

# SOLUTIONS DESIGNED TO HELP YOU WORK BETTER



**METALWORKING**



**CUTTING TOOLS**



**SAFETY SOLUTIONS**



# HELPING METALWORKERS ACHIEVE GREATNESS

WALTER was created thanks to a man's will to help. Walter Somers, a mechanical engineer from Germany arrived in Canada in 1939 when World War II started. After noticing Canadian workers' limited tooling and training, he saw the opportunity to contribute to greater industrial successes.

In 1952, WALTER Surface Technologies was founded driven by a will to outperform and improve productivity. The WALTER team visited end users one by one to help them work better. This unique customer-centric approach provided significant and measurable improvements to metalworkers output and set WALTER apart.

At WALTER, we believe that everyone has the potential to build, fabricate, construct, finish and erect great projects. With safe tools, productive consumables and the right recommendations, workers are enabled to do better work. We provide the means to achieve greatness through three pillars: productivity, safety and customer experience.

We help our customers achieve greatness by asking ourselves every day: how can we help them work better? It's the only question that matters and the reason why we exist.

At WALTER, we help our customers Achieve Greatness™.





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# NEW PRODUCTS

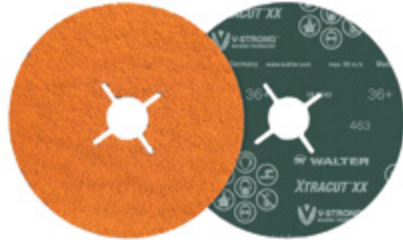


**PAGE 20**

## **SURFOX™ WELD CLEANING SYSTEMS**

**Fastest, safest, and easiest-to-use weld cleaning systems on the market**

All units have increased output to clean welds faster than ever before and some even include dual-user capabilities so multiple users can work with the same machine. All units also include improved functionality with digital display and multiple language settings.



**PAGE 93**

## **XTRACUT XX™**

**Self-sharpening ceramic disc with exceptional removal rates**

XTRACUT™ XX is engineered to deliver unmatched stock removal and an extended service life, making it the ideal choice for working with steel, stainless steel, and hard alloys. Its optimized shape and self-sharpening grains, this disc ensures consistent, high-efficiency material removal throughout its use. It boasts a very strong service life and toughness due to its V-STRONG™ backing.



**PAGE 137**

## **BRASS BRUSHES**

**For working in hazardous or extremely sensitive environments**

WALTER's brass brushes are made with 100% brass wire and are the perfect choice for spark-free brushing in hazardous environments or in operations where cleaning is needed without removing the base material. The perfect combination of productivity and efficiency without compromising on safety.



**PAGE 74**

## **FLEXCUT XX™ GRINDING DISC**

**Fast, efficient grinding for steel, stainless steel, and mill scale removal**

FLEXCUT XX™ uses SMART RESIN™ Technology to deliver ultra-fast grinding by exposing fresh grains at the optimal moment, ensuring a perfect balance of sharpness and extended wheel life, all while preventing clogging. It's designed for steel, stainless, and tough mill scale removal, providing consistent results and a clean finish.



**PAGE 118**

## **BLENDIX™ FLAP DISC**

**The longest life & highest overall material removal**

WALTER's BLENDIX™ flap discs offer aggressive material removal with a smooth finish, combining the benefits of a flap disc and a surface conditioning disc for consistent results and less downtime. Featuring WALTER's Eco-Trim™ backing for up to three times longer life and MAX-LIFE™ glue for maximum grain freshness.



**PAGE 142**

## **SCRATCH BRUSHES**

**Versatile scratch brush for wide range of applications**

A curved metal-core design combined with high-quality crimped wire allows for comfortable and productive brushing in a wide variety of applications, using only one brush. To reduce the number of brushes needed in your operation, turn to WALTER's new line of scratch brushes.



## PAGE 193

### SC 400™ LOW VOC High-Strength Citrus-Based Degreaser

When you need a powerful degreaser for the most challenging jobs, SC 400™ LOW VOC is the solution you can rely on. Formulated with citrus peel extracts, this heavy-duty cleaner effectively removes tar, bitumen, grease, lubricants, and oils. The slow evaporation rate ensures extended contact time, allowing thorough removal of contaminants with minimal cleaning liquid needed.



## PAGE 181

### AF-PL LOW VOC™

The AIR FORCE AF-PL LOW VOC™ is a powerful industrial cleaner and degreaser designed to remove grease, oil, and dirt without leaving residue. It's safe on most plastics, rubber compounds, and metals, and it also displaces moisture, making it ideal for applications on electronic devices, gaskets, and assembly lines. Featuring a low-VOC formulation, it offers an effective, environmentally conscious solution for heavy duty cleaning.



## PAGE 559

### SUPER SINGLES® VARIABLE ADF LENS

**Get superior optical clarity and variable shades**

The new and improved SUPER SINGLES® welding lens boasts all the same features as the SINGLES® lineup, including HD technology, but with variable shade and delay settings as well as grind mode so you get all the bells and whistles from the most premium welding lenses in one affordable retrofit lens. Compatible with most 2x4 welding helmets.



## PAGE 566

### SPY™ HELMET

**Experience ultimate versatility and a superior view**

The ARCONE® SPY™ helmet is a versatile, go-to option for students and industrial welders, offering top performance and advanced features. It combines a large viewing area with a wide shade range for exceptional visibility. Designed for all-day comfort, the SPY™ helmet ensures welders stay productive in any environment.



## PAGE 586

### HIGH-VIZ COOLING VEST Stay Cool & Visible

This vest is ideal for wearing where Hi-Viz safety apparel is needed in high-heat conditions. It features four pockets for inserts, a zippered front, hook and loop adjustment straps over the shoulders, and side straps to help achieve a perfect fit.



## PAGE 629

### 8" EX-PROOF MANHOLE VENTILATION PASSTHRU (MVP)

The first explosion proof manhole system that combines the low-profile manhole air vent, 90° elbow, and built-in mounting all in one unit. This unit comes with a collapsible duct for easy entry, stored in a small storage bag that can be dropped into the manhole with a quick release of the drawstring.





# STAR PRODUCTS

## METALWORKING SOLUTIONS

### PAGE 47

#### ZIP WHEEL™ Setting the industry standard for cut-off wheels

Faster, cooler, freer cutting and heavily reinforced for added safety, the ZIP WHEEL™ provides premium performance while resisting twisting and bending. This allows for a true, straight cut, every time. The end result is a wheel that improves worker safety while delivering unrivaled value.



### PAGE 66

#### XCAVATOR XX™ Ultra-fast material removal and comfort

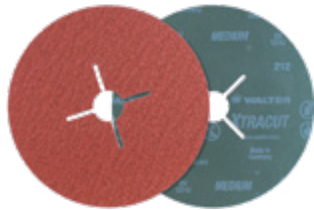
With its unique ceramic-grain blend and SMART RESIN™ technology, which allows the wheel to expose the fresh grains at the optimal moment to maximize longevity and sharpness, the ferrous-free XCAVATOR XX™ is the most productive wheel for heavy-duty grinding on steel and stainless steel.



### PAGE 93

#### XTRACUT™ Highest performance sanding disc in steel

Optimized self-sharpening ceramic grains enable consistent, high performance making it most productive sanding disc for steel production. Plus, the exclusive V-STRONG™ backing, which has 14% more layers of vulcanized fibers, delivers increased durability and resistance to wear and tear, allowing the disc to withstand high-speed abrasive action in the most demanding applications.



### PAGE 84

#### ENDURO-FLEX™ FLAP DISC FAMILY The longest life and highest overall material removal in the industry

Assembled with MAX LIFE™ cold-curing glue, which maintains the moisture levels of the abrasive, the ENDURO-FLEX™ flap disc family lasts longer and delivers more consistent performance than competitive flap discs. This exclusive glue prevents exposure to excessive heat during manufacturing, avoiding micro-cracking and drying out, ensuring you get the freshest and most productive abrasive possible.



### PAGE 35

#### E-WELD 3™ Dual-purpose, high-temperature anti-spatter and cleaning solution

E-WELD 3™ is a high-performance anti-spatter solution that both cleans the workpiece and protects it from high-energy spatter, eliminating an extra step in the welding process while avoiding costly rework. The E-WELD 3™ is often the preferred solution for use on stainless steel.



### PAGE 183

#### CB 100™ Industrial-strength part cleaner and degreaser

Powered by our exclusive Nature Boost™ formula, CB 100™ is unsurpassed in its ability to remove the most stubborn industrial contaminants.



## CUTTING TOOL SOLUTIONS

### PAGE 401

#### CARBIDE BURRS Fast material removal and longest life

High-performance carbide burrs are made with the highest grade of tungsten carbide and are manufactured with the highest degree of accuracy for perfect concentricity and balance.



### PAGES 252 AND 253

#### NITRO® DRILLS Heavy-duty HSS drills with Black & Gold surface treatment

Manufactured from a premium-grade of M2 high-speed steel, these drills are designed for use in stainless steel and other hard-metal drilling.



## PAGE 436

### ICECUT MINI™ MAGNETIC DRILL

**Low-profile magnetic drilling unit  
for confined spaces**

Measuring in at only 7 inches tall, the ICECUT MINI™ is the ultimate compact, low-profile magnetic drilling unit for making holes in tight spaces from H-beams to truck frames, and other applications where space may be limited.



## PAGE 452

### NITRO® SAFETY FIRST REAMERS Protects against the danger of a falling reamer

Ideal for use with air impact tools, two NEO40 magnets are placed in the hex nut to reduce the risk of the reamer falling out of the socket while in use.



## PAGE 430

### TCT HOLE CUTTERS Ultra-hard teeth

Tungsten Carbide Tipped (TCT) Hole Cutters are a cost-effective alternative to bi-metal hole saws. Designed for drilling large-diameter holes in both ferrous and non-ferrous materials. Excellent performance and portability makes them ideal for a wide range of trade professionals.



## SAFETY SOLUTIONS

## PAGE 559

### SINGLES® RETRO-FIT WELDING LENS Upgrade your view with the best optical clarity in the industry

Retro-fit your welding helmet with superior optical clarity with an ARCONE® SINGLES Lens. Upgrade your welding experience as well as the quality of your work, all while keeping your eyes protected.



## PAGE 634

### MAGNETIC MANHOLE LID LIFTER

**Designed for quick and safe  
removal and replacement of  
manhole covers by yourself**

Minimizes stress and strain on the back and body while eliminating the need for pry bars. Collapsible for easy storage and transport.



## PAGE 552

### VISION® BFFVX PAPR SYSTEM Breathe easy with accessible respiratory protection solutions

Weld and breathe easy with the ARCONE® AIRPLUS® PAPR System. This unit boasts a 17-square-inch viewing area in addition to an 8-setting airflow control and long battery life. This unit comes equipped with a new flexible breathing hose, pre-filter, and spark arrester.



## PAGE 585

### VORTEX COOLING OR HEATING VEST Continuous cooling or heating for maximum comfort

Delivering constant and adjustable cooling or heating, the VORTEX Vest is especially popular for workers in confined spaces as well as foundries, steel mills, asbestos abatement, and paint-baking operations. This vest offers full range of motion and can be worn under protective clothing.



## PAGE 603

### 8" AXIAL AC PLASTIC BLOWER W/ COMPACT CANISTER & DUCTING Compact canister is the lightest and shortest on the market!

Keeps workers comfortable, while keeping them safe. Lightweight, portable, compact, durable, and quiet. Made from corrosion-, UV- and chemical-resistant "safety orange"-colored polyethylene for high visibility.







Automation has become essential in improving productivity and maintaining consistent quality across metalworking operations. WALTER's automation solutions streamline labor-intensive tasks like grinding, deburring, drilling, and more, allowing for faster production cycles while reducing the need for manual intervention.



*Book Your Automation  
Consultation today*



## Why Choose WALTER?

- **Expert Guidance:** Our team provides comprehensive support for evaluating and optimizing your material removal tasks, whether you're automating existing processes or considering new solutions.
- **Complete Solutions:** WALTER offers a full range of high-performance abrasive and tooling solutions to increase productivity in automated processes. Now with the addition of PUSHCORP, you can combine WALTER solutions with force control devices, spindles and other end of arm solutions to further maximize performance.
- **Customized Testing:** In one of our demo labs, we demonstrate what's possible for your parts, building a proof of concept to help achieve the desired finish, consistency, or validation of what you could actually achieve robotically.

## Reducing Uncertainty Around Automated Processes

At WALTER, we are dedicated to helping you find the right automation solution for your operations. Our new automation demo lab showcases what's possible on your actual parts, using the right abrasives, tooling, and material removal solutions, paired with robotic equipment tailored to your project's needs. By testing directly on your components, we design a tailored process that includes selecting the right abrasives, setting optimal operating parameters, and configuring equipment to maximize performance.

**DISCOVER AUTOMATED SOLUTIONS FOR YOUR OPERATIONS!**







**TALK TO OUR TEAM TODAY AND SEE HOW YOU CAN WORK BETTER WITH WALTER  
AUTOMATION SOLUTIONS**



# BRINGING THE METALWORKING INDUSTRY TOWARD A MORE SUSTAINABLE FUTURE

Helping you work better by reducing your carbon footprint, energy consumption, and waste all while ensuring VOC-compliance and increasing the health and safety of metalworkers.

WALTER meets the challenge of sustainability with environmentally safe, productive, and long-lasting products that outperform the competition. At WALTER, we implement and regularly monitor internal initiatives to ensure we work more safely, responsibly, and sustainably.

ICONS	INITIATIVE	WHAT WE DO AT WALTER
 	<b>Safer Solutions</b>	<ul style="list-style-type: none"> <li>• Deliver products that meet customer needs and goals with the least amount of impact on the environment such as through low-VOC or VOC-free chemicals.</li> <li>• Provide end-users and distributors with the tools to do crossovers when looking for solutions with environmental benefits.</li> <li>• Minimize packaging, make it reusable or find recyclable alternatives to reduce waste.</li> </ul>
	<b>Manufacturing Waste</b>	<ul style="list-style-type: none"> <li>• Reduce the amount of waste created during the manufacturing process</li> <li>• Minimize the disposal of hazardous materials by recycling resources and allocating them efficiently.               <ul style="list-style-type: none"> <li>- Our USA-made drill bits utilize blanks produced from more than 90% recycled HSS and more than 80% recycled cobalt steel.</li> <li>- At least 15% of boxes from our suppliers are re-used for outbound shipments and 45-50% of our shipping cardboard boxes is recycled fibers.</li> </ul> </li> </ul>
	<b>Reducing GHG (Green House Gas Emissions)</b>	<ul style="list-style-type: none"> <li>• Focusing on larger impact operations first, such as, consolidating our outbound shipments to deliver products responsibly, reduce costs, and help our customers meet their emission reduction goals.</li> </ul>
 	<b>Reduce Waste</b>	<ul style="list-style-type: none"> <li>• Expand our product's lifespan as much as possible.</li> <li>• Offer after-sales repair services for our power tools and a sharpening service for our annual cutters to extend the life of the product so less waste is sent to landfill.</li> <li>• Extend product life via design:               <ul style="list-style-type: none"> <li>- Our SURFOX™ brushes can be trimmed to expose new bristles.</li> <li>- Our ENDURO-FLEX™ flap discs can also be trimmed to expose more abrasive flaps.</li> </ul> </li> </ul>

## Our Ethics

We continuously promote ethical values and principles within the company. These principles seek to serve and protect others above the organization's self-interest and demonstrate strong moral character from our leaders and employees. We ensure our employees commit to, represent, and embody our company values by ensuring they align with our many initiatives, goals, and procedures through training.



# PARTNERSHIP IN PRODUCTIVITY PROGRAMS

## CHEMICAL AUDITS AND PROCESS OPTIMIZATION

*Increased productivity and safety through professional audits*

WALTER technicians analyze your contaminants and cleaning processes and recommend ways to improve efficiency and productivity. We provide a detailed cost analysis report to help you make informed decisions, consolidate product requirements and optimize inventory. Our trained professionals make suggestions, demonstrate products, and let you see for yourself how well WALTER products work. Chemical audits help consolidate product requirements and optimize inventory.



## SAFETY SEMINARS AND INDUSTRY TRAINING

*Because health and safety are top priority*

As an addition to WALTER's value-added services, we offer FREE Safety Seminars to encourage a safer work environment. Whether it is the Abrasives Safety Seminar or the Chemical Safety Seminar that you are interested in, WALTER works with you to customize the perfect training for your team. We provide hands-on training at our fully-equipped campus so your team can innovate and operate safely. While training, you will work with our professional Product Management Team.



## PRODUCT DEMONSTRATION

Our team is trained to listen and provide innovative solutions that answer your specific needs. With our mobile product demonstration trucks, WALTER's team can easily go to your facility and help make the fabricating and finishing process more efficient, reducing both abrasive spend and overall production costs.



## THE BUCKET PROGRAM

*Evaluation of cost savings potential and improved worker safety*

WALTER will assist in optimizing your workflow and cost savings by analyzing your abrasive and tooling usages and work processes through our Bucket Program. Based on our analysis, we will be able to make recommendations on how you can improve efficiency, reduce abrasive costs, improve productivity and encourage safer working habits, maximizing every dollar spent on consumables.



## PRODUCTIVITY REPORTS

*Working to positively impact your business*

Accompanying every Bucket Program analysis, a detailed productivity report comparing WALTER products versus competitive products in terms of yearly usage, removal, labour time and cost, product life and product cost. The goal of the productivity report is to provide you with all the facts in hand, so that you can optimize your productivity and make adjustments that will positively impact your business.



## TRADESCHOOL PROGRAM

*Helping instructors and providing future welders with the right tools*

Turn a portion of your spending as well as your students' purchases into scholarships with our reward program. Our instructors provide customizable and interactive on-site training seminars to support welding instructors and their classrooms. WALTER also offers educational videos, mobile apps, posters, technical guides and more!



## THE MONEY MAKER GUARANTEE

WALTER Money Maker Guarantee certifies that all WALTER products are designed, manufactured and sold with our total commitment to saving time, lasting longer and making money for you. Your total satisfaction is paramount to us, which is why we will reimburse you for your original purchase price\*. That is our guarantee.

*\* WALTER will reimburse up to \$1000 via free products if you are not completely satisfied.*



## YOUTUBE VIDEOS

Access product trainings and spotlights, anywhere, anytime:



Visit the WALTER Network

[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)



Visit the ALLEGRO INDUSTRIES Channel

[www.youtube.com/user/AllegroIndustries](http://www.youtube.com/user/AllegroIndustries)





# SPOTLESS

ANDREW OVERING  
FOREMAN & TECHNICAL SUPERVISOR

“  
Stainless steel is a very difficult material to work with. Working with the right tools is crucial to making sure that all of our tanks come out spotless.  
”

Andrew has always been a very curious person. From an early age, he's been fascinated by how things are put together. Not surprisingly, his favourite toys were Legos and K'nex.

One day, he met a welder. He immediately found his calling as he watched the metalworker form, cut, and join. Within 3 weeks, he was registered at his local trade school. After completing the program, he accepted a welding job at a newly opened tanker manufacturer, and he's been working there ever since.

Sixteen years later, Andrew has learned and mastered every single process in the tanker industry. He's the go-to person for technical assistance. He enjoys “teaching others various methods as well as sharing tips and tricks that you might not have learned in school. I'm always willing to help people.”

He is now the shop's foreman. He loves his job, and it shows. Cutting corners is not an option for him. “Stainless steel is a very difficult material to work with. Working with the right tools is crucial to making sure that all our tanks come out of here spotless.” He's also responsible for signing off on every tank. “I consider myself a perfectionist. I will always try to outdo my last tank and I make sure that everybody else that works with me follows the same desire to do better every single time.”

His motto is “I can fix just about anything that is broken.” This also applies to his hobbies outside of work. He has renovated his house by himself and hasn't paid a mechanic to repair his cars in over ten years.

Getting an impeccable finish on tanks is not an easy feat. According to Andrew, using the right tools is key: “When it comes to abrasive work, you want to do as little manual labor as possible. A long day of grinding can be hard on your hands and hard on your back. The better your tool is, the faster you're going to remove material and the better your product is going to be.” Andrew wants to continue repairing and building tanks. “It's such a rewarding industry that I don't picture myself anywhere else.”

Perhaps a new generation of tank builders is in the works. His 3-year-old is always on the lookout for large tanks when in the car with his dad. Andrew always makes sure to say, “daddy built this!” when seeing a tank on the road. That's how proud Andrew Overing is of what he does. To him, they are more than just tankers, they are pieces of art.

 **WALTER**  
Achieve Greatness™

# METALWORKING SOLUTIONS

WELDING

CUTTING

GRINDING

FINISHING

BRUSHING

POWER TOOLS

MRO CHEMICALS

HIGH-PERFORMANCE  
DEGREASING SOLUTIONS

ACCESSORIES

WALTER VENDING PROGRAM

 **WALTER**



# SAFETY FIRST

## Tips on the safest and most effective use of abrasives and power tools\*



- Disconnect the power tool prior to changing abrasives.
- Inspect the abrasive for any sign of damage. Do not use if damaged.
- Check MAX. RPM on abrasive and check the spindle speed of the tool. Never run an abrasive faster than its MAX. RPM (or M.R.S. = Maximum Rated Speed).
- Mounting: Use only approved mounting hardware for the abrasive at hand. Above all, the clamping hardware must center the wheel securely and provide the required support to the abrasive.
- Abrasives must be used with safety guards in place as indicated on the label. Adjust guards to protect the operator.
- Always wear eye protection. Wear face, body, ear and dust inhalation protection as needed.
- Practice safe working methods: Secure the workpiece, hold the tool firmly, avoid cluttered and badly lit work areas.
- Ensure adequate protection of other workers in the vicinity.
- Do not use abrasives and tools over their rated capacity, follow manufacturer's instructions.
- Service power tools regularly and according to manufacturer's instructions to keep them in good working condition and maintain their performance. Do not use if damaged.

\*WALTER abrasives are designed for use as directed in all applicable safety codes, such as CSA, WHMIS, ANSI, OSHA and other regulatory bodies. Always work within these applicable rules and regulations.

## SAFEST AND MOST EFFECTIVE WORK METHODS



### GRINDING

Type 27 depressed center grinding wheels are designed to be used at a 15° to 20° working angle.



### FLEXCUT

FLEXCUT flexible grinding wheels are best used with a working angle of 10° to 15°.



### FLAP DISCS

Flap discs are designed to be used at a working angle of 4° to 10°. Never use flat.



### SANDING DISCS

Fiber backed sanding discs work best at a working angle of 4° to 10°. They must be used on a full size flexible backing pad.



### CUT-OFF WHEELS

Choose direction of cut to present the narrowest cross section of the material to the wheel.

Cut large solids with a moderate rocking motion. Avoid twisting and bending of the wheel in the cut. Do not use a cut-off wheel for deburring unless otherwise specified.



### FLAP WHEELS

Apply moderate working pressure when working with flap wheels – let the tips of the flaps do the work.



### WIRE BRUSHES

Work with the face of a wire brush. Apply moderate working pressure to let the wire tips do the work and prevent excessive bending of the wire.

## STORAGE TIPS FOR ABRASIVE PRODUCTS

- Keep abrasives in their original packaging, to protect them from water and excessive heat.
- Coated abrasives, such as fiber discs, flap discs and cloth belts perform best when stored in an area with 50% humidity at 22 °C (70 °F).

## SAFETY SEMINAR

WALTER offers free in-plant safety seminars to promote the safe use of abrasives. Reserve your safety seminar today by calling: **1-888-592-5837**. For more information, visit [walter.com/safety](http://walter.com/safety)

# IMPORTANT

# METALWORKING SOLUTIONS

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# WALTER ICONS LEGEND

## Materials

Red for steel

Blue for stainless steels and nickel-based alloys

Green for aluminum and non-ferrous metals

Gold for brass

Black for plastic

Purple for cast iron

Gray for concrete and ductile metal

Charcoal for carbide

Titanium

Dark gray for mill scale

Light gray for hard metal

## Working angle

The only permitted angle for cutting wheels is 90° to the material (Type 1 (EN 41) – flat)

Type 27 / (EN 42) – (depressed centered)

Type 27 combo (cutting and grinding) wheels ideal angle is 90° or 20°

Type 27 grinding ideal angle varies from 15° to 30°

Type 28 ideal angle is lower than 10°

Type 29 ideal angle is 10°



## Simple numbering system

Makes it easy to reorder. Also present in the center of bonded wheels to be readable when wheels are worn-out.

## Maximum speed

RPM (rotations per minute) and m/s (meters per second)

## Compliance

Products manufactured in compliance with European regulation EN 12413 and US regulation ANSI B7.1

## Traceability

Internal code to monitor production for safety

## Wheel grade

Bond type, grain type and grain size

## Warning

When using SPIN-ON quick mounting system

## Dimensions

Diameter, thickness, bore

## More information

Consult WALTER website for complete safety information

## Restrictions

**DO NOT** use if damaged

**NOT** suitable for hand-held grinders

**NOT** suitable for grinding

**DO NOT** use for wet grinding or cutting

## Safety

Eyes, face, ears and lungs protection

Hand protection

Always use safety guard

## SURFOX weld cleaning systems - Legend

**MIG icon**  
Cleans MIG welds

**TIG and spot icon**  
Cleans TIG and spot welds

## WALTER products - Legend

**California Proposition 65 Warning**  
The products identified with this symbol can expose you to chemicals that are known to the State of California to cause cancer and / or reproductive harm. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov) or [www.walter.com](http://www.walter.com)

**NSF**  
**Nonfood Compounds Program**  
The global food industry relies upon nonfood compounds to facilitate the efficient processing, handling and storage of food throughout the supply chain. Nonfood compounds include such substances as cleaners, sanitizers, boiler compounds and lubricants. NSF International Nonfood Compounds Registration Program provides beneficial product information to three important stakeholder groups.

**Low VOC**  
**Low Volatile Organic Compounds**  
Consumers today are far more knowledgeable regarding products containing potentially toxic levels of volatile organic compounds, commonly known as VOCs. Paints, stains, and varnishes have long contributed considerably to the prolific release of VOCs, sometimes known as off-gassing. This explains the growing popularity of low-VOC and VOC-free products. Products where you see the VOC-free logo guarantee that they contain no volatile organic compounds.



# 01

## WELDING



# SURFOX™ WELD CLEANING



**SURFOX™ is a safe, effective, and fast electrochemical weld cleaning system.**

- ▷ Fast and uniform weld cleaning
- ▷ Guaranteed passivation
- ▷ NSF registered solutions
- ▷ Minimal PPE Requirements
- ▷ SURFOX™ Systems meet ASTM standards to guarantee passivation of workpieces
- ▷ Validated by stringent third-party testing to comply with the exacting ASTM specifications for passivation.


## Why is passivation important?

Stainless steel can resist corrosion thanks to a passive chromium oxide layer that forms on its surface. The formation of this protective layer is called passivation.


Passivation occurs when the chromium contained in the stainless steel meets the oxygen in the air. This chemical reaction forms a passive chromium oxide layer, which will protect the surface of stainless steel. Mechanical abrasion, thermal treatment, welding, salt, strong acids, and galvanic contamination will destroy this protective layer and expose the metal to corrosion. To fully restore the corrosion resistance of stainless steel and avoid any interference in the passivation process, the heat tint as well as other surface contaminants must be removed.

**Safe:**  

SURFOX™ CLEANING electrolytes are NSF registered to be used in food plants and pose no health hazards for operators.






**Easy to use:** 

Depending on your model, either pour your SURFOX™ electrolyte cleaning solutions into the reservoir, or dip the wand into the solution and drag to clean.

**Fast:** 

Uniform cleaning and passivation at a rate of 3 to 5 feet per minute.

## Which SURFOX™ is right for your weld cleaning needs?

Usage	Fieldwork/Occasional Use		Heavy-Duty/Industrial & Field Work	Heavy-Duty/Industrial Use	
Process	Weld Cleaning	Cleaning, Marking, Etching	Cleaning, Marking, Etching	Cleaning, Marking, Etching	
					
	<b>SURFOX™ TURBO</b>	<b>SURFOX™ MINI</b>	<b>SURFOX™ MAX</b>	<b>SURFOX 206™</b>	<b>SURFOX 306™</b>
Application	<ul style="list-style-type: none"> <li>Cleans TIG and Spot welds and light MIG welds.</li> </ul>	<ul style="list-style-type: none"> <li>Cleans TIG, SPOT and light MIG welds.</li> <li>Excellent for repairs, touch-ups and small jobs.</li> </ul>	<ul style="list-style-type: none"> <li>Stick, MIG, TIG and Spot welds.</li> <li>Heavy-duty weld cleaning.</li> <li>More than one user.</li> </ul>	<ul style="list-style-type: none"> <li>Cleans TIG, Spot and MIG welds.</li> </ul>	<ul style="list-style-type: none"> <li>Stick, MIG, TIG and Spot welds.</li> <li>Heavy-duty cleaning.</li> <li>More than one user.</li> </ul>
Features	<ul style="list-style-type: none"> <li>Powerful and compact.</li> <li>Dip &amp; work weld cleaning.</li> <li>Simple to use.</li> <li>AC only (cleaning).</li> </ul>	<ul style="list-style-type: none"> <li>Uses refillable cartridges; compatible with dip &amp; work wand.</li> <li>AC/DC option for marking and etching.</li> <li>LCD panel with multilanguage and precise functionalities.</li> </ul>	<ul style="list-style-type: none"> <li>Dual-user capabilities.</li> <li>Dip &amp; work weld cleaning.</li> <li>LCD panel with multilanguage and precise functionalities.</li> <li>Portable for field work.</li> <li>AC/DC option for marking and etching.</li> <li>Most versatile unit in the industry.</li> </ul>	<ul style="list-style-type: none"> <li>Built-in fume elimination system (requires a compressed air line).</li> <li>AC/DC option for marking and etching.</li> <li>Integrated reservoir with Dynamic Flow for precise liquid dispersion.</li> <li>LCD panel with multilanguage and precise functionalities.</li> </ul>	<ul style="list-style-type: none"> <li>Built-in fume elimination system (requires a compressed air line).</li> <li>AC/DC option for marking and etching.</li> <li>Integrated reservoir with Dynamic Flow for precise liquid dispersion.</li> <li>LCD panel with multilanguage and precise functionalities.</li> <li>Dual-user capabilities.</li> <li>Most powerful unit in its class.</li> </ul>
Marking & Etching	N/A	Stainless steel, aluminum, titanium	Stainless steel, aluminum, titanium	Stainless steel, aluminum, titanium	Stainless steel, aluminum, titanium



# HEAVY-DUTY/INDUSTRIAL USE

## SURFOX™ 306

The most powerful heavy-duty production unit

The SURFOX™ 306 is the most powerful electrochemical weld cleaning unit on the market and WALTER's most powerful production unit when it comes to cleaning and passivating stainless steel welds. The 306 can clean Spot, TIG, and even the dirtiest of MIG and Stick welds. This unit is equipped with a flow-through tank and Dynamic Flow, a new feature that ensures the right amount of weld cleaning liquid is dispersed to the work piece as soon as contact is established. This unit also includes a port for dip & work weld cleaning, which allows two users to work using the same SURFOX™ machine.



### Features and benefits

- ▷ 2550 Watts of maximum cleaning output
- ▷ Includes dual-user functionality so two users can work with the same machine
- ▷ LCD panel with multi-language settings and more precise settings
- ▷ Threaded brush system to easily change out accessories and reduce downtime
- ▷ Ability to clean larger and hard-to-reach areas thanks to a variety of compatible accessories
- ▷ Flow-through reduces the risk of contaminating or spilling the electrolyte solution
- ▷ Dynamic Flow ensures the right amount of liquid is dispersed to the work piece
- ▷ Marking and etching capabilities
- ▷ Built-in fume dispersion system



Model	Order No.	Electrical		Dimensions			Dual User	Tank capacity	Length of hose	Weight
		Input	Output	Length	Width	Height				
306	54D316	120V - 50/60 Hz, 10A	3-30V AC/DC 85A Max	19"	10"	15"	YES	64.2 oz	20'	47 lbs

**Each unit comes with:** 1 x SURFOX™ 306 carbon fiber brush (54B606), 1 x brush adaptor (54B149), 1 x Ground Cable (48R136), 1 x user guide, 1 x carrying case, 1 x 10mm key

## SURFOX™ 206

Durable production unit for everyday use

The SURFOX™ 206 packs a serious punch when it comes to cleaning output and it is the most powerful unit in its segment. This unit cleans Spot, TIG, and MIG welds on stainless steel. The 206 is equipped with a flow-through tank with Dynamic Flow to the wand.



### Features and benefits

- ▷ 1500 Watts of maximum cleaning output
- ▷ LCD panel with multi-language settings and more precise settings
- ▷ Marking and etching capabilities
- ▷ Flow-through tank reduces risk of contaminating or spilling the electrolyte solution
- ▷ Dynamic Flow ensures the right amount of liquid is dispersed to the work piece



Model	Order No.	Electrical		Dimensions			Dual User	Tank capacity	Length of hose	Weight
		Input	Output	Length	Width	Height				
206	54D216	120V - 50/60 Hz, 5.5A	3-30V AC/DC 50A Max	19"	10"	15"	NO	64.2 oz	13'	44 lbs

**Each unit comes with:** 1 x carbon fiber brush (54B601), 1 x brush adaptor (54B149), 1 x Ground Cable (48R136), 1 x user guide, 1 x carrying case



# SURFOX™ MAX

Lightweight and ultra powerful; the most versatile unit in the industry

The SURFOX™ MAX is the industry's most versatile weld cleaning unit. It is powerful enough to tackle Spot, TIG, MIG, and even STICK welds on stainless steel, and is the lightest heavy-production unit on the market, making it ideal for tough fieldwork and heavy-duty industrial use. This unit is equipped with two dip & work ports, so two users can be cleaning welds using the same machine to maximize efficiency.



### Features and benefits

- ▷ 2550 Watts of maximum cleaning output
- ▷ Includes dual-user capabilities so two users can work with the same machine
- ▷ LCD panel with multi-language settings and more precise settings
- ▷ Dip & work weld cleaning
- ▷ Marking and etching
- ▷ Lightweight and portable



Model	Order No.	Electrical		Dimensions			Dual User	Tank capacity	Length of hose	Weight
		Input	Output	Length	Width	Height				
MAX	54D096	120V, 50/60 Hz, 10.0A	3-30V AC/DC 85A Max	16"	6"	11"	YES	-----	11'	22 lbs

Each unit comes with: 1 x D&W carbon fiber brush (54B604), 1 x D&W brush sleeve (54B605), 1 x brush adaptor (54B149), 1 x Ground Cable (48R136), 1 x user guide, 1 x carrying case

# FIELDWORK

## SURFOX™ MINI

The ideal unit for field or repair work

Ultra-light and portable, the SURFOX™ MINI is designed for weld cleaning, marking, and etching in the field. It is the most powerful fieldwork unit with marking and etching functionality and cleans Spot, TIG, and light MIG welds with ease.



### Features and benefits

- ▷ 900 Watts of maximum cleaning output
- ▷ Comes with the SURFOX™ cartridge wand
- ▷ Can be used with the SURFOX™ dip & work wand kit
- ▷ Marking and etching
- ▷ Weighs only 16 lbs



Model	Order No.	Electrical		Dimensions			Dual User	Tank capacity	Length of hose	Weight
		Input	Output	Length	Width	Height				
MINI	54D076	120V - 50/60 Hz, 5.5A	3-30V AC/DC, 30A Max	16"	6"	11"	NO	-----	-----	16 lbs

Each unit comes with: 1 x carbon fiber brush (54B601), 1 x adaptor for micro-brush (54B150), 1 x Ground Cable (48R136), 1 x user guide, 1 x carrying case

## SURFOX™ TURBO

Powerful, compact, and reliable; our most lightweight unit

The SURFOX™ TURBO is the easiest model to operate, on top of being the most lightweight and portable one, designed for quick weld cleaning and repair jobs in the field. Ideal for cleaning TIG, Spot and light MIG welds on stainless steel, this unit delivers hassle-free, quick weld cleaning and passivation.

### Features and benefits

- ▷ *Powerful and compact*
- ▷ *Dip & work weld cleaning*
- ▷ *Simple to use*
- ▷ *Weld cleaning unit only*
- ▷ *Lightweight and portable*



Model	Order No.	Electrical		Dimensions			Dual User	Tank capacity	Length of hose	Weight
		Input	Output	Length	Width	Height				
TURBO	54D066	120V - 50/60 Hz, 4A	12V AC, 25A Max	12"	5"	9"	NO	-----	-----	15 lbs

**Each unit comes with:** 1 x SURFOX™ D&W carbon fiber brush (54B601) 1 x D&W brush sleeve (54B603), 1 x brush adaptor (54B149), 1 x Ground Cable (48R136), 1 x user guide, 1 x carrying case

## WIDE SURFACE DIP & WORK KIT

Clean larger surfaces, faster

The wide-surface dip & work wand kit is designed to tackle larger high surfaces. This kit includes a 300mm/12" insert with handles in addition to a telescopic lance for areas that are out of reach. Compatible with SURFOX™ MAX & 306.

**Order No.:** 54B611



## DIP & WORK WAND KIT

Speed and versatility, when you need it most

The dip & work wand kit is your go-to SURFOX™ accessory to make quick work from repair and touch-up jobs, or when two workers are leveraging the same SURFOX™ weld cleaning unit to get the job done. This kit is an add-on accessory and is compatible with the SURFOX™ 306, MINI, MAX, and TURBO.

**Order No.:** 54B610



# SURFOX™ SOLUTIONS

NSF



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Cartridge	100 ml	3.4 oz	54A061	S-10E	6
Sprayer	500ml	16.9 oz	54A063	S-10E	12
Liquid	1.5 L	51 oz	54A065	S-10E	1
Liquid	5 L	1.3 gal	54A066	S-10E	1
Liquid	20 L	5.2 gal	54A067	S-10E	1
Liquid	208 L	55 gal	54A068	S-10E	1

Color: Translucent

## SURFOX-G™

pH neutral electrolyte solution

Can be used with high conductivity pads and carbon fiber brushes. Specially designed for use in water treatment plants.

NSF category A3, registration #146974

**Great for cleaning MIG, TIG, and spot welds on stainless or aluminum**

- ▷ pH neutral, non acidic
- ▷ Safe alternative to pickling paste and strong acids
- ▷ Non-corrosive
- ▷ Compatible with all SURFOX™ machines
- ▷ Lower environmental impact

### Tech tip!

Use with SURFOX-T™ drum pump 54B106



NSF

Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Cartridge	100 ml	3.4 oz	54A001	S-01E	6
Sprayer	500 ml	16.9 oz	54A003	S-01E	12
Liquid	1.5 L	51 oz	54A005	S-01E	1
Liquid	5 L	1.3 gal	54A006	S-01E	1
Liquid	20 L	5.2 gal	54A007	S-01E	1
Liquid	208 L	55 gal	54A008	S-01E	1

Color: Translucent

## SURFOX-T™

Heavy-duty formula

Provides faster cleaning action and more thorough cleaning on MIG welds.

NSF category A3, registration #142984

**Stronger solutions to clean even the dirtiest of MIG and TIG welds on stainless steel and aluminum**

- ▷ Safe alternative to pickling paste and strong acids
- ▷ SCAQMD compliant

NSF



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz	54A023	S-03E	12
Liquid	3.78 L	1 gal	54A025	S-03E	1
Liquid	20 L	5.2 gal	54A027	S-03E	1
Liquid	208 L	55 gal	54A028	S-03E	1

Color: Translucent

## SURFOX-N™

Cleaning and neutralizing formula

NSF category A1, registration #142985

- ▷ Must be used to clean and neutralize SURFOX™ electrolyte solutions
- ▷ SCAQMD compliant
- ▷ Prevents the formation of salt deposits (hazy white discoloration) around welds cleaned with SURFOX™



## SURFOX™ PRE-WELD

Fast drying surface cleaner

Formulated for preparing and degreasing metal surfaces prior to welding.

### Benefits

- ▷ *Reduced VOC content when compared to solvent-based surface cleaners*
- ▷ *Ready-to-use formula*

### Features

- ▷ *Replacement for surface preparation solvents such as acetone*



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz	54A073	S-13E	12
Liquid	3.78 L	1 gal	54A076	S-13E	1
Liquid	20 L	5.2 gal	54A077	S-13E	1
Liquid	208 L	55 gal	54A078	S-13E	1

Color: Orange

## SURFOX™ RENEW

High strength stainless steel cleaner

Highly concentrated, gel-like cleaner for removing rust and mineral deposits from stainless steel. Removes contaminants without attacking the parent material. Must be neutralized with SURFOX-N™ after use.

### Benefits

- ▷ *Gel formulation allows the product to cling to inclined surfaces*
- ▷ *VOC-free, solvent-free, non-flammable, biodegradable surfactants*
- ▷ *Removes rust, oxidation, mineral deposits, and light grease*

### Features

- ▷ *Concentrated formula – can be diluted up to 1:40 with water*
- ▷ *Ideal for cleaning of food processing and pharmaceutical equipment*



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz	54A083	S-11E	12
Liquid	3.78 L	1 gal	54A085	S-11E	1
Liquid	20 L	5.2 gal	54A087	S-11E	1
Liquid	208 L	55 gal	54A088	S-11E	1

Color: Light orange

### Tech tip!

Use with white BLENDEx™ hand pads (07A500) to easily remove rust and other surface contaminants

## SURFOX™ SHINE

Cleaner and protector for stainless steel

An innovative, non-hazardous product that removes light contaminants from stainless steel in one easy step.

NSF category A7, C1, registration # 152509

### Benefits

- ▷ *Removes dust, dirt, finger prints, oils, and handling marks*
- ▷ *Leaves a uniform finish without streaking*
- ▷ *Brightens and protects stainless steel surfaces*
- ▷ *Not controlled under WHMIS or OSHA*

### Features

- ▷ *Ready-to-use formula*
- ▷ *Silicone-free, VOC-free, solvent-free, non-flammable, phosphate-free, biodegradable*
- ▷ *For cleaning of food processing and pharmaceutical equipment*



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz	54A093	S-12E	12
Liquid	3.78 L	1 gal	54A095	S-12E	1
Liquid	20 L	5.2 gal	54A097	S-12E	1
Liquid	208 L	55 gal	54A098	S-12E	1

Color: White

# SURFOX™ CONSUMABLES & ACCESSORIES

SURFOX™ accessories are specially designed to handle the toughest weld cleaning and electropolishing applications. Depending on your application you can choose from a variety of sizes of pad cleaning options or carbon fiber brushes.

SKU	Product	Description	SURFOX™ 306	SURFOX™ 206	SURFOX™ MAX	SURFOX™ TURBO	SURFOX™ MINI
54B143		Tungsten insert 90°	✓	✓	✓		✓*
54B026		Standard cleaning pad	✓	✓	✓		✓*
54B002		Clamp ring for cleaning pad, 10-pack	✓	✓	✓		✓*
54B009		Large graphite insert, 45mm	✓	✓	✓		✓*
54B043		Large pad for large graphite insert with O-ring, 10-pack	✓	✓	✓		✓*
54B180		O-ring for insert	✓	✓	✓		✓*
54B038		Narrow tungsten insert					✓
54B028		Narrow cleaning pad with clamp ring, 10-pack					✓
54B020		Narrow clamp ring for narrow pad, 10-pack					✓
54B150		Spare brush adaptor for micro-wand					✓
54B149		Reusable brush adaptor for large wand	✓	✓	✓	✓	✓*
54B048		Large graphite insert for micro-wand					✓
48R294		Electrolyte straw	✓	✓	✓	✓	✓

\* Dip & Work applications only

SKU	Product	Description	SURFOX™ 306	SURFOX™ 206	SURFOX™ MAX	SURFOX™ TURBO	SURFOX™ MINI
54B051		Large pad for large graphite insert with O-ring, 10-pack					✓
54B092		Cartridge refilling pump					✓
54B601		Threaded round brush		✓			✓
54B602		Dip & work (D&W) brush w/o sleeve, 5-pack				✓	✓*
54B603		Dip & work (D&W) sleeve				✓	✓*
54B604		Dip & work (D&W) brush w/o sleeve, 5-pack	✓		✓		
54B605		Dip & work (D&W) sleeve	✓		✓		
54B606		Threaded round brush, 5-pack	✓				
54B607		Graphite insert, 100mm/4"	✓	✓	✓		
54B608		Pad for graphite insert, 100mm/4"	✓	✓	✓		
54B609		O-ring for graphite insert, 100mm/4"	✓	✓	✓		
54B614		Dip & work (D&W) wide insert, 300mm/12"	✓		✓		
54B615		Pad for wide insert, 300mm/12"	✓		✓		
54B618		Brush extraction	✓		✓	✓	✓
54B619		SURFOX™ D&W Dual Ground			✓		

\* Dip &amp; Work applications only



# COMPATIBLE WITH ALL SURFOX™ MODELS



### Micro-Wand and brush kit

With carbon fiber brush for cleaning corners and intricate areas.

**Not compatible with SURFOX™ TURBO.**

**Order No.:** 54B133



### SURFOX™ RENEW refillable trigger sprayer

Highly concentrated, gel-like cleaner for removing rust and mineral deposits from stainless steel. 500 ml (16.9 oz).

**Order No.:** 54A083



### Micro-Wand and tungsten insert kit

With tungsten inserts and pads for cleaning corners and intricate areas.

**Not compatible with SURFOX™ TURBO.**

**Order No.:** 54B033



### SURFOX™ PRE-WELD refillable trigger sprayer

Formulated for preparing and degreasing metal surfaces prior to welding. 500 ml (16.9 oz).

**Order No.:** 54A083



### SURFOX™ station

With its sturdy and industrial design, the SURFOX™ station has been designed to make it easy to move your SURFOX™ system throughout your work environment while allowing for the storage of various cleaning agents and accessories.

**Order No.:** 54B050



### SURFOX-N™ refillable trigger sprayer

Identified with GHS compliant product specific labels showing product features, OSHA/WHMIS information and directions for use. 500 ml (16.9 oz).

**Order No.:** 54A023



### SURFOX™ Powercloth

16 in. x 16 in.  
10 per package.

**Order No.:** 54B090



### BIO-CIRCLE POWERCLOTH

16 in. x 16 in.  
10 per package.

**Order No.:** 57M001

## Tech tip!

Keep different colour cloths for cleaning and neutralizing





# MARKING AND ETCHING UNITS



Go ahead, make your mark!

SURFOX™ marking kits use a fast and simple electrochemical process to permanently mark stainless steel surfaces. The marking wand plugs directly into the SURFOX™ machine and is used with specially made permanent or disposable stencils.



## STANDARD MARKING KIT

Order No.: 54B080

The standard kit requires the use of permanent stencils available from WALTER, each of which can be used hundreds of times.

### Includes:

- Marking wand and power cable
- Pack of 20 marking pads
- 5 O-rings
- Allen key 2.5 mm
- SURFOX-M™ marking solution 100 ml squeeze bottle for black marking (AC mode)
- SURFOX-E™ etching solution 100 ml squeeze bottle for white etching (DC mode)
- Packaged in a professional and sturdy case

### Permanent stencils

Can be used up to 200 times.

54 mm X 32 mm	54B076
85 mm X 54 mm	54B077
170 mm X 108 mm	54B073
257 mm X 170 mm	54B074
355 mm X 155 mm	54B079 *Aluminum frame



For more information: [stencil@walter.com](mailto:stencil@walter.com)



## PRO MARKING KIT

Order No.: 54B081

The PRO kit is offered with a stencil thermal printer for the printing of disposable stencils to permanently mark stainless steel surfaces. The printer comes with software that allows the creation of stencils for barcodes, serial numbers, lot and batch numbers, text, company logos, and more.


### Includes:

- Marking wand and power cable
- Pack of 20 marking pads
- 5 O-rings
- Allen key 2.5 mm
- SURFOX-M™ marking solution 100 ml squeeze bottle for black marking (AC mode)
- SURFOX-E™ etching solution 100 ml squeeze bottle for white etching (DC mode)
- Thermal printer and 20 m of stencil paper
- Packaged in a professional and sturdy case



# MARKING KIT ACCESSORIES

*For marking stainless steel and titanium*

**SURFOX-M™**  
**marking solution**   
 100 ml squeeze bottle  
 NSF category P1,  
 registration #146175  
**Order No.:** 54A031  
 Also available in 5 L format  
**Order No.:** 54A036



*For marking aluminum*

**SURFOX-M™ ALU**  
**electrolyte solution**  
 100 ml squeeze bottle  
**Order No.:** 54A131



*For etching stainless steel*

**SURFOX-E™**  
**etching solution**  
 100 ml squeeze bottle  
**Order No.:** 54A041



**Marking pads**  
 Pack of 20  
**Order No.:** 54B083



**Power cable**  
**Order No.:** 54B063



**Graphite marking insert**  
**Order No.:** 54B088



**O-rings**  
 Pack of 5  
**Order No.:** 54B089

**Marking wand**  
**Order No.:** 54B082



**Stencil paper roll**  
 100 mm x 20 m  
**Order No.:** 54B086  
 100 mm x 50 m  
**Order No.:** 54B087



Marking on aluminum using customizable stencil paper rolls



# PASSIVATION MEASUREMENTS

## SURFOX™ SURFACE MEASURING SYSTEM

Quickly and easily guarantee passivated stainless steel

The importance of validating the passivation of your stainless steel surfaces cannot be stressed enough. Impossible to detect with the naked eye, passivation indicates that the protective layer of chromium oxide exists on your stainless steel surface – the essential ingredient that guarantees your stainless steel will resist corrosion.

The SURFOX™ Passivation Tester is a simple, compact, and portable testing device that allows you to quickly and easily ensure passivation of stainless steel anywhere, anytime – even on job sites!

### Applications

- ▷ Determine the degree of passivation of stainless steel 304 & 316
- ▷ Testing device for passivation

### Tech tips!

- Use on a clean surface
- Clean stainless steel surface with SURFOX™ PRE-WELD for a clean, residue-free surface prior to marking

### Features

- ▷ Small probe allows testing in hard to reach areas
- ▷ Measures the protective chromium passive layer on stainless steel surfaces
- ▷ Based on a technology called “open circuit potential”
- ▷ A value above zero indicates the surface is passivated
- ▷ Minimizes costly downtime caused by the rework of pieces
- ▷ Provides an instant reading to verify the quality of the protective layer



## SURFOX™ PASSIVATION TESTER

Order No.: 54T012

### Accessories

Replacement cartridge  
White felt tip (Pkg. 5)

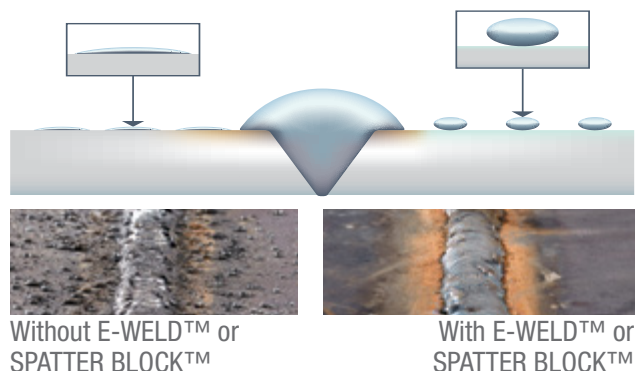
Order no.  
54A050  
54B046



# ANTI-SPATTER SOLUTIONS

## Why use anti-spatter solutions?

When small pieces of molten metal fly off the welding arc, the spatter, or slag, lands on weld surfaces around seams. As it cools and hardens on the surface on which it lands, it can be difficult to remove. Abrasives or chisels will then need to be utilized to remove the spatter to ensure a smooth surface for finishing the workpiece. However, by leveraging an anti-spatter solution before you begin welding, you can eliminate the time and cost of using abrasives or tools to remove weld spatter.



## Why use WALTER E-WELD™ and SPATTER BLOCK™ anti-spatter solutions?

WALTER has developed a **safer and healthier line of anti-spatter solutions** to prevent spatter from adhering to

surfaces. Our anti-spatter solutions are **biodegradable, non-flammable, and non toxic** so that you can improve your work process without sacrificing worker health and safety.

REQUIRED PROTECTION	NOZZLE PROTECTION			ANTI-SPATTER				CUTTING TABLE PROTECTION
APPLICATION	DIP APPLICATION	8-HOUR PROTECTION SPRAY	PERMANENT COATING	GENERAL PURPOSE	HIGH-PERFORMANCE			CUTTING TABLE PROTECTION
PRODUCT	SPATTER BLOCK GEL™	E-WELD NOZZLE™	E-WELD™ PRE-COATED NOZZLES	SPATTER BLOCK™	SPATTER BLOCK HT™	E-WELD 3™	E-WELD 4™	E-WELD PLASMA™
FEATURES	Practical magnetic anti-spatter gel dispenser	Protects welding nozzles for up to 8 hours	Lasts up to 5 x longer than standard welding nozzles	Temporary Corrosion Protection	For high heat applications	2-in-1 degreaser/ Anti-Spatter	Special heat dispersion technology guaranteed not to cause porosity	Prevents adhesions of slag to slats on cutting tables
CERTIFICATIONS								



## SPATTER BLOCK™

General purpose anti-spatter emulsion

SPATTER BLOCK™ is a safe, natural solution that protects the workpiece from weld spatter to keep you from having to perform time-consuming removal processes.



### Features

- ▷ Does not interfere with painting process
- ▷ VOC-free, solvent-free and silicone-free, biodegradable, non-flammable
- ▷ Formulation based on natural plant extracts
- ▷ Odorless
- ▷ Contains temporary corrosion inhibitors
- ▷ Up to 225 amps



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	400 ml	13.55 oz	53F002	L-10	12
Sprayer	500 ml	16.9 oz	53F203	L-21	12
Liquid	3.78 L	1 gal	53F205	L-21	1
Liquid	20 L	5.2 gal	53F207	L-21	1
Liquid	208 L	55 gal	53F208	L-21	1

Color: Milky green

## SPATTER BLOCK HT™

High temperature anti-spatter solution

SPATTER BLOCK HT™ is a unique, high-performing anti-spatter solution that protects workpieces from adherence with high heat resistance spatter and eliminates costly spatter removal operations.



### Features

- ▷ VOC-free, solvent-free, silicone-free, and biodegradable
- ▷ Odorless

### Benefits

- ▷ Allows multi pass welding
- ▷ Does not interfere with paint adhesion
- ▷ Contributes to a safer work environment



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	400 ml	13.55 oz	53F222	L-61	12
Sprayer	500 ml	16.9 oz	53F223	L-136	12
Liquid	3.78 L	1 gal	53F225	L-136	1
Liquid	20 L	5.2 gal	53F227	L-136	1
Liquid	208 L	55 gal	53F228	L-136	1

Color: Clear/Amber



## E-WELD 3™

Dual purpose high-temperature anti-spatter and cleaning solution

E-WELD 3™ is a high-performance anti-spatter solution that both cleans the workpiece and protects it from high velocity spatter, eliminating an extra step in the welding process while avoiding costly rework. E-WELD 3™ is often the preferred solution for use on stainless steel.



### Tech tip!

Use E-WELD 3™ to clean and protect from spatter.

NSF category P1, registration #145451

#### Benefits

- ▷ Cleans and degreases weld area
- ▷ Allows multi pass welding
- ▷ Does not interfere with paint adhesion
- ▷ Reduce consumable costs with a two-in-one solution
- ▷ Contributes to a safer work environment

#### Features

- ▷ High-heat resistance allows to weld at high amperages
- ▷ Surfactants to clean surface before welding without affecting the quality of the weld
- ▷ Corrosion inhibitors



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	400 ml	13.55 oz	53F252	L-176	12
Sprayer	500 ml	16.9 oz	53F253	L-46	12
Liquid	3.78 L	1 gal	53F255	L-46	1
Liquid	20 L	5.2 gal	53F257	L-46	1
Liquid	208 L	55 gal	53F258	L-46	1

Color: Clear blue

## E-WELD 4™

Premium anti-spatter emulsion

E-WELD 4™ is a unique anti-spatter solution which protects workpieces from the adherence of spatter. With the addition of special natural ingredients, E-WELD 4™ retracts in the presence of heat, leaving the welding area free of liquid. This means that unlike competitive products, E-WELD 4™ is guaranteed not to cause weld porosity or cracking, even when overapplied to work surfaces.



### Tech tip!

Best choice for welding on aluminum surfaces.

#### Benefits

- ▷ No weld cracking
- ▷ Corrosion resistant
- ▷ Does not interfere with paint adhesion

#### Features

- ▷ Premium protection when working up to 225 amps
- ▷ Guaranteed not to contribute to weld porosity



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	400 ml	13.55 oz	53F402	L-177	12
Sprayer	500 ml	16.9 oz	53F403	L-147	12
Liquid	3.78 L	1 gal.	53F405	L-147	1
Liquid	20 L	5.2 gal.	53F407	L-147	1
Liquid	208 L	55 gal.	53F408	L-147	1

Color: White



## INDUSTRIAL PUMP SPRAYER

Tough industrial sprayers designed to quickly and effectively dispense anti-spatter products. The spray pattern can easily be adjusted from a pin point jet for accurate product dispensing to a wide fan for greater surface coverage. These thick-walled polyethylene bottles have regulatory-compliant labels and feature a wide neck for easy refilling.

Description	Size		Order No.	Std. Pkg.
	Metric	US Gal		
Anti-Spatter	900 ml	30.4 oz	53L108	1



## REFILLABLE TRIGGER SPRAYER

Sprayers equipped with precision mechanism – guarantees minimal constant spray mist / no dripping. Clearly identified with product specific labels showing product features, WHMIS HCS 2012 compliance and directions for use.

Description	Size		Order No.	Std. Pkg.
	Metric	US Gal		
Spatter Block	500 ml	16.9 oz	53L321	1
Spatter Block HT	500 ml	16.9 oz	53L308	1
E-WELD 3	500 ml	16.9 oz	53L320	1
E-WELD 4	500 ml	16.9 oz	53L338	1





# AIR FORCE SYSTEMS

FOR SPATTER BLOCK™, SPATTER BLOCK HT™, E-WELD 3™, AND E-WELD 4™

The AIR FORCE aerosol can refilling station offers the convenience of using aerosol cans with the cost effectiveness of buying bulk packaging



The AIR FORCE station automatically dispenses SPATTER BLOCK™, SPATTER BLOCK HT™, E-WELD 3™, and E-WELD 4™ solutions and compressed air into refillable spray cans helping you reduce costs associated with the disposal of harmful aerosol cans as well as your environmental impact.

## Benefits

- ▷ *Eliminates aerosol disposal costs*
- ▷ *Reduces environmental impact*
- ▷ *Perfect price to performance ratio*

**1X 208L  
DRUM = 520  
CANS**

## AIR FORCE refillable sprayer

Durable and lightweight aluminum AIR FORCE sprayer comes with a specific label to clearly identify the contents.



*No more disposing  
of hazardous  
aerosol cans*



# AIR FORCE START-UP PACKAGES

## AIR FORCE SPATTER BLOCK™ 208 L / 55 gal.

Order no.  
**57D018**

**The start-up package includes:**

- ▷ 1 x 53F208 SPATTER BLOCK™  
208 L / 55 gal. drum
- ▷ 1 x 57D000 AIR FORCE Generic  
Orange Station
- ▷ 4 x 57B101 refillable bottle



## AIR FORCE SPATTER BLOCK HT™ 208 L / 55 gal.

Order no.  
**57D028**

**The start-up package includes:**

- ▷ 1 x 53F228 SPATTER BLOCK HT™  
208 L / 55 gal. drum
- ▷ 1 x 57D000 AIR FORCE Generic  
Orange Station
- ▷ 4 x 57B102 refillable bottle

## AIR FORCE E-WELD 3™ 208 L / 55 gal.

Order no.  
**57D038**

**The start-up package includes:**

- ▷ 1 x 53F258 E-WELD 3™  
208 L / 55 gal. drum
- ▷ 1 x 57D000 AIR FORCE Generic  
Orange Station
- ▷ 4 x 57B103 refillable bottle



**Air refilling pod**  
Order No.: 53M010

## AIR FORCE E-WELD 4™ 208 L / 55 gal.

Order no.  
**57D048**

**The start-up package includes:**

- ▷ 1 x 53F408 E-WELD 4™  
208 L / 55 gal. drum
- ▷ 1 x 57D000 AIR FORCE Generic  
Orange Station
- ▷ 4 x 57B104 refillable bottle

Accessories	Order No.
Air refilling pod	53M010
Replacement valve kit (includes 2 valves and 2 spray tips)	57B000
Brass screw cap	53M037
Drum adaptor	53M038

# CUTTING TABLE PROTECTION



## E-WELD PLASMA™

Long lasting protection for laser and plasma cutting tables

E-WELD PLASMA™ is a ceramic anti-spatter solution that is applied to laser and plasma cutting tables to reduce the buildup of slag over time.

This simple preventative measure keeps the slag from adhering to the slats in cutting tables, allowing it to be easily removed before it builds up and becomes problematic. This significantly decreases the amount of time and effort needed to clean slag off cutting tables, which saves you a great deal of labor time – and associated costs – in plant maintenance.

**Also compatible with wet tables.**



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Liquid	500 ml	16.9 oz	53F603	L-142	12
Refillable sprayer	1400 ml	34 oz	53L126		1
Liquid	10 kg	22 lbs	53F605	L-142	1
Liquid (Drum)	272 kg	600 lbs	53F608	L-142	1

**Color:** White

### **Tech tip!**

Stack multiple cutting tables behind one another and slightly offset them from one another so all the slats on each table are exposed. This will allow you to coat multiple cutting tables at once, saving even more time.

### Benefits

- ▷ Greatly reduces the amount of time required to remove slag from cutting tables
- ▷ Spend less time on equipment maintenance and more time on revenue generating activities
- ▷ Can also be applied to other equipment that is exposed to weld spatter or slag
- ▷ Spray gun applicator dispenses a thin, even layer to help prevent wasteful over application
- ▷ Can be applied to wet or dry cutting tables

### Features

- ▷ Ceramic formula provides long lasting protection, even in the presence of extreme heat
- ▷ Spray gun applicator allows you to quickly and easily dispense the product across large surface areas
- ▷ Each 10 kg (22 lbs) container provides enough antisplatter to cover 50-100 m<sup>2</sup> (538-1076 ft<sup>2</sup>)
- ▷ E-WELD PLASMA™ can be painted on manually or sprayed on with the applicator; just stir the solution prior to use
- ▷ Use a degreaser like SURFOX™ PRE-WELD to clean slats prior to use to ensure a strong, adhesive coating



# NOZZLE PROTECTION



## E-WELD NOZZLE™

Ceramic nozzle spray for up to 8 hours of protection

Extend the life of welding nozzles and reduce downtime spent scraping out spatter with E-WELD NOZZLE™. This highly concentrated anti-spatter evenly coats the exterior and interior surface of your welding nozzle to prevent spatter from adhering to the nozzle. This prevents obstructions and allows the gas to flow freely, resulting in a higher quality weld. This is an extremely economical solution, as the easy applicator dispenses a thin layer that can provide protection for up to 8 hours. This is an ideal solution for MIG welding, plasma cutting and laser cutting as the E-WELD NOZZLE™ can withstand high temperatures (up to 1000° C) and reduce your consumable spend.

- ▷ No weld contamination
- ▷ Helps prevent weld porosity
- ▷ No time lost on scraping spatter from nozzle prior to welding
- ▷ Improves weld quality and reduces rejection rate
- ▷ Only a thin layer needed (up to 100 applications per can)
- ▷ Superior life and more solution per can compared to competitive products

Unique self-dispensing applicator easily dispenses highly concentrated ceramic coating



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	400 ml	13.5 fl. oz.	53F212	L-156	6
Applicator			53L121		1
Aerosol and applicator	400 ml	13.5 fl. oz.	53F912	L-156	6

Color: Orange



Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)



Nozzle using E-WELD NOZZLE<sup>MC</sup>



Nozzle fully clogged (not using E-WELD NOZZLE<sup>MC</sup>)

## SPATTER BLOCK GEL™

Anti-spatter gel

Superior anti-spatter gel for protecting the interior and exterior of welding nozzles and contact tips.



### Features

- ▷ Free of chlorinated compounds and silicone
- ▷ Odorless
- ▷ Packaging height is designed to prevent clogging of gas diffusers in welding nozzles

### Benefits

- ▷ Extends welding torch life
- ▷ Fast, easy cleaning of nozzles and contact tips

Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Metal tin	200 g	7.0 oz	53F103	L-12	12

Color: Translucent

Magnetic tin "sticks" to steel work tables and vertical surfaces

# E-WELD NOZZLE™

Total nozzle protection for up to 8 hours!

- **UNIQUE APPLICATOR** ensures a thin, even protective coat.
- Extends nozzle life.
- Perfect for all types of welding, resists temperatures up to **1000 °C**.



Spatter build up obstructs gas flow, resulting in inconsistent weld quality.



Thin layer of E-WELD NOZZLE™ ensures gas flows freely for a clean, high-quality weld.



Video available at The WALTER Network

[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)

[walter.com/e-weld\\_nozzle](http://walter.com/e-weld_nozzle)



## E-WELD PRE-COATED NOZZLES™

Keeps nozzle cool and spatter-free

Reduce downtime spent scraping out spatter and replacing MIG nozzles.

The special water-based ceramic coating prevents spatter from adhering to the nozzle and allows the gas to flow freely, ultimately providing a better-quality weld.

The unique E-WELD PRE-COATED NOZZLES™ will reduce your welding operation costs.

### Features

- ▷ Reduce downtime scraping spatter and replacing nozzles
- ▷ Lasts up to 5 times longer than standard OEM nozzles
- ▷ Safe and non-flammable solution to nozzle spatter build-up
- ▷ Prevents nozzle obstructions resulting in a higher quality weld



### Tech tip!

Use E-WELD 4™ Premium anti-spatter emulsion to effectively protect welding pieces, welding jigs and tables against spatter.

Brand compatibility	Model compatibility	Diameter (in)	Position	Order no.	Std Pkg
Lincoln style	KP3075-1-38S	3/8"	Stick out 1/4	54C001	2
	KP3075-1-38F		Flush	54C003	2
	KP3075-1-50S	1/2"	Stick out 1/4	54C011	2
	KP3075-1-50F		Flush	54C013	2
	KP2742-1-38S	3/8"	Stick out 1/8	54C021	2
	KP2742-1-38R		Recess 1/8	54C022	2
	KP2742-1-38F		Flush	54C023	2
	KP2742-1-50S	1/2"	Stick out 1/8	54C031	2
	KP2742-1-50R		Recess 1/8	54C032	2
	KP2742-1-50F		Flush	54C033	2
	KP2742-1-62S	5/8"	Stick out 1/8	54C041	2
	KP2742-1-62R		Recess 1/8	54C042	2
KP2742-1-62F	Flush		54C043	2	
Miller style	169715	1/2"	Flush	54C113	2
	169724	1/2"	Recess 1/8	54C132	2
	200258		Flush	54C133	2
	169727	5/8"	Stick out 1/8	54C141	2
	169725		Recess 1/8	54C142	2
	169726		Flush	54C143	2
Tregaskiss style	401-4-50	1/2"	Recess 1/8	54C232	2
	401-4-62	5/8"	Recess 1/8	54C242	2
Bernard style	4491	3/4"	Flush	54C301	2
	4492	9/16"	Flush	54C302	2
	N-3418-C	3/4"	Recess 1/4	54C311	2
	N-5814-C	5/8"	Recess 1/4	54C312	2
	N-5818-C	5/8"	Recess 1/8	54C313	2
	4393	5/8"	Flush	54C321	2



A close-up photograph of a worker in a blue denim shirt and black safety harness, wearing a black helmet and clear safety goggles. The worker is using a circular saw to cut a metal beam, with a large spray of orange sparks flying from the cut. The worker's hands are wearing black gloves, one of which has 'WALTER' written on it. The background is a blurred industrial setting.

# 02

## CUTTING

# ZIPCUT FEATURES

*Why are WALTER thin cut-off wheels the best in the industry?*

**NEW**



### Smart Resin™ Technology

SMART RESIN™ Technology exposes fresh grains at optimal times to optimize the balance between sharpness & life.

**Only on ZIP™ XX**

### Curved Stripes

Look for curved stripes to be sure that you're getting an authentic WALTER Surface Technologies product. Like WALTER's distinctive orange, curved stripes distinguish our wheels.



## CUT-OFF WHEELS AT A GLANCE

Cut-Off Wheel

ZIP ONE™

ZIP WHEEL™

ZIP+ XTRA™

ZIP™ XX



<b>Application Need</b>	For thin gauge cutting	For an optimal balance between speed & durability	For performance cutting in thicker metal with a focus on durability	For exceptional life and faster, longer-lasting, and more efficient cutting
<b>Smart Resin™</b>				✓
<b>Durability</b>	•	• •	• • •	• • • •
<b>Cutting Speed</b>	• • • • •	• • •	• •	• • •
<b>Comfort</b>	• • •	• • • •	• • •	• • • •
<b>Wheel Thickness</b>	1/32"	3/64"	1/16"	1/16"
<b>Grain Type</b>	Zirconia (ZA)	Aluminum Oxide (AO)	Aluminum Oxide (AO)	Ceramic
<b>Features</b>	<ul style="list-style-type: none"> <li>• Thinnest wheel for speed &amp; minimal heat generation</li> <li>• Fe-S-Cl &lt; 0.1%</li> <li>• Narrow Crown with metal protective cladding</li> </ul>	<ul style="list-style-type: none"> <li>• Most versatile with a focus on speed</li> <li>• SPIN-ON Available</li> <li>• Narrow Crown with metal protective cladding</li> </ul>	<ul style="list-style-type: none"> <li>• Versatile wheel with a focus on durability</li> <li>• Narrow Crown with metal protective cladding</li> </ul>	<ul style="list-style-type: none"> <li>• SMART RESIN™ Technology optimizes sharpness &amp; life</li> <li>• Self-sharpening ceramic grain blend</li> <li>• Premium reinforcement for added safety</li> </ul>



### Exclusive Packaging

WALTER's cut-off wheels are sold in a sturdy, unique, and reusable plastic container that keeps each wheel in the same condition as when it left the factory thereby enhancing performance, safety, and durability.



### Type 27 Narrow Crown and Metal Cladding

Exclusive patented technology that incorporates a metal cladding in the center hub for added safety, and allows for a deeper cutting depth, extending the life of the cutting wheel.

### Spin-On Wheels for Easy Mounting

Changing your cut-off wheels is quicker and easier than ever before, which results in minimal downtime during wheel changeout and less vibration when cutting.



## CUT-OFF WHEELS AT A GLANCE

### Material-Specific

**TOUGH CUT™**



**COMBO ZIP™**



**ZIP STAINLESS™**



**ZIP ALU™**



**ZIP™ TiTan**



For the toughest, most demanding cutting applications	For fast, safe cutting and grinding with one wheel	For precise, clean cuts in stainless steel without contamination	For fast, free cutting of aluminum and non-ferrous metals without clogging	For optimal cutting of titanium and brass without overheating
• • • •	• • • •	• • •	•	• • •
•	•	• • • •	• • • •	• •
• • •	• • •			• • •
3/32"	5/64"	3/64"	3/64"	3/64"
Aluminum Oxide (AO)	Aluminum Oxide (AO)	Aluminum Oxide (AO)	Aluminum Oxide (AO)	Silicon Carbide
<ul style="list-style-type: none"> <li>• Extra tough reinforcements</li> <li>• Maintains high RPM for clean cuts</li> </ul>	<ul style="list-style-type: none"> <li>• Cut &amp; grind with the same disc</li> <li>• Fe-S-Cl &lt; 0.1%</li> <li>• Metal protective cladding</li> </ul>	<ul style="list-style-type: none"> <li>• Metal hub cladding for extra strength, control, safety</li> <li>• Fe-S-Cl &lt; 0.1%</li> </ul>	<ul style="list-style-type: none"> <li>• Excellent wheel life</li> <li>• Extra fast cutting on aluminum</li> </ul>	<ul style="list-style-type: none"> <li>• Optimal solution for cutting titanium and brass materials</li> <li>• Lasts long and preserves mechanical properties and surface integrity of the piece being worked on</li> </ul>



# ANGLE GRINDER CUT-OFF WHEELS

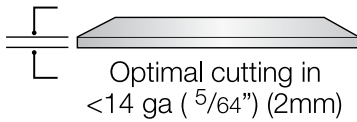


## ZIP ONE™

High performance cut-off wheel for thin gauge metal

ZIP ONE™ offers the quickest cuts and longest life in an ultra-thin 1/32" wheel. It is cool cutting to provide a burr-free cut with minimal discoloration. Best of all, it cuts extremely quickly and without vibration, making your job safer and easier when working with thin gauge steel or stainless steel.

Recommended: 8 ga (3/16") (4 mm)



- ▷ Fast, free precision cuts
- ▷ Clean cutting for less rework
- ▷ Unique mix of abrasive grains ensures cool cutting for less discoloration and warping
- ▷ Fe-free formulation – guaranteed not to contaminate stainless steel
- ▷ Perfect for plunge cutting applications

## Ultra-Thin ZIP ONE™

WALTER's thinnest cut-off wheel at 1/32" is designed for maximum precision cutting. Thanks to an innovative technology exclusive to WALTER, ZIP ONE is not only long-lasting, but also allows you to more accurately cut sheet metal without creating burrs.

### TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/32" (.035)	7/8"	11T542	ZA-60	13,300	25	400
5"	1/32" (.035)	7/8"	11T552	ZA-60	12,200	25	400



### TYPE 27



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/32" (.032")	7/8"	11T642	ZA-60	13,300	25	400
5"	1/32" (.032")	7/8"	11T652	ZA-60	12,200	25	400
6"	1/32" (.035")	7/8"	11T662	ZA-60	10,200	25	200
7"	3/64" (.045")	7/8"	11T672	ZA-60	8,600	25	100





## ZIP WHEEL™

Setting the industry standard for cut-off wheels

Faster, cooler, freer cutting and heavily reinforced for added safety, ZIPCUT™ provides premium performance while resisting twisting and bending. This allows for a true, straight cut every time. The end result is a wheel that improves worker safety while delivering great value.

### TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	3/64" (.045")	7/8"	11T042	A-60	13,300	25	400
5"	3/64" (.045")	7/8"	11T052	A-60	12,200	25	400
6"	3/64" (.045")	7/8"	11T062	A-60	10,200	25	200
7"	1/16" (.062")	7/8"	11T072	A-30	8,600	25	100
9"	* 5/64" (.078")	7/8"	11T092	A-30	6,600	25	100

\* Must be used with 3" clamping flange No. 30B022 (according to ANSI B7.1)



### TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
7"	1/16" (.062")	5/8"	11T070	A-30	8,600	25	100
8"	1/16" (.062")	5/8"	11T080	A-30	7,600	25	100

### TYPE 27



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	3/64" (.045")	7/8"	11T142	A-60	13,300	25	200
5"	3/64" (.045")	7/8"	11T152	A-60	12,200	25	200
6"	3/64" (.045")	7/8"	11T162	A-60	10,200	25	200
7"	1/16" (.062")	7/8"	11T172	A-30	8,600	25	100
9"	5/64" (.078")	7/8"	11T192	A-30	6,600	25	100

- ▷ Significantly more cuts than the competition\*
- ▷ Less friction and faster cutting

\* Against comparable 5" x 3/64" aluminum oxide cut-off wheels

## INDUSTRY'S MOST TRUSTED WHEEL



SCAN TO WATCH VIDEO



Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)

### Mounting accessories

Complete set for a flush fit and minimal spindle exposure beyond the clamping nut, for other brands of grinders with: 5/8"-11 spindles  
**30B021**



Thick backing flange for a flush fit and minimal exposure of spindle beyond the clamping nut for WALTER grinders with: 5/8"-11 spindles  
**30B017**

Clamping flanges set to mount 9" cut-off wheels on 5/8"-11 spindles  
**30B022**



### Accessory

Description	Order No.
Reducer bushing 7/8" to 5/8"	10A984


# ZIP WHEEL™ SPIN-ON





High performance cutting with SPIN-ON system

A WALTER exclusive, our SPIN-ON mounting system takes your productivity to the next level with a 5/8"-11 threaded hub that reduces vibration and reduces the time spent on wheel change outs.

- ▷ *Perfectly centered wheel for total operator comfort*
- ▷ *Vibration-free cutting for maximum life, safety and productivity*



**TYPE 27S**  **SPIN-ON**

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	3/64" (.045")	5/8"-11	11T342	A-60	13,300	25	100
5"	3/64" (.045")	5/8"-11	11T352	A-60	12,200	25	100
6"	3/64" (.045")	5/8"-11	11T362	A-60	10,200	25	100

**QUICK AND EASY**  
WHEEL CHANGE FOR  
MINIMUM DOWNTIME



## WALTER INDUSTRIAL GLOVES

Protective, sleek, and tight fitting for comfort. WALTER's newly-designed work gloves are made to last in the toughest applications. They are made of 100% Black Goatskin leather, with a neoprene insert that reduces vibration. The thumb curve is made with Kevlar™, a natural anti-slip solution. Simply put, these gloves are the toughest and most comfortable for demanding industrial applications.

Large  
Extra-Large

**Order No.:** 30B093  
**Order No.:** 30B095





# ZIP™ XX

Ceramic cut-off wheel for exceptional life and faster cuts

Achieve the ultimate gain in productivity and comfort with the new ZIP™ XX cut-off wheel. Made with a unique ceramic grain and WALTER's new SMART RESIN™ technology, it provides the most cuts without compromising on speed and safety. Not only does it cut up to 10% faster than aluminum oxide wheels, it lasts at least 30% longer than competitive ceramic wheels. Use ZIP™ XX to increase productivity and reduce your overall cost.



- ▷ **SMART RESIN™ Technology exposes fresh grains at the optimal time to optimize the balance between sharpness & life**
- ▷ **Experience faster, smoother, and safer cutting**
- ▷ **Maximize productivity while reducing wheel changeovers**
- ▷ **Self-sharpening ceramic grain blend**
- ▷ **Premium reinforcement for added safety**
- ▷ **Designed to exceed the highest industry safety standards**

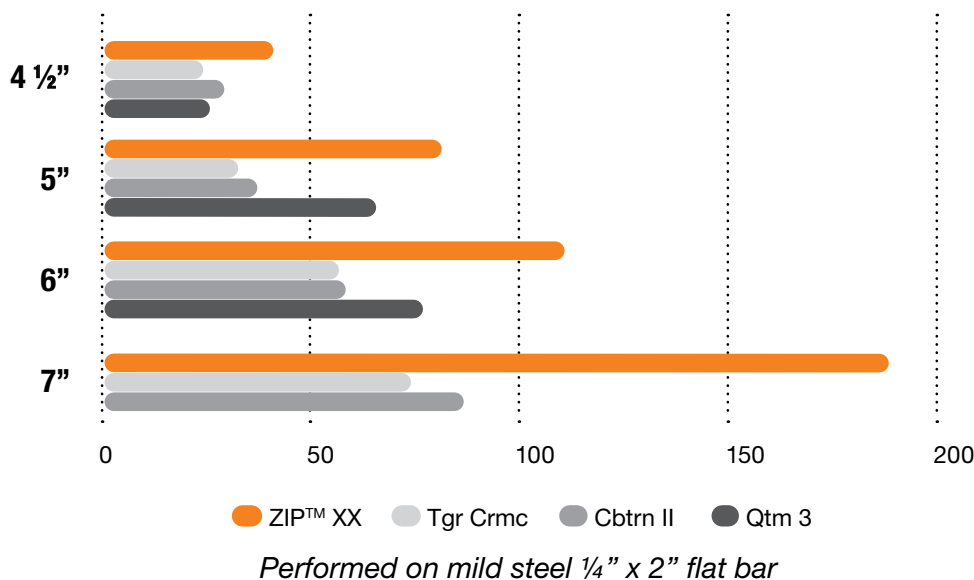


## TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/16" (.062")	7/8"	11X242	CA-46	13,300	25	400
5"	1/16" (.062")	7/8"	11X252	CA-46	12,200	25	400
6"	1/16" (.062")	7/8"	11X262	CA-46	10,200	25	200
7"	5/64" (.078")	7/8"	11X272	CA-46	8,600	25	100

## THE MOST CUTS PER WHEEL AVAILABLE TODAY



## ZIP+ XTRA™

Performance cutting in thicker metal

ZIP+ XTRA™ has a reinforced rib design for straighter cuts on metal that measures 1/8" thick or thicker. This feature also helps to cool the workpiece, preventing the large burrs and material discoloration often produced by competitive 1/16" cut-off wheels.



### TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/16" (.062")	7/8"	11T242	A-36	13,300	25	400
5"	1/16" (.062")	7/8"	11T252	A-36	12,200	25	400
6"	1/16" (.062")	7/8"	11T262	A-36	10,200	25	200
7"	5/64" (.078")	7/8"	11T272	A-36	8,600	25	100
9"	3/32" (.094")	7/8"	11T292	A-36	6,600	25	100

\* Must be used with 3" clamping flange No. 30B022 (according to ANSI B7.1)

### TYPE 27



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/16" (.062")	7/8"	11T453	A-36	13,300	25	200
5"	1/16" (.062")	7/8"	11T503	A-36	12,200	25	200
6"	1/16" (.062")	7/8"	11T603	A-36	10,200	25	200

**CHOOSE ZIP+ XTRA™**  
FOR THE TOUGHEST PROJECTS!

- ▷ Excellent performance for cutting material 1/8" and thicker
- ▷ 4 1/2" and 5" Type 27 wheels feature an exclusive narrow crown design and metal hub cladding
- ▷ The preferred wheel for flush cutting in confined spaces



SCAN TO WATCH VIDEO



Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)

## TOUGH CUT™

For the toughest, most demanding cutting applications

These wheels cut fast and free without binding, and maintain high RPM for a clean cut and superior all-around performance.



### TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	3/32"	7/8"	11R042	A-30	13,300	25	200
5"	3/32"	7/8"	11R052	A-30	12,200	25	200
6"	3/32"	7/8"	11R062	A-30	10,200	25	200
7"	3/32"	7/8"	11R072	A-30	8,600	25	100
9"	3/32"	7/8"	11R092	A-30	6,600	25	100

\* Must be used with 3" clamping flange No. 30B022 (according to ANSI B7.1)



#### Accessory

Description	Order No.
Reducer bushing 7/8" to 5/8"	10A984

# ANGLE GRINDER CUT AND GRIND WHEELS



## COMBO ZIP™

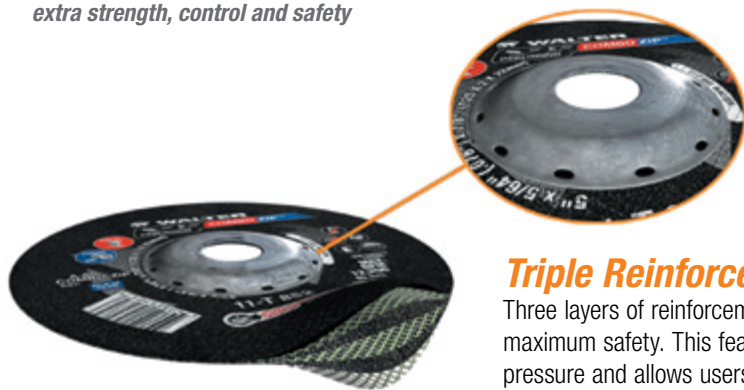
Fast, safe cutting and deburring with one wheel

Safely cut and deburr with just one wheel. COMBO ZIP™ is the perfect fit when operators don't want the hassle of having to change out wheels to deburr, notch or chamfer immediately after cutting. Save time and improve worker safety with COMBO ZIP™.

- ▷ Cutting and deburring combined for less wheel changeover and greater productivity
- ▷ Reinforced like a grinding wheel to improve operator safety
- ▷ ZIP formulation guarantees fast cutting time and long life
- ▷ Equipped with a metal protective hub for extra strength, control and safety

### TYPE 27

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	5/64" (.078")	7/8"	11T842	A-60	13,300	25	400
5"	5/64" (.078")	7/8"	11T852	A-60	12,200	25	200
6"	5/64" (.078")	7/8"	11T862	A-60	10,200	25	200



### Triple Reinforcement COMBO ZIP™

Three layers of reinforcement and metal cladding on the cut-off wheel's hub provides maximum safety. This feature allows the cut-off wheel to bear the force of lateral pressure and allows users to light grind/deburr in a safe manner.



SCAN TO  
WATCH VIDEO



Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)



# SPECIAL APPLICATION CUT-OFF WHEELS



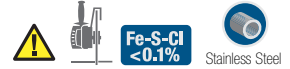
- ▷ Free of iron, sulfur, and chlorine so as not to contaminate stainless steel
- ▷ Type 27 allows more clearance for flush cutting
- ▷ Metal hub cladding for extra strength, control and safety

## ZIP STAINLESS™

Guaranteed not to contaminate stainless steel

The ZIP STAINLESS™ is better than ever. This cut-off wheel is free of iron, sulfur, and chlorine ensuring it will not contaminate stainless steel or other nickel alloyed steels. It offers cool, free cuts and the best overall performance on nickel alloyed steels.

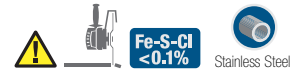
### TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	3/64" (.045")	7/8"	11F042	A-60	13,300	25	400
5"	3/64" (.045")	7/8"	11F052	A-60	12,200	25	400
6"	3/64" (.045")	7/8"	11F062	A-60	10,200	25	200
7"	1/16" (.062")	7/8"	11F072	A-46	8,600	25	100
9"	5/64" (.078")	7/8"	11F092	* A-46	6,600	25	100

\* Must be used with 3" clamping flange No. 30B022 (according to ANSI B7.1)

### TYPE 27



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	3/64" (.045")	7/8"	11F142	A-60	13,300	25	200
5"	3/64" (.045")	7/8"	11F152	A-60	12,200	25	400
6"	3/64" (.045")	7/8"	11F162	A-60	10,200	25	200
7"	1/16" (.062")	7/8"	11F172	A-46	8,600	25	100
9"	5/64" (.078")	7/8"	11F192	A-46	6,600	25	100

## ZIP ALU™

Fast and free cutting of aluminum without clogging

ZIP ALU™ is designed to provide long life and quick cuts on aluminum and other non-ferrous alloys. Our special abrasive blend provides smooth, cool cuts and is guaranteed not to clog, saving you time and money.



\*Best wheel life and extra fast cutting on aluminum and other non-ferrous alloys



### TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	3/64" (.045")	7/8"	11U042	A-60-ZIP-ALU	13,300	25	400
5"	3/64" (.045")	7/8"	11U052	A-60-ZIP-ALU	12,200	25	400
6"	3/64" (.045")	7/8"	11U062	A-60-ZIP-ALU	10,200	25	200
7"	1/16" (.062")	7/8"	11U072	A-30-ZIP-ALU	8,600	25	100

### TYPE 27



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	3/64" (.045")	7/8"	11U142	A-60-ZIP-ALU	13,300	25	400
5"	3/64" (.045")	7/8"	11U152	A-60-ZIP-ALU	12,200	25	400
6"	3/64" (.045")	7/8"	11U162	A-60-ZIP-ALU	10,200	25	200
7"	1/16" (.062")	7/8"	11U172	A-30-ZIP-ALU	8,600	25	100

## ZIP TiTAN™

Best solution for cutting titanium and brass

For the best solution when working with titanium and brass materials, trust ZIP TiTAN™. It cuts through titanium and brass without overheating these metals, delivering a longer lasting cut-off wheel while preserving the mechanical properties and surface integrity of the material being cut. Get more cuts per wheel and faster, freer cuts on some of the industry's most challenging metals, courtesy of ZIP TiTAN™.

- ▷ *Longer life and optimal cutting performance on titanium and brass*
- ▷ *Unique formulation which prevents metal from overheating 100%*



### TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	3/64" (.045")	7/8"	11H042	C-60	13,300	25	400
5"	3/64" (.045")	7/8"	11H052	C-60	12,200	25	400
6"	3/64" (.045")	7/8"	11H062	C-36	10,200	25	200



# STRAIGHT GRINDER CUT-OFF WHEELS



**EXCELLENT**  
CUTTING SPEED  
AND WHEEL LIFE

- ▶ *Fast, cool, and free cutting, allowing the operator to work with minimal pressure for best control*
- ▶ *Superior life and cutting speed compared to competitive wheels*
- ▶ *24 grit wheels for faster cutting speeds*
- ▶ *60 grit wheels for longer life*

## ZIP™

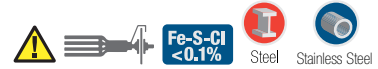
Small diameter performance cutting & grinding wheels with straight shaft for die grinders

ZIP™ wheels offer the best performance available on straight shaft and die grinders. They are specially formulated to run cool for maximum life and are guaranteed not to contaminate stainless steel.

For notching applications, it is recommended that you use  $\geq \frac{1}{8}$ ".

For grinding applications,  $\frac{1}{2}$ " is recommended.

### 2" TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
2"	1/32"	1/4"	11L202	A-24	30,600	25	200
2"	1/32"	3/8"	11L203	A-60	30,600	25	200
2"	1/16"	5/16"	11L211	A-24	30,600	25	200
2"	1/16"	1/4"	11L212	A-24	30,600	25	200
2"	1/16"	3/8"	11L213	A-24	30,600	25	200
2"	1/8"	5/16"	11L221	A-24	30,600	25	200
2"	1/8"	3/8"	11L223	A-24	30,600	25	200
2"	1/4"	5/16"	11L231	A-24	30,600	25	200
2"	1/4"	3/8"	11L233	A-24	30,600	25	200
2"	1/2"	5/16"	11L251	A-24	30,600	25	200
2"	1/2"	3/8"	11L253	A-24	30,600	25	200

### 2 1/2" TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
2 1/2"	1/16"	3/8"	11L263	A-24	30,350	25	200

### 3" TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
3"	1/32"	1/4"	11L302	A-60	25,470	25	200
3"	1/16"	1/4"	11L312	A-24	25,470	25	200
3"	1/8"	1/4"	11L322	A-24	25,470	25	200
3"	1/32"	3/8"	11L303	A-60	25,470	25	200
3"	1/16"	3/8"	11L317	A-60	25,470	25	200
3"	1/16"	3/8"	11L313	A-24	25,470	25	200
3"	1/8"	3/8"	11L323	A-24	25,470	25	200
3"	1/4"	3/8"	11L333	A-24	25,470	25	100
3"	1/2"	3/8"	11L353	A-24	25,470	25	100





## 4" TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4"	1/32"	3/8"	11L403	A-60	19,100	25	200
4"	1/16"	3/8"	11L413	A-24	19,100	25	200
4"	1/16"	3/8"	11L417	A-60	19,100	25	200
4"	1/8"	3/8"	11L423	A-24	19,100	25	200
4"	1/4"	3/8"	11L433	A-24	19,100	25	100
4"	1/2"	3/8"	11L453	A-24	19,100	25	75
4"	1/32"	5/8"	11L405	A-60	19,100	25	200
4"	1/16"	5/8"	11L415	A-24	19,100	25	200

- ▶ Ideal for flush cutting
- ▶ Metal hub cladding for extra strength and safety



## 3" &amp; 4" TYPE 27



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
3"	1/32"	3/8"	11L308	* A-60	25,470	25	200
4"	1/32"	3/8"	11L408	** A-60	19,100	25	200

\* Use with 1/4" mandrel 11L007

\*\* Use with 1/4" mandrel 11L003

## ZIP ALU™

Fast and free cutting of aluminum without clogging

Thin cut-off wheels specially formulated to cut a wide variety of aluminum, aluminum alloys and non-ferrous metals without clogging.

## TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
3"	1/32"	3/8"	11U303	A-60	25,470	25	200
4"	1/32"	3/8"	11U403	A-60	19,100	25	200

- ▶ Best wheel life and extra fast cutting on aluminum



## Mounting accessories

## Flush mandrels with 1/4" shaft for wheel thickness up to 1/2"

For 2 and 3" wheels, 1/4" and 3/8" arbor

11L007

For 2" wheels, 5/16" arbor

11L001

For 3" and 4" wheels, 1/4" arbor

11L006

For 3" and 4" wheels, 3/8" arbor

11L003

## General purpose mandrels with 1/4" shaft for wheel thickness up to 1/2"

For 2" wheels, 3/8" arbor

11L008

For 2" wheels, 5/16" arbor

11L002

For 3" and 4" wheels, 3/8" arbor

11L004

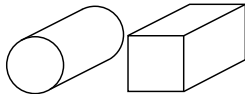


**EXTRA FAST**  
CUTTING ON ALUMINUM  
WITHOUT CLOGGING!

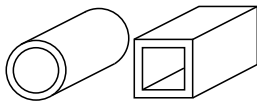
# CHOP SAW CUT-OFF WHEELS



## THE WHEEL OF CHOICE FOR SOLIDS AND STAINLESS TUBES



- ▷ Reinforced center
- ▷ Optimized for use on low-power chop saws; reduces load on machine and creates fewer burrs
- ▷ The wheel of choice for solids and stainless steel tubing



- ▷ Double external reinforcement for extra safety
- ▷ The wheel of choice for tubing and extrusions
- ▷ Longer life for the toughest applications



- ▷ Fast and free cutting on all types of aluminum and non-ferrous metals
- ▷ Unique formulation which prevents clogging to extend wheel life



- ▷ Optimal cutting performance on titanium and brass
- ▷ Unique formulation prevents metal from overheating
- ▷ For portable and stationary saws

## CHOPCUT™

Performance cutting with portable chop saws

These wheels have been developed specifically for use on portable chop saws. They put minimal load on the motor, making them easy on both the operator and the tool. Best of all, CHOPCUT™ wheels deliver quick cuts and exceptional lifespan.



### CHOPCUT

General purpose TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
12"	3/32"	1"	10Q123	A-30	5,100	10	50
14"	3/32"	1"	10Q143	A-30	4,400	10	50
16"	7/64"	1"	10Q163	A-30	3,800	10	30

### CHOPCUT II

High performance TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
12"	3/32"	1"	10P123	A-30	5,100	10	50
14"	3/32"	1"	10P143	A-30	4,400	10	50
16"	7/64"	1"	10P163	A-30	3,800	10	30

### CHOPCUT ALU

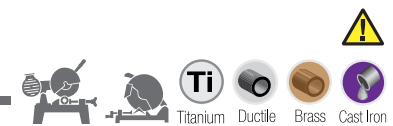
ALU TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
12"	3/32"	1"	10L123	A-30	5,100	10	50
14"	3/32"	1"	10L143	A-30	4,400	10	50

### CHOPCUT TITAN

Titanium TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
14"	1/8" (.125")	1"	10H143	C-30	4,400	10	50
16"	9/64" (.125")	1"	10H163	C-30	3,800	10	30

# STATIONARY SAW CUT-OFF WHEELS

## RIPCUT™

High performance cutting on stationary cut-off machines

Available in several styles, these heavily reinforced wheels can tackle anything from thin-walled profiles to heavy solids, while providing fast cuts and long life, to give you the lowest cost-per-cut in the industry.



### RIPCUT

General purpose TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
12"	1/8"	1"	10B123	A-24	5,100	10	50
14"	1/8"	1"	10B143	A-24	4,400	10	30
16"	5/32"	1"	10B163	A-24	3,800	10	30
18"	3/16"	1"	10B183	A-24	3,400	10	20
20"	3/16"	1"	10B203	A-24	3,000	5	10

**FOR THE LOWEST  
COST PER CUT!**

- ▷ *The most versatile wheel*
- ▷ *Cuts thin-walled profiles to heavy solids*
- ▷ *The preferred wheel for low-power machines (<10 HP)*

### RIPCUT II

High performance TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
12"	1/8"	1"	10A123	A-24	5,100	10	50
14"	1/8"	1"	10A143	A-24	4,400	10	30
16"	5/32"	1"	10A163	A-24	3,800	10	30
18"	3/16"	1"	10A183	A-24	3,400	10	20
20"	3/16"	1"	10A203	A-24	3,000	5	10

- ▷ *Outperforms all other comparable wheels*
- ▷ *Cuts almost anything from thin wall shapes to solid shafts*
- ▷ *For use on high power machines (>10 HP)*

### RIPCUT STAINLESS

Stainless TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
14"	1/8"	1"	10C143	A-36	4,400	10	30

- ▷ *Specially formulated to cut all types of stainless and alloyed steels*
- ▷ *Fast and cool cutting with less burrs and discoloration*

#### Accessories

##### Reducer bushings

From	To	Order No.	From	To	Order No.
40 mm	1 1/2"	10A992	1"	3/4"	10A987
40 mm	1"	10A990	1"	5/8"	10A986
1"	20 mm	10A989	1"	1/2"	10A985
1"	7/8"	10A988			





# GAS SAW CUT-OFF WHEELS



## PORTACUT™

High speed cutting with gas and electric power saws

These premium wheels stand out as the most reliable cut-off wheels for all on-site cutting jobs. Reinforced for added safety and formulated for an optimal cutting speed and wheel life ratio, PORTACUT™ is the preferred choice for professionals who demand “only the best” in performance and jobsite safety.

- ▷ *General purpose cutting of steel and cast iron*
- ▷ *Designed for cutting of concrete, concrete blocks, stone, asphalt, etc.*
- ▷ *General purpose cutting of reinforced concrete pipes, ductile iron, PVC, and other plastic pipes*

### TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
12"	1/8"	20 mm STIHL	11A121	A-24	6,300	10	50
12"	1/8"	7/8" PARTNER	11A122	A-24	6,300	10	50
12"	1/8"	1"	11A123	A-24	6,300	10	50
14"	1/8"	20 mm STIHL	11A141	A-24	5,400	10	30
14"	1/8"	7/8" PARTNER	11A142	A-24	5,400	10	30
14"	1/8"	1"	11A143	A-24	5,400	10	30

### TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
12"	1/8"	20 mm STIHL	11D121	C-24	6,300	10	50
12"	1/8"	1"	11D123	C-24	6,300	10	50
14"	1/8"	20 mm STIHL	11D141	C-24	5,400	10	30
14"	1/8"	1"	11D143	C-24	5,400	10	30

# RAIL SAW CUT-OFF WHEELS



- ▷ *Made with premium abrasive grains and resin*
- ▷ *Heavily reinforced for maximum safety and smoothness*
- ▷ *Railcut II Long Life for longer life and use on softer (new) rail - Best option for hydraulic saws*
- ▷ *Railcut II Fast Cut for faster cutting and minimal deflection on hardened (used) rail - Best option for gas saws*

## RAILCUT II™

Premium wheels for cutting all types of rail

RAILCUT II™ wheels are designed for fast cutting on all types of rails without glazing. They are heavily reinforced for maximum safety, smooth cutting and more cuts per wheel than ever before.

### RAILCUT II LONG LIFE

#### TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
14"	5/32"	1"	11V143	ZA-24	5,400	10	30
16"	5/32"	1"	11V163	ZA-24	4,700	10	30

### RAILCUT II FAST CUT

#### TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
14"	5/32"	1"	11V145	ZA-24	5,400	10	30
16"	5/32"	1"	11V165	ZA-24	4,700	10	30

#### Accessories

##### Reducer bushings

From	To	Order No.
1"	20 mm	10A989
1"	7/8"	10A988









# ALLSTEEL™

*New & Improved Formula  
Allows For 20% More Cuts*



## ALLSTEEL™ CUT-OFF WHEELS

ALLSTEEL™ high-performance cut-off wheels are specially formulated for fast cutting action for a superior performance-to-price ratio. Free of iron, sulfur and chlorine, they're guaranteed not to contaminate stainless steel or other nickel-alloyed steels.



**TYPE 1**      

Order No.	Dia.	Thick.	Arbor	Grit	Max RPM	Std. Pkg.	Std Ctn
11W042	4-1/2"	3/64" (.045)	7/8"	A-30	13,300	25	400
11W052	5"	3/64" (.045)	7/8"	A-30	12,250	25	400
11W062	6"	1/16" (.062)	7/8"	A-30	10,200	25	200
11W072	7"	5/64" (.078)	7/8"	A-30	8,500	25	100

**TYPE 27**  

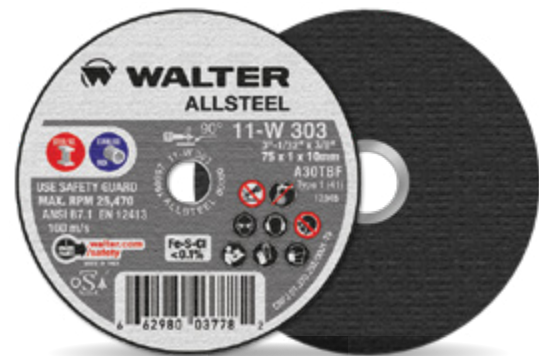
Order No.	Dia.	Thick.	Arbor	Grit	Max RPM	Std. Pkg.	Std Ctn
11W142	4-1/2"	3/64" (.045)	7/8"	A-30	13,300	25	400
11W152	5"	3/64" (.045)	7/8"	A-30	12,250	25	400
11W162	6"	1/16" (.062)	7/8"	A-30	10,200	25	200
11W172	7"	5/64" (.078)	7/8"	A-30	8,500	25	100







- ▷ The perfect choice for steel and stainless steel
- ▷ Excellent overall performance
- ▷ Free of iron, sulfur and chlorine - will not contaminate stainless steel
- ▷ Type 1 ensures longer life
- ▷ Type 27 allows more clearance for flush cutting
- ▷ OSA Certification

## ALLSTEEL™ MINI CUT-OFF WHEELS

Made of bonded aluminum oxide grains, ALLSTEEL™ Mini cut-off wheels deliver excellent performance on straight shaft and die grinders, pneumatic or electric.

- ▷ Fast cut rate
- ▷ Perfect for cutting steel and stainless steel
- ▷ Free of iron, sulfur and chlorine - will not contaminate stainless steel



**TYPE 1**      

Order No.	Dia.	Thick.	Arbor	Grit	Max RPM	Std. Pkg.	Std Ctn
11W303	3"	1/32"	3/8"	A-46	25,470	25	150
11W312	3"	1/16"	1/4"	A-46	25,470	25	150
11W313	3"	1/16"	3/8"	A-46	25,470	25	150
11W403	4"	1/32"	3/8"	A-46	19,100	25	150
11W413	4"	1/16"	3/8"	A-46	19,100	25	150
11W423	4"	1/8"	3/8"	A-46	19,100	25	150



## ALLSTEEL™ CHOPSAW WHEELS

ALLSTEEL™ Chopsaw wheels offer optimal cutting rates. Made with a rigid and versatile body construction, these wheels are designed for the demands of portable chop saw applications.

- ▷ *Fast cuts on structural steel cross sections, pipes, and tubing*
- ▷ *Great performance - excellent control for added safety*
- ▷ *Optimized for long life - the economical choice*
- ▷ *OSA Certification*

### TYPE 1

Order No.	Dia.	Thick.	Arbor	Grit	Max RPM	Std. Pkg.	Std Ctn
10W123	12"	7/64"	1"	A-30	5,100	10	50
10W143	14"	1/8"	1"	A-30	4,400	10	30



## ALLSTEEL™ GAS SAW WHEELS

ALLSTEEL™ gas saw wheels are engineered to cut all ferrous metals including steel and stainless steel, quickly and efficiently. These high-performance wheels are heavily reinforced for maximum operator safety. They run cool and provide clean cuts and a long wheel life.

- ▷ *Perfect for cutting steel and stainless steel*
- ▷ *Provides a cool, clean cut*
- ▷ *Excellent control for optimum safety*

### TYPE 1

Order No.	Dia.	Thick.	Arbor	Grit	Max RPM	Std. Pkg.	Std Ctn
11W321	12"	1/8"	20 mm (STIHL)	A-24	6,300	10	50
11W341	14"	1/8"	20 mm (STIHL)	A-24	5,400	10	30



# THE **BUCKET** PROGRAM

*A simple and easy way to gather data and make recommendations*

Today's competitive marketplace makes it essential for companies to adapt to new realities and evaluate ways to improve performance, productivity, safety and to make daily operations more cost-effective.

As the global industry leader in metalworking technologies, WALTER has developed the **Bucket Program** as a non-intrusive way to analyze usage and help you reach these targets in your abrasive and tooling operations.

*Done in **YOUR** working environment, based on **YOUR** challenges.*

---

## **HOW DOES IT WORK?**

- **STEP 1:**  
Current process evaluation and data collection
  - **STEP 2:**  
New process evaluation using only WALTER products
  - **RESULTS:**  
Documented cost savings report and recommendations
- 

**If we can't prove savings, we will credit the difference!**

Contact your WALTER representative or distributor and ask how you can participate in the WALTER Bucket Program.







# 03

## GRINDING



# GRINDING PRODUCTS AT A GLANCE

NEW



## Smart Resin™ Technology

SMART RESIN™ Technology exposes fresh grains at optimal times to optimize the balance between sharpness & life.

### Material Specific

HP™



HP XX™



XCAVATOR™



XCAVATOR XX™



STAINLESS™









	HP™	HP XX™	XCAVATOR™	XCAVATOR XX™	STAINLESS™
<b>Application Need</b>	For general grinding applications requiring consistent performance and control	For heavy-duty grinding tasks requiring the longest wheel life and superior material removal	For high removal rate on steel, stainless steel, and hard metals with minimal vibration	For ultra-fast material removal and reduced operator stress in heavy-duty grinding on steel and stainless steel	For grinding stainless steel without contamination, ensuring a clean finish
<b>SMART RESIN™</b>				✓	
<b>Durability</b>	• •	• • •	• • •	• • • •	• • •
<b>Material Removal Rate</b>	• •	• •	• • •	• • • •	• • •
<b>Comfort</b>	• • • •	• • •	• • • •	• • •	• • •
<b>Grain Type</b>	Aluminum Oxide (AO)	Alu Oxide + Zirconia (AO + ZA)	Zirconia (ZA)	Ceramic (CA)	Aluminum Oxide (AO)
<b>Features</b>	<ul style="list-style-type: none"> <li>• High-performance wheel that grinds off metal swiftly</li> <li>• Long wheel life</li> </ul>	<ul style="list-style-type: none"> <li>• Longest lasting grinding wheel</li> <li>• Improved bonding technology and state-of-the-art manufacturing</li> </ul>	<ul style="list-style-type: none"> <li>• Comfort Max Technology</li> <li>• Advanced design prevents edge flaking for better balance</li> <li>• Fe-S-Cl &lt; 0.1%</li> </ul>	<ul style="list-style-type: none"> <li>• Effortless grinding</li> <li>• Highest removal rate</li> <li>• Most durable</li> <li>• Fe-S-Cl &lt; 0.1%</li> </ul>	<ul style="list-style-type: none"> <li>• Excellent durability for stainless steel applications</li> <li>• Won't contaminate stainless steel</li> </ul>

## EXCLUSIVE TO WALTER CONVENIENT AND SAFE!

### SPIN-ON quick-change mounting

- Ultra resistant built-in threaded arbor for quick and easy disc changes while ensuring operator safety
- All the safety and comfort of using a wheel with a 5/8"-11 metal hub at just a fraction of the price



Material Specific		Application Specific			
ALU™	CONCRETE™	FLEXCUT™	FLEXCUT XX™	FLEXCUT MILL SCALE™	PIPEFITTER™
					
For grinding aluminum surfaces with a cool cutting action to prevent clogging	For effective grinding of concrete surfaces, providing a clean and smooth finish	For versatile grinding applications with excellent flexibility and handling on various materials	For ultra-fast removal of steel, stainless, and tough mill scale, delivering consistent, clean results on flat or curved surfaces.	For efficient removal of mill scale and other tough coatings on metal surfaces	For premium performance in pipeline construction, ensuring high removal rates and durability
			✓		
• • •	• • •	• •	• • • •	• •	•
• •	• •	• • •	• • • •	• • •	• • •
• • •	• • •	• • • •	• • • •	• • • •	• • • •
Aluminum Oxide (AO)	Ceramic (CA)	Aluminum Oxide (AO)	Ceramic (CA)	Aluminum Oxide (AO)	Aluminum Oxide (AO)
<ul style="list-style-type: none"> <li>• Fast and free cutting without clogging</li> <li>• Suitable for cutting &amp; intermittent light grinding</li> <li>• Free of waxes and lubricants</li> </ul>	<ul style="list-style-type: none"> <li>• Fast material removal and smooth operation on concrete, masonry, stone, etc.</li> <li>• Extra hard silicon carbide grain for superior life and performance</li> </ul>	<ul style="list-style-type: none"> <li>• Superior removal on all ferrous and non-ferrous metals without clogging</li> <li>• Deep Diamond-Cut™ pattern for more flexibility and better handling on flat and curved surfaces</li> </ul>	<ul style="list-style-type: none"> <li>• Superior removal on all ferrous and non-ferrous metals without clogging</li> <li>• Deep DiamondCut™ pattern for more flexibility and better handling on flat and curved surfaces</li> </ul>	<ul style="list-style-type: none"> <li>• Open diamond cut pattern that prevents clogging</li> <li>• Extremely effective performance on heavily rusted plates, aluminum, galvanized metal, and painted materials</li> </ul>	<ul style="list-style-type: none"> <li>• Thin design for fast and free cutting</li> <li>• Fe-S-CI &lt; 0.1%</li> <li>• Essential for pipeline construction and pipe</li> </ul>

# ANGLE GRINDER GRINDING WHEELS

## XCAVATOR XX™

Ultra-fast removal, stress-free







WALTER's XCAVATOR™ XX delivers premium performance so operators can remove more material faster in a comfortable grinding experience. Its unique ceramic grain blend delivers ultra-fast removal rates while reducing operator stress. Its durability and long life contribute to fewer wheel changeovers. The all-powerful XCAVATOR™ XX is the most productive wheel for heavy-duty grinding on steel and stainless steel. Work better. Work less.









**ULTRA-FAST**  
REMOVAL RATE  
ON THE TOUGHEST  
METALS









- ▷ SMART RESIN™ Technology exposes fresh grains at optimal times to optimize the balance between sharpness & life
- ▷ Ultra-fast removal rate
- ▷ Comfortable grinding experience that maximizes productivity
- ▷ Advanced design prevents edge flaking for better balance and safety
- ▷ Ferrous-free formulation (will not contaminate stainless steel)

**1/8" TYPE 27**    **Fe-S-Cl <0.1%**   







Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/8"	7/8"	08X452	CA-24	13,300	10	40
5"	1/8"	7/8"	08X502	CA-24	12,250	10	40
6"	1/8"	7/8"	08X602	CA-24	10,200	10	40
7"	1/8"	7/8"	08X702	CA-24	8,600	10	40
9"	1/8"	7/8"	08X902	CA-24	6,650	10	40

**1/4" TYPE 27**    **Fe-S-Cl <0.1%**   

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/4"	7/8"	08X450	CA-24	13,300	10	40
5"	1/4"	7/8"	08X500	CA-24	12,250	10	40
6"	1/4"	7/8"	08X600	CA-24	10,200	10	40
7"	1/4"	7/8"	08X700	CA-24	8,600	10	40
9"	1/4"	7/8"	08X900	CA-24	6,650	10	40

**1/8" TYPE 27**    **Fe-S-Cl <0.1%**   

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/8"	5/8"-11 Metal hub	08X457	CA-24	13,300	10	40
6"	1/8"	5/8"-11 Metal hub	08X607	CA-24	10,200	10	40
7"	1/8"	5/8"-11 Metal hub	08X707	CA-24	8,600	10	40
9"	1/8"	5/8"-11 Metal hub	08X907	CA-24	6,650	10	40

**1/4" TYPE 27**    **Fe-S-Cl <0.1%**   

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/4"	5/8"-11 Metal hub	08X455	CA-24	13,300	10	40
6"	1/4"	5/8"-11 Metal hub	08X605	CA-24	10,200	10	40
7"	1/4"	5/8"-11 Metal hub	08X705	CA-24	8,600	10	40
9"	1/4"	5/8"-11 Metal hub	08X905	CA-24	6,650	10	40












# XCAVATOR™

High removal rate on steel, stainless steel, and hard metals

XCAVATOR™ has been redesigned to incorporate the latest innovation in Type 27 depressed center grinding wheels. The Comfort Max™ Technology in the hub of the wheel helps to minimize vibration, providing the operator with more comfortable, ergonomic work conditions without sacrificing productivity. XCAVATOR™ delivers premium performance, high removal rate in steel and stainless steel, and can confront some of the industry's toughest metals, such as tungsten carbide and quenched and tempered steel. Eliminate bottlenecks in your production process and reduce the amount of time spent grinding with the Xcavator™ with Comfort Max™ Technology, exclusive to WALTER Surface Technologies.











**1/4" TYPE 27**       

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/4"	7/8"	08P460	ZA-16	13,300	25	100
5"	1/4"	7/8"	08P510	ZA-16	12,200	25	100
6"	1/4"	7/8"	08P600	ZA-16	10,200	25	100
7"	1/4"	7/8"	08P700	ZA-16	8,600	25	50
9"	1/4"	7/8"	08P900	ZA-16	6,600	25	50








**COMFORTABLE**  
GRINDING, NO MATTER  
THE APPLICATION

- ▶ *Comfort Max™ Technology provides a smoother, more comfortable grinding experience without sacrificing productivity*
- ▶ *Patented multi-layer technology*
- ▶ *Advanced design prevents edge flaking for better balance and added safety*
- ▶ *Optimal power transfer from operator to working surface*
- ▶ *Fe-Free formulation (guaranteed not to contaminate stainless steel)*

**1/4" TYPE 27S**  **SPIN-ON**       

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/4"	5/8"-11	08P450	ZA-16	13,300	20	80
5"	1/4"	5/8"-11	08P500	ZA-16	12,200	20	80

Always use with flange 30B057.

**1/4" TYPE 27**       

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/4"	5/8"-11 Metal hub	08P455	ZA-24	13,300	10	40
7"	1/4"	5/8"-11 Metal hub	08P705	ZA-24	8,600	10	40
9"	1/4"	5/8"-11 Metal hub	08P905	ZA-24	6,600	10	40



SCAN TO WATCH VIDEO



Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)










## HP™

High performance and exceptional comfort for everyday grinding

The HP™ has set new industry benchmarks in general purpose grinding on steel and stainless steel. With an abrasive grain formula engineered for greater hardness and wear resistance, HP™ wheels remove metal faster and with less effort to provide one of the best overall values in grinding.






### SMOOTH GRINDING WITH AN AGGRESSIVE, CONTROLLED BITE

- ▷ High performance wheel that grinds off metal swiftly
- ▷ Smooth grinding with an aggressive, controlled bite
- ▷ Long wheel life

**1/4" TYPE 27S**  **SPIN-ON**    






Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/4"	5/8"-11	08B450	A-24	13,300	20	80
5"	1/4"	5/8"-11	08B500	A-24	12,200	20	80
6"	1/4"	5/8"-11	08B630	A-24	10,200	20	80

Always use 1/4" wheels with flange 30B057.






**1/4" TYPE 28S**  **SPIN-ON**    

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
5"	1/4"	5/8"-11	08B501	A-24	12,200	20	80

Always use 1/4" wheels with flange 30B057.

**1/4" TYPE 27**     

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
3"	1/4"	3/8"	08B310	A-24	20,000	25	100
4"	1/4"	3/8"	08B410	A-24	15,300	25	100
4"	1/4"	5/8"	08B400	A-24	15,300	25	100
4 1/2"	1/4"	7/8"	08B460	A-24	13,300	25	100
5"	1/4"	7/8"	08B510	A-24	12,200	25	100
6"	1/4"	7/8"	08B600	A-24	10,200	25	100
7"	1/4"	7/8"	08B710	A-24	8,600	25	50
9"	1/4"	7/8"	08B910	A-24	6,600	25	50

**1/4" TYPE 28**     

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
7"	1/4"	7/8"	08B701	A-24	8,600	25	50
9"	1/4"	7/8"	08B901	A-24	6,600	25	50



**GET DOUBLE THE LIFE OF YOUR HP WHEELS WHEN COMBINED WITH THE MINI PLUS!**  
See page 150








## HP COMBO™

High performance cutting and grinding; all in one wheel






These 1/8" wheels set new standards for performance in combined depressed center wheels (for portable angle grinders). They are specially reinforced to withstand the stress in off-hand cutting operations. Whether cutting, grooving, notching, or light grinding, these wheels are guaranteed to give you the longest wheel life, fastest material removal, and maximum safety.



**1/8" TYPE 27S**  **SPIN-ON**    

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/8"	5/8"-11	08B452	A-30	13,300	25	200
4 1/2"	1/8"	5/8"-11 Metal hub	08B457	A-30	13,300	10	80
5"	1/8"	5/8"-11	08B502	A-30	12,200	25	200
5"	1/8"	5/8"-11 Metal hub	08B507	A-30	12,200	10	80
6"	1/8"	5/8"-11	08B632	A-24	10,200	25	100
7"	1/8"	5/8"-11 Metal hub	08B717	A-24	8,600	10	40
9"	1/8"	5/8"-11 Metal hub	08B917	A-24	6,600	10	40

Always use 1/8" wheels with flange 30-B 057.

**1/8" TYPE 27**     

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
3"	1/8"	3/8"	08B312	A-24	20,000	25	200
4"	1/8"	3/8"	08B412	A-24	15,300	25	200
4"	1/8"	5/8"	08B402	A-24	15,300	25	200
4 1/2"	1/8"	7/8"	08B462	A-30	13,300	25	200
5"	1/8"	7/8"	08B512	A-30	12,200	25	200
6"	1/8"	7/8"	08B602	A-30	10,200	25	100
7"	1/8"	7/8"	08B712	A-30	8,600	25	100
9"	1/8"	7/8"	08B912	A-30	6,600	25	100

**IDEAL FOR BOTH**  
CUTTING AND GRINDING  
WORK

- ▷ Hold its cutting edge longer to provide more cuts per wheel
- ▷ Designed for maximum operator safety



SCAN TO  
WATCH VIDEO



Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)





- ▷ Our longest lasting grinding wheel
- ▷ Improved bonding technology and state-of-the-art manufacturing ensure a working life that is unsurpassed

### SPIN-ON

#### Additional benefits of Spin-On

- ▷ Built-in threaded arbor ensures minimum vibration for maximum operator comfort
- ▷ No need for a pin key

All 7" x 1/8", 7" x 1/4", 9" x 1/8" and 9" x 1/4" depressed center wheels are available with threaded hubs 5/8"-11 mounted.

Order numbers for mounted wheels are 5-numbers higher.

For example:

08B712 + 5 = 08B717 = 7" x 1/8" x 5/8"-11  
A-30-COMBO cutting/grinding wheel.  
Std. Pkg.: 10.



**GET DOUBLE THE LIFE OF YOUR HP XX WHEELS WHEN COMBINED WITH THE PRO 5 GRINDER!**  
See page 151

## HP XX™

Premium grinding at the lowest overall cost

HP XX™ incorporates the latest advances in abrasive grain, bonding, and manufacturing technology to substantially lower your total grinding costs. With the longest life in our grinding wheel lineup and extremely aggressive material removal, HP XX™ will allow you to achieve the lowest overall cost of grinding on steel.

**1/8" TYPE 27**

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/8"	7/8"	08H452	ZA-24	13,300	25	200
5"	1/8"	7/8"	08H502	ZA-24	12,200	25	200
6"	1/8"	7/8"	08H602	ZA-24	10,200	25	200

**1/4" TYPE 27S** **SPIN-ON**

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/4"	5/8"-11	08K450	ZA-20	13,300	20	80
5"	1/4"	5/8"-11	08K500	ZA-20	12,200	20	80

Always use with flange 30B057 listed on page 207.

**1/4" TYPE 27**

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/4"	7/8"	08-H 450	ZA-24	13,300	25	100
4 1/2"	1/4"	5/8"-11 Metal hub	08-H 455	ZA-24	13,300	10	40
5"	1/4"	7/8"	08-H 500	ZA-24	12,200	25	100
6"	1/4"	7/8"	08-H 600	ZA-24	10,200	25	100
7"	1/4"	7/8"	08-H 700	ZA-24	8,600	25	50
7"	1/4"	5/8"-11 Metal hub	08-H 705	ZA-24	8,600	10	40
9"	1/4"	7/8"	08-H 900	ZA-24	6,600	25	50
9"	1/4"	5/8"-11 Metal hub	08-H 905	ZA-24	6,600	10	40

**1/4" TYPE 28**

Dia.	Thick.	Arbor	Order No.	Grade	Max RPM	Std. Pkg.	Std. Ctn.
7"	1/4"	7/8"	08-K 701	ZA-24-HPS	8,600	25	50
7"	1/4"	5/8"-11 Metal hub	08-K 706	ZA-16	8,600	10	40
9"	1/4"	7/8"	08-K 901	ZA-24-HPS	6,600	25	50
9"	1/4"	5/8"-11 Metal hub	08-K 906	ZA-16	6,600	10	40



### 1/8" cutting and light grinding:

- ▷ High performance cutting and intermittent light grinding
- ▷ Maintain a superior cutting edge



### 1/4" grinding:

- ▷ Fast and easy changeover of wheel for minimum downtime
- ▷ High performance and superior control in the most demanding grinding applications

**WILL NOT  
CONTAMINATE  
STAINLESS STEEL**

- ▷ Fast and cool stock removal
- ▷ High performance and superior control in the most demanding grinding applications

## STAINLESS™

Superior performance on stainless steel

When you need a wheel that is guaranteed not to contaminate stainless steel, this is the wheel for the job. These wheels do not contain any iron, sulfur, or chlorine and are designed to hug the workpiece for controlled grinding and a smooth, high-quality finish.

### 1/8" TYPE 27S

SPIN-ON



Fe-S-Cl  
<0.1%



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/8"	5/8"-11	08-F 452	A-30	13,300	25	100
4 1/2"	1/8"	5/8"-11 Metal hub	08-F 457	A-30	13,300	10	40
5"	1/8"	5/8"-11	08-F 502	A-30	12,200	25	100
7"	1/8"	5/8"-11 Metal hub	08-F 707	A-30	8,600	10	40

### 1/8" TYPE 27



Fe-S-Cl  
<0.1%



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/8"	7/8"	08F462	A-30	13,300	25	200
5"	1/8"	7/8"	08F512	A-30	12,200	25	200
6"	1/8"	7/8"	08F602	A-30	10,200	25	100
7"	1/8"	7/8"	08F702	A-30	8,600	25	100

Always use 1/8" wheels with flange 30B057.

### 1/4" TYPE 27S

SPIN-ON



Fe-S-Cl  
<0.1%



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/4"	5/8"-11	08-F 450	A-30	13,300	20	80
4 1/2"	1/4"	5/8"-11 Metal hub	08-F 455	A-30	13,300	10	40
5"	1/4"	5/8"-11	08-F 500	A-30	12,200	20	80
7"	1/4"	5/8"-11 Metal hub	08-F 705	A-30	8,600	10	40
9"	1/4"	5/8"-11 Metal hub	08-F 905	A-30	6,600	10	40

### 1/4" TYPE 27



Fe-S-Cl  
<0.1%



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/4"	7/8"	08F460	A-30	13,300	25	100
5"	1/4"	7/8"	08F510	A-30	12,200	25	100
6"	1/4"	7/8"	08F600	A-30	10,200	25	100
7"	1/4"	7/8"	08F700	A-30	8,600	25	50

### 1/4" TYPE 28S

SPIN-ON



Fe-S-Cl  
<0.1%



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/4"	5/8"-11	08F451	A-30	13,300	10	80

Always use 1/4" wheels with flange 30B057.



## NO CLOGGING IN ANY TYPE OF ALUMINUM

### 1/8" cutting and light grinding:

- ▶ Formulated for cutting but may also be used for intermittent light grinding
- ▶ Fast and free cutting

### 1/4" grinding:

- ▶ Fast removal rate and long wheel life
- ▶ Free of waxes and lubricants



- ▶ Fast and free cutting
- ▶ Formulated for cutting but may also be used for intermittent light grinding
- ▶ Excellent control in demanding applications
- ▶ Extra hard silicon carbide grain for fast material removal and long wheel life
- ▶ Superior performance in hard facing and cast iron

## ALU™

For use on aluminum and other soft metals

These wheels will not clog or glaze when working with aluminum or other non-ferrous metals. They are free of waxes and lubricants, so there is no need to clean the surface before welding or apply a surface coating, eliminating a time-consuming step in surface preparation.

### 1/8" TYPE 27



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/8"	7/8"	08-L 452	A-24	13,300	25	200
5"	1/8"	7/8"	08-L 502	A-24	12,200	25	200
6"	1/8"	7/8"	08-L 602	A-24	10,200	25	100
7"	1/8"	7/8"	08-L 702	A-24	8,600	25	100
7"	1/8"	5/8"-11 Metal hub	08-L 707	A-24	8,600	10	40
9"	1/8"	7/8"	08-L 902	A-24	6,600	25	100
9"	1/8"	5/8"-11 Metal hub	08-L 907	A-24	6,600	10	40

### 1/4" TYPE 27



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/4"	7/8"	08-L 450	A-24	13,300	25	100
4 1/2"	1/4"	5/8"-11 Metal hub	08-L 455	A-24	13,300	10	40
5"	1/4"	7/8"	08-L 500	A-24	12,200	25	100
6"	1/4"	7/8"	08-L 600	A-24	10,200	25	100
7"	1/4"	7/8"	08-L 700	A-24	8,600	25	50
7"	1/4"	5/8"-11 Metal hub	08-L 705	A-24	8,600	10	40
9"	1/4"	7/8"	08-L 900	A-24	6,600	25	50
9"	1/4"	5/8"-11 Metal hub	08-L 905	A-24	6,600	10	40

## CONCRETE™

High performance grinding and cutting

These wheels have multiple high-strength reinforcements and durable bonds for extra safety in tough grinding and cutting applications. They are designed for fast material removal and smooth grinding and cutting of concrete, masonry, stone, and other similar building materials.

### 1/8" TYPE 27



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/8"	7/8"	08D452	C-24	13,300	25	200
5"	1/8"	7/8"	08D502	C-24	12,200	25	200

### 1/4" TYPE 27



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/4"	7/8"	08E450	C-24	13,300	25	100
5"	1/4"	7/8"	08E500	C-24	12,200	25	100



## FLEXCUT™

Premium performance on curved or uneven surfaces

FLEXCUT™, the leading flexible grinding wheel for over 25 years, is specially formulated to deliver superior removal on all ferrous and non-ferrous metals without clogging or loading.



### TYPE 29

Dia.	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
3"	3/8"	A-36-X-FLEX	15L303	* 20,400	25	200
4 1/2"	7/8"	A-36-X-FLEX	15L463	13,300	25	200
5"	7/8"	A-36-X-FLEX	15L513	12,200	25	200
5"	7/8"	A-60-X-FLEX	15L516	12,200	25	200
7"	7/8"	A-24-X-FLEX	15L702	8,600	25	100
7"	7/8"	A-36-X-FLEX	15L703	8,600	25	100
7"	7/8"	A-60-X-FLEX	15L706	8,600	25	100

\*Use with 1/4" mandrel 11L007.

Always use SPIN-ON wheels with flange 30B057.

### TYPE 29S

Dia.	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	5/8"-11	A-36-X-FLEX	15L453	13,300	25	100
4 1/2"	5/8"-11	A-60-X-FLEX	15L456	13,300	25	100
4 1/2"	5/8"-11	A-100-X-FLEX	15L460	13,300	25	200
5"	5/8"-11	A-36-X-FLEX	15L503	12,200	25	100
5"	5/8"-11	A-60-X-FLEX	15L506	12,200	25	100
5"	5/8"-11	A-100-X-FLEX	15L510	12,200	25	200
6"	5/8"-11	A-24-X-FLEX	15L602	10,200	25	200
6"	5/8"-11	A-36-X-FLEX	15L603	10,200	25	200
6"	5/8"-11	A-60-X-FLEX	15L606	10,200	25	200



**BLENDS IN PERFECTLY**  
ON UNEVEN SURFACES  
AND WILL NEVER CLOG  
ON ALUMINUM



Deep Diamond-Cut™ pattern and optimized formulation offer:

- ▷ **More flexibility**
- ▷ **Best handling on flat and curved surfaces**
- ▷ **Cooler grinding**
- ▷ **Better stock removal in all materials (steel, stainless steel, aluminum)**



SCAN TO  
WATCH VIDEO

**YouTube**







Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)

## FLEXCUT MILL SCALE™

Quick, consistent removal of mill scale






Are you tired of changing out wheels every few minutes as they glaze over or clog during mill scale removal? FLEXCUT MILL SCALE™ is a flexible grinding wheel designed to last longer and remove mill scale quicker than any other abrasive. That's because FLEXCUT MILL SCALE™ is the first abrasive ever designed exclusively for the purpose of removing mill scale from hot rolled steel. Save time and quit throwing away wheels every few minutes. Switch to FLEXCUT MILL SCALE™ today for easy removal of mill scale and rust.

### INDUSTRY FAVORITE FOR MILL SCALE REMOVAL

**TYPE 29S**      

Dia.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	5/8"-11	15L843	A-36-FLEX	13,300	25	100
5"	5/8"-11	15L853	A-36-FLEX	12,200	25	200
6"	5/8"-11	15L863	A-36-FLEX	10,200	25	100

Always use SPIN-ON wheels with flange 30B057.

**TYPE 29**     

Dia.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
7"	7/8"	15L873	A-36-FLEX	8,600	25	100



- ▷ Unique blend of highly refined abrasives allows ultra quick cutting action without glazing or clogging
- ▷ Open diamond cut pattern prevents clogging
- ▷ Extremely effective for heavily rusted plates, aluminum, or galvanized metal and painted material
- ▷ Fe-free formulation – guaranteed not to contaminate aluminum
- ▷ Cool cutting action



SCAN TO  
WATCH VIDEO









Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)

## FLEXCUT™ XX

Fast, efficient flexible material removal on steel, stainless steel

FLEXCUT™ XX is designed to deliver ultra-fast material removal on steel and stainless steel and is effective for removing tough mill scale. Its advanced grain blend, combined with SMART RESIN™ Technology, ensures that fresh grains are exposed at the optimal time, achieving the perfect balance between sharpness and extended wheel life. Whether working on flat or curved surfaces, FLEXCUT™ XX provides consistent results, with premium reinforcement for added safety and a clean finish on every job.



**TYPE 29**      

Dia.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	7/8"	15L743	CA-36	13,300	25	200
5"	7/8"	15L753	CA-36	12,200	25	200
6"	7/8"	15L763	CA-36	10,200	25	100
7"	7/8"	15L773	CA-36	8,600	25	100



- ▷ Open diamond cut pattern prevents clogging for a smoother, longer-lasting performance
- ▷ Premium reinforcement enhances durability and safety during use
- ▷ Self-sharpening ceramic grain blend allows for a faster material removal rate
- ▷ SMART RESIN™ Technology exposes fresh grains at the optimal time to optimize the balance between sharpness & life
- ▷ Exclusive design for use on flat and curved surfaces
- ▷ Contains less than 0.1% of iron, sulfur, & chlorine (Fe, S, Cl) to guarantee no contamination of stainless steel



## PIPEFITTER™

Designed for premium performance in pipeline construction

These wheels are specially formulated and reinforced for grinding the root pass and joint welds between passes in pipeline construction and pipe fabrication. They do not contain iron, sulfur or chlorine (Fe, S, Cl) and are guaranteed not to contaminate stainless steel.

- ▷ Thin for fast and free cutting and grooving
- ▷ Can also be used for cutting sheet metal

**3/32"**

**TYPE 27**



Fe-S-Cl  
<0.1%



Steel

Stainless Steel

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	3/32"	7/8"	08N453	A-36	13,300	25	200
5"	3/32"	7/8"	08N503	A-36	12,200	25	200
6"	3/32"	7/8"	08N603	A-36	10,200	25	100
7"	3/32"	7/8"	08N703	A-36	8,600	25	100

- ▷ Ideal for use with low-power angle grinders
- ▷ Grind joint welds with ease
- ▷ Can be used for intermittent light grinding, facing, and bevelling work

**1/8"**

**TYPE 27**



Fe-S-Cl  
<0.1%



Steel

Stainless Steel

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	1/8"	7/8"	08N452	A-36	13,300	25	200
5"	1/8"	7/8"	08N502	A-36	12,200	25	200
6"	1/8"	7/8"	08N602	A-24	10,200	25	100
7"	1/8"	7/8"	08N702	A-24	8,600	25	100

- ▷ Formulated for light grinding, cutting, and notching

**5/32"**

**TYPE 27**



Fe-S-Cl  
<0.1%



Steel

Stainless Steel

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	5/32"	7/8"	08N454	A-36	13,300	25	200
5"	5/32"	7/8"	08N504	A-36	12,200	25	200
6"	5/32"	7/8"	08N604	A-20	10,200	25	100
7"	5/32"	7/8"	08N704	A-20	8,600	25	100
9"	5/32"	7/8"	08N904	A-20	6,600	25	100



**TYPE 27S**



**SPIN-ON**



Fe-S-Cl  
<0.1%



Steel

Stainless Steel

Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
5"	3/32"	5/8"-11	08N533	A-36	12,200	25	200
6"	3/32"	5/8"-11	08N633	A-36	10,200	25	100
6"	5/32"	5/8"-11	08N634	A-20	10,200	25	100
7"	3/32"	5/8"-11 Metal hub	08N708	A-20	8,600	10	40
7"	5/32"	5/8"-11 Metal hub	08N709	A-20	8,600	10	40
9"	5/32"	5/8"-11 Metal hub	08N909	A-20	6,600	10	40


Always use with flange 30B057.






# CUP STONES


## HP CUP WHEELS




WALTER HP Cup Wheels are designed for rough grinding or snagging work. Each wheel has a deeply anchored wrap-around steel hub for maximum safety and long life. A 5/8"-11 threaded arbor for SPIN-ON mounting reduces downtime for wheel changes and helps you finish your toughest grinding jobs faster.

**TYPE 11** 

   Steel

Dia.	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4"	5/8"-11	A-16	12A004	9,100	1	10
5"	5/8"-11	A-16	12A005	7,260	1	10
6"	5/8"-11	A-16	12A006	6,050	1	10

**TYPE 11** 

   Concrete

Dia.	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4"	5/8"-11	C-16	12B004	9,100	1	10
5"	5/8"-11	C-16	12B005	7,260	1	10
6"	5/8"-11	C-16	12B006	6,050	1	10



- ▷ For heavy-duty grinding
- ▷ Excellent wheel life
- ▷ Engineered for maximum operator safety



# PLUGS, CONES AND MOUNTED POINTS



- ▷ For grinding, shaping, cleaning, blending, and deburring of internal and external contours
- ▷ Fast material removal, long life

- ▷ For fitting, shaping, enlarging holes and finishing work in confined spaces
- ▷ For use on die grinders, point grinders, flexible shaft machines, etc.
- ▷ A complete line to address all your specific needs
- ▷ Faster removal AND longer lasting

Very popular in foundries, steel mills, and fabricating shops for heavy stock removal in hard-to-reach areas. Each abrasive has an internal threaded arbor for direct mounting.



Shape	Dia.	Length	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
16	1 1/2"	2 1/2"	3/8"-24	ZA16	12C101	24,200	10	10
16	1 1/2"	3"	5/8"-11	ZA16	12C111	24,200	10	10
16	2"	3"	5/8"-11	ZA16	12C121	18,100	10	10
17	1 1/2"	3"	5/8"-11	ZA16	12C401	24,200	10	10
17	2"	4"	5/8"-11	ZA16	12C421	18,100	10	10
18	1"	2"	3/8"-24	ZA16	12C301	36,200	10	10
18	1 1/2"	3"	5/8"-11	ZA16	12C311	24,200	10	10
18	2"	3"	5/8"-11	ZA16	12C321	18,100	10	10
18R	1 1/2"	3"	5/8"-11	ZA16	12C201	24,200	10	10
18R	2"	3"	5/8"-11	ZA16	12C211	18,100	10	10
18R	3"	4"	5/8"-11	ZA16	12C221	12,100	10	10

## MOUNTED POINTS

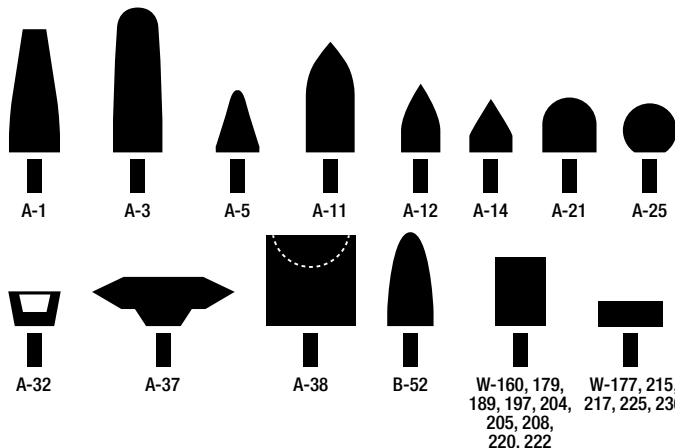
Versatile tools for fitting, shaping, and enlarging holes

These mounted points are ideal for finishing work in confined spaces. They are made from the finest grade of abrasive grains, and each is perfectly balanced to minimize vibration.

**Blue-grey for mild steel and cast iron**

**Orange for tool and high tensile steel**

**Resin bond for stainless steel**



**BLUE-GREY**



Type	Dia.	Length	Shaft	Order No.	Grit	Max. RPM	Std. Pkg.	Std. Ctn.
A-1	3/4"	2 1/2"	1/4"	12D002	A36	19,800	10	10
A-3	1"	2 3/4"	1/4"	12D012	A36	16,100	10	10
A-5	3/4"	1 1/8"	1/4"	12D022	A36	45,000	10	10
A-11	7/8"	2"	1/4"	12D032	A36	19,800	10	10
A-12	1 1/16"	1 1/4"	1/4"	12D037	A36	48,000	10	10
A-14	1 1/16"	7/8"	1/4"	12D047	A36	48,000	10	10
A-21	1"	1"	1/4"	12D057	A36	34,500	10	10
A-25	1"	1"	1/4"	12D077	A36	35,600	10	10
A-32	1"	5/8"	1/4"	12D092	A36	38,200	10	10
A-38	1"	1"	1/4"	12D122	A36	34,500	10	10
B-52	3/8"	3/4"	1/8"	12D232	A36	45,370	10	10
B-52	3/8"	3/4"	1/4"	12D242	A36	45,370	10	10
W-179	3/8"	1 1/4"	1/4"	12D592	A36	45,750	10	10
W-197	5/8"	2"	1/4"	12D677	A36	21,000	10	10
W-205	3/4"	1"	1/4"	12D722	A36	34,500	10	10
W-217	1"	3/8"	1/4"	12D782	A36	38,200	10	10
W-220	1"	1"	1/4"	12D797	A36	25,500	10	10
W-222	1"	2"	1/4"	12D807	A36	15,900	10	10
W-225	1 1/4"	1/4"	1/4"	12D822	A36	30,560	10	10

**Tech tip!**

Use dressing stones to extend product life and allow mounted points or bench grinding wheels to cut faster and produce a better surface finish.

**ORANGE**



Type	Dia.	Length	Shaft	Order No.	Grit	Max. RPM	Std. Pkg.	Std. Ctn.
A-1	3/4"	2 1/2"	1/4"	12D001	A60	19,800	10	10
A-3	1"	2 3/4"	1/4"	12D011	A60	16,100	10	10
A-5	3/4"	1 1/8"	1/4"	12D021	A60	45,000	10	10
A-11	7/8"	2"	1/4"	12D031	A60	19,800	10	10
A-12	1 1/16"	1 1/4"	1/4"	12D036	A60	48,000	10	10
A-14	1 1/16"	7/8"	1/4"	12D046	A60	48,000	10	10
A-21	1"	1"	1/4"	12D056	A60	34,500	10	10
A-25	1"	1"	1/4"	12D076	A60	35,600	10	10
A-32	1"	5/8"	1/4"	12D091	A60	38,200	10	10
A-37	1 1/4"	1/4"	1/4"	12D116	A60	30,560	10	10
A-38	1"	1"	1/4"	12D121	A60	34,500	10	10
W-179	3/8"	1 1/4"	1/4"	12D591	A60	45,750	10	10
W-197	5/8"	2"	1/4"	12D676	A60	21,000	10	10
W-205	3/4"	1"	1/4"	12D721	A60	34,500	10	10
W-217	1"	3/8"	1/4"	12D781	A60	38,200	10	10
W-220	1"	1"	1/4"	12D796	A60	25,500	10	10
W-222	1"	2"	1/4"	12D806	A60	15,900	10	10
W-225	1 1/4"	1/4"	1/4"	12D821	A60	30,560	10	10

**Accessories**

**Dressing stones**

Dimensions	Order No.	Std. Pkg.	Std. Ctn.
1" x 1" x 6"	12D900	1	10
1" x 1" x 8"	12D901	1	10

\* Max. RPM listed are for 1/2" free shaft.



**RESIN BOND**



Type	Dia.	Length	Shaft	Order No.	Grit	Max. RPM	Std. Pkg.	Std. Ctn.
A-1	3/4"	2 1/2"	1/4"	12D003	A36	19,800	10	10
A-3	1"	2 3/4"	1/4"	12D013	A36	16,100	10	10
A-5	3/4"	1 1/8"	1/4"	12D023	A36	45,000	10	10
A-11	7/8"	2"	1/4"	12D033	A36	19,800	10	10
A-12	1 1/16"	1 1/4"	1/4"	12D038	A36	48,000	10	10
A-21	1"	1"	1/4"	12D058	A36	34,500	10	10
A-25	1"	1"	1/4"	12D078	A36	35,600	10	10
W-179	3/8"	1 1/4"	1/4"	12D593	A36	45,750	10	10
W-197	5/8"	2"	1/4"	12D678	A36	21,000	10	10
W-205	3/4"	1"	1/4"	12D723	A36	34,500	10	10
W-207	3/4"	1 1/2"	1/4"	12D729	A36	24,000	10	10
W-217	1"	3/8"	1/4"	12D783	A36	38,200	10	10
W-220	1"	1"	1/4"	12D798	A36	25,500	10	10
W-222	1"	2"	1/4"	12D808	A36	15,900	10	10
W-236	1 1/2"	1/2"	1/4"	12D843	A36	25,470	10	10



# BENCH GRINDING

## BENCH GRINDING WHEELS

Long lasting and dependable, our bench grinding wheels are perfect for general-purpose sharpening, shaping, or deburring on bench and pedestal grinders.

All wheels are supplied with nested reducer bushings to fit on 1",  $\frac{3}{4}$ ",  $\frac{5}{8}$ " and  $\frac{1}{2}$ " shafts.

### TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
6"	$\frac{3}{4}$ "	1"	12E324	36 coarse	4,100	1	1
6"	$\frac{3}{4}$ "	1"	12E325	46 medium	4,100	1	1
6"	$\frac{3}{4}$ "	1"	12E328	80 fine	4,100	1	1
6"	1"	1"	12E344	36 coarse	4,100	1	1
6"	1"	1"	12E345	46 medium	4,100	1	1
6"	1"	1"	12E348	80 fine	4,100	1	1
7"	1"	1"	12E444	36 coarse	3,600	1	1
7"	1"	1"	12E447	60 fine	3,600	1	1
8"	$\frac{7}{8}$ "	1"	12E533	24 coarse	3,600	1	1
8"	$\frac{7}{8}$ "	1"	12E537	60 fine	3,600	1	1
8"	1"	1"	12E543	24 coarse	3,600	1	1
8"	1"	1"	12E545	46 medium	3,600	1	1
8"	1"	1"	12E547	60 fine	3,600	1	1
8"	1 $\frac{1}{4}$ "	1"	12E553	24 coarse	3,600	1	1
8"	1 $\frac{1}{4}$ "	1"	12E557	60 fine	3,600	1	1
10"	1"	1"	12E643	24 coarse	2,500	1	1
10"	1"	1"	12E647	60 fine	2,500	1	1
10"	1 $\frac{1}{4}$ "	1"	12E657	60 fine	2,500	1	1



### TYPE 1



Dia.	Thick.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
6"	$\frac{3}{4}$ "	1"	12E329	80 fine	4,100	1	1
7"	1"	1"	12E449	80 fine	3,600	1	1
8"	1"	1"	12E549	80 fine	3,600	1	1
10"	1"	1"	12E649	80 fine	2,500	1	1








# ALLSTEEL™

## GRINDING WHEELS






ALLSTEEL™ grinding wheels deliver fast removal rates on steel and stainless steel. High-strength abrasive grain ensures durability and aggressive grinding action with less effort, making even the toughest jobs easier.

- ▷ Perfect choice for steel and stainless steel
- ▷ Excellent removal rate
- ▷ Heavily reinforced to optimize safety in tough applications
- ▷ Smooth grinding with less effort
- ▷ Minimizes work-surface gouging








1/8" TYPE 27     






Order No.	Dia.	Thick.	Arbor	Grit	Max RPM	Std. Pkg.	Std Ctn
08W452	4-1/2"	1/8"	7/8"	A-30	13,300	25	200
08W502	5"	1/8"	7/8"	A-30	12,200	25	200
08W602	6"	1/8"	7/8"	A-30	10,200	25	100
08W702	7"	1/8"	7/8"	A-30	8,600	25	100
08W902	9"	1/8"	7/8"	A-30	6,800	25	100

1/4" TYPE 27     

Order No.	Dia.	Thick.	Arbor	Grit	Max RPM	Std. Pkg.	Std Ctn
08W450	4-1/2"	1/4"	7/8"	A-30	13,300	25	100
08W500	5"	1/4"	7/8"	A-30	12,200	25	100
08W600	6"	1/4"	7/8"	A-30	10,200	25	100
08W700	7"	1/4"	7/8"	A-30	8,600	25	50
08W900	9"	1/4"	7/8"	A-30	6,800	25	50

1/8" TYPE 27     

Order No.	Dia.	Thick.	Arbor	Grit	Max RPM	Std. Pkg.	Std Ctn
08W457	4-1/2"	1/8"	5/8"-11 Metal hub	A-30	13,300	10	80

1/4" TYPE 27     

Order No.	Dia.	Thick.	Arbor	Grit	Max RPM	Std. Pkg.	Std Ctn
08W455	4-1/2"	1/4"	5/8"-11 Metal hub	A-30	13,300	10	80





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# 04

## FINISHING

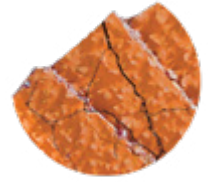




# FLAP DISCS AT A GLANCE



MAX LIFE™ cold curing glue ensures the freshest grains possible by eliminating the need to apply heat during the manufacturing process, avoiding micro-cracking and drying out, improving consistency, and maximizing disc life.



HEATED ABRASIVE FLAPS



COLD CURED GLUE

## BLENDING

### Material Specific

ENDURO-FLEX™



ENDURO-FLEX TURBO™



ENDURO-FLEX™ STAINLESS



ENDURO-FLEX ALU™



ALLSTEEL™



ALLSTEEL TURBO™



	ENDURO-FLEX™	ENDURO-FLEX TURBO™	ENDURO-FLEX™ STAINLESS	ENDURO-FLEX ALU™	ALLSTEEL™	ALLSTEEL TURBO™
<b>Application Need</b>	General purpose for material removal, surface blending and finishing, deburring, and breaking edges.	Ultra-fast metal removal. For heavy-duty grinding, blending welds, and breaking edges.	For blending on stainless steel, hard alloys, and heat-sensitive metals.	For blending on aluminum or other soft and non-ferrous metals.	General purpose for low-powered tools for light-duty blending.	Fast-metal removal suitable for all levels of expertise for blending.
<b>MAX-LIFE™ Glue</b>	✓	✓	✓	✓		
<b>Backing Material</b>	ECO-TRIM™	Nylon	ECO-TRIM™	ECO-TRIM™	ECO-TRIM™	Nylon
<b>Durability</b>	• • • •	• • •	• • •	• • •	• •	•
<b>Tool Power</b>	Mid-to-High	High	Mid-to-High	Mid-to-High	Low-to-Mid	Low-to-Mid
<b>Metals</b>	<ul style="list-style-type: none"> <li>• Steel</li> <li>• Stainless Steel</li> </ul>	<ul style="list-style-type: none"> <li>• Steel</li> <li>• Stainless Steel</li> </ul>	<ul style="list-style-type: none"> <li>• Stainless Steel</li> <li>• Hard Alloys</li> </ul>	<ul style="list-style-type: none"> <li>• Aluminum</li> <li>• Soft Alloys</li> </ul>	<ul style="list-style-type: none"> <li>• Steel</li> <li>• Stainless Steel</li> </ul>	<ul style="list-style-type: none"> <li>• Steel</li> <li>• Stainless Steel</li> </ul>
<b>Diameter</b>	<ul style="list-style-type: none"> <li>• 4 ½"</li> <li>• 5"</li> <li>• 6"</li> <li>• 7"</li> </ul>	<ul style="list-style-type: none"> <li>• 4 ½"</li> <li>• 5"</li> <li>• 6"</li> <li>• 7"</li> </ul>	<ul style="list-style-type: none"> <li>• 4 ½"</li> <li>• 5"</li> <li>• 6"</li> <li>• 7"</li> </ul>	<ul style="list-style-type: none"> <li>• 4 ½"</li> <li>• 5"</li> <li>• 6"</li> <li>• 7"</li> </ul>	<ul style="list-style-type: none"> <li>• 4 ½"</li> <li>• 5"</li> <li>• 6"</li> <li>• 7"</li> </ul>	<ul style="list-style-type: none"> <li>• 4 ½"</li> <li>• 5"</li> <li>• 6"</li> </ul>

# FLAP DISCS AT A GLANCE



Our **ENDURO-FLEX™** flap discs feature trimmable backings made with our proprietary **ECO-TRIM™** wood fiber backing material. When the flaps wear down to the outer diameter of the backing, trim away 1/4" of the backing at a time (up to three times total) to expose fresh abrasive grain, extending disc life and giving you a fresh new cutting edge.



New disc\*



After  
35 min.\*



After  
100 min.\*

\* Results based on a 5" ENDURO-FLEX™ used on steel. \* Trimmed once

\*Trimmed twice

## SURFACE FINISHING

ENDURO-FLEX 2-IN-1™

ENDURO-FLEX  
2-IN-1™ TURBO

BLENDX™

INSTANT POLISH™

ULTIMATE SHINE™



<b>Application Need</b>	Blend TIG welds, break edges, blend, and remove imperfections, oxidation, and discoloration. Mixture of sanding and BLENDX™ flaps.	Blend MIG welds and achieve the desired finish in a single step. Mixture of ceramic sanding and BLENDX™ flaps.	Ceramic BLENDX™ flap disc for better material removal with consistent surface finish. Available in different grits	For polishing and mirror finishing applications. Achieves desired finish in 1 step.	Designed for polishing and mirror finishing jobs. Achieve the desired finish in a single step.
<b>MAX-LIFE™ Glue</b>			✓	✓	✓
<b>Backing Material</b>	Nylon	Nylon	ECO-TRIM™	ECO-TRIM™	ECO-TRIM™
<b>Durability</b>	• • •	• • •	• •	•	•
<b>Tool Power</b>	Mid-to-High	High	Mid-to-High	Low-to-Mid	Low-to-Mid
<b>Metals</b>	<ul style="list-style-type: none"> <li>• Steel</li> <li>• Stainless Steel</li> <li>• Aluminum</li> </ul>	<ul style="list-style-type: none"> <li>• Steel</li> <li>• Stainless Steel</li> <li>• Aluminum</li> </ul>	<ul style="list-style-type: none"> <li>• Steel</li> <li>• Stainless Steel</li> <li>• Aluminum</li> </ul>	<ul style="list-style-type: none"> <li>• Steel</li> <li>• Stainless Steel</li> <li>• Aluminum</li> </ul>	<ul style="list-style-type: none"> <li>• Steel</li> <li>• Stainless Steel</li> <li>• Aluminum</li> </ul>
<b>Diameter</b>	<ul style="list-style-type: none"> <li>• 4 ½"</li> <li>• 5"</li> </ul>	<ul style="list-style-type: none"> <li>• 4 ½"</li> <li>• 5"</li> </ul>	<ul style="list-style-type: none"> <li>• 4 ½"</li> <li>• 5"</li> </ul>	<ul style="list-style-type: none"> <li>• 4 ½"</li> <li>• 5"</li> </ul>	<ul style="list-style-type: none"> <li>• 4 ½"</li> <li>• 5"</li> </ul>

# FLAP DISCS



- ▷ Longest-lasting flap disc on the market
- ▷ Highest overall material removal in the industry
- ▷ ECO-TRIM™ backing is easier to trim and environmentally friendly
- ▷ Remove welds and finish surfaces in one step
- ▷ Quiet, vibration-free grinding
- ▷ Self-sharpening Zirconia Alumina grain
- ▷ Lightweight

**INCREASE YOUR REMOVAL RATE BY A MINIMUM OF 25% BY COMBINING YOUR ENDURO-FLEX™ WITH THE PRO 5 OR BIG 6 GRINDER!**  
See pages 151 and 152



SCAN TO WATCH VIDEO



Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)






## ENDURO-FLEX™

The longest life and highest overall material removal in the industry

ENDURO-FLEX™ outperforms all competitive flap discs thanks to its innovative design and exclusive abrasive grain blend. Featuring an ECO-TRIM™ backing that can be trimmed back to extend disc life, ENDURO-FLEX™ is the longest-lasting flap disc in the industry and removes more material than any competitive flap disc. Your employees will spend more time getting the job done and less time making trips to the tool crib, saving you time and money while maximizing your productivity.






### THE LONGEST LIFE FLAP DISC ON THE MARKET



**TYPE 27S**  **SPIN-ON**    

Dia.	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	5/8"-11	40	06B454	13,300	10	40
4 1/2"	5/8"-11	60	06B456	13,300	10	40
4 1/2"	5/8"-11	80	06B458	13,300	10	40
4 1/2"	5/8"-11	120	06B462	13,300	10	40
5"	5/8"-11	40	06B504	12,200	10	40
5"	5/8"-11	60	06B506	12,200	10	40
5"	5/8"-11	80	06B508	12,200	10	40
5"	5/8"-11	120	06B512	12,200	10	40
6"	5/8"-11	40	06B604	10,200	10	40
6"	5/8"-11	60	06B606	10,200	10	40
6"	5/8"-11	80	06B608	10,200	10	40
6"	5/8"-11	120	06B612	10,200	10	40

Always use with flange 30B057.

**TYPE 27**     

Dia.	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	7/8"	40	15R454	13,300	10	40
4 1/2"	7/8"	60	15R456	13,300	10	40
4 1/2"	7/8"	80	15R458	13,300	10	40
4 1/2"	7/8"	120	15R462	13,300	10	40
5"	7/8"	40	15R504	12,200	10	40
5"	7/8"	60	15R506	12,200	10	40
5"	7/8"	80	15R508	12,200	10	40
5"	7/8"	120	15R512	12,200	10	40
6"	7/8"	40	15R604	10,200	10	40
6"	7/8"	60	15R606	10,200	10	40
6"	7/8"	80	15R608	10,200	10	40
6"	7/8"	120	15R612	10,200	10	40
7"	7/8"	40	15R704	8,600	10	40
7"	7/8"	60	15R706	8,600	10	40
7"	7/8"	80	15R708	8,600	10	40
7"	7/8"	120	15R712	8,600	10	40

Always use with flange 30B057.





- ▷ Exclusive flap configuration and Cyclone™ Technology for ultra fast metal removal
- ▷ Turbofan™ Cooling keeps the workpiece cooler for longer disc life
- ▷ Guaranteed cost savings!

**MAX LIFE™**  
COLD CURING  
GLUE IMPROVES  
CONSISTENCY AND  
MAXIMIZES DISC LIFE



**INCREASE YOUR REMOVAL RATE BY A MINIMUM OF 30% BY COMBINING YOUR ENDURO-FLEX TURBO™ WITH THE PRO 5 OR BIG 6 GRINDER!**  
See pages 151 and 152



SCAN TO WATCH VIDEO








Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)

## ENDURO-FLEX TURBO™

The fastest cutting flap disc on the market






If time is money, then ENDURO-FLEX TURBO™ is worth its weight in gold. This extremely aggressive flap disc removes material like a 36 grit but leaves a 60 grit, paint-ready finish, saving you a valuable step in the finishing process. The innovative backing design allows air to cool the workpiece, increasing product life and minimizing heat transfer to the surface. Whether you are working with steel or stainless steel, ENDURO-FLEX TURBO™ will help you blend welds and break edges faster, guaranteed.

### HIGHEST REMOVAL RATE IN THE INDUSTRY

**TYPE 27S**  **SPIN-ON**    






Dia.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	5/8"-11	06A452	36/60	13,300	10	40
4 1/2"	5/8"-11 metal hub	<b>06A457</b>	<b>36/60</b>	<b>13,300</b>	<b>10</b>	<b>40</b>
4 1/2"	5/8"-11	06A458	80	13,300	10	40
5"	5/8"-11	06A502	36/60	12,000	10	40
5"	5/8"-11	06A508	80	12,200	10	40
6"	5/8"-11	06A602	36/60	10,200	10	40
7"	5/8"-11 metal hub	<b>06A707</b>	<b>36/60</b>	<b>8,600</b>	<b>10</b>	<b>40</b>

Always use with flange 30B057.

**TYPE 27**     

Dia.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	7/8"	06A462	36/60	13,300	10	40
5"	7/8"	06A512	36/60	12,200	10	40
7"	7/8"	06A712	36/60	8,600	10	40

Always use with flange 30B057.

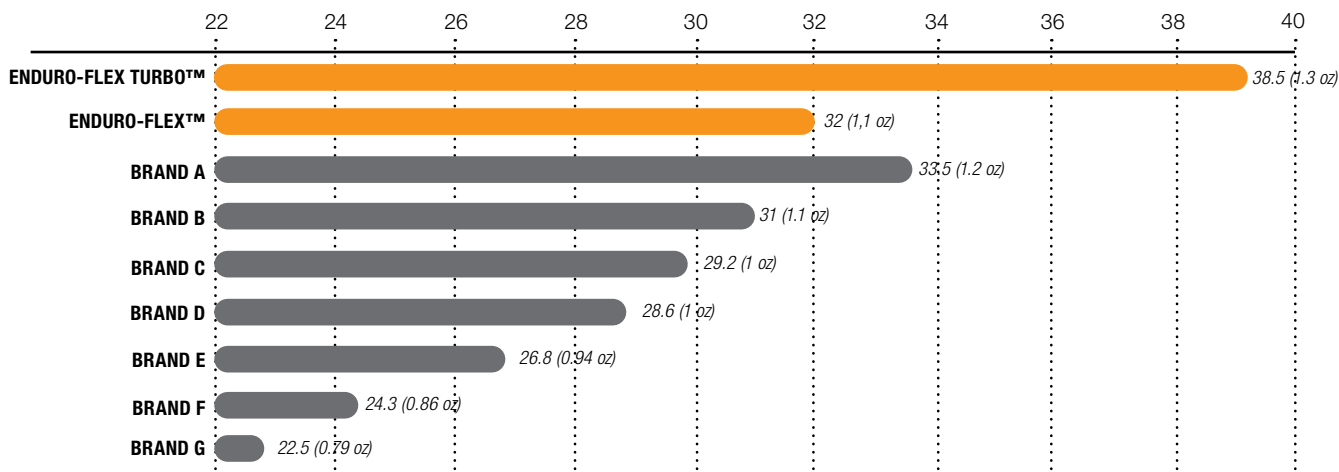
**TYPE 29**     

Dia.	Arbor	Order No.	Grade	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	7/8"	06A482	36/60	13,300	10	40
4 1/2"	5/8"-11 metal hub	06A487	36/60	13,300	10	40
5"	7/8"	06A532	36/60	12,200	10	40
5"	5/8"-11 metal hub	06A537	36/60	12,200	10	40

Always use with flange 30B057.

## ENDURO-FLEX TURBO™ COMPARISON TESTS BETWEEN 5" FLAP DISCS

Tests were done using the PRO 5 grinder. **Removal rate on steel - gr. (oz.)/min.**



# ENDURO-FLEX™ STAINLESS







Guaranteed not to contaminate stainless steel

ENDURO-FLEX™ STAINLESS offers all the benefits of the standard ENDURO-FLEX™ with a formula free of iron, sulfur, and chlorine to meet quality control objectives in sensitive operations. ENDURO-FLEX™ STAINLESS is the flap disc of choice for workers nationwide for blending applications on stainless steel and other heat-sensitive alloys.



## CONSISTENT FINISH WITHOUT DISCOLORATION








**TYPE 27S**  **SPIN-ON**   **Fe-S-Cl <0.1%**   

Dia.	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	5/8" -11	40	06F454	13,300	10	40
4 1/2"	5/8" -11	60	06F456	13,300	10	40
4 1/2"	5/8" -11	80	06F458	13,300	10	40
4 1/2"	5/8" -11	120	06F462	13,300	10	40
5"	5/8" -11	40	06F504	12,200	10	40
5"	5/8" -11	60	06F506	12,200	10	40
5"	5/8" -11	80	06F508	12,200	10	40
5"	5/8" -11	120	06F512	12,200	10	40
6"	5/8" -11	40	06F604	10,200	10	40
6"	5/8" -11	60	06F606	10,200	10	40
6"	5/8" -11	80	06F608	10,200	10	40
6"	5/8" -11	120	06F612	10,200	10	40

Always use with flange 30B057.

- ▷ Environmentally friendly
- ▷ Superior performance on all heat sensitive metals
- ▷ Will not load or glaze
- ▷ The coolest cutting action on stainless
- ▷ The fastest removal rate and best overall life on non-ferrous alloys
- ▷ High-performance aluminum oxide grain
- ▷ 100% Ceramic & lubricant for best removal in stainless and hard alloys

**TYPE 27**    **Fe-S-Cl <0.1%**  

Dia.	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	7/8"	40	15Q454	13,300	10	40
4 1/2"	7/8"	60	15Q456	13,300	10	40
4 1/2"	7/8"	80	15Q458	13,300	10	40
4 1/2"	7/8"	120	15Q462	13,300	10	40
5"	7/8"	40	15Q504	12,200	10	40
5"	7/8"	60	15Q506	12,200	10	40
5"	7/8"	80	15Q508	12,200	10	40
5"	7/8"	120	15Q512	12,200	10	40
7"	7/8"	40	15Q704	8,600	10	40
7"	7/8"	60	15Q706	8,600	10	40
7"	7/8"	80	15Q708	8,600	10	40
7"	7/8"	120	15Q712	8,600	10	40

Always use with flange 30B057.



For Fine Finishing, See Pages 117-122

## ENDURO-FLEX ALU™

High-performance flap disc for aluminum surfaces

ENDURO-FLEX ALU™ uses a superior zirconia alumina grain blend that is free of iron, sulfur, and chlorine to achieve maximum results when blending on aluminum surfaces. It's built using a special coating for extra long life. Thanks to its high removal rates and resistance to glaze buildup, ENDURO-FLEX ALU™ is the optimal choice for operators looking to enhance both quality and productivity when working with aluminum or other heat-sensitive metals.



### TYPE 27S



Fe-S-Cl  
<0.1%



Dia.	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4-1/2"	5/8"-11	40	06U454	13,300	10	40
4-1/2"	5/8"-11	60	06U456	13,300	10	40
4-1/2"	5/8"-11	80	06U458	13,300	10	40
5"	5/8"-11	40	06U504	12,200	10	40
5"	5/8"-11	60	06U506	12,200	10	40
5"	5/8"-11	80	06U508	12,200	10	40
6"	5/8"-11	40	06U604	10,200	10	40
6"	5/8"-11	60	06U606	10,200	10	40
6"	5/8"-11	80	06U608	10,200	10	40

Always use with flange 30B057.

### TYPE 27



Fe-S-Cl  
<0.1%



Dia.	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
7"	7/8"	40	15U704	8,600	10	40
7"	7/8"	60	15U706	8,600	10	40
7"	7/8"	80	15U708	8,600	10	40

Always use with flange 30B057.

- ▷ Specially formulated for performance and productivity on aluminum surfaces
- ▷ Special coating prevents load-up and glazing and extends disc life
- ▷ ECO-TRIM™ trimmable backing extends disc life by up to 3 times
- ▷ Zirconia and lubricant for best removal in aluminum and soft alloys

**MAX LIFE™**  
GLUE







## ENDURO-FLEX 2-IN-1™ FINISHING DISC

One-step finishing

ENDURO-FLEX 2-IN-1™ flap discs remove TIG welds and finish the surface in just one step, substantially reducing your finishing costs. Save time and reduce your inventory by using just one disc instead of two or more to perform the same job.

Long lasting

Developed to blend light TIG welds, break edges, blend, and remove surface imperfections, oxidation, discoloration, etc. One ENDURO-FLEX 2-IN-1™ disc will do the job of over twenty traditional discs while providing a smooth and consistent surface finish.







▷ *Allows operators to achieve a food grade finish*

### Tech tip!

**SPEED** To ensure the longest life and best performance, use at optimal speed of 4,000 to 6,000 RPM.

**PRESSURE** More pressure will increase removal rate while less pressure will improve the surface finish.

**WORKING ANGLE** For best performance, always use at a working angle of 4° to 10°. Never use flat.

TYPE 27S      

Dia.	Arbor	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
4 1/2"	5/8"-11	151453	13,300	4,000 to 6,000	10	40
5"	5/8"-11	151503	12,200	4,000 to 6,000	10	40



## ENDURO-FLEX 2-IN-1™ TURBO FINISHING DISC

The most versatile and fastest finishing disc on the market

Achieving the ideal finish when blending welds has never been easier. With the ENDURO-FLEX 2-in-1™ TURBO, remove material faster and get the finish you want in fewer steps. Designed for steel, stainless steel, and aluminum, the ENDURO-FLEX 2-in-1™ TURBO provides unmatched versatility. Incorporating WALTER's Cyclone™ Technology and high-tech BLENDEx™ Technology, the result is a smooth finish and product life that is simply unsurpassed.

Sanding flaps

- ▷ Special low heat generating top coat
- ▷ Non-loading
- ▷ High removal rate



BLENDEx™ flaps







- ▷ Combination that gives great performance on aluminum
- ▷ Non-woven material, will not smear or contaminate the workpiece
- ▷ Tear resistant for longest life



SCAN TO WATCH VIDEO



Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)

TYPE 27S      

Dia.	Arbor	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
4 1/2"	5/8"-11	151451	13,300	4,000 to 6,000	10	40
5"	5/8"-11	151501	12,200	4,000 to 6,000	10	40

Always use with flange 30B057.





 WALTER









# ALLSTEEL™

## ALLSTEEL™ FLAP DISCS

ALLSTEEL™ features a unique zirconia alumina abrasive grain blend that self-sharpenes with less pressure, providing a high removal rate with angle grinders. ALLSTEEL™ is an economical solution for operators who need a quality, industrial grade flap disc for a variety of applications.






- ▷ *Special zirconia alumina grain blend self-sharpenes with less pressure*
- ▷ *Provides a high removal rate on steel*
- ▷ *Trimnable backing extends disc life*
- ▷ *The economical choice when blending sharp corners, heavy deburring, or blending in fillet welds*
- ▷ *The best option for use on low-powered angle grinders*



**TYPE 27S**      

Order No.	Dia.	Arbor	Grit	Max RPM	Std. Pkg.	Std Ctn
06W454	4-1/2"	5/8"-11	40	13,300	10	40
06W456	4-1/2"	5/8"-11	60	13,300	10	40
06W458	4-1/2"	5/8"-11	80	13,300	10	40
06W462	4-1/2"	5/8"-11	120	13,300	10	40
06W504	5"	5/8"-11	40	12,200	10	40
06W506	5"	5/8"-11	60	12,200	10	40
06W508	5"	5/8"-11	80	12,200	10	40
06W512	5"	5/8"-11	120	12,200	10	40



**TYPE 27**     

Order No.	Dia.	Arbor	Grit	Max RPM	Std. Pkg.	Std Ctn
15W454	4-1/2"	7/8"	40	13,300	10	40
15W456	4-1/2"	7/8"	60	13,300	10	40
15W458	4-1/2"	7/8"	80	13,300	10	40
15W462	4-1/2"	7/8"	120	13,300	10	40
15W504	5"	7/8"	40	12,200	10	40
15W506	5"	7/8"	60	12,200	10	40
15W508	5"	7/8"	80	12,200	10	40
15W512	5"	7/8"	120	12,200	10	40
15W604	6"	7/8"	40	10,200	10	40
15W606	6"	7/8"	60	10,200	10	40
15W608	6"	7/8"	80	10,200	10	40
15W612	6"	7/8"	120	10,200	10	40
15W704	7"	7/8"	40	8,600	10	40
15W706	7"	7/8"	60	8,600	10	40
15W708	7"	7/8"	80	8,600	10	40
15W712	7"	7/8"	120	8,600	10	40





## ALLSTEEL TURBO™

ALLSTEEL TURBO™ combines a self-sharpening zirconia alumina abrasive grain with an optimal flap configuration to maximize removal rate. ALLSTEEL TURBO™ is an economical solution for operators who need a quality, industrial-grade, flap disc that can get the job done quickly without sacrificing safety.

- ▷ *Versatile, well-suited for a wide range of removal applications and skill levels*
- ▷ *Flap configuration designed for aggressive removal*
- ▷ *High-quality nylon backing*
- ▷ *Fe-free formulation*



### TYPE 27



Fe-S-CI  
<0.1%



Order No.	Dia.	Arbor	Grit	Max. RPM	Std. Pkg.	Std. Ctn.
15Y454	4-1/2"	7/8"	40	13,300	10	40
15Y456	4-1/2"	7/8"	60	13,300	10	40
15Y458	4-1/2"	7/8"	80	13,300	10	40
15Y504	5"	7/8"	40	12,200	10	40
15Y506	5"	7/8"	60	12,200	10	40
15Y508	5"	7/8"	80	12,200	10	40
15Y604	6"	7/8"	40	10,200	10	40
15Y606	6"	7/8"	60	10,200	10	40
15Y608	6"	7/8"	80	10,200	10	40

Always use with flange 30B057.

### TYPE 27S



**SPIN-ON**



Fe-S-CI  
<0.1%



Order No.	Dia.	Arbor	Grit	Max. RPM	Std. Pkg.	Std. Ctn.
06Y454	4-1/2"	5/8"-11	40	13,300	10	40
06Y456	4-1/2"	5/8"-11	60	13,300	10	40
06Y458	4-1/2"	5/8"-11	80	13,300	10	40
06Y504	5"	5/8"-11	40	12,200	10	40
06Y506	5"	5/8"-11	60	12,200	10	40
06Y508	5"	5/8"-11	80	12,200	10	40

Always use with flange 30B057.

### Tech tip!

To achieve the fastest removal rate available, ask your Territory Manager about ENDURO-FLEX TURBO™. A ceramic flap disc with a unique 36/60 grit to achieve the ultimate removal rate while leaving a paint-ready finish.

# SANDING PRODUCTS AT A GLANCE



### Unique packaging for optimal performance

- Best preservation of sanding disc with “Humidity Control” feature
- Shrink wrapped in quantities of 25 (2 x 25 discs) to keep discs’ shape intact
- Ensures the longest life, most aggressive removal rate, and best overall performance

V-STRONG™ backing technology improves durability for the most demanding applications. With more layers of advanced vulcanized fiber our sanding discs are the toughest, and longest-lasting available.

XTRACUT XX™



XTRACUT™



COOLCUT XX™



TOPCUT™



COOLCUT™




<b>Application Need</b>	Provides high-efficiency, long-lasting material removal on steel, stainless steel, and hard alloys.	For high-speed and heavy-duty stock removal with long service life in the toughest conditions. Best paired with a high-powered tool.	For maximum material removal efficiency and longevity on all power tools. Ideal for all metal types.	Maintains a high removal rate, even with lower-powered tools.	Economical solution for general-purpose sanding, light weld removal, and surface cleaning on steel.
<b>V-STRONG™ Backing</b>	✓	✓	✓		
<b>Grain</b>	Premium-shaped Ceramic	Premium Ceramic	Ceramic	Alumina	Aluminum Oxide
<b>Tool Power</b>	High	High	Mid-to-High	Low-to-Mid	Low-to-Mid
<b>Metals</b>	<ul style="list-style-type: none"> <li>• Steel</li> <li>• Stainless Steel</li> <li>• Hard Alloys</li> <li>• Aluminum</li> </ul>	<ul style="list-style-type: none"> <li>• Steel</li> <li>• Stainless Steel</li> <li>• Hard Alloys</li> </ul>	<ul style="list-style-type: none"> <li>• Steel</li> <li>• Stainless Steel</li> <li>• Aluminum</li> </ul>	<ul style="list-style-type: none"> <li>• Steel</li> <li>• Stainless Steel</li> </ul>	<ul style="list-style-type: none"> <li>• Steel</li> </ul>
<b>Diameter</b>	<ul style="list-style-type: none"> <li>• 4 ½"</li> <li>• 5"</li> <li>• 6"</li> <li>• 7"</li> </ul>	<ul style="list-style-type: none"> <li>• 4 ½"</li> <li>• 5"</li> <li>• 6"</li> <li>• 7"</li> </ul>	<ul style="list-style-type: none"> <li>• 4 ½"</li> <li>• 5"</li> <li>• 6"</li> <li>• 7"</li> </ul>	<ul style="list-style-type: none"> <li>• 4 ½"</li> <li>• 5"</li> <li>• 7"</li> </ul>	<ul style="list-style-type: none"> <li>• 4 ½"</li> <li>• 5"</li> <li>• 7"</li> </ul>

# FIBER DISCS

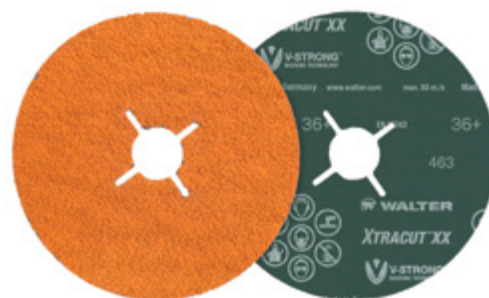
## XTRACUT™ XX

Self-sharpening ceramic disc with exceptional removal rates

XTRACUT™ XX is engineered to deliver unmatched stock removal and an extended service life, making it the ideal choice for working with steel, stainless steel, and hard alloys. With its optimized triangular shaped and self-sharpening grains, this disc ensures consistent, high-efficiency material removal throughout its use.



Dia.	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	7/8"	36	15N453	13,300	25	250
4 1/2"	7/8"	60	15N456	13,300	25	250
4 1/2"	7/8"	80	15N458	13,300	25	250
5"	7/8"	36	15N503	12,200	25	250
5"	7/8"	60	15N506	12,200	25	250
5"	7/8"	80	15N508	12,200	25	250
6"	7/8"	36	15N603	10,200	25	250
6"	7/8"	60	15N606	10,200	25	250
6"	7/8"	80	15N608	10,200	25	250
7"	7/8"	36	15N703	8,600	25	250
7"	7/8"	60	15N706	8,600	25	250
7"	7/8"	80	15N708	8,600	25	250




- ▷ High removal rate sanding disc for all alloys
- ▷ Optimized triangular shaped and self-sharpening ceramic grains provide extremely high stock removal
- ▷ Contains cooling agents that ensure cool cutting to prevent burning and distortion increasing product durability
- ▷ Guaranteed cost savings and best for use on steel, stainless, and hard alloys
- ▷ Very long service life and toughness due to its V-STRONG™ Technology

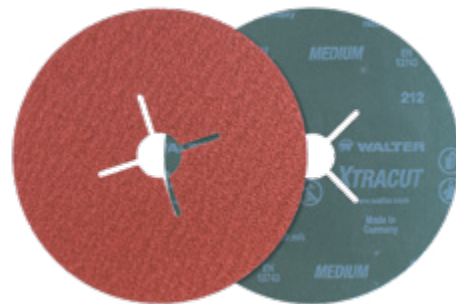
## XTRACUT™

Highest performance sanding disc in steel

XTRACUT™ equals ultra-high stock removal and long service life. Optimized self-sharpening ceramic grains enable consistently high performance. Your quickest and coolest cutting sanding disc for steel production. Now with the Quick-Change attachment for even more efficiency.



Dia.	Arbor	Grit	Equivalent Grit	Order No.	Std. Pkg.	Std. Ctn.
4 1/2"	7/8"	X-COARSE	36+	15A453	25	250
4 1/2"	7/8"	COARSE	60+	15A456	25	250
4 1/2"	7/8"	MEDIUM	80+	15A458	25	250
5"	7/8"	X-COARSE	36+	15A503	25	250
5"	7/8"	COARSE	60+	15A506	25	250
5"	7/8"	MEDIUM	80+	15A508	25	250
6"	7/8"	X-COARSE	36+	15A603	25	250
6"	7/8"	COARSE	60+	15A606	25	250
6"	7/8"	MEDIUM	80+	15A608	25	250
7"	7/8"	X-COARSE	36+	15A703	25	250
7"	7/8"	COARSE	60+	15A706	25	250
7"	7/8"	MEDIUM	80+	15A708	25	250



## HIGHEST PERFORMANCE SANDING DISC IN STEEL

- ▷ Highest performance sanding disc in steel
- ▷ Fastest cutting sanding disc in steel
- ▷ Optimised self-sharpening ceramic grain provides extremely high stock removal in steel
- ▷ Guaranteed cost savings in steel
- ▷ Extremely long service life
- ▷ Cooling agents to ensure cool cutting to prevent burning and distortion



SCAN TO WATCH VIDEO

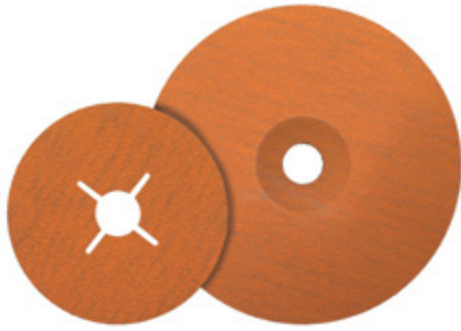


Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)



WALTER's exclusive V-STRONG™ backing technology improves durability for the most demanding applications. With more vulcanized fiber than the competition, WALTER ceramic sanding discs last longer.





- ▷ 6 times more total stock removal than aluminum oxide sanding discs
- ▷ 2 times faster cutting than aluminum oxide sanding discs
- ▷ Remove more material in less time, even when compared to some grinding wheels
- ▷ Provides a consistent surface finish, disc after disc
- ▷ Cooling agents ensure cool cutting to prevent burning and distortion

**Tech tip!**

Use with Turbo backing pads to reduce heat built-up and prolong disc life

**Exclusive packaging!**

**COOLCUT XX™ 50 packs**

Packaging that makes sense

Select grits and sizes of COOLCUT XX™ are now available in 50 packs. These specially designed packages are humidity-controlled to better preserve the sanding discs, essentially keeping them “factory fresh” and ensuring you get the best life and performance. Discs are also shrink wrapped to minimize warping.



SCAN TO WATCH VIDEO



Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)

**COOLCUT XX™**

The longest lasting, most aggressive sanding discs

COOLCUT XX™ sanding discs are formulated with our exclusive Cyclone™ Technology abrasive grain blend to provide extremely aggressive material removal rates and the longest life in the industry. These discs allow you to remove more material faster while also lasting longer than traditional aluminum oxide or zirconia alumina sanding discs, making them ideal for use in a production environment.

**REDUCE YOUR CYCLE TIME AND ELIMINATE BOTTLENECKS IN THE PRODUCTION PROCESS**



Dia.	Arbor	Grit	Order No.	Std. Pkg.	Std. Ctn.
4 1/2"	7/8"	24	15X452	25	250
4 1/2"	7/8"	36	15X453	25	250
4 1/2"	7/8"	50	15X455	25	250
4 1/2"	7/8"	60	15X456	25	250
4 1/2"	7/8"	80	15X458	25	250
4 1/2"	7/8"	100	15X460	25	250
4 1/2"	7/8"	120	15X462	25	250
5"	7/8"	24	15X502	25	250
5"	7/8"	36	15X503	25	250
5"	7/8"	50	15X505	25	250
5"	7/8"	60	15X506	25	250
5"	7/8"	80	15X508	25	250
5"	7/8"	100	15X510	25	250
5"	7/8"	120	15X512	25	250
6"	7/8"	24	15X602	25	250
6"	7/8"	36	15X603	25	250
6"	7/8"	50	15X605	25	250
6"	7/8"	60	15X606	25	250
6"	7/8"	80	15X608	25	250
6"	7/8"	100	15X610	25	250
6"	7/8"	120	15X612	25	250
7"	7/8"	24	15X702	25	250
7"	7/8"	36	15X703	25	250
7"	7/8"	50	15X705	25	250
7"	7/8"	60	15X706	25	250
7"	7/8"	80	15X708	25	250
7"	7/8"	100	15X710	25	250
7"	7/8"	120	15X712	25	250

**COOLCUT XX™ 50 pack**



Dia.	Arbor	Grit	Order No.	Std. Pkg.	Std. Ctn.
4 1/2"	7/8"	36	15X453B	50	400
4 1/2"	7/8"	50	15X455B	50	400
4 1/2"	7/8"	60	15X456B	50	400
4 1/2"	7/8"	80	15X458B	50	400
5"	7/8"	36	15X503B	50	400
5"	7/8"	50	15X505B	50	400
5"	7/8"	60	15X506B	50	400
5"	7/8"	80	15X508B	50	400

## XTRACUT™ QUICK-CHANGE

For faster disc changeouts

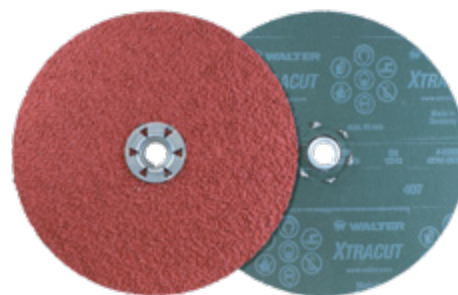
Our XTRACUT™ sanding discs are now available in a Quick-Change format for easier mounting and faster disc changeouts. Use with the new rubber backing pad for the best results.

New Quick-Change format allows you to save time on disc changes, significantly reducing lost time and associated labor costs over the course of the work day!

**SPIN-ON**



Dia.	Arbor	Grit	Equivalent Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	5/8"-11	X-COARSE	36+	15A473	13,000	25	250
4 1/2"	5/8"-11	COARSE	60+	15A476	13,000	25	250
4 1/2"	5/8"-11	MEDIUM	80+	15A478	13,000	25	250
5"	5/8"-11	X-COARSE	36+	15A523	12,200	25	250
5"	5/8"-11	COARSE	60+	15A526	12,200	25	250
5"	5/8"-11	MEDIUM	80+	15A528	12,200	25	250
6"	5/8"-11	X-COARSE	36+	15A623	10,200	25	250
7"	5/8"-11	X-COARSE	36+	15A723	8,600	25	250
7"	5/8"-11	COARSE	60+	15A726	8,600	25	250
7"	5/8"-11	MEDIUM	80+	15A728	8,600	25	250



- ▷ Ultra-fast removal rate
- ▷ Long life; high productivity
- ▷ Quick-Change attachment
- ▷ Ferrous-free formulation (will not contaminate stainless steel)
- ▷ V-STRONG™ backing improves durability for the most demanding applications.



## COOLCUT XX™ QUICK-CHANGE

With SPIN-ON™ system

Our COOLCUT XX™ sanding discs are available in a Quick-Change format for easier mounting and faster disc changeouts. Use with new rubber backing pads for the best results.

**SPIN-ON**



Dia.	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	5/8"-11	36	15X473	13,300	25	250
4 1/2"	5/8"-11	50	15X475	13,300	25	250
4 1/2"	5/8"-11	60	15X476	13,300	25	250
4 1/2"	5/8"-11	80	15X478	13,300	25	250
4 1/2"	5/8"-11	120	15X482	13,300	25	250
5"	5/8"-11	36	15X523	12,200	25	250
5"	5/8"-11	50	15X525	12,200	25	250
5"	5/8"-11	60	15X526	12,200	25	250
5"	5/8"-11	80	15X528	12,200	25	250
5"	5/8"-11	120	15X532	12,200	25	250
7"	5/8"-11	36	15X723	8,600	25	250
7"	5/8"-11	60	15X726	8,600	25	250
7"	5/8"-11	80	15X728	8,600	25	250
7"	5/8"-11	120	15X732	8,600	25	250



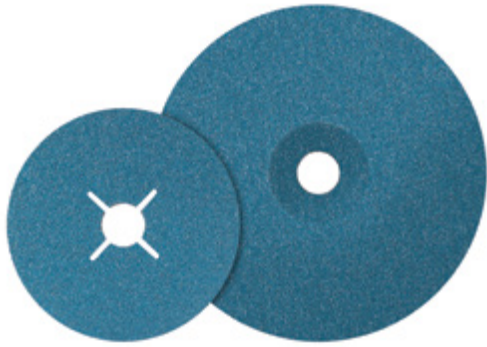
*The Quick-Change format allows you to save time on disc changes, significantly reducing lost time and associated labor costs over the course of the work day!*



### Tech tip!

Use with new rubber backing pads for 5/8"-11 threading

**EASIER MOUNTING  
AND FASTER DISC  
CHANGE OUTS**



- ▷ *Highest performance zirconia alumina sanding disc*
- ▷ *Highest total removal in the industry for a zirconia alumina disc*
- ▷ *Fast removal rate with cooler cutting to reduce heat generation and prevent warping or discoloration*
- ▷ *The ideal option for use on heat sensitive metals*

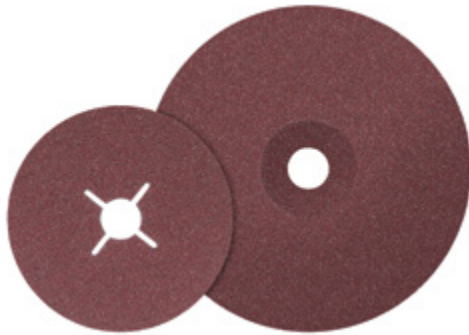
## TOPCUT™

Aggressive removal rate and extended disc life

TOPCUT™ sanding discs now remove material 50% faster than before, with a longer working life to help you maximize the efficiency of your production process. Designed using longer-lasting abrasive grains, TOPCUT™ is ideal for finishing applications on stainless steel and can improve your stock removal in more aggressive applications. Cooler sanding also guarantees your metal will not overheat, helping to preserve it and resulting in a higher quality finished product.



Dia.	Arbor	Grit	Order No.	Std. Pkg.	Std. Ctn.
4 1/2"	7/8"	24	15P452	25	250
4 1/2"	7/8"	36	15P453	25	250
4 1/2"	7/8"	60	15P456	25	250
4 1/2"	7/8"	80	15P458	25	250
5"	7/8"	24	15P502	25	250
5"	7/8"	36	15P503	25	250
5"	7/8"	60	15P506	25	250
5"	7/8"	80	15P508	25	250
7"	7/8"	24	15P702	25	250
7"	7/8"	36	15P703	25	250
7"	7/8"	60	15P706	25	250
7"	7/8"	80	15P708	25	250



- ▷ *Premium aluminum oxide abrasive grain blend*
- ▷ *High removal rate, cool cutting*
- ▷ *Most economical choice for finishing applications on steel*
- ▷ *The greatest selection of grit sizes of any WALTER sanding disc*

## COOLCUT™

General purpose sanding

COOLCUT™ is an economical solution for weld blending and finishing on steel surfaces.



Dia.	Arbor	Grit	Order No.	Std. Pkg.	Std. Ctn.
4 1/2"	7/8"	24	15C452	25	250
4 1/2"	7/8"	36	15C453	25	250
4 1/2"	7/8"	40	15C454	25	250
4 1/2"	7/8"	50	15C455	25	250
4 1/2"	7/8"	60	15C456	25	250
4 1/2"	7/8"	80	15C458	25	250
4 1/2"	7/8"	100	15C460	25	250
4 1/2"	7/8"	120	15C462	25	250
5"	7/8"	24	15C502	25	250
5"	7/8"	36	15C503	25	250
5"	7/8"	40	15C504	25	250
5"	7/8"	50	15C505	25	250
5"	7/8"	60	15C506	25	250
5"	7/8"	80	15C508	25	250
5"	7/8"	100	15C510	25	250
5"	7/8"	120	15C512	25	250
7"	7/8"	24	15C702	25	250
7"	7/8"	36	15C703	25	250
7"	7/8"	40	15C704	25	250
7"	7/8"	50	15C705	25	250
7"	7/8"	60	15C706	25	250
7"	7/8"	80	15C708	25	250
7"	7/8"	100	15C710	25	250
7"	7/8"	120	15C712	25	250

### Tech tip!

Use COOLCUT™ sanding discs with an orange backing pad to achieve a consistent scratch pattern for finishing operations.



## ERGOFLEX™

When employee safety and ergonomics are top priorities

ERGOFLEX™ is an abrasive that combines our proprietary Cyclone™ Technology grain blend with a Type 29 disc design to provide a solution for professionals looking to maximize workplace safety and ergonomics without sacrificing productivity. These wheels allow for a more comfortable working angle than Type 27 depressed center grinding wheels while minimizing the amount of noise and dust created during weld blending operations. The aggressive 36 grit abrasive grain blend also removes material quickly, allowing you to strike a perfect balance between comfort, safety, and productivity.

- ▷ **Advanced Cyclone™ Technology abrasive grain blend removes material fast for improved productivity**
- ▷ **Designed for extremely smooth, comfortable blending of both flat and curved surfaces**
- ▷ **Reduces the amount of dust generated by 95% compared to traditional grinding wheels**
- ▷ **Reduces the level of noise generated by 50% compared to a traditional grinding wheel**
- ▷ **Less risk of gouging compared to traditional grinding wheels**

### TYPE 29



Fe-S-CI  
<0.1%



Dia.	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	7/8"	36	15T453	13,300	25	200
4 1/2"	7/8"	60	15T456	13,300	25	200
4 1/2"	7/8"	80	15T458	13,300	25	200
5"	7/8"	36	15T503	12,200	25	200
5"	7/8"	60	15T506	12,200	25	200
5"	7/8"	80	15T508	12,200	25	200
6"	7/8"	36	15T603	10,200	25	100
6"	7/8"	60	15T606	10,200	25	100
6"	7/8"	80	15T608	10,200	25	100
7"	7/8"	36	15T703	8,600	25	100
7"	7/8"	60	15T706	8,600	25	100
7"	7/8"	80	15T708	8,600	25	100

Always use with flange 30B030.



### Tech tip!

Use with backing flange set 30B030 for best results. (Each pack of 25 comes with one backing flange set for your convenience)



30B030

30B031

### Accessories

Backing flange set	<b>Order No. 30B030</b>
Ergoflange 1/4" (6 mm) Pack of 5	<b>Order No. 30B031</b>

# BACKING PADS



Backing Pads	Backing Pad Assembly – Orange Backing Pads	Turbo Backing Pads - White	Turbo Backing Pads - Black	Rubber Backing Pad
<b>Application Need</b>	General purpose backing pad. Offers extra comfort and flexibility and is made from high-quality impact-resistant plastic.	Soft white pad for finishing where a wider contact area is required. Offers extra flexibility and longer life and is recommended for grit 60 and finer.	Hard black pad for weld blending and high stock removal. Offers longer life and is recommended for grit 50 and coarser.	Thick rubber orange pad for heavy-duty applications. Offers superior flexibility, exceptional resistance to wear and tear, and the longest lifespan.
<b>Durability</b>	•	• •	• • •	• • • •
<b>Flexibility</b>	• • • •	• • •	•	• •
<b>Diameter</b>	<ul style="list-style-type: none"> <li>• 4"</li> <li>• 4 1/2"</li> <li>• 5"</li> <li>• 6"</li> <li>• 7"</li> </ul>	<ul style="list-style-type: none"> <li>• 4 1/2"</li> <li>• 5"</li> <li>• 6"</li> <li>• 7"</li> </ul>	<ul style="list-style-type: none"> <li>• 4 1/2"</li> <li>• 5"</li> <li>• 6"</li> <li>• 7"</li> </ul>	<ul style="list-style-type: none"> <li>• 4 1/2"</li> <li>• 5"</li> <li>• 6"</li> <li>• 7"</li> </ul>
<b>Works Best With</b>	COOLCUT XX™, TOPCUT™, COOLCUT™	All Fiber Discs	XTRACUT XX™, XTRACUT™, COOLCUT XX™	XTRACUT XX™, XTRACUT™, COOLCUT XX™



▷ High-quality impact resistant plastic with maximum flexibility

## BACKING PAD ASSEMBLIES

The economical choice for light-duty work and maximum flexibility.



Dia.	Arbor	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4"	M10 × 1.25	15D030	15,000	1	10
4"	3/8"-24	15D035	15,000	1	10
4 1/2"	5/8"-11	15D044	13,300	1	10
5"	5/8"-11	15D054	12,200	1	10
6"	5/8"-11	15D064	10,200	1	10
7"	5/8"-11	15D027	8,600	1	10

## BACKING PADS



- ▷ *Hard black pad, for weld blending and high stock removal*
- ▷ *Excellent heat dissipation for longer life*
- ▷ *Recommended for grit 50 and coarser*



### **TURBO BACKING PAD ASSEMBLIES (Black and white)**

Special saucer-shaped backing pad with ribbed backing. Ensures a continuous stream of air between pad and disc for cool operation and long disc life. The ideal choice for COOLCUT XX™.



Dia.	Arbor	Color	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 ½"	⅝"-11	Black	15M044	13,300	1	10
4 ½"	⅝"-11	White	15M045	13,300	1	10
5"	⅝"-11	Black	15M054	12,200	1	10
5"	⅝"-11	White	15M055	12,200	1	10
6"	⅝"-11	Black	15M064	10,200	1	10
6"	⅝"-11	White	15M065	10,200	1	10
7"	⅝"-11	Black	15M007	8,600	1	10
7"	⅝"-11	White	15M008	8,600	1	10

- ▷ *Soft white pad, extra flexible for surface finishing where a wider contact area is required*
- ▷ *Excellent heat dissipation for longer life*
- ▷ *Recommended for grit 60 and finer*
- ▷ *New nut – easier to tighten by hand*

### **HIGH-PERFORMANCE RUBBER BACKING PAD ASSEMBLIES**

High-performance rubber backing pad withstands pressure while providing superior flexibility. This backing pad can be used with sanding discs with 7/8" hole as well as Quick-Change sanding discs COOLCUT XX™, XTRACUT™, AND XTRACUT XX™.



**SPIN-ON**

Dia.	Arbor	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 ½"	⅝"-11	15D144	13,300	1	10
5"	⅝"-11	15D154	12,200	1	10
6"	⅝"-11	15D164	10,200	1	10
7"	⅝"-11	15D127	8,600	1	10



- ▷ *Optimal flexibility*
- ▷ *Withstands high pressure*
- ▷ *Longest-lasting backing with medium flexibility*

#### Accessories

##### Clamping nuts for rubber backing pad

For 4 ½" and 5" rubber backing pads

**Order No.** 15D024

For 7" rubber backing pads

**Order No.** 15H025

Pin key for rubber backing pad

**Order No.** 48Z149



# FLAP WHEELS



### GRIT - FEPA EQUIVALENT

Medium	150
Fine	180
Extra fine	220
Extra fine, flexible	220
Polishing	360

### Accessories

#### Reducer bushing

1" wide, from 1 1/4" to 1", 3/4", 5/8", 1/2".

Order No. 12E010



#### Mandrel for finishing wheels

Plastic, 8 mm shaft, self-expanding, flush mounting for 1" thick wheels

Order No. 07C003



### Accessories

#### Steel flanges

Reducer from 1" to 5/8" spindle

Order No. 15G962



## TWO-IN-ONE™ FLAP WHEELS

Combine two steps in one. The TWO-IN-ONE™ Flap Wheels remove material nearly as fast as regular flap wheels while leaving a finer finish.



Dia.	Width	Shaft	Grit	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
2"	1"	1/4"	Fine	15E124	12,000	8,400	1	10
2"	1"	1/4"	Extra fine	15E126	12,000	8,400	1	10
3"	1 3/4"	1/4"	Medium	15E162	8,000	5,600	1	10
3"	1 3/4"	1/4"	Fine	15E164	8,000	5,600	1	10
3"	1 3/4"	1/4"	Extra fine	15E166	8,000	5,600	1	10
3"	1 3/4"	1/4"	Extra fine, flex.	15E167	8,000	5,600	1	10
3"	1 3/4"	1/4" *	Polishing	15E168	8,000	5,600	1	10

\* BLENDEX™ non-woven material only.



Dia.	Width	Arbor Hole	Grit	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
6"	1"	1 1/4"	Fine	15E295	3,600	2,500	1	10
6"	1"	1 1/4"	Extra fine	15E296	3,600	2,500	1	10

## COOLCUT™ FLAP WHEELS

Excellent for weld blending and general finishing work. Mounted with a pair of flanges for use on straight shaft or bench grinders.



Dia.	Width	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
6 1/2"	1"	1"	60	15G206	5,200	1	10
6 1/2"	1"	1"	80	15G208	5,200	1	10
6 1/2"	1"	1"	120	15G212	5,200	1	10
6 1/2"	2"	1"	60	15G306	5,200	1	10
6 1/2"	2"	1"	80	15G308	5,200	1	10
6 1/2"	2"	1"	120	15G312	5,200	1	10

# COOLCUT™ FLAP WHEELS

High quality and a consistent finish

COOLCUT™ Flap Wheels are ideal for general purpose blending, shaping, and deburring. They are made from the highest quality abrasive grains and are perfectly balanced to provide a uniform, grained satin finish. No matter the application, COOLCUT™ Flap Wheels provide consistently excellent results.

## 1/4" SHAFT

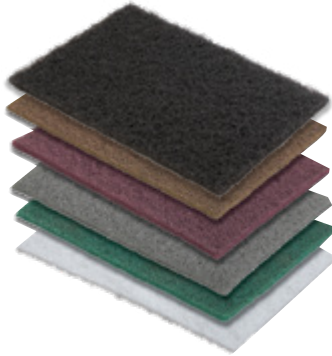


Dia.	Width	Grit	Order No.	Max. RPM	Optimal RPM	Std. Pkg.*	Std. Ctn.
5/8"	3/4"	60	15F016	30,000	15,000	10	100
5/8"	3/4"	80	15F018	30,000	15,000	10	100
3/4"	3/4"	120	15F022	30,000	15,000	10	100
3/4"	3/4"	180	15F028	30,000	15,000	10	100
1"	3/8"	40	15F054	30,000	15,000	10	100
1"	3/8"	60	15F056	30,000	15,000	10	100
1"	3/8"	80	15F058	30,000	15,000	10	100
1"	3/8"	120	15F062	30,000	15,000	10	100
1"	1"	40	15F154	30,000	15,000	10	100
1"	1"	60	15F156	30,000	15,000	10	100
1"	1"	80	15F158	30,000	15,000	10	100
1"	1"	120	15F162	30,000	15,000	10	100
1 1/2"	3/8"	40	15F004	25,000	13,000	10	100
1 1/2"	3/8"	60	15F006	25,000	13,000	10	100
1 1/2"	3/8"	80	15F008	25,000	13,000	10	100
1 1/2"	3/8"	120	15F012	25,000	13,000	10	100
1 1/2"	1"	40	15F104	25,000	13,000	10	100
1 1/2"	1"	60	15F106	25,000	13,000	10	100
1 1/2"	1"	80	15F108	25,000	13,000	10	100
1 1/2"	1"	120	15F112	25,000	13,000	10	100
1 1/2"	1"	240	15F124	25,000	13,000	10	100
2 1/2"	1 1/2"	40	15F504	20,000	11,000	10	100
2 1/2"	1 1/2"	60	15F506	20,000	11,000	10	100
2 1/2"	1 1/2"	80	15F508	20,000	11,000	10	100
2 1/2"	1 1/2"	120	15F512	20,000	11,000	10	100
2 1/2"	1 1/2"	240	15F524	20,000	11,000	10	100
2"	3/8"	40	15F204	25,000	13,000	10	100
2"	3/8"	60	15F206	25,000	13,000	10	100
2"	3/8"	80	15F208	25,000	13,000	10	100
2"	3/8"	120	15F212	25,000	13,000	10	100
2"	1"	40	15F304	25,000	13,000	10	100
2"	1"	60	15F306	25,000	13,000	10	100
2"	1"	80	15F308	25,000	13,000	10	100
2"	1"	120	15F312	25,000	13,000	10	100
2"	1"	80	15F313	20,000	11,000	10	100
2"	1"	240	15F324	25,000	13,000	10	100
3"	1"	40	15F704	20,000	11,000	10	100
3"	1"	60	15F706	20,000	11,000	10	100
3"	1"	80	15F708	20,000	11,000	10	100
3"	1"	40	15F709	20,000	11,000	10	100
3"	1"	60	15F711	20,000	11,000	10	100
3"	1"	120	15F712	20,000	11,000	10	100
3"	1"	60	15F713	20,000	11,000	10	100
3"	1 1/2"	40	15F804	20,000	11,000	10	100
3"	1 1/2"	60	15F806	20,000	11,000	10	100
3"	1 1/2"	80	15F808	20,000	11,000	10	100
3"	1 1/2"	120	15F812	20,000	11,000	10	100
3"	1 1/2"	240	15F824	20,000	11,000	10	100
3"	2"	40	15F904	20,000	11,000	10	100
3"	2"	60	15F906	20,000	11,000	10	100
3"	2"	80	15F908	20,000	11,000	10	100
3"	2"	120	15F912	20,000	11,000	10	100

\* Can also be sold by the unit.



# HAND ABRASIVES



**Hand pads:**

- ▷ Pads are washable and can be reused
- ▷ Replace steel wool with no rusting, splintering, or contamination of the workpiece



**Rolls:**

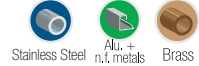
- ▷ Can easily be cut into strips of desired size
- ▷ For manual or machine operations
- ▷ Ideal for removing rust and corrosion

## BLENDIX™ HAND FINISHING ABRASIVES

Flexible rolls and sheets for general purpose sanding, deburring, surface cleaning, and finishing. They easily adapt to irregular surfaces making them indispensable in repair or maintenance applications.

### HAND PADS

Fe-S-CI  
<0.1%



Size	Order No.	Color	Type	Std. Pkg.
6" x 9"	07A100	Maroon	Blending	60
6" x 9"	07A200	Grey	Finishing/Polishing	60
6" x 9"	07A300	Tan	Heavy-duty	60
6" x 9"	07A400	Green	General purpose	60
6" x 9"	07A500	White	Cleaning	60
6" x 9"	07A600	Black	Finishing/Surface Preparation	60

#### Accessory

**Hand pad holder**

With molded hook pattern for positive pad holding and easy grip handle  
3" x 6"

**Order No.** 07A001



### ROLLS

Fe-S-CI  
<0.1%



Width	Length	Order No.	Color	Type	Std. Pkg.	Std. Ctn.
4"	30'	07B104	Maroon	Blending	1	10
4"	30'	07B204	Grey	Finishing/Polishing	1	10
4"	30'	07B304	Tan	Heavy-duty	1	10
4"	30'	07B404	Green	General purpose	1	10
4"	30'	07B504	White	Cleaning	1	10

### Tech tip!

Use white hand pad (Order no.: 07A500) or roll (Order no.: 07B504) with SURFOX™ PRE-WELD to clean soiled surfaces.



**SURFOX™ PRE-WELD**  
Order No. 54A083



# COOLCUT™ SHOP ROLLS AND HAND SHEETS

COOLCUT™ cloth abrasives are made from fast-cutting aluminum oxide grain resin-bonded onto a wear-resistant high-quality cotton cloth backing for cool and effective cutting. Get through general sanding, light removal and deburring, surface cleaning, and finishing fast.

## SHOP ROLLS

Fe-S-CI  
<0.1%



Width	Length	Grit	Order No.	Std. Pkg.	Std. Ctn.
1"	50 yards	60	14C106	1	10
1"	50 yards	80	14C108	1	10
1"	50 yards	100	14C110	1	10
1"	50 yards	120	14C112	1	10
1"	50 yards	180	14C118	1	10
1"	50 yards	240	14C124	1	10
1"	50 yards	320	14C132	1	10
1 ½"	50 yards	60	14C206	1	10
1 ½"	50 yards	80	14C208	1	10
1 ½"	50 yards	100	14C210	1	10
1 ½"	50 yards	120	14C212	1	10
1 ½"	50 yards	180	14C218	1	10
1 ½"	50 yards	240	14C224	1	10
1 ½"	50 yards	320	14C232	1	10
2"	50 yards	60	14C306	1	10
2"	50 yards	80	14C308	1	10
2"	50 yards	100	14C310	1	10
2"	50 yards	120	14C312	1	10
2"	50 yards	180	14C318	1	10
2"	50 yards	240	14C324	1	10
2"	50 yards	320	14C332	1	10



- ▷ Premium J-weight cloth backing for long life and flexibility
- ▷ Ideal for use in maintenance shops, machine shops, manufacturing plants, and more
- ▷ Safe for use on all metals

## HAND SHEETS

Fe-S-CI  
<0.1%



Dimensions	Grit	Order No.	Std. Pkg.	Std. Ctn.
9" x 11"	40	14A904	25	250
9" x 11"	40	14A904A	5	250
9" x 11"	60	14A906	25	250
9" x 11"	60	14A906A	5	250
9" x 11"	80	14A908	25	250
9" x 11"	80	14A908A	5	250
9" x 11"	100	14A910	25	250
9" x 11"	100	14A910A	5	250
9" x 11"	120	14A912	25	250
9" x 11"	120	14A912A	5	250
9" x 11"	180	14A918	25	250
9" x 11"	180	14A918A	5	250
9" x 11"	240	14A924	25	250
9" x 11"	240	14A924A	25	250
9" x 11"	320	14A932	25	250
9" x 11"	320	14A932A	5	250



- ▷ Woven backing is extra tough but tears straight for easy sizing
- ▷ Wear resistant and high performing
- ▷ Long lasting and cool cutting

\* 2 x 14A932, 2 x 14A918, 1 x 14A906

# LINEAR SURFACE FINISHING SYSTEM



**The LINE-MATE linear surface finishing system** is the most versatile tool for applications that involve applying a linear scratch pattern. LINE-MATE features a complete range of innovative abrasives designed to match any linear finish and reduce your finishing costs. Whether you work with stainless steel, aluminum, brass, copper, or other alloys, LINE-MATE allows you to achieve the desired finish quickly and with minimal effort.

*This is the finish you get for each product if used on a 2B stainless steel surface.*



DRUMS	Product	Application	Product category	Type of finish	Pre-finishing	Coarse finish	Sanitary	Pharma	Light polish	Mirror finish
				Ra	(>60 μin)	(60-50 μin)	(40-25 μin)	(16-12 μin)	(8-4 μin)	(4-1 μin)
				Grit size						
	FX™ Drums @2000 RPM	Cleaning	07-L	Coarse						
	COOLCUT™ Flap Drums @2000 RPM	Graining	07-J	40						
				60						
				80						
				120						
	BLENDEX™ Drums @2000 RPM	Finishing	07-M	Coarse						
				Medium						
				Fine						
				Super Fine						
				Ultra Fine						
	2-in-1 TURBO Drums @2000 RPM	Graining	07-K	60						
	2-in-1 Drums @2000 RPM	Linear finishing	07-K	80						
Buffing Drums and polishing pastes @2000 RPM	Applying a mirror finish	07T+ paste	Instant Polish 1000-1500							
		07T+ paste	Ultimate Shine 2000-2500							

BELTS	Product	Application	Product category	Type of finish	Pre-finishing	Coarse finish	Sanitary	Pharma	Light polish	Mirror finish
				Ra	(>60 μin)	(60-50 μin)	(40-25 μin)	(16-12 μin)	(8-4 μin)	(4-1 μin)
				Grit size						
	Cloth Drum Belts @2000 RPM	Removing deep scratches (stock removal)	07-F	40						
				60						
				80						
				120						
BLENDEX™ Drum Belts @2000 RPM	Graining and finishing	07-H	Coarse							
			Medium							
			Fine							
			Super Fine							
High Polish Drum Belts, Instant Polish Drum Belts and polishing pastes	Applying a mirror finish	07T+ paste	Instant Polish 1000-1500							
		07T+ paste	Ultimate Shine 2000-2500							

# LINE-MATE LINEAR SURFACE FINISHING SYSTEM

The professional choice for applying a linear finish

The LINE-MATE III™ surface finishing system is the most versatile method for all applications where a linear scratch pattern is required. Whether you need to grind, sand, clean, buff, or polish a metal surface, this system offers the most complete range of products to match the desired surface finish.

**LINE-MATE III™ high efficiency drum sander**  
See page 162 for details

**Pneumatic drum and belts**



**Drive roller and T-LOCK™ belts - for pipes, tubing and railings**

**Drums**



- ▷ *Ideal for graining and light metal removal and as a first step in the finishing process*
- ▷ *Will give a consistent and uniform finish*
- ▷ *Will not load or glaze*



- ▷ *Combine two finishing steps into one: The coated abrasive cloth cuts aggressively while the interweaved BLENDX™ flaps produce a satin linear finish*



- ▷ *Removes like a grinding belt while the interweaved BLENDX™ flaps produce a #3 finish*

## COOLCUT™ FLAP DRUMS



Dia.	Width	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/4"	2"	5/8"-11	40	07J424	3,800	1	10
4 1/4"	2"	5/8"-11	60	07J426	3,800	1	10
4 1/4"	2"	5/8"-11	80	07J428	3,800	1	10
4 1/4"	2"	5/8"-11	120	07J432	3,800	1	10
4 1/4"	4"	5/8"-11	40	07J444	3,800	1	10
4 1/4"	4"	5/8"-11	60	07J446	3,800	1	10
4 1/4"	4"	5/8"-11	80	07J448	3,800	1	10
4 1/4"	4"	5/8"-11	120	07J452	3,800	1	10

## TWO-IN-ONE™ DRUMS



Dia.	Width	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	2"	5/8"-11	80	07K422	3,800	1	10
4 1/2"	4"	5/8"-11	80	07K442	3,800	1	10

## ALLSTEEL™ TWO-IN-ONE™ DRUMS



Dia.	Width	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/4"	2"	5/8"-11	80	07K322	3,800	1	10
4 1/4"	4"	5/8"-11	80	07K342	3,800	1	10

## TWO-IN-ONE™ TURBO DRUMS



Dia.	Width	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	2"	5/8"-11	60	07K421	3,800	1	10
4 1/2"	4"	5/8"-11	60	07K441	3,800	1	10



## BLENDEx™ DRUMS



Dia.	Width	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	2"	5/8"-11	Coarse	07M422	3,800	1	10
4 1/2"	2"	5/8"-11	Medium	07M423	3,800	1	10
4 1/2"	2"	5/8"-11	Fine	07M424	3,800	1	10
4 1/2"	2"	5/8"-11	Super fine	07M425	3,800	1	10
4 1/2"	4"	5/8"-11	Coarse	07M441	* 3,800	1	10
4 1/2"	4"	5/8"-11	Coarse	07M442	* 3,800	1	10
4 1/2"	4"	5/8"-11	Medium	07M443	* 3,800	1	10
4 1/2"	4"	5/8"-11	Fine	07M444	3,800	1	10
4 1/2"	4"	5/8"-11	Super fine	07M445	3,800	1	10
4 1/2"	4"	5/8"-11	Ultra fine	07M446	** 3,800	1	10



- ▷ Can be used to polish, burnish, blend, deburr, clean, and brighten stainless steel, aluminum, brass, copper, and other alloys
- ▷ High quality non-wovens
- ▷ High flap density due to high compression during the manufacturing process

## ALLSTEEL™ BLENDEx™ DRUMS



Dia.	Width	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/4"	2"	5/8"-11	Coarse	07M322	3,800	1	10
4 1/4"	2"	5/8"-11	Medium	07M323	3,800	1	10
4 1/4"	2"	5/8"-11	Fine	07M324	3,800	1	10
4 1/4"	4"	5/8"-11	Coarse	07M342	3,800	1	10
4 1/4"	4"	5/8"-11	Medium	07M343	3,800	1	10
4 1/4"	4"	5/8"-11	Fine	07M344	3,800	1	10

\* 07M442 and 07M443: Now with "Perfect Brushed Finish" technology. Exclusive to WALTER, this technology provides a shadow-free finish right from the start.

\*\* Ultra-Fine HG (High Gloss) drums are ideal for enhancing and brightening existing finishes, taking out stains in metals and bringing out a new lustre in work surfaces.



- ▷ Foam impregnation makes the drums denser and longer-lasting
- ▷ Can be used in water
- ▷ For high-density applications such as deburring

## BLENDEx™ FOAM DRUMS



Dia.	Width	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	2"	5/8"-11	Coarse	07M411	3,800	1	10
4 1/2"	4"	5/8"-11	Super Fine	07P445	3,800	1	10

## INOX TAPE

Excellent for a perfect mitred corner finish

Length	Width	Thick.	Order No.	Std. Pkg.
16' 3/8"	1 37/64"	3/600"	07T100	1
30'	3/4"	1/100"	07T105	1

- ▷ Thin stainless steel tape with adhesive strip
- ▷ Use only on cool surfaces



## BUFFING DRUMS



Dia.	Width	Arbor	Grit	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
4 3/4"	2"	5/8"-11	Multi-ply cotton	07T425	3,800	1,700 to 2,200	1	10
4 3/4"	2"	5/8"-11	Fold cotton	07T427	3,800	1,700 to 2,200	1	10

Use with polishing pastes.

- ▷ Popular applications include upgrading of #4 finishes, polishing to a food grade finish, repairing minor scratches, etc.



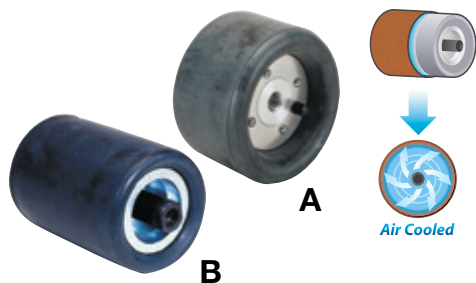
Multi-Ply (Harder)      Fold (Softer)

- ▷ Ideal for enhancing and brightening existing finishes, taking out stains in metals and bringing out a new lustre in work surfaces
- ▷ Use with polishing pastes for a mirror finish

## HIGH POLISH™ DRUM BELTS



Width	Length	Dia.	Color	Order No.	Std. Pkg.	Std. Ctn.
5 3/8"	11 5/8"	3 1/2"	White	07T530	1	10
5 3/8"	11 5/8"	3 1/2"	Yellow	07T534	1	10



## PNEUMATIC DRUMS



### Accessories

Photo	Width	Dia.	Arbor	Max. RPM	Order No.
A	3 1/2"	5"	5/8"-11	3,800	07F037*
B	5 3/8"	3 1/2"	5/8"-11	3,800	07F051

\*MUST USE extension for pneumatic drum A

### Replacement rubber bladder assemblies

3 1/2" x 5" (for drum A)	07F093
5 3/8" x 3 1/2" (for drum B)	07F095
Valve core for both drums	07F013

Put a cushion of air between your abrasives to:

- ▷ Eliminate edge cutting and swirl marks
- ▷ Increase sandpaper life by reducing heat build-up
- ▷ Allow more flexibility – conforms to curved surfaces

- ▷ Improves productivity with 3 inserts to allow easy drum belt change



- ▷ Longer lasting due to its premium rubber material
- ▷ Eliminates the need to have access to an air line
- ▷ With metal spin-on arbor – 5/8"-11\*

## EXPANDING DRUM



### Accessory

Width	Dia.	Arbor	Max. RPM	Order No.
5 3/8"	3 1/2"	5/8"-11	3,800	07F061



- ▷ Allows you to create or restore linear finishes, level off small welds, round corners, remove deep scratches, etc.
- ▷ Equipped with taped butt-joints for longer life and higher removal rates

## COOLCUT XX™ DRUM BELTS



Width	Length	Dia.	Grit	Order No.	Std. Pkg.	Std. Ctn.
3 1/2"	15 1/2"	5"	40 TOPCUT	07F364	5	100
3 1/2"	15 1/2"	5"	60 COOLCUT XX	07F366	5	100
3 1/2"	15 1/2"	5"	80 COOLCUT XX	07F368	5	100
3 1/2"	15 1/2"	5"	120 COOLCUT XX	07F371	5	100
5 3/8"	11 5/8"	3 1/2"	40 TOPCUT	07F504	5	100
5 3/8"	11 5/8"	3 1/2"	60 COOLCUT XX	07F506	5	100
5 3/8"	11 5/8"	3 1/2"	80 COOLCUT XX	07F508	5	100
5 3/8"	11 5/8"	3 1/2"	120 COOLCUT XX	07F511	5	100



- ▷ **Coarse:** For tough cleaning or removing rust and small scratches
- ▷ **Medium:** For conditioning and removing surface imperfections
- ▷ **Fine:** For fine surface refinements
- ▷ **Super fine:** Use to produce decorative finishes or as a last step before applying a mirror finish

## BLENDEX™ DRUM BELTS



Width	Length	Dia.	Grit	Order No.	Std. Pkg.	Std. Ctn.
3 1/2"	15 1/2"	5"	Coarse	07H362	1	10
3 1/2"	15 1/2"	5"	Medium	07H363	1	10
3 1/2"	15 1/2"	5"	Fine	07H364	1	10
3 1/2"	15 1/2"	5"	Super fine	07H365	1	10
5 3/8"	11 5/8"	3 1/2"	Coarse	07H502	1	10
5 3/8"	11 5/8"	3 1/2"	Medium	07H503	1	10
5 3/8"	11 5/8"	3 1/2"	Fine	07H504	1	10
5 3/8"	11 5/8"	3 1/2"	Super fine	07H505	1	10



- ▷ Achieve a #8 mirror finish in just one step
- ▷ The polishing paste comes pre-applied on the belt
- ▷ Packed in a resealable bag that protects the belt from contaminants and drying

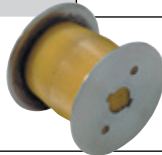


- ▷ Ideal for cleaning or finishing pipes, tubes, and railings
- ▷ Produces a new sheen on tarnished pipes
- ▷ T-Lock allows quick and easy access when finishing closed loop workpieces



**Accessory**

**Belt drive roller**  
3 1/4" x 2 3/4" x 5/8"-11  
Order No. 07F002



- ▷ Allows you to use T-Lock belts with the Line-Mate III tool for finishing pipes, tubing, and railing



**INSTANT POLISH™ DRUM BELTS**

One-step solution for achieving a #8 mirror finish



Width	Length	Dia.	Order No.	Std. Pkg.	Std. Ctn.
5 3/8"	11 5/8"	3 1/2"	07T536	1	10

**BLENDEX™ T-LOCK BELTS**



Width	Length	Grit	Color	Order No.	Std. Pkg.	Std. Ctn.
1 3/16"	24"	Coarse	Tan	07H242	3	48
1 3/16"	24"	Medium	Maroon	07H243	3	48
1 3/16"	24"	Fine	Blue	07H244	3	48
1 3/16"	24"	Super fine	Grey	07H245	3	48

**T-LOCK POLISHING FELT BELT**



Width	Length	Color	Order No.	Std. Pkg.	Std. Ctn.
1 3/16"	24"	White	07T225	3	48

Use with polishing paste.



**HAND RAIL FINISHING KIT**

Order No. 07H992

**Includes:**

- 1 belt drive roller (07F002)
- 4 BLENDEX™ strip belts:
  - 1 coarse (07H242)
  - 1 medium (07H243)
  - 1 fine (07H244),
  - 1 super fine (07H245).



## FX™ FLEX DRUMS

Clean welds and finish the surface in one step

Use the FX™ FLEX drum to easily clean TIG and MIG welds while leaving a fine #4 finish on your metal surfaces. This product is ideal for cleaning uneven surfaces like checker plates. FX™ FLEX drums are made with a lower-density material which allows you to achieve a perfectly uniform fine #4 finish on your metal surfaces. Save time and replace multiple tools with just one with FX™ FLEX drums.



Dia.	Width	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	2"	5/8"-11	Flex coarse	07L422	3,800	1	10
4 1/2"	4"	5/8"-11	Flex coarse	07L442	3,800	1	10

### FX™ DRUMS



Dia.	Width	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	2"	5/8"-11	Coarse	07L420	3,800	1	10
4 1/2"	4"	5/8"-11	Coarse	07L440	3,800	1	10

### FX™ DRUMS REVERSIBLE



Dia.	Width	Arbor	Grit	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	4"	5/8"-11	Coarse	07L441	3,800	1	10

### LINEAR CRIMPED BRUSHES



Dia.	Width	Arbor	Wire size	Wire type	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	2"	5/8"-11	.01"	Tempered steel	13M454	4,000	1	10

### LINEAR CRIMPED BRUSHES



Dia.	Width	Arbor	Wire size	Wire type	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	2"	5/8"-11	.01"	S/S 304	13M464	4,000	1	10

## LINE-MATE III™ SYSTEM

Linear finishing made easy

The LINE-MATE III™ is a versatile variable speed tool that allows you to quickly and easily apply a wide range of linear finishes to metal surfaces. Its powerful motor will help you complete even the toughest jobs with ease. RPM remains constant under load for a consistent and uniform finish every time. When you have a project that requires a linear scratch pattern applied to the surface, trust LINE-MATE to get the job done quickly and efficiently.

#### Includes:

- 1 LINE-MATE III™ with standard equipment plus carrying case
- 1 expanding drum (07F061)
- 6 cloth drum belts (2 each grit: 60: 07F506, 80: 07F508 and 120: 07F511)
- 2 BLENDEX™ drum belts (Coarse: 07H502, medium: 07H503)
- 1 TWO-IN-ONET™ drum (4 1/4" x 4": 07K342)
- 1 BLENDEX™ drum (4 1/4" x 4" medium: 07M343)

Model	Order No.	Spindle RPM	Thread	Motor	Amps	Weight
6268 KIT	30A269	1,000–3,800	5/8"-11	120V A.C. only	12.4 A	16 lbs



- ▷ More flexible non-woven mesh – cleans any uneven surface
- ▷ Clean TIG and MIG welds and leave a fine #4 finish
- ▷ Perfect on stainless steel



- ▷ Open web-like construction assures cool operation that resists loading
- ▷ Will strip paint with ease, remove rust and scale
- ▷ Firm coarse non-woven flaps for tough cleaning applications



- ▷ Reversible for uniform wear on uneven surfaces



- ▷ Perfect for a ready-to-paint finish
- ▷ Cleans large surfaces faster
- ▷ Provides a smooth linear finish
- ▷ The best solution to clean uneven surfaces

- ▷ Follows the direction of the grain
- ▷ The fastest way to clean oxidized and discolored welds



Scan the QR code to learn how the Line-Mate™ III can help you achieve consistent linear finishes

FINISHING TUBES, RAILS AND PIPES

**RAIL-MATE™**

Remove welds and finish pipes, tubes and railings faster

The RAIL-MATE™ allows you to use our premium abrasive products in a new belt format to finish pipes, tubes, and railings. This powerful finishing tool features variable speed settings so that you can tackle any job from blending welds or heavy stock removal all the way to polishing and finishing surfaces. Easily create a linear scratch pattern around the circumference of pipes, tubes, and rails with RAIL-MATE™.

See page 161 for more details



**TACKLE ANY APPLICATION**  
FROM HEAVY STOCK  
REMOVAL TO POLISHING

**Benefits**

- ▷ Allows you to quickly switch between abrasives to take time and cost out of finishing jobs
- ▷ Durable industrial tool that is built to last, saving you from having to replace your power tools every few months
- ▷ Designed to exceed all safety standards, creating a safer work environment

**Features**

- ▷ Dialspeed™ variable speed control allows you to quickly go from 1,600-3,200 RPM to tackle any application from heavy stock removal to polishing
- ▷ Powerful 1,200W industrial motor with Dynamax™ RPM monitoring to maintain constant RPM under load
- ▷ Soft Start™ technology helps to avoid kickback when starting the tool

**Tech tip!**

Use faster speeds for heavy stock removal and lower speeds for finishing.

*Finish (roughness average) obtained when using each product on 2B stainless steel surface.*



Product	Application	Product category	Type of finish	Pre-finishing	Coarse finish	Sanitary	Pharma	Light polish	Mirror finish
			Ra	(>60 μin)	(60-50 μin)	(40-25 μin)	(16-12 μin)	(8-4 μin)	(4-1 μin)
			Grit size						
COOLCUT XX™ Drums	Blending	14-X	40	■					
			60		■				
			80			■			
			120				■		
BLENDEX™ Belts	Surface conditioning	07-D	Coarse			■			
			Medium				■		
			Fine					■	
High Polish Belts	Mirror finishing	07T+ paste	Instant Polish 1000-1500						■
		07T+ paste	Ultimate Shine 2000-2500						■

# COOLCUT XX™ BELTS

For heavy stock removal

These coated abrasive belts use our exclusive Cyclone™ Technology with a premium ceramic abrasive grain blend to provide an extremely aggressive removal rate and long working life. This means you can remove weld beads and finish surfaces faster, reducing cycle time and taking labor time and cost out of the operation.



## Benefits

- ▷ Reduce cycle time to take labor time and cost out of the job
- ▷ Long-lasting performance to avoid frequent belt changeouts and trips to the tool crib
- ▷ Consistent removal rate and surface finish throughout the life of the belt

## Features

- ▷ Premium Cyclone™ Technology ceramic abrasive grain blend for the fastest removal and longest life in the industry
- ▷ Flexible cloth backing for any curved surface
- ▷ Guaranteed not to contaminate stainless steel (Fe-S-CL free)

## COOLCUT XX™ RAIL-MATE BELTS



Width	Length	Grit	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
1 1/2"	30"	40	14X154	3,200	2,900	5	100
1 1/2"	30"	60	14X156	3,200	2,900	5	100
1 1/2"	30"	80	14X158	3,200	2,900	5	100
1 1/2"	30"	120	14X162	3,200	2,900	5	100

# BLENDEX™ BELTS

For surface conditioning and removing fine scratches

Our proprietary BLENDEX™ belts outlast the competition and provide a consistent, uniform surface finish throughout the life of the belt. These non-woven belts excel at removing scratches and light corrosion or oxidation from stainless steel or aluminum tubes, rails, or pipes.



## Benefits

- ▷ Long lasting product that outlasts and outperforms the competition
- ▷ Quickly produces a new sheen on tarnished pipes
- ▷ Safe for use on all common metals and alloys

## Features

- ▷ Non-woven design ensures consistent performance from start to finish
- ▷ Premium abrasive grain blend for maximum performance
- ▷ Will not clog or load on aluminum and other non-ferrous metals

## BLENDEX™ RAIL-MATE BELTS



Width	Length	Grit	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
1 1/2"	30"	Coarse	07D152	3,200	2,500	5	100
1 1/2"	30"	Medium	07D153	3,200	2,500	5	100
1 1/2"	30"	Fine	07D154	3,200	2,500	5	100

# POLISHING BELTS

For applying a decorative or mirror finish

These durable belts are made of a special material that allows you to apply up to a #8 mirror finish with the use of our polishing pastes.



## Features

- ▷ Durable construction provides a long working life
- ▷ Extremely flexible to provide a superior surface finish

## RAIL-MATE POLISHING BELTS



Width	Length	Color	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
1 1/2"	30"	Yellow	07T220	3,200	1,600	5	20

# POLISHING PASTES

For use with felt, high polish, and instant polish discs

NSF category A7, registration #152698 (Instant Polish)  
NSF category A7, registration #154489 (Ultimate Shine)



Name	Order No.	Weight	Grit	Std. Pkg.	Std. Ctn.
White paste	07T901	600 g	1200-1500	1	10
Blue paste	07T905	650 g	2000	1	10
Instant polish paste	07T907	1200 g	1000-1500	1	5
Ultimate Shine™ paste	07T909	1300 g	2000-2500	1	5





## COATED ABRASIVE FILE BELTS

WALTER offers a complete line of file belts for general purpose sanding, light weld removal, surface cleaning, blending, deburring, and finishing of intricate shapes and profiles. An extra heavy-duty backing (Y-polyester) with a special butt-joint and glue ensure the longest belt life even in the most demanding applications.

- ▶ *Made with premium abrasive grain blends for fast material removal on all metal surfaces*
- ▶ *Excellent for contour and shape sanding applications requiring flexibility and fray resistance*



TOPCUT+

INOX+

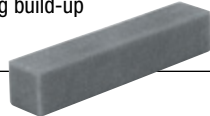
- ▶ *Made from top quality grain for sanding and finishing of stainless steel*
- ▶ *Leaves a smooth and bright surface finish*

### Accessory

#### Rubber cleaning stick

Prolongs the life of drum belts by removing build-up

Order No. 14E001



## NON-WOVEN ABRASIVE FILE BELTS

Assortment of non-woven abrasive file belts made with special reinforced nylon and abrasive grain to achieve a consistent and uniform finish. Conform to irregular surfaces with minimal smearing and discoloration of the workpiece.



- ▶ *Will not gouge or burn surfaces*
- ▶ *Specially formulated to resist loading and heat build-up*
- ▶ *Very flexible and suitable for edge finishing*
- ▶ *High performance butt-joint eliminates breakage*

### TOPCUT+ FILE BELTS



Width	Length	Grit	Order No.	Std. Pkg.	Std. Ctn.
1/2"	18"	36	14D033	25	200
1/2"	18"	60	14D036	25	200
1/2"	18"	80	14D038	25	200
1/2"	24"	36	14D053	25	200
1/2"	24"	60	14D056	25	200
1/2"	24"	80	14D058	25	200
3/4"	18"	36	14D103	25	200
3/4"	18"	60	14D106	25	200
3/4"	18"	80	14D108	25	200

### INOX+ FILE BELTS



Width	Length	Grit	Order No.	Std. Pkg.	Std. Ctn.
1/2"	18"	36	14B033	25	200
1/2"	18"	60	14B036	25	200
1/2"	18"	80	14B038	25	200
1/2"	18"	120	14B042	25	200
1/2"	24"	36	14B053	25	200
1/2"	24"	60	14B056	25	200
1/2"	24"	80	14B058	25	200
1/2"	24"	120	14B062	25	200
3/4"	18"	36	14B103	25	200
3/4"	18"	60	14B106	25	200
3/4"	18"	80	14B108	25	200
3/4"	18"	120	14B112	25	200

### BLENDEX+™ FILE BELTS



Width	Length	Grit	Order No.	Std. Pkg.	Std. Ctn.
1/2"	18"	Coarse	07D032	10	50
1/2"	18"	Medium	07D033	10	50
1/2"	18"	Very fine	07D034	10	50
1/2"	24"	Coarse	07D052	10	50
1/2"	24"	Medium	07D053	10	50
1/2"	24"	Very fine	07D054	10	50
3/4"	18"	Coarse	07D102	10	50
3/4"	18"	Medium	07D103	10	50
3/4"	18"	Very fine	07D104	10	50

# CIRCULAR FINISHING QUICK-STEP™ SYSTEM

## For all your surface finishing needs!

Whether you are blending in welds, cleaning surfaces, refining and enhancing existing finishes, or bringing out a mirror finish on stainless steel, steel, aluminum, or any other ferrous and non-ferrous metals, WALTER provides a complete line of tools for the art of metalworking!

*This is the finish you get for each product if used on a 2B stainless steel surface.*



Product	Application	Product category	Type of finish	Pre-finishing	Coarse finish	Sanitary	Pharma	Light polish	Mirror finish
			Ra	(>60 μin)	(60-50 μin)	(40-25 μin)	(16-12 μin)	(8-4 μin)	(4-1 μin)
			Grit size						
Quick-Step FX@5000 RPM	Cleaning	07-X	Coarse						
Quick-Step Flex@7000 RPM	Blending	07-Q	40						
			60						
			80						
			120						
Quick-Step XX@5000 RPM	Blending and surface conditioning	15-V	120						
			180						
			240						
Quick-Step Blendex@5000 RPM	Surface conditioning	07-R	X-tra Coarse						
			Coarse						
			Medium						
			Fine						
			Super fine						
Quick-Step Felt and Quick-Step High Polish with polishing pastes@2000 RPM	Mirror finishing	07T+ paste	Instant Polish 1000-1500						
		07T+ paste	Ultimate Shine 2000-2500						



Learn how to achieve the perfect finish every time with our online videos at



[www.youtube.com/thewalternetwork](http://www.youtube.com/thewalternetwork)

## QUICK-STEP™ METAL SURFACE FINISHING SYSTEM

Reduce the number of steps required to achieve the desired finish. From sanitary to pharmaceutical to mirror finishes, our QUICK-STEP™ abrasives will help you to efficiently achieve the finish you are looking for in fewer steps, reducing your cycle time and saving you time and money.



High Efficiency QUICK-STEP™ sander/polisher  
See page 159 for details



Hook-and-loop fastening system for quick disc changeouts between finishing steps

Simply center pin on the backing pad and mount QUICK-STEP™ disc



Built-in threaded arbor mounts directly onto grinder's spindle

Exclusive centering pin guarantees vibration-free operations



Torque resistant mushroom hooks hold discs securely in place

## QUICK-STEP™ BACKING PADS

This patented backing pad is the heart of the QUICK-STEP™ system. It is made of industrial strength nylon that is guaranteed to retain its strength and flexibility even at elevated temperatures. Disc changes take only seconds.

### QUICK-STEP™ MG BACKING PADS

For maximum grip when working at high speeds. Use this backing pad with BLENDEX™ surface conditioning discs for best results

Pad dia.	For disc dia.	Thread	Order No.	Std. Pkg.	Std. Ctn.
4 1/2"	4 1/2"	5/8"-11	07Q149	1	10
5"	5"	5/8"-11	07Q154	1	10
6"	6"	5/8"-11	07Q164	1	10
7"	7"	5/8"-11	07Q174	1	10

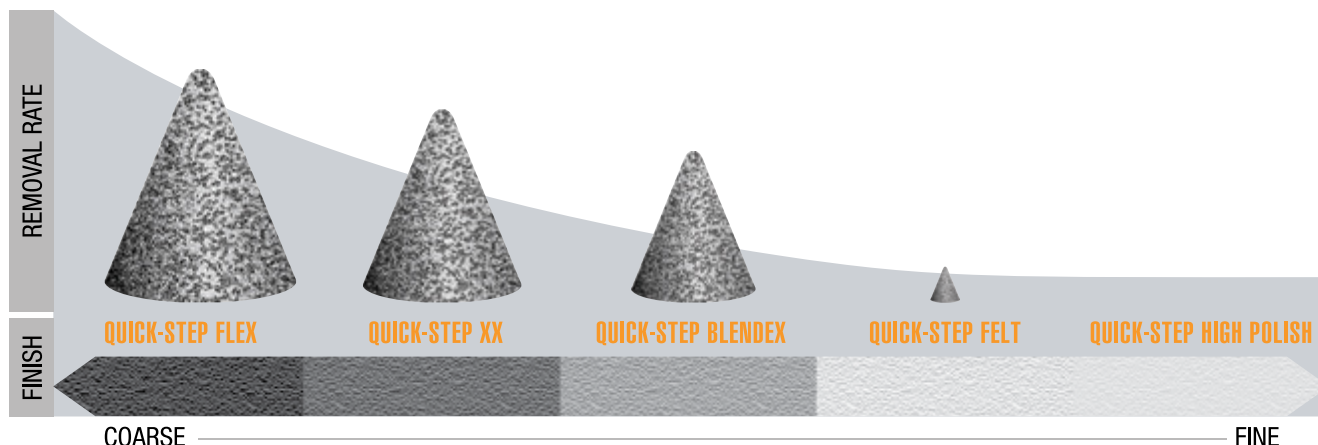
### QUICK-STEP™ BACKING PADS

Pad dia.	For disc dia.	Thread	Order No.	Std. Pkg.	Std. Ctn.
4"	4 1/2"	5/8"-11	07Q044	* 1	10
4 1/2"	4 1/2"	5/8"-11	07Q049	1	10
5"	5"	5/8"-11	07Q054	1	10
6"	6"	5/8"-11	07Q064	1	10
7"	7"	5/8"-11	07Q074	1	10

\* QUICK-STEP™ flap discs and FX™ cleaning discs can be used with backing pad one diameter size below for more flexibility, to reach into corners and to use up worn discs.



# QUICK-STEP™ METAL SURFACE FINISHING SYSTEM



## QUICK-STEP™ FX QUICK-STEP™ FX SURFACE CLEANING DISCS



Dia.	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
4 1/2"	07X845	6,000	2,000 to 3,000	5	40
6"	07X860	6,000	2,000 to 3,000	5	40



- ▶ Extra strong non-woven construction for removing heavy paint, gaskets, sealing compounds, rust, and scale from all metals
- ▶ Cleans without gouging or damaging the surface

## QUICK-STEP™ FLEX



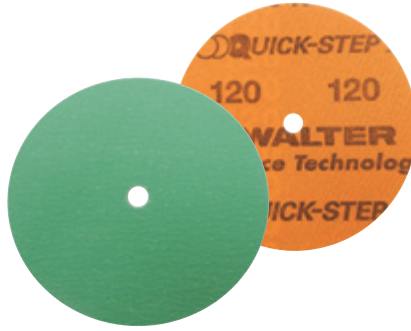
Dia.	Grit	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
4 1/2"	40	07Q454	11,000	8,000	10	40
4 1/2"	60	07Q456	11,000	8,000	10	40
4 1/2"	80	07Q458	11,000	8,000	10	40
4 1/2"	120	07Q462	11,000	8,000	10	40
5"	40	07Q504	10,000	7,300	10	40
5"	60	07Q506	10,000	7,300	10	40
5"	80	07Q508	10,000	7,300	10	40
5"	120	07Q512	10,000	7,300	10	40
6"	40	07Q604	8,600	6,500	10	40
6"	60	07Q606	8,600	6,500	10	40
6"	80	07Q608	8,600	6,500	10	40
6"	120	07Q612	8,600	6,500	10	40



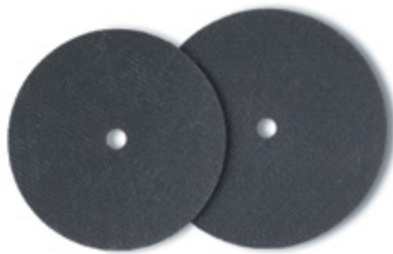
- ▶ For removing and blending in light welds, for deburring, breaking edges, and rounding corners
- ▶ Aggressive, cool cutting and provides a consistent uniform finish
- ▶ Abrasive flaps are secured onto a flexible backing making them ideal for working on curved surfaces

### Tech tip!

Use a backing pad one size below disc diameter for even more flexibility!



- ▶ *Extra long life – 6x the stock removal compared to aluminum oxide sanding discs*
- ▶ *Ultra High Removal Rate – twice as fast as Velcro or PSA (pressure sensitive adhesive) sanding discs*
- ▶ *Self-sharpening grain – consistently high cutting rate throughout lifetime*
- ▶ *Cooling agent – prevents burning and distortion*
- ▶ *Extra strong cloth backing – Resistant to ripping when catching an edge, unlike regular paper discs*



- ▶ *Reclosable polishing paste tube with convenient push-through system to protect paste from contaminants*
- ▶ *Suitable for use in food processing industries*
- ▶ *Achieve a mirror finish with only one paste*
- ▶ *Packed in a resealable bag that preserves the paste from contaminants and drying*



## QUICK-STEP XX™ SANDING DISCS

This high-performance sanding disc leverages our Cyclone™ Technology, a high-tech blend of abrasive grains, and combines it with a special cooling agent. This allows you to blend and finish more pieces to improve productivity. Paired with an interface pad, this sanding disc allows for more flexibility, making it ideal for curved surfaces.



Dia.	Grit	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
4 1/2"	120	15V412	7,400	5,000	25	250
4 1/2"	180	15V418	7,400	5,000	25	250
5"	120	15V512	6,150	4,000	25	250
5"	180	15V518	6,150	4,000	25	250
6"	120	15V612	5,100	3,000	25	250
6"	180	15V618	5,100	3,000	25	250

## QUICK-STEP™ INTERFACE PADS

Ideal for working on curved surfaces or when greater flexibility is required. It provides a soft foam cushion between the abrasive and the backing pad to increase flexibility and produce a better finish without gouging the work surface.

Dia.	Order No.	Std. Pkg.	Std. Ctn.
4 1/2"	07Q045	1	10
5"	07Q050	1	10
6"	07Q060	1	10
7"	07Q070	1	10

## SPACER WASHERS

For grinders with: 5/8"-11 spindle 07Q001  
 For grinders with: M14x2.0 spindle 07Z005

## POLISHING PASTES

For use with felt, high polish, and instant polish discs

**NSF category A7, registration #152698 (Instant Polish)**  
**NSF category A7, registration #154489 (Ultimate Shine)**



Name	Order No.	Weight	Grit	Std. Pkg.	Std. Ctn.
White paste	07T901	600 g	1200-1500	1	10
Blue paste	07T905	650 g	2000	1	10
Instant polish paste	07T907	1200 g	1000-1500	1	5
Ultimate Shine™ paste	07T909	1300 g	2000-2500	1	5

# QUICK-STEP™ BLENDIX™

SURFACE CONDITIONING DISCS



Dia.	Grit	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
4 1/2"	X-TRA COARSE, brown	07R450	11,000	4,000 to 6,500	10	100
4 1/2"	COARSE, tan	07R452	11,000	4,000 to 6,500	10	100
4 1/2"	MEDIUM, maroon	07R453	11,000	4,000 to 6,500	10	100
4 1/2"	FINE, blue	07R454	11,000	4,000 to 6,500	10	100
4 1/2"	SUPER FINE, grey	07R455	11,000	4,000 to 6,500	10	100
5"	X-TRA COARSE, brown	07R500	11,000	3,000 to 6,500	10	100
5"	COARSE, tan	07R502	11,000	3,000 to 6,500	10	100
5"	MEDIUM, maroon	07R503	11,000	3,000 to 6,500	10	100
5"	FINE, blue	07R504	11,000	3,000 to 6,500	10	100
6"	X-TRA COARSE, brown	07R600	8,600	3,000 to 6,500	10	100
6"	COARSE, tan	07R602	8,600	3,000 to 6,500	10	100
6"	MEDIUM, maroon	07R603	8,600	3,000 to 6,500	10	100
6"	FINE, blue	07R604	8,600	3,000 to 6,500	10	100
7"	X-TRA COARSE, brown	07R700	6,800	2,500 to 5,000	10	100
7"	COARSE, tan	07R702	6,800	2,500 to 5,000	10	100
7"	MEDIUM, maroon	07R703	6,800	2,500 to 5,000	10	100
7"	FINE, blue	07R704	6,800	2,500 to 5,000	10	100



**X-TRA COARSE:** For blending

**COARSE:** For removing scratches

**MEDIUM:** For cleaning and eliminating superficial scratches

**FINE:** For fine striated finishes

**SUPER FINE:** Last step before decorative or polishing finishes

## QUICK-STEP™ FELT DISCS



Dia.	Order No.	Optimal RPM	Std. Pkg.	Std. Ctn.
4 1/2"	07T450	2,000 to 3,000	5	40
6"	07T600	2,000 to 3,000	5	40
6"	07T602 *	2,000 to 3,000	5	40
7"	07T700	2,000 to 3,000	5	40

\* For use with ULTI-MATE™ finishing tool (page 160)

▷ **Felt discs**  
Strong high-density Merino felt discs for all heavy-duty finishing and polishing job



## QUICK-STEP™ HIGH POLISH DISCS



Dia.	Order No.	Optimal RPM	Std. Pkg.	Std. Ctn.
4 1/2"	07T454	2,000 to 3,000	10	100
5"	07T504	2,000 to 3,000	10	100
6"	07T604	2,000 to 3,000	10	100
7"	07T704	2,000 to 3,000	10	100

▷ **High polish discs**  
Special soft polishing disc produces high gloss and mirror finishes faster



## QUICK-STEP™ INSTANT POLISH™ DISCS

One-step solution to achieving a #8 mirror finish



Dia.	Order No.	Optimal RPM	Std. Pkg.	Std. Ctn.
4 1/2"	07T456	2,000 to 3,000	10	100
4 1/2"	07T457	2,000 to 3,000	2	20
5"	07T506	2,000 to 3,000	10	100
5"	07T507	2,000 to 3,000	2	20

▷ **Achieve a #8 mirror stainless steel finish faster than ever**

▷ **The polishing paste is pre-applied on the disc**

▷ **Packed in resealable bag that preserves the disc from contaminants and drying**





# HOOK-AND-LOOP™ NON-WOVEN BLENDEX™

This open-structured polishing disc offers a cooler, less aggressive finish, ideal for fine finishing and polishing on soft metals while preserving the original surface profile. Perfect for use on angle grinders and adaptable for automated processes.



Dia.	Grit	Order No.	Equivalent Grit	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
6"	MEDIUM, black	07R613	320	8,600	3,000 - 5,500	20	100
6"	FINE, maroon	07R614	600	8,600	3,000 - 5,500	20	100
6"	VERY FINE, grey	07R615	1000	8,600	3,000 - 5,500	20	100

- ▷ *Open Structure: Resists loading and allows for cooler operation*
- ▷ *Fine Finishing and Polishing: Ideal for achieving a finer finish on soft metals*
- ▷ *Less Aggressive: Prevents over-grinding compared to surface conditioning discs*
- ▷ *Maintains Original Profile: Suitable for tasks where preserving the original surface profile is essential*
- ▷ *For use on angle grinders with a suitable speed range*
- ▷ *Can be used in automation processes*

## BLENDEX™ FLAP DISCS

WALTER'S BLENDEX™ flap discs combine the aggressive material removal of a flap disc with the smooth finish and versatility of a surface conditioning disc. This allows for more consistent results, while reducing operator downtime to switch discs. These discs are built with WALTER's ECO-TRIM™ trimmable backing, extending the life of the product up to three times, as well as MAX-LIFE™ cold curing glue to maximize the abrasive grain's freshness.



Diameter	Arbor	Grade	Color Coding	Equivalent Grit	Order No.	Max RPM	Std. Pkg.	Std. Ctn.
4.5"	7/8"	X-Coarse	●	40	151454	13,300	10	40
4.5"	7/8"	Coarse	●	80	151458	13,300	10	40
4.5"	7/8"	Medium	●	180	151468	13,300	10	40
4.5"	7/8"	Fine	●	280	151478	13,300	10	40
5"	7/8"	X-Coarse	●	40	151504	12,200	10	40
5"	7/8"	Coarse	●	80	151508	12,200	10	40
5"	7/8"	Medium	●	180	151518	12,200	10	40
5"	7/8"	Fine	●	280	151528	12,200	10	40



- ▷ *Combines woven nylon with aggressive grain blends for the most consistent results*
- ▷ *ECO-TRIM™ trimmable backing extends product life up to three times*
- ▷ *Flexible backing allows for better operator comfort*
- ▷ *MAX-LIFE™ Glue ensures the freshest abrasives possible to avoid micro-cracking and drying out, which improves consistency and can extend disc life by up to 25%*







# BLENDEX U™

Superior finishes in less time

**BLENDEX™ Unitized Technology (BLENDEX U™)** is used for deburring, blending, and finishing any kind of metal, including stainless steel, titanium, aluminum, alloys and or plastic and fiberglass. These versatile abrasives are long-lasting and can replace many traditional abrasives, saving you steps in the finishing process and reducing your cycle time.



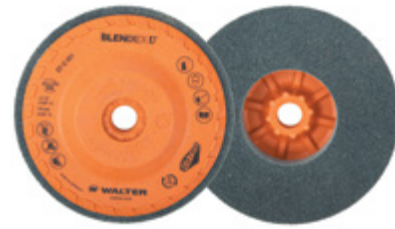
## BLENDEX U™ CUP DISCS

**SPIN-ON**



Dia.	Arbor	Grade	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
4 1/2"	5/8"-11	3SF	07U451	10,500	6,000	5	20
5"	5/8"-11	3SF	07U501	9,600	6,000	5	20

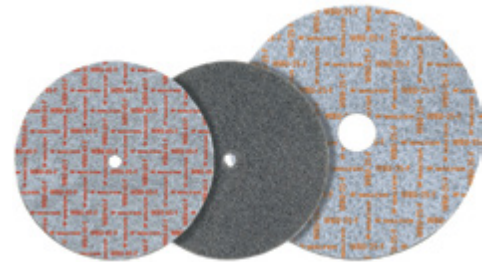
- ▷ **Long-lasting Incredible resistance even when working on sharp edges to ensure maximum life and productivity**
- ▷ **Superb finish Consistent and uniform; as close as possible to a mirror finish without the use of pastes**
- ▷ **Non loading Resists loading, which minimizes heat buildup and prolongs the life of the disc**
- ▷ **Flexible Choices of density: either soft for finishing or hard for demanding applications like deburring**



## BLENDEX U™ WHEELS



Dia.	Width	Arbor	Grade	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
3"	1/4"	3/8"	2SF	07U321	15,100	20	200
3"	1/4"	3/8"	6SF	07U322	18,100	20	200
3"	1/4"	3/8"	6AM	07U323	18,100	20	200
6"	1/4"	1"	2SF	07U621	5,000	5	40
6"	1/4"	1"	6SF	07U622	7,500	5	40
6"	1/4"	1"	6AM	07U623	7,500	5	40
6"	1/2"	1"	2SF	07U651	5,000	4	36
6"	1/2"	1"	6SF	07U652	7,500	4	36
6"	1/2"	1"	6AM	07U653	7,500	4	36
6"	1"	1"	2SF	07U611	5,000	2	16
6"	1"	1"	6SF	07U612	7,500	2	16
6"	1"	1"	6AM	07U613	7,500	2	16



- ▷ **For use on portable or stationary machines**
- ▷ **Can be used on the edge or on either side of the wheel**
- ▷ **Safe for use on all metals**

## BLENDEX U™ MOUNTED POINTS



Dia.	Width	Grade	Color	Order No.	Max. RPM	Std. Ctn.
3/8"	1 1/4"	2SF	Orange	07U101	37,210	5
3/8"	1 1/4"	6SF	Red	07U102	37,210	5
3/8"	1 1/4"	6AM	Black	07U103	37,210	5

Also see **BLENDEX U™** Twist discs on page 127.



- ▷ **These points are made with high-quality BLENDEX U™ material and offer a fast way to blend, clean, and polish in difficult to reach areas. 1/4" shaft**



## POLISHING FLAP DISCS

High-performance flap disc optimized for polishing and mirror finish applications

Get a professional shine efficiently and with the versatility of a flap disc. Strong removal rates and improved finishing capabilities ensure a consistent surface finish every time.



### INSTANT POLISH FLAP DISC

Dia.	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
4 1/2"	07T452	8,300	2,000	5	20
5"	07T502	7,600	2,000	5	20

### ULTIMATE SHINE FLAP DISC

Dia.	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
4 1/2"	07T453	8,300	2,000	5	20
5"	07T503	7,600	2,000	5	20

### FELT CUP DISC

Hard density felt disc for polishing applications



Dia.	Width	Arbor	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
5"	1/2"	5/8"-11	07T505	10,500	2,000-4,000	5	20

### POLISHING PASTES

For use with felt, high polish, and instant polish discs

NSF category A7, registration #152698 (INSTANT POLISH)

NSF category A7, registration #154489 (ULTIMATE SHINE)



Name	Order No.	Weight	Grit	Std. Pkg.	Std. Ctn.
White paste	07T901	600 g	1200-1500	1	10
Blue paste	07T905	650 g	2000	1	10
Instant polish paste	07T907	1200 g	1000-1500	1	5
Ultimate Shine™ paste	07T909	1300 g	2000-2500	1	5



- ▷ To achieve a mirror finish in a single step
- ▷ For use on angle grinders with a suitable speed range



- ▷ As a second step to achieve the best mirror finish
- ▷ For use on angle grinders with a suitable speed range



- ▷ To be used with polishing pastes
- ▷ For use on angle grinders with a suitable speed range
- ▷ Reclosable polishing paste tube with convenient push-through system to protect paste from contaminants
- ▷ Suitable for use in food processing industries



- ▷ Achieve a mirror finish with only one paste
- ▷ Packed in a resealable bag that preserves the paste from contaminants and drying



# FX™ CLEANING ABRASIVES

Quick, easy surface cleaning on all metals

FX™ abrasives quickly remove paint, rust, scale, coatings, burn marks, and gaskets without loading or clogging. Made from a high-density, non-woven material, they are incredibly durable and can replace wire brushes in a wide variety of applications.



Only applicable to FX CUP DISCS

## FX CUP DISCS



Dia.	Width	Arbor	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
4 1/2"	3/4"	5/8"-11	07X450	10,500	3,000	5	20
5"	3/4"	5/8"-11	07X505	9,600	3,000	5	20



- ▷ Outstanding life and performance
- ▷ For use on angle grinders with a suitable speed range
- ▷ No backing pad required

## FX STAINLESS CUP DISCS



Dia.	Width	Arbor	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
4.5"	1/2"	5/8"-11	07X452	10,000	4,000	5	20
5"	1/2"	5/8"-11	07X502	8,000	4,000	5	20



- ▷ Excellent for working in confined areas

## MOUNTED WHEELS



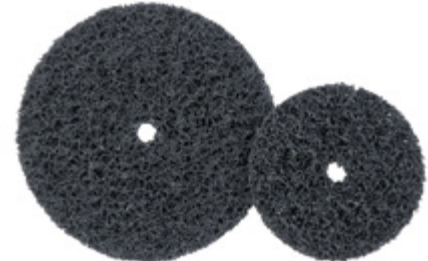
Dia.	Width	Arbor	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
2"	1"	1/4"	07X120	11,000	6,000	1	10



## CLEANING WHEELS



Dia.	Width	Arbor	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
4"	1/2"	1/2"	07X640	6,000	3,500 to 4,000	10	40
6"	1/2"	1/2"	07X660	4,000	2,400 to 2,700	10	40



- ▷ Use on edge — narrow contact area for maximum pressure
- ▷ Excellent for cleaning welds and stripping paint

## YouTube

Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)



SCAN TO WATCH VIDEO

### Accessories

#### Mounting accessories for 4" FX wheels

- Mandrels for use on straight grinders and drills
- 1/4" shaft **Order No. 07X004**
- 8 mm shaft **Order No. 07X003**



#### Mounting accessories for 6" FX wheels

- Mandrels for use on straight grinders and drills
- 1/4" shaft (1/2" arbor) **Order No. 07X006**
- 1/4" shaft (7/8" arbor) **Order No. 07X008**
- 8 mm shaft (1/2" arbor) **Order No. 07X005**



#### Extension mandrels for use on angle grinders

- M14 thread **Order No. 07C005**
- 5/8"-11 thread **Order No. 07C006**





## FX™ STAINLESS

For cleaning welds on stainless steel

These specially formulated non-woven abrasives help to remove heat tint and discoloration from stainless steel surfaces while simultaneously leaving a #4 finish. They can replace wire brushes in many applications without any risk of contaminating stainless steel or aluminum surfaces.

Dia.	Width	Arbor	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
6"	½"	⅞"	07X661	4,000	2,400 to 2,700	5	20
6"	¼"	⅞"	07X662	4,000	2,400 to 2,700	5	20
6"	1"	⅞"	07X663	4,000	2,400 to 2,700	5	20
6"	½"	½"	07X664	4,000	2,400 to 2,700	5	20
8"	1"	⅞"	07X683	4,000	2,400 to 2,700	5	20

### Features

- ▷ Premium abrasive grain blend guaranteed not to contaminate stainless steel
- ▷ Easily conforms to uneven surfaces like weld beads
- ▷ FX™ design ensures consistent performance throughout the life of the wheel

### Benefits

- ▷ Remove discoloration and finish weld surfaces in just one step
- ▷ Large diameter allows you to easily reach tight corners
- ▷ Safer to use than wire brushes (no risk of wires coming detached from the hub)



## BLENDEX U™ TURBO

For blending in fillet welds and deburring applications

BLENDEX U Turbo™ was engineered to provide the versatility and performance of BLENDEX U™ with a more aggressive grade of abrasive grains designed to remove more material. The end result is a wheel that is perfect for deburring and blending in fillet welds while leaving a uniform, consistent surface finish. Stop wasting flap discs and use the right tool for the job when confronted with weld beads in tight corners or other intricate areas.

### Features

- ▷ High-grade unitized abrasive grain blend for premium performance
- ▷ Can be shaped to fit your specific application
- ▷ Provides a consistent, uniform surface finish throughout the life of the wheel

Dia.	Width	Arbor	Grade	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
6"	⅝"	⅞"	7ZC	07U615	8,000	5,500	6	60
6"	¼"	⅞"	7ZC	07U625	8,000	5,500	4	200

### Benefits

- ▷ Unitized design allows you to use the wheel at multiple angles for a variety of applications
- ▷ Extremely durable and long-lasting
- ▷ The perfect system for blending in fillet welds when used with ULTI-MATE™

### Tech tip!

Use with the ULTI-MATE™ system to blend and finish fillet welds with ease



## QUICK-STEP™ STARTER KIT

### Includes:

- 1 QUICK-STEP™ backing pad (07Q049)
- 1 QUICK-STEP™ flex grit 120 (07Q462)
- 1 QUICK-STEP™ interface pad (07Q045)
- 2 QUICK-STEP™ XX grit 120 (15V412)
- 2 QUICK-STEP™ XX grit 180 (15V418)
- 2 QUICK-STEP™ BLENDEX™ coarse (07R452)
- 2 QUICK-STEP™ Blendex medium (07R453)
- 2 QUICK-STEP™ Blendex fine (07R454)
- 1 QUICK-STEP™ felt (07T450)
- 1 QUICK-STEP™ high polish (07T454)

### Features

- ▷ A complete range of abrasives for everything from weld blending to applying a #8 mirror finish

Dia.	Arbor	Order No.	Std. Pkg.	Std. Ctn.
4 ½"	⅝"–11	07Q953	1	5



## ULTI-MATE™ SYSTEM

ULTI-MATE™ system for finishing in tight corners

This versatile tool allows you to do everything from removing a weld to applying a #8 mirror finish when working in tight corners. The ideal tool for blending and finishing fillet welds, the ULTI-MATE™ allows you to take WALTER abrasives to places that were previously inaccessible, allowing you to significantly reduce your cycle time and finish jobs faster.

See page 160 for more details



N° de comm.: 30A287

### Includes:

- ULTI-MATE™ powertool (30A287)
- 1 ENDURO-FLEX 2-in-1 TURBO (15I451)
- 1 ENDURO-FLEX 2-in-1™ (15I453)
- 1 BLENDEX™ U TURBO, ¼" width (07U625)
- 1 BLENDEX™ U TURBO, 5/32" width (07U615)
- 1 BLENDEX™ U 2SF, ¼" width (07U621)
- 1 FX™ Stainless Wheel, ¼" width (07X662)

**QUICK-STEP™ FELT DISC  
TO USE WITH ULTI-MATE  
SYSTEM 6" No. 07T602**

### Benefits

- ▷ Allows you to quickly switch between abrasives to take time and cost out of finishing jobs
- ▷ Durable industrial tool that is built to last, saving you from having to replace your power tools every few months
- ▷ Designed to exceed all safety standards, creating a safer work environment

### Features

- ▷ Dialspeed™ variable speed control allows you to quickly go from 1,600-3,200 RPM to tackle any application from heavy stock removal to polishing
- ▷ Powerful 1,450 W industrial motor with Dynamax™ RPM monitoring to maintain constant RPM under load
- ▷ Soft Start™ technology

*Finish (roughness average) obtained when using each product if used on a 2B stainless steel surface.*



DISCS	Product	Application	Product category	Type of finish	Pre-finishing	Coarse finish	Sanitary	Pharma	Light polish	Mirror finish
				Ra	(>60 µin)	(60-50 µin)	(40-25 µin)	(16-12 µin)	(8-4 µin)	(4-1 µin)
				Grit size						
	ENDURO-FLEX™ 2-in-1 Turbo	Blending	15-I	36/60 + coarse						
	ENDURO-FLEX™ 2-in-1	Blending	15-I	80 + medium						
	BLENDEX U™ cup	Surface conditioning	07-U	3SF						
	FX™ cup	Surface cleaning	07-K	60						

WHEELS	Product	Application	Product category	Type of finish	Pre-finishing	Coarse finish	Sanitary	Pharma	Light polish	Mirror finish
	BLENDEX U™ Turbo	Blending	07-U	7ZC						
	BLENDEX U™	Surface conditioning	07-H	6AM						
				6SF						
				2SF						
FX™	Surface cleaning	07-X	FX							
			FX Stainless							
Felt	Mirror finishing	07T+ paste	Instant Polish 1000-1500							
			Ultimate Shine 2000-2500							

# TWIST™ SURFACE FINISHING SYSTEM

The **TWIST™ quick-change system** makes changing discs on small air grinders quick and easy, reducing cycle time. Achieve the desired finish quickly and maximize your productivity with this versatile line of high quality abrasives.



*Simply twist any abrasive to the backing pad and start working*

*Quickly change out abrasives to achieve the desired finish in fewer steps and with less time wasted making trips to the tool crib*

## QUICK DISC CHANGE BETWEEN FINISHING STEPS

## TWIST™ QUICK-CHANGE SURFACE FINISHING SYSTEM

Use these backing pads with TWIST™ abrasives to reduce the time spent changing from one abrasive to the next. Use orange backing pads for contour work and finishing or black backing pads for blending and light weld removal.



### TWIST™ BACKING PADS

Dia.	Flexibility	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
1 ½"	Medium	04X152	30,000	1	400
2"	Medium	04X202	30,000	1	400
2"	Hard	04X203	30,000	1	400
3"	Medium	04X302	28,000	1	400
3"	Hard	04X303	28,000	1	400

Color code: Medium = orange, Hard = black

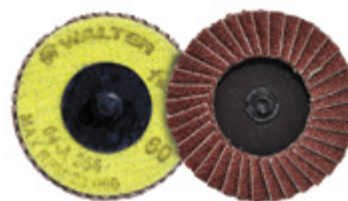
- ▷ Molded polyurethane construction
- ▷ Removable mandrel
- ▷ Surface design ensures uniform disc support
- ▷ Allows for quick disc changeouts

### TWIST™ FLAP DISCS



Dia.	Grit	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
2 ½"	40	04A254	23,000	12,000	10	400
2 ½"	60	04A256	23,000	12,000	10	400
2 ½"	80	04A258	23,000	12,000	10	400
2 ½"	120	04A262	23,000	12,000	10	400

Use with 2" backing pads



- ▷ Long-lasting with a consistent surface finish from start to end
- ▷ Very high removal rate
- ▷ Excellent for weld blending and finishing work

## TWIST™ CF (Clean & Finish)

Clean & Finish for ultra-fine surface and contour grinding and cleaning of metal or painted surfaces. The TWIST CF™ range has the flexibility and comfortability to produce a consistent finish on any workpiece.

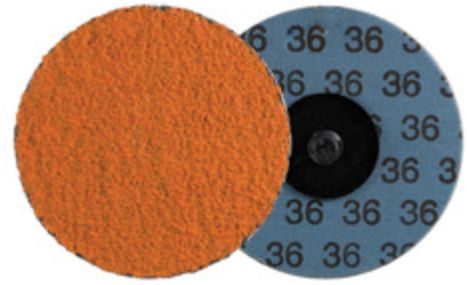
Dia.	Density	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
2"	Medium	04F203	30,000	25	500
3"	Medium	04F303	28,000	25	500



## TWIST COOLCUT XX™ SANDING DISCS



Dia.	Grit	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
1 1/2"	36	04C153	30,000	15,000	100	500
1 1/2"	50	04C155	30,000	15,000	100	500
1 1/2"	60	04C156	30,000	15,000	100	500
1 1/2"	80	04C158	30,000	15,000	100	500
1 1/2"	120	04C162	30,000	15,000	100	500
2"	36	04C203	30,000	15,000	50	500
2"	50	04C205	30,000	15,000	50	500
2"	60	04C206	30,000	15,000	50	500
2"	80	04C208	30,000	15,000	50	500
2"	120	04C212	30,000	15,000	50	500
3"	36	04C303	28,000	14,000	50	500
3"	50	04C305	28,000	14,000	50	500
3"	60	04C306	28,000	14,000	50	500
3"	80	04C308	28,000	14,000	50	500
3"	120	04C312	28,000	14,000	50	500

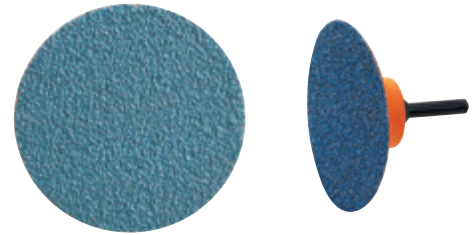


- ▷ Extremely aggressive removal rate for reduced cycle time
- ▷ The longest life in the industry to reduce your inventory needs
- ▷ Features WALTER's exclusive Cyclone Technology™ high-performance ceramic abrasive grain blend
- ▷ Grit is printed on the back for added convenience

## TWIST TOPCUT™ SANDING DISCS



Dia.	Grit	Color	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
2"	36	Black	04D203	30,000	15,000	50	2000
2"	50	Yellow	04D205	30,000	15,000	50	2000
2"	60	Blue	04D206	30,000	15,000	50	2000
2"	80	Orange	04D208	30,000	15,000	50	2000
2"	100	Green	04D210	30,000	15,000	50	2000
2"	120	Beige	04D212	30,000	15,000	50	2000
3"	36	Black	04D303	28,000	14,000	50	1000
3"	50	Yellow	04D305	28,000	14,000	50	1000
3"	60	Blue	04D306	28,000	14,000	50	1000
3"	80	Orange	04D308	28,000	14,000	50	1000
3"	100	Green	04D310	28,000	14,000	50	1000
3"	120	Beige	04D312	28,000	14,000	50	1000



- ▷ High metal removal rate
- ▷ Long life due to special Zirconia alumina grain formulation
- ▷ Unique construction for optimal heat dissipation and wear resistance
- ▷ Color-coded backing to easily distinguish between different grit sizes

### COLOR CODED FOR EASY IDENTIFICATION



## TWIST BLENDEX™ CONDITIONING DISCS

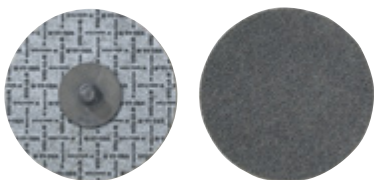


Dia.	Grit	Color	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
2"	Extra-Coarse	Brown	04G201	30,000	15,000	25	1000
2"	Coarse	Tan	04G202	30,000	15,000	25	1000
2"	Medium	Maroon	04G203	30,000	15,000	25	1000
2"	Fine	Blue	04G204	30,000	15,000	25	1000
2"	Super fine	Grey	04G205	30,000	15,000	25	1000
3"	Extra-Coarse	Brown	04G301	28,000	14,000	25	1000
3"	Coarse	Tan	04G302	28,000	14,000	25	500
3"	Medium	Maroon	04G303	28,000	14,000	25	500
3"	Fine	Blue	04G304	28,000	14,000	25	500
3"	Super fine	Grey	04G305	28,000	14,000	25	500



- COARSE:** For most heavy-duty applications
- MEDIUM:** For cleaning and removing surface imperfections
- FINE:** For producing a fine scratch pattern
- SUPER FINE:** Use as a last step before mirror finishing or to produce decorative finishes





▷ Designed for deburring, cleaning, blending, finishing light welds, and polishing hard to reach areas

▷ Designed for polishing

▷ 100% pure premium wool product

▷ Use with WALTER polishing pastes

▷ Reclosable polishing paste tube with convenient push-through system to protect paste from contaminants

▷ Suitable for use in food processing industries



▷ Extra strong non-woven construction for removing oxide, scale and gaskets

▷ Cleans without damaging the surface

▷ Leaves no residue on the surface



## TWIST BLENDEX™ U DISCS



Dia.	Grade	Order No.	Max. RPM	Std. Pkg.	Std. Ctn.
3"	2SF	04U321	15,100	10	100
3"	6SF	04U322	15,100	10	100
3"	6AM	04U323	15,100	10	100

## TWIST FELT DISCS



Dia.	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
2"	04T204	30,000	12,000	25	1000
3"	04T304	28,000	10,000	25	500

## POLISHING PASTES

For use with felt, high polish, and instant polish discs

**NSF category A7, registration #152698 (Instant Polish)**

**NSF category A7, registration #154489 (Ultimate Shine)**



Name	Order No.	Weight	Grit	Std. Pkg.	Std. Ctn.
White paste	07T901	600 g	1200-1500	1	10
Blue paste	07T905	650 g	2000	1	10
Instant Polish paste	07T907	1200 g	1000-1500	1	5
Ultimate Shine™ paste	07T909	1300 g	2000-2500	1	5

## FX SURFACE CLEANING DISCS



Dia.	Order No.	Max. RPM	Optimal RPM	Std. Pkg.	Std. Ctn.
2"	04L200	30,000	12,000	10	400
3"	04L300	28,000	10,000	10	200

## TWIST STARTER KITS

**2" assortment includes:**

- 1 medium backing pad (04X202)
- 2 flap discs (1 of each grit, 40: 04A254 and 80: 04A258)
- 15 TOPCUT™ discs (3 of each grit 36: 04D203, 50: 04D205, 60: 04D206, 80: 04D208 and 120: 04D212);
- 12 BLENDEX™ discs (3 of each grit, coarse: 04G202, medium: 04G203, fine: 04G204 and super fine: 04G205) and 1 FX disc (04L200).

**Order No.** 04Z992

**3" assortment includes:**

- 1 medium backing pad (04X202)
- 10 TOPCUT™ discs (2 of each grit 36: 04D303, 50: 04D305, 60: 04D306, 80, 04D308 and 120, 04D312);
- 4 BLENDEX™ discs (1 of each grit, coarse: 04G302, medium: 04G303, fine: 04G304 and super fine: 04G305) and 1 FX disc (04L300).

**Order No.** 04Z993

# ALLSTEEL™

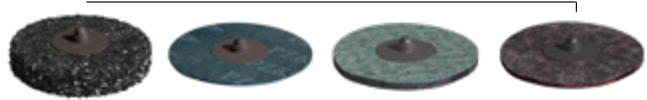
## ALLSTEEL™ SPINLOCK™ SYSTEM

The SPINLOCK™ system makes changing discs quick and easy on air grinders.

The SPINLOCK™ QUICK-CHANGE Flap Disc is a tough abrasive that will make short work of weld blending and finishing work. Its high-performance zirconia-alumina grain blend is designed to last and offer a consistent surface finish on every job.



Simply spin any abrasive to the backing pad and start working



## SPINLOCK™ QUICK-CHANGE

### SPINLOCK™ BACKING PADS

Order No.	Dia.	Optimal RPM	Std Pkg.	Std Ctn
09X203	2"	30,000	1	10
09X303	3"	28,000	1	10

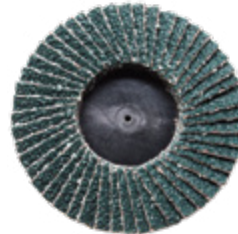


▷ Removable mandrel for quick disc changeouts

### SPINLOCK™ FLAP DISCS



Order No.	Dia.	Grit	Max RPM	Optimal RPM	Std Pkg.	Std Ctn
09A204	2"	40	30,000	15,000	10	800
09A206	2"	60	30,000	15,000	10	800
09A208	2"	80	30,000	15,000	10	800
09A212	2"	120	30,000	15,000	10	800
09A304	3"	40	20,000	10,000	10	510
09A306	3"	60	20,000	10,000	10	510
09A308	3"	80	20,000	10,000	10	510
09A312	3"	120	20,000	10,000	10	510



▷ Very high removal rate  
▷ Long-lasting  
▷ High-performance zirconia-alumina grain

### SPINLOCK™ ALUMINUM OXIDE RESIN FIBER DISCS



Order No.	Dia.	Grit	Max RPM	Optimal RPM	Std Pkg.	Std Ctn
09D102	2"	24	30,000	15,000	25	2000
09D103	2"	36	30,000	15,000	25	2000
09D105	2"	50	30,000	15,000	25	2000
09D106	2"	60	30,000	15,000	25	2000
09D108	2"	80	30,000	15,000	25	2000
09D112	2"	120	30,000	15,000	25	2000
09D202	3"	24	28,000	14,000	25	1000
09D203	3"	36	28,000	14,000	25	1000
09D205	3"	50	28,000	14,000	25	1000
09D206	3"	60	28,000	14,000	25	1000
09D208	3"	80	28,000	14,000	25	1000
09D212	3"	120	28,000	14,000	25	1000



▷ Ideal for weld blending and finishing work  
▷ High removal rate  
▷ Consistent surface finish  
▷ High-performance aluminum oxide grain

## SPINLOCK™ ZIRCONIA ALUMINA RESIN FIBRE DISCS



Order No.	Dia.	Grit	Max RPM	Optimal RPM	Std Pkg.	Std Ctn
09D403	2"	36	30,000	15,000	25	2000
09D406	2"	60	30,000	15,000	25	2000
09D408	2"	80	30,000	15,000	25	2000
09D503	3"	36	28,000	14,000	25	1000
09D506	3"	60	28,000	14,000	25	1000
09D508	3"	80	28,000	14,000	25	1000

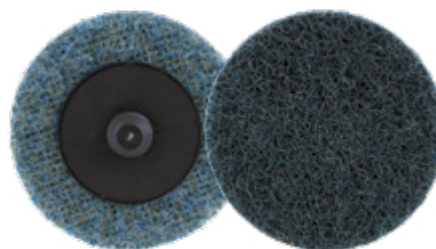


- ▷ Ideal for weld blending and finishing work
- ▷ Very high removal rate
- ▷ Consistent surface finish and long life
- ▷ High-performance zirconia alumina grain

## SPINLOCK™ SURFACE CONDITIONING DISCS



Order No.	Dia.	Grit	Max RPM	Optimal RPM	Std Pkg.	Std Ctn
09G102	2"	Coarse	30,000	15,000	25	2000
09G103	2"	Medium	30,000	15,000	25	2000
09G104	2"	Fine	30,000	15,000	25	2000
09G202	3"	Coarse	28,000	14,000	25	1000
09G203	3"	Medium	28,000	14,000	25	1000
09G204	3"	Fine	28,000	14,000	25	1000



- ▷ Ideal for light or heavy finishing
- ▷ Consistent finishes every time in hard to reach areas
- ▷ Long life disc

## SPINLOCK™ STARTER KITS

### 2" assortment includes:

- SPINLOCK™ backing pad
- SPINLOCK™ surface conditioning disc in coarse and medium grain
- SPINLOCK™ zirconia alumina resin fibre discs in 36, 60, and 80 grit.

Order No. 09Z992

### 3" assortment includes:

- SPINLOCK™ backing pad
- SPINLOCK™ surface conditioning disc in coarse and medium grain
- SPINLOCK™ zirconia alumina resin fibre discs in 36, 60, and 80 grit.

Order No. 09Z993





# SAFETY SEMINAR

*Safety Starts With You!*

**WALTER Surface Technologies trains thousands of workers every year on safe practices in metalworking.**

For over 70 years, WALTER has been offering innovative solutions for the metalworking industry. The Safety Seminar is part of our commitment to help you increase your productivity through safe practices.

Our trained instructors use an interactive format combining safety basics, correct use of PPE, proper identification and use of abrasives, consumables, and power tools.



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## The WALTER Safety Seminar is:

- INTERACTIVE & ENGAGING
- OFFERED ON-SITE OR ON A JOBSITE
- INDUSTRY RELEVANT
- CUSTOMIZED TO YOUR NEEDS



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Contact your local WALTER representative to book your on-site sessions.

[walter.com/support/safety-first](http://walter.com/support/safety-first)

## SAFETY SEMINAR TOPICS COVERED:

- Importance of safety
- Key Safety Points
- Personal Protective Equipment
- Abrasive Basics
- Proper Mounting
- Safe Practices
- Industry Ratings

... and more

 **WALTER**  
Achieve Greatness™





# 05

## BRUSHING

# HIGH PERFORMANCE POWER BRUSHES



**Power brushes have long been used** for edge and surface conditioning on a wide variety of materials. Unlike grinding wheels and other abrasives that remove base material along with surface contaminants, power brushes work on the metal surface without removing the base material. The tips of the wire hammer the metal surface like thousands of tiny ball peens to finish and work the surface.

To withstand that kind of abuse, every WALTER power brush is made from only the finest industrial-grade materials. Combined with the latest manufacturing technology and strictest quality control, every power brush is designed to guarantee the highest productivity, longest brush life and maximum operator safety.

## Perfect Balance

*Every knot is perfectly balanced through an accurate wire count and an even trim length before being permanently anchored in an individual hole. This ensures perfect concentricity and vibration-free brushing for maximum operator comfort.*

*Internal steel plate holds wires securely in place even under extreme pressure for maximum strength and safety.*



## Longest Life

*Premium high-tensile wire is oil-hardened and tempered for the longest life. Wire quality is mill-certified for every batch, ensuring consistent performance brush after brush.*



SCAN TO  
WATCH VIDEO



Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)

## Color coded hubs for easy identification






### Hub color Wire type

<b>Orange</b>	Made with premium carbon steel wire that is oil hardened and tempered for longest life and maximum brushing action.
<b>Blue</b>	Made with 304 stainless steel wire to help prevent contamination and surface rusting of brushed stainless steel parts. Also may be used on aluminum and other non-ferrous metals.
<b>Black</b>	Made with 100% brass wire. Ideal for spark-free brushing in hazardous environments or operations where cleaning is needed without removing the base material.





Choose the right wire brush for your application

POWER TOOL USED	TYPE OF BRUSH	BRUSH DIA.	COMPATIBLE GRINDER DIAMETER	WIRE CONSTRUCTION	APPLICATION	METAL
 Flat cleaning	Wire cup brushes	3"	4", 4 1/2", 5", 6"	Crimped	For quick, efficient cleaning, brushing, and finishing of large flat surfaces.	● ●
		4"		Knot-Twisted	For heavy-duty applications such as deburring, weld cleaning, or removing significant oxidation from surfaces.	● ●
		5" 6"		Knot-Twisted with ring	Heavy-duty cleaning with thicker wire and a supporting ring for added safety and a longer working life.	● ●
 Angle cleaning	Saucer-Cup brushes	4"	4", 4 1/2", 5"	Knot-Twisted	For weld cleaning and deburring in hard-to-reach areas such as inside corners, fillet welds and contours.	● ●
		5" 6", 7"		Crimped	For cleaning wider root passes and rough surfaces. Can clean on both sides of a weld, at the same time.	●
 Vertical cleaning	Wire wheel brushes	4"	4", 4 1/2", 5"	Crimped	For cleaning welds or over uneven surfaces, such as pipe and tubing.	● ●
		4 1/2" 5"		Stringer Bead	For cleaning in narrow spaces, such as in between passes on pipes or narrow groves, etc.	● ● ●
		6", 6 7/8"		Knot-Twisted	For cleaning wider root passes as well as removing scale, spatter, and corrosion.	● ●
 Vertical cleaning	Wire wheel brushes	4" to 10"	All bench and pedestal grinders with suitable speed range	Crimped	For light deburring and similar cleaning jobs, to remove paint, rust, etc.	● ●
				Knot-Twisted	For heavy-duty applications such as removal of rust, corrosion, and gaskets.	● ●
 Vertical cleaning	Mounted brushes	1/2" to 4"	All drill or die grinders with a suitable speed range	Crimped	For cleaning hard-to-reach areas such as pipe interiors and confined spaces.	● ●
				Knot-Twisted	For heavy-duty applications, such as removal of rust, corrosion, and gaskets.	● ●

# WIRE CUP BRUSHES

For angle grinders

Designed for high-performance brushing of large flat surfaces. Our wire cup brushes are designed to outlast all competitive brushes. Whether you are removing paint, spatter, rust or cleaning weld edges, we have a brush that can help you work faster and more safely.

## CRIMPED



Dia.	Arbor	Order No.	Wire	Max. RPM	Std. Pkg.	Std. Ctn.
3"	M14 X 2.0	13D302	.0118"	12,000	1	10
3"	5/8"-11	13D304	.0118"	12,000	1	10
5"	5/8"-11	13E504	.020"	8,600	1	10

## CRIMPED WITH RING



3"	5/8"-11	13D324	.0118"	12,000	1	10
4"	5/8"-11	13D424	.0118"	8,600	1	10
5"	5/8"-11	13D524	.0118"	8,600	1	10

## CRIMPED



3"	5/8"-11	13D314	.0118"	12,000	1	10
5"	5/8"-11	13E514	.020"	8,600	1	10

## KNOT-TWISTED



Dia.	Arbor	Order No.	Wire	Max. RPM	Std. Pkg.	Std. Ctn.
3"	M10 x 1.25	13F300	.015"	12,000	1	10
3"	M14 X 2.0	13F302	.015"	12,000	1	10
3"	5/8"-11	13F304	.015"	12,000	1	10
3"	5/8"-11	13F354	.020"	12,000	1	10

## KNOT-TWISTED



3"	5/8"-11	13F314	.015"	12,000	1	10
----	---------	--------	-------	--------	---	----



▷ *Crimped for light surface cleaning, rust and paint removal, etc.*



▷ *Safety supporting ring controls flaring to extend brush life. Once wires are worn down to the ring, the ring can be removed to expose more wire for extra brush life.*



SCAN TO WATCH VIDEO



Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)



▷ *Knot-twisted for heavy-duty brushing, such as deburring, weld edge cleaning, removal of scale, spatter, heavy rust, and corrosion, etc.*



- ▷ Knot-twisted with safety supporting ring for heavy-duty brushing
- ▷ Safety supporting ring controls flaring to extend brush life. Once worn down to the ring, it can be removed to expose more wire for extra brush life.



Double-row

- ▷ Work two times faster on large surfaces
- ▷ Requires less torque from the power tool for the same efficiency
- ▷ Unbeatable life and added working hours per brush



## WIRE CUP BRUSHES

### **KNOT-TWISTED WITH RING**



Dia.	Arbor	Order No.	Wire size	Thick.	Max. RPM	Std. Pkg.	Std. Ctn.
3"	5/8"-11	13G304	.020"	1/2"	12,000	1	10
4"	5/8"-11	13G404	.020"	1/2"	8,600	1	10
5"	5/8"-11	13G504	.020"	1/2"	8,600	1	10
5"	5/8"-11	13G554	.035"	1/2"	8,600	1	10
6"	5/8"-11	13G604	.020"	1/2"	6,800	1	10

### **KNOT-TWISTED WITH RING**



Dia.	Arbor	Order No.	Wire size	Thick.	Max. RPM	Std. Pkg.	Std. Ctn.
3"	5/8"-11	13G314	.020"	1/2"	12,000	1	10
5"	5/8"-11	13G514	.020"	1/2"	8,600	1	10

### **DOUBLE-ROW KNOT-TWISTED CUP BRUSHES WITH RING**



Dia.	Arbor	Order No.	Wire size	Thick.	Max. RPM	Std. Pkg.	Std. Ctn.
5"	5/8"-11	13G574	.020"	1"	8,600	1	10

### **DOUBLE-ROW KNOT-TWISTED CUP BRUSHES WITH RING**



Dia.	Arbor	Order No.	Wire size	Thick.	Max. RPM	Std. Pkg.	Std. Ctn.
5"	5/8"-11	13G584	.020"	1"	8,600	1	10



# WIRE WHEEL BRUSHES

For precision cleaning with angle grinders

These brushes are made from top-quality wire that is perfectly knotted and balanced for minimal vibration and maximum operator safety. Quicker surface cleaning, the longest product life in the industry, and an emphasis on operator safety make our wire wheel brushes the preferred choice for professionals throughout North America.

## CRIMPED WIRE WHEEL



Dia.	Width	Arbor	Order No.	Wire size	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	5/8"	5/8"-11	13J454	0.0118"	12,500	1	10
5"	5/8"	5/8"-11	13J504	0.0118"	10,000	1	10
6"	5/8"	5/8"-11	13J604	0.0118"	9,000	1	10

## CRIMPED WIRE WHEEL



Dia.	Width	Arbor	Order No.	Wire size	Max. RPM	Std. Pkg.	Std. Ctn.
4 1/2"	5/8"	5/8"-11	13J464	0.0118"	12,500	1	10
5"	5/8"	5/8"-11	13J514	0.0118"	10,000	1	10
6"	5/8"	5/8"-11	13J614	0.0118"	9,000	1	10

## STRINGER BEAD



Dia.	Width	Arbor	Order No.	Wire size	Max. RPM	Std. Pkg.	Std. Ctn.
4"	3/16"	5/8"-11	13K404	.020"	20,000	1	10
4 1/2"	3/16"	5/8"-11	13K454	.020"	15,000	1	10
5"	1/4"	5/8"-11	13K504	.020"	15,000	1	10
5"	1/4"	5/8"-11	13K504B	.020"	15,000	10	10
6"	1/4"	5/8"-11	13K604	.020"	10,000	1	10
6"	1/4"	5/8"-11	13K604B	.020"	10,000	10	10
6 7/8"	1/4"	5/8"-11	13K654	.020"	9,000	1	10
6 7/8"	1/4"	5/8"-11	13K654B	.020"	9,000	10	10

## STRINGER BEAD



Dia.	Width	Arbor	Order No.	Wire size	Max. RPM	Std. Pkg.	Std. Ctn.
4"	3/16"	5/8"-11	13K414	.020"	20,000	1	10
4 1/2"	3/16"	5/8"-11	13K464	.020"	15,000	1	10
5"	1/4"	5/8"-11	13K514	.020"	15,000	1	10
6"	1/4"	5/8"-11	13K614	.020"	10,000	1	10

## KNOT-TWISTED



Dia.	Width	Arbor	Order No.	Wire size	Max. RPM	Std. Pkg.	Std. Ctn.
4"	3/8"	5/8"-11	13L404	.020"	20,000	1	10
4 1/2"	3/8"	5/8"-11	13L454	.020"	15,000	1	10
5"	3/8"	5/8"-11	13L504	.020"	15,000	1	10
6"	3/8"	5/8"-11	13L604	.020"	10,000	1	10

## KNOT-TWISTED



Dia.	Width	Arbor	Order No.	Wire size	Max. RPM	Std. Pkg.	Std. Ctn.
4"	3/8"	5/8"-11	13L414	.020"	20,000	1	10
4 1/2"	3/8"	5/8"-11	13L464	.020"	15,000	1	10
5"	3/8"	5/8"-11	13L514	.020"	15,000	1	10
6"	3/8"	5/8"-11	13L614	.020"	10,000	1	10



▷ Stringer bead brushes are extra narrow to clean in tight areas such as between weld passes in pipe fitting



▷ Knot-twisted brushes are for surface cleaning after welding, to remove scale, spatter, rust and corrosion

## BRASS STRINGER BEAD BRUSH

Made with high-quality brass wire, WALTER brass brushes are the right choice for spark-free brushing in hazardous environments or operations where cleaning is needed without removing the base material.

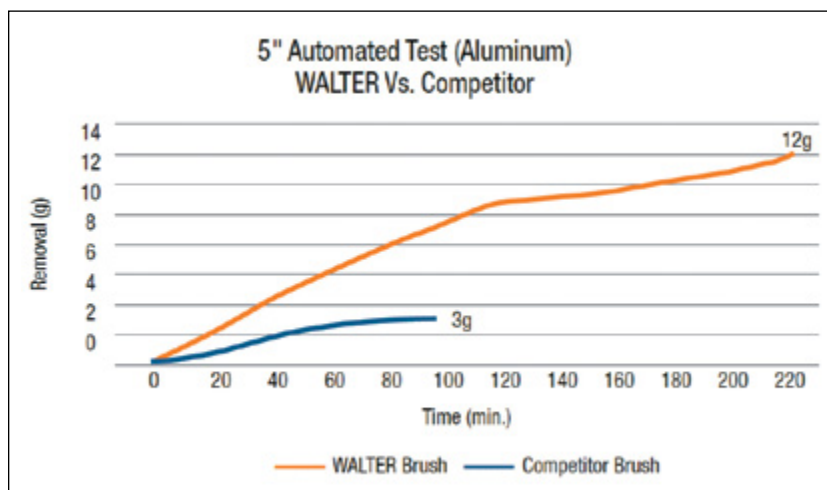
- ▷ 100% brass wires
- ▷ Spark-free & non-destructive
- ▷ Extra narrow for cleaning tight or hard-to-reach areas



### BRASS



Dia.	Width	Arbor	Order No.	Wire size	Max. RPM	Std. Pkg.	Std. Ctn.
5"	1/4"	5/8"-11	13K534	.020"	12,500	1	10
6"	1/4"	5/8"-11	13K634	.020"	12,500	1	10



### Tech tip!

Brass wire is softer than steel and stainless steel. Extend the life of your brush by using lighter pressure when cleaning contaminants with brass stringer bead brushes.

# SAUCER-CUP BRUSHES

For cleaning hard-to-reach areas

These brushes have a built-in working angle of 45° to clean surfaces in hard-to-reach areas such as inside corners, edges, and contours. Knot-twisted brushes are tightly knotted to remove surface imperfections quickly and ensure a long, productive lifespan. Crimped brushes provide excellent cleaning on uneven surfaces.

- ▷ For surface cleaning such as removing paint, rust, and corrosion
- ▷ Tightly knotted for maximum impact and long brush life (knot-twisted only)

## CRIMPED



Dia.	Arbor	Order No.	Wire size	Thick.	Max. RPM	Std. Pkg.	Std. Ctn.
4"	5/8"-11	13H454	.012"	1/2"	12,500	1	10
5"	5/8"-11	13H554	.012"	3/4"	10,000	1	10
6"	5/8"-11	13H654	.012"	3/4"	9,000	1	10

## KNOT-TWISTED



Dia.	Arbor	Order No.	Wire size	Thick.	Max. RPM	Std. Pkg.	Std. Ctn.
4"	5/8"-11	13H404	.015"	1/2"	20,000	1	10
5"	5/8"-11	13H504	.020"	1/2"	15,000	1	10
6"	5/8"-11	13H604	.020"	1/2"	12,500	1	10
7"	5/8"-11	13H704	.020"	1/2"	10,000	1	10

## KNOT-TWISTED



Dia.	Arbor	Order No.	Wire size	Max. RPM	Std. Pkg.	Std. Ctn.
4"	5/8"-11	13H414	.015"	20,000	1	10
5"	5/8"-11	13H514	.020"	15,000	1	10
6"	5/8"-11	13H614	.020"	12,500	1	10
7"	5/8"-11	13H714	.020"	10,000	1	10

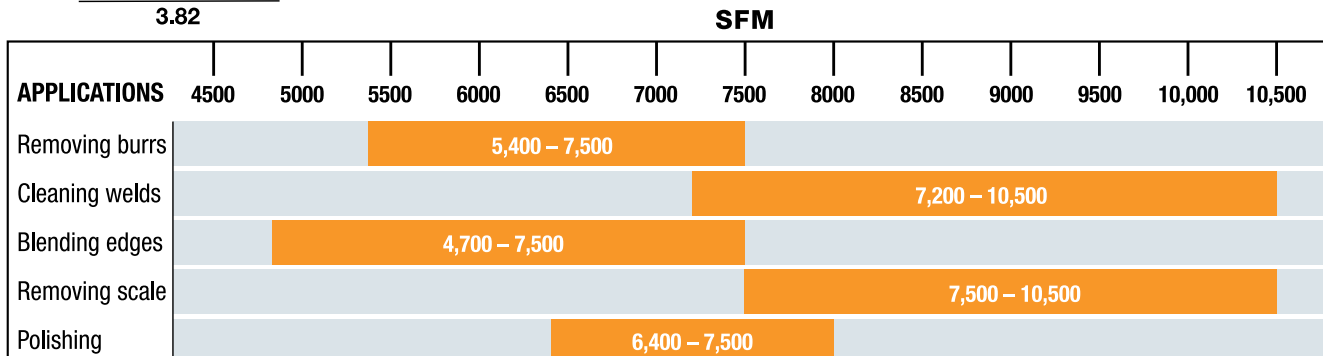
To convert brushes with 5/8"-11 arbor, please see page 206 for special threaded adaptors.



## Choose the right speed for your application

TO CONVERT SURFACE FEET PER MINUTE (SFM) TO RPM:

$$\text{SFM} = \frac{\text{DIAMETER} \times \text{RPM}}{3.82}$$







- ▷ *Crimped wire for general surface cleaning, rust, scale, and paint removal, etc.*

Spherical



- ▷ *The spherical shape allows you to clean in almost any position around the working area. Perfect for cleaning inside pipes and custom hard-to-reach areas.*

Straight



Conical



Wheel



Cup



## MOUNTED WIRE BRUSHES

Our mounted wire brushes come in a variety of sizes and configurations to fit numerous industrial applications on die grinders, power drills, or automated equipment.

For die grinders 1/4" shaft.

### MOUNTED CRIMPED



Type	Dia.	Width	Order No.	Wire size	Max. RPM	Std. Pkg.	Std. Ctn.
Straight	1/2"		13C003	.010"	25,000	1	10
Straight	1/2"		13C005	.020"	25,000	1	10
Straight	3/4"		13C008	.014"	25,000	1	10
Straight	1"		13C010	.014"	25,000	1	10
Conical	3/4"		13C028	.014"	25,000	1	10
Wheel	1 3/8"	1/4"	13C110	.008"	25,000	1	10
Wheel	2"	5/8"	13C120	.0118"	25,000	1	10
Wheel	3"	1/4"	13C123	.0118"	25,000	1	10
Wheel	3"	3/4"	13C125	.0118"	25,000	1	10
Wheel	4"	1/4"	13C128	.0118"	15,000	1	10
Cup	1 1/2"		13C015	.0118"	13,000	1	10
Cup	2 3/8"		13C018	.0118"	13,000	1	10
Spherical	1 1/2"	1 1/2"	13C215	.008"	20,000	1	10
Spherical	2"	2"	13C225	.010"	20,000	1	10
Spherical	3"	3"	13C230	.0118"	15,000	1	10

### MOUNTED CRIMPED



Type	Dia.	Width	Order No.	Wire size	Max. RPM	Std. Pkg.	Std. Ctn.
Straight	1/2"		13C053	.010"	25,000	1	10
Straight	1/2"		13C055	.020"	25,000	1	10
Straight	3/4"		13C058	.014"	25,000	1	10
Conical	3/4"		13C078	.0118"	25,000	1	10
Wheel	1 3/8"	1/4"	13C160	.008"	25,000	1	10
Wheel	2"	5/8"	13C170	.0118"	25,000	1	10
Wheel	3"	1/4"	13C173	.0118"	25,000	1	10
Wheel	3"	3/4"	13C175	.0118"	25,000	1	10
Wheel	4"	1/4"	13C178	.0118"	15,000	1	10
Cup	1 1/2"		13C065	.0118"	13,000	1	10
Cup	2 3/8"		13C068	.0118"	13,000	1	10
Spherical	1 1/2"	1 1/2"	13C265	.008"	20,000	1	10
Spherical	2"	2"	13C275	.010"	20,000	1	10
Spherical	3"	3"	13C280	.0118"	15,000	1	10

## KNOT-TWISTED



Type	Dia.	Width	Order No.	Wire size	Max. RPM	Std. Pkg.	Std. Ctn.
Straight	¾"		13C019	.020"	25,000	1	10
Straight	1 ½"		13C020	.020"	25,000	1	10
Wheel	2 ¾"	¾"	13C130	.020"	25,000	1	10
Wheel	2 ¾"	¾"	13C140	.020"	25,000	1	10
Saucer-cup	3"	½"	13C270	.020"	25,000	1	10
Cup	3"	½"	13C370	.020"	12,000	1	10

- ▷ Knot-twisted wire for heavy-duty brushing such as deburring, removing heavy rust and corrosion, etc.
- ▷ Conical brushes for cleaning fillet welds
- ▷ Wire wheel brushes are excellent for cleaning the inside diameter of pipes and tubing

## KNOT-TWISTED



Type	Dia.	Width	Order No.	Wire size	Max. RPM	Std. Pkg.	Std. Ctn.
Straight	1 ½"		13C070	.020"	25,000	1	10
Wheel	2 ¾"	¾"	13C180	.020"	25,000	1	10

## DOUBLE SIDED KNOT-TWISTED



Type	Dia.	Width	Order No.	Wire size	Max. RPM	Std. Pkg.	Std. Ctn.
Wheel	3"	¾"	13C303	.0118"	25,000	1	10
Wheel	4"	¾"	13C404	.0118"	20,000	1	10

Mandrels for double sided brushes, order No. 13D008 (for 13C303) and 13D009 (for 13C404).



**COMBINE YOUR WIRE BRUSH WITH THE BEST POWER TOOL!**  
See page 164.



Mandrel shown on picture sold separately.

## LINEAR CRIMPED BRUSHES

Our linear wire brushes can be used with the LINE-MATE III™ system for efficient cleaning over wide surface areas.

### LINEAR CRIMPED BRUSHES



Dia.	Width	Arbor	Order No.	Wire size	Max. RPM	Std. Pkg.	Std. Ctn.
4 ½"	2"	⅝"-11	13M454	.01"	4,000	1	10

### LINEAR CRIMPED BRUSHES



Dia.	Width	Arbor	Order No.	Wire size	Max. RPM	Std. Pkg.	Std. Ctn.
4 ½"	2"	⅝"-11	13M464	.01"	4,000	1	10



# WIRE WHEEL BRUSHES

For bench and pedestal grinders

These brushes are made from industrial quality wire perfectly balanced for smooth operation and long life. They are most commonly used to remove paint, rust, and corrosion, for light deburring and similar cleaning jobs.

## CRIMPED



Dia.	Width	Arbor	Order No.	Wire size	Max. RPM	Std. Pkg.	Std. Ctn.
4"	3/4"	1/2"	13B040	.0118"	6,000	1	10
6"	7/8"	1 1/4"	* 13B060	.0118"	6,000	1	10
6"	1 1/8"	1 1/4"	* 13B061	.0118"	6,000	1	10
6"	3/4"	1 1/4"	* 13B065	.0118"	6,000	1	10
7"	7/8"	1 1/4"	* 13B070	.0118"	6,000	1	10
8"	1"	1 1/4"	* 13B080	.0118"	4,500	1	10
8"	1/2"	5/8"	** 13B082	.0118"	4,500	1	10
8"	3/4"	1 1/4"	* 13B085	.0118"	4,500	1	10
10"	1"	1 1/4"	* 13B100	.0118"	3,600	1	10

\* All brushes with 1 1/4" arbor are equipped with a set of reducer bushings to fit the following shaft diameters: 1/2", 5/8", 3/4", 7/8" and 1".

\*\* This brush comes with 1/2" reducer bushings.



- ▷ Crimped wire has optimal density and wire trim for the most effective brushing action and longest life
- ▷ For general surface cleaning and deburring applications

## CRIMPED



Dia.	Width	Arbor	Order No.	Wire size	Max. RPM	Std. Pkg.	Std. Ctn.
6"	3/4"	1 1/4"	* 13B165	.0118"	6,000	1	10
6"	7/8"	1 1/4"	* 13B160	.0118"	6,000	1	10
8"	3/4"	1 1/4"	* 13B185	.0118"	4,500	1	10
8"	1"	1 1/4"	* 13B180	.0118"	4,500	1	10

\* All brushes with 1 1/4" arbor are equipped with a set of reducer bushings to fit the following shaft diameters: 1/2", 5/8", 3/4", 7/8" and 1".

## KNOT-TWISTED



Dia.	Width	Arbor	Order No.	Wire size	Max. RPM	Std. Pkg.	Std. Ctn.
6"	3/8"	5/8"	** 13B260	.0118"	9,000	1	10
8"	3/8"	5/8"	** 13B280	.0118"	8,500	1	10

\*\* These brushes come with 1/2" reducer bushings.



- ▷ These brushes are designed to be flipped and mounted in the opposite direction
- ▷ This self-sharpenes the wires, extending lifespan while maintaining fast cleaning and deburring rates

### Accessory

#### Replacement set of bushings

Complete set 13B015



## SCRATCH BRUSHES

The best value for hand brushes in the industry. A curved metal core design combined with high-quality crimped wire allows for comfortable and productive brushing in wide variety of applications using one brush. The ergonomic thermoplastic handle design is both heat- and crack-resistant. To reduce the number of brushes needed in your operation, turn to WALTER's universal scratch brushes.

- ▷ Lasts up to 25X longer than conventional wood handle scratch brushes
- ▷ Replace multiple brush types with this one versatile brush
- ▷ Ergonomic design for comfortable brushing
- ▷ Color-coded for easy identification

### BRASS COATED STEEL



Steel

Order No.	Wire type	Total length	Brush length	Brush width	Wire size	Std. Pkg.
13S104	Crimped	9-5/8"	5-5/16"	9/16"	.012"	24

### STAINLESS STEEL



Stainless Steel



Alu. + n.f. metals

Order No.	Wire type	Total length	Brush length	Brush width	Wire size	Std. Pkg.
13S114	Crimped	9-5/8"	5-5/16"	9/16"	.012"	24

### BRASS



Steel



Stainless Steel



Alu. + n.f. metals



Brass

Order No.	Wire type	Total length	Brush length	Brush width	Wire size	Std. Pkg.
13S134	Crimped	9-5/8"	5-5/16"	9/16"	.012"	24

### Tech tip!

Working with multiple brush types on the job can cause clutter and downtime due to switching. Simplify your brushing solutions with this universal scratch brush designed to handle all your brushing application needs.



- ▷ High carbon steel wires
- ▷ Brass coating prevents rust buildup



- ▷ 304 stainless steel wires
- ▷ Guaranteed not to contaminate stainless steel



- ▷ 100% brass wires
- ▷ Designed for spark-free environments

# ALLSTEEL™

## ALLSTEEL™ WIRE BRUSHES

ALLSTEEL™ wire brushes are designed to provide exceptional value and deliver consistent and reliable surface cleaning performance on a variety of metals. Through a strict quality-controlled manufacturing process, ALLSTEEL™ brushes are perfectly balanced and feature an identical wire count to ensure vibration-free brushing. Available in a variety of shapes and sizes.

- ▷ High-quality wire
- ▷ Perfect balance and even wire count
- ▷ Stainless steel wire brushes made with grade 304 stainless wire
- ▷ Guaranteed not to contaminate your workpiece

### WIRE CUP BRUSHES

#### CRIMPED



Order No.	Dia.	Arbor	Wire	Max RPM	Std Pkg.	Wire Type
13W301	3	5/8"-11	0.0118"	12,000	1	Steel
13W302	3	5/8"-11	0.0118"	12,000	1	Stainless
13W501	5	5/8"-11	0.014"	8,600	1	Steel

#### KNOT-TWISTED

Order No.	Dia.	Arbor	Wire	Max RPM	Std Pkg.	Wire Type
13W311	3	5/8"-11	0.02"	12,000	1	Steel
13W312	3	5/8"-11	0.02"	12,000	1	Stainless
13W313	3	M14	0.02"	12,000	10	Steel

\* Only on 304 stainless wire type



### WIRE WHEEL BRUSHES

#### STRINGER BEAD



Order No.	Dia.	Arbor	Wire	Max RPM	Std Pkg.	Wire Type
13W461	4-1/2	5/8"-11	0.02"	15,000	1	Steel
13W561	5	5/8"-11	0.02"	15,000	1	Steel
13W561B	5	5/8"-11	0.02"	15,000	10	Steel
13W563	5	M14	0.02"	15,000	10	Steel
13W661	6	5/8"-11	0.02"	10,000	1	Steel
13W661B	6	5/8"-11	0.02"	10,000	10	Steel
13W761	6-7/8	5/8"-11	0.02"	9,000	1	Steel

#### KNOT-TWISTED

Order No.	Dia.	Arbor	Wire	Max RPM	Std Pkg.	Wire Type
13W451	4-1/2	5/8"-11	0.02"	15,000	1	Steel
13W551	5	5/8"-11	0.02"	15,000	1	Steel
13W553	5	M14	0.02"	15,000	10	Steel
13W651	6	5/8"-11	0.02"	10,000	1	Steel



#### Color coded hubs for easy identification

	Dark Grey	Carbon Steel
	White	Stainless Steel

# ALLSTEEL™ WIRE BRUSHES AND MOUNTED WIRE BRUSHES

## SAUCER CUP BRUSHES

### CRIMPED



Order No.	Dia.	Arbor	Wire	Max RPM	Std Pkg.	Wire Type
13W431	4	5/8"-11	0.0118"	12,500	1	Steel
13W531	5	5/8"-11	0.0118"	10,000	1	Steel

### KNOT-TWISTED

13W441	4	5/8"-11	0.02"	20,000	1	Steel
13W541	5	5/8"-11	0.02"	15,000	1	Steel



## MOUNTED WIRE BRUSHES

### KNOT-TWISTED



Order No.	Type	Dia.	Shank	Wire	Max RPM	Std Pkg.	Std Ctn	Wire Type
09C020	Straight	1-1/8"	1/4"	0.02"	20,000	1	10	Steel
09C130	Wheel	2-3/4"	1/4"	0.02"	20,000	1	10	Steel
09C140	Wheel	2-3/4"	1/4"	0.02"	25,000	1	10	Steel
09C270	Saucer-cup	3"	1/4"	0.02"	20,000	1	10	Steel
09C370	Cup	3"	1/4"	0.02"	12,000	1	10	Steel



STRAIGHT



SAUCER-CUP

### KNOT-TWISTED



Order No.	Type	Dia.	Shank	Wire	Max RPM	Std Pkg.	Std Ctn	Wire Type
09C070	Straight	1-1/8"	1/4"	0.02"	20,000	1	10	Stainless
09C180	Wheel	2-3/4"	1/4"	0.02"	20,000	1	10	Stainless



WHEEL

Mandrel shown on picture sold separately.

### DOUBLE SIDED KNOT-TWISTED



Order No.	Type	Dia.	Shank	Wire	Max RPM	Std Pkg.	Std Ctn	Wire Type
09C303	Wheel	3"	3/8"	0.02"	20,000	1	10	Steel
09C404	Wheel	4"	3/8"	0.02"	20,000	1	10	Steel



CUP

Mandrels for double sided brushes, order no. 13D008 (for 13C303) and 13D009 (for 13C404).

### Color coded hubs for easy identification

	Dark Grey	Carbon Steel
	White	Stainless Steel



# ALLSTEEL™ MOUNTED WIRE BRUSHES

## MOUNTED WIRE BRUSHES

### MOUNTED CRIMPED



Order No.	Type	Dia.	Shank	Wire	Max RPM	Std Pkg.	Std Ctn	Wire Type
09C008	Straight	3/4"	1/4"	0.0118"	18,000	1	10	Steel
09C028	Conical	2-3/8"	1/4"	0.0118"	18,000	1	10	Steel
09C110	Wheel	1-3/8"	1/4"	0.0080"	20,000	1	10	Steel
09C120	Wheel	2"	1/4"	0.0118"	20,000	1	10	Steel
09C125	Wheel	3"	1/4"	0.0118"	18,000	1	10	Steel
09C015	Cup	1-1/2"	1/4"	0.0118"	13,000	1	10	Steel
09C018	Cup	2-3/8"	1/4"	0.0118"	13,000	1	10	Steel



SPHERICAL



STRAIGHT

### MOUNTED CRIMPED



Order No.	Type	Dia.	Shank	Wire	Max RPM	Std Pkg.	Std Ctn	Wire type
09C058	Straight	3/4"	1/4"	0.0118"	25,000	1	10	Stainless
09C078	Conical	3/4"	1/4"	0.0118"	18,000	1	10	Stainless
09C160	Wheel	1-3/8"	1/4"	0.0080"	20,000	1	10	Stainless
09C170	Wheel	2"	1/4"	0.0118"	20,000	1	10	Stainless
09C175	Wheel	3"	1/4"	0.0118"	18,000	1	10	Stainless
09C065	Cup	1-1/2"	1/4"	0.0118"	13,000	1	10	Stainless
09C068	Cup	2-3/8"	1/4"	0.0118"	13,000	1	10	Stainless



CONICAL





WHEEL



CUP

#### Color-coded hubs for easy identification

	Dark Gray	Carbon Steel
	White	Stainless Steel



Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)



# FAST TRACK

SHAYNE WORGAN  
WELDER

//  
We can't delay shipments. Quality tools help me get the trains back on the tracks quickly.  
//

If you want something done fast and well, sometimes the best way to achieve it, is by doing it yourself. Shayne learned that at a young age, watching his dad fix and repair all kinds of items around the house. Shayne's first job was to hold the flashlight while his father did the fixing.

After giving graphic design a try in school, Shayne went back to his roots. He realized that the countless hours spent helping his dad, as well as the experience gained by building and repairing things on his own, were not in vain since they were highly requested and profitable in the world of large-scale manufacturing. So, he decided to give welding a try.

Eight years later, Shayne now works for one of North America's largest manufacturers of freight car axles and a leading train repair shop, supplying the transit and ground passenger transportation industry. "At the shop, we work on so many different projects. I can be welding, gauging, grinding, and drilling within the same day. Cars are continuously coming in. I can't afford to waste time; I've got to stay on schedule."

His passion for metalworking, as well as his access to the proper tools and abrasives, helps Shayne get the job done fast. So fast, that when he asked his boss what he could do to improve and suggested he could try to work a little faster, his boss chuckled and said: "No, I really don't think your speed is an issue."

Performing a wide variety of repairs on rail cars has its challenges. "Maintenance and repairs on trains are physically demanding jobs. Flap discs that increase my comfort level, help take a load off my shoulders." But it also has its rewards: "Seeing these huge units enter the shop all crooked and worn down and leave the shop looking as good as new is so satisfying!"

Shayne is definitely on the fast track to success.



SCAN THE QR CODE ABOVE TO LEARN MORE ABOUT SHAYNE'S JOURNEY

 **WALTER**  
Achieve Greatness™



A man in a dark denim shirt and safety gear is using a power tool to grind a metal piece. A large shower of sparks is flying out from the point of contact. The background is a blurred industrial setting.

# 06

**POWER  
TOOLS**



# FEATURES



Video available at The WALTER Network  
www.youtube.com/user/TheWalterNetwork

## Power, safety and improved productivity

Our line of angle grinders is designed to excel in all applications, whether it be in grinding, cutting, sanding, or cleaning. Each of our grinders is compact and packs a punch, providing you with the highest removal rate in the industry when paired with WALTER abrasives. These industrial tools are designed with safety in mind and are built to last.

We also have classified our grinders to help you select the very best tool for your specific needs. Is improving safety the key decision factor? Perhaps maximum productivity is really what matters. Rest assured that whichever grinder you select, it will deliver the strongest, most efficient output available, reducing your overall costs.



	Anti-vibration side handle	Tool-free guard	Quick-R™ release	Safety clutch	Paddle switch (non-locking)	Soft Start™	Safety restart	DYNAMAX™ electronics	Powerguard™	Stabilizer	Variable Dialspeed™	Mechanical brake system
<b>MINI GRINDER</b>	✗	✗	✗	✗								
<b>MINI PS</b>	✗	✗	✗	✗	✗							
<b>MINI PLUS</b>	✗	✗	✗	✗		✗	✗	✗	✗	✗	✗	
<b>SUPER 5</b>	✗	✗	✗	✗								
<b>SUPER 5 PS</b>	✗	✗	✗	✗	✗	✗	✗	✗	✗			✗
<b>PRO 5</b>	✗	✗	✗	✗		✗	✗	✗	✗	✗		
<b>BIG 6</b>	✗	✗	✗	✗		✗	✗	✗	✗	✗		
<b>BIG 6 PS</b>	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗		✗
<b>IRONMAN</b>	✗	✗	✗	✗		✗	✗	✗	✗	✗		
<b>IRONMAN PS</b>	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗		✗
<b>MAXI</b>	✗	✗			✗**							
<b>QUICK-STEP FINISHER</b>	✗	✗	✗	✗		✗	✗	✗	✗		✗	
<b>QUICK-STEP BIG-BUFF III</b>	✗					✗		✗	✗		✗	
<b>ULTI-MATE</b>	✗	✗		✗		✗	✗	✗	✗		✗	
<b>RAIL-MATE</b>						✗		✗			✗	
<b>QUICK-STEP LINE-MATE III</b>	✗					✗		✗	✗		✗	
<b>DIALSPEED 6141</b>						✗	✗	✗	✗		✗	
<b>DIALSPEED 6145</b>						✗	✗	✗	✗		✗	
<b>STRAIGHT-MATE</b>						✗		✗			✗	

\*Non-locking paddle switch on models 6352 and 6362 only. \*\*Non-locking switch available upon request on MAXI™ models.

## Total performance

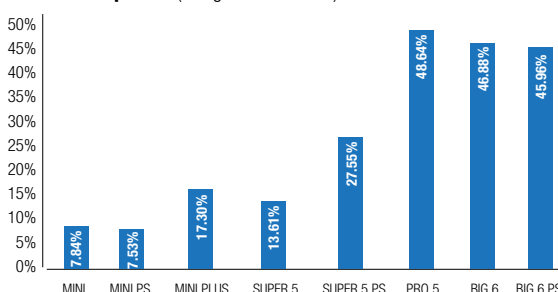
When you combine the most powerful grinders with premium WALTER abrasives, you get the best overall performance in the industry. Whether you need to cut, grind or finish surfaces, our line of angle grinders gets the job done faster and easier while extending the life of your abrasives. WALTER's next generation grinders are setting new standards in the metalworking industry.

### New angle grinders vs. the previous generation (both using HP XX grinding wheels)

Model	Total removal (g)			Removal rate (g/min.)		
	New	Old	%	New	Old	%
MINI	1020	1111	8.92%	20.40	22	7.84%
MINI PS	1023	1111	8.60%	20.46	22	7.53%
MINI PLUS	1023	1230	20.23%	20.46	24	17.30%
SUPER 5	1176	1200	2.04%	29.40	33.4	13.61%
SUPER 5 PS	1176	2100	78.57%	29.40	37.5	27.55%
PRO 5	1176	2300	95.58%	29.40	43.7	48.64%
BIG 6	2200	2765	25.68%	32.00	47	46.88%
BIG 6 PS	2200	2765	25.68%	32.20	47	45.96%

● Double the life of your HP XX wheels by combining them with our PRO 5 grinder!

### Productivity gain with our grinders compared to closest competitor (using HP XX wheels)



## OUR GRINDERS GENERAL FEATURES

**Variable DialSpeed™** Electronic speed control at the back of the machine to adjust the speed for optimum performance. DYNAMAX™ electronics regulate the power supply to the motor to ensure constant speed under full load for optimal control.

**Soft Start™** Tools equipped with Soft Start™ will ensure a progressive increase of RPM for a safer use, as opposed to a high start-up "kick".

**Brake system** Fastest mechanical brake available on the market, that will stop the tool within two seconds, for optimal user safety.

**Powerguard™** A temperature sensor is built into the electric motor to help protect the tool from burn-out.

**Quick-R™ release** Lets you change grinding and cut-off wheels in seconds, without any keys or wrenches.

**Anti-vibration side handle** High-tech, vibration absorbing side handle offers a safer and more comfortable operation without fatigue.

**Paddle switch (non-locking)** For added safety, the double action non-locking paddle switch will stop the grinder if you are not holding it.

**Safety restart** Following a power interruption the power tool will not restart on its own when power is restored. If the switch is left in the ON position, the LED will start blinking when the power is restored. To restart the grinder, it must be reset by switching it OFF and then ON. If the cord breaks, the LED link will flash.

**Tool-free guard** Quick-release guard lever lets you adjust or remove the wheel guard without any tools, in a matter of seconds.

**Stabilizer** Significantly reduces vibration during operation, making the tools more ergonomic and extending the life of both the tool and abrasives by up to 200%.

**DYNAMAX™ electronics** Ensure that spindle RPM speeds remain constant even under load for maximum productivity.

**Safety clutch** Built into the gear drive, the safety slip clutch neutralizes momentum and eliminates dangerous backlash.

## More protection

All WALTER 4 1/2", 5" and 6" angle grinders are covered by our 24-month LONG-RUN warranty and exclusive SERVICEGUARD™ protection plan.



# ANGLE GRINDERS



WARRANTY  
LONG-RUN  
SERVICEGUARD™  
Protection Plan  
24 MONTHS

## MINI GRINDER™

Order no. 30A161

Light, compact and durable  
The Mini™ 4.5" grinder's state-of-the-art features include the new WALTER anti-vibration handle that makes the grinder more comfortable to use and WALTER's QUICK-R™ instant release function for disc change outs that take just seconds. The Mini™ has an additional 100 watts of power and features a rear vent to keep the armature cooler, allowing you to work longer while extending the life of the tool.



WARRANTY  
LONG-RUN  
SERVICEGUARD™  
Protection Plan  
24 MONTHS

## MINI PS™

Order no. 30A163

Additional job site safety  
The Mini PS™ is the ideal choice when a paddle switch is needed on a 4 ½" grinder. It can be plugged into a generator, making it the perfect fit for construction sites. The double action non-locking paddle switch will stop when you release it, making it the safest choice without sacrificing productivity.



WARRANTY  
LONG-RUN  
SERVICEGUARD™  
Protection Plan  
24 MONTHS

## MINI PLUS™

Order no. 30A255

Powerful variable speed grinder  
The MINI PLUS™ grinder provides premium performance and the most advanced features in the industry. Put it to work taking down welds, cutting tubing, light sanding, or removing rust and paint. With an autobalancer, our DYNAMAX™ speed control and POWERGUARD™ protection from overheating, the MINI PLUS™ delivers superior performance no matter the job. Remove more material faster while also significantly extending the life of your abrasives with a premium power tool.

Description	MINI™	MINI PS™	MINI PLUS™
Model name	6161K	6163B	6255J
Order No.	30A161	30A163	30 255
Anti-vibration side handle	√	√	√
Safety clutch	√	√	√
QUICK-R™ instant release function	√	√	√
Tool-free rotating guard	√	√	√
Non-locking paddle switch		√	
Lock-on switch	√		√
AC/DC compatibility	√	AC only	AC only
Stabilizer™			√
Soft-Start™			√
Restart protection			√
DYNAMAX™ RPM monitoring			√
POWERGUARD™ overheat protection			√
LED indicator			√
DIALSPEED™ variable RPM selector			√
Spindle	5/8" - 11	5/8" - 11	5/8" - 11
RPM no-load	10,500	10,500	2,800 to 10,500
Amps	8.5 A	8.5 A	9.5 A
Power	900 W	900 W	1000 W
Tool weight	4.6 lbs	4.6 lbs	4.8 lbs
Maximum wheel diameter	4 ½"	4 ½"	5"
<b>Standard equipment</b>			
Wheel guard type 27	48M441	48M441	48M444
Side handle	30B075	30B075	30B075
Inner flange	30B057	30B057	30B057
QUICK-R™ front nut	30B020	30B020	30B020
<b>Optional equipment</b>			
Close guard adaptor	34B010	34B010	34B011
Manual clamping nut	30B037	30B037	30B037
Nut holder	30B023	30B023	30B023
Pin key wrench	48Z148	48Z148	48Z148
SPIN-ON™ kit	30B024	30B024	30B024





## SUPER 5™

Order no. 30A150

The perfect intermediate size grinder

Now boasting a 10.5A motor, this grinder is the right choice for those jobs that require extra power from a lightweight tool. This industrial grade power tool is built to last, and when paired with 5" WALTER abrasives it provides one of the safest and most productive systems to tackle a wide range of jobs.



## SUPER 5 PS™

Order no. 30A153

Safety and performance

The Super 5 PS™ allows you to grind, cut, sand, finish and clean at a much faster and smoother rate. Furthermore, rest assured that when you hold the Super 5 PS™, you are holding the safest grinder thanks to Soft Start™, Powerguard™, a safety clutch and a safety restart that prevents the tool from starting on its own after a power interruption. The Super 5 PS also comes with a paddle switch and a mechanical brake which stops the grinder within 2 seconds of relieving the trigger.



## PRO 5™

Order no. 30A157

The best ratio of weight and performance

The Pro 5™ has no peers among 5" angle grinders when it comes to removal rate or cutting speed. Equipped with the WALTER Stabilizer™, DYNAMAX™, Powerguard™, and Soft Start™ technologies, the Pro 5™ is in a class of its own and offers the most comprehensive safety and productivity enhancing features.

Description	SUPER 5™	SUPER 5 PS™	PRO 5™
Model name	6150i	6153C	6157A
Order No.	30A150	30A153	30A157
Anti-vibration side handle	√	√	√
Safety clutch	√	√	√
QUICK-R™ instant release function	√	√	√
Tool-free rotating guard	√	√	√
Non-locking paddle switch		√	
Mechanical brake system		2-second brake	
Lock-on switch	√		√
AC/DC compatibility	√	AC only	AC compatibility only
Stabilizer™			√
Soft-Start™		√	√
Restart protection		√	√
DYNAMAX™ RPM monitoring		√	√
POWERGUARD™ overheat protection		√	√
LED indicator		√	√
Spindle	5/8" - 11	5/8" - 11	5/8" - 11
RPM no-load	11,000	11,000	11,000
Amps	10.5 A	10.5 A	13.5 A
Power	1200 W	1550 W	1550 W
Tool weight	5.3 lbs	5.5 lbs	5.7 lbs
Maximum wheel diameter	5"	5"	5"
<b>Standard equipment</b>			
Wheel guard type 27	48M444	48M444	48M444
Side handle	30B075	30B075	30B075
Inner flange	30B057	30B057	30B057
QUICK-R™ front nut	30B020	30B020	30B020
<b>Optional equipment</b>			
Close guard adaptor	34B011	34B011	34B011
Manual clamping nut	30B037	30B037	30B037
Nut holder	30B023	30B023	30B023
Pin key wrench	48Z148	48Z148	48Z148
SPIN-ON™ kit	30B024	30B024	30B024



## BIG 6™

Order no. 30A260

The best ratio of weight and performance

The Big 6™ is the most powerful grinder in its class. The only grinder that can deliver 1,700 watts with a 6" wheel capacity, the Big 6™ is built for heavy duty applications. It offers a secure grip thanks to the new WALTER Stabilizer™ system, which reduces vibration and increases the life of each wheel by at least 30%. The Big 6™ has extensive safety features, making it ideal for production environments that require the performance of a 7" or even 9" grinder without the weight that contributes to operator fatigue.



## BIG 6 PS™

Order no. 30A263

Heavy-duty performance with additional safety features

The Big 6 PS™ comes with a paddle switch and a mechanical brake to stop the grinder within 2 seconds of relieving the trigger. The Big 6 PS™ is the safest heavy duty grinder on the market and also comes with a WALTER Stabilizer™ to reduce vibration, improving workplace ergonomics while improving the life and removal rate of your abrasives.

Description	BIG 6™	BIG 6 PS™
Model name	6260J	6263B
Order No.	30A260	30A263
Anti-vibration side handle	✓	✓
Safety clutch	✓	✓
QUICK-R™ instant release function	✓	✓
Tool-free rotating guard	✓	✓
Lock-on switch	✓	
Non-locking paddle switch		✓
Mechanical brake system		✓
AC/DC compatibility	AC compatibility only	AC compatibility only
Stabilizer™	✓	✓
Soft-Start™	✓	✓
Restart protection	✓	✓
DYNAMAX™ RPM monitoring	✓	✓
POWERGUARD™ overheat protection	✓	✓
LED indicator	✓	✓
Spindle	5/8" - 11	5/8" - 11
RPM no-load	9,600	9,600
Amps	14.5 A	14.5 A
Power	1700 W	1700 W
Tool weight	5.9 lbs	6.2 lbs
Maximum wheel diameter	6"	6"
<b>Standard equipment</b>		
Wheel guard type 27	48M446	48M446
Side handle	30B075	30B075
Inner flange	30B057	30B057
QUICK-R™ front nut	30B020	30B020
<b>Optional equipment</b>		
Close guard adaptor	34B011	34B011
Manual clamping nut	30B037	30B037
Nut holder	30B023	30B023
Pin key wrench	48Z148	48Z148
SPIN-ON™ kit	30B024	30B024

# IRONMAN™ GRINDERS

## WARRANTY

**LONG-RUN**  
SERVICEGUARD™  
Protection Plan

**24**  
MONTHS



## IRONMAN™

**Order no.** 30A560

Top performance in strenuous and prolonged applications

With its ergonomic rat-tail design, the Ironman™ delivers 1,750 watts with 6" wheel capacity. It comes with a WALTER Stabilizer™ to reduce vibration and extend the life and removal rate of your abrasives by up to 30%. Ideal for prolonged applications, when combined with WALTER abrasives, Ironman™ is among the industry's most productive systems available.

## IRONMAN™ PS

**Order no.** 30A563

Exceptional performance with added safety features

If it's high performance and added safety you're after, the Ironman™ PS comes with a paddle switch and a mechanical brake to stop grinding wheels from turning within 2 seconds of relieving the trigger, and cutting wheels within 1.5 seconds. It delivers 1,750 watts of power and comes with a WALTER Stabilizer™ to reduce vibration, improve ergonomics and extend the life and removal rate of your abrasives.

Description	IRONMAN™	IRONMAN™ PS
Model name	6560A	6563A
Order No.	30A560	30A563
Anti-vibration side handle	√	√
Safety clutch	√	√
QUICK-R™ instant release function	√	√
Tool-free rotating guard	√	√
Lock-on switch	√	
Mechanical brake system		2-second brake
AC/DC compatibility	AC compatibility only	AC compatibility only
Stabilizer™	√	√
Soft-Start™	√	√
Restart protection	√	√
DYNAMAX™ RPM monitoring	√	√
POWERGUARD™ overheat protection	√	√
LED indicator	√	√
Spindle	5/8" - 11	5/8" - 11
RPM no-load	9,600	9,600
Amps	14.5 A	14.5 A
Power	1750 W	1750 W
Tool weight	6.2 lbs	6.2 lbs
Maximum wheel diameter	6"	6"
<b>Standard equipment</b>		
Wheel guard type 27	48M444 / 48M446	48M444 / 48M446
Side handle	30B075	30B075
QUICK-R™ front nut	30B020	30B020
<b>Optional equipment</b>		
Close guard adaptor	34B011	34B012
Manual clamping nut	30B037	30B037
Nut holder	30B023	30B023
Pin key wrench	48Z148	48Z148
SPIN-ON™ kit	30B024	30B024



# MAXI™ GRINDERS



**MAXI™ 7"**  
Order no. 30A170

**MAXI™ 9"**  
Order no. 30A190

Pound for pound, they deliver more power and better performance

These full-size industrial angle grinders now deliver even more power and speed to get heavy-duty grinding and finishing jobs done faster and with less effort. Well established and recognized quality motors generate less heat and deliver a higher removal rate under load. These grinders will stay on the job longer in the most demanding applications such as bevelling, grinding and taking down heavy welds.

**WARRANTY**

**LONG-RUN**  
SERVICEGUARD™  
Protection Plan

**24**  
MONTHS

Description	MAXI™ 7"	MAXI™ 9"
Model name	6170i	6190i
Order No.	30A170	30A190
Anti-vibration side handle	√	√
Lock-on switch	√	√
AC/DC compatibility	√	√
Swivel rear handle	√	√
Spindle	5/8" - 11	5/8" - 11
RPM no-load	8,500	6,800
Amps	15 A	15 A
Power	2400 W	2400 W
Tool weight	12.8 lbs	12.8 lbs
Maximum wheel diameter	7"	9"
<b>Standard equipment</b>		
Wheel guard	48M472	48M517
Side handle	48M401	48M401
Inner flange	30B057	30B057
Clamping nut	30B037	30B037
Pin key wrench	48M483	48M483
<b>Optional equipment</b>		
Cut-off guard	34B065	34B066

\* Non-locking switch available upon request for MAXI™ grinder models.

# GRINDER GRIP™

Magnetic grinder accessory to keep your tools close



*The Grinder Grip™ is the only magnetic grinder accessory that makes work easier, safer and more convenient.*

The magnet easily attaches to your grinder, allowing it to stick to any ferrous metal surface when not in use. This will help prevent damage to your power tools, as well as your abrasives by keeping it out of harm's way, all while remaining easily accessible. No more knocking or dropping your tools! Stick them with the Grinder Grip™.

### Features

- ▷ *It's safe and easy to install*
- ▷ *Keeps your tools out of harm's way all while keeping them handy. Compatible with WALTER angle grinders*
- ▷ *Models compatible with other brands such as Metabo, Dewalt, Milwaukee, Makita, Hilti*



**Order No.:** 30G001 for WALTER grinder models.

*For other brands, see accessories on page 208.*



Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)







# STRAIGHT GRINDERS

## STRAIGHT-MATE™

**Order no.** 30A606 (30A607 for the kit)

The ultimate straight grinder and lightweight polishing and buffing tool

The Straight-Mate™ packs a punch as the ultimate lightweight straight grinder with WALTER's Dynamax™ variable speed control and RPM range of 1,600 to 4,800. A versatile grinding, polishing and buffing tool.



### Features

- ▷ *Dynamax™ variable speed control*
- ▷ *RPM range: 1,600-4,800*
- ▷ *Lightweight: 7 lbs (3.2 kg)*
- ▷ *Max wheel diameter: 6" (150mm).*
- ▷ *Compatible with cotton wheels and polishing pastes*
- ▷ *Compatible with wire brush and Line-Mate™ drums*
- ▷ *Compatible with non-woven abrasives,*
- ▷ *Plugs and cones*
- ▷ *Compatible with snagging wheels*



## STRAIGHT-MATE KIT

**Order no.** 30A607

### Includes:

- 1 FX Stainless (07X661)
- 1 Blendex U (07U613)
- 1 2-in-1 Turbo Drum (07K441)
- 1 2-in-1 Drum (07K342)
- 1 Blendex Drum (07M323)
- 1 Cotton Drum (07T425)
- 1 Polishing Paste (07T907)
- 1 Wire Drums (13M454)
- 1 Straight-Mate (30A606)

Description	STRAIGHT-MATE™
Model Name	6606A
Order No.	30A606 (30A607 for kit)
AC compatibility only	√
Soft-Start <sup>MC</sup>	√
DYNAMAX™ RPM monitoring	√
DIALSPEED™ variable RPM selector	√
Spindle	5/8"-11
RPM no-load	1600-4800
Amperage	11.8
Power	1300W
Tool weight	6.6 lbs
Maximum wheel diameter	6" (150mm)

# FINISHING TOOLS



## QUICK-STEP FINISHER™

**Order no.** 30A275 (30A277 for the kit)

The perfect tool for surface finishing and polishing

This variable speed tool was specifically designed to get the most out of the QUICK-STEP™ surface finishing system. Whether you sand, buff or polish, the QUICK-STEP Finisher™ will provide you with a uniform, top quality finish and reduced finishing times. With all the latest electronic safety controls, the QUICK-STEP Finisher™ is the smart choice for professionals looking to reduce cycle time and finishing costs.



## QUICK-STEP FINISHER™ SYSTEM

**Order no.** 30A277

**Includes:**

- 1 Quick-Step interface pad (07Q045)
- 1 Quick-Step backing pad MG (07Q149)
- 1 Quick-Step FLEX grit 60 (07Q506)
- 1 Quick-Step FLEX grit 120 (07Q512)
- 2 Quick-Step Blendex med (07R453)
- 1 Quick-Step Blendex fine (07R454)
- 1 Quick-Step FX (07X845)
- 4 Quick-Step XX (15V418)
- 1 Quick-Step Finisher (30A275) with standard equipment plus carrying case



Description	QUICK-STEP FINISHER™
Model name	6275B
Order No.	30A275 (30A277 for the kit)
Anti-vibration side handle	✓
Safety clutch	✓
QUICK-R™ instant release function	✓
Lock-on switch	✓
AC/DC compatibility	AC compatibility only
Soft-Start™	✓
Restart protection	✓
DYNAMAX™ RPM monitoring	✓
POWERGUARD™ overheat protection	✓
LED indicator	✓
DIALSPEED™ variable RPM selector	✓
Spindle	5/8" - 11
RPM no-load	2,000 to 7,600
Amps	12.2 A
Power	1550 W
Tool weight	5.5 lbs
Maximum wheel diameter	6"
<b>Standard equipment</b>	
Wheel guard type 27	48M446
Side handle	30B075
Inner flange	30B057
QUICK-R™ front nut	30B020
<b>Optional equipment</b>	
Manual clamping nut	30B037
Nut holder	30B023
Pin key wrench	48Z148



## QUICK-STEP BIG-BUFF III™

**Order no.** 30A265 (30A267 for the kit)

The most comfortable and versatile tool for metal polishing

The Quick-Step Big-Buff III™ is a variable speed tool designed to provide operators with the power and versatility to tackle any job that requires sanding, buffing or polishing. The ergonomic design reduces operator fatigue and ensures smooth operation during the most demanding jobs.



### QUICK-STEP BIG-BUFF III™ SYSTEM – 4 1/2"

**Order no.** 30A267

**Includes:**

- 1 Quick-Step interface pad (07Q045)
- 1 Quick-Step backing pad MG (07Q149)
- 1 Quick-Step FLEX grit 60 (07Q506)
- 1 Quick-Step FLEX grit 120 (07Q512)
- 2 Quick-Step Blendex med (07R453)
- 2 Quick-Step Blendex fine (07R454)
- 1 Quick-Step Felt (07T450)
- 1 Quick-Step high polish (07T454)
- 1 instant polishing paste (07T907)
- 1 BLENDEX U™ Cup Disc (07U451)
- 1 Quick-Step FX (07X845)
- 1 ENDURO-FLEX 2-in-1™ (15I453)
- 2 Quick-Step XX (15V418)
- 1 Quick-Step Big-Buff and carrying case (30A265)



Description	QUICK-STEP BIG-BUFF III™
Model name	6265C
Order No.	30A265 (30A267 for the kit)
Anti-vibration side handle	✓
Lock-on switch	✓
AC/DC compatibility	AC compatibility only
Soft-Start™	✓
DYNAMAX™ RPM monitoring	✓
POWERGUARD™ overheat protection	✓
DIALSPEED™ variable RPM selector	✓
Spindle	5/8" - 11
RPM no-load	2,000 to 7,300
Amps	12.4 A
Power	1500 W
Weight	6 lbs
Maximum wheel diameter	6"
<b>Standard equipment</b>	
Side handle	30B075
Inner flange	30B057
Manual clamping nut	30B037
Pin key wrench	48Z148



## ULTI-MATE™

Order no. 30A285 (30A287 for the kit)

Variable speed fillet weld grinder

Ulti-Mate™ is a variable speed fillet weld grinder and finishing tool designed to work in tight corners that other tools have a difficult time reaching. By combining this tool and our range of quality abrasives, you can go from a rough weld all the way to a mirror finish in just minutes.



WARRANTY

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SERVICEGUARD™  
Protection Plan

24  
MONTHS

### ULTI-MATE™ FILLET WELD GRINDER SYSTEM

Order no. 30A287

**Includes:**

- 1 Ulti-Mate grinder (30A285)
- 1 Enduro-Flex 2-in-1 Turbo (15I451)
- 1 Enduro-Flex 2-in-1 (15I453)
- 1 Blendex U Turbo, 1/4" width (07U625)
- 1 Blendex U Turbo, 1/6" width (07U615)
- 1 Blendex U 2SF, 1/4" width (07U621)
- 1 FX Stainless wheel, 1/4" width (07X662)



Description	ULTI-MATE™ WELD GRINDER SYSTEM
Model name	6285A
Order No.	30A285 (30A287 for the kit)
Anti-vibration side handle	✓
Safety clutch	✓
Lock-on switch	✓
AC/DC compatibility	AC compatibility only
Soft-Start™	✓
Restart protection	✓
DYNAMAX™ RPM monitoring	✓
LED indicator	✓
DIALSPEED™ variable RPM selector	✓
Spindle	5/8" - 11
RPM no-load	2,500 to 8,750
Amps	12.2 A
Power	1550 W
Weight	7.7 lbs
Maximum wheel diameter	6"

WARRANTY

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Protection Plan24  
MONTHS

## RAIL-MATE™

**Order no.** 30A288 (30A289 for the kit)

Remove welds and finish pipes, tubes and railings faster

This power tool allows you to use our premium abrasive products to finish pipes, tubes and railings. This powerful finishing tool features Soft-Start technology to avoid kickback when starting the tool, Dialspeed™ variable speed control and Dynamax™ RPM Monitoring to maintain consistent speed under load.



### RAIL-MATE™ SANDER SYSTEM

**Order no.** 30A289

**Includes:**

- 1 Rail-Mate sander (30A288)
- 6 Coolcut XX belts (2 of each: grit 60, 14X156; grit 80, 14X158; grit 120: 14X162)
- 3 Blendex belts (1 of each grade: Coarse, 07D152; Medium 07D153; Fine 07D154)



Description	RAIL-MATE™ SANDER SYSTEM
Model name	6288A
Order No.	30A288 (30A289 for the kit)
Lock-on switch	√
AC/DC compatibility	AC compatibility only
Soft-Start™	√
DYNAMAX™ RPM monitoring	√
POWERGUARD™ overheat protection	√
LED indicator	√
DIALSPEED™ variable RPM selector	√
Spindle	5/8" - 11
RPM no-load	1,600 to 3,200
Surface speed	3-12 m/sec.
MAX belt size L x W	760 mm x 40 mm
MAX pipe diameter	7 in. (180 mm)
MAX polishing deg.	270°
Amps	10A
Power	1200 W
Tool weight	6.8 lbs
QUICK-R™ front nut	30B020

## QUICK-STEP LINE-MATE III™

Order no. 30A268 (30A269 for the kit)

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### Linear finishing made easy

The Line-Mate III™ is a versatile variable speed tool that allows you to quickly and easily apply a wide range of linear finishes to metal surfaces. Its powerful motor will help you complete even the toughest jobs with ease. RPM remains constant under load for a consistent and uniform finish every time. When you have a project that requires a linear scratch pattern applied to the surface, trust Line-Mate to get the job done quickly and efficiently.

### LINE-MATE III™ SYSTEM

Order no. 30A269

#### Includes:

- 1 Line-Mate III™ with standard equipment plus carrying case (30A268)
- 1 expanding drum (07F061)
- 6 cloth drum belts (2 each grit: 60: 07F506, 80: 07F508 and 120: 07F511)
- 2 BLENDEX drum belts (Coarse: 07H502, medium: 07H503)
- 1 TWO-IN-ONE drum (4 ¼" x 4": 07K342)
- 1 BLENDEX drum (4 ¼" x 4" medium: 07M343)



Description	QUICK-STEP LINE-MATE III™
Model name	6268C
Order No.	30A268 (30A269 for the kit)
Anti-vibration side handle	✓
Lock-on switch	✓
AC/DC compatibility	AC only
Soft-Start™	✓
DYNAMAX™ RPM monitoring	✓
POWERGUARD™ overheat protection	✓
DIALSPEED™ variable RPM selector	✓
Spindle	5/8" - 11
RPM no-load	1,000 to 3,800
Amps	12.4 A
Power	1500 W
Weight	6 lbs
Max. wheel dimensions	4 ½" diameter x 4" length
<b>Standard equipment</b>	
Side handle	48Z034
Manual clamping nut	30B037
Pin key wrench	48Z148
Inner flange	30B057



# DIALSPEED™ 6141

Order no. 30A141

For fitting and finishing work

The convenient design of this very popular point grinder results in increased performance and operator comfort to let you reach new levels of productivity. Proven electronics and the quality construction of the motor deliver more power to the spindle while the ergonomic housing minimizes fatigue. This tool is the perfect companion to our premium carbide burrs for any deburring or shaping applications.



SPEED 1	10,000 rpm
SPEED 2	14,000 rpm
SPEED 3	18,500 rpm
SPEED 4	22,000 rpm
SPEED 5	26,000 rpm
SPEED 6	30,500 rpm



Description	DIALSPEED™ 6141
Model name	6141E
Order No.	30A141
Lock-on switch	√
AC/DC compatibility	AC compatibility only
Soft-Start™	√
Restart protection	√
DYNAMAX™ RPM monitoring	√
POWERGUARD™ overheat protection	√
DIALSPEED™ variable RPM selector	√
Collet	¼"
RPM no-load	10,000 to 30,500
Amps	6.4 A
Power	710 W
Tool weight	4.2 lbs
Tool length	13.75"
Maximum wheel diameter	1.5"
<b>Standard equipment</b>	
¼ collet	30B046
Spanner	48Z019
<b>Optional equipment</b>	
Cutting guard	30B051

## DIALSPEED™ 6145

Order no. 30A145

For finishing, brushing and polishing work

Our Dialspeed™ Straight Grinder operates at a lower RPM range, making it the perfect companion for mounted flap wheels or wire brushes for brushing, finishing or polishing applications. The planetary gears allow you to get closer to the workpiece, producing a uniform and straight finish. This industrial power tool is built to last and also features a side handle for increased control in applications requiring a delicate touch.

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SPEED 1	2,500 rpm
SPEED 2	4,000 rpm
SPEED 3	5,500 rpm
SPEED 4	7,000 rpm
SPEED 5	8,000 rpm
SPEED 6	8,700 rpm

Description	DIALSPEED™ STRAIGHT GRINDER 6145
Model name	6145E
Order No.	30A145
Lock-on switch	✓
AC/DC compatibility	AC compatibility only
Soft-Start™	✓
Restart protection	✓
DYNAMAX™ RPM monitoring	✓
POWERGUARD™ overheat protection	✓
DIALSPEED™ variable RPM selector	✓
Collet	¼"
RPM no-load	2,500 to 8,700
Amps	8.5 A
Power	950 W
Tool weight	4.3 lbs
Tool length	14"
Maximum wheel diameter	1.5"
<b>Standard equipment</b>	
Side handle	48L555
¼ collet	30B046
Spanner	48Z019
<b>Optional equipment</b>	
Cutting guard	30B051

# 07

## MRO CHEMICALS



**WALTER**  
**CHAIN GANG**

Instructions for use: Shake before use. Spray for 1-2 seconds.  
Distance of 25 cm (10 inches).  
Operating temperature: -20°C (-4°F).  
WALTER SLAP SHOT

**CONTENTS UNDER PRESSURE**  
Container may explode if heated above 50°C (122°F).

**FLAMMABLE AEROSOL** Keep container away from heat. Do not puncture or incinerate. Keep away from flames and sparks. Do not use during use.

**IRRITANT** Harmful by inhalation if swallowed. Use with adequate ventilation. May be irritant to skin and respiratory passages. Avoid prolonged contact with skin. Avoid contact. Wear safety glasses. Do not breathe vapours.

**Inhalation:** Remove victim to fresh air. Keep victim still. **Skin contact:** Wash with soap and plenty of water. **Eye contact:** Flush with plenty of water. **Ingestion:** Do not induce vomiting. Call physician if necessary.

**FOR INDUSTRIAL USE ONLY**  
SEE MATERIAL SAFETY DATA SHEET  
**J. WALTER INC.**  
810 Day Hill Road  
Windsor, CT 06795  
QUESTIONS? CANADIAN 1-800-387-2222  
WWW.WALTERINC.COM



# WALTER'S MRO CHEMICAL SOLUTIONS HELP YOU REDUCE MAINTENANCE COSTS, EXTEND EQUIPMENT LIFE, AND IMPROVE WORKPLACE PRODUCTIVITY

WALTER'S MRO CHEMICAL OFFERING CAN BE SPLIT INTO 4 PRIMARY TYPES:

LUBRICANTS	<b>Maintain:</b> Reduce wear and friction for machinery and parts to help customers work better.
ANTI-SEIZE	<b>Prevent:</b> Treat threaded components to prevent rust and corrosion.
PENETRANTS	<b>Disassemble:</b> Increase disassembly speed when working on seized parts.
CORROSION INHIBITORS	<b>Prevent:</b> Protect metal surfaces from rust and corrosion.

## ENSURING MATERIAL COMPABILITY

WHEN CHOOSING CHEMICALS, IT IS IMPORTANT TO IDENTIFY WHICH MATERIALS THEY WILL BE USED ON.

► Look for the following icons when choosing the right product for your application:



## CERTIFICATIONS AND KEY ATTRIBUTES

► WALTER offers chemicals that meet various certification levels and benefits.



**NON-FLAMMABLE**

Safe for use in environments where flames or sparks are present.



**NONFOOD COMPOUNDS PROGRAM**

The global food industry relies upon nonfood compounds to facilitate the efficient processing, handling and storage of food throughout the supply chain. NSF certification ensures products meet strict standards in these environments.



# CHAIN AND GEARS LUBRICANTS

## CHAIN GANG™

Moly Chain Lubricant

CHAIN GANG™ is a high-performance synthetic lubricant that lasts longer than traditional lubricants. Effectively penetrates fine pins and bushings to seal out dust, dirt, water, and other contaminants. Provides excellent protection and enhances the life of any machinery that uses chains or wire cables.



All Metals

Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	400 ml	13.5 oz.	53D102	L-05	12

### Applications

- ▷ All types of chain drives, O-ring chains, and wire rope
- ▷ Machinery (especially forklifts)

### Benefits

- ▷ Reduces costly downtime due to seized chains, pin breakage, and premature wear
- ▷ Stays cleaner and lasts longer than hot grease dips
- ▷ Requires fewer applications than other lubricants
- ▷ Prolongs chain life



### Features

- ▷ Contains microscopic moly particles for excellent lubricity
- ▷ Penetrates fine clearances
- ▷ Water-resistant and dust-resistant
- ▷ Repels dirt particles

## OPEN GEAR™

Moly Gear Lubricant

OPEN GEAR™ is an adherent, long-lasting, high-load gear grease that prevents metal-to-metal contact. Increases efficiency and service life of drives and gears – even in harsh environments.



All Metals

Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	400 ml	13.5 oz.	53E102	L-16	12

### Applications

- ▷ All types of heavy-duty chains, drives, and gears

### Benefits

- ▷ Reduces costly downtime due to seized chains, pin breakage, and premature wear
- ▷ Stays cleaner and lasts longer than hot grease dips
- ▷ Requires fewer applications than other lubricants
- ▷ Prolongs chain life



### Features

- ▷ Contains moly and EP additives for high-load lubrication
- ▷ Highly adhesive
- ▷ Water- and dirt-resistant
- ▷ Resists loads up to 90 000 lbs/in<sup>2</sup>

# FOOD GRADE LUBRICANTS

## FOOD ZONE™

Food grade multi-purpose lubricant

FOOD ZONE™ is a multi-purpose lubricant and penetrating oil developed for food industry manufacturing plants. Extends equipment life by protecting against friction, wear, and corrosion.  
**NSF category H1, registration #148372**

### Applications

- ▷ *Lubrication and temporary corrosion protection of food and beverage processing equipment*
- ▷ *Loosening of rust, scale, grime, and corrosion*



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	400 ml	13.5 oz.	53D602	L-153	12



### Benefits

- ▷ *Lubricates and protects*
- ▷ *Displaces moisture and water*
- ▷ *Loosens rusted parts*

### Features

- ▷ *Fast-penetrating oil leaves a thin protective film*

## FOOD ZONE™ V

Food grade high viscosity lubricant

FOOD ZONE™ V is an industrial-strength lubricant designed for heavy-duty applications and chain lubrication in food-manufacturing facilities. Foamy, non-drying formula adheres to surfaces and reduces friction, wear, and corrosion in heavy-loaded machinery.  
**NSF category H1, registration #148374**

### Applications

- ▷ *Lubrication of chains and conveyor systems, moving parts in heavy-loaded industrial machinery*



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	400 ml	13.5 oz.	53D652	L-154	12



### Benefits

- ▷ *Easy to apply, ideal for vertical surfaces*
- ▷ *Maximum adherence*
- ▷ *Protects against wear and corrosion*

### Features

- ▷ *Heavy-duty, high-grade formula with PTFE additives*
- ▷ *Thick, non-drying, water-resistant film*



# ADHESIVE LUBRICANT

## HANG-ON™

HANG-ON™ is a highly adhesive maintenance lubricant that provides effective, long-lasting lubrication under harsh conditions and over extended periods of time.

### Applications

- ▷ *Forklift truck chains, locking pins, snowplows, hinges, etc.*
- ▷ *Differentials in coupling units*

### Benefits

- ▷ *Outperforms and lasts longer than all-purpose and standard thin-film lubricants*
- ▷ *Resists exposure to weather, salt water, mild chemicals, high loads, and temperatures up to 200 °C (390 °F)*
- ▷ *Doesn't drip or stain vertical surfaces*
- ▷ *Efficient, long-lasting action reduces downtimes and maintenance frequencies*

### Features

- ▷ *Silicone-free, no chlorinated solvent*
- ▷ *Adheres extremely well to surfaces*
- ▷ *Penetrates fine clearances*
- ▷ *Displaces water and moisture*



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	400 ml	13.5 oz.	53D812	L-33	12
Liquid, trigger sprayer	500 ml	16.9 fl.oz.	53D813	L-45	12
Liquid	20 L	5.2 gal	53D817	L-45	1

### ACCESSORIES

Refillable trigger sprayer bottles

**Order no.**  
53L331

# ANTI-SEIZE LUBRICANT

## ROCK'N ROLL™

ROCK'N ROLL™ is an inert, non-toxic, metal-free white lubricant that prevents seizing of assemblies. Provides long-term protection against corrosion. Highly effective in a wide range of temperatures (-30°C or -22°F to 1400°C or 2500°F) and in extreme conditions.

**NSF category H1, registration #161930**

### Applications

- ▷ *Lubrication of all threaded components, bushings, and press fits*
- ▷ *Lubrication of highly stressed bearings*

### Benefits

- ▷ *Makes disassembly easy and efficient*
- ▷ *Provides long-term corrosion protection*
- ▷ *No galling or seizing*
- ▷ *Safe for food industry applications*

### Features

- ▷ *Inert ingredients*
- ▷ *Non-carbonizing*
- ▷ *(Paste) Highly resistant to water, seawater, benzene, and most acids and alkalis*



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	400 ml	13.5 oz.	53D852	L-43	12
Paste/Brush	255.15 g	9 oz.	53D854	L-44	12

# PENETRANTS

## BOLT-OUT™

BOLT-OUT™ is a heavy-duty, non-chlorinated liquid solution that penetrates and lubricates to efficiently free seized parts while inhibiting further rust. Works well in a wide range of temperatures.

### Applications

- ▷ *Loosening seized bolts, nuts, studs, and pins*
- ▷ *Disassembly of seized bolts, nuts, mechanisms, pins, bushings, etc.*



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	400 ml	13.5 oz.	53D892	L-08	12
Liquid, trigger sprayer	500 ml	16.9 fl.oz.	53D893	L-26	12
Liquid	20 L	5.2 gal	53D897	L-26	1

ACCESSORIES	Order no.
Refillable trigger sprayer bottles	53L332



### Benefits

- ▷ *Enables faster, easier disassembly*
- ▷ *Prevents/protects against further corrosion*

### Features

- ▷ *Silicone-free, no chlorinated solvents*
- ▷ *Contains microscopic moly particles for excellent lubricity*
- ▷ *Displaces moisture*
- ▷ *Effective from -20 °C to 250 °C (-4 °F to 482 °F)*

## COLD SHOCK™

Seized parts are no match for fast penetrating COLD SHOCK™

COLD SHOCK™ is a high-tech lubricant that frees corroded and seized parts by creating a sudden, shock-freezing effect to -35°C (-31°F). COLD SHOCK™ penetrates micro-fissures to loosen nuts, bolts, studs, pins and other seized parts in an instant.

### Applications

*For use on corroded and seized nuts, bolts, studs, pins, and other components.*

### Benefits

- ▷ *Loosens corroded and seized parts through cooling*
- ▷ *Powerful 1 to 2-minute penetration time*



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	400 ml	13.5 oz.	53D882	L-98	12



### Features

- ▷ *Decreases parts temperatures to -35°C (-31°F)*
- ▷ *Shock-effect lubricant*
- ▷ *Straw extension for precise targeting*

# CORROSION PROTECTION

## ZINC 100™

Bright galvanizing spray

ZINC 100™ is a bright, long-lasting corrosion protection spray specially formulated for the touch-up and repair of hot galvanized parts.

### Applications

- ▷ Food processing equipment
- ▷ Water and storage tanks

### Benefits

- ▷ Effective, long-lasting corrosion protection
- ▷ Resists chemical and water attack
- ▷ Can be painted over



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	400 ml	11.5 oz.	53H102	L-54	12

## ZINC 200™

Cold galvanizing spray

ZINC 200™ is a high-performance, fast-drying corrosion protection spray specially formulated for ferrous metals. Provides the ultimate protection—even when surfaces get scratched.

### Applications

- ▷ For marine equipment and weather-exposed parts

### Benefits

- ▷ Longest lasting corrosion protection in the marketplace
- ▷ Extremely effective when used as a primer
- ▷ Withstands harsh environmental conditions



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	400 ml	11.5 oz.	53H152	L-95	12

## SHIELD PRO™

Heavy-duty industrial corrosion protection

SHIELD PRO™ is an adherent, non-drying solution that coats metal parts to protect against corrosion. Ideal for indoor and outdoor storage.

### Applications

- ▷ For outdoor equipment and tools, overseas storage and shipments, cables, chains, pulleys, pump and hose assemblies, and more
- ▷ Suitable for all types of maintenance and repair applications

### Benefits

- ▷ Long-term indoor and outdoor corrosion protection
- ▷ Withstands harsh conditions

### Features

- ▷ Non-drying film
- ▷ Displaces moisture and saltwater-resistant



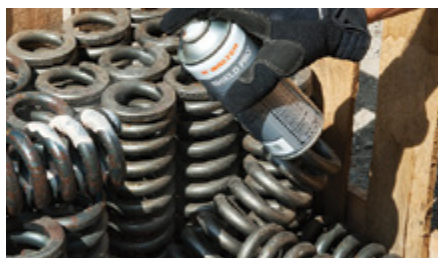
### Features

- ▷ Zinc flakes permanently bond to metallic surfaces
- ▷ Bright metallic finish matches hot dipped look
- ▷ Fast drying
- ▷ Zinc-rich formula meets ASTM A780 standard



### Features

- ▷ Actively fights rust and corrosion
- ▷ Dual-action protection (resin coat and galvanic action)
- ▷ Meets ASTM A780
- ▷ Dull finish, dries to touch in 3-5 min.



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Liquid	500 ml	17.6 fl oz	53H254	L-170	1
Liquid	3.78 L	1 gal	53H255	L-170	1
Liquid	20 L	5.2 gal	53H257	L-170	1
Liquid	200 L	52.8 gal	53H258	L-170	1

### ACCESSORIES

Spout for 20 L round metal pail and 200 L metal drum  
3/4" NPT

### Order no.

53L208



# CLEANING, LUBRICATING AND TEMPORARY PROTECTION

A multifunctional maintenance cleaner, lubricant and protector safe to use on all metals.

## CLEANER/LUBRICANT/PROTECTOR OMNI™

Multifunctional maintenance cleaner/lubricant/protector. Excellent penetrating and lubricating capability. Protects surfaces from oxidation. **NSF category A8, registration #142610**

*Cleans, penetrates, lubricates, and protects **in one easy step!***



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	480 ml	16.2 fl.oz.	53X002	L-73	12
Sprayer	500 ml	16.9 oz.	53X003	L-74	12
Liquid	3.78 L	1 gal	53X005	L-74	1
Liquid	20 L	5.2 gal	53X007	L-74	1
Liquid	208 L	55 gal	53X008	L-74	1
Liquid	1000 L	264.6 gal	53X009	L-74	1

ACCESSORIES	Order No.
Industrial pump sprayer	53L120
Spout for 20 L square plastic pail	53L207
Spout for 208 L plastic drum 2" NPT	53L209
Empty refillable trigger sprayer for OMNI	53L314
Bio-Circle® Powercloth microfiber / Pack of 10	57M001



### Applications

- ▷ Dissolving light rust and graphite
- ▷ Loosening rusted and seized hardware

### Benefits

- ▷ Cleans, penetrates, lubricates, and protects in one easy step
- ▷ Versatile – can be used for multiple maintenance applications
- ▷ Reduces rework
- ▷ Creates a safer, healthier work environment

### Features

- ▷ Non-flammable, silicone-free, Teflon-free
- ▷ Dielectric strength 350 V/mil





# 08

## HIGH-PERFORMANCE DEGREASING SOLUTIONS



OUTILS PNEUMATIQUES

WALTER Surface Technologies offers high-performance degreasing solutions that get the job done faster and safer, helping you work better.

Large industrial production and maintenance facilities with demanding cleaning requirements benefit from our powerful, reliable, and certified products. For even the most heavy-duty applications, WALTER provides safe and efficient alternatives to toxic solvents.

The ability to satisfy specific, high-volume surface treatment and cleaning needs, makes WALTER the ideal partner for all manufacturing process applications. For all cleaning requirements, at any stage of production, we can reduce toxicity and help maximize your overall productivity.

No matter how stringent your cleaning requirements, we can provide the perfect custom solution - to improve working conditions, reduce waste, protect the environment, and maximize productivity. Refer to our selection chart for quick tips on choosing the right cleaner to get the job done.

## AVAILABLE SIZES

Our liquid cleaning and degreasing solutions come in a wide range of sizes and formats to suit your needs. From small, no-drip, continuous spray mist bottles to bulk barrels or totes, WALTER's got you covered.

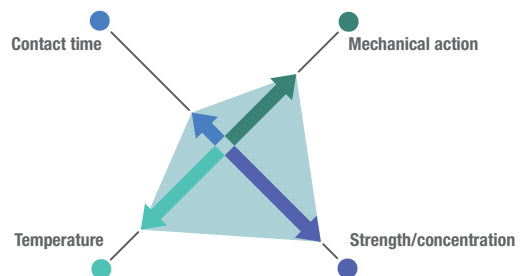


### THE WATER-BASED CLEANING MATRIX

Increase any of these four elements and increase the performance of your product!

**4** key elements  
to cleaning efficiency

- ▶ Contact time
- ▶ Mechanical action
- ▶ Temperature
- ▶ Strength/concentration





## CLEANER CHARACTERISTICS

	Fast evaporating	Flammability	pH level	Residue	Short term protection	Long term protection	Rinsable	Dilutable	Biodegradable
BIO-CIRCLE L – BIO-REMIEDIATING PARTS CLEANER AND DEGREASER BIO-CIRCLE ULTRA – EXTRA POWERFUL BIO-REMIEDIATING PARTS CLEANER AND DEGREASER BIO-CIRCLE AERO – BIO-REMIEDIATING PARTS CLEANER AND DEGREASER FOR AIRCRAFT USE	No	None	Neutral	Yes	Yes	No	Yes	No	Yes
CB 100 – INDUSTRIAL STRENGTH PARTS CLEANER AND DEGREASER	No	None	Slightly alkaline	Yes	Yes	No	Yes	No	Yes
CB 100 ALU – INDUSTRIAL STRENGTH NON-FERROUS PARTS CLEANER AND DEGREASER	No	None	Slightly alkaline	Yes	Yes	No	Yes	No	Yes
UNO S – INDUSTRIAL CLEANER AND DEGREASER - FOAMING	No	None	Alkaline	Yes	Yes	No	Yes	Yes (up to 40:1)	Yes
UNO SF – INDUSTRIAL CLEANER AND DEGREASER - FOAMLESS	No	None	Alkaline	Yes	Yes	No	Yes	Yes (up to 40:1)	Yes
CLEANER, DEGREASER & DISINFECTANT (CONC)	No	None	Alkaline	No	Yes	Yes	Yes	Yes (up to 40:1)	Yes
GOLD MATRIX READY™	No	None	Alkaline	Yes	Yes	No	Yes	Yes (up to 40:1)	Yes
STAR 200 – CONCENTRATED ALKALINE AUTOMATED PARTS WASHER CLEANER AND DEGREASER	No	None	Alkaline	Yes	Yes	No	Yes	Yes (up to 1:200)	Yes
ALUSTAR 200 – AUTOMATED PARTS WASHER CLEANER AND DEGREASER FOR NON-FERROUS ALLOYS	No	None	Alkaline	Yes	Yes	No	Yes	Yes (up to 1:200)	Yes
ALUSTAR 300 – HEAVY-DUTY AUTOMATED PARTS WASHER CLEANER AND DEGREASER FOR NON-FERROUS ALLOYS	No	None	Alkaline	Yes	Yes	No	Yes	Yes (up to 1:200)	Yes
E-NOX CLEAN – STAINLESS STEEL CLEANER/BRIGHTENER	No	None	Acidic	Yes	No	No	Yes	Yes (up to 40:1)	Yes
E-NOX SHINE – STAINLESS STEEL CLEANER AND PROTECTOR	No	None	Alkaline	Yes	Yes	No	Yes	No	Yes
BIO-RUST – NON-CAUSTIC RUST REMOVER	No	None	Slightly acidic	Yes	Yes	No	Yes	No	Yes
POWER CLEANER 100 – RUST AND MINERAL REMOVER/BRIGHTENER	No	None	Acidic	Yes	No	No	Yes	Yes (up to 40:1)	Yes
PRO-CLEAN – HIGH STRENGTH NATURAL SOLVENT	No	Low (102°C/215°F)	---	Yes	---	---	No	No	Yes
ALL-SEASON – ALL WEATHER TAR AND BITUMEN DEGREASER	No	Mod. (66°C/150.8°F)	---	Yes	No	No	No	No	No
FT 100 – GLASS CLEANER	Yes (after wiping)	Mod. (43°C/104°F)	Alkaline	No	No	No	Yes	No	Yes
FT 100 – STAINLESS STEEL CLEANER	Yes	Low (95°C/203°F)	Alkaline	No	Yes	No	Yes	No	No
FT 200 – SURFACE CLEANER	Yes (after wiping)	Mod. (40°C/104°F)	Slightly alkaline	No	No	No	Yes	No	Yes
SC 400 – HIGH STRENGTH CITRUS CLEANER/DEGREASER	No	Mod. (45°C/113°F)	---	Yes	---	---	No	No	Yes
SC 400 LOW VOC	No	Mod. (45°C/113°F)	---	Yes	---	---	No	No	Yes
SC 400 FOAM – HIGH STRENGTH ADHESIVE AND INK REMOVER	No	High (-60°C/-76°F)	---	Yes	No	No	No	No	No
HEAVY-DUTY CITRUS DEGREASER	Yes	None	Slightly Acidic	No	Yes	No	No	No	Yes
SLAP SHOT PL – PLASTIC-SAFE HEAVY-DUTY, DEGREASER AND PARTS CLEANER	Yes	High (-24°C/-11°F)	---	No	No	No	No	No	No
SLAP SHOT – DEGREASER AND PARTS CLEANER	Yes	High (-24°C/-11°F)	---	No	No	No	No	No	No
SLAP SHOT LOW VOC	Yes	High (-24°C/-11°F)	---	No	No	No	No	No	No
CONTACT CLEAN – NON-FLAMMABLE ELECTRONICS AND ELECTRICAL EQUIPMENT CLEANER	Yes	None	---	No	No	No	No	No	No
AF-PL	Yes	High (-7°C/19.4°F)	---	No	Yes	No	No	No	No
AF-PL LOW VOC	Yes	High (-7°C/19.4°F)	---	No	Yes	No	No	No	No
STAINLESS STEEL CLEANER	Yes	High (-16°C/3.2°F)	---	No	Yes	Yes	No	No	No
OMNI – CLEANER/LUBRICANT/PROTECTOR	No	Low (125°C/257°F)	---	Yes	Yes	Yes	No	No	No

Legend: ● Water-based ● Natural solvent-based ● Oil-based ● Solvent-based

## CLEANING AND DEGREASING SELECTION CHART

TYPE OF CLEANERS		ALKALINE / NEUTRAL							
Contaminant		<i>Organic:</i> grease, oil, corrosion protection, lubricants, smoke, finger prints, dust, carbon, graphite, soot, etc.							
Cleaning process		Spray and wipe	Ultrasonic bath	Floor washing machine and general maintenance	Pressure washer	Hot parts washer	Automated parts washer	Dip tank	Manual parts washer
Parent material	Steel	UNO S F UNO S FT 100 FT 200	CB 100 STAR 200	UNO S F	UNO S F	STAR 200 ALUSTAR 200 ALUSTAR 300	STAR 200 ALUSTAR 200 ALUSTAR 300	CB 100	Bio-Circle L Bio-Circle Ultra CB 100
	Stainless steel	UNO S F UNO S FT 100 FT 200 E-Nox Shine	CB 100 STAR 200	UNO S F	UNO S F	STAR 200 ALUSTAR 200 ALUSTAR 300	STAR 200 ALUSTAR 200 ALUSTAR 300	CB 100	
	Aluminum	FT 100 FT 200 E-Nox Shine	CB 100 ALU ALUSTAR 200 ALUSTAR 300			ALUSTAR 200 ALUSTAR 300	ALUSTAR 200 ALUSTAR 300	CB 100 ALU	Bio-Circle Aero CB 100 ALU
	Copper / Brass	FT 100 FT 200	CB 100 ALU			ALUSTAR 200 ALUSTAR 300	ALUSTAR 200 ALUSTAR 300	CB 100 ALU	
	Glass	UNO S F UNO S FT 100 FT 200	CB 100	UNO S F	UNO S F	STAR 200 ALUSTAR 200 ALUSTAR 300	STAR 200 ALUSTAR 200 ALUSTAR 300	CB 100	—
	Plastic	UNO S F UNO S FT 100 FT 200	CB 100	UNO S F	UNO S F	STAR 200 ALUSTAR 200 ALUSTAR 300	STAR 200 ALUSTAR 200 ALUSTAR 300	CB 100	—

Note: It is very important to know the next step after cleaning. For instance, if painting is required after the cleaning operation, a surface preparation cleaner may be recommended.

- Inorganic contaminant: Mineral-based compounds such as rust, limescale, etc.
- Organic contaminants: Carbon-based compounds such as oil, grease, etc.
- Other contaminants: Can be a combination of organic and inorganic contaminants

**Neutralization** of acidic cleaners: Proper neutralization with an alkaline cleaner is always required to deactivate the acid and prevent damages to the parent material

**Steps to proper neutralization:**

1. Wipe off the excess of acid
2. Apply an alkaline cleaner
3. Wipe off the surface with a clean rag (rinse and dry when necessary)

ACIDIC					ULTRA-POWERFUL NATURAL CLEANER AND DEGREASER		
<i>Inorganic:</i> rust, corrosion, limescale, calamine, heat tint, etc.					<i>Other:</i> paint, glue, adhesive, ink, wax, tar, etc.		
Spray and wipe	Ultrasonic bath	Hot parts washer	Automated parts washer	Dip tank	Spray and wipe	Ultrasonic bath	Dip tank
E-Nox Clean	Power Cleaner 100	Power Cleaner 100	Power Cleaner 100	Bio-Rust and Power Cleaner 100	ALL SEASON PRO CLEAN SC 400 SC 400 FOAM SC 400 LOW VOC	CB 100	ALL SEASON PRO CLEAN CB 100
E-Nox Clean	Power Cleaner 100	Power Cleaner 100	Power Cleaner 100	Power Cleaner 100	ALL SEASON PRO CLEAN SC 400 SC 400 FOAM SC 400 LOW VOC	CB 100	ALL SEASON PRO CLEAN CB 100
E-Nox Clean	Power Cleaner 100	Power Cleaner 100	Power Cleaner 100	Power Cleaner 100	ALL SEASON PRO CLEAN SC 400 SC 400 FOAM SC 400 LOW VOC	CB 100 ALU CB 100 ALU	ALL SEASON PRO CLEAN CB 100 ALU
E-Nox Clean	Power Cleaner 100	Power Cleaner 100	Power Cleaner 100	Power Cleaner 100	ALL SEASON PRO CLEAN SC 400 SC 400 FOAM SC 400 LOW VOC	CB 100 ALU	ALL SEASON PRO CLEAN CB 100 ALU
E-Nox Clean	Power Cleaner 100	Power Cleaner 100	Power Cleaner 100	Power Cleaner 100	PRO CLEAN SC 400 SC 400 LOW VOC	CB 100	PRO CLEAN CB 100
—	—	—	—	—	—	CB 100	CB 100



## WALTER PRODUCTS LEGEND



### Low Volatile Organic Compounds

Consumers today are far more knowledgeable regarding products containing potentially toxic levels of volatile organic compounds, commonly known as VOCs. Paints, stains, and varnishes have long contributed considerably to the prolific release of VOCs, sometimes known as off-gassing. This explains the growing popularity of low-VOC and VOC-free products. Products where you see the VOC-free logo guarantee that they contain no volatile organic compounds.



### Non-Flammable

Safe for use in environments where flames or sparks are present.



### Nonfood Compounds Program

The global food industry relies upon nonfood compounds to facilitate the efficient processing, handling and storage of food throughout the supply chain. Nonfood compounds include such substances as cleaners, sanitizers, boiler compounds and lubricants. NSF International Nonfood Compounds Registration Program provides beneficial product information to three important stakeholder groups.



### Low Energy Surfactant (LES) technology

These unique surfactants can clean and degrease effectively at lower temperatures, thus generating substantial energy savings. Lower the temperature of your automated industrial parts washers today! NOTE: Dilution up to 1:200



# WALTER VOC GUIDE

To reduce ground-level ozone and smog, certain U.S. states regulate the sales of volatile organic compounds (VOC) in consumer and industrial products. The goal is to decrease the use of high-VOC products in consumer, commercial, and industrial applications and incentivize suppliers to create lower-VOC alternatives.

WALTER offers powerful solutions for industrial applications. Whenever possible, we offer low-VOC or VOC-free alternatives to replace high-VOC products. For example, we use compressed air as an alternative to high-VOC propellants for some of our aerosol solutions.

We are committed to keeping our customers informed of any restrictions on the use of our products. Below, you'll find a list of our products and the states that restrict their use in some applications.

All states provide exemptions for high-VOC products used in the manufacturing process. Contact your local air quality regulators to learn more about VOC restrictions that may apply in your state or county.

Products	Order No.	COMPLIANCE as per CARB 310*	Restricted for sale in the following States to manufacturing use only, not for retail sale: CA, UT, NH, CT, DC, DE, IN, IL, MD, ME, MA, MI, NY, NJ, OH, PA, RI, VA
PRO CLEAN	53G523, 53G525, 53G527, 53G528		✓
SC 400	53G512, 53G513, 53G516, 53G517, 53G518		✓
SC 400 LOW VOC	53G653, 53G655, 53G657, 53G658		✓
SC 400 FOAM	53G512		✓
ALL-SEASON	53G553 53G555 53G557 53G558 53G559		✓
OMNI Liquid	53X003, 53X005, 53X007, 53X008, 53X009	✓	
FT 100	53G183, 53G187, 53G188	✓	
FT 100 aerosol	53G182		✓
FT 200	53G173, 53G177, 53G178		✓
OMNI	53X003 53X005 53X007 53X008 53X009	✓	
AF-PL LOW VOC	53C553, 53C566, 53C567, 53C568		✓
AF-PL	53C553-, 53C556, 53C557, 53C558		✓
Contact Clean	53C713	✓	
Slap Shot Aerosol	53C502		✓
Slap Shot Liquid	53C503, 53C506, 53C508		✓
Slap Shot LOW VOC Aerosol	53C512		✓
Slap Show LOW VOC Liquid	53C513, 53C516, 53C517, 53C519		✓
Slap Shot PL Aerosol	53C552		✓
Food Zone	53D602		✓
Food Zone V	53D652		✓
Coolcut Aerosol	53B002		✓
Open Gear Aerosol	53E102		✓
Chain Gang Aerosol	53D102		✓
Hang-On	53D812, 53D817		✓
Bolt Out	53D893, 53D897		✓
COLD SHOCK	53D882		✓
Rock'N Roll Aerosol	53D852		✓
Zinc 100 Aerosol	53H102		✓
Zinc 200 Aerosol	53H152		✓
STAINLESS CUT Aerosol	53B202		✓
Shield Pro	53H255, 53H257, 53H258		✓
Stainless Steel Cleaner Aerosol	53G412	✓	
Power Cleaner 100	53G253, 53G255, 53G-257		✓
Heavy-Duty Citrus Degreaser	53G533, 53G534, 53G535, 53G537, 53G538		✓

\*California Environmental Protection Agency Air Resources Board, method 310 for determination of Volatile Organic Compounds (VOC) in consumer products and reactive organic compounds in aerosol coating products.





# FAST-EVAPORATING DEGREASERS

A highly effective, residue-free, fast evaporating degreaser that dissolves and removes grease, oil, and grime on contact.

## HEAVY-DUTY

### DEGREASER AND PART CLEANER

#### SLAP SHOT/SLAP SHOT LOW VOC™

SLAP SHOT™ is a highly effective, residue-free, cleaner/degreaser that dissolves and removes grease, oil, and grime on contact.

**NSF category K1, registration #154299 (Aerosol) #154300 (Liquids)**



#### SLAP SHOT



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	500 ml	16.9 oz.	53C502	L-39	12
Trigger sprayer	500 ml	16.9 oz.	53C503	L-40	12
Liquid	5 L	1.3 gal	53C506	L-40	1
Liquid	20 L	5.2 gal	53C507	L-40	1
Liquid	200 L	52.8 gal	53C508	L-40	1

#### SLAP SHOT LOW VOC



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	500 ml	16.9 oz.	53C512	L-200	12
Trigger sprayer	500 ml	16.9 oz.	53C513	L-201	12
Liquid	3.78 L	1 gal	53C516	L-201	1
Liquid	20 L	5.2 gal	53C517	L-201	1
Liquid	200 L	52.8 gal	53C519	L-201	1

ACCESSORIES	Order No.
Spout for 20 L round metal pail and 200 L metal drum 3/4" NPT	53L208
Empty refillable trigger sprayer	53L311

**Fast acting,  
no residues!**



#### Applications

- ▷ Cleaning and degreasing for maintenance and repair
- ▷ Preparing surfaces for painting or relubrication

#### Benefits

- ▷ Fast acting—dissolves stubborn contaminants quickly and completely
- ▷ No residues

#### Features

- ▷ Quickly dissolves grease, oil and dirt without residues
- ▷ Free of chlorinated solvent
- ▷ Strong aerosol spray

## PLASTIC SAFE HEAVY-DUTY

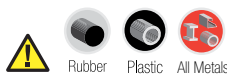
### DEGREASER AND PART CLEANER

#### SLAP SHOT PL™

SLAP SHOT™ PL is a highly effective, residue-free, cleaner/degreaser that dissolves and removes grease, oil, and grime on contact. Specially formulated for maximum compatibility with plastics and rubber-like compounds.

#### Applications

- ▷ Cleaning metal parts in presence of plastic or gaskets
- ▷ Removal of grease and oil



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	400 ml	13.5 oz.	53C552	L-64	12

**Safe on most plastics  
and rubbers**



#### Benefits

- ▷ Fast acting—dissolves stubborn contaminants quickly and completely
- ▷ No residues

#### Features

- ▷ Quickly dissolves grease, oil and dirt without residues
- ▷ Free of chlorinated solvent
- ▷ Strong aerosol jet
- ▷ Safe on plastics



**HEAVY-DUTY****DEGREASER AND BRAKE CLEANER****AF-PL/AF-PL LOW VOC™**

Plastic-safe, heavy-duty brake cleaner designed for use with AIR FORCE™ system.

**Application Type:**

- ▷ Spray
- ▷ Air Force™ System

**AF-PL**

Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Liquid, trigger sprayer	500 mL	16.9 fl. oz.	53C553	L-65	12
Liquid	5 L	1.3 gal	53C556	L-65	1
Liquid	20 L	5.2 gal	53C557	L-65	1
Liquid	200 L	52.8 gal	53C558	L-65	1

**AF-PL LOW VOC**

Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Liquid, trigger sprayer	500 mL	16.9 fl. oz.	53C563	L-65	12
Liquid	3.78 L	1 gal	53C566	L-65	1
Liquid	20 L	5.2 gal	53C567	L-65	1
Liquid	200 L	52.8 gal	53C568	L-65	1

**PLASTIC-SAFE, FAST-EVAPORATING PART DEGREASER****AIR FOR AF-PL/  
AIR FORCE AF-PL LOW VOC™**

- ▷ Cost-effective brake cleaner alternative
- ▷ Safe for most plastics and rubber compounds
- ▷ Non-chlorinated solvents penetrate and displace moisture

**AIR FORCE AF-PL**

Metric	Size		Order No.
	US Gal		
20 L	5.3 gal		53M012AFPLP
200 L	52.8 gal		53M012AFPLD

**AF-PL LOW VOC**

Metric	Size		Order No.
	US Gal		
20 L	5.3 gal		53M012AFPLLVP
200 L	52.8 gal		53M0125AFPLLVD

**The 20L / 5.3 gal. start-up package includes:**

- Air Force station
- 1 x 53C567 AF-PL 20 L / 5.3 gal OR
- 1 x 53C557 AF-PL 20 L / 5.3 gal
- 1 x 53M041 pail adaptor
- 6 x 53M101 refillable bottles

**The 200L / 52.8 gal. start-up package includes:**

- Air Force station
- 1 x 53C568 AF-PL 200 L / 52.8 gal OR
- 1 x 53C558 AF-PL 200 L / 52.8 gal
- 1 x 53M038 drum adaptor
- 6 x 53M101 refillable bottles

**OPTIONAL NOZZLES****ORDER NO.**

Wide spray	53M022
Long extension tube	53M052
Red nozzle-narrow spray	53M023

**ACCESSORIES****ORDER NO.**

Air refilling station	53M010
Air nozzle	53M015
Replacement valve kit (includes 2 valves and 2 spray tips)	53M030
Brass screw cap	53M037

**ACCESSORIES****ORDER NO.**

Replacement filling valve	53M039
Pail adaptor	53M041
Drum adaptor	53M038
Safety valve	53M025

# ELECTRONIC CONTACT CLEANING

For cleaning of instrument and equipment junctions (PLCs, printed circuit boards, vehicle fuse boxes).

## NON-FLAMMABLE ELECTRONICS AND ELECTRICAL EQUIPMENT CLEANER

### CONTACT CLEAN™

CONTACT CLEAN™ removes grease, oil and contaminants from sensitive electronics and electrical equipment to prevent contact failure. Fast-evaporating formula dries residue-free in seconds. Safe to use on most plastics. **NSF category K2, registration #154540**

#### Applications

- ▷ Removing contaminants from electrical parts

#### Benefits

- ▷ Fast acting – dissolves stubborn contaminants quickly and completely
- ▷ Fast evaporating
- ▷ No residues, no rinsing

#### Features

- ▷ Nonconductive
- ▷ Safe on most plastics and rubbers



*Dissolves stubborn contaminants **quickly and completely!***



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	500 g	17.6 oz.	53C713	L-165	12



# PARTS WASHING SOLUTIONS

Heavy-duty cleaning for removing ink, adhesive, synthetic oils, heavy grease and other tough contaminants. These solutions work exceptionally well at room temperature and only require periodical oil skimming.

## INDUSTRIAL STRENGTH PART CLEANER AND DEGREASER

### CB 100™

CB 100™ is next-generation cleaning technology. Powered by our exclusive Nature Boost™ formula, CB 100™ is unsurpassed in its ability to remove the most stubborn industrial contaminants.

**NSF category C1, registration #148555**

#### Applications

- ▷ *Cleaning asphalt from paving equipment*
- ▷ *Removing tough greases from gears and bearings*

#### Benefits

- ▷ *Outlasts solvent cleaners by 3-5x*
- ▷ *Shortens cleaning time*
- ▷ *Creates a safer, more pleasant work environment*
- ▷ *Reduces workplace liability*

#### Features

- ▷ *For steel and stainless steel*
- ▷ *Ready-to-use, non-caustic, non-hazardous, phosphate-free, and butyl-free*
- ▷ *Cuts through contaminants most solvents can't touch*
- ▷ *Great cleaning power at room temperature*



**Extreme strength & natural**



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz.	53G163	L-155	12
Liquid	3.78 L	1 gal	53G165	L-155	1
Liquid	20 L	5.2 gal	53G167	L-155	1
Liquid	208 L	55 gal	53G168	L-155	1
Liquid	1000 L	264 gal	53G169	L-155	1





**ALUMINIUM COMPATIBILITY**

**INDUSTRIAL STRENGTH  
NON-FERROUS PARTS CLEANER  
AND DEGREASER**

**CB 100 ALU™**

CB 100™ ALU is a powerful cleaner/degreaser powered by our unique Nature Boost™ technology. Similar to the CB 100™ cleaning solution, yet specially designed for cleaning aluminum and sensitive alloys. Replaces hazardous solvents and petroleum-based products for improved health and safety in the workplace.

**NSF category A1, registration #163931**

**Applications**

- ▷ *Removing coolants and cutting oils from parts in machine shops*
- ▷ *Degreasing engine components during repair and rebuild operations*

**Benefits**

- ▷ *Outlasts solvent cleaners by 3-5x*
- ▷ *Shortens cleaning time*
- ▷ *Eliminates material compatibility issues*
- ▷ *Reduces workplace liability*

**Features**

- ▷ *Specially formulated for non-ferrous alloys*
- ▷ *Ready-to-use, non-caustic, non-hazardous, phosphate-free, and butyl-free*
- ▷ *Great cleaning power at room temperature*
- ▷ *Formulated with special corrosion protection*



**Aluminum  
compatible**



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz.	53G123	L-158	12
Liquid	3.78 L	1 gal	53G125	L-158	1
Liquid	20 L	5.2 gal	53G127	L-158	1
Liquid	208 L	55 gal	53G128	L-158	1
Liquid	1000 L	264 gal	53G129	L-158	1

# BIO-REMEDICATING PARTS WASHING SOLUTIONS

Designed for use in parts washers with heating elements, these self-regenerating solutions contain micro-organisms that break down oils and greases into CO<sub>2</sub> and H<sub>2</sub>O, with almost ZERO waste products to dispose of.

## BIO-REMEDICATING PARTS CLEANER AND DEGREASER

### BIO-CIRCLE® L

BIO-CIRCLE® L is a top-selling Bio-remediating part cleaner and degreaser used in thousands of operations worldwide. Maintains its cleaning power over time, offering an economical and environmental advantage over toxic solvents and weaker water-based systems. **NSF category C1, registration #141285**

#### Applications

- ▷ Parts cleaning
- ▷ Facility maintenance

#### Benefits

- ▷ Maximum strength for life of product
- ▷ Reduces waste and disposal costs
- ▷ Creates a safer, more pleasant work environment
- ▷ No respiration equipment required

#### Features

- ▷ Continuously self-renewing with minimal waste streams
- ▷ Non-hazardous, Non-flammable, VOC-free
- ▷ Pleasant scent—no harsh fumes or vapors



Versatile and **safe!**



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Liquid	20 L	5.2 gal	55A007	L-78	1
Liquid	208 L	55 gal	55A008	L-78	1
Liquid	1000 L	264 gal	55A009	L-78	1



## EXTRA POWERFUL BIO-REMIEDIATING PARTS CLEANER AND DEGREASER

### BIO-CIRCLE® ULTRA

BIO-CIRCLE® ULTRA is a bio-remediating part cleaner and degreaser. The highly effective ULTRA formula quickly removes the toughest hardened oil/grease as well as other hard to remove contaminants. Maintains its cleaning power over time, offering an economical and environmental advantage over toxic solvents and weaker water-based systems. **NSF category C1, registration #145549**

#### Applications

- ▷ MRO and production
- ▷ Rebuild and repair operations

#### Benefits

- ▷ Maximum strength for life of product
- ▷ Reduces waste and disposal costs
- ▷ Creates a safer, more pleasant work environment
- ▷ No respiration equipment required



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Liquid	20 L	5.2 gal	55A107	L-158	1
Liquid	208 L	55 gal	55A108	L-158	1
Liquid	1000 L	264 gal	55A109	L-158	1



**Less chemical**  
required per cleaning

#### Features

- ▷ Continuously self-renewing with minimal waste streams
- ▷ Non-hazardous, non-flammable, VOC-free
- ▷ Powered by Nature Boost™, an exclusive, highly effective natural ingredient
- ▷ Pleasant scent—no harsh fumes or vapors

## BIO-REMIEDIATING PART CLEANER AND DEGREASER FOR AIRCRAFT USE

### BIO-CIRCLE® AERO

BIO-CIRCLE® AERO liquid is a bio-remediating parts cleaner and degreaser designed to meet the aeronautical industry's stringent requirements. Safe for use with aluminum and other sensitive alloys.

#### Applications

- ▷ Airport maintenance
- ▷ Aerospace parts manufacturing

#### Benefits

- ▷ Maximum strength for life of product
- ▷ Eliminates material compatibility issues
- ▷ Reduces waste and disposal costs
- ▷ Creates a safer, more pleasant work environment



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Liquid	20 L	5.2 gal	55A207	L-161	1
Liquid	208 L	55 gal	55A208	L-161	1
Liquid	1000 L	264 gal	55A209	L-161	1



**Eliminates** material  
compatibility issues

#### Features

- ▷ Continuously self-renewing with minimal waste streams
- ▷ Conforms to: Boeing D6-17487 Revision R Douglas Aircraft Company CSD No.1 (Type I) AMS 1526C
- ▷ Non-hazardous, non-flammable, VOC-free, pH neutral
- ▷ Safe for all metals and most surfaces



# PARTS WASHING MACHINES AND KITS

If you're looking to create a safer workplace without compromising performance, our BIO-CIRCLE® MAXI industrial parts washer is built for you.

This cutting-edge cleaning and degreasing system is sturdy, reliable, low maintenance, and specially designed for water-based cleaning, allowing you to quickly power through the most demanding cleaning jobs. When paired with BIO-CIRCLE® or CB 100™ solutions, our part washer will transform your cleaning operations, making them easy, eco-friendly, efficient and safe.



## BIO-CIRCLE® MAXI

Order No.	Dimensions	Max tank capacity	Soak load capacity
55D600	109 cm L x 72 cm W x 96 cm (43"L x 28.5"W x 38"H)	136 L (30 gal)	136 Kg (300 lbs)

## CB 100 START-UP PACKAGES



### INCLUDED: 6 PAILS (20 L / 5.2 GAL.)

Name	Order No.
CB 100	55D615CBP
CB 100 ALU	55D615CBAP

### INCLUDED: 1 DRUM (208 L / 55 GAL.)

Name	Order No.
CB 100	55D615CBD
CB 100 ALU	55D615CBAD

## BIO CIRCLE START-UP PACKAGES



### INCLUDED: 6 PAILS (20 L / 5.2 GAL.)

Name	Order No.
BIO-CIRCLE® L	55D600BCLP
BIO-CIRCLE® ULTRA	55D600BCUP
BIO-CIRCLE® AERO	55D600BCAP

### INCLUDED: 1 DRUM (208 L / 55 GAL.)

Name	Order No.
BIO-CIRCLE® L	55D600BCLD
BIO-CIRCLE® ULTRA	55D600BCUD
BIO-CIRCLE® AERO	55D600BCAD

# AUTOMATIC PARTS WASHING

An excellent substitute to solvent-based cleaners! Save on energy and costs with Low Energy Surfactant (LES) Technology! These unique surfactants can clean and degrease effectively at lower temperatures, thus generating substantial energy savings. Lower the temperature of your automated industrial parts washers today!

## REGULAR

### CONCENTRATED ALKALINE AUTOMATED PARTS WASHER CLEANER AND DEGREASER

#### STAR 200™

STAR™ 200 is a foamless demulsifying alkaline cleaner/degreaser specially formulated for cleaning iron, cast iron, steel, and stainless steel. Excellent at dissolving thick oil, grease, lubricants, and grime.

#### Applications

- ▷ Hot parts washers, cleaning tunnels, ultrasonic baths, turntable washers, spray cabinets, and agitated tanks
- ▷ Maintenance, repair, and cleaning applications

#### Benefits

- ▷ Less chemical required per cleaning
- ▷ Lasts longer
- ▷ Saves money
- ▷ Lowers energy costs

#### Features

- ▷ Highly concentrated - dilutable up to 1:200
- ▷ Lower energy cost, saves money
- ▷ Short term built-in corrosion inhibitors

*Less chemical required per cleaning*



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Liquid	20 L	5.2 gal	53G067	L-107	1
Liquid	208 L	55 gal	53G068	L-107	1
Liquid	1000 L	264 gal	53G069	L-107	1



**ALUMINIUM COMPATIBILITY****AUTOMATED PARTS WASHER CLEANER AND DEGREASER FOR NON-FERROUS ALLOYS****ALUSTAR 200™**

ALUSTAR™ 200 is a foamless demulsifying cleaner/degreaser that dissolves and removes thick oil, grease, lubricants, and grime from aluminum and other nonferrous alloys. Ideal for applications that are subject to strict cleaning specifications.

**NSF category A8, registration #145452**

**Applications**

- ▷ Automated and semi-automated hot parts washers, cleaning tunnels, ultrasonic baths, turntable washers, spray cabinets, and agitated tanks
- ▷ Removing cutting oils after machining



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Liquid	3.78 L	1 gal	53G705	L-79	1
Liquid	20 L	5.2gal	53G707	L-79	1
Liquid	208 L	55 gal	53G708	L-79	1
Liquid	1000 L	264 gal	53G709	L-79	1

**HEAVY-DUTY****HEAVY-DUTY AUTOMATED PARTS WASHER CLEANER AND DEGREASER FOR NON-FERROUS ALLOYS****ALUSTAR 300™**

ALUSTAR™ 300 is a foamless demulsifying cleaner/degreaser that easily dissolves and removes persistent oil, grease, lubricants and grime from aluminum, steel, and stainless steel. Excellent for heavy-duty maintenance, repair, and operations cleaning applications.

**NSF category A8, registration #145453**

**Applications**

- ▷ Automated and semi-automated hot parts washers, cleaning tunnels, ultrasonic baths, turntable washers, spray cabinets, and agitated tanks
- ▷ Heavy-duty maintenance, repair, and cleaning applications

**Benefits**

- ▷ Less chemical required per cleaning
- ▷ Lasts longer
- ▷ Saves money
- ▷ Lowers energy costs



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Liquid	20 L	5.2 gal	53G757	L-106	1
Liquid	208 L	55 gal	53G758	L-106	1
Liquid	1000 L	264 gal	53G759	L-106	1



*Lower energy cost*

**Benefits**

- ▷ Less chemical required per cleaning
- ▷ Lasts longer
- ▷ Saves money
- ▷ Lowers energy costs

**Features**

- ▷ Highly concentrated - dilutable up to 1:200
- ▷ Phosphate-free
- ▷ Biodegradable



*Lasts longer!*

**Features**

- ▷ Highly concentrated - dilutable up to 1:200
- ▷ Short term protection



# MULTI-PURPOSE CLEANERS AND DEGREASERS

Family of cleaning and degreasing products that are ideal for various applications conducted at room temperature. Save time and money with the Low Energy Surfactant (LES) technology which allows the product to achieve optimal results at ambient temperature.

## CONCENTRATED INDUSTRIAL CLEANER AND DEGREASER – FOAMING

### UNO™ S

UNO™ S is a highly concentrated, powerful foaming cleaner/degreaser that lifts dirt and grease fast. Ideal for manual spraying applications. Excellent substitute for solvent-base cleaners.

**NSF category A1, registration #142608**

#### Applications

- ▷ Cleaning stainless steel equipment in food industry
- ▷ Removal of cutting fluids, stamping oils and grease



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz.	53G033	L-143	12
Liquid	3.78 L	1 gal	53G035	L-143	1
Liquid	20 L	5.2 gal	53G037	L-143	1
Liquid	208 L	55 gal	53G038	L-143	1
Liquid	1000 L	264 gal	53G039	L-143	1

## IMPROVED FORMULA!

Versatile and **safe!**



#### Benefits

- ▷ Versatile — can be used for a variety of applications
- ▷ Less chemical required per cleaning
- ▷ Creates a safer, healthier work environment

#### Features

- ▷ Non-flammable, phosphate-free
- ▷ Improved formula
- ▷ Foaming action for increased contact time
- ▷ Dilutable up to 1:50

## CONCENTRATED INDUSTRIAL CLEANER AND DEGREASER – FOAMLESS

### UNO™ SF

UNO™ SF is a highly concentrated, powerful foamless cleaner/degreaser that can cut through dirt and grease throughout your facility. Uses range from floor washing and pressure washing of large parts to automatic parts washers. Excellent substitute for solvent-base cleaners. **NSF category A1, registration #142609**

#### Applications

- ▷ Cleaning of stainless steel equipment
- ▷ Removal of cutting fluids, stamping oils and grease



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz.	53G023	L-48	12
Liquid	3.78 L	1 gal	53G015	L-48	1
Liquid	20 L	5.2 gal	53G017	L-48	1
Liquid	208 L	55 gal	53G018	L-48	1
Liquid	1000 L	264 gal	53G019	L-48	1



**Less chemical** required per cleaning

#### Benefits

- ▷ Versatile — can be used for a variety of applications
- ▷ Less chemical required per cleaning
- ▷ Creates a safer, healthier work environment

#### Features

- ▷ Non-flammable
- ▷ Low Energy Surfactant Technology cleans at lower temperatures
- ▷ Dilutable up to 1:40

**READY-TO-USE****GOLD MATRIX READY™**

GOLD MATRIX READY™ is a foamless formulation which makes it ideal for applications where foaming could interfere in the cleaning process. Ideal for trigger sprayer applications, hot parts washers, ultrasonic baths, dip tanks, floor cleaners and pressure washers. Removes oils, greases, organic contaminants, pigment coating, markers, smoke, dust, carbon deposits and more.

**Applications**

- ▷ Removal of oils and greases from ferrous parts
- ▷ Facility maintenance
- ▷ All hand applied cleaning tasks
- ▷ Removal of organic contaminants
- ▷ Cleans floors, walls, tables, etc.
- ▷ Neutralizes residual acidic components of weld cleaning solutions



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz.	53G073	L-69E	12
Liquid	3.78 L	1 gal	53G075	L-69E	4
Liquid	20 L	5.2 gal	53G077	L-69E	1
Liquid	208 L	52.8 gal	53G078	L-69E	1
Liquid	1000 L	264 gal	53G079	L-69E	1

**Features**

- ▷ Contains corrosion inhibitors to prevent flash rusting
- ▷ Foamless for high-pressure or agitation cleaning systems
- ▷ Nontoxic, nonflammable, VOC-free
- ▷ Cleans parts efficiently and most of all safely
- ▷ Effective ready-to-use formula
- ▷ Foamless formulations
- ▷ Water-Based. Solvent-free. Phosphate-free
- ▷ High strength formula, ready to use
- ▷ Can withstand heat up to 90°C (194°F) for maximum cleaning



# CLEANING, LUBRICATING AND TEMPORARY PROTECTION

A multi-functional maintenance cleaner, lubricant and protector safe to use on all metals.

## CLEANER/LUBRICANT/PROTECTOR

### OMNI™

Multifunctional maintenance cleaner/lubricant/protector. Excellent penetrating and lubricating capability. Protects surfaces from oxidation. **NSF category A8, registration #142610**

#### Applications

- ▷ Dissolving light rust and graphite
- ▷ Loosening rusted and seized hardware



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	480 ml	16.2 fl.oz.	53X002	L-73	12
Sprayer	500 ml	16.9 oz.	53X003	L-74	12
Liquid	3.78 L	1 gal	53X005	L-74	1
Liquid	20 L	5.2 gal	53X007	L-74	1
Liquid	208 L	55 gal	53X008	L-74	1
Liquid	1000 L	264.6 gal	53X009	L-74	1

ACCESSORIES	Order No.
Industrial pump sprayer	53L120
Spout for 20 L square plastic pail	53L207
Spout for 208 L plastic drum 2" NPT	53L209
Empty refillable trigger sprayer for OMNI	53L314
BIO-CIRCLE® Powercloth microfiber / Pack of 10	57M001



Cleans, penetrates, lubricates and protects **in one easy step!**

#### Benefits

- ▷ Cleans, penetrates, lubricates, and protects in one easy step
- ▷ Versatile – can be used for multiple maintenance applications
- ▷ Reduces rework
- ▷ Creates a safer, healthier work environment

#### Features

- ▷ Non-flammable, silicone-free, Teflon-free
- ▷ Dielectric strength 350 V/mil





# HEAVY-DUTY TAR AND BITUMEN REMOVERS

For removing very tough contaminants such as tar, bitumen, carbon and asphalt.

## FOR DIFFICULT CONTAMINANTS

### HIGH STRENGTH CITRUS CLEANER/DEGREASER

#### SC 400/SC 400 LOW VOC™

Formulated with citrus peel extracts, SC 400™ is a heavy-duty, powerful, fast-acting solvent cleaners. Easily removes tar, bitumen, grease, lubricants, and oils.

#### Applications

- ▷ *Cleaning machine parts, tools, pumps, gears*
- ▷ *Not for use on plastics, rubber, and other solvent-sensitive materials*

#### SC 400



All Metals

Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz.	53G513	L-68	12
Liquid	3.78 L	1 gal	53G516	L-68	1
Liquid	20 L	5.2 gal	53G517	L-68	1
Liquid	200 L	52.8 gal	53G518	L-68	1

#### SC 400 LOW VOC



All Metals

Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz.	53G653	L-202	12
Liquid	3.78 L	1 gal	53G655	L-202	1
Liquid	20 L	5.2 gal	53G657	L-202	1
Liquid	200 L	52.8 gal	53G658	L-202	1



Cuts through contaminants **quickly and effectively**

#### Benefits

- ▷ *Cuts through contaminants quickly and effectively*
- ▷ *Slow drying formula covers larger surface areas*
- ▷ *Safer than more flammable alternatives*

#### Features

- ▷ *Low residue, slow drying*



## FOR DIFFICULT CONTAMINANTS

### HEAVY-DUTY CITRUS DEGREASER

Cleans and emulsifies to breakdown difficult contaminants such as asphalt and tar residue that are bound to the surfaces.

**NSF category K1, registration #163464**



All Metals

Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz.	53G533	L-187	12
Sprayer	946 ml	32 oz.	53G534	L-187	12
Liquid	3.78 L	1 gal	53G535	L-187	1
Liquid	20 L	5.2 gal	53G537	L-187	1
Liquid	208 L	52.8 gal	53G538	L-187	1

#### Applications

- ▷ *Spray application recommended to be used straight on soiled surfaces*
- ▷ *Recommended to clean soiled concrete floors, hydrocarbons, tar, bunkers, piping soil, etc.*
- ▷ *Great for paving, mining equipment*

#### Benefits

- ▷ *Leaves no residue*
- ▷ *High flashpoint*
- ▷ *Biodegradable*

#### Features

- ▷ *No need for dilution*
- ▷ *Reduction of the volume of waste, without presence of water in the oil*



**High**  
flashpoint

**FOR ANY TEMPERATURE**

**ALL WEATHER TAR AND BITUMEN DEGREASER**

**ALL-SEASON™**

ALL-SEASON™ is a less toxic alternative to solvent cleaning for tough applications, even at the most extreme temperatures. Bitumen, tar and asphalt don't stand a chance even at cold temperatures. ALL-SEASON™ is the perfect alternative to solvent based and d-limonene based cleaners.

**Applications**

- ▷ Can be used in spray applications for manual cleaning or pressure washing for large surface applications
- ▷ Provides high solvency for fast and easy removal of tough contaminants: tar, asphalt and bitumen

**Benefits**

- ▷ High-strength formulation, fast acting, very effective
- ▷ Ready-to-use formulation, no dilution required
- ▷ Safe on all metals, non-corrosive

**Features**

- ▷ Formulated to clean at any temperature
- ▷ Separates from water for easier recovery of waste



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz.	53G553	L-75	12
Liquid	3.78 L	1 gal	53G555	L-75	1
Liquid	20 L	5.2 gal	53G557	L-75	1
Liquid	208 L	55 gal	53G558	L-75	1
Liquid	1000 L	264 gal	53G559	L-75	1



*High strength,  
fast acting*

ACCESSORIES	Order No.
Industrial pump sprayer	53L120
Spout for 20 L pail	53L207
Spout for 20 L round metal pail and 200 L metal drum 3/4" NPT	53L208
Spout for 208 L drum	53L209
Empty refillable trigger sprayer for SC 400	53L313
Bio-Circle Air Drying Gun	55B085
Replacement sprayer, 500 ml	53L318



# HEAVY-DUTY INK AND ADHESIVE REMOVERS

For removing ink, adhesive and other contaminants.

## FOR ADHESIVES

### HIGH STRENGTH ADHESIVE AND INK REMOVER

#### SC 400 FOAM™

SC 400™ Foam is a high strength solvent with which adhesive substances even when hardened can be removed. Special additives enable a long-lasting depth effect of the solvent so that even the most difficult dried adhesive films can be cleaned.

**NSF category K3, registration #156603**

#### Applications

- ▷ *Cleaning machine parts, tools, pumps, gears*
- ▷ *Not for use on plastics, rubber, and other solvent-sensitive materials*



Glass and Mirror All Metals

Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	400 ml	11.5 oz.	53G512	L-171	12



*Suitable for metal, wood, ceramics and glass*

#### Benefits

- ▷ *Removes labels, adhesive*
- ▷ *Suitable for metal, wood, ceramics, glass*
- ▷ *The corrosion protection agent protects the metal surface on bare metal parts*

#### Features

- ▷ *Special additives to enable long-lasting depth effect*
- ▷ *Colourless*

## CONCENTRATED

### HIGH STRENGTH ADHESIVE REMOVER

#### PRO CLEAN™

Made from bio-renewable extracts, PRO CLEAN™ is a powerful, 100% concentrated solvent that removes hard-to-clean contaminants. Its Nature Boost™ formula quickly and easily removes adhesives.

**NSF category K3, registration #146172**



Steel Plastic Alu.

Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz.	53G523	L-169	12
Liquid	3.78 L	1 gal	53G525	L-169	1
Liquid	20 L	5.2 gal	53G527	L-169	1
Liquid	208 L	55 gal	53G528	L-169	1



*Safer to handle than toxic and volatile solvents!*

#### Benefits

- ▷ *Creates a safer, more pleasant work environment*
- ▷ *Safer to handle than toxic and volatile solvents*
- ▷ *Improves sustainability*
- ▷ *Reduces workplace liability*

#### Features

- ▷ *Formulated with natural and bio-renewable ingredients*
- ▷ *Test before use on rubber*
- ▷ *Fast acting, very effective*



# GLASS CLEANER

Spotless cleaning with fast drying cleaner.

## GLASS CLEANER

### FT 100™

FT 100™ is a surfactant-free, fast-drying cleaning agent that removes light oil, pollution, dust, fingerprints, felt pen, and pencil residues from glass, mirror or whiteboards. **NSF category A1, registration #156602**

#### Applications

- ▷ Final step before any treatment in process (painting, varnish, sealing, gluing, coating, etc.)
- ▷ Final step before showcasing a final product

#### Benefits

- ▷ Leaves no residue, streaks or stains
- ▷ Ready to use



Leaves no **residue**, streaks or stains



Stainless Steel Glass and Mirror

Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	400 ml	13.5 oz.	53G182	L-172	12



# RUST-REMOVAL SOLUTIONS

Breaks down rust from metallic surfaces without the need of abrasives.

## RUST AND MINERAL

### RUST AND MINERAL REMOVER + BRIGHTENER POWER CLEANER 100™

Highly concentrated cleaner/ brightener that quickly breaks down rust, dissolves limescale, eliminates mineral deposits, and brightens metallic surfaces. **NSF category A3, registration #141944**

#### Applications

- ▷ Removing rust, limescale, and mineral deposits on sheet metal, metallic structures, heating coils, pumps, heat exchanger plates, and storage tanks
- ▷ Brightening metallic surfaces

#### Benefits

- ▷ Fast acting
- ▷ Easier and more efficient than manual rust removal
- ▷ No need to salvage rusted parts or equipment

#### Features

- ▷ Phosphoric Acid based: does not contain nitric, hydrofluoric or hydrochloric acid
- ▷ Fully restores dull or tarnished metal surfaces
- ▷ Can be diluted up to 1:40 with water
- ▷ Light oxidation



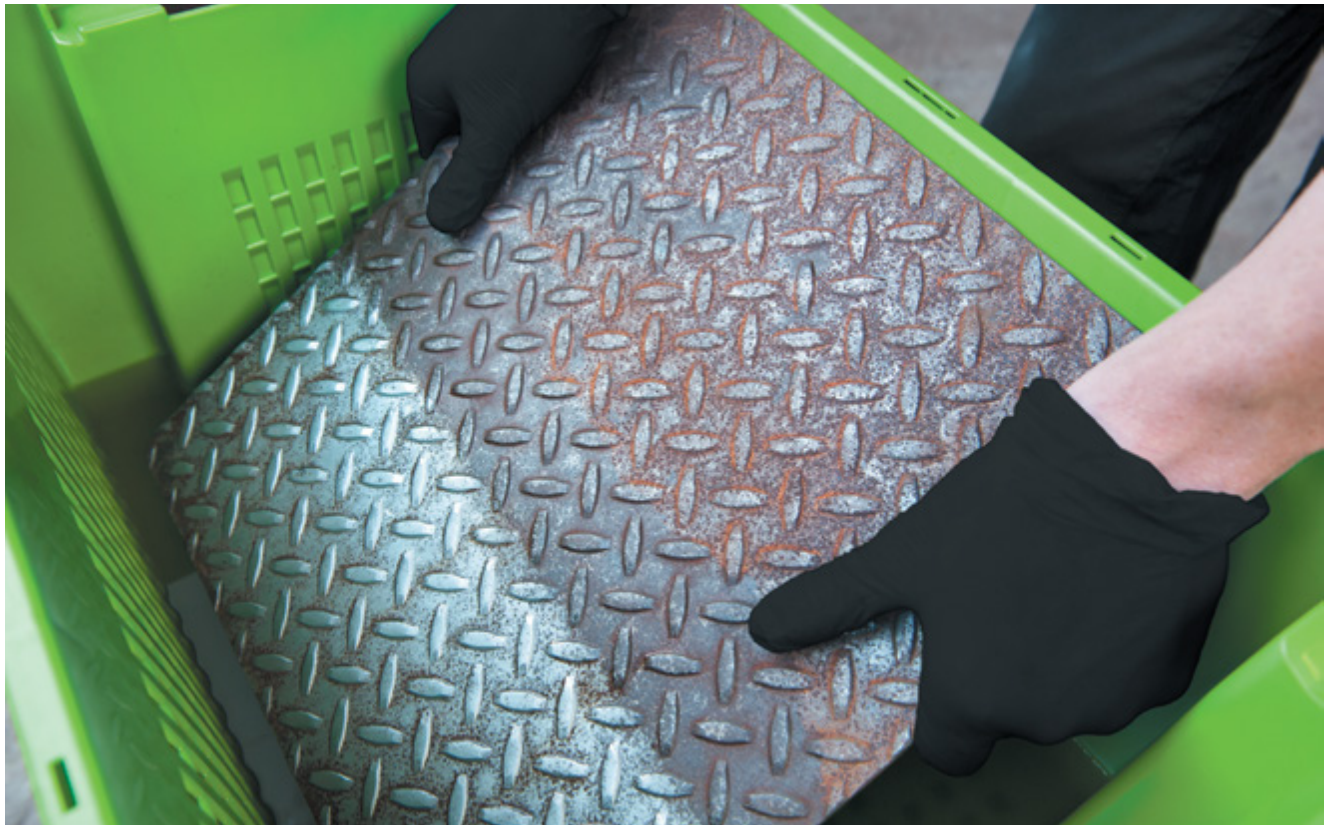
Rusted parts or equipment **can now be salvaged!**



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz.	53G253	L-23	12
Liquid	3.78 L	1 gal	53G255	L-23	1
Liquid	20 L	5.2 gal	53G257	L-23	1
<b>ACCESSORIES</b>			<b>Order No.</b>		
Spout for 20 L square plastic pail			53L207		
Empty refillable trigger sprayer for POWER CLEANER 100			53L309		

#### Tech tip!

Don't forget to neutralize with FT 100™



**HEAVY RUST (SOAKING)**  
**NON-CAUSTIC RUST REMOVER**  
**BIO-RUST™**

Non-caustic rust removers that safely eliminates rust on all ferrous alloys. **NSF category A2, registration #146173**

**Applications**

- ▷ Removal of rust and other metallic particles
- ▷ We recommend degreasing parts before using it

**Benefits**

- ▷ Reduces scrap rate
- ▷ Requires less time and effort than abrasives
- ▷ Safe to handle and store



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz.	53G243	L-134	12
Liquid	20 L	5.2 gal	53G247	L-134	1
Liquid	208 L	55 gal	53G248	L-134	1
<b>ACCESSORIES</b>			<b>Order No.</b>		
Chrome plated drum pump			53L116		
Spout for 20 L square plastic pail			53L207		
Spout for 208 L plastic drum 2" NPT			53L209		

**Features**

- ▷ Removes rust without attacking surface material
- ▷ Non-flammable, phosphate-free
- ▷ Non-hazardous — OSHA and WHMIS compliant
- ▷ Soak for best results (up to 24h)



# SURFACE CLEANERS

Make your parts spotless before bonding, corrosion protection, metalizing or delivery.

## SURFACE CLEANER

### FT 200™

FT 200™ prepares metallic surfaces for bonding, corrosion protection, metalizing, welding, and a variety of other processes. Evaporates after it's wiped off surfaces. Lasts 7x longer than traditional fast-evaporating surface preparation solvents such as acetone. **NSF category A1, registration #142612**

#### Applications

- ▷ *Preparing metallic surfaces prior to coating*
- ▷ *Removal of light contaminants such as processing oils, anticorrosion oils, and light waxes*

#### Benefits

- ▷ *Increased surface coverage*
- ▷ *A safer alternative to traditional solvents*

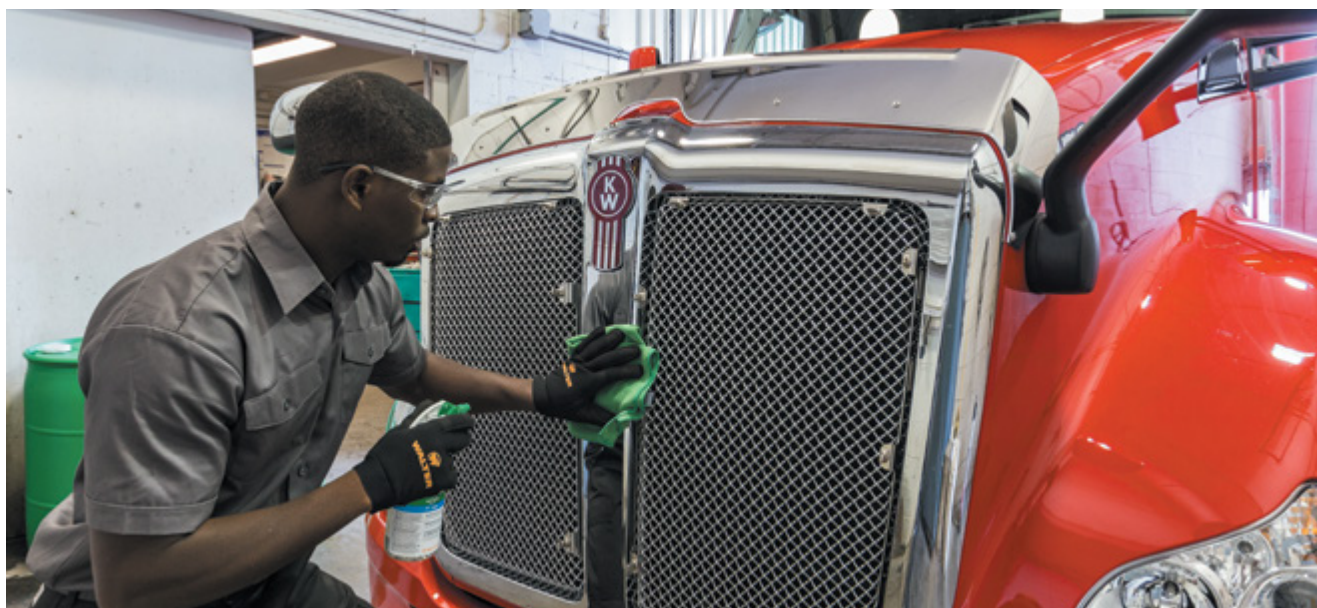
#### Features

- ▷ *Residue-free after wiping*



Plastic Alu. All Metals

Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz.	53G173	L-128	12
Liquid	20 L	5.2 gal	53G177	L-128	1
Liquid	208 L	55 gal	53G178	L-128	1



# STAINLESS STEEL SOLUTIONS

For removing any residue from stainless steel surfaces and provide spotless finish. Cleans, shines and protects all surfaces. Excellent solvent of oils, greases, soluble ink and certain oily inks. Leaving you with no residues, streaks or stains!

## SURFACE CLEANER

### STAINLESS STEEL SURFACE PREPARATION CLEANER

#### FT 100™

FT 100™ is a surfactant-free, fast-drying cleaning agent that removes light oil pollution, dust, fingerprints, felt pen, and pencil residues. **NSF category A1, registration #154672**

#### Applications

- ▷ Final step before any treatment in process (painting, varnish, sealing, gluing, coating, etc.)
- ▷ Final step before showcasing a final product

#### Benefits

- ▷ Leaves no residue, streaks, or stains
- ▷ Ready to use



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz.	53G183	L-167	12
Liquid	20 L	5.2 gal	53G187	L-167	1
Liquid	208 L	55 gal	53G188	L-167	1



Leaves no **residue**, streaks or strains

#### Features

- ▷ Fast acting, fast drying
- ▷ Great acid neutralizer
- ▷ Surfactant-free



## SURFACE CLEANER

### STAINLESS STEEL CLEANER AND BRIGHTENER

#### E-NOX CLEAN™

E-NOX CLEAN™ is a highly concentrated gel formulation cleaner that removes tarnish, rust, and mineral deposits and brightens surfaces. Outperforms abrasives while saving time and energy. **NSF category A3, registration #142614**

#### Applications

- ▷ Brightening stained and exposed finishes
- ▷ Cleaning of food and pharmaceutical equipment



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Gel, sprayer	500 ml	16.9 oz.	53G303	L-59	12
Liquid	3.78 L	1 gal	53G305	L-59	1
Liquid	20 L	5.2 gal	53G307	L-59	1
Liquid	208 L	55 gal	53G308	L-59	1

Fast acting and **improves efficiency**

#### Tech tip!

Don't forget to neutralize with STAINLESS STEEL CLEANER FT 100™



#### Benefits

- ▷ Fast acting
- ▷ Clean, precise application minimizes dripping
- ▷ Improves efficiency

#### Features

- ▷ Non-flammable
- ▷ Phosphoric acid: Free of nitric and hydrochloric acid
- ▷ Gel sticks to vertical surfaces

**CLEANER AND PROTECTOR****STAINLESS STEEL CLEANER AND PROTECTOR****E-NOX SHINE™**

E-NOX SHINE™ is a surface cleaner designed to remove light contaminants such as dust, light oils, and fingerprints prior to shipping. Creates a thin, invisible protective film to preserve the quality of your work until it reaches its final destination.

**NSF category A7, C1, registration #131393**

**Applications**

- ▷ Removing oil, carbon, light dirt, and fingerprints
- ▷ Brightening and protecting indoor finishes

**Benefits**

- ▷ Gives finished work a polished, flawless look

**Features**

- ▷ Non-flammable, silicone-free, phosphate-free
- ▷ Uniform finish, no streaking
- ▷ Ready to use



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	500 ml	16.9 oz.	53G403	L-102	12
Liquid	3.78 L	1 gal	53G405	L-102	1
Liquid	20 L	5.2 gal	53G407	L-102	1
Liquid	208 L	55 gal	53G408	L-102	1



Gives finished work a polished, **flawless look!**

**CLEANER AND PROTECTOR****STAINLESS STEEL CLEANER**

Excellent solvent of oils, greases, soluble ink and certain oily inks. Leaves no residue, streaks or stains. Designed to be fast acting and fast drying.

**Applications**

- ▷ Stainless steel manufacturing
- ▷ Aluminum manufacturing
- ▷ Also works great on brass and copper
- ▷ Cleans and polish equipment in institutional or food processing, farm equipment or elevator doors



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	500 ml	16.9 oz.	53G412		1

**Benefits**

- ▷ Leaves no residue, streaks or stains
- ▷ Contains no wax or harsh abrasives
- ▷ Cleans without abrasives or heavy creams

**Features**

- ▷ Polish, shines and protects
- ▷ Protects from rusting, corrosion and discoloration



# AEROSOL CAN REFILL STATIONS

Convenient, cost effective, easy to use refillable aerosol cans. Helpful for reducing the costs associated with the disposal of harmful aerosol cans as well as your environmental impact.

## CLEANER/LUBRICANT/PROTECTOR

### AIR FORCE OMNI™

- ▷ Non-flammable, silicone-free, teflon-free
- ▷ High flash point 125 °C (275 °F)



Metric	Size		Order No.
	US Gal		
20 L	5.3 gal		53M012AF0BB
200 L	52.8 gal		53M012AF0D



#### The 20L / 5.3 gal. start-up package includes:

- Air Force station
- 1 x 53X007 OMNI 20 L / 5.3 gal
- 1 x 53M058 pail adaptor
- 6 x 53M132 refillable bottles

#### The 200L / 52.8 gal. start-up package includes:

- Air Force station
- 1 x 53X008 OMNI 200 L / 52.8 gal
- 1 x 53M058 pail adaptor
- 6 x 53M132 refillable bottles

## PLASTIC-SAFE, PARTS DEGREASER

### AIR FORCE AF-PL / AF-PL LOW VOC™

- ▷ Cost-effective brake cleaner alternative
- ▷ Safe for most plastics and rubber compounds
- ▷ Non-chlorinated solvents penetrate and displace moisture

#### AF-PL



Metric	Size		Order No.
	US Gal		
20 L	5.3 gal		53M012AFPLP
200 L	52.8 gal		53M012AFPLD

#### AF-PL LOW VOC



Metric	Size		Order No.
	US Gal		
20 L	5.3 gal		53M012AFPLLVP
200 L	52.8 gal		53M012AFPLLVD



#### The 20L / 5.3 gal. start-up package includes:

- Air Force station
- 1 x 53C567 AF-PL 20 L / 5.3 gal
- OR
- 1 x 53C557 AF-PL 20 L / 5.3 gal
- 1 x 53M041 pail adaptor
- 6 x 53M101 refillable bottles

#### The 200L / 52.8 gal. start-up package includes:

- Air Force station
- 1 x 53C568 AF-PL 200 L / 52.8 gal
- OR
- 1 x 53C558 AF-PL 200 L / 52.8 gal
- 1 x 53M038 drum adaptor
- 6 x 53M101 refillable bottles

## ALL NATURAL CLEANER AND DEGREASER

### AIR FORCE CB 100™

- ▷ Ready-to-use, non-caustic, non-hazardous, phosphate-free, and butyl-free
- ▷ Cuts through contaminants most solvents can't touch
- ▷ Great cleaning power at room temperature
- ▷ VOC-free



Metric	Size		Order No.
	US Gal		
208 L	55 gal		57D058



#### The start-up package includes:

- Air Force station
- 1 x 53G168 CB 100 208 L / 55 gal
- 4 x 53B105 refillable bottles
- 1 x 53M038 drum adapter

OPTIONAL NOZZLES	ORDER NO.	ACCESSORIES	ORDER NO.	ACCESSORIES	ORDER NO.
Wide spray	53M022	Air refilling station	53M010	Replacement filling valve	53M039
Long extension tube	53M052	Air nozzle	53M015	Pail adaptor	53M041
Red nozzle-narrow spray	53M023	Replacement valve kit (includes 2 valves and 2 spray tips)	53M030	Drum adaptor	53M038
		Brass screw cap	53M037	Safety valve	53M025

## Corrosion Inhibitor

For STAR™ and UNO™ family of aqueous cleaners  
Provides additional corrosion protection when used with aqueous cleaners. Is concentrated, 100% active ingredients and is foamless.

### Applications

- ▷ Use with any UNO™ and STAR™ Cleaning Solution
- ▷ Add to cleaning solution and/or rinsing water



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	950 ml	32.1 fl.oz.	53G001	L-56	1
Liquid	20 L	5.2 gal	53G927	L-56	1
Liquid	208 L	55 gal	53G928	L-56	1



### Features

- ▷ Non-flammable. Non-hazardous
- ▷ Solvent, phosphate and butyl-free
- ▷ Protects steel parts and equipment from flash-rust

## Defoamer additive

For STAR™ and UNO™ family of aqueous cleaners  
Quick and permanent foam dissipation for aqueous cleaners.  
Comes concentrated with a suggested dilution rate of 0.5% to 1%.



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Sprayer	950 ml	32.1 fl.oz.	53G002	L-57	1
Liquid	20 L	5.2 gal	53G937	L-57	1



### Features

- ▷ Silicone-free
- ▷ Eliminates all foaming with water-based products

## Titration Kit

For use with STAR™ and UNO™ family of products  
High concentration cleaning solutions such as the STAR™ and UNO™ family can be diluted with water to alter the cleaning strength of the product. With the titration kit, you can easily determine the exact level of concentration of your solution to maintain a high level of cleaning productivity.

### Applications

- ▷ For use with automated mechanical cleaning systems
- ▷ For immersion tank

Order No.	(M)SDS	Std. Pkg.
53L160	L-145 L-144	1



## Proportioning system

Offers a complete system for dispensing bulk aqueous cleaners. It will automatically dilute the solution and fill spray bottles, buckets and other containers.

Order No.	Std. Pkg.
53L162	1

### Features

- ▷ 2 high flow (bucket feed)
- ▷ 2 low flow (bottle feed)
- ▷ Push button activated
- ▷ Metering tips from 350:1 to 3.5:1 at 3.5 GPM



# HARD CORE LIVIN'

**SCOTT ATKIN**  
SHOP OWNER & LEAD FABRICATOR

“  
Time is the one thing  
I cannot control. I  
can't buy time, but I  
can buy good tools.  
Having the proper tool  
for the job saves you  
tons of time, it just  
avoids rework.”  
”

Hard core or hardcore? For Scott Atkin, shop owner, and lead fabricator, it's both.

He's committed and devoted to his custom metal fabrication business. The endless possibilities of metalworking have inspired him to fabricate unique projects for engineers, architects, designers, movie sets, and regular people.

At the age of 19, Scott founded a skate and snowboard shop. It was his way of staying out of trouble and taking charge of his life. It also allowed him to merge his creativity and passion for extreme sports eventually turning his company into a very well-known brand across the USA and Canada.

Scott was thriving but was ready for a new challenge. After 10 successful years at the shop, there was one thing he hadn't mastered: welding. He signed up for a welding course and was instantly hooked.

To perfect his newly acquired skills, he got a job in the aerospace industry. "You had to be ultra-focused and produce high-quality welds. I was also quite creative coming up with special tools for people to do their jobs safer." Scott realized he needed another outlet to let his creativity flow through building things. "I'm all over the place, I'm a fast mover and thinker. When I come across a problem, I resolve it and want to immediately move forward."

His gained experience would certainly pay off as he now had all the skillset to venture out (again!).

He decided to open a metal fabrication shop that would take on the most original and ambitious projects. "It usually starts with an idea or a challenge". With his out-of-the-ordinary ability to solve problems and his precise welding skills, nothing was off-limits for Scott. "I like problem-solving, coming up with real solutions." He has built a dedicated, passionate, and hard-working team. "We're very few in numbers but the energy is just there. We do massive projects."

Scott depends on good planning and tools to get the job done. "Time is the one thing I cannot control. I can't buy time, but I can buy good tools. Having the proper tool for the job saves you tons of time, it just avoids rework." Nowadays, the shop is a reference in the industry and Scott continues to embody hard core livin' (and welding!).



SCAN THE QR CODE ABOVE TO LEARN  
MORE ABOUT SCOTT'S JOURNEY

 **WALTER**  
Achieve Greatness™



# ACCESSORIES



## Threaded throw-away adaptors

Description	Order No.
For 1/8" wheels (5/8"NC)	08B002
For 1/4" wheels (5/8"NC)	08B001
For 1/2" wheels (5/8"NC)	08B003



## Reusable adaptor kit

Description	Order No.
For depressed center wheels	08B031



## Mandrels for ZIP wheels

Description	Order No.
<b>Flush mandrels with 1/4" shaft</b>	
For 2 and 3" wheels, 1/4" and 3/8" arbor	11L007
For 2" wheels, 5/16" arbor	11L001
For 3" and 4" wheels, 1/4" arbor	11L006
For 3" and 4" wheels, 3/8" arbor	11L003
<b>General purpose mandrels with 1/4" shaft</b>	
For 2" wheels, 3/8" arbor	11L008
For 2" wheels, 5/16" arbor	11L002
For 3" and 4" wheels, 3/8" arbor	11L004
<b>with 5/16" shaft</b>	
For 3" and 4" wheels, 3/8" arbor	11L005



## Mandrel for finishing wheels

Description	Order No.
Plastic, 8 mm shaft, self-expanding, flush mounting for 1" thick wheels	07C003



## 1/4" shaft for TWIST backing pads

Description	Order No.
with 1/4"-20 thread	
For 2" and 3" pads	04X001



## Clamping flanges

Description	Order No.
Clamping flanges set to mount 9" cut-off wheels on 5/8"-11 spindles	30B022



## Mounting accessories for FX wheels

Mandrels for use on straight grinders and drills

Description	Order No.
<b>For use with 4" FX wheels</b>	
1/4" shaft	07X004
8 mm shaft	07X003
<b>For use with 6" FX wheels</b>	
1/4" shaft	07X006
8 mm shaft	07X005
<b>Extension mandrels for use on angle grinders</b>	
M14 x 2.0 thread	07C005
5/8"-11 thread	07C006



Two wheels can be mounted on each mandrel.

## Wheel dressers

Description	Order No.
<b>For bench grinder wheels</b>	
Standard	12E001
Heavy-duty	12E002
<b>Replacement wheels</b>	
Set for 12E001	12E004
Set for 12E002	12E005



## Reducer bushings

Description	Order No.
Set 3/4" wide, from 1" to 3/4", 5/8" and 1/2"	12E006
Set 1" wide, from 1" to 3/4", 5/8" and 1/2"	12E007
Pair of bushings from 1" to 7/8"	12E008

## Extra clamping nuts

Description	Order No.
<b>For 4" backing pads</b>	
3/8"-24	15D015
<b>For 4 1/2" and 5" backing pads</b>	
M10 x 1.25	15D010
5/8"-11	15D014
<b>For 6" and 7" backing pads</b>	
5/8"-11	15H014
<b>For 7" Turbo Action backing pad</b>	
5/8"-11	15M014
<b>For 4 1/2" and 5" backing pads</b>	
5/8"-11	15D024
<b>For 7" backing pads</b>	
5/8"-11	15H025



## Spacer washers

Description	Order No.
For grinders with: 5/8"-11 spindle	07Q001
For grinders with: M14x2.0 spindle	07Z005



## Wire brush adaptors and mandrels

Description	Order No.
<b>Use these threaded adaptors to convert brushes with 5/8"-11 arbor</b>	
To M10 × 1.25 female	13D001
To M10 × 1.5 female	13D002
To 3/8"-24 female	13D003
To 3/8"-16 female	13D007
<b>Use these mandrels for double-sided knot-twisted mounted brushes</b>	
To fit with 13C303 (3/8" X 1/4")	13D008
To fit with 13C404 (1/2" X 1/4")	13D009



## SPIN-ON performance kit

Description	Order No.
Contains 1 universal clamping nut holder for all types of clamping flanges. Allows quick and easy storage of clamping flange when not in use. Also includes 2 silicone rings.	30B024



## Mounting flanges

Description	Order No.
5/8"-11 clamping nut for 6150, 6161, 6170, 6190, 6255, 6260, 6350 and 6360.	30B037
Thick backing flange for a flush fit and minimal exposure of spindle beyond the clamping nut for WALTER grinders with: 5/8"-11 spindles	30B017



## Quick release backing flange

Description	Order No.
For quick and easy removal of wheel	30B057
Special heat resistant silicone ring for retention of the back flange to the spindle. Package of 10.	30B027
Quick nut 5/8"-11	30B020



## Carrying case

Description	Order No.
Sturdy steel carrying case with protective foam and ample room for accessories. For 6141, 6145, 6150, 6161, 6255, and 6260 grinders.	30B010



## Flanges for flush mounting wheels

Description	Order No.
Thick backing flange for a flush fit and minimal exposure of spindle beyond the clamping nut for WALTER grinders with: 5/8"-11 spindles	30B017
<b>Flush mounting set (includes special flange and clamping nut)</b>	
Complete set for a flush fit and minimal spindle exposure beyond the clamping nut, for other brands of grinders with: 5/8"-11 spindles	30B021
<b>ErgoFlex mounting set</b>	
5/8"-11 spindle	30B030



## Spacer washers

Description	Order No.
For grinders with: 5/8"-11 spindle	07Q001
For grinders with: M14×2.0 spindle	07Z005



## Pin keys

Description	Order No.
For clamping nuts	48Z148



## Side handles

Description	Order No.
4-1/2", 5" and 6", Quick-Step Big Buff and Line-Mate III	30B075
7" and 9"	48M401
Straight grinder 6145	48L555



## Anti-vibration handle

Description	Order No.
4-1/2", 5", 6" angle grinders	30B075
MAXI 7" and 9"	30B078





## Flexible shaft

Description	Order No.
For delicate finishing work with 6141 and 6145. 1/4" collet, 5 ft. long.	30B050



## Bench mount

Description	Order No.
For use with flexible shaft, for 6141 and 6145.	30B002



## Replacement collets

Size	Order No.
For 6141 and 6145.	
1/4"	30B046
1/8"	30B047
6 mm	30B048



## Special "Top-Up" lubricants

Description	Order No.
For models: 6145, 6150, 6161, 6170, 6190, 6255, 6260, 6265, 6268, 6330, 6350, 6352, 6360 and 6362.	48Z392



## Carbon brush Diamond brush seating stick

Order No.
48Z449



## Spouts



53L210\*



53L209\*



53L207\*



53L113\*

Description	Order No.
Spout for 5 L / 1.3 gal plastic pail	53L113
Spout for 20 L / 5.3 gal square plastic pail	53L207
Spout for 208 L plastic drum and 200 L / 55 gal metal drum, 2" NPT	53L209
Spout for 200 L metal drum, 3/4" NPT	53L210

## Accessories for air grinders

Description	Order No.
-------------	-----------

### Use these adaptors to convert accessories with 5/8"-11 arbors

To 3/8"-16 (male)	13D004
To 5/16"-24 (male)	13D005



### Use these extensions to mount accessories

With 3/8"-24 on spindles with 3/8"-24 thread	08B006
With 3/8"-24 on spindles with 7/16"-20 thread	08B005
With 5/8"-11 on spindles with 1/2"-13 thread	08B008



### Clamping nut for use with above extension 3/8"-24 thread, to mount grinding wheels

With 5/8" arbor	08B007
-----------------	--------



### Mounting flange to mount 4" type 27 grinding wheels on air grinders

with 3/8"-24 spindle	08B004
----------------------	--------



## Cutting guard

Size	Order No.
<b>Designed to make all cutting operations even safer.</b>	
3"	30B051
7"	30B065
9"	30B066



## Grinder Grip™ magnet

Strong magnet to fix your grinder to any ferrous metal surface.



Description	Order No.
<b>Compatible with DEWALT grinder models:</b> DWE402, DW831, DWE43066, DWE43113, DWE43114, DWE43840, DCG413B, D28065, D28402, and others	30G002
<b>Compatible with MAKITA grinder models:</b> 9005B, GA5020, 9558, GA5010, GA5043, GA6010, GA6020, 9566 and others	30G003
<b>Compatible with MILWAUKEE grinder models:</b> 6121, 6124, 6130, 2780, 6143, 6116, 6117, 6142, 2680, 2981, 2783 and others	30G004
<b>Compatible with HILTI grinder models:</b> AG500-A22, AG600-A36, AG450-7, AG500-12, AG500-7, AG500-11 and others	30G005

## WALTER industrial gloves

Made of 100% black goatskin leather, with neoprene inserts that reduce vibration. The thumb curve is made with Kevlar™.

Size	Order No.
Large	30B093
Extra-Large	30B095





## BIO-CIRCLE® POWERCLOTH™



- ▷ Ideal for streak free clean-ups
- ▷ Non-abrasive, won't scratch mirror finish, paint or clear coat

Description	Order No.	Std. Pkg.
Bag	57M001	10

## REFILLABLE TRIGGER SPRAYERS

Practical and sturdy, all bottles are clearly identified with product specific labels showing product features, hazard information and directions for use. High-quality, resistant trigger for longest life. Transparent bottle allows you to see product level. Can be refilled hundreds of times.



Description	Size		Order No.	Std. Pkg.
	Metric	US Gal		
UNO S F dilution	950 ml	32.1 oz	53L158	1
UNO S F	500 ml	16.9 oz	53L315	1
POWER CLEANER 100	500 ml	16.9 oz	53L309	1
SC 400	500 ml	16.9 oz	53L313	1
OMNI	500 ml	16.9 oz	53L314	1
UNO S	500 ml	16.9 oz	53L335	1
E-NOX SHINE	500 ml	16.9 oz	53L316	1
FT 100	500 ml	16.9 oz	53L323	1
FT 200	500 ml	16.9 oz	53L322	1
E-NOX CLEAN	500 ml	16.9 oz	53L337	1
PRO CLEAN	500 ml	16.9 oz	53L341	1
SLAP SHOT	500 ml	16.9 oz	53L311	1
HANG-ON	500 ml	16.9 oz	53L331	1
COOLCUT	500 ml	16.9 oz	53L330	1
BOLT-OUT	500 ml	16.9 oz	53L332	1
CB 100	500 ml	16.9 oz	53L342	1
CB 100 ALU	500 ml	16.9 oz	53L343	1

## INDUSTRIAL PUMP SPRAYERS

Rugged and convenient sprayers designed to effectively dispense a variety of BIO-CIRCLE® cleaners and lubricants.

The spray pattern can easily be adjusted from a pin pointjet for accurate product dispensing to a wide fan for fast surface coverage. Viton gaskets and corrosion-proofspring for optimal chemical resistance. These thick walled polyethylene bottles feature a wide neck for easy filling hundreds of times.



Description	Size		Order No.	Std. Pkg.	Std. Pkg.
	Metric	US Gal			
For SC 400, PRO CLEAN, CB 100, AF-PL, FT 100, FT 200, OMNI, ALL SEASON	900 ml	30 oz	53L120	1	1

ACCESSORIES	Order No.
Replacement Viton gasket set	53L100
Replacement swirl piece (without gaskets)	53L114

# BIO-CIRCLE® PARTS CLEANING SYSTEM ACCESSORIES

## Parts washing basket

- 9" dia x 8 1/4" high
- 1/4" holes

55B004



## Filter cartridge

- Reusable 350 micron 55B011
- Reusable 200 micron 55B038
- Reusable 100 micron 55B036
- Disposable 100 micron 55B012
- Disposable 200 micron 55B021



## BIO-CIRCLE® scraper

55B063



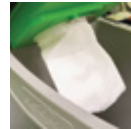
## Angled flow through brush

55B007



## Disposable filter bags for BIO-CIRCLE® machines

- 50 micron 55B041
- 100 micron 55B042
- 200 micron 55B043



## BIO-CIRCLE® Air Drying Gun

55B085



## Replacement flow-through brush

55B005



## Filter housing spanner

- For MAXI 55B035





# SPOUTS

**Tech tip!**  
When transferring flammable liquids, always ensure containers are grounded and follow normal safety rules.

Description	Order No.
Spout for 5 L / 1.3 gal plastic pail	53L113 *
Spout for 20 L / 5.3 gal square plastic pail	53L207 *
Spout for 20 L / 5.3 gal round metal pail and 200 L / 55 gal metal drum, (metal spout), 3/4" NPT	53L208 *
Spout for 208 L plastic drum and 200 L / 55 gal metal drum, 2" NPT	53L209
Spout for 200 L metal drum, 3/4" NPT	53L210 *

\* Allows to fill 500 ml trigger sprayer bottles or any other larger container directly.



## Metal drum pump

For use with lubricants or viscous liquids



Description	Order No.
Delivers 12 oz per stroke.	53L115

## Chrome plated drum pump

For use with aqueous or solvent based cleaners



Description	Order No.
Delivers 8 oz per stroke	53L116

## Hand pump

For effective fluid transfer



Description	Order No.
Use with BIO-CIRCLE®	55B051

# THE **WALTER** **VENDING** PROGRAM



OPTIMIZED **CHOICE**

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OPTIMIZED **QUANTITIES**

---

OPTIMIZED **INVENTORY**

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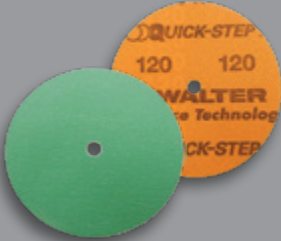
OPTIMIZED **SAVINGS**

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# THE WALTER VENDING PROGRAM

The right tool at the click of a button.  
Get the convenience of



READY-TO-GO, PRE-PACKED UNITS  
ROUND-THE-CLOCK AVAILABILITY

**Get our vending program to work  
for you and benefit from:**



- ▷ Pre-packed products
- ▷ Convenient single-pack quantities
- ▷ Vast product choice
- ▷ Optimized inventory

See back cover for contact details

## WALTER PRODUCTS AVAILABLE

PACKS OF 5



### ZIP WHEEL™ TYPE 1



Order No.	Description	Std. Pkg.	Std. Ctn.
11T042V	4-1/2X3/64 TYPE 1	5	80
11T052V	5X3/64X7/8 TYPE 1	5	80
11T062V	6X3/64X7/8 TYPE 1	5	40



### ZIP TITAN™



Order No.	Description	Std. Pkg.	Std. Ctn.
11H042V	4-1/2X3/64 ZIP TITAN WHEELS	5	80
11H052V	5X3/64 ZIP TITAN WHEELS	5	80
11H062V	6X3/64 ZIP TITAN WHEELS	5	40



### ZIP WHEEL™ TYPE 27



Order No.	Description	Std. Pkg.	Std. Ctn.
11T142V	4-1/2X3/64 TYPE 27	5	80
11T152V	5X3/64X7/8 TYPE 27	5	80
11T162V	6X3/64X7/8 TYPE 27	5	80



PACKS OF 5



**ZIP+ XTRA™ TYPE 1**

Order No.	Description	Std. Pkg.	Std. Ctn.
11T242V	4-1/2 x 1/16 ZIP + WHEEL	5	80
11T252V	5 X 1/16 ZIP + WHEEL	5	80
11T262V	6 X 1/16 ZIP + WHEEL	5	40



**ZIP STAINLESS™ TYPE 1**

Order No.	Description	Std. Pkg.	Std. Ctn.
11F042V	4-1/2X3/64 ZIP STAINLESS	5	80
11F052V	5"X3/64 ZIP STAINLESS	5	80
11F062V	6"X3/64 ZIP STAINLESS	5	40



**ZIP+ XTRA™ TYPE 27**

Order No.	Description	Std. Pkg.	Std. Ctn.
11T453V	4-1/2 X 1/16 ZIP+ TYPE 27	5	80
11T503V	5 X 1/16 ZIP+ WHEELS TYPE 27	5	80
11T603V	6 X 1/16 ZIP+ TYPE 27	5	40



**ZIP STAINLESS™ TYPE 27**

Order No.	Description	Std. Pkg.	Std. Ctn.
11F142V	4-1/2X3/64 ZIP ST TYPE 27	5	80
11F152V	5X3/64 ZIP STAINLESS TYPE 27	5	80
11F162V	6X3/64 ZIP STAINLESS TYPE 27	5	40



**TOUGH CUT™**

Order No.	Description	Std. Pkg.	Std. Ctn.
11R042V	4-1/2X3/32 A30 TOUGH CUT	5	40
11R052V	5X3/32X7/8 A30 TOUGH CUT	5	40
11R062V	6X3/32X7/8 A30 TOUGH CUT	5	20



**ZIP ALU™ TYPE 1**

Order No.	Description	Std. Pkg.	Std. Ctn.
11U042V	4-1/2X3/64 ZIP ALU WHEEL	5	80
11U052V	5X3/64 ZIP ALU WHEEL	5	80
11U062V	6 X 3/64 ZIP ALU WHEEL	5	40



**ZIP ONE™ TYPE 1**

Order No.	Description	Std. Pkg.	Std. Ctn.
11T542V	4-1/2x1/32 ZIP ONE WHEEL	5	80
11T552V	5"x 1/32" ZIP ONE WHEEL	5	80



**ZIP ALU™ TYPE 27**

Order No.	Description	Std. Pkg.	Std. Ctn.
11U142V	4-1/2X3/64 ZIP ALU TYPE 27	5	80
11U152V	5X3/64 ZIP ALU TYPE 27	5	80
11U162V	6 X 3/64 ZIP ALU TYPE 27	5	40



**ZIP ONE™ TYPE 27**

Order No.	Description	Std. Pkg.	Std. Ctn.
11T642V	4-1/2x1/32 ZIP ONE TYPE 27	5	80
11T652V	5"x 1/32" ZIP ONE TYPE 27	5	80
11T662V	6"x 1/32" ZIP ONE TYPE 27	5	40



**ZIP ALU™ TYPE 1**

Order No.	Description	Std. Pkg.	Std. Ctn.
11U303V	3X1/32X3/8 ALU C/O WHEEL	5	40

# THE WALTER VENDING PROGRAM

PACKS OF 5

WALTER VENDING PROGRAM



## COMBO ZIP™

Order No.	Description	Std. Pkg.	Std. Ctn.
11T842V	4-1/2X5/64 COMBO ZIP	5	80
11T852V	5X5/64 COMBO ZIP	5	80
11T862V	6X5/64 COMBO ZIP	5	40



## ZIP™ 3" TYPE 1

Order No.	Description	Std. Pkg.	Std. Ctn.
11L302V	3X1/32X1/4 ZIP C/O WHEELS	5	40
11L303V	3X1/32X3/8 ZIP C/O WHEELS	5	40
11L308V	3X1/32X3/8 TYPE 27	5	40
11L312V	3X1/16X1/4 ZIP C/O WHEELS	5	40
11L313V	3X1/16X3/8 ZIP CUT-OFF WHEELS	5	40
11L316V	3X1/16X1/4 ZIP C/O WHEELS	5	40
11L317V	3X1/16X3/8 ZIP C/O WHEELS	5	40
11L322V	3X1/8X1/4 ZIP C/O WHEELS	5	40
11L323V	3X1/8X3/8 ZIP CUT-OFF WHEELS	5	40
11L333V	3X1/4X3/8 ZIP GR WHEELS	5	20
11L353V	3X1/2X3/8 ZIP GR WHEELS	5	20



## ZIP™ 2" TYPE 1

Order No.	Description	Std. Pkg.	Std. Ctn.
11L202V	2X1/32X1/4 ZIP CUT-OFF WHEELS	5	40
11L203V	2X1/32X3/8 ZIP CUT-OFF WHEELS	5	40
11L211V	2X1/16X5/16 ZIP CUT-OFF WHEELS	5	40
11L212V	2X1/16X1/4 ZIP CUT-OFF WHEELS	5	40
11L213V	2X1/16X3/8 ZIP C/O WHEEL	5	40
11L221V	2X1/8X5/16 ZIP CUT-OFF WHEELS	5	40
11L223V	2X1/8X3/8 ZIP C/O WHEEL	5	40
11L231V	2X1/4X5/16 ZIP GR WHEELS	5	40
11L233V	2X1/4X3/8 ZIP C/O WHEEL	5	40
11L251V	2X1/2X5/16 ZIP GR WHEELS	5	40
11L253V	2X1/2X3/8 ZIP C/O WHEEL	5	40



## ZIP™ 4" TYPE 1

Order No.	Description	Std. Pkg.	Std. Ctn.
11L402V	4X1/32X1/4 ZIP C/O WHEELS	5	40
11L403V	4X1/32X3/8 ZIP C/O WHEELS	5	40
11L405V	4X1/32X5/8 ZIP C/O WHEELS	5	40
11L406V	4X1/32X1/4 ZIP C/O WHEELS	5	40
11L408V	4X1/32X3/8 ZIP C/O WHEELS	5	40
11L412V	4X1/16X1/4 ZIP C/O WHEELS	5	40
11L413V	4X1/16X3/8 ZIP C/O WHEELS	5	40
11L415V	4X1/16X5/8 ZIP C/O WHEELS	5	40
11L417V	4X1/16X3/8 ZIP C/O WHEELS	5	40



## ZIP™ 2 1/2" TYPE 1

Order No.	Description	Std. Pkg.	Std. Ctn.
11L262V	2.5X1/16X1/4 ZIP CUT-OFF WHEEL	5	40
11L263V	2.5X1/32X3/8 ZIP CUT-OFF WHEEL	5	40



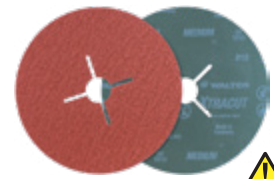
PACKS OF 5



**COOLCUT XX™**



Order No.	Description	Std. Pkg.	Std. Ctn.
15X452V	4-1/2 GR24 COOLCUT XX DISCS	5	50
15X453V	4-1/2 GR36 COOLCUT XX DISCS	5	50
15X455V	4-1/2 GR50 COOLCUT XX	5	50
15X456V	4-1/2 GR60 COOLCUT XX DISCS	5	50
15X458V	4-1/2 GR80 COOLCUT XX DISCS	5	50
15X460V	4-1/2 GR100 COOLCUT XX	5	50
15X462V	4-1/2 GR120 COOLCUT XX DISCS	5	50
15X473V	4.5"GR36 COOLCUT XX/Q. CHANGE	5	50
15X475V	4.5"GR50 COOLCUT XX/Q. CHANGE	5	50
15X476V	4.5"GR60 COOLCUT XX/Q. CHANGE	5	50
15X478V	4.5"GR80 COOLCUT XX/Q. CHANGE	5	50
15X482V	4.5"GR120 COOLCUT XX/Q. CHANGE	5	50
15X502V	5" GR24 COOLCUT XX DISCS	5	50
15X503V	5" GR36 COOLCUT XX DISCS	5	50
15X505V	5" GR50 COOLCUT XX	5	50
15X506V	5" GR60 COOLCUT XX DISCS	5	50
15X508V	5" GR80 COOLCUT XX DISCS	5	50
15X510V	5" GR100 COOLCUT XX	5	50
15X512V	5" GR120 COOLCUT XX DISCS	5	50
15X523V	5" GR36 COOLCUT XX/Q. CHANGE	5	50
15X525V	5" GR50 COOLCUT XX/Q. CHANGE	5	50
15X526V	5" GR60 COOLCUT XX/Q. CHANGE	5	50
15X528V	5" GR80 COOLCUT XX/Q. CHANGE	5	50
15X532V	5" GR120 COOLCUT XX/Q. CHANGE	5	50
15X602V	6" GR24 COOLCUT XX DISCS	5	50
15X603V	6" GR36 COOLCUT XX DISCS	5	50
15X605V	6" GR50 COOLCUT XX DISCS	5	50
15X606V	6" GR60 COOLCUT XX DISCS	5	50
15X608V	6" GR80 COOLCUT XX DISCS	5	50
15X610V	6" GR100 COOLCUT XX DISCS	5	50
15X612V	6" GR120 COOLCUT XX DISCS	5	50
15X622V	6" GR24 COOLCUT XX/Q. CHANGE	5	50
15X623V	6" GR36 COOLCUT XX/Q. CHANGE	5	50
15X625V	6" GR50 COOLCUT XX/Q. CHANGE	5	50
15X626V	6" GR60 COOLCUT XX/Q. CHANGE	5	50
15X628V	6" GR80 COOLCUT XX/Q. CHANGE	5	50
15X630V	6" GR100 COOLCUT XX/Q. CHANGE	5	50
15X632V	6" GR120 COOLCUT XX/Q. CHANGE	5	50



**XTRACUT™**



Order No.	Description	Std. Pkg.	Std. Ctn.
15A453V	4.5" GR36 SANDING DISCS	5	50
15A456V	4.5" GR60 SANDING DISCS	5	50
15A458V	4.5" GR80 SANDING DISCS	5	50
15A503V	5" GR36 SANDING DISCS	5	50
15A506V	5" GR60 SANDING DISCS	5	50
15A508V	5" GR80 SANDING DISCS	5	50
15A603V	6" GR36 SANDING DISCS	5	50
15A606V	6" GR60 SANDING DISCS	5	50
15A608V	6" GR80 SANDING DISCS	5	50
15A703V	7" GR36 SANDING DISCS	5	50
15A706V	7" GR60 SANDING DISCS	5	50
15A708V	7" GR80 SANDING DISCS	5	50



**TOPCUT™**

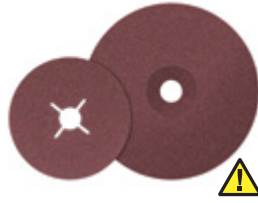


Order No.	Description	Std. Pkg.	Std. Ctn.
15P452V	4-1/2" GR24 TOPCUT DISCS	5	50
15P453V	4-1/2" GR36 TOPCUT DISCS	5	50
15P456V	4-1/2" GR60 TOPCUT DISCS	5	50
15P458V	4-1/2" GR80 TOPCUT DISCS	5	50
15P502V	5" GR24 TOPCUT SAND DISCS	5	50
15P503V	5" GR36 TOPCUT SAND DISCS	5	50
15P506V	5" GR60 TOPCUT SAND DISCS	5	50
15P508V	5" GR80 TOPCUT SAND DISCS	5	50



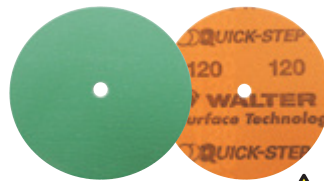


# THE WALTER VENDING PROGRAM



## COOLCUT™

Order No.	Description	Std. Pkg.	Std. Ctn.
15C452V	4-1/2 GR24 COOLCUT DISCS	5	50
15C453V	4-1/2 GR36 COOLCUT DISCS	5	50
15C454V	4-1/2 GR40 COOLCUT DISCS	5	50
15C455V	4-1/2 GR50 COOLCUT DISCS	5	50
15C456V	4-1/2 GR60 COOLCUT DISCS	5	50
15C458V	4-1/2 GR80 COOLCUT DISCS	5	50
15C460V	4-1/2 GR100 COOLCUT DISCS	5	50
15C462V	4-1/2 GR120 COOLCUT DISCS	5	50
15C502V	5" GR24 COOLCUT SAND DISCS	5	50
15C503V	5" GR36 COOLCUT SAND DISC	5	50
15C504V	5" GR40 COOLCUT SAND DISCS	5	50
15C505V	5" GR50 COOLCUT SAND DISC	5	50
15C506V	5" GR60 COOLCUT SAND DISCS	5	50
15C508V	5" GR80 COOLCUT SAND DISCS	5	50
15C510V	5" GR100 COOLCUT SAND DISC	5	50
15C512V	5" GR120 COOLCUT SAND DISC	5	50



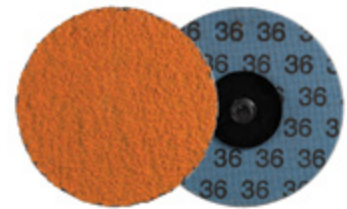
## QUICK-STEP XX™

Order No.	Description	Std. Pkg.	Std. Ctn.
15V412V	4-1/2 GR120 QUICK STEP XX DISCS	5	50
15V418V	4-1/2 GR180 QUICK STEP XX DISCS	5	50
15V424V	4-1/2 GR240 QUICK STEP XX DISCS	5	50
15V512V	5" GR120 QUICK STEP XX DISCS	5	50
15V518V	5" GR180 QUICK STEP XX DISCS	5	50
15V524V	5" GR240 QUICK STEP XX DISCS	5	50
15V612V	6" GR120 QUICK STEP XX DISCS	5	50
15V618V	6" GR180 QUICK STEP XX DISCS	5	50
15V624V	6" GR240 QUICK STEP XX DISCS	5	50



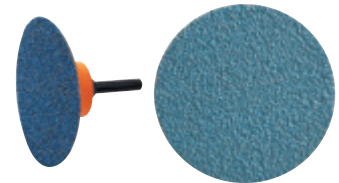
## TWIST FLAP DISCS™

Order No.	Description	Std. Pkg.	Std. Ctn.
04A254V	2-1/2" FLAP DISC - GR40	2	80
04A256V	2-1/2" FLAP DISC - GR60	2	80
04A258V	2-1/2" FLAP DISC - GR80	2	80
04A262V	2-1/2" FLAP DISC - GR120	2	80



## TWIST™ COOLCUT SANDING DISCS

Order No.	Description	Std. Pkg.	Std. Ctn.
04C203V	2" TWIST COOLCUT XX - GR 36	10	100
04C205V	2" TWIST COOLCUT XX - GR 50	10	100
04C206V	2" TWIST COOLCUT XX - GR 60	10	100
04C208V	2" TWIST COOLCUT XX - GR 80	10	100
04C212V	2" TWIST COOLCUT XX - GR 120	10	100
04C303V	3" TWIST COOLCUT XX - GR 36	10	100
04C305V	3" TWIST COOLCUT XX - GR 50	10	100
04C306V	3" TWIST COOLCUT XX - GR 60	10	100
04C308V	3" TWIST COOLCUT XX - GR 80	10	100
04C312V	3" TWIST COOLCUT XX - GR 120	10	100



## TWIST™ TOPCUT SANDING DISCS

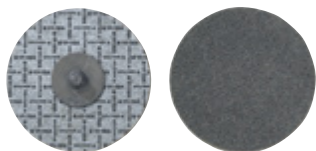
Order No.	Description	Std. Pkg.	Std. Ctn.
04D203V	2" TOPCUT DISC - GR 36	10	400
04D205V	2" TOPCUT DISC - GR 50	10	400
04D206V	2" TOPCUT DISC - GR 60	10	400
04D208V	2" TOPCUT DISC - GR 80	10	400
04D210V	2" TOPCUT DISC - GR 100	10	400
04D212V	2" TOPCUT DISC - GR 120	10	400
04D303V	3" TOPCUT DISC - GR 36	10	200
04D305V	3" TOPCUT DISC - GR 50	10	200
04D306V	3" TOPCUT DISC - GR 60	10	200
04D308V	3" TOPCUT DISC - GR 80	10	200
04D310V	3" TOPCUT DISC - GR 100	10	200
04D312V	3" TOPCUT DISC - GR 120	10	200

PACKS OF 5



**TWIST™ BLENDEX CONDITIONING DISCS** ⚠

Order No.	Description	Std. Pkg.	Std. Ctn.
04G202V	2" BLENDEX TWIST - COARSE	5	200
04G203V	2" BLENDEX TWIST - MEDIUM	5	200
04G204V	2" BLENDEX TWIST - FINE	5	200
04G205V	2" BLENDEX TWIST - S. FINE	5	200
04G302V	3" BLENDEX TWIST - COARSE	5	200
04G303V	3" BLENDEX TWIST - MEDIUM	5	200
04G304V	3" BLENDEX TWIST - FINE	5	200
04G305V	3" BLENDEX TWIST - S. FINE	5	100



**TWIST™ BLENDEX U DISCS** ⚠

Order No.	Description	Std. Pkg.	Std. Ctn.
04U321V	3" BLENDEX U TWIST-2SF	2	20
04U322V	3" BLENDEX U TWIST-6SF	2	20
04U323V	3" BLENDEX U TWIST-6AM	2	20



**FX™ SURFACE CLEANING DISCS** ⚠

Order No.	Description	Std. Pkg.	Std. Ctn.
04L200V	2" FX DISC	2	80
04L300V	3" FX DISC	2	40



**TWIST™ FELT DISCS** ⚠

Order No.	Description	Std. Pkg.	Std. Ctn.
04T204V	2" TWIST FELT DISC	5	200
04T304V	3" TWIST FELT DISC	5	100



**DRILLCO 350N AND 400N SERIES**

**NOW AVAILABLE IN BLISTER PACKS**

See pages 252 and 283 for assortments

# CUTTING TOOL SOLUTIONS

DRILLS

TAPS

DIES

CARBIDE BURRS

ANNULAR CUTTERS

TCT HOLE CUTTERS

MAGNETIC DRILLS

REAMERS

END MILLS

COUNTERSINKS

CUTTING FLUIDS  
AND LUBRICANTS





# CUTTING TOOL SOLUTIONS

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# SAFETY FIRST

## Tips on the Safest and Most Effective Use of Cutting Tools\*



- ▷ Disconnect the power tool prior to changing cutting tools.
- ▷ Keep cutting tools sharp and clean to prevent injuries and for best performance.
- ▷ Inspect the cutting tool for any sign of damage. Do not use if damaged.
- ▷ Mounting: Use only approved mounting hardware for the cutting tools. The chuck must center the cutting tool securely and provide the required support.
- ▷ Use mounting straps or a permanent magnet design when using a magnetic drill vertically. This prevents it from falling during power interruptions.
- ▷ When possible, drilling guards should be used to protect the operator.
- ▷ Always wear eye protection. Wear head, hand, ear and dust inhalation protection as needed.
- ▷ Practice safe working methods: always secure the workpiece being drilled to prevent movement, hold the tool firmly, avoid cluttered and badly lit work areas.
- ▷ Ensure adequate protection of other workers in the vicinity.
- ▷ Do not use cutting tools over their rated capacity, follow manufacturer's instructions.
- ▷ Service power tools regularly and according to manufacturer's instructions to keep them in good working condition and maintain their performance. Do not use if damaged.

## *Safest and Most Effective Work Methods*

### Pro Tips: Maximize Drilling Efficiency

#### Select the proper feed rate.

It will impact the rate of material removal, power requirements, and surface finish.

$$\text{SFM} = \text{D} \times \text{RPM} \times .262$$

SFM = Surface Feet per Minute  
D = Drill Diameter

#### Use the correct RPM speed

it has the greatest influence on performance.

$$\text{RPM} = \frac{\text{SFM} \times 3.82}{\text{D}}$$

#### Reduce friction, prevent tool wear and breakage

by using cutting lubricants. Increase up to 5 times the life of your tools with COOLCUT™ Cutting Lubricants

#### Remember this rule:

Small diameter bits =  
**High speed, low feed**

Large diameter bits =  
**Low speed, high feed**

## Safety Seminar

\* WALTER offers free in-plant safety seminars to promote the safe use of cutting tools. Reserve your safety seminar today by calling: **1-866-592-5837**. For more information, visit [walter.com/safety](http://walter.com/safety)





01

DRILLS

# QUICK PAGES REFERENCES

## GENERAL PURPOSE JOBBER LENGTH DRILLS



### Jobber Drills High Speed Steel

<b>Black Oxide</b> For low to medium tensile strength materials		
Type	Series	Catalog page reference
118° Conventional Point	200A	235
	200A	236
	200A	237



### Jobber Drills High Speed Steel

<b>Bright Finish</b> For aluminum and other non-ferrous materials		
Type	Series	Catalog page reference
118° Conventional Point	200B	235
	200B	236
	200B	238



### Jobber Drills High Speed Steel

<b>Black Oxide</b> For low to medium tensile strength materials		
Type	Series	Catalog page reference
118° Conventional Point	100SE	239



### Jobber Drills High Speed Steel

<b>Black Oxide</b> For low to medium tensile strength materials		
Type	Series	Catalog page reference
118° Conventional Point	T1B, BP1B, T2B, T3B	240, 241



### Jobber Drills High Speed Steel

<b>Bright Finish</b> For aluminum and other non-ferrous materials		
Type	Series	Catalog page reference
118° Conventional Point	T1, BP1, T2, T3, MM1	242, 243, 244
3/8" Reduced Shank	T8, BP8	244



### Left Hand Jobber Length Drills High Speed Steel

<b>Bright Finish</b> For removal of broken screws and bolts		
Type	Series	Catalog page reference
118° Conventional Point	T1L	246



### Left Hand Jobber Length Drills High Speed Steel

<b>Bright Finish</b> For removal of broken screws and bolts		
Type	Series	Catalog page reference
118° Conventional Point	200LH	247



## HEAVY-DUTY JOBBER LENGTH DRILLS



### Jobber Drills High Speed Steel

<b>Black Oxide</b> For better performance on low to medium tensile strength materials		
Type	Series	Catalog page reference
135° Split Point	400A	248
	400A	249



### Jobber Drills High Speed Steel

<b>Black Oxide</b> Heavy-duty construction affords efficient portable drilling in medium strength alloy materials		
Type	Series	Catalog page reference
135° Split Point	T1D, T2D, T3D	250, 251



### Jobber Drills High Speed Steel



<b>Black &amp; Gold Finish</b> Exceptional performance in most materials		
Type	Series	Catalog page reference
135° Split Point	400N	252, 253



### Jobber Drills High Speed Steel



<b>Black &amp; Gold Finish</b> Exceptional performance in most materials Includes 3-flat shank		
Type	Series	Catalog page reference
135° Split Point	410N, 450N, 490N	254, 255



**Jobber Drills**  
High Speed Steel

**Black & Gold Finish**  
Heavy-duty construction affords efficient portable drilling in medium strength alloy materials

Type	Series	Catalog page reference
135° Split Point	400E	256
	400E, 800	257,258



**Jobber Drills**  
High Speed Steel



**Black & Gold Finish**  
Heavy-duty core guarantees increased strength and better resistance to breakage

Type	Series	Catalog page reference
135° Split Point	T1HD, T2HD, T3HD, MM1HD, BP1HD	259, 260



**Jobber Drills**  
High Speed Steel



**Black & Gold Finish**  
Heavy-duty core guarantees increased strength and better resistance to breakage, with a 3-flat shank

Type	Series	Catalog page reference
135° Split Point 3-Flat Shank	T1HD+, T2HD+, T3HD+, MM1HD+, BP1HD+	261, 262



**Jobber Drills**  
High Speed Steel



**Black & Gold finish**  
Heavy-duty construction affords efficient portable drilling in medium strength alloy materials

Type	Series	Catalog page reference
135° Split Point	T101D, T102D, T103D	263, 264



**Jobber Drills**  
High Speed Steel

**Black & Gold Finish**  
Ideal for both handheld and CNC Operations

Type	Series	Catalog page reference
140° Split Point 3-Flat shank	400F	265



**Jobber Drills**  
High Speed Steel



**TiN Coating**  
Combines a super hard TiN coating with the heavy-duty Thunderbit core to guarantee increased strength and longer tool life

Type	Series	Catalog page reference
135° Split Point	T1HDG	266



**Jobber Drills**  
High Speed Steel

**TiN Coating**  
A super hard TiN coating to guarantee increased lubricity and longer tool life

Type	Series	Catalog page reference
135° Split Point	450T	267, 268



**Jobber Drills**  
Cobalt

**Bronze Finish**  
For tough materials such as stainless steel, titanium high temperature and high strength alloys

Type	Series	Catalog page reference
135° Split Point	500, 580	269, 270
	500E	271



**Jobber Drills**  
Cobalt



**Bronze Finish**  
Heavy-duty Thunderbit core and cobalt base material for high performance drilling in tough materials

Type	Series	Catalog page reference
135° Split Point	T1HDC	272



**Jobber Drills**  
Cobalt

**Bronze Finish**  
For tough materials such as stainless steel, titanium high temperature and high strength alloys

Type	Series	Catalog page reference
135° Split Point	T1C, BP1C, T2C, T3C	273, 274



**Jobber Drills**  
High Speed Steel

**Black & Gold Finish**  
Exceptional performance in most materials

Type	Series	Catalog page reference
135° Split Point 3/8" Reduced Shank	1035N	275



**Jobber Drills**  
High Speed Steel



**Black & Gold Finish**  
Heavy-duty core guarantees increased strength and better resistance to breakage

Type	Series	Catalog page reference
135° Split Point 3/8" Reduced Shank	T8HD, BP8HD	276





# QUICK PAGES REFERENCES

## MECHANICS LENGTH DRILLS



### Mechanics Length



High Speed Steel

Black & Gold Finish Exceptional performance in most materials		
Type	Series	Catalog page reference
135° Split Point with 3-Flats	350N	283



### Mechanics Length

High Speed Steel

Black & Gold Oxide Mechanics length drills are shorter for increased rigidity and strength especially in handheld drilling operations		
Type	Series	Catalog page reference
135° Split Point	T1M, BP1M	284



### Reduced Shank Mechanics Length

High Speed Steel



Black & Gold Finish Mechanics length drills are shorter for increased rigidity and strength especially in handheld drilling operations		
Type	Series	Catalog page reference
135° Split Point	1045N	285



## SCREW MACHINE LENGTH DRILLS



### Screw Machine

High Speed Steel

Black Oxide For better performance on low to medium tensile strength materials		
Type	Series	Catalog page reference
135° Split Point Straight Shank	300A	287
	300A	287
	300A, 300E	288



### Screw Machine

High Speed Steel

Black Oxide Screw machine drills are shorter for increased rigidity and strength		
Type	Series	Catalog page reference
135° Split Point	T4, T5	289
Black & Gold Finish	T4HD	291
<b>THUNDERBIT®</b>		



### Screw Machine

High Speed Steel



Black & Gold Finish Screw machine drills are shorter for increased rigidity and strength		
Type	Series	Catalog page reference
135° Split Point	300N	290



### Screw Machine

Cobalt

Bronze Finish Screw machine drills are shorter for increased rigidity and strength. Cobalt for added strength		
Type	Series	Catalog page reference
135° Split Point	300C, 380C	292



### Screw Machine

Cobalt

Bronze Finish Screw machine drills are shorter for increased rigidity and strength		
Type	Series	Catalog page reference
135° Split Point	T4C	293



### Left Hand Screw Machine

Cobalt

Bronze Finish For super abrasive resistance in tough metals		
Type	Series	Catalog page reference
135° Split Point, 3-Flat Shank	300LH	294



# DOUBLE-ENDED DRILLS



## Double-Ended Drills

High Speed Steel

**Black Oxide**  
Double the life thanks to flutes and cutting edges on both ends

Type	Series	Catalog page reference
135° Split Point	330	295



## Double-Ended Drills

High Speed Steel

**Black Oxide**  
Double the life thanks to flutes and cutting edges on both ends

Type	Series	Catalog page reference
135° Split Point	TSM8	295



# S&D DRILLS



## S&D Drills

High Speed Steel

**Bright and Black Finish**  
For better performance on low to medium tensile strength materials

Type	Series	Catalog page reference
118° Point 1/2" Reduced Shank	1000A, 1000F	296
3-Flats Reduced Shank	1000E	297



## S&D Drills



High Speed Steel

**Black & Gold Finish**  
For better performance on low to medium tensile strength materials

Type	Series	Catalog page reference
118° Split Point 1/2" Reduced Shank with 3-Flats	1000N	298
135° Split Point 3-Flats Reduced Shank	1000EF	299



## S&D Drills



High Speed Steel

**Black & Gold Oxide**  
For medium to high tensile strength Materials

Type	Series	Catalog page reference
118° Split Point 1/2" Reduced Shank with 3-Flats	T9FHD	300



## S&D Drills

High Speed Steel

**Black Oxide**  
For low to medium tensile strength materials

Type	Series	Catalog page reference
118° Split Point 1/2" Reduced Shank with 3-Flats	T9F, T9	300, 301



## S&D Drills

Cobalt

**Black & Gold Finish**  
For tough, high tensile strength materials

Type	Series	Catalog page reference
135° Split Point	1000C	302
Bronze Finish	1000EC	304



## S&D Drills

Cobalt

**Black & Gold oxide**  
For low to medium tensile strength materials

Type	Series	Catalog page reference
118° Split Point	T9C	303



# QUICK PAGES REFERENCES

## TAPER LENGTH DRILLS



### Taper Length Drills

High Speed Steel

**Black Oxide**

For general purpose use in a wide range of materials

Type	Series	Catalog page reference
118° Conventional Point / Straight Shank	900	304



## AIRCRAFT EXTENSION DRILLS



### Aircraft Extension Drills

High Speed Steel

**Black Oxide**

Long drills with jobbers length flutes for drilling holes in hard to reach places

Type	Series	Catalog page reference
135° Split Point Aircraft Extension 6" & 12"	1100, 1180	305
	1200, 1280	309



### Aircraft Extension Drills

High Speed Steel

**Black Oxide**

Long drills with jobbers length flutes for drilling holes in hard to reach places

Type	Series	Catalog page reference
135° Split Point Aircraft Extension 6"	T6HH, BP6HH, T6WW	308
	T12HH, BP12HH, 12WW	310



### Aircraft Extension Drills

Cobalt

**Bronze Finish**

Long drills with jobbers length flutes for drilling holes in hard to reach places

Type	Series	Catalog page reference
135° Split Point	1100C	311
	1200C	312



## EXTRA LENGTH DRILLS



### Extra Length Drills

High Speed Steel

**Black Oxide**

For deep hole drilling in a wide range of material

Type	Series	Catalog page reference
118° Split Point 8"	1308	313
118° Split Point 12"	1312, 1312R	313
118° Split Point 18"	1318, 1318R	314



### Extra Length Drills

High Speed Steel

**Bright Finish**

For deep hole drilling in a wide range of material

Type	Series	Catalog page reference
118° Split Point 12"	T1290	314
118° Split Point 18"	T1813	314





# TAPER SHANK DRILLS



## Taper Shank Drills

### High Speed Steel

**Black Oxide**  
For general purpose use in a wide range of materials

Type	Series	Catalog page reference
118° Conventional Point / Taper Shank	1400	315
	1400	316



# HEX SHANK DRILLS



## HEX Drills

### High Speed Steel



**Black & Gold Oxide**  
1/4" hex shank for HEX or adjustable power tool chucks, added strength due to Thunderbit geometry

Type	Series	Catalog page reference
135° Self-Centering Split Point	HEXT4HD	317



## HEX Drills

### High Speed Steel

**Black Oxide**  
1/4" hex shank for HEX or adjustable power tool chucks

Type	Series	Catalog page reference
135° Self-Centering Split Point	HEXT4	317



# SOLID CARBIDE DRILLS



## Jobber Drills

### Carbide Tip

**Bright Finish**  
For use in drilling cast iron, cast steel, bronze, hard copper, aluminum, and hard non-ferrous materials

Type	Series	Catalog page reference
118° Split Point	600	318



## Jobber Length Drills

### Solid Carbide

**Bright Finish**  
For use in drilling abrasive materials such as cast iron, non-ferrous alloys, high silicon aluminum, hard rubber, and Plexiglas

Type	Series	Catalog page reference
118° Point	700	319, 320



## Straight Flute Drills

### Solid Carbide

**Bright Finish**  
For use in drilling difficult materials (up to Rc 60) including nickel alloys, chrome alloys, steel weldments, titanium alloys, high temperature alloys, and stainless-steel weldments

Type	Series	Catalog page reference
140° Split Point	710	321, 322



# QUICK PAGES REFERENCES

## SOLID CARBIDE DRILLS



### Screw Machine

Solid Carbide

**Bright Finish**

Slow helix 135° split point provides ease of penetration and increases edge strength

Type	Series	Catalog page reference
Slow Helix 135° Split Point	720	323, 324



### 3-Flute

Solid Carbide

**Bright Finish**

For titanium, cast iron, low alloy steel, and high silicon aluminum applications

Type	Series	Catalog page reference
150° Point	730	325



### Spade Drills

Solid Carbide

**Bright Finish**

Perform well in hard to machine materials (up to Rc 60), high strength alloys, plastic, and glass

Type	Series	Catalog page reference
118° Point	750	326



### Combined Drill & Countersink

Solid Carbide

**Bright Finish**

Ideal for drilling and countersinking in difficult materials

Type	Series	Catalog page reference
60° Angle	3500C	326



## MASONRY DRILLS



### Masonry Drills

Carbide Tip

**Gold & Silver Finish**

For use in drilling concrete, natural stone, aerated concrete, masonry, brick, block, and lime sandstone

Type	Series	Catalog page reference
Straight Shank	1600N	327



### Masonry Drills

Carbide Tip

**Black & Gold Tipped**

Combine a rotation and percussion that helps the drill achieve a cutting and grinding action at the same time

Type	Series	Catalog page reference
Rotary Percussion & Hammer Drilling, Round Shank	1600A	327



### Masonry Drills

Carbide Tip

**Black with Gold Tip Finish**

Type	Series	Catalog page reference
TAPCON® Screw Type Anchor Bits	1800A, 1800E	328



### Masonry Drills

Carbide Tip

**Bright Finish**

Short head to flute entrance allows debris to quickly channel down the flute for faster drilling progress

Type	Series	Catalog page reference
TAPCON® SDS-HEX Type Screw Anchor Drills	1750	328



### SDS Plus Masonry Drills

Carbide Tip

**Bright Finish**

Short head to flute entrance allows debris to quickly channel down the flute for faster drilling progress

Type	Series	Catalog page reference
SDS Plus	1700A, 1700B (in bulk)	329



### SDS Plus Masonry Drills

Carbide Tip

**Bright Finish**

Designed for longer life when drilling in concrete

Type	Series	Catalog page reference
SDS Plus Dura-Tip	1720, 1720B (in bulk)	330



### SDS Max Masonry Drills

#### Carbide Tip

<b>Bright Finish</b> Designed for longer life in concrete and reinforced concrete applications		
Type	Series	Catalog page reference
SDS Max	1740	330



### Rebar Cutters

#### Carbide Tip

<b>Bright Finish</b> Perfect solution for drilling through concrete embedded rebar		
Type	Series	Catalog page reference
Micro SDS+ or 3-Flat Shank	1760, 1770	331
Head Only	1780	331



### Hammer Drill Tools

Series	Catalog page reference
1850, 1860	332



## MISCELLANEOUS DRILLS



Miscellaneous Drills		
Series	Description	Catalog page reference
1840	Glass, Tile, & Ceramics Bits	328
1900E	Ship Auger Bits	336
1950E	Paddle Bits	336
3500	Combined Drill & Countersink, HSS, 60° Angle, Plain Type	337
3500E	Combined Drill & Countersink, HSS, 60° Angle, Plain & Bell Type	337
3575E	Combined Drill & Countersink, HSS, 60° Angle, Long Length Series	338
400P	Pilot Drill for Holesaws, Bright, 118° Point	338
8900	Multi-Step Drill for Sheet Metal	334
8950	Multi-Step Drills	334
9000E	Screw Extractors	339

Miscellaneous Drills		
Series	Description	Catalog page reference
01-W	Multi-Step Drill Bits	335

Drill Accessories		
Series	Description	Catalog page reference
1420	Hardened Drill Sleeve, Regular Length	340
1440	Hardened Drill Sleeve, Extension Length	340
1470	Drill Drifts	340
-	Drill Gauges	340





# DRILL BITS EXPLAINED

## WALTER, DRILLCO, AND TRIUMPH OFFER A COMPLETE PRODUCT PROGRAM FOR A WIDE RANGE OF MATERIALS, APPLICATIONS, AND INDUSTRIES

### WHAT DOES THE DRILLCO Nitro® PROGRAM OFFER?

**NITRO**

- ▷ A complete line of drills including jobber length, mechanic's length, stub length, silver & deming (S&D), and sets
- ▷ All Nitro® drills are made from premium quality M2 High Speed Steel
- ▷ Body and flute are black and gold surface treated for maximum lubricity
- ▷ Split Point ensures ease of penetration and reduces "walking" when starting a hole
- ▷ Designed for use in portable hand drills, or fixed spindle applications (CNC Machines, Drill Presses)
- ▷ Made in the USA



### WHAT DOES THE TRIUMPH THUNDERBIT® PROGRAM OFFER?

- ▷ A complete line of drills including jobber length, stub length, silver & deming (S&D), hex shanks, and sets
- ▷ Unique spiral flute design improves chip ejection and coolant flow to the point
- ▷ The heavy-duty core guarantees increased strength and reduced breakage
- ▷ 135° self-centering split point prevents "walking" and provides quick penetration
- ▷ Friction-reducing black & bronze oxide surface treatments for higher drilling speeds
- ▷ Available in High Speed Steel (HSS) and Cobalt
- ▷ Designed for use in portable hand drills
- ▷ Made in the USA



**Tech tip!**

Use a drill with a flatted shank to reduce slippage in the drill chuck in portable drill applications.



<p><b>THUNDERBIT</b> <i>The HOLE Story</i></p>			
<p><b>Unique spiral flute design improves chip ejection and coolant flow to the point</b></p>			
<p><b>The heavy-duty core guarantees increased strength and reduced breakage</b></p>			
<p><b>135° self-centering split point prevents "walking" and provides quick penetration</b></p>			
<p><b>Friction-reducing black &amp; bronze oxide surface treatments for higher drilling speeds</b></p>			
<p><b>THUNDERBIT®</b></p>		<p><b>GENERAL PURPOSE</b></p>	

## MATERIAL

### High Speed Steel (HSS)

The most commonly used tool material for general purpose drilling. Suitable for most materials, including low- to medium-strength steels, aluminum and other non-ferrous materials, as well as wood and plastic.

### Cobalt (HSCo)

This composition increases tool hardness and improves wear resistance making it a great option for drilling into harder steel as well as stainless steel grades.

### Carbide (C)

Carbide tools are designed for very hard and very tough to machine materials. Carbide drills are more brittle than HSS or HSCo drills, and should only be used for production drilling in stationary equipment. They are not recommended for use in handheld portable drills.

### Why it's important?

It's important to select the correct material of the drill bit based on your application to maximize performance.

## DRILL POINT STYLE

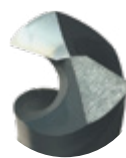
### Conventional

Most commonly used drill point. Ideal for a wide variety of materials.



### Split Point

Designed to drill in hard and soft materials, it reduces "walking," lifts away debris, allowing you to drill holes faster and with less chance of breakage. Ideal for curved surfaces.



## DRILL LENGTH



Stub/Screw Machine Length



Mechanic's Length



Jobber Length



Taper Length



Extra Length  
(8"/12"/18")



## FINISH AND COATING

### Bright Finish

Can be used on low-carbon steel and aluminum.



### Black Oxide

More lubricity than bright finish. Resists corrosion and oxidation with an added heat treatment that reduces friction.



### Black and Gold

Better resistance to corrosion and breakage while increasing lubricity. Reduces chipping and flaking. Can be used on most materials.



### Titanium Nitride Coated (TiN)

A wear-resistant gold colored, all-purpose ceramic coating provides high hardness, low coefficient of friction and thermal barrier. Tool life may be extended by 500% or more in high wear or very abrasive drilling applications.



### Bronze

Will increase lubricity and bit life while reducing chip build-up. For performance on harder metals and stainless steel. Applied primarily to Cobalt drills.



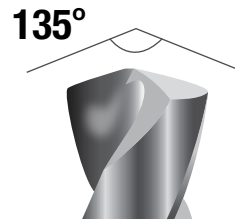
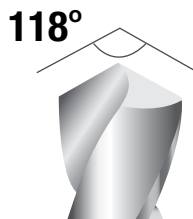
## DRILL POINT ANGLE

### 118°

Ideal for cutting mild steel, aluminum, and free machining materials.

### 135°

Ideal for drilling into more difficult-to-machine materials, such as stainless steel, hardened steels, cast iron, and more. For CNC or hand drilling applications.



### Why it's important?

- ▷ The shorter the bit, the more suitable they are for applications that require precision and accuracy.
- ▷ The shorter the bit, the more rigid it is.
- ▷ Ensure you use the right flute length to get the chips completely out of the hole.

# DRILL BIT SELECTION

## SECTION 1 – DRILL BIT MATERIAL AND GEOMETRY

*Increasing Hardness* →

### High Speed Steel (HSS)

High speed steel, for most drilling applications

Recommended series:  
**200A, 400N, T1, T1B**

### HSS + Cobalt (HSCo)

Premium high speed steel with cobalt, for added hardness, suitable for many drilling applications

Recommended series:  
**01A,01D, 01B, 500, 540, 580, T1HDC, T1C**

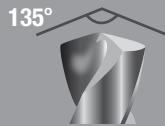
### Solid Carbide (SC)

Solid carbide is meant for the toughest materials and is designed to be used in CNC applications

Recommended series:  
**600, 680, 700**



118°



135°

**Use 118°** conventional point for soft materials like aluminum  
Recommended series: 200B, T1B, 01A

**Use 135°** split-point for harder materials like steel, or stainless steel  
Recommended series: 400N, T1D, T1HD, T1HDG, 01A

## SECTION 2 – DRILL BIT LENGTH

*Shortest* →

*Longest* →

### Stub or Screw Machine Length

Used in sheet metal and fixed spindle machines.

Recommended series:  
**300A, 300N, T4HD, 300C, 01H, 01J**

### Mechanics Length

Performs best in handheld drilling applications.

Recommended series:  
**350N, T1M, 1045N**

### Jobber Length

A do-it-all length that can be used in most applications.

Recommended series:  
**400N, T1HD, 01A**

### S&D Prentice

Large diameter with a 1/2" reduced shank to be used in 1/2" drill chucks.

Recommended series:  
**1000A, 1000N, T9F-HD, 01M**

### Aircraft Extension

Long-length drill bits, with jobber length flutes for extra reach.

Recommended series:  
**1100, 1200, 1100C, 1200C**

### Extra Length

Long-length drill bits, with extra long flutes for deep hole drilling.

Recommended series:  
**1308, 1312, 1318**

## SECTION 3 – POWER TOOL USED



THREE FLAT SHANK

When using a handheld power tool, a 3-flat or hex shank drill bit should be used.

Recommended series:  
**T101D, T1HD+, 01A, 350N**



ROUND SHANK

In fixed spindle machines like drill presses, a round shank should be used to reduce the chances of breakage.

## IMPORTANT – TIPS TO GET THE MOST OUT OF YOUR DRILL BIT

**Speed** – Using the optimal RPM for the drill bit diameter and material being drilled will increase productivity.

**Feed** – Using the right pressure and feed rate will optimize the drilling operation and extend drill bit life.

**Lube** – Using lubricant increases drill bit life and improves chip ejection for a better surface finish on your hole.



# JOBBER LENGTH GENERAL PURPOSE DRILLS

Designed for general purpose drilling under a wide range of drilling conditions. It can drill various materials such as cast iron, steel, and steel forging. The surface treatment prevents chip welding, improves chip flow, and increases abrasion resistance.

- ▷ 118° Point designed for general use
- ▷ A general purpose jobber for a wide range of applications
- ▷ Black oxide finish improves chip flow and increases abrasion resistance
- ▷ Bright finish recommended for aluminum and other non-ferrous materials
- ▷ Available in bulk packaging

## 200A SERIES

### GENERAL PURPOSE HIGH SPEED STEEL

118° Point / Straight Shank  
Fractional / Black Oxide



200A - Black Oxide

Size	Flute Length	Overall Length	200A Order No.
1/64"	3/16"	3/4"	200A101
1/32"	1/2"	1-3/8"	200A102
3/64"	3/4"	1-3/4"	200A103
1/16"	7/8"	1-7/8"	200A104
5/64"	1"	2"	200A105
3/32"	1-1/4"	2-1/4"	200A106
7/64"	1-1/2"	2-5/8"	200A107
1/8"	1-5/8"	2-3/4"	200A108
9/64"	1-3/4"	2-7/8"	200A109
5/32"	2"	3-1/8"	200A110
11/64"	2-1/8"	3-1/4"	200A111
3/16"	2-5/16"	3-1/2"	200A112
13/64"	2-7/16"	3-5/8"	200A113
7/32"	2-1/2"	3-3/4"	200A114
15/64"	2-5/8"	3-7/8"	200A115
1/4"	2-3/4"	4"	200A116
17/64"	2-7/8"	4-1/8"	200A117
9/32"	2-15/16"	4-1/4"	200A118
19/64"	3-1/16"	4-3/8"	200A119
5/16"	3-3/16"	4-1/2"	200A120
21/64"	3-5/16"	4-5/8"	200A121
11/32"	3-7/16"	4-3/4"	200A122
23/64"	3-1/2"	4-7/8"	200A123
3/8"	3-5/8"	5"	200A124
25/64"	3-3/4"	5-1/8"	200A125
13/32"	3-7/8"	5-1/4"	200A126
27/64"	3-15/16"	5-3/8"	200A127
7/16"	4-1/16"	5-1/2"	200A128
29/64"	4-3/16"	5-5/8"	200A129
15/32"	4-5/16"	5-3/4"	200A130
31/64"	4-3/8"	5-7/8"	200A131
1/2"	4-1/2"	6"	200A132

## 200B SERIES

### GENERAL PURPOSE HIGH SPEED STEEL

118° Point / Straight Shank  
Fractional / Bright



200B - Bright

Size	Flute Length	Overall Length	200B Order No.
1/64"	3/16"	3/4"	200B101
1/32"	1/2"	1-3/8"	200B102
3/64"	3/4"	1-3/4"	200B103
1/16"	7/8"	1-7/8"	200B104
5/64"	1"	2"	200B105
3/32"	1-1/4"	2-1/4"	200B106
7/64"	1-1/2"	2-5/8"	200B107
1/8"	1-5/8"	2-3/4"	200B108
9/64"	1-3/4"	2-7/8"	200B109
5/32"	2"	3-1/8"	200B110
11/64"	2-1/8"	3-1/4"	200B111
3/16"	2-5/16"	3-1/2"	200B112
13/64"	2-7/16"	3-5/8"	200B113
7/32"	2-1/2"	3-3/4"	200B114
15/64"	2-5/8"	3-7/8"	200B115
1/4"	2-3/4"	4"	200B116
17/64"	2-7/8"	4-1/8"	200B117
9/32"	2-15/16"	4-1/4"	200B118
19/64"	3-1/16"	4-3/8"	200B119
5/16"	3-3/16"	4-1/2"	200B120
21/64"	3-5/16"	4-5/8"	200B121
11/32"	3-7/16"	4-3/4"	200B122
23/64"	3-1/2"	4-7/8"	200B123
3/8"	3-5/8"	5"	200B124
25/64"	3-3/4"	5-1/8"	200B125
13/32"	3-7/8"	5-1/4"	200B126
27/64"	3-15/16"	5-3/8"	200B127
7/16"	4-1/16"	5-1/2"	200B128
29/64"	4-3/16"	5-5/8"	200B129
15/32"	4-5/16"	5-3/4"	200B130
31/64"	4-3/8"	5-7/8"	200B131
1/2"	4-1/2"	6"	200B132

1/64" thru 19/64" - 12 per pack, 5/16" thru 1/2" - 6 per pack

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & O - Z	72

# GENERAL PURPOSE JOBBER LENGTH DRILLS



## 200A SERIES

### GENERAL PURPOSE HIGH SPEED STEEL

118° Point / Straight Shank  
Letter / Black Oxide



200A - Black Oxide

Size	Flute Length	Overall Length	200A Order No.
A	2-5/8"	3-7/8"	200A501
B	2-3/4"	4"	200A502
C	2-3/4"	4"	200A503
D	2-3/4"	4"	200A504
E	2-3/4"	4"	200A505
F	2-7/8"	4-1/8"	200A506
G	2-7/8"	4-1/8"	200A507
H	2-7/8"	4-1/8"	200A508
I	2-7/8"	4-1/8"	200A509
J	2-7/8"	4-1/8"	200A510
K	2-15/16"	4-1/4"	200A511
L	2-15/16"	4-1/4"	200A512
M	3-1/16"	4-3/8"	200A513
N	3-1/16"	4-3/8"	200A514
O	3-3/16"	4-1/2"	200A515
P	3-5/16"	4-5/8"	200A516
Q	3-7/16"	4-3/4"	200A517
R	3-7/16"	4-3/4"	200A518
S	3-1/2"	4-7/8"	200A519
T	3-1/2"	4-7/8"	200A520
U	3-5/8"	5"	200A521
V	3-5/8"	5"	200A522
W	3-3/4"	5-1/8"	200A523
X	3-3/4"	5-1/8"	200A524
Y	3-7/8"	5-1/4"	200A525
Z	3-7/8"	5-1/4"	200A526

## 200B SERIES

### GENERAL PURPOSE HIGH SPEED STEEL

118° Point / Straight Shank  
Letter / Bright



200B - Bright

Size	Flute Length	Overall Length	200B Order No.
A	2-5/8"	3-7/8"	200B501
B	2-3/4"	4"	200B502
C	2-3/4"	4"	200B503
D	2-3/4"	4"	200B504
E	2-3/4"	4"	200B505
F	2-7/8"	4-1/8"	200B506
G	2-7/8"	4-1/8"	200B507
H	2-7/8"	4-1/8"	200B508
I	2-7/8"	4-1/8"	200B509
J	2-7/8"	4-1/8"	200B510
K	2-15/16"	4-1/4"	200B511
L	2-15/16"	4-1/4"	200B512
M	3-1/16"	4-3/8"	200B513
N	3-1/16"	4-3/8"	200B514
O	3-3/16"	4-1/2"	200B515
P	3-5/16"	4-5/8"	200B516
Q	3-7/16"	4-3/4"	200B517
R	3-7/16"	4-3/4"	200B518
S	3-1/2"	4-7/8"	200B519
T	3-1/2"	4-7/8"	200B520
U	3-5/8"	5"	200B521
V	3-5/8"	5"	200B522
W	3-3/4"	5-1/8"	200B523
X	3-3/4"	5-1/8"	200B524
Y	3-7/8"	5-1/4"	200B525
Z	3-7/8"	5-1/4"	200B526

"A" thru "L" - 12 per pack, "M" thru "Z" - 6 per pack

Corresponding Sets				
No. of Pcs.	Description	Order No.	Order No.	
<b>200/240/280 &amp; 200B/240B/280B Series Jobber Drill Sets</b>				
13	1/16" - 1/4" by 64 <sup>ths</sup>	200A13	200B13	
15	1/16" - 1/2" by 32 <sup>nds</sup>	200A15	200B15	
19	Maintenance Set - 1/16, 5/64, 3/32, 1/8, #29, #25, 5/32, #21, 3/16, #7, 7/32, 1/4, F, 5/16, U, 3/8, 27/64, 7/16, 1/2	200A19	200B19	
20	#61 - #80	200A20	200B20	
21	1/16" - 3/8" by 64 <sup>ths</sup>	200A21	200B21	
21	1/16" - 1/4" by 64 <sup>ths</sup> & 9/32" - 1/2" by 32 <sup>nds</sup>	200A21V	200B21V	
26	A - Z	200A26	200B26	
29	1/16" - 1/2" by 64 <sup>ths</sup>	200A29	200B29	
29	DRILL PAL 1/16" - 1/2" by 64 <sup>ths</sup>	200AW29	-	
60	#1 - #60	200A60	200B60	
115	1/16" - 1/2" by 64 <sup>ths</sup> , #1 - 60, A - Z	200A0115	200B0115	



200AW29



200B29

# GENERAL PURPOSE JOBBER LENGTH DRILLS

## 200A SERIES

### GENERAL PURPOSE HIGH SPEED STEEL

118° Point / Straight Shank

Number / Black Oxide



200A - Black Oxide

Size	Flute Length	Overall Length	200A Order No.
1	2-5/8"	3-7/8"	200A001
2	2-1/2"	3-7/8"	200A002
3	2-1/2"	3-3/4"	200A003
4	2-1/2"	3-3/4"	200A004
5	2-1/2"	3-3/4"	200A005
6	2-1/2"	3-3/4"	200A006
7	2-7/16"	3-5/8"	200A007
8	2-7/16"	3-5/8"	200A008
9	2-7/16"	3-5/8"	200A009
10	2-7/16"	3-5/8"	200A010
11	2-5/16"	3-1/2"	200A011
12	2-5/16"	3-1/2"	200A012
13	2-5/16"	3-1/2"	200A013
14	2-3/16"	3-3/8"	200A014
15	2-3/16"	3-3/8"	200A015
16	2-3/16"	3-3/8"	200A016
17	2-3/16"	3-3/8"	200A017
18	2-1/8"	3-1/4"	200A018
19	2-1/8"	3-1/4"	200A019
20	2-1/8"	3-1/4"	200A020
21	2-1/8"	3-1/4"	200A021
22	2"	3-1/8"	200A022
23	2"	3-1/8"	200A023
24	2"	3-1/8"	200A024
25	1-7/8"	3"	200A025
26	1-7/8"	3"	200A026
27	1-7/8"	3"	200A027
28	1-3/4"	2-7/8"	200A028
29	1-3/4"	2-7/8"	200A029
30	1-5/8"	2-3/4"	200A030
31	1-5/8"	2-3/4"	200A031
32	1-5/8"	2-3/4"	200A032
33	1-1/2"	2-5/8"	200A033
34	1-1/2"	2-5/8"	200A034
35	1-1/2"	2-5/8"	200A035
36	1-7/16"	2-1/2"	200A036
37	1-7/16"	2-1/2"	200A037
38	1-7/16"	2-1/2"	200A038
39	1-3/8"	2-3/8"	200A039
40	1-3/8"	2-3/8"	200A040

Size	Flute Length	Overall Length	200A Order No.
41	1-3/8"	2-3/8"	200A041
42	1-1/4"	2-1/4"	200A042
43	1-1/4"	2-1/4"	200A043
44	1-1/8"	2-1/8"	200A044
45	1-1/8"	2-1/8"	200A045
46	1-1/8"	2-1/8"	200A046
47	1"	2"	200A047
48	1"	2"	200A048
49	1"	2"	200A049
50	1"	2"	200A050
51	1"	2"	200A051
52	7/8"	1-7/8"	200A052
53	7/8"	1-7/8"	200A053
54	7/8"	1-7/8"	200A054
55	7/8"	1-7/8"	200A055
56	3/4"	1-3/4"	200A056
57	3/4"	1-3/4"	200A057
58	11/16"	1-5/8"	200A058
59	11/16"	1-5/8"	200A059
60	11/16"	1-5/8"	200A060
61	11/16"	1-5/8"	200A061
62	5/8"	1-1/2"	200A062
63	5/8"	1-1/2"	200A063
64	5/8"	1-1/2"	200A064
65	5/8"	1-1/2"	200A065
66	1/2"	1-3/8"	200A066
67	1/2"	1-3/8"	200A067
68	1/2"	1-3/8"	200A068
69	1/2"	1-3/8"	200A069
70	3/8"	1-1/4"	200A070
71	3/8"	1-1/4"	200A071
72	5/16"	1-1/8"	200A072
73	5/16"	1-1/8"	200A073
74	1/4"	1"	200A074
75	1/4"	1"	200A075
76	3/16"	7/8"	200A076
77	3/16"	7/8"	200A077
78	3/16"	7/8"	200A078
79	1/8"	3/4"	200A079
80	1/8"	3/4"	200A080

#1 thru #80 - 12 per pack

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & 0 - Z	72



# GENERAL PURPOSE JOBBER LENGTH DRILLS

## 200B SERIES

### GENERAL PURPOSE HIGH SPEED STEEL

118° Point / Straight Shank

Number / Bright



200B - Bright

Size	Flute Length	Overall Length	200B Order No.
1	2-5/8"	3-7/8"	200B001
2	2-1/2"	3-7/8"	200B002
3	2-1/2"	3-3/4"	200B003
4	2-1/2"	3-3/4"	200B004
5	2-1/2"	3-3/4"	200B005
6	2-1/2"	3-3/4"	200B006
7	2-7/16"	3-5/8"	200B007
8	2-7/16"	3-5/8"	200B008
9	2-7/16"	3-5/8"	200B009
10	2-7/16"	3-5/8"	200B010
11	2-5/16"	3-1/2"	200B011
12	2-5/16"	3-1/2"	200B012
13	2-5/16"	3-1/2"	200B013
14	2-3/16"	3-3/8"	200B014
15	2-3/16"	3-3/8"	200B015
16	2-3/16"	3-3/8"	200B016
17	2-3/16"	3-3/8"	200B017
18	2-1/8"	3-1/4"	200B018
19	2-1/8"	3-1/4"	200B019
20	2-1/8"	3-1/4"	200B020
21	2-1/8"	3-1/4"	200B021
22	2"	3-1/8"	200B022
23	2"	3-1/8"	200B023
24	2"	3-1/8"	200B024
25	1-7/8"	3"	200B025
26	1-7/8"	3"	200B026
27	1-7/8"	3"	200B027
28	1-3/4"	2-7/8"	200B028
29	1-3/4"	2-7/8"	200B029
30	1-5/8"	2-3/4"	200B030
31	1-5/8"	2-3/4"	200B031
32	1-5/8"	2-3/4"	200B032
33	1-1/2"	2-5/8"	200B033
34	1-1/2"	2-5/8"	200B034
35	1-1/2"	2-5/8"	200B035
36	1-7/16"	2-1/2"	200B036
37	1-7/16"	2-1/2"	200B037
38	1-7/16"	2-1/2"	200B038
39	1-3/8"	2-3/8"	200B039
40	1-3/8"	2-3/8"	280B040

Size	Flute Length	Overall Length	200B Order No.
41	1-3/8"	2-3/8"	200B041
42	1-1/4"	2-1/4"	200B042
43	1-1/4"	2-1/4"	200B043
44	1-1/8"	2-1/8"	200B044
45	1-1/8"	2-1/8"	200B045
46	1-1/8"	2-1/8"	200B046
47	1"	2"	200B047
48	1"	2"	200B048
49	1"	2"	200B049
50	1"	2"	200B050
51	1"	2"	200B051
52	7/8"	1-7/8"	200B052
53	7/8"	1-7/8"	200B053
54	7/8"	1-7/8"	200B054
55	7/8"	1-7/8"	200B055
56	3/4"	1-3/4"	200B056
57	3/4"	1-3/4"	200B057
58	11/16"	1-5/8"	200B058
59	11/16"	1-5/8"	200B059
60	11/16"	1-5/8"	200B060
61	11/16"	1-5/8"	200B061
62	5/8"	1-1/2"	200B062
63	5/8"	1-1/2"	200B063
64	5/8"	1-1/2"	200B064
65	5/8"	1-1/2"	200B065
66	1/2"	1-3/8"	200B066
67	1/2"	1-3/8"	200B067
68	1/2"	1-3/8"	200B068
69	1/2"	1-3/8"	200B069
70	3/8"	1-1/4"	200B070
71	3/8"	1-1/4"	200B071
72	5/16"	1-1/8"	200B072
73	5/16"	1-1/8"	200B073
74	1/4"	1"	200B074
75	1/4"	1"	200B075
76	3/16"	7/8"	200B076
77	3/16"	7/8"	200B077
78	3/16"	7/8"	200B078
79	1/8"	3/4"	200B079
80	1/8"	3/4"	200B080

#1 thru #80 - 12 per pack

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & 0 - Z	72

# GENERAL PURPOSE JOBBER LENGTH DRILLS

## 100SE SERIES

### GENERAL PURPOSE HIGH SPEED STEEL

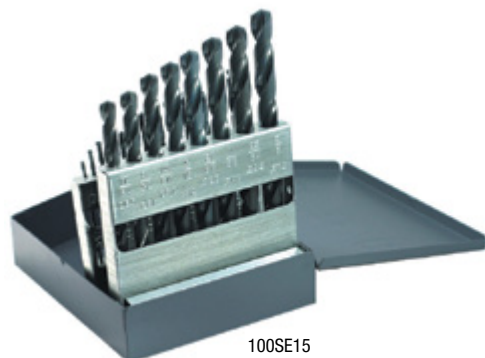
118° Point / Straight Shank  
Fractional / Black Oxide



100SE

Size	Flute Length	Overall Length	100SE Order No.
1/16"	7/8"	1-7/8"	100SE104
5/64"	1"	2"	100SE105
3/32"	1-1/4"	2-1/4"	100SE106
7/64"	1-1/2"	2-5/8"	100SE107
1/8"	1-5/8"	2-3/4"	100SE108
9/64"	1-3/4"	2-7/8"	100SE109
5/32"	2"	3-1/8"	100SE110
11/64"	2-1/8"	3-1/4"	100SE111
3/16"	2-5/16"	3-1/2"	100SE112
13/64"	2-7/16"	3-5/8"	100SE113
7/32"	2-1/2"	3-3/4"	100SE114
15/64"	2-5/8"	3-7/8"	100SE115
1/4"	2-3/4"	4"	100SE116
17/64"	2-7/8"	4-1/8"	100SE117
9/32"	2-15/16"	4-1/4"	100SE118
19/64"	3-1/16"	4-3/8"	100SE119
5/16"	3-3/16"	4-1/2"	100SE120
21/64"	3-5/16"	4-5/8"	100SE121
11/32"	3-7/16"	4-3/4"	100SE122
23/64"	3-1/2"	4-7/8"	100SE123
3/8"	3-5/8"	5"	100SE124
25/64"	3-3/4"	5-1/8"	100SE125
13/32"	3-7/8"	5-1/4"	100SE126
27/64"	3-15/16"	5-3/8"	100SE127
7/16"	4-1/16"	5-1/2"	100SE128
29/64"	4-3/16"	5-5/8"	100SE129
15/32"	4-5/16"	5-3/4"	100SE130
31/64"	4-3/8"	5-7/8"	100SE131
1/2"	4-1/2"	6"	100SE132

1/16" thru 19/64" - 12 per pack, 5/16" thru 1/2" - 6 per pack



100SE15

Corresponding Sets		
No. of Pcs.	Description	Order No.
<b>100SE Series Jobber Drill Sets</b>		
13	1/16" - 1/4" by 64 <sup>ths</sup>	100SE13
15	1/16" - 1/2" by 32 <sup>nds</sup>	100SE15
21	1/16" - 3/8" by 64 <sup>ths</sup>	100SE21
21	1/16" - 1/4" by 64 <sup>ths</sup> & 9/32" - 1/2" by 32 <sup>nds</sup>	100SE21V
29	DRILL PAL 1/16" - 1/2" by 64 <sup>ths</sup>	100SEW29
29	1/16" - 1/2" by 64 <sup>ths</sup>	100SE29

## 100SE SERIES

### GENERAL PURPOSE HIGH SPEED STEEL

118° Point / Straight Shank  
Number / Black Oxide



100SE

Size	Flute Length	Overall Length	100SE Order No.
1	2-5/8"	3-7/8"	100SE001
2	2-1/2"	3-7/8"	100SE002
3	2-1/2"	3-3/4"	180SE003
4	2-1/2"	3-3/4"	100SE004
5	2-1/2"	3-3/4"	100SE005
6	2-1/2"	3-3/4"	100SE006
7	2-7/16"	3-5/8"	100SE007
8	2-7/16"	3-5/8"	100SE008
9	2-7/16"	3-5/8"	100SE009
10	2-7/16"	3-5/8"	100SE010
11	2-5/16"	3-1/2"	100SE011
12	2-5/16"	3-1/2"	100SE012
13	2-5/16"	3-1/2"	100SE013
14	2-3/16"	3-3/8"	100SE014
15	2-3/16"	3-3/8"	100SE015
16	2-3/16"	3-3/8"	100SE016
17	2-3/16"	3-3/8"	100SE017
18	2-1/8"	3-1/4"	100SE018
19	2-1/8"	3-1/4"	100SE019
20	2-1/8"	3-1/4"	100SE020
21	2-1/8"	3-1/4"	100SE021
22	2"	3-1/8"	100SE022
23	2"	3-1/8"	100SE023
24	2"	3-1/8"	100SE024
25	1-7/8"	3"	100SE025
26	1-7/8"	3"	100SE026
27	1-7/8"	3"	100SE027
28	1-3/4"	2-7/8"	100SE028
29	1-3/4"	2-7/8"	100SE029
30	1-5/8"	2-3/4"	100SE030
31	1-5/8"	2-3/4"	100SE031
32	1-5/8"	2-3/4"	100SE032
33	1-1/2"	2-5/8"	100SE033
34	1-1/2"	2-5/8"	100SE034
35	1-1/2"	2-5/8"	100SE035
36	1-7/16"	2-1/2"	100SE036
37	1-7/16"	2-1/2"	100SE037
38	1-7/16"	2-1/2"	100SE038
39	1-3/8"	2-3/8"	100SE039
40	1-3/8"	2-3/8"	100SE040

#1 thru #40 - 12 per pack

# GENERAL PURPOSE JOBBER LENGTH DRILLS

Designed for general purpose drilling under a wide range of drilling conditions. It can drill various materials such as cast iron, steel, and steel forging.

- ▷ 118° Point designed for general use
- ▷ A general purpose jobber for a wide range of applications
- ▷ Black Oxide improves chip flow and increases abrasion resistance

## T1B - BP1B - T2B - T3B SERIES

### GENERAL PURPOSE HIGH SPEED

118° Point / Straight Shank

Black Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T1B Packaging: Tube		T1B Packaging: Bulk		BP1B Packaging: Card	
				Order No.	Pkg Qty	Order No.	Pkg Qty	Order No.	Pkg Qty
1/64"	.0156	3/16"	3/4"	011201	12	-	-	-	-
1/32"	.0312	1/2"	1-3/8"	011202	12	-	288	-	-
3/64"	.0469	3/4"	1-3/4"	011203	12	011203.20	288	-	-
1/16"	.0625	7/8"	1-7/8"	011204	12	011204.20	288	011304	1
5/64"	.0781	1"	2"	011205	12	011205.20	288	011305	1
3/32"	.0938	1-1/4"	2-1/4"	011206	12	011206.20	288	011306	1
7/64"	.1094	1-1/2"	2-5/8"	011207	12	011207.20	288	011307	1
1/8"	.1250	1-5/8"	2-3/4"	011208	12	011208.20	288	011308	1
9/64"	.1406	1-3/4"	2-7/8"	011209	12	011209.20	288	011309	1
5/32"	.1562	2"	3-1/8"	011210	12	011210.20	288	011310	1
11/64"	.1719	2-1/8"	3-1/4"	011211	12	011211.20	288	011311	1
3/16"	.1875	2-5/16"	3-1/2"	011212	12	011212.20	288	011312	1
13/64"	.2031	2-7/16"	3-5/8"	011213	12	011213.20	288	011313	1
7/32"	.2188	2-1/2"	3-3/4"	011214	12	011214.20	288	011314	1
15/64"	.2344	2-5/8"	3-7/8"	011215	12	011215.20	288	011315	1
1/4"	.2500	2-3/4"	4"	011216	12	011216.20	288	011316	1
17/64"	.2656	2-7/8"	4-1/8"	011217	12	011217.20	144	011317	1
9/32"	.2812	2-15/16"	4-1/4"	011218	12	011218.20	144	011318	1
19/64"	.2969	3-1/16"	4-3/8"	011219	12	011219.20	144	011319	1
5/16"	.3125	3-3/16"	4-1/2"	011220	6	011220.20	144	011320	1
21/64"	.3281	3-5/16"	4-5/8"	011221	6	011221.20	144	011321	1
11/32"	.3438	3-7/16"	4-3/4"	011222	6	011222.20	144	011322	1
23/64"	.3594	3-1/2"	4-7/8"	011223	6	011223.20	144	011323	1
3/8"	.3750	3-5/8"	5"	011224	6	011224.20	144	011324	1
25/64"	.3906	3-3/4"	5-1/8"	011225	6	011225.20	144	011325	1
13/32"	.4062	3-7/8"	5-1/4"	011226	6	011226.20	144	011326	1
27/64"	.4219	3-15/16"	5-3/8"	011227	6	011227.20	144	011327	1
7/16"	.4375	4-1/16"	5-1/2"	011228	6	011228.20	144	011328	1
29/64"	.4531	4-3/16"	5-5/8"	011229	6	011229.20	144	011329	1
15/32"	.4688	4-5/16"	5-3/4"	011230	6	011230.20	144	011330	1
31/64"	.4844	4-3/8"	5-7/8"	011231	6	011231.20	144	011331	1
1/2"	.5000	4-1/2"	6"	011232	6	011232.20	144	011332	1



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Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T17B	Metal Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	099802
T18B	Metal Index	15 Piece	1/16"-1/2" by 32 <sup>nds</sup>	099808
T19B	Metal Index	13 Piece	1/16"-1/4" by 64 <sup>ths</sup>	099814
T22B	Metal Index	60 Piece	#1 - #60	099820
T25B	Metal Index	26 Piece	A - Z	099827
T123B	Metal Index	115 Piece	1/16"-1/2 by 64 <sup>ths</sup> , #1 - #60, A-Z	099832
T180B	Metal Index	21 Piece	1/16"-3/8" by 64 <sup>ths</sup>	099835
T815B*	Metal Index	15 Piece	1/16"-1/2" by 32 <sup>nds</sup>	099812
T829B*	Metal Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	099833

\*3/8" Reduced Shank





# GENERAL PURPOSE JOBBER LENGTH DRILLS

Size	Decimal Equivalent	Flute Length	Overall Length	T2B Packaging: Tube	
				Order No.	Pkg Qty
1	.2280	2-5/8"	3-7/8"	012201	12
2	.2210	2-5/8"	3-7/8"	012202	12
3	.2130	2-1/2"	3-3/4"	012203	12
4	.2090	2-1/2"	3-3/4"	012204	12
5	.2055	2-1/2"	3-3/4"	012205	12
6	.2040	2-1/2"	3-3/4"	012206	12
7	.2010	2-7/16"	3-5/8"	012207	12
8	.1990	2-7/16"	3-5/8"	012208	12
9	.1960	2-7/16"	3-5/8"	012209	12
10	.1935	2-7/16"	3-5/8"	012210	12
11	.1910	2-5/16"	3-1/2"	012211	12
12	.1890	2-5/16"	3-1/2"	012212	12
13	.1850	2-5/16"	3-1/2"	012213	12
14	.1820	2-3/16"	3-3/8"	012214	12
15	.1800	2-3/16"	3-3/8"	012215	12
16	.1770	2-3/16"	3-3/8"	012216	12
17	.1730	2-3/16"	3-3/8"	012217	12
18	.1695	2-1/8"	3-1/4"	012218	12
19	.1660	2-1/8"	3-1/4"	012219	12
20	.1610	2-1/8"	3-1/4"	012220	12
21	.1590	2-1/8"	3-1/4"	012221	12
22	.1570	2"	3-1/8"	012222	12
23	.1540	2"	3-1/8"	012223	12
24	.1520	2"	3-1/8"	012224	12
25	.1495	1-7/8"	3"	012225	12
26	.1470	1-7/8"	3"	012226	12
27	.1440	1-7/8"	3"	012227	12
28	.1405	1-3/4"	2-7/8"	012228	12
29	.1360	1-3/4"	2-7/8"	012229	12
30	.1285	1-5/8"	2-3/4"	012230	12
31	.1200	1-5/8"	2-3/4"	012231	12
32	.1160	1-5/8"	2-3/4"	012232	12
33	.1130	1-1/2"	2-5/8"	012233	12
34	.1110	1-1/2"	2-5/8"	012234	12
35	.1100	1-1/2"	2-5/8"	012235	12
36	.1065	1-7/16"	2-1/2"	012236	12
37	.1040	1-7/16"	2-1/2"	012237	12
38	.1015	1-7/16"	2-1/2"	012238	12
39	.0995	1-3/8"	2-3/8"	012239	12
40	.0980	1-3/8"	2-3/8"	012240	12
41	.0960	1-3/8"	2-3/8"	012241	12
42	.0935	1-1/4"	2-1/4"	012242	12
43	.0890	1-1/4"	2-1/4"	012243	12
44	.0860	1-1/8"	2-1/8"	012244	12
45	.0820	1-1/8"	2-1/8"	012245	12
46	.0810	1-1/8"	2-1/8"	012246	12
47	.0785	1"	2"	012247	12
48	.0760	1"	2"	012248	12
49	.0730	1"	2"	012249	12
50	.0700	1"	2"	012250	12
51	.0670	1"	2"	012251	12
52	.0635	7/8"	1-7/8"	012252	12
53	.0595	7/8"	1-7/8"	012253	12
54	.0550	7/8"	1-7/8"	012254	12
55	.0520	7/8"	1-7/8"	012255	12
56	.0465	3/4"	1-3/4"	012256	12
57	.0430	3/4"	1-3/4"	012257	12
58	.0420	11/16"	1-5/8"	012258	12
59	.0410	11/16"	1-5/8"	012259	12
60	.0400	11/16"	1-5/8"	012260	12

Size	Decimal Equivalent	Flute Length	Overall Length	T2B Packaging: Bulk	
				Order No.	Pkg Qty
1	.2280	2-5/8"	3-7/8"	012201.20	288
2	.2210	2-5/8"	3-7/8"	012202.20	288
6	.2040	2-1/2"	3-3/4"	012206.20	288
7	.2010	2-7/16"	3-5/8"	012207.20	288
10	.1935	2-7/16"	3-5/8"	012210.20	288
16	.1770	2-3/16"	3-3/8"	012216.20	288
20	.1610	2-1/8"	3-1/4"	012220.20	288
21	.1590	2-1/8"	3-1/4"	012221.20	288
25	.1495	1-7/8"	3"	012225.20	288
28	.1405	1-3/4"	2-7/8"	012228.20	288
29	.1360	1-3/4"	2-7/8"	012229.20	288
30	.1285	1-5/8"	2-3/4"	012230.20	288
31	.1200	1-5/8"	2-3/4"	012231.20	288
36	.1065	1-7/16"	2-1/2"	012236.20	288
40	.0980	1-3/8"	2-3/8"	012240.20	288
52	.0635	7/8"	1-7/8"	012252.20	288
53	.0595	7/8"	1-7/8"	012253.20	288
54	.0550	7/8"	1-7/8"	012254.20	288
55	.0520	7/8"	1-7/8"	012255.20	288
56	.0465	3/4"	1-3/4"	012256.20	288
57	.0430	3/4"	1-3/4"	012257.20	288
58	.0420	11/16"	1-5/8"	012258.20	288
59	.0410	11/16"	1-5/8"	012259.20	288

Size	Decimal Equivalent	Flute Length	Overall Length	T3B Packaging: Tube	
				Order No.	Pkg Qty
A	.2340	2-5/8"	3-7/8"	013201	12
B	.2380	2-3/4"	4"	013202	12
C	.2420	2-3/4"	4"	013203	12
D	.2460	2-3/4"	4"	013204	12
E	.2500	2-3/4"	4"	013205	12
F	.2570	2-7/8"	4-1/8"	013206	12
G	.2610	2-7/8"	4-1/8"	013207	12
H	.2660	2-7/8"	4-1/8"	013208	12
I	.2720	2-7/8"	4-1/8"	013209	12
J	.2770	2-7/8"	4-1/8"	013210	12
K	.2810	2-15/16"	4-1/4"	013211	12
L	.2900	2-15/16"	4-1/4"	013212	12
M	.2950	3-1/16"	4-3/8"	013213	12
N	.3020	3-1/16"	4-3/8"	013214	12
O	.3160	3-3/16"	4-1/2"	013215	6
P	.3230	3-5/16"	4-5/8"	013216	6
Q	.3320	3-7/16"	4-3/4"	013217	6
R	.3390	3-7/16"	4-3/4"	013218	6
S	.3480	3-1/2"	4-7/8"	013219	6
T	.3580	3-1/2"	4-7/8"	013220	6
U	.3680	3-5/8"	5"	013221	6
V	.3770	3-5/8"	5"	013222	6
W	.3860	3-3/4"	5-1/8"	013223	6
X	.3970	3-3/4"	5-1/8"	013224	6
Y	.4040	3-7/8"	5-1/4"	013225	6
Z	.4130	3-7/8"	5-1/4"	013226	6

# GENERAL PURPOSE JOBBER LENGTH DRILLS

## T1 - BP1 - T2 - T3 - MM1 SERIES

### GENERAL PURPOSE HIGH SPEED STEEL

118° Point  
 Bright Finish



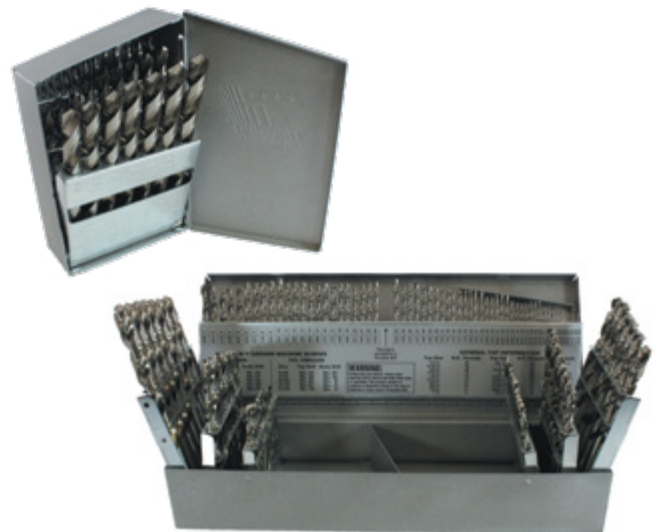
Size	Decimal Equivalent	Flute Length	Overall Length	T1 Packaging: Tube		T1 Packaging: Bulk		BP1 Packaging: Card	
				Order No.	Pkg Qty	Order No.	Pkg Qty	Order No.	Pkg Qty
1/64"	.0156	3/16"	3/4"	011001	12	-	-	-	-
1/32"	.0312	1/2"	1-3/8"	011002	12	011002.20	288	-	-
3/64"	.0469	3/4"	1-3/4"	011003	12	011003.20	288	-	-
1/16"	.0625	7/8"	1-7/8"	011004	12	011004.20	288	011604	1
5/64"	.0781	1"	2"	011005	12	011005.20	288	011605	1
3/32"	.0938	1-1/4"	2-1/4"	011006	12	011006.20	288	011606	1
7/64"	.1094	1-1/2"	2-5/8"	011007	12	011007.20	288	011607	1
1/8"	.1250	1-5/8"	2-3/4"	011008	12	011008.20	288	011608	1
9/64"	.1406	1-3/4"	2-7/8"	011009	12	011009.20	288	011609	1
5/32"	.1562	2"	3-1/8"	011010	12	011010.20	288	011610	1
11/64"	.1719	2-1/8"	3-1/4"	011011	12	011011.20	288	011611	1
3/16"	.1875	2-5/16"	3-1/2"	011012	12	011012.20	288	011612	1
13/64"	.2031	2-7/16"	3-5/8"	011013	12	011013.20	288	011613	1
7/32"	.2188	2-1/2"	3-3/4"	011014	12	011014.20	288	011614	1
15/64"	.2344	2-5/8"	3-7/8"	011015	12	011015.20	288	011615	1
1/4"	.2500	2-3/4"	4"	011016	12	011016.20	288	011616	1
17/64"	.2656	2-7/8"	4-1/8"	011017	12	011017.20	144	011617	1
9/32"	.2812	2-15/16"	4-1/4"	011018	12	011018.20	144	011618	1
19/64"	.2969	3-1/16"	4-3/8"	011019	12	011019.20	144	011619	1
5/16"	.3125	3-3/16"	4-1/2"	011020	6	011020.20	144	011620	1
21/64"	.3281	3-5/16"	4-5/8"	011021	6	011021.20	144	011621	1
11/32"	.3438	3-7/16"	4-3/4"	011022	6	011022.20	144	011622	1
23/64"	.3594	3-1/2"	4-7/8"	011023	6	011023.20	144	011623	1
3/8"	.3750	3-5/8"	5"	011024	6	011024.20	144	011624	1
25/64"	.3906	3-3/4"	5-1/8"	011025	6	011025.20	144	011625	1
13/32"	.4062	3-7/8"	5-1/4"	011026	6	011026.20	144	011626	1
27/64"	.4219	3-15/16"	5-3/8"	011027	6	011027.20	144	011627	1
7/16"	.4375	4-1/16"	5-1/2"	011028	6	011028.20	144	011628	1
29/64"	.4531	4-3/16"	5-5/8"	011029	6	011029.20	144	011629	1
15/32"	.4688	4-5/16"	5-3/4"	011030	6	011030.20	144	011630	1
31/64"	.4844	4-3/8"	5-7/8"	011031	6	011031.20	144	011631	1
1/2"	.5000	4-1/2"	6"	011032	6	011032.20	144	011632	1



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Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
SAD13	Select-A-Drill	13 Piece	1/16"-1/4" by 64 <sup>ths</sup>	090490
SAD21	Select-A-Drill	21 Piece	1/16"-3/8" by 64 <sup>ths</sup>	090491
T14P*	Metal Index	14 Piece	1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32, 3/16", 7/32", 1/4", 5/16", 3/8", 7/16", 1/2"	090614
T17	Metal Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	090517
T18	Metal Index	15 Piece	1/16"-1/2" by 32 <sup>nds</sup>	090518
T19	Metal Index	13 Piece	1/16"-1/4" by 64 <sup>ths</sup>	090519
T180	Metal Index	21 Piece	1/16"-3/8" by 64 <sup>ths</sup>	090580
T123	Metal Index	115 Piece	1/16"-1/2" by 64 <sup>ths</sup> , #1-#60, A-Z	090560
T829B*	Metal Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	099833

\*Sizes over 1/4" are 1/4" reduced shank



**T2 SERIES (CONTINUED)**

**GENERAL PURPOSE  
JOBBER LENGTH DRILLS**

Size	Decimal Equivalent	Flute Length	Overall Length	T2 Packaging: Tube	
				Order No.	Pkg Qty
1	.2280	2-5/8"	3-7/8"	012001	12
2	.2210	2-5/8"	3-7/8"	012002	12
3	.2130	2-1/2"	3-3/4"	012003	12
4	.2090	2-1/2"	3-3/4"	012004	12
5	.2055	2-1/2"	3-3/4"	012005	12
6	.2040	2-1/2"	3-3/4"	012006	12
7	.2010	2-7/16"	3-5/8"	012007	12
8	.1990	2-7/16"	3-5/8"	012008	12
9	.1960	2-7/16"	3-5/8"	012009	12
10	.1935	2-7/16"	3-5/8"	012010	12
11	.1910	2-5/16"	3-1/2"	012011	12
12	.1890	2-5/16"	3-1/2"	012012	12
13	.1850	2-5/16"	3-1/2"	012013	12
14	.1820	2-3/16"	3-3/8"	012014	12
15	.1800	2-3/16"	3-3/8"	012015	12
16	.1770	2-3/16"	3-3/8"	012016	12
17	.1730	2-3/16"	3-3/8"	012017	12
18	.1695	2-1/8"	3-1/4"	012018	12
19	.1660	2-1/8"	3-1/4"	012019	12
20	.1610	2-1/8"	3-1/4"	012020	12
21	.1590	2-1/8"	3-1/4"	012021	12
22	.1570	2"	3-1/8"	012022	12
23	.1540	2"	3-1/8"	012023	12
24	.1520	2"	3-1/8"	012024	12
25	.1495	1-7/8"	3"	012025	12
26	.1470	1-7/8"	3"	012026	12
27	.1440	1-7/8"	3"	012027	12
28	.1405	1-3/4"	2-7/8"	012028	12
29	.1405	1-3/4"	2-7/8"	012029	12
30	.1285	1-5/8"	2-3/4"	012030	12
31	.1200	1-5/8"	2-3/4"	012031	12
32	.1160	1-5/8"	2-3/4"	012032	12
33	.1130	1-1/2"	2-5/8"	012033	12
34	.1110	1-1/2"	2-5/8"	012034	12
35	.1100	1-1/2"	2-5/8"	012035	12
36	.1065	1-7/16"	2-1/2"	012036	12
37	.1040	1-7/16"	2-1/2"	012037	12
38	.1015	1-7/16"	2-1/2"	012038	12
39	.0995	1-3/8"	2-3/8"	012039	12
40	.0980	1-3/8"	2-3/8"	012040	12
41	.0960	1-3/8"	2-3/8"	012041	12
42	.0935	1-1/4"	2-1/4"	012042	12
43	.0890	1-1/4"	2-1/4"	012043	12
44	.0860	1-1/8"	2-1/8"	012044	12
45	.0820	1-1/8"	2-1/8"	012045	12
46	.0810	1-1/8"	2-1/8"	012046	12
47	.0785	1"	2"	012047	12
48	.0760	1"	2"	012048	12
49	.0730	1"	2"	012049	12
50	.0700	1"	2"	012050	12
51	.0670	1"	2"	012051	12
52	.0635	7/8"	1-7/8"	012052	12
53	.0595	7/8"	1-7/8"	012053	12
54	.0550	7/8"	1-7/8"	012054	12
55	.0520	7/8"	1-7/8"	012055	12
56	.0465	3/4"	1-3/4"	012056	12
57	.0430	3/4"	1-3/4"	012057	12
58	.0420	11/16"	1-5/8"	012058	12
59	.0410	11/16"	1-5/8"	012059	12
60	.0400	11/16"	1-5/8"	012060	12
61	.0390	11/16"	1-5/8"	012061	12

Size	Decimal Equivalent	Flute Length	Overall Length	T2 Packaging: Bulk	
				Order No.	Pkg Qty
62	.0380	5/8"	1-1/2"	012062	12
63	.0370	5/8"	1-1/2"	012063	12
64	.0360	5/8"	1-1/2"	012064	12
65	.0350	5/8"	1-1/2"	012065	12
66	.0330	1/2"	1-3/8"	012066	12
67	.0320	1/2"	1-3/8"	012067	12
68	.0310	1/2"	1-3/8"	012068	12
69	.0292	1/2"	1-3/8"	012069	12
70	.0280	3/8"	1-1/4"	012070	12
71	.0260	3/8"	1-1/4"	012071	12
72	.0250	5/16"	1-1/8"	012072	12
73	.0240	5/16"	1-1/8"	012073	12
74	.0225	1/4"	1"	012074	12
75	.0210	1/4"	1"	012075	12
76	.0200	3/16"	7/8"	012076	12
77	.0180	3/16"	7/8"	012077	12
78	.0160	3/16"	7/8"	012078	12
79	.0145	1/8"	3/4"	012079	12
80	.0135	1/8"	3/4"	012080	12

Size	Decimal Equivalent	Flute Length	Overall Length	T2 Packaging: Bulk	
				Order No.	Pkg Qty
7	.2010	2-7/16"	3-5/8"	012007.20	288
10	.1935	2-7/16"	3-5/8"	012010.20	288
21	.1590	2-1/8"	3-1/4"	012021.20	288
25	.1495	1-7/8"	3"	012025.20	288
29	.1360	1-3/4"	2-7/8"	012029.20	288
31	.1200	1-5/8"	2-3/4"	012031.20	288
32	.1160	1-5/8"	2-3/4"	012032.20	288
35	.1100	1-1/2"	2-5/8"	012035.20	288
36	.1065	1-7/16"	2-1/2"	012036.20	288
44	.0860	1-1/8"	2-1/8"	012044.20	288
50	.0700	1"	2"	012050.20	288
53	.0595	7/8"	1-7/8"	012053.20	288
54	.0550	7/8"	1-7/8"	012054.20	288
55	.0520	7/8"	1-7/8"	012055.20	288
56	.0465	3/4"	1-3/4"	012056.20	288
58	.0420	11/16"	1-5/8"	012058.20	288
60	.0400	11/16"	1-5/8"	012060.20	288

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T22	Metal Index	60 Piece	#1- #60	090522
T23	Metal Index	20 Piece	#61- #80	090523
T123	Metal Index	115 Piece	1/16"-1/2" by 64 <sup>ths</sup> , #1- #60, A-Z	090560



**T3 - MM1 SERIES (CONTINUED)**



**GENERAL PURPOSE  
JOBBER LENGTH DRILLS**

**T1 - BP1 - T2 - T3 - MM1 SERIES**

**GENERAL PURPOSE HIGH SPEED STEEL**

118° Point  
Bright Finish



Size	Decimal Equivalent	Flute Length	Overall Length	T3 Packaging: Tube	
				Order No.	Pkg Qty
A	.2340	2-5/8"	3-7/8"	013001	12
B	.2380	2-3/4"	4"	013002	12
C	.2420	2-3/4"	4"	013003	12
D	.2460	2-3/4"	4"	013004	12
E	.2500	2-3/4"	4"	013005	12
F	.2570	2-7/8"	4-1/8"	013006	12
G	.2610	2-7/8"	4-1/8"	013007	12
H	.2660	2-7/8"	4-1/8"	013008	12
I	.2720	2-7/8"	4-1/8"	013009	12
J	.2770	2-7/8"	4-1/8"	013010	12
K	.2810	2-15/16"	4-1/4"	013011	12
L	.2900	2-15/16"	4-1/4"	013012	12
M	.2950	3-1/16"	4-3/8"	013013	12
N	.3020	3-1/16"	4-3/8"	013014	12
O	.3160	3-3/16"	4-1/2"	013015	6
P	.3230	3-5/16"	4-5/8"	013016	6
Q	.3320	3-7/16"	4-3/4"	013017	6
R	.3390	3-7/16"	4-3/4"	013018	6
S	.3480	3-1/2"	4-7/8"	013019	6
T	.3580	3-1/2"	4-7/8"	013020	6
U	.3680	3-5/8"	5"	013021	6
V	.3770	3-5/8"	5"	013022	6
W	.3860	3-3/4"	5-1/8"	013023	6
X	.3970	3-3/4"	5-1/8"	013024	6
Y	.4040	3-7/8"	5-1/4"	013025	6
Z	.4130	3-7/8"	5-1/4"	013026	6

Size	Decimal Equivalent	Flute Length	Overall Length	MM1 Packaging: Tube	
				Order No.	Pkg Qty
1.00	.0394	17	41	013910	12
1.20	.0472	22	48	013912	12
1.50	.0591	22	48	013915	12
2.00	.0787	25	51	013920	12
2.50	.0984	35	60	013925	12
3.00	.1181	41	70	013930	12
3.30	.1299	44	73	013933	12
3.50	.1378	44	73	013935	12
4.00	.1575	54	83	013940	12
4.20	.1654	54	83	013942	12
4.50	.1772	56	86	013945	12
5.00	.1969	62	92	013950	12
5.10	.2008	62	92	013951	12
5.30	.2087	64	95	013953	12
5.50	.2165	64	95	013955	12
6.00	.2362	70	102	013960	12
6.50	.2559	73	105	013965	12
6.90	.2717	73	105	013969	6
7.00	.2756	73	105	013970	6
7.20	.2835	75	108	013972	6
7.50	.2953	78	111	013975	6
8.00	.3150	81	114	013980	6
8.30	.3268	84	117	013983	6
8.50	.3346	87	121	013985	6
9.00	.3543	89	124	013990	6
10.00	.3937	95	130	013800	6
10.50	.4134	98	133	013805	6
11.00	.4331	103	140	013810	6
11.50	.4528	106	143	013811	6
12.00	.4724	111	149	013812	6
12.50	.4921	114	152	013813	6
13.00	.5118	114	152	013814	1

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T123	Metal Index	115 Piece	1/16"-1/2" by 64 <sup>ths</sup> , #1- #60, A-Z	090560

**T8 - BP8 SERIES**

**HIGH SPEED STEEL**

118° Point  
Bright Finish  
3/8" Reduced Shank



Size	Decimal Equivalent	Flute Length	Overall Length	T8 Packaging: Tube		BP8 Packaging: Tube	
				Order No.	Pkg Qty	Order No.	Pkg Qty
25/64"	.3906	3-3/4"	5-1/8"	091825	6	-	-
13/32"	.4062	3-7/8"	5-1/4"	091826	6	-	-
27/64"	.4219	3-15/16"	5-3/8"	091827	6	-	-
7/16"	.4375	4-1/16"	5-1/2"	091828	6	091928	1
29/64"	.4531	4-3/16"	5-5/8"	091829	6	-	-
15/32"	.4688	4-5/16"	5-3/4"	091830	6	-	-
31/64"	.4844	4-3/8"	5-7/8"	091831	6	-	-
1/2"	.5000	4-1/2"	6"	091832	6	091932	1

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T815	Metal Index	15 Piece	1/16"-1/2" by 32 <sup>nds</sup>	090815
T829	Metal Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	090829





**T**  
**TRIUMPH**  
**TWIST DRILL CO.**  
A DIVISION OF MINNESOTA TWIST DRILL

# GENERAL PURPOSE LEFT HAND JOBBER LENGTH DRILLS

Used in close center multiple spindle gear driven drilling heads, where adjacent spindles operate alternately left and right hand. They are also used in left hand screw machines. Can be used to drill out broken bolts.

- ▷ Left handed flutes and cutting edges allow for counter-clockwise drilling
- ▷ Easy removal of broken bolts
- ▷ Bright finish for increased lubricity when drilling softer materials

## T1L SERIES

### GENERAL PURPOSE HIGH SPEED STEEL

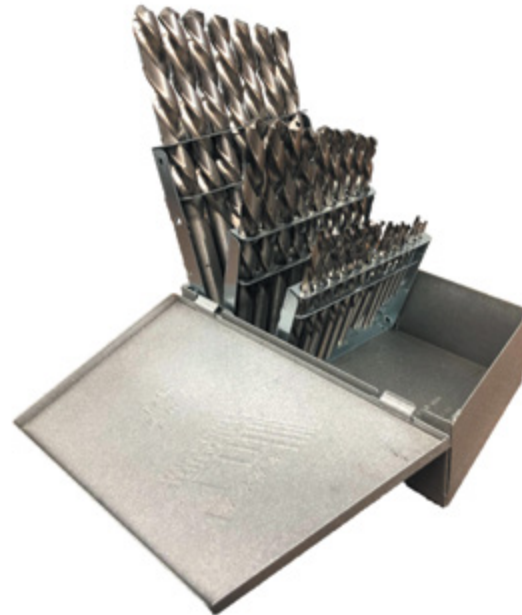
118° Point

Bright Finish



Size	Decimal Equivalent	Flute Length	Overall Length	T1L Packaging: Tube	
				Order No.	Pkg Qty
1/16"	.0625	7/8"	1-7/8"	011104	12
5/64"	.0781	1"	2"	011105	12
3/32"	.0938	1-1/4"	2-1/4"	011106	12
7/64"	.1094	1-1/2"	2-5/8"	011107	12
1/8"	.1250	1-5/8"	2-3/4"	011108	12
9/64"	.1406	1-3/4"	2-7/8"	011109	12
5/32"	.1562	2"	3-1/8"	011110	12
11/64"	.1719	2-1/8"	3-1/4"	011111	12
3/16"	.1875	2-5/16"	3-1/2"	011112	12
13/64"	.2031	2-7/16"	3-5/8"	011113	12
7/32"	.2188	2-1/2"	3-3/4"	011114	12
15/64"	.2344	2-5/8"	3-7/8"	011115	12
1/4"	.2500	2-3/4"	4"	011116	12
17/64"	.2656	2-7/8"	4-1/8"	011117	12
9/32"	.2812	2-15/16"	4-1/4"	011118	12
19/64"	.2969	3-1/16"	4-3/8"	011119	12
5/16"	.3125	3-3/16"	4-1/2"	011120	6
21/64"	.3281	3-5/16"	4-5/8"	011121	6
11/32"	.3438	3-7/16"	4-3/4"	011122	6
23/64"	.3594	3-1/2"	4-7/8"	011123	6
3/8"	.3750	3-5/8"	5"	011124	6
25/64"	.3906	3-3/4"	5-1/8"	011125	6
13/32"	.4062	3-7/8"	5-1/4"	011126	6
27/64"	.4219	3-15/16"	5-3/8"	011127	6
7/16"	.4375	4-1/16"	5-1/2"	011128	6
29/64"	.4531	4-3/16"	5-5/8"	011129	6
15/32"	.4688	4-5/16"	5-3/4"	011130	6
31/64"	.4844	4-3/8"	5-7/8"	011131	6
1/2"	.5000	4-1/2"	6"	011132	6

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T17L	Metal Index	29 Piece	1/16"-1/2" by 64ths	011199



### Tech tip!

Left-handed drill bits can be used to drill out broken bolts.



## GENERAL PURPOSE LEFT HAND JOBBER LENGTH DRILLS

Used in close center multiple spindle gear driven drilling heads, where adjacent spindles operate alternately left and right hand. They are also used in left hand screw machines. Can be used to drill out broken bolts.

- ▷ *Left handed flutes and cutting edges allow for counter-clockwise drilling*
- ▷ *Easy removal of broken bolts*
- ▷ *Bright finish for increased lubricity when drilling softer materials*

### 200LH SERIES

#### GENERAL PURPOSE HIGH SPEED STEEL

118° Point / Straight Shank

Fractional / Bright



200LH

Size	Flute Length	Overall Length	200LH Order No.
1/16"	7/8"	1-7/8"	200LH104
5/64"	1"	2"	200LH105
3/32"	1-1/4"	2-1/4"	200LH106
7/64"	1-1/2"	2-5/8"	200LH107
1/8"	1-5/8"	2-3/4"	200LH108
9/64"	1-3/4"	2-7/8"	200LH109
5/32"	2"	3-1/8"	200LH110
11/64"	2-1/8"	3-1/4"	200LH111
3/16"	2-5/16"	3-1/2"	200LH112
13/64"	2-7/16"	3-5/8"	200LH113
7/32"	2-1/2"	3-3/4"	200LH114
15/64"	2-5/8"	3-7/8"	200LH115
1/4"	2-3/4"	4"	200LH116
17/64"	2-7/8"	4-1/8"	200LH117
9/32"	2-15/16"	4-1/4"	200LH118

Size	Flute Length	Overall Length	200LH Order No.
19/64"	3-1/16"	4-3/8"	200LH119
5/16"	3-3/16"	4-1/2"	200LH120
21/64"	3-5/16"	4-5/8"	200LH121
11/32"	3-7/16"	4-3/4"	200LH122
23/64"	3-1/2"	4-7/8"	200LH123
3/8"	3-5/8"	5"	200LH124
25/64"	3-3/4"	5-1/8"	200LH125
13/32"	3-7/8"	5-1/4"	200LH126
27/64"	3-15/16"	5-3/8"	200LH127
7/16"	4-1/16"	5-1/2"	200LH128
29/64"	4-3/16"	5-5/8"	200LH129
15/32"	4-5/16"	5-3/4"	200LH130
31/64"	4-3/8"	5-7/8"	200LH131
1/2"	4-1/2"	6"	200LH132



200LH29

Corresponding Sets		
No. of Pcs.	Description	Order No.
<b>200LH Series Left Hand Jobber Drill Sets</b>		
13	1/16" - 1/4" by 64 <sup>ths</sup>	200LH13
15	1/16" - 1/2" by 32 <sup>nds</sup>	200LH15
21	1/16" - 3/8" by 64 <sup>ths</sup>	200LH21
21	1/16" - 1/4" by 64 <sup>ths</sup> & 9/32" - 1/2" by 32 <sup>nds</sup>	200LH21V
29	1/16" - 1/2" by 64 <sup>ths</sup>	200LH29

# HEAVY-DUTY JOBBER LENGTH DRILLS



Designed for efficient drilling in stainless steel and tougher ferrous materials.

- ▷ The 135° split point reduces the thrust requirements and minimizes "walking"
- ▷ NAS Type B
- ▷ Black oxide surface treatment for increased wear resistance and lubricity
- ▷ Available in bulk packaging

## 400 SERIES

### HEAVY-DUTY HIGH SPEED STEEL

135° Split Point / Straight Shank  
Fractional / Black Oxide



400

Size	Flute Length	Overall Length	400 Order No.
1/16"	7/8"	1-7/8"	400A104
5/64"	1"	2"	400A105
3/32"	1-1/4"	2-1/4"	400A106
7/64"	1-1/2"	2-5/8"	400A107
1/8"	1-5/8"	2-3/4"	400A108
9/64"	1-3/4"	2-7/8"	400A109
5/32"	2"	3-1/8"	400A110
11/64"	2-1/8"	3-1/4"	400A111
3/16"	2-5/16"	3-1/2"	400A112
13/64"	2-7/16"	3-5/8"	400A113
7/32"	2-1/2"	3-3/4"	400A114
15/64"	2-5/8"	3-7/8"	400A115
1/4"	2-3/4"	4"	400A116
17/64"	2-7/8"	4-1/8"	400A117
9/32"	2-15/16"	4-1/4"	400A118

Size	Flute Length	Overall Length	400 Order No.
19/64"	3-1/16"	4-3/8"	400A119
5/16"	3-3/16"	4-1/2"	400A120
21/64"	3-5/16"	4-5/8"	400A121
11/32"	3-7/16"	4-3/4"	400A122
23/64"	3-1/2"	4-7/8"	400A123
3/8"	3-5/8"	5"	400A124
25/64"	3-3/4"	5-1/8"	400A125
13/32"	3-7/8"	5-1/4"	400A126
27/64"	3-15/16"	5-3/8"	400A127
7/16"	4-1/16"	5-1/2"	400A128
29/64"	4-3/16"	5-5/8"	400A129
15/32"	4-5/16"	5-3/4"	400A130
31/64"	4-3/8"	5-7/8"	400A131
1/2"	4-1/2"	6"	400A132

1/16" thru 19/64" - 12 per pack, 5/16" thru 1/2" - 6 per pack

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & 0 - Z	72

## 400 SERIES

### HEAVY-DUTY HIGH SPEED STEEL

135° Split Point / Straight Shank  
Letter / Black Oxide



400

Size	Flute Length	Overall Length	400 Order No.
A	2-5/8"	3-7/8"	400A501
B	2-3/4"	4"	400A502
C	2-3/4"	4"	400A503
D	2-3/4"	4"	400A504
E	2-3/4"	4"	400A505
F	2-7/8"	4-1/8"	400A506
G	2-7/8"	4-1/8"	400A507
H	2-7/8"	4-1/8"	400A508
I	2-7/8"	4-1/8"	400A509
J	2-7/8"	4-1/8"	400A510
K	2-15/16"	4-1/4"	400A511
L	2-15/16"	4-1/4"	400A512
M	3-1/16"	4-3/8"	400A513

Size	Flute Length	Overall Length	400 Order No.
N	3-1/16"	4-3/8"	400A514
O	3-3/16"	4-1/2"	400A515
P	3-5/16"	4-5/8"	400A516
Q	3-7/16"	4-3/4"	400A517
R	3-7/16"	4-3/4"	400A518
S	3-1/2"	4-7/8"	400A519
T	3-1/2"	4-7/8"	400A520
U	3-5/8"	5"	400A521
V	3-5/8"	5"	400A522
W	3-3/4"	5-1/8"	400A523
X	3-3/4"	5-1/8"	400A524
Y	3-7/8"	5-1/4"	400A525
Z	3-7/8"	5-1/4"	400A526

"A" thru "L" - 12 per pack, "M" thru "Z" - 6 per pack

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & 0 - Z	72

# HEAVY-DUTY JOBBER LENGTH DRILLS

## 400 SERIES

### HEAVY-DUTY HIGH SPEED STEEL

135° Split Point / Straight Shank

Number / Black Oxide



400

Size	Flute Length	Overall Length	400 Order No.
1	2-5/8"	3-7/8"	400A001
2	2-1/2"	3-7/8"	400A002
3	2-1/2"	3-3/4"	400A003
4	2-1/2"	3-3/4"	400A004
5	2-1/2"	3-3/4"	400A005
6	2-1/2"	3-3/4"	400A006
7	2-7/16"	3-5/8"	400A007
8	2-7/16"	3-5/8"	400A008
9	2-7/16"	3-5/8"	400A009
10	2-7/16"	3-5/8"	400A010
11	2-5/16"	3-1/2"	400A011
12	2-5/16"	3-1/2"	400A012
13	2-5/16"	3-1/2"	400A013
14	2-3/16"	3-3/8"	400A014
15	2-3/16"	3-3/8"	400A015
16	2-3/16"	3-3/8"	400A016
17	2-3/16"	3-3/8"	400A017
18	2-1/8"	3-1/4"	400A018
19	2-1/8"	3-1/4"	400A019
20	2-1/8"	3-1/4"	400A020
21	2-1/8"	3-1/4"	400A021
22	2"	3-1/8"	400A022
23	2"	3-1/8"	400A023
24	2"	3-1/8"	400A024
25	1-7/8"	3"	400A025
26	1-7/8"	3"	400A026
27	1-7/8"	3"	400A027
28	1-3/4"	2-7/8"	400A028
29	1-3/4"	2-7/8"	400A029
30	1-5/8"	2-3/4"	400A030

Size	Flute Length	Overall Length	400 Order No.
31	1-5/8"	2-3/4"	400A031
32	1-5/8"	2-3/4"	400A032
33	1-1/2"	2-5/8"	400A033
34	1-1/2"	2-5/8"	400A034
35	1-1/2"	2-5/8"	400A035
36	1-7/16"	2-1/2"	400A036
37	1-7/16"	2-1/2"	400A037
38	1-7/16"	2-1/2"	400A038
39	1-3/8"	2-3/8"	400A039
40	1-3/8"	2-3/8"	400A040
41	1-3/8"	2-3/8"	400A041
42	1-1/4"	2-1/4"	400A042
43	1-1/4"	2-1/4"	400A043
44	1-1/8"	2-1/8"	400A044
45	1-1/8"	2-1/8"	400A045
46	1-1/8"	2-1/8"	400A046
47	1"	2"	400A047
48	1"	2"	400A048
49	1"	2"	400A049
50	1"	2"	400A050
51	1"	2"	400A051
52	7/8"	1-7/8"	400A052
53*	7/8"	1-7/8"	400A053
54*	7/8"	1-7/8"	400A054
55*	7/8"	1-7/8"	400A055
56*	3/4"	1-3/4"	400A056
57*	3/4"	1-3/4"	400A057
58*	11/16"	1-5/8"	400A058
59*	11/16"	1-5/8"	400A059
60*	11/16"	1-5/8"	400A060

\* Not Split Point

#1 thru #60 - 12 per pack

Corresponding Sets		
No. of Pcs.	Description	Order No.
<b>400/440/480 &amp; 400E Series Heavy-Duty Jobber Drill Sets</b>		
13	1/16" - 1/4" by 64 <sup>ths</sup>	400HD13
15	1/16" - 1/2" by 32 <sup>nds</sup>	400HD15
19	Maintenance Set - 1/16, 5/64, 3/32, 1/8, #29, #25, 5/32, #21, 3/16, #7, 7/32, 1/4, F, 5/16, U, 3/8, 27/64, 7/16, 1/2	400A19
21	1/16" - 3/8" by 64 <sup>ths</sup>	400HD21
21	1/16" - 1/4" by 64 <sup>ths</sup> & 9/32" - 1/2" by 32 <sup>nds</sup>	400HD21V
26	A - Z	400HD26
29	1/16" - 1/2" by 64 <sup>ths</sup>	400HD29
29	DRILL PAL 1/16" - 1/2" by 64 <sup>ths</sup>	400AW29
60	#1 - #60	400HD60
115	1/16" - 1/2" by 64 <sup>ths</sup> , #1 - 60, A - Z	400HD0115
13	1/16" - 1/4" by 64 <sup>ths</sup>	400HDE13
15	1/16" - 1/2" by 32 <sup>nds</sup>	400HDE15
21	1/16" - 3/8" by 64 <sup>ths</sup>	400HDE21
21	1/16" - 1/4" by 64 <sup>ths</sup> & 9/32" - 1/2" by 32 <sup>nds</sup>	400HDE21V
29	1/16" - 1/2" by 64 <sup>ths</sup>	400HDE29
29	DRILL PAL 1/16" - 1/2" by 64 <sup>ths</sup>	400EW29

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & 0 - Z	72



400HD21



# HEAVY-DUTY JOBBER LENGTH DRILLS

The heavy duty construction affords efficient drilling in medium strength alloy materials. The split point reduces the thrust requirements and minimizes walking. A black oxide surface treatment improves tool life.

- ▷ Heavy duty 135° Split Point minimizes walking
- ▷ Black oxide surface treatment for increased wear resistance
- ▷ A multi-purpose heavy-duty drill bit

## T1D - T2D - T3D SERIES HEAVY-DUTY HIGH SPEED STEEL



135° Split Point  
Black Oxide

Size	Decimal Equivalent	Flute Length	Overall Length	T1D Packaging: Tube		T1D Packaging: Bulk	
				Order No.	Pkg Qty	Order No.	Pkg Qty
1/16"	.0625	7/8"	1-7/8"	011404	12	011404.20	288
5/64"	.0781	1"	2"	011405	12	011405.20	288
3/32"	.0938	1-1/4"	2-1/4"	011406	12	011406.20	288
7/64"	.1094	1-1/2"	2-5/8"	011407	12	011407.20	288
1/8"	.1250	1-5/8"	2-3/4"	011408	12	011408.20	288
9/64"	.1406	1-3/4"	2-7/8"	011409	12	-	288
5/32"	.1562	2"	3-1/8"	011410	12	011410.20	288
11/64"	.1719	2-1/8"	3-1/4"	011411	12	011411.20	288
3/16"	.1875	2-5/16"	3-1/2"	011412	12	011412.20	288
13/64"	.2031	2-7/16"	3-5/8"	011413	12	011413.20	288
7/32"	.2188	2-1/2"	3-3/4"	011414	12	011414.20	288
15/64"	.2344	2-5/8"	3-7/8"	011415	12	011415.20	288
1/4"	.2500	2-3/4"	4"	011416	12	011416.20	288
17/64"	.2656	2-7/8"	4-1/8"	011417	12	011417.20	288
9/32"	.2812	2-15/16"	4-1/4"	011418	12	011418.20	144
19/64"	.2969	3-1/16"	4-3/8"	011419	12	011419.20	144
5/16"	.3125	3-3/16"	4-1/2"	011420	6	011420.20	144
21/64"	.3281	3-5/16"	4-5/8"	011421	6	011421.20	144
11/32"	.3438	3-7/16"	4-3/4"	011422	6	011422.20	144
23/64"	.3594	3-1/2"	4-7/8"	011423	6	011423.20	144
3/8"	.3750	3-5/8"	5"	011424	6	011424.20	144
25/64"	.3906	3-3/4"	5-1/8"	011425	6	011425.20	144
13/32"	.4062	3-7/8"	5-1/4"	011426	6	011426.20	144
27/64"	.4219	3-15/16"	5-3/8"	011427	6	011427.20	144
7/16"	.4375	4-1/16"	5-1/2"	011428	6	011428.20	144
29/64"	.4531	4-3/16"	5-5/8"	011429	6	011429.20	144
15/32"	.4688	4-5/16"	5-3/4"	011430	6	011430.20	144
31/64"	.4844	4-3/8"	5-7/8"	011431	6	011431.20	144
1/2"	.5000	4-1/2"	6"	011432	6	011432.20	144



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Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T19D	Metal Index	13 Piece	1/16"-1/4" by 64 <sup>ths</sup>	099815
T18D	Metal Index	15 Piece	1/16"-1/2" by 32 <sup>nds</sup>	099809
T180D	Metal Index	21 Piece	1/16"-3/8" by 64 <sup>ths</sup>	099836
T17DC	Clip-On Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	099804
T17D	Metal Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	099803
T123D	Metal Index	115 Piece	1/16"-1/2" by 64 <sup>ths</sup> , #1- #60, A-Z	090561



# HEAVY-DUTY JOBBER LENGTH DRILLS

T1D - T2D - T3D SERIES

HEAVY-DUTY HIGH SPEED STEEL

135° Split Point

Black Oxide

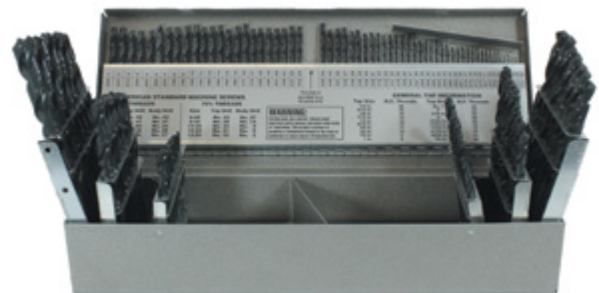


Size	Decimal Equivalent	Flute Length	Overall Length	T2D Packaging: Tube	
				Order No.	Pkg Qty
1	.2280	2-5/8"	3-7/8"	012401	12
2	.2210	2-5/8"	3-7/8"	012402	12
3	.2130	2-1/2"	3-3/4"	012403	12
4	.2090	2-1/2"	3-3/4"	012404	12
5	.2055	2-1/2"	3-3/4"	012405	12
6	.2040	2-1/2"	3-3/4"	012406	12
7	.2010	2-7/16"	3-5/8"	012407	12
8	.1990	2-7/16"	3-5/8"	012408	12
9	.1960	2-7/16"	3-5/8"	012409	12
10	.1935	2-7/16"	3-5/8"	012410	12
11	.1910	2-5/16"	3-1/2"	012411	12
12	.1890	2-5/16"	3-1/2"	012412	12
13	.1850	2-5/16"	3-1/2"	012413	12
14	.1820	2-3/16"	3-3/8"	012414	12
15	.1800	2-3/16"	3-3/8"	012415	12
16	.1770	2-3/16"	3-3/8"	012416	12
17	.1730	2-3/16"	3-3/8"	012417	12
18	.1695	2-1/8"	3-1/4"	012418	12
19	.1660	2-1/8"	3-1/4"	012419	12
20	.1610	2-1/8"	3-1/4"	012420	12
21	.1590	2-1/8"	3-1/4"	012421	12
22	.1570	2"	3-1/8"	012422	12
23	.1540	2"	3-1/8"	012423	12
24	.1520	2"	3-1/8"	012424	12
25	.1495	1-7/8"	3"	012425	12
26	.1470	1-7/8"	3"	012426	12
27	.1440	1-7/8"	3"	012427	12
28	.1405	1-3/4"	2-7/8"	012428	12
29	.1360	1-3/4"	2-7/8"	012429	12
30	.1285	1-5/8"	2-3/4"	012430	12
31	.1200	1-5/8"	2-3/4"	012431	12
32	.1160	1-5/8"	2-3/4"	012432	12
33	.1130	1-1/2"	2-5/8"	012433	12
34	.1110	1-1/2"	2-5/8"	012434	12
35	.1100	1-1/2"	2-5/8"	012435	12
36	.1065	1-7/16"	2-1/2"	012436	12
37	.1040	1-7/16"	2-1/2"	012437	12
38	.1015	1-7/16"	2-1/2"	012438	12
39	.0995	1-3/8"	2-3/8"	012439	12
40	.0980	1-3/8"	2-3/8"	012440	12
41	.0960	1-3/8"	2-3/8"	012441	12
42	.0935	1-1/4"	2-1/4"	012442	12
43	.0890	1-1/4"	2-1/4"	012443	12
44	.0860	1-1/8"	2-1/8"	012444	12
45	.0820	1-1/8"	2-1/8"	012445	12
46	.0810	1-1/8"	2-1/8"	012446	12
47	.0785	1"	2"	012447	12
48	.0760	1"	2"	012448	12
49	.0730	1"	2"	012449	12
50	.0700	1"	2"	012450	12
51	.0670	1"	2"	012451	12
52	.0635	7/8"	1-7/8"	012452	12
53*	.0595	7/8"	1-7/8"	012453	12
54*	.0550	7/8"	1-7/8"	012454	12
55*	.0520	7/8"	1-7/8"	012455	12
56*	.0465	3/4"	1-3/4"	012456	12
57*	.0430	3/4"	1-3/4"	012457	12
58*	.0420	11/16"	1-5/8"	012458	12
59*	.0410	11/16"	1-5/8"	012459	12
60*	.0400	11/16"	1-5/8"	012460	12

Size	Decimal Equivalent	Flute Length	Overall Length	T3D Packaging: Tube	
				Order No.	Pkg Qty
A	.2340	2-5/8"	3-7/8"	013401	12
B	.2380	2-3/4"	4"	013402	12
C	.2420	2-3/4"	4"	013403	12
D	.2460	2-3/4"	4"	013404	12
E	.2500	2-3/4"	4"	013405	12
F	.2570	2-7/8"	4-1/8"	013406	12
G	.2610	2-7/8"	4-1/8"	013407	12
H	.2660	2-7/8"	4-1/8"	013408	12
I	.2720	2-7/8"	4-1/8"	013409	12
J	.2770	2-7/8"	4-1/8"	013410	12
K	.2810	2-15/16"	4-1/4"	013411	12
L	.2900	2-15/16"	4-1/4"	013412	12
M	.2950	3-1/16"	4-3/8"	013413	12
N	.3020	3-1/16"	4-3/8"	013414	12
O	.3160	3-3/16"	4-1/2"	013415	6
P	.3230	3-5/16"	4-5/8"	013416	6
Q	.3320	3-7/16"	4-3/4"	013417	6
R	.3390	3-7/16"	4-3/4"	013418	6
S	.3480	3-1/2"	4-7/8"	013419	6
T	.3580	3-1/2"	4-7/8"	013420	6
U	.3680	3-5/8"	5"	013421	6
V	.3770	3-5/8"	5"	013422	6
W	.3860	3-3/4"	5-1/8"	013423	6
X	.3970	3-3/4"	5-1/8"	013424	6
Y	.4040	3-7/8"	5-1/4"	013425	6
Z	.4130	3-7/8"	5-1/4"	013426	6



© triumphtwistdrill



\*Not split point

# HEAVY-DUTY JOBBER LENGTH DRILLS



NITRO® drills (NAS Type B) offer superior performance over conventional HSS drills. 135° Split Point reduces "walking" at the drill point and makes these drills ideal for both handheld and CNC Operations.



- ▷ Heavy-duty construction increases tool life and performance
- ▷ Black & Gold surface treatment for maximum lubricity
- ▷ Usable in a wide range of materials including difficult-to-machine materials such as stainless steel
- ▷ Jobber length for extra reach
- ▷ Available in bulk packaging

## 400N SERIES

**HEAVY-DUTY HIGH SPEED STEEL**  
135° Split Point / Straight Shank  
Fractional / Black & Gold



400N

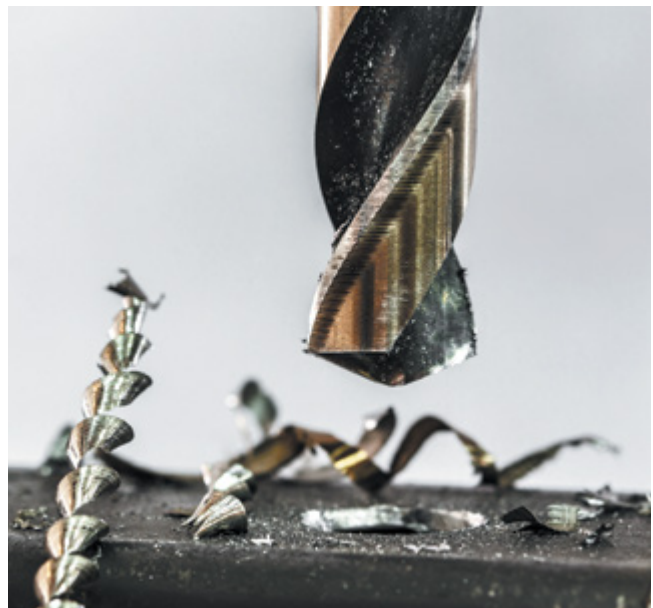
Size	Flute Length	Overall Length	400N Order No.	Blister Pack Order No.
1/16"	7/8"	1-7/8"	400N104	400N104BP
5/64"	1"	2"	400N105	400N105BP
3/32"	1-1/4"	2-1/4"	400N106	400N106BP
7/64"	1-1/2"	2-5/8"	400N107	400N107BP
1/8"	1-5/8"	2-3/4"	400N108	400N108BP
9/64"	1-3/4"	2-7/8"	400N109	400N109BP
5/32"	2"	3-1/8"	400N110	400N110BP
11/64"	2-1/8"	3-1/4"	400N111	400N111BP
3/16"	2-5/16"	3-1/2"	400N112	400N112BP
13/64"	2-7/16"	3-5/8"	400N113	400N113BP
7/32"	2-1/2"	3-3/4"	400N114	400N114BP
15/64"	2-5/8"	3-7/8"	400N115	400N115BP
1/4"	2-3/4"	4"	400N116	400N116BP
17/64"	2-7/8"	4-1/8"	400N117	400N117BP
9/32"	2-15/16"	4-1/4"	400N118	400N118BP

Size	Flute Length	Overall Length	400N Order No.	Blister Pack Order No.
19/64"	3-1/16"	4-3/8"	400N119	400N119BP
5/16"	3-3/16"	4-1/2"	400N120	400N120BP
21/64"	3-5/16"	4-5/8"	400N121	400N121BP
11/32"	3-7/16"	4-3/4"	400N122	400N122BP
23/64"	3-1/2"	4-7/8"	400N123	400N123BP
3/8"	3-5/8"	5"	400N124	400N124BP
25/64"	3-3/4"	5-1/8"	400N125	400N125BP
13/32"	3-7/8"	5-1/4"	400N126	400N126BP
27/64"	3-15/16"	5-3/8"	400N127	400N127BP
7/16"	4-1/16"	5-1/2"	400N128	400N128BP
29/64"	4-3/16"	5-5/8"	400N129	400N129BP
15/32"	4-5/16"	5-3/4"	400N130	400N130BP
31/64"	4-3/8"	5-7/8"	400N131	400N131BP
1/2"	4-1/2"	6"	400N132	400N132BP

1/16" thru 19/64" - 12 per pack, 5/16" thru 1/2" - 6 per pack  
Blister packs: 1 per package, except for 1/16" - 5/32" which are 2 per pack

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & 0 - Z	72

**NOW AVAILABLE  
IN BLISTER PACKS**





# HEAVY-DUTY JOBBER LENGTH DRILLS

## 400N SERIES

**HEAVY-DUTY HIGH SPEED STEEL**  
135° Split Point / Straight Shank  
Letter / Black & Gold



**NITRO**

400N

Size	Flute Length	Overall Length	400N Order No.
A	2-5/8"	3-7/8"	400N501
B	2-3/4"	4"	400N502
C	2-3/4"	4"	400N503
D	2-3/4"	4"	400N504
E	2-3/4"	4"	400N505
F	2-7/8"	4-1/8"	400N506
G	2-7/8"	4-1/8"	400N507
H	2-7/8"	4-1/8"	400N508
I	2-7/8"	4-1/8"	400N509
J	2-7/8"	4-1/8"	400N510
K	2-15/16"	4-1/4"	400N511
L	2-15/16"	4-1/4"	400N512
M	3-1/16"	4-3/8"	400N513

Size	Flute Length	Overall Length	400N Order No.
N	3-1/16"	4-3/8"	400N514
O	3-3/16"	4-1/2"	400N515
P	3-5/16"	4-5/8"	400N516
Q	3-7/16"	4-3/4"	400N517
R	3-7/16"	4-3/4"	400N518
S	3-1/2"	4-7/8"	400N519
T	3-1/2"	4-7/8"	400N520
U	3-5/8"	5"	400N521
V	3-5/8"	5"	400N522
W	3-3/4"	5-1/8"	400N523
X	3-3/4"	5-1/8"	400N524
Y	3-7/8"	5-1/4"	400N525
Z	3-7/8"	5-1/4"	400N526

'A' thru 'L' - 12 per pack, 'M' thru 'Z' - 6 per pack

## 400N SERIES

**HEAVY-DUTY HIGH SPEED STEEL**  
135° Split Point / Straight Shank  
Number / Black & Gold



**NITRO**

400N

Size	Flute Length	Overall Length	400N Order No.
1	2-5/8"	3-7/8"	400N001
2	2-1/2"	3-7/8"	400N002
3	2-1/2"	3-3/4"	400N003
4	2-1/2"	3-3/4"	400N004
5	2-1/2"	3-3/4"	400N005
6	2-1/2"	3-3/4"	400N006
7	2-7/16"	3-5/8"	400N007
8	2-7/16"	3-5/8"	400N008
9	2-7/16"	3-5/8"	400N009
10	2-7/16"	3-5/8"	400N010
11	2-5/16"	3-1/2"	400N011
12	2-5/16"	3-1/2"	400N012
13	2-5/16"	3-1/2"	400N013
14	2-3/16"	3-3/8"	400N014
15	2-3/16"	3-3/8"	400N015
16	2-3/16"	3-3/8"	400N016
17	2-3/16"	3-3/8"	400N017
18	2-1/8"	3-1/4"	400N018
19	2-1/8"	3-1/4"	400N019
20	2-1/8"	3-1/4"	400N020
21	2-1/8"	3-1/4"	400N021
22	2"	3-1/8"	400N022
23	2"	3-1/8"	400N023
24	2"	3-1/8"	400N024
25	1-7/8"	3"	400N025
26	1-7/8"	3"	400N026
27	1-7/8"	3"	400N027
28	1-3/4"	2-7/8"	400N028
29	1-3/4"	2-7/8"	400N029
30	1-5/8"	2-3/4"	400N030

Size	Flute Length	Overall Length	400N Order No.
31	1-5/8"	2-3/4"	400N031
32	1-5/8"	2-3/4"	400N032
33	1-1/2"	2-5/8"	400N033
34	1-1/2"	2-5/8"	400N034
35	1-1/2"	2-5/8"	400N035
36	1-7/16"	2-1/2"	400N036
37	1-7/16"	2-1/2"	400N037
38	1-7/16"	2-1/2"	400N038
39	1-3/8"	2-3/8"	400N039
40	1-3/8"	2-3/8"	400N040
41	1-3/8"	2-3/8"	400N041
42	1-1/4"	2-1/4"	400N042
43	1-1/4"	2-1/4"	400N043
44	1-1/8"	2-1/8"	400N044
45	1-1/8"	2-1/8"	400N045
46	1-1/8"	2-1/8"	400N046
47	1"	2"	400N047
48	1"	2"	400N048
49	1"	2"	400N049
50	1"	2"	400N050
51	1"	2"	400N051
52	7/8"	1-7/8"	400N052
53*	7/8"	1-7/8"	400N053
54*	7/8"	1-7/8"	400N054
55*	7/8"	1-7/8"	400N055
56*	3/4"	1-3/4"	400N056
57*	3/4"	1-3/4"	400N057
58*	11/16"	1-5/8"	400N058
59*	11/16"	1-5/8"	400N059
60*	11/16"	1-5/8"	400N060

\*Not split point

#1 thru #60 - 12 per pack

Corresponding Sets		
No. of Pcs.	Description	Order No.
<b>400N/440N/480N Series NITRO® Heavy-Duty Jobber Drill Sets</b>		
13	1/16" - 1/4" by 64 <sup>ths</sup>	400N13
15	1/16" - 1/2" by 32 <sup>nds</sup>	400N15
19	Maintenance Set - 1/16, 5/64, 3/32, 1/8, #29, #25, 5/32, #21, 3/16, #7, 7/32, 1/4, F, 5/16, U, 3/8, 27/64, 7/16, 1/2	400N19
21	1/16" - 3/8" by 64 <sup>ths</sup>	400N21
21	1/16" - 1/4" by 64 <sup>ths</sup> & 9/32" - 1/2" by 32 <sup>nds</sup>	400N21V
26	A - Z	400N26
29	1/16" - 1/2" by 64 <sup>ths</sup>	400N29
29	DRILL PAL 1/16" - 1/2" by 64 <sup>ths</sup>	400NW29
60	#1 - #60	400N60
115	1/16" - 1/2" by 64 <sup>ths</sup> , #1 - 60, A - Z	400N0115



400N29

# HEAVY-DUTY JOBBER LENGTH DRILLS



NITRO+® drills elevate the performance of heavy-duty drilling with their robust Black & Gold HSS design and a practical 3-flat shank that ensures stability in the toughest materials. The 135° Split Point minimizes drill "walking", making these drills a reliable choice for both handheld and CNC operations across diverse material groups.

- ▷ All NITRO+® drills are made from premium quality M2 High Speed Steel. Recommended for heavy-duty drilling in a wide range of material groups, including stainless steel.
- ▷ 3-flat shank drill reduces slippage in the drill chuck
- ▷ Body and flute are black and gold surface-treated for maximum lubricity
- ▷ Designed for use in portable hand drills

## 410N SERIES

**HEAVY-DUTY HIGH SPEED STEEL**  
135° Split Point / 3-Flat Shank  
Fractional / Black & Gold



410N

Size	Flute Length	Overall Length	410N Order No.	Blister Pack Order No.
1/16"	7/8"	1-7/8"	410N104	410N104BP
5/64"	1"	2"	410N105	410N105BP
3/32"	1-1/4"	2-1/4"	410N106	410N106BP
7/64"	1-1/2"	2-5/8"	410N107	410N107BP
1/8"	1-5/8"	2-3/4"	410N108	410N108BP
9/64"	1-3/4"	2-7/8"	410N109	410N109BP
5/32"	2"	3-1/8"	410N110	410N110BP
11/64"	2-1/8"	3-1/4"	410N111	410N111BP
3/16"	2-5/16"	3-1/2"	410N112	410N112BP
13/64"	2-7/16"	3-5/8"	410N113	410N113BP
7/32"	2-1/2"	3-3/4"	410N114	410N114BP
15/64"	2-5/8"	3-7/8"	410N115	410N115BP
1/4"	2-3/4"	4"	410N116	410N116BP
17/64"	2-7/8"	4-1/8"	410N117	410N117BP

Size	Flute Length	Overall Length	410N Order No.	Blister Pack Order No.
19/64"	3-1/16"	4-3/8"	410N119	400N119BP
5/16"	3-3/16"	4-1/2"	410N120	400N120BP
21/64"	3-5/16"	4-5/8"	410N121	400N121BP
11/32"	3-7/16"	4-3/4"	410N122	400N122BP
23/64"	3-1/2"	4-7/8"	410N123	400N123BP
3/8"	3-5/8"	5"	410N124	400N124BP
25/64"	3-3/4"	5-1/8"	410N125	400N125BP
13/32"	3-7/8"	5-1/4"	410N126	400N126BP
27/64"	3-15/16"	5-3/8"	410N127	400N127BP
7/16"	4-1/16"	5-1/2"	410N128	400N128BP
29/64"	4-3/16"	5-5/8"	410N129	400N129BP
15/32"	4-5/16"	5-3/4"	410N130	400N130BP
31/64"	4-3/8"	5-7/8"	410N131	400N131BP
1/2"	4-1/2"	6"	410N132	400N132BP

1/16thru 19/64" - 12 per pack, 5/16" thru 1/2" - 6 per pack  
Blister packs: 1 per package, except for 1/16" - 5/32" which are 2 per pack

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & O - Z	72

# HEAVY-DUTY JOBBER LENGTH DRILLS

## 450N SERIES

**HEAVY-DUTY HIGH SPEED STEEL**

135° Split Point / 3-Flat Shank

Letter / Black & Gold



410N



Size	Flute Length	Overall Length	450N Order No.
A	2-5/8"	3-7/8"	450N501
B	2-3/4"	4"	450N502
C	2-3/4"	4"	450N503
D	2-3/4"	4"	450N504
E	2-3/4"	4"	450N505
F	2-7/8"	4-1/8"	450N506
G	2-7/8"	4-1/8"	450N507
H	2-7/8"	4-1/8"	450N508
I	2-7/8"	4-1/8"	450N509
J	2-7/8"	4-1/8"	450N510
K	2-15/16"	4-1/4"	450N511
L	2-15/16"	4-1/4"	450N512
M	3-1/16"	4-3/8"	450N513

Size	Flute Length	Overall Length	450N Order No.
N	3-1/16"	4-3/8"	450N514
O	3-1/16"	4-1/2"	450N515
P	3-5/16"	4-5/8"	450N516
Q	3-7/16"	4-3/4"	450N517
R	3-7/16"	4-3/4"	450N518
S	3-1/2"	4-7/8"	450N519
T	3-1/2"	4-7/8"	450N520
U	3-5/8"	5"	450N521
V	3-5/8"	5"	450N522
W	3-3/4"	5-1/8"	450N523
X	3-3/4"	5-1/8"	450N524
Y	3-7/8"	5-1/4"	450N525
Z	3-7/8"	5-1/4"	450N526

'A' thru 'L' - 12 per pack, 'M' thru 'Z' - 6 per pack

## 490N SERIES

**HEAVY-DUTY HIGH SPEED STEEL**

135° Split Point / 3-Flat Shank

Number / Black & Gold



410N



Size	Flute Length	Overall Length	490N Order No.
1	2-5/8"	3-7/8"	490N001
2	2-1/2"	3-7/8"	490N002
3	2-1/2"	3-3/4"	490N003
4	2-1/2"	3-3/4"	490N004
5	2-1/2"	3-3/4"	490N005
6	2-1/2"	3-3/4"	490N006
7	2-7/16"	3-5/8"	490N007
8	2-7/16"	3-5/8"	490N008
9	2-7/16"	3-5/8"	490N009
10	2-7/16"	3-1/2"	490N010
11	2-5/16"	3-1/2"	490N011
12	2-5/16"	3-1/2"	490N012
13	2-5/16"	3-1/2"	490N013
14	2-3/16"	3-3/8"	490N014
15	2-3/16"	3-3/8"	490N015
16	2-3/16"	3-3/8"	490N016
17	2-1/16"	3-3/8"	490N017
18	2-1/8"	3-1/4"	490N018
19	2-1/8"	3-1/4"	490N019
20	2-1/8"	3-1/4"	490N020
21	2"	3-1/4"	490N021
22	2"	3-1/8"	490N022
23	2"	3-1/8"	490N023
24	2"	3-1/8"	490N024
25	1-7/8"	3"	490N025
26	1-7/8"	3"	490N026
27	1-7/8"	3"	490N027
28	1-3/4"	2-7/8"	490N028
29	1-3/4"	2-7/8"	490N029
30	1-5/8"	2-3/4"	490N030

Size	Flute Length	Overall Length	490N Order No.
31	2-3/4"	3-1/4"	490N031
32	1-5/8"	2-5/8"	490N032
33	1-1/2"	2-5/8"	490N033
34	1-1/2"	2-5/8"	490N034
35	1-1/2"	2-5/8"	490N035
36	1-7/16"	2-1/2"	490N036
37	1-7/16"	2-1/2"	490N037
38	1-3/8"	2-1/2"	490N038
39	1-3/8"	2-3/8"	490N039
40	1-3/8"	2-3/8"	490N040
41	1-3/8"	2-3/8"	490N041
42	1-1/4"	2-1/4"	490N042
43	1-1/4"	2-1/4"	490N043
44	1-1/4"	2-1/4"	490N044
45	1-1/8"	2-1/8"	490N045
46	1-1/8"	2-1/8"	490N046
47	1"	2"	490N047
48	1"	2"	490N048
49	1"	2"	490N049
50	1"	2"	490N050
51	1"	2"	490N051
52	7/8"	1-7/8"	490N052
53	7/8"	1-7/8"	490N053
54	7/8"	1-7/8"	490N054
55	7/8"	1-7/8"	490N055
56	3/4"	1-3/4"	490N056
57	3/4"	1-3/4"	490N057
58	11/16"	1-5/8"	490N058
59	11/16"	1-5/8"	490N059
60	11/16"	1-5/8"	490N060

\*Not split point

#1 thru #60 - 12 per pack

Corresponding Sets		
No. of Pcs.	Description	Order No.
<b>410N/450N/490N Series NITRO+ Heavy-Duty Jobber Drill Sets</b>		
13	1/16" - 1/4" by 64ths	410N13
15	1/16" - 1/2" by 32nds	410N15
19	Maintenance Set - 1/16, 5/64, 3/32, 1/8, #29, 25/32, #21, 3/16, #7, 7/32, 1/4, 5/16, 3/8, 27/64, 7/16, 1/2	410019
21	1/16" - 3/8" by 64ths	410N21
21	1/16" - 1/4" by 64ths & 9/32" - 1/2" by 32nds	410N21V
26	A-Z	410N26
29	1/16" - 1/2" by 64ths	410N29
29	DRILL PAL 1/16" - 1/2" by 64ths	410NW29
60	#1 - #60	410N60
115	1/16" - 1/2" by 64ths, #1 - 60, A - Z	410N115



# HEAVY-DUTY JOBBER LENGTH DRILLS

The heavy construction affords efficient portable drilling in medium strength alloy materials. The split point reduces the thrust requirements and minimizes "walking." This is a suitable drill for the construction industry.

- ▷ Heavy-duty 135° Split Point minimizes "walking"
- ▷ Black & Gold surface treatment for high wear resistance and lubricity
- ▷ A multi-purpose heavy-duty drill bit

## 400E SERIES

**HEAVY-DUTY HIGH SPEED STEEL**  
135° Split Point / Straight Shank  
Fractional / Black & Gold



400E

Size	Flute Length	Overall Length	400E Order No.
1/16"	7/8"	1-7/8"	400E104
5/64"	1"	2"	400E105
3/32"	1-1/4"	2-1/4"	400E106
7/64"	1-1/2"	2-5/8"	400E107
1/8"	1-5/8"	2-3/4"	400E108
9/64"	1-3/4"	2-7/8"	400E109
5/32"	2"	3-1/8"	400E110
11/64"	2-1/8"	3-1/4"	400E111
3/16"	2-5/16"	3-1/2"	400E112
13/64"	2-7/16"	3-5/8"	400E113
7/32"	2-1/2"	3-3/4"	400E114
15/64"	2-5/8"	3-7/8"	400E115
1/4"	2-3/4"	4"	400E116
17/64"	2-7/8"	4-1/8"	400E117
9/32"	2-15/16"	4-1/4"	400E118

Size	Flute Length	Overall Length	400E Order No.
19/64"	3-1/16"	4-3/8"	400E119
5/16"	3-3/16"	4-1/2"	400E120
21/64"	3-5/16"	4-5/8"	400E121
11/32"	3-7/16"	4-3/4"	400E122
23/64"	3-1/2"	4-7/8"	400E123
3/8"	3-5/8"	5"	400E124
25/64"	3-3/4"	5-1/8"	400E125
13/32"	3-7/8"	5-1/4"	400E126
27/64"	3-15/16"	5-3/8"	400E127
7/16"	4-1/16"	5-1/2"	400E128
29/64"	4-3/16"	5-5/8"	400E129
15/32"	4-5/16"	5-3/4"	400E130
31/64"	4-3/8"	5-7/8"	400E131
1/2"	4-1/2"	6"	400E132

1/16" thru 19/64" and #1 thru #60 - 12 per pack, 5/16" thru 1/2" - 6 per pack

# HEAVY-DUTY JOBBER LENGTH DRILLS

## 400E SERIES

### HEAVY-DUTY HIGH SPEED STEEL

135° Split Point / Straight Shank

Number / Black & Gold



400E

Size	Flute Length	Overall Length	400E Order No.
1	2-5/8"	3-7/8"	400E001
2	2-1/2"	3-7/8"	400E002
3	2-1/2"	3-3/4"	400E003
4	2-1/2"	3-3/4"	400E004
5	2-1/2"	3-3/4"	400E005
6	2-1/2"	3-3/4"	400E006
7	2-7/16"	3-5/8"	400E007
8	2-7/16"	3-5/8"	400E008
9	2-7/16"	3-5/8"	400E009
10	2-7/16"	3-5/8"	400E010
11	2-5/16"	3-1/2"	400E011
12	2-5/16"	3-1/2"	400E012
13	2-5/16"	3-1/2"	400E013
14	2-3/16"	3-3/8"	400E014
15	2-3/16"	3-3/8"	400E015
16	2-3/16"	3-3/8"	400E016
17	2-3/16"	3-3/8"	400E017
18	2-1/8"	3-1/4"	400E018
19	2-1/8"	3-1/4"	400E019
20	2-1/8"	3-1/4"	400E020
21	2-1/8"	3-1/4"	400E021
22	2"	3-1/8"	400E022
23	2"	3-1/8"	400E023
24	2"	3-1/8"	400E024
25	1-7/8"	3"	400E025
26	1-7/8"	3"	400E026
27	1-7/8"	3"	400E027
28	1-3/4"	2-7/8"	400E028
29	1-3/4"	2-7/8"	400E029
30	1-5/8"	2-3/4"	400E030

Size	Flute Length	Overall Length	400E Order No.
31	1-5/8"	2-3/4"	400E031
32	1-5/8"	2-3/4"	400E032
33	1-1/2"	2-5/8"	400E033
34	1-1/2"	2-5/8"	400E034
35	1-1/2"	2-5/8"	400E035
36	1-7/16"	2-1/2"	400E036
37	1-7/16"	2-1/2"	400E037
38	1-7/16"	2-1/2"	400E038
39	1-3/8"	2-3/8"	400E039
40	1-3/8"	2-3/8"	400E040
41	1-3/8"	2-3/8"	400E041
42	1-1/4"	2-1/4"	400E042
43	1-1/4"	2-1/4"	400E043
44	1-1/8"	2-1/8"	400E044
45	1-1/8"	2-1/8"	400E045
46	1-1/8"	2-1/8"	400E046
47	1"	2"	400E047
48	1"	2"	400E048
49	1"	2"	400E049
50	1"	2"	400E050
51	1"	2"	400E051
52	7/8"	1-7/8"	400E052
53*	7/8"	1-7/8"	400E053
54*	7/8"	1-7/8"	400E054
55*	7/8"	1-7/8"	400E055
56*	3/4"	1-3/4"	400E056
57*	3/4"	1-3/4"	400E057
58*	11/16"	1-5/8"	400E058
59*	11/16"	1-5/8"	400E059
60*	11/16"	1-5/8"	400E060

#1 thru #60 - 12 per pack

Designed for efficient drilling in stainless steel and tougher ferrous materials. The 135° split point reduces the thrust requirements and minimizes "walking." Black & Gold surface treatment for increased wear resistance and lubricity.

## 800 SERIES

### HEAVY-DUTY HIGH SPEED STEEL

135° Split Point / Straight Shank

Metric / Black & Gold



800A

Size (mm)	Flute Length (mm)	Overall Length (mm)	800 Order No.
.35	3	19	800A0035
.40	5	19	800A0040
.45	5	22	800A0045
.50	5	22	800A0050
.55	6	25	800A0055
.60	8	29	800A0060
.65	10	32	800A0065
.70	10	32	800A0070
.75	13	35	800A0075
.80	13	35	800A0080
.85	16	38	800A0085
.90	16	38	800A0090
.95	16	38	800A0095
1.00	17	41	800A0100
1.05	17	41	800A0105
1.10	19	44	800A0110
1.15	19	44	800A0115

Size (mm)	Flute Length (mm)	Overall Length (mm)	800 Order No.
1.20	22	48	800A0120
1.25	22	48	800A0125
1.30	22	48	800A0130
1.35	22	49	800A0135
1.40	22	48	800A0140
1.45	22	48	800A0145
1.50	22	48	800A0150
1.55	22	48	800A0155
1.60	22	48	800A0160
1.65	25	51	800A0165
1.70	25	51	800A0170
1.75	25	51	800A0175
1.80	25	51	800A0180
1.85	25	51	800A0185
1.90	25	51	800A0190
1.95	25	51	800A0195
2.00	25	51	800A0200

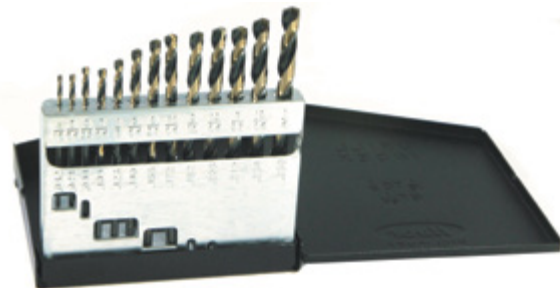
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# HEAVY-DUTY JOBBER LENGTH DRILLS

Size (mm)	Flute Length (mm)	Overall Length (mm)	800 Order No.
2.05	29	54	800A0205
2.10	29	54	800A0210
2.15	29	54	800A0215
2.20	32	57	800A0220
2.25	32	57	800A0225
2.30	32	57	800A0230
2.35	32	57	800A0235
2.40	35	60	800A0240
2.45	35	60	800A0245
2.50	35	60	800A0250
2.60	37	64	800A0260
2.70	37	64	800A0270
2.75	37	64	800A0275
2.80	38	67	800A0280
2.90	41	70	800A0290
3.00	41	70	800A0300
3.10	41	70	800A0310
3.20	41	70	800A0320
3.25	41	70	800A0325
3.30	44	73	800A0330
3.40	44	73	800A0340
3.50	44	73	800A0350
3.60	48	76	800A0360
3.70	48	76	800A0370
3.75	48	76	800A0375
3.80	48	76	800A0380
3.90	51	79	800A0390
4.00	54	83	800A0400
4.10	54	83	800A0410
4.20	54	83	800A0420
4.25	54	83	800A0425
4.30	54	83	800A0430
4.40	56	86	800A0440
4.50	56	86	800A0450
4.60	56	86	800A0460
4.70	59	89	800A0470
4.75	59	89	800A0475
4.80	59	89	800A0480
4.90	62	92	800A0490
5.00	62	92	800A0500
5.10	62	92	800A0510
5.20	64	95	800A0520
5.25	64	95	800A0525
5.30	64	95	800A0530
5.40	64	95	800A0540
5.50	64	95	800A0550
5.60	67	98	800A0560
5.70	67	98	800A0570
5.75	67	98	800A0575
5.80	67	98	800A0580
5.90	67	98	800A0590
6.00	70	102	800A0600
6.10	70	102	800A0610
6.20	70	102	800A0620
6.25	70	102	800A0625
6.30	70	102	800A0630
6.40	73	105	800A0640
6.50	73	105	800A0650
6.60	73	105	800A0660
6.70	73	105	800A0670
6.75	73	105	800A0675
6.80	73	105	800A0680
6.90	73	105	800A0690
7.00	73	105	800A0700

Size (mm)	Flute Length (mm)	Overall Length (mm)	800 Order No.
7.10	75	108	800A0710
7.20	75	108	800A0720
7.25	75	108	800A0725
7.30	75	108	800A0730
7.40	78	111	800A0740
7.50	78	111	800A0750
7.60	78	111	800A0760
7.70	81	114	800A0770
7.75	81	114	800A0775
7.80	81	114	800A0780
7.90	81	114	800A0790
8.00	81	114	800A0800
8.10	84	117	800A0810
8.20	84	117	800A0820
8.25	84	117	800A0825
8.30	84	117	800A0830
8.40	87	121	800A0840
8.50	87	121	800A0850
8.60	87	121	800A0860
8.70	87	121	800A0870
8.75	87	121	800A0875
8.80	89	124	800A0880
8.90	89	124	800A0890
9.00	89	124	800A0900
9.10	89	124	800A0910
9.20	92	127	800A0920
9.25	92	127	800A0925
9.30	92	127	800A0930
9.40	92	127	800A0940
9.50	92	127	800A0950
9.60	95	130	800A0960
9.70	95	130	800A0970
9.75	95	130	800A0975
9.80	95	130	800A0980
9.90	95	130	800A0990
10.00	95	130	800A1000
10.50	98	133	800A1050
11.00	103	140	800A1100
11.50	106	143	800A1150
12.00	111	149	800A1200
12.50	114	152	800A1250
13.00	114	152	800A1300

0.35 mm thru 6.60 mm - 12 pack, 6.70 mm thru 12.50 mm - 6 pack, 13.0 mm - packaged individually



800A13

Corresponding Sets		
No. of Pcs.	Description	Order No.
<b>800 Series Metric Jobber Drill Sets</b>		
13	1mm - 7mm by 0.5mm	800A13
19	1mm - 10mm by 0.5mm	800A19
25	1mm - 13mm by 0.5mm	800A25



# HEAVY-DUTY JOBBER LENGTH DRILLS

The heavy-duty construction with a THUNDERBIT core and flute design affords efficient portable drilling in medium strength alloy materials. The split point reduces the thrust requirements and minimizes "walking". A black and gold surface treatment is applied for superior lubricity.

- ▷ Unique flute design for added strength and improved chip evacuation
- ▷ Black & Gold surface treatment for maximum lubricity



## T1HD - BP1HD - T2HD - T3HD - MM1HD SERIES

### HEAVY-DUTY HIGH SPEED STEEL

135° Split Point

Black & Gold Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T1HD Packaging: Tube		T1HD Packaging: Bulk		BP1HD Packaging: Card	
				Order No.	Pkg Qty	Order No.	Pkg Qty	Order No.	Pkg Qty
1/16"	.0625	7/8"	1-7/8"	012504	12	012504.20	288	014004	1
5/64"	.0781	1"	2"	012505	12	012505.20	288	014005	1
3/32"	.0938	1-1/4"	2-1/4"	012506	12	012506.20	288	014006	1
7/64"	.1094	1-1/2"	2-5/8"	012507	12	012507.20	288	014007	1
1/8"	.1250	1-5/8"	2-3/4"	012508	12	012508.20	288	014008	1
9/64"	.1406	1-3/4"	2-7/8"	012509	12	012509.20	288	014009	1
5/32"	.1562	2"	3-1/8"	012510	12	012510.20	288	014010	1
11/64"	.1719	2-1/8"	3-1/4"	012511	12	012511.20	288	014011	1
3/16"	.1875	2-5/16"	3-1/2"	012512	12	012512.20	288	014012	1
13/64"	.2031	2-7/16"	3-5/8"	012513	12	012513.20	288	014013	1
7/32"	.2188	2-1/2"	3-3/4"	012514	12	012514.20	288	014014	1
15/64"	.2344	2-5/8"	3-7/8"	012515	12	012515.20	288	014015	1
1/4"	.2500	2-3/4"	4"	012516	12	012516.20	288	014016	1
17/64"	.2656	2-7/8"	4-1/8"	012517	12	012517.20	144	014017	1
9/32"	.2812	2-15/16"	4-1/4"	012518	12	012518.20	144	014018	1
19/64"	.2969	3-1/16"	4-3/8"	012519	12	012519.20	144	014019	1
5/16"	.30125	3-3/16"	4-1/2"	012520	6	012520.20	144	014020	1
21/64"	.3281	3-5/16"	4-5/8"	012521	6	012521.20	144	014021	1
11/32"	.3438	3-7/16"	4-3/4"	012522	6	012522.20	144	014022	1
23/64"	.3594	3-1/2"	4-7/8"	012523	6	012523.20	144	014023	1
3/8"	.3750	3-5/8"	5"	012524	6	012524.20	144	014024	1
25/64"	.3906	3-3/4"	5-1/8"	012525	6	012525.20	144	014025	1
13/32"	.4062	3-7/8"	5-1/4"	012526	6	012526.20	144	014026	1
27/64"	.4219	3-15/16"	5-3/8"	012527	6	012527.20	144	014027	1
7/16"	.4375	4-1/16"	5-1/2"	012528	6	012528.20	144	014028	1
29/64"	.4531	4-3/16"	5-5/8"	012529	6	012529.20	144	014029	1
15/32"	.4688	4-5/16"	5-3/4"	012530	6	012530.20	144	014030	1
31/64"	.4844	4-3/8"	5-7/8"	012531	6	012531.20	144	014031	1
1/2"	.5000	4-1/2"	6"	012532	6	012532.20	144	014032	1



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Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
SAD13HD	Select-A-Drill	13 Piece	1/16"-1/4" by 64 <sup>ths</sup>	090495
T19HD	Metal Index	13 Piece	1/16"-1/4" by 64 <sup>ths</sup>	099858
T18HD	Metal Index	15 Piece	1/16"-1/2" by 32 <sup>nds</sup>	099857
T180HD	Metal Index	21 Piece	1/16"-3/8" by 64 <sup>ths</sup>	099861
T17HDDC	Clip-On Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	099855
T17HD	Metal Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	099856
T123HD	Metal Index	115 Piece	1/16"-1/2" by 64 <sup>ths</sup> , #1- #60, A-Z	099862
T80HD	Display		1/16"-1/2" by 64 <sup>ths</sup>	099995



# HEAVY-DUTY JOBBER LENGTH DRILLS

Size	Decimal Equivalent	Flute Length	Overall Length	T2HD Packaging: Tube	
				Order No.	Pkg Qty
1	.2280	2-5/8"	3-7/8"	012601	12
2	.2210	2-5/8"	3-7/8"	012602	12
3	.2130	2-1/2"	3-3/4"	012603	12
4	.2090	2-1/2"	3-3/4"	012604	12
5	.2055	2-1/2"	3-3/4"	012605	12
6	.2040	2-1/2"	3-3/4"	012606	12
7	.2010	2-7/16"	3-5/8"	012607	12
8	.1990	2-7/16"	3-5/8"	012608	12
9	.1960	2-7/16"	3-5/8"	012609	12
10	.1935	2-7/16"	3-5/8"	012610	12
11	.1910	2-5/16"	3-1/2"	012611	12
12	.1890	2-5/16"	3-1/2"	012612	12
13	.1850	2-5/16"	3-1/2"	012613	12
14	.1820	2-3/16"	3-3/8"	012614	12
15	.1800	2-3/16"	3-3/8"	012615	12
16	.1770	2-3/16"	3-3/8"	012616	12
17	.1730	2-3/16"	3-3/8"	012617	12
18	.1695	2-1/8"	3-1/4"	012618	12
19	.1660	2-1/8"	3-1/4"	012619	12
20	.1610	2-1/8"	3-1/4"	012620	12
21	.1590	2-1/8"	3-1/4"	012621	12
22	.1570	2"	3-1/8"	012622	12
23	.1540	2"	3-1/8"	012623	12
24	.1520	2"	3-1/8"	012624	12
25	.1495	1-7/8"	3"	012625	12
26	.1470	1-7/8"	3"	012626	12
27	.1440	1-7/8"	3"	012627	12
28	.1405	1-3/4"	2-7/8"	012628	12
29	.1360	1-3/4"	2-7/8"	012629	12
30	.1285	1-5/8"	2-3/4"	012630	12
31	.1200	1-5/8"	2-3/4"	012631	12
32	.1160	1-5/8"	2-3/4"	012632	12
33	.1130	1-1/2"	2-5/8"	012633	12
34	.1110	1-1/2"	2-5/8"	012634	12
35	.1100	1-1/2"	2-5/8"	012635	12
36	.1065	1-7/16"	2-1/2"	012636	12
37	.1040	1-7/16"	2-1/2"	012637	12
38	.1015	1-7/16"	2-1/2"	012638	12
39	.0995	1-3/8"	2-3/8"	012639	12
40	.0980	1-3/8"	2-3/8"	012640	12
41	.0960	1-3/8"	2-3/8"	012641	12
42	.0935	1-1/4"	2-1/4"	012642	12
43	.0890	1-1/4"	2-1/4"	012643	12
44	.0860	1-1/8"	2-1/8"	012644	12
45	.0820	1-1/8"	2-1/8"	012645	12
46	.0810	1-1/8"	2-1/8"	012646	12
47	.0785	1"	2"	012647	12
48	.0760	1"	2"	012648	12
49	.0730	1"	2"	012649	12
50	.0700	1"	2"	012650	12
51	.0670	1"	2"	012651	12
52	.0635	7/8"	1-7/8"	012652	12
53*	.0595	7/8"	1-7/8"	012653	12
54*	.0550	7/8"	1-7/8"	012654	12
55*	.0520	7/8"	1-7/8"	012655	12
56*	.0465	3/4"	1-3/4"	012656	12
57*	.0430	3/4"	1-3/4"	012657	12
58*	.0420	11/16"	1-5/8"	012658	12
59*	.0410	11/16"	1-5/8"	012659	12
60*	.0400	11/16"	1-5/8"	012660	12

\*Not split point

Size	Decimal Equivalent	Flute Length	Overall Length	T3HD Packaging: Bulk	
				Order No.	Pkg Qty
A	.2340	2-5/8"	3-7/8"	012701	12
B	.2380	2-3/4"	4"	012702	12
C	.2420	2-3/4"	4"	012703	12
D	.2460	2-3/4"	4"	012704	12
E	.2500	2-3/4"	4"	012705	12
F	.2570	2-7/8"	4-1/8"	012706	12
G	.2610	2-7/8"	4-1/8"	012707	12
H	.2660	2-7/8"	4-1/8"	012708	12
I	.2720	2-7/8"	4-1/8"	012709	12
J	.2770	2-7/8"	4-1/8"	012710	12
K	.2810	2-15/16"	4-1/4"	012711	12
L	.2900	2-15/16"	4-1/4"	012712	12
M	.2950	3-1/16"	4-3/8"	012713	12
N	.3020	3-1/16"	4-3/8"	012714	12
O	.3160	3-3/16"	4-1/2"	012715	6
P	.3230	3-5/16"	4-5/8"	012716	6
Q	.3320	3-7/16"	4-3/4"	012717	6
R	.3390	3-7/16"	4-3/4"	012718	6
S	.3480	3-1/2"	4-7/8"	012719	6
T	.3580	3-1/2"	4-7/8"	012720	6
U	.3680	3-5/8"	5"	012721	6
V	.3770	3-5/8"	5"	012722	6
W	.3860	3-3/4"	5-1/8"	012723	6
X	.3970	3-3/4"	5-1/8"	012724	6
Y	.4040	3-7/8"	5-1/4"	012725	6
Z	.4130	3-7/8"	5-1/4"	012726	6

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T22HD	Metal Index	60 Piece	#1- #60	099859
T25HD	Metal Index	26 Piece	A - Z	099860
T123HD	Metal Index	115 Piece	1/16"-1/2" by 64 <sup>ths</sup> , #1- #60, A-Z	099862

Size	Decimal Equivalent	Flute Length	Overall Length	MM1HD Packaging: Tube	
				Order No.	Pkg Qty
1.00	.0394	17	41	014310	12
1.50	.0591	22	48	014315	12
2.00	.0787	25	51	014320	12
2.50	.0984	35	60	014325	12
3.00	.1181	41	70	014330	12
3.50	.1378	44	73	014335	12
4.00	.1575	54	83	014340	12
4.50	.1772	56	86	014345	12
5.00	.1969	62	92	014350	12
5.50	.2165	64	95	014355	12
6.00	.2362	70	102	014360	12
6.50	.2559	73	105	014365	12
7.00	.2756	73	105	014370	6
7.50	.2953	78	111	014375	6
8.00	.3150	81	114	014380	6
8.50	.3346	87	121	014385	6
9.00	.3543	89	124	014390	6
9.50	.3740	92	127	014395	6
10.00	.3937	95	130	014400	6
10.50	.4134	98	133	014405	6
11.00	.4331	103	140	014410	6
11.50	.4528	106	143	014415	6
12.00	.4724	111	149	014420	6
12.50	.4921	114	152	014425	6
13.00	.5118	114	152	014430	1

# HEAVY-DUTY JOBBER LENGTH DRILLS

The heavy-duty construction with a THUNDERBIT core and flute design affords efficient portable drilling in medium strength alloy materials. The split point reduces the thrust requirements and minimizes "walking". A black and gold surface treatment is applied for superior lubricity.



- ▷ 3 flats for handheld power tools
- ▷ Unique flute design for added strength and improved chip evacuation
- ▷ Black & Gold surface treatment for maximum lubricity

## T1HD+ - BP1HD+ - T2HD+ - T3HD+ SERIES HEAVY-DUTY HIGH SPEED STEEL

135° Split Point

3 Flats on Shank

Black & Gold Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T1HD+ Packaging: Tube		T1HD+ Packaging: Bulk		BP1HD+ Packaging: Single	
				Order No.	Pkg Qty	Order No.	Pkg Qty	Order No.	Pkg Qty
1/16"	.0625	7/8"	1-7/8"	014504	12	014504.20	288	014804	1
5/64"	.0781	1"	2"	014505	12	014505.20	288	014805	1
3/32"	.0938	1-1/4"	2-1/4"	014506	12	014506.20	288	014806	1
7/64"	.1094	1-1/2"	2-5/8"	014507	12	014507.20	288	014807	1
1/8"	.1250	1-5/8"	2-3/4"	014508	12	014508.20	288	014808	1
9/64"	.1406	1-3/4"	2-7/8"	014509	12	014509.20	288	014809	1
5/32"	.1562	2"	3-1/8"	014510	12	014510.20	288	014810	1
11/64"	.1719	2-1/8"	3-1/4"	014511	12	014511.20	288	014811	1
<b>3 Flats on Shank</b>									
3/16"	.1875	2-5/16"	3-1/2"	014512	12	014512.20	288	014812	1
13/64"	.2031	2-7/16"	3-5/8"	014513	12	014513.20	288	014813	1
7/32"	.2188	2-1/2"	3-3/4"	014514	12	014514.20	288	014814	1
15/64"	.2344	2-5/8"	3-7/8"	014515	12	014515.20	288	014815	1
1/4"	.2500	2-3/4"	4"	014516	12	014516.20	288	014816	1
17/64"	.2656	2-7/8"	4-1/8"	014517	12	014517.20	144	014817	1
9/32"	.2812	2-15/16"	4-1/4"	014518	12	014518.20	144	014818	1
19/64"	.2969	3-1/16"	4-3/8"	014519	12	014519.20	144	014819	1
5/16"	.30125	3-3/16"	4-1/2"	014520	6	014520.20	144	014820	1
21/64"	.3281	3-5/16"	4-5/8"	014521	6	014521.20	144	014821	1
11/32"	.3438	3-7/16"	4-3/4"	014522	6	014522.20	144	014822	1
23/64"	.3594	3-1/2"	4-7/8"	014523	6	014523.20	144	014823	1
3/8"	.3750	3-5/8"	5"	014524	6	014524.20	144	014824	1
25/64**	.3906	3-3/4"	5-1/8"	014525	6	014525.20	144	014825	1
13/32**	.4062	3-7/8"	5-1/4"	014526	6	014526.20	144	014826	1
27/64"	.4219	3-15/16"	5-3/8"	014527	6	014527.20	144	014827	1
7/16"	.4375	4-1/16"	5-1/2"	014528	6	014528.20	144	014828	1
29/64"	.4531	4-3/16"	5-5/8"	014529	6	014529.20	144	014829	1
15/32"	.4688	4-5/16"	5-3/4"	014530	6	014530.20	144	014830	1
31/64"	.4844	4-3/8"	5-7/8"	014531	6	014531.20	144	014831	1
1/2"	.5000	4-1/2"	6"	014532	6	014532.20	144	014832	1



Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T19HD+	Metal Index	13 Piece	1/16"-1/4" by 64 <sup>ths</sup>	099501
T18HD+	Metal Index	15 Piece	1/16"-1/2" by 32 <sup>nds</sup>	099502
T180HD+	Metal Index	21 Piece	1/16"-3/8" by 64 <sup>ths</sup>	099503
T17HDDC+	Clip-On Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	099504
T17HD+	Metal Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	099505
T123HD+	Metal Index	115 Piece	1/16"-1/2" by 64 <sup>ths</sup> , #1- #60, A-Z	099508
T80HD+	Display		1/16"-1/2" by 64 <sup>ths</sup>	099509



**T2HD+ - T3HD+ SERIES (CONTINUED)**



**HEAVY-DUTY JOBBER LENGTH DRILLS**

Size	Decimal Equivalent	Flute Length	Overall Length	T2HD+ Packaging: Tube	
				Order No.	Pkg Qty
1**	.2280	2-5/8"	3-7/8"	014601	12
2**	.2210	2-5/8"	3-7/8"	014602	12
3**	.2130	2-1/2"	3-3/4"	014603	12
4**	.2090	2-1/2"	3-3/4"	014604	12
5**	.2055	2-1/2"	3-3/4"	014605	12
6**	.2040	2-1/2"	3-3/4"	014606	12
7**	.2010	2-7/16"	3-5/8"	014607	12
8**	.1990	2-7/16"	3-5/8"	014608	12
9**	.1960	2-7/16"	3-5/8"	014609	12
10**	.1935	2-7/16"	3-5/8"	014610	12
11**	.1910	2-5/16"	3-1/2"	014611	12
12**	.1890	2-5/16"	3-1/2"	014612	12
13	.1850	2-5/16"	3-1/2"	014613	12
14	.1820	2-3/16"	3-3/8"	014614	12
15	.1800	2-3/16"	3-3/8"	014615	12
16	.1770	2-3/16"	3-3/8"	014616	12
17	.1730	2-3/16"	3-3/8"	014617	12
18	.1695	2-1/8"	3-1/4"	014618	12
19	.1660	2-1/8"	3-1/4"	014619	12
20	.1610	2-1/8"	3-1/4"	014620	12
21	.1590	2-1/8"	3-1/4"	014621	12
22	.1570	2"	3-1/8"	014622	12
23	.1540	2"	3-1/8"	014623	12
24	.1520	2"	3-1/8"	014624	12
25	.1495	1-7/8"	3"	014625	12
26	.1470	1-7/8"	3"	014626	12
27	.1440	1-7/8"	3"	014627	12
28	.1405	1-3/4"	2-7/8"	014628	12
29	.1360	1-3/4"	2-7/8"	014629	12
30	.1285	1-5/8"	2-3/4"	014630	12
31	.1200	1-5/8"	2-3/4"	014631	12
32	.1160	1-5/8"	2-3/4"	014632	12
33	.1130	1-1/2"	2-5/8"	014633	12
34	.1110	1-1/2"	2-5/8"	014634	12
35	.1100	1-1/2"	2-5/8"	014635	12
36	.1065	1-7/16"	2-1/2"	014636	12
37	.1040	1-7/16"	2-1/2"	014637	12
38	.1015	1-7/16"	2-1/2"	014638	12
39	.0995	1-3/8"	2-3/8"	014639	12
40	.0980	1-3/8"	2-3/8"	014640	12
41	.0960	1-3/8"	2-3/8"	014641	12
42	.0935	1-1/4"	2-1/4"	014642	12
43	.0890	1-1/4"	2-1/4"	014643	12
44	.0860	1-1/8"	2-1/8"	014644	12
45	.0820	1-1/8"	2-1/8"	014645	12
46	.0810	1-1/8"	2-1/8"	014646	12
47	.0785	1"	2"	014647	12
48	.0760	1"	2"	014648	12
49	.0730	1"	2"	014649	12
50	.0700	1"	2"	014650	12
51	.0670	1"	2"	014651	12
52	.0635	7/8"	1-7/8"	014652	12
53*	.0595	7/8"	1-7/8"	014653	12
54*	.0550	7/8"	1-7/8"	014654	12
55*	.0520	7/8"	1-7/8"	014655	12
56*	.0465	3/4"	1-3/4"	014656	12
57*	.0430	3/4"	1-3/4"	014657	12
58*	.0420	11/16"	1-5/8"	014658	12
59*	.0410	11/16"	1-5/8"	014659	12
60*	.0400	11/16"	1-5/8"	014660	12

Size	Decimal Equivalent	Flute Length	Overall Length	T3HD+ Packaging: Bulk	
				Order No.	Pkg Qty
A	.2340	2-5/8"	3-7/8"	014701	12
B	.2380	2-3/4"	4"	014702	12
C	.2420	2-3/4"	4"	014703	12
D	.2460	2-3/4"	4"	014704	12
E	.2500	2-3/4"	4"	014705	12
F	.2570	2-7/8"	4-1/8"	014706	12
G	.2610	2-7/8"	4-1/8"	014707	12
H	.2660	2-7/8"	4-1/8"	014708	12
I	.2720	2-7/8"	4-1/8"	014709	12
J	.2770	2-7/8"	4-1/8"	014710	12
K	.2810	2-15/16"	4-1/4"	014711	12
L	.2900	2-15/16"	4-1/4"	014712	12
M	.2950	3-1/16"	4-3/8"	014713	12
N	.3020	3-1/16"	4-3/8"	014714	12
O	.3160	3-3/16"	4-1/2"	014715	6
P	.3230	3-5/16"	4-5/8"	014716	6
Q	.3320	3-7/16"	4-3/4"	014717	6
R	.3390	3-7/16"	4-3/4"	014718	6
S	.3480	3-1/2"	4-7/8"	014719	6
T	.3580	3-1/2"	4-7/8"	014720	6
U	.3680	3-5/8"	5"	014721	6
V	.3770	3-5/8"	5"	014722	6
W	.3860	3-3/4"	5-1/8"	014723	6
X	.3970	3-3/4"	5-1/8"	014724	6
Y	.4040	3-7/8"	5-1/4"	014725	6
Z	.4130	3-7/8"	5-1/4"	014726	6

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T22HD+	Metal Index	60 Piece	#1- #60	099506
T25HD+	Metal Index	26 Piece	A - Z	099507
T123HD+	Metal Index	115 Piece	1/16"-1/2" by 64 <sup>ths</sup> , #1- #60, A-Z	099508



\*Not split point \*\*3-Flats on shank



# HEAVY-DUTY JOBBER LENGTH DRILLS

The heavy-duty construction affords efficient drilling in medium strength alloy materials. The split point reduces the thrust requirements and minimizes "walking." A black and gold surface treatment is applied for superior lubricity.



- ▷ Heavy-duty 135° Split Point minimizes "walking"
- ▷ Black & Gold surface treatment for high wear resistance and lubricity
- ▷ 3 flats on shank for hand-held power tools

## T101D - T102D - T103D SERIES

### HEAVY-DUTY HIGH SPEED STEEL

135° Split Point

Fractional, Wire, Letter sizes

3 Flats on Shank

Black & Gold Finish



Size	Decimal Equivalent	Flute Length	Overall Length	T101D Packaging: Tube	
				Order No.	Pkg Qty
1/16"	.0625	7/8"	1-7/8"	022704	12
5/64"	.0781	1"	2"	022705	12
3/32"	.0938	1-1/4"	2-1/4"	022706	12
7/64"	.1094	1-1/2"	2-5/8"	022707	12
1/8"	.1250	1-5/8"	2-3/4"	022708	12
9/64"	.1406	1-3/4"	2-7/8"	022709	12
5/32"	.1562	2"	3-1/8"	022710	12
11/64"	.1719	2-1/8"	3-1/4"	022711	12
3 Flats on Shank					
3/16"	.1875	2-5/16"	3-1/2"	022712	12
13/64"	.2031	2-7/16"	3-5/8"	022713	12
7/32"	.2188	2-1/2"	3-3/4"	022714	12
15/64"	.2344	2-5/8"	3-7/8"	022715	12
1/4"	.2500	2-3/4"	4"	022716	12
17/64"	.2656	2-7/8"	4-1/8"	022717	12
9/32"	.2812	2-15/16"	4-1/4"	022718	12
19/64"	.2969	3-1/16"	4-3/8"	022719	12
5/16"	.3125	3-3/16"	4-1/2"	022720	6
21/64"	.3281	3-5/16"	4-5/8"	022721	6
11/32"	.3438	3-7/16"	4-3/4"	022722	6
23/64"	.3594	3-1/2"	4-7/8"	022723	6
3/8"	.3750	3-5/8"	5"	022724	6
25/64"*	.3906	3-3/4"	5-1/8"	022725	6
13/32"*	.4062	3-7/8"	5-1/4"	022726	6
27/64"	.4219	3-15/16"	5-3/8"	022727	6
7/16"	.4375	4-1/16"	5-1/2"	022728	6
29/64"	.4531	4-3/16"	5-5/8"	022729	6
15/32"	.4688	4-5/16"	5-3/4"	022730	6
31/64"	.4844	4-3/8"	5-7/8"	022731	6
1/2"	.5000	4-1/2"	6"	022732	6



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Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T1019D	Metal Index	13	1/16"-1/4" by 64 <sup>ths</sup>	090113
T1018D	Metal Index	15	1/16"-1/2" by 32 <sup>nds</sup>	090115
T10180D	Metal Index	21	1/16"-3/8" by 64 <sup>ths</sup>	090121
T1017D	Metal Index	29	1/16"-1/2" by 64 <sup>ths</sup>	090190
T1017DC	Round Twist Top Drill Caddy	29	1/16"-1/2" by 64 <sup>ths</sup>	090192
T10123D	Metal Index	115	1/16"-1/2" by 64 <sup>ths</sup> , #1- #60, A-Z	090196



# HEAVY-DUTY JOBBER LENGTH DRILLS

Size	Decimal Equivalent	Flute Length	Overall Length	T102D Packaging: Tube	
				Order No.	Pkg Qty
1**	.2280	2-5/8"	3-7/8"	024701	12
2**	.2210	2-5/8"	3-7/8"	024702	12
3**	.2130	2-1/2"	3-3/4"	024703	12
4**	.2090	2-1/2"	3-3/4"	024704	12
5**	.2055	2-1/2"	3-3/4"	024705	12
6**	.2040	2-1/2"	3-3/4"	024706	12
7**	.2010	2-7/16"	3-5/8"	024707	12
8**	.1990	2-7/16"	3-5/8"	024708	12
9**	.1960	2-7/16"	3-5/8"	024709	12
10**	.1935	2-7/16"	3-5/8"	024710	12
11**	.1910	2-5/16"	3-1/2"	024711	12
12**	.1890	2-5/16"	3-1/2"	024712	12
13	.1850	2-5/16"	3-1/2"	024713	12
14	.1820	2-3/16"	3-3/8"	024714	12
15	.1800	2-3/16"	3-3/8"	024715	12
16	.1770	2-3/16"	3-3/8"	024716	12
17	.1730	2-3/16"	3-3/8"	024717	12
18	.1695	2-1/8"	3-1/4"	024718	12
19	.1660	2-1/8"	3-1/4"	024719	12
20	.1610	2-1/8"	3-1/4"	024720	12
21	.1590	2-1/8"	3-1/4"	024721	12
22	.1570	2"	3-1/8"	024722	12
23	.1540	2"	3-1/8"	024723	12
24	.1520	2"	3-1/8"	024724	12
25	.1495	1-7/8"	3"	024725	12
26	.1470	1-7/8"	3"	024726	12
27	.1440	1-7/8"	3"	024727	12
28	.1405	1-3/4"	2-7/8"	024728	12
29	.1360	1-3/4"	2-7/8"	024729	12
30	.1285	1-5/8"	2-3/4"	024730	12
31	.1200	1-5/8"	2-3/4"	024731	12
32	.1160	1-5/8"	2-3/4"	024732	12
33	.1130	1-1/2"	2-5/8"	024733	12
34	.1110	1-1/2"	2-5/8"	024734	12
35	.1100	1-1/2"	2-5/8"	024735	12
36	.1065	1-7/16"	2-1/2"	024736	12
37	.1040	1-7/16"	2-1/2"	024737	12
38	.1015	1-7/16"	2-1/2"	024738	12
39	.0995	1-3/8"	2-3/8"	024739	12
40	.0980	1-3/8"	2-3/8"	024740	12
41	.0960	1-3/8"	2-3/8"	024741	12
42	.0935	1-1/4"	2-1/4"	024742	12
43	.0890	1-1/4"	2-1/4"	024743	12
44	.0860	1-1/8"	2-1/8"	024744	12
45	.0820	1-1/8"	2-1/8"	024745	12
46	.0810	1-1/8"	2-1/8"	024746	12
47	.0785	1"	2"	024747	12
48	.0760	1"	2"	024748	12
49	.0730	1"	2"	024749	12
50	.0700	1"	2"	024750	12
51	.0670	1"	2"	024751	12
52	.0635	7/8"	1-7/8"	024752	12
53*	.0595	7/8"	1-7/8"	024753	12
54*	.0550	7/8"	1-7/8"	024754	12
55*	.0520	7/8"	1-7/8"	024755	12
56*	.0465	3/4"	1-3/4"	024756	12
57*	.0430	3/4"	1-3/4"	024757	12
58*	.0420	11/16"	1-5/8"	024758	12
59*	.0410	11/16"	1-5/8"	024759	12
60*	.0400	11/16"	1-5/8"	024760	12

\*Not split point \*\*3-Flats on shank

Size	Decimal Equivalent	Flute Length	Overall Length	T103D Packaging: Tube	
				Order No.	Pkg Qty
A	.2340	2-5/8"	3-7/8"	026701	12
B	.2380	2-3/4"	4"	026702	12
C	.2420	2-3/4"	4"	026703	12
D	.2460	2-3/4"	4"	026704	12
E	.2500	2-3/4"	4"	026705	12
F	.2570	2-7/8"	4-1/8"	026706	12
G	.2610	2-7/8"	4-1/8"	026707	12
H	.2660	2-7/8"	4-1/8"	026708	12
I	.2720	2-7/8"	4-1/8"	026709	12
J	.2770	2-7/8"	4-1/8"	026710	12
K	.2810	2-15/16"	4-1/4"	026711	12
L	.2900	2-15/16"	4-1/4"	026712	12
M	.2950	3-1/16"	4-3/8"	026713	12
N	.3020	3-1/16"	4-3/8"	026714	12
O	.3160	3-3/16"	4-1/2"	026715	6
P	.3230	3-5/16"	4-5/8"	026716	6
Q	.3320	3-7/16"	4-3/4"	026717	6
R	.3390	3-7/16"	4-3/4"	026718	6
S	.3480	3-1/2"	4-7/8"	026719	6
T	.3580	3-1/2"	4-7/8"	026720	6
U	.3680	3-5/8"	5"	026721	6
V	.3770	3-5/8"	5"	026722	6
W	.3860	3-3/4"	5-1/8"	026723	6
X	.3970	3-3/4"	5-1/8"	026724	6
Y	.4040	3-7/8"	5-1/4"	026725	6
Z	.4130	3-7/8"	5-1/4"	026726	6

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T10125D	Metal Index	26	A-Z	099828
T10123D	Metal Index	115	1/16"-1/2" by 64 <sup>ths</sup> , #1- #60, A-Z	090196



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# HEAVY-DUTY JOBBER LENGTH DRILLS

140° Split Point reduces "walking" at the drill point and makes these drills ideal for both handheld and CNC Operations. Usable in a wide range of materials including difficult-to-machine materials such as stainless steel.

- ▷ *Black & Gold surface treatment for maximum lubricity*
- ▷ *Jobber length for extra reach*
- ▷ *3-flat shank helps reduce slippage in the drill chuck*

## 400F SERIES

### HEAVY-DUTY HIGH SPEED STEEL

140° Split Point / 3 Flats

Fractional / Black & Gold



400F

Size	Flute Length	Overall Length	400F Order No.
1/16"	7/8"	1-7/8"	400F104
5/64"	1"	2"	400F105
3/32"	1-1/4"	2-1/4"	400F106
7/64"	1-1/2"	2-5/8"	400F107
1/8"	1-5/8"	2-3/4"	400F108
9/64"	1-3/4"	2-7/8"	400F109
5/32"	2"	3-1/8"	400F110
11/64"	2-1/8"	3-1/4"	400F111
3/16"	2-5/16"	3-1/2"	400F112
13/64"	2-7/16"	3-5/8"	400F113
7/32"	2-1/2"	3-3/4"	400F114
15/64"	2-5/8"	3-7/8"	400F115
1/4"	2-3/4"	4"	400F116
17/64"	2-7/8"	4-1/8"	400F117
9/32"	2-15/16"	4-1/4"	400F118

Size	Flute Length	Overall Length	400F Order No.
19/64"	3-1/16"	4-3/8"	400F119
5/16"	3-3/16"	4-1/2"	400F120
21/64"	3-5/16"	4-5/8"	400F121
11/32"	3-7/16"	4-3/4"	400F122
23/64"	3-1/2"	4-7/8"	400F123
3/8"	3-5/8"	5"	400F124
25/64"	3-3/4"	5-1/8"	400F125
13/32"	3-7/8"	5-1/4"	400F126
27/64"	3-15/16"	5-3/8"	400F127
7/16"	4-1/16"	5-1/2"	400F128
29/64"	4-3/16"	5-5/8"	400F129
15/32"	4-5/16"	5-3/4"	400F130
31/64"	4-3/8"	5-7/8"	400F131
1/2"	4-1/2"	6"	400F132

Flats start at 3/16"      1/16" thru 19/64" - 12 per pack, 5/16" thru 1/2" - 6 per pack

Corresponding Sets		
No. of Pcs.	Description	Order No.
400F Series Jobber Drill Sets		
21	1/16" - 3/8" by 64 <sup>ths</sup>	400F21
29	1/16" - 1/2" by 64 <sup>ths</sup>	400F29
29	DRILL PAL 1/16" - 1/2" by 64 <sup>ths</sup>	400FW29



400F29



# HEAVY-DUTY JOBBER LENGTH DRILLS

TiN (Titanium Nitride) coated drill bits are used for drilling holes in very hard and tough materials. The gold-colored coating excels at evacuating chips due to its high lubricity. The TiN coating is also very resistant to wear and abrasion due to it being extremely hard. This significantly extends the life of the tool in many intense drilling operations. This jobber drill also employs the THUNDERBIT geometry for increased strength and better resistance to breakage.

- ▷ Unique flute design for added strength and improved chip evacuation
- ▷ The TiN (titanium nitride) coating provides a super hard surface with high lubricity
- ▷ Extended tool life in high-wear drilling applications



## T1HDG SERIES HEAVY-DUTY HIGH SPEED STEEL 135° Split Point TiN Coating



Size	Decimal Equivalent	Flute Length	Overall Length	T1HDG Packaging: Tube	
				Order No.	Pkg Qty
1/16"	.0625	7/8"	1-7/8"	012804	12
5/64"	.0781	1"	2"	012805	12
3/32"	.0938	1-1/4"	2-1/4"	012806	12
7/64"	.1094	1-1/2"	2-5/8"	012807	12
1/8"	.1250	1-5/8"	2-3/4"	012808	12
9/64"	.1406	1-3/4"	2-7/8"	012809	12
5/32"	.1562	2"	3-1/8"	012810	12
11/64"	.1719	2-1/8"	3-1/4"	012811	12
3/16"	.1875	2-5/16"	3-1/2"	012812	12
13/64"	.2031	2-7/16"	3-5/8"	012813	12
7/32"	.2188	2-1/2"	3-3/4"	012814	12
15/64"	.2344	2-5/8"	3-7/8"	012815	12
1/4"	.2500	2-3/4"	4"	012816	12
17/64"	.2656	2-7/8"	4-1/8"	012817	12
9/32"	.2812	2-15/16"	4-1/4"	012818	12
19/64"	.2969	3-1/16"	4-3/8"	012819	12
5/16"	.3125	3-3/16"	4-1/2"	012820	6
21/64"	.3281	3-5/16"	4-5/8"	012821	6
11/32"	.3438	3-7/16"	4-3/4"	012822	6
23/64"	.3594	3-1/2"	4-7/8"	012823	6
3/8"	.3750	3-5/8"	5"	012824	6
25/64"	.3906	3-3/4"	5-1/8"	012825	6
13/32"	.4062	3-7/8"	5-1/4"	012826	6
27/64"	.4219	3-15/16"	5-3/8"	012827	6
7/16"	.4375	4-1/16"	5-1/2"	012828	6
29/64"	.4531	4-3/16"	5-5/8"	012829	6
15/32"	.4688	4-5/16"	5-3/4"	012830	6
31/64"	.4844	4-3/8"	5-7/8"	012831	6
1/2"	.5000	4-1/2"	6"	012832	6



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Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T19HDG	Metal Index	13 Piece	1/16"-1/4" by 64 <sup>ths</sup>	093713
T18HDG	Metal Index	15 Piece	1/16"-1/2" by 32 <sup>nds</sup>	093716
T180HDG	Metal Index	21 Piece	1/16"-3/8" by 64 <sup>ths</sup>	093719
T17HDG	Metal Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	093700
T17HDCG	Clip On Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	093754





# HEAVY-DUTY JOBBER LENGTH DRILLS

The TiN (Titanium Nitride) coating provides a super hard surface with high lubricity and longer tool life, as the heat is deflected away from the drill. These drills can be used in a wide range of materials including steel, stainless steel, titanium, nickel, and aluminum. TiN coating is applied to the "working" part of the drill. This allows for all of the benefits that the user receives from a fully TiN coated product, but at a reduced price when compared to a drill that is fully coated.

- ▷ *The TiN (titanium nitride) coating provides a super hard surface with high lubricity*
- ▷ *Extended tool life in high wear application*
- ▷ *135° split point for self centering and reduced "walking"*

## 450T SERIES

### HEAVY-DUTY HIGH SPEED STEEL

135° Split Point / Straight Shank

Fractional / TiN Tip Coated



450T

Size	Flute Length	Overall Length	450T Order No.
1/16"	7/8"	1-7/8"	450T104
5/64"	1"	2"	450T105
3/32"	1-1/4"	2-1/4"	450T106
7/64"	1-1/2"	2-5/8"	450T107
1/8"	1-5/8"	2-3/4"	450T108
9/64"	1-3/4"	2-7/8"	450T109
5/32"	2"	3-1/8"	450T110
11/64"	2-1/8"	3-1/4"	450T111
3/16"	2-5/16"	3-1/2"	450T112
13/64"	2-7/16"	3-5/8"	450T113
7/32"	2-1/2"	3-3/4"	450T114
15/64"	2-5/8"	3-7/8"	450T115
1/4"	2-3/4"	4"	450T116
17/64"	2-7/8"	4-1/8"	450T117
9/32"	2-15/16"	4-1/4"	450T118

Size	Flute Length	Overall Length	450T Order No.
19/64"	3-1/16"	4-3/8"	450T119
5/16"	3-3/16"	4-1/2"	450T120
21/64"	3-5/16"	4-5/8"	450T121
11/32"	3-7/16"	4-3/4"	450T122
23/64"	3-1/2"	4-7/8"	450T123
3/8"	3-5/8"	5"	450T124
25/64"	3-3/4"	5-1/8"	450T125
13/32"	3-7/8"	5-1/4"	450T126
27/64"	3-15/16"	5-3/8"	450T127
7/16"	4-1/16"	5-1/2"	450T128
29/64"	4-3/16"	5-5/8"	450T129
15/32"	4-5/16"	5-3/4"	450T130
31/64"	4-3/8"	5-7/8"	450T131
1/2"	4-1/2"	6"	450T132

3/64" thru 19/64" & #1 thru #60 - 12 per pack, 5/16" thru 1/2" - 6 per pack

# HEAVY-DUTY JOBBER LENGTH DRILLS

## 450T SERIES

**HEAVY-DUTY HIGH SPEED STEEL**

135° Split Point / Straight Shank

Number / TiN Tip Coated



450T

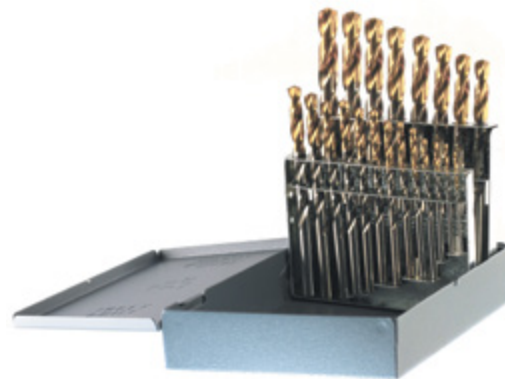
Size	Flute Length	Overall Length	450T Order No.
1	2-5/8"	3-7/8"	450T001
2	2-5/8"	3-7/8"	450T002
3	2-1/2"	3-3/4"	450T003
4	2-1/2"	3-3/4"	450T004
5	2-1/2"	3-3/4"	450T005
6	2-1/2"	3-3/4"	450T006
7	2-7/16"	3-5/8"	450T007
8	2-7/16"	3-5/8"	450T008
9	2-7/16"	3-5/8"	450T009
10	2-7/16"	3-5/8"	450T010
11	2-5/16"	3-1/2"	450T011
12	2-5/16"	3-1/2"	450T012
13	2-5/16"	3-1/2"	450T013
14	2-3/16"	3-3/8"	450T014
15	2-3/16"	3-3/8"	450T015
16	2-3/16"	3-3/8"	450T016
17	2-3/16"	3-3/8"	450T017
18	2-1/8"	3-1/4"	450T018
19	2-1/8"	3-1/4"	450T019
20	2-1/8"	3-1/4"	450T020
21	2-1/8"	3-1/4"	450T021
22	2"	3-1/8"	450T022
23	2"	3-1/8"	450T023
24	2"	3-1/8"	450T024
25	1-7/8"	3"	450T025
26	1-7/8"	3"	450T026
27	1-7/8"	3"	450T027
28	1-3/4"	2-7/8"	450T028
29	1-3/4"	2-7/8"	450T029
30	1-5/8"	2-3/4"	450T030

Size	Flute Length	Overall Length	450T Order No.
31	1-5/8"	2-3/4"	450T031
32	1-5/8"	2-3/4"	450T032
33	1-1/2"	2-5/8"	450T033
34	1-1/2"	2-5/8"	450T034
35	1-1/2"	2-5/8"	450T035
36	1-7/16"	2-1/2"	450T036
37	1-7/16"	2-1/2"	450T037
38	1-7/16"	2-1/2"	450T038
39	1-3/8"	2-3/8"	450T039
40	1-3/8"	2-3/8"	450T040
41	1-3/8"	2-3/8"	450T041
42	1-1/4"	2-1/4"	450T042
43	1-1/4"	2-1/4"	450T043
44	1-1/8"	2-1/8"	450T044
45	1-1/8"	2-1/8"	450T045
46	1-1/8"	2-1/8"	450T046
47	1"	2"	450T047
48	1"	2"	450T048
49	1"	2"	450T049
50	1"	2"	450T050
51	1"	2"	450T051
52	7/8"	1-7/8"	450T052
53*	7/8"	1-7/8"	450T053
54*	7/8"	1-7/8"	450T054
55*	7/8"	1-7/8"	450T055
56*	3/4"	1-3/4"	450T056
57*	3/4"	1-3/4"	450T057
58*	11/16"	1-5/8"	450T058
59*	11/16"	1-5/8"	450T059
60*	11/16"	1-5/8"	450T060

\*Not split point

#1 thru #60 - 12 per pack

Corresponding Sets		
No. of Pcs.	Description	Order No.
<b>450T Series Jobber Drill Sets</b>		
13	1/16" - 1/4" by 64 <sup>ths</sup>	450T13
15	1/16" - 1/2" by 32 <sup>nds</sup>	450T15
21	1/16" - 3/8" by 64 <sup>ths</sup>	450T21
29	1/16" - 1/2" by 64 <sup>ths</sup>	450T29
29	1/16" - 1/2" by 64 <sup>ths</sup> DRILL PAL	450TW29
60	#1 - 60	450T60



450T21

# HEAVY-DUTY JOBBER LENGTH DRILLS

Heavy-duty construction made to NAS Type J aircraft specifications. Used for drilling holes in hard, tough materials such as stainless steel, titanium high temperature and high strength alloys.

- ▷ High red hardness of cobalt permits speeds 30% greater than HSS drills
- ▷ Bronze surface treatment for high lubricity
- ▷ Cobalt drills can cut harder materials than HSS drills
- ▷ Available in bulk packaging

## 500 SERIES

### HEAVY-DUTY COBALT

135° Split Point / Straight Shank  
Fractional / Bronze



500

Size	Flute Length	Overall Length	500 Order No.
3/64"	3/4"	1-3/4"	500A103
1/16"	7/8"	1-7/8"	500A104
5/64"	1"	2"	500A105
3/32"	1-1/4"	2-1/4"	500A106
7/64"	1-1/2"	2-5/8"	500A107
1/8"	1-5/8"	2-3/4"	500A108
9/64"	1-3/4"	2-7/8"	500A109
5/32"	2"	3-1/8"	500A110
11/64"	2-1/8"	3-1/4"	500A111
3/16"	2-5/16"	3-1/2"	500A112
13/64"	2-7/16"	3-5/8"	500A113
7/32"	2-1/2"	3-3/4"	500A114
15/64"	2-5/8"	3-7/8"	500A115
1/4"	2-3/4"	4"	500A116
17/64"	2-7/8"	4-1/8"	500A117

Size	Flute Length	Overall Length	500 Order No.
9/32"	2-15/16"	4-1/4"	500A118
19/64"	3-1/16"	4-3/8"	500A119
5/16"	3-3/16"	4-1/2"	500A120
21/64"	3-5/16"	4-5/8"	500A121
11/32"	3-7/16"	4-3/4"	500A122
23/64"	3-1/2"	4-7/8"	500A123
3/8"	3-5/8"	5"	500A124
25/64"	3-3/4"	5-1/8"	500A125
13/32"	3-7/8"	5-1/4"	500A126
27/64"	3-15/16"	5-3/8"	500A127
7/16"	4-1/16"	5-1/2"	500A128
29/64"	4-3/16"	5-5/8"	500A129
15/32"	4-5/16"	5-3/4"	500A130
31/64"	4-3/8"	5-7/8"	500A131
1/2"	4-1/2"	6"	500A132

3/64" thru 19/64" and "A" thru "L" - 12 per pack  
5/16" thru 1/2" and "M" thru "Z" - 6 per pack

## 500 SERIES

### HEAVY-DUTY COBALT

135° Split Point / Straight Shank  
Number / Bronze



500

Size	Flute Length	Overall Length	500 Order No.
1	2-5/8"	3-7/8"	500A001
2	2-1/2"	3-7/8"	500A002
3	2-1/2"	3-3/4"	500A003
4	2-1/2"	3-3/4"	500A004
5	2-1/2"	3-3/4"	500A005
6	2-1/2"	3-3/4"	500A006
7	2-7/16"	3-5/8"	500A007
8	2-7/16"	3-5/8"	500A008
9	2-7/16"	3-5/8"	500A009
10	2-7/16"	3-5/8"	500A010
11	2-5/16"	3-1/2"	500A011
12	2-5/16"	3-1/2"	500A012
13	2-5/16"	3-1/2"	500A013

Size	Flute Length	Overall Length	500 Order No.
14	2-3/16"	3-3/8"	500A014
15	2-3/16"	3-3/8"	500A015
16	2-3/16"	3-3/8"	500A016
17	2-3/16"	3-3/8"	500A017
18	2-1/8"	3-1/4"	500A018
19	2-1/8"	3-1/4"	500A019
20	2-1/8"	3-1/4"	500A020
21	2-1/8"	3-1/4"	500A021
22	2"	3-1/8"	500A022
23	2"	3-1/8"	500A023
24	2"	3-1/8"	500A024
25	1-7/8"	3"	500A025
26	1-7/8"	3"	500A026

# HEAVY-DUTY JOBBER LENGTH DRILLS

## 580 SERIES

### HEAVY-DUTY COBALT

135° Split Point / Straight Shank  
Number / Bronze



580

Size	Flute Length	Overall Length	580 Order No.
27	1-7/8"	3"	580A027
28	1-3/4"	2-7/8"	580A028
29	1-3/4"	2-7/8"	580A029
30	1-5/8"	2-3/4"	580A030
31	1-5/8"	2-3/4"	580A031
32	1-5/8"	2-3/4"	580A032
33	1-1/2"	2-5/8"	580A033
34	1-1/2"	2-5/8"	580A034
35	1-1/2"	2-5/8"	580A035
36	1-7/16"	2-1/2"	580A036
37	1-7/16"	2-1/2"	580A037
38	1-7/16"	2-1/2"	580A038
39	1-3/8"	2-3/8"	580A039
40	1-3/8"	2-3/8"	580A040
41	1-3/8"	2-3/8"	580A041
42	1-1/4"	2-1/4"	580A042
43	1-1/4"	2-1/4"	580A043

Size	Flute Length	Overall Length	580 Order No.
44	1-1/8"	2-1/8"	580A044
45	1-1/8"	2-1/8"	580A045
46	1-1/8"	2-1/8"	580A046
47	1"	2"	580A047
48	1"	2"	580A048
49	1"	2"	580A049
50	1"	2"	580A050
51	1"	2"	580A051
52	7/8"	1-7/8"	580A052
53*	7/8"	1-7/8"	580A053
54*	7/8"	1-7/8"	580A054
55*	7/8"	1-7/8"	580A055
56*	3/4"	1-3/4"	580A056
57*	3/4"	1-3/4"	580A057
58*	11/16"	1-5/8"	580A058
59*	11/16"	1-5/8"	580A059
60*	11/16"	1-5/8"	580A060

\*Not split point

#1 thru #60 - 12 per pack

## 500 SERIES

### HEAVY-DUTY COBALT

135° Split Point / Straight Shank  
Letter / Bronze



500

Size	Flute Length	Overall Length	500 Order No.
A	2-5/8"	3-7/8"	500A501
B	2-3/4"	4"	500A502
C	2-3/4"	4"	500A503
D	2-3/4"	4"	500A504
E	2-3/4"	4"	500A505
F	2-7/8"	4-1/8"	500A506
G	2-7/8"	4-1/8"	500A507
H	2-7/8"	4-1/8"	500A508
I	2-7/8"	4-1/8"	500A509
J	2-7/8"	4-1/8"	500A510
K	2-15/16"	4-1/4"	500A511
L	2-15/16"	4-1/4"	500A512
M	3-1/16"	4-3/8"	500A513

Size	Flute Length	Overall Length	500 Order No.
N	3-1/16"	4-3/8"	500A514
O	3-3/16"	4-1/2"	500A515
P	3-5/16"	4-5/8"	500A516
Q	3-7/16"	4-3/4"	500A517
R	3-7/16"	4-3/4"	500A518
S	3-1/2"	4-7/8"	500A519
T	3-1/2"	4-7/8"	500A520
U	3-5/8"	5"	500A521
V	3-5/8"	5"	500A522
W	3-3/4"	5-1/8"	500A523
X	3-3/4"	5-1/8"	500A524
Y	3-7/8"	5-1/4"	500A525
Z	3-7/8"	5-1/4"	500A526

"A" thru "L" - 12 per pack, "M" thru "Z" - 6 per pack

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & 0 - Z	72

Corresponding Sets		
No. of Pcs.	Description	Order No.
<b>500/540/580 &amp; 500E/580E Series Cobalt Heavy-Duty Jobber Drill Sets</b>		
13	1/16" - 1/4" by 64 <sup>ths</sup>	500A13
15	1/16" - 1/2" by 32 <sup>nds</sup>	500A15
21	1/16" - 3/8" by 64 <sup>ths</sup>	500A21
21	1/16" - 1/4" by 64 <sup>ths</sup> & 9/32" - 1/2" by 32 <sup>nds</sup>	500A21V
26	A - Z	500A26
29	1/16" - 1/2" by 64 <sup>ths</sup>	500A29
29	DRILL PAL 1/16" - 1/2" by 64 <sup>ths</sup>	500AW29
60	#1 - #60	500A60
115	1/16" - 1/2" by 64 <sup>ths</sup> , #1 - 60, A - Z	500A0115



500A29



# HEAVY-DUTY JOBBER LENGTH DRILLS

## 500E SERIES

### HEAVY-DUTY COBALT

135° Split Point / Straight Shank  
Fractional / Bronze



500E

Size	Flute Length	Overall Length	500E Order No.
1/16"	7/8"	1-7/8"	500E104
5/64"	1"	2"	500E105
3/32"	1-1/4"	2-1/4"	500E106
7/64"	1-1/2"	2-5/8"	500E107
1/8"	1-5/8"	2-3/4"	500E108
9/64"	1-3/4"	2-7/8"	500E109
5/32"	2"	3-1/8"	500E110
11/64"	2-1/8"	3-1/4"	500E111
3/16"	2-5/16"	3-1/2"	500E112
13/64"	2-7/16"	3-5/8"	500E113
7/32"	2-1/2"	3-3/4"	500E114
15/64"	2-5/8"	3-7/8"	500E115
1/4"	2-3/4"	4"	500E116
17/64"	2-7/8"	4-1/8"	500E117
9/32"	2-15/16"	4-1/4"	500E118
19/64"	3-1/16"	4-3/8"	500E119
5/16"	3-3/16"	4-1/2"	500E120
21/64"	3-5/16"	4-5/8"	500E121
11/32"	3-7/16"	4-3/4"	500E122
23/64"	3-1/2"	4-7/8"	500E123
3/8"	3-5/8"	5"	500E124
25/64"	3-3/4"	5-1/8"	500E125
13/32"	3-7/8"	5-1/4"	500E126
27/64"	3-15/16"	5-3/8"	500E127
7/16"	4-1/16"	5-1/2"	500E128
29/64"	4-3/16"	5-5/8"	500E129
15/32"	4-5/16"	5-3/4"	500E130
31/64"	4-3/8"	5-7/8"	500E131
1/2"	4-1/2"	6"	500E132

1/16" thru 19/64" - 12 per pack., 5/16" thru 1/2" - 6 per pack.



500E29

Corresponding Sets		
No. of Pcs.	Description	Order No.
<b>500E/580E Series Cobalt Heavy-Duty Jobber Drill Sets</b>		
13	1/16" - 1/4" by 64 <sup>ths</sup>	500E13
15	1/16" - 1/2" by 32 <sup>nds</sup>	500E15
21	1/16" - 3/8" by 64 <sup>ths</sup>	500E21
21	1/16" - 1/4" by 64 <sup>ths</sup> & 9/32" - 1/2" by 32 <sup>nds</sup>	500E21V
29	1/16" - 1/2" by 64 <sup>ths</sup>	500E29
60	#1 - #60	500E60

## 500E SERIES

### HEAVY-DUTY COBALT

135° Split Point / Straight Shank  
Number / Bronze



500E

Size	Flute Length	Overall Length	500E Order No.
1	2-5/8"	3-7/8"	500E001
2	2-1/2"	3-7/8"	500E002
3	2-1/2"	3-3/4"	500E003
4	2-1/2"	3-3/4"	500E004
5	2-1/2"	3-3/4"	500E005
6	2-1/2"	3-3/4"	500E006
7	2-7/16"	3-5/8"	500E007
8	2-7/16"	3-5/8"	500E008
9	2-7/16"	3-5/8"	500E009
10	2-7/16"	3-5/8"	500E010
11	2-5/16"	3-1/2"	500E011
12	2-5/16"	3-1/2"	500E012
13	2-5/16"	3-1/2"	500E013
14	2-3/16"	3-3/8"	500E014
15	2-3/16"	3-3/8"	500E015
16	2-3/16"	3-1/4"	500E016
17	2-3/16"	3-1/4"	500E017
18	2-1/8"	3-1/4"	500E018
19	2-1/8"	3-1/4"	500E019
20	2-1/8"	3-1/4"	500E020
21	2-1/8"	3-1/4"	500E021
22	2"	3-1/8"	500E022
23	2"	3-1/8"	500E023
24	2"	3-1/8"	500E024
25	1-7/8"	3"	500E025
26	1-7/8"	3"	500E026
27	1-7/8"	3"	500E027
28	1-3/4"	2-7/8"	500E028
29	1-3/4"	2-7/8"	500E029
30	1-5/8"	2-3/4"	500E030
31	1-5/8"	2-3/4"	500E031
32	1-5/8"	2-3/4"	500E032
33	1-1/2"	2-5/8"	500E033
34	1-1/2"	2-5/8"	500E034
35	1-1/2"	2-5/8"	500E035
36	1-7/16"	2-1/2"	500E036
37	1-7/16"	2-1/2"	500E037
38	1-7/16"	2-1/2"	500E038
39	1-3/8"	2-3/8"	500E039
40	1-3/8"	2-3/8"	500E040
41	1-3/8"	2-3/8"	500E041
42	1-1/4"	2-1/4"	500E042
43	1-1/4"	2-1/4"	500E043
44	1-1/8"	2-1/8"	500E044
45	1-1/8"	2-1/8"	500E045
46	1-1/8"	2-1/8"	500E046
47	1"	2"	500E047
48	1"	2"	500E048
49	1"	2"	500E049
50	1"	2"	500E050
51	1"	2"	500E051
52	7/8"	1-7/8"	500E052
53*	7/8"	1-7/8"	500E053
54*	7/8"	1-7/8"	500E054
55*	7/8"	1-7/8"	500E055
56*	3/4"	1-3/4"	500E056
57*	3/4"	1-3/4"	500E057
58*	11/16"	1-5/8"	500E058
59*	11/16"	1-5/8"	500E059
60*	11/16"	1-5/8"	500E060

\* Not Split Point

# HEAVY-DUTY JOBBER LENGTH DRILLS

The heavy-duty construction with a THUNDERBIT core and flute design affords efficient portable drilling in medium strength alloy materials. The split point reduces the thrust requirements and minimizes "walking." A black and gold surface treatment is applied for superior lubricity.

- ▷ Unique flute design for added strength and improved chip evacuation
- ▷ Bronze oxide for maximum lubricity
- ▷ Cobalt substrate permits speeds and feeds up to 30% faster than HSS drill



## T1HDC SERIES HEAVY-DUTY COBALT

135° Split Point / Straight Shank  
Fractional / Bronze



Size	Decimal Equivalent	Flute Length	Overall Length	T1HDC Packaging: Tube	
				Order No.	Pkg Qty
1/16"	.0625	7/8"	1-7/8"	013504	12
5/64"	.0781	1"	2"	013505	12
3/32"	.0938	1-1/4"	2-1/4"	013506	12
7/64"	.1094	1-1/2"	2-5/8"	013507	12
1/8"	.1250	1-5/8"	2-3/4"	013508	12
9/64"	.1406	1-3/4"	2-7/8"	013509	12
5/32"	.1562	2"	3-1/8"	013510	12
11/64"	.1719	2-1/8"	3-1/4"	013511	12
3/16"	.1875	2-5/16"	3-1/2"	013512	12
13/64"	.2031	2-7/16"	3-5/8"	013513	12
7/32"	.2188	2-1/2"	3-3/4"	013514	12
15/64"	.2344	2-5/8"	3-7/8"	013515	12
1/4"	.2500	2-3/4"	4"	013516	12
17/64"	.2656	2-7/8"	4-1/8"	013517	12
9/32"	.2812	2-15/16"	4-1/4"	013518	12
19/64"	.2969	3-1/16"	4-3/8"	013519	12
5/16"	.3125	3-3/16"	4-1/2"	013520	6
21/64"	.3281	3-5/16"	4-5/8"	013521	6
11/32"	.3438	3-7/16"	4-3/4"	013522	6
23/64"	.3594	3-1/2"	4-7/8"	013523	6
3/8"	.3750	3-5/8"	5"	013524	6
25/64"	.3906	3-3/4"	5-1/8"	013525	6
13/32"	.4062	3-7/8"	5-1/4"	013526	6
27/64"	.4219	3-15/16"	5-3/8"	013527	6
7/16"	.4375	4-1/16"	5-1/2"	013528	6
29/64"	.4531	4-3/16"	5-5/8"	013529	6
15/32"	.4688	4-5/16"	5-3/4"	013530	6
31/64"	.4844	4-3/8"	5-7/8"	013531	6
1/2"	.5000	4-1/2"	6"	013532	6

#1 thru #60 - 12 per pack



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Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T19HDC	Metal Index	13 Piece	1/16"-1/4" by 64 <sup>ths</sup>	099813
T18HDC	Metal Index	15 Piece	1/16"-1/2" by 32 <sup>nds</sup>	099816
T180HDC	Metal Index	21 Piece	1/16"-3/8" by 64 <sup>ths</sup>	099819
T17HDC	Metal Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	099821
T17HDCDC	Clip On Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	099854



# HEAVY-DUTY JOBBER LENGTH DRILLS

Used for drilling holes in hard, tough materials such as stainless steel, titanium, high temperature, and high strength alloys.

- ▷ High red hardness of cobalt permits speeds 30% greater than HSS drills
- ▷ Bronze surface treatment for high lubricity
- ▷ Cobalt drills can cut harder materials than HSS drills

## T1C - BP1C - T2C - T3C SERIES

### HEAVY-DUTY COBALT

135° Split Point / Straight Shank

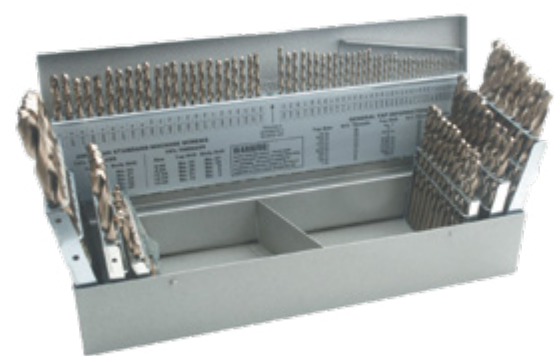
Fractional, Number, Letter / Bronze



Size	Decimal Equivalent	Flute Length	Overall Length	T1C Packaging: Tube		T1C Packaging: Bulk		BP1C Packaging: Card	
				Order No.	Pkg Qty	Order No.	Pkg Qty	Order No.	Pkg Qty
1/16"	.0625	7/8"	1-7/8"	011504	12	011504.20	288	014204	1
5/64"	.0781	1"	2"	011505	12	011505.20	288	014205	1
3/32"	.0938	1-1/4"	2-1/4"	011506	12	011506.20	288	014206	1
7/64"	.1094	1-1/2"	2-5/8"	011507	12	011507.20	288	014207	1
1/8"	.1250	1-5/8"	2-3/4"	011508	12	011508.20	288	014208	1
9/64"	.1406	1-3/4"	2-7/8"	011509	12	011509.20	288	014209	1
5/32"	.1562	2"	3-1/8"	011510	12	011510.20	288	014210	1
11/64"	.1719	2-1/8"	3-1/4"	011511	12	011511.20	288	014211	1
3/16"	.1875	2-5/16"	3-1/2"	011512	12	011512.20	288	014212	1
13/64"	.2031	2-7/16"	3-5/8"	011513	12	011513.20	288	014213	1
7/32"	.2188	2-1/2"	3-3/4"	011514	12	011514.20	288	014214	1
15/64"	.2344	2-5/8"	3-7/8"	011515	12	011515.20	288	014215	1
1/4"	.2500	2-3/4"	4"	011516	12	011516.20	288	014216	1
17/64"	.2656	2-7/8"	4-1/8"	011517	12	011517.20	144	014217	1
9/32"	.2812	2-15/16"	4-1/4"	011518	12	011518.20	144	014218	1
19/64"	.2969	3-1/16"	4-3/8"	011519	12	011519.20	144	014219	1
5/16"	.3125	3-3/16"	4-1/2"	011520	6	011520.20	144	014220	1
21/64"	.3281	3-5/16"	4-5/8"	011521	6	011521.20	144	014221	1
11/32"	.3438	3-7/16"	4-3/4"	011522	6	011522.20	144	014222	1
23/64"	.3594	3-1/2"	4-7/8"	011523	6	011523.20	144	014223	1
3/8"	.3750	3-5/8"	5"	011524	6	011524.20	144	014224	1
25/64"	.3906	3-3/4"	5-1/8"	011525	6	011525.20	144	014225	1
13/32"	.4062	3-7/8"	5-1/4"	011526	6	011526.20	144	014226	1
27/64"	.4219	3-15/16"	5-3/8"	011527	6	011527.20	144	014227	1
7/16"	.4375	4-1/16"	5-1/2"	011528	6	011528.20	144	014228	1
29/64"	.4531	4-3/16"	5-5/8"	011529	6	011529.20	144	014229	1
15/32"	.4688	4-5/16"	5-3/4"	011530	6	011530.20	144	014230	1
31/64"	.4844	4-3/8"	5-7/8"	011531	6	011531.20	144	014231	1
1/2"	.5000	4-1/2"	6"	011532	6	011532.20	144	014232	1



Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T19C	Metal Index	13 Piece	1/16"-1/4" by 64 <sup>ths</sup>	099823
T18C	Metal Index	15 Piece	1/16"-1/2" by 32 <sup>nds</sup>	099826
T180C	Metal Index	21 Piece	1/16"-3/8" by 64 <sup>ths</sup>	099825
T17C	Metal Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	099822
T123C	Metal Index	115 Piece	1/16"-1/2" by 64 <sup>ths</sup> , #1- #60, A-Z	099831



HEAVY-DUTY JOBBER LENGTH DRILLS

Size	Decimal Equivalent	Flute Length	Overall Length	T2C Packaging: Tube	
				Order No.	Pkg Qty
1	.2280	2-5/8"	3-7/8"	011701	12
2	.2210	2-5/8"	3-7/8"	011702	12
3	.2130	2-1/2"	3-3/4"	011703	12
4	.2090	2-1/2"	3-3/4"	011704	12
5	.2055	2-1/2"	3-3/4"	011705	12
6	.2040	2-1/2"	3-3/4"	011706	12
7	.2010	2-7/16"	3-5/8"	011707	12
8	.1990	2-7/16"	3-5/8"	011708	12
9	.1960	2-7/16"	3-5/8"	011709	12
10	.1935	2-7/16"	3-5/8"	011710	12
11	.1910	2-5/16"	3-1/2"	011711	12
12	.1890	2-5/16"	3-1/2"	011712	12
13	.1850	2-5/16"	3-1/2"	011713	12
14	.1820	2-3/16"	3-3/8"	011714	12
15	.1800	2-3/16"	3-3/8"	011715	12
16	.1770	2-3/16"	3-3/8"	011716	12
17	.1730	2-3/16"	3-3/8"	011717	12
18	.1695	2-1/8"	3-1/4"	011718	12
19	.1660	2-1/8"	3-1/4"	011719	12
20	.1610	2-1/8"	3-1/4"	011720	12
21	.1590	2-1/8"	3-1/4"	011721	12
22	.1570	2"	3-1/8"	011722	12
23	.1540	2"	3-1/8"	011723	12
24	.1520	2"	3-1/8"	011724	12
25	.1495	1-7/8"	3"	011725	12
26	.1470	1-7/8"	3"	011726	12
27	.1440	1-7/8"	3"	011727	12
28	.1405	1-3/4"	2-7/8"	011728	12
29	.1360	1-3/4"	2-7/8"	011729	12
30	.1285	1-5/8"	2-3/4"	011730	12
31	.1200	1-5/8"	2-3/4"	011731	12
32	.1160	1-5/8"	2-3/4"	011732	12
33	.1130	1-1/2"	2-5/8"	011733	12
34	.1110	1-1/2"	2-5/8"	011734	12
35	.1100	1-1/2"	2-5/8"	011735	12
36	.1065	1-7/16"	2-1/2"	011736	12
37	.1040	1-7/16"	2-1/2"	011737	12
38	.1015	1-7/16"	2-1/2"	011738	12
39	.0995	1-3/8"	2-3/8"	011739	12
40	.0980	1-3/8"	2-3/8"	011740	12
41	.0960	1-3/8"	2-3/8"	011741	12
42	.0935	1-1/4"	2-1/4"	011742	12
43	.0890	1-1/4"	2-1/4"	011743	12
44	.0860	1-1/8"	2-1/8"	011744	12
45	.0820	1-1/8"	2-1/8"	011745	12
46	.0810	1-1/8"	2-1/8"	011746	12
47	.0785	1"	2"	011747	12
48	.0760	1"	2"	011748	12
49	.0730	1"	2"	011749	12
50	.0700	1"	2"	011750	12
51	.0670	1"	2"	011751	12
52	.0635	7/8"	1-7/8"	011752	12
53*	.0595	7/8"	1-7/8"	011753	12
54*	.0550	7/8"	1-7/8"	011754	12
55*	.0520	7/8"	1-7/8"	011755	12
56*	.0465	3/4"	1-3/4"	011756	12
57*	.0430	3/4"	1-3/4"	011757	12
58*	.0420	11/16"	1-5/8"	011758	12
59*	.0410	11/16"	1-5/8"	011759	12
60*	.0400	11/16"	1-5/8"	011760	12

Size	Decimal Equivalent	Flute Length	Overall Length	T3C Packaging: Tube	
				Order No.	Pkg Qty
A	.2340	2-5/8"	3-7/8"	011901	12
B	.2380	2-3/4"	4"	011902	12
C	.2420	2-3/4"	4"	011903	12
D	.2460	2-3/4"	4"	011904	12
E	.2500	2-3/4"	4"	011905	12
F	.2570	2-7/8"	4-1/8"	011906	12
G	.2610	2-7/8"	4-1/8"	011907	12
H	.2660	2-7/8"	4-1/8"	011908	12
I	.2720	2-7/8"	4-1/8"	011909	12
J	.2770	2-7/8"	4-1/8"	011910	12
K	.2810	2-15/16"	4-1/4"	011911	12
L	.2900	2-15/16"	4-1/4"	011912	12
M	.2950	3-1/16"	4-3/8"	011913	12
N	.3020	3-1/16"	4-3/8"	011914	12
O	.3160	3-3/16"	4-1/2"	011915	6
P	.3230	3-5/16"	4-5/8"	011916	6
Q	.3320	3-7/16"	4-3/4"	011917	6
R	.3390	3-7/16"	4-3/4"	011918	6
S	.3480	3-1/2"	4-7/8"	011919	6
T	.3580	3-1/2"	4-7/8"	011920	6
U	.3680	3-5/8"	5"	011921	6
V	.3770	3-5/8"	5"	011922	6
W	.3860	3-3/4"	5-1/8"	011923	6
X	.3970	3-3/4"	5-1/8"	011924	6
Y	.4040	3-7/8"	5-1/4"	011925	6
Z	.4130	3-7/8"	5-1/4"	011926	6



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\* Not split pointed.  
See Drillco Tables for references



# HEAVY-DUTY 3/8" REDUCED SHANK DRILLS

Has all of the features of the Nitro® jobber drill, but with a 3/8" reduced shank for use in 3/8" drill chucks.

**NITRO**

## 1035N SERIES

### HEAVY-DUTY HIGH SPEED STEEL

135° Split Point / 3/8" Reduced Shank

Jobber Length

Fractional / Black & Gold



1035N

Size	Flute Length	Overall Length	1035N Order No.
25/64"	3"	6"	1035N125
13/32"	3"	6"	1035N126
27/64"	3"	6"	1035N127
7/16"	3"	6"	1035N128
29/64"	3"	6"	1035N129
15/32"	3"	6"	1035N130
31/64"	3"	6"	1035N131

Size	Flute Length	Overall Length	1035N Order No.
1/2"	3"	6"	1035N132
17/32"	3"	6"	1035N134
9/16"	3"	6"	1035N136
5/8"	3"	6"	1035N140
11/16"	3"	6"	1035N144
3/4"	3"	6"	1035N148

25/64" - 1/2" - 6 per pack, 17/32" - 3/4" - 1 per pack

Corresponding Sets		
No. of Pcs.	Description	Order No.
1035N Series Reduced Shank Drill Sets		
15	1/16" - 1/2" by 32 <sup>nds</sup>	1035N15
29	1/16" - 1/2" by 64 <sup>ths</sup>	1035N29



1035N15

# HEAVY-DUTY 3/8" REDUCED SHANK DRILLS



## T8HD - BP8HD SERIES

**HEAVY-DUTY HIGH SPEED STEEL**

135° Split Point / 3/8" Reduced Shank

Jobber Length

Black & Gold Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T8HD Packaging: Tube		BP8HD Packaging: Bulk	
				Order No.	Pkg Qty	Order No.	Pkg Qty
25/64"	.3906	3-3/4"	5-1/8"	092125	6	095125	1
13/32"	.4062	3-7/8"	5-1/4"	092126	6	095126	1
27/64"	.4219	3-15/16"	5-3/8"	092127	6	095127	1
7/16"	.4375	4-1/16"	5-1/2"	092128	6	095128	1
29/64"	.4531	4-3/16"	5-5/8"	092129	6	095129	1
15/32"	.4688	4-5/16"	5-3/4"	092130	6	095130	1
31/64"	.4844	4-3/8"	5-7/8"	092131	6	095131	1
1/2"	.5000	4-1/2"	6"	092132	6	095132	1



Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T815HD	Metal Index	15 Piece	1/16"-1/2" by 32 <sup>nds</sup>	099104
T829HD	Metal Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	099101

# HEAVY-DUTY JOBBER LENGTH DRILLS SETS



400N29



450TW29



100SE15

No. of Pieces	Brand	Material	Coating/Finish	Point Angle	Description	Order No.
<b>400N/440N/480N Series NITRO™ Heavy-Duty Jobber Drill Sets</b>						
13	NITRO®	High Speed Steel	Black & Gold	135°	1/16" - 1/4" by 64 <sup>ths</sup>	400N13
15	NITRO®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" by 32 <sup>nds</sup>	400N15
19	NITRO®	High Speed Steel	Black & Gold	135°	Maintenance Set - 1/16, 5/64, 3/32, 1/8, #29, #25, 5/32, #21, 3/16, #7, 7/32, 1/4, F, 5/16, U, 3/8, 27/64, 7/16, 1/2	400N19
21	NITRO®	High Speed Steel	Black & Gold	135°	1/16" - 3/8" by 64 <sup>ths</sup>	400N21
21	NITRO®	High Speed Steel	Black & Gold	135°	1/16" - 1/4" by 64 <sup>ths</sup> & 9/32" - 1/2" by 32 <sup>nds</sup>	400N21V
26	NITRO®	High Speed Steel	Black & Gold	135°	A - Z	400N26
29	NITRO®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" by 64 <sup>ths</sup>	400N29
29	NITRO®	High Speed Steel	Black & Gold	135°	DRILL PAL 1/16" - 1/2" by 64 <sup>ths</sup>	400NW29
60	NITRO®	High Speed Steel	Black & Gold	135°	#1 - #60	400N60
115	NITRO®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" by 64 <sup>ths</sup> , #1 - 60, A - Z	400N0115
<b>450T Series Jobber Drill Sets</b>						
13		High Speed Steel	TiN Tipped	135°	1/16" - 1/4" by 64 <sup>ths</sup>	450T13
15		High Speed Steel	TiN Tipped	135°	1/16" - 1/2" by 32 <sup>nds</sup>	450T15
21		High Speed Steel	TiN Tipped	135°	1/16" - 3/8" by 64 <sup>ths</sup>	450T21
29		High Speed Steel	TiN Tipped	135°	1/16" - 1/2" by 64 <sup>ths</sup>	450T29
29		High Speed Steel	TiN Tipped	135°	DRILL PAL 1/16" - 1/2" by 64 <sup>ths</sup>	450TW29
60		High Speed Steel	TiN Tipped	135°	#1 - 60	450T60
<b>100SE Series Jobber Drill Sets</b>						
13		High Speed Steel	Black Oxide	118°	1/16" - 1/4" by 64 <sup>ths</sup>	100SE13
15		High Speed Steel	Black Oxide	118°	1/16" - 1/2" by 32 <sup>nds</sup>	100SE15
21		High Speed Steel	Black Oxide	118°	1/16" - 3/8" by 64 <sup>ths</sup>	100SE21
21		High Speed Steel	Black Oxide	118°	1/16" - 1/4" by 64 <sup>ths</sup> & 9/32" - 1/2" by 32 <sup>nds</sup>	100SE21V
29		High Speed Steel	Black Oxide	118°	DRILL PAL 1/16" - 1/2" by 64 <sup>ths</sup>	100SEW29
29		High Speed Steel	Black Oxide	118°	1/16" - 1/2" by 64 <sup>ths</sup>	100SE29

# HEAVY-DUTY JOBBER LENGTH DRILLS SETS



200B29

No. of Pieces	Made in	Material	Coating/Finish	Point Angle	Description	Order No.
<b>200/240/280 Series Jobber Drill Sets</b>						
13	USA	High Speed Steel	Black Oxide	118°	1/16" - 1/4" by 64 <sup>ths</sup>	200A13
15	USA	High Speed Steel	Black Oxide	118°	1/16" - 1/2" by 32 <sup>nds</sup>	200A15
19	USA	High Speed Steel	Black Oxide	118°	Maintenance Set - 1/16, 5/64, 3/32, 1/8, #29, #25, 5/32, #21, 3/16, #7, 7/32, 1/4, F, 5/16, U, 3/8, 27/64, 7/16, 1/2	200A19
20	USA	High Speed Steel	Black Oxide	118°	#61 - #80	200A20
21	USA	High Speed Steel	Black Oxide	118°	1/16" - 3/8" by 64 <sup>ths</sup>	200A21
21	USA	High Speed Steel	Black Oxide	118°	1/16" - 1/4" by 64 <sup>ths</sup> & 9/32" - 1/2" by 32 <sup>nds</sup>	200A21V
26	USA	High Speed Steel	Black Oxide	118°	A - Z	200A26
29	USA	High Speed Steel	Black Oxide	118°	1/16" - 1/2" by 64 <sup>ths</sup>	200A29
29	USA	High Speed Steel	Black Oxide	118°	DRILL PAL 1/16" - 1/2" by 64 <sup>ths</sup>	200AW29
60	USA	High Speed Steel	Black Oxide	118°	#1 - #60	200A60
115	USA	High Speed Steel	Black Oxide	118°	1/16" - 1/2" by 64 <sup>ths</sup> , #1 - 60, A - Z	200A0115
<b>200B/240B/280B Series Jobber Drill Sets</b>						
13	USA	High Speed Steel	Bright	118°	1/16" - 1/4" by 64 <sup>ths</sup>	200B13
15	USA	High Speed Steel	Bright	118°	1/16" - 1/2" by 32 <sup>nds</sup>	200B15
19	USA	High Speed Steel	Bright	118°	Maintenance Set - 1/16, 5/64, 3/32, 1/8, #29, #25, 5/32, #21, 3/16, #7, 7/32, 1/4, F, 5/16, U, 3/8, 27/64, 7/16, 1/2	200B19
21	USA	High Speed Steel	Bright	118°	1/16" - 3/8" by 64 <sup>ths</sup>	200B21
21	USA	High Speed Steel	Bright	118°	1/16" - 1/4" by 64 <sup>ths</sup> & 9/32" - 1/2" by 32 <sup>nds</sup>	200B21V
26	USA	High Speed Steel	Bright	118°	A - Z	200B26
29	USA	High Speed Steel	Bright	118°	1/16" - 1/2" by 64 <sup>ths</sup>	200B29
60	USA	High Speed Steel	Bright	118°	#1 - #60	200B60
115	USA	High Speed Steel	Bright	118°	1/16" - 1/2" by 64 <sup>ths</sup> , #1 - 60, A - Z	200B0115



# HEAVY-DUTY JOBBER LENGTH DRILLS SETS



400HD21

No. of Pieces	Made in	Material	Coating/Finish	Point Angle	Description	Order No.
<b>400/440/480 &amp; 400E Series Heavy-Duty Jobber Drill Sets</b>						
13	USA	High Speed Steel	Black Oxide	135°	1/16" - 1/4" by 64 <sup>ths</sup>	400HD13
15	USA	High Speed Steel	Black Oxide	135°	1/16" - 1/2" by 32 <sup>nds</sup>	400HD15
19	USA	High Speed Steel	Black Oxide	135°	Maintenance Set - 1/16, 5/64, 3/32, 1/8, #29, #25, 5/32, #21, 3/16, #7, 7/32, 1/4, F, 5/16, U, 3/8, 27/64, 7/16, 1/2	400A19
21	USA	High Speed Steel	Black Oxide	135°	1/16" - 3/8" by 64 <sup>ths</sup>	400HD21
21	USA	High Speed Steel	Black Oxide	135°	1/16" - 1/4" by 64 <sup>ths</sup> & 9/32" - 1/2" by 32 <sup>nds</sup>	400HD21V
26	USA	High Speed Steel	Black Oxide	135°	A - Z	400HD26
29	USA	High Speed Steel	Black Oxide	135°	1/16" - 1/2" by 64 <sup>ths</sup>	400HD29
29	USA	High Speed Steel	Black Oxide	135°	DRILL PAL 1/16" - 1/2" by 64 <sup>ths</sup>	400AW29
60	USA	High Speed Steel	Black Oxide	135°	#1 - #60	400HD60
115	USA	High Speed Steel	Black Oxide	135°	1/16" - 1/2" by 64 <sup>ths</sup> , #1 - 60, A - Z	400HD0115
13		High Speed Steel	Black & Gold	135°	1/16" - 1/4" by 64 <sup>ths</sup>	400HDE13
15		High Speed Steel	Black & Gold	135°	1/16" - 1/2" by 32 <sup>nds</sup>	400HDE15
21		High Speed Steel	Black & Gold	135°	1/16" - 3/8" by 64 <sup>ths</sup>	400HDE21
21		High Speed Steel	Black & Gold	135°	1/16" - 1/4" by 64 <sup>ths</sup> & 9/32" - 1/2" by 32 <sup>nds</sup>	400HDE21V
29		High Speed Steel	Black & Gold	135°	1/16" - 1/2" by 64 <sup>ths</sup>	400HDE29
29		High Speed Steel	Black & Gold	135°	DRILL PAL 1/16" - 1/2" by 64 <sup>ths</sup>	400EW29

# HEAVY-DUTY JOBBER LENGTH DRILLS SETS

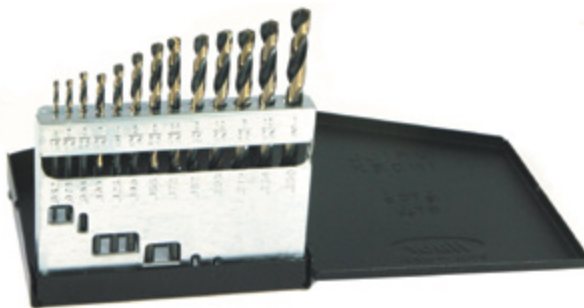


500AW29



500

No. of Pieces	Made in	Material	Coating/Finish	Point Angle	Description	Order No.
<b>500/540/580 &amp; 500E/580E Series Cobalt Heavy-Duty Jobber Drill Sets</b>						
13	USA	Cobalt	Bronze	135°	1/16" - 1/4" by 64 <sup>ths</sup>	500A13
15	USA	Cobalt	Bronze	135°	1/16" - 1/2" by 32 <sup>nds</sup>	500A15
21	USA	Cobalt	Bronze	135°	1/16" - 3/8" by 64 <sup>ths</sup>	500A21
21	USA	Cobalt	Bronze	135°	1/16" - 1/4" by 64 <sup>ths</sup> & 9/32" - 1/2" by 32 <sup>nds</sup>	500A21V
26	USA	Cobalt	Bronze	135°	A - Z	500A26
29	USA	Cobalt	Bronze	135°	1/16" - 1/2" by 64 <sup>ths</sup>	500A29
29	USA	Cobalt	Bronze	135°	DRILL PAL 1/16" - 1/2" by 64 <sup>ths</sup>	500AW29
60	USA	Cobalt	Bronze	135°	#1 - #60	500A60
115	USA	Cobalt	Bronze	135°	1/16" - 1/2" by 64 <sup>ths</sup> , #1 - 60, A - Z	500A0115
13		Cobalt	Bronze	135°	1/16" - 1/4" by 64 <sup>ths</sup>	500E13
15		Cobalt	Bronze	135°	1/16" - 1/2" by 32 <sup>nds</sup>	500E15
21		Cobalt	Bronze	135°	1/16" - 3/8" by 64 <sup>ths</sup>	500E21
21		Cobalt	Bronze	135°	1/16" - 1/4" by 64 <sup>ths</sup> & 9/32" - 1/2" by 32 <sup>nds</sup>	500E21V
29		Cobalt	Bronze	135°	1/16" - 1/2" by 64 <sup>ths</sup>	500E29
60		Cobalt	Bronze	135°	#1 - #60	500E60



800A13



200LH29

No. of Pieces	Made in	Material	Coating/Finish	Point Angle	Description	Order No.
<b>800 Series Metric Jobber Drill Sets</b>						
13		High Speed Steel	Black & Gold	135°	1mm - 7mm by 0.5mm	800A13
19		High Speed Steel	Black & Gold	135°	1mm - 10mm by 0.5mm	800A19
25		High Speed Steel	Black & Gold	135°	1mm - 13mm by 0.5mm	800A25
<b>200LH Series Left Hand Jobber Drill Sets</b>						
13	USA	High Speed Steel	Bright	118°	1/16" - 1/4" by 64 <sup>ths</sup>	200LH13
15	USA	High Speed Steel	Bright	118°	1/16" - 1/2" by 32 <sup>nds</sup>	200LH15
21	USA	High Speed Steel	Bright	118°	1/16" - 3/8" by 64 <sup>ths</sup>	200LH21
21	USA	High Speed Steel	Bright	118°	1/16" - 1/4" by 64 <sup>ths</sup> & 9/32" - 1/2" by 32 <sup>nds</sup>	200LH21V
29	USA	High Speed Steel	Bright	118°	1/16" - 1/2" by 64 <sup>ths</sup>	200LH29

# HEAVY-DUTY JOBBER LENGTH DRILLS SETS

Jobber, Fractional (Metal Index)		
13 Piece, 1/16"– 1/4" by 64 <sup>ths</sup>		Order No.
T19	General Purpose, Bright Finish	090519
T19B	General Purpose, Black Oxide	099814
T19D	Heavy-Duty, Black Oxide	099815
T19C	Cobalt, Bronze Oxide	099823
T19HDC	ThunderBit <sup>®</sup> , Cobalt	099813
T19HDG	ThunderBit <sup>®</sup> , TiN Coated	093713
T19HD	ThunderBit <sup>®</sup> , Black & Bronze Oxide	099858
T19HD+	ThunderBit+ <sup>®</sup> , Black & Bronze Oxide	099501



Jobber, Fractional (Metal Index)		
15 Piece, 1/16"– 1/2" by 32 <sup>nds</sup>		Order No.
T18	General Purpose, Bright Finish	090518
T18B	General Purpose, Black Oxide	099808
T18D	Heavy-Duty, Black Oxide	099809
T18C	Cobalt, Bronze Oxide	099826
T18HDC	ThunderBit <sup>®</sup> , Cobalt	099816
T18HDG	ThunderBit <sup>®</sup> , TiN Coated	093716
T18HD	ThunderBit <sup>®</sup> , Black & Bronze Oxide	099857
T18HD+	ThunderBit+ <sup>®</sup> , Black & Bronze Oxide	099502



Jobber, Fractional (Metal Index)		
21 Piece, 1/16"– 3/8" by 64 <sup>ths</sup>		Order No.
T180	General Purpose, Bright Finish	090580
T180B	General Purpose, Black Oxide	099835
T180D	Heavy-Duty, Black Oxide	099836
T180C	Cobalt, Bronze Oxide	099825
T180HDC	ThunderBit <sup>®</sup> , Cobalt	099819
T180HDG	ThunderBit <sup>®</sup> , TiN Coated	093719
T180HD	ThunderBit <sup>®</sup> , Black & Bronze Oxide	099861
T180HD+	ThunderBit+ <sup>®</sup> , Black & Bronze Oxide	099503



Jobber, Fractional (Metal Index)		
29 Piece, 1/16"– 1/2" by 64 <sup>ths</sup>		Order No.
T17	General Purpose, Bright Finish	090517
T17L	General Purpose, L.H., Bright Finish	011199
T17B	Heavy-Duty, Black Oxide	099802
T17D	Heavy-Duty, Black Oxide	099803
T17C	Cobalt, Bronze Oxide	099822
T17HDC	ThunderBit <sup>®</sup> , Cobalt	099821
T17HDG	ThunderBit <sup>®</sup> , TiN Coated	093700
T17HD	ThunderBit <sup>®</sup> , Black & Bronze Oxide	099856
T17HD+	ThunderBit+ <sup>®</sup> , Black & Bronze Oxide	099505
T17HDCDC	CLIP-ON INDEX - ThunderBit <sup>®</sup> , Cobalt	099854
T17HDG	CLIP-ON INDEX - ThunderBit <sup>®</sup> , TiN Coated	093754
T17HDDC	CLIP-ON INDEX - ThunderBit <sup>®</sup> , Black & Bronze Oxide	099855
T17HDDC+	CLIP-ON INDEX - ThunderBit+ <sup>®</sup> , Black & Bronze Oxide	099504



# HEAVY-DUTY JOBBER LENGTH DRILLS SETS

### Jobber, Wire (Metal Index)

T22	60 Piece, HSS, General Purpose, Bright Finish, #1- #60	090522
T22B	60 Piece, HSS, General Purpose, Black Oxide, #1- #60	099820
T22HD	60 Piece, ThunderBit®, Black & Bronze Oxide, #1- #60	099859
T22HD+	60 Piece, ThunderBit+®, Black & Bronze Oxide, #1- #60	099506
T23	20 Piece, HSS, General Purpose, Bright Finish, #61- #80	090523



### Jobber, Letter (Metal Index)

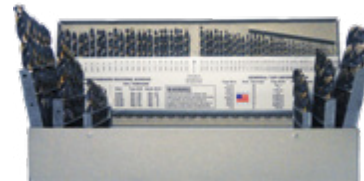
26 Piece, A-Z	Order No.	
T25B	General Purpose, Black Oxide	099827
T25HD	ThunderBit®, Black & Bronze Oxide	099860
T25HD	ThunderBit®, Black & Bronze Oxide	099507

### Jobber (Metal Index)

Metric	Order No.	
MM19HD, 1mm-10mm x .5	ThunderBit®, Black & Bronze Oxide	099866
MM25HD, 1mm-13mm x .5	ThunderBit®, Black & Bronze Oxide	099867

### Jobber, Combination Sizes (Metal Index)

115 Piece, 1/16 - 1/2 by 64 <sup>ths</sup> , #1- #60, A-Z	Order No.	
T123	General Purpose, Bright Finish	090560
T123B	General Purpose, Black Oxide	099832
T123D	Heavy-Duty, Black Oxide	090561
T123C	Cobalt, Bronze Oxide	099831
T123HD	ThunderBit®, Black & Bronze Oxide	099862
T123HD+	ThunderBit+®, Black & Bronze Oxide	099508



### Jobber, Miscellaneous

Select-A-Drill Case	Order No.	
SAD13	13 Piece, General Purpose, Bright Finish, 1/16 - 1/4 by 64 <sup>ths</sup>	090490
SAD13HD	13 Piece, ThunderBit®, Black & Bronze Oxide, 1/16 - 1/4 by 64 <sup>ths</sup>	090495
SAD21	21 Piece, General Purpose, Bright Finish, 1/16 - 3/8 by 64 <sup>ths</sup>	090491
SAD21HD	21 Piece, ThunderBit®, Black & Bronze Oxide, 1/16 - 3/8 by 64 <sup>ths</sup>	090496
Metal Index		
T14P	14 Piece, General Purpose, Bright Finish, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, 5/16, 3/8, 7/16, 1/2. Sizes over 1/4" have 1/4" reduced shank.	090614



### Jobber Length, MRO Plus®

T1019D	13 Piece – Fractional, 1/16 - 1/4 by 64 <sup>ths</sup>	090113
T1018D	15 Piece – Fractional, 1/16 - 1/2 by 32 <sup>nds</sup>	090115
T10180D	21 Piece – Fractional, 1/16 - 3/8 by 64 <sup>ths</sup>	090121
T10125D	26 Piece – Letter, A-Z	099828
T1017D	29 Piece – Fractional, 1/16 - 1/2 by 64 <sup>ths</sup>	090190
T1017DC	CLIP-ON INDEX - 29 Piece – Fractional, 1/16 - 1/2 by 64 <sup>ths</sup>	090192
T10123D	115 Piece, Fractional, Wire, Letter, 1/16 - 1/2" by 64 <sup>ths</sup> ; #1-# 60; A-Z	090196



# MECHANIC'S LENGTH DRILLS

NITRO® drills offer superior performance over conventional HSS drills. 135° Split Point reduces "walking" at the drill point and makes these drills ideal for both handheld and CNC Operations.



- ▷ Their heavy-duty construction increases tool life and performance
- ▷ Black & Gold surface treatment for maximum lubricity
- ▷ Usable in a wide range of materials including difficult-to-machine materials such as stainless steel
- ▷ Mechanic's length drill lengths are in between jobber length and screw machine (stub) length
- ▷ 3-flat shank helps to reduce slippage in the drill chuck
- ▷ Available in bulk packaging

## 350N SERIES

### HIGH SPEED STEEL

135° Split Point / 3 Flats  
Fractional / Black & Gold



350N

**NEW**

Size	Flute Length	Overall Length	350N Order No.	Blister Pack Order No.
1/16"	7/8"	1-7/8"	350N104	350N104BP
5/64"	1"	2"	350N105	350N105BP
3/32"	1-1/4"	2-1/4"	350N106	350N106BP
7/64"	1-5/16"	2-3/8"	350N107	350N107BP
1/8"	1-7/16"	2-1/2"	350N108	350N108BP
9/64"	1-9/16"	2-5/8"	350N109	350N109BP
5/32"	1-11/16"	2-3/4"	350N110	350N110BP
11/64"	1-13/16"	2-7/8"	350N111	350N111BP
3/16"	1-7/8"	3"	350N112	350N112BP
13/64"	1-15/16"	3-1/8"	350N113	350N113BP
7/32"	2"	3-1/4"	350N114	350N114BP
15/64"	2-1/16"	3-3/8"	350N115	350N115BP
1/4"	2-3/32"	3-1/2"	350N116	350N116BP
17/64"	2-1/8"	3-5/8"	350N117	350N117BP

**NEW**

Size	Flute Length	Overall Length	350N Order No.	Blister Pack Order No.
9/32"	2-1/4"	3-3/4"	350N118	350N118BP
19/64"	2-3/8"	3-7/8"	350N119	350N119BP
5/16"	2-1/2"	4"	350N120	350N120BP
21/64"	2-9/16"	4-1/16"	350N121	350N121BP
11/32"	2-5/8"	4-1/8"	350N122	350N122BP
23/64"	2-11/16"	4-3/16"	350N123	350N123BP
3/8"	2-11/16"	4-1/4"	350N124	350N124BP
25/64"	2-3/4"	4-5/16"	350N125	350N125BP
13/32"	2-13/16"	4-3/8"	350N126	350N126BP
27/64"	2-7/8"	4-7/16"	350N127	350N127BP
7/16"	2-15/16"	4-1/2"	350N128	350N128BP
29/64"	3"	4-5/8"	350N129	350N129BP
15/32"	3-1/8"	4-3/4"	350N130	350N130BP
31/64"	3-1/4"	4-7/8"	350N131	350N131BP
1/2"	3-3/8"	5"	350N132	350N132BP

No flats on sizes smaller than 3/16"  
1/16" thru 19/64" - 12 per pack.  
5/16" thru 1/2" - 6 per pack.

Blister packs: 1 per package,  
except for 1/16" - 5/32" which are 2 per pack

Sizes	Bulk Quantity
1/16" - 1/8"	504
9/64" - 13/64"	252
7/32" - 5/16"	132
21/64" - 1/2"	72

**NEW**

NOW AVAILABLE  
IN BLISTER PACKS



350N21

Corresponding Sets		
No. of Pcs.	Description	Order No.
<b>350N Series NITRO™ Mechanics Length Drill Sets</b>		
13	1/16" - 1/4" by 64 <sup>ths</sup>	350N13
15	1/16" - 1/2" by 32 <sup>nds</sup>	350N15
21	1/16" - 3/8" by 64 <sup>ths</sup>	350N21
21	1/16" - 1/4" by 64 <sup>ths</sup> & 9/32" - 1/2" by 32 <sup>nds</sup>	350N21V
29	1/16" - 1/2" by 64 <sup>ths</sup>	350N29
29	DRILL PAL 1/16" - 1/2" by 64 <sup>ths</sup>	350NW29

# MECHANIC'S LENGTH DRILLS

Mechanic's length drills are shorter than standard jobber drills. This allows them to be used in tighter spaces and it also improves their overall toughness and reduces chances for breakage. This is ideal for drilling applications in harder metals like stainless steel. These drills are surface-treated for high wear resistance and increased lubricity.

- ▷ Shorter length increases rigidity
- ▷ 135° Split Point reduces "walking" and improves ease of penetration
- ▷ Black & Gold surface treatment for high wear resistance and lubricity

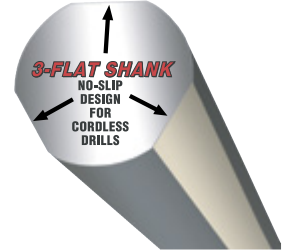


## T1M - BP1M SERIES

### HIGH SPEED STEEL

#### 135° Split Point

#### Black & Bronze Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T1M Packaging: Tube		T1M Packaging: Bulk		BP1M Packaging: Card	
				Order No.	Pkg Qty	Order No.	Pkg Qty	Order No.	Pkg Qty
1/16"	.0625	7/8"	1-7/8"	033304	12	033304.20	144	035304	1
5/64"	.0781	1"	2"	033305	12	033305.20	144	035305	1
3/32"	.0938	1-1/4"	2-1/4"	033306	12	033306.20	144	035306	1
7/64"	.1094	1-5/16"	2-3/8"	033307	12	033307.20	144	035307	1
1/8"	.1250	1-7/16"	2-1/2"	033308	12	033308.20	144	035308	1
9/64"	.1406	1-9/16"	2-5/8"	033309	12	033309.20	144	035309	1
5/32"	.1562	1-11/16"	2-3/4"	033310	12	033310.20	144	035310	1
11/64"	.1719	1-13/16"	2-7/8"	033311	12	033311.20	144	035311	1
<b>3 Flats on Shank</b>									
3/16"	.1875	1-7/8"	3"	033312	12	033312.20	144	035312	1
13/64"	.2031	1-15/16"	3-1/8"	033313	12	033313.20	144	035313	1
7/32"	.2188	2"	3-1/4"	033314	12	033314.20	144	035314	1
15/64"	.2344	2-1/16"	3-3/8"	033315	12	033315.20	144	035315	1
1/4"	.2500	2"	3-1/2"	033316	12	033316.20	144	035316	1
17/64"	.2656	2-1/8"	3-5/8"	033317	12	033317.20	144	035317	1
9/32"	.2812	2-1/4"	3-3/4"	033318	12	033318.20	144	035318	1
19/64"	.2969	2-3/8"	3-7/8"	033319	12	033319.20	144	035319	1
5/16"	.3125	2-1/2"	4"	033320	6	033320.20	144	035320	1
21/64"	.3281	2-9/16"	4-1/16"	033321	6	033321.20	144	035321	1
11/32"	.3438	2-5/8"	4-1/8"	033322	6	033322.20	144	035322	1
23/64"	.3594	2-11/16"	4-3/16"	033323	6	033323.20	144	035323	1
3/8"	.3750	2-11/16"	4-1/4"	033324	6	033324.20	144	035324	1
25/64**	.3906	2-3/4"	4-5/16"	033325	6	033325.20	144	035325	1
13/32**	.4062	2-13/16"	4-3/8"	033326	6	033326.20	144	035326	1
27/64"	.4219	2-7/8"	4-7/16"	033327	6	033327.20	144	035327	1
7/16"	.4375	2-15/16"	4-1/2"	033328	6	033328.20	144	035328	1
29/64"	.4531	3"	4-5/8"	033329	6	033329.20	144	035329	1
15/32"	.4688	3-1/8"	4-3/4"	033330	6	033330.20	144	035330	1
31/64"	.4844	3-1/4"	4-7/8"	033331	6	033331.20	144	035331	1
1/2"	.5000	3-3/8"	5"	033332	6	033332.20	144	035332	1

### Tech tip!

- TriNADO Drills are the perfect no-slip tool for your cordless drilling needs
- The TriNADO Drill series is longer than Screw Machine, but shorter than Jobber Length.
- Available in either Straight or Reduced Shank



Straight Shank



Reduced Shank



\*T1M, BP1M - Drill sizes 25/64" and 13/32" will fit a 3/8" chuck without reducing the shank

Corresponding Sets					Size	Decimal Equivalent	Flute Length	Overall Length	T8M Reduced Shank Packaging: Tube	
Style	Description	Pieces	Size Range	Order No.					Order No.	Pkg Qty
T19M	Metal Index	13 Piece	1/16"-1/4" by 64 <sup>ths</sup>	090547	<b>3 Flats on Shank</b>					
T18M	Metal Index	15 Piece	1/16"-1/2" by 32 <sup>nds</sup>	090551	27/64"	.4219	2-7/8"	4-7/16"	092627	6
T180M	Metal Index	21 Piece	1/16"-3/8" by 64 <sup>ths</sup>	090549	7/16"	.4375	2-15/16"	4-1/2"	092628	6
T17MDC	Clip-On Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	090553	29/64"	.4531	4-5/8"	4-5/8"	092629	6
T17M	Metal Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	090552	15/32"	.4688	3-1/8"	4-3/4"	092630	6
T829M	Metal Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup> (3/8" Reduced Shank)	090550	31/64"	.4844	3-1/4"	4-7/8"	092631	6
					1/2"	.5000	3-3/8"	5"	092632	6

(3/8" Reduced Shank)

## MECHANIC'S LENGTH DRILLS

NITRO® drills offer superior performance over conventional HSS drills. 135° Split Point reduces "walking" at the drill point and makes these drills ideal for both handheld and CNC Operations.

**NITRO**

- ▷ Their heavy-duty construction increases tool life and performance
- ▷ Black & Gold surface treatment for maximum lubricity
- ▷ Usable in a wide range of materials including difficult-to-machine materials such as stainless steel
- ▷ Mechanic's length drill lengths are in between jobber length and screw machine (stub) length
- ▷ 3-flat shank helps to reduce slippage in the drill chuck
- ▷ Available in bulk packaging

### 1045N SERIES

#### HIGH SPEED STEEL

Mechanics Length / 135° Split Point / 3/8" Reduced Shank  
Fractional / Black & Gold



1045N

Size	Flute Length	Overall Length	1045N Order No.
25/64"	2-3/4"	4-5/16"	1045N125
13/32"	2-13/16"	4-3/8"	1045N126
27/64"	2-7/8"	4-7/16"	1045N127
7/16"	2-15/16"	4-1/2"	1045N128

Size	Flute Length	Overall Length	1045N Order No.
29/64"	3"	4-5/8"	1045N129
15/32"	3-1/8"	4-3/4"	1045N130
31/64"	3-1/4"	4-7/8"	1045N131
1/2"	3-3/8"	5"	1045N132

6 per pack

Corresponding Sets		
No. of Pcs.	Description	Order No.
<b>1045N Series Reduced Shank Drill Sets</b>		
15	1/16" - 1/2" by 32 <sup>nds</sup>	1045N15
29	1/16" - 1/2" by 64 <sup>ths</sup>	1045N29



1045N15

# SCREW MACHINE LENGTH DRILLS



Screw Machine Drills (NAS Type C) are designed for use in machines and portable drilling in sheet metal.

**300A SERIES**  
**HIGH SPEED STEEL**  
 135° Split Point / Straight Shank  
 Fractional / Black Oxide



300A

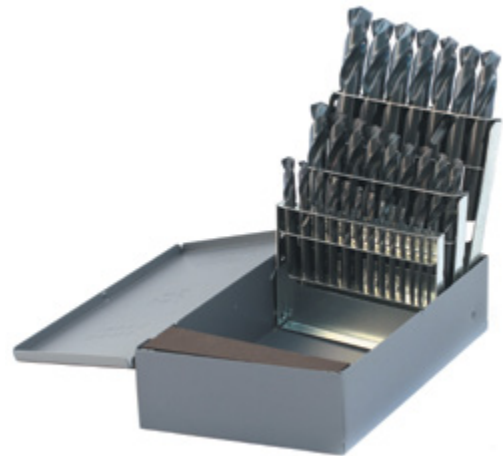
Size	Flute Length	Overall Length	300 Order No.
1/16"	5/8"	1-5/8"	300A104
5/64"	11/16"	1-11/16"	300A105
3/32"	3/4"	1-3/4"	300A106
7/64"	13/16"	1-13/16"	300A107
1/8"	7/8"	1-7/8"	300A108
9/64"	15/16"	1-15/16"	300A109
5/32"	1"	2-1/16"	300A110
11/64"	1-1/16"	2-1/8"	300A111
3/16"	1-1/8"	2-3/16"	300A112
13/64"	1-3/16"	2-1/4"	300A113
7/32"	1-1/4"	2-3/8"	300A114
15/64"	1-5/16"	2-7/16"	300A115
1/4"	1-3/8"	2-1/2"	300A116
17/64"	1-7/16"	2-5/8"	300A117
9/32"	1-1/2"	2-11/16"	300A118

Size	Flute Length	Overall Length	300 Order No.
19/64"	1-9/16"	2-3/4"	300A119
5/16"	1-5/8"	2-13/16"	300A120
21/64"	1-11/16"	2-15/16"	300A121
11/32"	1-11/16"	3"	300A122
23/64"	1-3/4"	3-1/16"	300A123
3/8"	1-13/16"	3-1/8"	300A124
25/64"	1-7/8"	3-1/4"	300A125
13/32"	1-15/16"	3-5/16"	300A126
27/64"	2"	3-3/8"	300A127
7/16"	2-1/16"	3-7/16"	300A128
29/64"	2-1/8"	3-9/16"	300A129
15/32"	2-1/8"	3-5/8"	300A130
31/64"	2-3/16"	3-11/16"	300A131
1/2"	2-1/4"	3-3/4"	300A132

1/16" thru 19/64" - 12 per pack.  
 5/16" thru 1/2" - 6 per pack.

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & 0 - Z	72

Corresponding Sets		
No. of Pcs.	Description	Order No.
29	300 Series Screw Machine (Stub) Length Drill Sets 1/16" - 1/2" by 64 <sup>ths</sup>	300A29



300A29



# SCREW MACHINE LENGTH DRILLS

## 300A SERIES

### HIGH SPEED STEEL

135° Split Point / Straight Shank

Letter / Black Oxide



300A

Size	Flute Length	Overall Length	300A Order No.
A	1-5/16"	2-7/16"	300A501
B	1-3/8"	2-1/2"	300A502
C	1-3/8"	2-1/2"	300A503
D	1-3/8"	2-1/2"	300A504
E	1-3/8"	2-1/2"	300A505
F	1-7/16"	2-5/8"	300A506
G	1-7/16"	2-5/8"	300A507
H	1-1/2"	2-11/16"	300A508
I	1-1/2"	2-11/16"	300A509
J	1-1/2"	2-11/16"	300A510
K	1-1/2"	2-11/16"	300A511
L	1-9/16"	2-3/4"	300A512
M	1-9/16"	2-3/4"	300A513

Size	Flute Length	Overall Length	300A Order No.
N	1-5/8"	2-13/16"	300A514
O	1-11/16"	2-15/16"	300A515
P	1-11/16"	2-15/16"	300A516
Q	1-11/16"	3"	300A517
R	1-11/16"	3"	300A518
S	1-3/4"	3-1/16"	300A519
T	1-3/4"	3-1/16"	300A520
U	1-13/16"	3-1/8"	300A521
V	1-7/8"	3-1/4"	300A522
W	1-7/8"	3-1/4"	300A523
X	1-15/16"	3-5/16"	300A524
Y	1-15/16"	3-5/16"	300A525
Z	2"	3-3/8"	300A526

A - Z - 12 per pack

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & 0 - Z	72

# SCREW MACHINE LENGTH DRILLS

## 300A SERIES

### HIGH SPEED STEEL

135° Split Point / Straight Shank  
Number / Black Oxide



300A



Size	Flute Length	Overall Length	300 Order No.
1	1-5/16"	2-7/16"	300A001
2	1-5/16"	2-7/16"	300A002
3	1-1/4"	2-3/8"	300A003
4	1-1/4"	2-3/8"	300A004
5	1-1/4"	2-3/8"	300A005
6	1-1/4"	2-3/8"	300A006
7	1-3/16"	2-1/4"	300A007
8	1-3/16"	2-1/4"	300A008
9	1-3/16"	2-1/4"	300A009
10	1-3/16"	2-1/4"	300A010
11	1-3/16"	2-1/4"	300A011
12	1-3/16"	2-1/4"	300A012
13	1-1/8"	2-3/16"	300A013
14	1-1/8"	2-3/16"	300A014
15	1-1/8"	2-3/16"	300A015
16	1-1/8"	2-3/16"	300A016
17	1-1/8"	2-3/16"	300A017
18	1-1/16"	2-1/8"	300A018
19	1-1/16"	2-1/8"	300A019
20	1-1/16"	2-1/8"	300A020
21	1-1/16"	2-1/8"	300A021
22	1-1/16"	2-1/8"	300A022
23	1"	2-1/16"	300A023
24	1"	2-1/16"	300A024
25	1"	2-1/16"	300A025
26	1"	2-1/16"	300A026
27	1"	2-1/16"	300A027
28	15/16"	1-15/16"	300A028
29	15/16"	1-15/16"	300A029
30	15/16"	1-15/16"	300A030

Size	Flute Length	Overall Length	300 Order No.
31	7/8"	1-7/8"	300A031
32	7/8"	1-7/8"	300A032
33	7/8"	1-7/8"	300A033
34	7/8"	1-7/8"	300A034
35	7/8"	1-7/8"	300A035
36	13/16"	1-13/16"	300A036
37	13/16"	1-13/16"	300A037
38	13/16"	1-13/16"	300A038
39	13/16"	1-13/16"	300A039
40	13/16"	1-13/16"	300A040
41	13/16"	1-13/16"	300A041
42	3/4"	1-3/4"	300A042
43	3/4"	1-3/4"	300A043
44	3/4"	1-3/4"	300A044
45	3/4"	1-3/4"	300A045
46	3/4"	1-3/4"	300A046
47	11/16"	1-11/16"	300A047
48	11/16"	1-11/16"	300A048
49	11/16"	1-11/16"	300A049
50	11/16"	1-11/16"	300A050
51	11/16"	1-11/16"	300A051
52	11/16"	1-11/16"	300A052
53*	5/8"	1-5/8"	300A053
54*	5/8"	1-5/8"	300A054
55*	5/8"	1-5/8"	300A055
56*	1/2"	1-3/8"	300A056
57*	1/2"	1-3/8"	300A057
58*	1/2"	1-3/8"	300A058
59*	1/2"	1-3/8"	300A059
60*	1/2"	1-3/8"	300A060

\* Not Split Point

#1 thru #60 - 12 per pack

## 300E SERIES

### HIGH SPEED STEEL

135° Split Point / Straight Shank  
Fractional / Black Oxide



300E

Size	Flute Length	Overall Length	300E Order No.
1/16"	5/8"	1-5/8"	300E104
5/64"	11/16"	1-11/16"	300E105
3/32"	3/4"	1-3/4"	300E106
7/64"	13/16"	1-13/16"	300E107
1/8"	7/8"	1-7/8"	300E108
9/64"	15/16"	1-15/16"	300E109
5/32"	1"	2-1/16"	300E110
11/64"	1-1/16"	2-1/8"	300E111
3/16"	1-1/8"	2-3/16"	300E112
13/64"	1-3/16"	2-1/4"	300E113
7/32"	1-1/4"	2-3/8"	300E114
15/64"	1-5/16"	2-7/16"	300E115
1/4"	1-3/8"	2-1/2"	300E116
17/64"	1-7/16"	2-5/8"	300E117
9/32"	1-1/2"	2-11/16"	300E118

Size	Flute Length	Overall Length	300E Order No.
19/64"	1-9/16"	2-3/4"	300E119
5/16"	1-5/8"	2-13/16"	300E120
21/64"	1-11/16"	2-15/16"	300E121
11/32"	1-11/16"	3"	300E122
23/64"	1-3/4"	3-1/16"	300E123
3/8"	1-13/16"	3-1/8"	300E124
25/64"	1-7/8"	3-1/4"	300E125
13/32"	1-15/16"	3-5/16"	300E126
27/64"	2"	3-3/8"	300E127
7/16"	2-1/16"	3-7/16"	300E128
29/64"	2-1/8"	3-9/16"	300E129
15/32"	2-1/8"	3-5/8"	300E130
31/64"	2-3/16"	3-11/16"	300E131
1/2"	2-1/4"	3-3/4"	300E132

1/16" thru 19/64" - 12 per pack.  
5/16" thru 1/2" - 6 per pack.

# SCREW MACHINE LENGTH DRILLS

Screw machine drills (NAS Type C) are shorter than jobbers length drills and are designed for use in drill presses and CNC applications. They can also be used in portable drills when drilling sheet metal.

- ▷ Shorter length increases rigidity
- ▷ Improved drilling in hard metal like stainless
- ▷ 135° Split Point reduces walking and improves ease of penetration
- ▷ NAS Type C

## T4 - T5 SERIES HIGH SPEED STEEL 135° Split Point Black Oxide



Fractional				T4 Packaging: Tube	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
3/64"	.0469	1/2"	1-3/8"	044403	12
1/16"	.0625	5/8"	1-5/8"	044404	12
5/64"	.0781	11/16"	1-11/16"	044405	12
3/32"	.0938	3/4"	1-3/4"	044406	12
7/64"	.1094	13/16"	1-13/16"	044407	12
1/8"	.1250	7/8"	1-7/8"	044408	12
9/64"	.1406	15/16"	1-15/16"	044409	12
5/32"	.1562	1"	2-1/16"	044410	12
11/64"	.1719	1-1/16"	2-1/8"	044411	12
3/16"	.1875	1-1/8"	2-3/16"	044412	12
13/64"	.2031	1-3/16"	2-1/4"	044413	12
7/32"	.2188	1-1/4"	2-3/8"	044414	12
15/64"	.2344	1-5/16"	2-7/16"	044415	12
1/4"	.2500	1-3/8"	2-1/2"	044416	12
17/64"	.2656	1-7/16"	2-5/8"	044417	12
9/32"	.2812	1-1/2"	2-11/16"	044418	12
19/64"	.2969	1-9/16"	2-3/4"	044419	12
5/16"	.3125	1-5/8"	2-13/16"	044420	6
21/64"	.3281	1-11/16"	2-15/16"	044421	6
11/32"	.3438	1-11/16"	3"	044422	6
23/64"	.3594	1-3/4"	3-1/16"	044423	6
3/8"	.3750	1-13/16"	3-1/8"	044424	6
25/64"	.3906	1-7/8"	3-1/4"	044425	6
13/32"	.4062	1-15/16"	3-5/16"	044426	6
27/64"	.4219	2"	3-3/8"	044427	6
7/16"	.4375	2-1/16"	3-7/16"	044428	6
29/64"	.4531	2-1/8"	3-9/16"	044429	6
15/32"	.4688	2-1/8"	3-5/8"	044430	6
31/64"	.4844	2-3/16"	3-11/16"	044431	6
1/2"	.5000	2-1/4"	3-3/4"	044432	6

				T4 Packaging: Bulk	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
1/8"	.1250	7/8"	1-7/8"	044408.20	144
9/64"	.1406	15/16"	1-15/16"	044409.20	144
5/32"	.1562	1"	2-1/16"	044410.20	144
3/16"	.1875	1-1/8"	2-3/16"	044412.20	144
13/64"	.2031	1-3/16"	2-1/4"	044413.20	144

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T29	Metal Index	29 Piece	1/16"-1/2" by 64ths	090569

Number				T5 Packaging: Tube	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
1	.2280	1-5/16"	2-7/16"	044501	12
2	.2210	1-5/16"	2-7/16"	044502	12
3	.2130	1-1/4"	2-3/8"	044503	12
4	.2090	1-1/4"	2-3/8"	044504	12
5	.2055	1-1/4"	2-3/8"	044505	12
6	.2040	1-1/4"	2-3/8"	044506	12
7	.2010	1-3/16"	2-1/4"	044507	12
8	.1990	1-3/16"	2-1/4"	044508	12
9	.1960	1-3/16"	2-1/4"	044509	12
10	.1935	1-3/16"	2-1/4"	044510	12
11	.1910	1-3/16"	2-1/4"	044511	12
12	.1890	1-3/16"	2-1/4"	044512	12
13	.1850	1-1/8"	2-3/16"	044513	12
14	.1820	1-1/8"	2-3/16"	044514	12
15	.1800	1-1/8"	2-3/16"	044515	12
16	.1770	1-1/8"	2-3/16"	044516	12
17	.1730	1-1/8"	2-3/16"	044517	12
18	.1695	1-1/16"	2-1/8"	044518	12
19	.1660	1-1/16"	2-1/8"	044519	12
20	.1610	1-1/16"	2-1/8"	044520	12
21	.1590	1-1/16"	2-1/8"	044521	12
22	.1570	1-1/16"	2-1/8"	044522	12
23	.1540	1"	2-1/16"	044523	12
24	.1520	1"	2-1/16"	044524	12
25	.1495	1"	2-1/16"	044525	12
26	.1470	1"	2-1/16"	044526	12
27	.1440	1"	2-1/16"	044527	12
28	.1405	15/16"	1-15/16"	044528	12
29	.1360	15/16"	1-15/16"	044529	12
30	.1285	15/16"	1-15/16"	044530	12
31	.1200	7/8"	1-7/8"	044531	12
32	.1160	7/8"	1-7/8"	044532	12
33	.1130	7/8"	1-7/8"	044533	12
34	.1110	7/8"	1-7/8"	044534	12
35	.1100	7/8"	1-7/8"	044535	12
36	.1065	13/16"	1-13/16"	044536	12
37	.1040	13/16"	1-13/16"	044537	12
38	.1015	13/16"	1-13/16"	044538	12
39	.0995	13/16"	1-13/16"	044539	12
40	.0980	13/16"	1-13/16"	044540	12
41	.0960	13/16"	1-13/16"	044541	12
42	.0935	3/4"	1-3/4"	044542	12
43	.0890	3/4"	1-3/4"	044543	12
44	.0860	3/4"	1-3/4"	044544	12
45	.0820	3/4"	1-3/4"	044545	12
46	.0810	3/4"	1-3/4"	044546	12
47	.0785	11/16"	1-11/16"	044547	12
48	.0760	11/16"	1-11/16"	044548	12
49	.0730	11/16"	1-11/16"	044549	12
50	.0700	11/16"	1-11/16"	044550	12
51	.0670	11/16"	1-11/16"	044551	12
52	.0635	11/16"	1-11/16"	044552	12
53*	.0595	5/8"	1-5/8"	044553	12
54*	.0550	5/8"	1-5/8"	044554	12
55*	.0520	5/8"	1-5/8"	044555	12
56*	.0465	1/2"	1-3/8"	044556	12
57*	.0430	1/2"	1-3/8"	044557	12
58*	.0420	1/2"	1-3/8"	044558	12
59*	.0410	1/2"	1-3/8"	044559	12
60*	.0400	1/2"	1-3/8"	044560	12

\* Not Split Point

				T5 Packaging: Bulk	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
60	.0400	1/2"	1-3/8"	044560.20	72

# SCREW MACHINE LENGTH DRILLS

NITRO™ drills (NAS Type C) offer superior performance over conventional HSS drills. 135° Split Point reduces "walking" at the drill point and makes these drills ideal for both handheld and CNC Operations. Black & Gold surface treatment for maximum lubricity. Usable in a wide range of materials including difficult-to-machine materials such as stainless steel.



## 300N SERIES

### HIGH SPEED STEEL

135° Split Point / Straight Shank  
 Fractional / Black & Gold



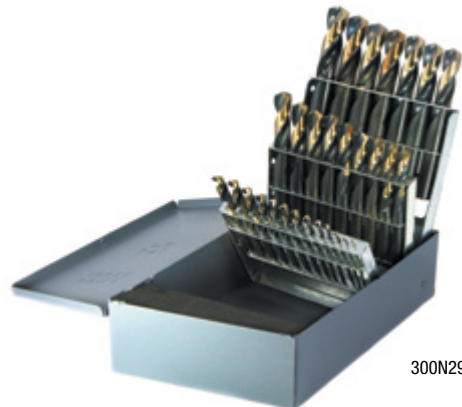
300N

Size	Flute Length	Overall Length	300N Order No.
1/16"	5/8"	1-5/8"	300N104
5/64"	11/16"	1-11/16"	300N105
3/32"	3/4"	1-3/4"	300N106
7/64"	13/16"	1-13/16"	300N107
1/8"	7/8"	1-7/8"	300N108
9/64"	15/16"	1-15/16"	300N109
5/32"	1"	2-1/16"	300N110
11/64"	1-1/16"	2-1/8"	300N111
3/16"	1-1/8"	2-3/16"	300N112
13/64"	1-3/16"	2-1/4"	300N113
7/32"	1-1/4"	2-3/8"	300N114
15/64"	1-5/16"	2-7/16"	300N115
1/4"	1-3/8"	2-1/2"	300N116
17/64"	1-7/16"	2-5/8"	300N117
9/32"	1-1/2"	2-11/16"	300N118

Size	Flute Length	Overall Length	300N Order No.
19/64"	1-9/16"	2-3/4"	300N119
5/16"	1-5/8"	2-13/16"	300N120
21/64"	1-11/16"	2-15/16"	300N121
11/32"	1-11/16"	3"	300N122
23/64"	1-3/4"	3-1/16"	300N123
3/8"	1-13/16"	3-1/8"	300N124
25/64"	1-7/8"	3-1/4"	300N125
13/32"	1-15/16"	3-5/16"	300N126
27/64"	2"	3-3/8"	300N127
7/16"	2-1/16"	3-7/16"	300N128
29/64"	2-1/8"	3-9/16"	300N129
15/32"	2-1/8"	3-5/8"	300N130
31/64"	2-3/16"	3-11/16"	300N131
1/2"	2-1/4"	3-3/4"	300N132

1/16" thru 19/64" - 12 per pack., 5/16" thru 1/2" - 6 per pack.

Corresponding Sets		
No. of Pcs.	Description	Order No.
300N Series Screw Machine (Stub) Length Heavy-Duty Drill Sets		
29	1/16" - 1/2" by 64ths	300N29



300N29



# SCREW MACHINE LENGTH DRILLS

These drill bits (NAS Type C) have short flutes as well as a short overall length for maximum rigidity when drilling in sheet metal. They are made with a cobalt blend to provide a long service life in hard materials such as stainless steel.



- ▷ Shorter length increases rigidity
- ▷ Improved drilling in hard metal like stainless
- ▷ 135° Split Point reduces walking and improves ease of penetration
- ▷ NAS Type C

## T4HD SERIES HIGH SPEED STEEL 135° Split Point Black & Gold



Fractional				T4HD Packaging: Tube	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
1/16"	.0625	5/8"	1-5/8"	060404	12
5/64"	.0781	11/16"	1-11/16"	060405	12
3/32"	.0938	3/4"	1-3/4"	060406	12
7/64"	.1094	13/16"	1-13/16"	060407	12
1/8"	.1250	7/8"	1-7/8"	060408	12
9/64"	.1406	15/16"	1-15/16"	060409	12
5/32"	.1562	1"	2-1/16"	060410	12
11/64"	.1719	1-1/16"	2-1/8"	060411	12
3/16"	.1875	1-1/8"	2-3/16"	060412	12
13/64"	.2031	1-3/16"	2-1/4"	060413	12
7/32"	.2188	1-1/4"	2-3/8"	060414	12
15/64"	.2344	1-5/16"	2-7/16"	060415	12
1/4"	.2500	1-3/8"	2-1/2"	060416	12
17/64"	.2656	1-7/16"	2-5/8"	060417	12
9/32"	.2812	1-1/2"	2-11/16"	060418	12
19/64"	.2969	1-9/16"	2-3/4"	060419	12
5/16"	.3125	1-5/8"	2-13/16"	060420	6
21/64"	.3281	1-11/16"	2-15/16"	060421	6
11/32"	.3438	1-11/16"	3"	060422	6
23/64"	.3594	1-3/4"	3-1/16"	060423	6
3/8"	.3750	1-13/16"	3-1/8"	060424	6
25/64"	.3906	1-7/8"	3-1/4"	060425	6
13/32"	.4062	1-15/16"	3-5/16"	060426	6
27/64"	.4219	2"	3-3/8"	060427	6
7/16"	.4375	2-1/16"	3-7/16"	060428	6
29/64"	.4531	2-1/8"	3-9/16"	060429	6
15/32"	.4688	2-1/8"	3-5/8"	060430	6
31/64"	.4844	2-3/16"	3-11/16"	060431	6
1/2"	.5000	2-1/4"	3-3/4"	060432	6

				T4HD Packaging: Bulk	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
1/8"	.1250	7/8"	1-7/8"	060408.20	288
5/32"	.1562	1"	2-1/16"	060410.20	288
3/16"	.1875	1-1/8"	2-3/16"	060412.20	288
7/32"	.2188	1-1/4"	2-3/8"	060414.20	288
1/4"	.2500	1-3/8"	2-1/2"	060416.20	288
9/32"	.2812	1-1/2"	2-11/16"	060418.20	72
5/16"	.3125	1-5/8"	2-13/16"	060420.20	72

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T29HD	Metal Index	29 Piece	1/16"-1/2" by 64 <sup>ths</sup>	090568

# SCREW MACHINE LENGTH DRILLS

These drill bits have short flutes as well as a short overall length for maximum rigidity when drilling in sheet metal. They are made with a cobalt blend to provide a long service life in hard materials such as stainless steel.

## 300C SERIES

### COBALT

135° Split Point / Straight Shank  
 Fractional / Bronze



300C

Size	Flute Length	Overall Length	300C Order No.
1/16"	5/8"	1-5/8"	300C104
5/64"	11/16"	1-11/16"	300C105
3/32"	3/4"	1-3/4"	300C106
7/64"	13/16"	1-13/16"	300C107
1/8"	7/8"	1-7/8"	300C108
9/64"	15/16"	1-15/16"	300C109
5/32"	1"	2-1/16"	300C110
11/64"	1-1/16"	2-1/8"	300C111
3/16"	1-1/8"	2-3/16"	300C112
13/64"	1-3/16"	2-1/4"	300C113
7/32"	1-1/4"	2-3/8"	300C114
15/64"	1-5/16"	2-7/16"	300C115
1/4"	1-3/8"	2-1/2"	300C116
17/64"	1-7/16"	2-5/8"	300C117
9/32"	1-1/2"	2-11/16"	300C118
19/64"	1-9/16"	2-3/4"	300C119
5/16"	1-5/8"	2-13/16"	300C120
21/64"	1-11/16"	2-15/16"	300C121
11/32"	1-11/16"	3"	300C122
23/64"	1-3/4"	3-1/16"	300C123
3/8"	1-13/16"	3-1/8"	300C124
25/64"	1-7/8"	3-1/4"	300C125
13/32"	1-15/16"	3-5/16"	300C126
27/64"	2"	3-3/8"	300C127
7/16"	2-1/16"	3-7/16"	300C128
29/64"	2-1/8"	3-9/16"	300C129
15/32"	2-1/8"	3-5/8"	300C130
31/64"	2-3/16"	3-11/16"	300C131
1/2"	2-1/4"	3-3/4"	300C132

1/16" thru 19/64" - 12 per pack, 5/16" thru 1/2" - 6 per pack



300C29

## 300C SERIES

### COBALT

135° Split Point / Straight Shank  
 Number / Bronze



300C

Size	Flute Length	Overall Length	300C Order No.
1	1-5/16"	2-7/16"	300C001
2	1-5/16"	2-7/16"	300C002
3	1-1/4"	2-3/8"	300C003
4	1-1/4"	2-3/8"	300C004
5	1-1/4"	2-3/8"	300C005
6	1-1/4"	2-3/8"	300C006
7	1-3/16"	2-1/4"	300C007
8	1-3/16"	2-1/4"	300C008
9	1-3/16"	2-1/4"	300C009
10	1-3/16"	2-1/4"	300C010
11	1-3/16"	2-1/4"	300C011
12	1-3/16"	2-1/4"	300C012
13	1-1/8"	2-3/16"	300C013
14	1-1/8"	2-3/16"	300C014
15	1-1/8"	2-3/16"	300C015
16	1-1/8"	2-3/16"	300C016
17	1-1/8"	2-3/16"	300C017
18	1-1/16"	2-1/8"	300C018
19	1-1/16"	2-1/8"	300C019
20	1-1/16"	2-1/8"	300C020
21	1-1/16"	2-1/8"	300C021
22	1-1/16"	2-1/8"	300C022
23	1"	2-1/16"	300C023
24	1"	2-1/16"	300C024
25	1"	2-1/16"	300C025
26	1"	2-1/16"	300C026
27	1"	2-1/16"	300C027
28	15/16"	1-15/16"	300C028
29	15/16"	1-15/16"	300C029
30	15/16"	1-15/16"	300C030
31	7/8"	1-7/8"	300C031
32	7/8"	1-7/8"	300C032
33	7/8"	1-7/8"	300C033
34	7/8"	1-7/8"	300C034
35	7/8"	1-7/8"	300C035
36	13/16"	1-13/16"	300C036
37	13/16"	1-13/16"	300C037
38	13/16"	1-13/16"	300C038
39	13/16"	1-13/16"	300C039
40	13/16"	1-13/16"	300C040

#1 thru #40 - 12 per pack

Corresponding Sets		
No. of Pcs.	Description	Order No.
300C Series Cobalt Screw Machine (Stub) Length Drill Sets		
29	1/16" - 1/2" by 64 <sup>ths</sup>	300C29

## SCREW MACHINE LENGTH DRILLS

These drill bits have short flutes as well as a short overall length for maximum rigidity when drilling in sheet metal. They are made with a cobalt blend to provide a long service life in hard materials such as stainless steel.

- ▷ Shorter length increases rigidity
- ▷ Improved drilling in hard sheet metal like stainless
- ▷ 135° Split Point reduces walking and improves ease of penetration

### T4C SERIES

#### COBALT

135° Split Point  
Bronze Oxide



Fractional				T4C Packaging: Tube	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
1/16"	.0625	5/8"	1-5/8"	046604	12
5/64"	.0781	11/16"	1-11/16"	046605	12
3/32"	.0938	3/4"	1-3/4"	046606	12
7/64"	.1094	13/16"	1-13/16"	046607	12
1/8"	.1250	7/8"	1-7/8"	046608	12
9/64"	.1406	15/16"	1-15/16"	046609	12
5/32"	.1562	1"	2-1/16"	046610	12
11/64"	.1719	1-1/16"	2-1/8"	046611	12
3/16"	.1875	1-1/8"	2-3/16"	046612	12
13/64"	.2031	1-3/16"	2-1/4"	046613	12
7/32"	.2188	1-1/4"	2-3/8"	046614	12
15/64"	.2344	1-5/16"	2-7/16"	046615	12
1/4"	.2500	1-3/8"	2-1/2"	046616	12
17/64"	.2656	1-7/16"	2-5/8"	046617	12
9/32"	.2812	1-1/2"	2-11/16"	046618	12
19/64"	.2969	1-9/16"	2-3/4"	046619	12
5/16"	.3125	1-5/8"	2-13/16"	046620	6
21/64"	.3281	1-11/16"	2-15/16"	046621	6
11/32"	.3438	1-11/16"	3"	046622	6
23/64"	.3594	1-3/4"	3-1/16"	046623	6
3/8"	.3750	1-13/16"	3-1/8"	046624	6
25/64"	.3906	1-7/8"	3-1/4"	046625	6
13/32"	.4062	1-15/16"	3-5/16"	046626	6
27/64"	.4219	2"	3-3/8"	046627	6
7/16"	.4375	2-1/16"	3-7/16"	046628	6
29/64"	.4531	2-1/8"	3-9/16"	046629	6
15/32"	.4688	2-1/8"	3-5/8"	046630	6
31/64"	.4844	2-3/16"	3-11/16"	046631	6
1/2"	.5000	2-1/4"	3-3/4"	046632	6

## LEFT HAND SCREW MACHINE LENGTH DRILLS

Constructed of M-42 Cobalt High Speed Steel for super abrasive resistance in tough metals. They are used in left hand screw machines and with screw extractors. Can be used to drill out broken bolts and other hardened fasteners. Sizes 3/16" and above have a 3-flat shank which reduces slippage in the drill chuck.

### 300LH SERIES

#### COBALT

135° Split Point / 3-Flat Shank

Fractional / Bronze



300LH

Size	Flute Length	Overall Length	300LH Order No.
1/16"	5/8"	1-5/8"	300LH104
3/32"	3/4"	1-3/4"	300LH106
1/8"	7/8"	1-7/8"	300LH108
5/32"	1"	2-1/16"	300LH110
3/16"	1-1/8"	2-3/16"	300LH112

Size	Flute Length	Overall Length	300LH Order No.
7/32"	1-1/4"	2-3/8"	300LH114
1/4"	1-3/8"	2-1/2"	300LH116
9/32"	1-1/2"	2-11/16"	300LH118
5/16"	1-5/8"	2-13/16"	300LH120
11/32"	1-11/16"	3"	300LH122
3/8"	1-13/16"	3-1/8"	300LH124

1/16" thru 9/32" - 12 per pack, 5/16" thru 3/8" - 6 per pack



Corresponding Sets		
No. of Pcs.	Description	Order No.
300LH Series Cobalt Screw Machine (Stub) Length Drill Sets		
11	1/16" - 3/8" by 32 <sup>nds</sup>	300LH11



# DOUBLE ENDED DRILLS

These drills have flutes and cutting points on both ends. This allows the user to reverse the drill and utilize both ends. For users that want to drill a hole into sheet metal, thin material, for automotive or aerospace purposes, for a rivet hole, or simply to double the life of your current stub length drill bit.

## 330 SERIES

### HIGH SPEED STEEL

#### 135° Split Point

#### Fractional & Number / Black Oxide



330

Size	Flute Length	Overall Length	330 Order No.
#11	1/2"	2-1/4"	330A011
#20	1/2"	2-1/8"	330A020
#30	1/2"	2"	330A030
7/64"	1/2"	1-7/8"	330A107
1/8"	1/2"	2"	330A108

Size	Flute Length	Overall Length	330 Order No.
9/64"	1/2"	2"	330A109
5/32"	1/2"	2-1/16"	330A110
3/16"	1/2"	2-3/16"	330A112
7/32"	1/2"	2-3/8"	330A114
1/4"	1/2"	2-1/2"	330A116

12 per pack

## TSM8 SERIES

### HIGH SPEED STEEL

#### 135° Split Point

#### Fractional & Number / Black Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	TSM8 Packaging: Tube		TSM8 Packaging: Bulk	
				Order No.	Pkg Qty	Order No.	Pkg Qty
#11	.1910	1/2"	2-1/4"	098811	12	098811.20	288
#20	.1610	1/2"	2-1/8"	098820	12	098820.20	288
#30	.1285	1/2"	2"	098830	12	098830.20	288
7/64"	.1094	1/2"	1-7/8"	098807	12	098807.20	288
1/8"	.1250	1/2"	2"	098808	12	098808.20	288
9/64"	.1406	1/2"	2"	098809	12	098809.20	288
5/32"	.1562	1/2"	2-1/16"	098810	12	098810.20	288
3/16"	.1875	1/2"	2-3/16"	098812	12	098812.20	288
7/32"	.2188	1/2"	2-3/8"	098814	12	098814.20	288
1/4"	.2500	1/2"	2-1/2"	098816	12	098816.20	288

# S&D DRILLS



## 1/2" SHANK DRILLS

Expands the size range capacity of a 1/2" portable drill chuck. Common flute and overall length for minimal adjustment during tool changes. Precision ground for a high degree of concentricity between shank and body diameter. Ideal for drilling low and medium tensile strength materials.

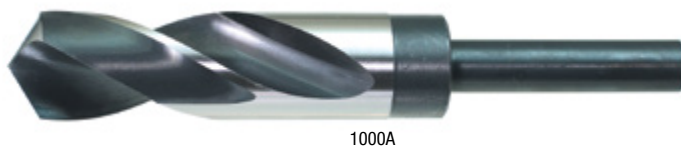
### 1000A / 1000F SERIES

#### HIGH SPEED STEEL

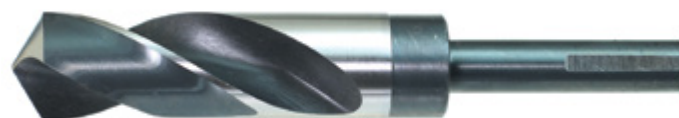
118° / 1/2" Reduced Shank

3-Flats on 1000F

Fractional / Bright & Black



1000A



1000F - 3-Flat Shank

Size	Flute Length	Overall Length	1000A Order No.	1000F Order No.
33/64"	3"	6"	1000A133	1000F133
17/32"	3"	6"	1000A134	1000F134
35/64"	3"	6"	1000A135	1000F135
9/16"	3"	6"	1000A136	1000F136
37/64"	3"	6"	1000A137	1000F137
19/32"	3"	6"	1000A138	1000F138
39/64"	3"	6"	1000A139	1000F139
5/8"	3"	6"	1000A140	1000F140
41/64"	3"	6"	1000A141	1000F141
21/32"	3"	6"	1000A142	1000F142
43/64"	3"	6"	1000A143	1000F143
11/16"	3"	6"	1000A144	1000F144
45/64"	3"	6"	1000A145	1000F145
23/32"	3"	6"	1000A146	1000F146
47/64"	3"	6"	1000A147	1000F147
3/4"	3"	6"	1000A148	1000F148
49/64"	3"	6"	1000A149	1000F149
25/32"	3"	6"	1000A150	1000F150
51/64"	3"	6"	1000A151	1000F151
13/16"	3"	6"	1000A152	1000F152
53/64"	3"	6"	1000A153	1000F153
27/32"	3"	6"	1000A154	1000F154
55/64"	3"	6"	1000A155	1000F155
7/8"	3"	6"	1000A156	1000F156
57/64"	3"	6"	1000A157	1000F157
29/32"	3"	6"	1000A158	1000F158
59/64"	3"	6"	1000A159	1000F159

Size	Flute Length	Overall Length	1000A Order No.	1000F Order No.
15/16"	3"	6"	1000A160	1000F160
61/64"	3"	6"	1000A161	1000F161
31/32"	3"	6"	1000A162	1000F162
63/64"	3"	6"	1000A163	1000F163
1"	3"	6"	1000A164	1000F164
1-1/64"	3"	6"	1000A201	-
1-1/32"	3"	6"	1000A202	1000F202
1-3/64"	3"	6"	1000A203	-
1-1/16"	3"	6"	1000A204	1000F204
1-5/64"	3"	6"	1000A205	-
1-3/32"	3"	6"	1000A206	1000F206
1-7/64"	3"	6"	1000A207	-
1-1/8"	3"	6"	1000A208	1000F208
1-9/64"	3"	6"	1000A209	-
1-5/32"	3"	6"	1000A210	1000F210
1-11/64"	3"	6"	1000A211	-
1-3/16"	3"	6"	1000A212	1000F212
1-13/64"	3"	6"	1000A213	-
1-7/32"	3"	6"	1000A214	1000F214
1-15/64"	3"	6"	1000A215	-
1-1/4"	3"	6"	1000A216	1000F216
1-9/32"	3"	6"	1000A218	-
1-5/16"	3"	6"	1000A220	1000F220
1-3/8"	3"	6"	1000A224	1000F224
1-7/16"	3"	6"	1000A228	1000F228
1-1/2"	3"	6"	1000A232	1000F232

1 per pack

Corresponding Sets		
No. of Pcs.	Description	Order No.
1000A Series 1/2" Shank S&D Drill Sets		
5	9/16" - 1" by 8 <sup>ths</sup>	1000A5
8	9/16" - 1" by 16 <sup>ths</sup>	1000A8
32	STAND 1/2" - 1" by 64 <sup>ths</sup> W/DRILLS	1000A32

Corresponding Sets		
No. of Pcs.	Description	Order No.
1000F Series 1/2" Shank S&D Drill Sets		
5	9/16" - 1" by 8 <sup>ths</sup>	1000F5
8	9/16" - 1" by 16 <sup>ths</sup>	1000F8
32	STAND 1/2" - 1" by 64 <sup>ths</sup> W/DRILLS	1000F32



1000A8

# S&D 1/2" SHANK DRILLS

## 1000E SERIES

### HIGH SPEED STEEL

118° Split Point / 3 Flats, Reduced Shank  
Fractional / Bright & Black



1000E

Size	Flute Length	Overall Length	1000E Order No.
33/64"	3"	6"	1000E133
17/32"	3"	6"	1000E134
35/64"	3"	6"	1000E135
9/16"	3"	6"	1000E136
37/64"	3"	6"	1000E137
19/32"	3"	6"	1000E138
39/64"	3"	6"	1000E139
5/8"	3"	6"	1000E140
41/64"	3"	6"	1000E141
21/32"	3"	6"	1000E142
43/64"	3"	6"	1000E143
11/16"	3"	6"	1000E144
45/64"	3"	6"	1000E145
23/32"	3"	6"	1000E146
47/64"	3"	6"	1000E147
3/4"	3"	6"	1000E148
49/64"	3"	6"	1000E149
25/32"	3"	6"	1000E150
51/64"	3"	6"	1000E151
13/16"	3"	6"	1000E152
53/64"	3"	6"	1000E153
27/32"	3"	6"	1000E154
55/64"	3"	6"	1000E155
7/8"	3"	6"	1000E156
57/64"	3"	6"	1000E157
29/32"	3"	6"	1000E158
59/64"	3"	6"	1000E159
15/16"	3"	6"	1000E160
61/64"	3"	6"	1000E161
31/32"	3"	6"	1000E162
63/64"	3"	6"	1000E163
1"	3"	6"	1000E164

Size	Flute Length	Overall Length	1000E Order No.
1-1/64"	3"	6"	1000E201
1-1/32"	3"	6"	1000E202
1-3/64"	3"	6"	1000E203
1-1/16"	3"	6"	1000E204
1-5/64"	3"	6"	1000E205
1-3/32"	3"	6"	1000E206
1-7/64"	3"	6"	1000E207
1-1/8"	3"	6"	1000E208
1-9/64"	3"	6"	1000E209
1-5/32"	3"	6"	1000E210
1-11/64"	3"	6"	1000E211
1-3/16"	3"	6"	1000E212
1-13/64"	3"	6"	1000E213
1-7/32"	3"	6"	1000E214
1-15/64"	3"	6"	1000E215
1-1/4"	3"	6"	1000E216
1-17/64"	3"	6"	1000E217
1-9/32"	3"	6"	1000E218
1-19/64"	3"	6"	1000E219
1-5/16"	3"	6"	1000E220
1-21/64"	3"	6"	1000E221
1-11/32"	3"	6"	1000E222
1-23/64"	3"	6"	1000E223
1-3/8"	3"	6"	1000E224
1-25/64"	3"	6"	1000E225
1-13/32"	3"	6"	1000E226
1-27/64"	3"	6"	1000E227
1-7/16"	3"	6"	1000E228
1-29/64"	3"	6"	1000E229
1-15/32"	3"	6"	1000E230
1-31/64"	3"	6"	1000E231
1-1/2"	3"	6"	1000E232

Corresponding Sets		
No. of Pcs.	Description	Order No.
1000E Series 1/2" Shank S&D Drill Sets		
5	9/16" - 1" by 8 <sup>ths</sup>	1000E5
8	9/16" - 1" by 16 <sup>ths</sup>	1000E8
32	STAND 1/2" - 1" by 64 <sup>ths</sup> W/DRILLS	1000E32



1000E8

## S&D 1/2" SHANK DRILLS

Nitro® drills offer superior performance over conventional HSS drills. 118° Split Point reduces walking at the drill point and makes these drills ideal for both hand held and CNC Operations.

- ▷ Their heavy-duty construction increases tool life and performance
- ▷ Black & Gold surface treatment for maximum lubricity
- ▷ Usable in a wide range of materials including difficult to machine materials such as stainless steel
- ▷ S&D drills expand the size range capacity of a 1/2" portable drill chuck
- ▷ All sizes are individually packaged



### 1000N SERIES

#### HIGH SPEED STEEL

118° Split Point / 1/2" Reduced Shank / 3-Flat Shank  
Fractional / Black Oxide



1000N

Size	Flute Length	Overall Length	1000N Order No.
33/64"	3"	6"	1000N133
17/32"	3"	6"	1000N134
35/64"	3"	6"	1000N135
9/16"	3"	6"	1000N136
37/64"	3"	6"	1000N137
19/32"	3"	6"	1000N138
39/64"	3"	6"	1000N139
5/8"	3"	6"	1000N140
41/64"	3"	6"	1000N141
21/32"	3"	6"	1000N142
43/64"	3"	6"	1000N143
11/16"	3"	6"	1000N144
45/64"	3"	6"	1000N145
23/32"	3"	6"	1000N146
47/64"	3"	6"	1000N147
3/4"	3"	6"	1000N148

Size	Flute Length	Overall Length	1000N Order No.
49/64"	3"	6"	1000N149
25/32"	3"	6"	1000N150
51/64"	3"	6"	1000N151
13/16"	3"	6"	1000N152
53/64"	3"	6"	1000N153
27/32"	3"	6"	1000N154
55/64"	3"	6"	1000N155
7/8"	3"	6"	1000N156
57/64"	3"	6"	1000N157
29/32"	3"	6"	1000N158
59/64"	3"	6"	1000N159
15/16"	3"	6"	1000N160
61/64"	3"	6"	1000N161
31/32"	3"	6"	1000N162
63/64"	3"	6"	1000N163
1"	3"	6"	1000N164

Corresponding Sets		
No. of Pcs.	Description	Order No.
1000N Series 1/2" Shank S&D Drill Sets		
5	9/16" - 1" by 8 <sup>ths</sup>	1000N5
8	9/16" - 1" by 16 <sup>ths</sup>	1000N8
32	STAND 1/2" - 1" by 64 <sup>ths</sup> W/DRILLS	1000N32



1000N32



## S&D 1/2" SHANK DRILLS

General purpose flute design. All sizes have a 1/2" by 2-1/4" long shank. The maximum overall length is 6" and the flute length is 3". This makes them short drills in the larger sizes and thus well suited to use in portable electric drills equipped with 1/2" chucks. They are highly effective in tough, high tensile strength materials. The 135° split point reduces thrust and eliminates "walking" at the drill point.

▷ All sizes are individually packaged

### 1000EF SERIES

#### HIGH SPEED STEEL

135° Split Point / 3 Flats, Reduced Shank  
Fractional / Black & Gold



1000EF

Size	Flute Length	Overall Length	1000EF Order No.
33/64"	3"	6"	1000EF133
17/32"	3"	6"	1000EF134
35/64"	3"	6"	1000EF135
9/16"	3"	6"	1000EF136
37/64"	3"	6"	1000EF137
19/32"	3"	6"	1000EF138
39/64"	3"	6"	1000EF139
5/8"	3"	6"	1000EF140
41/64"	3"	6"	1000EF141
21/32"	3"	6"	1000EF142
43/64"	3"	6"	1000EF143
11/16"	3"	6"	1000EF144
45/64"	3"	6"	1000EF145
23/32"	3"	6"	1000EF146
47/64"	3"	6"	1000EF147
3/4"	3"	6"	1000EF148
49/64"	3"	6"	1000EF149
25/32"	3"	6"	1000EF150
51/64"	3"	6"	1000EF151
13/16"	3"	6"	1000EF152
53/64"	3"	6"	1000EF153
27/32"	3"	6"	1000EF154
55/64"	3"	6"	1000EF155
7/8"	3"	6"	1000EF156

Size	Flute Length	Overall Length	1000EF Order No.
57/64"	3"	6"	1000EF157
29/32"	3"	6"	1000EF158
59/64"	3"	6"	1000EF159
15/16"	3"	6"	1000EF160
61/64"	3"	6"	1000EF161
31/32"	3"	6"	1000EF162
63/64"	3"	6"	1000EF163
1"	3"	6"	1000EF164
1-1/32"	3"	6"	1000EF202
1-1/16"	3"	6"	1000EF204
1-3/32"	3"	6"	1000EF206
1-1/8"	3"	6"	1000EF208
1-5/32"	3"	6"	1000EF210
1-3/16"	3"	6"	1000EF212
1-7/32"	3"	6"	1000EF214
1-1/4"	3"	6"	1000EF216
1-9/32"	3"	6"	1000EF218
1-5/16"	3"	6"	1000EF220
1-11/32"	3"	6"	1000EF222
1-3/8"	3"	6"	1000EF224
1-13/32"	3"	6"	1000EF226
1-7/16"	3"	6"	1000EF228
1-15/32"	3"	6"	1000EF230
1-1/2"	3"	6"	1000EF232

Corresponding Sets		
No. of Pcs.	Description	Order No.
1000EF Series 1/2" Shank S&D Drill Sets		
5	9/16" - 1" by 8 <sup>ths</sup>	1000EF5
8	9/16" - 1" by 16 <sup>ths</sup>	1000EF8
32	STAND 1/2" - 1" by 64 <sup>ths</sup> W/DRILLS	1000EF32



1000EF8

# S&D REDUCED SHANK DRILLS

HSS S&D drills expand the size range capacity of a 1/2" drill chuck. By including a split-point and a 3-flat option, this style of drill is ideal for handheld drilling operations. The split-point reduces "walking" and the 3 flats keep the tool from rotating in the chuck.

- ▷ 1/2" reduced shank with 3 flats is ideal for handheld power tools
- ▷ Incorporating a reduced shank increases drilling diameter range
- ▷ Split-Point eliminates "walking" at the drill point

## T9FHD SERIES

### HIGH SPEED STEEL

118° Split Point / 3 Flats on Shank  
Black & Bronze Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T9FHD Packaging: Tube	
				Order No.	Pkg Qty
33/64"	.5156	3"	6"	094133	1
17/32"	.5312	3"	6"	094134	1
35/64"	.5469	3"	6"	094135	1
9/16"	.5625	3"	6"	094136	1
37/64"	.5781	3"	6"	094137	1
19/32"	.5938	3"	6"	094138	1
39/64"	.6094	3"	6"	094139	1
5/8"	.6250	3"	6"	094140	1
41/64"	.6406	3"	6"	094141	1
21/32"	.6562	3"	6"	094142	1
43/64"	.6719	3"	6"	094143	1
11/16"	.6875	3"	6"	094144	1
45/64"	.7031	3"	6"	094145	1
23/32"	.7188	3"	6"	094146	1
47/64"	.7344	3"	6"	094147	1
3/4"	.7500	3"	6"	094148	1
49/64"	.7656	3"	6"	094149	1
25/32"	.7812	3"	6"	094150	1
51/64"	.7969	3"	6"	094151	1
13/16"	.8125	3"	6"	094152	1
53/64"	.8281	3"	6"	094153	1
27/32"	.8438	3"	6"	094154	1
55/64"	.8594	3"	6"	094155	1
7/8"	.8750	3"	6"	094156	1
57/64"	.8906	3"	6"	094157	1
29/32"	.9062	3"	6"	094158	1
59/64"	.9219	3"	6"	094159	1
15/16"	.9375	3"	6"	094160	1
61/64"	.9531	3"	6"	094161	1
31/32"	.9688	3"	6"	094162	1
63/64"	.9844	3"	6"	094163	1
1"	1.0000	3"	6"	094164	1

## T9F SERIES

### HIGH SPEED STEEL

118° Point / 3 Flats, Reduced Shank  
Black & Bright Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T9F Packaging: Tube	
				Order No.	Pkg Qty
33/64"	.5156	3"	6"	092833	1
17/32"	.5312	3"	6"	092834	1
35/64"	.5469	3"	6"	092835	1
9/16"	.5625	3"	6"	092836	1
37/64"	.5781	3"	6"	092837	1
19/32"	.5938	3"	6"	092838	1
39/64"	.6094	3"	6"	092839	1
5/8"	.6250	3"	6"	092840	1
41/64"	.6406	3"	6"	092841	1
21/32"	.6562	3"	6"	092842	1
43/64"	.6719	3"	6"	092843	1
11/16"	.6875	3"	6"	092844	1
45/64"	.7031	3"	6"	092845	1
23/32"	.7188	3"	6"	092846	1
47/64"	.7344	3"	6"	092847	1
3/4"	.7500	3"	6"	092848	1
49/64"	.7656	3"	6"	092849	1
25/32"	.7812	3"	6"	092850	1
51/64"	.7969	3"	6"	092851	1
13/16"	.8125	3"	6"	092852	1
53/64"	.8281	3"	6"	092853	1
27/32"	.8438	3"	6"	092854	1
55/64"	.8594	3"	6"	092855	1
7/8"	.8750	3"	6"	092856	1
57/64"	.8906	3"	6"	092857	1
29/32"	.9062	3"	6"	092858	1
59/64"	.9219	3"	6"	092859	1
15/16"	.9375	3"	6"	092860	1
61/64"	.9531	3"	6"	092861	1
31/32"	.9688	3"	6"	092862	1
63/64"	.9844	3"	6"	092863	1
1"	1.0000	3"	6"	092864	1
1-1/32"	1.0312	3"	6"	092866	1
1-1/16"	1.0625	3"	6"	092868	1
1-3/32"	1.0938	3"	6"	092870	1
1-1/8"	1.1250	3"	6"	092872	1
1-5/32"	1.1562	3"	6"	092874	1
1-3/16"	1.1875	3"	6"	092876	1
1-7/32"	1.2188	3"	6"	092878	1
1-1/4"	1.2500	3"	6"	092880	1
1-5/16"	1.3125	3"	6"	092884	1
1-3/8"	1.3750	3"	6"	092888	1
1-7/16"	1.4375	3"	6"	092892	1
1-1/2"	1.5000	3"	6"	092896	1

### Corresponding Sets

Style	Description	Pieces	Size Range	Order No.
T98F	Molded Case	8 Piece	9/16"-1" by 16 <sup>ths</sup>	090596
T98FHD	Molded Case	8 Piece	9/16"-1" by 16 <sup>ths</sup>	090595
T933FHD	Metal Stand	32 Piece	1/2"-1" by 64 <sup>ths</sup>	090593

# S&D REDUCED SHANK DRILLS

## T9 SERIES

### HIGH SPEED STEEL

118° Point / Reduced Shank

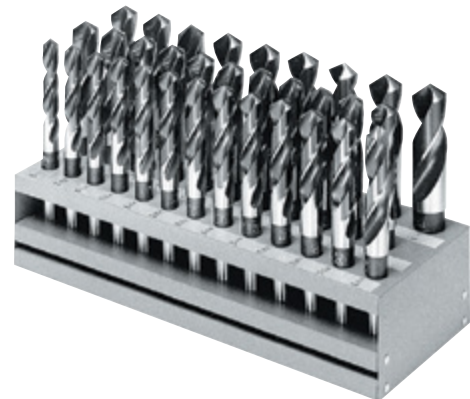
Black & Bright Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T9 Packaging: Tube		T9 Packaging: Bulk	
				Order No.	Pkg Qty	Order No.	Pkg Qty
33/64"	.5156	3"	6"	091733	1	091733.20	25
17/32"	.5312	3"	6"	091734	1	091734.20	25
35/64"	.5469	3"	6"	091735	1	091735.20	25
9/16"	.5625	3"	6"	091736	1	091736.20	25
37/64"	.5781	3"	6"	091737	1	091737.20	25
19/32"	.5938	3"	6"	091738	1	091738.20	25
39/64"	.6094	3"	6"	091739	1	091739.20	25
5/8"	.6250	3"	6"	091740	1	091740.20	25
41/64"	.6406	3"	6"	091741	1	091741.20	25
21/32"	.6562	3"	6"	091742	1	091742.20	25
43/64"	.6719	3"	6"	091743	1	091743.20	25
11/16"	.6875	3"	6"	091744	1	091744.20	25
45/64"	.7031	3"	6"	091745	1	091745.20	25
23/32"	.7188	3"	6"	091746	1	091746.20	25
47/64"	.7344	3"	6"	091747	1	091747.20	25
3/4"	.7500	3"	6"	091748	1	091748.20	25
49/64"	.7656	3"	6"	091749	1	091749.20	25
25/32"	.7812	3"	6"	091750	1	091750.20	25
51/64"	.7969	3"	6"	091751	1	091751.20	25
13/16"	.8125	3"	6"	091752	1	091752.20	25
53/64"	.8281	3"	6"	091753	1	091753.20	25
27/32"	.8438	3"	6"	091754	1	091754.20	25
55/64"	.8594	3"	6"	091755	1	091755.20	25
7/8"	.8750	3"	6"	091756	1	091756.20	25
57/64"	.8906	3"	6"	091757	1	091757.20	25
29/32"	.9062	3"	6"	091758	1	091758.20	25
59/64"	.9219	3"	6"	091759	1	091759.20	25
15/16"	.9375	3"	6"	091760	1	091760.20	25
61/64"	.9531	3"	6"	091761	1	091761.20	25
31/32"	.9688	3"	6"	091762	1	091762.20	25
63/64"	.9844	3"	6"	091763	1	091763.20	25
1"	1.0000	3"	6"	091764	1	091764.20	25
1-1/64"	1.0156	3"	6"	091765	1	091765.20	25
1-1/32"	1.0312	3"	6"	091766	1	091766.20	25
1-3/64"	1.0469	3"	6"	091767	1	091767.20	25
1-1/16"	1.0625	3"	6"	091768	1	091768.20	25
1-3/32"	1.0938	3"	6"	091770	1	091770.20	25
1-1/8"	1.1250	3"	6"	091772	1	091772.20	25
1-5/32"	1.1562	3"	6"	091774	1	091774.20	25
1-3/16"	1.1875	3"	6"	091776	1	091776.20	25
1-7/32"	1.2188	3"	6"	091778	1	091778.20	25
1-1/4"	1.2500	3"	6"	091780	1	091780.20	25
1-9/32"	1.2812	3"	6"	091782	1	091782.20	25
1-5/16"	1.3125	3"	6"	091784	1	091784.20	25
1-3/8"	1.3750	3"	6"	091788	1	091788.20	25
1-7/16"	1.4375	3"	6"	091792	1	091792.20	25
1-1/2"	1.5000	3"	6"	091796	1	091796.20	25



T98FHD



T933

#### Corresponding Sets

Style	Description	Pieces	Size Range	Order No.
T98	Molded Case	8 Piece	9/16"-1" by 16 <sup>ths</sup>	090598
T933	Metal Stand	32 Piece	1/2"-1" by 64 <sup>ths</sup>	090599

## S&D REDUCED SHANK DRILLS

S&D drills expand the size range capacity of a 1/2" drill chuck. By including a split-point and a 3-flat option, this style of drill is ideal for handheld drilling operations. The split-point reduces "walking" and the 3 flats keep the tool from rotating in the chuck.

- ▷ 1/2" reduced shank is ideal for handheld power tools
- ▷ Incorporating a reduced shank increases drilling diameter range
- ▷ Split-Point eliminates "walking" at the drill point
- ▷ Cobalt drills offer speeds and feeds of up to 30% faster than HSS drills
- ▷ All sizes are individually packaged

### 1000C SERIES

#### COBALT

118° Split Point / Reduced Shank  
 Fractional / Black & Gold



1000C

Size	Flute Length	Overall Length	1000C Order No.
33/64"	3"	6"	1000C133
17/32"	3"	6"	1000C134
35/64"	3"	6"	1000C135
9/16"	3"	6"	1000C136
37/64"	3"	6"	1000C137
19/32"	3"	6"	1000C138
39/64"	3"	6"	1000C139
5/8"	3"	6"	1000C140
41/64"	3"	6"	1000C141
21/32"	3"	6"	1000C142
43/64"	3"	6"	1000C143
11/16"	3"	6"	1000C144
45/64"	3"	6"	1000C145
23/32"	3"	6"	1000C146
47/64"	3"	6"	1000C147
3/4"	3"	6"	1000C148

Size	Flute Length	Overall Length	1000C Order No.
49/64"	3"	6"	1000C149
25/32"	3"	6"	1000C150
51/64"	3"	6"	1000C151
13/16"	3"	6"	1000C152
53/64"	3"	6"	1000C153
27/32"	3"	6"	1000C154
55/64"	3"	6"	1000C155
7/8"	3"	6"	1000C156
57/64"	3"	6"	1000C157
29/32"	3"	6"	1000C158
59/64"	3"	6"	1000C159
15/16"	3"	6"	1000C160
61/64"	3"	6"	1000C161
31/32"	3"	6"	1000C162
63/64"	3"	6"	1000C163
1"	3"	6"	1000C164

Corresponding Sets		
No. of Pcs.	Description	Order No.
1000C Series 1/2" Shank S&D Drill Sets		
5	9/16" - 1" by 8 <sup>ths</sup>	1000C5
8	9/16" - 1" by 16 <sup>ths</sup>	1000C8
32	STAND 1/2" - 1" by 64 <sup>ths</sup> W/DRILLS	1000C32



1000C8



# S&D REDUCED SHANK DRILLS

## T9C SERIES

### COBALT

118° Split Point / Reduced Shank  
Black & Gold Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T9FHD Packaging: Tube	
				Order No.	Pkg Qty
33/64"	.5156	3"	6"	092033	1
17/32"	.5312	3"	6"	092034	1
35/64"	.5469	3"	6"	092035	1
9/16"	.5625	3"	6"	092036	1
37/64"	.5781	3"	6"	092037	1
19/32"	.5938	3"	6"	092038	1
39/64"	.6094	3"	6"	092039	1
5/8"	.6250	3"	6"	092040	1
41/64"	.6406	3"	6"	092041	1
21/32"	.6562	3"	6"	092042	1
43/64"	.6719	3"	6"	092043	1
11/16"	.6875	3"	6"	092044	1
45/64"	.7031	3"	6"	092045	1
23/32"	.7188	3"	6"	092046	1
47/64"	.7344	3"	6"	092047	1
3/4"	.7500	3"	6"	092048	1
49/64"	.7656	3"	6"	092049	1
25/32"	.7812	3"	6"	092050	1
51/64"	.7969	3"	6"	092051	1
13/16"	.8125	3"	6"	092052	1
53/64"	.8281	3"	6"	092053	1
27/32"	.8438	3"	6"	092054	1
55/64"	.8594	3"	6"	092055	1
7/8"	.8750	3"	6"	092056	1
57/64"	.8906	3"	6"	092057	1
29/32"	.9062	3"	6"	092058	1
59/64"	.9219	3"	6"	092059	1
15/16"	.9375	3"	6"	092060	1
61/64"	.9531	3"	6"	092061	1
31/32"	.9688	3"	6"	092062	1
63/64"	.9844	3"	6"	092063	1
1"	1.0000	3"	6"	092064	1



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Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T98C	Molded Case	8 Piece	9/16"-1" by 16 <sup>ths</sup>	090909



## REDUCED SHANK S&D DRILL

Expands the size range capacity of a 1/2" portable drill chuck. Common flute and overall length for minimal adjustment during tool changes. Precision ground for high degree of concentricity between shank and body diameter. Ideal for drilling in tough, high tensile strength materials. The 135° split point reduces thrust and eliminates walking at the drill point.

▷ All sizes are individually packaged

### 1000EC SERIES

#### COBALT

135° Split Point / Reduced Shank  
Fractional / Bronze



1000EC

Size	Flute Length	Overall Length	1000EC Order No.
33/64"	3"	6"	1000EC133
17/32"	3"	6"	1000EC134
35/64"	3"	6"	1000EC135
9/16"	3"	6"	1000EC136
37/64"	3"	6"	1000EC137
19/32"	3"	6"	1000EC138
39/64"	3"	6"	1000EC139
5/8"	3"	6"	1000EC140
41/64"	3"	6"	1000EC141
21/32"	3"	6"	1000EC142
43/64"	3"	6"	1000EC143
11/16"	3"	6"	1000EC144
45/64"	3"	6"	1000EC145
23/32"	3"	6"	1000EC146
47/64"	3"	6"	1000EC147
3/4"	3"	6"	1000EC148
49/64"	3"	6"	1000EC149
25/32"	3"	6"	1000EC150
51/64"	3"	6"	1000EC151
13/16"	3"	6"	1000EC152
53/64"	3"	6"	1000EC153
27/32"	3"	6"	1000EC154
55/64"	3"	6"	1000EC155
7/8"	3"	6"	1000EC156

Size	Flute Length	Overall Length	1000EC Order No.
57/64"	3"	6"	1000EC157
29/32"	3"	6"	1000EC158
59/64"	3"	6"	1000EC159
15/16"	3"	6"	1000EC160
61/64"	3"	6"	1000EC161
31/32"	3"	6"	1000EC162
63/64"	3"	6"	1000EC163
1"	3"	6"	1000EC164
1-1/32"	3"	6"	1000EC202
1-1/16"	3"	6"	1000EC204
1-3/32"	3"	6"	1000EC206
1-1/8"	3"	6"	1000EC208
1-5/32"	3"	6"	1000EC210
1-3/16"	3"	6"	1000EC212
1-7/32"	3"	6"	1000EC214
1-1/4"	3"	6"	1000EC216
1-9/32"	3"	6"	1000EC218
1-5/16"	3"	6"	1000EC220
1-11/32"	3"	6"	1000EC222
1-3/8"	3"	6"	1000EC224
1-13/32"	3"	6"	1000EC226
1-7/16"	3"	6"	1000EC228
1-15/32"	3"	6"	1000EC230
1-1/2"	3"	6"	1000EC232

Corresponding Sets		
No. of Pcs.	Description	Order No.
1000EC Series 1/2" Shank S&D Drill Sets		
5	9/16" - 1" by 8 <sup>ths</sup>	1000EC5
8	9/16" - 1" by 16 <sup>ths</sup>	1000EC8
32	STAND 1/2" - 1" by 64 <sup>ths</sup> W/DRILLS	1000EC32



1000EC5

## 1/2" & 3/8" REDUCED SHANK DRILLS SETS



1000A8



1000N32

No. of Pieces	Brand	Material	Coating/Finish	Point Angle	Description	Order No.
<b>1000EC Series 1/2" Shank S&amp;D Drill Sets</b>						
5	–	Cobalt	Bronze	135°	9/16" - 1" by 8 <sup>ths</sup>	1000EC5
8	–	Cobalt	Bronze	135°	9/16" - 1" by 16 <sup>ths</sup>	1000EC8
32	–	Cobalt	Bronze	135°	STAND 1/2" - 1" by 64 <sup>ths</sup> W/DRILLS	1000CE32
<b>1000EF Series 1/2" Shank S&amp;D Drill Sets</b>						
5	–	High Speed Steel	Black & Gold	135°	9/16" - 1" by 8 <sup>ths</sup>	1000EF5
8	–	High Speed Steel	Black & Gold	135°	9/16" - 1" by 16 <sup>ths</sup>	1000EF8
32	–	High Speed Steel	Black & Gold	135°	STAND 1/2" - 1" by 64 <sup>ths</sup> W/DRILLS	1000EF32
<b>1000E Series 1/2" Shank S&amp;D Drill Sets</b>						
5	–	High Speed Steel	Bright & Black	118°	9/16" - 1" by 8 <sup>ths</sup>	1000E5
8	–	High Speed Steel	Bright & Black	118°	9/16" - 1" by 16 <sup>ths</sup>	1000E8
32	–	High Speed Steel	Bright & Black	118°	STAND 1/2" - 1" by 64 <sup>ths</sup> W/DRILLS	1000E32
<b>1035N &amp; 1045N Series 3/8" Reduced Shank Drill Sets</b>						
15	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" by 32 <sup>nds</sup>	1035N15
29	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" by 64 <sup>ths</sup>	1035N29
15	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" by 32 <sup>nds</sup>	1045N15
29	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" by 64 <sup>ths</sup>	1045N29

No. of Pieces	Brand	Material	Coating/Finish	Point Angle	Description	Order No.
<b>1000N Series 1/2" Shank S&amp;D Drill Sets</b>						
5	Nitro®	High Speed Steel	Black & Gold	118°	9/16" - 1" by 8 <sup>ths</sup>	1000N5
8	Nitro®	High Speed Steel	Black & Gold	118°	9/16" - 1" by 16 <sup>ths</sup>	1000N8
32	Nitro®	High Speed Steel	Black & Gold	118°	STAND 1/2" - 1" by 64 <sup>ths</sup> W/DRILLS	1000N32
<b>1000 Series 1/2" Shank S&amp;D Drill Sets</b>						
5	USA	High Speed Steel	Bright & Black	118°	9/16" - 1" by 8 <sup>ths</sup>	1000A5
8	USA	High Speed Steel	Bright & Black	118°	9/16" - 1" by 16 <sup>ths</sup>	1000A8
32	USA	High Speed Steel	Bright & Black	118°	STAND 1/2" - 1" by 64 <sup>ths</sup> W/DRILLS	1000A32
<b>1000C Series 1/2" Shank S&amp;D Drill Sets</b>						
5	USA	Cobalt	Black & Gold	118°	9/16" - 1" by 8 <sup>ths</sup>	1000C5
8	USA	Cobalt	Black & Gold	118°	9/16" - 1" by 16 <sup>ths</sup>	1000C8
32	USA	Cobalt	Black & Gold	118°	STAND 1/2" - 1" by 64 <sup>ths</sup> W/DRILLS	1000C32
<b>1000F Series 1/2" Shank S&amp;D Drill Set</b>						
5	USA	High Speed Steel	Bright & Black	118°	9/16" - 1" by 8 <sup>ths</sup>	1000F5
8	USA	High Speed Steel	Bright & Black	118°	9/16" - 1" by 16 <sup>ths</sup>	1000F8
32	USA	High Speed Steel	Bright & Black	118°	STAND 1/2" - 1" by 64 <sup>ths</sup> W/DRILLS	1000F32

# TAPER LENGTH DRILLS

Straight shank taper length drills are standard for general purpose work in relatively deep holes. Shanks are the same diameter as the drill body.

▷ All sizes are individually packaged

## 900 SERIES

### HIGH SPEED STEEL

118° Point / Straight Shank

Fractional / Black Oxide



900

Size	Flute Length	Overall Length	900 Order No.
1/4"	3-3/4"	6-1/8"	900A116
9/32"	3-7/8"	6-1/4"	900A118
5/16"	4"	6-3/8"	900A120
11/32"	4-1/8"	6-1/2"	900A122
23/64"	4-1/4"	6-3/4"	900A123
3/8"	4-1/4"	6-3/4"	900A124
25/64"	4-3/8"	7"	900A125
13/32"	4-3/8"	7"	900A126
27/64"	4-5/8"	7-1/4"	900A127
7/16"	4-5/8"	7-1/4"	900A128
29/64"	4-3/4"	7-1/2"	900A129
15/32"	4-3/4"	7-1/2"	900A130
31/64"	4-3/4"	7-3/4"	900A131
1/2"	4-3/4"	7-3/4"	900A132
33/64"	4-3/4"	8"	900A133
17/32"	4-3/4"	8"	900A134
35/64"	4-7/8"	8-1/4"	900A135
9/16"	4-7/8"	8-1/4"	900A136
37/64"	4-7/8"	8-3/4"	900A137
19/32"	4-7/8"	8-3/4"	900A138
39/64"	4-7/8"	8-3/4"	900A139
5/8"	4-7/8"	8-3/4"	900A140
41/64"	5-1/8"	9"	900A141

Size	Flute Length	Overall Length	900 Order No.
21/32"	5-1/8"	9"	900A142
43/64"	5-3/8"	9-1/4"	900A143
11/16"	5-3/8"	9-1/4"	900A144
45/64"	5-5/8"	9-1/2"	900A145
23/32"	5-5/8"	9-1/2"	900A146
47/64"	5-7/8"	9-3/4"	900A147
3/4"	5-7/8"	9-3/4"	900A148
49/64"	6"	9-7/8"	900A149
25/32"	6"	9-7/8"	900A150
51/64"	6-1/8"	10"	900A151
13/16"	6-1/8"	10"	900A152
53/64"	6-1/8"	10"	900A153
27/32"	6-1/8"	10"	900A154
55/64"	6-1/8"	10"	900A155
7/8"	6-1/8"	10"	900A156
57/64"	6-1/8"	10"	900A157
29/32"	6-1/8"	10"	900A158
59/64"	6-1/8"	10-3/4"	900A159
15/16"	6-1/8"	10-3/4"	900A160
61/64"	6-3/8"	11"	900A161
31/32"	6-3/8"	11"	900A162
63/64"	6-3/8"	11"	900A163
1"	6-3/8"	11"	900A164



## 6" AIRCRAFT EXTENSION DRILLS

Manufactured to NAS 907 Type B specifications, 135° split point, surface-treated with jobber flute lengths for drilling holes in hard-to-reach places. Heavy-duty construction for portable or machine drilling in high tensile strength alloy steels.

- ▷ 135° Split Point reduces "walking"
- ▷ Extended length to drill hard to reach places
- ▷ Black Oxide surface treatment to improve performance

### 1100 SERIES

#### HIGH SPEED STEEL

135° Split Point / Straight Shank  
Fractional / Black Oxide



1100

Size	Flute Length	Overall Length	1100 Order No.
1/16"	7/8"	6"	1100A104
5/64"	1"	6"	1100A105
3/32"	1-1/4"	6"	1100A106
7/64"	1-1/2"	6"	1100A107
1/8"	1-5/8"	6"	1100A108
9/64"	1-3/4"	6"	1100A109
5/32"	2"	6"	1100A110
11/64"	2-1/8"	6"	1100A111
3/16"	2-5/16"	6"	1100A112
13/64"	2-7/16"	6"	1100A113
7/32"	2-1/2"	6"	1100A114
15/64"	2-5/8"	6"	1100A115
1/4"	2-3/4"	6"	1100A116
17/64"	2-7/8"	6"	1100A117
9/32"	2-15/16"	6"	1100A118

Size	Flute Length	Overall Length	1100 Order No.
19/64"	3-1/16"	6"	1100A119
5/16"	3-3/16"	6"	1100A120
21/64"	3-5/16"	6"	1100A121
11/32"	3-7/16"	6"	1100A122
23/64"	3-1/2"	6"	1100A123
3/8"	3-5/8"	6"	1100A124
25/64"	3-3/4"	6"	1100A125
13/32"	3-7/8"	6"	1100A126
27/64"	3-15/16"	6"	1100A127
7/16"	4-1/16"	6"	1100A128
29/64"	4-3/16"	6"	1100A129
15/32"	4-5/16"	6"	1100A130
31/64"	4-3/8"	6"	1100A131
1/2"	4-1/2"	6"	1100A132

1/16" thru 1/2" - 6 per pack

### 1100 SERIES

#### HIGH SPEED STEEL

135° Split Point / Straight Shank  
Number / Black Oxide



1100

Size	Flute Length	Overall Length	1100 Order No.
1	2-5/8"	6"	1100A001
2	2-5/8"	6"	1100A002
3	2-1/2"	6"	1100A003
4	2-1/2"	6"	1100A004
5	2-1/2"	6"	1100A005
6	2-1/2"	6"	1100A006
7	2-7/16"	6"	1100A007
8	2-7/16"	6"	1100A008
9	2-7/16"	6"	1100A009
10	2-7/16"	6"	1100A010
11	2-5/16"	6"	1100A011
12	2-5/16"	6"	1100A012
13	2-5/16"	6"	1100A013
14	2-3/16"	6"	1100A014
15	2-3/16"	6"	1100A015
16	2-3/16"	6"	1100A016
17	2-3/16"	6"	1100A017
18	2-1/8"	6"	1100A018
19	2-1/8"	6"	1100A019
20	2-1/8"	6"	1100A020

Size	Flute Length	Overall Length	1100 Order No.
21	2-1/8"	6"	1100A021
22	2"	6"	1100A022
23	2"	6"	1100A023
24	2"	6"	1100A024
25	1-7/8"	6"	1100A025
26	1-7/8"	6"	1100A026
27	1-7/8"	6"	1100A027
28	1-3/4"	6"	1100A028
29	1-3/4"	6"	1100A029
30	1-5/8"	6"	1100A030
31	1-5/8"	6"	1100A031
32	1-5/8"	6"	1100A032
33	1-1/2"	6"	1100A033
34	1-1/2"	6"	1100A034
35	1-1/2"	6"	1100A035
36	1-7/16"	6"	1100A036
37	1-7/16"	6"	1100A037
38	1-7/16"	6"	1100A038
39	1-3/8"	6"	1100A039
40	1-3/8"	6"	1100A040

#1 thru #40 - 6 per pack

## 6" AIRCRAFT EXTENSION DRILLS

Manufactured to NAS 907 Type B specifications, 135° split point, surface-treated with jobber flute lengths for drilling holes in hard-to-reach places. Heavy-duty construction for portable or machine drilling in high tensile strength alloy steels.

- ▷ 135° Split Point reduces "walking"
- ▷ Extended length to drill hard to reach places
- ▷ Black Oxide surface treatment to improve performance

### T6HH - BP6HH - T6WW SERIES

#### HIGH SPEED STEEL

135° Split Point

Black Oxide



Fractional				T6HH Packaging: Tube		T6HH Packaging: Bulk		BP6HH Packaging: Tube	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty	Order No.	Pkg Qty	Order No.	Pkg Qty
7/64"	.1094	1-1/2"	6"	057507	6	057507.20	144	057707	1
1/8"	.1250	1-5/8"	6"	057508	6	057508.20	144	057708	1
9/64"	.1406	1-3/4"	6"	057509	6	057509.20	144	057709	1
5/32"	.1562	2"	6"	057510	6	057510.20	144	057710	1
11/64"	.1719	2-1/8"	6"	057511	6	057511.20	144	057711	1
3/16"	.1875	2-5/16"	6"	057512	6	057512.20	144	057712	1
13/64"	.2031	2-7/16"	6"	057513	6	057513.20	144	057713	1
7/32"	.2188	2-1/2"	6"	057514	6	057514.20	144	057714	1
15/64"	.2344	2-5/8"	6"	057515	6	057515.20	144	057715	1
1/4"	.2500	2-3/4"	6"	057516	6	057516.20	144	057716	1
17/64"	.2656	2-7/8"	6"	057517	6	057517.20	144	057717	1
9/32"	.2812	2-15/16"	6"	057518	6	057518.20	144	057718	1
19/64"	.2969	3-1/16"	6"	057519	6	057519.20	144	057719	1
5/16"	.3125	3-3/16"	6"	057520	6	057520.20	144	057720	1
21/64"	.3281	3-5/16"	6"	057521	6	057521.20	144	057721	1
11/32"	.3438	3-7/16"	6"	057522	6	057522.20	144	057722	1
23/64"	.3594	3-1/2"	6"	057523	6	057523.20	144	057723	1
3/8"	.3750	3-5/8"	6"	057524	6	057524.20	144	057724	1
7/16"	.4375	4-1/16"	6"	057528	6	057528.20	144	057728	1
1/2"	.5000	4-1/2"	6"	057532	6	057532.20	144	057732	1

Number				T6WW Packaging: Tube	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
2	.2210	2-5/8"	6"	057602	6
5	.2055	2-1/2"	6"	057605	6
6	.2040	2-1/2"	6"	057606	6
9	.1960	2-7/16"	6"	057609	6
10	.1935	2-7/16"	6"	057610	6
11	.1910	2-5/16"	6"	057611	6
18	.1695	2-1/8"	6"	057618	6
19	.1660	2-1/8"	6"	057619	6
20	.1610	2-1/8"	6"	057620	6
21	.1590	2-1/8"	6"	057621	6
25	.1495	1-7/8"	6"	057625	6
27	.1440	1-7/8"	6"	057627	6
29	.1360	1-3/4"	6"	057629	6
30	.1285	1-5/8"	6"	057630	6
33	.1130	1-1/2"	6"	057633	6
40	.0980	1-3/8"	6"	057640	6

Number				T6WW Packaging: Bulk	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
20	.1610	2-1/8"	6"	057620.20	144
30	.1285	1-5/8"	6"	057630.20	144

# 12" AIRCRAFT EXTENSION DRILLS

## 1200 SERIES

### HIGH SPEED STEEL

135° Split Point / Straight Shank  
Fractional / Black Oxide



1200

Size	Flute Length	Overall Length	1200 Order No.
1/16"	7/8"	12"	1200A104
5/64"	1"	12"	1200A105
3/32"	1-1/4"	12"	1200A106
7/64"	1-1/2"	12"	1200A107
1/8"	1-5/8"	12"	1200A108
9/64"	1-3/4"	12"	1200A109
5/32"	2"	12"	1200A110
11/64"	2-1/8"	12"	1200A111
3/16"	2-5/16"	12"	1200A112
13/64"	2-7/16"	12"	1200A113
7/32"	2-1/2"	12"	1200A114
15/64"	2-5/8"	12"	1200A115
1/4"	2-3/4"	12"	1200A116
17/64"	2-7/8"	12"	1200A117
9/32"	2-15/16"	12"	1200A118

Size	Flute Length	Overall Length	1200 Order No.
19/64"	3-1/16"	12"	1200A119
5/16"	3-3/16"	12"	1200A120
21/64"	3-5/16"	12"	1200A121
11/32"	3-7/16"	12"	1200A122
23/64"	3-1/2"	12"	1200A123
3/8"	3-5/8"	12"	1200A124
25/64"	3-3/4"	12"	1200A125
13/32"	3-7/8"	12"	1200A126
27/64"	3-15/16"	12"	1200A127
7/16"	4-1/16"	12"	1200A128
29/64"	4-3/16"	12"	1200A129
15/32"	4-5/16"	12"	1200A130
31/64"	4-3/8"	12"	1200A131
1/2"	4-1/2"	12"	1200A132

1/16" thru 19/64" - 6 per pack, 5/16" thru 1/2" - 3 per pack

## 1200 SERIES

### HIGH SPEED STEEL

135° Split Point / Straight Shank  
Number / Black Oxide



1200

Size	Flute Length	Overall Length	1200 Order No.
1	2-5/8"	12"	1200A001
2	2-5/8"	12"	1200A002
3	2-1/2"	12"	1200A003
4	2-1/2"	12"	1200A004
5	2-1/2"	12"	1200A005
6	2-1/2"	12"	1200A006
7	2-7/16"	12"	1200A007
8	2-7/16"	12"	1200A008
9	2-7/16"	12"	1200A009
10	2-7/16"	12"	1200A010
11	2-5/16"	12"	1200A011
12	2-5/16"	12"	1200A012
13	2-5/16"	12"	1200A013
14	2-3/16"	12"	1200A014
15	2-3/16"	12"	1200A015
16	2-3/16"	12"	1200A016
17	2-3/16"	12"	1200A017
18	2-1/8"	12"	1200A018
19	2-1/8"	12"	1200A019
20	2-1/8"	12"	1200A020

Size	Flute Length	Overall Length	1200 Order No.
21	2-1/8"	12"	1200A021
22	2"	12"	1200A022
23	2"	12"	1200A023
24	2"	12"	1200A024
25	1-7/8"	12"	1200A025
26	1-7/8"	12"	1200A026
27	1-7/8"	12"	1200A027
28	1-3/4"	12"	1200A028
29	1-3/4"	12"	1200A029
30	1-5/8"	12"	1200A030
31	1-5/8"	12"	1200A031
32	1-5/8"	12"	1200A032
33	1-1/2"	12"	1200A033
34	1-1/2"	12"	1200A034
35	1-1/2"	12"	1200A035
36	1-7/16"	12"	1200A036
37	1-7/16"	12"	1200A037
38	1-7/16"	12"	1200A038
39	1-3/8"	12"	1200A039
40	1-3/8"	12"	1200A040

#1 thru #40 - 6 per pack

# 12" AIRCRAFT EXTENSION DRILLS

## T12HH - BP12HH - T12WW SERIES

**HIGH SPEED STEEL**

135° Split Point

Black Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T12HH Packaging: Tube	
				Order No.	Pkg Qty
5/64"	.0781	1"	12"	058505	6
3/32"	.0938	1-1/4"	12"	058506	6
7/64"	.1094	1-1/2"	12"	058507	6
1/8"	.1250	1-5/8"	12"	058508	6
9/64"	.1406	1-3/4"	12"	058509	6
5/32"	.1562	2"	12"	058510	6
11/64"	.1719	2-1/8"	12"	058511	6
3/16"	.1875	2-5/16"	12"	058512	6
7/32"	.2188	2-1/2"	12"	058514	6
1/4"	.2500	2-3/4"	12"	058516	6
17/64"	.2656	2-7/8"	12"	058517	6
9/32"	.2812	2-15/16"	12"	058518	6
19/64"	.2969	3-1/16"	12"	058519	6
5/16"	.3125	3-3/16"	12"	058520	3
11/32"	.3438	3-7/16"	12"	058522	3
3/8"	.3750	3-5/8"	12"	058524	3
13/32"	.4062	3-7/8"	12"	058526	3
7/16"	.4375	4-1/16"	12"	058528	3
15/32"	.4688	4-5/16"	12"	058530	3
1/2"	.5000	4-1/2"	12"	058532	3

Size	Decimal Equivalent	Flute Length	Overall Length	T12WW Packaging: Tube	
				Order No.	Pkg Qty
1	.2280	2-5/8"	12"	058601	6
7	.2010	2-7/16"	12"	058607	6
10	.1935	2-7/16"	12"	058610	6
11	.1910	2-5/16"	12"	058611	6
17	.1730	2-3/16"	12"	058617	6
20	.1610	2-1/8"	12"	058620	6
30	.1285	1-5/8"	12"	058630	6
40	.0980	1-3/8"	12"	058640	6

Size	Decimal Equivalent	Flute Length	Overall Length	BP12HH Packaging: Tube	
				Order No.	Pkg Qty
1/8"	.1250	1-5/8"	12"	058408	1
3/16"	.1875	2-5/16"	12"	058412	1
1/4"	.2500	2-3/4"	12"	058416	1
5/16"	.3125	3-3/16"	12"	058420	1
3/8"	.3750	3-5/8"	12"	058424	1
7/16"	.4375	4-1/16"	12"	058428	1
1/2"	.5000	4-1/2"	12"	058432	1



## 6" AIRCRAFT EXTENSION DRILLS

Manufactured to NAS 907 Type J specifications, 135° split point, surface-treated with jobber flute lengths for drilling holes in hard-to-reach places. Heavy-duty construction for portable or machine drilling in high tensile strength alloy steels, stainless steels, titanium, and other difficult-to-machine materials.

### 1100C SERIES

#### COBALT

135° Split Point / Straight Shank  
Fractional / Bronze



1100C

Size	Flute Length	Overall Length	1100C Order No.
1/16"	7/8"	6"	1100C104
5/64"	1"	6"	1100C105
3/32"	1-1/4"	6"	1100C106
7/64"	1-1/2"	6"	1100C107
1/8"	1-5/8"	6"	1100C108
9/64"	1-3/4"	6"	1100C109
5/32"	2"	6"	1100C110
11/64"	2-1/8"	6"	1100C111

Size	Flute Length	Overall Length	1100C Order No.
3/16"	2-5/16"	6"	1100C112
13/64"	2-7/16"	6"	1100C113
7/32"	2-1/2"	6"	1100C114
15/64"	2-5/8"	6"	1100C115
1/4"	2-3/4"	6"	1100C116
9/32"	2-15/16"	6"	1100C118
5/16"	3-3/16"	6"	1100C120
3/8"	3-5/8"	6"	1100C124

### 1100C SERIES

#### COBALT

135° Split Point / Straight Shank  
Number / Bronze



1100C

Size	Flute Length	Overall Length	1100C Order No.
1	2-5/8"	6"	1100C001
2	2-5/8"	6"	1100C002
3	2-1/2"	6"	1100C003
4	2-1/2"	6"	1100C004
5	2-1/2"	6"	1100C005
6	2-1/2"	6"	1100C006
7	2-7/16"	6"	1100C007
8	2-7/16"	6"	1100C008
9	2-7/16"	6"	1100C009
10	2-7/16"	6"	1100C010
11	2-5/16"	6"	1100C011
12	2-5/16"	6"	1100C012
13	2-5/16"	6"	1100C013
14	2-3/16"	6"	1100C014
15	2-3/16"	6"	1100C015
16	2-3/16"	6"	1100C016
17	2-3/16"	6"	1100C017
18	2-1/8"	6"	1100C018
19	2-1/8"	6"	1100C019
20	2-1/8"	6"	1100C020

Size	Flute Length	Overall Length	1100C Order No.
21	2-1/8"	6"	1100C021
22	2"	6"	1100C022
23	2"	6"	1100C023
24	2"	6"	1100C024
25	1-7/8"	6"	1100C025
26	1-7/8"	6"	1100C026
27	1-7/8"	6"	1100C027
28	1-3/4"	6"	1100C028
29	1-3/4"	6"	1100C029
30	1-5/8"	6"	1100C030
31	1-5/8"	6"	1100C031
32	1-5/8"	6"	1100C032
33	1-1/2"	6"	1100C033
34	1-1/2"	6"	1100C034
35	1-1/2"	6"	1100C035
36	1-7/16"	6"	1100C036
37	1-7/16"	6"	1100C037
38	1-7/16"	6"	1100C038
39	1-3/8"	6"	1100C039
40	1-3/8"	6"	1100C040

1/16" thru 3/8" - 6 per pack, #1 thru #40 - 6 per pack

## 12" AIRCRAFT EXTENSION DRILLS

### 1200C SERIES

#### COBALT

135° Split Point / Straight Shank  
Fractional / Bronze



1200C

Size	Flute Length	Overall Length	1200C Order No.
1/16"	7/8"	12"	1200C104
5/64"	1"	12"	1200C105
3/32"	1-1/4"	12"	1200C106
7/64"	1-1/2"	12"	1200C107
1/8"	1-5/8"	12"	1200C108
9/64"	1-3/4"	12"	1200C109
5/32"	2"	12"	1200C110
11/64"	2-1/8"	12"	1200C111
3/16"	2-5/16"	12"	1200C112
13/64"	2-7/16"	12"	1200C113
7/32"	2-1/2"	12"	1200C114
15/64"	2-5/8"	12"	1200C115
1/4"	2-3/4"	12"	1200C116
17/64"	2-7/8"	12"	1200C117
9/32"	2-15/16"	12"	1200C118

Size	Flute Length	Overall Length	1200C Order No.
19/64"	3-1/16"	12"	1200C119
5/16"	3-3/16"	12"	1200C120
21/64"	3-5/16"	12"	1200C121
11/32"	3-7/16"	12"	1200C122
23/64"	3-1/2"	12"	1200C123
3/8"	3-5/8"	12"	1200C124
25/64"	3-3/4"	12"	1200C125
13/32"	3-7/8"	12"	1200C126
27/64"	3-15/16"	12"	1200C127
7/16"	4-1/16"	12"	1200C128
29/64"	4-3/16"	12"	1200C129
15/32"	4-5/16"	12"	1200C130
31/64"	4-3/8"	12"	1200C131
1/2"	4-1/2"	12"	1200C132

1/16" thru 19/64" - 6 per pack, 5/16" thru 1/2" - 3 per pack

### 1200C SERIES

#### COBALT

135° Split Point / Straight Shank  
Number / Bronze



1200C

Size	Flute Length	Length	1200C Order No.
1	2-5/8"	12"	1200C001
2	2-5/8"	12"	1200C002
3	2-1/2"	12"	1200C003
4	2-1/2"	12"	1200C004
5	2-1/2"	12"	1200C005
6	2-1/2"	12"	1200C006
7	2-7/16"	12"	1200C007
8	2-7/16"	12"	1200C008
9	2-7/16"	12"	1200C009
10	2-7/16"	12"	1200C010
11	2-5/16"	12"	1200C011
12	2-5/16"	12"	1200C012
13	2-5/16"	12"	1200C013
14	2-3/16"	12"	1200C014
15	2-3/16"	12"	1200C015
16	2-3/16"	12"	1200C016
17	2-3/16"	12"	1200C017
18	2-1/8"	12"	1200C018
19	2-1/8"	12"	1200C019
20	2-1/8"	12"	1200C020

Size	Flute Length	Overall Length	1200C Order No.
21	2-1/8"	12"	1200C021
22	2"	12"	1200C022
23	2"	12"	1200C023
24	2"	12"	1200C024
25	1-7/8"	12"	1200C025
26	1-7/8"	12"	1200C026
27	1-7/8"	12"	1200C027
28	1-3/4"	12"	1200C028
29	1-3/4"	12"	1200C029
30	1-5/8"	12"	1200C030
31	1-5/8"	12"	1200C031
32	1-5/8"	12"	1200C032
33	1-1/2"	12"	1200C033
34	1-1/2"	12"	1200C034
35	1-1/2"	12"	1200C035
36	1-7/16"	12"	1200C036
37	1-7/16"	12"	1200C037
38	1-7/16"	12"	1200C038
39	1-3/8"	12"	1200C039
40	1-3/8"	12"	1200C040

#1 thru #40 - 6 per pack

# EXTRA LENGTH DRILLS

## 8" EXTRA LENGTH DRILLS

Because of the inaccessibility or the extreme depth of a hole, it is often found that even long series drills are not long enough. The drilling of such holes generally requires the use of an Extra Length Drill. The drills are made with a general purpose flute design which will perform well under the widest range of operating conditions and materials.

### 1308 SERIES

#### HIGH SPEED STEEL

118° Point / Straight Shank  
Fractional / Black Oxide



1308

Size	Flute Length	Overall Length	1308 Order No.
1/8"	6"	8"	1308A108
9/64"	6"	8"	1308A109
5/32"	6"	8"	1308A110
11/64"	6"	8"	1308A111
3/16"	6"	8"	1308A112
13/64"	6"	8"	1308A113
7/32"	6"	8"	1308A114
15/64"	6"	8"	1308A115
1/4"	6"	8"	1308A116
17/64"	6"	8"	1308A117
9/32"	6"	8"	1308A118
19/64"	6"	8"	1308A119
5/16"	6"	8"	1308A120

Size	Flute Length	Overall Length	1308 Order No.
21/64"	6"	8"	1308A121
11/32"	6"	8"	1308A122
23/64"	6"	8"	1308A123
3/8"	6"	8"	1308A124
25/64"	6"	8"	1308A125
13/32"	6"	8"	1308A126
27/64"	6"	8"	1308A127
7/16"	6"	8"	1308A128
29/64"	6"	8"	1308A129
15/32"	6"	8"	1308A130
31/64"	6"	8"	1308A131
1/2"	6"	8"	1308A132

1 per pack

## 12" EXTRA LENGTH DRILLS

### 1312 / 1312R SERIES

#### HIGH SPEED STEEL

118° Point / Straight & Reduced Shanks  
Fractional / Black Oxide



1312 - Straight Shank



1312R - 1/2" Reduced Shank

Size	Flute Length	Overall Length	1312 Order No.
1/8"	9"	12"	1312A108
9/64"	9"	12"	1312A109
5/32"	9"	12"	1312A110
11/64"	9"	12"	1312A111
3/16"	9"	12"	1312A112
13/64"	9"	12"	1312A113
7/32"	9"	12"	1312A114
15/64"	9"	12"	1312A115
1/4"	9"	12"	1312A116
17/64"	9"	12"	1312A117
9/32"	9"	12"	1312A118
19/64"	9"	12"	1312A119
5/16"	9"	12"	1312A120
21/64"	9"	12"	1312A121
11/32"	9"	12"	1312A122
23/64"	9"	12"	1312A123
3/8"	9"	12"	1312A124
25/64"	9"	12"	1312A125
13/32"	9"	12"	1312A126
27/64"	9"	12"	1312A127
7/16"	9"	12"	1312A128

Size	Flute Length	Overall Length	1312 Order No.	1312R Order No.
29/64"	9"	12"	1312A129	-
15/32"	9"	12"	1312A130	-
31/64"	9"	12"	1312A131	-
1/2"	9"	12"	1312A132	-
33/64"	9"	12"	1312A133	1312AR133
17/32"	9"	12"	1312A134	1312AR134
35/64"	9"	12"	1312A135	1312AR135
9/16"	9"	12"	1312A136	1312AR136
37/64"	9"	12"	1312A137	1312AR137
19/32"	9"	12"	1312A138	1312AR138
39/64"	9"	12"	1312A139	1312AR139
5/8"	9"	12"	1312A140	1312AR140
41/64"	9"	12"	1312A141	1312AR141
21/32"	9"	12"	1312A142	1312AR142
43/64"	9"	12"	1312A143	1312AR143
11/16"	9"	12"	1312A144	1312AR144
45/64"	9"	12"	1312A145	1312AR145
23/32"	9"	12"	1312A146	1312AR146
47/64"	9"	12"	1312A147	1312AR147
3/4"	9"	12"	1312A148	1312AR148

1 per pack

## 12" EXTRA LENGTH DRILLS

### T1290 SERIES

**HIGH SPEED STEEL**

118° Point  
 Bright Finish



Size	Decimal Equivalent	Flute Length	Overall Length	T1290 Packaging: Tube	
				Order No.	Pkg Qty
1/8"	.1250	9"	12"	059808	1
5/32"	.1562	9"	12"	059810	1
3/16"	.2031	9"	12"	059812	1
7/32"	.2188	9"	12"	059814	1
1/4"	.2500	9"	12"	059816	1
9/32"	.2812	9"	12"	059818	1
5/16"	.3125	9"	12"	059820	1
11/32"	.3438	9"	12"	059822	1
3/8"	.3750	9"	12"	059824	1
13/32"	.4062	9"	12"	059826	1
7/16"	.4375	9"	12"	059828	1
15/32"	.4688	9"	12"	059830	1
1/2"	.5000	9"	12"	059832	1
17/32"*	.5312	9"	12"	059834	1
9/16"*	.5625	9"	12"	059836	1
5/8"*	.6250	9"	12"	059840	1

\* Black oxide

## 18" EXTRA LENGTH DRILLS

### T1813 SERIES

**HIGH SPEED STEEL**

118° Split Point  
 Bright Finish



Size	Decimal Equivalent	Flute Length	Overall Length	T1813 Packaging: Tube	
				Order No.	Pkg Qty
1/4"	.2500	13"	18"	059916	1
5/16"	.3125	13"	18"	059920	1
3/8"	.3750	13"	18"	059924	1
7/16"	.4375	13"	18"	059928	1
1/2"	.5000	13"	18"	059932	1
9/16*	.6250	13"	18"	059936	1
5/8*	.6250	13"	18"	059940	1

\* Black oxide

## 18" EXTRA LENGTH DRILLS

### 1318 / 1318R SERIES

**HIGH SPEED STEEL**

118° Point / Straight & Reduced Shanks  
 Fractional / Black Oxide



1318 - Straight Shank



1318R - 1/2" Reduced Shank

Size	Flute Length	Overall Length	1318 Order No.
1/4"	13"	18"	1318A116
17/64"	13"	18"	1318A117
9/32"	13"	18"	1318A118
19/64"	13"	18"	1318A119
5/16"	13"	18"	1318A120
21/64"	13"	18"	1318A121
11/32"	13"	18"	1318A122
23/64"	13"	18"	1318A123
3/8"	13"	18"	1318A124
25/64"	13"	18"	1318A125
13/32"	13"	18"	1318A126
27/64"	13"	18"	1318A127
7/16"	13"	18"	1318A128
29/64"	13"	18"	1318A129
15/32"	13"	18"	1318A130
31/64"	13"	18"	1318A131
1/2"	13"	18"	1318A132

Size	Flute Length	Overall Length	1318 Order No.	1318R Order No.
33/64"	13"	18"	1318A133	1318AR133
17/32"	13"	18"	1318A134	1318AR134
35/64"	13"	18"	1318A135	1318AR135
9/16"	13"	18"	1318A136	1318AR136
37/64"	13"	18"	1318A137	1318AR137
19/32"	13"	18"	1318A138	1318AR138
39/64"	13"	18"	1318A139	1318AR139
5/8"	13"	18"	1318A140	1318AR140
21/32"	13"	18"	1318A142	1318AR142
11/16"	13"	18"	1318A144	1318AR144
23/32"	13"	18"	1318A146	1318AR146
3/4"	13"	18"	1318A148	1318AR148
25/32"	13"	18"	1318A150	1318AR150
13/16"	13"	18"	1318A152	1318AR152
27/32"	13"	18"	1318A154	1318AR154
7/8"	13"	18"	1318A156	1318AR156
29/32"	13"	18"	1318A158	1318AR158
15/16"	13"	18"	1318A160	1318AR160
31/32"	13"	18"	1318A162	1318AR162
1"	13"	18"	1318A164	1318AR164

1 per pack



# GENERAL PURPOSE TAPER SHANK DRILLS

For general purpose use in a wide range of materials.

1400 – American Standard Taper Shanks / 1450 – Smaller than normal Taper Shanks / 1475 – Larger than normal Taper Shanks

▷ All sizes are individually packaged

## 1400 SERIES

### HIGH SPEED STEEL

118° Point / Taper Shank

Fractional / Black Oxide



1400

Size	Morse Taper	Flute Length	Overall Length	1400 Order No.
1/8"	1	1-7/8"	5-1/8"	1400A108
9/64"	1	2-1/8"	5-3/8"	1400A109
5/32"	1	2-1/8"	5-3/8"	1400A110
11/64"	1	2-1/2"	5-3/4"	1400A111
3/16"	1	2-1/2"	5-3/4"	1400A112
13/64"	1	2-3/4"	6"	1400A113
7/32"	1	2-3/4"	6"	1400A114
15/64"	1	2-7/8"	6-1/8"	1400A115
1/4"	1	2-7/8"	6-1/8"	1400A116
17/64"	1	3"	6-1/4"	1400A117
9/32"	1	3"	6-1/4"	1400A118
19/64"	1	3-1/8"	6-3/8"	1400A119
5/16"	1	3-1/8"	6-3/8"	1400A120
21/64"	1	3-1/4"	6-1/2"	1400A121
11/32"	1	3-1/4"	6-1/2"	1400A122
23/64"	1	3-1/2"	6-3/4"	1400A123
3/8"	1	3-1/2"	6-3/4"	1400A124
25/64"	1	3-5/8"	7"	1400A125
13/32"	1	3-5/8"	7"	1400A126
27/64"	1	3-7/8"	7-1/4"	1400A127
7/16"	1	3-7/8"	7-1/4"	1400A128
29/64"	1	4-1/8"	7-1/2"	1400A129
15/32"	1	4-1/8"	7-1/2"	1400A130
31/64"	2	4-3/8"	8-1/4"	1400A131
1/2"	2	4-3/8"	8-1/4"	1400A132
33/64"	2	4-5/8"	8-1/2"	1400A133
17/32"	2	4-5/8"	8-1/2"	1400A134
35/64"	2	4-7/8"	8-3/4"	1400A135
9/16"	2	4-7/8"	8-3/4"	1400A136
37/64"	2	4-7/8"	8-3/4"	1400A137
19/32"	2	4-7/8"	8-3/4"	1400A138
39/64"	2	4-7/8"	8-3/4"	1400A139
5/8"	2	4-7/8"	8-3/4"	1400A140
41/64"	2	5-1/8"	9"	1400A141
21/32"	2	5-1/8"	9"	1400A142
43/64"	2	5-3/8"	9-1/4"	1400A143
11/16"	2	5-3/8"	9-1/4"	1400A144
45/64"	2	5-5/8"	9-1/2"	1400A145
23/32"	2	5-5/8"	9-1/2"	1400A146
47/64"	2	5-7/8"	9-3/4"	1400A147
3/4"	2	5-7/8"	9-3/4"	1400A148
49/64"	2	6"	9-7/8"	1400A149
25/32"	2	6"	9-7/8"	1400A150
51/64"	3	6-1/8"	10-3/4"	1400A151
13/16"	3	6-1/8"	10-3/4"	1400A152
53/64"	3	6-1/8"	10-3/4"	1400A153
27/32"	3	6-1/8"	10-3/4"	1400A154
55/64"	3	6-1/8"	10-3/4"	1400A155
7/8"	3	6-1/8"	10-3/4"	1400A156
57/64"	3	6-1/8"	10-3/4"	1400A157

Size	Morse Taper	Flute Length	Overall Length	1400 Order No.
29/32"	3	6-1/8"	10-3/4"	1400A158
59/64"	3	6-1/8"	10-3/4"	1400A159
15/16"	3	6-1/8"	10-3/4"	1400A160
61/64"	3	6-3/8"	11"	1400A161
31/32"	3	6-3/8"	11"	1400A162
63/64"	3	6-3/8"	11"	1400A163
1"	3	6-3/8"	11"	1400A164
1-1/64"	3	6-1/2"	11-1/8"	1400A201
1-1/32"	3	6-1/2"	11-1/8"	1400A202
1-3/64"	3	6-5/8"	11-1/4"	1400A203
1-1/16"	3	6-5/8"	11-1/4"	1400A204
1-5/64"	4	6-7/8"	12-1/2"	1400A205
1-3/32"	4	6-7/8"	12-1/2"	1400A206
1-7/64"	4	7-1/8"	12-3/4"	1400A207
1-1/8"	4	7-1/8"	12-3/4"	1400A208
1-9/64"	4	7-1/4"	12-7/8"	1400A209
1-5/32"	4	7-1/4"	12-7/8"	1400A210
1-11/64"	4	7-3/8"	13"	1400A211
1-3/16"	4	7-3/8"	13"	1400A212
1-13/64"	4	7-1/2"	13-1/8"	1400A213
1-7/32"	4	7-1/2"	13-1/8"	1400A214
1-15/64"	4	7-7/8"	13-1/2"	1400A215
1-1/4"	4	7-7/8"	13-1/2"	1400A216
1-17/64"	4	8-1/2"	14-1/8"	1400A217
1-9/32"	4	8-1/2"	14-1/8"	1400A218
1-19/64"	4	8-1/2"	14-1/4"	1400A219
1-5/16"	4	8-5/8"	14-1/4"	1400A220
1-21/64"	4	8-3/4"	14-3/8"	1400A221
1-11/32"	4	8-3/4"	14-3/8"	1400A222
1-23/64"	4	8-7/8"	14-1/2"	1400A223
1-3/8"	4	8-7/8"	14-1/2"	1400A224
1-25/64"	4	9"	14-5/8"	1400A225
1-13/32"	4	9"	14-5/8"	1400A226
1-27/64"	4	9-1/8"	14-3/4"	1400A227
1-7/16"	4	9-1/8"	14-3/4"	1400A228
1-29/64"	4	9-1/4"	14-7/8"	1400A229
1-15/32"	4	9-1/4"	14-7/8"	1400A230
1-31/64"	4	9-3/8"	15"	1400A231
1-1/2"	4	9-3/8"	15"	1400A232
1-17/32"	5	9-3/8"	16-3/8"	1400A234
1-9/16"	5	9-5/8"	16-5/8"	1400A236
1-19/32"	5	9-7/8"	16-7/8"	1400A238
1-5/8"	5	10"	17"	1400A240
1-21/32"	5	10-1/8"	17-1/8"	1400A242
1-11/16"	5	10-1/8"	17-1/8"	1400A244
1-23/32"	5	10-1/8"	17-1/8"	1400A246
1-3/4"	5	10-1/8"	17-1/8"	1400A248
1-25/32"	5	10-3/4"	17-1/8"	1400A250
1-13/16"	5	10-1/8"	17-1/8"	1400A252
1-27/32"	5	10-1/8"	17-1/8"	1400A254

Continued on next page

**1400 SERIES (CONTINUED)**



**TAPER SHANK DRILLS**

Size	Morse Taper	Flute Length	Overall Length	1400 Order No.
1-7/8"	5	10-3/8"	17-3/8"	1400A256
1-29/32"	5	10-3/8"	17-3/8"	1400A258
1-15/16"	5	10-3/8"	17-3/8"	1400A260
1-31/32"	5	10-3/8"	17-3/8"	1400A262
2"	5	10-3/8"	17-3/8"	1400A264
2-1/32"	5	10-3/8"	17-3/8"	1400A302
2-1/16"	5	10-1/4"	17-3/8"	1400A304
2-3/32"	5	10-1/4"	17-3/8"	1400A306
2-1/8"	5	10-1/4"	17-3/8"	1400A308
2-5/32"	5	10-1/4"	17-3/8"	1400A310
2-3/16"	5	10-1/4"	17-3/8"	1400A312
2-7/32"	5	10-1/8"	17-3/8"	1400A314

Size	Morse Taper	Flute Length	Overall Length	1400 Order No.
2-1/4"	5	10-1/8"	17-3/8"	1400A316
2-5/16"	5	10-1/8"	17-3/8"	1400A320
2-3/8"	5	10-1/8"	17-3/8"	1400A324
2-7/16"	5	11-1/4"	18-3/4"	1400A328
2-1/2"	5	11-1/4"	18-3/4"	1400A332
2-9/16"	5	11-7/8"	19-1/2"	1400A336
2-5/8"	5	12-3/4"	19-1/2"	1400A340
2-11/16"	5	12-3/4"	20-3/8"	1400A344
2-3/4"	5	12-3/4"	20-3/8"	1400A348
2-13/16"	5	13-3/8"	21-1/8"	1400A352
2-7/8"	5	13-3/8"	21-1/8"	1400A356
2-15/16"	5	14"	21-3/4"	1400A360
3"	5	14"	21-3/4"	1400A364

**1400 SERIES**

**HIGH SPEED STEEL**

**118° Point / Undersize Taper Shank  
Fractional / Black Oxide**



1400

Size	Morse Taper	Flute Length	Overall Length	1400 Order No.
31/64"	1	4-3/8"	7-3/4"	1400A131
1/2"	1	4-3/8"	7-3/4"	1400A132
33/64"	1	4-5/8"	8"	1400A133
17/32"	1	4-5/8"	8"	1400A134
35/64"	1	4-7/8"	8-1/4"	1400A135
9/16"	1	4-7/8"	8-1/4"	1400A136
51/64"	2	6-1/8"	10"	1400A151
13/16"	2	6-1/8"	10"	1400A152
53/64"	2	6-1/8"	10"	1400A153
27/32"	2	6-1/8"	10"	1400A154
55/64"	2	6-1/8"	10"	1400A155
7/8"	2	6-1/8"	10"	1400A156
57/64"	2	6-1/8"	10"	1400A157
29/32"	2	6-1/8"	10"	1400A158
1-5/64"	3	6-7/8"	11-1/2"	1400A205
1-3/32"	3	6-7/8"	11-1/2"	1400A206
1-7/64"	3	7-1/8"	11-3/4"	1400A207
1-1/8"	3	7-1/8"	11-3/4"	1400A208
1-9/64"	3	7-1/4"	11-7/8"	1400A209
1-5/32"	3	7-1/4"	11-7/8"	1400A210
1-11/64"	3	7-3/8"	12"	1400A211
1-3/16"	3	7-3/8"	12"	1400A212
1-13/64"	3	7-1/2"	12-1/8"	1400A213
1-7/32"	3	7-1/2"	12-1/8"	1400A214
1-15/64"	3	7-7/8"	12-1/2"	1400A215

Size	Morse Taper	Flute Length	Overall Length	1400 Order No.
1-1/4"	3	7-7/8"	12-1/2"	1400A216
1-33/64"	4	9-3/8"	15"	1400A233
1-17/32"	4	9-3/8"	15"	1400A234
1-35/64"	4	9-5/8"	15-1/4"	1400A235
1-9/16"	4	9-5/8"	15-1/4"	1400A236
1-37/64"	4	9-7/8"	15-1/2"	1400A237
1-19/32"	4	9-7/8"	15-1/2"	1400A238
1-39/64"	4	10"	15-5/8"	1400A239
1-5/8"	4	10"	15-5/8"	1400A240
1-41/64"	4	10-1/8"	15-3/4"	1400A241
1-21/32"	4	10-1/8"	15-3/4"	1400A242
1-43/64"	4	10-1/8"	15-3/4"	1400A243
1-11/16"	4	10-1/8"	15-3/4"	1400A244
1-45/64"	4	10-1/8"	15-3/4"	1400A245
1-23/32"	4	10-1/8"	15-3/4"	1400A246
1-47/64"	4	10-3/8"	16-1/4"	1400A247
1-3/4"	4	10-3/8"	16-1/4"	1400A248
1-25/32"	4	10-3/8"	16-1/4"	1400A250
1-13/16"	4	10-3/8"	16-1/4"	1400A252
1-27/32"	4	10-3/8"	16-1/4"	1400A254
1-7/8"	4	10-1/2"	16-1/2"	1400A256
1-29/32"	4	10-1/2"	16-1/2"	1400A258
1-15/16"	4	10-5/8"	16-5/8"	1400A260
1-31/32"	4	10-5/8"	16-5/8"	1400A262
2"	4	10-5/8"	16-5/8"	1400A264

**1400 SERIES**

**HIGH SPEED STEEL**

**118° Point / Oversize Taper Shank  
Fractional / Black Oxide**



1400

Size	Morse Taper	Flute Length	Overall Length	1400 Order No.
3/8"	2	3-1/2"	7-3/8"	1400A124
25/64"	2	3-5/8"	7-1/2"	1400A125
13/32"	2	3-5/8"	7-1/2"	1400A126
27/64"	2	3-7/8"	7-3/4"	1400A127
7/16"	2	3-7/8"	7-3/4"	1400A128
29/64"	2	4-1/8"	8"	1400A129
15/32"	2	4-1/8"	8"	1400A130
41/64"	3	5-1/8"	9-3/4"	1400A141
21/32"	3	5-1/8"	9-3/4"	1400A142
43/64"	3	5-3/8"	10"	1400A143

Size	Morse Taper	Flute Length	Overall Length	1400 Order No.
11/16"	3	5-3/8"	10"	1400A144
45/64"	3	5-3/8"	10-1/4"	1400A145
23/32"	3	5-7/8"	10-1/4"	1400A146
47/64"	3	5-7/8"	10-1/2"	1400A147
3/4"	3	6"	10-1/2"	1400A148
49/64"	3	6"	10-5/8"	1400A149
25/32"	3	6-3/8"	10-5/8"	1400A150
1"	4	6-3/8"	12"	1400A164
1-1/32"	4	6-1/2"	12-1/8"	1400A202
1-1/16"	4	6-5/8"	12-1/4"	1400A204

# HEX SHANK DRILLS



Heavy-duty drills with added versatility thanks to the hex shank. This shank can quickly be installed in any adjustable power tool chuck. These heavy-duty drills employ a 135° Split Point to reduce "walking" when drilling. Each drill has been through a surface treatment process to improve overall performance.

- ▷ Hex shank for adjustable power tool chucks
- ▷ 135° split point for self centering and reduced "walking"
- ▷ Surface treatment for improved performance

## HEXT4HD SERIES HIGH SPEED STEEL

1/4" Hex Shank for Hex or adjustable power tool chucks  
Black & Gold Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	HEXT4HD Packaging: Tube		HEXT4HD Packaging: Bulk	
				Order No.	Pkg Qty	Order No.	Pkg Qty
1/16"	.0625	5/8"	2-1/4"	045504	1	045504.20	72
3/32"	.0938	3/4"	2-7/16"	045506	1	045506.20	72
1/8"	.1250	7/8"	2-5/8"	045508	1	045508.20	72
5/32"	.1562	1"	2-13/16"	045510	1	045510.20	72
3/16"	.1875	1-1/8"	3"	045512	1	045512.20	72
7/32"	.2188	1-1/4"	3-1/8"	045514	1	045514.20	72
1/4"	.2500	1-3/8"	3-3/16"	045516	1	045516.20	72

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T47HEXHD	Plastic Case	7 Piece	1/16" - 1/4" by 32 <sup>nds</sup>	045532

## HEXT4 SERIES HIGH SPEED STEEL

1/4" Hex Shank for Hex or adjustable power tool chucks  
Black Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	HEXT4 Packaging: Tube		HEXT4 Packaging: Bulk	
				Order No.	Pkg Qty	Order No.	Pkg Qty
1/16"	.0625	5/8"	2-1/4"	045404	1	045404.20	72
3/32"	.0938	3/4"	2-7/16"	045406	1	045406.20	72
1/8"	.1250	7/8"	2-5/8"	045408	1	045408.20	72
5/32"	.1562	1"	2-13/16"	045410	1	045410.20	72
3/16"	.1875	1-1/8"	3"	045412	1	045412.20	72
7/32"	.2188	1-1/4"	3-1/8"	045414	1	045414.20	72
1/4"	.2500	1-3/8"	3-3/16"	045416	1	045416.20	72

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T47HEX	Plastic Case	7 Piece	1/16" - 1/4" by 32 <sup>nds</sup>	045432

Size	Decimal Equivalent	Flute Length	Overall Length	400AX Packaging: Tube	
				Order No.	Pkg Qty
1/16"	.0625	5/8"	2-1/4"	400AX104	1
3/32"	.0938	3/4"	2-7/16"	400AX106	1
1/8"	.1250	7/8"	2-5/8"	400AX108	1
5/32"	.1562	1"	2-13/16"	400AX110	1
3/16"	.1875	1-1/8"	3"	400AX112	1
7/32"	.2188	1-1/4"	3-1/8"	400AX114	1
1/4"	.2500	1-3/8"	3-3/16"	400AX116	1

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
400AX7	Plastic Case	7 Piece	1/16" - 1/4" by 32 <sup>nds</sup>	045432

# CARBIDE DRILLS



## CARBIDE TIP JOBBER LENGTH DRILLS

Carbide Tipped jobbers length drills are primarily for drilling cast iron, cast steel, bronze, hard copper, aluminium, and hard non-ferrous materials which have a high degree of abrasiveness, and which requires a sturdy drill for strength.

▷ All sizes are individually packaged

### 600 SERIES

#### CARBIDE TIP

118° Point / Straight Shank  
Fractional / Bright



600

Size	Flute Length	Overall Length	600 Order No.
7/64"	1-1/2"	2-5/8"	600A107
1/8"	1-5/8"	2-3/4"	600A108
9/64"	1-3/4"	2-7/8"	600A109
5/32"	2"	3-1/8"	600A110
11/64"	2-1/8"	3-1/4"	600A111
3/16"	2-5/16"	3-1/2"	600A112
13/64"	2-7/16"	3-5/8"	600A113
7/32"	2-1/2"	3-3/4"	600A114
15/64"	2-5/8"	3-7/8"	600A115
1/4"	2-3/4"	4"	600A116
17/64"	2-7/8"	4-1/8"	600A117
9/32"	2-15/16"	4-1/4"	600A118
19/64"	3-1/16"	4-3/8"	600A119
5/16"	3-3/16"	4-1/2"	600A120
21/64"	3-5/16"	4-5/8"	600A121
11/32"	3-7/16"	4-3/4"	600A122
23/64"	3-1/2"	4-7/8"	600A123
3/8"	3-5/8"	5"	600A124
25/64"	3-3/4"	5-1/8"	600A125

Size	Flute Length	Overall Length	600 Order No.
13/32"	3-7/8"	5-1/4"	600A126
27/64"	3-15/16"	5-3/8"	600A127
7/16"	4-1/16"	5-1/2"	600A128
29/64"	4-3/16"	5-5/8"	600A129
15/32"	4-5/16"	5-3/4"	600A130
31/64"	4-3/8"	5-7/8"	600A131
1/2"	4-1/2"	6"	600A132
33/64"	4-13/16"	6-5/8"	600A133
17/32"	4-13/16"	6-5/8"	600A134
35/64"	4-13/16"	6-5/8"	600A135
9/16"	4-13/16"	6-5/8"	600A136
37/64"	4-13/16"	6-5/8"	600A137
19/32"	5-3/16"	7-1/8"	600A138
39/64"	5-3/16"	7-1/8"	600A139
5/8"	5-3/16"	7-1/8"	600A140
41/64"	5-3/16"	7-1/8"	600A141
21/32"	5-3/16"	7-1/8"	600A142
43/64"	5-5/8"	7-5/8"	600A143
11/16"	5-5/8"	7-5/8"	600A144

### 600 SERIES

#### CARBIDE TIP

118° Point / Straight Shank  
Number / Bright



600

Size	Flute Length	Overall Length	600 Order No.
1	2-5/8"	3-7/8"	600A001
2	2-5/8"	3-7/8"	600A002
3	2-1/2"	3-3/4"	600A003
4	2-1/2"	3-3/4"	600A004
5	2-1/2"	3-3/4"	600A005
6	2-1/2"	3-3/4"	600A006
7	2-7/16"	3-5/8"	600A007
8	2-7/16"	3-5/8"	600A008
9	2-7/16"	3-5/8"	600A009
10	2-7/16"	3-5/8"	600A010
11	2-5/16"	3-1/2"	600A011
12	2-5/16"	3-1/2"	600A012
13	2-5/16"	3-1/2"	600A013
14	2-3/16"	3-3/8"	600A014
15	2-3/16"	3-3/8"	600A015
16	2-3/16"	3-3/8"	600A016

Size	Flute Length	Overall Length	600 Order No.
17	2-3/16"	3-3/8"	600A017
18	2-1/8"	3-1/4"	600A018
19	2-1/8"	3-1/4"	600A019
20	2-1/8"	3-1/4"	600A020
21	2-1/8"	3-1/4"	600A021
22	2"	3-1/8"	600A022
23	2"	3-1/8"	600A023
24	2"	3-1/8"	680A024
25	1-7/8"	3"	600A025
26	1-7/8"	3"	600A026
27	1-7/8"	3"	600A027
28	1-3/4"	2-7/8"	600A028
29	1-3/4"	2-7/8"	600A029
30	1-5/8"	2-3/4"	600A030
31	1-5/8"	2-3/4"	600A031
32	1-5/8"	2-3/4"	600A032



# CARBIDE JOBBER LENGTH DRILLS

Solid carbide drills have the ability to retain hardness and a sharp edge at high temperatures.

- ▷ *Excellent abrasion-resistant qualities*
- ▷ *Advantageous for use in drilling abrasive materials such as cast iron, non-ferrous alloys, high silicon aluminum, hard rubber, and Plexiglass*
- ▷ *Carbide drills are run at higher speeds than standard High Speed Steel drills*
- ▷ *They offer the advantage of extreme rigidity for greater drilling accuracy*
- ▷ *All sizes are individually packaged*

## 700 SERIES

### SOLID CARBIDE

118° Point / Straight Shank  
Fractional & Letter / Bright



700

Size	Flute Length	Overall Length	700 Order No.
1/32"	3/8"	1-1/8"	700A102
3/64"	3/4"	1-1/2"	700A103
1/16"	3/4"	1-1/2"	700A104
5/64"	7/8"	1-3/4"	700A105
3/32"	1"	2"	700A106
7/64"	1-1/4"	2-1/4"	700A107
1/8"	1-1/4"	2-1/4"	700A108
9/64"	1-3/8"	2-1/2"	700A109
5/32"	1-3/8"	2-1/2"	700A110
11/64"	1-5/8"	2-3/4"	700A111
3/16"	1-5/8"	2-3/4"	700A112
13/64"	1-3/4"	3"	700A113
7/32"	1-3/4"	3"	700A114
15/64"	2"	3-1/4"	700A115
1/4"	2"	3-1/4"	700A116
17/64"	2-1/8"	3-1/2"	700A117
9/32"	2-1/8"	3-1/2"	700A118
19/64"	2-3/8"	3-3/4"	700A119
5/16"	2-3/8"	3-3/4"	700A120
21/64"	2-1/2"	4"	700A121
11/32"	2-1/2"	4"	700A122
23/64"	2-1/2"	4"	700A123
3/8"	2-3/4"	4-1/4"	700A124
25/64"	2-7/8"	4-1/2"	700A125
13/32"	2-7/8"	4-1/2"	700A126
27/64"	2-7/8"	4-1/2"	700A127
7/16"	2-7/8"	4-1/2"	700A128
29/64"	3"	4-3/4"	700A129
15/32"	3"	4-3/4"	700A130

Size	Flute Length	Overall Length	700 Order No.
31/64"	3"	4-3/4"	700A131
1/2"	3"	4-3/4"	700A132
A	2"	3-1/4"	700A501
B	2"	3-1/4"	700A502
C	2"	3-1/4"	700A503
D	2"	3-1/4"	700A504
E	2"	3-1/4"	700A505
F	2"	3-1/4"	700A506
G	2-1/8"	3-1/2"	700A507
H	2-1/8"	3-1/2"	700A508
I	2-1/8"	3-1/2"	700A509
J	2-1/8"	3-1/2"	700A510
K	2-1/8"	3-1/2"	700A511
L	2-1/8"	3-1/2"	700A512
M	2-3/8"	3-3/4"	700A513
N	2-3/8"	3-3/4"	700A514
O	2-3/8"	3-3/4"	700A515
P	2-3/8"	3-3/4"	700A516
Q	2-1/2"	4"	700A517
R	2-1/2"	4"	700A518
S	2-1/2"	4"	700A519
T	2-1/2"	4"	700A520
U	2-3/4"	4-1/4"	700A521
V	2-3/4"	4-1/4"	700A522
W	2-7/8"	4-1/4"	700A523
X	2-7/8"	4-1/4"	700A524
Y	2-7/8"	4-1/4"	700A525
Z	2-7/8"	4-1/4"	700A526

# CARBIDE JOBBER LENGTH DRILLS

## 700 SERIES

### SOLID CARBIDE

118° Point / Straight Shank  
Number / Bright



700

Size	Flute Length	Overall Length	700 Order No.
1	1-3/4"	3"	700A001
2	1-3/4"	3"	700A002
3	1-3/4"	3"	700A003
4	1-3/4"	3"	700A004
5	1-3/4"	3"	700A005
6	1-3/4"	3"	700A006
7	1-3/4"	3"	700A007
8	1-3/4"	3"	700A008
9	1-5/8"	2-3/4"	700A009
10	1-5/8"	2-3/4"	700A010
11	1-5/8"	2-3/4"	700A011
12	1-5/8"	2-3/4"	700A012
13	1-5/8"	2-3/4"	700A013
14	1-5/8"	2-3/4"	700A014
15	1-5/8"	2-3/4"	700A015
16	1-5/8"	2-3/4"	700A016
17	1-5/8"	2-3/4"	700A017
18	1-5/8"	2-3/4"	700A018
19	1-5/8"	2-3/4"	700A019
20	1-3/8"	2-1/2"	700A020
21	1-3/8"	2-1/2"	700A021
22	1-3/8"	2-1/2"	700A022
23	1-3/8"	2-1/2"	700A023
24	1-3/8"	2-1/2"	700A024
25	1-3/8"	2-1/2"	700A025
26	1-3/8"	2-1/2"	700A026
27	1-3/8"	2-1/2"	700A027
28	1-3/8"	2-1/2"	700A028
29	1-3/8"	2-1/2"	700A029
30	1-1/4"	2-1/4"	700A030

Size	Flute Length	Overall Length	700 Order No.
31	1-1/4"	2-1/4"	700A031
32	1-1/4"	2-1/4"	700A032
33	1-1/4"	2-1/4"	700A033
34	1-1/4"	2-1/4"	700A034
35	1-1/4"	2-1/4"	700A035
36	1-1/4"	2-1/4"	700A036
37	1-1/4"	2-1/4"	700A037
38	1-1/4"	2-1/4"	700A038
39	1-1/4"	2-1/4"	700A039
40	1"	2"	700A040
41	1"	2"	700A041
42	1"	2"	700A042
43	1"	2"	700A043
44	1"	2"	700A044
45	7/8"	2"	700A045
46	7/8"	1-3/4"	700A046
47	7/8"	1-3/4"	700A047
48	7/8"	1-3/4"	700A048
49	7/8"	1-3/4"	700A049
50	7/8"	1-3/4"	700A050
51	3/4"	1-1/2"	700A051
52	3/4"	1-1/2"	700A052
53	3/4"	1-1/2"	700A053
54	3/4"	1-1/2"	700A054
55	3/4"	1-1/2"	700A055
56	3/4"	1-1/2"	700A056
57	3/4"	1-1/2"	700A057
58	3/4"	1-1/2"	700A058
59	3/4"	1-1/2"	700A059
60	3/4"	1-1/2"	700A060

# CARBIDE STRAIGHT FLUTE DRILLS

The straight flute design of these Solid Carbide drills increases edge strength, and produces good size control and hole surface finish.

- ▷ *The 140° split point provides ease of penetration*
- ▷ *Used to drill difficult materials (up to Rc 60) including nickel alloys, chrome alloys, steel weldments, titanium alloys, high temperature alloys, and stainless-steel weldments*
- ▷ *Suitable for drilling out broken drills, taps, bolts, screws, studs, weldments*
- ▷ *All sizes are individually packaged*



## 710 SERIES

### SOLID CARBIDE

140° Split Point / Straight Shank  
Fractional & Letter / Bright



710

Size	Flute Length	Overall Length	710 Order No.
3/64"	1/2"	1-3/8"	710A103
1/16"	5/8"	1-5/8"	710A104
5/64"	11/16"	1-11/16"	710A105
3/32"	3/4"	1-3/4"	710A106
7/64"	13/16"	1-13/16"	710A107
1/8"	7/8"	1-7/8"	710A108
9/64"	15/16"	1-15/16"	710A109
5/32"	1"	2-1/16"	710A110
11/64"	1-1/16"	2-1/8"	710A111
3/16"	1-1/8"	2-3/16"	710A112
13/64"	1-3/16"	2-1/4"	710A113
7/32"	1-1/4"	2-3/8"	710A114
15/64"	1-5/16"	2-7/16"	710A115
1/4"	1-3/8"	2-1/2"	710A116
17/64"	1-7/16"	2-5/8"	710A117
9/32"	1-1/2"	2-11/16"	710A118
19/64"	1-9/16"	2-3/4"	710A119
5/16"	1-5/8"	2-13/16"	710A120
21/64"	1-11/16"	2-15/16"	710A121
11/32"	1-11/16"	3"	710A122
23/64"	1-3/4"	3-1/16"	710A123
3/8"	1-13/16"	3-1/8"	710A124
25/64"	1-7/8"	3-1/4"	710A125
13/32"	1-15/16"	3-5/16"	710A126
27/64"	2"	3-3/8"	710A127
7/16"	2-1/8"	3-7/16"	710A128
29/64"	2-1/8"	3-9/16"	710A129
15/32"	2-1/8"	3-5/8"	710A130

Size	Flute Length	Overall Length	710 Order No.
31/64"	2-3/16"	3-11/16"	710A131
1/2"	2-1/4"	3-3/4"	710A132
A	1-5/16"	2-7/16"	710A501
B	1-3/8"	2-1/2"	710A502
C	1-3/8"	2-1/2"	710A503
D	1-3/8"	2-1/2"	710A504
E	1-3/8"	2-1/2"	710A505
F	1-7/16"	2-5/8"	710A506
G	1-7/16"	2-5/8"	710A507
H	1-1/2"	2-11/16"	710A508
I	1-1/2"	2-11/16"	710A509
J	1-1/2"	2-11/16"	710A510
K	1-1/2"	2-11/16"	710A511
L	1-9/16"	2-3/4"	710A512
M	1-9/16"	2-3/4"	710A513
N	1-5/8"	2-13/16"	710A514
O	1-11/16"	2-15/16"	710A515
P	1-11/16"	2-15/16"	710A516
Q	1-11/16"	3"	710A517
R	1-11/16"	3"	710A518
S	1-3/4"	3-1/16"	710A519
T	1-3/4"	3-1/16"	710A520
U	1-13/16"	3-1/8"	710A521
V	1-7/8"	3-1/4"	710A522
W	1-7/8"	3-1/4"	710A523
X	1-15/16"	3-5/16"	710A524
Y	1-15/16"	3-5/16"	710A525
Z	2"	3-3/8"	710A526

# CARBIDE STRAIGHT FLUTE DRILLS

## 710 SERIES

### SOLID CARBIDE

140° Split Point / Straight Shank  
Number / Bright



710

Size	Flute Length	Overall Length	710 Order No.
1	1-5/16"	2-7/16"	710A001
2	1-5/16"	2-7/16"	710A002
3	1-1/4"	2-3/8"	710A003
4	1-1/4"	2-3/8"	710A004
5	1-1/4"	2-3/8"	710A005
6	1-1/4"	2-3/8"	710A006
7	1-3/16"	2-1/4"	710A007
8	1-3/16"	2-1/4"	710A008
9	1-3/16"	2-1/4"	710A009
10	1-3/16"	2-1/4"	710A010
11	1-3/16"	2-1/4"	710A011
12	1-3/16"	2-1/4"	710A012
13	1-1/8"	2-3/16"	710A013
14	1-1/8"	2-3/16"	710A014
15	1-1/8"	2-3/16"	710A015
16	1-1/8"	2-3/16"	710A016
17	1-1/8"	2-3/16"	710A017
18	1-1/16"	2-1/8"	710A018
19	1-1/16"	2-1/8"	710A019
20	1-1/16"	2-1/8"	710A020
21	1-1/16"	2-1/8"	710A021
22	1-1/16"	2-1/8"	710A022
23	1"	2-1/16"	710A023
24	1"	2-1/16"	710A024
25	1"	2-1/16"	710A025
26	1"	2-1/16"	710A026
27	1"	2-1/16"	710A027
28	15/16"	1-15/16"	710A028
29	15/16"	1-15/16"	710A029
30	15/16"	1-15/16"	710A030

Size	Flute Length	Overall Length	710 Order No.
31	7/8"	1-7/8"	710A031
32	7/8"	1-7/8"	710A032
33	7/8"	1-7/8"	710A033
34	7/8"	1-7/8"	710A034
35	7/8"	1-7/8"	710A035
36	13/16"	1-13/16"	710A036
37	13/16"	1-13/16"	710A037
38	13/16"	1-13/16"	710A038
39	13/16"	1-13/16"	710A039
40	13/16"	1-13/16"	710A040
41	13/16"	1-13/16"	710A041
42	3/4"	1-3/4"	710A042
43	3/4"	1-3/4"	710A043
44	3/4"	1-3/4"	710A044
45	3/4"	1-3/4"	710A045
46	3/4"	1-3/4"	710A046
47	3/4"	1-3/4"	710A047
48	11/16"	1-11/16"	710A048
49	11/16"	1-11/16"	710A049
50	11/16"	1-11/16"	710A050
51	11/16"	1-11/16"	710A051
52	11/16"	1-11/16"	710A052
53	5/8"	1-1/2"	710A053
54	5/8"	1-1/2"	710A054
55	5/8"	1-1/2"	710A055
56	1/2"	1-3/8"	710A056
57	1/2"	1-3/8"	710A057
58	1/2"	1-3/8"	710A058
59	1/2"	1-3/8"	710A059
60	1/2"	1-3/8"	710A060

Corresponding Sets		
No. of Pcs.	Description	Order No.
710 Series Solid Carbide Straight Flute Sets		
5	1/8, 3/16, 1/4, 5/16, 3/8	710A5



710A5



# CARBIDE SCREW MACHINE LENGTH DRILLS

Slow helix 135° split point provides ease of penetration and increases edge strength.

- ▷ Heavy-duty web, short flute, and overall length increases strength and rigidity
- ▷ Suited for drilling difficult materials (up to Rc 60), including nickel alloys, chrome alloys, steel weldments, titanium alloys, high temperature alloys, and stainless-steel weldments
- ▷ All sizes are individually packaged

## 720 SERIES

### SOLID CARBIDE

135° Split Point / Straight Shank / Slow Helix  
Fractional & Letter / Bright



720

Size	Flute Length	Overall Length	720 Order No.	Size	Flute Length	Overall Length	720 Order No.
3/64"	1/2"	1-3/8"	720A103	31/64"	2-3/16"	3-11/16"	720A131
1/16"	5/8"	1-5/8"	720A104	1/2"	2-1/4"	3-3/4"	720A132
5/64"	11/16"	1-11/16"	720A105	A	1-5/16"	2-7/16"	720A501
3/32"	3/4"	1-3/4"	720A106	B	1-3/8"	2-1/2"	720A502
7/64"	13/16"	1-13/16"	720A107	C	1-3/8"	2-1/2"	720A503
1/8"	7/8"	1-7/8"	720A108	D	1-3/8"	2-1/2"	720A504
9/64"	15/16"	1-15/16"	720A109	E	1-3/8"	2-1/2"	720A505
5/32"	1"	2-1/16"	720A110	F	1-7/16"	2-5/8"	720A506
11/64"	1-1/16"	2-1/8"	720A111	G	1-7/16"	2-5/8"	720A507
3/16"	1-1/8"	2-3/16"	720A112	H	1-1/2"	2-11/16"	720A508
13/64"	1-3/16"	2-1/4"	720A113	I	1-1/2"	2-11/16"	720A509
7/32"	1-1/4"	2-3/8"	720A114	J	1-1/2"	2-11/16"	720A510
15/64"	1-5/16"	2-7/16"	720A115	K	1-1/2"	2-11/16"	720A511
1/4"	1-3/8"	2-1/2"	720A116	L	1-9/16"	2-3/4"	720A512
17/64"	1-7/16"	2-5/8"	720A117	M	1-9/16"	2-3/4"	720A513
9/32"	1-1/2"	2-11/16"	720A118	N	1-5/8"	2-13/16"	720A514
19/64"	1-9/16"	2-3/4"	720A119	O	1-11/16"	2-15/16"	720A515
5/16"	1-5/8"	2-13/16"	720A120	P	1-11/16"	2-15/16"	720A516
21/64"	1-11/16"	2-15/16"	720A121	Q	1-11/16"	3"	720A517
11/32"	1-11/16"	3"	720A122	R	1-11/16"	3"	720A518
23/64"	1-3/4"	3-1/16"	720A123	S	1-3/4"	3-1/16"	720A519
3/8"	1-13/16"	3-1/8"	720A124	T	1-3/4"	3-1/16"	720A520
25/64"	1-7/8"	3-1/4"	720A125	U	1-13/16"	3-1/8"	720A521
13/32"	1-15/16"	3-5/16"	720A126	V	1-7/8"	3-1/4"	720A522
27/64"	2"	3-3/8"	720A127	W	1-7/8"	3-1/4"	720A523
7/16"	2-1/16"	3-7/16"	720A128	X	1-15/16"	3-5/16"	720A524
29/64"	2-1/8"	3-9/16"	720A129	Y	1-15/16"	3-5/16"	720A525
15/32"	2-1/8"	3-5/8"	720A130	Z	2"	3-3/8"	720A526

# CARBIDE STRAIGHT FLUTE DRILLS

## 720 SERIES

### SOLID CARBIDE

135° Split Point / Straight Shank / Slow Helix  
Number / Bright



720

Size	Flute Length	Overall Length	720 Order No.
1	1-5/16"	2-7/16"	720A001
2	1-5/16"	2-7/16"	720A002
3	1-1/4"	2-3/8"	720A003
4	1-1/4"	2-3/8"	720A004
5	1-1/4"	2-3/8"	720A005
6	1-1/4"	2-3/8"	720A006
7	1-3/16"	2-1/4"	720A007
8	1-3/16"	2-1/4"	720A008
9	1-3/16"	2-1/4"	720A009
10	1-3/16"	2-1/4"	720A010
11	1-3/16"	2-1/4"	720A011
12	1-3/16"	2-1/4"	720A012
13	1-1/8"	2-3/16"	720A013
14	1-1/8"	2-3/16"	720A014
15	1-1/8"	2-3/16"	720A015
16	1-1/8"	2-3/16"	720A016
17	1-1/8"	2-3/16"	720A017
18	1-1/16"	2-1/8"	720A018
19	1-1/16"	2-1/8"	720A019
20	1-1/16"	2-1/8"	720A020
21	1-1/16"	2-1/8"	720A021
22	1-1/16"	2-1/8"	720A022
23	1"	2-1/16"	720A023
24	1"	2-1/16"	720A024
25	1"	2-1/16"	720A025
26	1"	2-1/16"	720A026
27	1"	2-1/16"	720A027
28	15/16"	1-15/16"	720A028
29	15/16"	1-15/16"	720A029
30	15/16"	1-15/16"	720A030

Size	Flute Length	Overall Length	720 Order No.
31	7/8"	1-7/8"	720A031
32	7/8"	1-7/8"	720A032
33	7/8"	1-7/8"	720A033
34	7/8"	1-7/8"	720A034
35	7/8"	1-7/8"	720A035
36	13/16"	1-13/16"	720A036
37	13/16"	1-13/16"	720A037
38	13/16"	1-13/16"	720A038
39	13/16"	1-13/16"	720A039
40	13/16"	1-13/16"	720A040
41	13/16"	1-13/16"	720A041
42	3/4"	1-3/4"	720A042
43	3/4"	1-3/4"	720A043
44	3/4"	1-3/4"	720A044
45	3/4"	1-3/4"	720A045
46	3/4"	1-3/4"	720A046
47	3/4"	1-3/4"	720A047
48	11/16"	1-11/16"	720A048
49	11/16"	1-11/16"	720A049
50	11/16"	1-11/16"	720A050
51	11/16"	1-11/16"	720A051
52	11/16"	1-11/16"	720A052
53	5/8"	1-1/2"	720A053
54	5/8"	1-1/2"	720A054
55	5/8"	1-1/2"	720A055
56	1/2"	1-3/8"	720A056
57	1/2"	1-3/8"	720A057
58	1/2"	1-3/8"	720A058
59	1/2"	1-3/8"	720A059
60	1/2"	1-3/8"	720A060

## CARBIDE 3-FLUTE DRILLS

3-Flute Solid Carbide drills can be used for centering, spotting, or drilling. This tool provides precise hole size, finish, and higher productivity. Applications include titanium, cast iron, low alloy steel, and high silicon aluminum.

▷ All sizes are individually packaged

### 730 SERIES

#### SOLID CARBIDE

150° Point / Straight Shank  
Fractional & Metric / Bright



730

Size	Flute Length	Overall Length	730 Order No.
1/8"	1-1/4"	2-1/4"	730A108
9/64"	1-3/8"	2-1/2"	730A109
5/32"	1-3/8"	2-1/2"	730A110
11/64"	1-5/8"	2-3/4"	730A111
3/16"	1-5/8"	2-3/4"	730A112
13/64"	1-3/4"	3"	730A113
7/32"	1-3/4"	3"	730A114
15/64"	2"	3-1/4"	730A115
1/4"	2"	3-1/4"	730A116
17/64"	2-1/8"	3-1/2"	730A117
9/32"	2-1/8"	3-1/2"	730A118
19/64"	2-3/8"	3-3/4"	730A119
5/16"	2-3/8"	3-3/4"	730A120
21/64"	2-1/2"	4"	730A121
11/32"	2-1/2"	4"	730A122
23/64"	2-1/2"	4"	730A123
3/8"	2-3/4"	4-1/2"	730A124
25/64"	2-7/8"	4-1/2"	730A125
13/32"	2-7/8"	4-1/2"	730A126
27/64"	2-7/8"	4-1/2"	730A127
7/16"	2-7/8"	4-1/2"	730A128
29/64"	3"	4-1/2"	730A129
15/32"	3"	4-3/4"	730A130
31/64"	3"	4-3/4"	730A131
1/2"	3"	4-3/4"	730A132
17/32"	3"	4-3/4"	730A134
9/16"	3-1/2"	5-3/4"	730A136
5/8"	3-1/2"	5-3/4"	730A140
3/4"	4-1/4"	5-3/4"	730A148

Size	Flute Length	Overall Length	730 Order No.
3.0 (mm)	1-1/4"	2-1/4"	730A003
6.0 (mm)	2"	3-1/4"	730A006
8.0 (mm)	2-3/8"	3-3/4"	730A008
10.0 (mm)	2-7/8"	4-1/2"	730A010
12.0 (mm)	3"	4-3/4"	730A012
14.0 (mm)	3-1/2"	5-3/4"	730A014
16.0 (mm)	3-1/2"	5-3/4"	730A016

## CARBIDE SPADE DRILLS

Solid Carbide spade drills perform well in hard-to-machine materials (up to Rc 60), high strength alloys, plastic, and glass. They can be used in thin sheet metal and spotting applications. Drilling depth should not exceed 2x the drill diameter.

▷ All sizes are individually packaged

### 750 SERIES

#### SOLID CARBIDE

118° Point / Straight Shank  
 Fractional / Bright



750

Size	Flute Length	Overall Length	Shank Size	750 Order No.
1/32"	3/16"	1-1/2"	1/8"	750A102
3/64"	7/32"	1-1/2"	1/8"	750A103
1/16"	5/16"	1-1/2"	1/8"	750A104
5/64"	7/16"	1-1/2"	1/8"	750A105
3/32"	7/16"	1-1/2"	1/8"	750A106
7/64"	7/16"	1-1/2"	1/8"	750A107
1/8"	1/2"	1-1/2"	1/8"	750A108
9/64"	1/2"	2"	3/16"	750A109
5/32"	9/16"	2"	3/16"	750A110
11/64"	9/16"	2"	3/16"	750A111
3/16"	11/16"	2"	3/16"	750A112

Size	Flute Length	Overall Length	Shank Size	750 Order No.
7/32"	19/32"	2-1/2"	1/4"	750A114
1/4"	11/16"	2-1/2"	1/4"	750A116
9/32"	3/4"	2-1/2"	5/16"	750A118
5/16"	7/8"	2-1/2"	5/16"	750A120
11/32"	15/16"	2-1/2"	3/8"	750A122
3/8"	1-1/8"	2-1/2"	3/8"	750A124
13/32"	1-1/8"	2-1/2"	1/2"	750A126
7/16"	1-3/16"	3"	1/2"	750A128
15/32"	1-3/16"	3"	1/2"	750A130
1/2"	1-3/16"	3"	1/2"	750A132

## CARBIDE COMBINED & COUNTERSINK (CENTER DRILL)

Solid Carbide Combination Drill & Countersinks (also known as Center Drills) have strong shanks and flutes, making them ideal for drilling and countersinking in difficult materials. They may also be used in high-production applications where tolerance, finish, and machine downtimes are considered. Included angle is 60°. Other angles are available upon request.

▷ All sizes are individually packaged

### 3500C SERIES

#### SOLID CARBIDE

60° Angle  
 Bright



3500C

Size	Body Dia.	Overall Length	Drill Dia.	3500C Order No.
00	1/8"	1-1/4"	0.025	350CA00A
0	1/8"	1-1/4"	1/32"	350CAB0A
1	1/8"	1-1/4"	3/64"	350C001A
2	3/16"	1-7/8"	5/64"	350C002A
3	1/4"	2"	7/64"	350C003A
4	5/16"	2-1/8"	1/8"	350C004A
5	7/16"	2-3/4"	3/16"	350C005A
6	1/2"	3"	7/32"	350C006A



# MASONRY DRILLS

This masonry drill is used to drill Concrete, Natural Stone, Aerated Concrete, Masonry, Brick, Block, and Lime Sandstone. Self Centering Tip for easy spot drilling. Chisel Shaped Head Geometry-for faster drilling progress. Hardened Steel Body-for increased impact resistance. Large Volume Flute creates cupping effect for efficient dust extraction.

▷ All sizes are individually packaged

## 1600N SERIES

**CARBIDE TIP**

**Straight Shank**

**Fractional / Gold & Silver**



1600N

Size	Flute Length	Overall Length	Shank Size	1600N Order No.
1/8"	1-3/8"	2-1/2"	1/8"	160N108
5/32"	1-1/2"	3"	5/32"	160N110
3/16"	2"	3-1/2"	3/16"	160N112
7/32"	2"	3-1/2"	7/32"	160N114
1/4"	2-3/8"	4"	1/4"	160N116
9/32"	2-3/8"	4"	9/32"	160N118

Size	Flute Length	Overall Length	Shank Size	1600N Order No.
5/16"	3"	5"	5/16"	160N120
3/8"	3"	5"	3/8"	160N124
7/16"	3-1/2"	6"	7/16"	160N128
15/32"	3-1/2"	6"	15/32"	160N130
1/2"	3-1/2"	6"	1/2"	160N132
9/16"	3-1/2"	6"	1/2"	160N136

## 1600A SERIES

**CARBIDE TIP**

**Rotary Percussion & Hammer Drilling,  
Round Shank**

**Fractional / Black & Gold Tipped**



1600A

The combination of rotation and percussion helps the drill achieve a cutting and grinding (rotary) action at the same time as a chipping (percussive) action, chipping away at rock to produce a hole. Usually, these motions are hydraulically or pneumatically driven.

Size	Flute Length	Overall Length	Shank Size	1600A Order No.
1/8"	1-1/2"	3"	1/8"	160A1083
5/32"	1-1/2"	3"	5/32"	160A1103
3/16"	2"	4"	3/16"	160A1124
3/16"	3-1/2"	6"	3/16"	160A1126
3/16"	4-3/4"	8"	3/16"	160A1128
7/32"	2"	4"	7/32"	160A1144
1/4"	2"	4"	1/4"	160A1164
1/4"	3-1/2"	6"	1/4"	160A1166
1/4"	6-5/8"	12"	1/4"	160A11612
1/4"	10"	16"	1/4"	160A11616
1/4"	18-1/2"	24"	1/4"	160A11624
5/16"	2-1/2"	5"	1/4"	160A1205
5/16"	3-1/2"	6"	1/4"	160A1206
5/16"	4-3/4"	8"	1/4"	160A1208
5/16"	6-5/8"	12"	1/4"	160A12012
5/16"	10"	16"	1/4"	160A12016
5/16"	18-1/2"	24"	1/4"	160A12024
11/32"	2-1/2"	5"	1/4"	160A1225
3/8"	2-1/2"	5"	5/16"	160A1245
3/8"	3-1/2"	6"	5/16"	160A1246A
3/8"	4-3/4"	8"	5/16"	160A1248A
3/8"	6-5/8"	12"	5/16"	160A12412A
3/8"	10"	16"	5/16"	160A12416A
3/8"	18-1/2"	24"	5/16"	160A12424A
7/16"	3-1/2"	6"	3/8"	160A1286A

Size	Flute Length	Overall Length	Shank Size	1600A Order No.
1/2"	3-1/2"	6"	3/8"	160A1326A
1/2"	6-5/8"	12"	3/8"	160A13212A
1/2"	10"	16"	3/8"	160A13216A
1/2"	18-1/2"	24"	3/8"	160A13224A
9/16"	3-1/2"	6"	3/8"	160A1366A
9/16"	4-3/4"	8"	3/8"	160A1368A
9/16"	10"	16"	3/8"	160A13616B
19/32"	3-1/2"	6"	1/2"	160A1386B
5/8"	3-1/2"	6"	1/2"	160A1406B
5/8"	4-3/4"	8"	1/2"	160A1408A
5/8"	10"	16"	1/2"	160A14016B
5/8"	18-1/2"	24"	1/2"	160A14024B
3/4"	4"	6-1/2"	1/2"	160A1486B
3/4"	6-5/8"	12"	1/2"	160A14812B
3/4"	10"	16"	1/2"	160A14816B
3/4"	18-1/2"	24"	1/2"	160A14824B
7/8"	4"	6-1/2"	1/2"	160A1566B
7/8"	6-5/8"	12"	1/2"	160A15612B
7/8"	10"	16"	1/2"	160A15616B
7/8"	18-1/2"	24"	1/2"	160A15624B
1"	4"	6-1/2"	1/2"	160A1646B
1"	6-5/8"	12"	1/2"	160A16412B
1"	10"	16"	1/2"	160A16416B
1"	18-1/2"	24"	1/2"	160A16424B

## MASONRY DRILLS

The TAPCON® drill bit is specially designed to be used with the TAPCON® masonry fastener and installation kit.

▷ All sizes are individually packaged

### 1750 SERIES

#### CARBIDE TIP

TAPCON® SDS-HEX Type Screw Anchor Drills  
Fractional / Bright



1750

Size	Flute Length	Overall Length	1750 Order No.
5/32"	2-3/8"	5"	175F1105
5/32"	4-1/8"	7"	175F1107
3/16"	2-3/8"	5"	175F1125
3/16"	4-1/8"	7"	175F1127

### 1800E SERIES

#### CARBIDE TIP

TAPCON® Screw Type Anchor Drills  
Fractional / Black with Gold Tip



1800E

Size	Overall Length	Screw Size	1800E Order No.
5/32"	3-1/2"	12	180E1103
5/32"	4-1/2"	12	180E1104
5/32"	5-1/2"	12	180E1105
3/16"	3-1/2"	14	180E1123
3/16"	4-1/2"	14	180E1124
3/16"	5-1/2"	14	180E1125

### 1800A SERIES

#### CARBIDE TIP

TAPCON® Screw Type Anchor Drills  
Fractional / Black with Gold Tip



1800A

Size	Overall Length	Screw Size	1800A Order No.
5/32"	3-1/2"	12	180A1103
5/32"	4-1/2"	12	180A1104
5/32"	5-1/2"	12	180A1105
3/16"	3-1/2"	14	180A1123
3/16"	4-1/2"	14	180A1124
3/16"	5-1/2"	14	180A1125
3/16"	6-1/2"	14	180A1126
3/16"	7-1/2"	14	180A1127

## GLASS AND TILE DRILLS

For the drilling of glass, tile, and ceramics. Can be used with or without water or coolant; water is the preferred and best way. For use in rotary motors (not to be confused or used with rotary percussion motors).

### 1840 SERIES

Straight Shank  
Fractional / Bright



1840

Size	Overall Length	1840 Order No.
1/8"	3-1/2"	184F108
3/16"	3-1/2"	184F112
1/4"	3-1/2"	184F116
5/16"	3-3/4"	184F120
3/8"	4"	184F124
1/2"	4"	184F132

## SDS PLUS MASONRY DRILLS

Short head-to-flute entrance allows debris to quickly channel down the flute for faster drilling progress. Chisel-shaped head geometry for faster drilling progress. Self-centering tip for easy spot drilling. Reinforced flute geometry reduces vibrations, increases breakage resistance, and transfers more energy from power tool motor to tip of the drill bit. Rebar Chamfer prevents carbide head from cracking in the event of contact with reinforced concrete (product not intended for use in reinforced concrete).

### 1700A SERIES

**CARBIDE TIP**

SDS Plus

Fractional / Bright



1700A

Size	Flute Length	Overall Length	1700A Order No.
5/32"	2"	4-1/4"	170A1104
5/32"	4"	6-1/4"	170A1106
3/16"	2"	4-1/2"	170A1124
3/16"	4"	6-1/2"	170A1126
3/16"	6"	8-1/2"	170A1128
3/16"	10"	12-1/2"	170A11212
7/32"	2"	4-1/2"	170A1144
7/32"	4"	6-1/2"	170A1146
7/32"	6"	8-1/2"	170A1148
1/4"	2"	4-1/2"	170A1164
1/4"	4"	6-1/2"	170A1166
1/4"	6"	8-1/2"	170A1168
1/4"	9"	10-1/2"	170A11612
1/4"	18"	20"	170A11618
5/16"	4"	6-1/2"	170A1206
5/16"	6"	8-1/2"	170A1208
5/16"	10"	12-1/2"	170A12012
3/8"	4"	6-1/2"	170A1246
3/8"	6"	8-1/2"	170A1248
3/8"	10"	12-1/2"	170A12412
3/8"	16"	18"	170A12418
3/8"	22"	24"	170A12424
7/16"	4"	6-1/2"	170A1286

Size	Flute Length	Overall Length	1700A Order No.
7/16"	10"	12-1/2"	170A12812
1/2"	4"	6-1/2"	170A1326
1/2"	8"	10-1/2"	170A13210
1/2"	10"	12-1/2"	170A13212
1/2"	16"	18"	170A13218
1/2"	22"	24"	170A13224
9/16"	4"	6-1/4"	170A1366
9/16"	10"	12-1/4"	170A13612
9/16"	16"	18"	170A13618
5/8"	4"	6-1/4"	170A1406
5/8"	6"	8-1/4"	170A1408
5/8"	10"	12-1/4"	170A14012
5/8"	16"	18"	170A14018
5/8"	22"	24"	170A14024
11/16"	6"	8"	170A1448
3/4"	6"	8"	170A1488
3/4"	10"	12"	170A14812
3/4"	16"	18"	170A14818
7/8"	8"	10"	170A15610
7/8"	10"	12"	170A15612
7/8"	16"	18"	170A15618
1"	10"	12"	170A16412
1"	16"	18"	170A16418

All sizes are individually packaged.

### 1700B SERIES (bulk packaging)

**CARBIDE TIP**

SDS Plus

Fractional / Bright



1700B

Size	Flute Length	Overall Length	1700B Order No.
5/32"	2"	4-1/4"	170B1104
5/32"	4"	6-1/4"	170B1106
3/16"	2"	4-1/2"	170B1124
3/16"	4"	6-1/2"	170B1126
3/16"	6"	8-1/2"	170B1128
7/32"	4"	6-1/2"	170B1146
7/32"	6"	8-1/2"	170B1148

Size	Flute Length	Overall Length	1700B Order No.
1/4"	2"	4-1/2"	170B1164
1/4"	4"	6-1/2"	170B1166
1/4"	6"	8-1/2"	170B1168
5/16"	4"	6-1/2"	170B1206
3/8"	4"	6-1/2"	170B1246
3/8"	6"	8-1/2"	170B1248
1/2"	10"	12-1/2"	170B13212
5/8"	6"	8-1/4"	170B1408

**1700B PACKAGING:**  
5/32" thru 3/8" - 25 per pack  
1/2" thru 5/8" - 15 per pack

**1730 PACKAGING:**  
All sizes are individually packaged.

## SDS PLUS & SDS MAX MASONRY DRILLS

The 3-cutting-edge monobloc tip is the solution for all concrete drilling. The self-centering tip provides more precision, and this design guarantees a concentric hole. The bit is designed for longer life when drilling in concrete. As an additional benefit, it can crush through and pulverize rebar when drilling in reinforced concrete applications. The square flute accelerates dust extraction and improves the drill bit's lifetime. The reinforced geometry reduces vibrations and transfers more energy from the power tool motor to the tip of the drill bit.

▷ All sizes are individually packaged

### 1720 SERIES CARBIDE TIP SDS PLUS DURA-TIP Fractional / Bright



1720

Size	Flute Length	Overall Length	1720 Order No.
3/16"	2"	4-1/4"	172F1124
3/16"	4"	6-1/2"	172F1126
3/16"	6"	8-1/2"	172F1128
3/16"	10"	12-1/2"	172F11212
1/4"	2"	4-1/2"	172F1164
1/4"	4"	6-1/2"	172F1166
1/4"	6"	8-1/2"	172F1168
1/4"	10"	12-1/2"	172F11612
5/16"	4"	6-1/2"	172F1206
5/16"	10"	12-1/2"	172F12012
5/16"	16"	18"	172F12018
3/8"	4"	6-1/4"	172F1246
3/8"	10"	12-1/4"	172F12412
3/8"	16"	18"	172F12418
7/16"	4"	6-1/4"	172F1286
1/2"	4"	6-1/4"	172F1326

Size	Flute Length	Overall Length	1720 Order No.
1/2"	10"	12-1/4"	172F13212
1/2"	16"	18"	172F13218
9/16"	4"	6-1/4"	172F1366
9/16"	10"	12-1/4"	172F13612
9/16"	16"	18"	172F13618
5/8"	8"	10-1/4"	172F14010
5/8"	10"	12-1/4"	172F14012
3/4"	8"	10"	172F14810
3/4"	10"	12"	172F14812

Size	Flute Length	Overall Length	1720 BULK Order No.
3/16"	4"	6-1/2"	172B1126
1/4"	4"	6-1/2"	172B1166
5/16"	4"	6-1/2"	172B1206
3/8"	4"	6-1/4"	172B1246
1/2"	4"	6-1/4"	172B1326

3/16" thru 5/16" - 15 per pack, 3/8" thru 1/2" - 10 per pack

### 1740 SERIES CARBIDE TIP SDS MAX Fractional / Bright



1740

Designed for longer life in concrete and reinforced concrete applications. The 6-cutting-edge geometry guarantees perfect round and calibrated holes, a longer lifetime, an anti-blocking system, and really low vibration which delivers more comfort. The square flutes accelerate dust extraction and improves the drill bit's lifetime as well as transfers more impact energy from the head to the tip of the drill bit. It can crush through and pulverize rebar when drilling in reinforced concrete applications.

Size	Flute Length	Overall Length	1740 Order No.
1/2"	7-1/2"	13"	174F13213*
1/2"	15-1/2"	21"	174F13221*
9/16"	7-1/2"	13"	174F13613*
9/16"	15-1/2"	21"	174F13621*
5/8"	7-1/2"	13"	174F14013
5/8"	15-1/2"	21"	174F14021
5/8"	31"	36"	174F14036
3/4"	7-1/2"	13"	174F14813
3/4"	17"	21"	174F14821
3/4"	31"	36"	174F14836
7/8"	8"	13"	174F15613

Size	Flute Length	Overall Length	1740 Order No.
7/8"	17"	21"	174F15621
1"	8"	13"	174F16413
1"	17"	21"	174F16421
1"	31"	36"	174F16436
1-1/8"	12"	17"	174F20817
1-1/8"	17"	21"	174F20821
1-1/4"	9-1/2"	15"	174F21615
1-1/4"	18"	23"	174F21623
1-1/4"	31"	36"	174F21636
1-3/8"	18"	23"	174F22423
1-1/2"	18"	21"	174F23223



## MASONRY DRILLS REBAR CUTTERS

These cutters are the perfect solution for drilling through concrete embedded rebar! Evacuation zones between the carbide teeth and flutes for optimal dust evacuation. Made from premium grade European Carbide.

For sizes 3/8" – 5/8", rebar cutters come in a single, one-piece design in either Micro SDS+ (Compatible with SDS+ drive systems), or 3-Flat shank.

For sizes 3/4" and above, Drillco rebar cutters come in a two-piece design (Head + Shank Adapter). The adapter is available in Micro SDS+ or 3-Flat Shank, and is interchangeable and reusable with all sizes from 3/4" and above.

- ▷ *Cuts through rebar up to 5x faster than an SDS+ multi-cutting drill*
- ▷ *Eliminates the need to relocate holes to avoid rebar; just drill straight through!*
- ▷ *Large, unique flute design optimizes debris removal*
- ▷ *Relief hole for easier chip and heat removal away from the drilling surface*

### 1760 / 1770 SERIES

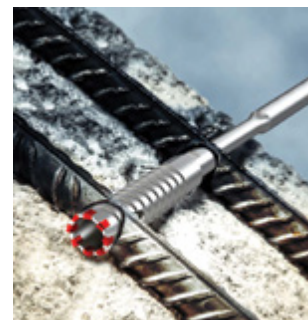
#### SOLID CARBIDE

Micro SDS+ or 3-Flat Shank / Fractional / Bright  
One-Piece Design



1760

Size	Head Length	Overall Length	Micro SDS+ Order No	3-Flat SDS Order No
3/8"	4"	8"	176F1248	177F1248
1/2"	4"	12"	176F13212	177F13212
9/16"	4"	12"	176F13612	177F13612
5/8"	4"	12"	176F14012	177F14012



### 1780 SERIES

#### SOLID CARBIDE

Head Only / Fractional / Bright  
Two-Piece Design



1780

Size	Head Length	Order No
3/4"	4"	178F1484
7/8"	4"	178F1564
1"	4"	178F1644
1-1/8"	4"	178F2084
1-1/4"	4"	178F2164
1-3/8"	4"	178F2244
1-1/2"	4"	178F2324

Type	Adapter Length	Order No
SDS PLUS	9"	178FSDSADAPT
3-Flat Shank	9"	178F3FLATADAPT



#### **Tech tip!**

*Use rebar cutters on rotation mode only*

# MASONRY HAMMER DRILL TOOLS

## 1850 SERIES



1850 Gouging Chisel



1850 Pointed Chisel



1850 Flat Chisel



1850 Toothed Chisel aka Slotting Tool



1850 Mortar Chisel aka Seam Tool



1850 Tile Chisel

Description	Overall Length	Shank Type	Length of Cut	1850 Order No.
BULL POINT CHISEL SDS-PLUS SHANK 10"	10"	SDS PLUS	–	185FCB05
BULL POINT CHISEL SDS-MAX 12"	12"	SDS MAX	–	185FCB06
BULL POINT CHISEL SDS-MAX 18"	18"	SDS MAX	–	185FCB07
BUSHING TOOL SDS-MAX 1-3/4"	9-1/2"	SDS MAX	–	185FCB29
FLAT CHISEL SDS-PLUS 3/4"	10"	SDS PLUS	13/16"	185FCF11
FLAT CHISEL SDS-MAX 1"	12"	SDS MAX	15/16"	185FCF13
FLAT CHISEL SDS-MAX 1"	18"	SDS MAX	15/16"	185FCF14
GOUGING CHISEL SDS-PLUS 7/8"	10"	SDS PLUS	–	185FCG27
GOUGING CHISEL SDS-MAX 1"	12"	SDS MAX	–	185FCG28
MOIL POINT CHISEL 3/4"	12"	3/4"	–	185FCM02
MOIL POINT CHISEL 3/4"	18"	3/4"	–	185FCM03
MORTAR/SEAM SDS-MAX 1 1/8"	12"	SDS MAX	–	185FCM26
SCALING CHISEL SDS-PLUS 1-1/2"	10"	SDS PLUS	1-9/16"	185FCS12
SCALING CHISEL SDS-MAX 2"	12"	SDS MAX	2"	185FCS15
SCALING CHISEL SDS-MAX 3"	12"	SDS MAX	3-3/16"	185FCS16
SCALING CHISEL 3/4"	12"	3/4"	3-3/16"	185FCS23
SLOTING CHISEL SDS-MAX 1-1/8"	12"	SDS MAX	1-9/16"	185FCS25
TILE SCALING CHISEL SDS- PLUS 3"	6-1/2"	SDS PLUS	1-9/16"	185FCT23
TILE SCALING CHISEL SDS- MAX 2"	12"	SDS MAX	1-31/32"	185FCT24

## 1860 SERIES



1860 - ADAPTER



1860 - SCRIBER

Description	Overall Length	Shank Type	1860 Order No.
SDS-PLUS ADAPTER SDS-MAX SHANK 8"	8"	SDS MAX	186FA01
CHUCK ADAPTER SDS-PLUS SHANK 2"	2"	SDS PLUS	186FA02
CHUCK ADAPTER SDS-PLUS SHANK 2-1/2"	2-1/2"	SDS PLUS	186FA03
CARBIDE TIPPED SCRIBER HEXAGONAL SHANK	–	HEXAGONAL	186FA04





# MULTI-STEP DRILLS



3-flat shank reduces slippage in the drill chuck. For sheet metal and other thin material such as plastic, PVC pipe, and wood. Ideal for electricians and other skilled trades.

**8900 SERIES**  
Bright / 3-Flat Shank  
Fractional



8900

Size	Shank Size	Min. Size	Max. Size	Step Increment	Number of Steps	8900 Order No.
1	1/4"	1/8"	1/2"	1/32"	13	890A001
2	1/4"	3/16"	1/2"	1/16"	6	890A002
3	3/8"	1/4"	3/4"	1/16"	9	890A003
4	3/8"	3/16"	7/8"	1/16"	12	890A004
5	1/2"	1/4"	1-3/8"	1/8"	10	890A005

DRILLCO's MULTI-STEP drills are designed for all sheet metals up to 5/32" thick. Creates clean, round, burr free holes in multiple sizes with just one tool!

**8950 SERIES**  
TiN/ Hex Shank  
Fractional

3pc Set



Individually blister packed for easy display!

Tool#	Description	4700SE Order No.
1	13 Steps: 1/8" to 1/2"	895A001
2	9 Steps: 1/4" to 3/4"	895A002
3	12 Steps: 3/16" to 7/8"	895A003
4	13 Steps: 1/4" to 1.1/8"	895A004
SET	3pc Set: Tools #1 - #3	895SET



# MULTI-STEP™ DRILLS

Now with the exclusive ICECUT™ coating

Multi-Step drill bits are the fastest and easiest way to enlarge holes in sheet metal and other materials up to 1/8" thick.

- ▷ *Special AlCrN coating provides additional toughness and wear resistance to prolong tooling life, even when compared to titanium based coatings such as TiN or TiAlN*
- ▷ *2 wide cylindrical flutes eliminate chip build-up for faster drilling and to produce holes with minimal vibration or distortion*
- ▷ *Each shank has three flats for easy mounting*
- ▷ *Spiral fluting is ideal to improve speed when working with cordless power tools*
- ▷ *Straight fluting is ideal to ensure you get the proper hole size without warping on corded power tools*



## 01W SERIES

Coated / 3-Flat Shank  
Fractional

Type	Type of Flute	Shank Size	Min. Size	Max. Size	Step Increment	Number of Steps	Order No.
A	SPIRAL	1/4"	1/8"	1/2"	1/8"	13	01W001
B	SPIRAL	3/8"	3/16"	7/8"	1/8"	12	01W005
C	SPIRAL	3/8"	1/4"	3/4"	1/8"	9	01W011
D	SPIRAL	3/8"	1/4"	1 3/8"	9/64"	10	01W012
E	SPIRAL	1/4"	3/16"	1/2"	3/8"	6	01W021
F	SPIRAL	3/8"	1/4"	1"	1/8"	10	01W029
A	STRAIGHT	1/4"	1/8"	1/2"	1/8"	13	01W101
B	STRAIGHT	3/8"	3/16"	7/8"	1/8"	12	01W105
C	STRAIGHT	3/8"	1/4"	3/4"	1/8"	9	01W111
D	STRAIGHT	3/8"	1/4"	1 3/8"	9/64"	10	01W112

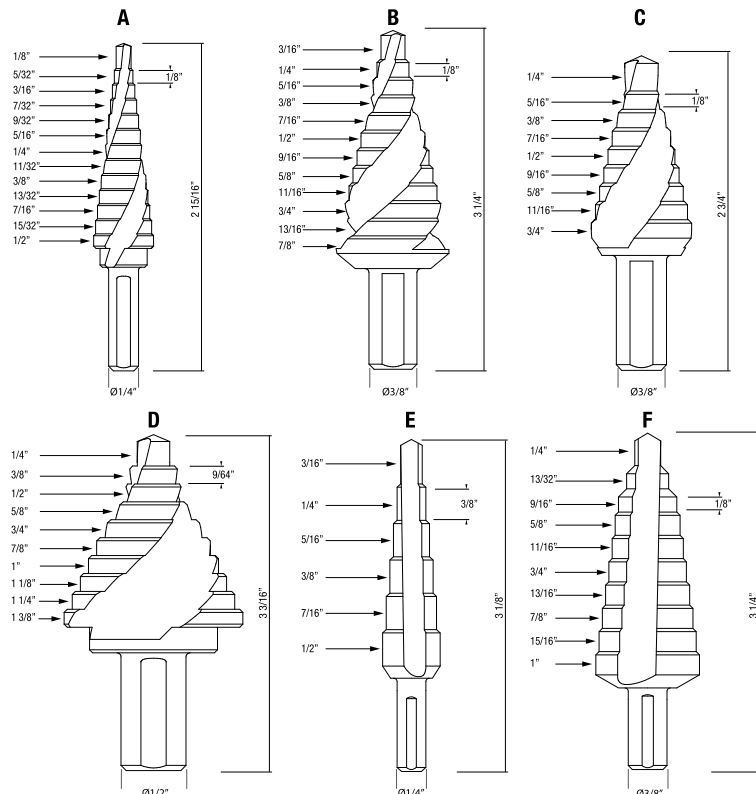
Packaged in reusable plastic packaging



## STEP DRILL SET

Contains the three Multi-Step bits needed for all hole sizes from 1-3/8".

Set	
Description	Order No.
Each kit contains:	
01W001	01W951
01W005	
01W012	



# WOOD DRILLS

Ship Auger Bits are used to make long holes in thick pieces of lumber. They can cut through nails without damaging the bit. It is also capable of drilling through vinyl and plastic. Ideal for electricians, plumbers, utilities and any trade requiring fast hole drilling in clean or nail-embedded wood.

▷ All sizes are individually packaged

## 1900E SERIES

**HIGH SPEED STEEL**

Ship Auger Bit / HEX Shank  
Fractional / Bright



1900E

Size	Overall Length	1900E Order No.
1/4"	7-1/2"	19E116A
3/8"	7-1/2"	19E124A
3/8"	18"	19E124B
7/16"	7-1/2"	19E128A
7/16"	18"	19E128B
1/2"	7-1/2"	19E132A
1/2"	18"	19E132B
9/16"	7-1/2"	19E136A
9/16"	18"	19E136B
5/8"	7-1/2"	19E140A
5/8"	18"	19E140B

Size	Overall Length	1900E Order No.
11/16"	7-1/2"	19E144A
11/16"	18"	19E144B
3/4"	7-1/2"	19E148A
3/4"	18"	19E148B
7/8"	7-1/2"	19E156A
7/8"	18"	19E156B
1"	7-1/2"	19E164A
1"	18"	19E164B
1-1/8"	18"	19E208B
1-1/4"	18"	19E216B

## 1950E SERIES

**HIGH SPEED STEEL**

Paddle Bits - Ball Groove Shank  
Fractional / Bright

Ball groove hex shank helps reduce slippage in the drill chuck.



1950E

Size	Overall Length	1950E Order No.
1/4"	6"	195E116
5/16"	6"	195E120
3/8"	6"	195E124
1/2"	6"	195E132
9/16"	6"	195E136
5/8"	6"	195E140
11/16"	6"	195E144
3/4"	6"	195E148

Size	Overall Length	1950E Order No.
7/8"	6"	195E156
15/16"	6"	195E160
1"	6"	195E164
1-1/8"	6"	195E208
1-1/4"	6"	195E216
1-3/8"	6"	195E224
1-1/2"	6"	195E232

# COMBINED DRILL & COUNTERSINK (CENTER DRILL)

When metal parts are machined on centers, as in turning or cylindrical grinding, it is always necessary to drill and countersink the center holes to serve as seats or bearings in the machine centers. Plain Type is the most commonly used combined drill and countersink.

▷ All sizes are individually packaged

## 3500 SERIES

### HIGH SPEED STEEL

Plain Type / 60° Angle  
Bright



3500

Size	Body Dia.	Overall Length	Drill Size	3500 Order No.
00	1/8"	1-1/4"	.025	350AA00
1	1/8"	1-1/4"	3/64"	350A001
2	3/16"	1-7/8"	5/64"	350A002
3	1/4"	2"	7/64"	350A003

Size	Body Dia.	Overall Length	Drill Size	3500 Order No.
4	5/16"	2-1/8"	1/8"	350A004
5	7/16"	2-3/4"	3/16"	350A005
6	1/2"	3"	7/32"	350A006
7	5/8"	3-1/4"	1/4"	350A007
8	3/4"	3-1/2"	5/16"	350A008

## 3500E SERIES

### HIGH SPEED STEEL

Plain & Bell Type / 60° Angle  
Bright

Bell Type is used if the parts to be machined are to pass through a number of subsequent handlings, where there is danger of marring the edges of the center holes. They have an additional small 120° chamfer to protect the edges of the 60° hole.



3500E Plain



3500E Bell Type

Size	Body Dia.	Overall Length	Drill Size	Plain Order No.
1	1/8"	1-1/4"	3/64"	350E001
2	3/16"	1-7/8"	5/64"	350E002
3	1/4"	2"	7/64"	350E003
4	5/16"	2-1/8"	1/8"	350E004
5	7/16"	2-3/4"	3/16"	350E005
6	1/2"	3"	7/32"	350E006
7	5/8"	3-1/4"	1/4"	350E007
8	3/4"	3-1/2"	5/16"	350E008

Size	Body Dia.	Overall Length	Drill Size	Bell Order No.
11	1/8"	1-1/4"	3/64"	350E011
12	3/16"	1-7/8"	1/16"	350E012
13	1/4"	2"	3/32"	350E013
14	5/16"	2-1/8"	7/64"	350E014
15	7/16"	2-3/4"	5/32"	350E015
16	1/2"	3"	3/16"	350E016
17	5/8"	3-1/4"	7/32"	350E017
18	3/4"	3-1/2"	1/4"	350E018

## COMBINED DRILL & COUNTERSINK (CENTER DRILL)

Plain Type Long Series is used where extra reach is required.

### 3575E SERIES

60° Angle  
Bright



3575E

Size	Body Dia.	Overall Length	Drill Size	3575E Order No.
1	1/8"	3"	3/64"	35E001A
1	1/8"	4"	3/64"	35E001B
1	1/8"	5"	3/64"	35E001C
1	1/8"	6"	3/64"	35E001D
2	3/16"	4"	5/64"	35E002A
2	3/16"	5"	5/64"	35E002B
2	3/16"	6"	5/64"	35E002C
3	1/4"	4"	7/64"	35E003A
3	1/4"	5"	7/64"	35E003B
3	1/4"	6"	7/64"	35E003C
4	5/16"	4"	1/8"	35E004A
4	5/16"	5"	1/8"	35E004B

Size	Body Dia.	Overall Length	Drill Size	3575E Order No.
4	5/16"	6"	1/8"	35E004C
4-1/2	3/8"	4"	9/64"	35E045A
4-1/2	3/8"	5"	9/64"	35E045B
4-1/2	3/8"	6"	9/64"	35E045C
5	7/16"	4"	3/16"	35E005A
5	7/16"	5"	3/16"	35E005B
6	1/2"	5"	7/32"	35E006B
6	1/2"	6"	7/32"	35E006C
7	5/8"	5"	1/4"	35E007A
7	5/8"	6"	1/4"	35E007B
8	3/4"	6"	5/16"	35E008A

## PILOT FOR HOLESAWS

Pilot drills have a self-centering 118° split point and are designed to fit most styles of hole saw arbors. Pilot drills have 3 notches ground into the shank to allow adjustment for varying depth hole saws.

### 400P SERIES

118° Split Point / 3 Flats / Fractional  
Black Oxide



400P



Size	Flute Length	Overall Length	400P Order No.
1/4"	1-5/16"	4"	400P116



# SCREW EXTRACTORS

Screw extractors are designed to remove a broken or seized screw. The screw must first be "drilled out" to the proper size in order for the screw extractor to fit properly. The screw extractor is turned counter-clockwise using a tap wrench.

▷ Available individually, in a 5pc set or in a 5pc set with corresponding required drill

## 9000E SERIES CARBON



9000E

Size	Screw Size	Pipe Size	Drill Size	9000E Order No.
1	3/16"	–	5/64"	9000E001
2	1/4"	–	7/64"	9000E002
3	5/16"	–	5/32"	9000E003
4	7/16" – 9/16"	–	1/4"	9000E004
5	9/16-3/4"	1/8"	17/64"	9000E005
6	3/4"	3/8"	13/32"	9000E006
7	1" – 1-3/8"	1/2"	17/32"	9000E007
8	1-3/8"	3/4"	13/16"	9000E008
9	1-3/4"	1"	1-1/16"	9000E009



9000ESET



9000EDS

Corresponding Sets		
Description	Drills	Order No.
9000E Series Screw Extractor Sets with 100SE Drills		
#1-5 with Drills	5/64, 7/64, 5/32, 1/4, 17/64	9000EDS
9000E Series Screw Extractor Sets		
#1-5 no Drills	N/A	9000ESET

## HARDENED DRILL SLEEVE

Regular Length. For adapting Morse Taper Shank tools to larger Morse taper holders. Hardened Sleeves (1420) – Case hardened throughout and ground internally and externally

### 1420 SERIES Hardened Bright



1420

Size	Inside Morse Taper	Morse Taper Outside	1420 Order No.
12	1	2	142E012H
13	1	3	142E013H
14	1	4	142E014H
23	2	3	142E023H
24	2	4	142E024H
25	2	5	142E025H
34	3	4	142E034H
35	3	5	142E035H
45	4	5	142E045H
46	4	6	142E046H
56	5	6	142E056H

Extension Length. For adapting Morse Taper Shank tools to larger or smaller Morse taper holders. Can also be used to extend the length of taper shank tools. Hardened Sleeves (1440) – Case hardened throughout and ground internally and externally

### 1440 SERIES Hardened Bright



1440

Size	Inside Morse Taper	Morse Taper Outside	1440 Order No.
12	1	2	144E012H
13	1	3	144E013H
21	2	1	144E021H
22	2	2	144E022H
23	2	3	144E023H
24	2	4	144E024H
32	3	2	144E032H
33	3	3	144E033H
34	3	4	144E034H
43	4	3	144E043H
44	4	4	144E044H
45	4	5	144E045H
54	5	4	144E054H
55	5	5	144E055H
56	5	6	144E056H

## DRILL DRIFTS & GAUGES

For ejecting taper shank tools out of Morse Taper sleeves and sockets. Fully drop forged.

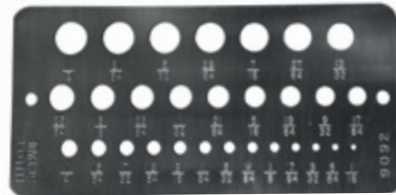
### 1470 SERIES Drill Drifts Bright



Size	Overall Length	Morse Taper	Drifts Order No.
1	4-1/2"	#1	147E001
2	5-1/4"	#2	147E002
3	6"	#3	147E003
4	7"	#4, 5 and 6	147E004

## DRILL GAUGES

For ejecting taper shank tools out of Morse Taper sleeves and sockets. Fully drop forged.



Size	Gauges Order No.
Fractional	29G0000
33/64" - 1"	32G0000
Wire #1 - 60	60G0000

# DISPLAY, DISPENSERS, INDEXES



49A123 / 540DX



115DX



29IDX

No. of Pieces	Series	Description	Order No.
<b>Drill Display Case - Counter Top Display</b>			
540	200		200A540C
	200B		200B540C
	200LH	(24) 1/16, (24) 5/64, (24) 3/32, (24) 7/64, (60) 1/8, (24) 9/64, (24) 5/32,	200LH540C
	300	(24) 11/64, (48) 3/16, (24) 13/64, (24) 7/32, (24) 15/64, (60) 1/4, (12)	300A540C
	300N	17/64, (12) 9/32, (12) 19/64, (12) 5/16, (6) 21/64, (6) 11/32, (6) 23/64,	300N540C
	300C	(12) 3/8, (6) 25/64, (6) 13/32, (6) 27/64, (12) 7/16, (6) 29/64, (6) 15/32,	300C540C
	350N	(6) 31/64, (6) 1/2	350N540C
	400		400A540C
	400N		400N540C
<b>Drill Dispensers (Empty)</b>			
	Jobber Drill Dispensers	270PC FRACTIONAL SIZES	270DX
	Jobber Drill Dispensers	720PC WIRE SIZES	720DX
	Jobber Drill Dispensers	240PC LETTER SIZES	240DX
	Jobber Drill Dispensers	MASTER DRILL DISPENSER	115DX
	Jobber Drill Dispensers	234PC METRIC SIZES	800DX
<b>Drill Index (Empty)</b>			
13		13PC DRILL BIT INDEX 1/16" - 1/4" by 64 <sup>ths</sup>	13IDX
15		15PC DRILL BIT INDEX 1/16" - 1/2" by 32 <sup>nds</sup>	15IDX
21		21PC DRILL BIT INDEX 1/16" - 3/8" by 64 <sup>ths</sup>	21IDX
26		26PC DRILL BIT INDEX A-Z	26IDX
29		29PC DRILL BIT INDEX 1/16" - 1/2" by 64 <sup>ths</sup>	29IDX
29		29PC DRILL BIT INDEX 1/16" - 1/2" by 64 <sup>ths</sup> , "DRILL PAL"	29WIDX
60		60PC DRILL BIT INDEX #1-60	60IDX
540		540PC EMPTY DRILL COUNTER DISPLAY	540DX or 49A123





## Drill Feeds and Speeds

Material	Hardness	Drill Type	Point Style	Point Angle	Speed (SFM)	Feed	Coolant
Aluminum / Aluminum Alloys	–	High Helix	Standard	118°	200-300	Medium to Heavy	Water Soluble
Aluminum Bronze	–	High Helix	Standard	118°	50-100	Medium to Heavy	Water Soluble
Brass, Free Machining	–	Low Helix	Standard	118°	100-250	Medium to Heavy	Water Soluble
Bronze, Soft Medium	Below 200	General Purpose	Standard	118°	70-150	Medium to Heavy	Water Soluble
Bronze, High Tensile	–	Low Helix or Half RD	Standard	118°	50-100	Medium to Heavy	Water Soluble
Cooper / Cooper Alloys	–	General Purpose	Standard	118°	100-200	Medium	Water Soluble
High Temp. Alloys, Cobalt Base	180-300	Cobalt	Split Point	135°	5-20	Medium	Activated Oils
High Temp. Alloys, Iron Base	180-300	Cobalt	Split Point	135°	5-20	Medium	Activated Oils
High Temp. Alloys, Nickel Base	180-300	Nitro® or Cobalt	Split Point	135°	5-15	Medium	Activated Oils
Iron, Soft Case	Up to 150	Heavy Duty or Nitro®	Split Point	135°	75-150	Medium	Dry / Air
Iron, Medium Case	150-250	Heavy Duty or Nitro®	Split Point	135°	50-100	Medium	Dry / Air
Iron, Hard Case	Over 250	Carbide	Standard	118°	40-75	Light to Medium	Dry / Air
Plastic & Related Materials	–	Low Helix	Low Angle	90°	100-200	Medium to Heavy	Dry / Air
Steel, Alloyed Low Carbon	125-275	General Purpose	Standard	118°	50-70	Medium	Water Soluble
Steel, Alloyed Medium Carbon	275-325	Heavy Duty or Nitro®	Split Point	135°	40-55	Medium	Water Soluble
Steel, Alloyed High Carbon	Over 325	Cobalt	Split Point	135°	30-50	Medium	Water Soluble
Steel Low & Medium carbon	Below 175	General Purpose	Standard	118°	45-95	Medium to Heavy	Water Soluble
Steel High Carbon	175-225	General Purpose	Standard	118°	45-65	Medium	Water Soluble
Stainless Steel, Austenitic	Below 300	Heavy Duty or Nitro®	Split Point	135°	40-60	Medium to Heavy	Water Soluble
Stainless Steel Precipitation	Over 300	Cobalt	Split Point	135°	20-40	Medium	Cutting Oil

Drill Dia.	Light	Medium	Heavy
<b>Feed Per Drill Revolution</b>			
1/16" to 1/8"	.0005 - .0010	.0010 - .0020	.0020 - .0040
1/8" to 1/4"	.0010 - .0030	.0030 - .0050	.0040 - .0060
1/4" to 3/8"	.0030 - .0050	.0050 - .0070	.0060 - .0100
3/8" to 1/2"	.0040 - .0060	.0050 - .0080	.0080 - .0120
1/2" to 3/4"	.0050 - .0070	.0070 - .0100	.0090 - .0140
3/4" to 1"	.0070 - .0100	.0090 - .0140	.0140 - .0200

## Recommended Drilling Depths

Length of Drill	Drilling Depth
Center Drills	1 x D
Stub (Screw Machine)	2.5 x D
Mechanic's	3.5 x D
Jobber	4 x D
S&D Drill	4 x D
Aircraft Extension	4 x D
Taper Length	6 x D
8" Extra Length	10 x D
12" Extra Length	12 x D
18" Extra Length	15 x D

**Feeds** – Feed rates for drilling are governed by the drill diameter, machinability of materials and depth of hole.

**Speeds** – The speed of a drill is determined by the rate which the outer periphery of the tool rotates in relation to material being cut. In general, the SFM at which a drill will operate is within a range based upon the workpiece material, its condition, hardness and depth of hole. It is usually advisable to start the drilling process at a slower SFM and then increase to the maximum.

$$\text{RPM} = \frac{\text{SFM}}{\text{TD}} \times 3.82 = \text{Revolutions Per Minute}$$

$$\text{SFM} = \text{RPM} \times \text{TD} \times .26 = \text{Surface Feet Per Minute}$$

**TD** – Tool diameter in inches

# TECHNICAL INFORMATION

## 710 Drill Feeds and Speeds

Workpiece Material Groups	Hardness	Speed (SFM)	1/32"	1/16"	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"
<b>Free Machining &amp; Low Carbon Steels</b> 1006, 1008, 1015, 1018, 1020, 1022, 1025, 1117, 1140, 1141, 11L08, 11L14, 1213, 12L13, 12L14, 1215, 1330	up to 28 Rc	330	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
<b>Medium Carbon &amp; High Carbon Steels, Alloy Steels &amp; Easy to Machine Tool Steels</b> 1030, 1035, 1040, 1045, 1050, 1052, 1055, 1060, 1085, 1095, 1541, 1551, 9255, 2515, 3135, 3415, 4130, 4137, 4140, 4150, 4320, 4340, 4520, 5015, 5115, 5120, 5132, 5140, 5155, 6150, 8620, 9262, 9840, 52100, 01, 02, 06, S2, W1 to W310	28 to 38 Rc	265	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
<b>Tool Steels &amp; Die Steels</b> 07, M1, M2, M3, M4, M7, T1, T2, T4, T5, T8, T15, A2, A3, A6, A7, H10, H11, H12, H13, H19, H21, L3, L6, L7, P2, P20, S1, S5, S7, 52100, A 128, D2, D3, D4, D5, D7	28 to 44 Rc	230	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
<b>Hardened Steel</b>	45 to 65 Rc	50	0.0003	0.0010	0.0010	0.0010	0.0020	0.0020	0.0020	0.0030
<b>Stainless Steel - Moderately Difficult</b> 301, 302, 303 High Tensile, 304, 304L, 305, 420, 15-5PH, 17-4PH, 17-7PH	up to 28 Rc	150	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
<b>Stainless Steel - Difficult to Machine</b> 302B, 304B, 309, 310, 316, 316B, 316L, 316Ti, 317, 317L, 321, PH13-8Mo, Nitronics	up to 28 Rc	100	0.0003	0.0005	0.0020	0.0040	0.0050	0.0060	0.0080	0.0100
<b>High Temp Alloys</b> Nimonic, Inconel, Monel, Hastelloy	up to 42 Rc	70	0.0003	0.0005	0.0020	0.0040	0.0050	0.0060	0.0080	0.0100
<b>Titanium Alloys</b> 6Al-4V, 5Al-2.5 Sn, 6Al-2 Sn-4Zr-6Mo, 3Al-8V-6Cr4Mo-4Zr, 10V-2Fe-3Al, 13V-11Cr-3Al	up to 42 Rc	180	0.0003	0.0005	0.0020	0.0040	0.0050	0.0060	0.0080	0.0100
<b>Cast-Iron - Gray CG,</b> ASTM A48, CLASS 20, 25, 30, 35, SAE J431C, GRADES G1800, G3000, G3500, GG 10, 15, 20, 25, 30, 35, 40	up to 240 HB	365	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
<b>Cast Iron - Ductile &amp; Malleable CGI</b> 60-40-18, 65-45-12, D4018, D4512, D5506, 32510, 35108, M3210, M4504, M5503, 250, 300, 350, 400, 450	over 240 HB	365	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
<b>Plastics</b>		300	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
<b>Kevlar</b>		300	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120

### Recommended cutting speed for MULTI-STEP™ HSSAI Drill Bits

Cutter Dia.	Alumi-	Copper	Mild	Stainless	Non-
mm	num		Steel	Steel	metallic
12.7	1003	878	502	376	1128
14.3	892	781	446	335	1004
15.9	802	702	401	301	902
17.5	730	638	365	274	821
19.1	669	585	334	251	752
20.6	617	540	309	231	694
22.2	573	502	287	215	645
23.8	535	468	268	201	602
25.4	502	439	251	188	564
27.0	472	413	236	177	531
28.6	446	390	223	167	502
30.2	422	370	211	158	475
31.8	401	351	201	150	451
33.3	382	334	191	143	430
34.9	365	319	182	137	410

\* Choose RPM based on LARGEST step diameter

# TECHNICAL INFORMATION

## Drill Surface Treatments

Type	Chemical Compositions of High Speed Steels					Term
	Carbon %	Tungsten %	Molybdenum	Chromium %	Vanadium %	
M.50	.83	0.10	4.25	4.00	1.00	HSS
M1	.80	1.50	8.00	4.00	1.00	HSS
M2	.85	6.00	5.00	4.00	2.00	HSS
M7	1.00	1.75	8.75	4.00	2.00	HSS
M35	.80	6.00	5.00	4.00	2.00	5% Cobalt
M42	1.0	1.50	9.50	3.75	1.05	8% Cobalt

## Surface Treatments

Surface treatments for high speed steel tools function to condition them, so in certain applications they will outperform tools that have not been treated. Surface treatments do not, however, alter the functional structure of the tool itself.

**Black Oxide** - This treatment is applied to finished tools and produces a thin black iron oxide surface coating. It also provides additional tempering and stress relieving. This coating reduces galling and chip welding and also increases the ability of the tool to retain lubricants. Recommended in iron and steel drilling applications. It should not be used in non-ferrous metals such as aluminum because it increases the loading tendencies of the tool.

**Nitride** - This treatment produces a hard case which is highly resistant to abrasion. It also slows down the tendency of softer materials to cling or load on tools. Recommended for tools that are used for ferrous, non-ferrous, and non-metallic materials which are abrasive and have loading characteristics.

**Nitride and Oxide** - Combines the advantages of the lubricity of oxide with the abrasion resistance of nitriding. Recommended for abrasive ferrous applications. Not recommended for soft materials such as aluminum, magnesium, or similar non-ferrous applications.

**Chrome Plating** - This treatment deposits an extremely thin layer of chromium on the surface of tools. It reduces the coefficient of friction and resists chip weld and abrasion. Recommended for non-ferrous and non-metallic materials.

**Titanium Nitride** - This surface treatment improves tool life by acting as a wear-resistant and thermal barrier. It also gives the tool a low coefficient of friction and very high surface hardness. It reduces friction and chip welding and acts as a thermal insulator between the chip and the tool. Recommended for use in ferrous materials below Rc 40 and in non-ferrous materials.

## Drill Points

**Conventional Point** - Conventional points with 118° included point angles are the most commonly used because they provide satisfactory results in a wide variety of materials. A possible limitation is that the straight chisel edge contributes to walking at the drill point, often making it necessary to spot the hole for improved accuracy.

**Split Point** - Split points were originally developed for use on drills designed for deep oil holes in automotive crankshafts. Since its inception, the split point has gained widespread use and is applied to both 118° and 135° included point angles. Its main advantages are the ability to reduce thrust and eliminate walking at the drill point. The split point also has two positive rake cutting edges extending the center of the drill, which can assist as a chipbreaker to produce small chips which can readily be ejected.

**Notched Point** - Notched points were developed for drilling tough alloys. Commonly incorporated on heavy web drills, which allow the point to withstand the higher thrust loads required in drilling these materials. As with the split point, the notched point contains two additional positive rake cutting edges extending toward the center of the drill. These secondary cutting lips, which extend no further than half the original cutting lip, can assist in chip control and reduce the torque required in drilling tough materials. Notched points can be incorporated on both 118° and 135° included point angles, making them suitable for drilling a broad variety of materials.

**Helical Point** - Helical points change the flat blunt chisel to an “S” contour with a radiused crown effect which has its highest point at the center of the drill axis. This crown contour creates a continuous cutting edge from margin to margin across the web. The advantage is its self-centering ability which allows the chisel to cut and enables the drill to cut closer to actual drill diameter. Helical Points are not available under 1/16” diameter.

**Reduced Rake Point** - Reduced rake points are generated by flatter or dubbing both cutting lips from the outer periphery to the chisel. This reduces the effective axial rake to 0–5, positive which translates to a plowing rather than shearing action. This reduction in shearing is an effective method of preventing the drill from grabbing in low tensile strength materials such as brass. Reducing the rake also strengthens the cutting lip and can assist in breaking chips.

# TECHNICAL INFORMATION

## Decimal Equivalent Chart

Drill Size	MM	Decimal Inches	Drill Size	MM	Decimal Inches	Drill Size	MM	Decimal Inches	Drill Size	MM	Decimal Inches
-	0.10	.0039	<b>45</b>	2.08	.0820	<b>5</b>	5.22	.2055	<b>7/16</b>	11.11	.4375
-	0.20	.0079	<b>44</b>	2.18	.0860	<b>4</b>	5.31	.2090	<b>29/64</b>	11.15	.4531
-	0.25	.0098	<b>43</b>	2.26	.0890	<b>3</b>	5.41	.2130	<b>15/32</b>	11.91	.4688
-	0.30	.0118	<b>42</b>	2.37	.0935	<b>7/32</b>	5.56	.2188	-	12.00	.4724
<b>80</b>	0.34	.0135	<b>3/32</b>	2.38	.0938	<b>2</b>	5.61	.2210	<b>31/64</b>	12.30	.4844
<b>79</b>	0.37	.0145	<b>41</b>	2.44	.0960	<b>1</b>	5.79	.2280	<b>1/2</b>	12.70	.5000
<b>1/64</b>	0.40	.0156	<b>40</b>	2.50	.0980	<b>A</b>	5.94	.2340	-	13.00	.5118
<b>78</b>	0.41	.0160	<b>39</b>	2.53	.0995	<b>15/64</b>	5.95	.2344	<b>33/64</b>	13.10	.5156
<b>77</b>	0.46	.0180	<b>38</b>	2.58	.1015	-	6.00	.2360	<b>17/32</b>	13.49	.5312
-	0.50	.0197	<b>37</b>	2.64	.1040	<b>B</b>	6.05	.2380	<b>35/64</b>	13.89	.5469
<b>76</b>	0.51	.0200	<b>36</b>	2.71	.1065	<b>C</b>	6.15	.2420	-	14.00	.5512
<b>75</b>	0.53	.0210	<b>7/64</b>	2.78	.1094	<b>D</b>	6.25	.2460	<b>9/16</b>	14.29	.5625
<b>74</b>	0.57	.0225	<b>35</b>	2.79	.1100	<b>1/4</b>	6.35	.2500	<b>37/64</b>	14.68	.5781
-	0.60	.0236	<b>34</b>	2.82	.1110	<b>E</b>	6.35	.2500	-	15.00	.5906
<b>73</b>	0.61	.0240	<b>33</b>	2.87	.1130	<b>F</b>	6.53	.2570	<b>19/32</b>	15.08	.5938
<b>72</b>	0.64	.0250	<b>32</b>	2.95	.1160	<b>G</b>	6.63	.2610	<b>39/64</b>	15.48	.6094
<b>71</b>	0.66	.0260	-	3.00	.1181	<b>17/64</b>	6.75	.2656	<b>5/8</b>	15.88	.6250
-	0.70	.0276	<b>31</b>	3.05	.1200	<b>H</b>	6.76	.2660	-	16.00	.6299
<b>70</b>	0.71	.0280	<b>1/8</b>	3.18	.1250	<b>I</b>	6.91	.2720	<b>41/64</b>	16.27	.6406
<b>69</b>	0.74	.0282	<b>30</b>	3.26	.1285	-	7.00	.2756	<b>21/32</b>	16.67	.6562
-	0.75	.0295	<b>29</b>	3.45	.1360	<b>J</b>	7.04	.2770	-	17.00	.6693
<b>68</b>	0.79	.0310	<b>28</b>	3.57	.1405	<b>K</b>	7.14	.2810	<b>43/64</b>	17.07	.6719
<b>1/32</b>	0.79	.0313	<b>9/64</b>	3.57	.1406	<b>9/32</b>	7.14	.2812	<b>11/16</b>	17.46	.6875
-	0.80	.0315	<b>27</b>	3.66	.1440	<b>L</b>	7.37	.2900	<b>45/64</b>	17.86	.7031
<b>67</b>	0.81	.0320	<b>26</b>	3.73	.1470	<b>M</b>	7.49	.2950	-	18.00	.7087
<b>66</b>	0.84	.0330	<b>25</b>	3.80	.1495	<b>19/64</b>	7.54	.2969	<b>23/32</b>	18.26	.7188
<b>65</b>	0.89	.0350	<b>24</b>	3.86	.1520	<b>N</b>	7.67	.3020	<b>47/64</b>	18.65	.7344
-	0.90	.0354	<b>23</b>	3.91	.1540	<b>5/16</b>	7.94	.3125	-	19.00	.7480
<b>64</b>	0.91	.0360	<b>5/32</b>	3.97	.1562	-	8.00	.3150	<b>3/4</b>	19.05	.7500
<b>63</b>	0.94	.0370	<b>22</b>	3.99	.1570	<b>O</b>	8.03	.3160	<b>49/64</b>	19.45	.7656
<b>62</b>	0.97	.0380	-	4.00	.1575	<b>P</b>	8.20	.3230	<b>25/32</b>	19.84	.7812
<b>61</b>	0.99	.0390	<b>21</b>	4.04	.1590	<b>21/64</b>	8.33	.3281	-	20.00	.7874
-	1.00	.0394	<b>20</b>	4.09	.1610	<b>Q</b>	8.43	.3320	<b>51/64</b>	20.24	.7969
<b>60</b>	1.02	.0400	<b>19</b>	4.22	.1660	<b>R</b>	8.61	.3390	<b>13/16</b>	20.64	.8125
<b>59</b>	1.04	.0410	<b>18</b>	4.31	.1695	<b>11/32</b>	8.73	.3438	-	21.00	.8268
<b>58</b>	1.07	.0420	<b>11/64</b>	4.37	.1719	<b>S</b>	8.84	.3480	<b>53/64</b>	21.03	.8281
<b>57</b>	1.09	.0430	<b>17</b>	4.39	.1730	-	9.00	.3543	<b>27/32</b>	21.43	.8438
<b>56</b>	1.18	.0465	<b>16</b>	4.50	.1770	<b>T</b>	9.09	.3580	<b>55/64</b>	21.84	.8594
<b>3/64</b>	1.19	.0469	<b>15</b>	4.57	.1800	<b>23/64</b>	9.13	.3594	-	22.00	.8661
<b>55</b>	1.32	.0520	<b>14</b>	4.62	.1820	<b>U</b>	9.35	.3680	<b>7/8</b>	22.23	.8750
<b>54</b>	1.40	.0550	<b>13</b>	4.70	.1850	<b>3/8</b>	9.53	.3750	<b>57/64</b>	22.62	.8906
<b>53</b>	1.51	.0595	<b>3/16</b>	4.76	.1875	<b>V</b>	9.56	.3770	-	23.00	.9055
<b>1/16</b>	1.59	.0625	<b>12</b>	4.80	.1890	<b>W</b>	9.80	.3860	<b>29/32</b>	23.02	.9062
<b>52</b>	1.61	.0635	<b>11</b>	4.85	.1910	<b>25/64</b>	9.92	.3906	<b>59/64</b>	23.42	.9219
<b>51</b>	1.70	.0670	<b>10</b>	4.91	.1935	-	10.00	.3937	<b>15/16</b>	23.81	.9375
<b>50</b>	1.78	.0700	<b>9</b>	4.98	.1960	<b>X</b>	10.08	.3970	-	24.00	.9449
<b>49</b>	1.85	.0730	-	5.00	.1968	<b>Y</b>	10.26	.4040	<b>61/64</b>	24.21	.9531
<b>48</b>	1.93	.0760	<b>8</b>	5.05	.1990	<b>13/32</b>	10.32	.4062	<b>31/32</b>	24.61	.9688
<b>5/64</b>	1.98	.0781	<b>7</b>	5.11	.2010	<b>Z</b>	10.49	.4130	-	25.00	.9843
<b>47</b>	1.99	.0785	<b>13/64</b>	5.16	.2031	<b>27/64</b>	10.72	.4219	<b>63/64</b>	25.00	.9844
-	2.00	.0787	<b>6</b>	5.18	.2040	-	11.00	.4331	<b>1"</b>	25.40	1.0000
<b>46</b>	2.06	.0810	-	-	-	-	-	-	-	-	-



# TECHNICAL INFORMATION

## Common Drilling Terms

**Axis** - The imaginary straight line which forms the lengthwise center of a drill

**Body** - The section of a drill from the shank to the outer edges of the cutting lips

**Body Clearance Diameter** - The portion of the land that has been cut away so it will not bind against the walls of the hole

**Chip Removal** - The ability of a drill to pull material that has been cut away from the point, up the flutes and out of the hole

**Chisel Edge** - The edge at the end of the web that connects the cutting lips

**Chisel Edge Angle** - The angle between the chisel edge and cutting lip, as viewed from the end of a drill

**Cobalt Steel** - A heat-resistant steel that produces increased drill life

**Drill Diameter** - The diameter over the margins of a drill, measured at the point (Dia.)

**Feeds** - Feed rates for drilling are determined by the drill diameter, machinability of materials and depth of the desired hole. Small drills, harder materials and deeper holes require additional considerations in selecting proper feed rates

**Flute** - Groove cut in the body of drills to provide cutting surfaces, permit removal of chips and allow cutting fluid to reach cutting surfaces

**Flute Length** - The distance from the outer edges of the cutting lips to the extreme back of the flutes

**Helix Angle** - The angle formed between the leading edge of the land and the axis of a drill

**High Speed Steel** - The high quality steel used in drills for most maintenance and industrial applications

**IPM** - Feed rate in Inches Per Minute = IPR X RPM

**IPR** - Inches Per Revolution (Feed)

**Land** - The outer portion of the body between two adjacent flutes

**Land Width** - The distance between the leading edge and heel of the land, measured at a right angle to the leading edge

**Lip Relief Angle** - The relief angle at the outer corner of the lip

**Lip** - The cutting edge of a two-flute drill which extends from the chisel edge to the outer edge

**Margin** - The narrow raised surface on a drill body along the flute that stabilizes the drill in the hole

**Neck** - The section of reduced diameter between the body and the shank of a drill

**Overall Length** - The length from the end of the shank to the outer corners of the cutting lip

**Point** - The cone-shaped cutting end of a drill, made from the ends of the lands and the web

**Point Angle** - The angle of the cutting surfaces on a drill point, commonly 118° or 135°

**RPM** - Revolutions Per Minute =  $\frac{\text{SFM}}{\text{Dia.}} \times 3.82$

**SFM** - Surface Feet Per Minute = RPM X Dia. X .26

**Shank** - The part of a drill by which it is held and driven

**Size** - Measurement reference for diameter size of a drill, expressed as either fractional, wire, letter or metric

**Speed** - The speed of a drill is determined by the rate which the outer edge of the tool rotates in relation to the material being cut. In general, the SFM is within a range based upon the workpiece material, its condition, hardness and depth of the hole. The deeper the hole, the greater tendency for more heat to be generated. Speed reduction is often recommended to minimize the amount of heat. It is usually best to start drilling at a slower speed and then increase.

**Split Point** - A special point configuration that eliminates "walking" so holes stay on center

**Web** - The central portion of the body that joins the lands. The extreme end of the web forms the chisel edge of a two-flute drill

**Web Thickness** - The thickness of the web at the point, unless otherwise specified

# TECHNICAL INFORMATION

## Drill Troubleshooting Guide

Trouble	Possible Causes	Corrections
<b>Drill Breaks</b>	Spring or back lash in press or work	Test press and work for rigidity and alignment
	Too little lip relief	Regrind properly
	Speed too low in proportion to the feed	Increase or decrease speed
	Dull drill	Sharpen drill
<b>Outer Corner Breakdown</b>	Possible chip congestion	Peck drill
	Uneven hardness in work material	Reduce speed
	Too much Speed	Reduce Speed
<b>Drill Breaks in Brass or Wood</b>	Improper cutting compound	Use proper cutting compound
	Chips clog up flutes	Increase speed. Use drills designed for these materials
<b>Cutting Lips Chipped</b>	Too much feed	Reduce feed
	Too much lip relief	Regrind properly
<b>Cracking or Checking in Cutting Edges</b>	Heated and cooled too quickly	Warm slowly before using. Do not throw cold water on hot drill while grinding or drilling
	Too much feed	Reduce feed
<b>Hole too Large</b>	Unequal angle or length of the cutting edges or both	Regrind properly
	Loose spindle	Test spindle for rigidity
<b>Only One Lip Cutting</b>	Unequal length or angle of cutting lips or both	Regrind drill properly
<b>Drill Splits up Center</b>	Too little lip relief	Regrind with proper relief
	Too much feed	Reduce feed
<b>Rough Hole</b>	Dull or improperly ground drill	Regrind properly
	Lack of lubricant or wrong lubricant	Lubricate or change lubricant
	Improper set-up	Check set-up
	Too much feed	Reduce feed

# 02

## TAPS



# QUICK PAGES REFERENCES

## GENERAL PURPOSE TAPS



### Hand Taps High Speed Steel

**Bright Finish**  
Low to medium tensile strength materials and aluminum

Type	Series	Catalog page reference
Taper, Plug, Bottoming/Through or Blind Hole	2000	355, 356
	2000E	357
	2800	358
	2800E	359



### Hand Taps High Speed Steel

**Bronze Surface Treatment**  
For long life on most materials

Type	Series	Catalog page reference
Taper, Plug, Bottoming/Through or Blind Hole SST	03-A, 03-B	360



### Hand Taps High Speed Steel



**Black Oxide**  
For better performance on low to medium tensile strength materials

Type	Series	Catalog page reference
Taper, Plug, Bottoming/Through or Blind Hole	2000N	361, 362



### Hand Taps Carbon

**Bright Finish**  
For cleaning up threads or repairing damaged threads

Type	Series	Catalog page reference
Taper, Plug, Bottoming/Through or Blind Hole	2000C	363, 364



### Power Taps High Speed Steel

**Bronze Surface Treatment**  
For long life on most materials using power tools

Type	Series	Catalog page reference
Plug, Through or Blind Hole	03-A, 03-B	365



### Spiral Point Taps High Speed Steel



**Black Oxide**  
For tapping through holes in high tensile strength materials

Type	Series	Catalog page reference
Plug / Through Hole	2100N	366



### Spiral Point Taps High Speed Steel

**Bright Finish**  
For tapping through holes in low to medium tensile strength materials

Type	Series	Catalog page reference
Plug / Through Hole	2850	366
	2100, 2100E	367



### Oversize Spiral Point Taps High Speed Steel

**Bright Finish**  
To cut oversized threads in through holes

Type	Series	Catalog page reference
Plug / Through Hole	2103, 2105	368



### Oversized Hand Taps High Speed Steel

**Bright Finish**  
To cut oversized Threads in through holes

Type	Series	Catalog page reference
Oversize / Plug & Bottoming / Through or Blind Hole	2003, 2005	368





# PRODUCTION TAPS



## ANSI Production Taps *NITRO-MAX*

M4 Premium HSS

**Black Oxide or TiCN Coated**  
For production tapping & threading

Type	Series	Catalog page reference
Through or Blind Hole	2150N	369
	2160N	370
	2250N	371
	2260N	372
	2270N	373



## DIN/ANSI Production Taps *NITRO*

High Speed Steel

**Bright Finish**  
For machine tapping through holes

Type	Series	Catalog page reference
Plug / Through Hole	2100PS	374



## Production Multi-Application Spiral Flute Taps

High Speed Steel

**Bright Finish**  
For tapping blind holes

Type	Series	Catalog page reference
Bottoming / Blind Hole <i>NITRO</i>	2000PF	375
	2000F	376



## Thread Forming Taps

High Speed Steel

**Bright Finish**  
Thread forming does not produce any chips

Type	Series	Catalog page reference
Plug & Bottoming / Through or Blind Hole	2090	376



# PIPE TAPS



## Taper Pipe Taps (NPT)

High Speed Steel

**Bright Finish**  
For long life on most materials

Type	Series	Catalog page reference
Through or Blind Hole	2900, 2900E	377



## Taper Pipe Taps (NPT)

Carbon

**Bright Finish**  
For long life on most materials

Type	Series	Catalog page reference
Through or Blind Hole	2700E	377



## Taper Pipe Taps (NPT)

Carbon

**Bright Finish**  
For steel and non-ferrous metals

Type	Series	Catalog page reference
Through or Blind Hole	02- C	378



## Interrupted Thread Pipe Taps

High Speed Steel

**Bright Finish**  
For better chip management

Type	Series	Catalog page reference
Through or Blind Hole	2930	379



## Taper Pipe Taps (NPS)

High Speed Steel

**Bright Finish**  
For straight pipe threads

Type	Series	Catalog page reference
Through or Blind Hole	2950	379



## SPECIAL PURPOSE TAPS

### Left Hand Taps

High Speed Steel

**Bright Finish**  
For creating left-handed threads

Type	Series	Catalog page reference
Taper, Plug, & Bottoming / Through or Blind Hole	2300	380



### 8-Pitch Hand Taps

High Speed Steel

**Bright Finish**  
For larger diameter threaded holes

Type	Series	Catalog page reference
Taper, Plug, & Bottoming / Through or Blind Hole	2500	381



### Screw Thread Insert Hand Taps (STI)

High Speed Steel

**Bright Finish**  
STI Taps for screw thread inserts

Type	Series	Catalog page reference
Plug & Bottoming / Through or Blind Hole	2020	382



### Hand Taps Pulley Style

High Speed Steel

**Bright & Black finish**  
For threading hard-to-reach holes

Type	Series	Catalog page reference
Plug / Through or Blind Hole	2400	382



### Hand Taps 6" Extension

High Speed Steel

**Bright & Black finish**  
For threading hard-to-reach holes

Type	Series	Catalog page reference
Plug & Bottoming / Through or Blind Hole	2060	382



### Combined Tap & Drill

High Speed Steel

**Bright Finish**  
Drill and tap in one

Type	Series	Catalog page reference
Through or Blind Hole	2050	383



For Tap/Drill sizes, please see chart on page 398

# TAPS EXPLAINED

When it comes to precision cutting, selecting the best tool for the job is key. Taps, the tools used for producing internal threads on a workpiece, offer precision, customization, and cost-effectiveness in various machining and manufacturing applications. When using the right tap, the threads are accurately formed and exhibit optimal engagement, resistance to wear, and longevity. Many different taps differ in material, coating, flute and overall length, and other specifications.

## DETERMINING THE APPLICATION

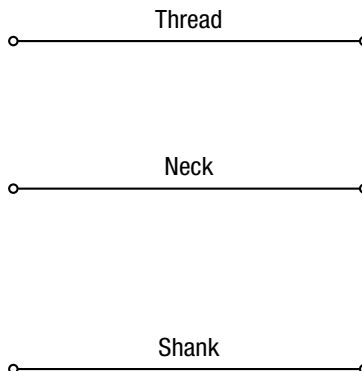
### HAND TAP

Hand tapping requires manual control and is best-suited for low-volume or delicate tasks where feel and on-the-fly adjustments are crucial. This method offers flexibility in tight or hard-to-reach spaces but is slower and more physically demanding.



### MACHINE TAP

Machine tapping, executed with a drill press or tapping machine, is ideal for high speed, consistent threading in high-volume, offering greater precision and uniformity while reducing operator fatigue and effortlessly handling tougher materials.



## TAP GEOMETRIES

### TAPER TAPS

- Gradually increases in diameter with a long pitch chamfer (7-10)
- Eases the start of threading, making it ideal for initiating threads in through holes



### PLUG TAPS

- Most common type of tap
- Moderate taper with an intermediate pitch chamfer (3-5)
- Used for finishing threads, generally used in through holes



### BOTTOMING TAPS

- Almost no taper with a short pitch chamfer (1-2)
- Essential for threading to the bottom of blind holes, finishing what taper and plug taps have started







### TAP SETS

- Comprehensive solution for creating precise and accurate internal threads from start to finish
- Includes a taper, plug, and bottoming tap



## CHOOSING THE RIGHT TAPS

								
	Hand Taps		Spiral Point Tap		Spiral Flute Tap		Pipe Taps	
APPLICATION	Wrench (manual)		Machine		Machine		For tapping into pipes and fittings	
DESCRIPTION	Hand taps have 3 standard chamfer geometries including taper, plug, and bottoming. They have straight flutes and are the most popular and versatile styles of taps in general machine tapping operations.		An additional grind on the tip of the tap propels the chips ahead causing less load and clogging in the flutes. The combination of forward chip ejection and reduced cutting torque allows for faster and more efficient tapping in through hole applications. <ul style="list-style-type: none"> <li>• Excels in creating clean, straight threads thanks to additional grind on the tip of the tap</li> <li>• Leads to less load and clogging in the flutes</li> </ul>		The design of spiral flute taps is conducive to improved chip flow. The flutes pull the chips out of the workpiece, which reduces the chances of tap breakage in blind hole applications. The helical flutes also allow for better coolant flow to the cutting area, helping to dissipate heat and prolong tool life. <ul style="list-style-type: none"> <li>• Features helical flutes that evacuate the chips upwards</li> <li>• Allow for better coolant flow to the cutting area, dissipating heat and prolonging tool life</li> <li>• Conducive to improved chip flow</li> </ul>		Pipe taps are specialized tools designed for cutting internal threads in pipes and fittings, featuring tapered threads that conform to standard pipe sizes and provide tight, leak-proof connections. <ul style="list-style-type: none"> <li>• Chips propelled ahead leading to less load and clogging in the flutes thanks to additional grind on the tip of the tap</li> <li>• Designed to cut precise threads in pipes and fittings</li> <li>• Essential in oil, gas, and water supply systems</li> </ul>	
CHIP REMOVAL	Breaks Chips		No Chip Breaks – Evacuates chips down		No Chip Breaks – Pulls chips out		Breaks Chips	
TYPE OF HOLE	Through	Blind	Through		Blind		Through	
GEOMETRIES	Taper, Plug	Taper, Plug, Bottoming	Plug		Bottoming		Plug	

### TECH TIP!

When using hand taps, turn the tap wrench clockwise for one full revolution, then, turn counter-clockwise in order to break the chip as you go!

### TECH TIP!

Using the correct wrench size for hand taps helps prevent thread damage, tap breakage, and ensures accurate, high-quality threading results.



# GENERAL PURPOSE TAPS

## HAND TAPS

Straight Flute "Hand Taps" are the most popular and versatile style of taps in general machine tapping operations. They are for general use in production tapping or hand operations in a wide range of application material groups.

- ▷ *Taper – 7-10 pitch chamfer length. Starts the thread square with the workpiece*
- ▷ *Plug – 3-5 pitch chamfer length. Generally used in through holes*
- ▷ *Bottoming – 1-2 pitch chamfer length. Generates the thread to the bottom*
- ▷ *Sets – Contains 1 each of Taper, Plug, and Bottoming*

### 2000 SERIES

#### GENERAL PURPOSE HIGH SPEED STEEL

Taper, Plug & Bottoming / Through or Blind Hole  
Machine Screw/ Bright



2000

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2000 Order No.			
							Taper	Plug	Bottoming	Sets
0	–	80	1-5/8"	5/16"	2	H1	20A000FT	20A000FP	20A000FB	20A000FS
1	64	–	1-11/16"	3/8"	2	H1	20A001CT	20A001CP	20A001CB	20A001CS
1	–	72	1-11/16"	3/8"	2	H1	20A001FT	20A001FP	20A001FB	20A001FS
2	56	–	1-3/4"	7/16"	3	H2	20A002CT	20A002CP	20A002CB	20A002CS
2	–	64	1-3/4"	7/16"	3	H2	20A002FT	20A002FP	20A002FB	20A002FS
3	48	–	1-13/16"	1/2"	3	H2	20A003CT	20A003CP	20A003CB	20A003CS
3	–	56	1-13/16"	1/2"	3	H2	20A003FT	20A003FP	20A003FB	20A003FS
4	40	–	1-7/8"	9/16"	3	H2	20A004CT	20A004CP	20A004CB	20A004CS
4	–	36	1-7/8"	9/16"	3	H2	20A004ST	20A004SP	20A004SB	20A004SS
4	–	48	1-7/8"	9/16"	3	H2	20A004FT	20A004FP	20A004FB	20A004FS
5	40	–	1-15/16"	5/8"	3	H2	20A005CT	20A005CP	20A005CB	20A005CS
5	–	44	1-15/16"	5/8"	3	H2	20A005FT	20A005FP	20A005FB	20A005FS
6	32	–	2"	11/16"	3	H3	20A006CT	20A006CP	20A006CB	20A006CS
6	–	40	2"	11/16"	3	H2	20A006FT	20A006FP	20A006FB	20A006FS
8	32	–	2-1/8"	3/4"	4	H3	20A008CT	20A008CP	20A008CB	20A008CS
8	–	36	2-1/8"	3/4"	4	H2	20A008FT	20A008FP	20A008FB	20A008FS
10	24	–	2-3/8"	7/8"	4	H3	20A010CT	20A010CP	20A010CB	20A010CS
10	–	32	2-3/8"	7/8"	4	H3	20A010FT	20A010FP	20A010FB	20A010FS
12	24	–	2-3/8"	15/16"	4	H3	20A012CT	20A012CP	20A012CB	20A012CS
12	–	28	2-3/8"	15/16"	4	H3	20A012FT	20A012FP	20A012FB	20A012FS

All sizes are individually packaged

# GENERAL PURPOSE HAND TAPS

## 2000 SERIES

### GENERAL PURPOSE HIGH SPEED STEEL

Taper, Plug, & Bottoming / Through or Blind Hole  
Fractional / Bright



2000

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2000 Order No.			
							Taper	Plug	Bottoming	Sets
1/4"	20	-	2-1/2"	1"	4	H3	20A116CT	20A116CP	20A116CB	20A116CS
1/4"	-	28	2-1/2"	1"	4	H3	20A116FT	20A116FP	20A116FB	20A116FS
5/16"	18	-	2-23/32"	1-1/8"	4	H3	20A120CT	20A120CP	20A120CB	20A120CS
5/16"	-	24	2-23/32"	1-1/8"	4	H3	20A120FT	20A120FP	20A120FB	20A120FS
3/8"	16	-	2-15/16"	1-1/4"	4	H3	20A124CT	20A124CP	20A124CB	20A124CS
3/8"	-	24	2-15/16"	1-1/4"	4	H3	20A124FT	20A124FP	20A124FB	20A124FS
7/16"	14	-	3-5/32"	1-7/16"	4	H3	20A128CT	20A128CP	20A128CB	20A128CS
7/16"	-	20	3-5/32"	1-7/16"	4	H3	20A128FT	20A128FP	20A128FB	20A128FS
1/2"	13	-	3-3/8"	1-21/32"	4	H3	20A132CT	20A132CP	20A132CB	20A132CS
1/2"	-	20	3-3/8"	1-21/32"	4	H3	20A132FT	20A132FP	20A132FB	20A132FS
9/16"	12	-	9/16"	1-21/32"	4	H3	20A136CT	20A136CP	20A136CB	20A136CS
9/16"	-	18	9/16"	1-21/32"	4	H3	20A136FT	20A136FP	20A136FB	20A136FS
5/8"	11	-	3-13/16"	1-13/16"	4	H3	20A140CT	20A140CP	20A140CB	20A140CS
5/8"	-	18	3-13/16"	1-13/16"	4	H3	20A140FT	20A140FP	20A140FB	20A140FS
11/16"	11	-	4-1/32"	1-13/16"	4	H3	20A144CT	20A144CP	20A144CB	20A144CS
11/16"	-	16	4-1/32"	1-13/16"	4	H3	20A144FT	20A144FP	20A144FB	20A144FS
3/4"	10	-	4-1/4"	2"	4	H3	20A148CT	20A148CP	20A148CB	20A148CS
3/4"	-	16	4-1/4"	2"	4	H3	20A148FT	20A148FP	20A148FB	20A148FS
7/8"	9	-	4-11/16"	2-7/32"	4	H4	20A156CT	20A156CP	20A156CB	20A156CS
7/8"	-	14	4-11/16"	2-7/32"	4	H4	20A156FT	20A156FP	20A156FB	20A156FS
1"	8	-	5-1/8"	2-1/2"	4	H4	20A164CT	20A164CP	20A164CB	20A164CS
1"	-	12	5-1/8"	2-1/2"	4	H4	20A164FT	20A164FP	20A164FB	20A164FS
1"	-	14	5-1/8"	2-1/2"	4	H4	20A164ST	20A164SP	20A164SB	20A164SS
1-1/8"	7	-	5-7/16"	2-9/16"	4	H4	20A208CT	20A208CP	20A208CB	20A208CS
1-1/8"	-	12	5-7/16"	2-9/16"	4	H4	20A208FT	20A208FP	20A208FB	20A208FS
1-1/4"	7	-	5-3/4"	2-9/16"	4	H4	20A216CT	20A216CP	20A216CB	20A216CS
1-1/4"	-	12	5-3/4"	2-9/16"	6	H4	20A216FT	20A216FP	20A216FB	20A216FS
1-3/8"	6	-	6-1/16"	3"	4	H4	20A224CT	20A224CP	20A224CB	20A224CS
1-3/8"	-	12	6-1/16"	3"	6	H4	20A224FT	20A224FP	20A224FB	20A224FS
1-1/2"	6	-	6-3/8"	3"	4	H4	20A232CT	20A232CP	20A232CB	20A232CS
1-1/2"	-	12	6-3/8"	3"	6	H4	20A232FT	20A232FP	20A232FB	20A232FS

All sizes are individually packaged

# GENERAL PURPOSE HAND TAPS

## 2000E SERIES

### GENERAL PURPOSE HIGH SPEED STEEL

Taper, Plug, & Bottoming / Through or Blind Hole  
Machine Screw / Bright

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2000E Order No.			
							Taper	Plug	Bottoming	Sets
0	-	80	1-5/8"	5/16"	2	H1	20E000FT	20E000FP	20E000FB	20E000FS
1	64	-	1-11/16"	3/8"	2	H1	20E001CT	20E001CP	20E001CB	20E001CS
1	-	72	1-11/16"	3/8"	2	H1	20E001FT	20E001FP	20E001FB	20E001FS
2	56	-	1-3/4"	7/16"	3	H2	20E002CT	20E002CP	20E002CB	20E002CS
2	-	64	1-3/4"	7/16"	3	H2	20E002FT	20E002FP	20E002FB	20E002FS
3	48	-	1-13/16"	1/2"	3	H2	20E003CT	20E003CP	20E003CB	20E003CS
3	-	56	1-13/16"	1/2"	3	H2	20E003FT	20E003FP	20E003FB	20E003FS
4	40	-	1-7/8"	9/16"	3	H2	20E004CT	20E004CP	20E004CB	20E004CS
4	-	36	1-7/8"	9/16"	3	H2	20E004ST	20E004SP	20E004SB	20E004SS
4	-	48	1-7/8"	9/16"	3	H2	20E004FT	20E004FP	20E004FB	20E004FS
5	40	-	1-15/16"	5/8"	3	H2	20E005CT	20E005CP	20E005CB	20E005CS
5	-	44	1-15/16"	5/8"	3	H2	20E005FT	20E005FP	20E005FB	20E005FS
6	32	-	2"	11/16"	3	H3	20E006CT	20E006CP	20E006CB	20E006CS
6	-	40	2"	11/16"	3	H2	20E006FT	20E006FP	20E006FB	20E006FS
8	32	-	2-1/8"	3/4"	4	H3	20E008CT	20E008CP	20E008CB	20E008CS
8	-	36	2-1/8"	3/4"	4	H2	20E008FT	20E008FP	20E008FB	20E008FS
10	24	-	2-3/8"	7/8"	4	H3	20E010CT	20E010CP	20E010CB	20E010CS
10	-	32	2-3/8"	7/8"	4	H3	20E010FT	20E010FP	20E010FB	20E010FS
12	24	-	2-3/8"	15/16"	4	H3	20E012CT	20E012CP	20E012CB	20E012CS
12	-	28	2-3/8"	15/16"	4	H3	20E012FT	20E012FP	20E012FB	20E012FS

## 2000E SERIES

### GENERAL PURPOSE HIGH SPEED STEEL

Taper, Plug, & Bottoming / Through or Blind Hole  
Fractional / Bright



2000E

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2000E Order No.			
							Taper	Plug	Bottoming	Sets
1/4"	20	-	2-1/2"	1"	4	H3	20E116CT	20E116CP	20E116CB	20E116CS
1/4"	-	28	2-1/2"	1"	4	H3	20E116FT	20E116FP	20E116FB	20E116FS
5/16"	18	-	2-23/32"	1-1/8"	4	H3	20E120CT	20E120CP	20E120CB	20E120CS
5/16"	-	24	2-23/32"	1-1/8"	4	H3	20E120FT	20E120FP	20E120FB	20E120FS
3/8"	16	-	2-15/16"	1-1/4"	4	H3	20E124CT	20E124CP	20E124CB	20E124CS
3/8"	-	24	2-15/16"	1-1/4"	4	H3	20E124FT	20E124FP	20E124FB	20E124FS
7/16"	14	-	3-5/32"	1-7/16"	4	H3	20E128CT	20E128CP	20E128CB	20E128CS
7/16"	-	20	3-5/32"	1-7/16"	4	H3	20E128FT	20E128FP	20E128FB	20E128FS
1/2"	13	-	3-3/8"	1-21/32"	4	H3	20E132CT	20E132CP	20E132CB	20E132CS
1/2"	-	20	3-3/8"	1-21/32"	4	H3	20E132FT	20E132FP	20E132FB	20E132FS
9/16"	12	-	3-19/32"	1-21/32"	4	H3	20E136CT	20E136CP	20E136CB	20E136CS
9/16"	-	18	3-19/32"	1-21/32"	4	H3	20E136FT	20E136FP	20E136FB	20E136FS
5/8"	11	-	3-13/16"	1-13/16"	4	H3	20E140CT	20E140CP	20E140CB	20E140CS
5/8"	-	18	3-13/16"	1-13/16"	4	H3	20E140FT	20E140FP	20E140FB	20E140FS
11/16"	11	-	4-1/32"	1-13/16"	4	H3	20E144CT	20E144CP	20E144CB	20E144CS
11/16"	-	16	4-1/32"	1-13/16"	4	H3	20E144FT	20E144FP	20E144FB	20E144FS
3/4"	10	-	4-1/4"	2"	4	H3	20E148CT	20E148CP	20E148CB	20E148CS
3/4"	-	16	4-1/4"	2"	4	H3	20E148FT	20E148FP	20E148FB	20E148FS
7/8"	9	-	4-11/16"	2-7/32"	4	H4	20E156CT	20E156CP	20E156CB	20E156CS
7/8"	-	14	4-11/16"	2-7/32"	4	H4	20E156FT	20E156FP	20E156FB	20E156FS
1"	8	-	5-1/8"	2-1/2"	4	H4	20E164CT	20E164CP	20E164CB	20E164CS
1"	-	12	5-1/8"	2-1/2"	4	H4	20E164FT	20E164FP	20E164FB	20E164FS
1"	-	14	5-1/8"	2-1/2"	4	H4	20E164ST	20E164SP	20E164SB	20E164SS
1-1/8"	7	-	5-7/16"	2-9/16"	4	H4	20E208CT	20E208CP	20E208CB	20E208CS
1-1/8"	-	12	5-7/16"	2-9/16"	4	H4	20E208FT	20E208FP	20E208FB	20E208FS
1-1/4"	7	-	5-3/4"	2-9/16"	6	H4	20E216CT	20E216CP	20E216CB	20E216CS
1-1/4"	-	12	5-3/4"	2-9/16"	6	H4	20E216FT	20E216FP	20E216FB	20E216FS
1-3/8"	6	-	6-1/16"	3"	4	H4	20E224CT	20E224CP	20E224CB	20E224CS
1-3/8"	-	12	6-1/16"	3"	6	H4	20E224FT	20E224FP	20E224FB	20E224FS
1-1/2"	6	-	6-3/8"	3"	4	H4	20E232CT	20E232CP	20E232CB	20E232CS
1-1/2"	-	12	6-3/8"	3"	6	H4	20E232FT	20E232FP	20E232FB	20E232FS

#0 thru 1/4" - 12 per pack, 5/16" thru 1/2" - 6 per pack, 9/16" thru 1" - 3 per pack, 1-1/8" and up - individually packaged

# GENERAL PURPOSE HAND TAPS

## 2800 SERIES

### GENERAL PURPOSE HIGH SPEED STEEL

Taper, Plug, & Bottoming / Through or Blind Hole  
Metric / Bright



2800

Size (mm)	Pitch Dia. (mm)	No. of Flutes	Dia. Limits	2800 Order No.			
				Taper	Plug	Bottoming	Sets
1.6	0.35	2	D3	28A016AT	28A016AP	28A016AB	28A016AS
1.8	0.35	2	D3	28A018AT	28A018AP	28A018AB	28A018AS
2	0.40	3	D3	28A020AT	28A020AP	28A020AB	28A020AS
2.2	0.45	3	D3	28A022AT	28A022AP	28A022AB	28A022AS
2.5	0.45	3	D3	28A025AT	28A025AP	28A025AB	28A025AS
3	0.50	3	D3	28A030AT	28A030AP	28A030AB	28A030AS
3.5	0.60	3	D4	28A035AT	28A035AP	28A035AB	28A035AS
4	0.70	4	D4	28A040AT	28A040AP	28A040AB	28A040AS
4.5	0.75	4	D4	28A045AT	28A045AP	28A045AB	28A045AS
5	0.80	4	D4	28A050AT	28A050AP	28A050AB	28A050AS
6	1.00	4	D5	28A060AT	28A060AP	28A060AB	28A060AS
6.3	1.00	4	D5	28A063AT	28A063AP	28A063AB	28A063AS
7	1.00	4	D5	28A070AT	28A070AP	28A070AB	28A070AS
8	1.00	4	D5	28A080BT	28A080BP	28A080BB	28A080BS
8	1.25	4	D5	28A080AT	28A080AP	28A080AB	28A080AS
10	1.25	4	D5	28A100BT	28A100BP	28A100BB	28A100BS
10	1.50	4	D5	28A100AT	28A100AP	28A100AB	28A100AS
12	1.25	4	D5	28A120CT	28A120CP	28A120CB	28A120CS
12	1.75	4	D6	28A120AT	28A120AP	28A120AB	28A120AS
14	1.50	4	D6	28A140BT	28A140BP	28A140BB	28A140BS
14	2.00	4	D7	28A140AT	28A140AP	28A140AB	28A140AS
16	1.50	4	D6	28A160BT	28A160BP	28A160BB	28A160BS
16	2.00	4	D7	28A160AT	28A160AP	28A160AB	28A160AS
18	1.50	4	D6	28A180DT	28A180DP	28A180DB	28A180DS
18	2.00	4	D6	28A180CT	28A180CP	28A180CB	28A180CS
18	2.50	4	D7	28A180AT	28A180AP	28A180AB	28A180AS
20	1.50	4	D6	28A200BT	28A200BP	28A200BB	28A200BS
20	2.50	4	D7	28A200AT	28A200AP	28A200AB	28A200AS
22	1.50	4	D6	28A220BT	28A220BP	28A220BB	28A220BS
22	2.50	4	D7	28A220AT	28A220AP	28A220AB	28A220AS
24	2.00	4	D7	28A240BT	28A240BP	28A240BB	28A240BS
24	3.00	4	D8	28A240AT	28A240AP	28A240AB	28A240AS
27	2.00	4	D7	28A270BT	28A270BP	28A270BB	28A270BS
27	3.00	4	D8	28A270AT	28A270AP	28A270AB	28A270AS
30	2.00	4	D7	28A300BT	28A300BP	28A300BB	28A300BS
30	3.50	4	D9	28A300AT	28A300AP	28A300AB	28A300AS
33	2.00	4	D7	28A330BT	28A330BP	28A330BB	28A330BS
33	3.50	4	D9	28A330AT	28A330AP	28A330AB	28A330AS
36	3.00	4	D8	28A360BT	28A360BP	28A360BB	28A360BS
36	4.00	4	D9	28A360AT	28A360AP	28A360AB	28A360AS
39	3.00	6	D8	28A390BT	28A390BP	28A390BB	28A390BS
39	4.00	6	D9	28A390AT	28A390AP	28A390AB	28A390AS

All sizes are individually packaged



# GENERAL PURPOSE HAND TAPS

## 2800E SERIES

### GENERAL PURPOSE HIGH SPEED STEEL

Taper, Plug, & Bottoming / Through or Blind Hole  
Metric / Bright



2800E

Size (mm)	Pitch Dia. (mm)	No. of Flutes	2800E Order No.			
			Taper	Plug	Bottoming	Sets
1.5	0.35	2	28E015AT	28E015AP	28E015AB	28E015AS
1.6	0.35	2	28E016AT	28E016AP	28E016AB	28E016AS
1.8	0.35	2	28E018AT	28E018AP	28E018AB	28E018AS
2	0.40	3	28E020AT	28E020AP	28E020AB	28E020AS
2	0.45	3	28E020BT	28E020BP	28E020BB	28E020BS
2.2	0.45	3	28E022AT	28E022AP	28E022AB	28E022AS
2.3	0.40	3	28E023AT	28E023AP	28E023AB	28E023AS
2.5	0.45	3	28E025AT	28E025AP	28E025AB	28E025AS
2.6	0.45	3	28E026AT	28E026AP	28E026AB	28E026AS
3	0.50	3	28E030AT	28E030AP	28E030AB	28E030AS
3	0.60	3	28E030BT	28E030BP	28E030BB	28E030BS
3.5	0.60	3	28E035AT	28E035AP	28E035AB	28E035AS
4	0.50	4	28E040BT	28E040BP	28E040BB	28E040BS
4	0.70	4	28E040AT	28E040AP	28E040AB	28E040AS
4.5	0.75	4	28E045AT	28E045AP	28E045AB	28E045AS
5	0.50	4	28E050CT	28E050CP	28E050CB	28E050CS
5	0.80	4	28E050AT	28E050AP	28E050AB	28E050AS
5	0.90	4	28E050BT	28E050BP	28E050BB	28E050BS
5.5	0.90	4	28E055AT	28E055AP	28E055AB	28E055AS
6	0.75	4	28E060BT	28E060BP	28E060BB	28E060BS
6	1.00	4	28E060AT	28E060AP	28E060AB	28E060AS
6.3	1.00	4	28E063AT	28E063AP	28E063AB	28E063AS
7	1.00	4	28E070AT	28E070AP	28E070AB	28E070AS
8	1.00	4	28E080BT	28E080BP	28E080BB	28E080BS
8	1.25	4	28E080AT	28E080AP	28E080AB	28E080AS
10	1.00	4	28E100CT	28E100CP	28E100CB	28E100CS
10	1.25	4	28E100BT	28E100BP	28E100BB	28E100BS
10	1.50	4	28E100AT	28E100AP	28E100AB	28E100AS
11	1.50	4	28E110AT	28E110AP	28E110AB	28E110AS
12	1.25	4	28E120CT	28E120CP	28E120CB	28E120CS
12	1.50	4	28E120BT	28E120BP	28E120BB	28E120BS
12	1.75	4	28E120AT	28E120AP	28E120AB	28E120AS
14	1.25	4	28E140CT	28E140CP	28E140CB	28E140CS
14	1.50	4	28E140BT	28E140BP	28E140BB	28E140BS
14	2.00	4	28E140AT	28E140AP	28E140AB	28E140AS

Size (mm)	Pitch Dia. (mm)	No. of Flutes	2800E Order No.			
			Taper	Plug	Bottoming	Sets
16	1.50	4	28E160BT	28E160BP	28E160BB	28E160BS
16	2.00	4	28E160AT	28E160AP	28E160AB	28E160AS
18	1.00	4	28E180CT	28E180CP	28E180CB	28E180CS
18	1.50	4	28E180DT	28E180DP	28E180DB	28E180DS
18	2.00	4	28E180BT	28E180BP	28E180BB	28E180BS
18	2.50	4	28E180AT	28E180AP	28E180AB	28E180AS
20	1.00	4	28E200CT	28E200CP	28E200CB	28E200CS
20	1.50	4	28E200BT	28E200BP	28E200BB	28E200BS
20	2.00	4	28E200DT	28E200DP	28E200DB	28E200DS
20	2.50	4	28E200AT	28E200AP	28E200AB	28E200AS
22	1.50	4	28E220BT	28E220BP	28E220BB	28E220BS
22	2.50	4	28E220AT	28E220AP	28E220AB	28E220AS
24	1.50	4	28E240CT	28E240CP	28E240CB	28E240CS
24	2.00	4	28E240BT	28E240BP	28E240BB	28E240BS
24	3.00	4	28E240AT	28E240AP	28E240AB	28E240AS
27	2.00	4	28E270BT	28E270BP	28E270BB	28E270BS
27	3.00	4	28E270AT	28E270AP	28E270AB	28E270AS
30	1.50	4	28E300CT	28E300CP	28E300CB	28E300CS
30	2.00	4	28E300BT	28E300BP	28E300BB	28E300BS
30	3.50	4	28E300AT	28E300AP	28E300AB	28E300AS
32	2.00	4	28E320AT	28E320AP	28E320AB	28E320AS
33	2.00	4	28E330BT	28E330BP	28E330BB	28E330BS
33	3.50	4	28E330AT	28E330AP	28E330AB	28E330AS
36	3.00	4	28E360BT	28E360BP	28E360BB	28E360BS
36	4.00	4	28E360AT	28E360AP	28E360AB	28E360AS
39	3.00	6	28E390BT	28E390BP	28E390BB	28E390BS
39	4.00	6	28E390AT	28E390AP	28E390AB	28E390AS
42	1.50	6	28E420BT	28E420BP	28E420BB	28E420BS
42	4.50	6	28E420AT	28E420AP	28E420AB	28E420AS
45	1.50	6	28E450BT	28E450BP	28E450BB	28E450BS
45	4.50	6	28E450AT	28E450AP	28E450AB	28E450AS
48	1.50	6	28E480BT	28E480BP	28E480BB	28E480BS
48	5.00	6	28E480AT	28E480AP	28E480AB	28E480AS
52	1.50	6	28E520BT	28E520BP	28E520BB	28E520BS
52	5.00	6	28E520AT	28E520AP	28E520AB	28E520AS

1.6 mm thru 6.3 mm - 12 per pack, 7 mm thru 12 mm - 6 per pack,  
14 mm thru 27 mm - 3 per pack, 30 mm and up - individually package

# GENERAL PURPOSE HAND TAPS

## SST+ 03A/ 03B SERIES

### HIGH SPEED STEEL

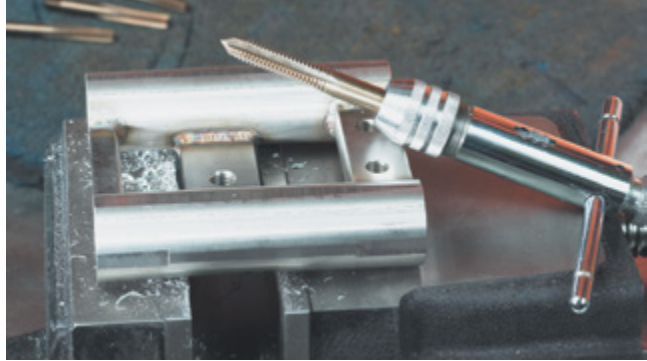
Taper, Plug, & Bottoming / Through or Blind Hole Machine Screw / Fractional

Made from premium quality high speed steel with ground threads, hardened and tempered for longest life in a variety of materials.

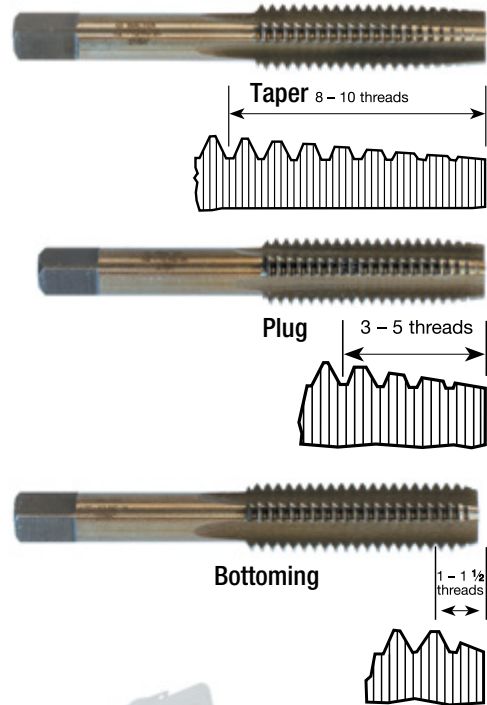
- ▷ Precision ground threads with eccentric relief for free cutting action
- ▷ Three and four flute designs
- ▷ Available in three chamfer lengths for through or blind hole tapping
- ▷ Special bronze SST surface treatment to improve life and tapping speed
- ▷ Packaged in reusable plastic packaging



# SST+



Machine Screw and Fractional Sizes						
Tap Size × Threads per inch	Drill Size	Taper	Plug	Bottoming	Std. Pkg.	Std. Ctn.
4-40 NC	#43	03A041	03A042	03A043	3	30
5-40 NC	#38	03A051	03A052	03A053	3	30
6-32 NC	#36	03A061	03A062	03A063	3	30
8-32 NC	#29	03A081	03A082	03A083	3	30
10-24 NC	#25	03A101	03A102	03A103	3	30
10-32 NF	#21	03A104	03A105	03A106	3	30
12-24 NC	#16	03A121	03A122	03A123	3	30
1/4"-20 NC	#7	03B041	03B042	03B043	3	30
1/4"-28 NF	#3	03B044	03B045	03B046	3	30
5/16"-18 NC	F	03B051	03B052	03B053	3	30
5/16"-24 NF	17/64"	03B054	03B055	03B056	3	30
3/8"-16 NC	5/16"	03B061	03B062	03B063	3	30
3/8"-24 NF	21/64"	03B064	03B065	03B066	3	30
7/16"-14 NC	U	03B071	03B072	03B073	3	30
7/16"-20 NF	25/64"	03B074	03B075	03B076	3	30
1/2"-13 NC	27/64"	03B081	03B082	03B083	3	30
1/2"-20 NF	29/64"	03B084	03B085	03B086	3	30
9/16"-12 NC	31/64"	03B091	03B092	03B093	1	10
9/16"-18 NF	33/64"	03B094	03B095	03B096	1	10
5/8"-11 NC	17/32"	03B101	03B102	03B103	1	10
5/8"-18 NF	37/64"	03B104	03B105	03B106	1	10
3/4"-10 NC	21/32"	03B121	03B122	03B123	1	10
3/4"-16 NF	11/16"	03B124	03B125	03B126	1	10
7/8"-9 NC	49/64"	03B141	03B142	03B143	1	10
7/8"-14 NF	13/16"	03B144	03B145	03B146	1	10
1"-8 NC	7/8"	03B161	03B162	03B163	1	10
1"-12 NF	7/8"	03B164	03B165	03B166	1	10



# GENERAL PURPOSE STRAIGHT FLUTE HAND TAPS

Straight Flute “Hand Taps” are the most popular and versatile style of taps in general machine tapping operations. They are for general use in production tapping or hand operations in a wide range of application material groups.

- ▷ *Taper – 7-10 pitch chamfer length. Starts the thread square with the workpiece*
- ▷ *Plug – 3-5 pitch chamfer length. Generally used in through holes*
- ▷ *Bottoming – 1-2 pitch chamfer length. Generates the thread to the bottom*
- ▷ *Sets – Contains 1 each of Taper, Plug, and Bottoming*
- ▷ *Black oxide surface treatment reduces wear and chip welding in abrasive materials*

## 2000N SERIES

### GENERAL PURPOSE HIGH SPEED STEEL

Taper, Plug, & Bottoming / Through or Blind Hole  
Machine Screw/ Black Oxide

**NITRO**



2000N

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2000N Order No.			
							Taper	Plug	Bottoming	Sets
0	-	80	1-11/16"	3/8"	2	H1	20N000FT	20N000FP	20N000FB	20N000FS
1	64	-	1-11/16"	3/8"	2	H1	20N001CT	20N001CP	20N001CB	20N001CS
1	-	72	1-11/16"	3/8"	2	H1	20N001FT	20N001FP	20N001FB	20N001FS
2	56	-	1-3/4"	7/16"	3	H2	20N002CT	20N002CP	20N002CB	20N002CS
2	-	64	1-3/4"	7/16"	3	H2	20N002FT	20N002FP	20N002FB	20N002FS
3	48	-	1-13/16"	1/2"	3	H2	20N003CT	20N003CP	20N003CB	20N003CS
3	-	56	1-13/16"	1/2"	3	H2	20N003FT	20N003FP	20N003FB	20N003FS
4	40	-	1-7/8"	9/16"	3	H2	20N004CT	20N004CP	20N004CB	20N004CS
4	-	36	1-7/8"	9/16"	3	H2	20N004ST	20N004SP	20N004SB	20N004SS
4	-	48	1-7/8"	9/16"	3	H2	20N004FT	20N004FP	20N004FB	20N004FS
5	40	-	1-15/16"	5/8"	3	H2	20N005CT	20N005CP	20N005CB	20N005CS
5	-	44	1-15/16"	5/8"	3	H2	20N005FT	20N005FP	20N005FB	20N005FS
6	32	-	2"	11/16"	3	H3	20N006CT	20N006CP	20N006CB	20N006CS
6	-	40	2"	11/16"	3	H2	20N006FT	20N006FP	20N006FB	20N006FS
8	32	-	2-1/8"	3/4"	4	H3	20N008CT	20N008CP	20N008CB	20N008CS
8	-	36	2-1/8"	3/4"	4	H2	20N008FT	20N008FP	20N008FB	20N008FS
10	24	-	2-3/8"	7/8"	4	H3	20N010CT	20N010CP	20N010CB	20N010CS
10	-	32	2-3/8"	7/8"	4	H3	20N010FT	20N010FP	20N010FB	20N010FS
12	24	-	2-3/8"	15/16"	4	H3	20N012CT	20N012CP	20N012CB	20N012CS
12	-	28	2-3/8"	15/16"	4	H3	20N012FT	20N012FP	20N012FB	20N012FS

All sizes are individually packaged

# GENERAL PURPOSE STRAIGHT FLUTE HAND TAPS



## 2000N SERIES

### GENERAL PURPOSE HIGH SPEED STEEL

Taper, Plug, & Bottoming / Through or Blind Hole

Fractional / Black Oxide



2000N

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2000N Order No.			
							Taper	Plug	Bottoming	Sets
1/4"	20	-	2-1/2"	1"	4	H3	20N116CT	20N116CP	20N116CB	20N116CS
1/4"	-	28	2-1/2"	1"	4	H3	20N116FT	20N116FP	20N116FB	20N116FS
5/16"	18	-	2-23/32"	1-1/8"	4	H3	20N120CT	20N120CP	20N120CB	20N120CS
5/16"	-	24	2-23/32"	1-1/8"	4	H3	20N120FT	20N120FP	20N120FB	20N120FS
3/8"	16	-	2-15/16"	1-1/4"	4	H3	20N124CT	20N124CP	20N124CB	20N124CS
3/8"	-	24	2-15/16"	1-1/4"	4	H3	20N124FT	20N124FP	20N124FB	20N124FS
7/16"	14	-	3-5/32"	1-7/16"	4	H3	20N128CT	20N128CP	20N128CB	20N128CS
7/16"	-	20	3-5/32"	1-7/16"	4	H3	20N128FT	20N128FP	20N128FB	20N128FS
1/2"	13	-	3-3/8"	1-21/32"	4	H3	20N132CT	20N132CP	20N132CB	20N132CS
1/2"	-	20	3-3/8"	1-21/32"	4	H3	20N132FT	20N132FP	20N132FB	20N132FS
9/16"	12	-	3-19/32"	1-21/32"	4	H3	20N136CT	20N136CP	20N136CB	20N136CS
9/16"	-	18	3-19/32"	1-21/32"	4	H3	20N136FT	20N136FP	20N136FB	20N136FS
5/8"	11	-	3-13/16"	1-13/16"	4	H3	20N140CT	20N140CP	20N140CB	20N140CS
5/8"	-	18	3-13/16"	1-13/16"	4	H3	20N140FT	20N140FP	20N140FB	20N140FS
11/16"	11	-	4-1/32"	1-13/16"	4	H3	20N144CT	20N144CP	20N144CB	20N144CS
11/16"	-	16	4-1/32"	1-13/16"	4	H3	20N144FT	20N144FP	20N144FB	20N144FS
3/4"	10	-	4-1/4"	2"	4	H3	20N148CT	20N148CP	20N148CB	20N148CS
3/4"	-	16	4-1/4"	2"	4	H3	20N148FT	20N148FP	20N148FB	20N148FS
7/8"	9	-	4-11/16"	2-7/32"	4	H4	20N156CT	20N156CP	20N156CB	20N156CS
7/8"	-	14	4-11/16"	2-7/32"	4	H4	20N156FT	20N156FP	20N156FB	20N156FS
1"	8	-	5-1/8"	2-1/2"	4	H4	20N164CT	20N164CP	20N164CB	20N164CS
1"	-	12	5-1/8"	2-1/2"	4	H4	20N164FT	20N164FP	20N164FB	20N164FS
1"	-	14	5-1/8"	2-1/2"	4	H4	20N164ST	20N164SP	20N164SB	20N164SS
1-1/8"	7	-	5-7/16"	2-9/16"	4	H4	20N208CT	20N208CP	20N208CB	20N208CS
1-1/8"	-	12	5-7/16"	2-9/16"	4	H4	20N208FT	20N208FP	20N208FB	20N208FS
1-1/4"	7	-	5-3/4"	2-9/16"	4	H4	20N216CT	20N216CP	20N216CB	20N216CS
1-1/4"	-	12	5-3/4"	2-9/16"	6	H4	20N216FT	20N216FP	20N216FB	20N216FS
1-3/8"	6	-	6-1/16"	3"	4	H4	20N224CT	20N224CP	20N224CB	20N224CS
1-3/8"	-	12	6-1/16"	3"	6	H4	20N224FT	20N224FP	20N224FB	20N224FS
1-1/2"	6	-	6-3/8"	3"	4	H4	20N232CT	20N232CP	20N232CB	20N232CS
1-1/2"	-	12	6-3/8"	3"	6	H4	20N232FT	20N232FP	20N232FB	20N232FS

All sizes are individually packaged



## GENERAL PURPOSE HAND TAPS

Carbon Steel Taps are used to rethread damaged or jammed threads or to thread mild steels. They can be used for either through or blind holes.

- ▷ *Taper – 7-10 pitch chamfer length. Starts the thread square with the workpiece*
- ▷ *Plug – 3-5 pitch chamfer length. Generally used in through holes*
- ▷ *Bottoming – 1-2 pitch chamfer length. Generates the thread to the bottom*

### 2000C SERIES

#### GENERAL PURPOSE CARBON

Taper, Plug, & Bottoming / Through or Blind Hole  
Machine Screw & Fractional / Bright



2000C

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	2000C Order No.		
						Taper	Plug	Bottoming
0	–	80	1-5/8"	5/16"	2	20C000FT	20C000FP	20C000FB
1	64	–	1-11/16"	3/8"	2	20C001CT	20C001CP	20C001CB
1	–	72	1-11/16"	3/8"	2	20C001FT	20C001FP	20C001FB
2	56	–	1-3/4"	7/16"	3	20C002CT	20C002CP	20C002CB
2	–	64	1-3/4"	7/16"	3	20C002FT	20C002FP	20C002FB
3	48	–	1-13/16"	1/2"	3	20C003CT	20C003CP	20C003CB
3	–	56	1-13/16"	1/2"	3	20C003FT	20C003FP	20C003FB
4	36	–	1-7/8"	9/16"	3	20C004AT	20C004AP	20C004AB
4	–	40	1-7/8"	9/16"	3	20C004CT	20C004CP	20C004CB
4	–	48	1-7/8"	9/16"	3	20C004FT	20C004FP	20C004FB
5	40	–	1-15/16"	5/8"	3	20C005CT	20C005CP	20C005CB
5	–	44	1-15/16"	5/8"	3	20C005FT	20C005FP	20C005FB
6	32	–	2"	11/16"	3	20C006CT	20C006CP	20C006CB
6	–	40	2"	11/16"	3	20C006FT	20C006FP	20C006FB
8	32	–	2-1/8"	3/4"	4	20C008CT	20C008CP	20C008CB
8	–	36	2-1/8"	3/4"	4	20C008FT	20C008FP	20C008FB
10	24	–	2-3/8"	7/8"	4	20C010CT	20C010CP	20C010CB
10	–	32	2-3/8"	7/8"	4	20C010FT	20C010FP	20C010FB
12	24	–	2-3/8"	15/16"	4	20C012CT	20C012CP	20C012CB
12	–	28	2-3/8"	15/16"	4	20C012FT	20C012FP	20C012FB
1/4"	20	–	2-1/2"	1"	4	20C116CT	20C116CP	20C116CB
1/4"	–	28	2-1/2"	1"	4	20C116FT	20C116FP	20C116FB
5/16"	18	–	2-23/32"	1-1/8"	4	20C120CT	20C120CP	20C120CB
5/16"	–	24	2-23/32"	1-1/8"	4	20C120FT	20C120FP	20C120FB
3/8"	16	–	2-15/16"	1-1/4"	4	20C124CT	20C124CP	20C124CB
3/8"	–	24	2-15/16"	1-1/4"	4	20C124FT	20C124FP	20C124FB

#0 thru 1/4" - 12 per pack, 5/16" thru 1/2" - 6 per pack, 9/16" thru 1" - 3 per pack, 1-1/8" and up - individually packaged

# GENERAL PURPOSE HAND TAPS

## 2000C SERIES

### GENERAL PURPOSE CARBON

Taper, Plug, & Bottoming / Through or Blind Hole  
Fractional & Metric / Bright



2000C

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	2000C Order No.		
						Taper	Plug	Bottoming
7/16"	14	-	3-5/32"	1-7/16"	4	20C128CT	20C128CP	20C128CB
7/16"	-	20	3-5/32"	1-7/16"	4	20C128FT	20C128FP	20C128FB
1/2"	13	-	3-3/8"	1-21/32"	4	20C132CT	20C132CP	20C132CB
1/2"	-	20	3-3/8"	1-21/32"	4	20C132FT	20C132FP	20C132FB
9/16"	12	-	3-19/32"	1-21/32"	4	20C136CT	20C136CP	20C136CB
9/16"	-	18	3-19/32"	1-21/32"	4	20C136FT	20C136FP	20C136FB
5/8"	11	-	3-13/16"	1-13/16"	4	20C140CT	20C140CP	20C140CB
5/8"	-	18	3-13/16"	1-13/16"	4	20C140FT	20C140FP	20C140FB
3/4"	10	-	4-1/4"	2"	4	20C148CT	20C148CP	20C148CB
3/4"	-	16	4-1/4"	2"	4	20C148FT	20C148FP	20C148FB
7/8"	9	-	4-11/16"	2-7/32"	4	20C156CT	20C156CP	20C156CB
7/8"	-	14	4-11/16"	2-7/32"	4	20C156FT	20C156FP	20C156FB
1"	8	-	5-1/8"	2-1/2"	4	20C164CT	20C164CP	20C164CB
1"	-	12	5-1/8"	2-1/2"	4	20C164FT	20C164FP	20C164FB
1-1/8"	7	-	5-7/16"	2-9/16"	4	20C208CT	20C208CP	20C208CB
1-1/8"	-	12	5-7/16"	2-9/16"	4	20C208FT	20C208FP	20C208FB
1-1/4"	7	-	5-3/4"	2-9/16"	4	20C216CT	20C216CP	20C216CB
1-1/4"	-	12	5-3/4"	2-9/16"	6	20C216FT	20C216FP	20C216FB
1-3/8"	6	-	6-1/16"	3"	6	20C224CT	20C224CP	20C224CB
1-3/8"	-	12	6-1/16"	3"	6	20C224FT	20C224FP	20C224FB
1-1/2"	6	-	6-3/8"	3"	6	20C232CT	20C232CP	20C232CB
1-1/2"	-	12	6-3/8"	3"	6	20C232FT	20C232FP	20C232FB
Size (mm)	Pitch (mm)		Overall Length	Length of Thread	No. of Flutes	Taper	Plug	Bottoming
4	0.70	-	2-1/4"	5/16"	4	20C040AT	20C040AP	20C040AB
5	0.80	-	2-1/2"	3/8"	4	20C050AT	20C050AP	20C050AB
6	1.00	-	2-1/2"	3/8"	4	20C060AT	20C060AP	20C060AB
8	1.00	-	2-3/4"	7/16"	4	20C080AT	20C080AP	20C080AB
8	1.25	-	2-3/4"	7/16"	4	20C080BT	20C080BP	20C080BB
10	1.00	-	3"	1/2"	4	20C100AT	20C100AP	20C100AB
10	1.25	-	3"	1/2"	4	20C100BT	20C100BP	20C100BB
10	1.50	-	3"	9/16"	4	20C100CT	20C100CP	20C100CB
12	1.50	-	3-1/4"	9/16"	4	20C120AT	20C120AP	20C120AB
12	1.75	-	3-1/4"	9/16"	4	20C120BT	20C120BP	20C120BB
14	2.00	-	3-5/8"	5/8"	4	20C140AT	20C140AP	20C140AB
16	2.00	-	3-3/4"	11/16"	4	20C160AT	20C160AP	20C160AB

4 mm thru 6 mm - 12 per pack , 8 mm thru 12 mm - 6 per pack, 13 mm and up - individually packaged

# GENERAL PURPOSE POWER TAPS

# SST

## SST POWER TAPS 03A / 03B SERIES

### HIGH SPEED STEEL

#### Plug / Through Hole

#### Machine Screw / Fractional / Bronze Oxide

Specially designed for use on reversible portable drills, SST™ power taps are guaranteed to work faster and last longer than standard taps in steel, stainless steel and other ferrous or non-ferrous metals. SST™ power taps eliminate slow hand tapping to increase productivity and reduce overall production costs.

- ▷ 3 flats to fit any drill chuck without slippage
- ▷ Special power tip ejects chips ahead of tap and self-aligns with hole axis for high quality threads
- ▷ Premium HSS body, ground threads, 3-flute plug style with SST surface treatment for long tap life
- ▷ Special long and resistant shank for tapping deep or difficult-to-reach holes
- ▷ Packaged in reusable plastic packaging



Tap Size	Overall Length	Drill Size	Order No.	Std. Pkg.	Std. Ctn.
6-32 NC	2 1/2"	#36	03A561	1	10
6-40 NF	2 1/2"	#33	03A564	1	10
8-32 NC	2 13/16"	#29	03A581	1	10
8-36 NF	2 13/16"	#29	03A584	1	10
10-24 NC	2 13/16"	#25	03A601	1	10
10-32 NF	2 13/16"	#21	03A604	1	10
12-24 NC	3 3/16"	#16	03A621	1	10
12-28 NF	3 3/16"	#15	03A624	1	10
1/4"-20 NC	3 3/16"	#7	03B541	1	10
1/4"-28 NF	3 3/16"	#3	03B544	1	10
5/16"-18 NC	3 11/16"	F	03B551	1	10
5/16"-24 NF	3 11/16"	I	03B554	1	10
3/8"-16 NC	4 3/32"	5/16"	03B561	1	10
3/8"-24 NF	4 3/32"	Q	03B564	1	10
7/16"-14 NC	4 3/32"	U	03B571	1	10
7/16"-20 NF	3 15/16"	25/64"	03B574	1	10
1/2"-13 NC	4 5/16"	27/64"	03B581	1	10
1/2"-20 NF	4 5/16"	29/64"	03B584	1	10
9/16"-12 NC	4 5/16"	31/64"	03B591	1	10
9/16"-18 NF	4 5/16"	33/64"	03B594	1	10
5/8"-11 NC	4 5/16"	17/32"	03B601	1	10
5/8"-18 NF	4 5/16"	37/64"	03B604	1	10
3/4"-10 NC	4 5/16"	21/32"	03B621	1	10
3/4"-16 NF	4 5/16"	11/16"	03B624	1	10
7/8"-9 NC	4 5/16"	49/64"	03B641	1	10
7/8"-14 NF	4 5/16"	13/16"	03B644	1	10
1"-8 NC	4 5/16"	7/8"	03B661	1	10
1"-12 NF	4 5/16"	59/64"	03B664	1	10

Tap drill size marked on shank (tap sizes 12-24 and over).

**GUARANTEED TO TAP FASTER AND LAST LONGER**

### Tech tip!

For increased cutting efficiency and tool life, use TAPCUT lubricant.

## GENERAL PURPOSE SPIRAL POINT TAPS

The angular flutes at the front end of these taps propel the chips ahead of the tap. This reduces loading and clogging in the flutes. Spiral Point taps are ideal for production tapping through holes. Sometimes referred to as "Gun Taps," spiral point taps "shoot" the chips ahead of the tap.

- ▷ *Spiral point taps eject chips ahead of the tap for reduced loading and clogging in flutes*
- ▷ *Bright finish for increased lubricity*
- ▷ *Black oxide surface treatment for longer life*

**NITRO**

### 2100N SERIES

#### GENERAL PURPOSE HIGH SPEED STEEL

Plug / Through Hole

Machine Screw / Black Oxide

### 2100N SERIES

#### GENERAL PURPOSE HIGH SPEED STEEL

Plug / Through Hole

Fractional / Black Oxide



2100N

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2100N Order No. Plug
0	-	80	1-5/8"	5/16"	2	H1	21N000FP
1	64	-	1-11/16"	3/8"	2	H1	21N001CP
1	-	72	1-11/16"	3/8"	2	H1	21N001FP
2	56	-	1-3/4"	7/16"	2	H2	21N002CP
2	-	64	1-3/4"	7/16"	2	H2	21N002FP
3	48	-	1-13/16"	1/2"	2	H2	21N003CP
3	-	56	1-13/16"	1/2"	2	H2	21N003FP
4	40	-	1-7/8"	9/16"	2	H2	21N004CP
4	-	48	1-7/8"	9/16"	2	H2	21N004FP
4	-	36	1-7/8"	9/16"	2	H2	21N004SP
5	40	-	1-15/16"	5/8"	2	H2	21N005CP
5	-	44	1-15/16"	5/8"	2	H2	21N005FP
6	32	-	2"	11/16"	2	H3	21N006CP
6	-	40	2"	11/16"	2	H2	21N006FP
8	32	-	2-1/8"	3/4"	2	H3	21N008CP
8	-	36	2-1/8"	3/4"	2	H2	21N008FP
10	24	-	2-3/8"	7/8"	2	H3	21N010CP
10	-	32	2-3/8"	7/8"	2	H3	21N010FP
12	24	-	2-3/8"	15/16"	2	H3	21N012CP
12	-	28	2-3/8"	15/16"	2	H3	21N012FP

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2100N Order No. Plug
1/4"	20	-	2-1/2"	1"	2	H3	21N116CP
1/4"	-	28	2-1/2"	1"	2	H3	21N116FP
5/16"	18	-	2-23/32"	1-1/8"	2	H3	21N120CP
5/16"	-	24	2-23/32"	1-1/8"	2	H3	21N120FP
3/8"	16	-	2-15/16"	1-1/4"	3	H3	21N124CP
3/8"	-	24	2-15/16"	1-1/4"	3	H3	21N124FP
7/16"	14	-	3-5/32"	1-7/16"	3	H3	21N128CP
7/16"	-	20	3-5/32"	1-7/16"	3	H3	21N128FP
1/2"	13	-	3-3/8"	1-21/32"	3	H3	21N132CP
1/2"	-	20	3-3/8"	1-21/32"	3	H3	21N132FP
9/16"	12	-	3-19/32"	1-21/32"	3	H3	21N136CP
9/16"	-	18	3-19/32"	1-21/32"	3	H3	21N136FP
5/8"	11	-	3-13/16"	1-13/16"	3	H3	21N140CP
5/8"	-	18	3-13/16"	1-13/16"	3	H3	21N140FP
3/4"	10	-	4-1/4"	2"	3	H3	21N148CP
3/4"	-	16	4-1/4"	2"	3	H3	21N148FP

All sizes are individually packaged

### 2850 SERIES

#### GENERAL PURPOSE HIGH SPEED STEEL

Plug / Through Hole

Metric / Bright



2850

Size (mm)	Pitch Dia. (mm)	No. of Flutes	Pitch Dia. Limits	2850 Order No. Plug
1,6	0,35	2	D3	285A016A
1,8	0,35	2	D3	285A018A
2	0,4	2	D3	285A020A
2,2	0,45	2	D3	285A022A
2,5	0,45	2	D3	285A025A
3	0,5	2	D3	285A030A
3,5	0,6	2	D4	285A035A
4	0,7	2	D4	285A040A
4,5	0,75	2	D4	285A045A
5	0,8	2	D4	285A050A
6	1	2	D5	285A060A
6,3	1	2	D5	285A063A
7	1	2	D5	285A070A

Size (mm)	Pitch Dia. (mm)	No. of Flutes	Pitch Dia. Limits	2850 Order No. Plug
8.0	1.25	2	D5	285A080A
8.0	1.00	2	D5	285A080B
10	1.50	3	D6	285A100A
10	1.25	3	D5	285A100B
12	1.75	3	D6	285A120A
12	1.25	3	D5	285A120C
14	2.00	3	D7	285A140A
14	1.50	3	D6	285A140B
16	2.00	3	D7	285A160A
16	1.50	3	D6	285A160B
18	2.50	4	D7	285A180A
20	2.50	4	D7	285A200A
20	1.50	4	D6	285A200B



# GENERAL PURPOSE SPIRAL POINT TAPS

## 2100 SERIES

**GENERAL PURPOSE HIGH SPEED STEEL**

Plug / Through Hole  
Machine Screw / Bright

## 2100 SERIES

**GENERAL PURPOSE HIGH SPEED STEEL**

Plug / Through Hole  
Fractional / Bright



2100

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2100 Order No. Plug
0	-	80	1-5/8"	5/16"	2	H1	21A000FP
1	64	-	1-11/16"	3/8"	2	H1	21A001CP
1	-	72	1-11/16"	3/8"	2	H1	21A001FP
2	56	-	1-3/4"	7/16"	2	H2	21A002CP
2	-	64	1-3/4"	7/16"	2	H2	21A002FP
3	48	-	1-13/16"	1/2"	2	H2	21A003CP
3	-	56	1-13/16"	1/2"	2	H2	21A003FP
4	40	-	1-7/8"	9/16"	2	H2	21A004CP
4	-	48	1-7/8"	9/16"	2	H2	21A004FP
4	-	36	1-7/8"	9/16"	2	H2	21A004SP
5	40	-	1-15/16"	5/8"	2	H2	21A005CP
5	-	44	1-15/16"	5/8"	2	H2	21A005FP
6	32	-	2"	11/16"	2	H3	21A006CP
6	-	40	2"	11/16"	2	H2	21A006FP
8	32	-	2-1/8"	3/4"	2	H3	21A008CP
8	-	36	2-1/8"	3/4"	2	H2	21A008FP
10	24	-	2-3/8"	7/8"	2	H3	21A010CP
10	-	32	2-3/8"	7/8"	2	H3	21A010FP
12	24	-	2-3/8"	15/16"	2	H3	21A012CP
12	-	28	2-3/8"	15/16"	2	H3	21A012FP

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2100 Order No. Plug
1/4"	20	-	2-1/2"	1"	2	H3	21A116CP
1/4"	-	28	2-1/2"	1"	2	H3	21A116FP
5/16"	18	-	2-23/32"	1-1/8"	2	H3	21A120CP
5/16"	-	24	2-23/32"	1-1/8"	2	H3	21A120FP
3/8"	16	-	2-15/16"	1-1/4"	3	H3	21A124CP
3/8"	-	24	2-15/16"	1-1/4"	3	H3	21A124FP
7/16"	14	-	3-5/32"	1-7/16"	3	H3	21A128CP
7/16"	-	20	3-5/32"	1-7/16"	3	H3	21A128FP
1/2"	13	-	3-3/8"	1-21/32"	3	H3	21A132CP
1/2"	-	20	3-3/8"	1-21/32"	3	H3	21A132FP
9/16"	12	-	3-19/32"	1-21/32"	3	H3	21A136CP
9/16"	-	18	3-19/32"	1-21/32"	3	H3	21A136FP
5/8"	11	-	3-13/16"	1-13/16"	3	H3	21A140CP
5/8"	-	18	3-13/16"	1-13/16"	3	H3	21A140FP
3/4"	10	-	4-1/4"	2"	3	H3	21A148CP
3/4"	-	16	4-1/4"	2"	3	H3	21A148FP

All sizes are individually packaged

## 2100E SERIES

**GENERAL PURPOSE HIGH SPEED STEEL**

Plug / Through Hole  
Machine Screw / Bright

## 2100E SERIES

**GENERAL PURPOSE HIGH SPEED STEEL**

Plug / Through Hole  
Fractional / Bright



2100E

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2100E Order No. Plug
0	-	80	1-5/8"	5/16"	2	H1	21E000FP
1	64	-	1-11/16"	3/8"	2	H1	21E001CP
1	-	72	1-11/16"	3/8"	2	H1	21E001FP
2	56	-	1-3/4"	7/16"	2	H2	21E002CP
2	-	64	1-3/4"	7/16"	2	H2	21E002FP
3	48	-	1-13/16"	1/2"	2	H2	21E003CP
3	-	56	1-13/16"	1/2"	2	H2	21E003FP
4	40	-	1-7/8"	9/16"	2	H2	21E004CP
4	-	36	1-7/8"	9/16"	2	H2	21E004SP
4	-	48	1-7/8"	9/16"	2	H2	21E004FP
5	40	-	1-15/16"	5/8"	2	H2	21E005CP
5	-	44	1-15/16"	5/8"	2	H2	21E005FP
6	32	-	2"	11/16"	2	H3	21E006CP
6	-	40	2"	11/16"	2	H2	21E006FP
8	32	-	2-1/8"	3/4"	2	H3	21E008CP
8	-	36	2-1/8"	3/4"	2	H2	21E008FP
10	24	-	2-3/8"	7/8"	2	H3	21E010CP
10	-	32	2-3/8"	7/8"	2	H3	21E010FP
12	24	-	2-3/8"	15/16"	2	H3	21E012CP
12	-	28	2-3/8"	15/16"	2	H3	21E012FP

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2100E Order No. Plug
1/4"	20	-	2-1/2"	1"	2	H3	21E116CP
1/4"	-	28	2-1/2"	1"	2	H3	21E116FP
5/16"	18	-	2-23/32"	1-1/8"	2	H3	21E120CP
5/16"	-	24	2-23/32"	1-1/8"	2	H3	21E120FP
3/8"	16	-	2-15/16"	1-1/4"	3	H3	21E124CP
3/8"	-	24	2-15/16"	1-1/4"	3	H3	21E124FP
7/16"	14	-	3-5/32"	1-7/16"	3	H3	21E128CP
7/16"	-	20	3-5/32"	1-7/16"	3	H3	21E128FP
1/2"	13	-	3-3/8"	1-21/32"	3	H3	21E132CP
1/2"	-	20	3-3/8"	1-21/32"	3	H3	21E132FP
9/16"	12	-	3-19/32"	1-21/32"	3	H3	21E136CP
9/16"	-	18	3-19/32"	1-21/32"	3	H3	21E136FP
5/8"	11	-	3-13/16"	1-13/16"	3	H3	21E140CP
5/8"	-	18	3-13/16"	1-13/16"	3	H3	21E140FP
3/4"	10	-	4-1/4"	2"	3	H3	21E148CP
3/4"	-	16	4-1/4"	2"	3	H3	21E148FP
7/8"	9	-	4-11/16"	2-7/32"	3	H4	21E156CP
7/8"	-	14	4-11/16"	2-7/32"	3	H4	21E156FP
1"	8	-	5-1/8"	2-1/2"	3	H4	21E164CP
1"	-	12	5-1/8"	2-1/2"	3	H4	21E164FP
1"	-	14	5-1/8"	2-1/2"	3	H4	21E164SP

#0 thru 1/4" - 12 per pack, 5/16" thru 1/2" - 6 per pack, 9/16" thru 1" - 3 per pack

## GENERAL PURPOSE OVERSIZE SPIRAL POINT TAPS

Oversize taps are similar in design to a standard tap, but with a pitch diameter that is usually 0.003" to 0.005" larger than standard. Oversize taps are used primarily where a part will be plated or treated after tapping. Available in H7 or H11 limits, in hand taps (2003 and 2005 series) or spiral point (2103 and 2105 series).

▷ *All sizes are individually packaged*

### 2105 SERIES

#### GENERAL PURPOSE HIGH SPEED STEEL

Fractional / Bright

.005" Oversize / Plug / Through Hole



2105

Size	NC	NF	No. of Flutes	2105 Order No.	
				Plug	
5/16"	18	–	2	215A120CP	
3/8"	16	–	3	215A124CP	
7/16"	14	–	3	215A128CP	
1/2"	13	–	3	215A132CP	
5/8"	11	–	3	215A140CP	

## GENERAL PURPOSE OVERSIZED HAND TAPS

Oversize taps are similar in design to a standard tap, but with a pitch diameter that is usually 0.003" to 0.005" larger than standard. Oversize taps are used primarily where a part will be plated or treated after tapping. Available in H7 or H11 limits, in hand taps (2003 and 2005 series) or spiral point (2103 and 2105 series).

▷ *All sizes are individually packaged*

### 2005 SERIES

#### GENERAL PURPOSE HIGH SPEED STEEL

.005" Oversize / Plug & Bottoming

Through or Blind Hole

Fractional / Bright



2005

Size	NC	Pitch Dia. Limits	No. of Flutes	2005 Order No.	
				Plug	Bottoming
1/4"	20	H11	4	205A116CP	–
5/16"	18	H11	4	205A120CP	205A120CB
3/8"	16	H11	4	205A124CP	205A124CB
7/16"	14	H11	4	205A128CP	205A128CB
1/2"	13	H11	4		205A132CB
5/8"	11	H11	4	205A140CP	205A140CB

# PRODUCTION TAPS

## ANSI PRODUCTION TAPS

**NITRO-MAX**

Produced with a reduced neck to allow for longer reach, improved coolant flow, and easier chip evacuation. Can be used in a wide range of material groups, including difficult-to-machine materials such as High Tensile Strength Steels and Stainless Steel.

- ▷ Extremely versatile high speed steel with high speed carbon and vanadium contents for exceptional abrasion resistance
- ▷ Offer higher heat resistance and red hardness over conventional High Speed Steel taps
- ▷ Can be used for production threading with both conventional or CNC equipment
- ▷ Black Oxide surface treatment provides improved lubricity and helps prevent the formation of built-up edge
- ▷ Manufactured to industry recognized USCTI 302A Standards
- ▷ All sizes are individually packaged

### 2150N SERIES

#### PRODUCTION M4 PREMIUM HSS

Spiral Point / Plug Chamfer / Through Hole

Machine Screw, Fractional, & Metric / Black Oxide



2150N

	Size	NC	NF	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (75%)	2150N Order No.
Machine Screw & Fractional Sizes	6	32	–	2"	0.110"	2	H3	#36	215N006C
	8	32	–	2-1/8"	0.131"	3	H3	#29	215N008C
	10	24	–	2-3/8"	0.152"	3	H3	#25	215N010C
	10	–	32	2-3/8"	0.152"	3	H3	#21	215N010F
	1/4"	20	–	2-1/2"	0.191"	3	H3	#7	215N116C
	1/4"	–	28	2-1/2"	0.191"	3	H3	#3	215N116F
	5/16"	18	–	2-23/32"	0.238"	3	H3	F	215N120C
	5/16"	–	24	2-23/32"	0.238"	3	H3	I	215N120F
	3/8"	16	–	2-15/16"	0.286"	3	H3	5/16"	215N124C
	3/8"	–	24	2-15/16"	0.286"	3	H3	Q	215N124F
	7/16"	14	–	3-5/32"	0.242"	3	H3	U	215N128C
	7/16"	–	20	3-5/32"	0.242"	3	H3	W	215N128F
	1/2"	13	–	3-3/8"	0.275"	3	H3	27/64"	215N132C
	1/2"	–	20	3-3/8"	0.275"	3	H3	29/64"	215N132F
	5/8"	11	–	3-13/16"	0.360"	3	H3	17/32"	215N140C
	5/8"	–	18	3-13/16"	0.360"	3	H3	37/64"	215N140F
	3/4"	10	–	4-1/4"	0.442"	3	H3	21/32"	215N148C
	3/4"	–	16	4-1/4"	0.442"	3	H3	11/16"	215N148F

	Size	Pitch (mm)	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (75%)	2150N Order No.
Metric Sizes	M4	0.7	2-1/8"	0.131"	3	D4	#30	215N040A
	M5	0.8	2-3/8"	0.152"	3	D4	#19	215N050A
	M6	1.0	2-1/2"	0.191"	3	D5	#9	215N060A
	M8	1.25	2-23/32"	0.238"	3	D5	H	215N080A
	M10	1.5	2-15/16"	0.286"	3	D6	Q	215N100A
	M12	1.75	3-3/8"	0.275"	3	D6	Y	215N120A

# ANSI PRODUCTION TAPS

## 2160N SERIES

### PRODUCTION M4 PREMIUM HSS

High Spiral Flute / Bottoming Chamfer / Blind Hole  
Machine Screw, Fractional, & Metric / Black Oxide

**NITRO-MAX**



2160N

	Size	NC	NF	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (75%)	2160N Order No.
Machine Screw & Fractional Sizes	6	32	-	2"	0.110"	3	H3	#36	216N006C
	8	32	-	2-1/8"	0.131"	3	H3	#29	216N008C
	10	24	-	2-3/8"	0.152"	3	H3	#25	216N010C
	10	-	32	2-3/8"	0.152"	3	H3	#21	216N010F
	1/4"	20	-	2-1/2"	0.191"	3	H3	#7	216N116C
	1/4"	-	28	2-1/2"	0.191"	3	H3	#3	216N116F
	5/16"	18	-	2-23/32"	0.238"	3	H3	F	216N120C
	5/16"	-	24	2-23/32"	0.238"	3	H3	I	216N120F
	3/8"	16	-	2-15/16"	0.286"	3	H3	5/16"	216N124C
	3/8"	-	24	2-15/16"	0.286"	3	H3	Q	216N124F
	7/16"	14	-	3-5/32"	0.242"	3	H3	U	216N128C
	7/16"	-	20	3-5/32"	0.242"	3	H3	W	216N128F
	1/2"	13	-	3-3/8"	0.275"	3	H3	27/64"	216N132C
	1/2"	-	20	3-3/8"	0.275"	3	H3	29/64"	216N132F
	5/8"	11	-	3-13/16"	0.360"	4	H3	17/32"	216N140C
	5/8"	-	18	3-13/16"	0.360"	4	H3	37/64"	216N140F
	3/4"	10	-	4-1/4"	0.442"	4	H3	21/32"	216N148C
	3/4"	-	16	4-1/4"	0.442"	4	H3	11/16"	216N148F

	Size	Pitch (mm)	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (75%)	2160N Order No.
Metric Sizes	M4	0.7	2-1/8"	0.131"	3	D4	#30	216N040A
	M5	0.8	2-3/8"	0.152"	3	D4	#19	216N050A
	M6	1.0	2-1/2"	0.191"	3	D5	#9	216N060A
	M8	1.25	2.23/32"	0.238"	3	D5	H	216N080A
	M10	1.5	2.15/16"	0.286"	3	D6	Q	216N100A
	M12	1.75	3.3/8"	0.275"	3	D6	Y	216N120A



## DIN/ANSI PRODUCTION TAPS

Manufactured to DIN/ANSI specifications, with DIN lengths to allow for longer reach and deeper threading in a single pass.

**NITRO-MAX**

- ▷ *Manufactured from M4 HSS, an extremely versatile high speed steel with high carbon and vanadium contents for exceptional abrasion-resistance*
- ▷ *Offer higher heat resistance and red hardness over conventional High Speed Steel taps*
- ▷ *TiCN (Titanium Carbo Nitride) coating*
  - *helps to reduce galling, microwelding, seizing, and adhesive wear*
  - *allows for a smoother threading operation*
  - *helps to hold sharp edges and reduces the coefficient of friction*
- ▷ *All sizes are individually packaged*

### 2250N SERIES

#### PRODUCTION M4 PREMIUM HSS

Spiral Point / Plug Chamfer / Through Hole

Machine Screw, Fractional, & Metric / TiCN Coated



2250N

	Size	NC	NF	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (75%)	2250N Order No.
Machine Screw & Fractional Sizes	4	40	–	2.21"	0.110"	2	H2	#43	225N004C
	6	32	–	2.21"	0.110"	2	H3	#36	225N006C
	8	32	–	2.48"	0.131"	3	H3	#29	225N008C
	10	24	–	2.76"	0.152"	3	H3	#25	225N010C
	10	–	32	2.76"	0.152"	3	H3	#21	225N010F
	1/4"	20	–	3.15"	0.191"	3	H3	#7	225N116C
	1/4"	–	28	3.15"	0.191"	3	H3	#3	225N116F
	5/16"	18	–	3.54"	0.238"	3	H3	F	225N120C
	5/16"	–	24	3.54"	0.238"	3	H3	I	225N120F
	3/8"	16	–	3.94"	0.286"	3	H3	5/16"	225N124C
	3/8"	–	24	3.94"	0.286"	3	H3	Q	225N124F
	7/16"	14	–	3.94"	0.242"	3	H3	U	225N128C
	7/16"	–	20	3.94"	0.242"	3	H3	W	225N128F
	1/2"	13	–	4.33"	0.275"	3	H3	27/64"	225N132C
	1/2"	–	20	4.33"	0.275"	3	H3	29/64"	225N132F
	5/8"	11	–	4.33"	0.360"	3	H3	17/32"	225N140C
	5/8"	–	18	4.33"	0.360"	3	H3	37/64"	225N140F
	3/4"	10	–	4.92"	0.442"	3	H3	21/32"	225N148C
3/4"	–	16	4.92"	0.442"	3	H3	11/16"	225N148F	

	Size	Pitch (mm)	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (75%)	2250N Order No.
Metric Sizes	M4	0.7	2.48"	0.131"	3	D4	#30	225N040A
	M5	0.8	2.76"	0.152"	3	D4	#19	225N050A
	M6	1.0	3.15"	0.191"	3	D5	#9	225N060A
	M8	1.25	3.54"	0.238"	3	D5	H	225N080A
	M10	1.5	3.94"	0.286"	3	D6	Q	225N100A
	M12	1.75	4.33"	0.275"	3	D6	Y	225N120A
	M16	2.0	4.33"	0.360"	3	D7	35/64"	225N160A

# DIN/ANSI PRODUCTION TAPS

## 2260N SERIES

### PRODUCTION M4 PREMIUM HSS

High Spiral Flute / Bottoming Chamfer / Blind Hole  
Machine Screw, Fractional, & Metric / TiCN Coated

**NITRO-MAX**



2260N



	Size	NC	NF	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (75%)	2260N Order No.
	Machine Screw & Fractional Sizes	4	40	-	2.21"	0.110"	3	H2	#43
6		32	-	2.21"	0.110"	3	H3	#36	226N006C
8		32	-	2.48"	0.131"	3	H3	#29	226N008C
10		24	-	2.76"	0.152"	3	H3	#25	226N010C
10		-	32	2.76"	0.152"	3	H3	#21	226N010F
1/4"		20	-	3.15"	0.191"	3	H3	#7	226N116C
1/4"		-	28	3.15"	0.191"	3	H3	#3	226N116F
5/16"		18	-	3.54"	0.238"	3	H3	F	226N120C
5/16"		-	24	3.54"	0.238"	3	H3	I	226N120F
3/8"		16	-	3.94"	0.286"	3	H3	5/16"	226N124C
3/8"		-	24	3.94"	0.286"	3	H3	Q	226N124F
7/16"		14	-	3.94"	0.242"	3	H3	U	226N128C
7/16"		-	20	3.94"	0.242"	3	H3	W	226N128F
1/2"		13	-	4.33"	0.275"	3	H3	27/64"	226N132C
1/2"		-	20	4.33"	0.275"	3	H3	29/64"	226N132F
5/8"		11	-	4.33"	0.360"	4	H3	17/32"	226N140C
5/8"		-	18	4.33"	0.360"	4	H3	37/64"	226N140F
3/4"		10	-	4.92"	0.442"	4	H3	21/32"	226N148C
3/4"		-	16	4.92"	0.442"	4	H3	11/16"	226N148F

	Size	Pitch (mm)	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (75%)	2260N Order No.
	Metric Sizes	M4	0.7	2.48"	0.131"	3	D4	#30
M5		0.8	2.76"	0.152"	3	D4	#19	226N050A
M6		1.0	3.15"	0.191"	3	D5	#9	226N060A
M8		1.25	3.54"	0.238"	3	D5	H	226N080A
M10		1.5	3.94"	0.286"	3	D6	Q	226N100A
M12		1.75	4.33"	0.275"	3	D6	Y	226N120A
M16		2.0	4.33"	0.360"	4	D7	35/64"	226N160A

# PRODUCTION THREAD FORMING TAPS

Thread forming taps “form” the thread in malleable materials without cutting, eliminating chips. This allows for increased speeds & feeds, and a cleaner threading environment.

- ▷ *Manufactured from M4 HSS, an extremely versatile high speed steel with high carbon and vanadium contents for exceptional abrasion-resistance*
- ▷ *Offer higher heat resistance and red hardness over conventional High Speed Steel taps*
- ▷ *TiCN (Titanium Carbo Nitride) coating*
  - *helps to reduce galling, microwelding, seizing, and adhesive wear*
  - *allows for a smoother threading operation*
  - *helps to hold sharp edges and reduces the coefficient of friction*
- ▷ *All sizes are individually packaged*

**NITRO-MAX**

## 2270N SERIES

### PRODUCTION M4 PREMIUM HSS

Fluteless / Bottoming Chamfer / Through or Blind Hole  
Machine Screw, Fractional & Metric / TiCN Coated



Machine Screw & Fractional Sizes	Size	NC	NF	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (65%)	2270N Order No.
	4	40	–	2.21”	0.110”	0	H5	#39	227N004C
	6	32	–	2.21”	0.110”	0	H5	1/8”	227N006C
	8	32	–	2.48”	0.131”	0	H5	#25	227N008C
	10	24	–	2.76”	0.152”	0	H6	11/64”	227N010C
	10	–	32	2.76”	0.152”	0	H6	#16	227N010F
	1/4”	20	–	3.15”	0.191”	0	H6	#1	227N116C
	1/4”	–	28	3.15”	0.191”	0	H6	A	227N116F
	5/16”	18	–	3.54”	0.238”	0	H7	7.3 mm	227N120C
	5/16”	–	24	3.54”	0.238”	0	H7	M	227N120F
	3/8”	16	–	3.94”	0.286”	0	H7	S	227N124C
	3/8”	–	24	3.94”	0.286”	0	H7	T	227N124F

Metric Sizes	Size	Pitch (mm)	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (65%)	2270N Order No.
	M4	0.7	2.48”	0.131”	0	D7	#27	227N040A
	M5	0.8	2.76”	0.152”	0	D8	#14	227N050A
	M6	1.0	3.15”	0.191”	0	D9	7/32”	227N060A
	M8	1.25	3.54”	0.238”	0	D10	M	227N080A
M10	1.5	3.94”	0.286”	0	D11	U	227N100A	

## PRODUCTION MULTI-APPLICATION SPIRAL POINT TAPS

**NITRO**

These taps are designed for machine tapping in a wide range of material groups, including difficult-to-machine materials such as stainless steel. The NITRO® multiapplication tap improves thread quality and aids in chip evacuation, eliminating bird nesting.

Available in both spiral point and spiral flute designs, in fractional and metric sizes.

- ▷ *Spiral point taps eject chips ahead of the tap*
- ▷ *A good choice for CNC and machine tapping*
- ▷ *Bright finish for increased lubricity*
- ▷ *All sizes are individually packaged*

### 2100PS SERIES

#### PRODUCTION HIGH SPEED STEEL

Plug / Through Hole

Machine Screw & Fractional / Bright

### 2100PS SERIES

#### PRODUCTION HIGH SPEED STEEL

Plug / Through Hole

Metric / Bright



2100PS

Size	NC	NF	Number of Flutes	Pitch Dia. Limits	2100PS Order No.
4	40	–	2	H2	21PS004C
4	–	48	2	H2	21PS004F
5	40	–	3	H2	21PS005C
5	–	44	3	H2	21PS005F
6	32	–	3	H3	21PS006C
6	–	40	3	H2	21PS006F
8	32	–	3	H3	21PS008C
8	–	36	3	H2	21PS008F
10	24	–	3	H3	21PS010C
10	–	32	3	H3	21PS010F
12	24	–	3	H3	21PS012C
12	–	28	3	H3	21PS012F
1/4"	20	–	3	H3	21PS116C
1/4"	–	28	3	H3	21PS116F
5/16"	18	–	3	H3	21PS120C
5/16"	–	24	3	H5	21PS120F
3/8"	16	–	3	H3	21PS124C
3/8"	–	24	3	H3	21PS124F
7/16"	14	–	3	H3	21PS128C
7/16"	–	20	3	H3	21PS128F
1/2"	13	–	3	H5	21PS132C
1/2"	–	20	3	H5	21PS132F
9/16"	12	–	3	H5	21PS136C
9/16"	–	18	3	H5	21PS136F
5/8"	11	–	3	H5	21PS140C
5/8"	–	18	3	H5	21PS140F
3/4"	10	–	3	H5	21PS148C
3/4"	–	16	3	H5	21PS148F
7/8"	9	–	3	H6	21PS156C
7/8"	–	14	3	H6	21PS156F
1"	8	–	3	H6	21PS164C
1"	–	12	3	H6	21PS164F

Size	Pitch (mm)	Number of Flutes	Pitch Dia. Limits	2100PS Order No.
M3	0.5	3	D3	21PS030A
M3.5	0.6	3	D4	21PS035A
M4	0.7	3	D4	21PS040A
M5	0.8	3	D4	21PS050A
M6	1.0	3	D5	21PS060A
M7	1.0	3	D5	21PS070A
M8	1.25	3	D5	21PS080A
M8	1.0	3	D5	21PS080B
M10	1.5	3	D6	21PS100A
M12	1.75	3	D6	21PS120A
M12	1.25	3	D5	21PS120B
M14	2.0	3	D7	21PS140A
M14	1.5	3	D6	21PS140B
M16	2.0	3	D7	21PS160A
M16	1.5	3	D6	21PS160B
M18	2.5	3	D7	21PS180A
M18	1.5	3	D6	21PS180D
M20	2.5	3	D7	21PS200A
M20	1.5	3	D6	21PS200B
M22	2.5	3	D7	21PS220A
M22	1.5	3	D6	21PS220B
M24	3.0	3	D8	21PS240A



# PRODUCTION MULTI-APPLICATION SPIRAL FLUTE TAPS

**NITRO**

These taps are designed for machine tapping in a wide range of material groups, including difficult-to-machine materials such as stainless steel. The NITRO® multiapplication tap improves thread quality and aids in chip evacuation, eliminating bird nesting. Available in both spiral point and spiral flute designs, in fractional and metric sizes.

- ▷ *Spiral flutes pull chips up out of the workpiece*
- ▷ *Ideal for tapping blind holes*
- ▷ *Bright finish for increased lubricity*
- ▷ *All sizes are individually packaged*

## 2000PF SERIES

### PRODUCTION HIGH SPEED STEEL

Bottoming / Blind Hole  
Machine Screw & Fractional / Bright

## 2000PF SERIES

### PRODUCTION HIGH SPEED STEEL

Bottoming / Blind Hole  
Metric / Bright



2000PF

Size	NC	NF	No. of Flutes	Pitch Dia. Limits	2000PF Order No.
4	40	–	2	H2	20PF004C
4	–	48	2	H2	20PF004F
6	32	–	3	H3	20PF006C
8	32	–	3	H3	20PF008C
10	24	–	3	H3	20PF010C
10	–	32	3	H3	20PF010F
12	24	–	3	H3	20PF012C
12	–	28	3	H3	20PF012F
1/4"	20	–	3	H3	20PF116C
1/4"	–	28	3	H3	20PF116F
5/16"	18	–	3	H3	20PF120C
5/16"	–	24	3	H5	20PF120F
3/8"	16	–	3	H3	20PF124C
3/8"	–	24	3	H3	20PF124F
7/16"	14	–	3	H3	20PF128C
7/16"	–	20	3	H3	20PF128F
1/2"	13	–	3	H5	20PF132C
1/2"	–	20	3	H5	20PF132F
9/16"	12	–	3	H5	20PF136C
9/16"	–	18	3	H5	20PF136F
5/8"	11	–	4	H5	20PF140C
5/8"	–	18	4	H5	20PF140F
3/4"	10	–	4	H5	20PF148C
3/4"	–	16	4	H5	20PF148F
7/8"	9	–	4	H6	20PF156C
7/8"	–	14	4	H6	20PF156F
1"	8	–	4	H6	20PF164C
1"	–	12	4	H6	20PF164F

Size	Pitch (mm)	No. of Flutes	Pitch Dia. Limits	2000PF Order No.
M3	0.5	3	D3	20PF030A
M3.5	0.6	3	D4	20PF035A
M4	0.7	3	D4	20PF040A
M5	0.8	3	D4	20PF050A
M6	1.0	3	D5	20PF060A
M7	1.0	3	D5	20PF070A
M8	1.25	3	D5	20PF080A
M8	1.0	3	D5	20PF080B
M10	1.5	3	D6	20PF100A
M12	1.75	3	D6	20PF120A
M12	1.25	3	D5	20PF120B
M14	2.0	3	D7	20PF140A
M14	1.5	3	D6	20PF140B
M16	2.0	3	D7	20PF160A
M16	1.5	3	D6	20PF160B
M18	2.5	4	D7	20PF180A
M18	1.5	4	D6	20PF180D
M20	2.5	4	D7	20PF200A
M20	1.5	4	D6	20PF200B
M22	2.5	4	D7	20PF220A
M22	1.5	4	D6	20PF220B
M24	3.0	4	D8	20PF240A

## PRODUCTION MULTIAPPLICATION SPIRAL FLUTE TAPS

Designed for precision tapping of moderate-to-difficult-to-machine materials. Fast spiral flutes provide new efficiency in chip removal. These taps have continuous fast spiral flutes to lift and discharge chips from deep blind holes.

▷ All sizes are individually packaged

### 2000F SERIES

#### PRODUCTION HIGH SPEED STEEL

Plug & Bottoming / Blind Hole  
Machine Screw & Fractional / Bright



2000F

Size	NC	NF	Length of Thread	No. of Flutes	2000F Order No.	
					Plug	Bottoming
3	48	-	1/2"	2	20F003CP	20F003CB
4	40	-	9/16"	2	20F004CP	20F004CB
4	-	48	9/16"	2	20F004FP	20F004FB
5	40	-	5/8"	2	20F005CP	20F005CB
5	-	44	5/8"	2	20F005FP	20F005FB
6	32	-	11/16"	2	20F006CP	20F006CB
6	-	40	11/16"	2	20F006FP	20F006FB
8	32	-	3/4"	3	20F008CP	20F008CB
8	-	36	3/4"	3	20F008FP	20F008FB
10	24	-	7/8"	3	20F010CP	20F010CB
10	-	32	7/8"	3	20F010FP	20F010FB
12	24	-	1"	3	20F012CP	20F012CB
12	-	28	1"	3	20F012FP	20F012FB
1/4"	20	-	1"	3	20F116CP	20F116CB
1/4"	-	28	1"	3	20F116FP	20F116FB
5/16"	18	-	1-1/8"	3	20F120CP	20F120CB
5/16"	-	24	1-1/8"	3	20F120FP	20F120FB
3/8"	16	-	1-5/16"	3	20F124CP	20F124CB
3/8"	-	24	1-5/16"	3	20F124FP	20F124FB
7/16"	14	-	1-7/16"	3	20F128CP	20F128CB
7/16"	-	20	1-7/16"	3	20F128FP	20F128FB
1/2"	13	-	1-21/32"	3	20F132CP	20F132CB
1/2"	-	20	1-21/32"	3	20F132FP	20F132FB
5/8"	11	-	1-13/16"	4	20F140CP	20F140CB
3/4"	10	-	2-1/16"	4	20F148CP	20F148CB

## PRODUCTION THREAD FORMING TAPS

Thread forming taps "form" the thread rather than cut it, which allows the thread to be created without producing any chips. Thread forming taps can run at faster operating rates than standard cut taps, and generally have a longer tool life, sometimes up to 5x longer in some applications. Ideal in materials such as aluminum, brass, copper, low carbon steels, zinc, and 302-303 stainless steel.

- ▷ Thread forming does not produce any chips
- ▷ Thread forming taps have a longer tool life
- ▷ Formed threads are generally stronger than cut threads
- ▷ All sizes are individually packaged

### 2090 SERIES

#### PRODUCTION HIGH SPEED STEEL

Plug & Bottoming / Through or Blind Hole  
Machine Screw & Fractional / Bright



2090

Size	NC	NF	2090 Order No.	
			Plug	Bottoming
0	-	80	-	209A000FB
1	64	-	-	209A001CB
1	-	72	-	209A001FB
2	56	-	-	209A002CB
2	-	64	-	209A002FB
3	48	-	-	209A003CB
3	-	56	209A003FP	209A003FB
4	40	-	209A004CP	209A004CB
4	-	48	209A004FP	209A004FB
5	40	-	209A005CP	209A005CB
5	-	44	209A005FP	209A005FB
6	32	-	209A006CP	209A006CB
6	-	40	209A006FP	209A006FB
8	32	-	209A008CP	209A008CB
8	-	36	209A008FP	209A008FB
10	24	-	209A010CP	209A010CB
10	-	32	209A010FP	209A010FB
12	24	-	209A012CP	209A012CB
12	-	28	209A012FP	209A012FB
1/4"	20	-	209A116CP	209A116CB
1/4"	-	28	209A116FP	209A116FB
5/16"	18	-	209A120CP	209A120CB
5/16"	-	24	209A120FP	209A120FB
3/8"	16	-	209A124CP	209A124CB
3/8"	-	24	209A124FP	209A124FB
7/16"	14	-	209A128CP	209A128CB
7/16"	-	20	209A128FP	209A128FB
1/2"	13	-	209A132CP	209A132CB
1/2"	-	20	209A132FP	209A132FB
5/8"	11	-	209A140CP	209A140CB
5/8"	-	18	209A140FP	209A140FB
3/4"	10	-	209A148CP	209A148CB
3/4"	-	16	-	209A148FB

## TAPER PIPE (NPT)

NPT taps are tapered to provide a tight seal and are used mainly with threaded pipes and pipe fittings. These taps are available in both HSS and carbon steel materials. A carbon tap is used to rethread damaged threads. These NPT taps have a bright finish to increase tool life and reduce chip loading in the flutes.

- ▷ *Bright finish for prolonged life*
- ▷ *Most commonly used to produce a tight sealing thread*
- ▷ *Available in high speed steel and carbon steel*
- ▷ *All sizes are individually packaged*

### 2900 SERIES

#### HIGH SPEED STEEL

Through or Blind Hole  
Fractional / Bright



2900

Size	TPI	Overall Length	Length of Thread	No. of Flutes	2900 Order No.
1/16"	27	2-1/8"	11/16"	4	290A104
1/8"	27	2-1/8"	3/4"	4	290A108
1/4"	18	2-7/16"	1-1/16"	4	290A116
3/8"	18	2-9/16"	1-1/16"	4	290A124
1/2"	14	3-1/8"	1-3/8"	4	290A132
3/4"	14	3-1/4"	1-3/8"	5	290A148
1"	11-1/2	3-3/4"	1-3/4"	5	290A164
1-1/4"	11-1/2	4"	1-3/4"	5	290A216
1-1/2"	11-1/2	4-1/4"	1-3/4"	7	290A232
2"	11-1/2	4-1/4"	1-3/4"	7	290A264
2-1/2"	8	5-1/2"	2-9/16"	8	290A332
3"	8	6"	2-5/8"	8	290A364
3-1/2"	8	6-1/2"	2-11/16"	8	290A432
4"	8	6-3/4"	2-3/4"	8	290A464

### 2900E SERIES

#### HIGH SPEED STEEL

Through or Blind Hole  
Fractional / Bright



2900E

Size	TPI	Overall Length	Length of Thread	No. of Flutes	2900E Order No.
1/16"	27	2-1/8"	11/16"	4	290E104
1/8"	27	2-1/8"	3/4"	4	290E108
1/4"	18	2-7/16"	1-1/16"	4	290E116
3/8"	18	2-9/16"	1-1/16"	4	290E124
1/2"	14	3-1/8"	1-3/8"	4	290E132
3/4"	14	3-1/4"	1-3/8"	5	290E148
1"	11-1/2	3-3/4"	1-3/4"	5	290E164
1-1/4"	11-1/2	4"	1-3/4"	5	290E216
1-1/2"	11-1/2	4-1/4"	1-3/4"	7	290E232
2"	11-1/2	4-1/2"	1-3/4"	7	290E264
2-1/2"	8	5-1/2"	2-9/16"	8	290E332
3"	8	6"	2-5/8"	8	290E364
3-1/2"	8	6-1/2"	2-11/16"	8	290E432
4"	8	6-3/4"	2-3/4"	8	290E464

## TAPER PIPE TAPS (NPT)

### 2700E SERIES

#### CARBON

Through or Blind Hole  
Fractional / Bright



2700E

Size	TPI	Overall Length	2700E Order No.
1/16"	27	2-1/8"	2700E104
1/8"	27	2-1/8"	2700E108
1/4"	18	2-7/16"	2700E116
3/8"	18	2-9/16"	2700E124
1/2"	14	3-1/8"	2700E132
3/4"	14	3-1/4"	2700E148
1"	11-1/2	3-3/4"	2700E164
1-1/4"	11-1/2	4"	2700E216
1-1/2"	11-1/2	4-1/4"	2700E232
2"	11-1/2	4-1/2"	2700E264

# TAPER PIPE TAPS (NPT)

## 02C SERIES

### CARBON

Through or Blind Hole  
Fractional / Bright

Made from tough carbon alloy tool steel to cut new threads or repair damaged threads in pipe fittings. For use in steel and non-ferrous metals.

▷ Packaged in reusable plastic packaging



Nominal Size Inch	Thread per inch	Drill Size	Order No.	Std. Pkg.	Std. Ctn.
1/16"	27	D	02C010	1	10
1/8"	27	11/32"	02C020	1	10
1/4"	18	7/16"	02C040	1	10
3/8"	18	37/64"	02C060	1	10
1/2"	14	45/64"	02C080	1	10
3/4"	14	59/64"	02C120	1	10
1"	11 1/2	1 5/32"	02C160	1	10
1 1/4"	11 1/2	1 1/2"	02C200	1	10
1 1/2"	11 1/2	1 47/64"	02C240	1	10
2"	11 1/2	2 7/32"	02C320	1	10

Corresponding Sets	
Taper Pipe Tap Set	
Description	Order No.
Contains one of each of the following NPT taps: 1/8": 02C020, 1/4": 02C040, 3/8": 02C060, 1/2": 02C080	02C500

### Tech tip!

For increased cutting efficiency and tool life, use TAPCUT™ lubricant



## PIPE TAPS, INTERRUPTED THREAD, & NPS

The Interrupted Thread Pipe Taps have every other thread removed except for the first few at the point. They are used for tapping tough metals or those which have a tendency to load the tap teeth.

Straight Pipe Taps (NPS) are used for hand or machine tapping of straight pipe threads.

▷ All sizes are individually packaged

### 2930 SERIES Interrupted Thread

**HIGH SPEED STEEL**

Through or Blind Hole

Fractional / Bright



2930

Size	TPI	Length of Thread	No. of Flutes	2930 Order No.
1/8"	27	3/4"	5	293A108
1/4"	18	1-1/16"	5	293A116
3/8"	18	1-1/16"	5	293A124
1/2"	14	1-3/8"	5	293A132
3/4"	14	1-3/8"	5	293A148
1"	11-1/2	1-3/4"	5	293A164
1-1/4"	11-1/2	1-3/4"	5	293A216
1-1/2"	11-1/2	1-3/4"	7	293A232
2"	11-1/2	1-3/4"	7	293A264

### 2950 SERIES Straight Pipe (NPS)

**HIGH SPEED STEEL**

Through or Blind Hole

Fractional / Bright



2950

Size	TPI	Length of Thread	No. of Flutes	2950 Order No.
1/8"	27	3/4"	4	295A108
1/4"	18	1-1/16"	4	295A116
3/8"	18	1-1/16"	4	295A124
1/2"	14	1-3/8"	4	295A132
3/4"	14	1-3/8"	5	295A148
1"	11-1/2	1-3/4"	5	295A164

# SPECIAL PURPOSE TAPS



## LEFT HAND TAPS

Left hand taps are used just like normal hand taps except they are rotated counterclockwise to cut left-handed threads in the workpiece. They are for general use in production tapping or hand operations in a wide range of application material groups.

- ▷ *Taper – 7-10 pitch chamfer length. Starts the thread square with the workpiece*
- ▷ *Plug – 3-5 pitch chamfer length. Generally used in through holes*
- ▷ *Bottoming – 1-2 pitch chamfer length. Generates the thread to the bottom*

### 2300 SERIES

#### SPECIAL PURPOSE HIGH SPEED STEEL

Taper, Plug, & Bottoming / Through or Blind Hole  
Machine Screw & Fractional / Bright



2300

Size	NC	NF	Overall Length	No. of Flutes	Pitch Dia. Limits	2300 Order No.		
						Taper	Plug	Bottoming
6	32	–	2"	4	H3	23A006CT	23A006CP	23A006CB
8	32	–	2-1/8"	4	H3	23A008CT	23A008CP	23A008CB
10	24	–	2-3/8"	4	H3	23A010CT	23A010CP	23A010CB
10	–	32	2-3/8"	4	H3	23A010FT	23A010FP	23A010FB
1/4"	20	–	2-1/2"	4	H3	23A116CT	23A116CP	23A116CB
1/4"	–	28	2-1/2"	4	H3	23A116FT	23A116FP	23A116FB
5/16"	18	–	2-23/32"	4	H3	23A120CT	23A120CP	23A120CB
5/16"	–	24	2-23/32"	4	H3	23A120FT	23A120FP	23A120FB
3/8"	16	–	2-5/16"	4	H3	23A124CT	23A124CP	23A124CB
3/8"	–	24	2-5/16"	4	H3	23A124FT	23A124FP	23A124FB
7/16"	14	–	3-5/32"	4	H3	23A128CT	23A128CP	23A128CB
7/16"	–	20	3-5/32"	4	H3	23A128FT	23A128FP	23A128FB
1/2"	13	–	3-3/8"	4	H3	23A132CT	23A132CP	23A132CB
1/2"	–	20	3-3/8"	4	H3	23A132FT	23A132FP	23A132FB
9/16"	12	–	3-19/32"	4	H3	23A136CT	23A136CP	23A136CB
9/16"	–	18	3-19/32"	4	H3	23A136FT	23A136FP	23A136FB
5/8"	11	–	3-3/16"	4	H3	23A140CT	23A140CP	23A140CB
5/8"	–	18	3-3/16"	4	H3	23A140FT	23A140FP	23A140FB
3/4"	10	–	4-1/4"	4	H3	23A148CT	23A148CP	23A148CB
3/4"	–	16	4-1/4"	4	H3	23A148FT	23A148FP	23A148FB
7/8"	9	–	4-11/16"	4	H4	23A156CT	23A156CP	23A156CB
7/8"	–	14	4-11/16"	4	H4	23A156FT	23A156FP	23A156FB
1"	8	–	5-1/8"	4	H4	23A164CT	23A164CP	23A164CB
1"	–	12	5-1/8"	4	H4	23A164FT	23A164FP	23A164FB
1"	–	14	5-1/8"	4	H4	23A164ST	23A164SP	23A164SB
1-1/8"	7	–	5-7/16"	4	H4	23A208CT	23A208CP	23A208CB
1-1/8"	–	12	5-7/16"	4	H4	23A208FT	23A208FP	23A208FB
1-1/4"	7	–	5-3/4"	4	H4	23A216CT	23A216CP	23A216CB
1-1/4"	–	12	5-3/4"	6	H4	23A216FT	23A216FP	23A216FB
1-3/8"	6	–	6"	4	H4	23A224CT	23A224CP	23A224CB
1-3/8"	–	12	6"	6	H4	23A224FT	23A224FP	23A224FB
1-1/2"	6	–	6-1/4"	4	H4	23A232CT	23A232CP	23A232CB
1-1/2"	–	12	6-1/4"	6	H4	23A232FT	23A232FP	23A232FB

All sizes are individually packaged

## SPECIAL PURPOSE 8-PITCH HAND TAPS

8-pitch hand taps are mainly used in oil field, gas exploration equipment, and power generation plants. They are of a larger diameter, with standard sizes up to 4".

- ▷ *Taper – 7-10 pitch chamfer length. Starts the thread square with the workpiece*
- ▷ *Plug – 3-5 pitch chamfer length. Generally used in through holes*
- ▷ *Bottoming – 1-2 pitch chamfer length. Generates the thread to the bottom*
- ▷ *All sizes are individually packaged*

### 2500 SERIES

#### SPECIAL PURPOSE HIGH SPEED STEEL

Taper, Plug, & Bottoming / Through or Blind Hole  
Fractional / Bright



2500

Size	NS	No. of Flutes	2500 Order No.		
			Taper	Plug	Bottoming
1-1/8"	8	4	25A208T	25A208P	25A208B
1-1/4"	8	4	25A216T	25A216P	25A216B
1-3/8"	8	4	25A224T	25A224P	25A224B
1-1/2"	8	4	25A232T	25A232P	25A232B
1-5/8"	8	6	25A240T	25A240P	25A240B
1-3/4"	8	6	25A248T	25A248P	25A248B
1-7/8"	8	6	25A256T	25A256P	25A256B
2"	8	6	25A264T	25A264P	25A264B
2-1/8"	8	6	25A308T	25A308P	25A308B
2-1/4"	8	6	25A316T	25A316P	25A316B
2-3/8"	8	6	25A324T	25A324P	25A324B
2-1/2"	8	6	25A332T	25A332P	25A332B
2-5/8"	8	6	25A340T	25A340P	25A340B
2-3/4"	8	6	25A348T	25A348P	25A348B
2-7/8"	8	6	25A356T	25A356P	25A356B
3"	8	6	25A364T	25A364P	25A364B
3-1/4"	8	6	25A416T	25A416P	25A416B
3-1/2"	8	6	25A432T	25A432P	25A432B
3-3/4"	8	6	25A448T	25A448P	25A448B
4"	8	8	25A464T	25A464P	25A464B

## SPECIAL PURPOSE HAND TAPS, SCREW THREAD INSERT (STI)

Screw Thread Insert (STI) taps are dimensionally oversize and utilize a larger tap drill size so that thread they produce will accommodate a helical screw thread insert.

▷ All sizes are individually packaged

### 2020 SERIES

Plug & Bottoming / Through or Blind Hole  
Machine Screw & Fractional / Bright



2020

Size	NC	NF	No. of Flutes	2020 Order No.	
				Plug	Bottoming
4	40	—	3	202A004CP	202A004CB
6	32	—	3	202A006CP	202A006CB
8	32	—	3	202A008CP	202A008CB
10	24	—	3	202A010CP	202A010CB
10	—	32	3	202A010FP	202A010FB
1/4"	20	—	3	202A116CP	202A116CB
1/4"	—	28	3	202A116FP	202A116FB
5/16"	18	—	4	202A120CP	202A120CB
5/16"	—	24	4	202A120FP	202A120FB
3/8"	16	—	4	202A124CP	202A124CB
3/8"	—	24	4	202A124FP	202A124FB
1/2"	13	—	4	202A132CP	202A132CB
1/2"	—	20	4	202A132FP	202A132FB

## SPECIAL PURPOSE HAND TAPS, PULLEY STYLE

Pulley taps are used for tapping the hubs of pulleys for oil caps or set screws. The long shank is also ideal for reaching holes inaccessible with standard length taps. The thread length is the same length as a standard tap.

▷ All sizes are individually packaged

### 2400 SERIES

Plug / Through or Blind Hole  
Fractional / Bright & Black



2400

Size	NC	Flute Length	Overall Length	2400 Order No.
				Plug
1/4"	20	1"	6"	24A116C6
1/4"	20	1"	8"	24A116C8
5/16"	18	1-1/8"	6"	24A120C6
5/16"	18	1-1/8"	8"	24A120C8
3/8"	16	1-1/4"	10"	24A124C10
3/8"	16	1-1/4"	6"	24A124C6
3/8"	16	1-1/4"	8"	24A124C8
7/16"	14	1-7/16"	6"	24A128C6
7/16"	14	1-7/16"	8"	24A128C8
1/2"	13	1-21/32"	10"	24A132C10
1/2"	13	1-21/32"	12"	24A132C12
1/2"	13	1-21/32"	6"	24A132C6
1/2"	13	1-21/32"	8"	24A132C8
5/8"	11	1-13/16"	10"	24A140C10
5/8"	11	1-13/16"	12"	24A140C12
5/8"	11	1-13/16"	6"	24A140C6
5/8"	11	1-13/16"	8"	24A140C8
3/4"	10	2"	10"	24A148C10
3/4"	10	2"	12"	24A148C12

## HAND TAPS, 6" EXTENSION

The long shank is ideal for reaching holes inaccessible with standard length taps.

The thread length is the same length as a standard tap.

▷ All sizes are individually packaged

### 2060 SERIES

Plug & Bottoming / Through or Blind Hole  
Machine Screw & Fractional / Bright & Black



2060

Size	NC	NF	No. of Flutes	2060 Order No.	
				Plug	Bottoming
6	32	—	3	206A006CP	206A006CB
8	32	—	4	206A008CP	206A008CB
10	24	—	4	206A010CP	206A010CB
10	—	32	4	206A010FP	206A010FB
1/4"	20	—	4	206A116CP	206A116CB
* 1/4"	20	—	4	206A116SP	—
1/4"	—	28	4	206A116FP	206A116FB
5/16"	18	—	4	206A120CP	206A120CB
* 5/16"	18	—	4	206A120SP	—
5/16"	—	24	4	206A120FP	206A120FB
3/8"	16	—	4	206A124CP	206A124CB
* 3/8"	16	—	4	206A124SP	—
3/8"	—	24	4	206A124FP	206A124FB
7/16"	14	—	4	206A128CP	206A128CB
7/16"	—	20	4	206A128FP	206A128FB
1/2"	13	—	4	206A132CP	206A132CB
1/2"	—	20	4	206A132FP	—



## SPECIAL PURPOSE COMBINED TAP AND DRILL

Drills and Taps in a single pass, reducing cycle time, and therefore reducing the manufacturing cost of a part. Self-centering point eliminates the need for center drilling or center punching. The drill part of the tool produces a hole correctly sized for approximately 75% of the thread. Can be used in a handheld power tool or a fixed spindle machine tool.

- ▷ *Electrical Contractors*
- ▷ *Maintenance Depts.*
- ▷ *Utility Crews*
- ▷ *Mechanics*
- ▷ *Installation Crews*

### 2050 SERIES Through or Blind Hole Machine Screw & Fractional / Bright



205A6

No. of Pcs.	Description	Order No.
<b>2050 Series Combined Tap and Drill Sets</b>		
6	6-32, 8-32, 10-24, 10-32, 12-24, 1/4-20	205A6



2050

Size	NC	NF	Length of Thread	2050 Order No.
4	40	-	9/16"	205A004C
4	-	48	9/16"	205A004F
5	40	-	5/8"	205A005C
5	-	44	5/8"	205A005F
6	32	-	11/16"	205A006C
6	-	40	11/16"	205A006F
8	32	-	3/4"	205A008C
8	-	36	3/4"	205A008F
10	24	-	7/8"	205A010C
10	-	32	7/8"	205A010F
12	24	-	7/8"	205A012C
12	-	28	7/8"	205A012F
1/4"	20	-	15/16"	205A116C
1/4"	-	28	15/16"	205A116F
5/16"	18	-	1-1/8"	205A120C
5/16"	-	24	1-1/8"	205A120F
3/8"	16	-	1-1/4"	205A124C
3/8"	-	24	1-1/4"	205A124F
7/16"	14	-	1-7/16"	205A128C
7/16"	-	20	1-7/16"	205A128F
1/2"	13	-	1-21/32"	205A132C
1/2"	-	20	1-21/32"	205A132F

## POWER TAPS AND DRILL BIT SETS



03B952

03B953

03B954

### SST power taps and drill bit sets

Description	Order No.
<b>Power taps:</b> 10-24 NC, 10-32 NF, 1/4"-20 NC, 5/16"-18 NC and 3/8"-16 NC	03B952
<b>Drill bits:</b> #25, #21, #7, F and 5/16"	

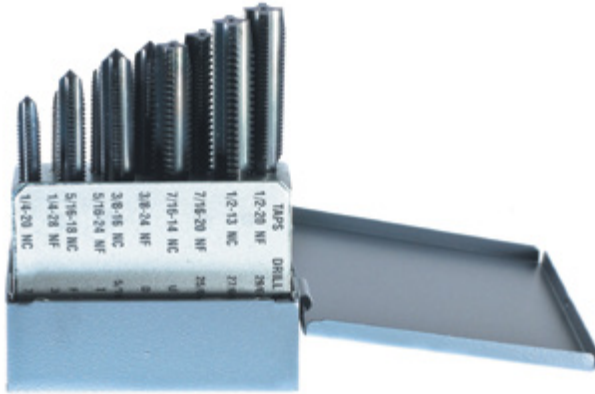
### NC SST power taps and drill bit sets

Description	Order No.
6-32 NC, 8-32 NC, 10-24 NC, 12-24 NC 1/4"-20 NC, 5/16"-18 NC, 3/8"-16 NC, 7/16"-14 NC and 1/2"-13 NC	03B953
<b>Drill bits:</b> #36, #29, #25, #16, #7, F, 5/16", U and 27/64"	

### NF SST power taps and drill bit sets

Description	Order No.
<b>Power taps:</b> 6-40 NF, 8-36 NF, 10-32 NF, 12-28 NF, 1/4"-28 NF, 5/16"-24 NF, 3/8"-24 NF, 7/16"-20 NF and 1/2"-20 NF	03B954
<b>Drill bits:</b> #33, #29, #21, #15, #3, I, Q, 25/64" and 29/64"	

TAP SETS / TAP & DRILL SETS



2000N10



400NC2018

No. of Pieces	Brand	Material	Coating/Finishing	Includes	Order No.
<b>2000N &amp; 2000 Series Hand Taps</b>					
10	Nitro®	High Speed Steel	Black Oxide	1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20"	2000N10
10	USA	High Speed Steel	Bright	1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20	2000A10
<b>2100N &amp; 2100 Series Spiral Point Tap Sets</b>					
10	Nitro®	High Speed Steel	Black Oxide	1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20	2100N10
10	USA	High Speed Steel	Bright	1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20	2100A10
<b>2000N &amp; 2000 Series Tap &amp; Drill Sets</b>					
18	Nitro®	High Speed Steel	Black Oxide	Taps: 6-32, 8-32, 10-24, 10-32, 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13 w/ corresponding 400N series drills	400NC2018
18	Nitro®	High Speed Steel	Black Oxide	Taps: 6-40, 8-36, 10-24, 10-32, 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20 w/ corresponding 400N series drills	400NF2018
18	USA	High Speed Steel	Bright	Taps: 6-32, 8-32, 10-24, 10-32, 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13 w/ corresponding 200 series drills	200C2018
18	USA	High Speed Steel	Bright	Taps: 6-40, 8-36, 10-24, 10-32, 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20 w/ corresponding 200 series drills	200F2018
<b>2800 Series Tap &amp; Drill Sets</b>					
18	USA	High Speed Steel	Bright	Taps: M2.5, M3.0, M3.5, M4.0, M5.0, M6.0, M8.0, M10.0, M12.0 w/ corresponding 800 series drills	800A2018



Description	Sizes	Order No.
<b>Tap Dispensers (Empty)</b>		
Fractional Tap Dispenser	1/4" – 1"	2000FDX
Metric Tap Dispenser	3 mm - 24 mm	2800DX

Pieces	Description	Order No.
<b>Tap Index Cases (Empty)</b>		
10	TAP INDEX	10TDX
18	UNC TAP & DRILL INDEX	18CDX
18	UNF TAP & DRILL INDEX	18FDX
18	METRIC TAP & DRILL INDEX	18MDX

# TAP WRENCHES

Tap Capacity	Pipe Tap Capacity	Reamer Capacity	Overall Length	Order No.
<b>2000TW T-Handle Tap Wrenches</b>				
#0 – 3/16"	–	–	–	2000TW1
#0 – 1/4"	–	–	–	2000TW2
#10 – 3/8"	–	–	–	2000TW3
1/4" – 1/2"	–	–	–	2000TW4
<b>2000AW Tap &amp; Reamer Wrenches</b>				
1/64" – 1/4"	–	1/8" – 21/64"	7"	2000AW0
5/32" – 1/2"	1/8"	11/64" – 7/16"	11"	2000AW5
5/32" – 3/4"	1/8" – 1/4"	11/16" – 41/64"	15"	2000AW6
1/4" – 1-1/8"	1/8" – 3/4"	9/32" – 29/32"	19"	2000AW7
1/2" – 1-3/8"	1/8" – 1"	3/8" – 1.5/32"	31"	2000AW7A
3/4" – 1-5/8"	3/8" – 1-1/4"	37/64" – 1-11/32"	40"	2000AW8



Premium quality tool stock, all jaws and set screws are hardened and tempered for optimum tool life.



▷ *Packaged in reusable plastic packaging*

Adjustable Tap Wrenches				
No.	Capacity	Order No.	Std. Pkg.	Std. Ctn.
1	1/16" – 1/4"	02W010	1	10
1 1/2	3/16" – 1/2"	02W015	1	10
3	1/4" – 3/4"	02W030	1	10
4	3/8" – 1"	02W040	1	10

T-Handle Tap Wrench With 3-Position Ratchet				
No.	Capacity	Order No.	Std. Pkg.	Std. Ctn.
1-T	6/32 to 1/4"	02W100	1	10
2-T	1/4" to 1/2"	02W200	1	10



# TECHNICAL INFORMATION

## COMMON TAPPING TERMS

### Angle of Thread

The angle included between the flanks of the thread measured in an axial plane

### Back Taper

A slight axial relief on the thread of the tap which makes the pitch diameter of the thread near the shank somewhat smaller than that of the chamfered end

### Bottoming Chamfer

The shortest chamfer (1-2 threads long) for threading close to the bottom of blind holes

### Chamfer

The tapering of the threads at the front end of each land of a tap, by cutting away and relieving the crest of the first few teeth, to distribute the cutting action over several teeth

### Chamfer Relief

The gradual decrease in land height from cutting edge to heel on the chamfered portion, to provide clearance for the cutting action as the tap advances

### Chordal Hook Angle

The angle between the chord passing through the root and crest of a thread form at the cutting face, and a radial line through the crest at the cutting edge

### Crest

The top surface joining the two flanks of a thread. The crest of an external thread is at its major diameter, while the crest of an internal thread is at its minor diameter

### Cutting Face

The leading side of the land in the direction of rotation for cutting on which the chip impinges

### Flutes

The longitudinal channels formed in a tap to create cutting edges on the thread profile, and to provide chip spaces and cutting fluid passages

### Height of Thread

The distance between the crest and the base of a thread measured normal to the axis

### Lead

The distance a screw thread advances axially in one complete turn. On a single lead screw or tap, the lead and pitch are identical. On a double-lead screw or tap, the lead is twice the pitch, etc.

### Pitch

The distance from any point on a screw or tap thread to a corresponding point on the next thread, measured parallel to the axis. The pitch equals one divided by the number of threads per inch

### Pitch Diameter

On a straight thread, the diameter of any imaginary coaxial cylinder, the surface of which would pass through the thread profile at such points as to make equal the width of the threads and the width of the spaces cut by the surface of the cylinder

On a taper thread, the diameter at a given distance from a reference plane perpendicular to the axis of an imaginary co-axial cone, the surface of which would pass through the thread profile at such points as to make equal the width of the threads and the width of the spaces cut by the surface of the cone

### Plug Chamfer

The most common chamfer (3-5 threads long), for hand or machine tapping in through or blind holes

### Rake

Any deviation of a straight cutting face of the tooth from a radial line. **Positive Rake** means that the crest of the cutting face is angularly advanced ahead of the balance of the face of the tooth.

**Negative Rake** means that the same point is angularly behind the balance of the cutting face of the tooth.

**Zero Rake** means that the cutting face is directly on the center line

### Spiral Point (Chip Driver)

A supplementary angular fluting cut in the cutting face of the land at the chamfer end. It is slightly longer than the chamfer on the tap, and of the opposite hand to that of rotation

### Taper Chamfer

A long chamfer (8-10 threads long) for easier starting and engagement in the workpiece. More working teeth means that less tapping torque is required, and the chip load is reduced on each tooth

### Threads Per Inch

The number of threads in one inch of length



# TECHNICAL INFORMATION

## TAP TROUBLESHOOTING GUIDE

Trouble	Possible Causes	Corrections
Oversize Pitch Diameter	Incorrect tap	Use correct "H" limit Use longer chamfered tap
	Chip packing	Use spiral pointed tap Use larger drill size Shorten length of thread in blind holes
	Galling	Reduce tapping speed Use lubricants
Torn or Rough Threads	Dull tap	Resharpener or replace
	Chamfer too short	Increase chamfer length
	Galling	Use lubricant Reduce speed Use larger drill
Breakage	Incorrect tap selection	Increase chamfer length Use spiral pointed taps in through holes Tapping too deep
	Excessive tapping torque	Increase hole size Shorten thread length Increase chamfer length
	Operating conditions	Reduce tapping speed Avoid bottoming out the tap
Chipping	Incorrect tap selection	Increase chamfer length Avoid chip packing in flutes
	Operating conditions	Reduce tapping speed Use larger drill Ensure adequate lubricant
Excessive Wear	Incorrect tap selection	Increase chamfer length
	Operating conditions	Reduce tapping speed Ensure adequate lubricant Use larger drill

# TECHNICAL INFORMATION

## TAP DRILL SIZES – CUT TAPS

### Regular Taps

Tap Size	Drill Size	Probable % Thread	Tap Size	Drill Size	Probable % Thread	Tap Size	Drill Size	Probable % Thread
0-80	3/64"	71-81	10-32	#21	68-76	5/8-18	37/64"	58-65
M1.6-.35	1.25 MM	69-77	M5 x .8	4.2 MM	69-77	M16 x 2	35/64"	76-81
1-64	#53	59-67	12-24	#16	66-72	3/4-10	21/32"	68-72
M2 x .4	1/16"	72-79	12-28	#15	70-78	3/4-16	11/16"	71-77
1-72	#53	67-75	M6 x 1	#10	76-84	M20 x 2.5	11/16"	74-78
2-56	#50	62-69	1/4-20	#7	70-75	7/8-9	49/64"	72-76
2-64	#50	70-79	1/4-28	#3	72-80	7/8-14	13/16"	62-67
M2 x .45	2.05 MM	69-77	5/16-18	F	72-77	M24 x 3	53/64"	72-76
3-48	5/64"	70-77	5/16-24	I	67-75	1" - 8	7/8"	73-77
3-56	#46	69-78	M8 x 1.25	6.7 MM	74-80	1" - 12	59/64"	67-72
4-40	#43	65-71	3/8-16	5/16"	72-77	1" - 14	15/16"	61-67
4-48	#42	61-68	3/8-24	Q	71-79	1-1/8" - 7	63/64"	72-76
M3 x .5	#40	70-79	M10 x 1.5	8.4 MM	76-82	1-1/8-12	1-3/64"	66-72
5-40	#38	65-72	7/16-14	U	70-75	M30 x 3.5	1-3/64"	75
5-44	#37	63-71	7/16-20	25/64"	65-72	1-1/4 - 7	1-7/64"	76
M3.5 x .6	#33	72-81	M12 x 1.7	13/32"	69-74	1-1/4-12	1-11/64"	72
6-32	#36	71-78	1/2-13	27/64"	73-78	1-3/8 - 6	1-7/32"	72
6-40	#33	69-77	1/2-20	29/64"	65-72	1-3/8-12	1-19/64"	72
M4 x .7	3.25 MM	74-82	M14 x 2	15/32"	76-81	M36 x 4	1-1/4"	82
8-32	#29	62-69	9/16-12	31/64"	68-72	1-1/2 - 6	1-11/32"	72
8-36	#29	70-78	9/16-18	33/64"	58-65	1-1/2-12	1-27/64"	72
10-24	#25	69-75	5/8-11	17/32"	75-79	-	-	-

### STI Taps

Tap Size	Drill Size Aluminum	Drill Size Steel, Magnesium, Plastic
2-56	3/32	41
3-48	36	7-64
3-56	37	36
4-40	31	31
4-48	3.0 mm	31
5-40	3.4 mm	29
6-32	26	25
6-40	26	25
8-32	17	16
8-36	17	16
10-24	13/64	5
10-32	7	13/64
12-24	1	1
1/4-20	H	H
1/4-28	G	6.7 mm
5/16-18	Q	Q
5/16-24	21/64	21/64
3/8-16	X	X
3/8-24	25/64	25/64
7/16-14	29/64	29/64
7/16-20	29/64	29/64
1/2-13	33/64	17/32
1/2-20	29/64	29/64
9/16-12	37/64	19/32
9/16-18	37/64	37/64
5/8-11	21/32	21/32
5/8-18	41/64	41/64
3/4-10	25/32	25/32
3/4-16	49/64	49/64
7/8-9	29/32	29/32
7/8-14	57/64	57/64
1-8	1-1/32	1-1/32
1-12	1-1/64	1-1/64

### Pipe Taps

Tap Size	Taperpipe NPT & NPTF	Decimal Equivalent	Straight Pipe NPS	Decimal Equivalent
1/8-27	Q	.3320	11/32	.3438
1/4-18	7/16	.4375	7/16	.7375
3/8-18	9/16	.5625	37/64	.5781
1/2-14	45/64	.7031	23/32	.7188
3/4-14	29/32	.9062	59/64	.9219
1" - 11-1/2	1-9/64	1.1406	1-5/32	1.1562
1-1/4" - 11-1/2	1-31/64	1.4844	1-1/2	1.5000
1-1/2" - 11-1/2	1-23/32	1.7188	1-3/4	1.7500
2" - 11-1/2	2-3/16	2.1875	2-7/32	2.2188
2-1/2" - 8	2-39/64	2.6094	2-21/32	2.6562
3" - 8	3-15/64	3.2344	3.2344	33/64

# TECHNICAL INFORMATION

## TAP DRILL SIZES – THREAD FORMERS

**Note:** Recommended thread percentage for various (Inch standard) tap sizes is shown in the “60% Thread” columns below. This is also the average percentage that is desirable for metric sizes. Use the “Probable Percent of Thread” column in the “Metric Sizes” tables below.

Machine Screw Sizes	Tap Size	75% Thread		70% Thread		65% Thread		60% Thread		55% Thread		50% Thread	
		Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size
0-80		0.0536	1.35 mm	0.0540	1.35 mm	0.0545	–	0.0549	54	0.0554	54	0.0558	1.0 mm
1-64		0.0650	1.65 mm	0.0655	1.65 mm	0.0661	–	0.0666	–	0.0672	51	0.0677	51
1-72		0.0659	1.65 mm	0.0663	–	0.0669	1.7 mm	0.0673	51	0.0679	51	0.0683	–
2-56		0.0769	1.65 mm	0.0774	1.95 mm	0.0669	23498	0.0787	47	0.0794	2.0 mm	0.0799	–
2-64		0.0780	5/64	0.0785	47	0.0791	2.0 mm	0.0796	2.0 mm	0.0802	–	0.0807	2.05 mm
3-48		0.0884	2.25 mm	0.0890	43	0.0898	43	0.0905	2.3 mm	0.0913	2.3 mm	0.0919	–
3-56		0.0899	43	0.0904	–	0.0911	2.3 mm	0.0917	2.8 mm	0.0924	2.35 mm	0.0929	2.35 mm
4-40		0.0993	2.5 mm	0.1000	39	0.1010	39	0.1018	38	0.1028	2.6 mm	0.1035	2.6 mm
4-48		0.1014	38	0.1020	38	0.1028	2.6 mm	0.1035	2.6 mm	0.1043	37	0.1049	37
5-40		0.1123	34	0.1130	33	0.1140	33	0.1148	2.9 mm	0.1158	32	0.1165	32
5-44		0.1134	33	0.1130	2.9 mm	0.1150	2.9 mm	0.1157	–	0.1166	32	0.1173	32
6-32		0.1221	3.1 mm	0.1230	3.1 mm	0.1243	–	0.1252	40916	0.1264	3.2 mm	0.1274	–
6-40		0.1253	1/8	0.1260	3.2 mm	0.1270	2.9 mm	0.1278	3.25 mm	0.1288	30	0.1295	30
8-32		0.1481	3.75 mm	0.1490	–	0.1503	25	0.1512	3.8 mm	0.1524	24	0.1534	3.9 mm
8-36		0.1498	25	0.1507	3.8 mm	0.1518	25	0.1526	24	0.1537	3.9 mm	0.1546	23
10-24		0.1688	–	0.1507	18	0.1717	23682	0.1729	23682	0.1746	–	0.1758	–
10-32		0.1741	17	0.1750	–	0.1763	–	0.1772	16	0.1784	4.5 mm	0.1794	–
12-24		0.1948	10	0.1960	9	0.1977	5.0 mm	0.1989	8	0.2006	5.1 mm	0.2018	7
12-28		0.1978	5.0 mm	0.1989	8	0.2003	8	0.1989	7	0.2028	–	0.2039	13/16

Fractional Sizes	Tap Size	75% Thread		70% Thread		65% Thread		60% Thread		55% Thread		50% Thread	
		Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size
1/4-20		.2245	5.7 mm	.2260	–	.2280	1	.2295	1	.2315	–	.2330	5.9 mm
1/4-28		.2318	–	.2329	5.9 mm	.2343	A	.2354	15/64	.2368	6.0 mm	.2379	B
5/16-18		0.2842	7.2 mm	.2861	7.25 mm	.2879	7.3 mm	.2898	L	.2917	7.4 mm	.2936	–
5/16-24		0.2912	7.4 mm	.2927	–	.2941	M	.2955	7.5 mm	.2969	19/64	.2983	7.6 mm
3/8-16		.3431	11/32	.3452	8.75 mm	.3474	S	.3495	8.9 mm	.3516	–	.3537	9.0 mm
3/8-24		.3537	9.0 mm	.3552	9.0 mm	.3566	–	.3580	T	.3594	23/64	.3608	–
7/16-14		.4011	–	.4035	Y	.4059	13/32	.4084	–	.4108	–	.4132	Z
7/16-20		0.4120	Z	.4137	10.5 mm	.4154	–	.4171	–	.4188	–	.4205	–
1/2-13		.4608	–	.4634	–	.4660	–	.4686	15/32	.4712	12 mm	.4738	12 mm
1/2-20		.4745	–	.4762	–	.4779	–	.4796	–	.4803	–	.4830	31/64

Metric Sizes	Metric Tap Size	Tap Drill Size	Decimal Equiv. of Tap Drill (inches)	Theoretical Percentage of thread %	Probable Mean Oversize (inches)	Probable Hole Size (inches)	Probable Percent of Thread %	Metric Tap Size	Tap Drill Size	Decimal Equiv. of Tap Drill (inches)	Theoretical Percentage of thread %	Probable Mean Oversize (inches)	Probable Hole Size (inches)	Probable Percent of Thread %
–	2.7 mm	0.1062	88	.0026	.1088	70	–	L	0.2900	75	.0042	.2942	62	
M4 x 0.7	27	0.1440	72	.0032	.1472	54	–	7.3 mm	.2874	82	.0042	.2916	70	
–	3.6 mm	.1417	84	.0032	.1449	67	M10 x 1.5	U	0.3680	64	.0046	.3726	53	
–	9/64	.1406	90	.0032	.1438	73	–	9.3 mm	0.3660	69	.0046	.3706	58	
M5 x 0.8	14	0.1820	69	.0035	.1855	53	–	9.2 mm	0.3620	78	.0046	.3666	67	
–	4.6 mm	.1811	74	.0035	.1846	57	–	23/64	.3594	85	.0046	.3640	74	
–	15	.1800	79	.0035	.1835	62	M12 x 1.5	11.3 mm	.4449	70	.0047	.4496	57	
–	16	0.1770	92	.0035	.1805	76	–	7/16	.4375	86	.0047	.4422	75	
M6 x 1	7/32	.2188	65	.0038	.2226	51	M12 x 1.75	7/16	.4375	75	.0047	.4422	65	
–	5.4 mm	.2126	88	.0038	.2164	74	–	11 mm	.4331	84	.0047	.4378	73	

# CUTTING DATA



## MATERIAL & SPEED RECOMMENDATIONS

Nitro®-Max can be used in a wide range of materials. CNC type equipment is recommended to achieve maximum performance of the taps.

### Conditions that effect SFM:

- ▷ *Rigidity of fixture*
- ▷ *Spindle runout*
- ▷ *Coolant flow*
- ▷ *Feed mechanism*

Workpiece Material	2150N (Sp.Pt)	2160N (Sp.FI)	2250N (Sp.Pt)	2260N (Sp.FI)	2270N (T.F)
	Speed (SFM)	Speed (SFM)	Speed (SFM)	Speed (SFM)	Speed (SFM)
A. Stainless Steel (Free Machining)	25-50	25-50	50-80	40-70	60-100
B. Carbon Steels					
Low Carbon	50-80	40-70	50-80	30-60	80-120
Medium Carbon	30-60	20-50	30-60	15-40	60-90
High Carbon	10-30	10-20	10-30	10-20	20-50
C. Non-Ferrous Materials					
Zinc Die Cast	75-100	60-90	80-120	80-120	150-200
Brass	75-100	60-90	80-120	80-120	100-150
Plastic	40-80	40-80	60-100	60-100	80-120
D. Aluminum Alloys					
Wrought	75-100	60-90	80-120	80-120	150-200
Cast	60-100	60-100	80-120	80-120	120-180
Unalloyed	75-100	75-100	80-120	80-120	150-200

### Maximum cutting speeds for SST power taps - RPM

Tap dia.	Mild steel	Stainless steel	Aluminum
#6	800	500	1600
#8	670	400	1500
#10	600	350	1400
#12	550	300	1200
1/4"	450	250	1000
5/16"	370	200	850
3/8"	300	150	700
7/16"	260	120	600
1/2"	230	100	500



A close-up photograph of a die casting process. A dark, metallic die is visible, with a hot, glowing orange-red metal part being ejected from a hole. The metal part has a textured, ribbed surface. The die is mounted on a larger, dark metal base. The lighting is dramatic, highlighting the textures and colors of the metal.

# 03

DIES



# QUICK PAGES REFERENCES



## THREADING DIES

### Adjustable Round Split Dies High Speed Steel

Bright Finish	
Series	Catalog page reference
3000E	393
3050E, 3100E	394



### Hexagon Dies High Speed Steel

Bright Finish	
Series	Catalog page reference
3300E, 3350	395



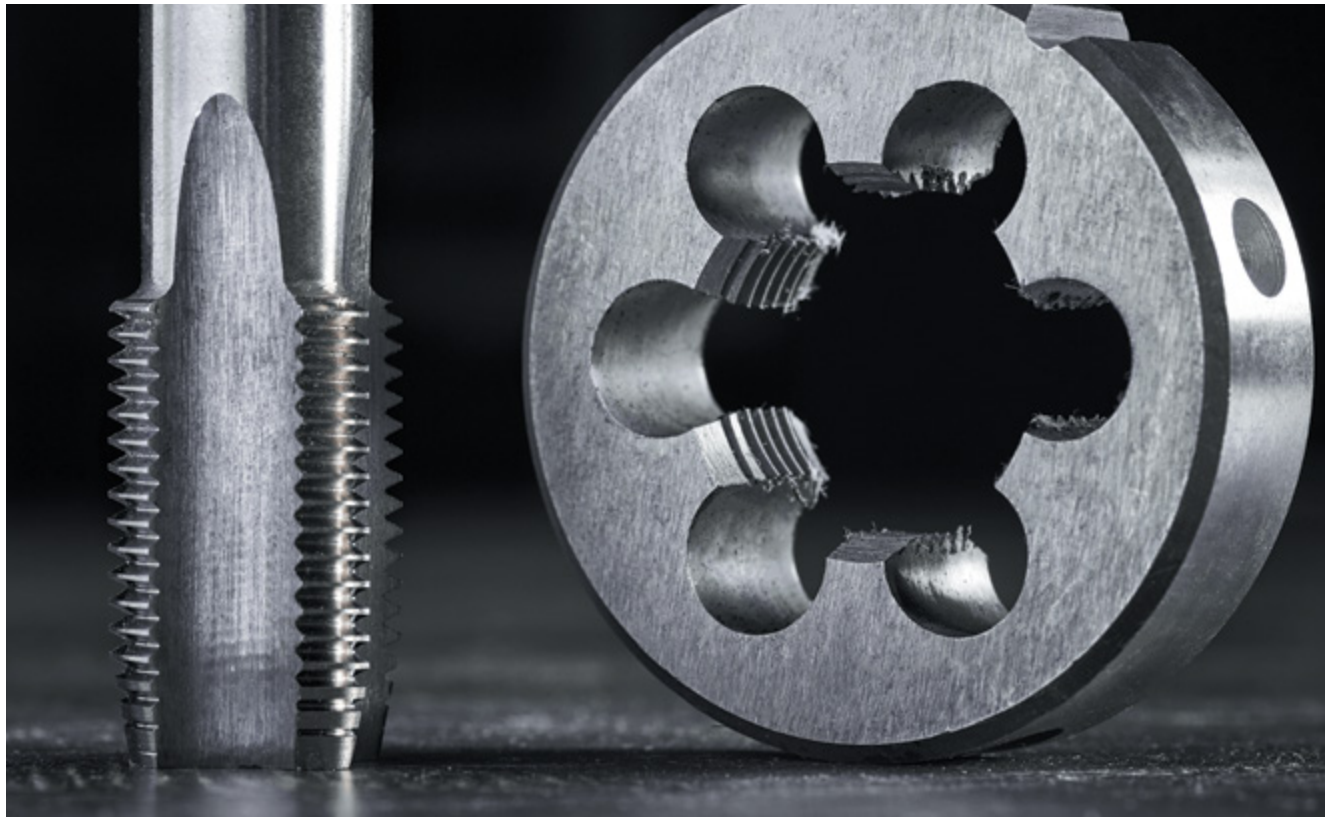
### Hexagon Dies Carbon

Bright Finish	
Series	Catalog page reference
3350-E 8-Pitch, 3360E, 3380E	3895, 396



### Die Stocks

Bright Finish For use with round Adjustable Split Dies	
Series	Catalog page reference
3000DS	398



## ADJUSTABLE ROUND SPLIT DIES

The round split adjustable die may be adjusted through the screws on the holder. Adjustment on the open type is done by turning the three screws on the holder. A die holder or handle is needed for proper operation of round split adjustable dies.

- ▷ Manufactured using a premium grade High Speed Steel material
- ▷ Bright Finish
- ▷ Cuts an external thread when held in a die stock

### 3000E SERIES HIGH SPEED STEEL Machine Screw Fractional / Bright



3000E

Size (Inches)	Outer Diameter (O.D.)			
	13/16" Order No.	1" Order No.	1-1/2" Order No.	2" Order No.
0 - 80	30E000FA	-	-	-
1 - 64	30E001CA	-	-	-
1 - 72	30E001FA	-	-	-
2 - 56	30E002CA	-	-	-
2 - 64	30E002FA	-	-	-
3 - 48	30E003CA	-	-	-
3 - 56	30E003FA	-	-	-
4 - 40	30E004CA	30E004CB	-	-
4 - 48	30E004FA	30E004FB	-	-
5 - 40	30E005CA	30E005CB	-	-
5 - 44	30E005FA	-	-	-
6 - 32	30E006CA	30E006CB	-	-
6 - 40	30E006FA	30E006FB	-	-
8 - 32	30E008CA	30E008CB	-	-
8 - 36	30E008FA	30E008FB	-	-
10 - 24	30E010CA	30E010CB	-	-
10 - 32	30E010FA	30E010FB	-	-
12 - 24	30E012CA	30E012CB	-	-
12 - 28	30E012FA	30E012FB	-	-
1/4 - 20	30E116CA	30E116CB	30E116CC	30E116CD
1/4 - 28	30E116FA	30E116FB	30E116FC	30E116FD
5/16 - 18	30E120CA	30E120CB	30E120CC	30E120CD
5/16 - 24	30E120FA	30E120FB	30E120FC	30E120FD
3/8 - 16	-	30E124CB	30E124CC	30E124CD
3/8 - 24	-	30E124FB	30E124FC	30E124FD
7/16 - 14	-	30E128CB	30E128CC	30E128CD
7/16 - 20	-	30E128FB	30E128FC	30E128FD
1/2 - 13	-	30E132CB	30E132CC	30E132CD
1/2 - 20	-	30E132FB	30E132FC	30E132FD
9/16 - 12	-	-	30E136CC	30E136CD
9/16 - 18	-	-	30E136FC	30E136FD
5/8 - 11	-	-	30E140CC	30E140CD
5/8 - 18	-	-	30E140FC	30E140FD

Size (Inches)	Outer Diameter (O.D.)			
	1-1/2" Order No.	2" Order No.	2-1/2" Order No.	3" Order No.
3/4 - 10	30E148CC	30E148CD	-	-
3/4 - 16	30E148FC	30E148FD	-	-
7/8 - 9	-	30E156CD	-	-
7/8 - 14	-	30E156FD	-	-
1 - 8	-	30E164CD	-	30E164CF
1 - 12	-	30E164FD	-	-
1 - 14	-	30E164SD	-	30E164SF
1-1/8 - 7	-	-	30E208CE	30E208CF
1-1/8 - 12	-	-	30E208FE	30E208FF
1-1/4 - 7	-	-	30E216CE	30E216CF
1-1/4 - 12	-	-	30E216FE	30E216FF
1-3/8 - 6	-	-	30E224CE	30E224CF
1-3/8 - 12	-	-	30E224FE	30E224FF
1-1/2 - 6	-	-	30E232CE	30E232CF
1-1/2 - 12	-	-	30E232FE	30E232FF
1-5/8 (5-1/2)	-	-	-	30E240CF
1-5/8 - 12	-	-	-	30E240FF
1-3/4 - 5	-	-	-	30E248CF
1-3/4 - 12	-	-	-	30E248FF
1-7/8 - 5	-	-	-	30E256CF
1-7/8 - 12	-	-	-	30E256FF
2 (4-1/2)	-	-	-	30E264CF
2 - 12	-	-	-	30E264FF

### Tech tip!

The round split adjustable die may be adjusted through the screws on the holder. Adjustment on the open type is done by turning the three screws on the holder. A die holder or handle is needed for proper operation of round split adjustable dies.

# THREADING ADJUSTABLE ROUND SPLIT DIES

## 3050E SERIES Pipe Dies (NPT)

**HIGH SPEED STEEL**

Machine Screw  
Fractional / Bright

Size (Inches)	Outer Diameter (O.D.)				
	1" Order No.	1-1/2" Order No.	2" Order No.	2-1/2" Order No.	3" Order No.
1/16 - 24	305E104B	-	-	-	-
1/8 - 27	305E108B	305E108C	-	-	-
1/4 - 18	-	305E116C	-	-	-
3/8 - 18	-	-	305E124D	-	-
1/2 - 14	-	-	305E132D	-	-
3/4 - 14	-	-	305E148D	-	-
1 - 11-1/2	-	-	-	305E164E	-
1-1/4 - 11-1/2	-	-	-	-	305E216F
1-1/2 - 11-1/2	-	-	-	-	305E232F



3050E



3100E

## 3100E SERIES

**HIGH SPEED STEEL**

Machine Screw  
Metric / Bright

Size (mm)	Outer Diameter (O.D.)		
	13/16" Order No.	1" Order No.	1-1/2" Order No.
1.6 x 0.35	31E016AA	-	-
2 x 0.40	31E020AA	31E020AB	-
2.2 x 0.45	-	31E022AB	-
2.3 x 0.40	-	31E023AB	-
2.5 x 0.45	31E025AA	31E025AB	-
2.6 x 0.45	-	31E026AB	-
3 x 0.50	-	31E030AB	-
3.5 x 0.50	-	31E035AB	-
3.5 x 0.60	-	31E035BB	-
4 x 0.50	31E040AA	31E040AB	-
4 x 0.70	31E040BA	31E040BB	-
4.5 x 0.50	-	31E045AB	-
4.5 x 0.75	-	31E045BB	-
5 x 0.50	-	31E050AB	-
5 x 0.80	31E050BA	31E050BB	-
5 x 1	-	31E050CB	-
6 x 0.50	-	31E060AB	-
6 x 0.75	-	31E060BB	-
6 x 1	-	31E060CB	-
7 x 0.75	-	31E070AB	-
7 x 1	-	31E070BB	-
8 x 0.75	-	31E080AB	-
8 x 1	-	31E080BB	-
8 x 1.25	-	31E080CB	-
9 x 1	-	-	31E090AC
9 x 1.25	-	31E090BB	31E090BC
10 x 0.75	-	31E100AB	31E100AC
10 x 1	-	31E100BB	31E100BC
10 x 1.25	-	31E100CB	-

Size (mm)	Outer Diameter (O.D.)				
	1" Order No.	1-1/2" Order No.	2" Order No.	2-1/2" Order No.	3" Order No.
10 x 1.5	31E100DB	31E100DC	-	-	-
11 x 1	-	31E110AC	-	-	-
11 x 1.5	31E110BB	31E110BC	-	-	-
12 x 1	-	31E120AC	-	-	-
12 x 1.25	-	31E120BC	-	-	-
12 x 1.5	-	31E120CC	-	-	-
12 x 1.75	-	31E120DC	-	-	-
14 x 1	-	31E140AC	-	-	-
14 x 1.25	-	31E140BC	-	-	-
14 x 1.5	-	31E140CC	-	-	-
14 x 2	-	31E140DC	-	-	-
15 x 1.5	-	31E150AC	-	-	-
16 x 1	-	31E160AC	-	-	-
16 x 1.5	-	31E160BC	-	-	-
16 x 2	-	31E160CC	-	-	-
17 x 1.5	-	31E170AC	-	-	-
18 x 1.5	-	31E180BC	-	-	-
18 x 2	-	31E180CC	-	-	-
18 x 2.5	-	31E180DC	-	-	-
20 x 1	-	31E200AC	31E200AD	-	-
20 x 1.5	-	31E200BC	31E200BD	-	-
20 x 2	-	-	31E200CD	-	-
20 x 2.5	-	-	31E200DD	-	-
22 x 1	-	-	31E220AD	-	-
22 x 1.5	-	-	31E220BD	-	-
22 x 2	-	-	31E220CD	-	-
22 x 2.5	-	-	31E220DD	-	-
24 x 1.5	-	-	31E240AD	-	-
24 x 2	-	-	31E240BD	-	-
24 x 3	-	-	31E240CD	-	-
26 x 1.5	-	-	31E260AD	-	-
30 x 2	-	-	31E300BD	-	-
33 x 2	-	-	-	31E330AE	-
45 x 4.5	-	-	-	-	31E450AF



# THREADING HEXAGON DIE

Hex rethreading dies are designed for repairing damaged threads on bolts, screws, rods, or studs. Their hexagon shape allows them to be used in a socket, or with a wrench.

- ▷ *Hex Dies are multi-edged, internally threaded tools used for cutting external threads*
- ▷ *Same size as standard hex nuts*

## **3300E SERIES** **HIGH SPEED STEEL** Machine Screw Fractional / Bright Threading Dies



3300E

Size	Threads Per Inch	Width A/F	3300E Order No.
4	40	19/32"	33E004C
6	32	19/32"	33E006C
8	32	19/32"	33E008C
10	24	19/32"	33E010C
10	32	19/32"	33E010F
12	24	19/32"	33E012C
1/4"	20	19/32"	33E116C
1/4"	28	19/32"	33E116F
5/16"	18	11/16"	33E120C
5/16"	24	11/16"	33E120F
3/8"	16	25/32"	33E124C
3/8"	24	25/32"	33E124F
7/16"	14	7/8"	33E128C
7/16"	20	7/8"	33E128F

Size	Threads Per Inch	Width A/F	3300E Order No.
1/2"	13	1-1/16"	33E132C
1/2"	20	1-1/16"	33E132F
9/16"	12	1-1/16"	33E136C
9/16"	18	1-1/16"	33E136F
5/8"	11	1-1/4"	33E140C
5/8"	18	1-1/4"	33E140F
3/4"	10	1-7/16"	33E148C
3/4"	16	1-7/16"	33E148F
7/8"	9	1-5/8"	33E156C
7/8"	14	1-5/8"	33E156F
1"	8	1-13/16"	33E164C
1"	12	1-13/16"	33E164F
1"	14	1-13/16"	33E164S

- ▷ *Carbon steel hex dies are for repair work only; not recommended for creating new threads*
- ▷ *Extra thick, allows user to rethread damaged or jammed threads*
- ▷ *Same size as standard hex nuts*

## **3350E SERIES** **CARBON** Machine Screw Fractional / Bright Rethreading Dies



3350E

Size	Threads Per Inch	Width A/F	3350E Order No.
4	40	19/32"	335E004C
4	48	19/32"	335E004F
5	40	19/32"	335E005C
5	44	19/32"	335E005F
6	32	19/32"	335E006C
6	40	19/32"	335E006F
8	32	19/32"	335E008C
8	36	19/32"	335E008F
10	24	19/32"	335E010C
10	32	19/32"	335E010F
12	24	19/32"	335E012C
12	28	19/32"	335E012F
1/4"	20	19/32"	335E116C
1/4"	28	19/32"	335E116F
5/16"	18	11/16"	335E120C
5/16"	24	11/16"	335E120F
3/8"	16	25/32"	335E124C
3/8"	24	25/32"	335E124F
7/16"	14	7/8"	335E128C
7/16"	20	7/8"	335E128F
1/2"	13	1-1/16"	335E132C
1/2"	20	1-1/16"	335E132F
9/16"	12	1-1/16"	335E136C

Size	Threads Per Inch	Width A/F	3350E Order No.
9/16"	18	1-1/16"	335E136F
5/8"	11	1-1/4"	335E140C
5/8"	18	1-1/4"	335E140F
11/16"	11	1-7/16"	335E144C
11/16"	16	1-7/16"	335E144F
3/4"	10	1-7/16"	335E148C
3/4"	16	1-7/16"	335E148F
7/8"	9	1-5/8"	335E156C
7/8"	14	1-5/8"	335E156F
1"	8	1-13/16"	335E164C
1"	12	1-13/16"	335E164F
1"	14	1-13/16"	335E164S
1-1/8"	7	2"	335E208C
1-1/8"	12	2"	335E208F
1-1/4"	7	2-3/16"	335E216C
1-1/4"	12	2-3/16"	335E216F
1-3/8"	6	2-3/8"	335E224C
1-3/8"	12	2-3/8"	335E224F
1-1/2"	6	2-9/16"	335E232C
1-1/2"	12	2-9/16"	335E232F
1-5/8"	5-1/2	3-1/8"	335E240C
1-5/8"	12	3-1/8"	335E240F
1-3/4"	5	3-1/8"	335E248C

Size	Threads Per Inch	Width A/F	3350E Order No.
1-3/4"	12	3-1/8"	335E248F
1-7/8"	5	3-1/8"	335E256C
1-7/8"	12	3-1/8"	335E256F
2"	4-1/2	3-1/2"	335E264C
2"	12	3-1/2"	335E264F
2-1/4"	4-1/2	3-1/2"	335E316C
2-1/4"	12	3-1/2"	335E316F
2-1/2"	4	4-1/2"	335E332C
2-1/2"	12	4-1/2"	335E332F
2-3/4"	4	4-1/2"	335E348C
2-3/4"	12	4-1/2"	335E348F
3"	4	5"	335E364C
3"	12	5"	335E364F
3-1/4"	4	5"	335E416C
3-1/4"	12	5"	335E416F
3-1/2"	4	5"	335E432C
3-1/2"	12	5"	335E432F
3-3/4"	4	6"	335E448C
3-3/4"	12	6"	335E448F
4"	4	6"	335E464C
4"	12	6"	335E464F

## THREADING HEXAGON DIES

### 3350E SERIES 8-Pitch

**CARBON**

Machine Screw  
Fractional / Bright  
Rethreading Dies



3350E

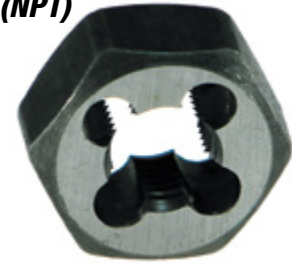
Size	Threads Per Inch	Width A/F	3350E Order No.
1-1/8"	8	2"	335E208N
1-1/4"	8	2"	335E216N
1-3/8"	8	2-3/16"	335E224N
1-1/2"	8	2-3/16"	335E232N
1-5/8"	8	2-3/8"	335E240N
1-3/4"	8	2-3/8"	335E248N
1-7/8"	8	2-9/16"	335E256N
2"	8	2-9/16"	335E264N
2-1/4"	8	3-1/8"	335E316N
2-3/8"	8	3-1/8"	335E324N
2-1/2"	8	3-1/8"	335E332N
2-5/8"	8	3-1/8"	335E340N
2-3/4"	8	3-1/8"	335E348N
2-7/8"	8	3-1/8"	335E356N
3"	8	3-1/2"	335E364N
3-1/4"	8	3-1/2"	335E416N
3-1/2"	8	3-1/2"	335E432N
3-3/4"	8	3-1/2"	335E448N
4"	8	4-1/2"	335E464N

## THREADING HEXAGON DIES

### 3380E SERIES Pipe Dies (NPT)

**CARBON**

Machine Screw  
Fractional / Bright  
Rethreading Dies



3380E

Size	Threads Per Inch	Width A/F	3380E Order No.
1/8"	27	25/32"	338E108
1/4"	18	1-1/16"	338E116
3/8"	18	1-1/4"	338E124
1/2"	14	1-5/8"	338E132
3/4"	14	1-13/16"	338E148
1"	11-1/2	2-3/16"	338E164
1-1/4"	11-1/2	3-1/8"	338E216
1-1/2"	11-1/2	3-1/8"	338E232
2"	11-1/2	4"	338E264

## THREADING HEXAGON DIES

### 3360E SERIES

**CARBON**

Machine Screw  
Metric / Bright  
Rethreading Dies



3360E

Size (mm)	Pitch (mm)	Width A/F	3360E Order No.
3	0.5	19/32"	336E030A
3	0.6	19/32"	336E030B
3.5	0.6	19/32"	336E035A
4	0.7	19/32"	336E040A
4	0.75	19/32"	336E040B
4.5	0.75	19/32"	336E045A
5	0.8	19/32"	336E050A
5	0.9	19/32"	336E050B
6	1	19/32"	336E060A
6	0.75	19/32"	336E060B
6.3	1	19/32"	336E063A
7	1	11/16"	336E070A
8	1	11/16"	336E080A
8	1.25	11/16"	336E080B
9	1	25/32"	336E090A
9	1.25	25/32"	336E090B
10	1.25	7/8"	336E100A
10	1.5	7/8"	336E100B
11	1.5	7/8"	336E110A
12	1.25	1-1/16"	336E120A
12	1.5	1-1/16"	336E120B
12	1.75	1-1/16"	336E120C
14	1.5	1-1/16"	336E140A
14	2	1-1/16"	336E140B
16	1.5	1-1/4"	336E160A
16	2	1-1/4"	336E160B

Size (mm)	Pitch (mm)	Width A/F	3360E Order No.
18	1.5	1-7/16"	336E180A
18	2.5	1-7/16"	336E180B
18	2	1-7/16"	336E180C
20	1.5	1-5/8"	336E200A
20	2.5	1-5/8"	336E200B
22	1.5	1-5/8"	336E220A
22	2.5	1-5/8"	336E220B
24	2	1-13/16"	336E240A
24	3	1-13/16"	336E240B
26	1.5	2"	336E260A
27	2	2"	336E270A
27	3	2"	336E270B
28	1.5	2"	336E280A
30	2	2-3/16"	336E300A
33	2	2-3/8"	336E330A
33	3.5	2-3/8"	336E330B
36	3	2-9/16"	336E360A
36	4	2-9/16"	336E360B
39	3	3-1/8"	336E390A
39	4	3-1/8"	336E390B
40	1.5	3-1/8"	336E400A
42	4.5	3-1/8"	336E420B
45	1.5	3-1/4"	336E450A
45	4.5	3-1/4"	336E450B
48	1.5	3-1/4"	336E480A
52	1.5	3-1/2"	336E520A
52	5	3-1/2"	336E520B

# TAP & DIE SETS



2000H38

Material	Pieces	Includes	Case	Order No.
<b>Tap &amp; Hexagon Die Set</b>				
TAPS: HSS USA DIES: Carbon Import	23 pcs (UNC & UNF)*	Taps & Dies: 9/16-12, 9/16-18, 5/8-11, 5/8-18, 3/4-10, 3/4-16, 7/8-9, 7/8-14, 1-8, 1-12 & 1/4-18 (NPT). Also: 1/4" to 1" Adjustable Tap Wrench.	Wood	2000H25
TAPS: HSS USA DIES: Carbon Import	36 pcs (UNC & UNF)	Taps & Dies: 4-40, 6-32, 8-32, 10-24, 10-32, 12-24, 1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20, & 1/8-27 (NPT). Also: 1/4" to 1" Adjustable Tap Wrench, #0 to 3/8" T-Handle Tap Wrench.	Wood	2000H38
TAPS: HSS USA DIES: Carbon Import	58 pcs (UNC & UNF)	Taps & Dies: 4-40, 6-32, 8-32, 10-24, 10-32, 12-24, 1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20, 9/16-12, 9/16-18, 5/8-11, 5/8-18, 3/4-10, 3/4-16, 7/8-9, 7/8-14, 1-8, 1-12, & 1/8-27, 1/4-18 (NPT). Also: #7 to 1/2" & 1/4" to 1" Adjustable Tap Wrench, #0 to 3/8" T-Handle Tap Wrench.	Wood	2000H63
TAPS: HSS USA DIES: Carbon Import	18 pcs (UNC)	Taps & Dies: 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4. Also: #7 to 1/2 Adjustable Tap Wrench, #12 to 1/2" T-Handle Tap Wrench.	Wood	2000HC20
TAPS: HSS USA DIES: Carbon Import	18 pcs (UNF)	Taps & Dies: 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4. Also: #7 to 1/2 Adjustable Tap Wrench, #12 to 1/2" T-Handle Tap Wrench.	Wood	2000HF20
<b>Tap &amp; Round Adjustable Die Set</b>				
High Speed Steel TAPS: USA DIES: Import	25 pcs (UNC & UNF)	Taps & Dies: 9/16-12, 9/16-18, 5/8-11, 5/8-18, 3/4-10, 3/4-16, 7/8-9, 7/8-14, 1-8, 1-12 & 1/4-18 (NPT). Also: 2" Round Die Stock, 1/4" to 1" Adjustable Tap Wrench, and 1 Screwdriver.	Wood	2000R25
High Speed Steel TAPS: USA DIES: Import	38 pcs (UNC & UNF)	Taps & Dies: 4-40, 6-32, 8-32, 10-24, 10-32, 12-24, 1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20 & 1/8-27 (NPT). Also: 1" Round Die Stock, 1/4" to 1" Adjustable Tap Wrench, #0 to 3/8" T-Handle Tap Wrench and 1 Screwdriver.	Wood	2000R38
High Speed Steel TAPS: USA DIES: Import	63 pcs (UNC & UNF)	Taps & Dies: 4-40, 6-32, 8-32, 10-24, 10-32, 12-24, 1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20, 9/16-12, 9/16-18, 5/8-11, 5/8-18, 3/4-10, 3/4-16, 7/8-9, 7/8-14, 1-8, 1-12, & 1/8-27, 1/4-18 (NPT). Also: 1" & 2" Round Die Stock, #7 to 1/2" & 1/4" to 1" Adjustable Tap Wrench, #0 to 3/8" T-Handle Tap Wrench and 2 Screwdrivers.	Wood	2000R63
High Speed Steel TAPS: USA DIES: Import	20 pcs (UNC)	Taps & Dies: 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4. Also: 1-1/2" Round Die Stock, #7 to 1/2 Adjustable Tap Wrench, #12 to 1/2" T-Handle Tap Wrench, and 1 Screwdriver.	Wood	2000RC20
High Speed Steel TAPS: USA DIES: Import	20 pcs (UNF)	Taps & Dies: 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4. Also: 1-1/2" Round Die Stock, #7 to 1/2 Adjustable Tap Wrench, #12 to 1/2" T-Handle Tap Wrench, and 1 Screwdriver.	Wood	2000RF20

\* UNF threads are Unified fine pitch threads, UNC threads are Unified coarse pitch threads.

## TAP & DIE SETS



2800E36



3300EC10



3350C20

Material	Pieces	Includes	Case	Order No.
<b>Pipe Tap &amp; Die Set</b>				
Carbon	12 pcs (NPT)	Taper Pipe Taps: 1/8-27, 1/4-18, 3/8-18, 1/2-14, 3/4-14, 1 - 11-1/2. Hexagon Pipe Dies: 1/8-27, 1/4-18, 3/8-18, 1/2-14, 3/4-14, 1 - 11-1/2.	Plastic	2700C12
<b>Tap &amp; Die Set</b>				
High Speed Steel	40 pcs (UNC & UNF)	4-40 thru 1/2", Round Adjustable Dies	Plastic	2000E40
Carbon	36 pcs (Metric)	4mm thru 12mm, Round Adjustable or Hex Dies	Plastic	2800C36
High Speed Steel	36 pcs (Metric)	4mm thru 12mm, Round Adjustable Dies	Plastic	2800E36
<b>Hexagon Die Sets (Dies Only)</b>				
High Speed Steel	20 pcs (UNC & UNF)	1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, & 1"	Wood	3300E20
High Speed Steel	10 pcs (UNC)	1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, & 1"	Wood	3300EC10
High Speed Steel	10 pcs (UNF)	1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, & 1"	Wood	3300EF10
Carbon	20 pcs (UNC & UNF)	1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, & 1"	Wood	3350C20
Carbon	10 pcs (UNC)	1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, & 1"	Wood	3350CC10
Carbon	10 pcs (UNF)	1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, & 1"	Wood	3350CF10

### 3000DS SERIES Die Stocks 3 Screw Type

Designed for use with round adjustable split dies.



3000DS

Size	Overall Length	3000DS Order No.
13/16"	7"	3000DS1
1"	8 1/4"	3000DS2
1-1/2"	11 3/4"	3000DS3
2"	15 1/2"	3000DS4
2-1/2"	19"	3000DS5
3"	22 1/2"	3000DS6



# 04

## CARBIDE BURRS



# QUICK PAGES REFERENCES

## CARBIDE BURRS



### Single & Double Cut Burrs

#### Bright Finish

For most ferrous metals, hard alloys; aluminum

Series 7'	Catalog page reference
7000A / 7000AX, 7000B	401
7000C / 7000CX, 7000D / 7000DX	402
7000E / 7000EX, 7000F / 7000FX, 7000G / 7000GX	403
7000H / 7000HX, 7000J, 7000K	404
7000L / 7000LX, 7000M, 7000N / 7000NE	405

### Aluminium/Non-Ferrous Cut Burrs

#### Bright Finish

For aluminum and other non-ferrous materials

Series 7'	Catalog page reference
7000AAL, 7000CAL, 7000DAL, 7000EAL, 7000FAL, 7000LAL	406

### Burrs Sets

#### Bright Finish

For high-performance on most ferrous metal, hard alloys; aluminum

Order No.	Catalog page reference
70S001SC / 70S001DC	408
70S002SC / 70S002DC	
70S003SC / 70S003DC	
70S004SC / 70S004DC	
70S005SC / 70S005DC	
70S006SC / 70S006DC	
70S007SC / 70S007DC	
70S011DC	
70S010NF	

### Burrs Display

#### Bright Finish

For high-performance on non-ferrous, aluminium and soft metal

Order No.	Catalog page reference
70S033SC / 70S033DC	408
70S066SC / 70S066DC	
70S099SC / 70S099DC	

### Point Grinder

#### Dialspeed™ 6141

For fitting and finishing work

Order No.	Catalog page reference
30A141	409

# SINGLE & DOUBLE CUT BURRS

Manufactured from premium-grade Tungsten Carbide, they are primarily used to remove burrs (the small flakes of metal) that often remain on the workpiece after the machining process.

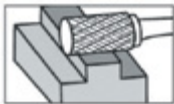
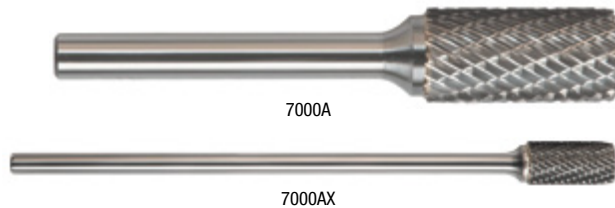
- ▷ One of the most widely used and versatile cutting tools
- ▷ Burrs are available in single cut, double cut, and non-ferrous/aluminum cut
- ▷ All sizes are individually packaged
- ▷ Special sizes and profiles are available upon request



## 7000A / 7000AX

Shape: Cylindrical

Use: Deburring

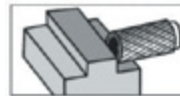


SA Burr Profile

## 7000B

Shape: Cylindrical with End Cut

Use: Interior Contour Work



SB Burr Profile

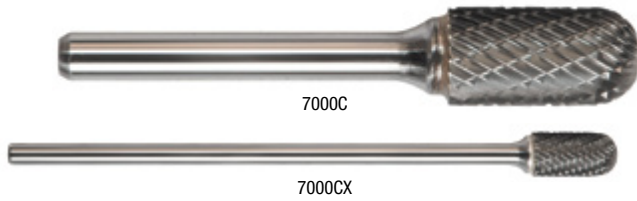
Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
<b>Series 7000A – Cylindrical</b>					
SA-11	1/8"	1/4"	1/2"	7A108BSC	7A108BDC
SA-12	1/8"	1/4"	5/8"	7A108ASC	7A108ADC
SA-14	3/16"	1/4"	5/8"	7A112ASC	7A112ADC
SA-1	1/4"	1/4"	5/8"	7A116ASC	7A116ADC
SA-1L	1/4"	1/4"	1"	7A116BSC	7A116BDC
SA-2	5/16"	1/4"	3/4"	7A120ASC	7A120ADC
SA-2L	5/16"	1/4"	1"	7A120BSC	7A120BDC
SA-3	3/8"	1/4"	3/4"	7A124ASC	7A124ADC
SA-3L	3/8"	1/4"	1"	7A124BSC	7A124BDC
SA-3XL	3/8"	1/4"	1-1/2"	7A124CSC	7A124CDC
SA-4	7/16"	1/4"	1"	7A128BSC	7A128BDC
SA-5	1/2"	1/4"	1"	7A132BSC	7A132BDC
SA-6	5/8"	1/4"	1"	7A140BSC	7A140BDC
SA-16	3/4"	1/4"	3/4"	7A148ASC	7A148ADC
SA-7	3/4"	1/4"	1"	7A148BSC	7A148BDC
SA-9	1"	1/4"	1"	7A164BSC	7A164BDC
<b>Series 7000A – Miniature</b>					
SA-41	1/16"	1/8"	1/4"	70A041SC	70A041DC
SA-42	3/32"	1/8"	7/16"	70A042SC	70A042DC
SA-43	1/8"	1/8"	9/16"	70A043SC	70A043DC
SA-51	1/4"	1/8"	1/2"	70A051SC	70A051DC
SA-52	5/32"	1/8"	1/2"	70A052SC	70A052DC
SA-53	3/16"	1/8"	1/2"	70A053SC	70A053DC
SA-61	1/16"	3/32"	1/4"	70A061SC	70A061DC
SA-63	3/32"	3/32"	3/8"	70A063SC	70A063DC
SA-81	3/16"	3/16"	1/2"	70A081SC	70A081DC
SA-43L2	1/8"	1/8"	9/16"	7A43L2SC	7A43L2DC
SA-43L3	1/8"	1/8"	9/16"	7A43L3SC	7A43L3DC
<b>Series 7000AX – 6" Extra Long</b>					
SA-1L6	1/4"	1/4"	1/2"	7AX116SC	7AX116DC
SA-3L6	3/8"	1/4"	3/4"	7AX124SC	7AX124DC
SA-5L6	1/2"	1/4"	1"	7AX132SC	7AX132DC

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
<b>Series 7000B – Cylindrical With End Cut</b>					
SB-12	1/8"	1/4"	5/8"	7B108ASC	7B108ADC
SB-11	1/8"	1/4"	1/2"	7B108BSC	7B108BDC
SB-14	3/16"	1/4"	5/8"	7B112ASC	7B112ADC
SB-1	1/4"	1/4"	5/8"	7B116ASC	7B116ADC
SB-1L	1/4"	1/4"	1"	7B116BSC	7B116BDC
SB-2	5/16"	1/4"	3/4"	7B120ASC	7B120ADC
SB-2L	5/16"	1/4"	1"	7B120BSC	7B120BDC
SB-3	3/8"	1/4"	3/4"	7B124ASC	7B124ADC
SB-3L	3/8"	1/4"	1"	7B124BSC	7B124BDC
SB-3XL	3/8"	1/4"	1-1/2"	7B124CSC	7B124CDC
SB-4	7/16"	1/4"	1"	7B128BSC	7B128BDC
SB-5	1/2"	1/4"	1"	7B132BSC	7B132BDC
SB-6	5/8"	1/4"	1"	7B140BSC	7B140BDC
SB-16	3/4"	1/4"	3/4"	7B148ASC	7B148ADC
SB-7	3/4"	1/4"	1"	7B148BSC	7B148BDC
SB-9	1"	1/4"	1"	7B164BSC	7B164BDC
<b>Series 7000B – Miniature</b>					
SB-43	1/8"	1/8"	9/16"	70B043SC	70B043DC
SB-51	1/4"	1/8"	3/16"	70B051SC	70B051DC
SB-ECO	1/8"	1/8"	-	70BECOSC	70BECODC

## SINGLE & DOUBLE CUT BURRS

### 7000C / 7000CX

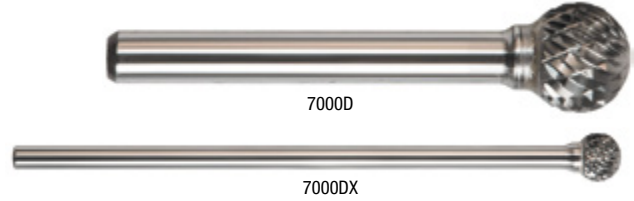
Shape: Cylindrical Ball Nose  
Use: Surface Milling & Contour Work



SC Burr Profile

### 7000D / 7000DX

Shape: Ball  
Use: Surface Milling, Deburring & Contour Work



SD Burr Profile

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
<b>Series 7000C – Cylindrical Ball Nose</b>					
SC-11	1/8"	1/4"	1/2"	7C108BSC	7C108BDC
SC-12	1/8"	1/4"	5/8"	7C108ASC	7C108ADC
SC-14	3/16"	1/4"	5/8"	7C112ASC	7C112ADC
SC-1	1/4"	1/4"	5/8"	7C116ASC	7C116ADC
SC-1L	1/4"	1/4"	1"	7C116BSC	7C116BDC
SC-2	5/16"	1/4"	3/4"	7C120ASC	7C120ADC
SC-2L	5/16"	1/4"	1"	7C120BSC	7C120BDC
SC-3	3/8"	1/4"	3/4"	7C124ASC	7C124ADC
SC-3L	3/8"	1/4"	1"	7C124BSC	7C124BDC
SC-3XL	3/8"	1/4"	1-1/2"	7C124CSC	7C124CDC
SC-4	7/16"	1/4"	1"	7C128BSC	7C128BDC
SC-5	1/2"	1/4"	1"	7C132BSC	7C132BDC
SC-6	5/8"	1/4"	1"	7C140BSC	7C140BDC
SC-7	3/4"	1/4"	1"	7C148BSC	7C148BDC
SC-9	1"	1/4"	1"	7C164BSC	7C164BDC
<b>Series 7000C – Miniature</b>					
SC-41	3/32"	1/8"	7/16"	70C041SC	70C041DC
SC-42	1/8"	1/8"	9/16"	70C042SC	70C042DC
SC-51	1/4"	1/8"	1/2"	70C051SC	70C051DC
SC-52	5/32"	1/8"	1/2"	70C052SC	70C052DC
SC-53	3/16"	1/8"	1/2"	70C053SC	70C053DC
SC-61	3/32"	3/32"	3/8"	70C061SC	70C061DC
SC-81	3/16"	3/16"	1/2"	70C081SC	70C081DC
SC-42L2	1/8"	1/8"	9/16"	7C42L2SC	7C42L2DC
SC-42L3	1/8"	1/8"	9/16"	7C42L3SC	7C42L3DC
<b>Series 7000CX – 6" Extra Long</b>					
SC-1L6	1/4"	1/4"	1/2"	7CX116SC	7CX116DC
SC-3L6	3/8"	1/4"	3/4"	7CX124SC	7CX124DC
SC-5L6	1/2"	1/4"	1"	7CX132SC	7CX132DC

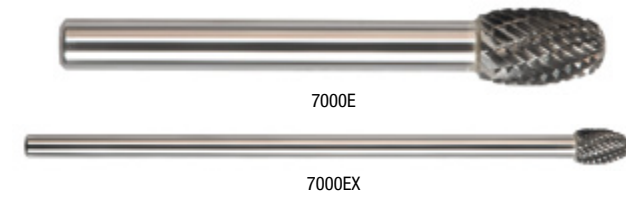
Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
<b>Series 7000D – Ball Shape</b>					
SD-12	1/8"	1/4"	1/8"	7D108ASC	7D108ADC
SD-14	3/16"	1/4"	3/16"	7D112ASC	7D112ADC
SD-1	1/4"	1/4"	1/4"	7D116ASC	7D116ADC
SD-2	5/16"	1/4"	5/16"	7D120ASC	7D120ADC
SD-3	3/8"	1/4"	3/8"	7D124ASC	7D124ADC
SD-4	7/16"	1/4"	7/16"	7D128ASC	7D128ADC
SD-5	1/2"	1/4"	1/2"	7D132ASC	7D132ADC
SD-6	5/8"	1/4"	5/8"	7D140ASC	7D140ADC
SD-7	3/4"	1/4"	3/4"	7D148ASC	7D148ADC
SD-9	1"	1/4"	1"	7D164ASC	7D164ADC
<b>Series 7000D – Miniature</b>					
SD-41	3/32"	1/8"	3/32"	70D041SC	70D041DC
SD-42	1/8"	1/8"	1/8"	70D042SC	70D042DC
SD-51	1/4"	1/8"	7/32"	70D051SC	70D051DC
SD-53	3/16"	1/8"	5/32"	70D053SC	70D053DC
SD-61	3/32"	3/32"	3/32"	70D061SC	70D061DC
SD-81	3/16"	3/16"	5/32"	70D081SC	70D081DC
SD-42L2	1/8"	1/8"	1/8"	7D42L2SC	7D42L2DC
SD-42L3	1/8"	1/8"	1/8"	7D42L3SC	7D42L3DC
<b>Series 7000DX – 6" Extra Long</b>					
SD-1L6	1/4"	1/4"	7/32"	7DX116SC	7DX116DC
SD-3L6	3/8"	1/4"	5/16"	7DX124SC	7DX124DC
SD-5L6	1/2"	1/4"	7/16"	7DX132SC	7DX132DC



# SINGLE & DOUBLE CUT BURRS

## 7000E / 7000EX

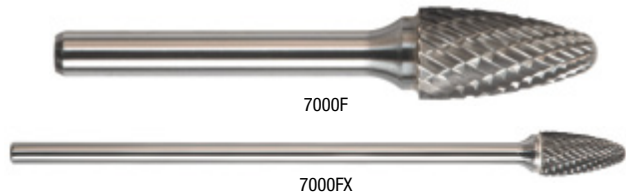
Shape: Oval  
Use: Contour Work



SE Burr Profile

## 7000F / 7000FX

Shape: Round Tree  
Use: Narrow Contour Work



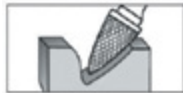
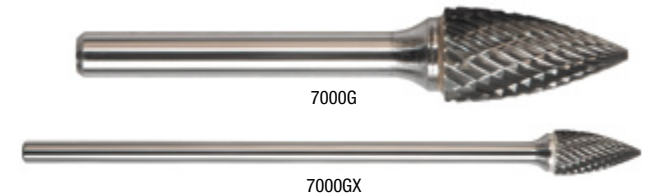
SF Burr Profile

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
<b>Series 7000F – Round Tree Shape</b>					
SF-11	1/8"	1/4"	5/8"	7F108BSC	7F108BDC
SF-12	1/8"	1/4"	1/2"	7F108ASC	7F108ADC
SF-1	1/4"	1/4"	5/8"	7F116ASC	7F116ADC
SF-1L	1/4"	1/4"	3/4"	7F116BSC	7F116BDC
SF-3	3/8"	1/4"	3/4"	7F124ASC	7F124ADC
SF-4	7/16"	1/4"	1"	7F128ASC	7F128ADC
SF-13	1/2"	1/4"	3/4"	7F132ASC	7F132ADC
SF-5	1/2"	1/4"	1"	7F132BSC	7F132BDC
SF-6	5/8"	1/4"	1"	7F140ASC	7F140ADC
SF-7	3/4"	1/4"	1"	7F148ASC	7F148ADC
SF-14	3/4"	1/4"	1-1/4"	7F148BSC	7F148BDC
SF-15	3/4"	1/4"	1-1/2"	7F148CSC	7F148CDC
<b>Series 7000F – Miniature</b>					
SF-41	1/8"	1/8"	1/4"	70F041SC	70F041DC
SF-42	1/8"	1/8"	1/2"	70F042SC	70F042DC
SF-51	1/4"	1/8"	1/2"	70F051SC	70F051DC
SF-53	3/16"	1/8"	1/2"	70F053SC	70F053DC
SF-61	3/32"	3/32"	1/4"	70F061SC	70F061DC
SF-81	3/16"	3/16"	1/2"	70F081SC	70F081DC
SF-42L2	1/8"	1/8"	1/2"	7F42L2SC	7F42L2DC
SF-42L3	1/8"	1/8"	1/2"	7F42L3SC	7F42L3DC
<b>Series 7000FX – 6" Extra Long</b>					
SF-1L6	1/4"	1/4"	1/2"	7FX116SC	7FX116DC
SF-3L6	3/8"	1/4"	3/4"	7FX124SC	7FX124DC
SF-5L6	1/2"	1/4"	1"	7FX132SC	7FX132DC

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
<b>Series 7000E – Oval Shape</b>					
SE-11	3/16"	1/4"	5/16"	7E112ASC	7E112ADC
SE-1	1/4"	1/4"	3/8"	7E116ASC	7E116ADC
SE-2	5/16"	1/4"	5/8"	7E120ASC	7E120ADC
SE-3	3/8"	1/4"	5/8"	7E124ASC	7E124ADC
SE-5	1/2"	1/4"	7/8"	7E132ASC	7E132ADC
SE-6	5/8"	1/4"	1"	7E140ASC	7E140ADC
SE-7	3/4"	1/4"	1"	7E148ASC	7E148ADC
<b>Series 7000E – Miniature</b>					
SE-41	1/8"	1/8"	7/32"	70E041SC	70E041DC
SE-51	1/4"	1/8"	3/8"	70E051SC	70E051DC
SE-53	3/16"	1/8"	9/32"	70E053SC	70E053DC
SE-61	3/32"	3/32"	1/8"	70E061SC	70E061DC
SE-81	3/16"	3/16"	9/32"	70E081SC	70E081DC
SE-41L2	1/8"	1/8"	7/32"	7E41L2SC	7E41L2DC
SE-41L3	1/8"	1/8"	7/32"	7E41L3SC	7E41L3DC
<b>Series 7000EX – 6" Extra Long</b>					
SE-1L6	1/4"	1/4"	3/8"	7EX116SC	7EX116DC
SE-3L6	3/8"	1/4"	5/8"	7EX124SC	7EX124DC
SE-5L6	1/2"	1/4"	7/8"	7EX132SC	7EX132DC

## 7000G / 7000GX

Shape: Pointed Tree  
Use: Surface Milling & Narrow Contour Work



SG Burr Profile

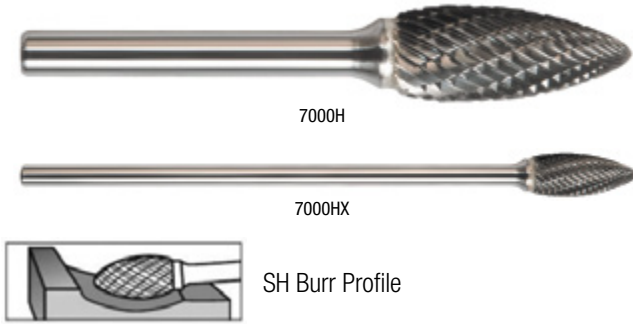
Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
<b>Series 7000G – Pointed Tree Shape</b>					
SG-1	1/4"	1/4"	5/8"	7G116ASC	7G116ADC
SG-1L	1/4"	1/4"	3/4"	7G116BSC	7G116BDC
SG-2	5/16"	1/4"	3/4"	7G120ASC	7G120ADC
SG-3	3/8"	1/4"	3/4"	7G124ASC	7G124ADC
SG-13	1/2"	1/4"	3/4"	7G132ASC	7G132ADC
SG-5	1/2"	1/4"	1"	7G132BSC	7G132BDC
SG-6	5/8"	1/4"	1"	7G140ASC	7G140ADC
SG-7	3/4"	1/4"	1"	7G148ASC	7G148ADC
SG-15	3/4"	1/4"	1-1/2"	7G148BSC	7G148BDC
<b>Series 7000G – Miniature</b>					
SG-41	1/8"	1/8"	1/4"	70G041SC	70G041DC
SG-42	1/8"	1/8"	5/16"	70G042SC	70G042DC
SG-43	1/8"	1/8"	3/8"	70G043SC	70G043DC
SG-44	1/8"	1/8"	1/2"	70G044SC	70G044DC
SG-51	1/4"	1/8"	1/2"	70G051SC	70G051DC
SG-53	3/16"	1/8"	1/2"	70G053SC	70G053DC
SG-61	3/32"	3/32"	1/4"	70G061SC	70G061DC
SG-81	3/16"	3/16"	1/2"	70G081SC	70G081DC
SG-44L2	1/8"	1/8"	1/2"	7G44L2SC	7G44L2DC
SG-44L3	1/8"	1/8"	1/2"	7G44L3SC	7G44L3DC
<b>Series 7000GX – 6" Extra Long</b>					
SG-1L6	1/4"	1/4"	1/2"	7GX116SC	7GX116DC
SG-3L6	3/8"	1/4"	3/4"	7GX124SC	7GX124DC
SG-5L6	1/2"	1/4"	1"	7GX132SC	7GX132DC

# 04 SINGLE & DOUBLE CUT BURRS

## CARBIDE BURRS

### 7000H / 7000HX

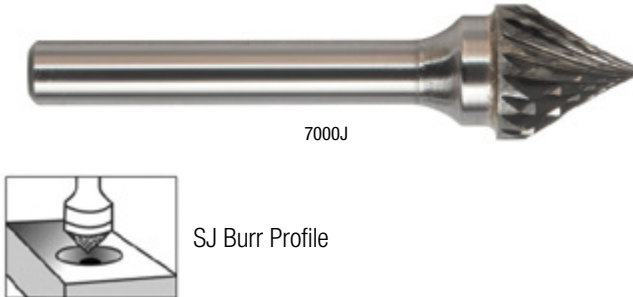
Shape: Flame  
Use: Contour Work



Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
<b>Series 7000H – Flame Shape</b>					
SH-1	1/4"	1/4"	1/2"	7H116ASC	7H116ADC
SH-2	5/16"	1/4"	3/4"	7H120ASC	7H120ADC
SH-5	1/2"	1/4"	1-1/4"	7H132ASC	7H132ADC
SH-6	5/8"	1/4"	1-7/16"	7H140ASC	7H140ADC
SH-7	3/4"	1/4"	1-5/8"	7H148ASC	7H148ADC
<b>Series 7000H – Miniature</b>					
SH-41	1/8"	1/8"	1/4"	70H041SC	70H041DC
SH-53	3/16"	1/8"	3/8"	70H053SC	70H053DC
SH-41L2	1/8"	1/8"	1/4"	7H41L2SC	7H41L2DC
SH-41L3	1/8"	1/8"	1/4"	7H41L3SC	7H41L3DC
<b>Series 7000HX – 6" Extra Long</b>					
SH-2L6	5/16"	1/4"	3/4"	7HX120SC	7HX120DC
SH-5L6	1/2"	1/4"	1-1/4"	7HX132SC	7HX132DC

### 7000J

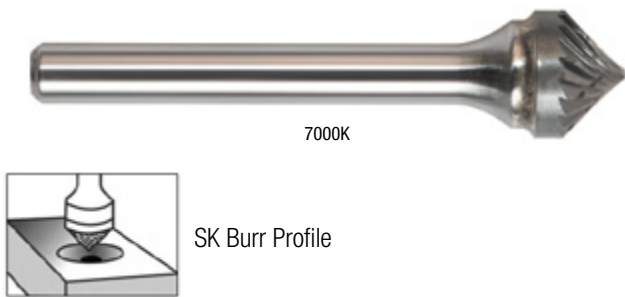
Shape: 60° Included Angle  
Use: Machining of Acute Angle Areas & Countersinking



Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
<b>Series 7000J – 60° Included Angle</b>					
SJ-1	3/16"	1/4"	3/16"	7J116ASC	7J116ADC
SJ-2	1/4"	1/4"	1/4"	7J120ASC	7J120ADC
SJ-3	5/16"	1/4"	1/4"	7J124ASC	7J124ADC
SJ-5	3/8"	1/4"	7/16"	7J132ASC	7J132ADC
SJ-6	1/2"	1/4"	1/2"	7J140ASC	7J140ADC
SJ-7	5/8"	1/4"	5/8"	7J148ASC	7J148ADC
SJ-9	3/4"	1/4"	3/4"	7J164ASC	7J164ADC
<b>Series 7000J – Miniature</b>					
SJ-42	1/8"	1/8"	3/32"	70J042SC	70J042DC

### 7000K

Shape: 90° Included Angle  
Use: Machining of Acute Angle Areas & Countersinking



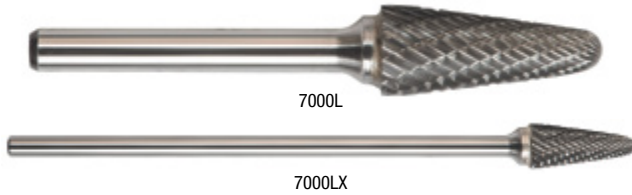
Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
<b>Series 7000K – 90° Included Angle</b>					
SK-1	1/4"	1/4"	1/8"	7K116ASC	7K116ADC
SK-2	5/16"	1/4"	3/16"	7K120ASC	7K120ADC
SK-3	3/8"	1/4"	3/16"	7K124ASC	7K124ADC
SK-5	1/2"	1/4"	1/4"	7K132ASC	7K132ADC
SK-6	5/8"	1/4"	5/16"	7K140ASC	7K140ADC
SK-7	3/4"	1/4"	3/8"	7K148ASC	7K148ADC
SK-9	1"	1/4"	1/2"	7K164ASC	7K164ADC
<b>Series 7000K – Miniature</b>					
SK-42	1/8"	1/8"	7/32"	70K042SC	70K042DC

# SINGLE & DOUBLE CUT BURRS

## 7000L / 7000LX

Shape: 14° Included Angle

Use: Surface Machining & Narrow Contour Work



SL Burr Profile

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
<b>Series 7000L – 14° Included Angle</b>					
SL-1	1/4"	1/4"	5/8"	7L116ASC	7L116ADC
SL-2	5/16"	1/4"	7/8"	7L120ASC	7L120ADC
SL-3	3/8"	1/4"	1-1/16"	7L124ASC	7L124ADC
SL-4	1/2"	1/4"	1-1/8"	7L132ASC	7L132ADC
SL-5	5/8"	1/4"	1-3/16"	7L140ASC	7L140ADC
SL-6	5/8"	1/4"	1-5/16"	7L140BSC	7L140BDC
SL-7	3/4"	1/4"	1-1/2"	7L148ASC	7L148ADC
<b>Series 7000L – Miniature</b>					
SL-41	1/8"	1/8"	3/8"	70L041SC	70L041DC
SL-42	1/8"	1/8"	1/2"	70L042SC	70L042DC
SL-53	3/16"	1/8"	1/2"	70L053SC	70L053DC
SL-81	3/16"	3/16"	7/16"	70L081SC	70L081DC
SL-42L2	1/8"	1/8"	1/2"	7L42L2SC	7L42L2DC
SL-42L3	1/8"	1/8"	1/2"	7L42L3SC	7L42L3DC
<b>Series 7000LX – 6" Extra Long</b>					
SL-1L6	1/4"	1/4"	5/8"	7LX116SC	7LX116DC
SL-3L6	3/8"	1/4"	1-1/16"	7LX124SC	7LX124DC
SL-4L6	1/2"	1/4"	1-1/8"	7LX132SC	7LX132DC

## 7000M

Shape: Cone

Use: Surface Machining & Narrow Contour Work



SM Burr Profile

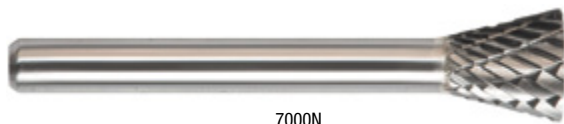
Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
<b>Series 7000M – Cone Shape</b>					
SM-1	1/4"	1/4"	1/2"	7M116ASC	7M116ADC
SM-2	1/4"	1/4"	3/4"	7M116BSC	7M116BDC
SM-3	1/4"	1/4"	1"	7M116CSC	7M116CDC
SM-3L	1/4"	1/4"	1-1/4"	7M116DSC	7M116DDC
SM-4	3/8"	1/4"	5/8"	7M124ASC	7M124ADC
SM-4L	3/8"	1/4"	1"	7M124BSC	7M124BDC
SM-5	1/2"	1/4"	7/8"	7M132ASC	7M132ADC
SM-6	5/8"	1/4"	1"	7M140ASC	7M140ADC
<b>Series 7000M – Miniature</b>					
SM-41	1/8"	1/8"	11/32"	70M041SC	70M041DC
SM-42	1/8"	1/8"	7/16"	70M042SC	70M042DC
SM-43	1/8"	1/8"	1/2"	70M043SC	70M043DC
SM-51	1/4"	1/8"	1/2"	70M051SC	70M051DC
SM-53	3/16"	1/8"	1/2"	70M053SC	70M053DC
SM-61	3/32"	3/32"	1/4"	70M061SC	70M061DC
SM-42L2	1/8"	1/8"	7/16"	7M42L2SC	7M42L2DC
SM-42L3	1/8"	1/8"	7/16"	7M42L3SC	7M42L3DC

## 7000N / 7000NE

7000N: Shape: Inverted cone

7000NE: Shape: Inverted cone with end cut

Use: Machining from the rear in hard to reach areas



SN Burr Profile

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
<b>Series 7000N – Inverted Cone</b>					
SN-1	1/4"	1/4"	5/16"	7N116ASC	7N116ADC
SN-2	3/8"	1/4"	3/8"	7N124ASC	7N124ADC
SN-4	1/2"	1/4"	1/2"	7N132ASC	7N132ADC
SN-6	5/8"	1/4"	3/4"	7N140ASC	7N140ADC
SN-7	3/4"	1/4"	5/8"	7N148ASC	7N148ADC
<b>Series 7000N – Miniature</b>					
SN-41	1/8"	1/8"	1/8"	70N041SC	70N041DC
SN-42	1/8"	1/8"	3/16"	70N042SC	70N042DC
SN-51	1/4"	1/8"	1/4"	70N051SC	70N051DC
SN-53	3/16"	1/8"	1/4"	70N053SC	70N053DC
SN-61	3/32"	3/32"	1/8"	70N061SC	70N061DC
SN-81	3/16"	3/16"	1/4"	70N081SC	70N081DC
<b>Series 7000NE – Inverted Cone With End Cut</b>					
SN-1E	1/4"	1/4"	5/16"	7N116ESC	7N116EDC
SN-2E	3/8"	1/4"	3/8"	7N124ESC	7N124EDC
SN-4E	1/2"	1/4"	1/2"	7N132ESC	7N132EDC
SN-7E	3/4"	1/4"	5/8"	7N148ESC	7N148EDC

# ALUMINIUM/NON-FERROUS CUT BURRS

Aluminum cut burrs have more aggressive cutting edges for rapid stock removal with minimum chip. Ideal for aluminum and other non-ferrous materials.

## 7000AAL

Shape: Cylindrical



7000AAL

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Order No.
<b>Series 7000AAL – Cylindrical</b>				
SA-1NF	1/4"	1/4"	3/4"	7AAL116
SA-3NF	3/8"	1/4"	3/4"	7AAL124
SA-5NF	1/2"	1/4"	1"	7AAL132
SA-6NF	5/8"	1/4"	1"	7AAL140
SA-7NF	3/4"	1/4"	1"	7AAL148

## 7000CAL

Shape: Cylindrical Ball Nose



7000CAL

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Order No.
<b>Series 7000CAL – Cylindrical Ball Nose</b>				
SC-1NF	1/4"	1/4"	3/4"	7CAL116
SC-3NF	3/8"	1/4"	3/4"	7CAL124
SC-5NF	1/2"	1/4"	1"	7CAL132
SC-6NF	5/8"	1/4"	1"	7CAL140
SC-7NF	3/4"	1/4"	1"	7CAL148

## 7000DAL

Shape: Ball



7000DAL

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Order No.
<b>Series 7000DAL – Ball Shape</b>				
SD-1NF	1/4"	1/4"	7/32"	7DAL116
SD-3NF	3/8"	1/4"	5/16"	7DAL124
SD-5NF	1/2"	1/4"	7/16"	7DAL132
SD-6NF	5/8"	1/4"	9/16"	7DAL140
SD-7NF	3/4"	1/4"	11/16"	7DAL148

## 7000EAL

Shape: Oval



7000EAL

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Order No.
<b>Series 7000EAL – Oval Shape</b>				
SE-1NF	1/4"	1/4"	7/32"	7EAL116
SE-3NF	3/8"	1/4"	5/16"	7EAL124
SE-5NF	1/2"	1/4"	7/16"	7EAL132
SE-6NF	5/8"	1/4"	9/16"	7EAL140
SE-7NF	3/4"	1/4"	11/16"	7EAL148

## 7000FAL

Shape: Round Tree



7000FAL

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Order No.
<b>Series 7000FAL – Round Tree Shape</b>				
SF-1NF	1/4"	1/4"	3/4"	7FAL116
SF-3NF	3/8"	1/4"	3/4"	7FAL124
SF-5NF	1/2"	1/4"	1"	7FAL132
SF-6NF	5/8"	1/4"	1"	7FAL140
SF-14NF	3/4"	1/4"	1-1/4"	7FAL148

## 7000LAL

Shape: 14° Included Angle



7000LAL

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Order No.
<b>Series 7000LAL – 14° Included Angle</b>				
SL-1NF	1/4"	1/4"	5/8"	7LAL116
SL-3NF	3/8"	1/4"	1-1/16"	7LAL124
SL-4NF	1/2"	1/4"	1-1/8"	7LAL132
SL-5NF	5/8"	1/4"	1-3/16"	7LAL140
SL-6NF	5/8"	1/4"	1-5/16"	7LAL140A







## BURRS SETS

Set No.	No. of Pieces	Shank Sizes	Includes	Single Cut Order No.	Double Cut Order No.
<b>Carbide Burr Sets</b>					
1	8	1/4	SA-1, SC-1, SD-1, SE-1, SF-1, SG-1, SL-1, SM-1	70S001SC	70S001DC
2	8	1/4	SA-3, SC-3, SD-3, SE-3, SF-3, SG-3, SL-3, SM-4	70S002SC	70S002DC
3	8	1/4	SA-5, SC-5, SD-5, SE-5, SF-5, SG-5, SL-4, SM-5	70S003SC	70S003DC
4	10	1/4	SA-1, SA-3, SA-5, SC-1, SC-3, SC-5, SD-3, SF-3, SF-5, SH-1	70S004SC	70S004DC
5	10	1/4	SA-5, SC-3, SC-5, SD-5, SE-3, SF-3, SF-5, SG-3, SG-5, SL-4	70S005SC	70S005DC
6	8	1/8	SA-43, SC-42, SD-42, SE-41, SF-42, SG-42, SL-41, SN-42	70S006SC	70S006DC
7	8	1/8	SA-51, SB-51, SC-51, SD-51, SE-51, SF-51, SG-51, SM-51	70S007SC	70S007DC
8	5	1/4	SA-5, SC-5, SF-5, SG-5, SM-5	N/A	70S011DC
<b>Aluminum/Non Ferrous Cut</b>					
10	8	1/4	SA-3NF, SA-5NF, SC-3NF, SC-5NF, SD-3NF, SF-3NF, SF-5NF, SL-3NF	70S010NF	



70S004DC



70S011DC

<b>WALTER Carbide Burr Kit</b>		Order No.
<b>Description</b>		
Carbide Burr Production Kit Contains one of each of the following: 01V002, 006, 011, 015 and 018		01V990
5-Piece Alu Cut Carbide Burr Kit		01V995
10-Piece Double Cut Carbide Burr Kit		01V996

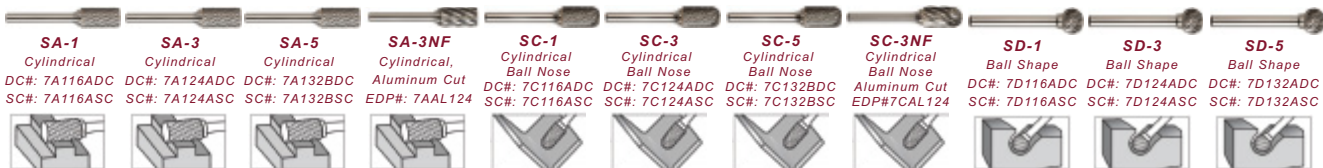


## BURRS DISPLAY

- ▷ Burrs are "Made in the USA" at our own state-of-the-art manufacturing facility
- ▷ A wide range of popular styles and sizes
- ▷ Comes complete with attractive, compact and light-weight acrylic display, ideal for your showroom and managing your inventory
- ▷ Display has a lock for added security. There is a shelf hidden in the back for holding additional replenishment inventory, or empty packages
- ▷ Available in 33, 66, or 99 pieces. The display holds 33 pieces (1 of each). The 66-piece display provides you with an extra piece of each for replenishment of the display. The 99-piece display provides you with 2 extra pieces of each.
- ▷ Detailed labels (sample pictured below) make filling the display simple and easy



Storage drawer in back of display



Displays	Each Set Contains The Following DC & NF Burrs:	Single Cut Order No.	Double Cut Order No.
33-Piece Display (1 of Each Burr)	SA-1, SA-3, SA-5, SA-3NF, SC-1, SC-3, SC-5, SC-3NF, SD-1, SD-3, SD-5, SE-1, SE-3, SE-5, SE-3NF, SF-1, SF-3, SF-5, SF-3NF, SG-1, SG-3, SG-5, SH-1, SH-5, SJ-1, SJ-3, SL-1, SL-3, SL-4, SL-3NF, SM-1, SM-4, SM-5	70S033SC	70S033DC
66-Piece Display (2 of Each Burr)		70S066SC	70S066DC
99-Piece Display (3 of Each Burr)		70S099SC	70S099DC

# POINT GRINDER

## DIALSPEED™ 6141

### For fitting and finishing work

The convenient design of this very popular point grinder results in increased performance and operator comfort to let you reach new levels of productivity. Proven electronics and the quality construction of the motor deliver more power to the spindle while the ergonomic housing minimizes fatigue. This tool is the perfect companion to our premium carbide burrs for any deburring or shaping applications.



RPM	
SPEED 1	10,000 rpm
SPEED 2	14,000 rpm
SPEED 3	18,500 rpm
SPEED 4	22,000 rpm
SPEED 5	26,000 rpm
SPEED 6	30,500 rpm

DIALSPEED™ 6141	
Model name	6141E
Order No.	30A141
Lock-on switch	✓
AC/DC compatibility	AC compatibility only
Soft-Start™	✓
Restart protection	✓
DYNAMAX™ RPM monitoring	✓
POWERGUARD™ overheat protection	✓
DIALSPEED™ variable RPM selector	✓
Collet	1/4"
RPM no-load	10,000 to 30,500
Amps	6.4 A
Power	710 W
Tool weight	4.2 lbs
Tool length	13.75"
Maximum wheel diameter	1.5"
<b>Standard equipment</b>	
1/4 collet	30B046
Spanner	48Z019
<b>Optional equipment</b>	
Cutting guard	30B051

Flexible shaft	
Description	Order No.
For delicate finishing work with 6141 and 6145. 1/4" collet, 5 ft. long.	30B050


















# TECHNICAL INFORMATION

## BURR SELECTION CHART

Head Style	Description	Use	
SA	Cylindrical	Deburring	
SB	Cylindrical with end cut	Interior Contour Work	
SC	Cylindrical Ball Nose	Surface Milling & Contour Work	
SD	Ball Shape	Surface Milling, Deburring, & Contour Work	
SE	Oval Shape	Contour Work	
SF	Round Tree Shape	Narrow Contour Work	
SG	Pointed Tree Shape	Surface Milling & Narrow Contour Work	
SH	Flame Shape	Contour Work	
SJ	60° Included Angle	Machining of Acute Angle Areas & Countersinking	
SK	90° Included Angle	Machining of Acute Angle Areas & Countersinking	
SL	14° Included Angle	Surface Machining & Narrow Contour Work	
SM	Cone Shape	Surface Machining & Narrow Contour Work	
SN	Inverted Cone	Machining from the Rear in hard to reach areas	
SNE	Inverted Cone with end cut	Machining from the Rear in hard to reach areas	

## TECHNICAL INFORMATION

### Head Profiles / RPM Chart / Speed Recommendations



#### Single Cut

DRILLCO's Single Cut produces a smooth finish for general purpose use on steel, cast iron and other ferrous and non-ferrous materials. Most of DRILLCO's Carbide Burrs are available in the Single Cut right hand spiral design.



#### Double Cut

DRILLCO's Double Cut, with its chisel type cutting edge, is a machine ground tool built to exacting tolerances of concentricity, size and shape. When combined with precision grinders, this accuracy results in smooth running, fast metal removal and fine finishes.

The right and left hand helical flutes combine to produce a chisel-type cutting tooth. This results in faster penetration and stock removal with minimal bounce or chatter. The Double Cut design also produces an easy-to-handle granular type chip, in most metals, as opposed to the conventional sliver type chips. Throughout its life, the Double Cut gives faster stock removal, less operator fatigue, and maintains a good finish on the widest possible variety of materials.



#### Chip Breaker

The addition of a chip breaker will reduce sliver size and improve operator control at a slightly reduced surface finish. Available through special order only.



#### Diamond Cut

The Diamond Cut is very effective in heat-treated and tough alloy steels, producing extremely small chips. It offers very good operator control with good stock removal at the sacrifice of finish. The diamond grind will reduce tool life, however. Available through special order only.



#### Aluminum Cut

DRILLCO's Aluminum Cut burrs are outstanding on soft or non-ferrous type materials. Use the Aluminum Cut design on aluminum, magnesium, brass, lead and most plastics.

RPM Chart	
Burr Diameter	RPM
1/16"	60,000 - 90,000
1/8"	40,000 - 70,000
3/16"	35,000 - 60,000
1/4"	30,000 - 50,000
5/16"	20,000 - 40,000
3/8"	20,000 - 40,000
7/16"	15,000 - 40,000
1/2"	15,000 - 40,000
5/8"	12,000 - 25,000
3/4"	10,000 - 20,000
1"	7,500 - 20,000
1-1/8"	7,000 - 13,000
1-1/2"	5,000 - 10,000
1-3/4"	4,500 - 9,000
2"	4,000 - 8,000

### Speed

High speeds are essential for efficient and economical use of a carbide burr. At high speeds, there will be less tendency for chips to build up in the flute. Also, the burr will cut more freely in corners or pockets and reduce the chances of jamming or wedging.

The selection of operating speeds for a carbide burr is usually less exacting than for most other cutting tools. Rather than specify a different grinder speed for every burr diameter used, one grinder will normally be used for many different burr sizes. However, for most efficient operations, the grinder should be specified with consideration given to the diameter of the burrs that will be used.

Carbide burrs should operate between 1,500 and 3,000 surface feet per minute. Using these guidelines, a grinder can be selected that will efficiently work with a broad range of burr sizes. For example, a 30,000 RPM grinder can be used with a 3/16" to a 3/8" diameter burr. A 22,000 RPM grinder will be satisfactory for burrs ranging from 1/4" to 1/2".

Speeds are an important factor in achieving desired stock removal rates and workpiece finish. Increasing the speed will improve finishes, while lower speeds will remove material more rapidly.



05

ANNULAR CUTTERS



# QUICK PAGES REFERENCES

## ANNULAR CUTTERS



### High Speed Steel

**Bright Finish**  
For low-to-medium tensile strength materials

Type	Series	Catalog page reference
	9100SE, 9200SE	416
	9300SE, 9400SE	417



### High Speed Steel + Aluminum (M2Al)

**Bronze Surface Treatment**  
For most materials

Type	Series	Catalog page reference
SST	05-A, 05-E	418



### Coated High Speed Steel + Aluminum (M2Al)

**Chromium Aluminium Based Coating**  
For longer tool life

Type	Series	Catalog page reference
ICECUT™	05-B, 05-F	419



### Cobalt Annular Cutters *NITRO*

**Bronze Finish**  
For long life on stainless steel, titanium, high tensile steel, other hard materials

Type	Series	Catalog page reference
	9100N, 9200N, 9300N	420



### Carbide Tipped Annular Cutters

**Bright Finish**  
For high performance on cast iron, cast steel, other hard materials

Type	Series	Catalog page reference
	9100CT, 9200CT	421



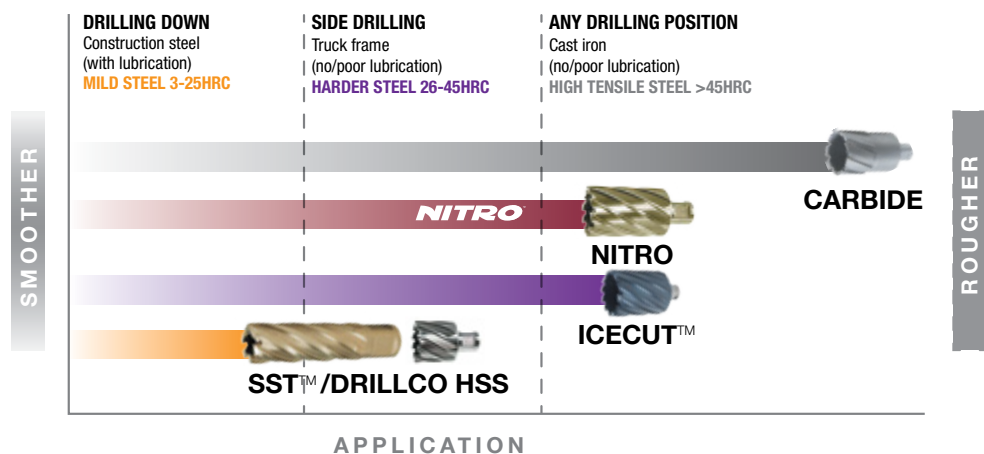
### Carbide Tipped Annular Cutters

**Bright Finish**  
For high performance on cast iron, cast steel, other hard materials

Type	Series	Catalog page reference
	05-D, 05-F, 05-H	422



## ANNULAR CUTTERS PERFORMANCE CHART





# ANNULAR CUTTERS EXPLAINED

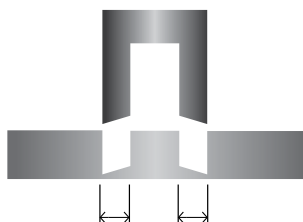
## HIGH-PERFORMANCE ANNULAR CUTTERS

When drilling large holes through thick, flat metal surfaces, it is often more cost-effective to use an annular cutter, which cuts at the circumference of the circle, instead of cutting through the entire area of the circle. This allows you to make holes faster and more efficiently.

WALTER annular cutters are made from a high-speed steel and aluminum blend (M2Al) that enhances toughness and durability, extending their lifespan. Unlike conventional cutting tools enhanced with cobalt (HSCo), which can become brittle and prone to breakage, WALTER'S advanced HSS blend reduces brittleness, providing superior performance under load.

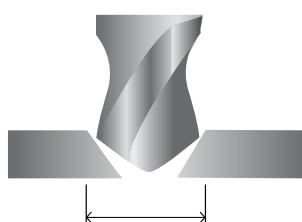
Through graduated hardening and the addition of aluminum, WALTER core cutters gain "micro-flexibility," making them less brittle and longer-lasting than regular HSCo annular cutters. The exclusive triple tooth design and special fluting angle optimize chip evacuation and eliminate debris. WALTER'S AlCrN coating on the ICECUT™ line forms a self-lubricating nano-layer when heated, preventing materials from sticking, melting, or deforming. ICECUT™ annular cutters offer the longest lifespan among coated HSS annular cutters.

Annular cutters

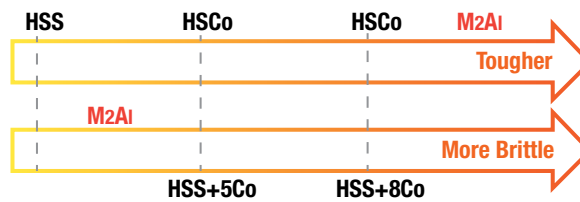


Less metal-to-metal contact reduces friction, thus reducing heat, increasing tool life and efficiency

Regular twist drills



More metal-to-metal contact increases friction and heat, causing tooling to wear prematurely and resulting in longer cutting time



Adding Cobalt makes cutters more resistant to wear, but also more brittle which makes them more susceptible to breakage under pressure. M2Al provides an ideal blend of extreme toughness without a kind of "micro-flexibility" not found in standard cobalt blends.

## Annular Cutter Selection Chart. Match the Best Cutter for your Application

SPECIFICATIONS	SST™ Core Cut/DRILLCO HSS	ICECUT™	NITRO™ Cobalt	Carbide (WALTER/DRILLCO)
Diameter Range	1/2" - 4"	1/2" - 2-3/8"	7/16" - 2-1/4"	1/2" - 4"
Drilling Depth	1", 2", 3" and 4"	Up to 4" depth cutters on selected items	1", 2" and 3"	1-1/2", 2", 3", 4"
Shank Size	3/4" and 1-1/4"	3/4"	3/4"	3/4", 1-1/4"
Shank Type	Universal & Weldon shank with 2 flats	Universal & Weldon shank with 2 flats	Weldon shank	Universal & Weldon shank with 2 flats*
MATERIAL				
Mild Steel (3 to 25 HRC)	✓	✓	✓	✓
Harder Steel (26 to 45 HRC)	✓	✓	✓	✓
Stainless Steel (300 and 400 series)	✓	✓	✓	✓
Cast Iron	—	✓	✓	✓
Aluminum	✓	✓	✓	✓
Brass and Bronze	✓	✓	✓	✓
Hardox / Scandia	—	—	✓	✓
Rough / Uneven material	—	—	✓	✓
Railroad Track	—	—	✓	✓
CHARACTERISTICS				
Cutting Speed	Fast	Very Fast	Very Fast	Extra Fast
Cutter Life	Long	Very Long	Very Long	Extra Long

✓ Highly Recommended  
 ✓ Recommended

\*Metric line available

# HIGH SPEED STEEL ANNULAR CUTTERS



Produce large diameter holes efficiently and quickly with less energy

Rather than drilling out the metal with a solid drill, DRILLCO cutters remove only the periphery of the hole, ejecting a slug at the end of the cut.

- ▷ For a wide range of materials
- ▷ Up to 4" diameter and 4" depth of cut
- ▷ Weldon Shank



## 9100SE SERIES HIGH SPEED STEEL 1" Depth of Cut Fractional



3/4" SHANK		
Size	HSS 9100SE Order No.	HSS 9100SE WITH PINS
7/16"	91SE128	91SE128K
1/2"	91SE132	91SE132K
9/16"	91SE136	91SE136K
5/8"	91SE140	91SE140K
11/16"	91SE144	91SE144K
3/4"	91SE148	91SE148K
13/16"	91SE152	91SE152K
7/8"	91SE156	91SE156K
15/16"	91SE160	91SE160K
1"	91SE164	91SE164K
1-1/16"	91SE204	91SE204K
1-1/8"	91SE208	91SE208K
1-3/16"	91SE212	91SE212K
1-1/4"	91SE216	91SE216K
1-5/16"	91SE220	91SE220K
1-3/8"	91SE224	91SE224K
1-7/16"	91SE228	91SE228K
1-1/2"	91SE232	91SE232K
1-9/16"	91SE236	-
1-5/8"	91SE240	-
1-11/16"	91SE244	-
1-3/4"	91SE248	-
1-13/16"	91SE252	-
1-7/8"	91SE256	-
1-15/16"	91SE260	-
2"	91SE264	-
2-1/16"	91SE304	-
2-1/8"	91SE308	-
2-3/16"	91SE312	-
2-1/4"	91SE316	-
2-5/16"	91SE320	-
2-3/8"	91SE324	-
2-7/16"	91SE328	-
2-1/2"	91SE332	-
2-9/16"	91SE336	-

1-1/4" SHANK	
Size	HSS 9100SE Order No.
2-5/8"	91SE340
2-11/16"	91SE344
2-3/4"	91SE348
2-13/16"	91SE352
2-7/8"	91SE356
2-15/16"	91SE360
3"	91SE364
3-1/16"	91SE404
3-1/8"	91SE408
3-3/16"	91SE412
3-1/4"	91SE416
3-5/16"	91SE420
3-3/8"	91SE424
3-7/16"	91SE428
3-1/2"	91SE432
3-9/16"	91SE436
3-5/8"	91SE440
3-11/16"	91SE444
3-3/4"	91SE448
3-13/16"	91SE452
3-7/8"	91SE456
3-15/16"	91SE460
4"	91SE464

HSS & Cobalt Annular Cutter Pilot Pins	
Description	Order No.
1" depth of cut pilot pin for 1/2" – 2-1/4"	91SE001
1" depth of cut pilot pin for 7/16"	91SE002
1" depth of cut pilot pin for 2-5/16" & larger sizes	91SE003



91SE7S

## 9200SE SERIES HIGH SPEED STEEL 2" Depth of Cut Fractional



3/4" SHANK		
Size	HSS 9200SE Order No.	HSS 9200SE WITH PINS
7/16"	92SE128	92SE128K
1/2"	92SE132	92SE132K
9/16"	92SE136	92SE136K
5/8"	92SE140	92SE140K
11/16"	92SE144	92SE144K
3/4"	92SE148	92SE148K
13/16"	92SE152	92SE152K
7/8"	92SE156	92SE156K
15/16"	92SE160	92SE160K
1"	92SE164	92SE164K
1-1/16"	92SE204	92SE204K
1-1/8"	92SE208	92SE208K
1-3/16"	92SE212	92SE212K
1-1/4"	92SE216	92SE216K
1-5/16"	92SE220	92SE220K
1-3/8"	92SE224	92SE224K
1-7/16"	92SE228	92SE228K
1-1/2"	92SE232	92SE232K
1-9/16"	92SE236	-
1-5/8"	92SE240	-
1-11/16"	92SE244	-
1-3/4"	92SE248	-
1-13/16"	92SE252	-
1-7/8"	92SE256	-
1-15/16"	92SE260	-
2"	92SE264	-
2-1/16"	92SE304	-
2-1/8"	92SE308	-
2-3/16"	92SE312	-
2-1/4"	92SE316	-
2-5/16"	92SE320	-
2-3/8"	92SE324	-
2-7/16"	92SE328	-
2-1/2"	92SE332	-
2-9/16"	92SE336	-

1-1/4" SHANK	
Size	9200SE Order No.
2-5/8"	92SE340
2-11/16"	92SE344
2-3/4"	92SE348
2-13/16"	92SE352
2-7/8"	92SE356
2-15/16"	92SE360
3"	92SE364
3-1/16"	92SE404
3-1/8"	92SE408
3-3/16"	92SE412
3-1/4"	92SE416
3-5/16"	92SE420
3-3/8"	92SE424
3-1/2"	92SE432
3-9/16"	92SE436
3-5/8"	92SE440
3-11/16"	92SE444
3-3/4"	92SE448
3-13/16"	92SE452
3-7/8"	92SE456
4"	92SE464

HSS & Cobalt Annular Cutter Pilot Pins	
Description	Order No.
2" depth of cut pilot pin for 1/2" – 2-1/4"	92SE001
2" depth of cut pilot pin for 7/16" only	92SE002
2" depth of cut pilot pin for 2-5/16" & larger sizes	92SE003

HSS Annular Cutters Sets	
Includes	
9/16", 5/8", 11/16", 3/4", 13/16", 15/16", and pilot pin	
Depth of Cut	Order No.
1" Depth of Cut	91SE7S
2" Depth of Cut	92SE7S

**9300SE SERIES**  
**HIGH SPEED STEEL**  
3" Depth of Cut  
Fractional



**9400SE SERIES**  
**HIGH SPEED STEEL**  
4" Depth of Cut  
Fractional



3/4" SHANK	
Size	HSS 9300SE Order No.
3/4"	93SE148
13/16"	93SE152
7/8"	93SE156
15/16"	93SE160
1"	93SE164
1-1/16"	93SE204
1-1/8"	93SE208
1-3/16"	93SE212
1-1/4"	93SE216
1-5/16"	93SE220
1-3/8"	93SE224
1-7/16"	93SE228
1-1/2"	93SE232
1-9/16"	93SE236
1-5/8"	93SE240
1-11/16"	93SE244
1-3/4"	93SE248
1-13/16"	93SE252
1-7/8"	93SE256
1-15/16"	93SE260
2"	93SE264
2-1/16"	93SE304
2-1/8"	93SE308
2-3/16"	93SE312
2-1/4"	93SE316
2-5/16"	93SE320
2-3/8"	93SE324
2-7/16"	93SE328
2-1/2"	93SE332
2-9/16"	93SE336

1-1/4" SHANK	
Size	9300SE Order No.
2-5/8"	93SE340
2-11/16"	93SE344
2-3/4"	93SE348
2-13/16"	93SE352
2-7/8"	93SE356
2-15/16"	93SE360
3"	93SE364
3-1/16"	93SE404
3-1/8"	93SE408
3-3/16"	93SE412
3-1/4"	93SE416
3-5/16"	93SE420
3-3/8"	93SE424
3-7/16"	93SE428
3-1/2"	93SE432
3-9/16"	93SE436
3-5/8"	93SE440
3-11/16"	93SE444
3-3/4"	93SE448
3-13/16"	93SE452
3-7/8"	93SE456
3-15/16"	93SE460
4"	93SE464

3/4" SHANK	
Size	9400SE Order No.
3/4"	94SE148
13/16"	94SE152
7/8"	94SE156
15/16"	94SE160
1"	94SE164
1-1/16"	94SE204
1-1/8"	94SE208
1-3/16"	94SE212
1-1/4"	94SE216
1-5/16"	94SE220
1-3/8"	94SE224
1-7/16"	94SE228
1-1/2"	94SE232
1-9/16"	94SE236
1-5/8"	94SE240
1-11/16"	94SE244
1-3/4"	94SE248
1-13/16"	94SE252
1-7/8"	94SE256
1-15/16"	94SE260
2"	94SE264
2-1/16"	94SE304
2-1/8"	94SE308
2-3/16"	94SE312
2-1/4"	94SE316
2-5/16"	94SE320
2-3/8"	94SE324
2-7/16"	94SE328
2-1/2"	94SE332
2-9/16"	94SE336

1-1/4" SHANK	
Size	9400SE Order No.
2-5/8"	94SE340
2-11/16"	94SE344
2-3/4"	94SE348
2-13/16"	94SE352
2-7/8"	94SE356
2-15/16"	94SE360
3"	94SE364
3-1/16"	94SE404
3-1/8"	94SE408
3-3/16"	94SE412
3-1/4"	94SE416
3-5/16"	94SE420
3-3/8"	94SE424
3-7/16"	94SE428
3-1/2"	94SE432
3-9/16"	94SE436
3-5/8"	94SE440
3-11/16"	94SE444
3-3/4"	94SE448
3-13/16"	94SE452
3-7/8"	94SE456
3-15/16"	94SE460
4"	94SE464

Annular Cutter Pilot Pin	
Description	Order No.
3" depth of cut pilot pin for 2-5/16" & larger sizes	93SE003

Annular Cutter Pilot Pin	
Description	Order No.
3" depth of cut pilot pin for 1/2" - 2-1/4"	93SE001

Annular Cutter Pilot Pin	
Description	Order No.
4" depth of cut pilot pin for 1/2" thru 1-7/16" sizes	94SE001
4" depth of cut pilot pin for 1-1/2" and larger sizes	94SE003



Annular Cutters 32.pc Fractional Sizes display			
Material	Series	Includes	Item Number
NITRO® (Cobalt)	9100N & 9200N	1 each of the following: 1/2, 5/8, 11/16, 3/4,	912N32D
High Speed Steel	9100SE & 9200SE	13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins	912SE32D
Carbide Tipped	9100CT & 9200CT	1 each of the following: 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins	912CT32D



## 05 HIGH SPEED STEEL SST™ CORE CUT ANNULAR CUTTERS

### 05A / 05E Series

#### HIGH SPEED STEEL

1", 2" & 3" Depth of Cut  
Fractional

**Guaranteed to outperform all uncoated cutters**

Super Speed Tip (SST) Core Cutters are made with state-of-the-art surface treatment technology that removes porosity during the fabrication process. This creates a perfectly smooth finish which allows for a better evacuation of material while cutting. It also helps to improve product life and reduce cutting time as it decreases friction with the work surface, which in turn reduces the amount of heat generated.

- ▷ Cuts faster
- ▷ Lasts longer
- ▷ Universal shank
- ▷ Exclusive SST surface treatment
- ▷ Multiple tooth design
- ▷ Packaged in reusable plastic packaging



Diameter		Std pkg	Weldon Shank			Universal Shank	
Inches	mm		1" cutters	2" cutters	3" cutters	1" cutters	2" cutters
Use with pilot pin			Order No.	Order No.	Order No.	Order No.	Order No.
7/16"	11.1	1	05Z001	05Z002	05Z018	05Z001	05Z002
						05E007*	
						*Use with pilot pin 05Z029	
1/2"	12.7	1	05A008	05A308		05E008	05E308
9/16"	14.3	1	05A009	05A309		05E009	05E309
5/8"	15.9	1	05A010	05A310		05E010	05E310
11/16"	17.5	1	05A011	05A311	05A611	05E011	05E311
3/4"	19.0	1	05A012	05A312		05E012	05E312
13/16"	20.6	1	05A013	05A313	05A613	05E013	05E313
7/8"	22.2	1	05A014	05A314		05E014	05E314
15/16"	23.8	1	05A015	05A315	05A615	05E015	05E315
1"	25.4	1	05A100	05A400		05E100	05E400
1-1/16"	27.0	1	05A101	05A401	05A701	05E101	05E401
1-1/8"	28.6	1	05A102	05A402		05E102	05E402
1-3/16"	30.2	1	05A103	05A403		05E103	05E403
1-1/4"	31.8	1	05A104	05A404		05E104	05E404
1-5/16"	33.3	1	05A105	05A405		05E105	05E405
1-3/8"	34.9	1	05A106	05A406		05E106	05E406
1-7/16"	36.5	1	05A107	05A407		05E107	05E407
1-1/2"	38.1	1	05A108	05A408		05E108	05E408
1-9/16"	39.7	1	05A109	05A409			05E409
1-5/8"	41.3	1	05A110	05A410			
1-3/4"	44.5	1	05A112	05A412			
1-13/16"	46.0	1	05A113	05A413			
1 7/8"	47.6	1	05A114	05A414			
1-15/16"	49.2	1	05A115	05A415			
2"	51.0	1	05A200	05A500			
2-1/16"	52.4	1	05A201	05A501			
2-1/8"	54.0	1	05A202	05A502			
2-3/16"	55.6	1	—	05A503			
2-1/4"	57.2	1		05A504			
2-5/16"	58.7	1		05A505			
2-3/8"	60.3	1		05A506			

Other sizes are available upon special request. Please speak with your WALTER sales representative.



SST Core Cut Kits	
<b>Material</b>	
Special bronze SST surface treatment Weldon shank	
<b>Includes</b>	
1 of each diameter: 9/16", 11/16", 13/16", 15/16", 1", 1-1/16" and pilot pin"	
Depth of Cut	Item Number
1" annular cutter kit	05A991
2" annular cutter kit	05A992



# COATED HIGH SPEED STEEL ICECUT™ ANNULAR CORE CUTTERS

## 05B / 05F Series

### COATED HIGH SPEED STEEL

1", 2", 3" & 4" Depth of Cut  
Fractional

**Guaranteed to cut more holes in less time!**

ICECUT™ annular cutters are coated with an exclusive chromium and aluminum blend (AlCrN), designed for use where lubricants are not permitted or difficult to apply. This technology outperforms cutters coated with Titanium Nitride (TiN) or Titanium Aluminum Nitride (TiAlN). The AlCrN coating generates less heat and withstands temperatures at least 200°C higher than TiAlN cutters, making ICECUT™ more resistant to stress and impact under load.



- ▷ Well-known quality and durability
- ▷ Lasts longer than uncoated core cutters
- ▷ Exclusive ICECUT™ AlCrN coating
- ▷ Fully ground extra large flutes
- ▷ Packaged in reusable plastic packaging



#### ICECUT™ Core Cut Kits

##### Material

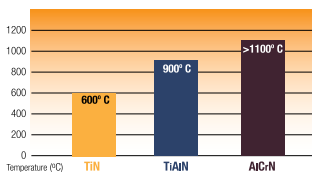
Exclusive ICECUT™ surface coating  
Weldon shank

##### Includes

1 of each diameter:  
9/16", 11/16", 13/16", 15/16", 1",  
1-1/16" and pilot pin

Depth of Cut	Item Number
1" annular cutter kit	05B991
2" annular cutter kit	05B992

Maximum temperature before deformation



Diameter		Std pkg	Weldon Shank				Universal Shank	
Inches	mm		1" cutters Order No.	2" cutters Order No.	3" cutters Order No.	4" cutters Order No.	1" cutters Order No.	2" cutters Order No.
Use with pilot pin			05W001	05W002	05W018 05W032	05Z031 05Z033	05Z001	05Z002
7/16"	11.1	1					05F007* *Use with pilot pin 05Z029	05F307* *Use with pilot pin 05Z030
1/2"	12.7	1	05B008	05B308			05F008	05F308
9/16"	14.3	1	05B009	05B309			05F009	05F309
5/8"	15.9	1	05B010	05B310			05F010	05F310
11/16"	17.5	1	05B011	05B311	05B611	05B811	05F011	05F311
3/4"	19.0	1	05B012	05B312			05F012	05F312
13/16"	20.6	1	05B013	05B313	05B613	05B813	05F013	05F313
7/8"	22.2	1	05B014	05B314			05F014	05F314
15/16"	23.8	1	05B015	05B315	05B615	05B815	05F015	05F315
1"	25.4	1	05B100	05B400			05F100	05F400
1-1/16"	27.0	1	05B101	05B401	05B701	05B901	05F101	05F401
1-1/8"	28.6	1	05B102	05B402			05F102	05F402
1-3/16"	30.2	1	05B103	05B403			05F103	05F403
1-1/4"	31.8	1	05B104	05B404			05F104	05F404
1-5/16"	33.3	1	05B105	05B405			05F105	05F405
1-3/8"	34.9	1	05B106	05B406			05F106	05F406
1-7/16"	36.5	1	05B107	05B407			05F107	05F407
1-1/2"	38.1	1	05B108	05B408			05F108	05F408
1-9/16"	39.7	1	05B109	05B409				
1-5/8"	41.3	1	05B110	05B410				
1-3/4"	44.5	1	05B112	05B412				
1-13/16"	46.0	1	05B113	05B413				
1-7/8"	47.6	1	05B114	05B414				
1-15/16"	49.2	1	05B115	05B415				
2"	51.0	1	05B200	05B500				
2-1/16"	52.4	1	05B201	05B501				
2-1/8"	54.0	1	05B202	05B502				
2-3/16"	55.6	1		05B503				
2-1/4"	57.2	1		05B504				
2-5/16"	58.7	1		05B505				
2-3/8"	60.3	1		05B506				

Other sizes are available upon special request. Please speak with your WALTER sales representative.

# COBALT ANNULAR CUTTERS

Offer even better performance over the standard High Speed Steel ranges

- ▷ Cobalt substrate helps deflect heat, allowing for faster speeds and feeds than HSS annular cutters
- ▷ Suitable for more demanding applications, such as stainless steel and titanium
- ▷ Bronze surface treatment for added lubricity
- ▷ Weldon Shank

## 9100N SERIES

**COBALT**

1" Depth of Cut  
Fractional



3/4" SHANK	
Size	NITRO® 9100N Order No.
7/16"	91N128
1/2"	91N132
9/16"	91N136
5/8"	91N140
11/16"	91N144
3/4"	91N148
13/16"	91N152
7/8"	91N156
15/16"	91N160
1"	91N164
1-1/16"	91N204
1-1/8"	91N208
1-3/16"	91N212
1-1/4"	91N216
1-5/16"	91N220
1-3/8"	91N224
1-7/16"	91N228
1-1/2"	91N232
1-9/16"	91N236
1-5/8"	91N240
1-11/16"	91N244
1-3/4"	91N248
1-13/16"	91N252
1-7/8"	91N256
1-15/16"	91N260
2"	91N264
2-1/16"	91N304
2-1/8"	91N308
2-3/16"	91N312
2-1/4"	91N316



3/4" SHANK	
Size	NITRO® 9100N Order No.
2-5/16"	91N320
2-3/8"	91N324
2-7/16"	91N328
2-1/2"	91N332

HSS & Cobalt Annular Cutter Pilot Pins	
Description	Order No.
1" depth of cut pilot pin for 1/2" – 2-1/4"	91SE001
1" depth of cut pilot pin for 7/16"	91SE002
1" depth of cut pilot pin for 2-5/16" & larger sizes	91SE003

Cobalt Annular Cutters Sets Includes	
9/16", 5/8", 11/16", 3/4", 13/16", 15/16", and pilot pin	
Depth of Cut	Order No.
1" Depth of Cut	91N7S
2" Depth of Cut	92N7S

## 9200N SERIES

**COBALT**

2" Depth of Cut  
Fractional



3/4" SHANK	
Size	NITRO® 9200N Order No.
7/16"	92N128
1/2"	92N132
9/16"	92N136
5/8"	92N140
11/16"	92N144
3/4"	92N148
13/16"	92N152
7/8"	92N156
15/16"	92N160
1"	92N164
1-1/16"	92N204
1-1/8"	92N208
1-3/16"	92N212
1-1/4"	92N216
1-5/16"	92N220
1-3/8"	92N224
1-7/16"	92N228
1-1/2"	92N232
1-9/16"	92N236
1-5/8"	92N240
1-11/16"	92N244
1-3/4"	92N248
1-13/16"	92N252
1-7/8"	92N256
1-15/16"	92N260
2"	92N264
2-1/16"	92N304
2-1/8"	92N308
2-3/16"	92N312
2-1/4"	92N316

HSS & Cobalt Annular Cutter Pilot Pins	
Description	Order No.
2" depth of cut pilot pin for 1/2" – 2-1/4"	92SE001
2" depth of cut pilot pin for 7/16"	92SE002
2" depth of cut pilot pin for 2-5/16" & larger sizes	92SE003

## 9300N SERIES

**COBALT**

3" Depth of Cut  
Fractional



3/4" SHANK	
Size	NITRO® 9300N Order No.
3/4"	93N148
13/16"	93N152
7/8"	93N156
15/16"	93N160
1"	93N164
1-1/16"	93N204
1-1/8"	93N208
1-3/16"	93N212
1-1/4"	93N216
1-5/16"	93N220
1-3/8"	93N224
1-7/16"	93N228
1-1/2"	93N232
1-9/16"	93N236
1-5/8"	93N240
1-11/16"	93N244
1-3/4"	93N248
1-13/16"	93N252
1-7/8"	93N256
1-15/16"	93N260
2"	93N264
2-1/16"	93N304
2-1/8"	93N308
2-3/16"	93N312
2-1/4"	93N316

Annular Cutter Pilot Pin	
Description	Order No.
3" depth of cut pilot pin	93SE001

# CARBIDE TIPPED ANNULAR CUTTERS

Maximize the performance of any Magnetic Drill Machine

- ▷ Deliver reamer-quality, burr-free holes in a fraction of the time of a twist drill
- ▷ Eliminates the need for costly pilot holes & step drilling
- ▷ Larger diameters and depths available by special order
- ▷ Weldon Shank

## 9100CT SERIES CARBIDE TIPPED 1-3/8" Depth of Cut Fractional



3/4" SHANK	
Size	Carbide Tip 9100CT Order No.
7/16"	-
1/2"	-
9/16"	91CT136
5/8"	91CT140
11/16"	91CT144
3/4"	91CT148
13/16"	91CT152
7/8"	91CT156
15/16"	91CT160
1"	91CT164
1-1/16"	91CT204
1-1/8"	91CT208
1-3/16"	91CT212
1-1/4"	91CT216
1-5/16"	91CT220
1-3/8"	91CT224

Annular Cutter Pilot Pin	
Description	Order No.
1-3/8" depth of cut pilot pin for 3/4" and above	91CT001
1-3/8" depth of cut pilot pin for 9/16" - 11/16"	91CT002



## 9200CT SERIES CARBIDE TIPPED 2" Depth of Cut Fractional



3/4" SHANK	
Size	Carbide Tip 9200CT Order No.
7/16"	-
1/2"	-
9/16"	92CT136
5/8"	92CT140
11/16"	92CT144
3/4"	92CT148
13/16"	92CT152
7/8"	92CT156
15/16"	92CT160
1"	92CT164
1-1/16"	92CT204
1-1/8"	92CT208
1-3/16"	92CT212
1-1/4"	92CT216
1-5/16"	92CT220
1-3/8"	92CT224
1-7/16"	92CT228
1-1/2"	92CT232
1-9/16"	92CT236
1-5/8"	92CT240
1-11/16"	92CT244
1-3/4"	92CT248
1-13/16"	92CT252
1-7/8"	92CT256
1-15/16"	92CT260
2"	92CT264
2-1/16"	-
2-1/8"	92CT308
2-3/16"	-
2-1/4"	92CT316
2-3/8"	92CT324

Annular Cutter Pilot Pin	
Description	Order No.
2" depth of cut pilot pin for 3/4" and above	92CT001
2" depth of cut pilot pin for 9/16" - 11/16"	92CT002



912SE32D



Material	Series	Includes	Order No.
<b>32 pc. Fractional Sizes Display</b>			
NITRO® (Cobalt)	9100N & 9200N	1 each of the following: 1/2, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins.	912N32D
Carbide Tipped*	9100CT & 9200CT	1 each of the following: 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins.	912CT32D
High Speed Steel	9100SE & 9200SE	1 each of the following: 1/2, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins.	912SE32D



91SE7S

Material	Series	Includes	Order No.
<b>Annular Cutter Sets, 7 pc.</b>			
NITRO® (Cobalt)	9100N	9/16, 5/8, 11/16, 3/4, 13/16, 15/16, and 1 pin.	91N7S
High Speed Steel	9100SE	9/16, 5/8, 11/16, 3/4, 13/16, 15/16, and 1 pin.	91SE7S

\*also available with WALTER 05E annular cutters series

# CARBIDE TIPPED ANNULAR CUTTERS

## 05D / 05F/ 05H SERIES

### CARBIDE TIPPED

1 1/2", 2", 3" & 4" Depth of Cut  
Fractional

**Top performance and maximum productivity on hard metals and uneven surfaces!**

WALTER Carbide Core Cut annular cutters accurately drill large diameter holes in a variety of hard or abrasive materials such as stainless steel, cast iron, tough alloys or composite materials. They outperform and outlast conventional HSS cutters and allow for higher speed and feed rates while requiring less effort to cut through some of the industry's toughest metals.

3/4" Weldon Shank							
Diameter	1 1/2" cutters	2" cutters	3" cutters	4" cutters	Diameter	30 mm	55 mm
Inches	Order No.	Order No.	Order No.	Order No.	mm	Order No.	Order No.
Use with pilot pin	05Z019	05Z021	05Z018	05Z031		05Z019	05Z021
1/2"	05D008	05D308			12 mm	05F112	05F212
9/16"	05D009	05D309			13 mm	05F113	05F213
5/8"	05D010	05D310			14 mm	05F114	05F214
11/16"	05D011	05D311			15 mm	05F115	05F215
					16 mm	05F116	05F216
					17 mm	05F117	05F217
Use with pilot pin	05Z020	05Z022	05Z032	05Z033		05Z020	05Z022
3/4"	05D012	05D312		05D812	18 mm	05F118	05F218
13/16"	05D013	05D313	05D613	05D813	19 mm	05F119	05F219
7/8"	05D014	05D314			20 mm	05F120	05F220
15/16"	05D015	05D315	05D615	05D815	21 mm	05F121	05F221
1"	05D100	05D400	05D700	05D900	22 mm	05F122	05F222
1-1/16"	05D101	05D401	05D701	05D901	23 mm	05F123	05F223
1-1/8"	05D102	05D402			24 mm	05F124	05F224
1-3/16"	05D103	05D403			25 mm	05F125	05F225
1-1/4"	05D104	05D404			26 mm	05F126	05F226
1-5/16"	05D105	05D405			27 mm	05F127	05F227
1-3/8"	05D106	05D406			28 mm	05F128	05F228
1-7/16"	05D107	05D407			29 mm	05F129	05F229
1-1/2"	05D108	05D408			30 mm	05F130	05F230
1-9/16"	05D109	05D409			31 mm	05F131	05F231
1-5/8"	05D110	05D410			32 mm	05F132	05F232
1-3/4"	05D112	05D412			33 mm	05F133	05F233
1-13/16"	05D113	05D413			34 mm	05F134	05F234
1-7/8"	05D114	05D414			35 mm	05F135	05F235
1-15/16"	05D115	05D415			36 mm	05F136	05F236
2"	05D200	05D500	05D716	05D916	37 mm	05F137	05F237
2-1/16"	05D201	05D501			38 mm	05F138	05F238
2-1/8"	05D202	05D502			39 mm	05F139	05F239
2-3/16"		05D503			40 mm	05F140	05F240
2-1/4"		05D504			41 mm	05F141	05F241
2-5/16"		05D505			42 mm	05F142	05F242
2-3/8"		05D506			43 mm	05F143	05F243
					44 mm	05F144	05F244
					45 mm	05F145	05F245
					46 mm	05F146	05F246
					47 mm	05F147	05F247
					48 mm	05F148	05F248
					49 mm	05F149	05F249
					50 mm	05F150	05F250
					51 mm	05F151	05F251

Universal Shank		
Dia.	1" cutters	2" cutters
Inches	Order No.	Order No.
Use with pilot pin	05Z027	05Z021
1/2"	05H008	05H308
9/16"	05H009	05H309
5/8"	05H010	05H310
11/16"	05H011	05H311
Use with pilot pin	05Z028	05Z022
3/4"	05H012	05H312
13/16"	05H013	05H313
7/8"	05H014	05H314
15/16"	05H015	05H315
1"	05H100	05H400
1-1/16"	05H101	05H401
1-11/8"	05H102	05H402
1-13/16"	05H103	05H403
1-11/4"	05H104	05H404
1-15/16"	05H105	05H405
1-13/8"	05H106	05H406
1-17/16"	05H107	05H407
1-1/2"	05H108	05H408

1-1/4" Weldon Shank				
Use with pilot pin	05Z019	05Z034	05Z035	05Z036
2-1/4"			05D720	05D920
2-7/16"		05D507		
2-1/2"		05D508	05D724	05D924
2-9/16"		05D509	05D725	05D925
2-5/8"		05D510		
2-3/4"		05D512	05D728	05D928
2-7/8"		05D514		
3"		05D532	05D732	05D932
3-1/4"		05D536	05D736	05D936
3-1/2"		05D540	05D740	
3-3/4"		05D544	05D744	
4"		05D548	05D748	



### Carbide Core Cut Kits

#### Material

Highest quality TCT for premium performance  
Weldon shank

#### Includes

1 of each diameter:  
9/16", 11/16", 13/16", 15/16", 1",  
1-1/16" and pilot pin

Depth of Cut	Item Number
1-3/8" annular cutter kit	05D991
2" annular cutter kit	05D992



# ANNULAR CUTTERS ACCESSORIES



## PILOT PINS

Precisely position annular cutters over drilling spot and eject slug after drilling is completed. All WALTER pilot pins are hardened and precision ground to provide the longest life in the industry.



Cutter family	Diameter	Max. drilling depth	Order No.	Std. Pkg.	Std. Ctn.
For use with these cutters					
SST Core Cut and ICECUT™	1/2" – 2 3/8" dia.	1"	05Z001	1	10
SST Core Cut and ICECUT™	1/2" – 2 3/8" dia.	2"	05Z002	1	10
SST Core Cut and ICECUT™	13/16" – 1 1/16" dia.	3"	05Z018	1	10
SST Core Cut and ICECUT™	11/16" – 2" dia.	4"	05Z031	1	10
SST Core Cut and ICECUT™	7/16" dia.	1"	05Z029	1	10
SST Core Cut and ICECUT™	7/16" dia.	2"	05Z030	1	10
2-piece, SST and ICECUT™	11/16" – 2" dia.	3"	05Z032	1	10
2-piece, SST and ICECUT™	11/16" – 2" dia.	4"	05Z033	1	10
For use with these cutters					
CARBIDE core cutters					
	1/2" – 11/16" dia.	1"	05Z027	1	10
	1/2" – 11/16" dia.	1 1/2"	05Z019	1	10
	1/2" – 11/16" dia.	2"	05Z021	1	10
	3/4" – 1 1/2" dia.	1"	05Z028	1	10
	3/4" – 2 3/8" dia.	1 1/2"	05Z020	1	10
	3/4" – 2 3/8" dia.	2"	05Z022	1	10
	2 7/16" – 4" dia.	2"	05Z034	1	10
	13/16" – 1 1/16" dia.	3"	05Z018	1	10
	2 1/4" – 4" dia.	3"	05Z035	1	10
	2 1/4" – 4" dia.	4"	05Z036	1	10



### Morse taper shank adaptors with coolant inducer

For use of WALTER annular cutters on drilling units with a Morse taper spindle. Coolant inducer feeds coolant through the pilot pin to increase cutter life.

Morse taper	Order No.	Std. Pkg.	Std. Ctn.
No. 2	05Z012	1	10
No. 3	05Z013	1	10
No. 3 (with 1 1/4" Weldon)	05Z037	1	10
No. 3 Extra Length (with 1 1/4" Weldon)	05Z038	1	10



### Morse taper shank adaptors without coolant inducer

For use of WALTER annular cutters on drilling units with a Morse taper spindle. Ideal for all drilling machines that are equipped with an external cooling source.

Morse taper	Order No.	Std. Pkg.	Std. Ctn.
No. 2	05Z010	1	10
No. 3	05Z011	1	10



### Fein and Nitto adaptors

For use of WALTER annular cutters on all Fein and Nitto magnetic drills.

Drilling Unit	Order No.	Std. Pkg.	Std. Ctn.
Fein (Adaptor)	05Z014	1	10
Fein (Pilot Pin)	05Z016	1	10
Nitto (Adaptor)	05Z015	1	10
Nitto (Pilot Pin)	05Z017	1	10



### Extension adaptors

Leverage an arbor adaptor with your WALTER core cutters to drill deeper holes. These durable arbor adaptors allow you to drill up to 4" for a fraction of the price of a full-size core cutter.

Extension Length	Description	Order No.	Std. Pkg.	Std. Ctn.
1"	Adaptor	05Z023	1	10
	Pilot pin	05Z025	1	10
2"	Adaptor	05Z024	1	10
	Pilot pin	05Z026	1	10

## ANNULAR CUTTERS ACCESSORIES

### ADAPTERS

Description	EDP No.
<b>Machine Accessories</b>	
1/2" chuck to annular adapter	MA000
<b>Annular Cutter Reduced &amp; Morse Taper Shank Holders</b>	
Annchuck1- For 1" and 2" length of cut	
1/2" thru 2-1/4" Dia. x 3" LOC	RSA003
1/2" thru 2-1/4" Dia. x 4" LOC	RSA004
<b>3/4" Shank Adapters w/ 3 Flats</b>	
ANNADAPT1	
2-5/16" thru 4" Dia. x 2" LOC	RSA006
2-5/16" thru 4" Dia. x 3" LOC	RSA007
2-5/16" thru 4" Dia. x 4" LOC	RSA008
<b>#2 Morse Taper Shank Adapters</b>	
7/16" thru 2-1/4" Dia. x 1" & 2" LOC	MTA001
1/2" thru 2-1/4" Dia. x 3" & 4" LOC	MTA002
<b>#3 Morse Taper Shank Adapters</b>	
7/16" thru 2-1/4" Dia. x 1" & 2" LOC	MTA003
1/2" thru 2-1/4" Dia. x 3" & 4" LOC	MTA004
2-5/16" thru 4" Dia. x 1" & 2" LOC	MTA005
2-5/16" thru 4" Dia. x 3" & 4" LOC	MTA006
<b>#4 Morse Taper Shank Adapters</b>	
2-5/16" thru 4" Dia. x 1" & 2" LOC	MTA007
2-5/16" thru 4" Dia. x 3" & 4" LOC	MTA008



MA000



MTA003







## Feeds and Speeds for Annular Cutters

Material to Be Drilled	HSS Cutter	SST Cutter	ICECUT™ Cutter	Nitro® Cutter	CT Cutter
Cutting Speed In Feet/Min. (SFPM)					
Freecutting-Leaded	100	100	100	150	175
Up To 180 Brinell	80 to 110	80 to 110	80 to 110	130	165
A-36	80 to 110	80 to 110	80 to 110	130	165
180 To 285 Brinell	45 to 70	45 to 70	45 to 70	80	90
285 To 375 Brinell	30 to 45	30 to 45	30 to 45	55	60
375 & Up Brinell	15 to 25	15 to 25	15 to 25	35	40
Manganese (low)	15 to 20	15 to 20	15 to 20	25	30
Stainless-Freecutting	30 to 60	30 to 60	30 to 60	70	100
Stainless 304,316,	-	-	-	-	-
320 & Tougher	20 to 40	20 to 40	20 to 40	50	60
Inconel, Hastelloy	25 to 40	25 to 40	25 to 40	55	70
Inconel - X	20 to 25	20 to 25	20 to 25	35	45
Titanium	30 to 40	30 to 40	30 to 40	50	60
A-286	25 to 35	25 to 35	25 to 35	50	60

Material To Be Drilled	HSS Cutter	SST Cutter	ICECUT™ Cutter	Nitro® Cutter	CT Cutter
Cutting Speed in Feet/Min. (SFPM)					
Aluminum	150	150	150	250	450-600
Brass	Ordinary	150	150	250	250-550
	Leaded	200	200	300	300-600
Bronze	Ordinary	100	100	200	200-500
	Hi-tensile	70	70	100	100-200
Cast Iron	Soft	100	100	150	175
	Medium	80	80	90	100
	Hard	50	50	70	80
	Chilled	25	25	35	40
Copper	100	100	100	200	250
Magnesium	Up to 300	Up to 300	Up to 300	400	400-800
Malleable Iron	70	70	70	80	100-130
Monel	40	40	40	50	50

Cutter Dia.	Feed Ins./Rev.
Operating Feed*	
7/16" to 9/16"	.002 to .006
5/8" to 3/4"	.003 to .003
1-3/16" - 1-1/16"	.004 to .008
1-1/8" - 1-7/16"	.006 to .010
1-1/2" to 2"	.008 to .012
2" to 2-1/2"	.012 to .025

\*Always commence operations at the lower end of RPM.

	DIAMETER																			
	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"	7/8"	15/16"	1"	1-1/8"	1-1/4"	1-3/8"	1-1/2"	1-5/8"	1-3/4"	2"	2-1/4"	2-1/2"	
CUTTING SPEEDS (SFPM)	10	87	76	68	61	56	51	47	44	41	38	34	31	28	25	24	22	19	17	15
	20	175	153	136	122	111	102	94	87	82	76	68	61	56	51	47	44	38	34	31
	30	262	229	204	183	167	153	141	131	122	115	102	92	83	76	71	65	57	51	46
	40	349	306	272	245	222	204	188	175	163	153	136	122	111	102	94	87	76	68	61
	50	437	382	339	306	278	255	235	218	204	191	170	153	140	127	118	109	95	85	76
	60	524	458	407	367	333	306	282	353	245	229	204	183	167	153	141	131	115	102	92
	70	611	535	475	428	389	357	329	306	285	267	238	214	194	178	165	153	134	119	107
	80	700	611	543	489	444	408	376	350	326	306	272	244	222	204	188	175	153	136	122
	90	786	688	611	550	500	458	426	393	367	344	306	275	250	229	212	196	172	153	138
	100	873	764	679	611	556	509	470	436	408	382	340	306	278	255	235	218	191	170	153
	120	1048	917	815	733	667	611	564	524	489	458	407	367	333	306	282	262	229	204	183
	140	1222	1070	950	856	778	713	658	611	571	535	475	428	390	356	329	306	267	238	214
	150	1310	1146	1018	917	833	764	705	655	611	573	509	458	417	382	353	327	286	255	229
	160	1397	1222	1086	978	889	815	752	698	652	611	543	490	444	407	376	350	306	272	244
	180	1572	1375	1222	1100	1000	917	846	786	734	688	611	550	500	458	423	393	344	306	275
	200	1747	1528	1358	1222	1111	1020	940	874	815	764	680	611	556	510	470	437	382	340	306
	220	1920	1681	1494	1345	1222	1121	1034	960	897	840	747	672	611	560	517	480	420	374	336
	240	2096	1833	1630	1467	1333	1222	1128	1048	978	917	815	733	667	611	564	524	458	407	367
	250	2183	1910	1697	1528	1389	1274	1175	1091	1020	955	850	764	694	637	588	546	477	424	382
	260	2270	1986	1765	1590	1444	1325	1221	1135	1060	993	883	795	722	662	611	568	497	441	397
280	2445	2140	1900	1712	1556	1426	1316	1222	1140	1070	950	856	778	713	658	611	535	475	428	
300	2620	2292	2037	1834	1667	1528	1410	1310	1222	1146	1020	917	833	7	705	655	573	510	458	

### Speed and Feed Formulas

SPEED OF CUTTER IN SURFACE FEET PER MINUTE (SFM)  
SFM = D x .26 x RPM

REVOLUTIONS PER MINUTE (RPM)  
RPM = SFM x 3.82 divided b Dia.

FEED IN INCHES PER MINUTE (IPM) OR (F)  
F = f x T x RPM



# TECHNICAL INFORMATION

## Recommended Cutting Speed for CARBIDE CORE CUT Annular Cutter (RPM)

Diameter		Mild Steel	Steel	Steel	Steel	Steel	Stainless Steel	Aluminium
mm	Inch	500N/mm <sup>2</sup>	750N/mm <sup>2</sup>	900N/mm <sup>2</sup>	1200N/mm <sup>2</sup>	1400N/mm <sup>2</sup>		
11.1	7/16"	1147	1061	1003	860	717	573	2580
12.7	1/2"	1003	928	878	752	627	502	2257
14.3	9/16"	892	825	781	669	558	446	2007
15.9	5/8"	802	742	702	602	501	401	1805
17.5	11/16"	730	675	638	547	456	365	1642
19.1	3/4"	669	619	585	502	418	334	1505
20.6	13/16"	617	571	540	463	386	309	1389
22.2	7/8"	573	530	502	430	358	287	1290
23.8	15/16"	535	495	468	401	334	268	1204
25.4	1"	502	464	439	376	313	251	1128
27.0	1-1/16"	472	437	413	354	295	236	1062
28.6	1-1/8"	446	412	390	334	279	223	1003
30.2	1-3/16"	422	391	370	317	264	211	950
31.8	1-1/4"	401	371	351	301	251	201	903
33.3	1-5/16"	382	353	334	287	239	191	860
34.9	1-3/8"	365	337	319	274	228	182	821
36.5	1-7/16"	349	323	305	262	218	174	785
38.1	1-1/2"	334	309	293	251	209	167	752
39.7	1-9/16"	321	297	281	241	201	161	722
41.3	1-5/8"	309	285	270	231	193	154	694
42.9	1-11/16"	297	275	260	223	186	149	669
44.5	1-3/4"	287	265	251	215	179	143	645
46.0	1-13/16"	277	256	242	208	173	138	623
47.6	1-7/8"	267	247	234	201	167	134	602
49.2	1-15/16"	259	239	227	194	162	129	582
50.8	2"	251	232	219	188	157	125	564
52.4	2-1/16"	243	225	213	182	152	122	547
54.0	2-1/8"	236	218	207	177	148	118	531
55.6	2-3/16"	229	212	201	172	143	115	516
57.2	2-1/4"	223	206	195	167	139	111	502
58.7	2-5/16"	217	201	190	163	136	108	488
60.4	2-3/8"	211	195	185	158	132	106	475
61.9	2-7/16"	206	190	180	154	129	103	463
63.5	2-1/2"	201	186	176	150	125	100	451
65.1	2-9/16"	196	181	171	147	122	98	440
66.7	2-5/8"	191	177	167	143	119	96	430
68.3	2-11/16"	187	173	163	140	117	93	420
69.9	2-3/4"	182	169	160	137	114	91	410
71.4	2-13/16"	178	165	156	134	111	89	401
73.0	2-7/8"	174	161	153	131	109	87	393
74.6	2-15/16"	171	158	149	128	107	85	384
76.2	3"	167	155	146	125	104	84	376
77.8	3-1/16"	164	151	143	123	102	82	368
79.4	3-1/8"	160	148	140	120	100	80	361
81.0	3-3/16"	157	146	138	118	98	79	354
82.6	3-1/4"	154	143	135	116	96	77	347
84.1	3-5/16"	151	140	132	114	95	76	341
85.7	3-3/8"	149	137	130	111	93	74	334
87.3	3-7/16"	146	135	128	109	91	73	328
88.9	3-1/2"	143	133	125	107	90	72	322
90.5	3-9/16"	141	130	123	106	88	70	317
92.1	3-5/8"	138	128	121	104	86	69	311
93.7	3-11/16"	136	126	119	102	85	68	306
95.3	3-3/4"	134	124	117	100	84	67	301
96.8	3-13/16"	132	122	115	99	82	66	296
98.4	3-7/8"	129	120	113	97	81	65	291
100.0	3-15/16"	127	118	111	96	80	64	287
101.6	4"	125	116	110	94	78	63	282

## TECHNICAL INFORMATION

### Recommended Cutting Speed for SST™ CORE CUT and ICECUT™ Annular Cutter (RPM)

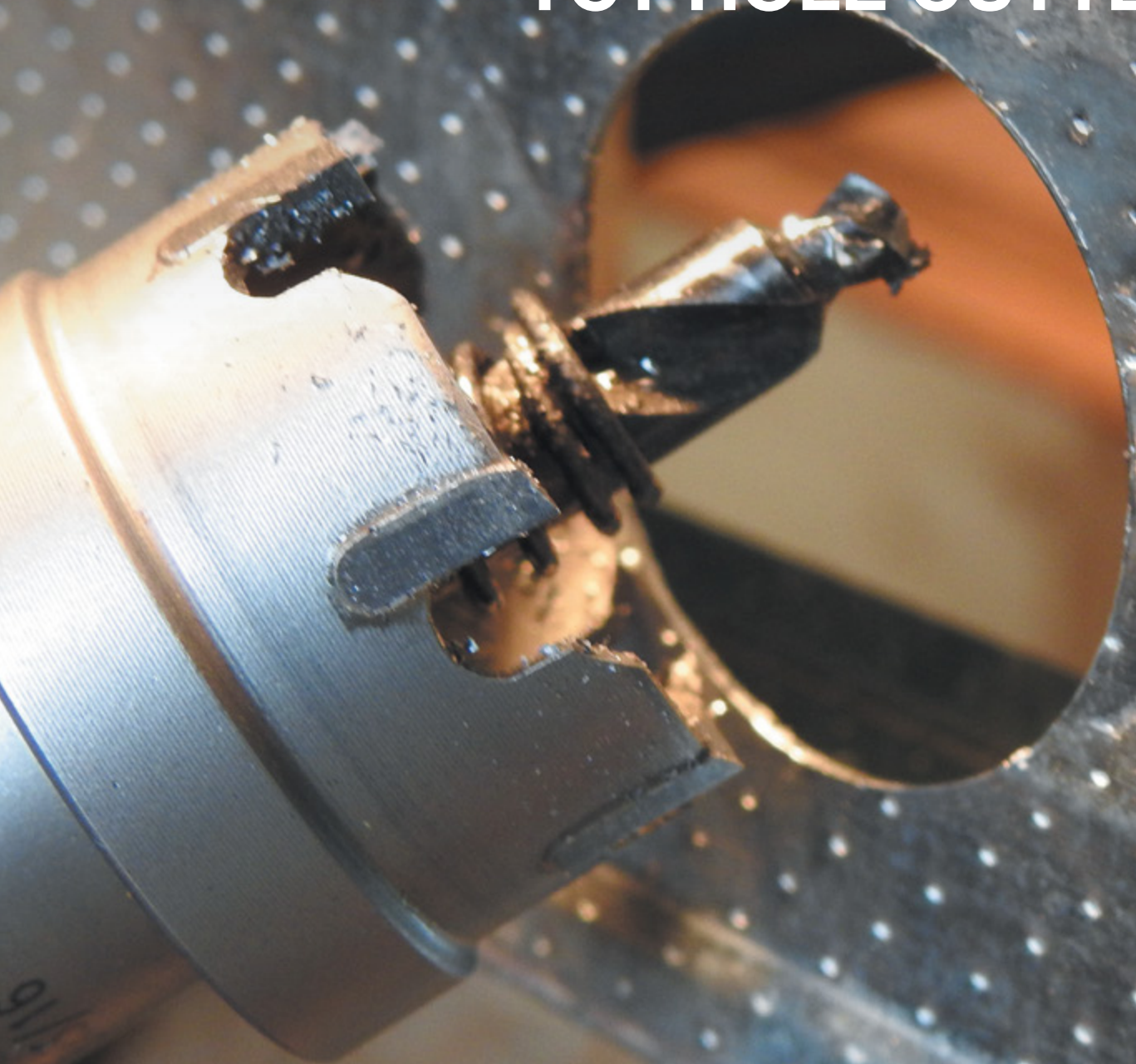
Diameter		Mild Steel	Steel	Steel	Steel	Steel	Stainless Steel	Aluminium
mm	Inch	500N/mm <sup>2</sup>	750N/mm <sup>2</sup>	900N/mm <sup>2</sup>	1200N/mm <sup>2</sup>	1400N/mm <sup>2</sup>		
11.1	7/16"	717	573	373	287	201	344	1433
12.7	1/2"	627	502	326	251	176	301	1254
14.3	9/16"	558	446	290	223	156	268	1115
15.9	5/8"	501	401	261	201	140	241	1003
17.5	11/16"	456	365	237	182	128	219	912
19.1	3/4"	418	334	217	167	117	201	836
20.6	13/16"	386	309	201	154	108	185	771
22.2	7/8"	358	287	186	143	100	172	717
23.8	15/16"	334	268	174	134	94	161	669
25.4	1"	313	251	163	125	88	150	627
27.0	1-1/16"	295	236	153	118	83	142	590
28.6	1-1/8"	279	223	145	111	78	134	557
30.2	1-3/16"	264	211	137	106	74	127	528
31.8	1-1/4"	251	201	130	100	70	120	502
33.3	1-5/16"	239	191	124	96	67	115	478
34.9	1-3/8"	228	182	119	91	64	109	456
36.5	1-7/16"	218	174	113	87	61	105	436
38.1	1-1/2"	209	167	109	84	59	100	418
39.7	1-9/16"	201	161	104	80	56	96	401
41.3	1-5/8"	193	154	100	77	54	93	386
42.9	1-11/16"	186	149	97	74	52	89	372
44.5	1-3/4"	179	143	93	72	50	86	358
46.0	1-13/16"	173	138	90	69	48	83	346
47.6	1-7/8"	167	134	87	67	47	80	334
49.2	1-15/16"	162	129	84	65	45	78	324
50.8	2"	157	125	81	63	44	75	313
52.4	2-1/16"	152	122	79	61	43	73	304
54.0	2-1/8"	148	118	77	59	41	71	295
55.6	2-3/16"	143	115	75	57	40	69	287
57.2	2-1/4"	139	111	72	56	39	67	279
58.7	2-5/16"	136	108	70	54	38	65	271
60.4	2-3/8"	132	106	69	53	37	63	264

### Recommended Feed for Annular Cutter

Material	Feed (mm/r)	Coolant (ml/min)
Steel 500N/mm <sup>2</sup>	0.08-0.13	60-80
Steel 750N/mm <sup>2</sup>	0.08-0.13	60-80
Steel 900N/mm <sup>2</sup>	0.05-0.1	80-100
Steel 1200N/mm <sup>2</sup>	0.05-0.1	80-100
Steel 1400N/mm <sup>2</sup>	0.05-0.1	80-100
Stainless Steel	0.05-0.1	150-200
Aluminum	0.1-0.15	80-100

# 06

## TCT HOLE CUTTERS





# TCT HOLE CUTTERS



06

TCT HOLE CUTTERS

**Ideal for drilling large diameter holes in both ferrous and non-ferrous materials**

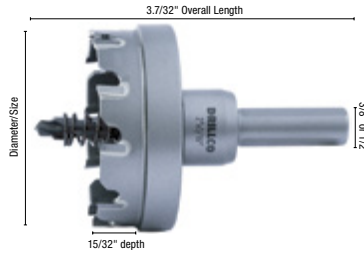
DRILLCO's line of carbide-tipped hole cutters are ideal for drilling large diameter holes in both ferrous and non-ferrous materials such as sheet metal, steel, aluminum, copper, plastics, brass, cast iron, and the difficult-to-machine stainless steel.

9500CT = thinner material, up to 3/16" depth of cut / 9600CT = thicker material, up to 1" depth of cut

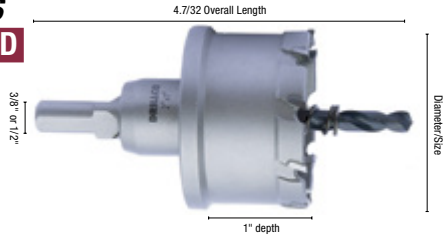
- ▷ Ultra-hard teeth increase performance and tool life
- ▷ Cost effective alternative to bi-metal hole saws
- ▷ Excellent portability
- ▷ Premium grade tungsten carbide
- ▷ Ideal for plumbers, electricians, mechanics, general contractors, HVAC technicians, DIY'ERS
- ▷ 3-flat shank. Diameters 9/16" to 2-5/8" have a 3/8" shank; 2-11/16" to 4-1/2" have a 1/2" shank



## 9500CT SERIES CARBIDE TIPPED 3/16" Depth of Cut Fractional



## 9600CT SERIES CARBIDE TIPPED 1" Depth of Cut Fractional



Size	9500CT Order No.
9/16"	95CT136
5/8"	95CT140
11/16"	95CT144
3/4"	95CT148
13/16"	95CT152
7/8"	95CT156
15/16"	95CT160
1"	95CT164
1-1/16"	95CT204
1-1/8"	95CT208
1-3/16"	95CT212
1-1/4"	95CT216
1-5/16"	95CT220
1-3/8"	95CT224
1-7/16"	95CT228
1-1/2"	95CT232
1-9/16"	95CT236
1-5/8"	95CT240
1-11/16"	95CT244
1-3/4"	95CT248
1-13/16"	95CT252
1-7/8"	95CT256
1-15/16"	95CT260

Size	9500CT Order No.
2"	95CT264
2-1/16"	95CT304
2-1/8"	95CT308
2-3/16"	95CT312
2-1/4"	95CT316
2-5/16"	95CT320
2-3/8"	95CT324
2-7/16"	95CT328
2-1/2"	95CT332
2-9/16"	95CT336
2-5/8"	95CT340
2-11/16"	95CT344
2-3/4"	95CT348
2-13/16"	95CT352
2-7/8"	95CT356
2-15/16"	95CT360
3"	95CT364
3-1/4"	95CT416
3-1/2"	95CT432
3-5/8"	95CT440
3-3/4"	95CT448
4"	95CT464

Size	9600CT Order No.
9/16"	96CT136
5/8"	96CT140
11/16"	96CT144
3/4"	96CT148
13/16"	96CT152
7/8"	96CT156
15/16"	96CT160
1"	96CT164
1-1/16"	96CT204
1-1/8"	96CT208
1-3/16"	96CT212
1-1/4"	96CT216
1-5/16"	96CT220
1-3/8"	96CT224
1-7/16"	96CT228
1-1/2"	96CT232
1-9/16"	96CT236
1-5/8"	96CT240
1-11/16"	96CT244

Size	9600CT Order No.
1-3/4"	96CT248
1-13/16"	96CT252
1-7/8"	96CT256
1-15/16"	96CT260
2"	96CT264
2-1/8"	96CT308
2-1/4"	96CT316
2-3/8"	96CT324
2-1/2"	96CT332
2-5/8"	96CT340
2-3/4"	96CT348
2-7/8"	96CT356
3"	96CT364
3-1/4"	96CT416
3-1/2"	96CT432
3-5/8"	96CT440
3-3/4"	96CT448
4"	96CT464
4-1/2"	96CT532

All sizes are individually packaged. Sizes up to 2-5/8" have a tab for hanging on a wall display.

All sizes are individually packaged. Sizes up to 3" have a tab for hanging on a wall display.

Set	
Description	Order No.
6pc Set: 7/8", 1", 1-1/8", 1-3/8", 1-3/4", 2" + Two Pilot Drills	95CT6S

Spare Parts	
Description	Order No.
HSS Pilot Drill 4.35mm	95CT001
M6 Screw	95CT002
Spring M8.5 x 20mm	95CT003
Allen Wrench	95CT004



Set	
Description	Order No.
6pc Set: 9/16", 5/8", 11/16", 3/4", 7/8", 1-1/16" + Two Pilot Drills	96CT6S

Spare Parts	
Description	Order No.
HSS Pilot Drill 6mm	96CT001
M6 Screw	96CT002
Spring M8.5 x 35mm	96CT003
Allen Wrench	96CT004



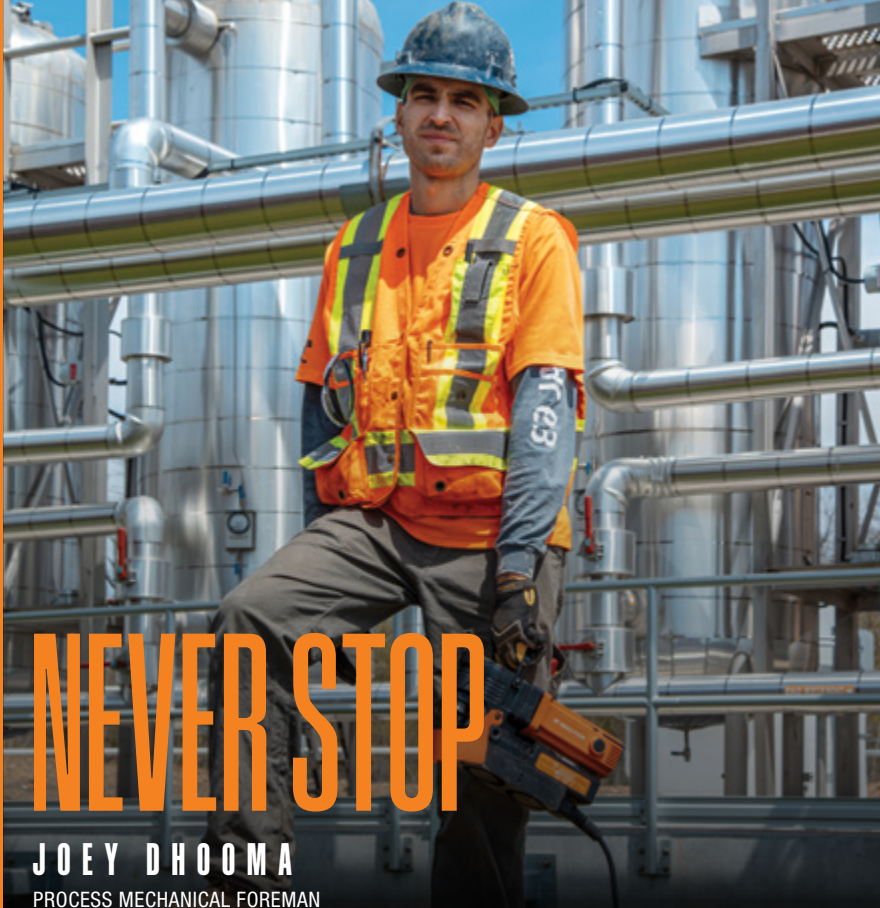
## TECHNICAL INFORMATION

### Speed Recommendations

Cutter Size	Aluminum	Copper	Steel	Stainless Steel	Alloy Steel	Non-Metallic Material
Revolution Per Minute (RPM)						
< 13/16"	1500-1800	800-1000	700-1000	700-800	700-900	1500-1800
13/16" - 1-3/16"	1500-1800	800-1000	700-800	400-600	600-700	1500-1800
1-7/32" - 1-9/16"	1500-1800	800-1000	500-600	350-450	450-500	1500-1800
1-5/8" - 2"	800-1000	600-800	400-500	250-400	300-400	1000-1500
2-1/16" - 2-3/8"	600-850	400-600	300-400	200-300	200-300	800-1000
2-7/16" - 3"	400-600	200-400	150-200	150-200	150-200	500-800
> 3"	200-400	100-200	100-150	100-150	100-150	5000-80

### Drilling Recommendations

- Inspect the hole cutter to ensure it is properly assembled and complete before use.
- To operate, use cutters on an electric hand drill, impact drill (rotary type), drill press or similar. Consult your power drill manufacturer's manual to see RPM ranges on low and high settings.
- Let the tool do the work! When beginning the drilling process, use a lower feed rate. Do not apply too much pressure or force onto the cutter or you may damage the carbide teeth.
- During operation, ensure the revolving speed is not too slow. This will help to prevent locking which can damage the tool.
- Shanks have 3-flats to reduce slippage in the chuck. Shank sizes of DRILLCO's TCT Hole Cutters are as follows: 9/16" to 2-5/8" have a 3/8" shank; 2-11/16" to 4" have a 1/2" shank.
- Can be used in a wide range of materials including aluminum, copper, steel, alloy steel, stainless steel, brass, and non-metallic materials such as plastics.
- To ensure optimal performance and extend tool life, a cutting fluid should always be used. DRILLCO offers a wide range of sizes and styles of environmentally safe heavy-duty cutting fluid.



# NEVER STOP

**JOEY DHOOMA**  
PROCESS MECHANICAL FOREMAN



“  
The water never stops flowing here. We need to be precise on everything we do on-site.  
”

As a Process Mechanical Foreman, Joey oversees a team that is implementing a series of major improvements to a large water treatment plant.

The job is not an easy one. He works in snow, rain, and even in blazing hot temperatures as the water tanks he sometimes works in feel like “an oven” in the summer. On top of that, from time to time he finds himself knee-deep in sewage water that is filled with harmful bacteria, which, as you probably guessed, emits an unpleasant smell. But none of that really bothers him. “I never was afraid to get dirty and I think I’m immune to the smell,” he says. “Whatever is thrown at us, we always manage to prevail and get through it.”

The problem-solving aspect of his work is what motivates him the most. Since the water that goes through the facility can never stop flowing completely, the sequencing of the project becomes a real challenge. “We have to get very creative and develop different methods of diverting the flow of water out of our way.” Another facet that he appreciates is the fact that he gets to witness the evolution of the project from its inception to its completion. He occasionally glances back and recognizes how impressive the facility’s enhancements have been thus far.

Joey is a perfectionist to the core. He likes it when things are done correctly the first time. A small inaccuracy can lead to catastrophic events. “We have to be on the mark,” he says. For someone who strives for perfection, working with the right tools is not optional. “Having the right tools means a lot because you will drill holes faster, cut metal quicker, put things together a lot better. If you don’t have the proper tools you will fall behind, you’ll be scrounging around site looking for the right stuff, you will waste time and money. It just wouldn’t work for us.”

We could say that, at the very least, he is very dedicated to his career. He’s the one who opens up the job site in the morning and the one that puts the padlock on the gates at night. Just like the thousands of gallons of water that rush through the pipes he installs and repairs every day, Joey never stops.

# 07

## MAGNETIC DRILLS





ICECUT FAMILY		
Product name	Series	Catalog page reference
ICECUT MINI™	39D	436
ICECUT 100™		437
ICECUT 200		438
ICECUT 200PM™		438
ICECUT 250 AUTO™		439
ICECUT 250™		440, 441
ICECUT 250P™		440, 441
ICECUT 300™		442, 443
ICECUT 400™		442, 443



## MAGNETIC DRILLS AT A GLANCE

### Magnetic Drills

WALTER Surface Technologies magnetic drills are the most reliable and versatile workhorses on the market. Their compact design allows for easy portability, and the added magnetized safety switch keeps you operating safely. With the addition of the central lubricating system that delivers cutting lubricant directly to the cutter and a complete offering of High Speed Steel, Cobalt, and Carbide Tipped Annular Cutters, you have the most complete solution for your hole making needs.



### Annular Cutters



### Cutting Fluids



Video

Watch the video to learn more about the ICECUT™!

Mag Drill Selection Chart

Model	Order No.	No Load RPM	Dynamax Variable Speed Control	Twist Drill Capacity	Annular Cutter Capacity (Diameter)	Annular Cutter Capacity (Depth)	Accudrill Integrated Ammeter	Tapping Functionality	Special Features
ICECUT MINI™	39D050	200-500 RPM	Yes	N/A	2"	2"	Yes	No	Largest drilling capacity for a machine of its size
ICECUT 100™	39D100	600 RPM	No	1/2" (stub length only)	1-3/8"	1-1/2"	Yes	No	Compact and mobile
ICECUT 200™	39D200	Speed #1: 300 RPM Speed #2: 600 RPM	No	1/2"	2"	2"	Yes	No	2 speeds for versatile cutting
ICECUT 200PM™	39D201	Speed #1: 300 RPM Speed #2: 600 RPM	No	1/2"	2"	2"	Yes	No	Permanent magnet for additional safety
ICECUT 250™	39D250	Speed #1: 100-265 RPM Speed #2: 200-500 RPM	Yes	1/2"	2-3/8"	3"	Yes	Yes (up to 3/4")	Tapping capabilities & variable speed selection
ICECUT 250P™	39D251	Speed #1: 100-265 RPM Speed #2: 200-500 RPM	Yes	1/2"	2-3/8"	3"	Yes	Yes (up to 3/4")	Permanent magnet perfect for curved surfaces
ICECUT 250 AUTO™	39D252	Speed #1: 100-265 RPM Speed #2: 200-500 RPM	Yes	1/2"	2-3/8"	3"	Yes	Yes (up to 3/4")	Manual and auto-feed modes
ICECUT 300™	39D300	Speed #1: 70-180 RPM Speed #2: 200-500 RPM	Yes	1-1/4"	3"	3"	Yes	Yes (up to 1-1/8")	120° swivel, 2" sliding magnetic base
ICECUT 400™	39D400	Speed #1: 45-129 RPM Speed #2: 70-208 RPM Speed #3: 150-434 RPM Speed #4: 240-700 RPM	Yes	1-1/4"	4"	4"	Yes	Yes (up to 1-1/8")	120° swivel, 2" sliding magnetic base 4-speed gearbox



## FEATURES

### All ICECUT™ Magnetic Drilling Units



#### 1 Centered Control Panel

Centered positioning of the electronics for easy control from any position. Whether it's a personal preference, or if the operation requires drilling from a specific side, the central control panel allows for efficient and easy operation.



#### 2 Mandrel Support

Absorbs vibration for added stability and easy centering. The ball bearing support ensures the motor and chuck are perfectly aligned. It also provides smooth and precise cutting operations, and reduces chipping or breakage of the cutter.



#### 3 Full-Body Integrated Wiring

For convenience and improved durability. No electrical wires will get in the way while drilling or moving your unit. Moreover, this prevents common failures due to mishandling (like carrying the unit by the wire, or the wire catching on an object).



#### 4 Steel Sliding Guard

Easily accessible, and extra safe. Slide guard upwards, position unit, slide guard down and start drilling safely while containing chips and lubricant to prevent them from spilling out onto the rest of the work surface.



#### 5 Direct Access

Direct access to carbon brushes makes maintenance simple. The powerful motor will always operate at maximum efficiency, and when it is time to change out the carbon brushes, their easily accessible location makes maintenance very convenient!



#### 6 Ergonomic Handle

The ergonomic handle with a smooth grip – sturdy and lightweight - makes moving the unit easy. Its design further reduces overall weight, and the smooth grip ensures easy portability.



#### 7 Quick-Release Reversible Handle

Quick-release reversible handle – allows for positioning in confined or restricted spaces. The handle can be removed and reattached on whichever side the operator prefers, making this a very user-friendly system.



#### 8 Material & Thickness Detector

Unit will not start when the magnetic holding power is insufficient to secure the unit to the workpiece and operate safely. Prevents accidental starts: unit will not start on any non-ferrous material like wood, plastic, or when held in the air.



#### 9 Mechanical Clutch

The ICECUT 200™ has a safety slip clutch, built into the gear drive, that will neutralize momentum and eliminate dangerous backlash for added safety. Prevents cutter breakage.



#### Lightweight

At 10 kg (22 lbs.) and 12.2 kg (27 lbs.) respectively, the ICECUT 100™ and ICECUT 200™ are the lightweight champions in their category. With a slim body, simplified carrying handle and powerful magnet, these units were designed with portability and ergonomics in mind.



#### Swivel Base

As a feature for the ICECUT 300™ and ICECUT 400™, it allows to swivel the magnetic drill by 60° on each side, and also slide by 3" for a perfect and easy alignment.



#### Equipped with SAFETY strap

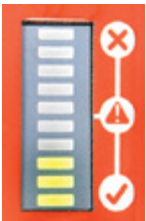
For added security when hung upside down or for frame drilling operations.

## ICECUT MINI™

### Low-profile magnetic drilling unit for confined spaces

Measuring in at only 7-inches tall, the ICECUT MINI™ is the ultimate compact, low-profile magnetic drilling unit for making holes in tight spaces from H-beams to truck frames, and other applications where space may be limited. This unit has a powerful electromagnet for safety while drilling and has a 2" x 2" drilling capacity, making it the most versatile unit in its class.

- ▷ *Lightweight unit*
- ▷ *Electromagnet for safety and functionality*
- ▷ *Low-profile and compact body allows for making holes in extremely tight spaces (7" tall)*
- ▷ *WALTER's Dynamax™ speed control ensures RPM speeds remain constant even under load*
- ▷ *Accudrill™ system protects unit from overload and the risk of cutter breakage*
- ▷ *2" x 2" drilling capacity—Largest on the market*



"Accudrill" system protects against overload and reduces the risk of cutter breakage. When you want to achieve the most productive drilling operation, you need to make sure you use the most power. This prevents the motor from overloading to reduce damage to the tool itself while also minimizing the risk of eventual damage to the cutter from overheating or movement.



SCAN TO  
WATCH VIDEO



Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](https://www.youtube.com/user/TheWalterNetwork)



**2" x 2" drilling capacity!**  
**The largest on the market!**

ICECUT MINI™ DIALSPEED™ RPM Setting	
SPEED DIAL SETTING	RPM
1	250
2	300
3	350
4	400
5	450
6	500

Order No.	39D050
Watts	1200 W
Rated Amperage	10.0 A
Speeds	1 speed variable
DYNAMAX speed control	YES
No load RPM	250-500 RPM
Rated current	110-120V
Total stroke	61 mm (2-3/8")
Core cutter capacity (diameter)	2" (50 mm)
Core cutter capacity (depth)	2" (50 mm)
Twist drill capacity (diameter)	N/A
Weight	23.14 lbs (10.5 kg)
Swivel and sliding magnet	NO
Magnetic holding force (at 1")	10,000N
Max drill point pressure	2248 lbs (1020 kg)
Reversible handle	Tool-free ratchet handle
Powerguard motor overload protection	YES
Short-Circuit protection	YES
ACCUDRILL LED Torque display	Integrated Amp meter (both sides)
Magnetic field sensor	NO
Guard	YES, pivoting
Wiring	Internal
Lubrication	Not integrated
Control board	Rear, S/S switches with LED
Arbor	3/4" Weldon arbor fixed
Maintenance	Easy access to carbon brushes

# ICECUT 100™

## Compact and portable

When you pair the best drilling machines with highly engineered annular cutters and superior cooling solutions, you know you have the best overall system for consistently drilling holes quickly and precisely with minimal interruption for changing out worn tooling.

- ▷ Compact
- ▷ Extra lightweight
- ▷ Perfect when mobility is key

## Drilling Made Easy and Safe



Order No.	39D100
Watts	850 W
Speed	1 speed
No load RPM	600 RPM
Rated current	8 A
Core cutter capacity (diameter)	1 3/8" (35 mm)
Core cutter capacity (depth)	1 1/2" (38 mm)
Twist drill capacity (diameter)	1/2" (stub length only)
Tapping function	NO
Weight	22 lbs (10 kg)
Swivel and sliding magnet	NO
Max drill point pressure	1875 lbs (850 kg)
Reversible handle	Tool free press-button
Powerguard electronic overload protection	15 A
Motor overload protection	NO
Short-Circuit protection	Integrated fuse
Accudrill LED torque display	Integrated Amp meter
Magnetic field sensor	Material and thickness detector
Tool free guard	Metal, sliding up
Wiring	Internal
Lubrication	On motor head
Control board	Centered, S/S switches with LED
Handle	Open on main housing
Arbor	Weldon shank with support
Maintenance	Easy access to carbon brushes
Total Stroke	2.6"



"Accudrill" system protects against overload and reduces the risk of cutter breakage. When you want to achieve the most productive drilling operation, you need to make sure you use the most power. This prevents the motor from overloading to reduce damage to the tool itself while also minimizing the risk of eventual damage to the cutter from overheating or movement.

SCAN TO WATCH VIDEO



Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)



## ICECUT 200™

### The versatile unit

Powerful – 2-speed – yet only 27 lbs – ideal for a wide range of production or job site operations.



## ICECUT 200PM™

### Permanent Magnet Magnetic Drill

Operator safety is the number 1 priority with the new ICECUT 200PM™. By swapping the electromagnetic base for permanent magnet, the machine does not need electricity to be securely fixed in place. This is the perfect unit to use on job sites or any applications that may involve inconsistent power sources.



Permanent Magnet for additional safety. With its double action lever, accidental magnet deactivation can be avoided. The magnet will also remain activated in the event of sudden power loss.

Order No.	39D200	39D201
Watts	1200 W	1200 W
Speed	2 speeds	2 speeds
No load RPM	Speed #1: 300 RPM / Speed #2: 600 RPM	Speed #1: 300 RPM / Speed #2: 600 RPM
Rated Amperage	10 A	10 A
Core cutter capacity (diameter)	2" (50 mm)	2" (50 mm)
Core cutter capacity (depth)	2" (50 mm)	2" (50 mm)
Twist drill capacity (diameter)	1/2"	1/2"
Tapping function	NO	NO
Weight	27 lbs (12.2 kg)	28.6 lbs (13 kg)
Swivel and sliding magnet	NO	NO
Max drill point pressure	1875 lbs (850 kg)	1875 lbs (850 kg)
Reversible handle	Tool-Free press button	Tool-Free press button
Powerguard electronic overload protection	15 A	15 A
Motor overload protection	Mechanical clutch	Mechanical clutch
Short-Circuit protection	Integrated fuse	Integrated fuse
Accudrill LED torque display	Integrated Amp meter	Integrated Amp meter
Magnetic field sensor	Material and thickness detector	Material thickness detector
Tool free guard	Metal, sliding up	Metal, sliding
Wiring	Internal	Internal
Lubrication	On motor head	Internal thru feed, on motor head
Control board	Centered, S/S switches with LED	Centered, S/S switches with LED
Handle	Open with anti-slip support	Open with anti-slip support
Arbor	Weldon shank with support	Weldon shank with support
Maintenance	Easy access to carbon brushes	Easy access to carbon brushes
Total Stroke	2.9"	2.9"



# ICECUT 250 AUTO™

## Continuous Feed Magnetic Drill

Building off the most versatile drilling platform WALTER has to offer, ICECUT 250 AUTO™ comes with all the great features of the 250 model as well as a new continuous feed setting. Just push in the machine's quill and watch the drill do all the work. Automatic feed, automatic return and automatic safety shut off after the hole is completed. This is the unit of choice for working in production style environments. A single operator can operate several machines at once to improve productivity.

- ▷ Automatic feed and auto-retract
- ▷ Twist drilling, core cutting, & tapping functionality
- ▷ ACCUDRILL system protects unit from overload and the risk of cutter breakage
- ▷ WALTER's DYNAMAX speed control ensures RPM remains constant even under load



ICECUT 250 AUTO™ DIALSPEED™ RPM Setting		
SPEED DIAL SETTING	SPEED 1	SPEED 2
1	100	200
2	130	260
3	160	320
4	200	380
5	230	440
6	265	500

<b>Order No.</b>	<b>39D252</b>
Watts	1500 W
Rated Amperage	15.0 A
Speeds	2 speeds variable
No load RPM	Speed #1: 100-265 RPM Speed #2: 200-500 RPM
Rated current	110-120V
Core cutter capacity (diameter)	2-3/8" (in manual), 2" (in auto)
Core cutter capacity (depth)	3" (in manual), 2" (in auto)
Twist drill capacity (diameter)	1"
Tapping function	YES (up to 3/4" - 16")
Weight	40.78 lbs (18.5 kg)
Swivel and sliding magnet	NO
Max drill point pressure	3035 lbs (1377 kg)
Reversible handle	NO
Powerguard motor overload protection	20 A
Powerguard electronic overload protection	27 A
Short-Circuit protection	Integrated fuse
Accudrill LED torque display	Integrated Amp meter
Magnetic field sensor	YES
Tool free guard	Metal, sliding
Wiring	Internal
Lubrication	Internal thru feed, on motor head
Control board	Centered, S/S switches with LED
Handle	1 on main housing, 1 pistol grip
Arbor	Morse Taper 2 shank; 3/4" Weldon
Maintenance	Easy access to carbon brushes
Total stroke	6.65"

Thanks to the drills optimized auto-feed system, cutter life can be extended. The continuous feed also allows for improved productivity and the operation of multiple units at once.

### Tech tip!

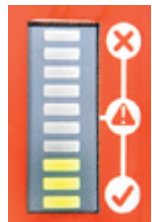
Always ensure the coolant tank is filled and a constant stream of ICECUT™ (53C055) is flowing when drilling automatically.

# ICECUT 250™ AND ICECUT 250P™

## Features

Get all the power and versatility from the ICECUT™ magnetic drilling systems, now available in a more compact size for easy portability. Use the ICECUT 250™ for ultimate versatility when drilling or tapping larger holes. The ICECUT 250P™ is the unit of choice for working on curved surfaces or pipes thanks to a convenient permanent magnet.

**Weighs only  
35 pounds!**



“Accudrill” system protects against overload and reduces the risk of cutter breakage. When you want to achieve the most productive drilling operation, you need to make sure you use the most power. This prevents the motor from overloading to reduce damage to the tool itself while also minimizing the risk of eventual damage to the cutter from overheating or movement.



SCAN TO  
WATCH VIDEO



Video available at The WALTER Network  
[www.youtube.com/user/TheWalterNetwork](http://www.youtube.com/user/TheWalterNetwork)

## ICECUT 250™

Lightweight, powerful with variable speed

The powerful, intuitive and lightweight ICECUT 250™ is a truly versatile machine, especially for its size.



## ICECUT 250P™

Drill faster and easier on pipe-related jobs

The double magnet ICECUT 250P™ sets up fast for pipe applications and is curved-surface-ready.



ICECUT 250-250P™ DIALSPEED™ RPM Setting		
SPEED DIAL SETTING	SPEED 1	SPEED 2
1	100	200
2	130	260
3	160	320
4	200	380
5	230	440
6	265	500

### Tech tip!

Use carbide core cutter  
05D518 with included morse  
Tape Shank no. 2 to drill  
to 2-1/2" large holes.  
3/4" Weldon shank  
Diameter: 2-1/2"  
Length: 1-1/2"

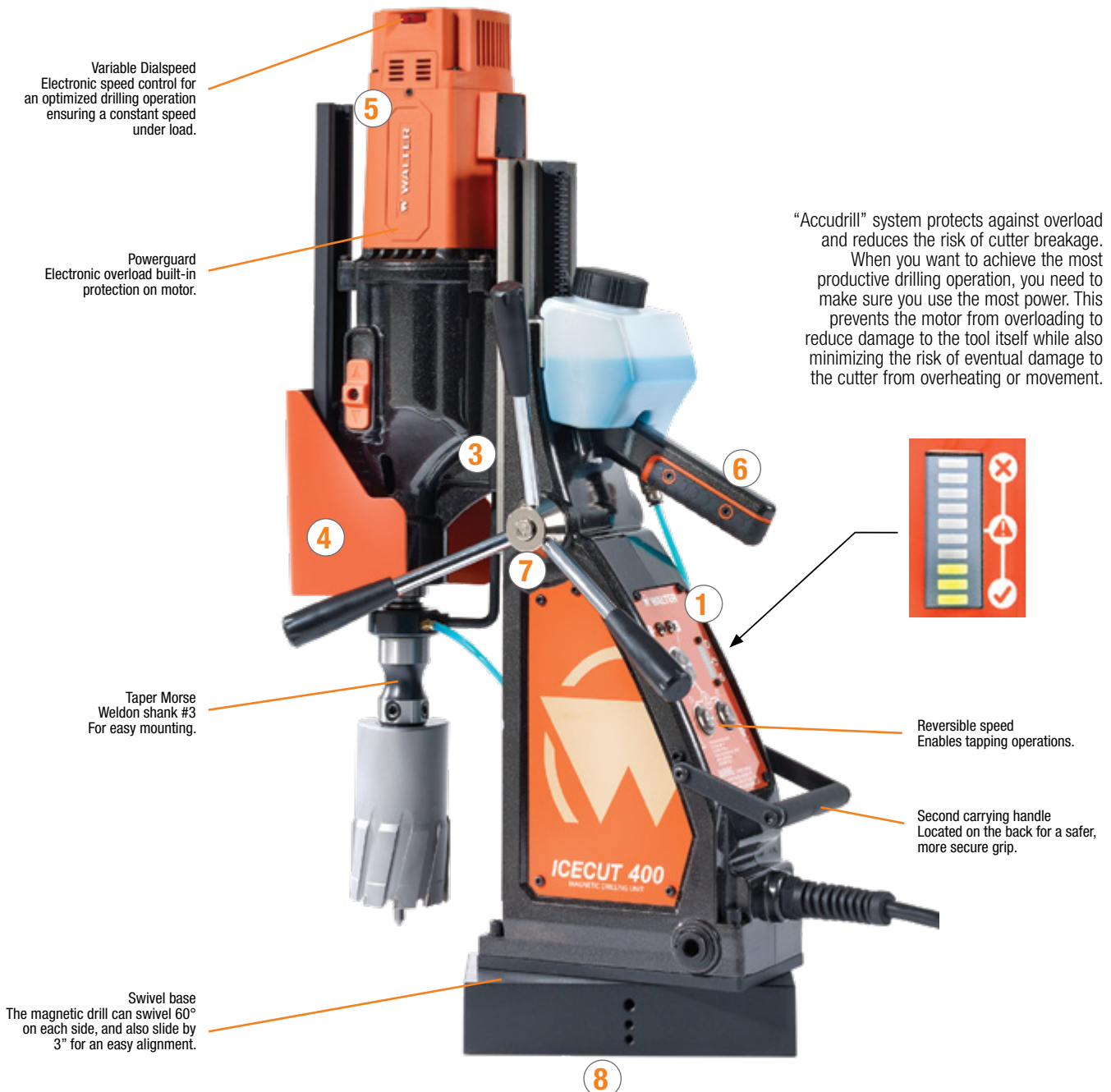
Order No.	39D250	39D251
Watts	1550 W	1500 W
Speed	2 speeds + Reversible	2 speeds + Reversible
Dynamax variable speed control	YES	YES
No load RPM	100-500 RPM	100-500 RPM
Rated current	15 A	15 A
Core cutter capacity (diameter)	2-1/2"	2-1/2"
Core cutter capacity (depth)	3" (w/ 2-piece pilot pin)	3" (w/ 2-piece pilot pin)
Twist drill capacity (diameter)	1/2"	1/2"
Tapping function	YES, up to 3/4" - 16	YES, up to 3/4" - 16
Weight	34.1 lbs (15.4 kg)	39.6 lbs (18 kg)
Swivel and sliding magnet	NO	NO
Max drill point pressure	3035 lbs (1376 kg)	3035 lbs (1376 kg)
Reversible handle	Tool-Free press button	Tool-Free press button
Powerguard motor overload protection	20 A	20 A
Powerguard electronic overload protection	27 A	27 A
Short-Circuit protection	Integrated fuse	Integrated fuse
Accudrill LED torque display	Integrated Amp meter	Integrated Amp meter
Magnetic field sensor	Material & thickness detector	NO (Permanent Magnet)
Tool free guard	Metal, sliding	Metal, sliding
Wiring	Internal	Internal
Lubrication	Internal thru feed, on motor head	Internal thru feed, on motor head
Control board	Centered, S/S switches with LEDs	Centered, S/S switches with LED
Handle	1 reversible on main housing, 1 pistol grip	1 reversible on main housing, 1 pistol grip
Arbor	Morse Taper 2 shank; 3/4" Weldon	Morse Taper 2 shank; 3/4" Weldon
Maintenance	Easy access to carbon brushes	Easy access to carbon brushes
Total Stroke	5.5"	5.5"

# ICECUT 300™ and ICECUT 400™

## Features

Now you can get all the benefits of using an ICECUT™ magnetic drilling machine while using annular cutters up to 4" wide and a depth of up to 4". To make the drilling operation even safer and easier, each machine features a swivel base for easy positioning of the tool along with our top-of-the-line safety features such as DIALSPEED™, POWERGUARD™, and DYNAMAX™.

*Drill more, bigger, faster and safer!*





## ICECUT 300™

For deeper, wider holes

With a swivel base and electronic speed control, allows you to drill safer and faster.



## ICECUT 400™

The most powerful and most versatile unit

With 4 mechanically controlled speeds and a wider RPM range, this powerful tool can tackle any drilling operation with ease.



Order No.	39D300	39D400
Watts	1800 W	2000 W
Speed	2 speeds + reversible	4 speeds + reversible
Dynamax variable speed control	YES	YES
No load RPM	Speed #1: 70-180 RPM / Speed #2: 200-500 RPM	Speed #1: 45-129 RPM / Speed #2: 70-208 RPM Speed #3: 150-434 RPM / Speed #4: 240-700 RPM
Rated current	18 A	20 A
Core cutter capacity (diameter)	3" (75 mm)	4" (100 mm)
Core cutter capacity (depth)	3" (75 mm)	4" (100 mm)
Twist drill capacity (diameter)	1-1/4" (31.75 mm)	1-1/4" (31.75 mm)
Tapping function	YES (1-1/8")	YES (1-1/8")
Weight	52 lbs (23.5 kg)	54.5 lbs (24.8 kg)
Swivel and sliding magnet	Swivel 120°, sliding 2"	Swivel 120°, sliding 2"
Max drill point pressure	4160 lbs (1890 kg)	4950 lbs (2240 kg)
Reversible handle	Tool free press-button	Tool free press-button
Powerguard motor overload protection	22 A	24 A
Powerguard electronic overload protection	25 A	27 A
Short-Circuit protection	Integrated fuse	Integrated fuse
Accudrill LED torque display	Integrated Amp meter	Integrated Amp meter
Magnetic field sensor	Material and thickness detector	Material and thickness detector
Tool free guard	Metal, sliding up	Metal, sliding up
Wiring	Internal	Internal
Lubrication	On motor head	On motor head
Control board	Centered, s/s switches with LEDS	Centered, S/S switches with LED
Handle	1 on main housing, 1 rear handle	1 on main housing, 1 rear handle
Arbor	Weldon taper morse #3	Weldon taper morse #3
Maintenance	Easy access to carbon brushes	Easy access to carbon brushes
Total Stroke	9.4"	10.2"

## MAGNETIC DRILLS FAMILY ICECUT™ SYSTEMS

ICECUT MINI™ - ICECUT 100™ - ICECUT 200™ - ICECUT 200PM™ - ICECUT 250™  
ICECUT 250 AUTO™ - ICECUT 250P™ - ICECUT 300™ - ICECUT 400™



Includes a 1/2" chuck adaptor for drilling smaller holes



For larger holes, 1/2" and above, use the magnetic base with the standard Weldon shank



Comes in a foam padded case for superior protection

ICECUT 300™ (39D300) DIALSPEED™ RPM Setting				
	RPM			
	SPEED 1 ↓	SPEED 2 ↑	SPEED 3	SPEED 4
1	70	200	x	x
2	92	260	x	x
3	114	320	x	x
4	136	380	x	x
5	158	440	x	x
6	180	500	x	x

ICECUT 400™ (39D400) DIALSPEED™ RPM Setting (Left/Right)				
	RPM			
	SPEED 1 ↓/↑	SPEED 2 ↓/↓	SPEED 3 ↑/↑	SPEED 4 ↑/↓
1	45	70	150	240
2	62	98	207	332
3	79	126	264	424
4	96	154	321	516
5	113	181	378	608
6	129	208	434	700

Model	Order No.	No load RPM	Motor	Amps	Twist drill capacity (diameter)	Annular cutter	Max. drilling depth	Magnet strength	Weight
ICECUT MINI™	39D050	250-500 RPM	120V .A.C.	10A	N/A	2"	2"	2248 lbs (1019.6 kg)	23.1 lbs (10.4 kg)
ICECUT 100™	39D100	600 RPM	120V .A.C.	8A	1/2" (stub length only)	1-3/8"	1-1/2"	1875 lbs (850.5 kg)	22 lbs (9.9 kg)
ICECUT 200™	39D200	Speed #1: 300 RPM Speed #2: 600 RPM	120V .A.C.	10A	1/2"	2"	2"	1875 lbs (850.5 kg)	27 lbs (12.2 kg)
ICECUT 200PM™	39D201	Speed #1: 300 RPM Speed #2: 600 RPM	120V .A.C.	10A	1/2"	2"	2"	1875 lbs (850.5 kg)	28 lbs (12.7 kg)
ICECUT 250™	39D250	Speed #1: 100-265 RPM Speed #2: 200-500 RPM	120V .A.C.	15A	1/2"	2-3/8"	3"	3035 lbs (1376.6 kg)	34.1 lbs (15.4 kg)
ICECUT 250 AUTO™	39D252	Speed #1: 100-265 RPM Speed #2: 200-500 RPM	120V .A.C.	15A	1/2"	2-3/8"	3"	3035 lbs (1376.6 kg)	40 lbs (18 kg)
ICECUT 250P™	39D251	Speed #1: 100-265 RPM Speed #2: 200-500 RPM	120V .A.C.	15A	1/2"	2-3/8"	3"	3035 lbs (1376.6 kg)	39.6 lbs (17.9 kg)
ICECUT 300™	39D300	Speed #1: 70-180 RPM Speed #2: 200-500 RPM	120V .A.C.	18A	1 1/4"	3"	3"	4160 lbs (1886.9 kg)	52 lbs (23.6 kg)
ICECUT 400™	39D400	Speed #1: 45-129 RPM Speed #2: 70-208 RPM Speed #3: 150-434 RPM Speed #4: 240-700 RPM	120V .A.C.	20A	1 1/4"	4"	4"	4950 lbs (2945.2 kg)	54.5 lbs (24.7 kg)

## STRAIGHT DRILL 716B- 5/8"

End handle drill with a heavy-duty 120V motor and 2-speed gear box. Use low speed to drill large holes with extra torque and high speed to drill small holes. The reversing feature makes this drill also suitable for tapping applications.



### Capacities - Steel

Model	Order No.	Speed under load	Motor	Max. torque	Amps	Twist drill	Hole saw	Weight
716B	38A716	0-430/760 rev.	120V A.C.	30/17 Nm	9.2	5/8"	3"	9 lbs (4 kg)

**STANDARD EQUIPMENT:** 5/8" capacity keyed chuck 22A072, chuck key 22A202, side handle (model 716) 48E063 and 9 ft. cord.





# 08

## REAMERS

# QUICK PAGES REFERENCES

## REAMERS

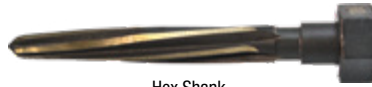


Reamers are available in car (shorter) and bridge (longer) length as:

### Shank Styles



Taper Shank



Hex Shank



3-Flat Shank

### Flute Styles



Spiral Flute



High-Spiral Flute



Straight Flute

### Multi Steps Reamers

#### High Speed Steel

**Black Oxide**  
For enlarging existing holes in steel to a new diameter

Type	Series	Catalog page reference
Step	4700SE	447



### Bridge / Car Reamers

#### High Speed Steel

**Black Oxide**  
For use with Morse taper holders

Type	Series	Catalog page reference
Bridge Length	4200, 4250	447
Car Length	150H, 175H	448



### Construction Reamers

#### High Speed Steel

**Black Oxide**  
For better performance on low to medium tensile strength materials

Type	Series	Catalog page reference
3-Flat Shank	4275, 4275E, 4285	450
Hex Nut Shank	4290, 4290E, 100HX, 125HX, 150HX	451



### Heavy-Duty Construction Reamers



#### High Speed Steel

**Black and Gold**  
For heavy-duty reaming applications

Type	Series	Catalog page reference
3-Flat Shank	4275N, 4285N	449
Hex Nut Shank	125SF, 4290N	452



### Alignment Reamers

#### High Speed Steel

**Black and Gold Oxide**  
For Cast Iron, Non-Ferrous Metals, Stainless Steel

Type	Series	Catalog page reference
3-Flat Shank	TCR	453



### Chucking Reamers

**Bright & Black**  
Provides an accurate hole size with a smooth finish

Type	Series	Catalog page reference
Chucking	4300E, 4375E, 4350E	454



### Hand Reamers

**Bright & Black**  
Widely used for final sizing of drilled holes

Type	Series	Catalog page reference
Hand	4400E, 4450E	455



### Taper Pin Reamers

**Bright & Black**  
For reaming holes to allow a taper pin fastener to fit

Type	Series	Catalog page reference
Taper Pin	4500E, 4550E, 4570E	456





# MULTI-STEPS REAMERS

**15 Sizes, 3 Tools: Clean, Deburr, and Free Holes in Seconds!**

- ▷ Feature 3-flat shanks to reduce slippage in the chuck
- ▷ Shanks are 3/8"
- ▷ Reamers are made from high quality High Speed Steel (HSS)
- ▷ Black oxide surface treatment increases wear resistance



Special geometry split point reduces "walking" when beginning the reaming process. Can start a hole from scratch.

**4700SE SERIES**  
**HIGH SPEED STEEL**  
Flat Reduced Shank

Tool#	Description	4700SE Order No.
1	5 Steps: 5/16", 3/8", 7/16", 1/2", 9/16"	470SE001
2	5 Steps: 9/16", 5/8", 11/16", 3/4", 13/16"	470SE002
3	5 Steps: 13/16", 7/8", 15/16", 1", 1-1/16"	470SE003
SET	3pcs: 1 of each Reamer	470SESET

Available in 3 tools, with sizes from 5/16" thru 1-1/16"

## BRIDGE REAMERS

For enlarging or aligning holes in structural steel, truck and trailer body frames, ship building, and bridge construction applications.

- ▷ For use with morse taper holders
- ▷ Straight Flute- for a smoother finish;  
Spiral Flute- for more aggressive reaming
- ▷ High Speed Steel
- ▷ All sizes are individually packaged

**4200 / 4250 SERIES**  
**HIGH SPEED STEEL**  
Taper Shank



4200 Straight Flute



4250 Spiral Flute

Size	Point Dia.	Flute Length	Overall Length	Morse Taper	Straight Flute 4200 Order No.	Spiral Flute 4250 Order No.
5/16"	11/64"	4-3/8"	8-1/4"	2	420A120	425A120
11/32"	11/64"	4-3/8"	8-1/4"	2	420A122	425A122
3/8"	7/32"	4-3/8"	8-1/4"	2	420A124	425A124
13/32"	7/32"	4-3/8"	8-1/4"	2	420A126	425A126
7/16"	17/64"	4-3/8"	8-1/4"	2	420A128	425A128
15/32"	9/32"	5-1/8"	9"	2	420A130	425A130
1/2"	5/16"	5-1/8"	9"	2	420A132	425A132
17/32"	11/32"	5-1/8"	9"	2	420A134	425A134
9/16"	3/8"	5-1/8"	9"	2	420A136	425A136
19/32"	3/8"	5-1/8"	9"	2	420A138	425A138
5/8"	25/64"	6-1/8"	10"	2	420A140	425A140
21/32"	25/64"	7-1/8"	11-3/4"	3	420A142	425A142
11/16"	13/32"	7-1/8"	11-3/4"	3	420A144	425A144
3/4"	15/32"	7-3/8"	12"	3	420A148	425A148
25/32"	15/32"	7-3/8"	12"	3	420A150	425A150
13/16"	35/64"	7-3/8"	12"	3	420A152	425A152
27/32"	35/64"	7-3/8"	12"	3	420A154	425A154

Size	Point Dia.	Flute Length	Overall Length	Morse Taper	Straight Flute 4200 Order No.	Spiral Flute 4250 Order No.
7/8"	39/64"	7-3/8"	12"	3	420A156	425A156
29/32"	39/64"	7-3/8"	12"	3	420A158	425A158
15/16"	43/64"	7-3/8"	12"	3	420A160	425A160
31/32"	5/8"	7-3/8"	12"	3	-	425A162
1"	47/64"	7-3/8"	12"	3	420A164	425A164
1-1/32"	47/64"	7-3/8"	12"	3	420A202	425A202
1-1/16"	13/16"	7-3/8"	12"	3	420A204	425A204
1-1/8"	55/64"	7-3/8"	12"	3	420A208	425A208
1-3/16"	59/64"	7-3/8"	12"	3	420A212	425A212
1-1/4"	63/64"	7-3/8"	13"	4	420A216	425A216
1-5/16"	1-1/16"	7-3/8"	13"	4	420A220	425A220
1-3/8"	1-1/8"	7-3/8"	13"	4	420A224	425A224
1-7/16"	1-3/16"	7-3/8"	13"	4	420A228	425A228
1-1/2"	1-1/4"	7-3/8"	13"	4	420A232	425A232
1-9/16"	1-1/4"	7-3/8"	13"	4	420A236	425A236
1-5/8"	1-3/8"	7-3/8"	13"	4	420A240	425A240

For enlarging or aligning holes in structural steel, ship building, and bridge construction applications

- ▷ Shorter length permits their use in cramped quarters where Bridge Reamers cannot enter
- ▷ The approximate length of the tapered section is 50% of the total flute length
- ▷ For use with morse taper holders
- ▷ High Speed Steel
- ▷ All sizes are individually packaged

## 150H / 175H SERIES

### HIGH SPEED STEEL

Straight Flute / Spiral Flute / Taper Shank



150H Straight Flute



175H Spiral Flute

Size	Flute Length	Overall Length	Morse Taper	Spiral Flute 175H Order No.
1/4"	2-1/2"	5-7/16"	1	175H116
9/32"	2-1/2"	5-7/16"	1	175H118
5/16"	2-3/4"	5-11/16"	1	175H120
11/32"	2-3/4"	5-11/16"	1	175H122
3/8"	2-3/4"	5-11/16"	1	175H124
13/32"	3-1/2"	6-15/16"	2	175H126
7/16"	3-1/2"	6-15/16"	2	175H128
15/32"	3-1/2"	7-1/16"	2	175H130
1/2"	4"	7-9/16"	2	175H132
17/32"	4"	7-9/16"	2	175H134
9/16"	4"	7-9/16"	2	175H136
19/32"	4-1/2"	8-1/16"	2	175H138
5/8"	4-1/2"	8-1/16"	2	175H140
21/32"	4-1/2"	8-13/16"	3	175H142
11/16"	4-1/2"	8-13/16"	3	175H144
23/32"	4-1/2"	8-13/16"	3	175H146
3/4"	5"	9-1/2"	3	175H148
25/32"	5"	9-1/2"	3	175H150

Size	Flute Length	Overall Length	Morse Taper	Straight Flute 150H Order No.	Spiral Flute 175H Order No.
13/16"	5"	9-1/2"	3		175H152
27/32"	5"	9-1/2"	3		175H154
7/8"	5"	9-1/2"	3		175H156
29/32"	5"	9-1/2"	3		175H158
15/16"	5"	9-1/2"	3	150H160	175H160
31/32"	5"	9-1/2"	3		175H162
1"	5"	9-1/2"	3		175H164
1-1/32"	5"	9-1/2"	3		175H202
1-1/16"	5"	9-1/2"	3		175H204
1-1/8"	5"	9-1/2"	3		175H208
1-3/16"	5"	9-1/2"	3		175H212
1-1/4"	5"	9-1/2"	3		175H216
1-5/16"	5"	10-1/2"	4		175H220
1-3/8"	5"	10-1/2"	4		175H224
1-7/16"	5"	10-1/2"	4		175H228
1-1/2"	5"	10-1/2"	4		175H232
1-9/16"	5"	10-1/2"	4		175H236
1-5/8"	5"	10-1/2"	4		175H240

# CONSTRUCTION REAMERS

For enlarging or aligning holes in structural steel, truck and trailer body framers, ship building, and bridge construction applications

- ▷ Especially adapted for heavy-duty reaming
- ▷ Tapered at the point to facilitate entering of holes which are out of alignment
- ▷ Available in Spiral Flute and High Spiral Flute with 3 Flats Straight Shanks, or with Hex Nut Shanks
- ▷ Safety collar added on 4285 / 4285N series to help prevent over penetration
- ▷ All sizes are individually packaged

**NITRO**



4275N Spiral Flute



4285N High Spiral Flute

## 4275N / 4285N SERIES

### CONSTRUCTION HIGH SPEED STEEL 3 Flats Reduced Shank

Size	Shank Dia.	Flute Length	Overall Length	Spiral Flute 4275N Order No.	High Spiral Flute 4285N Order No.
1/4"	1/4"	2-1/2"	4-3/8"	427N116	428N116
5/16"	5/16"	2-3/4"	4-5/8"	427N120	428N120
3/8"	3/8"	2-3/4"	4-5/8"	427N124	428N124
13/32"	13/32"	3-1/2"	5-3/8"	427N126	428N126
7/16"	7/16"	3-1/2"	5-3/8"	427N128	428N128
15/32"	15/32"	3-3/4"	5-7/8"	427N130	428N130
1/2"	1/2"	4"	5-7/8"	427N132	428N132
17/32"	1/2"	4"	5-7/8"	427N134	428N134
9/16"	1/2"	4"	5-7/8"	427N136	428N136
19/32"	1/2"	4-1/2"	6-3/8"	427N138	428N138
5/8"	1/2"	4-1/2"	6-3/8"	427N140	428N140
.652	1/2"	4-1/2"	6-3/8"	427N141	428N141
21/32"	1/2"	4-1/2"	6-3/8"	427N142	428N142
11/16"	1/2"	4-1/2"	6-3/8"	427N144	428N144
23/32"	1/2"	4-1/2"	6-3/8"	427N146	428N146
3/4"	1/2"	5"	6-7/8"	427N148	428N148
.776	1/2"	5"	6-7/8"	427N149	428N149

Size	Shank Dia.	Flute Length	Overall Length	Spiral Flute 4275N Order No.	High Spiral Flute 4285N Order No.
25/32"	1/2"	5"	6-7/8"	427N150	428N150
13/16"	1/2"	5"	6-7/8"	427N152	428N152
27/32"	1/2"	5"	6-7/8"	427N154	428N154
7/8"	1/2"	5"	6-7/8"	427N156	428N156
29/32"	1/2"	5"	6-7/8"		428N158
15/16"	1/2"	5"	6-7/8"	427N160	428N160
31/32"	1/2"	5"	6-7/8"	427N162	428N162
1"	1/2"	5"	6-7/8"	427N164	428N164
1.027	1/2"	5"	6-7/8"	427N201	428N201
1-1/16"	1/2"	5"	6-7/8"	427N204	428N204
1-1/8"	3/4"	5"	6-7/8"	427N208	428N208
1-3/16"	3/4"	5"	6-7/8"	427N212	428N212
1-1/4"	3/4"	5"	6-7/8"	427N216	428N216
1-5/16"	3/4"	5"	6-7/8"	427N220	428N220
1-3/8"	3/4"	5"	6-7/8"	427N224	428N224
1-7/16"	3/4"	5"	6-7/8"	427N228	428N228
1-1/2"	3/4"	5"	6-7/8"	427N232	428N232

Sizes 1-1/8" and above also available with 1/2" shank.  
Please call for price and availability.



No. of Pcs.	Sizes	Order No.
<b>NITRO® Construction Reamer Set</b>		
3	1/2", 5/8", 3/4"	427N3S
3	1/2", 5/8", 3/4"	428N3S



No. of Pcs.	Sizes	4275N Order No.	4285N Order No.
<b>NITRO® Construction Reamer Display Sets</b>			
8	1 each of: 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16	427N8D	428N8D
16	2 each of: 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16	427N16D	428N16D
24	3 each of: 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16	427N24D	428N24D

## CONSTRUCTION REAMERS

### 4275 / 4275E\* SERIES

#### CONSTRUCTION HIGH SPEED STEEL

Spiral Flute / 3-Flats Reduced Shank



4275

Size	Shank Dia.	Flute Length	Overall Length	4275 Order No.	4275E Order No.
1/4"	1/4"	2-1/2"	4-3/8"	427A116	-
5/16"	5/16"	2-3/4"	4-5/8"	427A120	427E120
3/8"	3/8"	2-3/4"	4-5/8"	427A124	427E124
13/32"	13/32"	3-1/2"	5-3/8"	427A126	-
7/16"	7/16"	3-1/2"	5-3/8"	427A128	427E128
1/2"	1/2"	4"	5-7/8"	427A132	427E132
17/32"	1/2"	3-3/4"	5-7/8"	427A134	-
9/16"	1/2"	4"	5-7/8"	427A136	427E136
19/32"	1/2"	4-1/4"	6-3/8"	427A138	-
39/64"	1/2"	4-1/4"	6-3/8"	427A139	-
5/8"	1/2"	4-1/2"	6-3/8"	427A140	427E140
.652	1/2"	4-1/2"	6-3/8"	427A141	-
21/32"	1/2"	4-1/2"	6-3/8"	427A142	-
11/16"	1/2"	4-1/2"	6-3/8"	427A144	427E144
23/32"	1/2"	4-1/2"	6-3/8"	427A146	-
3/4"	1/2"	5"	6-7/8"	427A148	427E148
.776"	1/2"	5"	6-7/8"	427A149	-
25/32"	1/2"	5"	6-7/8"	427A150	-
13/16"	1/2"	5"	6-7/8"	427A152	427E152
7/8"	1/2"	5"	6-7/8"	427A156	427E156
15/16"	1/2"	5"	6-7/8"	427A160	427E160
1"	1/2"	5"	6-7/8"	427A164	427E164
1-027	1/2"	5"	6-7/8"	427A201	-
1-1/16"	1/2"	5"	6-7/8"	427A204	427E204
1-3/32"	1/2"	5"	6-7/8"	427A206	-
1-1/8"	3/4"	5"	6-7/8"	427A208	-
1-3/16"	3/4"	5"	6-7/8"	427A212	-
1-1/4"	3/4"	5"	6-7/8"	427A216	-
1-5/16"	3/4"	5"	6-7/8"	427A220	-
1-3/8"	3/4"	5"	6-7/8"	427A224	-
1-7/16"	3/4"	5"	6-7/8"	427A228	-
1-1/2"	3/4"	5"	6-7/8"	427A232	-

Sizes 1-1/8" and above also available with 1/2" shank.  
Please call for price and availability.  
\*Not Made in USA

### 4285 SERIES

#### CONSTRUCTION HIGH SPEED STEEL

High Spiral Flute / 3-Flats Reduced Shank



4285

Size	Shank Dia.	Flute Length	Overall Length	4285 Order No.
1/4"	1/4"	2-1/2"	4-3/8"	428A116
5/16"	5/16"	2-3/4"	4-5/8"	428A120
3/8"	3/8"	2-3/4"	4-5/8"	428A124
13/32"	13/32"	3-1/2"	5-3/8"	428A126
7/16"	7/16"	3-1/2"	5-3/8"	428A128
15/32"	15/32"	3-3/4"	5-7/8"	428A130
1/2"	1/2"	4"	5-7/8"	428A132
17/32"	1/2"	4"	5-7/8"	428A134
9/16"	1/2"	4"	5-7/8"	428A136
19/32"	1/2"	4-1/2"	6-3/8"	428A138
5/8"	1/2"	4-1/2"	6-3/8"	428A140
.652	1/2"	4-1/2"	6-3/8"	428A141
21/32"	1/2"	4-1/2"	6-3/8"	428A142
11/16"	1/2"	4-1/2"	6-3/8"	428A144
23/32"	1/2"	4-1/2"	6-3/8"	428A146
3/4"	1/2"	5"	6-7/8"	428A148
.776"	1/2"	5"	6-7/8"	428A149
25/32"	1/2"	5"	6-7/8"	428A150
13/16"	1/2"	5"	6-7/8"	428A152
27/32"	1/2"	5"	6-7/8"	428A154
7/8"	1/2"	5"	6-7/8"	428A156
15/16"	1/2"	5"	6-7/8"	428A160
1"	1/2"	5"	6-7/8"	428A164
1.027	1/2"	5"	6-7/8"	428A201
1-1/32"	1/2"	5"	6-7/8"	428A202
1-1/16"	1/2"	5"	6-7/8"	428A204
1-1/8"	3/4"	5"	6-7/8"	428A208
1-3/16"	3/4"	5"	6-7/8"	428A212
1-1/4"	3/4"	5"	6-7/8"	428A216
1-5/16"	3/4"	5"	6-7/8"	428A220
1-3/8"	3/4"	5"	6-7/8"	428A224
1-7/16"	3/4"	5"	6-7/8"	428A228
1-1/2"	3/4"	5"	6-7/8"	428A232

Sizes 1-1/8" and above also available with 1/2" shank.  
Please call for price and availability.



# CONSTRUCTION REAMERS

## 4290 / 4290E\* SERIES

### CONSTRUCTION HIGH SPEED STEEL

Spiral Flute / Hex Nut / Car Length



4290

Size	Hex Dia.	Flute Length	Overall Length	4290 Order No.	4290E Order No.
1/2"	1-1/16"	4"	5-1/2"	429A132	
9/16"	1-1/16"	4"	5-7/8"	429A136	
5/8"	1-1/16"	4-1/2"	6"	429A140	
11/16"	1-1/16"	4-1/2"	6-3/8"	429A144	429E144
3/4"	1-1/4"	5"	7"	429A148	
13/16"	1-1/4"	5"	7"	429A152	429E152
7/8"	1-7/16"	5"	7"	429A156	
15/16"	1-7/16"	5"	7"	429A160	429E160
1"	1-7/16"	5"	7"	429A164	
1-1/16"	1-5/8"	5"	7"	429A204	429E204
1-1/8"	1-5/8"	5"	7"	429A208	
1-3/16"	1-13/16"	5"	7"	429A212	
1-1/4"	1-13/16"	5"	7"	429A216	
1-5/16"	2"	5"	7-7/8"	429A220	
1-3/8"	2"	5"	7-7/8"	429A224	
1-7/16"	2"	5"	7-7/8"	429A228	
1-1/2"	2"	5"	7-7/8"	429A232	
1-9/16"	2"	5"	7-7/8"	429A236	

\*Not Made in USA

## 125HX SERIES

### CONSTRUCTION HIGH SPEED STEEL

Spiral Flute / Hex Nut / Bridge Length



125HX

Size	Hex Dia.	Flute Length	Overall Length	125HX Order No.
9/16"	1-1/16"	5-1/8"	6-7/8"	125HX136
5/8"	1-1/16"	6-1/8"	7-7/8"	125HX140
11/16"	1-1/16"	7-1/8"	9-1/4"	125HX144
3/4"	1-1/4"	7-3/8"	9-3/8"	125HX148
13/16"	1-1/4"	7-3/8"	9-3/8"	125HX152
7/8"	1-7/16"	7-3/8"	9-3/8"	125HX156
15/16"	1-7/16"	7-3/8"	9-3/8"	125HX160
1"	1-7/16"	7-3/8"	9-3/8"	125HX164
1-1/16"	1-5/8"	7-3/8"	9-3/8"	125HX204
1-1/8"	1-5/8"	7-3/8"	9-3/8"	125HX208
1-3/16"	1-13/16"	7-3/8"	9-3/8"	125HX212
1-1/4"	1-13/16"	7-3/8"	9-3/8"	125HX216
1-5/16"	2"	7-3/8"	10"	125HX220
1-3/8"	2"	7-3/8"	10"	125HX224
1-7/16"	2"	7-3/8"	10"	125HX228
1-1/2"	2"	7-3/8"	10"	125HX232
1-9/16"	2"	7-3/8"	10"	125HX236
1-5/8"	2"	7-3/8"	10"	125HX240

## 150HX SERIES

### CONSTRUCTION HIGH SPEED STEEL

Straight Flute / Hex Nut / Car Length



150HX

Size	Hex Dia.	Flute Length	Overall Length	150HX Order No.
1/2"	1-1/16"	4"	5-1/2"	150HX132
9/16"	1-1/16"	4"	5-1/2"	150HX136
5/8"	1-1/16"	4-1/2"	6"	150HX140
11/16"	1-1/16"	4-1/2"	6-3/8"	150HX144
3/4"	1-1/4"	5"	7"	150HX148
13/16"	1-1/4"	5"	7"	150HX152
7/8"	1-7/16"	5"	7"	150HX156
15/16"	1-7/16"	5"	7"	150HX160
1"	1-7/16"	5"	7"	150HX164
1-1/16"	1-5/8"	5"	7"	150HX204
1-1/8"	1-5/8"	5"	7"	150HX208
1-3/16"	1-13/16"	5"	7"	150HX212
1-1/4"	1-13/16"	5"	7"	150HX216
1-5/16"	2"	5"	7-7/8"	150HX220

## 100HX SERIES

### CONSTRUCTION HIGH SPEED STEEL

Straight Flute / Hex Nut / Bridge Length



100HX

Size	Hex Dia.	Flute Length	Overall Length	100HX Order No.
9/16"	1-1/16"	5-1/8"	6-7/8"	100HX136
5/8"	1-1/16"	6-1/8"	7-7/8"	100HX140
11/16"	1-1/16"	7-1/8"	9-1/4"	100HX144
3/4"	1-1/4"	7-3/8"	9-3/8"	100HX148
13/16"	1-1/4"	7-3/8"	9-3/8"	100HX152
7/8"	1-7/16"	7-3/8"	9-3/8"	100HX156
15/16"	1-7/16"	7-3/8"	9-3/8"	100HX160
1"	1-7/16"	7-3/8"	9-3/8"	100HX164
1-1/16"	1-5/8"	7-3/8"	9-3/8"	100HX204
1-1/8"	1-5/8"	7-3/8"	9-3/8"	100HX208
1-3/16"	1-13/16"	7-3/8"	9-3/8"	100HX212
1-1/4"	1-13/16"	7-3/8"	9-3/8"	100HX216
1-5/16"	2"	7-3/8"	10"	100HX220
1-3/8"	2"	7-3/8"	10"	100HX224
1-7/16"	2"	7-3/8"	10"	100HX228
1-1/2"	2"	7-3/8"	10"	100HX232
1-9/16"	2"	7-3/8"	10"	100HX236
1-5/8"	2"	7-3/8"	10"	100HX240

# CONSTRUCTION REAMERS

**NITRO SAFETY FIRST**

Protect against the danger and loss of a falling reamer

- ▷ Manufactured from a premium grade of high speed steel
- ▷ Body and clearance are black and gold surface-treated for maximum lubricity
- ▷ Two NE040 Magnets are placed 180° apart in hex nut to reduce the risk of the reamer falling out of the socket while in use
- ▷ Meets OSHA 29CFR Part 1926.759 (falling objects protection)
- ▷ All sizes are individually packaged

## 125SF SERIES

**CONSTRUCTION HIGH SPEED STEEL**  
Spiral Flute / Hex Nut / Bridge Length



125SF

Size	Hex Dia.	Flute Length	Overall Length	125SF Order No.
9/16"	1-1/16"	5-1/8"	6-7/8"	125SF136
5/8"	1-1/16"	6-1/8"	7-7/8"	125SF140
11/16"	1-1/16"	7-1/8"	9-1/4"	125SF144
3/4"	1-1/4"	7-3/8"	9-3/8"	125SF148
13/16"	1-1/4"	7-3/8"	9-3/8"	125SF152
7/8"	1-7/16"	7-3/8"	9-3/8"	125SF156
15/16"	1-7/16"	7-3/8"	9-3/8"	125SF160
1"	1-7/16"	7-3/8"	9-3/8"	125SF164
1-1/16"	1-5/8"	7-3/8"	9-3/8"	125SF204

Size	Hex Dia.	Flute Length	Overall Length	125SF Order No.
1-1/8"	1-5/8"	7-3/8"	9-3/8"	125SF208
1-3/16"	1-13/16"	7-3/8"	9-3/8"	125SF212
1-1/4"	1-13/16"	7-3/8"	9-3/8"	125SF216
1-5/16"	2"	7-3/8"	10"	125SF220
1-3/8"	2"	7-3/8"	10"	125SF224
1-7/16"	2"	7-3/8"	10"	125SF228
1-1/2"	2"	7-3/8"	10"	125SF232
1-9/16"	2"	7-3/8"	10"	125SF236
1-5/8"	2"	7-3/8"	10"	125SF240

## 4290N SERIES

**CONSTRUCTION HIGH SPEED STEEL**  
Spiral Flute / Hex Nut / Car Length



4290N

Size	Hex Dia.	Flute Length	Overall Length	4290N Order No.
1/2"	1-1/16"	4"	5-1/2"	429N132
9/16"	1-1/16"	4"	5-7/8"	429N136
5/8"	1-1/16"	4-1/2"	6"	429N140
11/16"	1-1/16"	4-1/2"	6-3/8"	429N144
3/4"	1-1/4"	5"	7"	429N148
13/16"	1-1/4"	5"	7"	429N152
7/8"	1-7/16"	5"	7"	429N156

Size	Hex Dia.	Flute Length	Overall Length	4290N Order No.
15/16"	1-7/16"	5"	7"	429N160
1"	1-7/16"	5"	7"	429N164
1-1/16"	1-5/8"	5"	7"	429N204
1-1/8"	1-5/8"	5"	7"	429N208
1-3/16"	1-13/16"	5"	7"	429N212
1-1/4"	1-13/16"	5"	7"	429N216
1-5/16"	2"	5"	7-7/8"	429N220

# ALIGNMENT REAMERS

- ▷ *Black and Gold surface treatment*
- ▷ *For Cast Iron, Non-Ferrous Metals, Stainless Steel*
- ▷ *All sizes are individually packaged*

**TCR SERIES**  
**HIGH SPEED STEEL**  
**3-Flat Shank**



Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
7/16"	.4375	2-1/4"	4"	072279	1
3/8"*	.3750	3-1/16"	5-1/4"	072280	1
1/2"	.5000	3-3/4"	5-15/16"	072281	1
9/16"	.5625	4-5/16"	6-9/16"	072282	1
5/8"	.6250	4-5/16"	6-9/16"	072283	1
11/16"	.6875	4-13/16"	7"	072284	1
3/4"	.7500	4-13/16"	7"	072285	1
13/16"	.8125	5-1/8"	7-1/4"	072286	1
7/8"	.8750	5-1/8"	7-1/4"	072287	1
15/16"	.9375	5-1/8"	7-1/4"	072288	1
1"	1.0000	5-1/8"	7-1/4"	072289	1
1-1/16"	1.0625	5-1/4"	7-1/4"	072291	1
1-1/8"***	1.1250	5-1/4"	7-1/4"	072292	1
1-3/16"***	1.1875	5-1/4"	7-1/4"	072293	1
1-1/4"***	1.2500	5-1/2"	7-1/2"	072294	1
1-5/16"***	1.3125	5-1/2"	7-1/2"	072295	1
1-3/8"***	1.3750	5-1/2"	7-1/2"	072296	1
1-7/16"***	1.4375	5-1/2"	7-1/2"	072297	1
1-1/2"***	1.5000	5-1/2"	7-1/2"	072298	1

\*3/8" shank  
 \*\*3/4" shank

Set				
Style	Description	Pieces	Size Range	Order No.
TCR3	Resealable Plastic Tube	3 Piece	1/2", 5/8", 3/4"	072290



# CHUCKING REAMERS



08

REAMERS

Provides a smooth, accurate finish to a hole

- ▷ Designed for general purpose reaming in machines such as drill presses, turret lathes, and screw machines
- ▷ Shorter and deeper flutes than hand reamers
- ▷ Regularly pointed with a 45° chamfer
- ▷ Suitable for machine reaming a wide range of materials
- ▷ All sizes are individually packaged



4300E Straight Flute



4375E Spiral Flute

## 4300E / 4375E SERIES

Straight Shank / Right Hand Cut

Size	Flute Length	Overall Length	Straight Flute 4300E Order No.	Spiral Flute 4375E Order No.
1/8"	7/8"	3-1/2"	430E108	437E108
9/64"	1"	3-1/2"	430E109	437E109
5/32"	1"	4"	430E110	437E110
11/64"	1-1/8"	4"	430E111	437E111
3/16"	1-1/8"	4-1/2"	430E112	437E112
13/64"	1-1/4"	4-1/2"	430E113	437E113
7/32"	1-1/4"	5"	430E114	437E114
15/64"	1-1/2"	5"	430E115	437E115
1/4"	1-1/2"	6"	430E116	437E116
17/64"	1-1/2"	6"	430E117	437E117
9/32"	1-1/2"	6"	430E118	437E118
19/64"	1-1/2"	6"	430E119	437E119
5/16"	1-1/2"	6"	430E120	437E120
21/64"	1-1/2"	6"	430E121	437E121
11/32"	1-1/2"	6"	430E122	437E122
23/64"	1-3/4"	6"	430E123	437E123
3/8"	1-3/4"	7"	430E124	437E124
25/64"	1-3/4"	7"	430E125	437E125
13/32"	1-3/4"	7"	430E126	437E126
27/64"	1-3/4"	7"	430E127	437E127
7/16"	1-3/4"	7"	430E128	437E128
15/32"	1-3/4"	7"	430E130	437E130
1/2"	2"	8"	430E132	437E132
17/32"	2"	8"	430E134	437E134
9/16"	2"	8"	430E136	437E136

Size	Flute Length	Overall Length	Straight Flute 4300E Order No.	Spiral Flute 4375E Order No.
19/32"	2"	8"	430E138	437E138
5/8"	2-1/4"	9"	430E140	437E140
21/32"	2-1/4"	9"	430E142	437E142
11/16"	2-1/4"	9"	430E144	437E144
23/32"	2-1/4"	9"	430E146	437E146
3/4"	2-1/2"	9-1/2"	430E148	437E148
25/32"	2-1/2"	9-1/2"	430E150	437E150
13/16"	2-1/2"	9-1/2"	430E152	437E152
27/32"	2-1/2"	9-1/2"	430E154	437E154
7/8"	2-5/8"	10"	430E156	437E156
29/32"	2-5/8"	10"	430E158	437E158
15/16"	2-5/8"	10"	430E160	437E160
31/32"	2-5/8"	10"	430E162	437E162
1"	2-3/4"	10-1/2"	430E164	437E164
1-1/32"	2-3/4"	10-1/2"	430E202	-
1-1/16"	2-3/4"	10-1/2"	430E204	437E204
1-3/32"	2-3/4"	10-1/2"	430E206	-
1-1/8"	2-7/8"	11"	430E208	437E208
1-5/32"	2-7/8"	11"	430E210	-
1-3/16"	2-7/8"	11"	430E212	437E212
1-1/4"	3"	11-1/2"	430E216	437E216
1-5/16"	3"	11-1/2"	430E220	437E220
1-3/8"	3-1/4"	12"	430E224	437E224
1-7/16"	3-1/4"	12-1/2"	430E228	437E228
1-1/2"	3-1/2"	12-1/2"	430E232	437E232

## 4350E SERIES

Straight Flute / Straight Shank / Right Hand Cut



4350E

Size (mm)	Shank Dia.	Flute Length	Overall Length	4350E Order No.
2.5	2.5	20	70	435E025
3.0	3.0	20	70	435E030
3.2	3.2	22	80	435E032
3.5	3.5	22	80	435E035
4.0	4.0	22	80	435E040
4.5	4.5	22	80	435E045
5.0	5.0	25	90	435E050
6.0	6.0	28	100	435E060
7.0	7.0	30	110	435E070
8.0	8.0	32	120	435E080
9.0	9.0	36	130	435E090
10.0	10.0	40	140	435E110
11.0	9.0	40	145	435E111

Size (mm)	Shank Dia.	Flute Length	Overall Length	4350E Order No.
12.0	10.0	40	155	435E112
13.0	11.0	45	160	435E113
14.0	11.0	45	170	435E114
15.0	13.0	45	175	435E115
16.0	13.0	45	180	435E116
17.0	14.0	50	190	435E117
18.0	14.0	50	195	435E118
19.0	16.0	50	205	435E119
20.0	16.0	50	210	435E120
21.0	18.0	55	215	435E121
22.0	18.0	55	225	435E122
23.0	18.0	60	230	435E123
24.0	20.0	60	240	435E124



Widely used for final sizing of drilled holes, by hand

- ▷ The square on the shank-end is suitable for holding in a tap wrench or vise
- ▷ The cutting edge is ground with a starting taper to provide easy entry
- ▷ All sizes are individually packaged

## 4400E / 4450E SERIES

### Straight Shank with Square



4400E Straight Flute



4450E Spiral Flute

Size	Flute Length	Overall Length	Straight Flute 4400E Order No.	Spiral Flute 4450E Order No.
1/8"	1-1/2"	3"	440E108	445E108
5/32"	1-5/8"	3-1/4"	440E110	445E110
11/64"	1-3/4"	3-1/2"	440E111	-
3/16"	1-3/4"	3-1/2"	440E112	445E112
7/32"	1-7/8"	3-3/4"	440E114	445E114
1/4"	2"	4"	440E116	445E116
9/32"	2-1/8"	4-1/4"	440E118	445E118
5/16"	2-1/4"	4-1/2"	440E120	445E120
11/32"	2-3/8"	4-3/4"	440E122	445E122
3/8"	2-1/2"	5"	440E124	445E124
13/32"	2-5/8"	5-1/4"	440E126	445E126
7/16"	2-3/4"	5-1/2"	440E128	445E128
15/32"	2-7/8"	5-3/4"	440E130	445E130
1/2"	3"	6"	440E132	445E132
17/32"	3-1/8"	6-1/4"	440E134	445E134
9/16"	3-1/4"	6-1/2"	440E136	445E136
19/32"	3-3/8"	6-3/4"	440E138	445E138
5/8"	3-1/2"	7"	440E140	445E140
21/32"	3-11/16"	7-3/8"	440E142	445E142

Size	Flute Length	Overall Length	Straight Flute 4400E Order No.	Spiral Flute 4450E Order No.
11/16"	3-7/8"	7-3/4"	440E144	445E144
23/32"	4-1/16"	8-1/8"	440E146	445E146
3/4"	4-3/16"	8-3/4"	440E148	445E148
25/32"	4-3/8"	8-3/4"	440E150	445E150
13/16"	4-9/16"	9-1/8"	440E152	445E152
27/32"	4-11/16"	9-3/8"	440E154	445E154
7/8"	4-7/8"	9-3/4"	440E156	445E156
29/32"	5"	10"	440E158	445E158
15/16"	5-1/8"	10-1/4"	440E160	445E160
31/32"	5-5/16"	10-5/8"	440E162	445E162
1"	5-7/16"	10-7/8"	440E164	445E164
1-1/16"	5-5/8"	11-1/4"	440E204	445E204
1-1/8"	5-13/16"	11-5/8"	440E208	445E208
1-3/16"	6"	12"	440E212	445E212
1-1/4"	6-1/8"	12-1/4"	440E216	445E216
1-5/16"	6-1/4"	12-1/2"	440E220	445E220
1-3/8"	6-5/16"	12-5/8"	440E224	445E224
1-7/16"	6-7/16"	12-7/8"	440E228	445E228
1-1/2"	6-1/2"	13"	440E232	445E232

# TAPER PIN REAMERS

Used to finish, shape, or increase the size of holes for a near-perfect fit when inserting taper pins into your workpiece.

**STRAIGHT FLUTE** – for hand use in easy-to-ream materials

**SPIRAL FLUTE** – for hand use in hard-to-ream materials

**HELICAL FLUTE** – for machine reaming on a production basis. Helical design throws the chips forward to relieve packing of the flutes

- ▷ *Designed to ream holes to fit standard taper pins*
- ▷ *Taper Pin Reamers are manufactured with a taper of 1/4" per foot*
- ▷ *Square shank allows hand (straight and spiral flute) reamers to be held in a tap wrench or vise*
- ▷ *All sizes are individually packaged*

## 4500E / 4550E / 4570E SERIES

### Straight Shank with Square



4500E Straight Flute



4550E Spiral Flute



4570E Helical Flute

Size	Shank Dia.	Flute Length	Overall Length	Small End Dia.	Large End Dia.	Straight Flute 4500E Order No.	Spiral Flute 4550E Order No.	Helical Flute 4570E Order No.
0	11/64"	1-11/16"	2-15/16"	.1287	.1638	450E000	455E000	457E000
2/0	5/32"	1-9/16"	2-9/16"	.1137	.1462	450E002	455E002	457E002
3/0	9/64"	1-5/16"	2-5/16"	.1029	.1302	450E003	455E003	457E003
4/0	1/8"	1-5/16"	2-5/16"	.0869	.1142	450E004	455E004	
5/0	7/64"	1-3/16"	2-3/16"	.0719	.0966	450E005	455E005	457E005
6/0	3/32"	15/16"	1-15/16"	.0611	.0806			457E006
7/0	5/64"	13/16"	1-13/16"	.0497	.0666	450E007	455E007	457E007
1	3/16"	1-11/16"	2-15/16"	.1447	.1798	450E010	455E010	457E010
2	13/64"	1-15/16"	3-3/16"	.1605	.2008	450E020	455E020	457E020
3	15/64"	2-5/16"	3-11/16"	.1813	.2294	450E030	455E030	457E030
4	17/64"	2-9/16"	4-1/16"	.2071	.2604	450E040	455E040	457E040
5	5/16"	2-13/16"	4-5/16"	.2409	.2994	450E050	455E050	457E050
6	23/64"	3-11/16"	5-7/16"	.2773	.3540	450E060	455E060	457E060
7	13/32"	4-7/16"	6-5/16"	.3297	.4220	450E070	455E070	457E070
8	7/16"	5-3/16"	7-3/16"	.3971	.505	450E080	455E080	457E080
9	9/16"	6-1/16"	8-5/16"	.4805	.6066	450E090	455E090	457E090
10	5/8"	6-13/16"	9-5/16"	.5799	.7219	450E100	455E100	457E100



# 09

END MILLS

# QUICK PAGES REFERENCES



## END MILLS

### Heavy-Duty End Mills

Solid Carbide

<b>Bright Finish</b> For steel, stainless steel, titanium, cast iron, brass, bronze		
Type	Series	Catalog page reference
2 & 4-Flute Finishing	7200/7300	459
	7250/7350	
	7400/7500	
Ball Nose	7600/7700	460
	7650/7750	



### General Purpose End Mills

High Speed Steel

<b>Bright Finish</b> For low to medium tensile strength materials		
Type	Series	Catalog page reference
2-Flute Finishing	5075A, 5000A	461
	5600A, 5400A	462
Multi-Flute Finishing	5100A	463
	5150A, 5250A, 5350A	464
	5650A, 5500A	465
Ball Nose	6400A, 6420A	466



### General Purpose End Mills

Cobalt

<b>Bright Finish</b> For most materials		
Type	Series	Catalog page reference
2-Flute Finishing	6500A, 6900A	467
Multi-Flute Finishing	6700A, 6725A, 6750A, 6950A	468
Ball Nose	6650A	469
Roughing	7140	470





# HEAVY-DUTY END MILLS

## 2 & 4-FLUTE FINISHING END MILLS

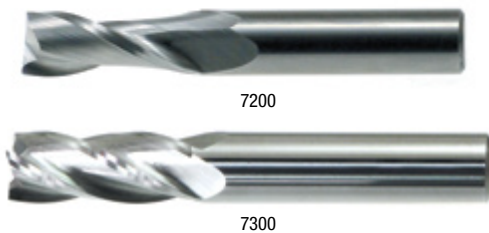
Solid carbide end mills often result in the lowest cost per operation. They can be run at impressive feed and speed rates and offer impressive tool life.

- ▷ Run at extremely impressive feed and speed rates  
- 3x the rates of HSS end mills
- ▷ Better surface finish on the workpiece
- ▷ Extended tool life over conventional HSS and Cobalt end mills

### 7200 / 7300 SERIES 2 & 4-Flute Finishing End Mills

**HEAVY-DUTY SOLID CARBIDE**

Regular Length / Center Cutting / Single End Fractional / Bright

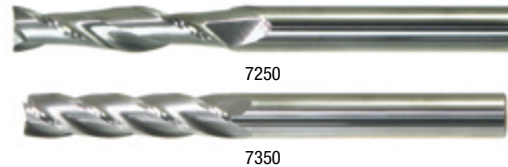


Size	Shank Dia.	Length of Cut	Overall Length	2-Flutes 7200 Order No.	4-Flutes 7300 Order No.
1/32"	1/8"	5/64"	1-1/2"	72A102C	73A102C
3/64"	1/8"	7/64"	1-1/2"	72A103C	73A103C
1/16"	1/8"	3/16"	1-1/2"	72A104C	73A104C
5/64"	1/8"	3/16"	1-1/2"	72A105C	73A105C
3/32"	1/8"	9/32"	1-1/2"	72A106C	73A106C
7/64"	1/8"	3/8"	1-1/2"	72A107C	73A107C
1/8"	1/8"	3/8"	1-1/2"	72A108C	73A108C
9/64"	3/16"	1/2"	2"	72A109C	73A109C
5/32"	3/16"	1/2"	2"	72A110C	73A110C
11/64"	3/16"	5/8"	2"	72A111C	73A111C
3/16"	3/16"	5/8"	2"	72A112C	73A112C
7/32"	1/4"	5/8"	2-1/2"	72A114C	73A114C
1/4"	1/4"	3/4"	2-1/2"	72A116C	73A116C
9/32"	5/16"	3/4"	2-1/2"	72A118C	73A118C
5/16"	5/16"	13/16"	2-1/2"	72A120C	73A120C
11/32"	3/8"	1"	2-1/2"	72A122C	73A122C
3/8"	3/8"	1"	2-1/2"	72A124C	73A124C
13/32"	7/16"	1"	2-3/4"	72A126C	73A126C
7/16"	7/16"	1"	2-3/4"	72A128C	73A128C
15/32"	1/2"	1"	3"	72A130C	73A130C
1/2"	1/2"	1"	3"	72A132C	73A132C
9/16"	9/16"	1-1/8"	3-1/2"	72A136C	73A136C
5/8"	5/8"	1-1/4"	3-1/2"	72A140C	73A140C
11/16"	3/4"	1-3/8"	4"	72A144C	73A144C
3/4"	3/4"	1-1/2"	4"	72A148C	73A148C
7/8"	7/8"	1-1/2"	4"	72A156C	73A156C
1"	1"	1-1/2"	4"	72A164C	73A164C

### 7250 / 7350 SERIES 2 & 4-Flute Finishing End Mills

**HEAVY-DUTY SOLID CARBIDE**

Extra Long Length / Center Cutting / Single End Fractional / Bright

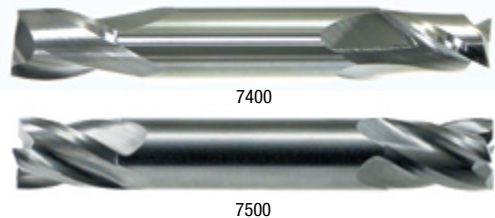


Size	Shank Dia.	Length of Cut	Overall Length	2-Flutes 7250 Order No.	4-Flutes 7350 Order No.
1/8"	1/8"	1"	3"	725A108C	735A108C
3/16"	3/16"	1-1/8"	3"	725A112C	735A112C
1/4"	1/4"	1-1/2"	4"	725A116C	735A116C
5/16"	5/16"	1-5/8"	4"	725A120C	735A120C
3/8"	3/8"	1-3/4"	4"	725A124C	735A124C
7/16"	7/16"	3"	6"	725A128C	735A128C
1/2"	1/2"	3"	6"	725A132C	735A132C
5/8"	5/8"	3"	6"	725A140C	735A140C
3/4"	3/4"	3"	6"	725A148C	735A148C
1"	1"	3"	6"	725A164C	735A164C

### 7400 / 7500 SERIES 2 & 4-Flute Finishing End Mills

**HEAVY-DUTY SOLID CARBIDE**

Stub Length / Center Cutting / Double End Fractional / Bright



Size	Shank Dia.	Length of Cut	Overall Length	2-Flutes 7400 Order No.	4-Flutes 7500 Order No.
1/32"	1/8"	5/64"	1-1/2"	74A102C	75A102C
3/64"	1/8"	3/32"	1-1/2"	74A103C	75A103C
1/16"	1/8"	1/8"	1-1/2"	74A104C	75A104C
5/64"	1/8"	5/32"	1-1/2"	74A105C	75A105C
3/32"	1/8"	3/16"	1-1/2"	74A106C	75A106C
7/64"	1/8"	7/32"	1-1/2"	74A107C	75A107C
1/8"	1/8"	1/4"	1-1/2"	74A108C	75A108C
9/64"	3/16"	9/32"	2"	74A109C	75A109C
5/32"	3/16"	5/16"	2"	74A110C	75A110C
3/16"	3/16"	3/8"	2"	74A112C	75A112C
7/32"	1/4"	1/2"	2-1/2"	74A114C	75A114C
1/4"	1/4"	1/2"	2-1/2"	74A116C	75A116C
5/16"	5/16"	1/2"	2-1/2"	74A120C	75A120C
3/8"	3/8"	1/2"	2-1/2"	74A124C	75A124C
7/16"	7/16"	9/16"	2-3/4"	74A128C	75A128C
1/2"	1/2"	5/8"	3"	74A132C	75A132C

## HEAVY-DUTY BALL NOSE END MILLS

Ball nose end mills are used where rounded details must be machined in a part (for example, a slot with a rounded bottom). They are also used where sharp machined corners must be avoided. Ball nose end mills are also widely used for delicate cuts on contoured surfaces of molds and dies.

- ▷ Have rounded end cutting edges
- ▷ Available as a center cutting tool only
- ▷ All sizes are individually packaged

### 7600 / 7700 SERIES Ball Nose End Mills

#### HEAVY DUTY SOLID CARBIDE

Regular Length / Center Cutting / Single End  
Fractional / Bright



7600



7700

### 7650 / 7750 SERIES Ball Nose End Mills SERIES

#### HEAVY DUTY SOLID CARBIDE

Extra Long Length / Center Cutting / Single End  
Fractional / Bright



7650



7750

Size	Shank Dia.	Length of Cut	Overall Length	2-Flutes 7600 Order No.	4-Flutes 7700 Order No.
1/32"	1/8"	5/64"	1-1/2"	76A102C	77A102C
3/64"	1/8"	7/64"	1-1/2"	76A103C	77A103C
1/16"	1/8"	3/16"	1-1/2"	76A104C	77A104C
5/64"	1/8"	3/16"	1-1/2"	76A105C	77A105C
3/32"	1/8"	9/32"	1-1/2"	76A106C	77A106C
7/64"	1/8"	3/8"	1-1/2"	76A107C	77A107C
1/8"	1/8"	3/8"	1-1/2"	76A108C	77A108C
9/64"	3/16"	1/2"	2"	76A109C	77A109C
5/32"	3/16"	1/2"	2"	76A110C	77A110C
11/64"	3/16"	5/8"	2"	76A111C	77A111C
3/16"	3/16"	5/8"	2"	76A112C	77A112C
7/32"	1/4"	5/8"	2-1/2"	76A114C	77A114C
1/4"	1/4"	3/4"	2-1/2"	76A116C	77A116C
9/32"	5/16"	3/4"	2-1/2"	76A118C	77A118C
5/16"	5/16"	1"	2-1/2"	76A120C	77A120C
11/32"	3/8"	1"	2-1/2"	76A122C	77A122C
3/8"	3/8"	1"	2-1/2"	76A124C	77A124C
13/32"	7/16"	1"	2-3/4"	76A126C	77A126C
7/16"	7/16"	1"	2-3/4"	76A128C	77A128C
15/32"	1/2"	1"	3"	76A130C	77A130C
1/2"	1/2"	1"	3"	76A132C	77A132C
9/16"	9/16"	1-1/8"	3-1/2"	76A136C	77A136C
5/8"	5/8"	1-1/4"	3-1/2"	76A140C	77A140C
11/16"	3/4"	1-3/8"	4"	76A144C	77A144C
3/4"	3/4"	1-1/2"	4"	76A148C	77A148C
7/8"	7/8"	1-1/2"	4"	76A156C	77A156C
1"	1"	1-1/2"	4"	76A164C	77A164C

Size	Shank Dia.	Length of Cut	Overall Length	2-Flutes 7650 Order No.	4-Flutes 7750 Order No.
1/8"	1/8"	1"	3"	765A108C	775A108C
3/16"	3/16"	1-1/8"	3"	765A112C	775A112C
1/4"	1/4"	1-1/2"	4"	765A116C	775A116C
5/16"	5/16"	1-5/8"	4"	765A120C	775A120C
3/8"	3/8"	1-3/4"	4"	765A124C	775A124C
7/16"	7/16"	3"	6"	765A128C	775A128C
1/2"	1/2"	3"	6"	765A132C	775A132C
5/8"	5/8"	3"	6"	765A140C	775A140C
3/4"	3/4"	3"	6"	765A148C	775A148C
1"	1"	3"	6"	765A164C	775A164C

# GENERAL PURPOSE END MILLS

## 2-FLUTE FINISHING END MILLS

For general purpose milling in all types of materials

- ▷ *Hard working center cutting tool*
- ▷ *Can be used for multiple operations, plunge cutting, slot milling, and profiling*
- ▷ *Ideal tool for milling operations that begin with a plunge cut and heavy cuts where the tool is "buried"*
- ▷ *2-flute end mills provide more efficient chip removal than multi-flute end mills*
- ▷ *All sizes are individually packaged*

### 5075A SERIES 2-Flute Finishing End Mills

**GENERAL PURPOSE HIGH SPEED STEEL**

Long Length / Center Cutting / Single End  
Fractional / Bright



5075A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5075A Order No.
1/4"	3/8"	1-1/4"	3-1/16"	2	507A116A
5/16"	3/8"	1-3/8"	3-1/8"	2	507A120A
3/8"	3/8"	1-1/2"	3-1/4"	2	507A124A
1/2"	1/2"	2"	4"	2	507A132B

### 5000A SERIES 2-Flute Finishing End Mills

**GENERAL PURPOSE HIGH SPEED STEEL**

Regular Length / Center Cutting / Single End  
Fractional / Bright



5000A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5000A Order No.
11/16"	1/2"	1-5/16"	3-5/16"	2	50A144B
11/16"	5/8"	1-5/16"	3-7/16"	2	50A144C
23/32"	3/4"	1-5/16"	3-5/16"	2	50A146D
3/4"	1/2"	1-5/16"	3-5/16"	2	50A148B
3/4"	5/8"	1-5/16"	3-7/16"	2	50A148C
3/4"	3/4"	1-5/16"	3-7/16"	2	50A148D
25/32"	3/4"	1-1/2"	3-5/8"	2	50A150D
13/16"	5/8"	1-1/2"	3-5/8"	2	50A152C
13/16"	3/4"	1-1/2"	3-3/4"	2	50A152D
27/32"	7/8"	1-1/2"	3-5/8"	2	50A154E
7/8"	5/8"	1-1/2"	3-5/8"	2	50A156C
7/8"	3/4"	1-1/2"	3-3/4"	2	50A156D
7/8"	7/8"	1-1/2"	3-3/4"	2	50A156E
29/32"	7/8"	1-1/2"	3-3/4"	2	50A158E
15/16"	5/8"	1-1/2"	3-5/8"	2	50A160C
15/16"	3/4"	1-1/2"	3-3/4"	2	50A160D
15/16"	7/8"	1-1/2"	3-3/4"	2	50A160E
31/32"	1"	1-1/2"	3-3/4"	2	50A162F
1"	5/8"	1-1/2"	3-5/8"	2	50A164C
1"	3/4"	1-1/2"	3-3/4"	2	50A164D
1"	7/8"	1-1/2"	3-3/4"	2	50A164E
1"	1"	1-5/8"	4-1/8"	2	50A164F
1-1/16"	3/4"	1-5/8"	3-7/8"	2	50A204D
1-1/8"	3/4"	1-5/8"	3-7/8"	2	50A208D
1-1/8"	1"	1-5/8"	4-1/8"	2	50A208F
1-3/16"	3/4"	1-5/8"	3-7/8"	2	50A212D
1-1/4"	3/4"	1-5/8"	3-7/8"	2	50A216D
1-1/4"	7/8"	1-5/8"	3-7/8"	2	50A216E
1-1/4"	1"	1-5/8"	4-1/8"	2	50A216F
1-1/4"	1-1/4"	1-5/8"	4-1/8"	2	50A216G
1-3/8"	3/4"	1-5/8"	3-7/8"	2	50A224D
1-3/8"	1"	1-5/8"	4-1/8"	2	50A224F
1-1/2"	3/4"	1-5/8"	4-1/8"	2	50A232D
1-1/2"	1"	1-5/8"	4-1/8"	2	50A232F
1-1/2"	1-1/4"	1-5/8"	4-1/8"	2	50A232G
1-5/8"	1-1/4"	1-5/8"	4-1/8"	2	50A240G
1-3/4"	3/4"	1-5/8"	4-1/8"	2	50A248D
1-3/4"	1-1/4"	1-5/8"	4-1/8"	2	50A248G
1-7/8"	1-1/4"	1-5/8"	4-1/8"	2	50A256G
2"	3/4"	1-5/8"	4-1/8"	2	50A264D
2"	1-1/4"	1-5/8"	4-1/8"	2	50A264G

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5000A Order No.
1/8"	3/8"	3/8"	2-5/16"	2	50A108A
11/64"	3/8"	7/16"	2-5/16"	2	50A111A
3/16"	3/8"	7/16"	2-5/16"	2	50A112A
13/64"	3/8"	1/2"	2-5/16"	2	50A113A
7/32"	3/8"	1/2"	2-5/16"	2	50A114A
15/64"	3/8"	1/2"	2-5/16"	2	50A115A
1/4"	3/8"	1/2"	2-5/16"	2	50A116A
17/64"	3/8"	9/16"	2-5/16"	2	50A117A
9/32"	3/8"	9/16"	2-5/16"	2	50A118A
19/64"	3/8"	9/16"	2-5/16"	2	50A119A
5/16"	3/8"	9/16"	2-5/16"	2	50A120A
21/64"	3/8"	9/16"	2-5/16"	2	50A121A
11/32"	3/8"	9/16"	2-5/16"	2	50A122A
23/64"	3/8"	9/16"	2-5/16"	2	50A123A
3/8"	3/8"	9/16"	2-5/16"	2	50A124A
25/64"	3/8"	13/16"	2-1/2"	2	50A125A
13/32"	3/8"	13/16"	2-1/2"	2	50A126A
27/64"	3/8"	13/16"	2-1/2"	2	50A127A
7/16"	3/8"	13/16"	2-1/2"	2	50A128A
29/64"	3/8"	13/16"	2-1/2"	2	50A129A
15/32"	3/8"	13/16"	2-1/2"	2	50A130A
1/2"	3/8"	13/16"	2-1/2"	2	50A132A
1/2"	1/2"	1"	3"	2	50A132B
17/32"	1/2"	1-1/8"	3-1/8"	2	50A134B
9/16"	1/2"	1-1/8"	3-1/8"	2	50A136B
19/32"	1/2"	1-1/8"	3-1/8"	2	50A138B
5/8"	1/2"	1-1/8"	3-1/8"	2	50A140B
5/8"	5/8"	1-5/16"	3-7/16"	2	50A140C
21/32"	5/8"	1-5/16"	3-5/16"	2	50A142C

## GENERAL PURPOSE 2-FLUTE FINISHING END MILLS

### 5600A SERIES 2-Flute Finishing End Mills

#### GENERAL PURPOSE HIGH SPEED STEEL

Regular Length / Center Cutting / Single End

Metric / Bright



5600A

Size (mm)	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5600A Order No.
3.0	3/8"	5/16"	2-5/16"	2	560A030
3.5	3/8"	7/16"	2-5/16"	2	560A035
4.0	3/8"	7/16"	2-5/16"	2	560A040
4.5	3/8"	1/2"	2-5/16"	2	560A045
5.0	3/8"	1/2"	2-5/16"	2	560A050
5.5	3/8"	1/2"	2-5/16"	2	560A055
6.0	3/8"	1/2"	2-5/16"	2	560A060
6.5	3/8"	9/16"	2-5/16"	2	560A065
7.0	3/8"	9/16"	2-5/16"	2	560A070
8.0	3/8"	9/16"	2-5/16"	2	560A080
9.0	3/8"	9/16"	2-5/16"	2	560A090
10.0	3/8"	13/16"	2-1/2"	2	560A100
10.5	3/8"	13/16"	2-1/2"	2	560A105
11.0	3/8"	13/16"	2-1/2"	2	560A110
12.0	3/8"	13/16"	2-1/2"	2	560A120

Size (mm)	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5600A Order No.
12.5	1/2"	1-1/8"	3-1/8"	2	560A125
13.0	1/2"	1-1/8"	3-1/8"	2	560A130
13.5	1/2"	1-1/8"	3-1/8"	2	560A135
14.0	1/2"	1-1/8"	3-3/8"	2	560A140
14.5	1/2"	1-1/8"	3-1/8"	2	560A145
15.0	1/2"	1-1/8"	3-1/2"	2	560A150
16.0	5/8"	1-5/16"	3-7/16"	2	560A160
18.0	5/8"	1-5/16"	3-7/16"	2	560A180
20.0	5/8"	1-1/2"	3-3/4"	2	560A200
22.0	3/4"	1-1/2"	3-3/4"	2	560A220
23.0	7/8"	1-1/2"	3-3/4"	2	560A230
24.0	3/4"	2"	4-1/2"	2	560A240
25.0	1"	2"	4-1/2"	2	560A250
32.0	1"	2"	4-1/2"	2	560A320

### 5400A SERIES 2-Flute Finishing End Mills

#### GENERAL PURPOSE HIGH SPEED STEEL

Regular Length / Center Cutting / Double End

Fractional / Bright



5400A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5400A Order No.
1/8"	3/8"	3/8"	3-1/16"	2	54A108A
5/32"	3/8"	7/16"	3-1/8"	2	54A110A
3/16"	3/8"	7/16"	3-1/8"	2	54A112A
7/32"	3/8"	1/2"	3-1/8"	2	54A114A
1/4"	3/8"	1/2"	3-1/8"	2	54A116A
9/32"	3/8"	9/16"	3-1/8"	2	54A118A
5/16"	3/8"	9/16"	3-1/8"	2	54A120A
11/32"	3/8"	9/16"	3-1/8"	2	54A122A
3/8"	3/8"	9/16"	3-1/8"	2	54A124A
13/32"	1/2"	13/16"	3-3/4"	2	54A126B
7/16"	1/2"	13/16"	3-3/4"	2	54A128B

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5400A Order No.
15/32"	1/2"	13/16"	3-3/4"	2	54A130B
1/2"	1/2"	13/16"	3-3/4"	2	54A132B
9/16"	5/8"	1-1/8"	4-1/2"	2	54A136C
5/8"	5/8"	1-1/8"	4-1/2"	2	54A140C
11/16"	3/4"	1-5/16"	5"	2	54A144D
3/4"	3/4"	1-5/16"	5"	2	54A148D
13/16"	7/8"	1-9/16"	5-1/2"	2	54A152E
7/8"	7/8"	1-9/16"	5-1/2"	2	54A156E
15/16"	1"	1-5/8"	5-7/8"	2	54A160F
1"	1"	1-5/8"	5-7/8"	2	54A164F



# GENERAL PURPOSE MULTI-FLUTE FINISHING END MILLS

- ▷ Provide a better finishing capability than the 2-flute end mill
- ▷ Cutting action is smoother than that of the 2-flute end mill, with less chatter and flutter
- ▷ Have ample chip carrying capacity
- ▷ Multi-flute end mills are preferred for profiling, side milling, and shallow slotting applications
- ▷ All sizes are individually packaged
- ▷ Non-center cutting end mills have cutting edges only on the sides and are used only for side milling

## 5100A SERIES Multi-Flute Finishing End Mills

### GENERAL PURPOSE HIGH SPEED STEEL

Regular Length / Non-Center Cutting / Single End  
Fractional / Bright



5100A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5100A Order No.
1/8"	3/8"	3/8"	2-5/16"	4	51A108A
11/64"	3/8"	1/2"	2-3/8"	4	51A111A
3/16"	3/8"	1/2"	2-3/8"	4	51A112A
13/64"	3/8"	9/16"	2-7/16"	4	51A113A
7/32"	3/8"	9/16"	2-7/16"	4	51A114A
15/64"	3/8"	5/8"	2-7/16"	4	51A115A
1/4"	3/8"	5/8"	2-7/16"	4	51A116A
17/64"	3/8"	11/16"	2-7/16"	4	51A117A
9/32"	3/8"	11/16"	2-7/16"	4	51A118A
19/64"	3/8"	3/4"	2-1/2"	4	51A119A
5/16"	3/8"	3/4"	2-1/2"	4	51A120A
21/64"	3/8"	3/4"	2-1/2"	4	51A121A
11/32"	3/8"	3/4"	2-1/2"	4	51A122A
23/64"	3/8"	3/4"	2-1/2"	4	51A123A
3/8"	3/8"	3/4"	2-1/2"	4	51A124A
25/64"	3/8"	1"	2-11/16"	4	51A125A
13/32"	3/8"	1"	2-11/16"	4	51A126A
27/64"	3/8"	1"	2-11/16"	4	51A127A
7/16"	3/8"	1"	2-11/16"	4	51A128A
29/64"	1/2"	1-1/4"	3-1/4"	4	51A129A
15/32"	1/2"	1-1/4"	3-1/4"	4	51A130A
31/64"	1/2"	1-1/4"	3-1/4"	4	51A131A
1/2"	3/8"	1"	2-11/16"	4	51A132A
1/2"	1/2"	1-1/4"	3-1/4"	4	51A132B
17/32"	1/2"	1-3/8"	3-3/8"	4	51A134B
9/16"	1/2"	1-3/8"	3-3/8"	4	51A136B
19/32"	1/2"	1-3/8"	3-3/8"	4	51A138B
5/8"	1/2"	1-3/8"	3-3/8"	4	51A140B
5/8"	5/8"	1-5/8"	3-3/4"	4	51A140C
21/32"	5/8"	1-5/8"	3-3/4"	4	51A142C
11/16"	1/2"	1-5/8"	3-5/8"	4	51A144B
11/16"	5/8"	1-5/8"	3-3/4"	4	51A144C
23/32"	3/4"	1-5/8"	3-7/8"	4	51A146D
3/4"	1/2"	1-5/8"	3-5/8"	4	51A148B
3/4"	5/8"	1-5/8"	3-3/4"	4	51A148C
3/4"	3/4"	1-5/8"	3-7/8"	4	51A148D

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5100A Order No.
25/32"	3/4"	1-7/8"	4-1/8"	4	51A150D
13/16"	5/8"	1-7/8"	4"	6	51A152C
13/16"	3/4"	1-7/8"	4-1/8"	4	51A152D
27/32"	5/8"	1-7/8"	4"	4	51A154E
7/8"	1/2"	1-5/8"	3-5/8"	4	51A156B
7/8"	5/8"	1-7/8"	4"	6	51A156C
7/8"	3/4"	1-7/8"	4-1/8"	4	51A156D
7/8"	7/8"	1-7/8"	4-1/8"	4	51A156E
29/32"	7/8"	1-7/8"	4-1/8"	6	51A158E
15/16"	5/8"	1-7/8"	4"	6	51A160C
15/16"	3/4"	1-7/8"	4-1/8"	4	51A160D
15/16"	7/8"	1-7/8"	4-1/8"	4	51A160E
1"	5/8"	1-7/8"	4"	6	51A164C
1"	3/4"	1-7/8"	4-1/8"	4	51A164D
1"	7/8"	1-7/8"	4-1/8"	4	51A164E
1"	1"	2"	4-1/2"	4	51A164F
1-1/16"	3/4"	2"	4-1/4"	6	51A204D
1-1/8"	3/4"	2"	4-1/4"	6	51A208D
1-1/8"	7/8"	2"	4-1/2"	6	51A208E
1-1/8"	1"	2"	4-1/2"	6	51A208F
1-1/4"	3/4"	2"	4-1/4"	6	51A216D
1-1/4"	7/8"	2"	4-1/2"	6	51A216E
1-1/4"	1"	2"	4-1/2"	6	51A216F
1-1/4"	1-1/4"	2"	4-1/2"	6	51A216G
1-3/8"	3/4"	2"	4-1/4"	6	51A224D
1-3/8"	1"	2"	4-1/2"	6	51A224F
1-1/2"	1"	2"	4-1/2"	6	51A232F
1-1/2"	1-1/4"	2"	4-1/2"	4	51A232G
1-1/2"	1-1/4"	2"	4-1/2"	6	51A232H
1-5/8"	1-1/4"	2"	4-1/2"	6	51A240G
1-3/4"	1-1/4"	2"	4-1/2"	4	51A248G
1-3/4"	1-1/4"	2"	4-1/2"	6	51A248H
1-7/8"	1-1/4"	2"	4-1/2"	6	51A256H
2"	3/4"	2"	4-1/2"	8	51A264D
2"	1-1/4"	2"	4-1/2"	6	51A264G
2"	1-1/4"	2"	4-1/2"	8	51A264H

## GENERAL PURPOSE MULTI-FLUTE FINISHING END MILLS

### 5150A SERIES Multi-Flute Finishing End Mills

#### GENERAL PURPOSE HIGH SPEED STEEL

Regular Length / Center Cutting / Single End

Fractional / Bright



5150A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5150A Order No.
1/8"	3/8"	3/8"	2-5/16"	4	515A108A
3/16"	3/8"	1/2"	2-3/8"	4	515A112A
7/32"	3/8"	5/8"	2-7/16"	4	515A114A
1/4"	3/8"	5/8"	2-7/16"	4	515A116A
9/32"	3/8"	11/16"	2-1/2"	4	515A118A
5/16"	3/8"	3/4"	2-1/2"	4	515A120A
11/32"	3/8"	3/4"	2-1/2"	4	515A122A
3/8"	3/8"	3/4"	2-1/2"	4	515A124A
13/32"	3/8"	1"	2-11/16"	4	515A126A
7/16"	3/8"	1"	2-11/16"	4	515A128A
15/32"	3/8"	1"	2-11/16"	4	515A130A
1/2"	1/2"	1-1/4"	3-1/4"	4	515A132B
9/16"	1/2"	1-3/8"	3-3/8"	4	515A136B
5/8"	1/2"	1-3/8"	3-3/8"	4	515A140B
5/8"	5/8"	1-5/8"	3-3/4"	4	515A140C

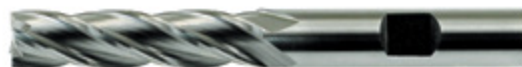
Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5150A Order No.
11/16"	5/8"	1-5/8"	3-3/4"	4	515A144C
3/4"	3/4"	1-5/8"	3-7/8"	4	515A148D
3/4"	3/4"	1-5/8"	3-7/8"	6	515A148E
13/16"	3/4"	1-7/8"	4-1/8"	4	515A152D
7/8"	7/8"	1-7/8"	4-1/8"	4	515A156E
15/16"	3/4"	1-7/8"	4-1/8"	4	515A160E
1"	1"	2"	4-1/2"	4	515A164F
1"	1"	2"	4-1/2"	6	515A164G
1-1/8"	1"	2"	4-1/2"	4	515A208F
1-1/8"	1"	2"	4-1/2"	6	515A208G
1-1/4"	1-1/4"	2"	4-1/2"	6	515A216H
1-1/2"	1-1/4"	2"	4-1/2"	4	515A232G
1-1/2"	1-1/4"	2"	4-1/2"	6	515A232H
1-3/4"	1-1/4"	2"	4-1/2"	6	515A248G
2"	1-1/4"	2"	4-1/2"	6	515A264G

### 5250A SERIES Multi-Flute Finishing End Mills

#### GENERAL PURPOSE HIGH SPEED STEEL

Long Length / Center Cutting / Single End

Fractional / Bright



5250A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5250A Order No.
1/4"	3/8"	1-1/4"	3-9/16"	4	525A116A
5/16"	3/8"	1-3/8"	3-1/8"	4	525A120A
3/8"	3/8"	1-1/2"	3-1/4"	4	525A124A
1/2"	1/2"	2"	4"	4	525A132B
5/8"	5/8"	2-1/2"	4-5/8"	4	525A140C
3/4"	3/4"	3"	5-1/4"	4	525A148D
3/4"	3/4"	3"	5-1/4"	6	525A148H
7/8"	7/8"	3-1/2"	5-3/4"	4	525A156E
7/8"	7/8"	3-1/2"	5-3/4"	6	525A156H

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5250A Order No.
1"	1"	4"	6-1/2"	4	525A164F
1"	1"	4"	6-1/2"	6	525A164H
1-1/4"	1-1/4"	4"	6-1/2"	4	525A216G
1-1/4"	1-1/4"	4"	6-1/2"	6	525A216H
1-1/2"	1-1/4"	4"	6-1/2"	4	525A232G
1-1/2"	1-1/4"	4"	6-1/2"	6	525A232H
2"	1-1/4"	4"	6-1/2"	6	525A264G
2"	2"	6"	9-3/4"	6	525A264J

### 5350A SERIES Multi-Flute Finishing End Mills

#### GENERAL PURPOSE HIGH SPEED STEEL

Extra-Long Length / Center Cutting / Single End

Fractional / Bright



5350A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5350A Order No.
1/4"	3/8"	1-3/4"	3-9/16"	4	535A116A
5/16"	3/8"	2"	3-3/4"	4	535A120A
3/8"	3/8"	2-1/2"	4-1/4"	4	535A124A
15/32"	1/2"	3"	5"	4	535A130A
1/2"	1/2"	3"	5"	4	535A132B
5/8"	5/8"	4"	6-1/8"	4	535A140C
3/4"	3/4"	4"	6-1/4"	4	535A148D
3/4"	3/4"	4"	6-1/4"	6	535A148H

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5350A Order No.
7/8"	7/8"	5"	7-1/4"	4	535A156E
7/8"	7/8"	5"	7-1/4"	6	535A156H
1"	1"	6"	8-1/2"	4	535A164F
1"	1"	6"	8-1/2"	6	535A164H
1-1/4"	1-1/4"	6"	8-1/2"	6	535A216H
2"	2"	6"	9-3/4"	6	535A264G

# GENERAL PURPOSE MULTI-FLUTE FINISHING END MILLS

## 5650A SERIES Multi-Flute Finishing End Mills

### GENERAL PURPOSE HIGH SPEED STEEL

Regular Length / Center Cutting / Single End  
Metric / Bright



5650A

Size (mm)	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5650A Order No.
3.0	3/8"	3/8"	2-5/16"	4	565A030
3.5	3/8"	1/2"	2-3/8"	4	565A035
4.0	3/8"	1/2"	2-3/8"	4	565A040
4.5	3/8"	9/16"	2-1/2"	4	565A045
5.0	3/8"	9/16"	2-1/2"	4	565A050
5.5	3/8"	5/8"	2-1/2"	4	565A055
6.0	3/8"	5/8"	2-1/2"	4	565A060
7.0	3/8"	11/16"	2-1/2"	4	565A070
8.0	3/8"	3/4"	2-1/2"	4	565A080
8.5	3/8"	3/4"	2-1/2"	4	565A085
9.0	3/8"	3/4"	2-1/2"	4	565A090
10.0	3/8"	1"	2-11/16"	4	565A100
10.5	3/8"	1"	2-11/16"	4	565A105
11.0	3/8"	1"	2-11/16"	4	565A110
12.0	1/2"	1"	2-11/16"	4	565A120
12.5	1/2"	1-1/4"	3-1/4"	4	565A125

Size (mm)	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5650A Order No.
13.0	1/2"	1-1/4"	3-1/4"	4	565A130
14.0	1/2"	1-3/8"	3-3/8"	4	565A140
15.0	1/2"	1-1/8"	3-3/8"	4	565A150
16.0	5/8"	1-5/8"	3-3/4"	4	565A160
18.0	5/8"	1-5/8"	3-3/4"	4	565A180
20.0	5/8"	1-7/8"	4-1/8"	4	565A200
21.0	5/8"	1-7/8"	4-1/8"	4	565A210
22.0	7/8"	1-7/8"	4-1/8"	4	565A220
23.0	7/8"	1-7/8"	4-1/8"	4	565A230
24.0	7/8"	2"	4-1/2"	4	565A240
25.0	7/8"	2"	4-1/2"	4	565A250
32.0	7/8"	2"	4-1/2"	4	565A320
36.0	7/8"	2"	4-1/2"	4	565A360
40.0	1-1/4"	2"	4-1/2"	4	565A400
45.0	1-1/4"	2"	4-1/2"	4	565A450

## 5500A SERIES Multi-Flute Finishing End Mills

### GENERAL PURPOSE HIGH SPEED STEEL

Regular Length / Center Cutting / Double End  
Fractional / Bright



5500A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5500A Order No.
1/8"	3/8"	3/8"	3-1/16"	4	55A108A
5/32"	3/8"	7/16"	3-1/8"	4	55A110A
3/16"	3/8"	1/2"	3-1/4"	4	55A112A
7/32"	3/8"	9/16"	3-1/4"	4	55A114A
1/4"	3/8"	5/8"	3-3/8"	4	55A116A
9/32"	3/8"	11/16"	3-3/8"	4	55A118A
5/16"	3/8"	3/4"	3-1/2"	4	55A120A
11/32"	3/8"	3/4"	3-1/2"	4	55A122A
3/8"	3/8"	3/4"	3-1/2"	4	55A124A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5500A Order No.
13/32"	1/2"	1"	4-1/8"	4	55A126B
7/16"	1/2"	1"	4-1/8"	4	55A128B
15/32"	1/2"	1"	4-1/8"	4	55A130B
1/2"	1/2"	1"	4-1/8"	4	55A132B
5/8"	5/8"	1-3/8"	5"	4	55A140C
3/4"	3/4"	1-5/8"	5-5/8"	4	55A148D
7/8"	7/8"	1-7/8"	6-1/8"	4	55A156E
1"	1"	1-7/8"	6-3/8"	4	55A164F

## GENERAL PURPOSE BALL NOSE END MILLS

Ball nose end mills are used where rounded details must be machined in a part (for example, a slot with a rounded bottom). They are also used where sharp machined corners must be avoided. Ball nose end mills are also widely used for delicate cuts on contoured surfaces of molds and dies.

- ▷ Have rounded end cutting edges
- ▷ Available as a center cutting tool only
- ▷ All sizes are individually packaged

### **6400A SERIES 2-Flute Ball Nose End Mills** **GENERAL PURPOSE HIGH SPEED STEEL** Regular Length / Center Cutting / Single End Fractional/Bright



6400A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6400A Order No.
1/8"	3/8"	3/8"	2-5/16"	2	640A108A
3/16"	3/8"	1/2"	2-3/8"	2	640A112A
1/4"	3/8"	5/8"	2-7/16"	2	640A116A
5/16"	3/8"	3/4"	2-1/2"	2	640A120A
3/8"	3/8"	3/4"	2-1/2"	2	640A124A
7/16"	1/2"	1"	3"	2	640A128B
1/2"	1/2"	1"	3"	2	640A132B
9/16"	1/2"	1-1/8"	3-1/8"	2	640A136B
5/8"	1/2"	1-1/8"	3-1/8"	2	640A140B
5/8"	5/8"	1-3/8"	3-1/2"	2	640A140C
3/4"	1/2"	1-5/16"	3-5/16"	2	640A148B
3/4"	3/4"	1-5/8"	3-7/8"	2	640A148D
13/16"	3/4"	2"	4-1/4"	2	640A152D
7/8"	3/4"	2"	4-1/4"	2	640A156D
7/8"	7/8"	2"	4-1/4"	2	640A156E
15/16"	3/4"	2-1/4"	4-1/2"	2	640A160D
1"	3/4"	2-1/4"	4-1/2"	2	640A164D
1"	1"	2-1/4"	4-3/4"	2	640A164F
1-1/8"	1"	2-1/4"	4-3/4"	2	640A208F
1-1/4"	1-1/4"	2-1/2"	5"	2	640A216G
1-1/2"	1-1/4"	2-1/2"	5"	2	640A232G

### **6420A SERIES 4-Flute Ball Nose End Mills** **GENERAL PURPOSE HIGH SPEED STEEL** Regular Length / Center Cutting / Single End Fractional/Bright



6420A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6420A Order No.
1/4"	3/8"	5/8"	2-7/16"	4	642A116A
5/16"	3/8"	3/4"	2-1/2"	4	642A120A
3/8"	3/8"	3/4"	2-1/2"	4	642A124A
1/2"	1/2"	1-1/4"	3-1/4"	4	642A132B
5/8"	5/8"	1-5/8"	3-3/4"	4	642A140C
3/4"	3/4"	1-5/8"	3-7/8"	4	642A148D
1"	1"	2"	4-1/2"	4	642A164F



## GENERAL PURPOSE 2-FLUTE FINISHING END MILLS

Cobalt end mills offer increased heat- and wear-resistance over standard HSS end mills. This results in faster operation rates and longer tool life.

- ▷ Cobalt end mills run approximately 10% faster than conventional HSS end mills
- ▷ Shorter machining times and permits fuller utilization of available machine horsepower
- ▷ Retain their sharpness for longer, providing more cuts between grinds and less machine downtime, resulting in lower end mill tooling costs
- ▷ All sizes are individually packaged

### 6500A SERIES 2-Flute Finishing End Mills

**COBALT**

Regular Length / Center Cutting / Single End  
Fractional / Bright



6500A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6500A Order No.
1/8"	3/8"	3/8"	2-5/16"	2	650A108A
3/16"	3/8"	7/16"	2-5/16"	2	650A112A
1/4"	3/8"	1/2"	2-5/16"	2	650A116A
5/16"	3/8"	9/16"	2-5/16"	2	650A120A
3/8"	3/8"	9/16"	2-5/16"	2	650A124A
7/16"	3/8"	13/16"	2-1/2"	2	650A128A
1/2"	1/2"	1"	3"	2	650A132B
5/8"	5/8"	1-5/16"	3-7/16"	2	650A140C
3/4"	3/4"	2-1/4"	4-1/2"	2	650A148C
3/4"	3/4"	1-5/16"	3-7/16"	2	650A148D
1"	1"	1-5/8"	4-1/8"	2	650A164F

### 6900A SERIES 2-Flute Finishing End Mills

**COBALT**

Regular Length / Center Cutting / Double End  
Fractional / Bright



6900A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6900A Order No.
1/8"	3/8"	3/8"	3-1/16"	2	690A108A
5/32"	3/8"	7/16"	3-1/8"	2	690A110A
3/16"	3/8"	7/16"	3-1/8"	2	690A112A
7/32"	3/8"	1/2"	3-1/4"	2	690A114A
1/4"	3/8"	1/2"	3-3/8"	2	690A116A
9/32"	3/8"	9/16"	3-3/8"	2	690A118A
5/16"	3/8"	9/16"	3-1/2"	2	690A120A
3/8"	3/8"	9/16"	3-1/2"	2	690A124A
1/2"	1/2"	13/16"	3-3/4"	2	690A132B
5/8"	5/8"	1-1/8"	4-1/2"	2	690A140C
3/4"	3/4"	1-5/16"	5"	2	690A148D

## GENERAL PURPOSE MULTI-FLUTE FINISHING END MILLS

Cobalt end mills offer increased heat- and wear-resistance over standard HSS end mills. This results in faster operation rates and longer tool life.

- ▷ Run about 10% faster than conventional HSS end mills
- ▷ Shorter machining times and permits fuller utilization of available machine horsepower
- ▷ All sizes are individually packaged

### 6700A SERIES Multi-Flute Finishing End Mills

**COBALT**

Regular Length / Center Cutting / Single End Fractional / Bright



6700A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6700A Order No.
1/8"	3/8"	3/8"	2-5/16"	4	670A108A
3/16"	3/8"	1/2"	2-3/8"	4	670A112A
1/4"	3/8"	5/8"	2-7/16"	4	670A116A
5/16"	3/8"	3/4"	2-1/2"	4	670A120A
3/8"	3/8"	3/4"	2-1/2"	4	670A124A
1/2"	1/2"	1-1/4"	3-1/4"	4	670A132B
5/8"	5/8"	1-5/8"	3-3/4"	4	670A140C
3/4"	3/4"	1-5/8"	3-7/8"	4	670A148D
3/4"	3/4"	1-5/8"	3-7/8"	6	670A148J
1"	1"	2"	4-1/2"	4	670A164F
1-1/4"	1-1/4"	2"	4-1/2"	4	670A216G
1-1/4"	1-1/4"	2"	4-1/2"	6	670A216J
1-1/2"	1-1/4"	2"	4-1/2"	4	670A232G
1-1/2"	1-1/4"	2"	4-1/2"	6	670A232J
2"	1-1/4"	2"	4-1/2"	6	670A264G

### 6725A SERIES Multi-Flute Finishing End Mills

**COBALT**

Medium Length / Center Cutting / Single End Fractional / Bright



6725A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6725A Order No.
3/8"	3/8"	1-1/2"	3-1/4"	4	672A124A
1/2"	1/2"	2"	4"	4	672A132B
5/8"	5/8"	2-1/2"	4-5/8"	4	672A140C

### 6750A SERIES Multi-Flute Finishing End Mills

**COBALT**

Long Length / Center Cutting / Single End Fractional / Bright



6750A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6750A Order No.
3/8"	3/8"	2-1/2"	4-1/2"	4	675A124A
1/2"	1/2"	3"	5"	4	675A132B
3/4"	3/4"	3"	5-1/4"	4	675A148D
1"	1"	4"	6-1/2"	4	675A164F
1-1/4"	1-1/4"	4"	6-1/2"	6	675A216G

### 6950A SERIES 4-Flute Finishing End Mills

**COBALT**

Regular Length / Center Cutting / Double End Fractional / Bright



6950A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6950A Order No.
1/8"	3/8"	3/8"	3-1/16"	4	695A108A
3/16"	3/8"	1/2"	3-1/4"	4	695A112A
1/4"	3/8"	5/8"	3-3/8"	4	695A116A
5/16"	3/8"	3/4"	3-1/2"	4	695A120A
3/8"	3/8"	3/4"	3-1/2"	4	695A124A
1/2"	1/2"	1"	4-1/8"	4	695A132B
5/8"	5/8"	1-3/8"	5"	4	695A140C
3/4"	3/4"	1-5/8"	5-5/8"	4	695A148D

## GENERAL PURPOSE BALL NOSE END MILLS

Ball nose end mills are used where rounded details must be machined in a part (ie: a slot with a rounded bottom). They are also used where sharp machined corners must be avoided. Ball nose end mills are also widely used for delicate cuts on contoured surfaces of molds and dies.

- ▷ Have rounded end cutting edges
- ▷ Available as a center cutting tool only
- ▷ All sizes are individually packaged

### 6650A SERIES Multi-Flute Ball Nose End Mills

**COBALT**

Regular Length / Center Cutting / Single End  
Fractional / Bright



6650A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6650A Order No.
1/8"	3/8"	3/8"	2-5/16"	4	665A108A
3/16"	3/8"	1/2"	2-3/8"	4	665A112A
1/4"	3/8"	5/8"	2-7/16"	4	665A116A
5/16"	3/8"	3/4"	2-1/2"	4	665A120A
3/8"	3/8"	3/4"	2-1/2"	4	665A124A
1/2"	1/2"	1-1/4"	3-1/4"	4	665A132B
5/8"	5/8"	1-5/8"	3-3/4"	4	665A140C
3/4"	3/4"	1-5/8"	3-7/8"	4	665A148D
1"	1"	2"	4-1/2"	4	665A164F
1-1/4"	1-1/4"	2"	4-1/2"	6	665A216G



## ROUGHING END MILLS

Roughing end mills are designed for extremely rapid stock removal. These end mills can remove material up to 3x the rate of regular end mills. Designed to machine low alloy, high strength steels at faster feed and speed rates. Utilizes a wavy tooth form cut. These teeth form many successive cutting edges producing many small chips, resulting in a relatively rough surface finish.

### 7140 SERIES Multi-Flute Roughing End Mills

**COBALT**

Regular Length / Center Cutting / Single End  
Fractional / Bright



7140

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	7140 Order No.
1/2"	1/2"	1-1/4"	3-1/4"	4	714A132B
1/2"	1/2"	2"	4"	4	714A132M
1/2"	1/2"	3"	5"	4	714A132L
5/8"	5/8"	3/4"	2-7/8"	4	714A140C
5/8"	5/8"	1-5/8"	3-3/4"	4	714A140M
5/8"	5/8"	3-1/8"	5-1/4"	4	714A140L
11/16"	5/8"	1-5/8"	3-3/4"	4	714A144C
3/4"	5/8"	1-5/8"	3-3/4"	4	714A148C
3/4"	3/4"	1-1/4"	3-1/2"	4	714A148D
3/4"	3/4"	2-1/2"	4-5/8"	4	714A148M
13/16"	3/4"	1-7/8"	4-1/8"	5	714A152D
7/8"	3/4"	1-1/8"	3-3/8"	5	714A156D
7/8"	3/4"	1-7/8"	4-1/8"	5	714A156M
7/8"	3/4"	3-1/2"	5-5/8"	5	714A156L
7/8"	7/8"	1-1/8"	3-3/8"	5	714A156E
1"	3/4"	1-1/2"	3-3/8"	5	714A164D

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	7140 Order No.
1"	3/4"	2"	4-1/4"	5	714A164M
1"	3/4"	4"	6-1/4"	5	714A164L
1"	1"	2"	4-1/2"	5	714A164F
1"	1"	6"	8-1/2"	5	714A164N
1-1/8"	3/4"	2"	4-1/4"	6	714A208D
1-1/8"	1"	2"	4-1/2"	6	714A208F
1-1/8"	1"	3-1/2"	6"	6	714A208L
1-1/4"	3/4"	1-1/8"	3-3/8"	6	714A216D
1-1/4"	3/4"	2"	4-1/4"	6	714A216M
1-1/4"	1-1/4"	3"	5-1/2"	6	714A216G
1-1/4"	1-1/4"	6"	8-1/2"	6	714A216N
1-3/8"	3/4"	2"	4-1/4"	6	714A224D
1-1/2"	3/4"	1-1/8"	3-3/8"	6	714A232D
1-1/2"	1-1/4"	2"	4-1/2"	6	714A232G
1-1/2"	1-1/4"	3"	5-1/2"	6	714A232N
1-1/2"	1-1/4"	4"	6-1/2"	6	714A232L



# 10

## COUNTERSINKS



# QUICK PAGES REFERENCES

## COUNTERSINKS



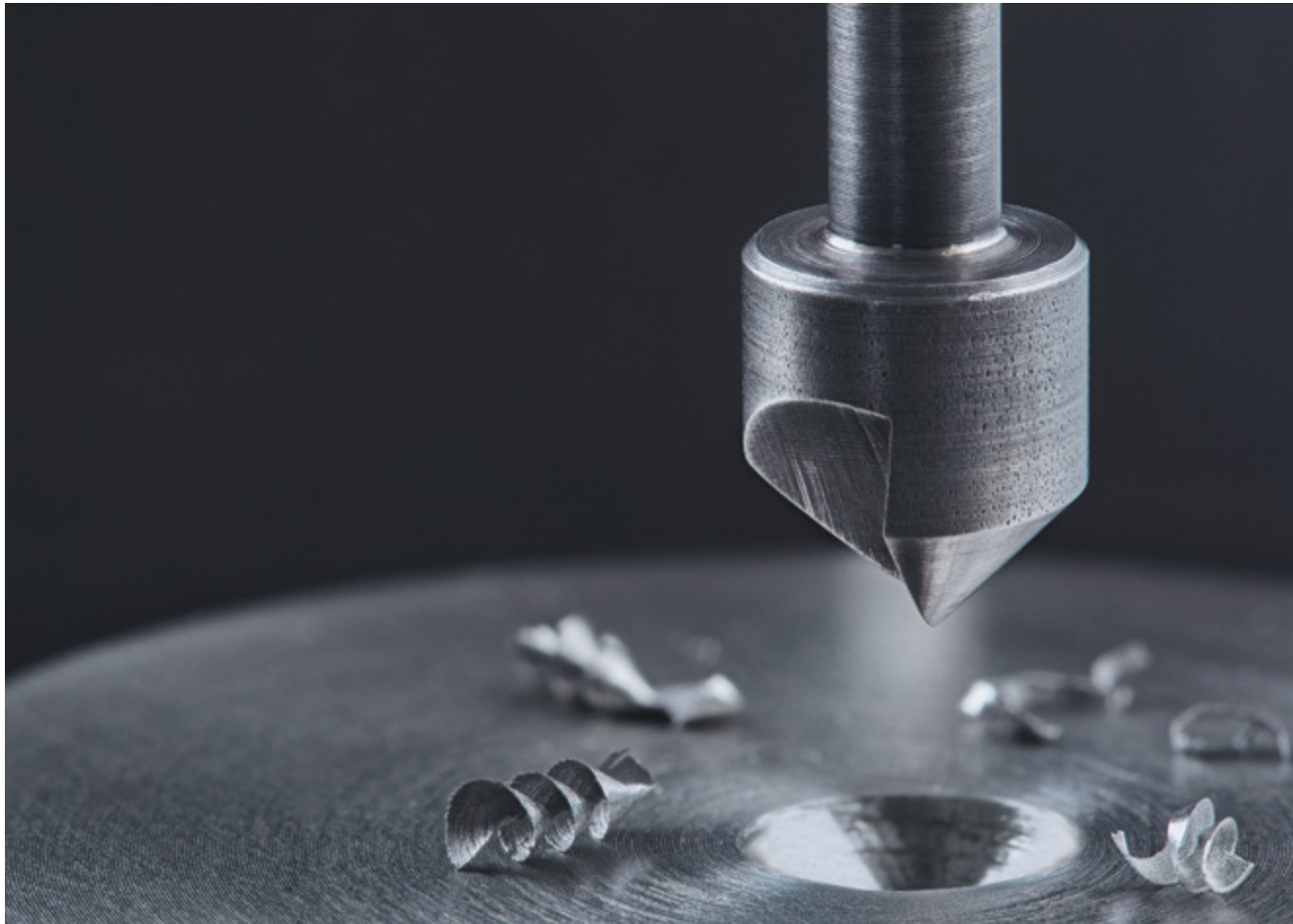
### General Purpose High Speed Steel

Bright Finish For low to medium tensile strength materials		
Type	Series	Catalog page reference
Single flute	3600E	473
3-flute	3700E	473
4-flute	3800E	474
6-flute	3900E	474
Fluteless	4000E	474



### Heavy-Duty High Speed Steel + Aluminum (M2Al)

AlCrN Coated For hard steel		
Type	Series	Catalog page reference
4-flute	01-U	475



# GENERAL PURPOSE COUNTERSINKS

## SINGLE FLUTE

Single-flute countersinks should be used when multi-flute countersinks chatter or the hole is too small for a multi-flute countersink to enter

- ▷ 60° Countersinks are used for centering
- ▷ 82° Countersinks are used for countersinking flathead screws
- ▷ 90° Countersinks are used for chamfering and deburring
- ▷ 100° Countersinks are used to make screw and rivet holes
- ▷ All sizes are individually packaged

### 3600E SERIES Countersink Fractional / Bright



3600E

Size	Shank Dia.	Overall Length	No. of Flutes	60° Order No.	82° Order No.	90° Order No.	100° Order No.
3/16"	3/16"	1-1/2"	1	36E112A	36E112B	36E112C	36E112D
1/4"	1/4"	2"	1	36E116A	36E116B	36E116C	36E116D
5/16"	1/4"	2"	1	36E120A	36E120B	36E120C	36E120D
3/8"	1/4"	2"	1	36E124A	36E124B	36E124C	36E124D
1/2"	1/4"	2"	1	36E132A	36E132B	36E132C	36E132D
5/8"	1/2"	2-3/4"	1	36E140A	36E140B	36E140C	36E140D
3/4"	1/2"	2-3/4"	1	36E148A	36E148B	36E148C	36E148D
7/8"	1/2"	2-3/4"	1	36E156A	36E156B	36E156C	36E156D
1"	1/2"	2-3/4"	1	36E164A	36E164B	36E164C	36E164D
1-1/4"	3/4"	3-3/8"	1	36E216A	36E216B	36E216C	36E216D
1-1/2"	3/4"	3-3/8"	1	36E232A	36E232B	36E232C	36E232D
2"	3/4"	3-3/8"	1	36E264A	36E264B	36E264C	36E264D

## 3-FLUTE

Center reamers are designed for countersinking holes for flathead screws and rivets in portable drilling applications

- ▷ All sizes are individually packaged

### 3700E SERIES Center Reamer Fractional / Bright



3700E

Size	Shank Dia.	Shank Length	Overall Length	No. of Flutes	60° Order No.	82° Order No.	90° Order No.	100° Order No.
1/4"	3/16"	3/4"	1-1/2"	3	37E116A	37E116B	37E116C	37E116D
3/8"	1/4"	7/8"	1-3/4"	3	37E124A	37E124B	37E124C	37E124D
1/2"	3/8"	1"	2"	3	37E132A	37E132B	37E132C	37E132D
5/8"	3/8"	1"	2-1/4"	3	37E140A	37E140B	37E140C	37E140D
3/4"	1/2"	1-1/4"	2-5/8"	3	37E148A	37E148B	37E148C	37E148D
1"	1/2"	1-1/4"	3-1/2"	3	37E164A	37E164B	37E164C	37E164D
1-1/4"	3/4"	1-1/2"	3-1/2"	3	37E216A	37E216B	37E216C	37E216D
1-1/2"	3/4"	1-1/2"	3-1/2"	3	37E232A	37E232B	37E232C	37E232D
2"	3/4"	1-1/2"	3-3/4"	3	37E264A	37E264B	37E264C	37E264D

## GENERAL PURPOSE COUNTERSINKS

### 4-FLUTE

Four flute machine countersinks have a longer shank to use in turret lathes and for screw machine work

▷ All sizes are individually packaged

#### 3800E SERIES Machine Countersink

Fractional / Bright



3800E

Size	Shank Dia.	Shank Length	Overall Length	No. of Flutes	60° Order No.	82° Order No.	90° Order No.
1/2"	1/2"	2-1/4"	3-7/8"	4	38E132A	38E132B	38E132C
5/8"	1/2"	2-1/4"	4"	4	38E140A	38E140B	38E140C
3/4"	1/2"	2-1/4"	4-1/8"	4	38E148A	38E148B	38E148C
7/8"	1/2"	2-1/4"	4-1/4"	4	38E156A	38E156B	38E156C
1"	1/2"	2-1/4"	4-3/8"	4	38E164A	38E164B	38E164C
1-1/4"	1/2"	2-1/4"	5"	4	38E216A	38E216B	38E216C
1-1/2"	1/2"	2-1/4"	5-3/8"	4	38E232A	38E232B	38E232C

### 6-FLUTE

Six flute chatterless countersinks are designed for fast shearing cuts

▷ All sizes are individually packaged

#### 3900E SERIES Chatterless Countersink

Fractional / Bright



3900E

Size	Shank Dia.	Shank Length	Overall Length	No. of Flutes	60° Order No.	82° Order No.	90° Order No.
3/16"	3/16"	1"	1-1/2"	6	39E112A	39E112B	39E112C
1/4"	1/4"	1"	2"	6	39E116A	39E116B	39E116C
5/16"	1/4"	1"	2"	6	39E120A	39E120B	39E120C
3/8"	1/4"	1"	2"	6	39E124A	39E124B	39E124C
1/2"	1/4"	1"	2"	6	39E132A	39E132B	39E132C
5/8"	1/2"	1-1/8"	2-3/4"	6	39E140A	39E140B	39E140C
3/4"	1/2"	1-5/16"	2-3/4"	6	39E148A	39E148B	39E148C
7/8"	1/2"	1-5/16"	2-3/4"	6	39E156A	39E156B	39E156C
1"	1/2"	1-5/16"	2-3/4"	6	39E164A	39E164B	39E164C
1-1/4"	3/4"	1-5/8"	3-3/8"	6	39E216A	39E216B	39E216C
1-1/2"	3/4"	1-5/8"	3-1/2"	6	39E232A	39E232B	39E232C
1-3/4"	1"	2-1/8"	4-1/4"	6	39E248A	39E248B	39E248C
2"	1"	2-1/8"	4-3/8"	6	39E264A	39E264B	39E264C

### FLUTELESS

Fluteless deburring tools have an angled hole that passes through the center of the tool to reduce vibration and chatter. This creates smooth cuts and prevents chips from clogging the tool

#### 4000E SERIES Deburring Tools

Fractional / Bright



4000E

Size	Inch Dia.	Shank Dia.	60° Order No.	82° Order No.
0	1/16" - 15/64"	1/4"	-	40E000B
1	5/32" - 13/32"	1/4"	-	40E001B
2	3/16" - 17/32"	1/4"	-	40E002B
3	5/16" - 25/32"	1/2"	-	40E003B
4	9/16" - 1-1/16"	1/2"	-	40E004B
5	5/8" - 1-15/32"	1/2"	-	40E005B
6	3/4" - 1-3/4"	5/8"	-	40E006B
7	1" - 2"	5/8"	-	40E007B
8	1.1/4" - 2-1/2"	3/4"	-	40E008B
#0 - #4SET	-	-	40ESETA	40ESETB



## 4-FLUTE

Now with the exclusive ICECUT™ coating

Made of M2Al to minimize vibration and maximize product life. Also features an exclusive AlCrN coating to provide greater heat resistance to further extend product life. The 82° point angle is ideal for countersinking but they can also be used for deburring and chamfering in steel, stainless steel and non-ferrous metals.

- ▷ Thicker teeth for added stability
- ▷ Special coating reducing frictional heat and optimizing tool life
- ▷ Special tip geometry for a uniform chamfer
- ▷ Packaged in reusable plastic packaging



Dia.	Angle	Overall Length	Shank Dia.	Order No.	Std. Pkg.	Std. Ctn.
1/4"	82°	2"	3/16"	01U004	1	10
5/16"	82°	2"	1/4"	01U005	1	10
3/8"	82°	2"	5/16"	01U006	1	10
1/2"	82°	2"	5/16"	01U008	1	10
5/8"	82°	2-1/4"	3/8"	01U010	1	10
3/4"	82°	2-3/4"	3/8"	01U012	1	10
1"	82°	2-3/4"	3/8"	01U100	1	10
1"	82°	1-3/4"	3/4"	01U400	1	10
1-1/2"	82°	2"	3/4"	01U408	1	10
2"	82°	2-1/4"	3/4"	01U500	1	10

Recommended cutting speed for M2Al HSS Countersinks (82°)						
Cutter Dia.		Aluminium	Copper	Mild	Stainless Steel	Non-metallic Steel
Inch	mm					
1/4"	6.4	1505	1404	752	602	1755
5/16"	7.9	1203	1123	602	481	1404
3/8"	9.5	1004	937	502	401	1171
7/16"	11.1	861	803	430	344	1004
1/2"	12.7	752	702	376	301	878
9/16"	14.3	669	624	335	268	781
5/8"	15.9	602	562	301	241	702
11/16"	17.5	547	511	274	219	638
3/4"	19.1	502	468	251	201	585
13/16"	20.6	463	432	231	185	540
7/8"	22.2	430	401	215	172	502
15/16"	23.8	401	375	201	161	468
1"	25.4	376	351	188	150	439
1-1/16"	27	354	331	177	142	413
1-1/8"	28.6	334	312	167	134	390
1-3/16"	30.2	317	296	158	127	370
1-1/4"	31.8	251	234	125	100	293
1-9/16"	39.7	241	225	120	96	281
1-5/8"	41.3	231	216	116	93	270
1-11/16"	42.9	223	208	111	89	260
1-3/4"	44.5	215	201	107	86	251
1-13/16"	46	208	194	104	83	242
1 7/8"	47.6	201	187	100	80	234
1-15/16"	49.2	194	181	97	78	227
2"	50.8	188	176	94	75	219

### Tech tip!

For increased cutting efficiency and tool life, use COOLCUT™ solid stick lubricant  
Order No.: 53B013

## COUNTERSINK SET

Contains the five most popular countersinks (Sizes 1/4", 3/8", 1/2", 3/4", 1") and cutting lubricant. Packaged in a reclosable, resistant plastic case.

Countersink Set	
Each kit contains	Item Number
01U004, 01U006, 01U008, 01U012, 01U100	01U950



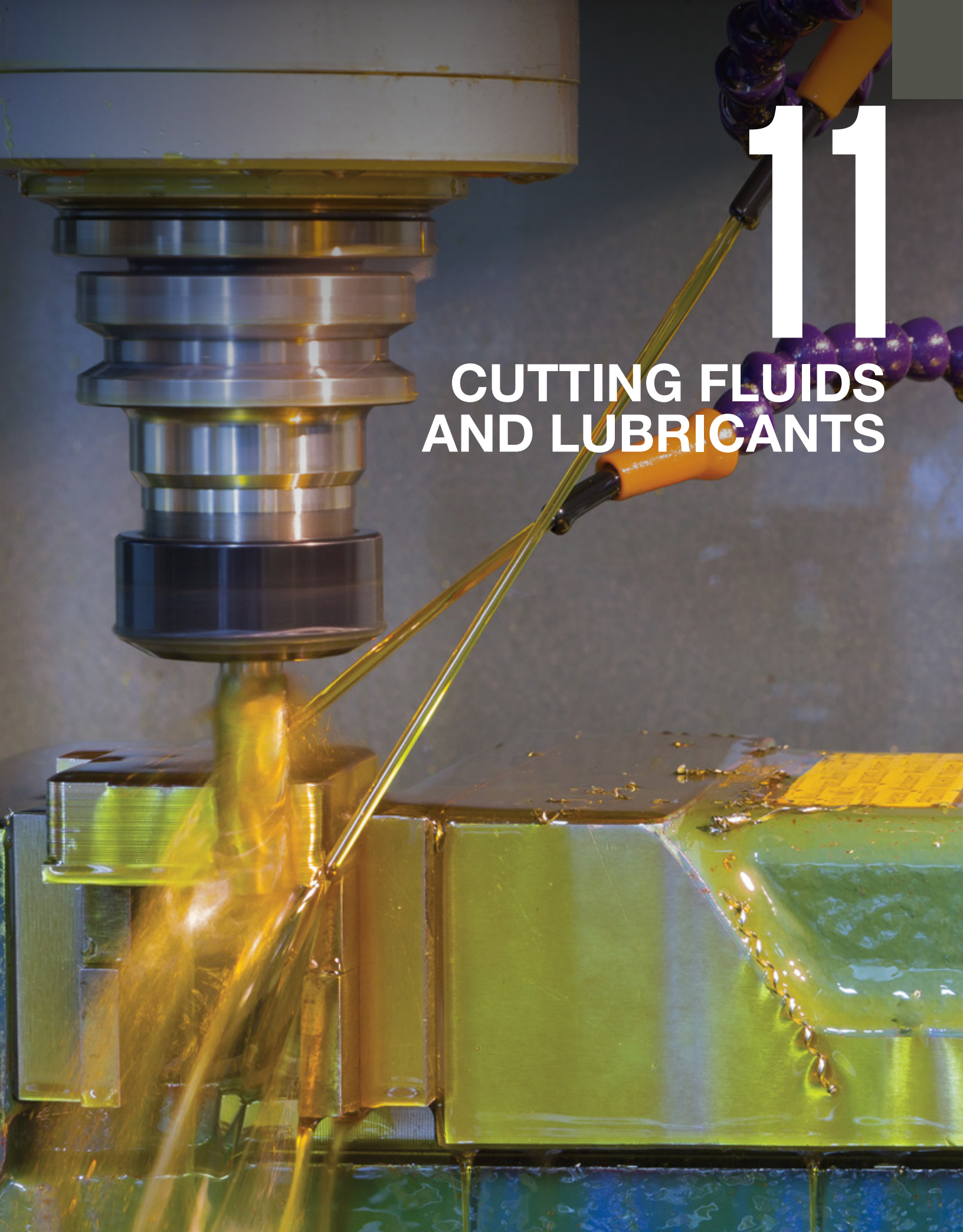
01U950





# 11

## CUTTING FLUIDS AND LUBRICANTS



# QUICK PAGES REFERENCES

## CUTTING FLUIDS AND LUBRICANTS



### HIGH PERFORMANCE CUTTING FLUIDS

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## CNC CUTTING AND GRINDING FLUIDS



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# COOLCUT™ FLUIDS AT A GLANCE

Processes										
Name	Turning	Milling	Gear hobbing	Drilling	Deep drilling	Threading tapping	Broaching	Surface and cylindrical grinding	Centerless grinding	Profile grinding
COOLCUT™ 150	•	•		•		•		•		
COOLCUT™ 250	•	•		•		•		•	•	
COOLCUT™ 200BF	•	•		•		•		•	•	•
COOLCUT™ 400U	•	•		•		•		•	•	•
COOLCUT™ S-30	•	•	•	•	•	•	•	•	•	•
COOLCUT™ S-50	•	•		•	•		•	•		•
COOLCUT™ SYN 400 BF	•	•		•	•	•	•	•	•	•
COOLCUT™ SYN GRIND								•		
COOLCUT™				•	•	•	•			
COOLCUT™ NEO AP	•	•	•	•	•	•	•			
COOLCUT™ NEO 3724 N	•	•		•	•	•	•			
COOLCUT™ SYN NEO HP	•	•							•	•

Materials								
Name	Steels	Cast iron	Stainless steel	Aluminum	Yellow metals	Titanium	Carbide	Glass ceramics
COOLCUT™ 150	•	•			•			
COOLCUT™ 250	•	•		•	•			
COOLCUT™ 200BF	•	•	•	•	•			
COOLCUT™ 400U	•	•	•	•	•			
COOLCUT™ S-30	•		•	•	•	•		
COOLCUT™ S-50	•		•	•		•	•	
COOLCUT™ SYN 400 BF	•		•	•	•	•		•
COOLCUT™ SYN GRIND	•	•	•	•	•	•		•
COOLCUT™	•		•	•	•			
COOLCUT™ NEO AP	•	•	•	•	•			
COOLCUT™ NEO 3724 N	•	•	•			•		
COOLCUT™ SYN NEO HP	•		•		•	•	•	



# HIGH PERFORMANCE CUTTING FLUIDS



## COOLCUT™

### Metal cutting lubricant

COOLCUT™ is a ready-to-use, high-performance metal cutting lubricant that stands up to pressure and heat to reduce tool wear and prevent tool breakage.

#### Applications

- ▷ Machining operations
- ▷ Drilling



Description	Size		Order No.	(M) SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	312 g	11 oz.	53B002	L-01	12
Solid stick	300 g	300 g	53B013	L-22	12
Liquid/Squeeze bottle	350 ml	11.8 fl.oz.	53B003	L-09	12
Sprayer	500 ml	16.9 oz.	53B004	L-09	12
Liquid	3.78 L	1 gal	53B005	L-09	1
Liquid	20 L	5.2 gal	53B007	L-09	1
Liquid	208 L	55 gal	53B008	L-09	1

Accessories	Order no.
Spout for 20 L square plastic pail	53L207
Spout for 208 L plastic drum 2" NPT	53L209
Spout for 208 L plastic drum 3/4" NPT	53L210



#### Benefits

- ▷ Reduces friction and heat
- ▷ Extends cutting tool life
- ▷ Improves finish
- ▷ Increases productivity

#### Features

- ▷ Contains extreme pressure additives (EP)
- ▷ Suitable for all ferrous and non-ferrous metals
- ▷ Non hazardous, biodegradable
- ▷ Free of solvents and chlorinated ingredients



## STAINLESSCUT™

### Stainless steel cutting lubricant

STAINLESSCUT™ is a heavy-duty cutting lubricant designed for tough metal cutting operations. Formulated for stainless steel, alloys, and ferrous alloys.

#### Applications

- ▷ Machining operations
- ▷ Drilling

#### Benefits

- ▷ Washes off completely with water
- ▷ Easy clean-up
- ▷ Improves finish to prolong tool life



Description	Size		Order No.	(M) SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	312 g	11 oz.	53B202	L-53	12
Liquid/Squeeze bottle	350 ml	11.8 fl.oz.	53B203	L-114	12
Liquid	3.78 L	1 gal	53B205	L-114	1
Liquid	20 L	5.2 gal	53B207	L-114	1

Accessories	Order no.
Spout for 20 L square plastic pail	53L207



#### Features

- ▷ Contains extreme pressure additives (EP)
- ▷ Solvent-free, sulfur-free, and chlorine-free
- ▷ High lubricity and cooling properties
- ▷ Non-hazardous

## ALUCUT™

### Solid stick aluminum cutting lubricant

ALUCUT™ is a high-performance lubricant that extends cutting tool life. Specially formulated for use with aluminum and other non-ferrous metals.

#### Applications

- ▷ Cutting with circular chop saws
- ▷ Drilling

#### Benefits

- ▷ Reduces scoring and chatter marks
- ▷ Improves finish
- ▷ Increases productivity
- ▷ Minimizes waste



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Solid stick	300 g	10.5 oz.	53B303	L-04	12



#### Features

- ▷ Clean, precise, stain-free application
- ▷ Coats cutting edge or workpiece
- ▷ Ideal for inclined, vertical, and overhead surfaces



# HIGH PERFORMANCE CUTTING FLUIDS

## TAPCUT™

### Thread cutting lubricant

TAPCUT™ lubricant is specially formulated for thread cutting with taps and dies.

#### Applications

- ▷ Hand tapping
- ▷ Machine tapping

#### Benefits

- ▷ Taps and dies cut faster and last longer
- ▷ Cleans up easily with water



Description	Size		Order No.	(M) SDS	Std. Pkg.
	Metric	US Gal			
Liquid/Squeeze bottle	350 ml	11.8 fl.oz.	53A103	L-115	12
Liquid	3.78 L	1 gal	53A105	L-115	1
Liquid	20 L	5.2 gal	53A107	L-115	1

Accessories		Order no.
Spout for 20 L square plastic pail		53L207



#### Features

- ▷ Special antiwear additives for thread cutting
- ▷ Produces clean, accurate threads
- ▷ Non-hazardous

## ICECUT™

### Ready-to-use coolant/lubricant

ICECUT™ is a ready-to-use coolant/lubricant specially formulated for use with magnetic drilling units to reduce tool wear and improve production rates.

#### Applications

- ▷ Drilling with annular cutters, carbide core cutters, and drill bits



Description	Size		Order No.	(M) SDS	Std. Pkg.
	Metric	US Gal			
Liquid	3.78 L	1 gal	53C055	L-122	1
Liquid	20 L	5.2 gal	53C057	L-122	1
Liquid	208 L	45 gal	53C058	L-122	1

Accessories		Order no.
Spout for 20 L square plastic pail		53L207
Spout for 208 L plastic drum 2" NPT		53L209
Spout for 208 L plastic drum 3/4" NPT		53L210



#### Benefits

- ▷ Reduces friction and heat
- ▷ Extends cutting tool life
- ▷ Increases productivity
- ▷ Improves finish

#### Features

- ▷ Nitrate-free, amine-free, boron-free, phenol-free and active sulfur-free



# CNC CUTTING AND GRINDING FLUIDS



## BETTER PERFORMANCE AND PRODUCTIVITY

WALTER Surface Technologies COOLCUT™ cutting fluids can be used for almost any metalworking process. All our products, from machine tool lubricants to water-miscible coolants, special additives and corrosion protection solutions, are designed to work together, minimizing interface problems and achieving the highest process efficiency.

- ▷ *Water-miscible coolants and neat cutting oils for machining with defined and non-defined cutting edges*
- ▷ *Spray mist lubricants for minimum quantity applications*
- ▷ *Forming lubricants with a variety of different formulations for sheet metal, tube, and massive forming*

## LIQUIDS

Available Sizes



3.78 L / 1 gal.



20 L / 5.2 gal.



200 L / 52.8 gal.



1000 L / 264 gal.



# WATER-MISCIBLE COOLANTS



Water-miscible coolants for metalworking must meet a wide range of technical requirements to achieve best possible machining results and smooth operation. All WALTER COOLCUT™ lubricants meet or exceed requirements to ensure:

**Features**

- ▷ Cutting performance for long tool life and optimal workpiece finish
- ▷ Corrosion protection for machine parts and workpieces
- ▷ Compatibility with sensitive materials for components without staining
- ▷ Stability and flushing action for clean machines and parts
- ▷ Low foaming even with high cooling lubricant pressure

## COOLCUT™ 150

**Very finely dispersed semisynthetic lubricant for circular and flat grinding and light machining**

COOLCUT™ 150 is a water-miscible coolant for light to medium duty machining without high lubricity demands. It is most suited for steels and cast iron.



Name	Product Number	(M)SDS	Size
COOLCUT™ 150	58A157	C-01	20 L
COOLCUT™ 150	58A158	C-01	200 L
COOLCUT™ 150	58A159	C-01	1000 L

Suitable for water hardness (PPM)					
0-30	40-100	110-180	190-360	370-720	730-1080
	•	•	•	•	•
				• Preferred	• Qualified

**Features**

- ▷ Semisynthetic
- ▷ Free of secondary amines
- ▷ Formaldehyde-free

**Benefits**

- ▷ Applicable for a wide range of water hardness

**Processes**

- ▷ Turning
- ▷ Milling
- ▷ Drilling
- ▷ Threading tapping
- ▷ Surface and cylindrical grinding

**Materials**

- ▷ Steels
- ▷ Cast iron
- ▷ Yellow metals



## COOLCUT™ 250

Very finely dispersed semisynthetic for grinding and for light- to medium-duty machining

COOLCUT™ 250 is a water-miscible coolant for metal cutting processes on individual machine tools as well as centralized systems. Superior washing action ensures safe chip removal, perfect cooling, and clean working spaces. When it comes down to price, COOLCUT™ 250 offers exceptional value.

**Features**

- ▷ Formaldehyde-free
- ▷ Semisynthetic
- ▷ Free of secondary amines

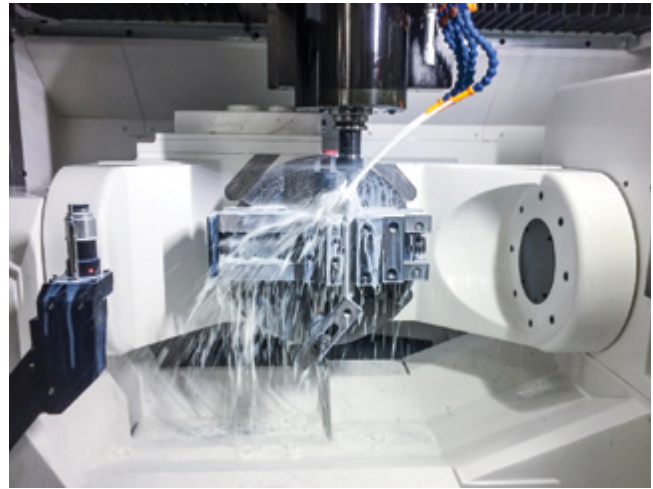
**Benefits**

- ▷ Good grinding performance
- ▷ Ideal price-to-performance ratio



Name	Product Number	(M)SDS	Size
COOLCUT™ 250	58A255	C-02	3.78 L
COOLCUT™ 250	58A257	C-02	20 L
COOLCUT™ 250	58A258	C-02	200 L
COOLCUT™ 250	58A259	C-02	1000 L

Suitable for water hardness (PPM)					
0-30	40-100	110-180	190-360	370-720	730-1080
		•	•	•	•
				• Preferred	• Qualified



## BEST COOLANT FOR BANDSAW

**Processes**

- ▷ Turning
- ▷ Milling
- ▷ Drilling
- ▷ Threading tapping
- ▷ Surface and cylindrical grinding
- ▷ Centerless grinding

**Materials**

- ▷ Cast iron
- ▷ Steels
- ▷ Aluminum
- ▷ Yellow metals

## COOLCUT™ 200 BF

Boron-free coolant for grinding and cutting operations

COOLCUT™ 200 BF is a very safe coolant that offers a great price-to-performance ratio. Its good washing action ensures a clean working area. This coolant is especially suitable for grinding processes as well as all medium-cutting operations like drilling and milling.

**Features**

- ▷ Semisynthetic
- ▷ Boron, Bactericide, and Monoethanolamine (MEA)-free

**Benefits**

- ▷ Very finely dispersed emulsion
- ▷ Excellent grinding performance
- ▷ Perfect price-to-performance ratio



Name	Product Number	(M)SDS	Size
COOLCUT™ 200 BF	58A295	C-09	3.78 L
COOLCUT™ 200 BF	58A297	C-09	20 L
COOLCUT™ 200 BF	58A298	C-09	200 L
COOLCUT™ 200 BF	58A299	C-09	1000 L

Suitable for water hardness (PPM)					
0-30	40-100	110-180	190-360	370-720	730-1080
	•	•	•	•	•
				• Preferred	• Qualified



**Processes**

- ▷ Turning
- ▷ Milling
- ▷ Drilling
- ▷ Threading tapping
- ▷ Surface and cylindrical grinding
- ▷ Centerless grinding
- ▷ Profile grinding

**Materials**

- ▷ Steels
- ▷ Cast iron
- ▷ Stainless steel
- ▷ Aluminum
- ▷ Yellow metals



## COOLCUT™ 400 U

Universal semisynthetic cooling lubricant, used for medium-duty machining and grinding

COOLCUT™ 400 U is universally applicable for use in medium-severe cutting and grinding processes. It is suitable when processing mixed materials (cast iron, steels, yellow metals and aluminum). Its superior washing action ensures a clean working area.

**Features**

- ▷ Bactericide-free
- ▷ Semisynthetic

**Benefits**

- ▷ Very versatile



Name	Product Number	(M)SDS	Size
COOLCUT™ 400U	58A507	C-03E	20 L
COOLCUT™ 400U	58A508	C-03E	200 L
COOLCUT™ 400U	58A509	C-03E	1000 L

Suitable for water hardness (PPM)					
0-30	40-100	110-180	190-360	370-720	730-1080
	•	•	•	•	•
				• Preferred	• Qualified

## BEST SOLUTION FOR ALUMINUM

**Processes**

- ▷ Turning
- ▷ Milling
- ▷ Drilling
- ▷ Threading tapping
- ▷ Surface and cylindrical grinding
- ▷ Centerless grinding
- ▷ Profile grinding

**Materials**

- ▷ Steels
- ▷ Cast iron
- ▷ Stainless steel
- ▷ Aluminum
- ▷ Yellow metals





## COOLCUT™ S-30

### Premium water-miscible cutting lubricant

COOLCUT™ S-30 is a ready-to-use, high-performance metal cutting lubricant specially designed for automatic and semi-automatic metal-removing operations. For general machining.

#### Features

- ▷ Contains non-chlorinated EP additives
- ▷ Bactericides-free
- ▷ High oil content

#### Benefits

- ▷ Extraordinary cutting performance for optimal tool life and surfaces



Name	Product Number	(M)SDS	Size
COOLCUT™ S-30	53C005	L-119	3.78 L
COOLCUT™ S-30	53C007	L-119	20 L
COOLCUT™ S-30	53C008	L-119	208 L
COOLCUT™ S-30	53C009	L-119	1000 L

Suitable for water hardness (PPM)					
0-30	40-100	110-180	190-360	370-720	730-1080
	•	•	•	•	•
		•	•		

• Preferred    • Qualified



#### Processes

- ▷ Turning
- ▷ Milling
- ▷ Drilling
- ▷ Deep drilling
- ▷ Threading tapping
- ▷ Broaching
- ▷ Surface and cylindrical grinding
- ▷ Centerless grinding
- ▷ Profile grinding
- ▷ Gear hobbing

#### Materials

- ▷ Steels
- ▷ Stainless steel
- ▷ Aluminum
- ▷ Yellow metals
- ▷ Titanium

## COOLCUT™ S-50

### Water-miscible cutting lubricant for high-pressure applications

COOLCUT™ S-50 is a high-performance metal cutting lubricant specially designed for automatic and semi-automatic metal-removing operations, even in severe machining processes and high-pressure conditions. Ideal for hard-to-machine materials.

#### Features

- ▷ Formulated with extended corrosion protection
- ▷ Free of bactericides
- ▷ Contains non-chlorinated EP additives

#### Benefits

- ▷ Extends cutting tool life
- ▷ Works with pressures up to 1,100 psi



Name	Product Number	(M)SDS	Size
COOLCUT™ S-50	53C025	L-109	3.78 L
COOLCUT™ S-50	53C027	L-109	20 L
COOLCUT™ S-50	53C028	L-109	200 L
COOLCUT™ S-50	53C029	L-109	1000 L

Suitable for water hardness (PPM)					
0-30	40-100	110-180	190-360	370-720	730-1080
•	•	•	•	•	•
		•	•		

• Preferred    • Qualified



#### Processes

- ▷ Turning
- ▷ Milling
- ▷ Drilling
- ▷ Deep drilling
- ▷ Broaching
- ▷ Surface and cylindrical grinding
- ▷ Profile grinding
- ▷ Gear hobbing

#### Materials

- ▷ Steels
- ▷ Stainless steel
- ▷ Aluminum
- ▷ Titanium
- ▷ Hard metals

## WATER-MISCIBLE COOLANTS COOLCUT™ SYN 400 BF

Water-soluble cooling lubricant for grinding and machining of steel and aluminum with high lubrication requirements

COOLCUT™ SYN 400 BF is the most technologically advanced coolant on the market. This coolant is designed for severe grinding and cutting operations with high lubricity demand. It is most suitable for aluminum alloys of all kinds including sensitive aerospace alloys. It is also suitable for steel, stainless steel, titanium, yellow metals and other materials suitable for work with ferrous materials and glass.

**Features**

- ▷ Mineral oil-free, fully synthetic
- ▷ Free of formaldehyde, boron and secondary amines

**Benefits**

- ▷ Slightly hazy, colorless solution
- ▷ High lubricity for severe operations
- ▷ 30% longer sump life vs most coolants



Name	Product Number	(M)SDS	Size
COOLCUT™ SYN 400 BF	58A407	C-05	20 L
COOLCUT™ SYN 400 BF	58A408	C-05	200 L

Suitable for water hardness (PPM)					
0-30	40-100	110-180	190-360	370-720	730-1080
•					
	• Preferred	• Qualified			



**Processes**

- ▷ Turning
- ▷ Milling
- ▷ Drilling
- ▷ Deep drilling
- ▷ Threading tapping
- ▷ Broaching
- ▷ Surface and cylindrical grinding
- ▷ Centerless grinding
- ▷ Profile grinding

**Materials**

- ▷ Steels
- ▷ Stainless steel
- ▷ Aluminum
- ▷ Yellow metals
- ▷ Titanium
- ▷ Glass ceramics

## COOLCUT™ SYN GRIND

Water-soluble cooling lubricant for circular and flat grinding of ferrous metals

COOLCUT™ SYN GRIND is specially designed for grinding operations. It is most suitable for work with ferrous materials and glass.

**Features**

- ▷ Fully synthetic
- ▷ Free from secondary amines
- ▷ Long coolant life, even in poor conditions

**Benefits**

- ▷ Colorless solution
- ▷ Excellent grinding performance
- ▷ Ideal price-to-performance ratio



Name	Product Number	(M)SDS	Size
COOLCUT™ SYN GRIND	58A707	C-06	20 L
COOLCUT™ SYN GRIND	58A708	C-06	200 L

Suitable for water hardness (PPM)					
0-30	40-100	110-180	190-360	370-720	730-1080
	•	•	•	•	
	• Preferred	• Qualified			



**Processes**

- ▷ Surface and cylindrical grinding

**Materials**

- ▷ Steels
- ▷ Cast iron
- ▷ Stainless steel
- ▷ Aluminum
- ▷ Titanium
- ▷ Glass ceramics

When your application demands higher lubricating action than cooling capacity, non-water-miscible, neat cutting oils are effective alternatives to water-mixed lubricants. For any specific application, achieving optimal performance with these cutting oils depends on their viscosity as well as the content and effectiveness of their active additives.

The WALTER COOLCUT™ product range covers the entire bandwidth of viscosities, starting with low-viscosity finish oils at approximately 3 mm<sup>2</sup>/s (40 °C/104 °F) to higher viscosity oils up to approximately 100 mm<sup>2</sup>/s (40 °C/104 °F) for the most difficult broaching operations. Using high-quality base oils and modern additive technologies, WALTER's COOLCUT™ solutions are optimal for modern machining processes.

**Features**

- ▷ High cutting action for long tool life and good surfaces
- ▷ Low evaporation base oils reduce the risk of oil mist and fire hazards
- ▷ Will not irritate skin

## COOLCUT™

### Metal cutting lubricant

COOLCUT™ is a ready-to-use, high-performance metal cutting lubricant that stands up to pressure and heat to reduce tool wear and prevent tool breakage.

**Features**

- ▷ Contains extreme pressure EP additives
- ▷ Suitable for all ferrous and non-ferrous metals
- ▷ Non hazardous, biodegradable
- ▷ Free of solvents and chlorinated ingredients
- ▷ Viscosity= 42 mm<sup>2</sup>/s (400 C)

**Benefits**

- ▷ Reduces friction and heat
- ▷ Extends cutting tool life
- ▷ Improves finish
- ▷ Increases productivity



Name	Product Number	(M)SDS	Size
COOLCUT™	53B005	L-09	3.78 L
COOLCUT™	53B007	L-09	20 L
COOLCUT™	53B008	L-09	208 L

**Processes**

- ▷ Machining operations
- ▷ Drilling
- ▷ MQL systems

**Materials**

- ▷ Steels
- ▷ Stainless steel
- ▷ Aluminum
- ▷ Yellow metals

## COOLCUT™ NEO AP

### Cutting oil for machining with defined cutting edges

The COOLCUT™ NEO AP is a multifunction oil for medium-duty machining and cutting machine lubrication. COOLCUT™ NEO AP's chlorine-free, chemically active, extreme pressure additives prevent buildup along the cutting edge, even on the most difficult materials such as stainless steel, nickel, and titanium alloys. These oils are suitable for severe cutting processes. They perform best with steel, stainless steel and aluminum. They may also be used in machining of copper alloys if workpieces are cleaned.

#### Features

- ▷ Formulated with low-emission base oils plus effective extreme-pressure additives
- ▷ Adequate viscosity per process requirements
- ▷ Viscosity = 25 mm<sup>2</sup>/s (400 C)
- ▷ Zinc-free, chlorine-free

#### Benefits

- ▷ Optimal price-to-performance ratio
- ▷ Good cutting performance, long tool life
- ▷ Low fog and evaporation loss
- ▷ Low drag out
- ▷ Easy removal with aqueous or hydrocarbon cleaners



#### Processes

- ▷ Turning
- ▷ Milling
- ▷ Gear hobbing
- ▷ Drilling
- ▷ Deep drilling
- ▷ Threading tapping
- ▷ Broaching

#### Materials

- ▷ Steels
- ▷ Cast iron
- ▷ Stainless steel
- ▷ Aluminum
- ▷ Yellow metals

Name	Product Number	(M)SDS	Size
COOLCUT™ NEO AP	58B305	C-07	3.78 L
COOLCUT™ NEO AP	58B307	C-07	20 L
COOLCUT™ NEO AP	58B308	C-07	200 L



## COOLCUT™ NEO 3724 N

### High performance cutting oil with EP-additives for severe cutting operations

COOLCUT™ NEO 3724 N is a very high-performance cutting oil made from low-emission base oils and effective EP-additives for severe cutting operations. Universally applicable for turning, milling, broaching, deep drilling, threading and more, this fluid is designed for use specifically on high-tensile materials like high-alloyed steels, Nickel- and Titanium-alloyed steels and stainless steels.

#### Features

- ▷ Chlorine-free and Zinc-free
- ▷ Low emission base oils
- ▷ Built with EP-additives
- ▷ Kinematic viscosity= 16 mm<sup>2</sup>/s (400C)

#### Benefits

- ▷ Highest performance for severe cutting applications
- ▷ Designed specially for stainless steel and high tensile alloys
- ▷ Low drag out, low fog, and low evaporation loss
- ▷ Easy to remove with aqueous or hydrocarbon cleaners



#### Processes

- ▷ Turning
- ▷ Milling
- ▷ Drilling
- ▷ Deep drilling
- ▷ Threading tapping
- ▷ Broaching, slotting

#### Materials

- ▷ Steels
- ▷ Cast iron
- ▷ Stainless steel
- ▷ Titanium

Name	Product Number	(M)SDS	Size
COOLCUT™ NEO 3724 N	58B377	C-14	20 L
COOLCUT™ NEO 3724 N	58B378	C-14	200 L
COOLCUT™ NEO 3724 N	58B379	C-14	1000 L





## COOLCUT™ SYN NEO HP

### Grinding and honing oil

The COOLCUT™ SYN NEO HP is a polyalphaolefin-based high-performance grinding oil. It is primarily for carbide tool grinding. These specially formulated grinding and honing oils allow maximum machining volumes without burning and perform precisely with exceptional grinding results.

#### Features

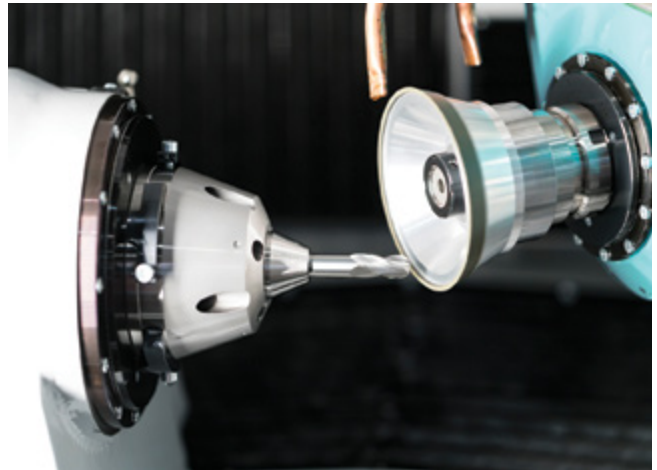
- ▷ Based on polyalphaolefins (PAO)
- ▷ Effective wetting agents
- ▷ Zinc-free, chlorine-free
- ▷ Kinematic viscosity= 6 mm<sup>2</sup>/s (400 C)

#### Benefits

- ▷ Optimal air separation for reliable cooling and maintaining the free wheel's porosity
- ▷ High grinding performance
- ▷ Minimal evaporation loss
- ▷ Extremely low drag out



Name	Product Number	(M)SDS	Size
COOLCUT™ SYN NEO HP	58B507	C-08	20 L
COOLCUT™ SYN NEO HP	58B508	C-08	200 L



#### Processes

- ▷ Turning
- ▷ Milling
- ▷ Centerless grinding
- ▷ Profile grinding

#### Materials

- ▷ Steels
- ▷ Stainless steel
- ▷ Yellow metals
- ▷ Titanium
- ▷ Carbide

## SLIDEWAY OIL

### COOLCUT™ PROTEC

#### High-performance slideway oil

COOLCUT™ PROTEC is a high-performance slideway oil with a special mineral oil base. Effective additives safely avoid stick-slip and ensure optimal prevention of oxidation, corrosion, and wear. This multipurpose oil can be used to lubricate slideways of all kinds under high loads (e.g., machine tools, forming presses) and it is also suitable for hydraulic and general machine lubrication.

#### Features

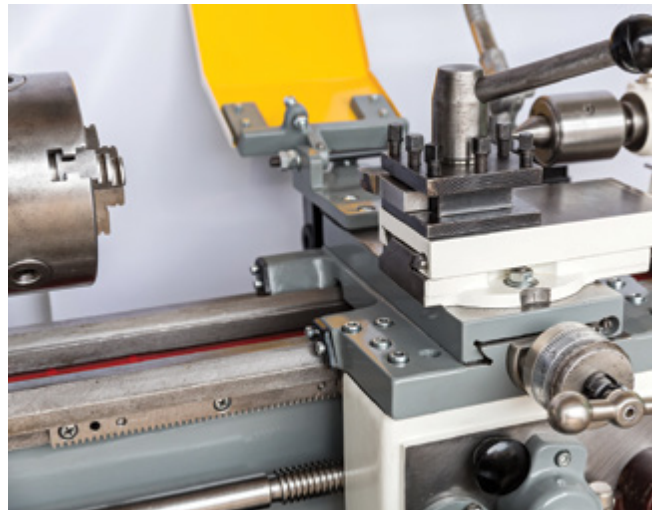
- ▷ Ash-free
- ▷ Reduced draining off vertical surfaces
- ▷ Minimal friction
- ▷ Compatible with all COOLCUT™ coolants
- ▷ Kinematic viscosity= 68 mm<sup>2</sup>/s (400 C)

#### Benefits

- ▷ Exact and safe positioning of tool and workpiece even under the highest loads, thanks to safe avoiding of stick-slip
- ▷ Minimization of friction saves energy and smooths movement
- ▷ Effective prevention of corrosion and wear
- ▷ Good compatibility with coolants



Name	Product Number	(M)SDS	Size
COOLCUT™ PROTEC	58C007	C-11	20 L
COOLCUT™ PROTEC	58C008	C-11	200 L



# ACCESSORIES



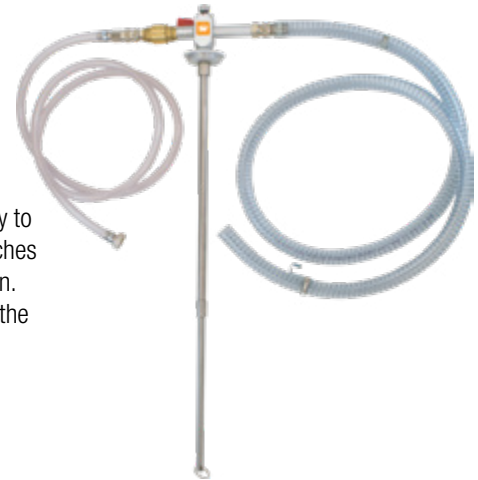
## COOLCUT™ CUTTING FLUIDS PROPORTIONING SYSTEM

Mixing device for water-miscible coolants

**Product Number: 53L165**

The WALTER COOLCUT™ proportioning system for water-miscible coolants is an easy way to dilute concentrated coolant with water, to achieve the desired usage concentration. It attaches easily to WALTER drums, and its simple dial guides the flow of concentrate into the solution. By attaching the water hose to your water supply, combined with the Venturi effect, out of the dispensing hose comes the diluted emulsion.

**NOTE:** It is recommended to always confirm the final concentration with a refractometer.



## SB 30 SYSTEM BOOSTER

Preventive treatment for reduced downtime

Keep your coolant systems in peak working order with this bactericide for metalworking fluids.

Name	Product Number	(M)SDS	Size
SB 30 SYSTEM BOOSTER	53C011	L-14	950 ml

### Applications

- ▷ Maintaining biocide action
- ▷ Maintaining efficiency and cleanliness

### Features and benefits

- ▷ Eliminates bacteria, fungus, and yeast
- ▷ Excellent corrosion protection
- ▷ Helps to maintain pH levels
- ▷ Reduces downtime and disposal costs

## COOLCUT™ SYSTEM CLEANER

System cleaner and decontaminator for CNC machine tools

The COOLCUT™ System Cleaner is the ideal product to add to your CNC machine tank before completing fluid changeovers and flushes. Biocidal agents help kill bacteria and fungi that might be growing in the machine or fluid reservoirs. Helps ensure your machine is totally clean and decontaminated before adding fresh coolant. Active ingredients help kill odor-causing bacteria and ensure a clean machine before the next replenishment. Add COOLCUT™ System Cleaner to your machine's coolant tank 12-24 hours before draining, then operate normally.

Name	Product Number	(M)SDS	Size
COOLCUT™ SYSTEM CLEANER	58C101	C-12E	950 ml
COOLCUT™ SYSTEM CLEANER	58C105	C-12E	3.78 L
COOLCUT™ SYSTEM CLEANER	58C107	C-12E	20 L



### Features

- ▷ Ideal for cleaning machine tools
- ▷ Use before fluid changeovers and machine tank flushes
- ▷ Use at 3% volume of entire fluid tank
- ▷ Mechanical cleaning is encouraged as well
- ▷ Compatible with all brands of coolant





# SAFETY SOLUTIONS

RESPIRATORY

HEAD AND FACE PROTECTION

ERGONOMICS

EYE PROTECTION

AIR SAMPLING

VENTILATION

CONFINED SPACE EQUIPMENT

OUTDOOR EQUIPMENT

WALL CASES

**ALLEGRO**  
INDUSTRIES

**ARCONE**

 **WALTER**



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# 01

## RESPIRATORY

# SUPPLIED-AIR RESPIRATOR SYSTEMS

## SAR SYSTEM COMPONENTS

1

**CHOOSE AN ALLEGRO MASK, HOOD, OR HELMET ASSEMBLY**



**HALF-MASK SUPPLIED-AIR RESPIRATOR**

9920 Low-Pressure w/ Fitting  
(No Air Control Assembly needed)



**FULL-MASK SUPPLIED-AIR RESPIRATOR**

9901 Low-Pressure w/ Fitting  
(No Air Control Assembly needed)  
9902 High-Pressure w/o Fitting



**TYVEK® SUPPLIED-AIR RESPIRATOR**

9910 Low-Pressure w/ Fitting  
(No Air Control Assembly needed)



**DOUBLE-BIB MAINTENANCE-FREE TYVEK® HOOD**

9911-10 Low-Pressure  
9911-10 High-Pressure



**MAINTENANCE-FREE HOODS**

9911-20 Low-Pressure Tyvek®  
9911-20S Low-Pressure Saran™  
9911-20 High-Pressure Tyvek®  
9911-20S High-Pressure Saran™



**DELUXE TYVEK® DOUBLE-BIB HARD HAT HOOD**

9909-10 LP, w/ Suspension only  
9909-11 LP, w/ Suspension and downtube  
9909-10 HP, w/ Suspension only  
9909-11 HP, w/ Suspension and downtube



**ECONOMY SUPPLIED-AIR SHIELD**

9903 Low-Pressure  
9903 High-Pressure



**EZ AIR FLEX GRINDING AIR SHIELD**

9907-G Low-Pressure  
9907-G High-Pressure



**DELUXE SUPPLIED-AIR SHIELD / HELMET**

9904 Low-Pressure  
9904 High-Pressure



**DELUXE SUPPLIED-AIR SHIELD AND WELDING HELMET (BLUE)**

9904-W Low-Pressure  
9904-W High-Pressure



**DELUXE SUPPLIED-AIR SHIELD AND WELDING HELMET (BLACK)**

9904-WB Low-Pressure  
9904-WB High-Pressure



**EZ AIR FLEX GRINDING / WELDING AIR SHIELD**

9907-WADF Low-Pressure  
9907-WADF High-Pressure



2

**CHOOSE AN  
AIR CONTROL DEVICE**

3

**CHOOSE THE APPROPRIATE  
AIRLINE HOSE**

4

**CHOOSE THE APPROPRIATE  
AIR SOURCE**

**LOW-PRESSURE SYSTEMS**



**LOW-PRESSURE  
FLOW ADAPTER**

9910-11 Low-Pressure



**LOW-PRESSURE  
SINGLE AIRLINE HOSE**

9100-25 25' Low-Pressure Airline Hose  
9100-50 50' Low-Pressure Airline Hose  
9100-100 100' Low-Pressure Airline Hose



**LOW-PRESSURE  
BREATHING AIR PUMP**

See page 507

**HIGH-PRESSURE SYSTEMS**



**HIGH-PRESSURE AIR  
TEMPERATURE CONTROLLER**

9990 High-Pressure



**HIGH-PRESSURE PERSONAL  
AIR COOLER**

9991 High-Pressure



**HIGH-PRESSURE SINGLE  
AIRLINE HOSE**

9101-25B 25' High-Pressure Airline Hose  
9101-50B 50' High-Pressure Airline Hose  
9101-100B 100' High-Pressure Airline Hose



**HIGH-PRESSURE BREATHING  
AIR FILTRATION PANEL**

See page 520



**ADJUSTABLE HIGH-PRESSURE  
FLOW CONTROL VALVE**

9992 High-Pressure

We have developed a complete line of NIOSH-approved supplied-air respirator systems. Our Full-Mask SAR and Fully Disposable Hoods offer incredible flexibility and ease of use in confined spaces and contaminated environments. Complete systems come in one box with one part number to make ordering easier and more efficient.



# RESPIRATOR MASKS, HOODS, AND HELMETS

## FULL- AND HALF-MASK SUPPLIED-AIR RESPIRATORS

- Made of silicone rubber for durability and will hold its shape even in extreme heat and cold
- Double-sealing flange and deep chin pocket provide improved face-to-mask seal and comfortable fit
- The replaceable polycarbonate lens offers a wider, distortion-free viewing area with an anti-fog, anti-scratch coating
- Removable hairnet means greater comfort and fits easily under a hard hat
- The unique “over the shoulder” hose design clips at the collar and an adjustable belt holds the air hose out of the way of work
- Comes with OBAC quick-connects (low-pressure)
- Large diameter contoured exhalation valve (high-pressure)
- Designed to connect to Adjustable HP Flow Control Valve, HP Personal Air Cooler, or HP Air Temperature Controller
- One size fits most
- **NIOSH approval TC-19C-0353 for 9901**
- **NIOSH approval TC-19C-0437 for 9902**

## HALF-MASK

- Half-mask provides low-pressure, continuous flow protection with the same belt and hose design as the full-mask respirator
- Low-profile design fits under welding shields
- Durable and easy to use with OBAC quick-connects
- Silicone skirt is easy to clean and won't lose its shape in storage
- **NIOSH approval TC-19C-0355**



Low Pressure	Order No.
Full-Mask Supplied-Air Respirator Assembly	9901
Low-Pressure Half-Mask Supplied-Air Respirator	9920

High Pressure	Order No.
Full-Mask Supplied-Air Respirator w/ HP Personal Air Cooler	9902-C
Full-Mask Supplied-Air Respirator w/ HP Flow Control Valve	9902-CV
Full-Mask Supplied-Air Respirator w/ Temperature Controller	9902-HC
Replacement Full-Mask Assembly	9902



Video available on the ALLEGRO INDUSTRIES Channel  
www.youtube.com/AllegroIndustries



SCAN TO WATCH VIDEO



### Tech tip!

Wear with Spray socks  
See page 530

### Accessories

Lens Covers 25/pkg.  
Order No. 9901-25





## TYVEK® SUPPLIED-AIR RESPIRATOR HOOD

- Especially comfortable for bearded workers, the hood style respirator is lightweight and loose-fitting to fit comfortably over the head
- A large clear window offers a wide view and complete protection in dirty environments such as spray painting or asbestos abatement
- The convenient disposable design is perfect where respirator cleaning or decontamination is difficult (simply remove the downtube and clamp before disposal)
- Includes OBAC quick-connects
- Each replacement hood comes complete with a hood harness
- **NIOSH approval TC-19C-0331**

Low Pressure	Order No.
Tyvek® Respirator Hood Assembly	9910
Replacement Hood w/ Suspension (Downtube not included)	9910-10



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



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## DOUBLE-BIB MAINTENANCE-FREE TYVEK® HOOD

- Provides the increased protection of two bibs
- Inner bib tucks inside protective garments so airflows down for a cooling effect on the body while the outer bib secures under the arms with hook-and-loop closure to keep the hood from riding up
- Features an extra-large lens for better visibility
- Offers the same convenient design with the downtube and suspension built-in, making the entire hood fully disposable
- Designed to connect to low-pressure or high-pressure flow adapters
- **NIOSH approval TC-19C-0331 for 9912-D**
- **NIOSH approval TC-19C-0367 for 9912-C/9911-10**
- **NIOSH approval TC-19C-0387 for 9912-CV**
- **NIOSH approval TC-19C-0366 for 9912-HC**



Low Pressure	Order No.
Double-Bib Maintenance-Free Tyvek® Hood Assembly w/ LP Flow Adapter and Suspension	9912-D
Replacement Double-Bib Maintenance-Free Tyvek® Hood Assembly w/ Suspension	9911-10

High Pressure	Order No.
Double-Bib Maintenance-Free Tyvek® Hood w/ HP Personal Air Cooler	9912-C
Double-Bib Maintenance-Free Tyvek® Hood w/ HP Flow Control Valve	9912-CV
Double-Bib Maintenance-Free Tyvek® Hood w/ HP Air Temperature Controller	9912-HC
Replacement Double-Bib Maintenance-Free Tyvek® Hood Assembly w/ Suspension	9911-10



## MAINTENANCE-FREE TYVEK® HOOD

- Downtube and head suspension integrated into one-piece assembly causing no need for decontamination of parts since the hood assembly is disposed of after use
- Lightweight, rugged, and reinforced downtube with swivel connection adds flexibility
- Multi-layer sound dampening system made of foam inside breathing tube meets NIOSH requirements
- Split air channel design delivers air inside the hood around the temple area w/ minimal lens fogging
- Large viewing window provides a wide field of vision and generous size makes it ideal for workers with beards or goggles
- Made from Poly-coated DuPont Tyvek®, it's flexible, splash-resistant and seals in airflow
- Easy adjustments are possible with a hook-and-loop closure and absorbent foam headband
- Designed to connect to low-pressure or high-pressure flow adapters
- Hard hat, Ratchet, or Disposable Suspensions available
- **NIOSH approval TC-19C-0331 for 9910-D**
- **NIOSH approval TC-19C-0367 for 9911-C/9911-20**
- **NIOSH approval TC-19C-0387 for 9911-CV**
- **NIOSH approval TC-19C-0366 for 9911-HC**

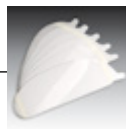


Low Pressure	Order No.
Maintenance-Free Tyvek® Hood Assembly w/ LP Flow Adapter and Suspension	9910-D
Replacement Maintenance-Free Tyvek® Hood Assembly w/ Suspension	9911-20

High Pressure	Order No.
Maintenance-Free Tyvek® Hood Assembly w/ HP Personal Air Cooler	9911-C
Maintenance-Free Tyvek® Hood Assembly w/ HP Flow Control Valve	9911-CV
Maintenance-Free Tyvek® Hood Assembly w/ HP Air Temperature Controller	9911-HC
Replacement Maintenance-Free Tyvek® Hood w/ Suspension	9911-20

### Accessories

Lens Covers 10/pkg.  
**Order No.** 9910-25





## DELUXE TYVEK® DOUBLE-BIB HARD HAT HOOD

- Lightweight, rugged, and reinforced downtube with swivel connection adds flexibility
- Split air channel design delivers air inside the hood around the temple area w/ minimal lens fogging
- Large viewing window provides a wide field of vision
- Double-bib style adds increased protection by simply tucking inner layer into the protective clothing
- Made from DuPont Tyvek®, it's flexible, splash-resistant, and seals in airflow
- Hard hat, Ratchet, or Disposable Suspensions available
- **NIOSH approval TC-19C-0409**



Low Pressure	Order No.
Replacement Deluxe Double-Bib Hard hat Hood w/ Suspension Only (Downtube not Included)	9909-10
Hood w/ Suspension and Downtube	9909-11
Hood w/ Hard hat	9909-HD
Hood w/ Ratchet	9909-RD
Hood w/ Disposable Suspension	9909-SD

High Pressure	Order No.
Replacement Deluxe Double-Bib Hard hat Hood w/ Suspension Only (Downtube not included)	9909-10
Hood w/ Suspension and Downtube	9909-11
Hood w/ Hard hat and HP Personal Air Cooler	9909-CHD
Hood w/ Ratchet Suspension and HP Personal Air Cooler	9909-CRD
Hood w/ Suspension and HP Personal Air Cooler	9909-CSD
Hood w/ Hard hat and HP Flow Control Valve	9909-CVHD
Hood w/ Ratchet Suspension and HP Flow Control Valve	9909-CVRD
Hood w/ Suspension and HP Flow Control Valve	9909-CVSD
Hood w/ Hard hat and HP Air Temperature Controller	9909-HCHD
Hood w/ Ratchet Suspension and HP Air Temperature Controller	9909-HCRD
Hood w/ Suspension and HP Air Temperature Controller	9909-HCSD

### Accessories

Replacement Hard hat	9909-03
Replacement Hard hat (Canada Purchase Only)	9909-03C
Ratchet Hood Suspension	9910-03
Lens Covers 10/pkg.	9910-25



## ECONOMY SUPPLIED-AIR SHIELD

- Perfect for use in grinding, chipping, spray painting and auto-body repair applications
- The easy flip-up visor is made of Nylon plastic and offers a wide field of vision
- Lens is polycarbonate and chin guard is polypropylene for added strength
- The shroud is cotton adding comfort and protects against overspray
- Designed to connect to low-pressure or high-pressure flow adapters
- Complies with ANSI Z87.1-2003
- Viewing area of 52.25 sq. in.
- **NIOSH approval TC-19C-0468**



Low Pressure	Order No.
Economy Supplied-Air Shield w/ LP Adapter	9903-D
Replacement Economy Supplied-Air Shield	9903

High Pressure	Order No.
Economy Supplied-Air Shield w/ HP Personal Air Cooler	9903-C
Economy Supplied-Air Shield w/ HP Flow Control Valve	9903-CV
Economy Supplied-Air Shield w/ HP Air Temperature Controller	9903-HC
Replacement Economy Supplied-Air Shield	9903

### Accessories

Lens Covers 10/pkg.  
Order No. 9910-25







## EZ AIR FLEX GRINDING AIR SHIELD

- Intended for industrial applications where combined respiratory, eye, and face protection are required, such as: grinding, assembly, facility maintenance, machine operations, painting, and sanding
- Made from DuPont® super tough flame-retardant nylon that can withstand extreme cold/heat without cracking or deforming
- Large shield design accommodates safety glasses under the face shield
- Adjustable durable Pera-Lok locking ratcheting headgear with replaceable ultrasoft sweat band
- Lightweight, comfortable, and easily replaceable 100% cotton FR-treated face seal
- Viewing area: 41.2 sq. in.
- Lightweight at only 0.46 lbs. total
- Air train directs air over the head and across the breathing zone, minimizing fogging
- User control of airflow direction
- APF 25
- Complies with ANSI Z87.1+ for face-shield/eye protection
- **NIOSH approval TC-19C-0588**

Low Pressure	Order No.
EZ Air Flex Grinding Air Shield Headtop	9907-G
EZ Air Flex Grinding Air Shield Headtop w/ LP Adapter	9907-DG

High Pressure	Order No.
EZ Air Flex Grinding Air Shield Headtop w/ HP Personal Air Cooler	9907-CG
EZ Air Flex Grinding Air Shield Headtop w/ HP Flow Control Valve	9907-CVG
EZ Air Flex Grinding Air Shield Headtop w/ HP Air Temperature Controller	9907-HCG



**COMPLIES WITH ANSI Z89.1 TYPE 1 CLASS G FOR HEAD PROTECTION**

## DELUXE SUPPLIED-AIR SHIELD

- All-in-one head, eye, face, and respiratory protection against hazardous airborne contaminants and flying debris
- Ergonomically designed with superb balance
- No fit testing required
- Can be worn comfortably by personnel with beards and facial hair
- Designed to connect to low-pressure or high-pressure flow adapters
- Complies with ANSI Z89.1 Type 1 Class G for head protection
- Complied with ANSI Z87.1+ for face-shield/eye protection
- APF 1000
- **NIOSH approval TC-19C-0488**

Low Pressure	Order No.
Deluxe Supplied-Air Shield w/ LP Adapter	9904-D
Replacement Deluxe Supplied-Air Shield	9904

High Pressure	Order No.
Deluxe Supplied-Air Shield w/ HP Personal Air Cooler	9904-C
Deluxe Supplied-Air Shield w/ HP Flow Control Valve	9904-CV
Deluxe Supplied-Air Shield w/ HP Air Temperature Controller	9904-HC
Replacement Deluxe Supplied-Air Shield	9904



## DELUXE SUPPLIED-AIR SHIELD AND BLACK WELDING HELMET

- Performance proven and a cost-effective system used by foundries, aluminum plants, mines, chemical plants, refineries, auto manufacturers, metal working, and fabrications
- Provides a constant and powerful supply of breathable air from a clean air source
- Provides protection from airborne contaminants including hexavalent chromium applications, flying debris, sparks, chemical, and molten metal splashes
- Visor flips up allowing user to grind and clean metal looking through clear ANSI face shield
- Designed to connect to low-pressure or high-pressure flow adapters
- Large #10 lens included
- Complies with ANSI Z89.1 Type 1 Class G for head protection
- Complied with ANSI Z87.1+ for face-shield/eye protection
- APF 1000
- **NIOSH approval TC-19C-0488**

Low Pressure	Order No.
Deluxe Supplied-Air Shield and Black Welding Helmet w/ No Flow Valve	9904-WB
Deluxe Supplied-Air Shield and Black Welding Helmet w/ LP Adapter	9904-DWB

High Pressure	Order No.
Deluxe Supplied-Air Shield and Black Welding Helmet w/ HP Personal Air Cooler	9904-CWB
Deluxe Supplied-Air Shield and Black Welding Helmet w/ HP Flow Control Valve	9904-CVWB
Deluxe Supplied-Air Shield and Black Welding Helmet w/ HP Air Temperature Controller	9904-HCWB



**YouTube**  
Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



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### Accessories

Snap-on Welding Shield with ADF Lens  
**Order No. 9937-AFFADF**



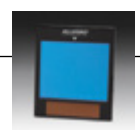
### Accessories

Lens Covers 6/pkg.  
**Order No. 9904-25**



### Accessories

Replacement Variable Shade #10 Lens Kit  
**Order No. 9904-35**





## DELUXE SUPPLIED-AIR SHIELD AND BLUE WELDING HELMET

- Performance proven and a cost-effective system used by foundries, aluminum plants, mines, chemical plants, refineries, auto manufacturers, metal working, and fabrications
- Provides a constant and powerful supply of breathable air from a clean air source
- Provides protection from airborne contaminants including hexavalent chromium applications, flying debris, sparks, chemical, and molten metal splashes
- Visor flips up allowing user to grind and clean metal looking through clear ANSI face shield
- Designed to connect to low-pressure or high-pressure flow adapters
- Equipped with variable shade, auto-darkening lens, shade 9-13
- Complies with ANSI Z89.1 Type 1 Class G for head protection
- Complied with ANSI Z87.1+ for face-shield/eye protection
- APF 1000
- **NIOSH approval TC-19C-0488**



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Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



## EZ AIR FLEX GRINDING/WELDING AIR SHIELD

- Intended for industrial applications where combined respiratory, eye, and face protection are required, such as welding, assembly, facility maintenance, grinding, machine operations, and sanding
- Made from DuPont® super tough flame-retardant nylon that can withstand extreme cold/heat without cracking or deforming
- Features a durable flip-up visor to expose a grind shield below that maintains respiratory protection while workers continue grinding or inspecting welds
- Large shield design accommodates safety glasses under the face shield
- Adjustable durable Pera-Lok locking ratcheting headgear with replaceable ultrasoft sweat band
- Lightweight, comfortable, and easily replaceable 100% cotton FR-treated face seal
- Visor dimension: 7" x 5.4" x 0.040"
- Viewing area: 41.2 sq. in.
- Lightweight at only 0.58 lbs. total
- Air train directs air over the head and across the breathing zone, minimizing fogging
- User control of airflow direction
- APF 25
- Equipped with variable shade, auto-darkening lens, shade 5-14
- Complies with ANSI Z87.1+ for face-shield/eye protection
- **NIOSH approval TC-19C-0588**



Low Pressure	Order No.
Deluxe Supplied-Air Shield and Blue Welding Helmet w/ No Flow Valve	9904-W
Deluxe Supplied-Air Shield and Blue Welding Helmet w/ LP Adapter	9904-DW
High Pressure	Order No.
Deluxe Supplied-Air Shield and Blue Welding Helmet w/ HP Personal Air Cooler	9904-CW
Deluxe Supplied-Air Shield and Blue Welding Helmet w/ HP Flow Control Valve	9904-CVW
Deluxe Supplied-Air Shield and Blue Welding Helmet w/ HP Air Temperature Controller	9904-HCW

Low Pressure	Order No.
EZ Air Flex Grinding/Welding Air Shield Headtop	9907-WADF
EZ Air Flex Grinding/Welding Air Shield Headtop w/ LP Adapter	9907-DWADF
High Pressure	Order No.
EZ Air Flex Grinding/Welding Air Shield Headtop w/ HP Flow Control Valve	9907-CVWADF
EZ Air Flex Grinding/Welding Air Shield Headtop w/ HP Personal Air Cooler	9907-CWADF
EZ Air Flex Grinding/Welding Air Shield Headtop w/ HP Air Temperature Controller	9907-HCWADF

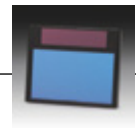
### Accessories

Replacement Variable Shade Lens Kit  
**Order No.** 9904-36



### Accessories

Replacement Variable Shade  
**Order No.** 9904-36



# SUPPLIED-AIR FLOW VALVES



## LOW-PRESSURE FLOW ADAPTER

Designed to be used with a Low-Pressure Supplied-Air Respirator, the Low-Pressure Flow Adapter allows the hood to connect to a breathing air pump or any low-pressure air source. It is a low-profile, lightweight, plastic threaded fitting that offers the convenience of OBAC quick-connect design with a waist belt and clip assembly. The controller is economical enough to dispose of with the hood assembly or save for use with a replacement hood. It requires an air supply pressure range of 6-50 psi.

**Order No. 9910-11**



## HIGH-PRESSURE AIR TEMPERATURE CONTROLLER

The HP Air Temperature Controller adjusts the amount of air to the hood and adjusts air 25 degrees warmer or cooler than the ambient air for use in cold or hot environments. It includes a waist belt and leather sheath to protect the user from temperature extremes.

**Order No. 9990**



## HIGH-PRESSURE PERSONAL AIR COOLER

The HP Personal Air Cooler is ideal in hot environments, adjusting the airflow from high-pressure air sources as low as 25 degrees colder than ambient air for an improved working environment. Includes a waist belt with the airflow valve.

**Order No. 9991**



## HIGH-PRESSURE ADJUSTABLE-FLOW CONTROL VALVE

The HP Adjustable Flow Control Valve adjusts airflow from any high-pressure air source for greater comfort. It offers a large gripping handle that makes it easy to use with a gloved hand. From the lowest flow position, the control valve will deliver the minimum flow required by NIOSH. Includes a waist belt with the airflow valve.

**Order No. 9992**

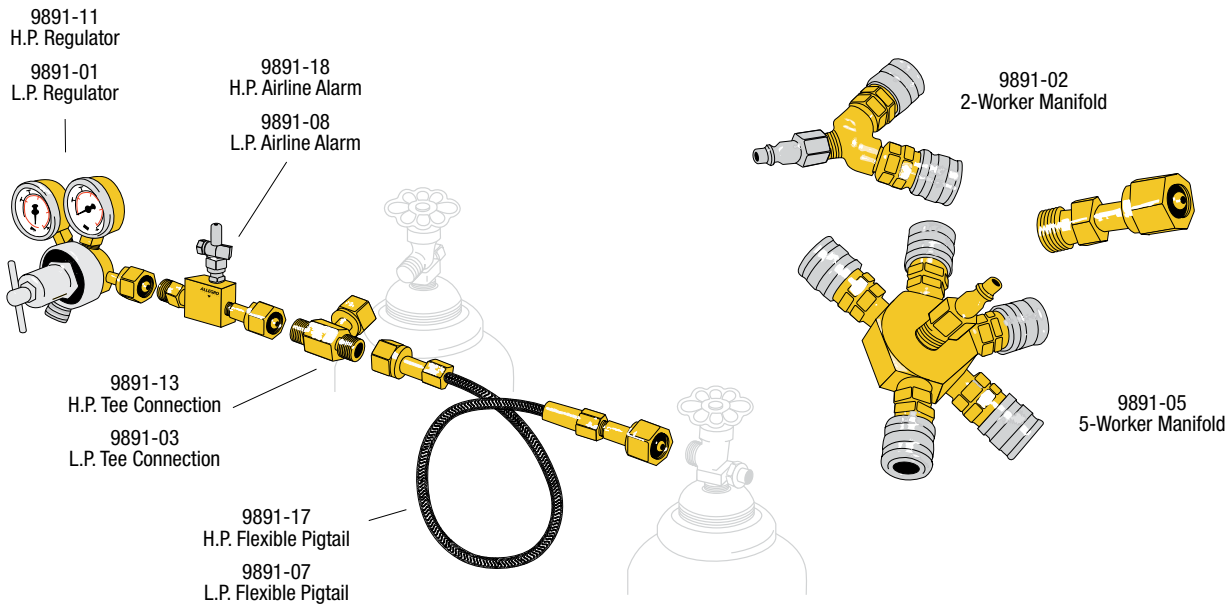
## INLET PSI REQUIREMENTS

Respirator	Description	PSI Range 9910-11 (LP)	PSI Range 9990 (HP)	PSI Range 9991 (HP)	PSI Range 9992 (HP)
9901/9902 Series	Full Face Mask	6-50 (9901 Series)	55-105	50-85	20-50
9903 Series	Economy Air Shield	6-50	90-120	72-98	25-46
9904 Series	Deluxe Air Shield/Helmet	6-50	90-120	68-93	27-47
9909 Series	Hard hat	6-50	80-120	65-115	23-47
9910 Series	Tyvek® Hood	6-50			
9911 Series	Saran™ Hood	6-50	85-110	55-85	30-48
9912 Series	Double-Bib Tyvek® Hood	6-50			
9920 Series	Half Mask	6-50			

# BREATHING AIR CASCADE PRODUCTS

## BREATHING AIR CASCADE KITS

Used to reduce high pressure through a series of tee and flexible pigtail connectors, our exclusive Low-Pressure Breathing Air Cascade Kits offer you the ease of ordering all the parts you need for your system with one part number. No more forgetting a piece or mismatched fittings. Inline check valves on both the tee and flexible pigtail (available in both high and low pressure) are used to allow for uninterrupted airflow while replacing depleted cylinders. An optional low-on-air warning device alerts the user when air is low. Individual components are available for adding on to an existing system, or for building a high-pressure breathing air cascade system.



Breathing Air Cascade System Kits	Order No.	Description	Contents
Low-Pressure Kits without alarm:	9891-01	One-Cylinder Cascade Kit	Regulator only
	9890-02	Two-Cylinder Cascade Kit	Regulator, Tee and Pigtail
	9890-04	Four-Cylinder Cascade Kit	Regulator, 3 Tees and 3 Pigtails
Low-Pressure Kits with alarm:	9892-01	One-Cylinder Cascade Kit	Regulator, Alarm
	9892-02	Two-Cylinder Cascade Kit	Regulator, Tee, Pigtail, Alarm
	9892-04	Four-Cylinder Cascade Kit	Regulator, 3 Tees, 3 Pigtails, Alarm

For high-pressure systems, order appropriate individual components.

NOTE: Low-pressure breathing air cascade systems: 3000 psi; high-pressure breathing air cascade systems: 5500 maximum psi.

Breathing Air Cascade Kits come standard with Foster/Hansen couplers. Other couplers are available upon request.



# BREATHING AIR PUMPS



## A-300

Ideal as a super portable, lightweight air source for a single respirator user. Solid performance in applications of one-worker painting, cleaning, sanding, or chemical handling operations.

Order No. 9806



## A-750

Fills the need for a very portable air source for one or two respirator users or a single hood user. Works well in a variety of work environments including painting or refinishing booths.

Order No 9821  
Order No 9821-E



## A-1500TE, A-1500EX

The easiest way to meet your needs for portable air sources for up to three respirator users or two hood users. Available in explosion-proof configurations for special applications. Applicable for chemical handling and clean-up. The A-1500EX meets Class I Div 1 & 2 Group D. Class II Div 1 & 2 Groups F & G

Order No. 9832 (TE)  
Order No. 9832-E   
Order No. 9833 (EX)\*  
Order No. 9833-E



## A-4000AD

Ideal for use when electric power is unavailable or undesirable. Highly effective in work areas where large amounts of compressed air are available such as sandblasting. Air driven motor is protected and lubricated by a high-capacity filter/regulator/lubricator assembly. Requires 75 CFM at 80 psig. Intended for four respirator users or three hood users.

Order No. 9850



**TE:** Totally Enclosed

**EX:** Explosion-Proof. EX models come complete with plug.

## LOW-PRESSURE BREATHING AIR PUMP SPECS

MODEL NO.	Order No.	MAX. NO. RESP.	MAX. NO HOODS	POWER REQUIRED	LBS.	HP	PSI	CFM
A-300	9806	1	0	4.6/2.3/115/230V AC	33	¼	0-15	0-5
A-750	9821	2	1	9.05/4.6/115/230V AC	53	¾	0-15	0-10
A-1500TE	9832	3	2	12.4/6.8-6.2/115/230V AC	97	1½	0-15	0-20
A-1500EX	9833*	3	2	16/8/115/230V AC	122	1½	0-15	0-15
A-4000AD	9850	4	3	75 CFM @ 80 psig.	83	n/a	0-15	0-20

\*Single-phase explosion-proof motor complete with plug.

Offered in 220V/50 Hz. For more information call Customer Service at 800-622-3530

**WARNING:** Breathing Air Pumps are not to be used with generators.  
**WARNING:** Air inlet to the pump must be located where breathable air can be assured at all times.  
**WARNING:** Breathing Air Pumps should be used only in areas containing sufficient oxygen to support life.  
 Do not use where contaminants are Immediately Dangerous to Life and Health (IDLH).  
**CAUTION:** NIOSH-approved respirators and corresponding hose lengths must function at pressures generated by breathing air pumps.  
 Only class "C" (constant flow) respirators will work properly.  
**NOTE:** Breathing Air Pumps contaminated with toxic or hazardous materials cannot be returned under guarantee.



Cooler subject to change

(Pump sold separately)

## LP ALLEGROAIR AIRLINE COOLING SYSTEM

Perfect, low-cost, portable means of cooling breathing air while keeping workers comfortable and productive. The system is capable of reducing air temperature from 180° F to 50° F. The cooling system is connected to the breathing air pump through a 5' long inlet supply airline. Airflowing through the FDA-Grade PVC coil inside the cooler reduces the air temperature by having ice poured on and around the coil. The outlet air is filtered by a 5-micron particulate air filter. An adjustable relief valve allows the user to adjust the airflow. Can be used with up to 3 workers. Comes with durable wheels and a locking telescoping pull handle. Dimensions: 20" w x 21" d x 24" h, 28 lbs. without ice.

**Order No. 9820-LP**



## BREATHING AIR PUMP CO MONITOR

The Breathing Air Pump CO Monitor alerts workers using supplied-air respirators when the level of carbon monoxide has exceeded 10 ppm (5 ppm Canada). The CO monitor can be operated in AC or DC mode and uses a single 9-volt alkaline battery. Housed in a portable, rugged molded case with handle and latches for protection and security. Comes with a threaded Tee. Dimensions are 8¼" l x 3½" w x 6¾" h. Weighs 3½ lbs.

**Order No. 9900-45**



## FLOW TEST KIT FOR CONSTANT FLOW SUPPLIED-AIR RESPIRATORS

CFM tester checks the volume of air that gets to the respirator. A flow meter simply quick-connects onto an airline hose to check the respirator system for NIOSH-compliant airflows. The kit contains a flow meter and a full assortment of quick-connect plugs and adapters to fit all respirator manufacturer's airline hoses. Excellent for use with breathing air pumps.

**Order No. 9900-40**

*NOTE: NIOSH mandates 4 CFM for tight-fitting masks and 6 CFM for hoods.*



## INLET HOSE EXTENSION KIT

Respirators must be supplied with a source of clean, breathable air at all times as per OSHA 29 CFR 1910.134. In order to achieve this requirement, at times it may be necessary to use an inlet hose extension from the breathing air pump to a clean air environment. This can be achieved by connecting one of our inlet hose extension kits, allowing the inlet air source to be 50 feet away from the pump. Or connect up to 5 total kits together for a total of 250 feet away from the pump. Included in the kit are (1) 1" x 50' heavy-duty hose and various fittings to ensure the hose fits to whatever ALLEGRO breathing air pump you have.

**Order No 9700-65**

# LOW-PRESSURE BREATHING AIR PUMP SYSTEMS



## HALF-MASK SYSTEMS

Our complete Half-Mask Systems offer portable, lightweight air sources for one, two, or three workers. They are offered with one, two, or three comfortable half-mask supplied-air respirators, a ¼ hp, ¾ hp, or 1 ½ hp breathing air pump, and one, two, or three 50- or 100-foot breathing air hose(s).



Description	Order No.
1-Worker Half-Mask System w/ 50' Hose	9205-01
1-Worker Half-Mask System w/ 100' Hose	9215-01
2-Worker Half-Mask System w/ 50' Hoses	9205-02
2-Worker Half-Mask System w/ 100' Hoses	9215-02
3-Worker Half-Mask System w/ 50' Hoses	9205-03
3-Worker Half-Mask System w/ 100' Hoses	9215-03

## FULL-MASK SYSTEMS

The Full-Mask Systems provide a portable air source for one, two, or three respirator users. They include one, two, or three full-mask supplied-air respirators, a ¼ hp, ¾ hp, or 1 ½ hp breathing air pump, and one, two, or three 50- or 100-foot breathing air hose(s).



Description	Order No.
1-Worker Full-Mask System w/ 50' Hose	9200-01
1-Worker Full-Mask System w/ 100' Hose	9210-01
2-Worker Full-Mask System w/ 50' Hoses	9200-02
2-Worker Full-Mask System w/ 100' Hoses	9210-02
3-Worker Full-Mask System w/ 50' Hoses	9200-03
3-Worker Full-Mask System w/ 100' Hoses	9210-03



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Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



## TYVEK® SUPPLIED-AIR HOOD SYSTEMS

In areas such as painting or asbestos abatement where levels of contamination are low, these complete SAR systems offer a portable air source for one or two workers. They include disposable, lightweight, loose-fitting DuPont Tyvek® hoods, a ¾ hp or 1 ½ hp breathing air pump, and one, or two 50- or 100-foot breathing air hose(s).



Description	Order No.
1-Worker Tyvek® Hood System w/ 50' Hose	9220-01
1-Worker Tyvek® Hood System w/ 100' Hose	9230-01
2-Worker Tyvek® Hood System w/ 50' Hoses	9220-02
2-Worker Tyvek® Hood System w/ 100' Hoses	9230-02

## ECONOMY SUPPLIED-AIR SHIELD SYSTEMS

Perfect for use with grinding, chipping, spray painting, and body repair, our comfortable Supplied-Air Shield is offered as a complete system for one or two workers. They include one or two shields, a ¾ hp, or 1 ½ hp breathing air pump, and one or two 50-foot breathing air hose(s). Complies with ANSI Z87.1-2003.



Description	Order No.
1-Worker Economy Shield System w/ 50' Hose	9245-01
2-Worker Economy Shield System w/ 50' Hoses	9245-02

# LOW-PRESSURE GRINDING AND WELDING SYSTEMS



## EZ AIR FLEX GRINDING AIR SHIELD SYSTEMS

Our EZ Air Flex Grinding Air Shield Supplied-Air Respirator (SAR) provides combined respiratory, eye, and face protection. The grinding shield with a large viewing lens maintains respiratory protection in diverse work environments. The system provides a constant supply of fresh air over the user's face. An APF level of 25 creates an optimal protective pressure inside the respirator headtop keeping away particulates of dust, steel, manganese, stainless steel, chromium, galvanized steel, cadmium, lead, and ozone. Complies with ANSI Z87.1+ for face-shield/eye protection. They include one or two shields, a ¾ hp or 1 ½ hp breathing air pump, and one or two 50-foot breathing air hose(s).



Description	Order No.
1-Worker EZ Air Flex Grinding Air Shield System w/ 50' Hose	9250-01
2-Worker EZ Air Flex Grinding Air Shield System w/ 50' Hoses	9250-02



## DELUXE SUPPLIED-AIR SHIELD/HELMET SYSTEMS

Our Deluxe Supplied-Air Shield uniquely provides all-in-one head, eye, face, and respiratory protection against hazardous airborne contaminants and flying debris. It delivers a constant and plentiful supply of clean purified air. Our superbly balanced Deluxe Supplied-Air Shield System is offered as a complete system for one or two workers. They include one or two shields, a ¾ hp or 1 ½ hp breathing air pump, and one or two 50-foot breathing air hose(s). Complies with ANSI Z87.1+.



Description	Order No.
1-Worker Deluxe Shield SAR System w/ 50' Hose	9247-01
2-Worker Deluxe Shield SAR System w/ 50' Hoses	9247-02



## DELUXE SUPPLIED-AIR SHIELD AND BLUE WELDING HELMET SYSTEMS

Our Deluxe Supplied-Air Shield and Blue Welding Helmet is performance-proven and a cost-effective system used by foundries, aluminum plants, mines, chemical plants, refineries, auto manufacturers, metal working, and fabrication. The Supplied-Air Respirator delivers a constant and powerful supply of breathable air from a clean air source. They include one or two shields/welding helmets, a ¾ hp or 1 ½ hp breathing air pump, and one or two 50-foot breathing air hose(s). ANSI-certified "all-in-one" system provides respiratory, head, eye and face protection.



Description	Order No.
1-Worker Deluxe Blue Welding Helmet System w/ 50' Hose	9248-01
2-Worker Deluxe Blue Welding Helmet System w/ 50' Hoses	9248-02





## DELUXE SUPPLIED-AIR SHIELD AND BLACK WELDING HELMET SYSTEMS

Our Deluxe Supplied-Air Shield and Black Welding Helmet is performance-proven and a cost-effective system used by foundries, aluminum plants, mines, chemical plants, refineries, auto manufacturers, metal working, and fabrication. The Supplied-Air Respirator delivers a constant and powerful supply of breathable from a clean air source. They include one or two shields/welding helmets, a ¾ hp or 1 ½ hp breathing air pump, and one or two 50-foot breathing air hose(s). ANSI-certified “all-in-one” system provides respiratory, head, eye, and face protection.



Description	Order No.
1-Worker Deluxe Black Welding Helmet System w/ 50' Hose	9249-01
2-Worker Deluxe Black Welding Helmet System w/ 50' Hoses	9249-02

## EZ AIR FLEX GRINDING/WELDING AIR SHIELD SYSTEMS

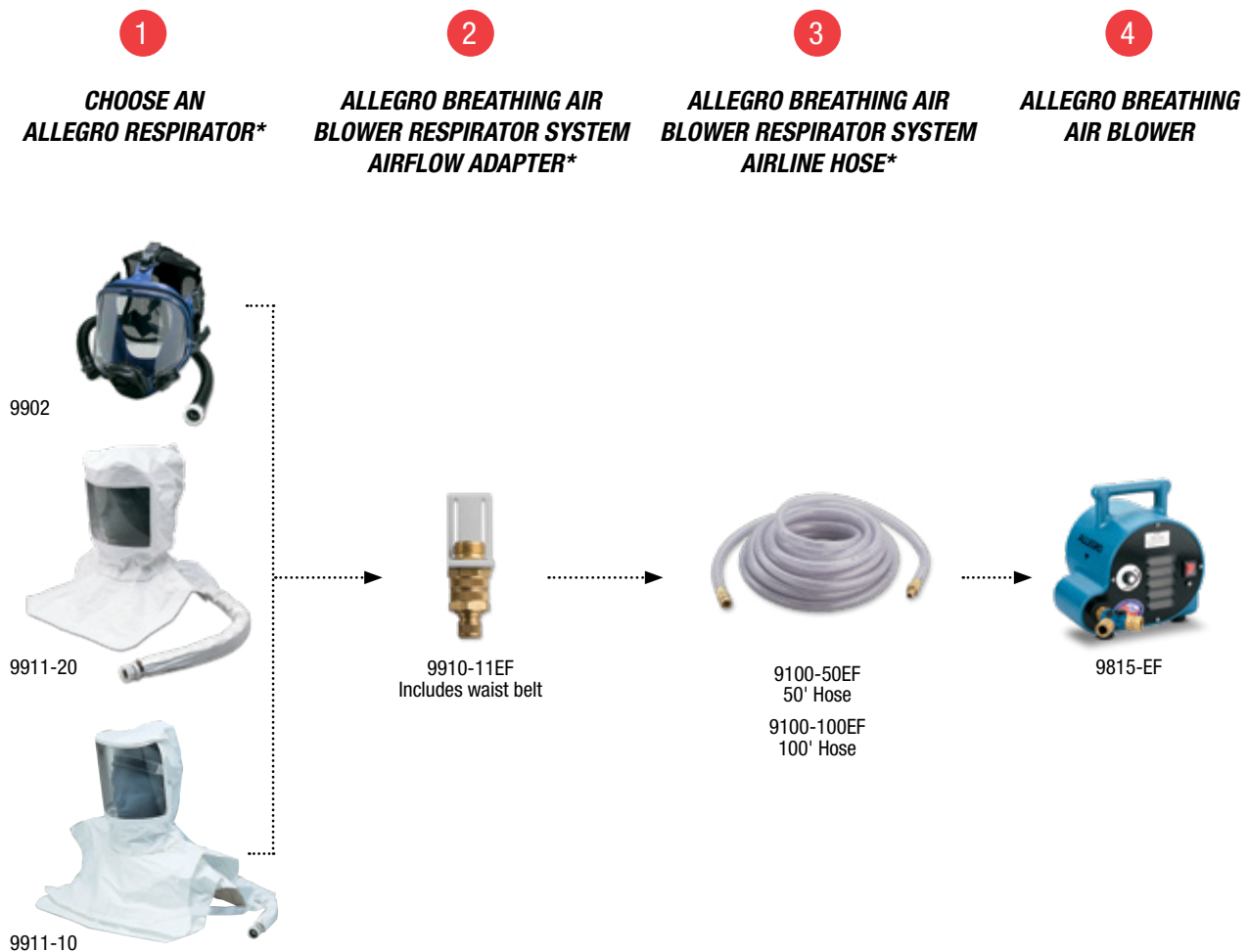
Our EZ Air Flex Grinding/Welding Air Shield Supplied-Air Respirator (SAR) provides combined respiratory, eye, and face protection. The flip-up visor exposes a grind shield below that maintains respiratory protection while grinding or inspecting welds. The system provides a constant supply of fresh air over the user's face. The optimal protective pressure inside the headtop keeps away particulates of dust, steel, manganese, stainless steel, chromium, galvanized steel, cadmium, lead, and ozone. Complies with ANSI Z87.1+ for face-shield/eye protection. They include one or two grinding/welding air shields, a ¾ hp or 1 ½ hp breathing air pump, and one or two 50-foot breathing air hose(s).

Description	Order No.
1-Worker EZ Air Flex Grinding/Welding Air Shield System w/ 50' Hose	9251-01
2-Worker EZ Air Flex Grinding/Welding Air Shield System w/ 50' Hoses	9251-02

# LOW-PRESSURE BREATHING AIR BLOWER RESPIRATOR SYSTEMS

We are proud to offer our NEW Breathing Air Blower Respirator Systems that provide fresh, safe OSHA-compliant breathing air for the NIOSH-APPROVED respirators that are included in our 1- and 2-worker systems. The unit does not heat the breathing air and helps improve worker's safety and comfort while reducing the frequency and duration of breaks. Don't compromise productivity because of hot working environments!

## BREATHING AIR BLOWER RESPIRATOR SYSTEM COMPONENTS



\*Note: Important to purchase specially designed components for your ALLEGRO Breathing Air Blower Respirator System.

# BREATHING AIR BLOWER



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Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



Included in 1-Worker System

## BREATHING AIR BLOWER

Our Breathing Air Blower is a portable, lightweight, fresh air supply system which provides safe and comfortable breathing air for industrial users who require an OSHA-compliant fresh air supply system while maximizing productivity. While our Breathing Air Blower improves the worker's safety and comfort, it also helps reduce the frequency and duration of breaks on the job. This self-contained, low-maintenance unit includes a removable and washable filter and is contained in a rugged roto-molded plastic housing for longer-lasting durability.



Description	Order No.
Breathing Air Blower w/ EF Couplers	9815-EF
Breathing Air Blower w/ EF Couplers, 220V AC, 50 Hz	9815-EFE



# LOW-PRESSURE RESPIRATOR MASKS AND HOODS



LP adapter w/  
waist belt included



LP adapter w/  
waist belt included



LP adapter w/  
waist belt included



## FULL-MASK RESPIRATOR

Made of silicone rubber for better durability and will hold its shape even in extreme heat and cold. The double-sealing flange provides an improved face-to-mask seal and a deep chin pocket provides a better, more comfortable fit. The replaceable polycarbonate lens offers a wider, distortion-free viewing area with an anti-fog, anti-scratch coating. The unique “over the shoulder” hose design clips at the collar and an adjustable belt holds the air hose out of the way of work. **NIOSH approval TC-19C-0531**

## SINGLE BIB MAINTENANCE-FREE TYVEK® HOOD

Made of a poly-coated Tyvek® material, this hood is designed and constructed in one piece with the downtube and head suspension completely integrated. This makes it maintenance-free, eliminating the need for decontamination of the breathing tube or replacement parts since the entire assembly is disposed of after use. The Tyvek® material is flexible, splash-resistant, and seals in the airflow. The hood features a large lens for increased visibility. **NIOSH approval TC-19C-0532**

## DOUBLE-BIB MAINTENANCE-FREE TYVEK® HOOD

Made of a poly-coated Tyvek® material, this hood offers the increased protection of two bibs. The inner bib tucks inside protective garments so airflows down for a cooling effect on the body, and the outer bib secures under the arms with hook-and-loop to keep the hood from riding up. The hood features an extra-large lens for better visibility. It offers the same convenient design with the downtube and suspension built-in, making the complete hood fully disposable. **NIOSH approval TC-19C-0532**



Description	Order No.
Full-Mask Respirator w/ LP Adapter	9902-EF

Description	Order No.
Single Bib Maintenance-Free Tyvek® Hood w/ LP Adapter	9910-EF

Description	Order No.
Double-Bib Maintenance-Free Tyvek® Hood w/ LP Adapter	9912-EF



# LOW-PRESSURE BREATHING AIR BLOWER RESPIRATOR SYSTEMS



## FULL-MASK BREATHING AIR BLOWER RESPIRATOR SYSTEMS

Our Full-Mask Breathing Air Blower Respirator Systems provide a portable air source for one or two respirator users. They include one or two NIOSH-approved full-mask supplied-air respirator(s), a breathing air blower, flow meter, and one or two 50-foot breathing air hose(s).

**Includes NIOSH-approved respirator(s).**



Description	Order No.
1-Worker Full-Mask Breathing Air Blower Respirator System w/ 50' Hose	9200-01A
1-Worker Full-Mask Breathing Air Blower Respirator System w/ 50' Hose, 220V AC, 50 Hz	9200-01AE
2-Worker Full-Mask Breathing Air Blower Respirator System w/ 50' Hoses	9200-02A
2-Worker Full-Mask Breathing Air Blower Respirator System w/ 50' Hoses, 220V AC, 50 Hz	9200-02AE



## SINGLE BIB HOOD BREATHING AIR BLOWER RESPIRATOR SYSTEMS

Our Single Bib Hood Breathing Air Blower Respirator Systems provide a portable air source for one or two workers. They include one or two NIOSH-approved disposable, lightweight Tyvek® hood(s), a breathing air blower, flow meter, and one or two 50-foot breathing air hose(s).

**Includes NIOSH-approved respirator(s).**



Description	Order No.
1-Worker Single Bib Hood Breathing Air Blower Respirator System w/ 50' Hose	9221-01A
1-Worker Single Bib Hood Breathing Air Blower Respirator System w/ 50' Hose, 220V AC, 50 Hz	9221-01AE
2-Worker Single Bib Hood Breathing Air Blower Respirator System w/ 50' Hoses	9221-02A
2-Worker Single Bib Hood Breathing Air Blower Respirator System w/ 50' Hoses, 220V AC, 50 Hz	9221-02AE



## DOUBLE-BIB HOOD BREATHING AIR BLOWER RESPIRATOR SYSTEMS

Our Double-Bib Hood Breathing Air Blower Respirator Systems provide a portable air source for one or two workers. They include one or two NIOSH-approved disposable, lightweight Tyvek® hood(s), a breathing air blower, flow meter, and one or two 50-foot breathing air hose(s).

**Includes NIOSH-approved respirator(s).**

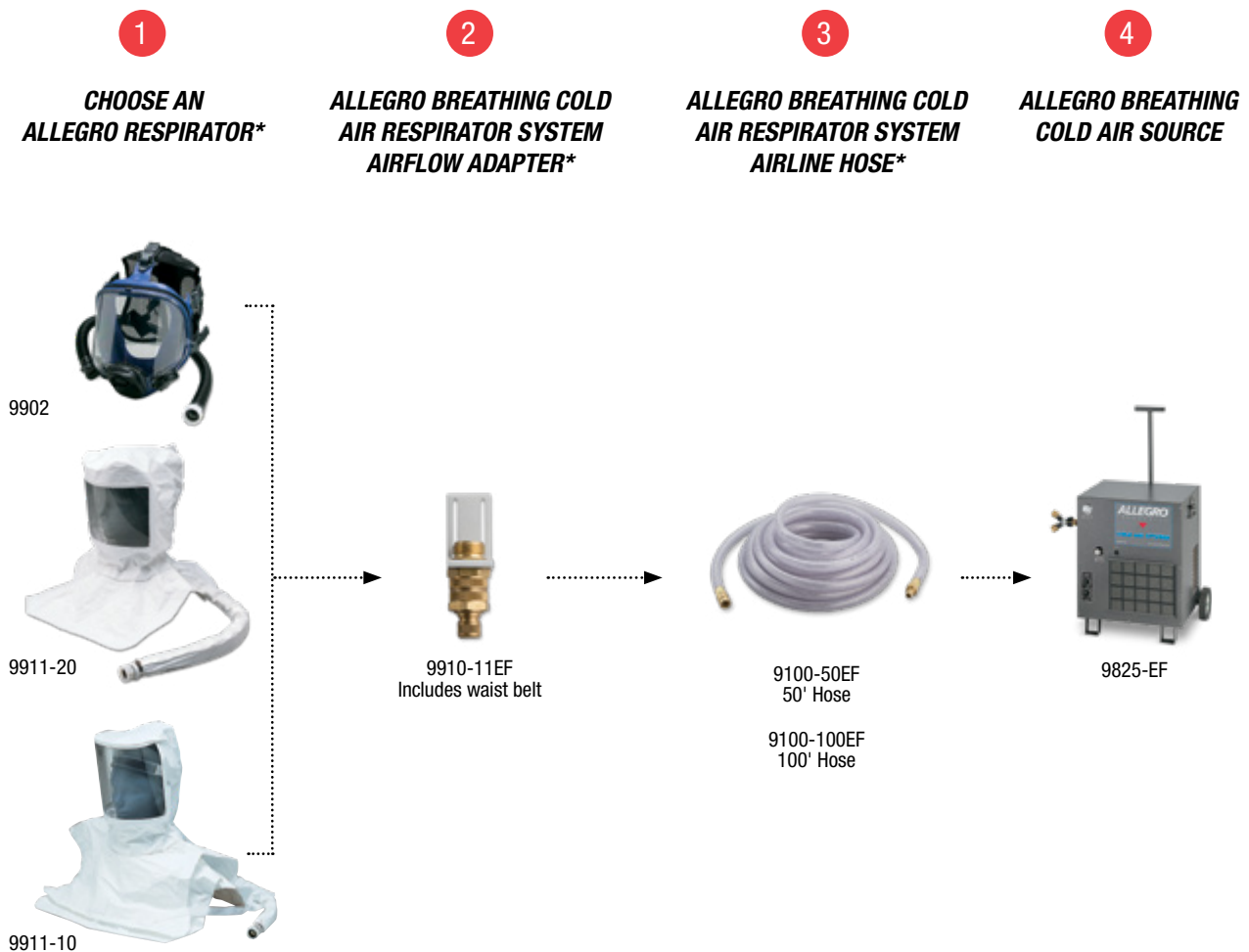


Description	Order No.
1-Worker Double-Bib Hood Breathing Air Blower Respirator System w/ 50' Hose	9222-01A
1-Worker Double-Bib Hood Breathing Air Blower Respirator System w/ 50' Hose, 220V AC, 50 Hz	9222-01AE
2-Worker Double-Bib Hood Breathing Air Blower Respirator System w/ 50' Hoses	9222-02A
2-Worker Double-Bib Hood Breathing Air Blower Respirator System w/ 50' Hoses, 220V AC, 50 Hz	9222-02AE

# LOW-PRESSURE BREATHING COLD AIR RESPIRATOR SYSTEMS

Don't compromise productivity because of hot working conditions. ALLEGRO is proud to offer our NEW Breathing Cold Air Respirator Source that provides fresh, refrigerated air that offers comfortable, and safe OSHA-compliant cooled breathing air for the NIOSH-APPROVED respirators that are included in our 1- and 2-worker systems. This cooled air helps improve worker's safety and comfort while reducing the frequency and duration of breaks in hot working environments.

## BREATHING COLD AIR RESPIRATOR SYSTEM COMPONENTS



\*Note: Important to purchase specially designed components for your ALLEGRO Breathing Cold Air Respirator System.

# BREATHING COLD AIR SOURCE



## BREATHING COLD AIR SOURCE

Our Breathing Cold Air Source is a fresh, refrigerated air supply system which provides comfortable and safe cooled breathing air for industrial users who require an OSHA-compliant fresh air supply system, with the advantages of air-conditioned air. It can maximize productivity and minimize the possibility of heat stroke, heat exhaustion, dehydration, nausea, and cramps for your workers. While our Breathing Cold Air Source improves the worker's safety and comfort, it also helps reduce the frequency and duration of breaks on the job. This sealed, low-maintenance unit includes a removable, washable filter and is powder-coated for longer-lasting durability. The NIOSH-approved respirators included in our 1- and 2-worker low-pressure systems feature an airflow valve for increased user comfort. Specs: 120V AC, 60 Hz, 10.5A. Measurements (H x D x W): 23.5" x 15" x 19.5". Weight: 76 lbs. Warning: Air inlet must be placed in clean, Grade "D" breathable air (as specified by OSHA 29 CFR 1910).



Description	Order No.
Breathing Cold Air Source w/ EF Couplers	9825-EF



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[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



# LOW-PRESSURE RESPIRATOR MASKS AND HOODS



LP adapter w/  
waist belt included



LP adapter w/  
waist belt included



LP adapter w/  
waist belt included



## FULL-MASK RESPIRATOR

Made of silicone rubber for better durability and will hold its shape even in extreme heat and cold. The double-sealing flange provides an improved face-to-mask seal and a deep chin pocket provides a better, more comfortable fit. The replaceable polycarbonate lens offers a wider, distortion-free viewing area with an anti-fog, anti-scratch coating. The unique “over the shoulder” hose design clips at the collar and an adjustable belt holds the air hose out of the way of work. **NIOSH approval TC-19C-0531**



Description	Order No.
Full-Mask Respirator w/ LP Adapter	9902-EF

## SINGLE BIB MAINTENANCE-FREE TYVEK® HOOD

Made of a poly-coated Tyvek® material, this hood is designed and constructed in one piece with the downtube and head suspension completely integrated. This makes it maintenance-free, eliminating the need for decontamination of the breathing tube or replacement parts since the entire assembly is disposed of after use. The Tyvek® material is flexible, splash-resistant and seals in the airflow. The hood features a large lens for increased visibility. **NIOSH approval TC-19C-0532**



Description	Order No.
Single Bib Maintenance-Free Tyvek® Hood w/ LP Adapter	9910-EF

## DOUBLE-BIB MAINTENANCE-FREE TYVEK® HOOD

Made of a poly-coated Tyvek® material, this hood offers the increased protection of two bibs. The inner bib tucks inside protective garments so airflows down for a cooling effect on the body, and the outer bib secures under the arms with hook-and-loop to keep the hood from riding up. The hood features an extra-large lens for better visibility. It offers the same convenient design with the downtube and suspension built-in, making the complete hood fully disposable. **NIOSH approval TC-19C-0532**



Description	Order No.
Double-Bib Maintenance-Free Tyvek® Hood w/ LP Adapter	9912-EF



# LOW-PRESSURE BREATHING COLD AIR RESPIRATOR SYSTEMS



## FULL-MASK BREATHING COLD AIR RESPIRATOR SYSTEMS

Our Full-Mask Breathing Cold Air Respirator Systems provide a portable cold air source for one or two respirator users. They include one or two NIOSH-approved full-mask supplied-air respirator(s), a breathing cold air source, and one or two 100-foot breathing air hose(s).

**Includes NIOSH-approved respirator(s).**



Description	Order No.
1-Worker Full-Mask Breathing Cold Air Respirator System w/ 100' Hose	9200-01CA
2-Worker Full-Mask Breathing Cold Air Respirator System w/ 100' Hoses	9200-02CA



## SINGLE BIB HOOD BREATHING COLD AIR RESPIRATOR SYSTEMS

Our Single Bib Hood Breathing Cold Air Respirator Systems provide a portable cold air source for one or two workers. They include one or two NIOSH-approved disposable, lightweight Tyvek® hood(s), a breathing cold air source, and one or two 100-foot breathing air hose(s).

**Includes NIOSH-approved respirator(s).**



Description	Order No.
1-Worker Single Bib Hood Breathing Cold Air Respirator System w/ 100' Hose	9221-01CA
2-Worker Single Bib Hood Breathing Cold Air Respirator System w/ 100' Hoses	9221-02CA



## DOUBLE-BIB HOOD BREATHING COLD AIR RESPIRATOR SYSTEMS

Our Double-Bib Hood Breathing Cold Air Respirator Systems provide a portable cold air source for one or two workers. They include one or two NIOSH-approved disposable, lightweight Tyvek® hood(s), a breathing cold air source, and one or two 100-foot breathing air hose(s).

**Includes NIOSH-approved respirator(s).**



Description	Order No.
1-Worker Double-Bib Hood Breathing Cold Air Respirator System w/ 100' Hose	9222-01CA
2-Worker Double-Bib Hood Breathing Cold Air Respirator System w/ 100' Hoses	9222-02CA

# HIGH-PRESSURE BREATHING AIR FILTRATION PANELS AND ACCESSORIES



9872-40

 **YouTube**  
Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



SCAN TO  
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## CARRY-AIR™ AND WALL-AIR™ FILTRATION PANELS



ALLEGRO's Air Filtration Panels convert shop air used for pneumatic tools and equipment to clean, breathable, Grade D air. They provide 1 to 8+ airline respirators a portable source of up to 15, 30, 60, or 100 CFM of breathable air from 5-125 psig. All models meet NIOSH requirements for point-of-attachment

- An optional Carbon Monoxide (CO) Monitor add-on to meet OSHA requirements (Optional in Wall-Air™ and Carry-Air™ models, Standard in Multi-regulator models)
- Can be operated in AC or DC modes
- 90 dB Audible alarm activates when CO exceeds 10 ppm (5 ppm in Canada)
- External-powered LED lit visual signal
- The 3-stage filtration system purifies compressed air by removing water, oil and particulate contaminants
  - 1<sup>st</sup> stage: 5-micron particulate filter element and automatic mechanical drain
  - 2<sup>nd</sup> stage: 0.010-micron coalescing filter element and manual drain
  - 3<sup>rd</sup> stage: 0.003 ppm activated carbon filter element and manual drain
- Filter replacement indicators (5 and 8 worker panels only)
- Pressure regulator includes a pressure gauge and adjustment knob with locking ring
- Pressure relief valve protects the CO monitor and respirators in the event of regulator failure
- Remote strobe alarm available (optional)
- All brass plumbing with quick-disconnect Hansen couplers (All filtration panel specifications are listed in the charts at the bottom of page 533)

### **CARRY-AIR™**

- Housed in a rugged molded case with carrying handle and latches for protection and security
- Portable or mountable
- 16-gauge, black powder-coated steel stand for support
- Includes external connections for use w/ remote alarms (Order numbers available on page 533)

### **WALL-AIR™**

- Allows for larger units providing more CFM to be used
- 12-gauge black powder-coated steel mounting bracket
- Easily accessible filters for quick replacement (Order numbers available on page 533)



## CARRY-AIR™ AND WALL-AIR™ INLINE FILTRATION PANELS



Our single outlet and single inlet inline filtration panels provide airline respirators a portable source of clean, breathable, Grade D air while ideally designed for filtering air anywhere within the airline system downstream from outlets. All models meet NIOSH requirements of point-of-attachment.

- An optional CO Monitor add-on to meet OSHA requirements
- Can be operated in AC or DC modes
- 90 dB Audible alarm activates when CO exceeds 10 ppm (5 ppm in Canada)
- External-powered LED lit visual signal
- Includes external connections
- The 3-stage filtration system purifies compressed air by removing water, oil and particulate contaminants
  - 1st stage: 5-micron particulate filter element and automatic mechanical drain
  - 2nd stage: 0.010-micron coalescing filter element and manual drain
  - 3rd stage: 0.003 ppm activated carbon filter element and manual drain
- Pressure regulator includes a pressure gauge and adjustment knob with locking ring
- Pressure relief valve protects the CO monitor and respirators in the event of regulator failure
- Remote strobe alarm available (optional)
- All brass plumbing with quick-disconnect Hansen couplers  
(All filtration panel specifications are listed in the charts at the bottom of page 533)



9878-150

### CARRY-AIR™ INLINE FILTRATION PANELS

- Provides up to 8+ airline respirators a portable source of up to 100 CFM of breathable air from 5-125 psig.
- Housed in a portable, rugged molded case with carrying handle and latches for protection and security
- 16-gauge, black powder-coated steel stand for support included
- Inlet side: 3/4" Hansen plug, made of Zinc plated case-hardened steel
- Outlet side: 1/2" NPT male nipple, made of Brass

Description	Order No.
Carry-Air™ Inline Filtration Panel	9878-100

### WALL-AIR™ INLINE FILTRATION PANELS

- Provides up to 12 airline respirators a portable source of up to 150 CFM of breathable air from 5-125 psig.
- 12-gauge black powder-coated steel wall-mounting bracket included (to keep work area clean)
- Inlet side: 1" NPT male nipple, made of Brass
- Outlet side: 3/4" NPT male nipple, made of Brass

Description	Order No.
Wall-Air™ Inline Filtration Panel w/ CO Monitor	9878-150
Wall-Air™ Inline Filtration Panel w/o CO Monitor	9878-151

# HIGH-PRESSURE BREATHING AIR FILTRATION PANELS AND ACCESSORIES



## MULTI-REGULATOR AIR FILTRATION PANELS

- Each regulator can be individually adjusted at different pressure settings for different types of respirators and can also be used for supplying separate outlets for air tools
- CO monitor is integrated to meet OSHA requirements for continuous monitoring of CO levels
- Housed in a portable, rugged molded case with carrying handle and latches for protection and security
- Acrylic window to monitor pressure gauges
- 16-gauge, black powder-coated steel stand for support

Description	Order No.
4-Worker Multi-Regulator Air Filtration Panel	9874-MR
6-Worker Multi-Regulator Air Filtration Panel	9876-MR

## BREATHING AIR FILTRATION PANEL SPECS

Breathing Air Filtration Panels		Order No.	Max. Flow	Max. Inlet	Dimensions (W x H x D)	Weight (LBS.)
Carry-Air™	1-Worker	9873	15 CFM	150 psig.	16" x 13" x 7"	11
	2-Worker	9872 Series	30 CFM	150 psig.	18" x 12" x 6"	14
	5-Worker	9875 Series	60 CFM	150 psig.	21" x 14½" x 6¾"	19
	8-Worker	9878 Series	100 CFM	150 psig.	23" x 16½" x 7½"	25
Carry-Air™ Multi-Regulator	4-Worker*	9874-MR	60 CFM	125 psig.	21" x 14½" x 6¾"	21
	6-Worker*	9876-MR	100 CFM	150 psig.	23" x 16½" x 7½"	27
Carry-Air™ 100 CFM Panel	1-8 Worker	9878-100	100 CFM	150 psig.	23" x 16½" x 7½"	21
Wall-Air™	1-Worker	9873-40	15 CFM	150 psig.	21¼" x 8¼" x 7¾"	11
	2-Worker	9872-40 Series	30 CFM	150 psig.	21¼" x 8¼" x 7¾"	11
	5-Worker	9875-40 Series	60 CFM	150 psig.	22" x 8½" x 7½"	15
	8-Worker	9878-40 Series	100 CFM	150 psig.	25" x 14" x 7"	21
Wall-Air™ 150 CFM Panel w/ CO	1-12 Worker	9878-150	150 CFM	150 psig.	22" x 19" x 10"	27
Wall-Air™ 151 CFM Panel w/o CO	1-12 Worker	9878-151	150 CFM	150 psig.	22" x 19" x 10"	2

Note: All above air sources come standard with Foster/Hansen couplers. Other couplers are available on request.

## BREATHING AIR FILTRATION PANEL ORDER NUMBERS

	1-Worker	2-Worker	5-Worker	8+ -Worker
Carry-Air™ w/ CO Monitor	9873	9872	9875	9878
Wall-Air™ w/ CO Monitor	9873-40	9872-40	9875-40	9878-40
Carry-Air™ w/o CO Monitor		9872-W/O	9875-W/O	9878-W/O
Wall-Air™ w/o CO Monitor		9872-40W/O	9875-40W/O	9878-40W/O
Carry-Air™ Inline Panel (1-8 Worker)	9878-100	9878-100	9878-100	9878-100
Wall-Air™ Inline Panel (1-12 Worker) w/ CO Monitor	9878-150	9878-150	9878-150	9878-150
Wall-Air™ Inline Panel (1-12 Worker) w/o CO Monitor	9878-151	9878-151	9878-151	9878-151





Video available on the ALLEGRO INDUSTRIES Channel  
www.youtube.com/AllegroIndustries

## CO MONITOR CALIBRATION TEST KIT

The CO Monitor Calibration Kit is essential for the proper operation of our CO Monitor. It's a two-point calibration for accurate monitoring of filtered air by the Oil-Less Compressor, Carry-Air™, and Wall-Air™ Filtration Panels.

- Kit includes: 17-liter cylinder each of Span Gas and Zero Gas, a constant flow-pressure regulator with gauge and tubing housed in a durable plastic case with integrated carrying handle
- No tools or adjustments needed
- CO Monitor should be calibrated once every two weeks with normal usage



Description	Order No.
CO Monitor Calibration Test Kit	9872-60
Calibration Span Gas	9872-61
Calibration Zero Gas	9872-62



## REMOTE CO MONITOR

When attached to any air source or filter panel, the Remote CO Monitor alerts workers using Supplied-Air Respirators when the level of carbon monoxide has exceeded 10 ppm (5 ppm Canada). An optional CO monitor is available for continuous monitoring of CO levels.

- Housed in a portable, rugged molded case with carrying handle and latches for protection and security
- Can be operated in AC or DC mode
- Uses a single 9-volt alkaline battery
- Maximum regulator inlet pressure is 150 psi
- Coupling pigtail and kit included for fast and easy adaptation to an existing air filtration system
- All brass plumbing with quick-disconnect 1/4" Hansen plug

Order No. 9871-02



## SOURCE PRE-FILTERS

Where inlet air quality is especially low, this particulate assembly helps extend the life of the filter panel's disposable filters by removing liquids and contaminants down to 5 microns.

- Offered in free-standing or wall-mounted configurations
- Black powder-coated steel
- The Source Pre-Filter (9350-03) includes a spring-loaded relief valve made from brass and is equipped with an adjustable regulator and pressure gauge to meet the NIOSH requirement for point-of-attachment.



Description	Order No.
Source Pre-filter	9350-03
Deluxe Source Pre-filter	9350-04

## 4-WORKER AIRLINE FILTER

This airline filter is designed to remove oil, mist, water vapor, and particulates down to 0.5 microns from breathing grade compressed air. The filter is placed in-line between the breathing air source and the respirator airline hose. Air enters the filter through the inlet port and once the air has been filtered, moisture is removed and drained through a drain valve located at the bottom of the airline filter.

- Comes with a four-worker manifold for multiple respirator users
- Made of impact and corrosion-resistant steel, it is ideally suited for rugged environments
- "Pot" type filter utilizes a large capacity quality filter cartridge to provide longer life
- Can be wall or floor mounted
- Meets OSHA regulation 1910-94 (6) (i) and 1910-94 (6) (ii). 75 CFM

Order No. 9874-W/O



When application requires CO monitoring the ALLEGRO Remote CO monitor can be attached to the manifold. (Remote CO Monitor and Airline Filter Sold Separately).



## REPLACEMENT FILTER CARTRIDGES

Quality Filter Cartridges provide better and longer life filtration. Universal design allows filter cartridge to fit into many filter brands on the market.

Order No. 3100-02





## REMOTE CO ALARM WITH STROBE

Designed and built to be an additional means of warning users of an ALLEGRO Filtration Panel when the carbon monoxide level has exceeded 10 PPM (5 PPM in Canada).

- Housed in a portable, rugged molded case with carrying handle and latches for protection and security
- Can also be wall-mounted
- Connects to the filtration panel with the included 50' cable allowing user to keep the alarm closer to working areas
- Includes both a loud 90 decibel, UL-approved, audio alarm and highly visible red strobe light with a yellow powder-coated cage to protect light
- Can be attached to any of our Air Filtration Panels (*Sold separately*)

Order No. 9871-01

### ECONOMY REMOTE CO ALARM WITH STROBE

The Economy CO Alarm has the same features as the Remote CO Alarm (PN 9871-01) with a smaller profile.

- Housed in a molded carry case with 25' of cable
- Yellow powder-coated cage (*optional*)



Description	Order No.
Economy Remote CO Alarm w/ Strobe	9871-01EC
50' Extension Cord	9871-50E



## POINT-OF-ATTACHMENT AIR CONTROL SYSTEM

This Point-of-Attachment Air control system connects to any breathing air source. It's designed to meet the NIOSH requirement for point-of-attachment for a SAR breathing system.

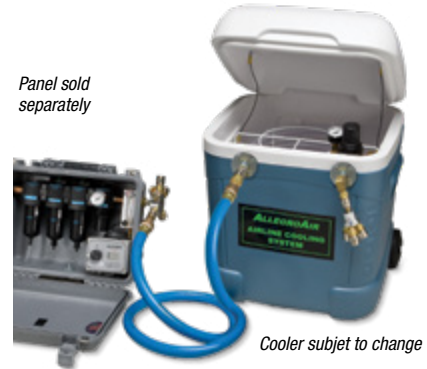
- Housed in a portable, rugged molded case with carrying handle and latches for protection and security
- Can also be wall-mounted
- Includes an adjustable pressure regulator, pressure gauge, and a brass spring-loaded pressure relief valve
- Maximum regulator inlet pressure is 150 psi
- Maximum over pressure: 300 psi
- Meets NIOSH requirements for point of attachment

Order No. 9871-03

### ECONOMY P.O.A.

The Economy P.O.A. has the same features as our Point-of-Attachment Air Control System without a carry case.

Order No. 9871-03EC



Panel sold separately

Cooler subject to change

## HP ALLEGRO AIR AIRLINE COOLING SYSTEM

Designed for greater user comfort and increased worker productivity, the ALLEGRO Air Airline Cooling System is a low-cost and portable means of cooling breathing air produced by high-pressure breathing source such as a filtration panel or compressor not to exceed 150 psi.

- Reduces air temperature from 180° F to as low as 50° F
- Durable wheels and locking telescope pull handle
- 5' long inlet supply hose
- Heavy-duty Hansen inlet coupler
- Uses FDA-Grade, 3-A sanitary standard, PVC tubing for temperature cooling coil
- Pressure regulator includes a pressure gauge and adjustable knob with locking ring
- Inline 5-micon particulate filter with manual drain
- Single outlet coupler can adapt quickly to accept 3-worker manifold
- Use with filtration panels, cascade system, or compressor
- Cooling system will provide cool air for hours
- Dimensions: 21"l x 20"w x 24"h, 28 lbs. (without ice)

Order No. 9820-HP



# HIGH-PRESSURE BREATHING AIR FILTRATION PANELS AND ACCESSORIES



## BREATHING AIR FILTRATION PANEL CARTS

Our Breathing Air Filtration Panel Carts filter impurities and hydrocarbons from an air compressor to convert to breathable air. All components are housed in a portable and rugged molded case mounted on a powder-coated steel cart w/ telescopic handle for ease of storage and shipping. To meet OSHA requirements, an optional CO monitor is available for continuous monitoring of carbon monoxide levels.

- 9874-EFC Panel provides up to 60 CFM (101.94 m<sup>3</sup>/hr) of air within a 5-125 PSI (0.34-8.62 bar) range.
- 9878-EFC Panel provides up to 100 CFM (169.9 m<sup>3</sup>/hr) of air within a 5-125 PSI (0.34-8.62 bar) range.



Description	Order No.
4-Worker Breathing Air Filtration Panel Cart	9874-EFC
8-Worker Breathing Air Filtration Panel Cart	9878-EFC



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

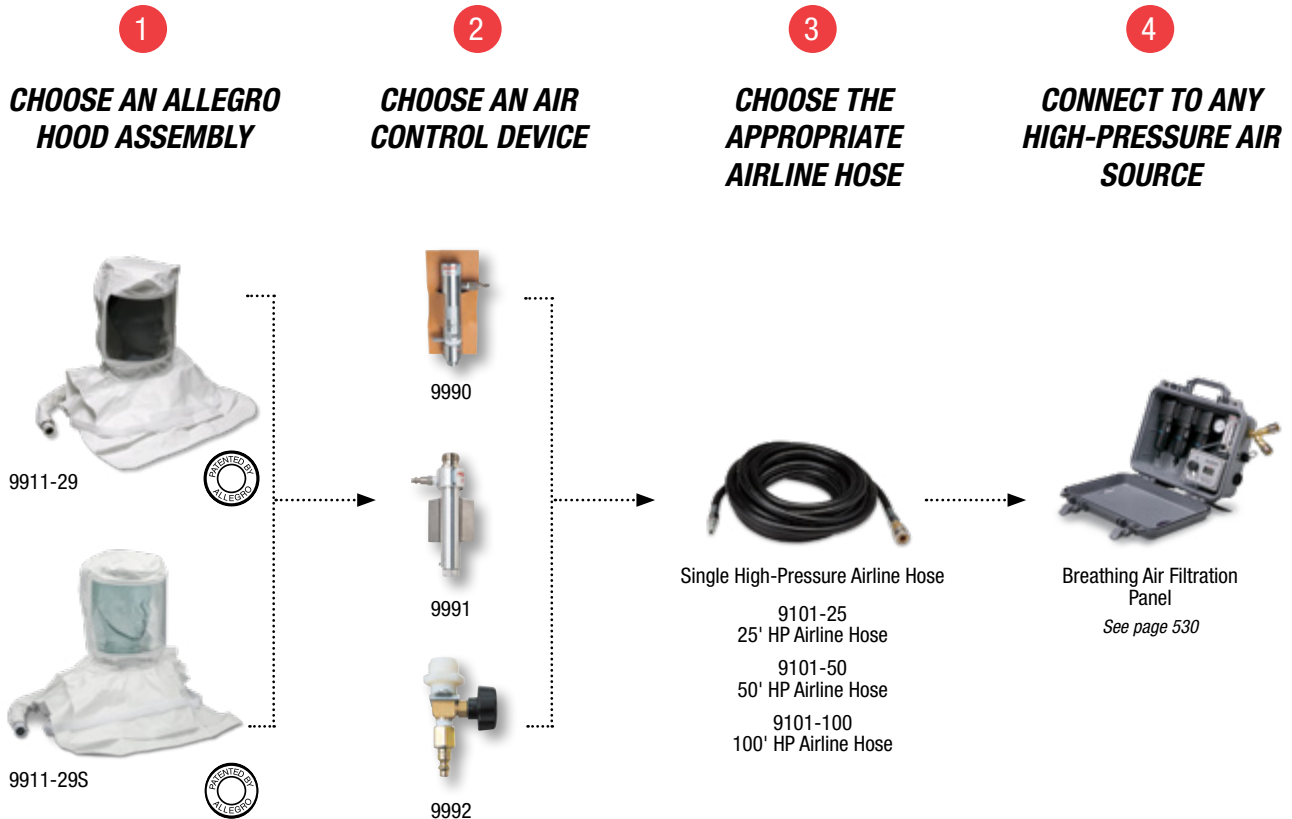


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# SAR PHARMACEUTICAL HOOD SYSTEMS

## PHARMACEUTICAL HOODS SYSTEM COMPONENTS



### ALLEGRO HOODS EXCEL IN THIRD PARTY TEST AT U.S. ARMY'S EDGEWOOD CHEMICAL BIOLOGICAL CENTER



ALLEGRO Industries contracted the US Army's ECBC (Edgewood Chemical Biological Center) to perform a third-party test using a protocol similar to the one used on a limited number of styles in the 1996 study. The protocol had to be slightly modified to adapt to the procedures used by the ECBC. The goal of this test was to certify and record actual simulated workplace protection factors (SWPF) of the ALLEGRO Hoods and to compare the results of these tests to those hoods tested in the 1996 ORC Study. The test results show that the ALLEGRO hoods do perform at least equal to those that now have an OSHA variance of APF (Assigned Protection Factor) 1000 as a result of the ORC Study.

ALLEGRO's objective for the Protection Factor test was to determine the efficiency of the ALLEGRO Supplied-Air Hood (SAH) in protecting the wearer from aerosolized chemical and airborne biological particles. The tests conducted at ECBC incorporated the use of fifteen (15) civilian test subjects. Each test subject was submitted to twelve two-minute-long exercises. The exercises used were derived from the 1996 ORC Study and were chosen because of their similarity to everyday tasks performed in the pharmaceutical manufacturing environment. All subjects were tested twice in each hood configuration in the aerosolized ECBC Test Chamber.

The sophisticated equipment ECBC used to record the results during the test offered 1200 data points for each exercise. The state-of-the-art facility is capable of detecting fit factors up to 100,000. An analysis of the test results indicates that, at the 5th percentile, ALLEGRO's hoods tested to a fit factor of the maximum of 100,000.



# SAR PHARMACEUTICAL HOODS

*The ALLEGRO Pharmaceutical Maintenance-Free Tyvek® Hood and the Pharmaceutical Maintenance-Free Saran™ Hood are NIOSH-approved and the unique design is patented.*

These hoods are engineered for ultimate protection, job performance, and maintenance-free, one-time use. The ALLEGRO high-pressure hoods are specifically designed to seal in airflow and seal out harmful chemical and airborne particulates.

Both the Tyvek® and the Saran™ hoods have a patented breathing tube integrated directly into the hood. The tube is splash-resistant and entirely disposable. Although made flexible for on-the-job performance, the multi-layer foam tubing material prevents downtubes from being crushed or twisted, with the tube's foam layers providing a sound-dampening system both unique and made in accordance with stringent NIOSH requirements.

These hoods are engineered without head harness for freedom of movement and comfort. Hook-and-loop underarm straps keep the hood from riding up. Each hood has a 8" x 14" viewing window which offers an extensive field of vision and aptly accommodates workers with beards or goggles. The hoods can be used with an adjustable HP Flow Control Valve ALLEGRO HP Personal Air Cooler or an ALLEGRO HP Air Temperature Controller.



## DOUBLE-BIB PHARMACEUTICAL MAINTENANCE-FREE TYVEK® HOOD

Constructed from polycoated Tyvek®, this double-bib hood offers greater protection for workers. Inner bib tucks into garments, allowing air to flow down across the body for a cooling effect. **NIOSH approval TC-19C-0357**

Order No. 9911-29



## DOUBLE-BIB PHARMACEUTICAL MAINTENANCE-FREE SARAN™ HOOD

Constructed from Saran™-coated Tyvek®, this double-bib hood features heat-taped seams to form a liquid- and gas-tight seal. Impermeable to air and moisture, the Saran™ Hood protects workers effectively against a broad range of chemicals and other hazardous materials. **NIOSH approval TC-19C-0357**

Order No. 9911-29S



# RESPIRATOR FIT TESTING



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

## BITTER (DENATONIUM BENZOATE) AND SWEET (SACCHARIN) FIT TEST KITS

The Bitter Fit Test Kit offers qualitative OSHA-compliant fit testing for disposable and reusable dust and mist respirators. Denatonium Benzoate creates an unmistakable bitter taste that indicates breakthrough in the respirator fit. Disposable glass ampules make pouring solution into nebulizer easier and reduces the chance of contamination.



Description	Order No.
Bitter (Denatonium Benzoate) Test Kit	2041
Deluxe Fit Test Kit*	2041-DLX
Sensitivity solution only, 6/box	2041-11K
Test solution only, 6/box	2041-12K



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



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When the sweet taste of saccharin is detected, the respirator has failed its fit test. The Sweet Fit Test Kit offers OSHA-compliant testing of disposable and reusable dust and mist respirators. Includes: a polycoated hood, sensitivity and fit test solutions, two nebulizers with labels, 2 sets of atomizers, wire cleaner, fit test documentation, and instructions. Replacement solutions are in ampules.



Description	Order No.
Sweet (Saccharin) Test Kit	2040
Sensitivity solution only, 6/box	2040-11K
Test solution only, 6/box	2040-12K
Deluxe Fit Test Kit*	2040-DLX

\*Deluxe Fit Test Kit comes in a rigid molded case.

## DELUXE BANANA OIL KIT

Isoamyl Acetate (banana oil) offers the oldest method of testing respirator fit. Its strong, readily identifiable odor will be recognized if respirators don't obtain a proper fit. The kit contains all the equipment necessary to perform a proper fit test, including a fit test tent, jars, 1- 8 oz. jar kit, paper towels, disposable bags, and other necessary components, all housed in a convenient storage and carry case.

Order No. 0202



## STANDARD BANANA OIL KIT

Designed for quick fit testing, the Standard Kit contains two 1 oz. bottles of test agents, vinyl test enclosure, measuring pipette, and paper towels in a handy carry bag.

Order No 0203



### BANANA OIL KIT REPLACEMENT SOLUTION

Description	Order No.
1 oz. Solution	0203-01

 **YouTube**  
Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

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 **YouTube**  
Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

## STANDARD SMOKE TEST KIT

For qualitative fit testing of air-purifying respirators, this Smoke Test Kit offers everything needed for meeting OSHA's protocol for fit testing with smoke. Includes irritant smoke tubes, aspirator assembly, and record form in a protective carry pouch.



Description	Order No.
Kit	2050
Replacement Tubes, 6/box	2050-01

## DELUXE PUMP SMOKE TEST KIT

The Deluxe Pump Smoke Test Kit includes a smoke fit tube pump with batteries which generates the required 200 ml per minute of smoke, six smoke tubes with caps, and instructions. Meets OSHA 29 CFR 1910.134 requirements.



Description	Order No.
Kit	2055
Replacement Tubes, 6/box	2050-01

## RESPIRATOR FIT CHECK AMPULES

Provides a fast, safe, and easy method to perform qualitative respirator fit checks. When activated, the ampules give off a non-irritating odor of banana oil (Isoamyl Acetate). If banana odor is detected by the wearer, the respirator must be adjusted or replaced.



Description	Order No.
10/box	0201



# RESPIRATOR ACCESSORIES



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Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

## SPRAY SOCKS

Provides comfortable protection against overspray and other particulates. Spray Sock fits over the head and can be worn with goggles, half-mask, or full-mask respirators. The stretch knit material is breathable and cool to wear. One size fits all.

Description	Order No.
144/case	1410
12/pkg	1410-12
Flame-retardant Spray Sock	1410-12FR



## SPRAY SOCK DISPENSER BOX

Our comfortable Spray Socks (PN 1410) are available individually packaged in a handy dispenser box.

Description	Order No.
12/box	1410-01



## RESPIRATOR CLEANING SWABS

Easy-to-use and good for cleaning full- and half-mask respirators as well as removing residues. Contains non-sterile, one-sided swabs with low lint cotton tip and wood shaft.

Description	Order No.
100/bag, 10 bags/box	0205



## ARM SOCK

Protect arms from paint overspray, dust, and other particulates. 16" long and made of 100% cotton. Provides for a comfortable fit from wrist to shoulder.



Description	Order No.
144/case	1440
12/pkg	1440-12



# RESPIRATOR CLEANING



**YouTube**  
Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

## RESPIRATOR CLEANING PADS

These large 5" x 8" individually foil-packaged towelettes containing 70% Isopropyl Alcohol are designed specifically for rubber respirator facepieces. The box is designed as a wall-mounted dispenser but can be wall-mounted using the box holder (PN 1001-02) instead.

**Order No. 1001**

## ALCOHOL-FREE CLEANING PADS

These large 5" x 8" individually foil-packaged towelettes containing Benzalkonium Chloride are designed specifically for rubber respirator facepieces and other personal safety equipment where the manufacturer recommends using a non-alcohol cleaning wipe. Will not harm even the most sensitive rubber respirator facepieces. The box is designed as a wall-mounted dispenser but can be wall-mounted using the box holder (PN 1001-02) instead.

**Order No. 3001**



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Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

## THE BIG ONES

Available with the same cleaning ingredients as our Cleaning Pads, these extra-large 8" x 11" towelettes are perfect for big cleaning jobs such as full face and supplied-air respirators.



Description	Order No.
Alcohol, 50/box	1001-05
Alcohol-Free, 50/box	3001-05



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

## WIPE DOWNS FOR EQUIPMENT

Easy-to-use 6" x 7½" wipes for respirator and other personal safety equipment clean-up. These Benzalkonium Chloride and alcohol wipes reduce the hazard of contamination.



Description	Order No.
220/canister	5001

## POP-UP WIPES CANISTER HOLDER

Impact-resistant ABS holder mounts on the wall to store wipe canisters for quick and easy access.

Description	Order No.
Wall Mount	5001-01





## ECONOMY RESPIRATOR CLEANING KIT WITH LIQUID CLEANER

Our Economy Respirator Cleaning Kit is a low-cost and convenient cleaning and storage solution for full face and half-mask respirators. Kit includes 32 oz. ready-to-use diluted liquid detergent with sprayer, two scrubbing sponges, 100 individual sterile storage bags and seals. Meets OSHA recommendations (29 CFR 1910.134 Appendix B).



Description	Order No.
Economy Cleaning Kit	4003
Replacement Liquid Respirator Cleaner, 32 oz., 946 ml	5004
Disposable Storage Bags, 100/pkg	4001-05



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Video available on the ALLEGRO INDUSTRIES Channel

[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



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## RESPIRATOR CLEANING KIT WITH LIQUID CLEANER

All the same features as our Respirator Cleaning Kit with the added convenience of a concentrate gallon liquid disinfectant soap. EPA-registered.



Description	Order No.
Cleaning Kit	4002
Replacement Liquid Cleaner, 1 Gallon	5003-U
Disposable Storage Bags, 100/pkg	4001-05



Video available on the ALLEGRO INDUSTRIES Channel

[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

## RESPIRATOR CLEANING KIT WITH DRY SOAP

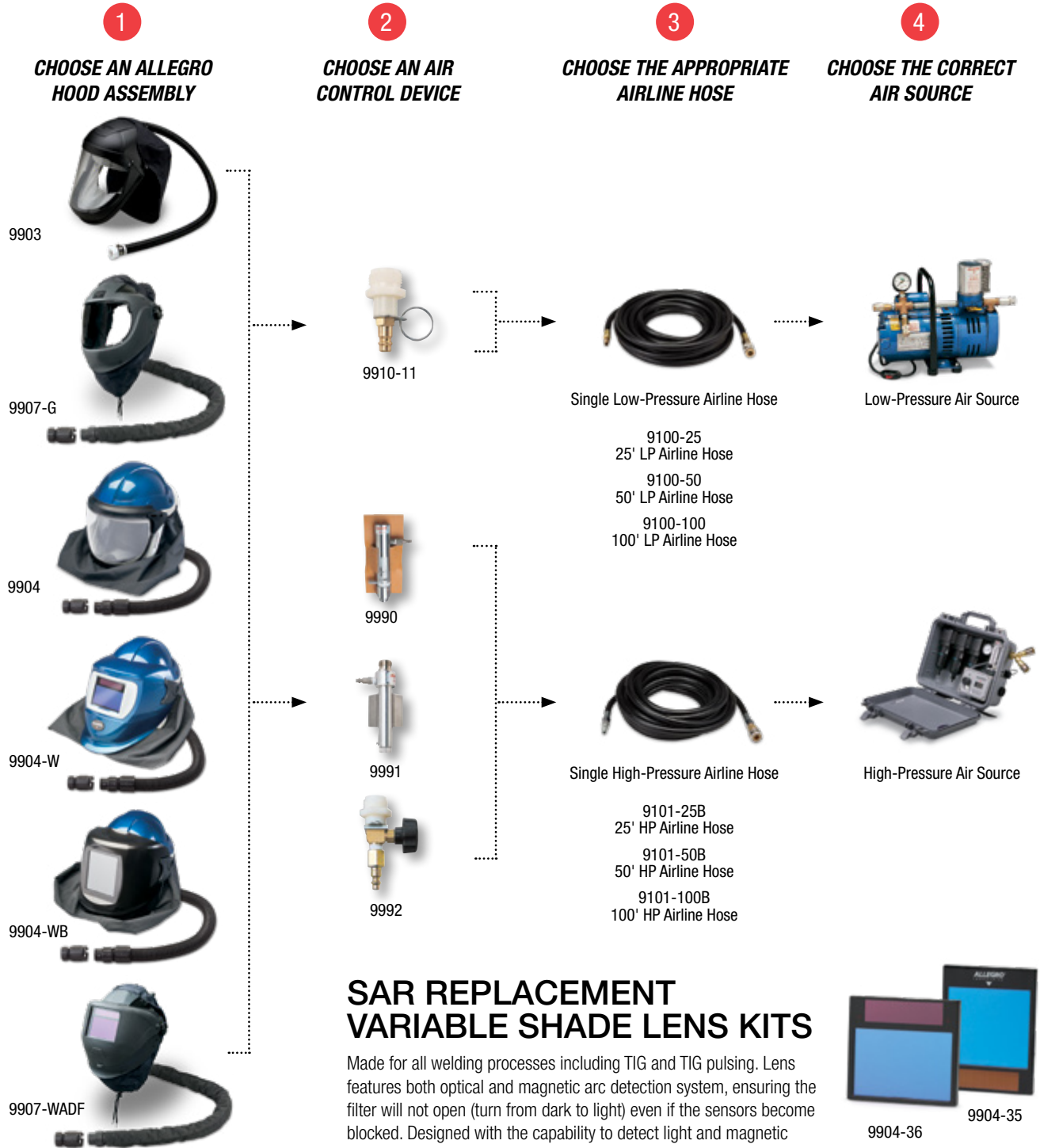
Convenient cleaning and storage for full face, and half-mask respirators. Contains ninety 1/2 oz. packets of water-soluble cleaner, air bulb, brush, 100 each sterile storage bags and seals, and large 17-quart, two-sided bucket. Kit meets OSHA recommendations.



Description	Order No.
Cleaning Kit	4001
Dry Replacement Soap	4001-02
Disposable Storage Bags, 100/pkg.	4001-05

# SUPPLIED-AIR GRINDING AND WELDING HELMET SYSTEMS

## SUPPLIED-AIR GRINDING AND WELDING HELMET SYSTEM COMPONENTS



### SAR REPLACEMENT VARIABLE SHADE LENS KITS

Made for all welding processes including TIG and TIG pulsing. Lens features both optical and magnetic arc detection system, ensuring the filter will not open (turn from dark to light) even if the sensors become blocked. Designed with the capability to detect light and magnetic waves that occur during welding. Optomagnetic sensors can be adjusted from 0 to 6 feet in range. It is solar powered with dual sensors. Kit includes auto-darkening welding filter and mounting frame.



Description	Order No.
Use w/ 9904-W and 9907-WADF	9904-36
Use w/ 9904-WB	9904-35

# SUPPLIED-AIR GRINDING AND WELDING HELMETS



## ECONOMY SUPPLIED-AIR SHIELD

- Perfect for use with grinding, chipping, spray painting, and auto body repair
- The easy flip-up visor is made of Nylon plastic and offers a wide field of vision
- Lens is polycarbonate and chin guard is polypropylene for added strength
- The shroud is cotton, adding comfort and protecting against overspray
- Designed to connect to low-pressure or high-pressure flow adapters
- Complies with ANSI Z87.1-2003
- **NIOSH approval TC-19C-0468**



## EZ AIR FLEX GRINDING AIR SHIELD

- Intended for industrial applications where combined respiratory, eye, and face protection are required, such as: grinding, assembly, facility maintenance, machine operations, and sanding
- Made from DuPont® super tough flame-retardant nylon that can withstand extreme cold/heat without cracking or deforming
- Large shield design accommodates safety glasses under the face shield
- Adjustable durable Pera-Lok locking ratcheting headgear with replaceable ultrasoft sweat band
- Lightweight, comfortable, and easily replaceable 100% cotton FR-treated face seal
- Viewing area: 41.2 sq. in.
- Lightweight at only 0.46 lbs. total
- Air Train directs air over the head and across the breathing zone, minimizes fogging
- User control of airflow direction
- Optional snap-on welding shield with ADF lens also available (PN 9937-WFFADF)
- APF 25
- Complies with ANSI Z87.1+ for face-shield/eye protection
- **NIOSH approval TC-19C-0588**



## DELUXE SUPPLIED-AIR SHIELD/HELMET

- All-in-one head, eye, face, and respiratory protection against hazardous airborne contaminants and flying debris
- Ergonomically designed with superb balance
- No fit testing required
- Can be worn comfortably by personnel with beards and facial hair
- Designed to connect to low-pressure or high-pressure flow adapters
- Complies with ANSI Z89.1 Type 1 Class G for head protection
- Complied with ANSI Z87.1+ for face-shield/eye protection
- APF 1000
- **NIOSH approval TC-19C-0488**



Low Pressure	Order No.
W/ LP Adapter	9903-D
Replacement Economy Supplied Air Shield	9903

High Pressure	Order No.
W/ HP Personal Air Cooler	9903-C
W/ HP Flow Control Valve	9903-CV
W/ HP Air Temperature Controller	9903-HC
Replacement Economy Supplied Air Shield	9903

Low Pressure	Order No.
Headtop	9907-G
Headtop w/ LP Adapter	9907-DG

High Pressure	Order No.
Headtop w/ HP Personal Air Cooler	9907-CG
Headtop w/ HP Flow Control Valve	9907-CVG
Headtop w/ HP Air Temperature Controller	9907-HCG



Low Pressure	Order No.
W/ LP Adapter	9904-D
Replacement Deluxe Supplied Air Shield	9904

High Pressure	Order No.
W/ HP Personal Air Cooler	9904-C
W/ HP Flow Control Valve	9904-CV
W/ HP Air Temperature Controller	9904-HC
Replacement Deluxe Supplied Air Shield	9904

### Accessories

Lens Covers 10/pkg.  
Order No. 9903-25



### Accessories

Snap-on Welding Shield with ADF Lens  
Order No. 9937-AFFADF



### Accessories

Lens Covers 6/pkg.  
Order No. 9904-25







### DELUXE SUPPLIED-AIR SHIELD AND BLUE WELDING HELMET

Performance-proven and a cost-effective system used by foundries, aluminum plants, mines, chemical plants, refineries, auto manufacturers, metal working, and fabrications. This helmet offers protection from airborne contaminants including hexavalent chromium applications, flying debris, sparks, and chemical and molten metal splashes. The helmet flips, allowing user to grind and clean metal looking through clear ANSI face shield. Equipped with variable shade, auto-darkening lens, shade 9-13. ANSI-certified face shield and head protection. APF 1000\*.

**NIOSH approval TC-19C-0488**



Low Pressure	Order No.
w/ No Flow Valve	9904-W
w/ LP Adapter	9904-DW

High Pressure	Order No.
w/ HP Personal Air Cooler	9904-CW
w/ HP Flow Control Valve	9904-CVW
w/ HP Air Temperature Controller	9904-HCW



### DELUXE SUPPLIED-AIR SHIELD AND BLACK WELDING HELMET

This is a cost-effective system used by foundries, aluminum plants, mines, chemical plants, refineries, auto manufacturers, metal working, and fabrications. Performance-proven with a constant and powerful supply of breathable air from a clean air source, this helmet offers protection from airborne contaminants including hexavalent chromium applications, flying debris, sparks, and chemical and molten metal splashes. The helmet flips, allowing user to grind and clean metal looking through clear ANSI face shield. Large #10 lens included. ANSI-certified face shield and head protection. APF 1000\*.

**NIOSH approval TC-19C-0488**



Low Pressure	Order No.
w/ No Flow Valve	9904-WB
w/ LP Adapter	9904-DWB

High Pressure	Order No.
w/ HP Personal Air Cooler	9904-CWB
w/ HP Flow Control Valve	9904-CVWB
w/ HP Air Temperature Controller	9904-HCWB



### EZ AIR FLEX GRINDING/WELDING AIR SHIELD

A versatile solution with combined respiratory, eye, and face protection for welding, assembly, facility maintenance, grinding, machine operations, and sanding applications. A flip-up visor reveals a grind shield below which maintains respiratory protection while grinding or inspecting welds. Fresh air constantly circulates over the user's face, and an APF level of 25 creates protective pressure inside the headtop to keep away particulates of dust, steel, manganese, stainless steel, chromium, galvanized steel, cadmium, lead, and ozone. Complies with ANSI Z87.1+ for face-shield/eye protection. **NIOSH approval TC-19C-0588**

Low Pressure	Order No.
Air Shield Headtop	9907-WADF
w/ LP Adapter	9907-DWADF

High Pressure	Order No.
w/ HP Personal Air Cooler	9907-CVWADF
w/ HP Flow Control Valve	9907-CWADF
w/ HP Air Temperature Controller	9907-HCWADF

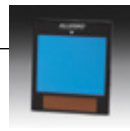
#### Accessories

Replacement Variable Shade Lens Kit  
**Order No. 9904-36**



#### Accessories

Replacement Variable Shade Lens Kit  
**Order No. 9904-35**



#### Accessories

Replacement Variable Shade Lens Kit  
**Order No. 9904-36**



# SUPPLIED-AIR GRINDING HELMET SYSTEMS



## EZ AIR FLEX GRINDING AIR SHIELD SYSTEMS

Our EZ Air Flex Grinding Air Shield Supplied-Air Respirator (SAR) provides combined respiratory, eye, and face protection. The grinding shield with a large viewing lens maintains respiratory protection in diverse work environments. The system provides a constant supply of fresh air over the user's face. An APF level of 25 creates an optimal protective pressure inside the respirator headtop keeping away particulates of dust, steel, manganese, stainless steel, chromium, galvanized steel, cadmium, lead, and ozone. Complies with ANSI Z87.1+ and CAN/CSA Z94.3 for face-shield/eye protection. Includes one or two air shields, a ¾ hp or 1 ½ hp breathing air pump, and one or two 50-foot breathing air hose(s).



Description	Order No.
1-Worker EZ Air Flex Grinding Air Shield System w/ 50' Hose	9250-01
2-Worker EZ Air Flex Grinding Air Shield System w/ 50' Hoses	9250-02



## DELUXE SUPPLIED-AIR SHIELD/HELMET SYSTEMS

Our Deluxe Supplied-Air Shield uniquely provides all-in-one head, eye, face, and respiratory protection against hazardous airborne contaminants and flying debris. It delivers a constant and plentiful supply of clean purified air. Our superbly balanced Deluxe Supplied-Air Shield System is offered as a complete system for one, or two workers. They include one or two shields, a ¾ hp or 1 ½ hp breathing air pump, and one or two 50-foot breathing air hose(s). Complies with ANSI Z87.1+.



Description	Order No.
1-Worker Deluxe Shield SAR System w/ 50' Hose	9247-01
2-Worker Deluxe Shield SAR System w/ 50' Hoses	9247-02



## ECONOMY SUPPLIED-AIR SHIELD SYSTEMS

Perfect for use with grinding, chipping, spray painting, and body repair; our comfortable Supplied-Air Shield is offered as a complete system for one, or two workers. They include one or two shields, a ¾ hp or 1 ½ hp breathing air pump, and one or two 50-foot breathing air hose(s). Complies with ANSI Z87.1-2003.



Description	Order No.
1-Worker Economy Shield System w/ 50' Hose	9245-01
2-Worker Economy Shield System w/ 50' Hoses	9245-02

# SUPPLIED-AIR GRINDING AND WELDING HELMET SYSTEMS



## DELUXE SUPPLIED-AIR SHIELD AND BLUE WELDING HELMET SYSTEMS

Our Deluxe Supplied-Air Shield and Blue Welding Helmet is performance-proven and a cost-effective system used by foundries, aluminum plants, mines, chemical plants, refineries, auto manufacturers, metal working, and fabrication. The Supplied-Air Respirator delivers a constant and powerful supply of breathable air from a clean air source. They include one or two shields/welding helmets, a ¾ hp or 1 ½ hp breathing air pump, and one or two 50-foot breathing air hose(s). ANSI-certified “all-in-one” system provides respiratory, head, eye, and face protection.



Description	Order No.
1-Worker Deluxe Blue Welding Helmet System w/ 50' Hose	9248-01
2-Worker Deluxe Blue Welding Helmet System w/ 50' Hoses	9248-02

## DELUXE SUPPLIED-AIR SHIELD AND BLACK WELDING HELMET SYSTEMS

Our Deluxe Supplied-Air Shield and Black Welding Helmet is performance-proven and a cost-effective system used by foundries, aluminum plants, mines, chemical plants, refineries, auto manufacturers, metal working, and fabrication. The Supplied-Air Respirator delivers a constant and powerful supply of breathable from a clean air source. They include one or two shields/welding helmets, a ¾ hp or 1 ½ hp breathing air pump, and one or two 50-foot breathing air hose(s). ANSI-certified “all-in-one” system provides respiratory, head, eye, and face protection.



Description	Order No.
1-Worker Deluxe Black Welding Helmet System w/ 50' Hose	9249-01
2-Worker Deluxe Black Welding Helmet System w/ 50' Hoses	9249-02



## EZ AIR FLEX GRINDING/WELDING AIR SHIELD SYSTEMS

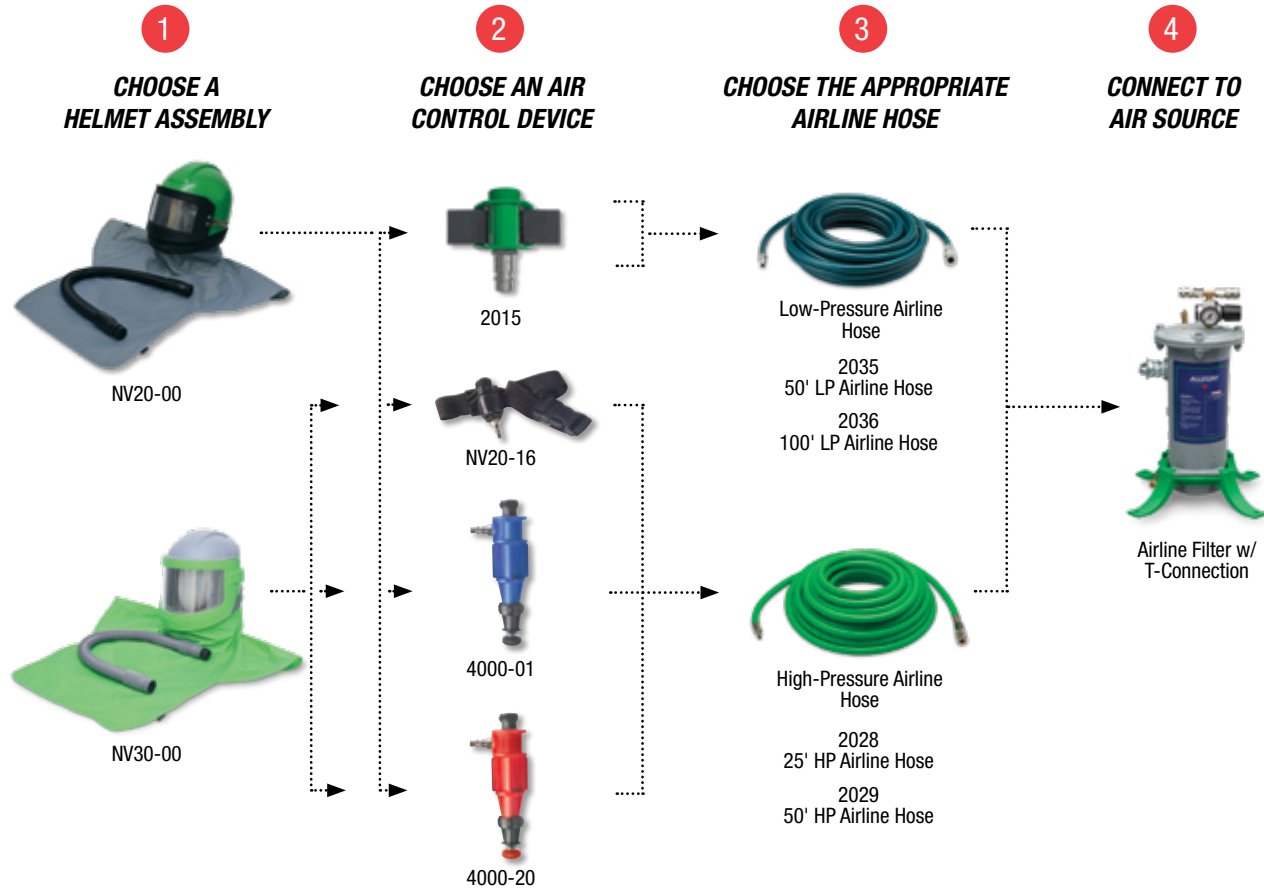
Our EZ Air Flex Grinding/Welding Air Shield Supplied-Air Respirator (SAR) provides combined respiratory, eye, and face protection. The flip-up visor exposes a grind shield below that maintains respiratory protection while grinding or inspecting welds. The system provides a constant supply of fresh air over the user's face. The optimal protective pressure inside the headtop keeps away particulates of dust, steel, manganese, stainless steel, chromium, galvanized steel, cadmium, lead, and ozone. Complies with ANSI Z87.1+ for face-shield/eye protection. Includes one or two grinding/welding air shields, a ¾ hp or 1 ½ hp breathing air pump, and one or two 50-foot breathing air hose(s).

Description	Order No.
1-Worker EZ Air Flex Grinding/Welding Air Shield System w/ 50' Hose	9251-01
2-Worker EZ Air Flex Grinding/Welding Air Shield System w/ 50' Hoses	9251-02

# ABRASIVE BLASTING

The Nova Series is your number one choice for economical Abrasive Blasting Helmets which meet safety standards worldwide. Reliable, durable, and designed to help reduce worker fatigue, reduce downtime replacing parts, and increase worker productivity. Built to last in rugged environments with an abrasion-resistant polyethylene helmet shell.

## ABRASIVE BLASTING HELMETS SYSTEM COMPONENTS



## NOVA 3® BLASTING HELMET

The NOVA 3® series respirator combines breakthrough protection technology with advanced comfort and functionality surpassing even the most rigorous industry standards. Designed to optimize safety and productivity as well as to minimize worker downtime, the helmet has a host of features that maximize its lifetime value. The NOVA 3® is designed and engineered to distribute the helmet's weight evenly across the head and shoulders for optimum comfort and ease of worker movement, reducing fatigue. In addition, a ratchet-adjusted neck pad ensures your head is supported. The Peel Offs Lens System is a unique "FIT AND SAVE™" system of pre-folded tabs. This means workers can quickly tear off just one layered lens at a time. The helmet complies with ANSI Z87.1 for eye protection and ANSI Z89.1 for head protection providing a high level of protection for the worker.



Description	Order No.
Nova 3® Helmet w/ HP Flow Control Valve	NV30-00
Nova 3® Helmet w/ Cooler	NV30-00HC
Nova 3® Helmet w/ Heater	NV30-00H
Replacement Peel Offs, 50/pkg.	NV37-25





## NOVA 2000™ BLASTING HELMET

Lightweight pillow foam padding ensures the helmet always sits comfortably on your head. The padding is hook-and-loop mounted and easily removed for hygienic cleaning. The large wrap-around double lens allows optimum vision without irritating side glare. Optional tear-off lenses are also available. The helmet complies with ANSI Z87.1 for eye protection and ANSI Z89.1 for head protection providing a high level of protection for the worker. Air duct distribution diffuses an even flow of breathing air throughout the helmet to cool the head and face and prevents the lens from fogging. Multi-layered sound-deadening foam makes this helmet the quietest on the market. This helmet is offered with a HP Adjustable Flow Control Valve, Cooler, Heater, or Low-Pressure Constant Flow Valve. **NIOSH-approved**



Description	Order No.
HP Nova 2000™ Helmet w/ HP Flow Control Valve	NV20-00
HP Nova 2000™ Helmet w/ Cooler	NV20-00HC
HP Nova 2000™ Helmet w/ Heater	NV20-00H
LP Nova 2000™ Helmet w/ Constant Flow Valve	NV20-00LP
Replacement Peel Offs, 50/pkg.	NV20-17

**WARNING:** Do NOT use Silica sand as an abrasive medium. The use of Silica sand can cause serious respiratory disease or death. (OSHA reference: <https://www.osha.gov/silica/>)

## TEMPERATURE CONTROLLER AND FLOW VALVES



### AIR TEMPERATURE CONTROLLER

These valves adjust the amount of air to the helmet and adjust air 25° F warmer or cooler than the ambient air for use in cold or hot environments.

Description	Order No.
HP Cooler w/ Belt	4000-01
HP Heater w/ Belt	4000-20



### ADJUSTABLE HP FLOW CONTROL VALVE

NIOSH-approved, injection-moulded, HP Flow Control Valve assembly provides the wearer with the ability to adjust the air flowing into the helmet. The adjustment barrel is easy to turn even with blasting gloves on. Comes with waist belt.

Description	Order No.
HP Flow Control Valve w/ Belt	NV20-16



### LOW-PRESSURE FLOW ADAPTER

The low-pressure supplied-air respirator adapter allows the helmet to connect to an ambient air pump or any low-pressure air source. Low-profile, lightweight plastic threaded fitting offers the convenience of quick-connect design with belt and clip assembly.

Description	Order No.
LP Constant Flow Adapter w/ Belt	2015

Refer to Nova 2000™ and Nova 3® Matrix (above) for NIOSH-approved configurations.



## AIRLINE FILTER

Made for rugged environments, this "Pot" type filter utilizes a large capacity quality filter cartridge to provide longer life filtration. Greater material surface area provides increased absorption of oil, water, and odors. Made of impact and corrosion-resistant aluminum and equipped with an airline regulator and two outlets. 75 CFM

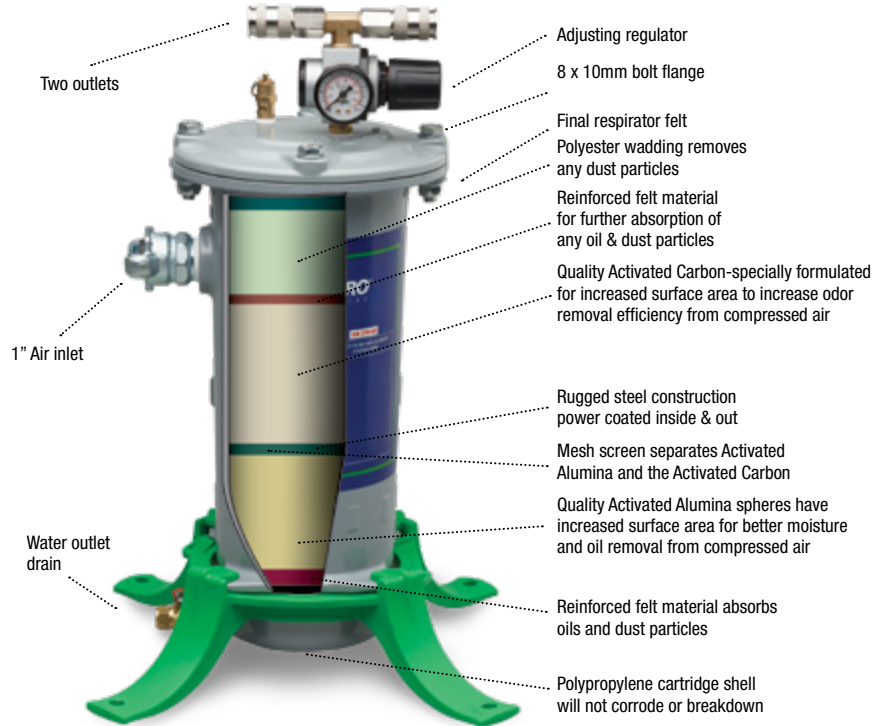
**Order No.** 3000-01



## REPLACEMENT FILTER CARTRIDGES

Quality filter cartridges provide better and longer life filtration. Universal design allows filter cartridge to fit into many filter brands on the market.

**Order No.** 3100-02



# ABRASIVE BLASTING HELMET LOW-PRESSURE SYSTEMS

## NOVA 2000™ HELMET LOW-PRESSURE SYSTEM

The Nova 2000™ is your number one choice Abrasive Blasting Helmet built for reliable, durable use and increased worker productivity. The complete One-Worker Blasting Helmet system provides a portable air source for one user. It includes a Nova helmet, ¾ HP pump, and 50' of airline hose.



Description	Order No.
1-Worker Blasting Helmet System w/ 50' Hose	9285-01

# POWERED AIR-PURIFYING RESPIRATOR SYSTEMS

*When it comes to exposure to hazardous fumes and particles, respiratory safety should be every worker's priority. A Powered Air-Purifying Respirator (PAPR) system can protect metalworkers, welders, and MRO professionals by filtering out dangerous particles. These units provide higher levels of respiratory protection compared to half-face respirators or disposable masks. Discover the AIRPLUS<sup>®</sup> and EZ-AIR systems by ARCONe<sup>®</sup> and ALLEGRO.*

## Features

- ▷ *High-capacity battery allows up to two full work shifts; reduces downtime*
- ▷ *Full charge in 6 hours*
- ▷ *3-phase alarm system for increased user awareness*
- ▷ *Flexible breathing tube reduces torque on neck and increases mobility*

**AIRPLUS<sup>®</sup> blower model also includes a spark arrestor and pre-filter**

## BASIC SYSTEM SPECIFICATIONS

### Blower Unit

Type	Flow Control
Motor speed	6,000-10,000 RPM
Air supply (min/max)	170 LPM/260 LPM (6/9.5 CFM)*
Case	Impact-Proof ABS
Filter cartridge	Single plug-in
Filter	HEPA
Expandable breathing tube	31.5 in to 63 in
Pre-filter	Yes
Spark arrestor	Yes

### Battery

Type	Lithium-ion
Voltage	7.4 V
Operating time	14 hours at minimum fan speed
Charging time	6 hours
Charging cycles	500

### Charger

Type	DC rectifier
Voltage	120 V / 60 Hz
Output current	8.4 V, 1500 mA
Approvals	UL



# POWERED AIR-PURIFYING RESPIRATOR SYSTEMS

Every work environment is different. That's why WALTER offers the most comprehensive line of PAPR systems in the market. There are several headtops to choose from and build the perfect PAPR system to meet your job site needs.

**MRO OR HEALTHCARE**



SARAN™-COATED TYVEK® HOOD



EZ AIR FLEX



EZ AIR GRINDING/WELDING



EZ AIR ECONOMY



EZ AIR DELUXE

**GRINDING & WELDING**



AIRPLUS® AIRSHIELD®



AIRSHIELD® FLIP FRONT



VISION® X81VX



VISION® BFFVX

**APF 25**

**MATERIAL RESISTANCE** →



**COMPATIBLE WITH ALLEGRO EZ AIR BLOWER**

**WELDING PERFORMANCE** →

**WELDING PERFORMANCE** →



**COMPATIBLE WITH ARCONE® AIRPLUS®**



**FILTER TYPE:**

High-efficiency particulate air filter (HEPA) will protect against:

- ▷ Hazardous solid dust particles, metal fumes, and mists
- ▷ Stainless steel (hexavalent chromium), galvanized steel (Zinc oxide), steel/manganese alloys, cadmium, and lead fumes.

AIRPLUS® COMPONENT	TYPICAL REPLACEMENT CADENCE	NOTES
Pre-filter	Once a week	Regular replacement of the pre-filter extends the life of the HE particulate filter, saving on consumable costs.
HEPA P3 Filter	At least every month	Do daily checks with airflow indicator and replace when airflow indicator falls below the minimum flow line.
Spark Arrestor	As needed	Replace if deformed and no longer fitting well.



# MRO AND HEALTHCARE PAPR SYSTEMS

## EZ AIR PAPR HOOD

Our EZ Air Powered Air-Purifying Tyvek® Hooded Respirator is a complete particulate system intended for industrial and healthcare workers where combined respiratory, eye, and face protection are required. It includes a motorized, lithium-ion battery-operated system that provides a constant supply of fresh, filtered air over the user's face. At an APF level of 25, it creates an optimal protective pressure inside the respirator hood keeping away harmful particulates. This complete PAPR assembly is also extremely lightweight weighing just under 4 pounds total! Recommended applications are facility maintenance and healthcare facilities. **NIOSH-approved**

Complete PAPR includes:

- ▷ Poly-coated DuPont Tyvek® Hood
- ▷ Breathing tube
- ▷ Blower
- ▷ Waist belt
- ▷ Battery and charger
- ▷ Flow tester
- ▷ HEPA filter



## EZ AIR PAPR POLY-COATED DUPONT TYVEK® HOOD

Description	Order No.
EZ Air Tyvek® PAPR Hood	9933
Replacement Tyvek® Hood Assembly with Suspension	9933-21

Complete PAPR assembly:

- Fully disposable hood with bonded/taped seams
- Air channel design delivers air inside hood across the breathing zone with minimal lens fogging
- Lightweight, disposable one-piece suspension with absorbent head band
- Flexible breathing tube inside the downtube sleeve of the hood reduces decontamination time
- Breathing tube directs the air up and over the user's head to allow the air to disperse across the lens to prevent fogging and reduce CO2 build up inside the hood
- Single filter design is easy to install and remove; NIOSH-approved HEPA Filter (42 CFR, Part 84); Filters 99.97% of particulates larger than 0.3 microns
- Rugged, lightweight, and low-profile ABS blower is quiet at 65 dB
- 7.4 V rechargeable lithium-ion battery operates up to 17 hours (minimum speed), 9 hours (maximum speed) on a full charge
- 110-240 Vac, 50-60 Hz smart charger (International kit available with removable plug)
- Waist belt features large heavy-duty belt clips, easy to attach while wearing gloves

# GRINDING AND WELDING PAPR SYSTEMS

*Our extensive line of high-quality grinding and welding products provide workers with better comfort, less fatigue, and improve productivity. ALLEGRO EZ Air PAPRs are intended for industrial applications where respiratory, eye, and face protection are required.*

## EZ AIR PAPR SYSTEM COMPONENTS

1

### CHOOSE A GRINDING OR WELDING HEADTOP



	For grinding applications	For grinding and welding applications	For grinding and welding applications	For grinding and welding applications
Order No.	9937-BHTG	9937-BHTWADF	9935-BHTX54V	9935-BHTX81V
Viewing Area (square inches)	41.2	7.1	7.25	12.6
HD Technology	N/A	✓	✓	✓
Light Shade	N/A	4	4	3
Dark Shade	N/A	9-13	5-14	5-14
Variable Sensitivity	N/A	✓	✓	✓
Variable Delay	N/A	✓	✓	✓
X-Tig Mode	N/A			✓
Cut & Grind Mode	N/A	✓	✓	✓
TIG Rating	N/A	25	5	<5
Arc Sensors	N/A	4	4	5
Digital	N/A	✓	✓	✓
Solar power	N/A	✓	✓	✓
<b>PAPR Kit Order No.</b>	<b>9937-G</b>	<b>9937-WADF</b>	<b>9935</b>	<b>9935-DLX</b>

2

### ADD BLOWER ASSEMBLY



9935-BLW  
(Shown disassembled)  
Includes downtube w/ FR cover, battery, charger, belt, flow tester, HEPA filter, and storage bag

3

### REPLACEMENT HEPA FILTER



9935-FIL  
Replacement (HEPA)

# GRINDING AND WELDING PAPR SYSTEMS



SCAN TO  
WATCH VIDEO



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

## EZ AIR FLEX SHIELD PAPR

Our EZ Air Flex Shield Powered Air-Purifying Respirator (PAPR) is a complete particulate system providing combined respiratory, eye, and face protection. The durable grinding shield features a large viewing lens that maintains respiratory protection. This motorized, lithium-ion battery-operated system provides a constant supply of fresh, filtered air over the user's face. At an APF level of 25, it creates an optimal protective pressure inside the respirator headtop keeping away particulates of dust, steel, manganese, stainless steel, chromium, galvanized steel, cadmium, lead, and ozone. Recommended applications are grinding, assembly, facility maintenance, machine operations, and sanding. Suggested industries include automotive, food and beverage, pharmaceutical, general manufacturing, metal production and fabrication, military maintenance, repair, and operation (MRO), transportation, and in medical applications. Complies with ANSI Z87.1+ and for face-shield/eye protection. **NIOSH-approved**

- Made from DuPont® super tough flame-retardant nylon that can withstand extreme cold/heat without cracking or deforming
- Large shield design (41.2 in<sup>2</sup>) accommodates safety glasses under the face shield
- Adjustable durable Pera-Lok locking ratcheting headgear with replaceable ultrasoft sweat band
- Comfortable and easily replaceable 100% cotton FR-treated face seal
- Complete headtop assembly weighs 0.46 lbs.
- Shell is 0.28 lbs.
- Air train directs air over the head and across the breathing zone, minimizing fogging
- User control of airflow direction
- Fully open-air setting to mitigate fogging
- Fully closed-air setting to channel airflow to breathing zone
- Lightweight, super comfortable 100% FR-treated face seal
- Easy-change face seal, no more nuts and bolts to fiddle around with

Complete PAPR assembly includes:

- ▷ **Shield**
- ▷ **Downtube w/ FR cover**
- ▷ **Blower**
- ▷ **Battery**
- ▷ **Waist belt**
- ▷ **Charger**
- ▷ **Flow tester**
- ▷ **HEPA filter**
- ▷ **Storage bag**



9937-AFFADF  
(Optional snap-on welding shield w/ ADF lens)

Description	Order No.
EZ Air Flex Shield PAPR	9937-G
EZ Air Flex Shield	9937-BHTG
Optional Snap-On Welding Shield with ADF lens	9937-AFFADF

# GRINDING AND WELDING PAPR SYSTEMS



SCAN TO  
WATCH VIDEO



Video available on the ALLEGRO INDUSTRIES Channel

[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



## EZ AIR FLEX GRINDING/WELDING PAPR

Our EZ Air Flex Grinding/Welding Powered Air-Purifying Respirator (PAPR) is a complete particulate system providing combined respiratory, eye, and face protection. The welding helmet features a durable flip-up visor with a grind shield below that maintains respiratory protection while grinding or inspecting welds. This motorized, lithium-ion battery-operated system provides a constant supply of fresh, filtered air over the user's face. At an APF level of 25, it creates an optimal protective pressure inside the respirator headtop keeping away particulates of dust, steel, manganese, stainless steel, chromium, galvanized steel, cadmium, lead, and ozone. Recommended applications are welding, assembly, facility maintenance, grinding, machine operations, and sanding. Suggested industries include automotive, food and beverage, pharmaceutical, general manufacturing, metal production and fabrication, military maintenance, repair and operation (MRO), and transportation. Complies with ANSI Z87.1+ for face-shield/eye protection. **NIOSH-approved**

- Made from DuPont® super tough flame-retardant nylon that can withstand extreme cold/heat without cracking or deforming
- Adjustable durable Pera-Lok locking ratcheting headgear with replaceable ultrasoft sweat band
- Large shield design accommodates safety glasses under the face shield
  - Visor dimension: 7" x 5.4" x 0.040"
  - Viewing area: 41.2 sq. in.
  - Visor thickness: 0.067"
- Complete with comfortable sweatband
- Complete headtop assembly weighs 0.58 lbs.
  - Shell is 0.28 lbs.
  - Visor is 0.12 lbs.
- Direct flow into the helmet with new air-manifold system
- User control of airflow direction
  - Fully open-air setting to mitigate fogging
  - Fully closed-air setting to channel airflow to breathing zone
  - Partially closed air setting for taking the sweat out of welding
  - Lightweight, super comfortable 100% FR-treated face seal
  - Easy-change face seal, no more nuts and bolts to fiddle around with
- APF 25

Complete PAPR assembly includes:

- ▷ **Welding shield w/ ADF lens**
- ▷ **Downtube w/ FR cover**
- ▷ **Blower**
- ▷ **Battery**
- ▷ **Waist belt**
- ▷ **Charger**
- ▷ **Flow tester**
- ▷ **HEPA filter**
- ▷ **Storage bag**

Description	Order No.
EZ Air Flex Grinding/Welding PAPR	9937-WADF
EZ Air Flex Grinding/Welding Headtop	9937-BHTWADF
Replacement ADF Lens Kit	9904-36



# GRINDING AND WELDING PAPR SYSTEMS



## EZ AIR PAPR

Our EZ Air Powered Air-Purifying Respirator (PAPR) is a complete particulate system intended for industrial applications where combined respiratory, eye, and face protection is required. It is a motorized, lithium-ion battery-operated system that provides a constant supply of fresh, filtered air over the user's face. At an APF level of 25, it creates an optimal protective pressure inside the respirator headtop keeping away harmful gases, vapors, particulates, and fumes (dust, steel, manganese, stainless steel, chromium, galvanized steel, cadmium, lead, and ozone\*). Recommended applications are welding, assembly, facility maintenance, grinding, machine operations, and sanding. Suggested industries include automotive, food and beverage, general manufacturing, metal production and fabrication, military maintenance, repair and operation (MRO), and transportation.

Complete PAPR includes:

- ▷ **Welding shield w/ Lens**
- ▷ **Downtube w/ FR cover**
- ▷ **Blower**
- ▷ **Waist belt**
- ▷ **Battery and Charger**
- ▷ **Flow Tester**
- ▷ **HEPA filter**
- ▷ **Storage bag**

*\*Always consult an Industrial Hygienist or Safety Expert to determine if APF will be acceptable for the measured concentration level of your application.*

 **YouTube**  
Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



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WATCH VIDEO

# GRINDING AND WELDING PAPR SYSTEMS



## EZ AIR ECONOMY PAPR

Complete PAPR assembly with 9935-X54V ADF lens:

- Filter size: 4.5" x 5.25"
- UV/IR: Up to shade 16, permanent outer coating to protect eyes
- Battery: Solar Cells primary with digital lithium-powered backup (lasts 5-10 years)
- Switching time: 1/10,000
- Light Shade Modes: 4
- TIG rating: 5 Amps
- Grind mode: Yes

Description	Order No.
EZ Air Economy PAPR Assembly	9935
EZ Air Economy PAPR Assembly (For International Charging)	9935-E
Replacement ADF Lens Kit	9935-X54V

## EZ AIR DELUXE PAPR

Complete PAPR assembly with 9935-X81V ADF lens:

- Filter size: 4.5" x 5.25"
- UV/IR: Up to shade 16, permanent outer coating to protect eyes
- Battery: Solar Cells primary with digital lithium-powered backup (lasts 5-10 years)
- Switching time: 1/10,000
- Light Shade Modes: 3
- TIG rating: 5 Amps
- Grind mode: Yes

Description	Order No.
EZ Air Deluxe PAPR Assembly	9935-DLX
EZ Air Deluxe PAPR Assembly (For International Charging)	9935-DLXE
Replacement ADF Lens Kit	9935-X81V

## X54V AND X81V ADF LENS CHART

Viewing Area (W x H)	Dark Shade	Magnetic Sensor	Warranty	Standards	Order No.
1.9" x 3.8"	5-14	No	3 years	ANSI/CSA	9935-X54V
3.2" x 3.9"	5-14	Yes "X-TIG"	3 years	ANSI/CSA	9935-X81V

## X54V ADF LENS

- Viewing area: 1.9" x 3.8"
- UV/IR: Up to shade 16, permanent outer coating to protect eyes
- Battery: Solar Cells primary with digital lithium-powered backup (lasts 5-10 years)
- Switching time: 1/10,000
- Light Shade Modes: 4
- TIG rating: 5 Amps
- Grind mode: Yes

**Order No.** 9935-X54V (Included in Economy model)



## X81V ADF LENS

- Viewing area: 3.2" x 3.9"
- UV/IR: Up to shade 16, permanent outer coating to protect eyes
- Battery: Solar Cells primary with digital lithium-powered backup (lasts 5-10 years)
- Switching time: 1/10,000
- Light Shade Modes: 3
- TIG rating: Below 5 amps
- Grind mode: Yes

**Order No.** 9935-X81V (Included in Deluxe model)







# GRINDING AND WELDING PAPR SYSTEMS

*Our extensive line of accessible grinding and welding respiratory products provide workers with better comfort, less fatigue, and improved productivity. The ARCONE® AIRPLUS® PAPR systems are intended for entry-level industrial welding and grinding applications where respiratory, eye, and face protection are required. All ARCONE® models also come with a spark arrestor and pre-filter for added safety.*

## AIRPLUS® SYSTEM COMPONENTS

1

### CHOOSE A GRINDING OR WELDING HEADTOP

	<b>AIRSHIELD®</b> For grinding applications	<b>AIRSHIELD® FLIP FRONT</b> For welding and grinding	<b>VISION® with X81VX</b> For mostly welding applications	<b>VISION® with BFFVX</b> For mostly welding applications
				
<b>Order No.</b>	<b>AP-AR-SH</b>	<b>AP-4500V-AIR</b>	<b>AP-X81VX-1500</b>	<b>AP-BFFVX-1500</b>
Viewing Area (square inches)	41.2	7.1	12.6	17.05
HD Technology	N/A		✓	✓
Light Shade	N/A	4	3	3
Dark Shade	N/A	9-13	5-14	5-13
Variable Sensitivity	N/A	✓	✓	✓
Variable Delay	N/A	✓	✓	
X-Tig Mode	N/A		✓	✓
Cut & Grind Mode	N/A	✓	✓	✓
TIG Rating	N/A	25	<5	5
Arc Sensors	N/A	4	5	3
Digital	N/A		✓	✓
Solar power	N/A	✓	✓	✓ (also comes with USB charger)
<b>PAPR Kit Order No.</b>	<b>AP1K-AIRSH</b>	<b>AP1K-A-4500V</b>	<b>AP1K-V-X81VX</b>	<b>AP1K-V-BFFVX</b>

2

### ADD BLOWER ASSEMBLY

3

### REPLACEMENT HEPA FILTER

## AIRPLUS® SYSTEMS

Order No.	Description
AP-1	AIRPLUS® Powered Air-Purifying System includes Battery, Battery Charger, Waist Belt, Flexible Breathing Tube and Flame-Retardant Cover, Airflow Indicator, Powered Respirator with HEPA filter, Spark Arrestor (2) and Pre-Filter (2).



AP-FIL-03-4  
AIRPLUS® HEPA filter (4-Pack)  
AP-FIL-03-12  
AIRPLUS® HEPA filter (12-Pack)

## AIRPLUS® PARTS AND ACCESSORIES

Order No.	Description
AP-BAT-03	AIRPLUS® Battery
AP-BLW-02	AIRPLUS® Blower Unit (includes one P3 Filter)
AP-CHG-03	AIRPLUS® Battery Charger
AP-FIL-03-4	AIRPLUS® HEPA Filter (4-Pack)
AP-FIL-03-12	AIRPLUS® HEPA Filter (12-Pack)
AP-FIL-04-10	AIRPLUS® Pre-Filter (10 pack)
AP-WBT-01	AIRPLUS® Waist Belt (34.5")
AP-WBT-02	AIRPLUS® Heavy-Duty Leather Waist Belt (52.9")
AP-WBT-EXT	AIRPLUS® Waist Belt Extension (10")
AP-AFI-01	AIRPLUS® AirLow Indicator
AP-SA-01-2	AIRPLUS® Spark Arrestor (2-pack)
AP-WBTSP-01	AIRPLUS® Waist Belt with Suspender
CA-CAC-02	Duffle Bag



# GRINDING AND WELDING PAPR SYSTEMS



AP1K-AIRSH



## AIRSHIELD® PAPR SYSTEM

ARCONE®'s AIRSHIELD® Powered Air-Purifying Respirator (PAPR) is a complete particulate system providing combined respiratory, eye, and face protection, suitable for grinding applications with large viewing area. This motorized, lithium-ion battery-operated system provides a constant supply of fresh, filtered air over the user's face. The optimal protective pressure inside the respirator headtop keeps away particulates of dust, steel, manganese, stainless steel, chromium, galvanized steel, cadmium, lead, and ozone. This unit is recommended for grinding, assembly, facility maintenance, machine operations, and sanding. Complies with ANSI Z87.1+ for face-shield/eye protection. **NIOSH-approved**

- Made from DuPont® super tough flame-retardant nylon that can withstand extreme cold/heat without cracking or deforming
- Large shield design (41.2 in<sup>2</sup>/265.6 cm<sup>2</sup>) accommodates safety glasses under the face shield
- Adjustable durable Pera-Lok locking ratcheting headgear with replaceable ultrasoft sweat band
- Comfortable and easily replaceable 100% cotton FR-treated face seal
- Complete headtop assembly weighs 0.46 lbs. (208 grams)
- Shell is 0.28 lbs. (130 grams)
- Air Train directs air over the head and across the breathing zone, minimizing fogging
- User control of airflow direction
  - Fully open-air setting to mitigate fogging
  - Fully closed-air setting to channel airflow to breathing zone
  - Lightweight, super comfortable 100% FR-treated face seal
  - Easy-change face seal; remove or replace with ease
- APF 25

Complete PAPR assembly includes:

- ▷ **Welding shield**
- ▷ **Breathing tube with FR cover**
- ▷ **AIRPLUS® blower unit**
- ▷ **Lithium-ion battery**
- ▷ **Charger**
- ▷ **FR waist belt**
- ▷ **Flow tester**
- ▷ **HEPA filter**
- ▷ **Pre-filter**
- ▷ **Spark arrestor**
- ▷ **Duffle bag**

Description	Order No.
AIRPLUS®: AIRSHIELD®	AP-AR-SH
AP FACE SEAL FOR AIRSHIELD®	AP-HFS-02
2 PK CLEAR VISOR FOR AIRSHIELD®	AIR-CL
AIRPLUS® AIRDUCT ASSEMBLY W HEADGEAR	AP-AIRDUCT-01
AIRPLUS® HG KIT: KNOBS, SCREWS	AP-HG-K
AIRPLUS® SWEATBAND 2 PACKS	AP-SWB-01



# GRINDING AND WELDING PAPR SYSTEMS



AP1K-A-4500V



## AIRSHIELD® FLIP FRONT PAPR SYSTEM

The ARCONe® flip-front Grinding/Welding Powered Air-Purifying Respirator (PAPR) is a complete particulate system providing combined respiratory, eye, and face protection. The welding flip-front features a 4500V lens with True Color Technology with a grind shield below that maintains respiratory protection while grinding or inspecting welds. This motorized, lithium-ion battery-operated system provides a constant supply of fresh, filtered air over the user's face. With an APF level of 25, it creates an optimal protective pressure inside the respirator headtop keeping away particulates of dust, steel, manganese, stainless steel, chromium, galvanized steel, cadmium, lead, and ozone. Recommended applications are welding, assembly, facility maintenance, grinding, machine operations, and sanding. Complies with ANSI Z87.1+ for face-shield/eye protection. **NIOSH-approved**

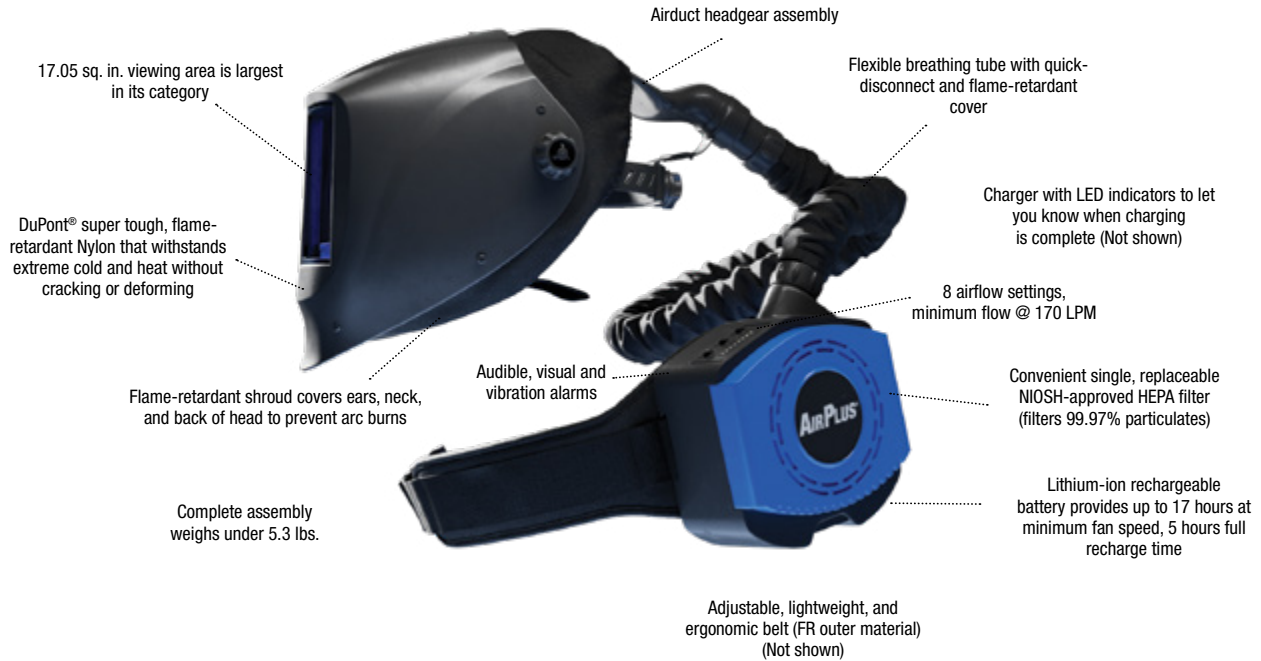
- Made from DuPont® super tough flame-retardant nylon that can withstand extreme cold/heat without cracking or deforming
- Adjustable durable Pera-Lok locking ratcheting headgear with replaceable sweat band
- Large shield design accommodates safety glasses under the face shield
  - Viewing area: 41.2 sq. in. (26560 mm<sup>2</sup>)
  - Visor thickness: 0.067" (1.7 mm)
- Flip-up welding visor features
  - 7.1-square-inch viewing area
  - Dark shade 9-13
  - TIG Rating of 25
  - 4 Arc Sensors
  - Solar-powered welding lens; no need for replaceable batteries
- Complete headtop assembly weighs 0.58 lbs. (265 grams)
- Direct flow into the helmet with new air-manifold system
- User control of airflow direction
  - Fully open-air setting to mitigate fogging
  - Fully closed-air setting to channel airflow to breathing zone
  - Partially closed-air setting for taking the sweat out of welding
  - Lightweight, super comfortable 100% FR-treated face seal
  - Easy-change face seal
- APF 25

Complete PAPR assembly includes:

- ▷ **Welding shield**
- ▷ **Breathing tube with FR cover**
- ▷ **AIRPLUS® blower unit**
- ▷ **Lithium-ion battery**
- ▷ **Charger**
- ▷ **FR waist belt**
- ▷ **Flow tester**
- ▷ **HEPA filter**
- ▷ **Pre-filter**
- ▷ **Spark arrestor**
- ▷ **Duffel bag**
- ▷ **Headgear: 15-HG**
- ▷ **Sweatbands: 06-HGSB-2**  
(2 Pack for the Front) ; 07-HGSB (1 for Rear)

Description	Order No.
AIRPLUS®: AIRSHIELD®	AP-AR-SH
AIRSHIELD® ADF FLIP FRONT	AIR-ADFFA
4500V 4/9-13 REPLACEMENT	4500V
PACKAGED 110X90MM COVER PLATE	04-OP
10 PACK 90 X 110 MM COVER PLATE	04-OP-10
PACKAGED 2X4 COVER PLATE	03-OP
10 PACK 2X4" COVER PLATE	03-OP-10
2 PK CLEAR VISOR FOR AIRSHIELD®	AIR-CL
AP FACE SEAL FOR AIRSHIELD®	AP-HFS-02

# GRINDING AND WELDING P APR SYSTEMS



## VISION® BFFVX P APR SYSTEM

The ARCONE® P APR System with VISION® BFFVX welding helmet combines the long battery life from the AIRPLUS® with the large viewing area and unparalleled optical clarity of the VISION® BFFVX welding hood. This unit is intended for industrial welding applications where respiratory protection is required. With an APF level of 25, it creates an optimal protective pressure inside the respirator headtop keeping away harmful gases, vapors, particulates, and fumes (dust, steel, manganese, stainless steel, chromium, galvanized steel, cadmium, lead, and ozone\*). Complies with ANSI Z87.1+ and CAN/CSA Z94.3 for face-shield/eye protection. **NIOSH-approved**

Description	Order No.
VISION® Helmet QUICK FACE SEAL	AP-HFS-03
VISION® QUICK FACE SEAL KIT	AP-QCFS-K1
AIRPLUS® AIRDUCT ASSEMBLY W HEADGEAR	AP-AIRDUCT-01
BFF FILTER WITH USB CORD	BFFVX
PACKAGED 4X5, 5X4 COVER PLATE	02-OP
10 PACK OF 4X5, 5X4 COVER PLATE	02-OP-10
AIRPLUS® HG KIT: KNOBS, SCREWS	AP-HG-K
AIRPLUS® SWEATBAND 2 PACKS	AP-SWB-01

### BFFVX LENS SPECIFICATION

- ▷ 17-square-inch viewing area
- ▷ Light state: 3
- ▷ Dark state: 5-13
- ▷ Largest viewing area in its category
- ▷ HD technology
- ▷ Grind mode
- ▷ 2 optical sensors, 1 magnetic sensor
- ▷ Fully solar-powered, with additional USB charger



# GRINDING AND WELDING PAPR SYSTEMS



AP1K-V-X81VX



## VISION® X81VX PAPR SYSTEM

The ARCONe® PAPR System with VISION® X81VX welding helmet combines the long battery life from the AIRPLUS® with the unparalleled optical clarity and sensitivity of the VISION® X81VX welding hood. This unit is intended for industrial welding applications where respiratory protection is required. With an APF level of 25, it creates an optimal protective pressure inside the respirator headtop keeping away harmful gases, vapors, particulates, and fumes (dust, steel, manganese, stainless steel, chromium, galvanized steel, cadmium, lead, and ozone\*). Complies with ANSI Z87.1+ and CAN/CSA Z94.3 for face-shield/eye protection. **NIOSH-approved**

Description	Order No.
VISION® Helmet QUICK FACE SEAL	AP-HFS-03
VISION® QUICK FACE SEAL KIT	AP-QCFS-K1
AIRPLUS® AIRDUCT ASSEMBLY W HEADGEAR	AP-AIRDUCT-01
81MM DIGITAL FILTER WITH X-TIG	X81VX
PACKAGED 4X5, 5X4 COVER PLATE	02-0P
10 PACK OF 4X5, 5X4 COVER PLATE	02-0P-10
PACKAGED 110X90MM COVER PLATE	04-0P
10 PACK 90 X 110 MM COVER PLATE	04-0P-10
AIRPLUS® HG KIT: KNOBS, SCREWS	AP-HG-K
AIRPLUS® SWEATBAND 2 PACKS	AP-SWB-01

### X81VX LENS SPECIFICATION

- ▷ 12.6-square-inch viewing area
- ▷ Light state: 3
- ▷ Dark state: 5-14
- ▷ HD Technology
- ▷ Grind mode
- ▷ 4 optical sensors
- ▷ 1 magnetic sensor

# THE AIRPLUS® SYSTEM



Number	Description	Part Number
1	Face Seal	AIRSHIELD®/AIRSHIELD® FLIP FRONT: AP-HFS-02 VISION® QUICK FACE SEAL: AP-HFS-03 VISION® FACE SEAL: AP-HFS-01 *model held by fastener
2	Airduct assembly with headgear	AP-AIRDUCT-01
3	Breathing tube & fire retardant cover Fire retardant cover replacement (cover only)	AP-BTC-03 AP-BT3-FR
4	Flame-retardant waistbelt	AP-WBT-01
5	Battery charger with universal plugs	AP-CHG-03
6	Heavy-duty lithium-ion 6-cell battery	AP-BAT-03
7	AIRPLUS® blower unit	AP-BLW-02
8	HEPA filter (Pack of 4 or 12)	AP-FIL-03-4 (Pack of 4) AP-FIL-03-12 (Pack of 12)
9	Pre-filter (10 pack)	AP-FIL-04-10
10	Spark arrestor (2 pack)	AP-SA-01-2
11	Airflow indicator	AP-AFI-01



# STORAGE & CARRY BAGS



## RESPIRATOR STORAGE BAGS

Reusable storage bags keep equipment contaminant free. Large (14" x 16") transparent bag with zipper. Made of tough 10 mil. poly to last longer and hold half-mask or full-mask sizes. Cleaning instructions are printed on bag.

Description	Order No.
14"w x 16"h	2000



## LARGE DISPOSABLE RESPIRATOR STORAGE BAGS

Single use disposable storage bags with gusset help prevent cross contamination of any personal safety equipment such as respirators or earmuffs. These large bags come with pressure-sensitive seals where cleaning information can be recorded. Packaged with 100 in a reusable storage bag.

Description	Order No.
11"w x 8"d x 21"h	4001-05



## EXTRA-LARGE DISPOSABLE RESPIRATOR STORAGE BAGS

Reduce personal safety equipment contamination by using these extra-large single use disposable storage bags. Built with gusset for extra space, these bags are perfect for full-masks, half-masks, and earmuffs. Pressure sensitive labels allow for cleaning documentation. Packaged with 50 in a reusable storage bag.

Description	Order No.
12"w x 8"d x 28"h	4001-06



## RESPIRATOR AND EQUIPMENT CARRY BAGS

Belt mounted for carrying respirators, gloves, goggles, and small tools. Constructed of lightweight nylon reinforced vinyl fabric with hook-and-loop closure to protect equipment from dust and moisture. Available in half-mask and full-mask sizes.

Description	Order No.
Half-Mask Size (7"w x 4"d x 9"h)	2010
Full-Mask Size (9"w x 5"d x 11"h)	2020



## FULL-MASK STORAGE BAG

This easy-to-store 16" x 14" bag is made with cotton outer fabric and fleece inside to protect mask. A clear plastic window pocket allows for personal identification. Designed with a drawstring closure, an added locking device feature and special hook which allows you to hang bag when stored. Will fit all full-size mask respirators.

Description	Order No.
16"w x 14"h	2025



## DELUXE FULL-MASK STORAGE BAG

This 10" diameter full-mask storage bag features a durable polyester outer shell and fleece inside that protects mask from scratches. Added features include a breathable PVC mesh covering, drawstring closure, and carrying strap designed to be used over the shoulder or for hand carry. Zippered inside and outside pockets allow extra storage for lens protectors and accessories. Hook is provided to hang bag when stored and drain hole is at base of bag. Clear plastic window pouch for personal identification. Will accommodate all sizes of full-mask respirators.

Description	Order No.
10" diameter x 12"h	2025-01



# DONE RIGHT

**KORY NIEMI**  
SENIOR WELDER

//  
**You're only as good  
as your last job.  
So I need consistent,  
efficient tools  
to outdo myself.**

//

For as long as he can remember, Kory Niemi has loved working, getting physical, and taking pride in his craft. When at the crossroads between attending university or enrolling in trade school, he chose the latter, embarking on what's now become his career and passion: welding massive industrial structures.

"Since my first school project," he says, "I've always wanted to feel great about my work and to know it's the absolute best it can be."

Now a senior welder with 15 years of experience under his belt, Kory's projects are intimidating in size and complexity. His employer manufactures large industrial tanks, stacks, pressure vessels, and custom equipment, some pieces weighing up to 244 tons.

"Everything needs to run smoothly, everything needs to flow, and I need tools I can rely on." He describes the long days he spends working at heights and inside tight, uncomfortable spaces, as well as the rigorous inspections his pieces go through. "My work needs to be flawless because it goes through X-rays and tons of testing. If something fails, it delays the whole process and time gets wasted."

Kory attributes his meticulousness and commitment to precision to his family, who taught him at a young age to always do things right. "I want every weld to be perfect and I want every piece to shine," he says, adding that his desire to keep evolving and getting better often keeps him up at night. "Working isn't just something I like doing, it's something I need to do," he emphasizes.

The last and most satisfying part of each job, he says, is watching the piece leave the shop on its way to its final destination. "We have to take the doors off the warehouse to get it out, the police come to guide traffic and hydro teams lift the power lines so it can pass underneath." Once the structure disappears over the horizon, Kory heads back inside, flips down his helmet, and gets to work on his next piece.

His teacher once told him, "You're only as good as your last job" – a philosophy that continues to guide him today. "I want each job to always exceed the last one that I did. That's my drive."

 **WALTER**  
Achieve Greatness™





# 02

## HEAD AND FACE PROTECTION






ARCONE®'s above-the-neck head and face protection solutions make safety accessible to every welder. Our solutions provide superior optical clarity and sensitivity and larger viewing areas to help increase welding quality and productivity without sacrificing safety.



## AUTO-DARKENING PROTECTION WELDING LENS SHADE SELECTION GUIDE

Choose the shade that's right for your welding application. Shade numbers are given as a guide only and may be varied to suit individual needs.

Process	Electrode size in inches (mm)	Arc current (Amperes)	Minimum protective Shade	Suggested shade No. (Comfort)
 Shielded Metal Arc Welding (SMAW)	Less than 3/32 (2.4)	Less than 60	7	—
	3/32–5/32 (2.4–4.0)	60–160	8	10
	5/32–1/4 (4.0–6.4)	160–250	10	12
	More than 1/4 (6.4)	250–550	11	14
 Gas Metal Arc Welding (GMAW) and Flux Cored Arc Welding (FCAW)	Less than 60	Less than 60	60	7
	60–160	60–160	10	11
	160–250	160–250	10	12
	250–500	250–500	10	14
 Gas Tungsten Arc Welding (GTAW)	Less than 50	Less than 50	8	10
	50–150	50–150	8	12
	150–500	150–500	10	14
Air Carbon Arc (Light)		Less than 500	10	12
Cutting (CAC-A) (Heavy)		500–1000	11	14
Plasma Arc Welding (PAW)	Less than 20	Less than 20	6	6 to 8
	20–100	20–100	8	10
	100–400	100–400	10	12
	400–800	400–800	11	14
Plasma Arc Cutting (PAC)	Less than 20	Less than 20	4	4
	20–40	20–40	5	5
	40–60	40–60	6	6
	60–80	60–80	8	8
	80–300	80–300	8	9
	300–400	300–400	9	12
400–800	400–800	10	14	
Torch Brazing (TB)		—	—	3 or 4
Torch Soldering (TS)		—	—	2
Carbon Arc Welding (CAW)		—	—	14

**PRO TIP!**  
As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go to a lighter shade which gives sufficient view of the weld zone without going below the minimum.

The chart above is published in ANSI Z49.1 – "Safety in Welding, Cutting and Allied Processes" on AWS.org

**NEW**



**ARCONE® LENSES OFFER BETTER OPTICAL CLARITY, SO WELDERS CAN SEE COLORS LIKE THEY'VE NEVER SEEN BEFORE.**



### HD TECHNOLOGY

See color in its truest form with ARCONE®'s new HD Technology. This innovative technology increases the range of visible light when looking through the lens, and while welding. By increasing the range of light, more natural colors can be seen, providing a clearer, more defined view of your work area.

HD Technology allows a wider range of visible light on the color spectrum, versus True Color, which tends to be more on the blue side of the spectrum, showing a slightly blue tint when looking through the lens.



# AUTO-DARKENING LENSES

Looking for an upgrade to your existing welding lens?  
We've got you covered with the ARCONE® SINGLES Retro-fit Lens lineup.

- ▷ HD Technology
- ▷ Compatible with most 2 x 4 welding helmets
- ▷ Light shade of 2.5 provides clearer view when not in use
- ▷ Low-power solar technology allows lens to function without drawing much energy
- ▷ No battery changes. Ever.



SS240-V



S240-10

Order No.	Description and dimensions	Light shade	Dark shade	Sensitivity	Grind mode	Delay	Tig rating	Sensors	Viewing area (sq. in.)
<b>SINGLES®</b>									
<b>HIGH-DEFINITION TECHNOLOGY</b>									
S240-8	SINGLES HD 2x4" (2 x 4 ¼ x .2")	2.5	8	Fixed	N	N	50	2	5.25
S240-9	SINGLES HD 2x4" (2 x 4 ¼ x .2")	2.5	9	Fixed	N	N	50	2	5.25
S240-10	SINGLES HD 2x4" (2 x 4 ¼ x .2")	2.5	10	Fixed	N	N	50	2	5.25
S240-11	SINGLES HD 2x4" (2 x 4 ¼ x .2")	2.5	11	Fixed	N	N	50	2	5.25
S240-12	SINGLES HD 2x4" (2 x 4 ¼ x .2")	2.5	12	Fixed	N	N	50	2	5.25
S450-9	SINGLES HD 4x5" (4 ½ x 5 ¼ x .2")	2.5	9	Fixed	N	N	50	2	5.25
S450-10	SINGLES HD 4x5" (4 ½ x 5 ¼ x .2")	2.5	10	Fixed	N	N	50	2	5.25
S450-11	SINGLES HD 4x5" (4 ½ x 5 ¼ x .2")	2.5	11	Fixed	N	N	50	2	5.25
S450-12	SINGLES HD 4x5" (4 ½ x 5 ¼ x .2")	2.5	12	Fixed	N	N	50	2	5.25
S540-10	SINGLES HD 5x4" (5 ¼ x 4 ½ x .2")	2.5	10	Fixed	N	N	50	2	5.25
S540-11	SINGLES HD 5x4" (5 ¼ x 4 ½ x .2")	2.5	11	Fixed	N	N	50	2	5.25
S540-12	SINGLES HD 5x4" (5 ¼ x 4 ½ x .2")	2.5	12	Fixed	N	N	50	2	5.25
<b>SUPER SINGLES VARIABLE®</b>									
<b>HIGH-DEFINITION TECHNOLOGY</b>									
SS240-V	SUPER SINGLES Variable 2 x 4" (2 x 4 ¼" x .25")	3	6-13	Fixed	Y	Variable	10	2	5.25
<b>TRADESMAN</b>									
<b>Entry-level 2 x 4 retrofit auto-darkening welding lens</b>									
T240-10	Tradesman ADF 2x4	3	10	Fixed	N	N	50	2	5.25

## AUTO-DARKENING LENSES

Order No.	Description and dimensions	Light Shade	Dark Shade	Sensitivity	Grind Mode	Delay	TIG Rating	Sensors	Viewing Area (sq. in.)	Battery
<b>Professional-grade</b>		Entry-level, for welders who occasionally grind. Best options for students!								
1000F	Shade Master® Professional-Grade True Color Technology	4	9-13	Variable	Y	Variable	25	2	6.0	
4500V	Shade Master Digital Professional-Grade True Color Technology	4	5/7/9-13	Variable	Y	Variable	5 amp	4	7.28	CR2450 Backup Battery
<b>Digital industrial</b>		Industrial-grade lenses for welders who perform diverse welding work, TIG weld, and require clearest vision.								
X54V	5x4" Digital ASIC (5 ¼ x 4 ½ x .244")	4	9-13	Variable	Y	Variable	5	2	7.25	
X54Vi	5x4" Digital ASIC HD (5 ¼ x 4 ½ x .267")	4	5-14	Variable	Y	Variable	5	4	7.25	
<b>HD digital industrial</b>		Industrial-grade, for welders working on complex and varied projects. ARCONE®'s most premium lens.								
X81VX	Xtreme® Digital ASIC w/ X-TIG - HD 5x4" (5 ¼ x 4 ½ x .295")	3	5-14	Variable	Y	Variable	3	5	12.6	
<b>XTREME®</b>		Industrial-grade lenses for welders who perform different tasks, TIG weld, and require a larger viewing area.								
X450V	Xtreme® 4x5" Variable (4 ½ x 5 ¼ x .267")	3	9-12	Variable	Y	Variable	5	4	12.6	
<b>BFF®</b>		Industrial-grade; for welders working on complex and varied projects. This lens has the largest viewing area in its category.								
BFFVX	BFF HD Digital Lens with X-TIG	3	5-13	Variable	Y	2 delay settings: Delay 0.1 and 2 sec.	5	3	17	

NEW &amp; IMPROVED

NEW &amp; IMPROVED

Order No.	Description and dimensions	Light shade	Dark shade	Sensitivity	Grind mode	Delay	Tig rating	Sensors	Viewing area	
<b>SHADE MASTER®</b>		Professional European-model lens, smaller and lighter format								
5500V	Shade Master® ASIC - 110x90mm	4	5-14	8 Settings	Y	8 Settings	5	2	7.25	
7500VX	Shade Master® ASIC w/ X-TIG & HD - 110x90mm	3	5-14	8 Settings	Y	8 Settings	<5	3	9.3	



**SEE COLOR IN ITS TRUEST FORM  
WITH ARCONE®'S HD TECHNOLOGY.**

*This innovative technology increases the range of visible light when looking through the lens and while welding. By increasing the range of light, more natural colors can be seen, providing a clearer, more defined view of your work area.*



# REDUCE DOWNTIME SPENT SCRAPING SPATTER & REPLACING WELDING NOZZLES



WALTER'S 5X LONGER-LASTING CERAMIC-COATED NOZZLES  
WILL **REDUCE YOUR OPERATION COSTS!**

See page 42 for all available models

# WELDING HELMET SERIES

Every welder is different. That's why we offer a wide selection of lens options, all specifically designed to help you optimize your welding productivity.

## HAWK® WELDING HELMET SERIES

The HAWK® provides excellent head, neck and ear coverage.

▷ Can be retrofitted with any ARCONE® SINGLES Lens

## CARRERA™ WELDING HELMET SERIES

The CARRERA™ ARCONE® helmet is ultra-light and has a sleek, modern wider-fit design.

▷ Built with many features from the premium welding hoods, but designed with budget in mind

▷ Wider fit can accommodate half-mask respirators



Order No.	H-0300	S240-10-0300	SS240-V-0300	1000F-0100	4500V-0100	3500V-1600
<b>Best for:</b>	Passive lens for the occasional welder, DIY	Entry-level for the occasional welder, students, DIY		Entry-level for the occasional welder, students, DIY		
Viewing Area	8.5 sq. in	5.25 sq. in	5.25 sq. in	6 sq. in	7.28 sq. in.	12.2 sq. in
HD Technology						
Light Shade		2.5	3	4	4	3
Dark Shade	10	10	6-13	9-13	5/7/9-13	5-8/ 9-13
Variable Sensitivity				✓	✓	✓
Variable Delay			✓	✓	✓	✓
X-TIG®						
Mode			Grind, Weld	Grind, Weld	Grind, Cut, Weld	Grind, Cut, Weld
TIG Rating		50 amps	10 amps	25 amps	5 amps	<5 amps
Arc Sensors	n/a	2	2	2	4	4
Digital			✓		✓	✓
Solar powered		✓	✓	✓	Solar & Battery	✓

**Viewing Area:** The total area through which the user can see. Larger viewing areas tend to be preferable for welding in different positions or all-day use because they increase peripheral vision.

**HD Technology:** This innovative technology increases the range of visible light seen through the lens providing a clearer, more defined view of the work area.

**Light State:** The shade when the welding filter is not welding. The lighter the light state, the better the welder can see their work area.

**Dark State:** The range of shades that determine how dark the filter will get when the arc is struck. Required darkness depends on the welding application.

**Variable Sensitivity:** Welding lens feature that allows the user to set the sensitivity of the sensors. High sensitivity is required for low-light or low amperage applications; Low Sensitivity is ideal for intense light- or high-amperage applications.

**Variable Delay:** Lens feature that allows the welder to set the number of seconds it takes the lens to switch back to its light shade after the weld is complete.



## VISION<sup>®</sup> WELDING HELMET SERIES

The VISION<sup>®</sup> helmet is light, slim, and will fit into tight areas, all while offering optimal face, ear and neck coverage.

- ▷ **Best-in-class optical clarity and sensitivity**
- ▷ **Patented cover plate quick-change system**
- ▷ **Dust and water resistance**
- ▷ **Meet ANSI and CSA standards**

## ORBIT<sup>™</sup> WELDING HELMET

Three high-definition auto-darkening lenses provide optimal peripheral vision

- ▷ **24-square-inch viewing area thanks to 3 lenses that improve peripheral view of surroundings**
- ▷ **Wider-fit design made for comfortable welding**



NEW & IMPROVED

NEW & IMPROVED

Order No.	V-1500	1000F-1500	4500V-1500	X54V-1500	X54VI-1500	X81VX-1500	BFFVX-1500	BFFVX3-1800
<b>Best for:</b>	Passive lens for the occasional welder, DIY	Entry-level for the occasional welder, students, DIY		Professional for the everyday welder		Industrial for the everyday welder working on different types of complex projects		Industrial-grade; for welders needing great peripheral vision
Viewing Area	25.5 sq. in	6 sq. in.	7.28 sq. in	7.25 sq. in.	7.25 sq. in.	12.6 sq. in	17 sq. in	24 sq. in. (17.05 main, 2 x 3.5 sq. in ADF side-lenses)
HD Technology								
Light Shade		4	4	4	4	3	3	3
Dark Shade	10	9-13	5/7/9-13	9-13	5-14	5-14	5-13	5-13
Variable Sensitivity		✓	✓	✓	✓	✓	✓	✓
Variable Delay		✓	✓	✓	✓	✓	✓	✓
X-TIG <sup>®</sup>						✓	✓	✓
Cut & Grind Mode		✓	✓	✓	✓	✓	✓	✓
TIG Rating		25 amps	5 amps	5 amps	5 amps	3 amps	5 amps	3 amps
Arc Sensors	n/a	2	4	2	4	5	3	3
Digital			✓	✓	✓	✓	✓	✓
Solar powered		✓	Solar & Battery	✓	✓	✓	Solar/USB rechargeable battery	Solar/USB rechargeable battery

**X TIG<sup>®</sup>:** A mode designed for welding in an environment with obstructed views. Sensors are triggered by the electromagnetic field created when welding.

**Cut & Grind Mode:** Ideal if you frequently switch between welding, cutting, or grinding.

**Tig Rating:** The minimum light or amperage for which the auto-darkening lens will activate.

**Arc Sensors:** An increased number of arc sensors makes the lens more sensitive and provides better lens response.

**Digital:** Whether or not the auto-darkening lens has a digital display.

**Solar Powered:** Whether or not the lens has a solar battery. ARCONE<sup>®</sup>'s VISION<sup>®</sup> BFFVX hood can last up to 6 months on a single charge.

## HAWK® WELDING HELMET SERIES



The HAWK® is perfect for general welding applications. It is one of the lightest helmets, comfortable for all-day use. The HAWK® provides excellent head, neck, and ear coverage.

**HAWK® BENEFITS**

- ▷ 2x4" viewing area
- ▷ 03-OP outside and inside cover plate
- ▷ 04-HG replacement headgear
- ▷ Can be retrofitted with any ARCONE® SINGLES lens
- ▷ HD Technology
- ▷ Good face, ear, and neck face coverage
- ▷ Lightweight hood
- ▷ Wide fit, can be worn with glasses underneath

**ALL HAWK® HOODS INCLUDE**

HD Technology Solar-powered

**NEW & IMPROVED**

Order No.	T240-10-0300	S240-10-0300	SS240-V-0300
Viewing Area	5.25 sq. in	5.25 sq. in	5.25 sq. in
HD Technology			
Light Shade	3	2.5	3
Dark Shade	10	10	6-13
Variable Sensitivity	Fixed Sensitivity	Fixed Sensitivity	Fixed Sensitivity
Variable Delay			✓
Grind Mode	✓		✓
TIG Rating	50 amps	50 amps	10 amps
Arc Sensors	2	2	2
Solar powered	✓	✓	✓
Inside and Outside Cover Plate	03-OP	03-OP	Ext: 03-OP Int: 03-IP Digital Display

For full accessories listing, please see page 570

**CARRERA™ WELDING HELMET SERIES**



0100



0110



0141



0171

**CARRERA™ BENEFITS**

- ▷ Unparalleled optical clarity and sensitivity reduces eye strain
- ▷ True Color Technology broadens viewable color range for better view of the weld pool
- ▷ Lightweight shell for all-day comfort
- ▷ Wider fit can accommodate an elastomeric half-mask underneath

Available with different decal versions!



**NEW & IMPROVED**

**ALL CARRERA™ HOODS INCLUDE**



Best-in-class optical clarity and sensitivity



Wide Dark Shade Range



Grind mode



True Color Technology

	<b>1000F-0100</b>	<b>4500V-0100</b>
<b>Best for:</b>	Budget-friendly for welders who occasionally grind.	For welders who occasionally grind and appreciate a larger viewing area.
Viewing Area	6 sq. in.	7.23 sq. in
Light Shade	4	4
Dark Shade Range	9-13	5/7/9-13
Variable Sensitivity	✓	✓
Variable Delay	✓	✓
Grind Mode	✓	✓
TIG Rating	25 amps	5 amps
Arc Sensors	2	4
Solar-Powered	✓	Solar & Battery
Outside Cover Plate	04-OP	04-OP
Inside Cover Plate	03-OP	03-OP

For full accessories listing, please see page 570

**ARCONE®****SPY™ AUTO-DARKENING WELDING HELMET**

The ARCONE® SPY™ helmet is your versatile, go-to hood for all welding projects, perfect for students and industrial welders alike seeking performance and advanced features. Combining a large viewing area with a wide shade range, this hood provides an unparalleled vision. With its comfort-first design, the SPY™ helmet is designed to keep welders productive all day, regardless of the environment.

**SPY™ BENEFITS**

- ▷ Large 12.2 square inch viewing area with wide variety of shade options for versatility to perform a variety of welding tasks
- ▷ TrueColor Technology broadens viewable color range for better view of the weld pool
- ▷ Ratchet headgear with integrated foam pad allows for maximum all-day comfort
- ▷ Powered by replaceable CR2450 battery & solar panel
- ▷ Can be used for low-amp TIG welding

**SPY™ HELMET INCLUDES**

Grind mode



True Color Technology



Wide Dark Shade Range

Order No.	3500V-1600
Viewing Area	12.2 sq. in.
Digital	✓
Light Shade	3
Dark Shade Range	5-8 / 9-13
Sensitivity	10 levels
Delay	0.2 to 1 second
Mode	Grind, Cut & Weld
TIG Rating	<5 amps
Arc Sensors	4
Solar powered	✓
Outside cover plate	02-OP
Inside cover plate	07-IP

For full accessories listing, please see page 570



**VISION® WELDING HELMET SERIES**



1500



1523



1555

**VISION BFFVX BENEFITS**

- ▷ 17.05-square-inch viewing area improves weld pool vision as well as peripheral view of surroundings
- ▷ Unparalleled optical clarity and sensitivity
- ▷ X-TIG mode for welding when views are obstructed
- ▷ Slim fit design made for welding in tight areas
- ▷ Solar powered means no battery changes. Ever.
- ▷ USB charger for on-the-go charging
- ▷ Patented cover-plate quick-change system
- ▷ New & Improved! Digital lens

**LARGEST VIEWING AREA**



**NEW & IMPROVED**

**ALL VISION® HOODS INCLUDE**



Best-in-class optical clarity and sensitivity



Wide Dark Shade Range



HD Technology



Patented cover-plate Quick Release system



Solar-powered



16-HG

**NEW!**  
**VISION® helmet improved headgear!**

**INCREASED COMFORT FOR THE WELDER**

ARCONE®'s new and improved headgear includes a comfort gel pad specially designed for all-day wear.

	X54V-1500	X54VI-1500	X81VX-1500	BFFVX-1500
<b>Best for:</b>	Professional-grade; for welders who TIG weld and like clear vision	Professional-grade; budget-friendly for welders who perform wide range of tasks and like clear vision	Industrial-grade; for welders working of complex varied projects. This is ARCONE®'s most premium hood.	Industrial-grade; for welders working of complex varied projects requiring good vision.
Viewing Area	7.25 sq. in.	7.25 sq. in.	12.6 sq. in.	17.05 sq. in.
HD Technology	<b>HD</b>	<b>HD</b>	<b>HD</b>	<b>HD</b>
Light Shade	4	4	3	3
Dark Shade	9-13	5-14	5-14	5-13
Variable Sensitivity	✓	✓	✓	✓
Variable Delay	✓	✓	✓	✓
X-TIG®			✓	✓
Grind Mode	✓	✓	✓	✓
TIG Rating	5 amps	5 amps	3 amps	5 amps
Arc Sensors	2	4	5	3
Digital	✓	✓	✓	✓
Solar powered	✓	✓	✓	✓ (Also includes USB charger)
Outside Cover Plate	02-OP	02-OP	02-OP	02-OP
Inside Cover Plate	08-IP	08-IP	04-OP	02-OP

For full accessories listing, please see page 570



# ORBIT™ WELDING HELMET



Three high-definition auto-darkening lenses provide optimal peripheral vision

### ORBIT™ BFFVX3 BENEFITS

- ▷ 24-square-inch viewing area thanks to 3 lenses that improve peripheral view of surroundings
- ▷ External controls for shade adjustment and grind mode
- ▷ Unparalleled optical clarity and sensitivity
- ▷ X-TIG mode for welding when views are obstructed
- ▷ Wider-fit design made for comfortable welding
- ▷ Solar-powered
- ▷ USB charger included for on-the-go back-up charging

### ORBIT™ HOODS INCLUDE



Best-in-class optical clarity and sensitivity



Wide Dark Shade Range



HD Technology



Grind mode



Solar-powered

Order No.	BFFVX3-1800
<b>Best for:</b>	Industrial-grade; for welders needing great peripheral vision
Viewing Area	24 sq. in.
HD Technology	✓
Light Shade	3
Dark Shade Range	5-13
Side Windows Dark Shade	6
Variable Sensitivity	✓ external controls
Variable Delay	0.1 to 2 seconds
X-TIG	✓
Grind Mode	✓ external controls
TIG Rating	< 5 amps
Arc Sensors	3
Digital	✓
Solar-Powered	✓
Outside Cover Plate	10-OP
Inside Main Cover Plate	02-OP
Inside Side Cover Plates	11-IP

For full accessories listing, please see page 570



**INCLUDES RACHET HEADGEAR WITH INTEGRATED GEL PAD FOR ADDED COMFORT**





# ACCESSORIES

ARCONE®'s standard-size cover plates are lightweight and can be used in most standard-sized welding helmets.

Can also be used with other manufacturer's helmets.

## INSIDE AND OUTSIDE COVER PLATES

Order No.	Order No for pack of 10	Description	Compatible lens	Compatible Helmets*
02-OP	02-OP-10	For inside and outside	BFFVX, S450, S540, X450V	VISION® Series
02-OP	02-OP-10	For outside	3500V, X54V, X54Vi	VISION® Series
03-OP	03-OP-10	For inside and outside	S240	Hawk® Series
03-OP	03-OP-10	For outside	SS240-V	Hawk® Series
03-IP		For inside	SS240-V	Hawk® Series
04-OP	04-OP-10	For inside	X81VX	VISION® Series
04-OP	04-OP-10	For outside	1000F, 4500V	CARRERA™ Series
07-IP		For inside	3500V	Spy™ Series
08-IP		For inside	X54V, X54Vi	VISION® Series
10-OP		For outside	BFFVX3	Orbit™ Series
02-OP		For inside main lens	BFFVX3	Orbit™ Series
11-IP		For inside side lenses	BFFVX3	Orbit™ Series



02-OP

\*Cover plates can be used with any standard-size welding helmet.

## INSIDE COVER PLATE SHADE UPGRADES

Order No.	Description
03IP-1	Passive Shade 1 Upgrade for 2 x 4" helmets
03IP-2	Passive Shade 2 Upgrade for 2 x 4" helmets
04IP-1	Passive Shade 1 Upgrade for CARRERA™ ARCONE® 90 x 110 mm helmets (04-OP-1)
04IP-2	Passive Shade 2 Upgrade for CARRERA™ ARCONE® 90 x 110 mm helmets (04-OP-2)

ARCONE® headgear and sweatbands can be retrofitted into any ARCONE® welding helmet to get you the perfect, customized fit.

## HEADGEARS AND SWEATBANDS

Order No.	Description
03-HGSB	FatBoy® Ultra-absorbent sweatband
04-HG	Economical ratchet headgear with cloth sweatband
04-HGSB-5	Lightweight felt sweatbands (5-Pack)
06-HG	ComfaGear® ratchet headgear with deluxe sweatband
06-HGSB-2	Deluxe sweatbands (2-Pack)
07-HGSB	Single rear felt sweatband
15-HG	ComfaGear® ratchet headgear with deluxe sweatband and large knobs
16-HG	VISION® headgear ratchet with added gel pad for added comfort
16-HGGP	Replacement gel pad for 16-HG
17-HG	Industrial headgear with deluxe rear foam sweatband
17-HGSB-R	Rear foam sweatband



03-HGSB AND 06-HGSB-2

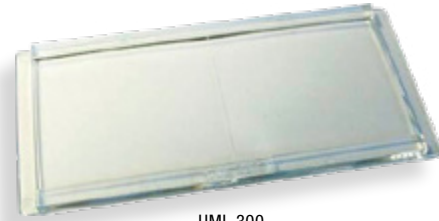


16-HG



## ARCONE® DIOPTER/CHEATER LENSES

- ▷ *The Standard Magnifying Lens is perfect for helmets like the VISION® that have a built-in mag lens holder*
- ▷ *The Universal Magnifying Lens replaces your 2 x 4" rear cover plate, ideal with our CARRERA™ ARCONE® welding helmet, or with the mounts for any manufacturer's 5 x 4" or 4 x 5" welding helmets*



UML-300

## STANDARD MAGNIFYING LENS

*(Mag lens holder required)*

Order No.	Description
VML-100	1.00 Strength
VML-150	1.50 Strength
VML-200	2.00 Strength
VML-250	2.50 Strength

## UNIVERSAL MAGNIFYING LENS

*(Fits all manufacturer's mount helmets, kit is included)*

Order No.	Description
UML-100	1.00 Strength
UML-150	1.50 Strength
UML-200	2.00 Strength
UML-250	2.50 Strength
UML-300	3.00 Strength



## ARCONE VISION® REPLACEMENT PARTS

Lens Model	Inside Cover Plates				Outside Cover Plate	Headgear				Sweatband			
	02-OP	04-OP	08-IP	02-IP-AF (Optional)		02-OP	04-HG	06-HG	15-HG	16-HG	04-HGSB-5	06-HGSB-2	07-HGSB
BFFVX	✓			✓	✓					✓	✓		✓
X81VX		✓		✓						✓	✓		✓
X54V			✓	✓	✓		✓			✓	✓		✓
X54VI			✓	✓	✓		✓			✓	✓		✓
Passive				†	✓	✓				✓			

## ARCONE® VISION® 911 REPLACEMENT PARTS

Lens type	Inside Cover Plate		Outside Cover Plate		Headgear		Sweatband	
	03-OP		04-OP		04-HG		04-HGSB-5	
ADF	✓		✓		✓		✓	
Passive			✓		✓		✓	

## ARCONE® HAWK® REPLACEMENT PARTS

Lens type	Inside Cover Plate			Outside Cover Plate		Headgear		Sweatband	
	03-OP	03-IP (SS240-V*)	03-OP (Other)	03-OP		04-HG		04-HGSB-5	
ADF	✓			✓		✓		✓	
Passive				✓		✓		✓	

## ARCONE® CARRERA™ REPLACEMENT PARTS

Lens type	Inside Cover Plate		Outside Cover Plate		Headgear			Sweatband		Center Section		Thumbscrew
	03-OP		04-OP		04-HG	17-HG	04-HGSB-5	06-HGSB-2	17-HGSB-R	CAR-CS	CAR-SCR	
ADF	✓		✓		✓	✓	✓	✓	✓			
Passive			✓		✓							

## ARCONE® SPY™ REPLACEMENT PARTS

Lens Model	Inside Cover Plates		Outside Cover Plate		Headgear			Sweatband	
	07-IP		02-OP		17-HG		17-HGSB-R	06-HGSB	
ADF	✓		✓		✓		✓	✓	✓

## WALTER ORBIT™ REPLACEMENT PARTS

Lens Model	Inside Cover Plates		Outside Cover Plate		Headgear		Sweatband	
	11-IP (2 pack for side lenses)	02-OP (center lens)	10-OP		16-HG		06-HGSB-2	16-HGGP
BFFVX3	✓	✓	✓		✓		✓	✓

# WELDING ACCESSORIES



BAG-CANVAS-01



Order No.	Description
CG-01	Leather chin guard, flexible, protects chin and neck. One size fits all ARCONE® Helmets & most other Welding Helmets.
CA-CAC-02	Polyester/Canvas duffle bag
BAG-HELMET-01	Nylon drawstring bag



BAG-HELMET-01



CA-CAC-02



CG-01  
*Helmet sold separately*

# BROWGUARDS & VISORS

- ▷ All models provide full face and eye protection against sparks, spatter, small particles, and non-hazardous liquids.
- ▷ Made for most work applications including grinding, cutting, brazing, and machining.
- ▷ Browguards offer a sleek wrap-around design that can be worn comfortably with impact-resistant safety glasses
- ▷ Meet CSA Z94.3 standards



	Cutting & Grinding					Brazing and plasma cutting		
Order No.	BG-FL	BG-1*	BG1-2CL*	BG2-2CL	BG4-K	BG-FF-5	BG-FF-8	
Application	Entry-level, basic protection	Professional and industrial cutting & grinding		Industrial cutting & grinding, best face protection. Includes a chin guard (for BG4-K only).		Cutting & brazing	Plasma cutting	
Dimensions	8 x 15 ½ x 0.04 in	16 x 8 x 0.06 in	16 x 9 x 0.06 in	16 x 9 x 0.06 in	16 x 9 x 0.06 in	16 x 9 x 0.06 in	16 x 9 x 0.06 in	
Material	P.E.T.G.	Injection-moulded Polycarbonate					Injection-moulded Polycarbonate	
Crown Size	4 in	3 in	3 in	4 in	3 in	4 in	4 in	
Headgear Material	Nylon	Nylon	Nylon	Nylon	Nylon	Nylon	Nylon	
Ratchet Suspension	✓	✓	✓	✓	✓	✓	✓	

\* CSA approved.

### **DIMENSIONS**

Larger visor dimensions provide more protection for ears, face, and neck.

### **MATERIALS**

Visor material; visors made from injection-molded polycarbonate provide better protection, longer life, and are more resistant to scratching.

### **CROWN SIZE**

Larger crown sizes provide more head protection.

### **HEADGEAR MATERIAL**

Nylon provides longer life than HDPE.



# BROWGUARDS & VISORS

## AIRSHIELD®

Order No.	Description
AIR-SH	AIRSHIELD® High-Impact Grinding Visor (7" x 5.4" x .040")
AIR-HEL	AIRSHIELD® Replacement Shell
AIR-CL	AIRSHIELD® Visor (8.75" x 5.5" x .040") (2-Pack)
AIR-WHA-04	Adapter to attach ARCONE® welding helmet to AIRSHIELD® using 04-HG
AIR-WHA-10	Adapter to attach ARCONE® welding helmet to AIRSHIELD® using 15-HG
SUHHA-03	Hard hat Adapter, Slotted for V-Crown Hard hats



\* does not meet CSA AIR-SH AIRSHIELD®

## VISORS

ARCONE® visors provide the protection you need.

Visors are molded from strong polycarbonate (injection-molded), not thin materials or materials that yellow over time. Visors are available in two different styles: a more traditional square-fit (168CL-PC) or a more rounded-fit for additional protection (2CL-PC). Visors come in clear, dark green, IR3 and IR5 shades. The 168 and 02 visors are CSA approved when used in combination with our BG1 Browguard. ARCONE® cost-performance durable visors fit most manufacturer browguards.

	Order No.	Size	Description
	2CL-PC	16" x 9" x .060"	Clear (each)
Rounded design Polycarbonate Injection-moulded	2CL-PC-50	16" x 9" x .060"	Clear, 50-Pack
	2DGN-PC	16" x 9" x .060"	Dark Green (each)
	2DGN-PC-50	16" x 9" x .060"	Dark Green, 50-Pack
Chin guard	FS-CH	N/A	Clear Polycarbonate chin guard for 2CL Visor
Square design polycarbonate Injection-moulded	168CL-PC	16" x 8" x .060"	Clear (each)
	168CL-PC-50	16" x 8" x .060"	Clear, 50-Pack
	168DG-PC	16" x 8" x .060"	Dark Green (each)
	168DG-PC-50	16" x 8" x .060"	Dark Green, 50-Pack
	168IR3-PC	16" x 8" x .060"	IR3 (each)
	168IR3-PC-50	16" x 8" x .060"	IR3, 50-Pack
	168IR5-PC	16" x 8" x .060"	IR5 (each)
	168IR5-PC-50	16" x 8" x .060"	IR5, 50-Pack
	PETG - Flat stock	1910CL-PE-10	19" x 9.75" x .040"
1910DG-PE-10		19" x 9.75" x .040"	Dark Green visor, 10-pack
1910IR5-PE-10		19" x 9.75" x .040"	IR5 visor, 10-pack
PETG	FLV-0815040-10	8" x 15.5" x .040"	Clear FL visor, 10-Pack
	FLV-0815040-100	8" x 15.5" x .040"	Clear FL visor, 100-Box
	FLV-0815060-10	8" x 15.5" x .060"	Clear FL visor, 10-Pack
	FLV-0815060-100	8" x 15.5" x .060"	Clear FL visor, 100-Box



2CL-PC CLEAR VISOR



168IR5-PC IR5 VISOR



1910DG-PE DARK GREEN PETG



FVL-0815060-10 CLEAR FL VISOR

# HARD HATS

*Our slotted hard hat is made from polyethylene and is offered with ratchet headgear.*



White V-Crown Hard hat w/ VISION® helmet and SUHHA-02 adapter

**Available V-CROWN Combinations:**

- ▷ **Welding Helmet**
- ▷ **Visor with FSHHA-01 Adapter**

## SMOOTH DOME

### Type 1

Sleek and modern style is ideal for welding applications and attachments. Rain trough and slotted design high-density polyethylene shell to accommodate all the latest accessories such as hearing protection, face shields, forestry kits or welding protection. Ratchet adjustment to properly fit all head sizes large or small. Attachment points for chin straps. HH-T1 CSA Type 1 Class E and ANSI Type I Class E.



Order No.	Description	Color
HH-T1-OR	Safety hard hat Type 1	Orange
HH-T1-WR	Safety hard hat Type 1	White
HH-T1-YR	Safety hard hat Type 1	Yellow

## V-CROWN

### Type 2

Hard hat with HDPE shell with rain trough, foam liner, 4-point nylon suspension, ratchet adjustment and 4 anchor points for chin strap. Foam liner to offer added lateral front, side and back protection. HH-T2 CSA Type 2 Class E and ANSI Type II Class E.



Order No.	Description	Color
HH-T2-OR	Safety hard hat Type 2	Orange
HH-T2-WR	Safety hard hat Type 2	White
HH-T2-YR	Safety hard hat Type 2	Yellow

## HARD HAT ADAPTERS

Order No.	Description
SUHHA-02	Hard hat adapter for welding helmet ARCONe®, MSA, North, Honeywell, Dynamic, and more
SUHHA-03	Hard hat adapter for welding helmet - Slotted for ARCONe® HH-VC series only
UHHA-01	Universal hard hat adapter (for non-slotted hard hats)
FSHHA-01	Universal hard hat adapter for visor
FSHHA-02	Hard hat slotted adapter for visor
FSHHA-03	Fibre-metal hard hat adapter for welding helmet



FSHHA-01  
(168 Visor & HH not included)





# 03

## ERGONOMICS



APPROX. SIZE  
CM 20x20  
INCHES 8x8

Coverage: 1 lb. will cover approximately 1.2 sq. ft. of  
Clean-Up: Clean tools with water before Quik-Fix Patch is applied.

**CAUTION:** Avoid prolonged contact with skin. This product develops sufficient heat to  
cause burns if a large mass, such as a cast of a hand or a slip-on hard hat, is in contact  
with skin.

**KEEP OUT OF REACH OF CHILDREN.  
DO NOT TAKE INTERNALLY.  
STORE IN COOL DRY AREA.**



ALLEGRO's extensive line of ergonomic solutions was designed to improve comfort and worker safety to help keep fabricators productive. These products combine high-quality materials and design engineering for long-lasting all-day wear.

## KNEE PADS

ALLEGRO knee pads are designed with superior comfort and support in mind. No matter the job at hand, our knee pads feature lightweight yet strong construction to keep you comfortable so you can focus on the work.

### MAXKNEE



#### MAXKNEE

For rough abrasive surfaces  
Perfect for kneeling on rough abrasive surfaces, MaxKnee is excellent for any application that demands maximum performance. It is designed with a hard poly cap that resists abrasion and works with an extra-long pad for optimum comfort. Available with two comfortable, fully adjustable elastic straps connecting with hook-and-loop closures.

**Order No. 7102**



#### GEL MAXKNEE

For maximum comfort for all-day wear

Hard poly-cap design features a silica gel insert pad for maximum comfort that cushions and protects the knee cap. Two fully adjustable elastic straps with hook-and-loop closure offer comfort and stability.

**Order No. 7102-GEL**



#### QUICKMAX

Quick-release buckle eliminates readjustments  
MAXKNEE is also available with a durable quick-release buckle that eliminates the need to re-adjust the straps.

**Order No. 7102-Q**

### FLEXKNEE



#### FLEXKNEE

For long-lasting wear  
Designed with lightweight pads capped by large abrasion-resistant rubber caps for long-lasting wear. The wrap-around rubber cap design allows maximum flexibility while maintaining a secure fit. Excellent for non-slip, hard surface work environments. Designed with hook-and-loop closures.

**Order No. 7103**



#### BLACK FLEXKNEE

The same Flexknee you know and love, in Black  
The favored pad of government and municipal workers, the Black FlexKnee offers the same features as our popular FlexKnee, including hook-and-loop straps.

**Order No. 7103-02**



#### GEL FLEXKNEE

For maximum comfort against hours of kneeling

Designed with a large abrasion-resistant poly cap, the silica gel cushion inserts and protects the knee cap by dispersing pressure that can build from hours of kneeling. 1 1/2" nylon reinforced elastic dual straps and hook-and-loop closures offer durability and stability, not to mention comfort and flexibility.

**Order No. 7103-GEL**



#### QUICKFLEX

FlexKnee is also available with a durable quick-release buckle that eliminates the need for readjusting the straps.

**Order No. 7103-Q**





## ULTRA FLEXKNEE

Designed with extended knee protection to limit falling debris. Ultra-durable, flexible, and lightweight, our Ultra FlexKnee provides maximum comfort for any wearer's knee. The flexible eco-friendly PVC material is ribbed across the kneeling surface for non-slip stability. It is designed with inner foam rubber for greater comfort and water resistance. Unique, easy-to-adjust rubber straps help to offer a comfortable, custom fit.

Description	Order No.
Ultra FlexKnee	6987
Replacement straps 4/pkg.	6988-04



## ECONOMY NON-MARKING FLEXKNEE

For delicate floor protection. Protect delicate flooring with our non-marking rubber FlexKnee. Extra-long ribbed cap provides workers with additional working surface and prevents slipping and sliding. Elastic straps with hook-and-loop closure ensures a snug fit.

Order No. 7103-04



## NON-MARKING FLEXKNEE

For delicate floor protection. A non-marking polyurethane cap is featured on our FlexKnee to allow workers to move around the work area without marking or damaging a delicate surface such as tiling. Hook-and-loop straps allow for a custom fit and make donning quick and easy.

Order No. 7103-01

## SOFTKNEE



## ULTRA GEL FLEXKNEE

Designed with extended knee protection to limit falling debris. This knee pad is ultra-durable, flexible, and comfortable for all-day use, day after day. The lightweight poly material is ribbed across the knee for easy flexing while providing maximum comfort above the knee. The kneeling surface is designed to hold its contoured shape and is constructed with a silica gel pad insert which cushions the kneecap allowing maximum protection and comfort. Unique and easy-to-adjust rubber straps offer a comfortable, custom fit.

Description	Order No.
Ultra Gel Flex Knee	6987-GEL
Replacement straps 4/pkg.	6988-04

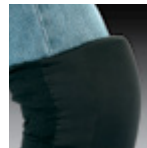


## SOFTKNEE

Designed for convenience in non-abrasive environments

A tough blend of cloth and EVA foam makes these pads extra comfortable, and easy to wear in non-abrasive environments. These lightweight yet durable knee pads can be worn over or under pants as they slip on and off quickly without straps or buckle attachments.

Order No. 7105



## DELUXE SOFTKNEE

Ultra-comfortable, with work surface protection

An extra-wide foam pad makes this knee pad the most comfortable in the industry. Designed with a tough water-resistant cover and no kneecaps, it is perfect for jobs where protecting the work surface is a primary concern. 1 1/2" elastic straps are adjustable and are equipped with hook-and-loop closures.

Order No. 6998

**Best for welding**

**LEATHER KNEE PAD**

For welding and concrete work  
 This knee pad features tough abrasion-resistant leather for maximum protection and a soft cushion back for increased comfort. Elastic straps with hook-and-loop closures ensure a secure fit. Because of its resistance to heat and fire, this pad is ideal for welding and construction applications.

**Order No.** 6991


**WELDING KNEE PAD**

Designed for welding applications

Tough heat-resistant leather that wraps over the top and down the back of the pad offers maximum protection from flying sparks. It features soft cushioning to ensure comfort, elastic straps that maintain a secure fit with the convenient quick-release buckle, and a non-marking poly cap that increases protection. Because of its resistance to heat, this knee pad is ideal for welding or any construction application such as concrete or flooring work.

**Order No.** 6991-01Q


**STANDARD KNEE PAD**

For wet, damp areas

One-piece molded rubber construction offers greater comfort at a low cost. Its surface grid provides skid resistance even in wet areas and superior protection on hard surfaces such as home and garden use. It also features adjustable hook-and-loop straps that ensure a secure fit.

**Order No.** 7101


**CONTOUR KNEE PADS**

**ECONOMY CONTOUR KNEE PAD**

Non-slip design

Lightweight and low-profile, our 1/2" outer foam rubber design allows for greater comfort with flexible spring back memory. These pads are lined for extra absorption and the ribbed kneeling surface helps to minimize slippage. The 1 1/2" hook-and-loop straps add stability and adjust for a custom fit.

**Order No.** 7100-02


**CONTOUR KNEE PAD**

Designed for masonry work

This soft 1/2" foam rubber pad is contoured to the shape of the knee. It's designed to allow easy side-to-side movement on hard surfaces and can be used in wet environments. The contoured shape allows the 1 1/2" hook-and-loop straps to be worn more loosely for greater comfort. Perfect for laying brick and other masonry work.

**Order No.** 7100





## GEL KNEE

Designed for abrasion-resistant applications and all-day wear

This neoprene knee pad features a soft, flexible, and abrasion-resistant riveted poly cap for added durability, and a silica gel pad insert for maximum comfort. A 2"-wide strap features a hook-and-loop closure that ensures a snug fit.

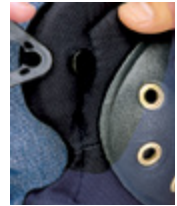
**Order No. 6986-GEL**



## DELUXE QUICKFLEX

Designed to provide the most all-around protection. Offering the most protection available, our Deluxe QuickFlex is a completely unique knee pad. The large,  $\frac{3}{4}$ " thick pad has a hinge design that provides protection and ease of movement above and below the cap, and a wrap-around design for greater side protection. The large poly cap is molded to conform to the shape of the knee for maximum protection. The double strap system uses 1  $\frac{1}{2}$ " straps with deluxe quick-release buckles and allows for easy adjustment and a snug fit while ensuring greater stability.

**Order No. 6990**



## DELUXE COMFORT KNEE

For delicate floor protection

Maximum support, comfort, and protection are provided by EVA foam, inner PVC pads, and a neoprene back with breathing holes. The nylon material will not mark delicate flooring, while the neoprene straps are comfortable, and the hook-and-loop closures allow for an easy, adjustable fit.

**Order No. 6985**



## VALUE PLUS KNEE PAD

Designed for resistance to oily environments

The most cost-effective knee pad in dirty, dusty environments. Comes with two fully adjustable straps with hook-and-loop closure for a custom fit. The poly cap is stitched on for greater strength and won't allow particles underneath to cause discomfort. Tough polyester fabric exterior protects a high-density lightweight foam core, and the long pad provides extra comfort.

**Order No. 6999**

# BACK SUPPORT

We offer an impressive line of ergonomic products including our top-of-the-line patented Flexbak® featuring a unique three-part support system providing a custom fit and unrivaled lumbar support. Our deluxe Spanbak offers dual side closure providing abdominal support and comfort.



## FLEXBAK®

The most versatile back brace in the industry

Flexbak® helps reduce back stress and strain with a design so unique it's patented. Its three-part support is the key to a system that provides maximum back support with ease of movement. Because no two bodies are exactly the same, this 9" medical-style truss uses two internal support panels above and below the waist surrounded by an elastic third panel. These combine to produce maximum bracing without pinching or riding up. Available in four sizes. Suspenders included.

Size	Waist	Order No.
Small	26" to 36"	7115-01
Medium	36" to 48"	7115-02
Large	48" to 58"	7115-03
X Large	58" to 68"	7115-04

## SPANBAK

Detachable suspenders for added convenience

Spanbak features a two-part closing design in breathable spandex backed with rubber grip webbing to help prevent ride-up. Polyethylene plastic stays provide support and strength. This easy-care, washable belt is 8" wide and available in five sizes (S through XXL) in black. Includes detachable suspenders.

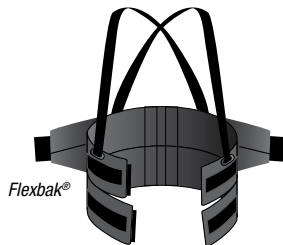
Size	Waist	Order No.
Small	33" to 36"	7190-01
Medium	37" to 40"	7190-02
Large	41" to 44"	7190-03
X Large	45" to 48"	7190-04
XX Large	49" to 54"	7190-05

## BODYBELT

Widest back support with detachable suspenders

The Bodybelt offers a serious 9" wide back support with two-part closure. The medical-style elastic back and non-elastic side panels include polyethylene plastic stays with gripping material to eliminate ride-up. It features removable, fully adjustable suspenders and is available in black in four sizes.

Size	Waist	Order No.
Small	26" to 36"	7160-01
Medium	36" to 48"	7160-02
Large	48" to 58"	7160-03
X Large	58" to 68"	7160-04







## ALL FIT BACK SUPPORT

Widest belt design with added breathability

High-performance 9 1/2" wide belt design offers full support and fit for most wearers from small to large. Comfortable neoprene pad fits center of back over spine. Breathable Spandex, vented V-pulls and front padded cushions all allow added comfort. Four polyethylene plastic stays mean greater fit. Comes in reusable zipper storage bag.

Size	Waist	Order No.
Small - Large	26" to 48"	7170



## ECONOMY BELT

Elastic back panel for increased comfort

This economical support is designed with an 8" elastic back panel, positive hook-and-loop material front panels, and 3" wide elastic V-shaped side pulls. Includes wide detachable elastic suspenders. Available in black, in four sizes.

Size	Waist	Order No.
Small	26" to 32"	7176-01
Medium	32" to 38"	7176-02
Large	38" to 47"	7176-03
X Large	47" to 56"	7176-04



## ECONOMY HI-VIZ

Hi-Viz color perfect for road work  
Offers the added safety of high-visibility green suspenders and side elastic pulls. Excellent for road work.

Size	Waist	Order No.
Small	26" to 32"	7178-01
Medium	32" to 38"	7178-02
Large	38" to 47"	7178-03
X Large	47" to 56"	7178-04



## LIFTBAK

Maximum support for all-day wear

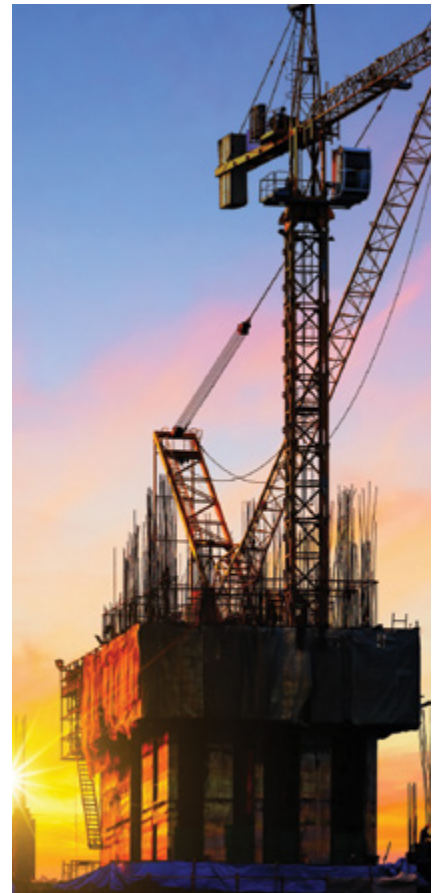
A rugged 5" belt with rigid foam that forms to the body for maximum support. Buckle and locking closure hold securely yet allows easy adjustment. Brushed lining and soft edges add to comfort and a wide 2" nylon strap provides additional support to the waterproof foam core. Its rugged nylon shell is designed for freedom of movement for easy, all-day wear.

Size	Waist	Order No.
Small	26" to 36"	7130-01
Medium	36" to 48"	7130-02
Large	48" to 58"	7130-03
X Large	58" to 68"	7130-04



## BACK SUPPORT REUSABLE BAG

Our handy zipper bag is perfect for storage. A clear plastic front for easy viewing of product and polypro breathable sides allow the belt to air out while being stored. The hanging loop allows the bag to be easily displayed. Comes as standard packaging for Spanbak, Deluxe Spanbak, Economy Belts, Economy Hi-Viz, All Fit and Body Belt.



# WRIST AND ELBOW SUPPORT



## DUAL-FLEX™

For firm wrist support  
Designed for firm support, the Dual-Flex™ contains four stays on the front and back of the wrist to limit flexion (downward) and extension (upward) movement and encourage neutral wrist position. The straps wrap completely around the wrist for added support. Easy to put on, it is lined to keep hands dry and fits both right and left hands. Available in black.

Size	Order No.
Small	7212-01
Medium	7212-02
Large	7212-03
X Large	7212-04



## RIST-RAP

For lighter wrist support with movability

An elastic wrapping for the wrist that helps support it while lifting or during other activities. Shown is Rist-Rap with Thumb. The thumb loop provides added support. Sold in pairs or individually in black. One size fits all.



Size	Color	Order No.
One Size	Black (Pair)	7211
	Black w/ thumb (Ea.)	7211-03



## DELUXE ELBOW PAD

For strong elbow support without damaging surfaces

This strong support offers abrasion-resistant flexible caps backed by soft foam padding. Fully adjustable hook-and-loop closures along with elastic sleeves provide a comfortable, custom fit. One size fits all.

Size	Color	Order No.
One Size	Black (Pair)	7104



## FLEXRIST®

For light support  
The comfortable all-around support of neoprene that can be worn on either the right or left hand. Available in black.

Size	Color	Order No.
Regular	Black	7111-01
X Large	Black	7111-02

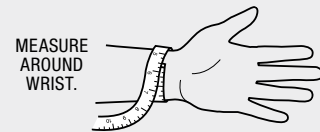


## THIN FLEXRIST®

For light support underneath work gloves  
Same great features as Flexrist®, but slightly thinner to fit easily into work gloves.

Size	Color	Order No.
One Size	Black	7311

## WRIST SUPPORT SIZING INFORMATION



X Small	4 1/2" to 5 1/2"
Small	5 1/2" to 6 1/2"
Medium	6 1/2" to 7 1/2"
Large	7 1/2" to 8 1/2"
X Large	8 1/2" to 9 1/2"

# HEAT STRESS PRODUCTS

Our cooling products are designed to protect and provide comfort for workers who must function in high-heat environments. We cater to the demands of construction workers, firefighters, welders, and factory workers. Our water-activated products are made from a unique non-toxic polymer that will keep you cool from 24 to 72 hours.



## VORTEX COOLING OR HEATING VEST

Delivering constant and adjustable cooling or heating, the Vortex Vest is especially popular for workers in confined spaces as well as foundries, steel mills, asbestos abatement, and paint baking operations. With no moving parts, the vortex tube forces a simple heat exchange to separate compressed air into hot and cold airstreams. The PVC vest delivers continuous cooled or heated air through its perforated, inner lining. This vest offers full range of motion and can be worn under protective clothing.



Description	Order No.
Vest w/ Plastic Cooler, Std	8300
Vest only, Std	8300-01
Vest only, XL, 200 lbs. +	8300-01L
Plastic Vortex Cooler w/ Snap Tite Plug	8300-95
Plastic Vortex Heater w/ Snap Tite Plug	8310-95
Metal Vortex Heater/Cooler w/ Snap Tite Plug	8300-90
Metal Vortex Cooler w/ Snap Tite Plug, 25 CFM	9991-25

**YouTube**  
Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



## LOW PROFILE VORTEX COOLING VEST

This air vest is designed to afford cooling to personnel in circumstances where air conditioning is not feasible. The vest connects to any existing clean compressed air source. Engineered jets keep the wearer continuously cooled with refrigerated air. The airflow enhances the body's natural evaporative cooling. The airflow additionally keeps the grit, dust, and fibers out. Available with a vortex cooler for additional cooling effect.



Order No. 8450

**YouTube**  
Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

### VEST HOSE

Description	Order No.
Air Source Hose 50' w/ Snap Tite Coupler, plug	8400-50
Air Source Hose 100' w/ Snap Tite Coupler, plug	8400-100



## STANDARD VEST FOR COOLING INSERTS

Ideal for under HazMat suits and other protective clothing. This vest features four pockets for inserts, zipper front, and adjusts with hook-and-loop over shoulder and side straps to help achieve a snug fit. Added comfort with 2 layers of 100% cotton. Royal Blue. (Inserts not included)

Size	Weight	Chest	Order No.
Large	100-175 lbs.	34" to 44"	8413-03
X Large	175-250 lbs.	46" to 48"	8413-04
XX Large	250 lbs. +	50" to 52"	8413-05

**YouTube**  
Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

### FEATHER ICE INSERT

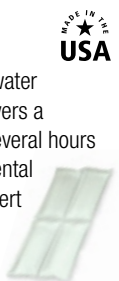
Freezes like ice but stays cold up to three times as long. Reusable packs deliver a constant temperature of below 50° F. The pliable powder conforms to your body when frozen. Non-toxic. Lightweight. 4/pkg.



Order No. 8413-11

### PHASE CHANGE INSERT

Safe, non-toxic PCM (Phase Change Material) freezes in a freezer or ice water (perfect for use on the job site). Delivers a constant temperature of 65° F for several hours depending on application, environmental and physiological variables. Each insert measures 6" x 14" and weighs just 16 oz. 4/pkg.



Order No. 8414-11





## HIGH-VIZ COOLING VEST

This vest is ideal for wearing where Hi-Viz safety apparel is needed in hot working conditions. It features four pockets for inserts, a zippered front, hook and loop adjustment straps over the shoulders, and side straps to help achieve a perfect fit. Added comfort is provided with 2 layers of 100% cotton. Flame-resistant. Available in Hi-Viz yellow color. Meets ANSI 107-2020  
NOTE: Inserts not included

Size	Weight	Chest	Order No.
Large	100-175 lbs.	34" to 44"	8413-03HV
X Large	175-250 lbs.	46" to 48"	8413-04HV
XX Large	250 lbs. +	50" to 52"	8413-05HV



## STANDARD COOLING VEST

Our Standard Cooling Vest is lightweight and when soaked in water for 5 to 9 minutes, provides all-day cooling comfort. Snap closures allow for quick-access. Available in royal blue in 3 sizes, made from 100% cotton, and is hand washable.

Size	Weight	Chest	Order No.
Standard	100-175 lbs.	34" to 44"	8401-03
X Large	175-250 lbs.	46" to 48"	8401-04
XX Large	250 lbs. +	50" to 52"	8401-05

**YouTube**  
Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



## STANDARD COOLING WRAP

Our water-activated lightweight and comfortable wrap can be tied around the neck or forehead for all-day cooling comfort. Ideal for all types of working environments and outdoor recreation. Available in royal blue in 100% cotton and is hand washable.

Order No. 8405

**YouTube**  
Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



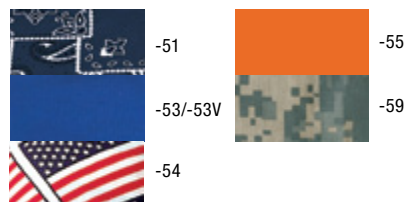
## COOL OFFS

Keep cool all-day long with our dual-use Cool Offs. Quilted into four sections for an even distribution of hydration material. Just soak in cold water for 5 to 9 minutes. The cooling crystals go to work to keep you cool for days. Lightweight and comfortable, 38" long (longest on market). It can be worn around neck or tied as a headband. Our unique button-hole closure allows for a secure fit. The outer shell is 100% cotton and comes in 6 colors and patterns.

**YouTube**  
Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



Colors and Patterns	Order No.
Cowboy Blue	8405-51
Royal Blue, Velcro	8405-53V
American Flag	8405-53
Orange	8405-54
Digital Camouflage	8405-55



## DELUXE NECK COOLING WRAP

Stay extra cool by soaking wrap in the cooler or chill in the freezer. This royal blue wrap is lightweight, comfortable, and low-profile. The 3" width band size increases cooling effect. Hook-and-loop closures keep this band in place. 100% cotton. Hand washable.

Order No. 8405-01

**YouTube**  
Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)





## COOLING SKULL CAP

These four disks are lightweight and low-profile, but after soaking for 5 to 9 minutes, you can enjoy a cooling effect for up to 72 hours. The contoured design allows for a great fit and attaches with hook-and-loop tabs into any type of hat, including hard hats.

**Order No. 8411-01**



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



## HARD HAT COOLING LINER

Simply soak this liner for 5 to 9 minutes in cold water and feel instant relief that lasts all-day. Attaches to the hard hat harness with an easy elastic/hook-and-loop closure. One size fits all. Liner is 100% cotton and comes in royal blue. Hand washable.

**Order No. 8407**



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



# HIGHLY SKILLED

MAGALI CÔTÉ

ROPE ACCESS SUPERVISOR, WELDER, MILLWRIGHT, HARD HAT DIVER

//  
I've worked on hydro dams, mines, huge industrial projects. I need to perform and I need my tools to perform, too.  
//

Magali Côté's never lived a boring day in her life. The freewheeling Jane of all Trades has half a dozen job titles, a persistent need to be under water, and an Instagram account revealing a life of adventure in some of the world's most extreme environments.

Professionally, she works as a commercial diver, rope access supervisor, welder, and millwright - dangling from bridges, cutting and grinding the sides of hydro dams, and solving problems at remote northern job sites where the sun never sets. On her days off she sets free-diving records and takes spontaneous 30-hour road trips to San Diego on her Triumph.

While crafting a career to align with our passions has become increasingly common, Magali's taken the concept, molded it to perfection and buffed it to a lustrous shine. She lives by her motto, "If somebody made it, I can fix it," and believes that with the right tools and attitude, anything is possible and every job can be made easier.

"I got to where I am now by always saying yes," she says when explaining how she developed her vast array of skills and credentials. "When I was five, my dad gave me a set of wood chisels and that's how I realized I loved working with my hands. When I got older and left home, he gave me my first toolbox along with the philosophy that life is all about adding new tools to your box."

Today, her toolboxes are as loaded as her work schedule. But when it's time to get down to business, her needs are simple: "For me, tools should be practical and powerful," she explains. "Whether I'm hanging off the side of a refinery or welding 3000 feet underground in a potash mine, I need tools I can count on, they need to be an extension of my hands."

Besides having the right equipment and experience, Magali regards her grit and creativity as the real drivers of her success. "I look at these huge job sites like they're jungle gyms where I need to use my brain to get the job done right and done safely," she says. "And I've learned a lot about myself my constantly having to tolerate such extreme conditions."

While some might think being a woman in such a male-dominated industry might be a challenge, Magali confidently explains that it isn't: "I'm a champion of women in this industry and there's nothing a man can do that we can't do. My advice for women starting in this field is to do your best, stay consistent, keep doing your thing and you'll blend right in."

 **WALTER**  
Achieve Greatness™





# 04

## EYE PROTECTION












WALTER eye protection solutions help workers see clearly, for longer. Our protective eyewear is made from high-quality materials made to keep users safe. Choose from a wide array of models with different finishes for the application at hand in addition to a variety of lens cleaning options for the ultimate eye protection in any environment.

## SAFETY GLASSES

ARCONE® safety glasses provide protection and comfort and are available in many different styles to suit your needs and budget.

















Each style is lightweight and durable. Some styles come with IR3 and IR5 lenses for cutting and brazing. Meets ANSI Z87 or Z87+ safety standards and CSA Z94.3.

Lens Selection Guide		Light Transmission Percentage
	<b>CLEAR</b> Allows maximum light transmission. Suitable for indoor or low-light conditions.	<b>91%</b>
	<b>INDOOR/OUTDOOR</b> Offers protection from bright indoor lighting or some sunlight.	<b>50%</b>
	<b>SMOKE</b> Excellent tint for all-around outdoor use, this is a typical sunglass tint.	<b>15%</b>
	<b>AMBER</b> Perfect for low or flat-light conditions both inside and outside.	<b>80%</b>
	<b>MOCHA</b> Excellent filter for blue light and outside sunlight conditions.	<b>22%</b>
	<b>CHOCOLATE</b> Excellent filter for blue light and outside sunlight conditions.	<b>22%</b>
	<b>SILVER MIRROR</b> An additional filter reducing outdoor glare. Ideal for sunny conditions.	<b>16%</b>
	<b>COLORED MIRROR</b> Mirror surface over a smoke lens diminishes glare and absorbs outdoor light. Ideal for sunlight.	<b>16%</b>
	<b>IR LENSES</b> Use when infrared protection is required, typically in cutting or brazing applications. Consult safety director for shade 3 or 5 operation.	

### SE-1000 SERIES

The SE-1000 Series proves that quality and performance can come in an economical package. Offers superior eye protection and ultra-lightweight face coverage. Wide fit. Available in multiple lens/finish configurations. Blocks up to 99.9% UV. Meets Z87.1 and CSA Z94.3.



Order No.	Frame Color	Lens Type	Finish	Coating	Anti-Scratch
SE-1000	Clear	 Clear	 None	Hard-coated	✓
SE-1001	Gray	 Smoke	 Gray Mirror	Hard-coated	✓
SE-1002	Tan	 Indoor/Outdoor	 I/O Mirror	Hard-coated	✓
SE-1003	Blue	 Smoke	 Blue Mirror	Hard-coated	✓
SE-1004	Purple/Blue	 Smoke	 Purple/Blue	Hard-coated	✓
SE-1005	Amber	 Amber	 None	Hard-coated	✓
SE-1006	Smoke	 Smoke	 None	Hard-coated	✓
SE-1007	Clear	 Mocha	 None	Hard-coated	✓



## SE-2000 SERIES

The SE-2000 Series offers added comfort features such as rubber tips as well as diopter models. The SE-2000 series also comes in various lens/finish combinations, including IR5 for cutting & brazing operations. Blocks up to 99.9% UV. Meets Z87.1 & CSA Z94.3.



Order No.	Frame Color	Lens Type	Finish	Coating	Anti-Scratch	Strength
SE-2000	Clear	Clear	None	Uncoated		N/A
SE-2001	Gray	Smoke	Silver Mirror	Hard-coated	✓	N/A
SE-2002	Tan	Indoor/Outdoor	I/O Mirror	Hard-coated	✓	N/A
SE-2003	Blue	Smoke	Blue Mirror	Hard-coated	✓	N/A
SE-2004	Purple/Green	Smoke	Purple/Green	Hard-coated	✓	N/A
SE-2005	Amber	Amber	None	Hard-coated	✓	N/A
SE-2006	Smoke	Smoke	None	Hard-coated	✓	N/A
SE-2007	Mocha	Mocha	Brown Mirror	Hard-coated	✓	N/A
SE-2008	Smoke	IR5*	None	Hard-coated	✓	N/A
SE-2009	Smoke	IR3*	None	Hard-coated	✓	N/A
SE-2100	Clear	1.0 Diopter Bifocal	None	Hard-coated	✓	+1.0
SE-2150	Clear	1.5 Diopter Bifocal	None	Hard-coated	✓	+1.5
SE-2200	Clear	2.0 Diopter Bifocal	None	Hard-coated	✓	+2.0
SE-2250	Clear	2.5 Diopter Bifocal	None	Hard-coated	✓	+2.5
SE-2300	Clear	3.0 Diopter Bifocal	None	Hard-coated	✓	+3.0

*\*Do not wear IR3 and IR5 while driving*

## SE-7000 SERIES

The SE-7000 series features added ear and nose comfort as well as ample eye and face coverage; suitable for safety use as well as everyday wear. The SE-7000 series comes in multiple lens/finish combinations including IR3 and IR5, as well as silver, blue, and red mirror. Blocks up to 99.9% UV. Meets Z87.1 & CSA Z94.3.



Order No.	Frame Color	Lens Type	Finish	Coating	Anti-Scratch
SE-7000	Black Gloss	Clear	Anti-fog	Hard-coated	✓
SE-7001	Black Gloss	Smoke	Silver Mirror	Hard-coated	✓
SE-7002	Black Gloss	Indoor/Outdoor	I/O Mirror	Hard-coated	✓
SE-7003	Black Gloss	Chocolate	Blue Revo Mirror	Hard-coated	✓
SE-7004	Black Gloss	Mocha	Red Revo Mirror	Hard-coated	✓
SE-7008	Black Gloss	IR5*	None	Hard-coated	✓
SE-7009	Black Gloss	IR3*	None	Hard-coated	✓

*\*Do not wear IR3 and IR5 while driving*

**ARCONE®**





# SAFETY GOGGLES

*ARCONE® safety goggles have been designed with both safety and comfort in mind, available in a variety of styles, colors, and lens options.*

All goggles also come with a pouch that doubles as a lens cleaner.  
Meets ANSI Z87 safety standards.

## ACTION



The Action Goggle provides additional protection with its adjustable strap and interior pads that provide all-day comfort and an extra seal around the eyes.

Order No.	Frame Color	Lens Type	Finish	Coating
G-ACT-A1101	Flat Black	 Clear	 Silver Mirror	Hard-coated
G-ACT-B1204	Black Gloss	 Smoke	 Blue/Purple Revo	Hard-coated



## CORONADO







A clean, low-cut padding around the eyes increases protection as well as comfort. Removable temples give way to a strap should you desire a tighter fit. Looking great has never been safer.

Order No.	Frame Color	Lens Type	Finish	Coating
G-COR-A1301	Flat Black	 IR3	 Mirror finish	Hard-coated



## THE FLY

The Fly is easily recognizable by the large round viewing area. Whether you are outdoors or working in an environment where you need full coverage, the Fly is your perfect choice.

Order No.	Frame Color	Lens Type	Finish	Coating
G-FLY-A1101	Flat Black	 Clear	 Silver Mirror	Hard-coated
G-FLY-B1202	Black Gloss	 Smoke	 Yellow/Orange Mirror	Hard-coated
G-FLY-A1301	Flat Black	 IR3	 None	Hard-coated



# SAFETY GOGGLES AND ACCESSORIES

## HOLLYWOOD

Hollywood goggles provide a hip style without compromising comfort. Thick foam completely surrounds the eyes ensuring no penetration. Removable temples give way to a strap should you desire a tighter fit. Diopter inserts available from 1.0 to 3.0 in half-shade increments.



Order No.	Frame Color	Lens Type	Finish	Coating
G-HOL-B1205	Black Gloss	● Smoke	■ Blue/Green Mirror	Hard-coated
G-HOL-A1501	Flat Black	● IR5	■ Mirror Finish	Hard-coated

## HOLLYWOOD DIOPTERS

Order No.	Diopter
D-HOL-1.0	+1.00 Strength
D-HOL-1.5	+1.50 Strength
D-HOL-2.0	+2.00 Strength
D-HOL-2.5	+2.50 Strength
D-HOL-3.0	+3.00 Strength



## G-CLIP

The G-Clip is another eyewear option that provides IR protection and comfort for cutting and brazing. The G-Clip can be used to protect against the sun's infrared. To use, clip these removable lenses onto regular eyeglasses.



Order No.	Lens Type	Finish	Coating	Anti-Scratch
G-CLIP-05	IR5	None	Hard-coated	✓



# LENS CLEANING

*ALLEGRO's quick-dry, alcohol-based, anti-fog, anti-static lens care solutions provide everything you need to effectively clean and care for your eyewear, helping you and your team work safely and efficiently. From pre-moistened lens cleaning wipes to lens cleaning stations, our wide assortment is available in a wide variety of packaging options to meet your site's specific needs.*



Order No. 0350-20PPD

Order No. 0350-200PU

Order No. 0350-20PP







## EYEWEAR CLEANING WIPES

Perfect for cleaning eyewear, these 100 individually wrapped pre-moistened wipes feature anti-fog, anti-static, silicone-free cleaning. Excellent on glass or polycarbonate lenses, the large 5" x 8" wipes are stored in a wall-mounted cardboard dispenser. Dimensions: 4 3/4" w x 2 5/8" d x 9" h



Description	Order No.
100/box	0350
Bulk (1000)	0350-1000



## BUCKET EYEWEAR CLEANING WIPES

This easy-to-use container offers a bulk pack of 200 individually wrapped lens cleaning towelettes in a 6" x 7" clear reusable plastic globe. Can be table- or wall-mounted.



Description	Order No.
200/bucket	0350-20



## CANISTER LENS WIPES

Easy-to-use canister design allows for quick access to wipes. 100 pre-moistened 5" x 8" wipes. Canister dimensions: 3 3/4" w x 6 1/2" h



Description	Order No.
100/canister	0353



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



## LARGE DISPOSABLE CLEANING STATION

Designed for busy work sites, this disposable station features a 16 oz. anti-static, anti-fog, non-silicone lens cleaner dispenser and 1200 non-abrasive, low-lint 5" x 8" tissues in a heavy-duty, recyclable cardboard tabletop or wall-mounted dispenser. Dimensions: 8 3/4" w x 5" d x 12 3/4" h



Description	Order No.
1200/container	0355



## SMALL DISPOSABLE CLEANING STATION

Features 600 easy-dispensing non-abrasive, low-lint 5" x 8" lens tissues and an 8 oz. anti-static, anti-fog, non-silicone lens cleaner that removes dirt and oil from glasses and lenses. The heavy-duty, recyclable cardboard dispenser may be mounted to the wall or used as a tabletop dispenser. Dimensions: 7" w x 5 1/8" d x 8 1/4" h



Description	Order No.
600/container	0355-01

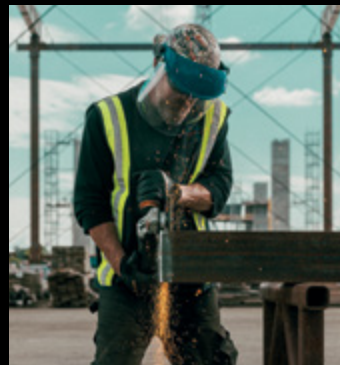


## PLASTIC DISPOSABLE CLEANING STATION

This attractive disposable plastic container dispenses 760 soft, non-abrasive, low-lint tissues and 8 oz. anti-static, anti-fog, non-silicone cleaning liquid. Wall mounts with either double-sided tape (included) or mounting holes. Dimensions: 4 3/4" w x 3 1/4" d x 12" h



Description	Order No.
760/container	0351



# BUILT TO LAST

**ROB REID**  
IRONWORKER & GENERAL FOREMAN

“  
Everything I built  
is still standing. It’s  
an accomplishment.  
”

The job of an ironworker is both physically demanding and often dangerous. “You need a little more backbone than most to do the crazy job that we do.”

Meet Rob Reid, a proud ironworker for over 20 years.

Rob has always been drawn to the metalworking industry. At the age of 17, he was already working as a steel fabricator building plywood mills. However, spending the scorching summer months in the shop wasn’t for him. His solution: get out on the field and start building.

Throughout the years, Rob contributed to the construction of several infrastructure mega projects. In fact, one of the things he likes the most about his job is knowing that the fruit of his labor will most likely pass the test of time and remain standing for many more generations.

Rob has recently worked on the world’s longest cable-stayed bridge connecting two countries: The Gordie Howe Bridge. It is over 120ft wide and over 780ft high. The Bridge between Windsor, Ontario, and Detroit, Michigan will be among the top five longest bridges in North America.

We asked Rob about the challenges of working at great heights and having cranes and pieces above his head. “You can’t think about the danger. It becomes an everyday thing!” Rob says. “Safe tools allow me to do a better job, so I can focus on the task at hand. We already face a lot of hazards on-site, so safety is key.”

If you need help with something on the site, Rob is your go-to guy. He’s always there to try to make everyone’s job easier by sharing his tricks of the trade and tips for working more efficiently. And he does so with the best of attitudes: “I believe I’m a pretty easygoing guy. I’m just trying to make everybody’s day go by easier. There is no sense in bringing the grouchy to work, so I’m always smiling and laughing.” When asked what sets him apart from his coworkers, without hesitation, he said: “experience.”

“I’m just proud to be an ironworker.”

Rob has no intention of stopping or retiring anytime soon. “I don’t see an end yet, I just keep going”. Just like every structure, he works on, Rob is built to last.



# 05

## AIR SAMPLING



# AIR SAMPLING PRODUCTS

*Working in atmospheres likely to contain dangerous particulates requires reliable constant air monitoring. Keep your team safe with ALLEGRO's industry-leading air sampling products that provide continuous monitoring to keep workers safe from mold, asbestos, lead and other particulates.*

## JARLESS SAMPLING PUMP

Lightweight and low maintenance, this rotary vane sampler has a sampling range of 0-30 LPM and is an excellent resource for sampling asbestos (25mm cassettes), lead (37mm cassettes) and mold. This sampler is the best value in the market today, meets OSHA and AHERA standards and comes complete with six feet of vinyl tubing, inline filters, rubber feet, for stability, handle, and built-in switch. Optional adjustment aluminum stand. Weight: 10 lbs.



Description	Order No.
T-101 Jarless Sampling Pump with Stand	9801
T-101 Jarless Sampling Pump without Stand	9801-88

## FLOW METER

Our flow meter is separate from the pump to allow the user to set the flow for more than one pump with the same meter. Features an expanded scale and includes necessary adapters for use with particulate cassettes. 0-20 LPM.

Order No. 9804-03



### 1 LEAD CASSETTE

This 37mm, MCE cassette is .8µm mixed cellulose ester and is specifically designed for lead sampling. Note: Use with 9804-19 adapter

### 2 TEM CASSETTE

This 25mm, .45µm + -5.0µm cassette is designed for asbestos final clearance testing. The cassettes incorporate a 2" static conductive extension cowl and meet all applicable standards.

### 3 PCM CASSETTE

A 25mm cassette with .8µm pore size for asbestos sampling. The high-quality cassette incorporates a 2" cowl and meets stringent quality standards.

Name	Count	Order No.
Lead Cassette	50/box	9804-14
TEM Cassette	50/box	9804-17
PCM Cassette	50/box	9804-16







# 06

## VENTILATION









The breadth of the ALLEGRO ventilation blower line has set it apart from the competition for over three decades! Made from high-quality products, our fully certified blowers are the safest and most reliable solutions for any type of work environment or application while adhering to the OSHA standard.

**Features**

- ▷ Most comprehensive product line on the market!
- ▷ Solutions designed for a wide range of applications and industries
- ▷ Industry-leading innovation
- ▷ CE-certified and CSA-approved options
- ▷ Made from high-quality, reliable, and durable materials
- ▷ Stackable products for ease of storage
- ▷ Lightweight solutions
- ▷ E-version options wired to meet international standards
- ▷ Options designed to fit American Petroleum Institute (API) standard tanks

**Benefits**

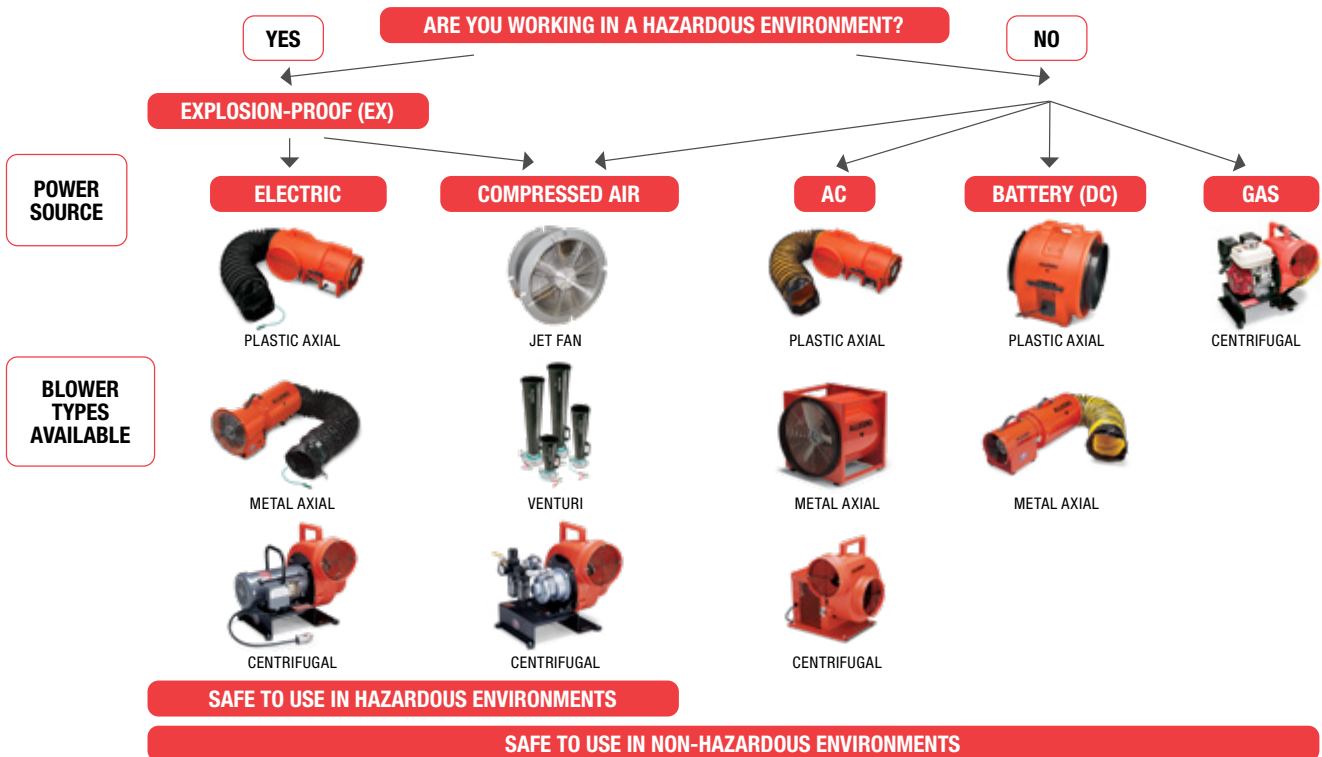
- ▷ Longer blower life helps lower total cost of ownership
- ▷ Easy transport to and from the job site
- ▷ Complete blower systems ensure you have everything you need to keep your space well ventilated
- ▷ Expert technical support and service

	About	Features	When To Use
<b>AXIAL</b> 	<ul style="list-style-type: none"> <li>Designed for high airflow with lower pressure*</li> <li>Plastic and metal versions offered</li> <li>Can be used with in-line axial booster blowers as a velocity accelerator for longer duct distances</li> </ul>	<ul style="list-style-type: none"> <li>Lightweight</li> <li>Low-cost</li> </ul>	<ul style="list-style-type: none"> <li>When portability and cost are major factors</li> <li>When working in smaller confined spaces</li> <li>Best for short distances with minimal ducting and bends</li> </ul>
<b>CENTRIFUGAL</b> 	<ul style="list-style-type: none"> <li>Uses a "squirrel cage" design creating high amounts of CFM with very high air pressure*</li> <li>They are typically heavier than axial blowers</li> </ul>	<ul style="list-style-type: none"> <li>Air does not cross over motor, minimizing contamination risk</li> </ul>	<ul style="list-style-type: none"> <li>Best for moving air longer distances, using long or multiple lengths of duct and more 90° bends</li> </ul>
<b>VENTURI</b> 	<ul style="list-style-type: none"> <li>Operates with compressed air being pushed through a pneumatic hose</li> <li>Generates very high amount of CFM*</li> <li>No fan or moving parts</li> </ul>	<ul style="list-style-type: none"> <li>Low maintenance</li> <li>Designed to fit American Petroleum Institute (API) standard tanks</li> </ul>	<ul style="list-style-type: none"> <li>Best for tanks</li> <li>Used for pushing or removing air from tanks or other large areas to rapidly remove gases prior to entry</li> </ul>
<b>JET FANS</b> 	<ul style="list-style-type: none"> <li>Operate with compressed air being pushed through a pneumatic air hose</li> <li>Generates very high CFM*</li> </ul>	<ul style="list-style-type: none"> <li>Designed to fit American Petroleum Institute (API) standard tanks</li> </ul>	<ul style="list-style-type: none"> <li>Best for tanks or other large areas</li> <li>Used for pushing or removing air from tanks or other large areas to rapidly remove gases prior to entry</li> </ul>

\*When selecting a blower, all ventilators have two characteristics to consider:

1. Air pressure – Force of air volume is measured by inch of water gauge (WG) 2. Airflow – Air volume delivered and measured by cubic feet per minute (CFM)

## HOW TO CHOOSE YOUR ALLEGRO BLOWER



Scan this code to access our Blower CFM calculator.



**VENTILATION AIR EXCHANGE CHART**

ALLEGRO Industries recommends air exchange at a rate of at least 20 times per hour.

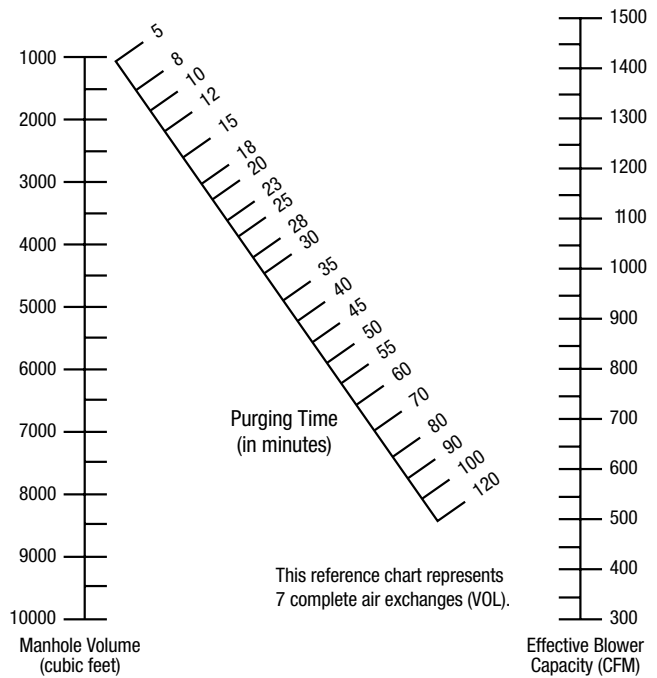
Confined Space Volume (Cubic Feet)	Blower Cubic Feet Per Min. (CFM) Output Needed*
1000	333
2000	667
3000	1000
4000	1333
5000	1667
6000	2000
7000	2333
8000	2667
9000	3000
10000	3333

\*Take into account 90° bends of ducting. See specifications under each blower description.



**USE OF ALIGNMENT CHART:**

1. Place straightedge on manhole volume (left scale).
2. Place other end of straightedge on blower capacity (right scale).
3. Read required purging time, in minutes, on diagonal scale.
4. If two blowers are used, add the two capacities, then proceed as above.
5. When toxic gases are encountered, increase purging time 50%.
6. Effective blower capacity is measured with one, or two 90° bends in standard 15-foot blower hose. See chart.



**HAZARDOUS LOCATION INFORMATION**

Reference: Explosion-Proof Blowers: 9503, 9509-01, 9513-05, 9514-05, 9514-06, 9515-01, 9515-50EX, 9525-01, 9525-50EX, 9538, 9538-15, 9538-25, 9538-50, 9539-12EX, 9539-12EXI, 9548, 9548-15, 9548-25, 9558, 9558-15, 9558-25\* National Electrical Code (NEC) A hazardous location is an area where the possibility of explosion and fire is created by the presence of flammable gases, vapors, dusts, fibers, or flyings. NOTE: Fibers and flyings are not likely to be suspended in the air, but can collect around machinery or on lighting fixtures and where heat, a spark, or hot metal can ignite them.

**CLASS I**  
(NEC-500-5)  
Those areas in which flammable gases or vapors may be present in the air in sufficient quantities to be explosive or ignitable.

**CLASS II**  
(NEC-500-6)  
Those areas made hazardous by the presence of combustible dust.

**CLASS III**  
(NEC-500-7)  
Those areas in which there are easily ignitable fibers or flyings present, due to type of material being handled, stored, or processed.

**DIVISION I**  
(NEC-800-5, 6, 7)  
In the normal situation, hazard would be expected to be present in everyday production operations or during frequent repair and maintenance activity.

**DIVISION 2**  
(NEC-500-5, 6, 7)  
In the abnormal situation, material is expected to be confined within closed containers or closed systems and will be present only through accidental rupture, breakage or unusual faulty operation.

**GROUPS**  
(NEC-500-3)  
The gases and vapors of Class I locations are broken into four groups by the code: A, B, C, and D. These materials are grouped according to the ignition temperature of the substance, its explosion pressure and other flammable characteristics. The dust locations of Class II are designated E, F, and G. These groups are classified according to the ignition temperature and the conductivity of the hazardous substance.  
*NOTE: For detailed group descriptions refer to NEC-500-3.*

- TYPICAL CLASS I LOCATIONS**
- Petroleum refineries and gasoline storage and dispensing areas.
  - Industrial firms that use flammable liquids in dip tanks for parts cleaning or other operations.
  - Petrochemical companies that manufacture chemicals from gas and oil.
  - Dry cleaning plants where vapors from cleaning fluids can be present.
  - Companies that have spraying areas where they coat product with paint or plastics.
  - Aircraft hangers and fuel servicing areas.
  - Utility gas plants and operations involving storage and handling or liquefied petroleum gas or natural gas.

- TYPICAL CLASS II LOCATIONS**
- Grain elevators, flour and feed mills.
  - Plants that manufacture, use or store magnesium or aluminum powders.
  - Plants that have chemical or metallurgical processes, producers of plastics, medicines, and fireworks, etc.
  - Producers of starch or candies.
  - Spice-grinding plants, sugar plants, and cocoa plants.
  - Coal preparation plants and other carbon-handling or processing areas.

- TYPICAL CLASS III LOCATIONS**
- Textile mills, cotton gins, cotton seed mills, and flax processing plants.
  - Any plant that shapes, pulverizes, or cuts wood and creates sawdust or flyings.

\* WARNING: Explosion-proof blowers must be used with statically conductive ducting.

# AXIAL PLASTIC BLOWERS

ALLEGRO Axial Plastic blowers are lightweight, portable, and durable units designed for use in rugged environments. They are made from corrosion-, UV- and chemical-resistant “safety orange” colored polyethylene for high visibility. They feature a molded-in carry handle for easy portability to and from the job site. All units are compact, super quiet, and provide the necessary ventilation to keep your workers comfortable, all while keeping them safe.



SCAN TO WATCH THE BLOWER IN ACTION



SCAN TO WATCH VIDEO



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



## 8" AXIAL AC PLASTIC MINI-PAK BLOWER

This new all-in-one blower w/ ducting is the lightest and shortest in the industry. The high-output compact design stores ducting inside the blower housing for an all-in-one unit for ease of operation, transportation, and storage. Available with either 15' or 25' of ducting.

*NOTE: A separate 8" duct (not included) can be attached to the intake side of the blower to draw air.*

### AC MODEL

Free Air	One 90° Bend	Two 90° Bends
791 CFM	703 CFM	621 CFM
19 lbs.	1/3 hp	115V-230V AC, 50/60 Hz

Description	Order No.
8" Axial AC Plastic Mini-Pak Blower and 15' Ducting 19 lbs.	9532-15
	9532-15E

Free Air	One 90° Bend	Two 90° Bends
760 CFM	674 CFM	602 CFM
23 lbs.	1/3 hp	115V-230V AC, 50/60 Hz

Description	Order No.
8" Axial AC Plastic Mini-Pak Blower and 25' Ducting 23 lbs.	9532-25
	9532-25E

## 8" AXIAL AC PLASTIC BLOWER

This compact unit features a polypropylene nine-blade fan, a steel/powder-coated grill, and carry handle that is molded into the blower. The bottom enclosure ensures safe and convenient storage of electrical components.

### AC MODEL

Free Air	One 90° Bend	Two 90° Bends
831 CFM	709 CFM	586 CFM
17 lbs.	1/3 hp	115V-230V AC, 50/60 Hz

Description	Order No.
8" Axial Axial AC Plastic Blower without Canister	9533
	9533-E

### DC MODEL

This unit features a polypropylene nine-blade fan, a steel/powder-coated grill. The bottom enclosure ensures safe and convenient storage of electrical components.

Free Air	One 90° Bend	Two 90° Bends
816 CFM	526 CFM	442 CFM
17 lbs.	1/4 hp	12V DC

Description	Order No.
8" Axial DC Plastic Blower without Canister	9536



### EXPLOSION-PROOF MODEL

This blower also features an electric, explosion-proof, single-phase motor that is UL-listed and CSA-certified and includes a NEMA-rated 115V plug for use with explosion-proof socket (sold separately). The bottom enclosure ensures safe and convenient storage of electrical components. Meets Class I, Divisions 1 and 2, Groups C and D and Class II, Divisions 1 and 2, Groups F and G Hazardous Location Requirements.\*

Free Air	One 90° Bend	Two 90° Bends
900 CFM	650 CFM	625 CFM
20 lbs.	1/3 hp	115V AC, 60 Hz

Description	Order No.
8" Axial Explosion-Proof Plastic Blower without Canister	9538
	9538-E



Complies with the relevant European product safety directives.

Blowers offered in 220V/50 Hz. Does not meet the CSA requirements for the following product safety standards: Fans and Ventilators, C22.2 No. 113. For more information call Customer Service at 800-622-3530.

Meets the CSA requirements for the following product safety standards: Fans and Ventilators, C22.2 No. 113

CFM calculated using 15' x 8", 12" or 16" ducting based on the diameter of the blower. Free Air calculated at blower.

\* See Hazardous Location Information on page 601. Warning: Explosion-proof blowers must be used with statically conductive ducting.

\*\* Explosion-Proof Blowers require an explosion-proof socket. See page 624.





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## 8" AXIAL AC PLASTIC BLOWER WITH CANISTER & DUCTING

This versatile system features our 8" Axial blower with your choice of ducting in our regular-sized canister. This lightweight unit is designed with the quick-connect clipping system which allows workers to attach the canister, tools-free, to the input side for powerful extraction or output side for ventilation. The ducting stores conveniently within the canister. Special design features include blower and canister built-in carry handles.

- ▷ Available with 15', 25', or 50' ducting
- ▷ Tool-free quick-connect clipping system for the canister
- ▷ Built-in on/off switch
- ▷ Safety Orange™ color for easy on-site visibility

### AC MODEL

Free Air 831 CFM	One 90° Bend 709 CFM 1/3 hp	Two 90° Bends 586 CFM 115V-230V AC, 50/60 Hz
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Description	Order No.	
8" Axial AC Plastic Blower with Compact Canister and 15' Ducting - 25 lbs.	9533-15	
	9533-15E	
8" Axial AC Plastic Blower with Compact Canister and 25' Ducting - 30 lbs.	9533-25	
	9533-25E	
8" Axial AC Plastic Blower with Canister and 50' Ducting - 40 lbs.	9533-50	
	9533-50E	

### DC MODEL

Free Air 816 CFM	One 90° Bend 526 CFM 1/4 hp	Two 90° Bends 442 CFM 12V DC
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Description	Order No.
8" Axial DC Plastic Blower with Compact Canister and 15' Ducting - 25 lbs.	9536-15
8" Axial DC Plastic Blower with Compact Canister and 25' Ducting - 30 lbs.	9536-25
8" Axial DC Plastic Blower with Canister and 50' Ducting - 38 lbs.	9536-50

## 8" AXIAL EXPLOSION-PROOF PLASTIC BLOWER WITH CANISTER & DUCTING

This unit features a polypropylene nine-blade fan and a steel/powder-coated grill. The bottom enclosure ensures safe and convenient storage of electrical components.

- ▷ Electric, explosion-proof, single-phase motor (UL-listed, CSA-certified)
- ▷ NEMA-rated 115V plug
- ▷ Quick-connect clipping system for tools-free attachment of canister
- ▷ Powerful extraction (input side) or ventilation (output side)
- ▷ Meets Hazardous Location Requirements: Class I, Divisions 1 and 2, Groups C and D, Class II, Divisions 1 and 2, Groups F and G

Free Air 900 CFM 20 lbs.	One 90° Bend 650 CFM 1/3 hp	Two 90° Bends 625 CFM 115V AC, 60 Hz
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Description	Order No.	
8" Axial Explosion-Proof Plastic Blower with Compact Canister and 15' Statically Conductive Ducting - 31 lbs.	9538-15	
	9538-15E	
8" Axial Explosion-Proof Plastic Blower with Compact Canister and 25' Statically Conductive Ducting - 36 lbs.	9538-25	
	9538-25E	
8" Axial Explosion-Proof Plastic Blower with Canister and 50' Statically Conductive Ducting - 46 lbs.	9538-50	
	9538-50E	



## 8" AXIAL AC AND DC PLASTIC BLOWER SYSTEM WITH MVP

The Complete Ventilation System includes everything you'll need for your confined space site. Systems include:

- ▷ 8" lightweight plastic blower, duct canister with 15' of ducting
- ▷ Manhole Ventilation Passthu (MVP), with 6' of ducting

Description	Order No.	
8" AC Plastic Blower System with 8" MVP	9520-33M	
8" DC Plastic Blower System with 8" MVP	9520-36M	USA
8" AC EX-Proof Plastic Blower System w/ 8" Ex-Proof MVP (9533-15 Blower)	9520-38MEX	



**YouTube**

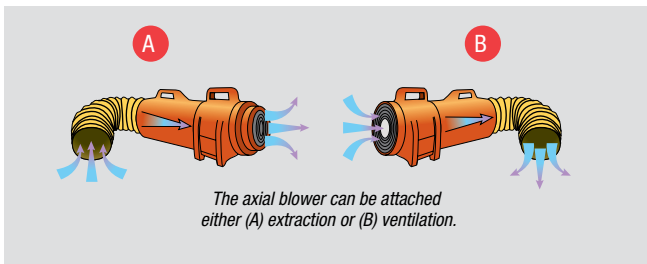
Video available on the ALLEGRO INDUSTRIES Channel!  
www.youtube.com/AllegroIndustries



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\*Image above represents standard blower only



## 12" AXIAL AC PLASTIC BLOWER WITH CANISTER & DUCTING

This lightweight and super quiet unit features a polyethylene housing and canister assembly. The quick-connect clipping system allows workers to attach the canister, tools-free, to the input side for powerful extraction or output side for ventilation.

- ▷ Molded carry handle
- ▷ Available with 15' or 25' of PVC-coated vinyl and polyester ducting
- ▷ Ducting stores easily within the storage canister

Free Air	One 90° Bend	Two 90° Bends
1842 CFM	1004 CFM	933 CFM
28 lbs.	1 hp	115V-230V AC, 50/60 Hz

Description	Order No.	
12" Axial AC Plastic Blower	9543	CE
	9543-E	E
12" Axial AC Plastic Blower with Canister and 15' Ducting - 43 lbs.	9543-15	CE
	9543-15E	E
12" Axial AC Plastic Blower with Canister and 25' Ducting - 49 lbs.	9543-25	CE
	9543-25E	E

## 12" AXIAL DC PLASTIC BLOWER WITH CANISTER & DUCTING

Designed for applications requiring larger air output, our 12" Axial DC Plastic Blower features a 1/4 hp motor with an efficient three-blade impeller in a rugged, lightweight polyethylene housing.

- ▷ Complete system with alligator clips and storage canister
- ▷ Available with 15' or 25' of ducting
- ▷ Powered by standard car or truck batteries

Free Air	One 90° Bend	Two 90° Bends
1330 CFM	1005 CFM	808 CFM
28 lbs.	1/3 hp	12V DC



Description	Order No.
12" Axial DC Plastic Blower	9546
12" Axial DC Plastic Blower with Canister and 15' Ducting - 43 lbs.	9546-15
12" Axial DC Plastic Blower with Canister and 25' Ducting - 49 lbs.	9546-25



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## 12" AXIAL EXPLOSION-PROOF PLASTIC BLOWER WITH CANISTER & DUCTING

This compact and super quiet unit features a polypropylene six-blade fan, a steel/powder-coated grill, and a molded carry handle. The bottom enclosure ensures safe and convenient storage of electrical components.

- ▷ **Electric, explosion-proof, single-phase motor (UL/CSA listed)**
- ▷ **NEMA-rated 115V plug for use with explosion-proof socket (sold separately)**
- ▷ **Quick-connect clipping system for tools-free attachment of canister**
- ▷ **Powerful extraction (input side) or ventilation (output side)**
- ▷ **Meets Hazardous Location Requirements: Class I, Divisions 1 and 2, Groups C and D, Class II, Divisions 1 and 2, Groups F and G**

Free Air	One 90° Bend	Two 90° Bends
1484 CFM	1174 CFM	1014 CFM
28 lbs.	1/3 hp	120V AC, 60 Hz



Description	Order No.	
12" Axial Explosion-Proof Plastic Blower	9548	
	9548-E	
12" Axial Explosion-Proof Plastic Blower with Canister and 15' Statically Conductive Ducting - 47 lbs.	9548-15	
	9548-15E	
12" Axial Explosion-Proof Plastic Blower with Canister and 25' Statically Conductive Ducting - 54 lbs.	9548-25	
	9548-25E	



## 12" AXIAL AC AND DC PLASTIC BLOWER SYSTEM WITH MVP

Everything needed for your confined space site is in this Complete Ventilation System from ALLEGRO. Systems include:

- ▷ **12" lightweight plastic blower, duct canister with 15' of ducting**
- ▷ **Manhole Ventilation Passthru (MVP), with 6' of ducting**

Description	Order No.	
12" Axial AC Plastic Blower System with 12" MVP	9520-43M	
12" Axial DC Plastic Blower System with 12" MVP	9520-46M	

Complies with the relevant European product safety directives.

Blowers offered in 220V/50 Hz. Does not meet the CSA requirements for the following product safety standards: Fans and Ventilators, C22.2 No. 113. For more information call Customer Service at 800-622-3530.

Meets the CSA requirements for the following product safety standards: Fans and Ventilators, C22.2 No. 113

CFM calculated using 15' x 8", 12" or 16" ducting based on the diameter of the blower. Free Air calculated at blower.

\* See Hazardous Location Information on page 601. Warning: Explosion-proof blowers must be used with statically conductive ducting.

\*\* Explosion-Proof Blowers require an explosion-proof socket. See page 624.





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






## 16" AXIAL AC PLASTIC BLOWER WITH CANISTER & DUCTING

This high-output blower is ideally suited for large confined spaces such as paper mills, tank purging, or utility sites. The quick-connect clipping system allows workers to attach the canister, tools-free, to the input side for powerful extraction or output side for ventilation. Added features include:

- ▷ Molded carry handle, built-in on/off switch
- ▷ Enclosed electrical components
- ▷ 15' or 25' of PVC-coated vinyl
- ▷ Polyester ducting which stores easily within the storage canister

Free Air	One 90° Bend	Two 90° Bends
3200 CFM	2350 CFM	2250 CFM
40 lbs.	1 hp	115V AC, 60 Hz

Description	Order No.	
16" Axial AC Plastic Blower	9553	 
16" Axial AC Plastic Blower with Canister and 15' Ducting - 66 lbs.	9553-15	  
16" Axial AC Plastic Blower with Canister and 25' Ducting - 72 lbs.	9553-25	  

## 16" AXIAL DC PLASTIC BLOWER WITH CANISTER & DUCTING

This high-output blower is perfect for large confined spaces such as paper mills, tank purging, or utility sites where access to electricity might not be readily available. The quick-connect clipping system allows workers to attach the canister, tools-free, to the input side for powerful extraction or output side for ventilation.

- ▷ Designed to be used with standard car or truck batteries
- ▷ Corrosion-, UV-, and chemical-resistant "safety orange" polyethylene
- ▷ Delivers both positive and negative airflow from a six-blade polypropylene fan
- ▷ Super quiet operation
- ▷ Molded carry handle with built-in On/Off switch
- ▷ Enclosed electrical components
- ▷ Available as a complete system with storage canister, 15' or 25' of ducting, and alligator clips




Video available on the ALLEGRO INDUSTRIES Channel  
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## 16" AXIAL EXPLOSION-PROOF PLASTIC BLOWER WITH CANISTER & DUCTING

This electric explosion-proof blower is perfect for large confined spaces in statically conductive environments. The quick-connect clipping system allows workers to attach the canister, tools-free, to the input side for powerful extraction or output side for ventilation.




- ▷ Single-phase motor with NEMA-rated 115V plug (for use with explosion-proof socket, sold separately) Bottom enclosure for safe and convenient storage of electrical components
- ▷ Meets Hazardous Location Requirements: Class I, Divisions 1 and 2, Groups C and D, Class II, Divisions 1 and 2, Groups F and G
- ▷ Certified to CSA Standard C22.2 No.113

Free Air	One 90° Bend	Two 90° Bends	
2849 CFM	2290 CFM	1951 CFM	
52 lbs.	3/4 hp	115/208-230V AC, 60 Hz	

Description	Order No.	
16" Axial Explosion-Proof Plastic Blower	9558	
16" Axial Explosion-Proof Plastic Blower with Canister and 15' Statically Conductive Ducting - 78 lbs.	9558-15	
16" Axial Explosion-Proof Plastic Blower with Canister and 25' Statically Conductive Ducting - 85 lbs.	9558-25	



Free Air	One 90° Bend	Two 90° Bends
2359 CFM	1666 CFM	1587 CFM
48 lbs.	1/2 hp	12V DC

Description	Order No.	
16" Axial DC Plastic Axial Blower	9556	
16" Axial DC Plastic Blower with Canister and 15' Ducting - 74 lbs.	9556-15	
16" Axial DC Plastic Blower with Canister and 25' Ducting - 81 lbs.	9556-25	



# AXIAL INDUSTRIAL PLASTIC BLOWERS

ALLEGRO Axial Industrial Plastic blowers are lightweight, portable, and durable units designed for use in industrial environments. They are made from corrosion-, UV- and chemical-resistant "safety orange" colored polyethylene for high visibility. They feature a molded-in carry handle and enclosed electrical components for easy portability to and from the job site. All units are compact, super quiet, and feature a stackable design that allows for multiple units to be used in minimum space.



## 8" AXIAL AC INDUSTRIAL PLASTIC BLOWER

This lightweight, portable, single-phase motor blower is ideally suited for light industrial or utility confined space applications. This unit features enclosed electrical components with built-in On/Off switch making it a valuable blower. Ducting can be added to both inlet and outlet side of blower for ventilation or extraction purposes.

Free Air	One 90° Bend	Two 90° Bends
865 CFM	550 CFM	350 CFM
16 lbs.	1/3 hp	115V AC, 60 Hz

Order No. 9539-08



## 12" AXIAL DC INDUSTRIAL PLASTIC BLOWER

This blower delivers both positive and negative airflow and is perfect for larger confined spaces such as paper mills, tank purging, or utility sites. Our DC blowers are designed to be used with standard car or truck batteries as the source of power.

Free Air	One 90° Bend	Two 90° Bends
1450 CFM	1075 CFM	900 CFM
19 lbs.	1/4 hp	12V DC

Order No. 9539-12DC



**CE** Complies with the relevant European product safety directives.

**ETL** Meets the CSA requirements for the following product safety standards: Fans and Ventilators, C22.2 No. 113

CFM calculated using 15' x 8", 12" or 16" ducting based on the diameter of the blower. Free Air calculated at blower.

\* See Hazardous Location Information on page 601. Warning: Explosion-proof blowers must be used with statically conductive ducting.

\*\* Explosion-Proof Blowers require an explosion-proof socket. See page 624.

## 12" AXIAL AC INDUSTRIAL PLASTIC BLOWER

This single-phase motor blower is ideally suited for large confined spaces such as paper mills, tank purging, or utility sites. This blower delivers both positive and negative airflow.

Free Air	One 90° Bend	Two 90° Bends
2180 CFM	1330 CFM	1255 CFM
31 lbs.	1 hp	115V AC, 60 Hz

Order No. 9539-12



## 12" AXIAL EXPLOSION-PROOF INDUSTRIAL PLASTIC BLOWER

This electric, lightweight, and easily portable explosion-proof blower is ideally suited for large confined spaces in statically conductive environments.

- ▷ Single-phase motor with NEMA-rated 115V plug (for use with explosion-proof socket, sold separately)
- ▷ Meets Hazardous Location Requirements: Class I, Divisions 1 and 2, Groups C and D, Class II, Divisions 1 and 2, Groups F and G
- ▷ Certified to CSA Standard C22.2 No. 113

Free Air	One 90° Bend	Two 90° Bends
1475 CFM	1300 CFM	1200 CFM
25 lbs.	1/3 hp	115V AC, 60 Hz



Order No. 9539-12EX



## 8" AND 12" AXIAL AC INDUSTRIAL PLASTIC BLOWER SYSTEMS WITH MVP

The complete Ventilation System includes everything you'll need for your confined space site! Systems include:

- ▷ 8" or 12" Axial AC Industrial Plastic Blower
- ▷ Includes 15' of ducting
- ▷ Storage Bag
- ▷ 8" or 12" Manhole Ventilation Passthru (MVP), with 6' of ducting

Description	Order No.	
8" Axial AC Industrial Plastic Blower System with 8" MVP	9520-398M	
12" Axial AC Industrial Plastic Blower System with 12" MVP	9520-3912M	



## 16" AXIAL DC INDUSTRIAL PLASTIC BLOWER

Lightweight, portable, and durable, this high-output blower is ideally suited for large confined spaces such as paper mills, tank purging, or utility sites where access to electricity might not be readily available. It is designed to be used with standard car or truck batteries.

- ▷ Made from corrosion-, UV-, and chemical-resistant "safety orange" colored polyethylene
- ▷ Delivers both positive and negative airflow from a six-blade polypropylene fan
- ▷ Super quiet operation
- ▷ Molded carry handle with built-in On/Off switch Enclosed electrical components

Free Air	One 90° Bend	Two 90° Bends
2359 CFM	1666 CFM	1587 CFM
48 lbs.	1/2 hp	12V DC

Order No. 9539-16DC



## 16" AXIAL AC INDUSTRIAL PLASTIC BLOWER

Lightweight, portable, and durable, this high-output blower is ideally suited for large confined spaces such as paper mills, tank purging, or utility sites. This blower delivers both positive and negative airflow from a three-blade polypropylene fan. Certified to CSA Standard C22.2 No.113.

Free Air	One 90° Bend	Two 90° Bends
3200 CFM	2350 CFM	2250 CFM
40 lbs.	1 hp	115V AC, 60 Hz

Order No. 9539-16



## 16" AXIAL EXPLOSION-PROOF INDUSTRIAL PLASTIC BLOWER

This electric, explosion-proof blower is ideally suited for large confined spaces in statically conductive environments.

- ▷ Single-phase motor with NEMA-rated 115V plug (for use with explosion-proof socket, sold separately)
- ▷ Meets Hazardous Location Requirements: Class I, Divisions 1 and 2, Groups C and D, Class II, Divisions 1 and 2, Groups F and G
- ▷ Certified to CSA Standard C22.2 No.113

Free Air	One 90° Bend	Two 90° Bends
2849 CFM	2290 CFM	1951 CFM
51 lbs.	3/4 hp	115V AC, 60 Hz

Order No. 9539-16EX



# AXIAL INLINE BOOSTER PLASTIC BLOWERS

## 8" AND 12" AXIAL AC INLINE BOOSTER PLASTIC BLOWERS



Ducting Not Included

Designed for use when there is a need to run long lengths of ventilation ducting while maintaining a high CFM, this blower allows ducting to be attached to both the intake and exhaust ends. Multiple blowers can be placed in series to achieve positive or negative ventilation. These lightweight, portable, single-phase motor blowers are ideally suited for industrial or utility confined space applications, featuring super quiet performance and a "safety orange" color.

- ▷ Molded carry handles for easy transport
- ▷ Stackable design with built-in On/Off switches
- ▷ Enclosed electrical components for added safety
- ▷ Certified to CSA STD C22.2 No 113 and Air Delivery certified CEESI

Order No. 9539-08I

Order No. 9539-12I



Ducting Not Included

## 12" AXIAL EXPLOSION-PROOF INLINE BOOSTER PLASTIC BLOWER

Designed for use when there is a need to run long lengths of statically conductive ducting while maintaining a high CFM. This explosion-proof blower allows statically conductive ducting to be attached to both the intake and exhaust ends. Multiple blowers can be placed in series to achieve positive or negative ventilation.

- ▷ Electric, lightweight, and easily portable
- ▷ Ideally suited for large confined spaces in statically conductive environments
- ▷ Single-phase motor with NEMA-rated 115V plug (for use with explosion-proof socket, sold separately)
- ▷ Meets Hazardous Location Requirements: Class I, Divisions 1 and 2, Groups C and D, Class II, Divisions 1 and 2, Groups F and G

Order No. 9539-12EXI



**CE** Complies with the relevant European product safety directives.

**ETL** Meets the CSA requirements for the following product safety standards:  
Fans and Ventilators, C22.2 No. 113

# AIR BAGS

Exclusive to ALLEGRO, these air bag blowers are designed for operations that are constantly on the go. These metal axial blowers are built into a heavy-duty polyester bag forming an all-in-one unit. Designed with zippered ends that allow blower use without removing blower from the bag. Zipper openings allow for plug/cord inlet and outlet.



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Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



## AIR BAG 8

Featuring an 8" metal blower system with 15' or 25' ducting built into a heavy-duty polyester bag forming an all-in-one unit for ease of operation. Polypropylene nine-blade fan, steel/powder-coated housing and grill, carry handle with molded-in 2-speed switch.

- ▷ 60 Hz, 1.4 Amps, 2-speed On/Off switch
- ▷ Ducting: Single-Ply lightweight vinyl/ polyester PVC-coated
- ▷ Yellow with black wear-strip and integrated nylon attachment strap on one end
- ▷ Dimensions: 27"l x 15"w x 12"h

### AC MODEL

Free Air                      760 CFM  
(high speed)                1/4 hp                              120V, 60 Hz

Description	Order No.
AC with 15' Ducting - 25 lbs.	9535-08
AC with 25' Ducting - 29 lbs.	9535-08L

### DC MODEL

Free Air                      668 CFM  
(high speed)                1/4 hp                              12V DC

Description	Order No.
DC with 15' Ducting - 26 lbs.	9535-08DC
DC with 25' Ducting - 29 lbs.	9535-08LDC



Meets the CSA requirements for the following product safety standards:  
Fans and Ventilators, C22.2 No. 113

CFM calculated using 15' x 8", 12" or 16" ducting based on the diameter of the blower.  
Free Air calculated at blower.

\* See Hazardous Location Information on page 601. Warning: Explosion-proof blowers must be used with statically conductive ducting.

\*\* Explosion-Proof Blowers require an explosion-proof socket. See page 624.





## AIR BAG 12

Featuring a 12" metal blower system with 15' or 25' ducting built into a heavy-duty polyester bag forming an all-in-one unit for ease of operation. Polypropylene nine-blade fan, steel/powder-coated housing and grill, carry handle with molded-in 2-speed switch.

- ▷ 60 Hz, 3.8 Amps, 2-speed On/Off switch
- ▷ Ducting: Single-Ply lightweight vinyl/polyester PVC-coated
- ▷ Yellow with black wear-strip and integrated nylon attachment strap on one end
- ▷ Dimensions: 28"l x 16"w x 14"h

### AC MODEL

Free Air 1840 CFM  
(high speed) 1/2 hp 120V AC, 60 Hz

Description	Order No.
AC with 15' Ducting - 35 lbs.	9535-12
AC with 25' Ducting - 41 lbs.	9535-12L

### DC MODEL

Free Air 1360 CFM  
(high speed) 1/2 hp 12V DC

Description	Order No.
DC with 15' Ducting - 36 lbs.	9535-12DC
DC with 25' Ducting - 39 lbs.	9535-12LDC

## 8" AND 12" AIR BAG BLOWER SYSTEMS WITH MVP

The complete Ventilation System includes everything you'll need for your confined space site. Systems include:

- ▷ 8" or 12" Metal all-in-one Air Bag Blower with 15' ducting
- ▷ 8" or 12" Manhole Ventilation Passthru (MVP), with 6' of ducting

Description	Order No.
8" AC Air Bag Blower System with 8" MVP	9520-358M
12" AC Air Bag Blower System with 12" MVP	9520-3512M



**YouTube**  
Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



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# AXIAL METAL BLOWERS



## 8" AXIAL AC METAL BLOWER

This compact, lightweight 8" Axial Blower offers the highest output available from an AC electric motor. It is designed with tough steel construction, a durable grill, a convenient carrying handle, and rubber feet. Its small profile means easy storage. Certified to CSA STD C22.2 No 113. Air delivery certified CEESI.

Free Air	One 90° Bend	Two 90° Bends
1275 CFM	661 CFM	582 CFM
19 lbs.	1/3 hp	120V AC, 60 Hz



Order No. 9513  
Order No. 9513-E



## 8" AXIAL DC METAL BLOWER

Perfect for locations where electricity is not available, this lightweight and easily portable 8" DC Axial Metal Blower may be operated off a standard car or truck battery. It features a 1/4 hp, 12V DC electric motor with thermal protector and single-speed performance. Alligator clips are included.

Free Air	One 90° Bend	Two 90° Bends
1150 CFM	800 CFM	650 CFM
18 lbs.	1/4 hp	12V DC



Order No. 9506



## 8" AXIAL AC METAL BLOWER WITH CANISTER & DUCTING

Engineered for convenience, this 8" Axial Blower is an all-in-one ventilation system. The design allows ducting to collapse into a built-in canister for easy storage.

- ▷ Can be stored vertically to use minimal space
- ▷ Includes blower, built-in storage canister, and 15 or 25 feet of ducting
- ▷ Certified to CSA STD C22.2 No 113
- ▷ Air delivery certified CEESI

Free Air	One 90° Bend	Two 90° Bends
1275 CFM	661 CFM	582 CFM
32 lbs.	1/3 hp	120V AC, 60 Hz



Description	Order No.
15 ft. of Ducting	9514
15 ft. of Ducting	9514-E



Free Air	One 90° Bend	Two 90° Bends
1275 CFM	661 CFM	582 CFM
46 lbs.	1/3 hp	120V AC, 60 Hz

Description	Order No.
25 ft. of Ducting	9514-25
25 ft. of Ducting	9514-25E



## 8" AXIAL DC METAL BLOWER WITH CANISTER & DUCTING

This complete, all-in-one ventilation system includes an 8" Axial Blower powered by a 12-volt DC motor, with 15 or 25 feet of ducting and a built-in storage canister.

- ▷ Lightweight system with handle and feet for portability
- ▷ Easy to store
- ▷ Designed to be used with standard car or truck batteries

Free Air	One 90° Bend	Two 90° Bends
1150 CFM	800 CFM	650 CFM
31 lbs.	1/4 hp	12V DC



Description	Order No.
15 ft. of Ducting	9506-01

Free Air	One 90° Bend	Two 90° Bends
1150 CFM	800 CFM	650 CFM
37 lbs.	1/4 hp	12V DC

Description	Order No.
25 ft. of Ducting	9506-25





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## 8" AXIAL EXPLOSION-PROOF METAL BLOWER

This blower features an electric, explosion-proof, single-phase motor that is UL-listed and includes a NEMA-rated 115V plug.

- ▷ **Tough steel construction**
- ▷ **Meets Hazardous Location Requirements: Class I, Divisions 1 and 2, Groups C and D, Class II, Divisions 1 and 2, Groups F and G**

Free Air 890 CFM 31 lbs.	One 90° Bend 825 CFM 1/3 hp	Two 90° Bends 770 CFM 115V AC, 60 Hz
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Description	Order No.	
Blower only	9513-05	
	9513-05E	
8" Axial Explosion-Proof Blower with Canister & 15 ft. of Statically Conductive Ducting - 49 lbs.	9514-05	
	9514-05E	
8" Axial Explosion-Proof Blower with Canister & 25 ft. of Statically Conductive Ducting - 57 lbs.	9514-06	
	9514-06E	

## 8" AXIAL AC AND DC METAL BLOWER SYSTEMS WITH MVP

Easy-to-order, easy-to-use Complete Ventilation Systems including all the most requested equipment you need for your confined space site.

The systems include:

- ▷ **8" Axial AC or DC Blower, duct canister with 15' of ducting**
- ▷ **Manhole Ventilation Passthru (MVP), with 6' of ducting**

Description	Order No.
8" AC Axial Blower System with 8" MVP	9520-14M
8" DC Axial Blower System with 8" MVP	9520-06M
8" AC EX- Proof Axial Blower System w/ 8" Ex-Proof MVP (9514-15 Blower)	9520-05MEX



\*Image above represents standard blower only

Blowers offered in 220V/50 Hz. Does not meet the CSA requirements for the following product safety standards: Fans and Ventilators, C22.2 No. 113. For more information call Customer Service at 800-622-3530.

Meets the CSA requirements for the following product safety standards: Fans and Ventilators, C22.2 No. 113

CFM calculated using 15' x 8", 12" or 16" ducting based on the diameter of the blower. Free Air calculated at blower.

\* See Hazardous Location Information on page 601. Warning: Explosion-proof blowers must be used with statically conductive ducting.

\*\* Explosion-Proof Blowers require an explosion-proof socket. See page 624.



## 8" AXIAL AC METAL COM-PAX-IAL BLOWER

Weighing 13% less than our 9513, this blower features a venturi inlet to increase CFM. Designed with tough steel construction, rubber feet, handle, and a durable grill. Complete with AC electric motor. Blower sold separately or with quick-connect canister with 15' or 25' ducting included.

Free Air	One 90° Bend	Two 90° Bends
778 CFM	645 CFM	496 CFM
17 lbs.	1/3 hp	120V AC, 60 Hz



Order No. 9534



## 8" AXIAL DC METAL COM-PAX-IAL BLOWER

Designed to run off a standard car or truck battery when you're on the road. A 12V DC electric motor with single-speed performance is included in this lightweight and easy-to-store blower. It also features a cord with a handle, alligator clips, durable grill, and tough steel construction that's built to last.

Free Air	One 90° Bend	Two 90° Bends
796 CFM	667 CFM	480 CFM
16 lbs.	1/4 hp	12V DC



Order No. 9537

## 8" AXIAL AC METAL COM-PAX-IAL BLOWER WITH CANISTER & DUCTING

This lightweight and compact Com-pax-ial blower is an all-in-one ventilation system sold with quick-connect 15' or 25' ducting canister which attaches quickly without tools with Cam-lock latches.

Free Air	One 90° Bend	Two 90° Bends
778 CFM	645 CFM	496 CFM
	1/3 hp	120V AC, 60 Hz



Description	Order No.
8" AC Com-pax-ial Blower with 15' Ducting Canister Assembly - 34 lbs.	9534-15
15' Canister Conversion Kit (use with 9534 & 9537)	9534-15C
8" AC Com-pax-ial Blower with 25' Ducting Canister Assembly - 37 lbs.	9534-25
25' Canister Conversion Kit (use with 9534 & 9537)	9534-25C



## 8" AXIAL DC METAL COM-PAX-IAL BLOWER WITH CANISTER & DUCTING

Designed to run off a standard car or truck battery, this lightweight and easy-to-store blower features a 12V DC electric motor with single speed performance. The quick-connect canister with 15' or 25' ducting attaches quickly without tools. It also includes a cord with handle, alligator clips, and Cam-lock latches for secure connections. The durable grill and tough steel construction ensure this blower is built to last.

- ▷ Cord with handle and alligator clips
- ▷ Cam-lock latches for secure connections
- ▷ Durable grill and tough steel construction

Free Air	One 90° Bend	Two 90° Bends
796 CFM	667 CFM	480 CFM
31 lbs.	1/4 hp	12V DC



Description	Order No.
8" DC Com-pax-ial Blower with Canister & 15 ft. of Ducting	9537-15

Free Air	One 90° Bend	Two 90° Bends
796 CFM	667 CFM	480 CFM
36 lbs.	1/4 hp	12V DC

Description	Order No.
8" DC Com-pax-ial Blower with Canister & 25 ft. of Ducting	9537-25

Blowers offered in 220V/50 Hz. Does not meet the CSA requirements for the following product safety standards: Fans and Ventilators, C22.2 No. 113. For more information call Customer Service at 800-622-3530.

Meets the CSA requirements for the following product safety standards: Fans and Ventilators, C22.2 No. 113

CFM calculated using 15' x 8", 12" or 16" ducting based on the diameter of the blower. Free Air calculated at blower.

\* See Hazardous Location Information on page 601. Warning: Explosion-proof blowers must be used with statically conductive ducting.

\*\* Explosion-Proof Blowers require an explosion-proof socket. See page 624.





## 12" AXIAL AC STANDARD METAL BLOWER

Designed for applications requiring larger amounts of air output, the Standard 12" Axial Blower offers a 1/3 hp motor with an efficient three-blade impeller in a rugged, lightweight metal housing. Certified to CSA Standard C22.2 No.113

Free Air 1763 CFM 27 lbs.	One 90° Bend 1401 CFM 1/3 hp	Two 90° Bends 1227 CFM 120V AC, 60 Hz
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Order No. 9509



## 12" AXIAL AC HIGH-OUTPUT METAL BLOWER

Designed for applications requiring larger amounts of air output, this 12" Axial High-Output Blower features a 1/2 hp motor with efficient three-blade impeller in a rugged, lightweight, and portable metal housing. Certified to CSA Standard C22.2 No.113.

Free Air 2202 CFM 40 lbs.	One 90° Bend 1674 CFM 1/2 hp	Two 90° Bends 1598 CFM 115V AC, 60 Hz
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Order No. 9509-50

Order No. 9509-50E



## 12" AXIAL AC STANDARD METAL BLOWER SYSTEM WITH MVP

The complete Ventilation System includes everything you'll need for your confined space site! The systems include:

- ▷ 12" Axial AC Standard Metal Blower
- ▷ Includes 15' of ducting
- ▷ Storage Bag
- ▷ 12" Manhole Ventilation Passthru (MVP), with 6' of ducting

Description	Order No.
12" Axial AC Standard Metal Blower System with 12" MVP	9520-09M



## 12" AXIAL EXPLOSION-PROOF METAL BLOWER

Designed for applications requiring larger amounts of air output, this blower features a 1/3 hp single-phase motor with an efficient three-blade impeller in a rugged, lightweight metal housing. It includes a NEMA-rated 125V plug for use with an explosion-proof socket (sold separately).

- ▷ Meets Class I, Division 1 and 2, Groups C & D
- ▷ Meets Class II, Division 1 and 2, Groups F & G
- ▷ Certified to CSA Standard C22.2 No.113

Free Air 1636 CFM 33 lbs.	One 90° Bend 1255 CFM 1/3 hp	Two 90° Bends 1156 CFM 115V AC, 60 Hz
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Order No. 9509-01

Order No. 9509-01E



## 12" AXIAL DC METAL BLOWER

Designed for applications requiring larger amounts of air output, the DC 12" Axial Metal Blower offers a 1/4 hp motor with an efficient three-blade impeller in a rugged, lightweight metal housing. Our DC Blowers are designed to be used with standard car or truck batteries as the source of power.

Free Air 1685 CFM 24 lbs.	One 90° Bend 1220 CFM 1/4 hp	Two 90° Bends 1020 CFM 12V DC
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Order No. 9529





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## 16" AXIAL AC STANDARD METAL BLOWER

Designed for very large confined spaces, this large 1/2 hp 16" Standard Axial Metal Blower delivers high output for drawing or pushing air. The durable and tough metal housing holds a six-blade impeller.

Free Air	One 90° Bend	Two 90° Bends
3400 CFM	2800 CFM	2300 CFM
47 lbs.	1/2 hp	115V AC, 60 Hz

Order No. 9515  
Order No. 9515-E



## 16" AXIAL EXPLOSION-PROOF METAL BLOWER

Designed for use in applications requiring a large amount of output in a hazardous location environment, our 16" Axial Explosion-Proof Metal Blower features a 1/2 hp single-phase motor and an efficient six-blade impeller fan in a rugged metal housing. It includes a NEMA-rated 115V plug for use with an explosion-proof socket (sold separately).

- ▷ Rugged metal housing
- ▷ Efficient six-blade impeller fan
- ▷ Meets Class I, Division 1 and 2, Groups C & D, and Class II, Division 1 and 2, Groups F & G
- ▷ Certified to CSA Standard C22.2 No.113

Free Air	One 90° Bend	Two 90° Bends
2900 CFM	1800 CFM	1750 CFM
67 lbs.	1/2 hp	115V-230V AC, 60 Hz

Order No. 9515-01



## 16" AXIAL DC STANDARD METAL BLOWER

Designed for applications requiring a large amount of output. This DC Standard Metal Blower features a 1/2 hp motor with an efficient six-blade impeller in a rugged metal housing with handles on each side for easy portability. Our DC Blowers are designed to be used with standard car or truck batteries as the source of power.

Free Air	One 90° Bend	Two 90° Bends
2929 CFM	1981 CFM	1762 CFM
54 lbs.	1/2 hp	12V DC

Order No. 9515-DC



## 16" AXIAL EXPLOSION-PROOF HIGH-OUTPUT METAL BLOWER

Designed for applications requiring maximum output, this unit features a housing made from 16-gauge cold rolled steel, powder-coated in "safety orange," and holds a three-blade impeller. Powered by a 1 1/2 hp, 3450 RPM UL-listed, IECex/ATEX/INMETRO certified motor, it also includes a 115V plug and interchangeable flange for intake or exhaust mounting.

- ▷ Integrated carry handles for easy transport
- ▷ Steel/zinc plated grill
- ▷ 4 rubber feet
- ▷ Built-in On/Off switch and voltage change switch

Free Air	One 90° Bend	Two 90° Bends
4839 CFM	2942 CFM	2926 CFM
62 lbs.	1 1/2 hp	115V-230V AC, 50/60 Hz

Order No. 9515-50EX  
Order No. 9515-50EXE



## 16" AXIAL AC HIGH-OUTPUT METAL BLOWER

Designed for applications requiring a maximum amount of output, this 16" High-Output Blower offers a 2 hp electric motor housed in a rugged metal casing. Its efficient three-blade impeller and high-powered motor allow for high airflow. Includes a special 30 amp plug.

Free Air	One 90° Bend	Two 90° Bends
5500 CFM	4950 CFM	4400 CFM
74 lbs.	2 hp	115V-230V AC, 60 Hz

Order No. 9516





## 20" AXIAL AC STANDARD METAL BLOWER

Designed for applications requiring maximum output, this unit features a housing made from 16-gauge cold rolled steel, powder-coated in "safety orange," and holds a three-blade impeller. It also includes an interchangeable flange for intake or exhaust mounting.

- ▷ **Integrated carry handles for easy transport**
- ▷ **Steel/zinc plated grill**
- ▷ **Includes 4 rubber feet**
- ▷ **UL-listed and certified to CSA Standard C22.2 No.113**

Free Air	One 90° Bend	Two 90° Bends
4650 CFM	3150 CFM	2950 CFM
56 lbs.	1/2 hp	115V AC, 60 Hz



**Order No. 9525**  
**Order No. 9525-E**



## 20" AXIAL EXPLOSION-PROOF METAL BLOWER

Designed for use in applications requiring a large amount of output in a hazardous location environment, our 20" Axial Explosion-Proof Metal Blower features a 1/2 hp single-phase motor and an efficient three-blade impeller fan in a rugged metal housing. It also includes a NEMA-rated 115V plug for use with an explosion-proof socket (sold separately).

- ▷ **UL-listed**
- ▷ **Meets Class I, Division 1 and 2, Groups C & D**
- ▷ **Meets Class II, Division 1 and 2, Groups F & G**
- ▷ **Certified to CSA Standard C22.2 No.113**

Free Air	One 90° Bend	Two 90° Bends
4650 CFM	3150 CFM	2950 CFM
75 lbs.	1/2 hp	115V-230V AC, 60 Hz



**Order No. 9525-01**  
**Order No. 9525-01E**



## 20" AXIAL AC HIGH-OUTPUT METAL BLOWER

Designed for applications requiring maximum output, this unit features a housing made from 16-gauge cold rolled steel, powder-coated in "safety orange," and holds a four-blade impeller. It also includes an interchangeable flange for intake or exhaust mounting.

- ▷ **Integrated carry handles for easy transport**
- ▷ **Steel/zinc plated grill**
- ▷ **4 rubber feet**
- ▷ **UL-listed and certified to CSA Standard C22.2 No.113**

Free Air	One 90° Bend	Two 90° Bends
7500 CFM	6700 CFM	6130 CFM
83 lbs.	2 hp	115V-230V AC, 60 Hz



**Order No. 9525-50**



## 20" AXIAL EXPLOSION-PROOF HIGH-OUTPUT METAL BLOWER

Designed for applications requiring maximum output, this unit features a housing made from 16-gauge cold rolled steel, powder-coated in "safety orange," and holds a three-blade impeller. Powered by a 1 1/2 hp, 3450 RPM UL-listed, IECex/ATEX/INMETRO certified motor, it includes a 115V plug and an interchangeable flange for intake or exhaust mounting.

- ▷ **Integrated carry handles for easy transport**
- ▷ **Steel/zinc plated grill**
- ▷ **4 rubber feet**
- ▷ **Built-in On/Off switch and voltage change switch**

Free Air	One 90° Bend	Two 90° Bends
6837 CFM	5268 CFM	4829 CFM
71 lbs.	1 1/2 hp	115V-230V AC, 50/60 Hz



**Order No. 9525-50EX**  
**Order No. 9525-50EXE**



**Blowers offered in 220V/50 Hz. Does not meet the CSA requirements for the following product safety standards: Fans and Ventilators, C22.2 No. 113. For more information call Customer Service at 800-622-3530.**

**Meets the CSA requirements for the following product safety standards: Fans and Ventilators, C22.2 No. 113**

*CFM calculated using 15' x 8", 12" or 16" ducting based on the diameter of the blower. Free Air calculated at blower.*

*\* See Hazardous Location Information on page 601. Warning: Explosion-proof blowers must be used with statically conductive ducting.*

*\*\* Explosion-Proof Blowers require an explosion-proof socket. See page 624.*



## 26" AXIAL AC STANDARD METAL BLOWER

Designed for applications requiring maximum output, the 26" Axial Standard Metal Blower offers the highest output of any of our ventilation blowers. The housing is made from 16-gauge cold rolled steel and powder-coated in "safety orange," holding a three-blade impeller.

- ▷ *Interchangeable flange for intake or exhaust mounting*
- ▷ *Integrated carry handles for easy transport*
- ▷ *Steel/zinc plated grill*
- ▷ *4 rubber feet*

Free Air	One 90° Bend	Two 90° Bends
9570 CFM	8610 CFM	7750 CFM
105 lbs.	2 hp	115V AC, 60 Hz



**Order No. 9530**





# CENTRIFUGAL BLOWERS



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[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

## CENTRIFUGAL STANDARD BLOWER

Excellent for ventilating most confined spaces, this unit is designed with a tough, lightweight polyethylene housing, metal safeguards, and a steel fan for durability. Two 8" ports offer positive ventilation or fume extraction, and the metal base with feet provides greater stability. The electric 1/3 hp motor is cage-enclosed for protection.

- ▷ On/Off switch and built-in carry handle for increased portability
- ▷ Works well with generators
- ▷ Air delivery certified CEESI
- ▷ Certified to CSA Standard C22.2 No. 113

Free Air	One 90° Bend	Two 90° Bends
1066 CFM	839 CFM	745 CFM
38 lbs.	1/3 hp	115V AC, 60 Hz



Order No. 9504



## CENTRIFUGAL HIGH-OUTPUT BLOWER

Designed for larger confined space environments that require faster purge times, this unit features a tough, lightweight polyethylene housing for durability, with metal safeguards and a steel fan for added safety. Two 8" ports offer positive ventilation or fume extraction, and the metal base with feet provides greater stability.


- ▷ Electric 3/4 hp motor with higher CFM output, cage-enclosed for protection
- ▷ On/Off switch and built-in carry handle for increased portability
- ▷ Certified to CSA Standard C22.2 No. 113


Free Air	One 90° Bend	Two 90° Bends
1570 CFM	1100 CFM	900 CFM
45 lbs.	3/4 hp	115V-230V AC, 60 Hz



Order No. 9504-50  
Order No. 9504-50E



 Blowers offered in 220V/50 Hz. Does not meet the CSA requirements for the following product safety standards: Fans and Ventilators, C22.2 No. 113. For more information call Customer Service at 800-622-3530.

 Meets the CSA requirements for the following product safety standards: Fans and Ventilators, C22.2 No. 113

CFM calculated using 15' x 8", 12" or 16" ducting based on the diameter of the blower.  
Free Air calculated at blower.

\* See Hazardous Location Information on page 601. Warning: Explosion-proof blowers must be used with statically conductive ducting.

\*\* Explosion-Proof Blowers require an explosion-proof socket. See page 624.



## CENTRIFUGAL TWO-SPEED BLOWER

This blower offers greater flexibility with high speed for applications such as purging an area, and lower speed for very dusty environments. The 8" ports allow for positive or negative ventilation, and the steel box-mounted electric motor and tough polyethylene housing ensure durability.

- ▷ *Inline GFI for safety*
- ▷ *Steel base for stability*
- ▷ *Designed for both high-speed and low-speed applications*
- ▷ *Durable construction with 8" ports for versatile ventilation*

### LOW SPEED

Free Air	One 90° Bend	Two 90° Bends
760 CFM	500 CFM	360 CFM
64 lbs.	¾ hp	115V AC, 60 Hz

### HIGH SPEED

Free Air	One 90° Bend	Two 90° Bends
1850 CFM	1050 CFM	800 CFM
64 lbs.	¾ hp	115V AC, 60 Hz

Order No. 9507



## CENTRIFUGAL HEAVY-DUTY EXPLOSION-PROOF BLOWER

This blower features an electric, explosion-proof, single-phase motor that is UL-listed and CSA-certified, including a NEMA-rated 115V plug for use with an explosion-proof socket (sold separately). Its ABS housing provides non-sparking safety, and the smart compact design allows for easy use and storage without sacrificing airflow.

- ▷ *Meets Class I, Divisions 1 and 2, Groups C and D*
- ▷ *Meets Class II, Divisions 1 and 2, Groups F and G Hazardous Location Requirements\**
- ▷ *Designed for non-sparking safety*
- ▷ *Compact design for easy use and storage*

Free Air	One 90° Bend	Two 90° Bends
1570 CFM	1100 CFM	900 CFM
76 lbs.	¾ hp	115V-230V AC, 60 Hz



Order No. 9503

Order No. 9503-E



## CENTRIFUGAL HEAVY-DUTY BLOWER

High performance and durability are built into this Heavy-Duty Blower. Its large 1 ½ hp motor and 8" ports deliver high CFM allowing workers to draw out or push air in. The electric motor is totally enclosed, and the high-impact polyethylene housing offers greater durability.

Free Air	One 90° Bend	Two 90° Bends
1700 CFM	1200 CFM	960 CFM
61 lbs.	1 ½ hp	115V-230V AC, 60 Hz

Order No. 9502



## CENTRIFUGAL GAS BLOWER (BRIGGS & STRATTON)

Perfect for remote locations where electricity is unavailable, this gasoline-powered, 5 hp blower offers high flow rates. The 8" ports and steel guards ensure safety, while the polyethylene housing with a built-in handle provides durability and convenience. It is designed with a sturdy metal base to minimize rocking and offer greater stability.

- ▷ *Powered by 3.2 quarts of gasoline for 3-4 hours of running time*
- ▷ *Includes 6-foot inlet hose extension*
- ▷ *Built-in handle for easy transport*
- ▷ *Sturdy metal base for stability*

Free Air	One 90° Bend	Two 90° Bends
1390 CFM	1152 CFM	1079 CFM
62 lbs.	5 hp	Briggs & Stratton

Order No. 9505





## CENTRIFUGAL GAS BLOWER (HONDA)

Perfect for remote locations where electricity is unavailable, this gasoline-powered, 4.8 hp, 4-stroke blower offers high flow rates and the durability of a Honda engine. The 8" ports and steel guards ensure safety, while the polyethylene housing with a built-in handle provides durability and convenience during transport.

- ▷ **Sturdy metal base minimizes blower rocking and offers greater stability**
- ▷ **Includes 6-foot inlet hose extension**
- ▷ **Built-in handle for easy transport**
- ▷ **High flow rates with Honda engine durability**

Free Air	One 90° Bend	Two 90° Bends	MADE IN THE ★ USA
1420 CFM	910 CFM	845 CFM	
58 lbs.	4.8 hp	Honda (four stroke)	

**Order No.** 9505-50



## CENTRIFUGAL AIR-DRIVEN BLOWER

Ideal for areas where a compressor is readily available, this air-driven model requires 30 CFM at 40 psi. It uses an aluminum fan for explosion-proof requirements and includes a steel base, polyethylene housing, 2-stage filter, regulator, and lubricator.

*If used in hazardous environments, use statically conductive ducting.*

Free Air	One 90° Bend	Two 90° Bends	MADE IN THE ★ USA
1800 CFM	1350 CFM	900 CFM	
43 lbs.			

**Order No.** 9508

## CENTRIFUGAL STANDARD BLOWER SYSTEM WITH MVP

Our Complete Ventilation Systems include all the most requested equipment you need for your confined space site. The systems include:

- ▷ **Your choice of Centrifugal Blower**
- ▷ **Includes 15' of ducting**
- ▷ **Storage Bag**
- ▷ **Manhole Ventilation Passthru (MVP), with 6' of ducting**



Description	Order No.	
8" AC Standard Blower System w/ MVP (9504 Blower)	9520-04M	
8" High-Output Blower System w/ MVP (9504-50 Blower)	9520-50M	
8" Briggs & Stratton Gas Blower System w/ MVP (9505 Blower)	9520-05M	
8" 2-Speed Blower System w/ MVP (9507 Blower)	9520-07M	
8" Heavy-Duty Explosion-Proof Blower System w/ MVP (9503 Blower)	9520-03M	
8" Heavy Duty Explosion-Proof Blower System w/EX MVP (9503 Blower)	9520-03MEX	



Blowers offered in 220V/50 Hz. Does not meet the CSA requirements for the following product safety standards: Fans and Ventilators, C22.2 No. 113. For more information call Customer Service at 800-622-3530.

Meets the CSA requirements for the following product safety standards: Fans and Ventilators, C22.2 No. 113

CFM calculated using 15' x 8", 12" or 16" ducting based on the diameter of the blower. Free Air calculated at blower.

\* See Hazardous Location Information on page 601. Warning: Explosion-proof blowers must be used with statically conductive ducting.

\*\* Explosion-Proof Blowers require an explosion-proof socket. See page 624.

# VENTURI BLOWERS

*Our Venturi Blowers are a perfect solution to moving air in refineries, utility and power plants, shipyards, paper and pulp plants, marine and steel industries, and manhole operations.*

Use our Venturi Blowers to remove poisonous, explosive, or hazardous fumes from confined spaces such as process towers, tanks, and large pipes. You can cool workers in elevated temperature conditions or cool heavy equipment that may be in danger of overheating with a blast of directed air. Our line of high-performance, lightweight Venturi Blowers helps to create a safe, healthy working environment leading to greater efficiency and productivity. Welding fumes, hot air, gases, and smoke can all be removed quickly and easily while our Venturi Blowers can also be used to move fresh air into a manhole.



**METAL**



SCAN TO WATCH VIDEO



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



**PLASTIC**



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



SCAN TO WATCH VIDEO

## OPERATION

Compressed air or saturated steam is the power source for our Venturi Blower line. Small volumes of high-velocity air (from the compressed air source) run through the casting and out the nozzle jets, creating a venturi action or pulling action that creates large volumes of air through the venturi and out the air diffuser.

A 1" to 1 1/2" hose with a "crows foot" connection is recommended from your air supply source to the side inlet connection. The compressor size required can be determined by checking the chart on air consumed at various inlet pressures. Operate this Venturi Blower on air or steam lines limited to 140 psi.

- ▷ Choose from Metal or Anti-Static Plastic Linear Low-Density Polyethylene (LLDPE)
- ▷ Lightweight construction
- ▷ Convenient carry handles for one-person portability to any location
- ▷ No guards required
- ▷ Multiple inlet ports
- ▷ Sturdy steel galvanized steel diffuser
- ▷ All models include a crow's foot inlet connection
- ▷ Static ground wire is attached to the base of all blowers (for use in hazardous locations)
- ▷ Single-piece cast aluminum inlet housing



## SPECIFICATIONS

Overall Length	Diameter of Base	Diameter Top of Horn	NPT Size	Bolt Circle Diameter	Basic Slot Diameter	Net Weight	Order No.
16.75"	7.31"	6.00"	.5"	6.56"	0.4"	5.5 lbs.	9518-03S
16.75"	7.31"	6.00"	.5"	6.56"	0.4"	4.4 lbs.	9518-13S (plastic)
30.50"	7.31"	7.00"	.5"	6.56"	0.4"	8.5 lbs.	9518-03
30.50"	7.31"	7.00"	.5"	6.56"	0.4"	6.2 lbs.	9518-13 (plastic)
44.25"	11.25"	12.50"	1"	10.50"	0.4"	22.3 lbs.	9518-06
44.25"	11.25"	12.50"	1"	10.50"	0.4"	14.9 lbs.	9518-16 (plastic)
46.06"	14.37"	14.25"	1"	13.62"	0.5"	36.0 lbs.	9518-08
46.06"	14.37"	14.25"	1"	13.62"	0.5"	26.3 lbs.	9518-18 (plastic)
48.00"	17.50"	15.75"	1"	15.50"	0.6"	42.0 lbs.	9518-10

Overall length can vary up to 1/2"

Diameter Top of Horn can vary up to 1/4"





## AIRFLOW

### TOTAL AIRFLOW

60 PSIG.	80 PSIG.	100 PSIG.	Order No.	
865 CFM	1080 CFM	1205 CFM	9518-03S	9518-13S
1135 CFM	1310 CFM	1465 CFM	9518-03	9518-13
2560 CFM	3020 CFM	3700 CFM	9518-06	9518-16
4215 CFM	4810 CFM	5435 CFM	9518-08	9518-18
6180 CFM	7305 CFM	8220 CFM	9518-10	

### AIR CONSUMED

60 PSIG.	80 PSIG.	100 PSIG.	Order No.	
30 SCFM	40 SCFM	50 SCFM	9518-03S	9518-13S
30 SCFM	40 SCFM	50 SCFM	9518-03	9518-13
60 SCFM	80 SCFM	100 SCFM	9518-06	9518-16
110 SCFM	140 SCFM	180 SCFM	9518-08	9518-18
190 SCFM	250 SCFM	380 SCFM	9518-10	

### FREE AIR INDUCTION RATIOS (Airflow divided by Air Consumed)

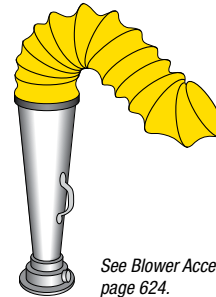
60 PSIG.	80 PSIG.	100 PSIG.	Order No.	
28.83	27.00	24.10	9518-03S	9518-13S
37.83	32.75	29.30	9518-03	9518-13
42.67	37.75	37.00	9518-06	9518-16
38.32	34.36	30.19	9518-08	9518-18
32.53	29.22	21.63	9518-10	

Example:

When using 9518-03S or 9518-13S with air supply 60 PSIG. and 30 SCFM, the total outlet airflow will generate up to 865 CFM.

Models 9518-03, 9518-03S, 9518-13, and 9518-13S use 8-inch ducting.

Models 9518-06, 9518-08, 9518-10, 9518-16, and 9518-18 use 16-inch ducting.



See Blower Accessories page 624.

### ACCESSORY PART NUMBERS

Description	Order No.
Duct to Duct Connector for 8" Ducting	9500-01
Duct to Duct Connector for 16" Ducting	9600-01
Adapter/Reducer 16" to 8"	9600-50
Storage Bag for 8" Ducting	9500-45
Storage Bag for 16" Ducting	9600-45
Storage Rack for 8" Ducting	9500-35
Storage Rack for 16" Ducting	9600-36

### DUCTING PART NUMBERS

Description	Order No.
15' of 8" Ducting	9500-15
25' of 8" Ducting	9500-25
15' of 8" Statically Conductive Ducting	9500-15EX
25' of 8" Statically Conductive Ducting	9500-25EX
15' of 16" Ducting	9600-15
25' of 16" Ducting	9600-25
15' of 16" Statically Conductive Ducting	9600-15EX
25' of 16" Statically Conductive Ducting	9600-25EX

## PNEUMATIC BLOWERS



### 20" JET FAN

This heavy-duty aluminum fan can be used as a blower or exhaust by simply reverse mounting. Compressed air is pushed through a nozzle at the end of each blade, creating up to 10,500 CFM at 100 psig. The fan features heavy-duty ball bearings that are permanently lubricated and sealed for the life of the fan.

- ▷ 3/4" side mount inlet connector
- ▷ Spark resistant
- ▷ Easy to transport with recessed handles or can be rolled
- ▷ Dimensions: 9 7/8" h x 24 3/4" diameter

Order No. 9518-20



### 24" JET FAN

Compressed air is pushed through a nozzle at the end of each blade, propelling the fan at speeds up to 16,000 RPM at 100 psig. This heavy-duty aluminum fan can be used as a blower or exhaust by simply reverse mounting.

- ▷ 3/4" side mount inlet connector
- ▷ Heavy-duty ball bearings permanently lubricated and sealed for the life of the fan
- ▷ Spark-resistant unit
- ▷ Easy to transport with recessed handles or can be rolled
- ▷ Dimensions: 11 3/4" h x 32 3/4" diameter

Order No. 9518-24



## CFM AT GIVEN STATIC PRESSURE (IN WG)

Jet Fan Size	Inlet Pressure (PSIG)	Air Consumption (SCFM)	Static Pressure (in inches of water)				
			0"	1"	2"	3"	4"
20" Jet Fan	40	60	6,000	3,600	1,600	200	—
	60	114	7,500	5,900	3,900	2,300	1,200
	80	186	9,000	7,700	6,000	4,400	3,200
	100	292	10,500	9,200	7,800	6,300	4,800
24" Jet Fan	40	76	8,200	2,400	—	—	—
	60	147	11,000	6,500	—	—	—
	80	225	12,900	9,900	6,200	3,400	1,200
	100	338	16,000	14,000	11,300	8,300	6,300

# BLOWER ACCESSORIES



## ADAPTER REDUCER

Our lightweight, yellow and black, soft nylon adapter reducer is rugged enough to stand up to any working condition and is designed for most air handling capabilities. Its flexible and collapsible design allows for easy storage when not in use. The reducer is available in three models and includes a duct-to-duct connector.

Note: 16" reducers can NOT be used with 9516 and 9515-50EX blowers.

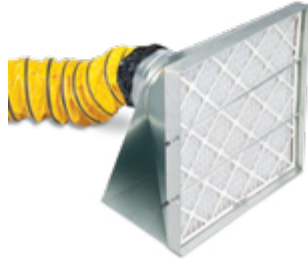
Description	Order No.
12" - 8" Flexible Vinyl	9550-50
16" - 8" Flexible Vinyl	9600-50
16" - 12" Flexible Vinyl	9600-55



## EXPLOSION-PROOF SOCKET

Designed for use in hazardous locations. Features an iron mounting box with triple coat finish and spring-loaded door keeping dust out of receptacle when plug is not in use. When plug is in use, a neoprene gasket inside receptacle seals around plug keeping out dirt, water, dust, and other foreign matter.

Description	Order No.
110V	9503-03
220V	9503-06



## BLOWER FILTER BOX

Hook up your existing blower with 8" ducting to the back of our Filter Box. It filters the ambient air from or to the blower through the Filter Box. Can be attached on either inlet or outlet side of blower for positive or negative filtration. Filters particulates and dust. Made of galvanized sheet metal. Operates with up to two filters inserted at once. One filter included. Dimensions are 24"l x 24"w. Weighs 13 lbs.

Order No. 9500-34



## DUCT-TO-DUCT CONNECTOR

Allows safe connection of additional ducting for remote locations, this connector is constructed of galvanized steel with a raised lip to hold ducting in place.

Description	Order No.
8" diameter	9500-01
12" diameter	9550-01
16" diameter	9600-01
20" diameter	9650-01
26" diameter	9700-26



## STANDARD EXTENSION CORD

This 50' yellow extra heavy-duty cord powers 15 AMP, 120V. Weather-resistant at temperature range of -40° F to 140° F (-40° C to 60° C). Includes rugged and durable clear molded plugs. Meets OSHA specifications and UL-listed. Weighs 13 lbs.

Order No. 9540-50



## Y-DUCT CONNECTOR

Our Y-Duct Connectors help distribute airflow in multiple directions. Made of industrial-grade galvanized sheet metal and sized to fit standard 8", 12", 16" or 20" circular ducting. The adapter inlets measure 8" x 8" x 8", 12" x 12" x 12", 16" x 16" x 16" or 20" x 20" x 20" respectively. Easily connects to your ducting by using standard ring clamps. Using multiple Y-Duct Connectors with other fittings may reduce your airflow.

Description	Order No.
8" diameter, 4 lbs.	9500-Y
12" diameter, 7 lbs.	9550-Y
16" diameter, 10 1/2 lbs.	9600-Y
20" diameter, 16 lbs.	9650-Y



## EXPLOSION-PROOF EXTENSION CORD

This 50' black extension cord comes with a 20 AMP connector and plug. Weather-resistant at a temperature range of -40° F to 221° F (-40° C to 105° C). Flexible and provides excellent abrasion resistance. UL-listed and CSA-certified for indoor and outdoor use. CSA Certifications: Class I Division 1 & 2 Groups B, C, and D; Class II, Division 1 & 2 Groups F\* and G. Weighs 15.5 lbs.

*\*Do not use where electrically conductive dusts are present (most coal dust is not electrically conductive).*

Description	Order No.
110V	9540-50EX
220V	9540-60EX







**ALLEGRO**  
INDUSTRIES



# DUCTING



Statically conductive ducting is black.

8" DIA.      12" DIA.      16" DIA.      20" DIA.      26" DIA.



## DUCTING

We can handle all your ducting needs with our extensive offering in five different diameters: 8", 12", 16", 20", and 26". The 8" ducting is available in 6', 15', and 25' lengths. The 12", 16", 20", and 26" ducting are available in 15' and 25' lengths. Lightweight and retractable, this ducting is designed for maximum air handling capabilities and built for dual-direction flow with minimum friction loss.

- ▷ *Made from vinyl and polyester materials with PVC coating*
- ▷ *Non-collapsible design with yellow and black weather strip for visibility*
- ▷ *Meets ASTM 227 specs*
- ▷ *Temperature resistance up to 180° F*

	8"	12"	16"	20"	26"
6 feet	9500-06	9550-06			
15 feet	9500-15	9550-15	9600-15	9650-15	9700-15
25 feet	9500-25	9550-25	9600-25	9650-25	9700-25

## STATICALLY CONDUCTIVE DUCTING

We offer ducting in four different diameters: 8", 12", 16", and 20", available in 15' and 25' lengths for static conductive environments. This lightweight and retractable ducting is designed for maximum air handling capabilities with dual direction flow and low friction loss, providing a safe, positive means of discharging static build-up.

- ▷ *Made from vinyl and polyester materials with a neoprene coating*
- ▷ *Temperature resistance up to 250° F*
- ▷ *Integrated with extended solid grounding wire at each end*
- ▷ *Meets ASTM Specs and UL-94-V0 requirements*
- ▷ *Rated to 1,000,000 OHMS or less per square inch*

	8"	12"	16"	20"
15 feet	9500-15EX	9550-15EX	9600-15EX	9650-15EX
25 feet	9500-25EX	9550-25EX	9600-25EX	9650-25EX







## LAY FLAT DUCTING

Lightweight air ventilation tubing, similar to a plastic bag, is manufactured from durable clear polyethylene. Engineered for maximum elasticity, flexibility, toughness, and resistance to splitting and tearing, it is most commonly used for transferring large volumes of forced air to confined areas, such as water restoration projects, building renovations, or other temporary applications. This tubing is not designed for permanent installations and collapses when airflow stops.

- ▷ **Unaffected by moisture and most chemicals**
- ▷ **Resistant to bacterial and fungal growth, making it suitable for use in food preparation areas**
- ▷ **Temperature range: 41° F to 150° F (5° C to 65° C)**
- ▷ **22" diameter flat**
- ▷ **Length: 500'**



Description	Order No.
Fits up to 14" blowers	9500-500
Fits 16" and 20" blowers	9600-500



## PLASTIC DUCTING STORAGE CANISTERS

Constructed from Linear Low-Density Polyethylene (LLDPE), this lightweight canister holds 25' of either 8" or 12" ducting. Transporting this canister is made easy with the molded-in carry handle. A secured lid with strap and side release plastic buckle are additional design features to this convenient storage canister.



Description	Order No.
8" Plastic Ducting Storage Canister	9500-55
12" Plastic Ducting Storage Canister	9550-55



## STO-SACK

This lightweight self-storage bag with attached ducting is designed for convenient storage and easy transport of ducting. Available in different diameters and lengths, the bag features flame-retardant materials, a fastening belt to attach directly to a blower, a drawstring closure to store ducting in the bag, and a built-in carry handle.

- ▷ **Ideal for moving large volumes of air, smoke, or fumes using portable and temporary ventilation blowers under positive pressure**
- ▷ **Made of single-ply, PVC-coated, flame-retardant vinyl and polyester materials**
- ▷ **Temperature range: -20° F to 180° F (-28.8° C to 82.22° C)**
- ▷ **Retractable, non-collapsible design with Class 1 hard-drawn spring steel wire helix**
- ▷ **Includes fastening cuff to attach the bag to the blower**
- ▷ **Yellow color with black weather strip**
- ▷ **Meets ASTM 227 specifications**



Description	Order No.
8" x 15' Ducting	9500-15SB
8" x 15' Statically Conductive Ducting	9500-15EXSB
8" x 25' Ducting	9500-25SB
8" x 25' Statically Conductive Ducting	9500-25EXSB
12" x 15' Ducting	9550-15SB
12" x 15' Statically Conductive Ducting	9550-15EXSB
12" x 25' Ducting	9550-25SB
12" x 25' Statically Conductive Ducting	9550-25EXSB



## DUCT STORAGE BAG

For easy storage and transportation. Polyester bag with cylinder shape for tight controlled fit will hold up to 25 feet of 8", 12", 16" or 20" ducting. Features double zipper for ease of access, reinforced carry handle and shoulder strap.

Description	Order No.
8" Ducting	9500-45
12", 16" or 20" Ducting	9600-45

# MANHOLE VENTILATION PASSTHRU



SCAN TO  
WATCH VIDEO



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

## 8" MANHOLE VENTILATION PASSTHRU (MVP)

The first manhole system that combines a low-profile manhole air vent, 90° elbow, and built-in mounting all in one unit. This compact and lightweight unit comes with a collapsible duct, made from vinyl and polyester with PVC coating, stored in a small storage bag, which can be quickly released and dropped into the manhole. The ducting springs back into shape once the worker is inside.

- ▷ Heat resistant up to 180° F
- ▷ Meets ASTM 227 specs and is UL 94V-0 flame-retardant
- ▷ Manhole cover fits into a flat channel corner for stabilization
- ▷ Constructed from Linear Low-Density Polyethylene (LLDPE)
- ▷ Easy to store and ships in one small carton
- ▷ Recyclable



Description	Order No.	
8" Manhole Ventilation Passthru (MVP)	9510-50	
8" Manhole Ventilation Passthru (MVP) with 15' Ducting	9510-55	

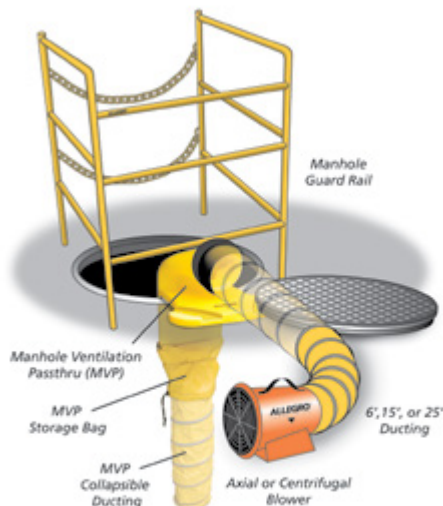
## 12" MANHOLE VENTILATION PASSTHRU (MVP)

The first manhole system that combines the low-profile manhole air vent, 90° elbow, and built-in mounting all in one unit. This unit comes with a collapsible duct for easy entry, made from vinyl and polyester with PVC coating, stored in a small storage bag that can be dropped down into the manhole with a quick release of the drawstring. The collapsible duct springs back into shape once the worker is down into the manhole. The ducting is heat resistant up to 180° F, meets ASTM 227 specs, and is UL 94V-0 flame-retardant.

- ▷ Manhole cover fits into a flat channel corner for stabilization
- ▷ Compact, lightweight, and made from Linear Low-Density Polyethylene (LLDPE)
- ▷ Not statically conductive
- ▷ Easy to store and ships in one small carton
- ▷ Recyclable



Description	Order No.	
12" Manhole Ventilation Passthru (MVP)	9510-60	
12" Manhole Ventilation Passthru (MVP) with 15' Ducting	9510-65	






## 8" EX-PROOF MANHOLE VENTILATION PASSTHRU (MVP)

The first explosion-proof system that combines the low-profile manhole air vent, 90° elbow, and built-in mounting all in one unit. This unit comes with a collapsible duct for easy entry, stored in a small storage bag that can be dropped into the manhole with a quick release of the drawstring. The Collapsible duct springs back into shape once the worker is down into the manhole. The ducting made from neoprene-coated, single ply, vinyl and polyester materials, heat resistant up to 250° F (121.1° C), meets ASTM 227 specs, and is UL 94V-0 flame retardant.

- ▷ *Manhole cover fits into a flat channel corner for stabilization*
- ▷ *Compact, lightweight, and made from Linear Low-Density Polyethylene (LLDPE) conductive material*
- ▷ *Easy to store and ships in one small carton*
- ▷ *Recyclable*

Description	Order No.
8" EX-Proof Manhole Ventilation Passthru (MVP)	9510-50EX 





# HIGH-OUTPUT FANS



*Swing Arm Mount  
Sold Separately*



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Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



*Wall Mount Sold  
Separately*

## HIGH-OUTPUT FAN

ALLEGRO's NEW series of High-Output Fans are versatile enough to withstand tough working conditions in warehouses and industrial settings; all while offering a refreshing breeze. These durable fans are built for high-velocity performance and superior distance of air throw to keep your employees comfortable as well as maximize their productivity.

- ▷ **High CFM output**
- ▷ **Made from lightweight, high-impact Linear Low-Density Polyethylene (LLDPE)**
- ▷ **Venturi-style inlet helps create even, non-disturbed airflow**
- ▷ **Vibrant yellow color for easy visibility**
- ▷ **360° turn radius and 130° tilt angle to push air where it's needed most**
- ▷ **Low energy consumption**
- ▷ **Powder-coated steel yoke bracket that's easily mountable**
- ▷ **Available with optional swing arm or wall mount brackets**



Diameter	Length	Width	Height	Weight	CFM	Order No.
18"	16"	24.5"	16"	44 lbs.	4179	9541-18
22"	16"	29"	16"	48 lbs.	5606	9541-22





## HIGH-OUTPUT FAN WALL MOUNT

Our metal Wall Mount is made from 1/4" and is designed to mount either of our 18" or 22" High-Output Fans. Fan-mounting hardware is included while mounting hardware to the surface is not.



Description	Order No.
High-Output Fan Wall Mount (4"w x 20"d x 26.25"h)	9541-05



## HIGH-OUTPUT FAN SWING ARM MOUNT

Our metal Swing Arm Mount is made from 1/4" and is designed to mount either of our 18" or 22" High-Output Fans. The Swing Arm moves freely to position our fans in the optimal position you want. Fan-mounting hardware is included while mounting hardware to the surface is not.



Description	Order No.
High-Output Fan Wall Mount (4"w x 11.25"d x 35.4"l)	9541-10

# CARPET BLOWERS




## THREE SPEED CARPET DRYER BLOWER


Designed for speed drying of wet carpets, pads, floors, and walls. Lightweight, plastic, blue housing that holds a squirrel cage fan and is stackable for convenient storage. The integrated carry handle allows for easy transport. Flat outlet allows blower to be directed under carpets. UL-listed. Certified to CSA STD C22.2 No 113.

Dimension 20" w x 17" d x 20" h  
 Weight 28 lbs.  
 Power Supply ½ hp 115V AC, 60 Hz

Order No. 9519-03  
 Order No. 9519-03E



 Blowers offered in 220V/50 Hz. Does not meet the CSA requirements for the following product safety standards: Fans and Ventilators, C22.2 No. 113. For more information call Customer Service at 800-622-3530.

 Meets the CSA requirements for the following product safety standards: Fans and Ventilators, C22.2 No. 113







07

**CONFINED SPACE  
EQUIPMENT**



# LID LIFTERS

## MAGNETIC MANHOLE LID LIFTER

Safe and strain-free removal of manhole covers  
 Designed for quick and safe removal and replacement of manhole covers by yourself. Minimizes stress and strain on the back and body. Collapsible for easy storage and transport. Can access uneven textured surfaces found on manhole covers with dual position lifting points to provide the power to break loose the most stubborn covers. For safety purposes, the magnet must be in contact with manhole cover to be engaged.

- ▷ *Reduces strain on operator when lifting manhole covers*
- ▷ *Eliminates the use of pry bars*
- ▷ *Folds for easy transport to worksite*
- ▷ *Moves covers up to 36" in diameter*
- ▷ *Offered with a steel or aluminum dolly*
- ▷ *Lifts Up To 900lbs*



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

Description	Order No.
Steel Dolly and 660 lb. Magnet (lift weight)*	9401-25
Steel Dolly and 900 lb. Magnet (lift weight)*	9401-26
Aluminum Dolly and 660 lb. Magnet (lift weight)*	9401-25A
Aluminum Dolly and 900 lb. Magnet (lift weight)*	9401-26A
Steel Dolly	9401-27
Aluminum Dolly	9401-27A

\*See spec sheets for flat and round item lifting weights.



## COMPACT MAGNETIC LID LIFTER

This lightweight, one-piece compact magnetic lid lifter makes moving the toughest manhole covers easy. It features a durable aluminum handle and base with rubber grips on the handles for secure handling. The magnets are surrounded by impaction protection guards and a storage tray allows for mobility during transportation. The magnets are made from rare neodymium that doesn't wear out.

- ▷ *Three magnets (3.5"l x 2"w, 12 lbs.) provide 150 lbs. of lifting capacity*
- ▷ *Shell Guard: 13"l x 8"w*
- ▷ *Lid Lifter: 34"h, 14 lbs.*

Order No. 9401-35



## MANHOLE LID LIFTER

The toughest manhole covers are easy to move with this one-piece lifter. It features a long all-steel handle that provides the leverage necessary to lift the heaviest lids. For safe storage, the alloy steel hook recesses and locks into the pole. Rubber grips on the handle and foot prevent slips and cadmium-plating fights rust. 42" long, 9 lbs.

Order No. 9401-20



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



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## MAGNETIC VALVE BOX LID LIFTER

Our series of lightweight Magnetic Valve Box Lid Lifters are specifically designed to eliminate the need to bend over when lifting and removing cast iron utility and valve box covers reducing strain on your back and body. The magnetic field penetrates texture surfaces of lids and allows the operator to ergonomically lift the casting out of the way reducing toe and finger injuries. They also feature a locking On/Off handle for safety, which makes removing covers quick and easy.



Description	Order No.
Magnetic Valve Box Lid Lifter (lift weight: 50 lbs.)	9401-40
Deluxe Magnetic Valve Box Lid Lifter (lift weight: 75 lbs.)	9401-45



# LID LIFTER ACCESSORIES

These accessories are ONLY for the Magnetic Manhole Lid Lifter (9401-25/9401-26 series)



## MAGNET

Offered in two strengths, the lifting magnet will lift manhole lids up to 660 lbs. The heavy-duty magnet will lift manhole lids up to 900 lbs. Requires no special tools or power sources.

Description	Order No.
660 lb. Magnet (lift weight)*	9401-28
900 lb. Magnet (lift weight)*	9401-28S

\*See spec sheets for flat and round item lifting weights.



## MAGNETIC LID LIFTER SPREADER BAR

Allows the use of two magnets simultaneously for those extra-heavy and oversized lids or grates. Bar hangs onto existing dolly without the need to assemble. Magnets not included. Weighs 6 lbs.

Order No. 9401-31



## MAGNETIC LID LIFTER EXTENSION

Extends the overall length by 7 inches to increase the leverage for heavier lids. Also extends the distance from the wheels for very large lids. Attached to the existing dolly with set screw and pin.

Order No. 9401-33



## STORM GRATE LIFTING ADAPTER

Three hooks for easy lifting and moving rectangular storm grates.

Order No. 9401-30



## MAGNETIC LID LIFTER HOOK

Designed to angle the hook for those hard-to-reach manholes. The zinc-plated, 5/0 chain is 24 inches long for adjustability. Made of 4130 tempered steel to hold up to the heaviest lids. Heat treated to 30-35 RC & oil quench. Also included: anchor shackle (3/8" diameter, 3/8" pin, 13/16" spread) and threaded connector (3/8" diameter, 27/16" l x 3/4" w).

Order No. 9401-32



## LARGE 10" PUNCTURE PROOF WHEELS

10" puncture-proof wheels increase footprint for use on soft ground. Drop axles ensure height remains the same as when using standard wheels.

Order No. 9401-29



# CONFINED SPACE ACCESSORIES

## MANHOLE GUARD RAIL

- ▷ Strong, one-inch tubular .078-gauge steel
- ▷ Power-coated in safety yellow for a durable finish and high visibility
- ▷ Easy, tool-free assembly
- ▷ One-piece construction
- ▷ Protected entry and exit with rail locks and hooking chains
- ▷ Accommodates signs, flags, or lights
- ▷ Compatible with guard rail tent, umbrellas, or winch (9401 model only)

*\*This assembly is to be used as a "Temporary Barrier Railing" only. See OSHA 1910.146(c)(5)(ii)(B)*

Description	Order No.
33" Manhole Guard Rail	9401
42" Manhole Guard Rail	9401-05



## HIGH-IMPACT POLYMER MANHOLE SHIELD

Constructed of rugged, lightweight Polyethylene with bright yellow material that resists fading.

- ▷ Fits 28", 30", and 32" diameter manholes
- ▷ Inflatable seal ensures a watertight seal
- ▷ 4 outrigger support gussets for stabilization
- ▷ 12" tall to keep water and mud out of the manhole during work
- ▷ Can be used with ALLEGRO guard rail

Order No. 9401-12



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Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



## GUARD RAIL WINCH

Raising and lowering equipment into confined spaces can be impossible without this durable winch.

- ▷ Lightweight and portable
- ▷ 300 lb. capacity
- ▷ Easy mounting on 9401-model guard rail
- ▷ Side pieces made of high-tensile, heavy gauge aluminum
- ▷ Yellow finish that resists weather and wear
- ▷ Winch bar made of rugged high-tensile steel tubing with 3" drum for fast recovery
- ▷ Load control and security with two independent ratchet systems & double-disc automatic brake
- ▷ Strong and durable 1/2" and 35' nylon braided rope
- ▷ Guard rail not included

**WARNING:** Not for use as a personal retrieval device.

Description	Order No.
Guard Rail Winch	9401-10
35' Winch Rope	9401-36



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)



## MANHOLE SAFETY CROSS

The Manhole Safety Cross is a two-bar system that interlocks in the center to reduce the manhole opening size minimizing the chance of falling into the manhole. This unique safety device installs in seconds, stores easily, and causes zero damage to the manhole or street. For added safety, each bar is labeled with warning stickers and numbered for easy installation. Available in small and large adjustable size options.



Description	Order No.
Adjustable Small Manhole Safety Cross (fits 18", 21", and 24" manhole openings)	9406-24A
Adjustable Large Manhole Safety Cross (fits 26", 30", and 36" manhole openings)	9406-36A



**YouTube**  
Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)





# DEWATERING PUMPS

Portable and submersible pumps are excellent for manholes, vaults, construction sites, and all dewatering needs. They offer top discharging which allows continuous operation at low water levels and extended dry runs without overheating. Includes synthetic rubber wear parts and vortex impeller for durability. All pumps and hoses feature fire hose-style quick-connect fittings, and a V-ring system to protect the shaft seal from abrasives.



## SLUDGE PUMP

Excellent for pumping standing water containing sand, solids, leaves, or debris at a maximum of 50 gallons per minute. Submersible to 39 feet and continuous running water level to 3 1/2". 1/2 hp motor.

**Order No.** 9404-04



## STANDARD DEWATERING PUMP

Excellent for manholes, vaults, construction sites, and all dewatering needs. Offers top discharging and allows continuous operation in low water levels. Includes synthetic rubber wear parts and vortex impeller. Fire hose quick-connect fitting. Offers easy disassembly with one 12mm box/socket wrench.

**Order No.** 9404-02



## PUMP DISCHARGE HOSE

Features tough PVC material, collapsible design for compact storage and fire-hose quick-connect design. Measures 50' x 2".

**Order No.** 9404-50

## SPECIFICATIONS

Model	Discharge Bore Inch	Motor Output HP	Phase	Total Head* (MAX.) ft.	Capacity (MAX.) gal/min	Rated Current-Amps	Starting Method	Weight	Length of Cable ft.	Dimensions inches		C.W.L.* inch	Order No.
										Diameter	Height		
Standard Pump	2	2/3	Single	39 1/2	63 1/2	5.4	Capacitor	21	32	7 3/8	12	2	9404-02
Sludge Pump	2	1/2	Single	39	50	5.1	Capacitor	25	20	9 1/2	13 3/8	3 1/2	9404-04

Max. Cable Length (including standard 32 ft.): \* Total Head - Maximum depth pump may be submerged. \* C.W.L. - Continuous Running Water Level





# 08

## OUTDOOR EQUIPMENT



# WORK TENTS AND HEATERS

Constructed to the highest standards for durability and ease of use, you'll find our line of outdoor equipment stands up to the elements in even the harshest of conditions. These work tents and heaters are made with high-quality materials and are designed to keep your onsite workers as comfortable as they are safe.



SCAN TO WATCH VIDEO



Video available on the ALLEGRO INDUSTRIES Channel  
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## DELUXE WORK TENT

Easy to use and very durable, the Deluxe Work Tent features quick set-up from the inside or outside with a fiberglass rod frame. These frames are uniquely designed to not pull out or poke through the fabric. A handy attached roll-up flap provides compact storage and easy transport and means no missing storage bag. Offered in two sizes, it is available in a one-door design with zipper closure or a two-door design with one zipper and one roll-up door. The pitch roof style provides extra headroom and structural strength and repels snow and water. Frame rods are bolted for increased stability and the unbreakable hinges are made of rolled steel. The free-standing structural stability is excellent in windy conditions. For safety, side panels are hi-viz green, and the white color of the tent allows proper lighting for color matching. Included is a blower duct tube in the rear of the tent, and a covered window. Flame-retardant. Weighs 32 lbs. 

## ECONOMY WORK TENT

Utility shelter springs from backpack into a full-size (6' d x 6' w x 7' h) tent in seconds. It is made from water-resistant, flame-retardant, and UV-treated nylon with 360° reflective striping. Quick set-up from the inside or outside, with two floor-to-floor fiber poles for better stability and structural strength. One large door and two large windows offer easy access for workers and equipment, an open bottom allows for protection while working over manhole covers or excavation sites.

- ▷ Available in hi-viz green
- ▷ Compact and lightweight design
- ▷ Includes twelve yellow 9" plastic stakes
- ▷ Folds to 31" l x 2 1/2" h
- ▷ Weighs 22 lbs.

Order No. 9403-66

Description	Order No.
6'w x 6'd x 6 1/2'h, 1 door	9401-66
8'w x 8'd x 7 1/2'h, 1 door	9401-88
6'w x 6'd x 6 1/2'h, 2 doors	9402-66
8'w x 8'd x 7 1/2'h, 2 doors	9402-88

Height measured from peak of roof







## TENT HEATER

Our lightweight Tent Heater offers a rugged, heavy-duty design with an all-steel housing, enclosed heating elements, and a sealed motor. This powerful heater will raise the temperature 50° F (10° C) in a work tent. It is UL-listed, CSA-approved, requires 110V AC, and offers 1500 watts of 5000 BTU with 115 CFM airflow. 12"l x 8"w x 12"h. Weighs 14 lbs.

**Order No. 9401-50**



## HI-VIZ GREEN UTILITY CANOPY SHELTER

The perfect shelter for confined space sites, utilities or any workplace where shade/shelter is needed. Affordable and featuring hi-viz green for visibility, this polyester canopy offers 100% UV protection, meets CPAI 84 fire code, and is water- and fire-resistant. Powder-coated steel frame requires no tools for setup. Rust-proof ABS foot pads provide greater ground stability and pull-pin leg adjusters offer easy height adjustment and leveling capacity. This canopy offers a full truss ceiling design. Included are four steel stakes and nylon rope for securing canopy shelter and storage bag. Easy pop-up for quick set-up and tear-down. Comes with a convenient carry/storage bag. Dimensions: 10' x 10' Clearance from ground to lowest truss 7'1" (maximum) Overall height 11' (maximum). Weighs 53 lbs.

**Order No. 9403-10**



## SIDE WALL KIT

This optional Kit for the Canopy (9403-10) includes a continuous 3-wall panel. The white color of the side wall panel allows proper lighting for color matching. Made of 210D Polyester and meets CPAI 84 fire code.

**Order No. 9403-11**



Meets the CSA requirements for the following product safety standards:  
Fans and Ventilators, C22.2 No. 113

# UMBRELLAS



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Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

Guardrail sold separately

## DELUXE UMBRELLA

This 84" diameter umbrella offers low-cost protection from sun and rain. It features heavy-duty vinyl in safety yellow with a sturdy 92" two-part metal pole that tilts for convenience. It can be pushed into the ground or strapped to the manhole guard rail. For easy storage, it collapses to 4' x 6" in length.

**Order No. 9403**



## NONCONDUCTIVE UMBRELLA

This 84" diameter Nonconductive Umbrella will protect you from the sun and rain at your job site. Constructed of waterproof UV-treated laminated vinyl with poles and fittings made from non-metallic material and leather-reinforced ends for added safety. The sturdy 48" pole with extension allows for adjustability measures up to 96". Set up and break down in seconds. Water-resistant storage bag included.

**Order No. 9403-03**



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

## ECONOMY UMBRELLA

Using the same heavy-duty safety yellow vinyl as the Deluxe Umbrella, the Economy model uses a strong, pointed 84" two-part wood pole, is 68" in diameter and collapses to 4' x 6" in length.

**Order No. 9403-01**



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

## UMBRELLA STAND

When the umbrella pole cannot be driven into the ground, this metal stand with four locking legs offers stability and ensures against collapse. The legs fold up for compact storage and easy transport.

**Order No. 9403-05**







UNDER ROOF PL  
ZONE 12



# 09

## WALL CASES

# WALL CASES

ALLEGRO's comprehensive line of convenient storage products allow your respiratory equipment to last longer and work more efficiently. In addition, our defibrillator storage line is designed for quick and easy access—essential to storing life-saving equipment.



## HI-VIZ HEAVY-DUTY SINGLE SCBA WALL CASE

Designed for a single SCBA, this low-profile wall-mounted case provides protection from dust, moisture, and damaging plant environments. The roto-molded material makes this case lightweight yet extremely rugged. Available in hi-viz yellow or green, ALLEGRO wall cases are easy to spot in the work environment. Two viewing windows allow easy visibility of the SCBA gauges and internal bracket and straps keep the SCBA secure. Comes standard with universal cylinder bracket. Can be mounted in a corner to reduce profile. Recyclable.

Exterior 17" w x 14" d x 32" h  
 Interior 15 3/4" w x 12 3/4" d x 28" h  
 Weight 18 lbs.



Description	Order No.
Hi-Viz Yellow	4125
Hi-Viz Green	4150

## HI-VIZ HEAVY-DUTY DUAL SCBA WALL CASE

Built to store two SCBA units, this low-profile, hi-viz yellow or green wall-mounted case is rugged yet lightweight. Built for simple, fast installation, this wall case is also recyclable and built from Linear Low-Density Polyethylene (LLDPE). Four viewing windows on each side allow easy visibility of the SCBA gauges. Cylinder brackets and straps support the entire weight of the SCBAs. Comes with two universal wall brackets. Recyclable.

Exterior 34" w x 14" d x 32" h  
 Interior 31 1/2" w x 12 3/4" d x 28" h  
 Weight 38 lbs.



Description	Order No.
Hi-Viz Yellow	4325
Hi-Viz Green	4350

## ALL-WEATHER SCBA WALL CASE

Our 4600 series All-Weather SCBA Wall Cases are designed for the storage of wall-mounted SCBAs to withstand the harshest environmental and plant conditions. Made of injection-molded polypropylene, these watertight, crushproof, and dustproof cases are very lightweight but extremely rugged and durable. These cases feature a large viewing window to allow for easy visibility of the SCBA gauges. The walk-away cylinder bracket or cylinder strap supports the entire weight of the SCBA and keeps it secure inside the case.

Exterior 20.1" w x 12.1" d x 31.1" h  
 Interior 17.3" w x 10.6" d x 28.4" h  
 Weight 17 lbs., 21 lbs., or 22 lbs. (see below)



Description	Order No.
Wall Case w/ Nylon Strap, 17 lbs.	4600
Wall Case w/ 5.25" Bracket, 21 lbs.	4605
Wall Case w/ 6.75" Bracket, 22 lbs.	4606
Wall Case w/ 7.25" Bracket, 22 lbs.	4607



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Video available on the ALLEGRO INDUSTRIES Channel  
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## SCBA COVER KITS

The Deluxe SCBA Cover Kit protects SCBAs from dirt and UV light. Hook-and-loop closure offers quick access. Includes heavy vinyl cover, silk screened identification, masonite backboard, and a deluxe tough, yellow steel cylinder bracket.

Description	Order No.
w/ 5 1/4" clip	4110-15
w/ 6 3/4" clip	4110-16
w/ 7 1/4" clip	4110-17
Cover and Backboard only	4110-18



4111  
SERIES



4110-04



SCBA and Mask Not Included

## DELUXE SCBA BRACKET

The Deluxe SCBA Bracket is constructed of durable coated steel.

Description	Order No.
5 1/4" clip fits 30 min., hp	4111-05
6 3/4" clip fits 30 min., lp & 45 min., hp	4111-06
7 1/4" clip fits 60 min., hp	4111-07

## SCBA BAG

Easy to transport and store, this durable rectangular carry bag features reinforced handles, shoulder strap and dual zipper entry. Internal padding protects SCBA and mask. Accessory zipper pouch and internal straps with side release buckle. Size: 30"l x 12"w x 13"h

Order No. 4100-45



## EBA BRACKET

For escape breathing apparatus. 4 3/4" clip fits 5/10-minute EBA.

Order No. 4110-04

## DELUXE AND STANDARD WALL CASE

Our Deluxe and Standard wall cases protect respirators against damaging plant and window environments. They are made of corrosion-resistant ABS with ultraviolet inhibitors. Nonmetallic hinges and latches prevent rust while a rubber door seal protects equipment from dust and moisture. The Deluxe Case comes with shelf and single SCBA cylinder bracket. The Standard Case offers the same large capacity, without shelf or bracket.



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Exterior 20" w x 13" d x 32 1/2" h  
Interior 18" w x 10" d x 28" h  
Weight 13 lbs.



Description	Order No.
Deluxe Wall Case	4100
Standard Wall Case	4101



Video available on the ALLEGRO INDUSTRIES Channel  
[www.youtube.com/AllegroIndustries](http://www.youtube.com/AllegroIndustries)

## HI-VIZ HEAVY-DUTY EMERGENCY RESPIRATOR WALL CASE

Designed to hold up to two 5 or 10 min EBAs and protect equipment from dust, moisture, and plant environments. This lightweight wall case can be mounted in a corner and the hi-viz green color makes locating easy. Made of Linear Low-Density Polyethylene (LLDPE), the rugged design features a window for easy visibility of equipment and is recyclable.

Exterior 14" w x 10" d x 21" h  
Interior 12 3/4" w x 8 3/4" d x 17" h  
Weight 10 lbs.



Order No. 4550



### RESPIRATOR STORAGE WALL CASE

Perfect for storing APRs, cartridges, and other respirator accessories such as fit testing kits, storage bags, and cleaning supplies. One shelf included.

Exterior 14" w x 9 1/2" d x 18" h  
Interior 12" w x 7 1/2" d x 16" h  
Weight 4 lbs.



Order No. 4400

### EMERGENCY RESPIRATOR WALL CASE

Holds up to two 5- or 10-minute EBAs. Made of corrosion-resistant ABS with ultraviolet inhibitors. No interior shelves.

Exterior 14" w x 9 1/2" d x 21" h  
Interior 12" w x 7 1/2" d x 19" h  
Weight 4 lbs.



Order No. 4500

### LOCKOUT / TAGOUT WALL CASE

This case can be used both inside and outside. Made to protect supplies from dust and the elements. Comes with three shelves and can be securely locked.

Exterior 14" w x 9 1/2" d x 18" h  
Interior 12" w x 7 1/2" d x 16" h  
Weight 6 lbs.



Order No. 4400-L





### PAPR WALL CASE

This lightweight design features two windows allowing for quick identification of contents. Covered pass-through allows charging while storing and will keep dirt and moisture out. You can store your PAPR without disassembling the breathing tube. Includes two shelves and storage space for batteries, cartridges, and filters.

Exterior 20" w x 13" d x 32 1/2" h  
Interior 18" w x 10" d x 28" h  
Weight 14 lbs.



**Order No. 4100-P**



### GENERIC ONE DOOR STORAGE CABINET

Heavy-duty steel cabinet includes two adjustable shelves, handle, and inspection window. This durable, convenient cabinet also includes a label kit with 17 custom labels (see list below).

Exterior 14" w x 13" d x 30" h  
Interior 13 3/4" w x 12 3/4" d x 29 3/4" h  
Weight 26 lbs.



**Order No. 4200**



### FIRE EXTINGUISHER WALL CASE

Designed to protect fire extinguishers from dust and harsh workplace environments. Made of high-impact, corrosion-resistant ABS. High-visibility red case makes locating easy. Holds all major extinguishers up to 30 lb. size.

Exterior 20" w x 13" d x 32 1/2" h  
Interior 18" w x 10" d x 28" h  
Weight 9 lbs.



**Order No. 3100**

## GENERIC WALL CASES

These cases are all made of corrosion-resistant ABS with ultraviolet inhibitors. The rubber door seal protects against dust and moisture, while the non-metallic hinges and latches prevent rust. You can customize these wall cases with our label kit. 17 label titles include:

*BioSafety Products  
Fire Extinguisher  
Fire Blanket  
Hearing Protection  
Hand Protection*

*Maintenance Supplies  
Safety Documents, MSDS  
Personal Protection Equipment (PPE)  
Respirator Fit Test Equipment*

*Instruments  
Respirator Storage  
Disposable Respirators  
Lockout/Tagout*

*Safety Glasses  
Visitor Specs  
Spill Kit  
First Aid*

#### SMALL YELLOW CASE WITH LABEL KIT AND 1 SHELF:

Exterior 14" w x 9 1/2" d x 18" h  
Interior 12" w x 7 1/2" d x 16" h  
Weight 4 lbs.

#### ALL MEDIUM CASES WITH LABEL KIT AND 1 SHELF:

Exterior 14" w x 9 1/2" d x 21" h  
Interior 12" w x 7 1/2" d x 19" h  
Weight 5 lbs.



Description	Order No.
Small Yellow w/ Label Kit, 1 shelf	4400-Y
Medium Yellow w/ Label Kit, 1 shelf	4500-Y
Medium White w/ Label Kit, 1 shelf	4500-W
Shelf	4511-00
Label Kit (17 Labels)	4500-10



# DEFIBRILLATOR STORAGE



## PLASTIC DEFIBRILLATOR WALL CASE

White case made of corrosion-resistant ABS plastic and hi-viz defibrillator graphics. Special features include a 6" x 10" window and right-hand door opening. Fits up to three optional slide-in shelves (sold individually).

Exterior 14"w x 9 1/2"d x 18"h  
 Interior 12"w x 7 1/2"d x 16"h  
 Weight 3 lbs.



Description	Order No.
Wall Case	4400-D
Shelf	4511-00



## PLASTIC DEFIBRILLATOR WALL CASE WITH STROBE

This white Defibrillator Wall Case is made of corrosion-resistant ABS plastic and includes hi-viz defibrillator graphics. It also features a 9-volt battery-powered 130-decibel alarm that goes off when the door is opened, a fully sealed, waterproof strobe light, a 6" x 10" window and right-hand door opening. Fits up to three optional slide-in shelves (sold individually).



Order No. 4400-DS

## PLASTIC DEFIBRILLATOR WALL CASE WITH ALARM

This plastic defibrillator wall case includes the same great features as our 4400-D with a 9-volt battery-powered 130-decibel alarm that goes off when the door is opened.

Order No. 4400-DA



## SMALL METAL DEFIBRILLATOR WALL CASE WITH ALARM

This metal defibrillator wall case comes in a corrosion-resistant electrostatic white finish. Defibrillator graphics are dominantly displayed. Other features include a 13" x 13" window on door front, right-hand door opening and recessed handle. Also included is a battery-operated audio alarm. Includes metal shelf.

Exterior 20 1/4"w x 9 1/4"d x 20 1/4"h  
 Interior 20 1/8"w x 8 3/4"d x 20"h  
 Weight 23 lbs.



Order No. 4210-01

# PRODUCT LISTING

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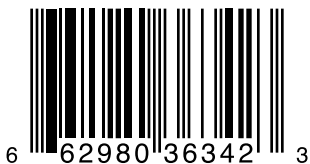
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