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CATALOG #7362

FULL-LINE STOCK CATALOG ABRASIVE PRODUCTS FOR THE INDUSTRIAL MARKET



BECAUSE **RIGHT CHOICES** MATTER™



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Our Mission

We offer powerful, precise, user-friendly solutions, which enable our customers to cut, shape and finish all materials even in the most complex and challenging applications. By working closely with end-users and our grinding expert partners, we design and provide customized solutions to secure the best option for performance, cost and safety.

Our Expertise

Norton is the leading brand of Saint-Gobain Abrasives, with more than 135 years of experience in manufacturing abrasives.

We are committed to providing access to our expert's knowledge whenever you need it. Whether it is through our <u>Process Solutions Program (PSP)</u>, ongoing training programs, or through on-line expert articles and white papers you can stay up-to-date with Norton where and when you need it.

Bring us your grinding challenges, we have solutions!

Our Commitment

You be the final judge in performance! We are so confident of the superior performance of our abrasive products, as recommended for specific applications, that we invite in-plant tests against any other brand of abrasive product on the market. Contact your Norton Representative to find out more about our No Risk test policy or visit www.nortonabrasives.com



Why Tiers Matter

At Norton we believe in delivering right choices that matter. Our abrasives are classified in BEST, BETTER, and GOOD performance/ price tiers to help you choose the right product for your specific application every time.

BEST

Our BEST tier products are designed for the customer who is seeking the highest productivity at the lowest total cost.

BETTER

Dur BETTER tier products provide an excellent blend of performance and price.

GOOD

And, our GOOD tier products promise the highest quality you expect from the Norton name with a low initial price.

If you need help determining the right tier for your specific needs, don't hesitate to contact us directly or reach out to your Norton sales representative.

Go Further

Visit our website at <u>www.nortonabrasives.com</u> for a more comprehensive outline of products, safety and application information. We continually update it with our most current information.

Connect with us:





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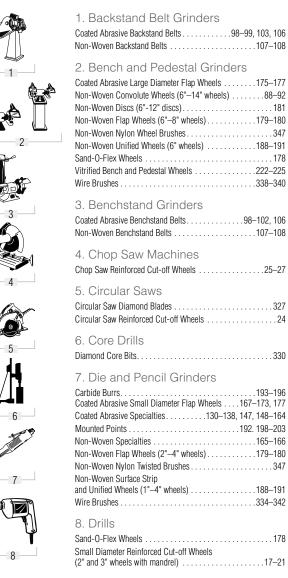
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Easy-to-Follow Page Guide

Key Questions to Simplify Product Selection

Am I in the right section?

- A Product
- **B** Category overview

NDRTDN

- **C** General attributes
- **D** Correct machine use

How do I narrow choices?

E Product design variations

How do I match my end-user needs?

- **F** Application recommendations
- G Best/Better/Good performance color coding
- H Full application / grit guide

How do I match or upgrade from a competitive product?

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Cross reference guide

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| Flag Deer Flag Deer A verif count (4:000 Status de la | | What are the Leading Products by Tier? J Tiers by color-coding: Best, Better, Good K Features and benefits L New, improved, and/or expanded offering How Do I Find What I Want Now That I Know What I Want? |
|---|--|---|
| Ang Aling an Constant 2023 An of the an Constant 2023 The Second Secon | | M Visual identification N Key product attributes O Full specification and product number |

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GENERAL INFORMATION Safety Basics

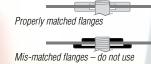


A WARNING

Improper use of abrasive products might cause grinding wheel breakage and serious injury. Comply with ANSI B7.1, OSHA and Safety Guide furnished with package. Don't overspeed, abuse, or drop wheel. Always use a guard, personal protective equipment and proper mounting procedures.



Speeds Check machine spindle speed and speed listed on machine against safe maximum operating speed marked on the grinding wheel. Do not overspeed the wheel.





When mounting most grinding wheels, use flanges of equal diameter and bearing surface. For exceptions, see ANSI B7.1.



Safety Gloves Grinding applications are conducted in harsh environments. The use of proper fitting gloves is recommended.



Wheel Guard Always use the wheel guard as supplied by the machine manufacturer, in the proper position.



Do Not Use Damaged Wheel Always check each wheel for cracks or damage before use. Never use a damaged wheel.



Eye/Face Protection Always wear governmentapproved face and eye protection when using abrasive products.



Hearing Protection Use of abrasive products can create elevated sound levels. Hearing protection must be worn where required.



Safety Guides, SDS and Wheel Warning Messages Before using any abrasive materials, READ:

- The Safety Guides
- Wheel Warning Messages
- Safety Data Sheets (SDS)

All Norton products provide information pertaining to safe use. Please take the time to read it carefully. Contact suppliers of the workpiece and abrasive materials for copies of the SDS if one is not readily available. Norton abrasives SDS can be obtained on www.nortonabrasives.com

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Dust Protection

Exposure to dust generated from workpiece and/or abrasive materials can result in lung damage and/or other physical injury.

Use dust capture or local exhaust as stated in the SDS. Wear government-approved respiratory protection and eye and skin protection. Failure to follow this warning can result in serious lung damage and/or physical injury.

This is a general dust warning and does not cover specific situations. For more information, refer to the SDS dust warning provided with your products, and workpiece.

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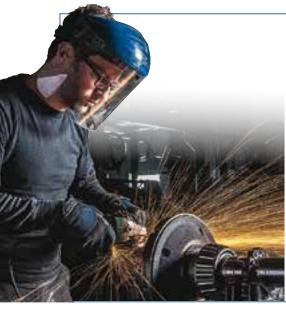
Please see pages 354 - 360 for additional safety information

Metal Fab Cutting and Grinding

when the going gets rough **RELY ON NORTON INNOVATION**

For stock removal, rough blending, cleaning castings and welds...Norton depressed center wheels are constructed to tackle the demanding work of all material types.





Depressed center wheels may also be referred to as raised hub wheels or by their shape designation of "Type", with Type 27 being the most popular. The depressed center design allows the flange/lock nut to recess within the wheel so that it can be used for various grinding and cutting applications. Depressed center wheels are designed to handle the most severe right angle grinding applications from heavy stock removal to rough blending. More recently, depressed center wheels have been designed to increase the utility of the tool for cut-off applications. While large right angle grinders (7" & 9") have been around for many years, small or mini grinders that handle 4", 4-1/2", 5", and 6" wheels have made this machine, and wheel category, the most popular in power tools.

Applications: Grinding, stock removal, edge chamfering, beveling, weld blending, and cutting-off 2'' - 9''**Thickness Range:** .040" - 1/4" 24 - 46 grits for stock removal; 60, 80 grits for blending and finishing Abrasive Grain: Ceramic Alumina, Diamond, Zirconia Alumina, Aluminum Oxide, Silicon Carbide Plain hole (3/8", 5/8" and 7/8") and discard mount (5/8"-11) **Mounting Options:** Type 27, Type 28, Type 29 **Machine Used: RIGHT ANGLE GRINDER**

How to Pick the Right Wheel

| DEPRESSED CENTER V | VHEEL DESCRIPTION | I CODES | | | | | | | |
|----------------------------|---------------------|--|--|------------------------------|-----------------|-----------------------|--|--|--|
| BLANK = All Purpose | ALU = Aluminum | FC = Fast Cut | HD = Heavy Duty | INOX/SS = Contaminant Free | LL = Long Life | XXL = Extra Long Life | | | |
| = Aluminum | = Foundry | = Masonry | = Stainless | Steel / Metal | | | | | |
| | | | | | | | | | |
| DESCRIPTION CODE DI | FINITIONS | | | | | | | | |
| BLANK = All Purpose | BLANK = All Purpose | | Where an excellent blend of cut rate and life is needed. | | | | | | |
| ALU = Aluminum | | Specially formulated bond for reduced loading and surface contamination while cutting aluminum and soft materials. | | | | | | | |
| FC = Fast Cut | | Where fast stock removal is needed, or the application only allows for low-pressure or under-horsepowered grinders. | | | | | | | |
| HD = Heavy Duty | | Triple reinforced | for the most aggre | essive foundry applications | | | | | |
| INOX/SS = Contaminate Free | | Contain <0.1% iron, sulfur or chlorine for rust-free and corrosion-free results. Will not contaminate stainless steel. | | | | | | | |
| LL = Long Life | | Where durability is needed due to severe application, and when horsepower of the grinder allows for heavy pressure. | | | | | | | |
| XXL = Extra Long Life | | Offers 50% more | e life and metal ren | noval than standard aluminur | n oxide wheels. | | | | |

How to Pick the Right Mount

Most wheel sizes come with a plain hole or a discard mount option. While the plain hole has a small, initial cost advantage, the discard mount can provide a labor cost advantage with the quicker wheel change.



Mini-Mount Hub

Our unique, patented mini-mount hub used on 4-1/2" and 5" depressed center wheels provides up to 30% more wheel life because the hub covers just a small surface area, providing maximum grinding area exposure and usage.

Size Range:

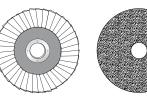
Grit Range:

Shape:

Standard throw-away hub size

Why Choose Depressed Center Wheels?





Depressed Center Wheels vs. Flap Discs or Fiber Discs

- · Up to 5X life over flap discs, less downtime and inventory
- · Up to 100X life over fiber discs, less downtime and inventory
- · Rigidity for severe operations and high power grinders
- 1/8" wheels can be used for cutting and grinding
- · Can be used to grind inside corners at outer edge of wheel

Mounting Depressed Center Wheels

YouTube

See how to correctly mount a depressed center wheel on our youtube page at https://nortonsga.us/7hc5m

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Type-To-Application Recommendation Guide

Wheel Type/Thickness Applications



| | | 90° ANGLE | 30° ANGLE | 15° ANGLE |
|--|--|-----------|-----------|-----------|
| TYPE 27 | Type 27 wheels are essentially straight wheels that have a "depressed center/ raised hub". Different types of fiberglass reinforcement mesh give the product stability for use on the periphery, on the face, or a combination of the two. | | | |
| .040", .045", and 1/16" Type 27/42 RightCut | Cutting only, where fast cutting and low kerf loss are desired | • | | |
| 3/32" and .125" Type 27/42 | For tough cutting and notching applications where stability is important; cutting and cleaning burr-free narrow root pass welds | • | | |
| 1/8" Type 27 | For multiple applications ranging from cutting-off, notching and light-duty side grinding | • | • | |
| 1/8" Pipe Notcher Type 27 | 2-1/2 pieces of reinforcement; durable face grinding; root pass grinding without removing pipe material | • | • | |
| 1/8" Type 27 Flexible | For light stock/blending/finishing/polishing | | • | |
| .140" and 1/8" Type 27 Foundry Notchers | Triple-reinforced for grinding steel and dirty/scale-covered castings; removing and cleaning gates and risers | • | • | |
| 1/4" Type 27 | For light- to heavy-duty grinding on the bottom/face of the wheel | | ٠ | |
| 1/4" Type 27 Foundry Snaggers | Designed for cleaning parting lines, pads and slag | | • | |
| 1/4" Type 27 Heavy-Duty Foundry | Triple-reinforced for the most aggressive foundry applications | | • | |
| TYPE 28 | Type 28 wheels are constructed with a downward angle built into the grinding section to facilitate a flatter grinding angle. These wheels can only be used on the face and never on the periphery for cutting-off. | | | |
| 1/4" Type 28 Saucers | Smooth, gouge-free grinding at shallow angles | | | • |
| TYPE 29 | Type 29 wheels are constructed with an upward angle built into the grinding section to provide full face contact for light stock removal and blending operations. These | | | |
| | wheels can only be used on the face and never on the periphery for cutting-off. | | | |
| 1/8" Type 29 Flexible, AVOS | Polishing and blending applications | | | • |

Material/Application-To-Product Recommendation Guide

| 1.1 | | | | | | |
|----------------------------------|----------|-------------|------------|------------------------------|-------|---------|
| | BEST | BEST | BETTER | GOOD | | |
| | Quantum3 | NorZon Plus | BlueFire | Gemini | Metal | Masonry |
| CUTTING | | | | | | |
| Mild Carbon / High Tensile Steel | • | • | • | • | • | |
| Stainless Steel / Alloys | • | • | • | • | • | |
| Contaminate Free* | | | FC/INOX/SS | INOX/SS | | |
| Cast Iron | • | • | | • | | |
| Gray Iron | | | | | | |
| Aluminum / Bronze / Brass | | | | ALU | | |
| Asphalt / Brick / Concrete | | | | | | • |
| Fiberglass / Plastic | | | | | | • |
| NOTCHING | | | | | | |
| Mild Carbon / High Tensile Steel | • | • | • | • | • | |
| Stainless Steel / Alloys | • | • | • | INOX/SS | | |
| Contaminate Free* | | | FC/INOX/SS | INOX/SS | | |
| Cast Iron | • | • | Foundry | • | | |
| GRINDING | | | | | | |
| Mild Carbon / High Tensile Steel | • | • | • | • | | |
| Stainless Steel / Alloys | • | | • | • | | |
| Contaminate Free* | • | | FC/INOX/SS | INOX/SS | | |
| Cast Iron | | • | Foundry | • | | |
| Gray Iron | • | | Foundry | • | | |
| Aluminum / Bronze / Brass | | | | ◆ ALU | | |
| Asphalt / Brick / Concrete | | | | | | • |
| BLENDING | | | | | | |
| Mild Carbon / High Tensile Steel | | | | Flexible | | |
| Stainless Steel / Alloys | | | | Flexible | | |
| Aluminum / Bronze / Brass | | | | Flexible | | |
| Fiberglass / Plastic | | | | • | | |
| | | | | | | |

Typical Steel, Stainless Steel, Cast Iron Products: Angle Iron, Bar Stock, Ductile Pipe, Channel Iron, Decking, Rebar, I-Bearns, Rail Steel, Studs, Tubing, and Welds * For use in nuclear and food industry applications that require contaminant free (<0.1% iron, sulfur or chlorine)



Cross Reference Guides

Type 27 and 28 – 1/8" and 1/4"

| | | PERFORM | - | | | | | | | \rightarrow | | | |
|-----------|--------------------------------|---------------------------------|----------------------------------|---------------------|------------------------|----------------------------------|--|--|-------------------------|--------------------------|---------------------|-------------------------|--------------------------------------|
| | BEST | | | BETTER G | | GOOD | | | | | BETTER | TER GOOD | |
| NORTON | Quantum3 | NorZon Plus LL | NorZon Plus | BlueFire | BlueFire FC/INOX/SS | Gemini XXL | Gemini | Gemini Fast Cut | Gemini SS | Metal | BlueFire Foundry | | Masonry |
| 3M | Cubitron II | - | - | - | - | High Perform., Green Corps | - | - | - | - | - | - | - |
| Arc | - | | - | - | - | - | Predator A24R | - | - | - | - | - | - |
| Brilliant | - | - | - | - | Brill-Max Z24R | - | Brill-Tex A24UHPXL, A30T | Brill-Tex A24R Super-G | Brill-Tex A30P | Hornet Metal | - | Brill-Tex 30ALU | Brill-Tex C30P, Horne Concrete |
| Bullard | - | - | TA24S | ZA24R Competitor | ZA24R | - | A24R | A24N | A46Q | A24R Competitor | - | AL36N | C24R |
| Camel | - | - | | - | ZA24T | - | A24R | Ultra A24- N-BF, A24T Super Quickie Cut | WA24S | A24N, R&T Fast Cut | - | A30N, Fast Cut | C24R |
| DeWalt | - | XP Ceramic | | XP | - | HP | - | - | HP SS | Metal | - | - | - |
| Flexovit | _ | Flexon ZA24P ZA30T | Flexon ZA20Q | Metalhog, AXT24S | _ | _ | High Perform. A24/30T | High Performance A30S, Specialist A30Q & R | Free Grind A30Q | _ | Flexon ZA16U | Specialist A24ALU | High Perform. C24/30P |
| Metabo | M-Calibur | - | - | ZA24T | - | - | A24R & T | A24N | A360 | - | - | A36M | C24N |
| Pearl | - | - | - | - | Z24T | - | Premium Metal A24S, Redline Max A/WA24S | Premium Metal A24R, Redline Max A/WA24R | WA24R, SRT24 | Silver Line A24R & S | - | D.A. Series AL24M | Silver Line C24S |
| Pferd | SG-Elastic Ceramic CO24Q | - | - | ZA SGP, ZA T SGP | ZA R SGP, Z-SG | SG-Elastic | A-PS, A-SG | - | A-SG INOX, A-PS INOX | - | - | A-SG ALU | S-SG, Masonry |
| Sait | The Ultimate Grind | Saitech Ultimate Perform. | Saitech Attacker, Pipeline | Z24R Z-Tech | Stainless | - | A24R, A24Turbo | A24N | XA24Q | A24T | CA24R - Foundry | A46N- ALU | C24N |
| Tyrolit | - | - | - | ZA24P- BFX | ZA24N-BFX | - | A30S & Q-BFX | A30R-BFX | A30-BF INOX | A30-BF | ZZA24R- BFX | A36N- BFX WA46-BF | C30-BF |
| Walter | - | - | - | Allsteel XX | Double-X | Allsteel | HP | - | Stainless | - | - | - | - |
| Weiler | Tiger Ceramic | - | - | Tiger Zirc | Tiger Inox | Tiger LL | Wolverine A24R | - | - | Wolverine A24N | - | - | - |

Type 27 - Flexible 1/8"

| GOOD |
|--------------------|
| Gemini Flexible |
| Brill-Flex |
| Flexlite AC |
| FGF, Special Wheel |
| Flexcel |
| Z-Plus |
| Flexible AC |
| SG-Flex |
| Challenger II |
| Flexcut |
| |









Best choice for stainless and carbon steel applications; efficiently grinds and cuts a variety of materials from alloys to gray iron

QUANTUM3 CERAMIC ALUMINA

- 100% next-generation, uniquely-shaped, ceramic alumina abrasive grain and tough new bond system result in 5-6 times the life of aluminum oxide wheels and up to 100% increase in performance and life over competitive ceramic wheels
- Significantly increase production, for the lowest total grinding cost of any wheel in the market place today
- Better operator control, improved comfort, and exceptional finished part quality with a more robust, sharper, yet smoother cutting action; wheels don't grab or dig

Best for metal plate, pipe, tubing, cast iron, carbon and mild steel, foundry and welding applications, and ceramics

DIALAST DIAMOND WHEELS

- · A combination of high-quality diamond and advanced brazed single-layer bonding technology for extra-long life versus conventional abrasives or other vacuum-brazed diamond tools
- Retains diamond grains and wheel shape for full life with low sparks, while keeping a continuous grinding depth for exceptional wheel life; less blade changes reduce downtime and labor costs
- Environmentally friendly design generates minimal dust for less clean-up and safer working conditions

Better choice for stainless steel, carbon steel, alloys and gray iron

BLUEFIRE ZIRCONIA ALUMINA / A/O BLEND

- · A blend of the most advanced zirconia alumina and premium aluminum oxide abrasives delivers 2 to 3 times the life of aluminum oxide wheels
- · Broad utility; from light-to heavy-pressure applications
- · Engineered specifically to deliver fast cut rate; excellent blend of performance and price



Good choice for steel and ferrous metals as well as specialty applications in aluminum and foundries

GEMINI ALUMINUM OXIDE

- Quality aluminum oxide for consistent performance at an economical price
- · High-performance bond and wheel hardness are designed for fast cut while retaining excellent wheel life
- · Versatile, general purpose specification for use on variety of materials including 400 series stainless, hard carbon steels, soft carbon steels
- Gemini XXL fastest 100% aluminum oxide wheels on the market today with 50% more life and metal removal than standard aluminum oxide wheels



Good choice for steel/ferrous metal applications with low initial price

METAL ALUMINUM OXIDE

- · Durable bond and wheel hardness are designed to provide an good mix of cut rate and life
- · Good choice when low initial price is needed for small jobs or newer operators
- · Metal (Aluminum Oxide) engineered for all steel/ferrous materials

Good choice for masonry applications with low initial price

MASONRY SILICON CARBIDE

- · Durable bond and wheel hardness are designed to provide a good mix of cut rate and life
- Good choice when low initial price is needed for small jobs or newer operators
- Masonry (Silicon Carbide) for masonry materials such as concrete, brick and asphalt

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| | | 7/50 | | |
|-----------------------------|-------------------|--------------------|--------------------------------------|-------------------------|
| | | TIER: TRADENAME | BEST Norzon Plus | GOOD Gemini XXL |
| | | 110 12 210 11121 | | Type 27 |
| | | ABRASIVE: | Ceramic Alumina/ Zirconia Alumina | Aluminum Oxide |
| | | | STAINLESS | STAINLESS |
| | | MATERIAL: | STEEL/METAL | STEEL/METAL |
| SIZE (D x T x H) | MAX. RPM | STD. PKG. | PART # | PART # |
| 1/8" (5/32") - Pipe Notcl | hing – Type 27 | - | | |
| 4-1/2 x 1/8 (5/32) x 5/8-11 | 13,580 | 10 | 4 | 662533 70272 XXL |
| 4-1/2 x 1/8 (5/32) x 7/8 | 13,580 | 25 | | 662533 70271 XXL |
| 5 x 1/8 (5/32) x 5/8-11 | 12,225 | 10 | | 662533 70273 XXL |
| 5 x 1/8 (5/32) x 7/8 | 12,225 | 25 | | 662528 42038 XXL |
| 6 x 1/8 (5/32) x 5/8-11 | 10,185 | 10 | | 662528 41193 XXL |
| 6 x 1/8 (5/32) x 7/8 | 10,185 | 20 | | 662528 35580 XXL |
| 7 x 1/8 (5/32) x 5/8-11 | 8,600 | 10 | 662529 39184 | 662533 70274 XXL |
| 7 x 1/8 (5/32) x 7/8 | 8,600 | 20 | | 662528 35581 XXL |
| 9 x 1/8 (5/32) x 5/8-11 | 6,600 | 10 | 662530 49066 | 662533 70275 XXL |
| 9 x 1/8 (5/32) x 7/8 | 6,600 | 20 | | 662533 70276 XXL |
| Pipe Notchers are to be use | d for cuttina/not | china onlv. | | |

See Type 27 .040" - 1/4" Foundry, Type 28 Saucer, Type 27 Flexible, and Type 29 Blending Wheels at the end of this section.

Pipe Notchers are to be used for cutting/notching only.

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| | | | HORTON | | | | - |
|----------------------|-----------------------|----------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------|---------------------|
| | | NEW | MOREDH | BLUEfire | GEMINI | METAL | MASONTY === |
| | | 6 | | | | | |
| | | | - Le | | | | e e |
| | | | | | | | |
| | TIER: | BEST | BEST | BETTER | GOOD | GOOD | GOOD |
| | TRADENAME: | | NORZON PLUS | BLUEFIRE | GEMINI | METAL | MASONRY |
| | SHAPE: | Type 27 | Type 27 | Type 27 | Type 27 | Type 27 | Type 27 |
| | ABRASIVE: | Ceramic Alumina | Ceramic Alumina/ Zirconia Alumina | Zirconia Alumina/ Aluminum Oxide | Aluminum Oxide | Aluminum Oxide | Silicon Carbide |
| | MATERIAL | STAINLESS | STAINLESS | STAINLESS | STAINLESS | STAINLESS | MASONRY |
| | MATERIAL: | STEEL/METAL | STEEL/METAL | STEEL/METAL | STEEL/METAL | STEEL/METAL | |
| | | | | | ALUMINUM | | |
| SIZE (D x T x H) | MAX. STD. RPM PKG. | | PART # | PART # | PART # | PART # | |
| | | t Grinding – Type 27 | | FANI # | FANI # | FANI # | |
| 3 x 1/8 x 3/8 | 18.000 25 | t armunig – Type 27 | 662528 42177 | | | | - - |
| 4 x 1/8 x 3/8 | 15,280 25 | | 662528 42004 | 662528 43178 | 662528 42016 | | |
| 4 x 1/8 x 5/8 | 15,280 25 | | 662528 42005 | 662528 43176 | 662528 42017 | 662528 42014 | 662528 42013 |
| 4-1/2 x 1/8 x 5/8-11 | | 662528 39423 | 662528 43323 | 662528 43211 | 662528 43590 | 662528 43609 | |
| ,,,. | 13,580 10 | | | 662528 43191 FC/INOX/SS | 662528 42029 ALU 46 | | |
| 4-1/2 x 1/8 x 7/8 | 13,580 25 | 662528 39424 | 662528 43324 | 662528 43212 | 662528 43591 | 662528 43611 | 662528 43601 |
| | 13,580 25 | | | 66252843190 FC/INOX/SS | 662528 42030 ALU 46 | | |
| 5 x 1/8 x 5/8-11 | 12,225 10 | 662528 39425 | 662528 43330 | 662528 43215 | | 662528 43615 | |
| | 12,225 10 | | | 66252843195 FC/INOX/SS | | | |
| 5 x 1/8 x 7/8 | 12,225 25 | 662528 39426 | 662528 43331 | 662528 43216 | 662528 43596 | 662528 43616 | |
| | 12,225 25 | | | 662528 43194 FC/INOX/SS | | | |
| 6 x 1/8 x 5/8-11 | 10,185 10 | 662528 39427 | 662528 41891 | 662528 43199 FC/INOX/SS | 662528 33965 | | |
| 6 x 1/8 x 7/8 | 10,185 20 | 662528 39428 | | 662528 43202 | 662528 01864 | | |
| | 10,185 20 | | | 662528 43198 FC/INOX/SS | | | |
| 7 x 1/8 x 5/8-11 | 8,600 10 | 662528 39429 | 662529 38855 | 662528 43233 | 662529 39259 | 076607 02678 | |
| | 8,600 10 | | | 662528 43183 FC/INOX/SS | | | |
| 7 x 1/8 x 7/8 | 8,600 20 | 662528 39430 | 662529 38854 | 662528 43234 | 662529 39207 | | |
| | 8,600 25* | | | | | 076607 75956 5-Pk | |
| 9 x 1/8 x 5/8-11 | 6,600 10 | 662528 39431 | 662530 48897 | 662528 43244 | 662530 48983 | | |
| 0 1/0 7/0 | 6,600 10 | 00050000400 | 00050040000 | 662528 43187 FC/INOX/SS | 00050040004 | | |
| 9 x 1/8 x 7/8 | 6,600 20 | 662528 39432 | 662530 48896 | 662528 43245 | 662530 48994 | | |
| *** | 6,600 20 | | | 662528 43186 FC/INOX/SS | | 0 1 1 11 1 10 | - |

* 5-wheel Job Packs; wheels are packed 5 wheels/Pack, with 5 Job Packs/carton. Order per each wheel in standard package quantities of 25. Order in multiples of 25.

DEPRESSED CENTER WHEEL DESCRIPTION CODES BLANK = All Purpose ALU = Aluminum FC = Fast Cut = Aluminum = Foundry

HD = Heavy Duty = Masonry = Stainless

 \mathbf{F}

INOX/SS = Contaminant Free Steel / Metal

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XXL = Extra Long Life

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LL = Long Life



Distrib

| | | | | - | | - | |
|----------------------------|-------------|--------------|--------------------------|--------------------------------------|-------------------------------------|-----------------------------|---|
| | | | | | | COMMY C | META |
| | | | | | | | |
| | 70.0 | | BEST | BEST | BETTER | GOOD | GOOD |
| | TRAL | DENAME: | 4 | NORZON PLUS | BLUEFIRE | GEMINI / GEMINI XXL | METAL OR MASONRY |
| | | SHAPE: | Type 27 | Type 27 | Type 27 | Type 27 | Type 27 |
| | AE | BRASIVE: | Ceramic Alumina | Ceramic Alumina/ Zirconia Alumina | Zirconia Alumina/ Aluminum Oxide | Aluminum Oxide | Aluminum Oxide – Metal Silicon Carbide – Masonry |
| | M | ATERIAL: | STAINLESS Steel/Metal | STAINLESS | STAINLESS STEEL/METAL | STAINLESS | STAINLESS STEEL/METAL |
| | | | STEEL/METAL | STEEL/METAL | STEEL/METAL | STEEL/METAL | MASONRY |
| SIZE (D x T x H) | MAX. RPM | STD. PKG. | PART # | PART # | PART # | PART # | PART # |
| /4" – Grinding – T | ype 27 | | | | | | V |
| 3 x 1/4 x 3/8 | 18,000 | 25 | | 662528 42178 | | 662528 42179 | |
| 1 x 1/4 x 3/8 | 15,280 | 25 | 662533 71180 | 662528 42002 | 662528 43179 | 662528 42018 | |
| x 1/4 x 5/8 | 15,280 | 25 | 662533 71181 | 662528 42003 | 662528 43177 | 662528 42020 FC | 662528 42011 |
| | 15,280 | 25 | | | | 662528 42019 | 662528 42010 Masonry |
| | 15,280 | 25 | | | | 662528 42183 ALU 46 | |
| -1/2 x 3/16 x 7/8 | 13,580 | 25 | | | | 662528 43592 | |
| -1/2 x 1/4 x 5/8-11 | 13,580 | 10 | 662533 70793 | 662528 43326 | 662528 43213 | 662528 43593 | 662528 43605 |
| 1/2 A 1/7 A J/0-11 | 13,580 | 10 | 00200010130 | 662528 43327 LL | 662528 43193 FC/INOX/SS | | 662528 43599 Masonry |
| | | 10 | | 002320 43327 LL | 00202043193 FC/INOX/33 | | 002320 43335 Masoniy |
| | 13,580 | | | | | 662528 42032 INOX/SS | |
| | 13,580 | 10 | | | | 662528 43785 XXL | |
| | 13,580 | 10 | | | | 662528 42031 ALU 46 | |
| | 13,580 | 40 | | | | | 662528 19559 |
| | 13,580 | 10 V | | 662528 29541 2-Pk | 662528 42162 2-Pk | 662528 42163 2-Pk | |
| -1/2 x 1/4 x 7/8 | 13,580 | 25 | 662533 70794 | 662528 43328 | 662528 43214 | 662528 43594 | 662528 43607 |
| | 13,580 | 25 | | | 662528 43192 FC/INOX/SS | 662528 43584 FC | 662528 43600 Masonry |
| | 13,580 | 25 | | | | 662528 42033 INOX/SS | |
| | 13,580 | 25 | | | | 662528 43784 XXL | |
| | 13,580 | 25 | | | | 662528 42034 ALU 46 | |
| | 13,580 | 50 | | | | | 662528 36796 |
| | 13,580 | 10 V | | 662528 29540 2-Pk | 662528 42164 2-Pk | 662528 42165 2-Pk | |
| 5 x 1/4 x 5/8-11 | 12,225 | 10 | 662533 70795 | 662528 43332 | 662528 43217 | 662528 43597 | 662528 43613 |
| | 12,225 | 10 | 00200010100 | 662528 43333 LL | 662528 43197 FC/INOX/SS | | |
| x 1/4 x 7/8 | 12,225 | 25 | 662533 70796 | 662528 43334 | 662528 43218 | 662528 43598 | 662528 43614 |
| x 1/4 x 1/0 | 12,225 | 25 | 00200010190 | 00232043334 | 00232043210 | 662528 42040 INOX/SS | 00232043014 |
| | 12,225 | 25 | | | | 662528 43786 XXL | |
| | | | | | | | |
| 4/4 5/0 44 | 12,225 | 25 | 00050070707 | 00050044000 | 00050040004 | 662528 42039 ALU 46 | |
| x 1/4 x 5/8-11 | 10,185 | 10 | 662533 70797 | 662528 41920 | 662528 43224 | 662528 32390 | |
| | 10,185 | 10 | | | | 662528 43789 XXL | |
| x 1/4 x 7/8 | 10,185 | 20 | 662533 70798 | 662528 09376 | 662528 43203 | 662528 01865 | |
| | 10,185 | 20 | | | | 662528 43788 XXL | |
| x 1/4 x 5/8-11 | 8,600 | 10 | 662533 70799 | 662529 17881 | 662528 43235 | 662529 40147 FC | 662529 12633 |
| | 8,600 | 10 | | 662528 35578 LL | 66252843185 FC/INOX/SS | 662529 40148 LL | 076607 75942 Masonry |
| | 8,600 | 10 | | | | 662528 43791 XXL | |
| | 8,600 | 10 | | | | 662529 40514 ALU 24 | |
| | 8,600 | 25* | | | | | 076607 75940 5-Pk |
| x 1/4 x 7/8 | 8,600 | 20 | 662533 70800 | 662529 17880 | 662528 43236 | 662529 40098 LL | |
| | 8,600 | 20 | | | | 662528 43790 XXL | |
| | 8,600 | 20 | | | | 662529 40516 ALU 24 | |
| | 8,600 | 25* | | | | SOLULUTUUIU ALU LT | 076607 75936 5-Pk |
| x 1/4 x 5/8-11 | 6,600 | 10 | 66253370201 | 662530 21634 | 662528 43246 | 662530 49105 FC | |
| ∧ I/ 4 ∧ J/0-II | | | 662533 70801 | | 00202040240 | | 076607 75937 Masonry |
| | 6,600 | 10 | | 662528 30728 LL | | 662530 49104 LL | |
| | 6,600 | 10 | | | | 662528 43793 XXL | |
| | 6,600 | 10 | | | | 662530 49045 ALU 24 | |
| | 6,600 | 25* | | | | | 076607 75938 5-Pk |
| x 1/4 x 7/8 | 6,600 | 20 | 662533 70802 | 662530 21633 | 662528 43247 | 662530 49077 FC | |
| | 6,600 | 20 | | 662530 49069 | 66252843188 FC/INOX/SS | 662530 48991 LL | |
| | | | | NorZon III – Rail Grind | | | |

NorZon III – Rail Grind

* 5-wheel Job Packs; wheels are packed 5 wheels/Pack. with 5 Job Packs/carton. Order per each wheel in standard package quantities of 25. Order in multiples of 25. V Vendible 2-wheel Package. Ideal for vending machings and small jobs. 5 packs/carton. Order in multiples of 10.

See 1/4 inch thick Type 27 Foundry and Type 28 Saucer Wheels on the next page.

| ibuted by | Applifas | | | | applifast.com | Toll Fre | e 1 800 563 1293 |
|-----------|---------------------------|------------------|---------------|-----------------|----------------------------|----------------|-----------------------|
| | = Aluminum | = Foundry | = Masonry | Stainless | Steel / Metal | | |
| | BLANK = All Purpose | ALU = Aluminum | FC = Fast Cut | HD = Heavy Duty | INOX/SS = Contaminant Free | LL = Long Life | XXL = Extra Long Life |
| | DEPRESSED CENTER \ | WHEEL DESCRIPTIO | N CODES | | | | |



| | | TIER: | BEST | EST CONTRACTOR | BEST | BEST | BETTER | GOOD |
|----------------------|--------|--------------|---------------------|--------------------------------------|---------------------|---------------------|-------------------------------------|--|
| | TRADI | ENAME: | QUANTUM3 | NORZON PLUS | DIALAST | DIALAST | BLUEFIRE | GEMINI |
| | | SHAPE: | Type 28 | Type 28 | Type 29 | Reversible | Type 28 | Type 28 |
| | ABI | RASIVE: | | Ceramic Alumina/ Zirconia Alumina | Diamond | Diamond | Zirconia Alumina/ Aluminum Oxide | Aluminum Oxide |
| | 1.1.4 | TERIAL: | STAINLESS | STAINLESS | STAINLESS | STAINLESS | STAINLESS | STAINLESS |
| | | | STEEL/METAL | STEEL/METAL | STEEL/METAL | STEEL/METAL | STEEL/METAL | STEEL/METAL |
| SIZE (D x T x H) | RPM | STD. PKG. | PART # | PART # | PART # | PART # | PART # | PART # |
| 1/4" – Grinding – | | | | | | | | |
| 7 x 1/4 x 5/8-11 | 8,600 | 10 | 662533 70803 | 662529 05369 | | | 662528 43229 | 662529 40149 |
| 7 x 1/4 x 7/8 | 8,600 | 20 | | 662529 05368 | | | | 662529 40095 |
| 9 x 1/4 x 5/8-11 | 6,600 | 10 | 662533 70804 | 662530 06335 | | | 662528 43237 | 662530 49106 |
| 9 x 1/4 x 7/8 | 6,600 | 20 | 662533 70805 | | | | | 662530 49081 |
| Light Grinding – 1 | | | | | | | | A STATE OF S |
| 4-1/2 x 5/8-11 | 13,600 | | | | 662533 70009 | | | W |
| 5 x 5/8-11 | 12,225 | | | | 662533 70010 | | | |
| 6 x 5/8-11 | 10,200 | | | | 662533 70011 | | | |
| 7 x 5/8-11 | 8,600 | | | | 662533 70012 | | | |
| 1/4" – Grinding – | | | ding Disc 🕼 | | | | | A STATE |
| 4-1/2 x 1/4 x 5/8-11 | , | | | | | 662533 70019 | | W |
| 7 x 1/4 x 5/8-11 | 8,600 | 1 | | | | 662533 70020 | | |

| | | TIER | BEST | BEST | BEST | BEITER |
|------------------------|-------------|--------------|------------------------------------|--------------------------------------|---------------------|--------------------------------------|
| | TRAF | | QUANTUM3 | NORZON PLUS | DIALAST | BLUEFIRE |
| | 11012 | | Type 27 | Type 27 | Type 27 | Type 27 |
| | AE | | Ceramic Alumina | Ceramic Alumina/ Zirconia Alumina | Diamond | Zirconia Alumina/ Silicon Carbide |
| | M | ATERIAL: | FOUNDRY | FOUNDRY | FOUNDRY | FOUNDRY |
| SIZE (D x T x H) | MAX. RPM | STD. PKG. | PART # | PART # | PART # | PART # |
| | | | Grinding – Type 27 | aconacona | | |
| 4-1/2 x 1/8 x 5/8-11 | 13,580 | 10 | | | | 662528 43206 |
| 4-1/2 x 1/8 x 7/8 | 13,580 | 25 | | | | 662528 43204 |
| 7 x .140 x 5/8-11 | 8,600 | 1 | | | 662533 70014 | |
| 7 x 1/8 x 5/8-11 | 8,600 | 10 | | | | 662528 43232 |
| 7 x 1/8 x 7/8 | 8,600 | 20 | | | | 662529 15526 |
| 9 x .140 x 5/8-11 | 6,600 | 1 | | | 662533 70015 | |
| 9 x 1/8 x 5/8-11 | 6,600 | 10 | | | | 662528 43240 |
| 9 x 1/8 x 7/8 | 6,600 | 20 | | | | 662528 43238 |
| 1/4" – Grinding – T | | | - Constanting | | | |
| 4 x 1/4 x 3/8 | 15,280 | 25 | | | | 662528 43181 |
| 4 x 1/4 x 5/8 | 15,280 | 25 | | | | 662528 43180 |
| 4-1/2 x 1/4 x 5/8-11 | 13,580 | 10 | | | | 662528 43207 |
| 4-1/2 x 1/4 x 7/8 | 13,580 | 25 | | | | 662528 43205 |
| 7 x 1/4 x 5/8-11 | 8,600 | 10 | | | | 662528 43231 |
| 7 x 1/4 x 7/8 | 8,600 | 20 | | | | 662528 43230 |
| 9 x 1/4 x 5/8-11 | 6,600 | 10 | 662533 70849 HD | 662530 07014 | | 662528 43241 |
| | 6,600 | 10 | | | | 662528 43261 HD |
| 9 x 1/4 x 7/8 | 6,600 | 20 | 662533 70848 HD | 662530 07013 | | 662528 43239 |
| | 6,600 | 20 | | | | 662528 43260 HD |
| All Norton foundry who | ale ara dae | ianod an | d rainforced to withstand the most | agaroccivo foundry applications | | |

All Norton foundry wheels are designed and reinforced to withstand the most aggressive foundry applications.

| | DEPRESSED CENTER | NHEEL DESCRIPTIO | N CODES | | | | |
|----------------|---------------------|------------------|---------------|-----------------|----------------------------|----------------|-----------------------|
| | BLANK = All Purpose | ALU = Aluminum | FC = Fast Cut | HD = Heavy Duty | INOX/SS = Contaminant Free | LL = Long Life | XXL = Extra Long Life |
| | = Aluminum | = Foundry | = Masonry | = Stainless | Steel / Metal | | |
| | | | | | | | |
| Distributed by | 1pplifas | t. 📖 🤅 | | | applifast.com | n Toll Fre | e 1800 563 1293 |



| | | | TIER: | GOOD | GOOD |
|-----------------------|--------------|--------------|------------|---|---------------------|
| | | TR | RADENAME: | GEMINI FLEXIBLE | GEMINI |
| | | | SHAPE: | Type 27 | Type 29 |
| | | | | Aluminum Oxide | Aluminum Oxide |
| | | | MATERIAL: | ALUMINUM | ALUMINUM |
| | | | MATLINAL. | STEEL/METAL | STEEL/METAL |
| SIZE (D x T x H) | MAX. RPM | STD. PKO | G. GRIT | PART # | PART # |
| 1/8", 1/4" - Blendir | 1g – Type 27 | and 29 | | THE COMPANY AND A COMPANY A | |
| 2 x 1/8 x 3/8 | 30,560 | 25 | 60 | 662528 35632 * | |
| | 30,560 | 25 | 80 | 662528 35633 * | |
| 4 x 1/8 x 5/8 | 15,280 | 20 | 36 | 662435 29721 # | |
| | 15,280 | 20 | 60 | 662435 29722 # | |
| 4-1/2 x 1/8 x 5/8-11 | 12,000 | 10 | 36 | | 662528 42203 |
| 4-1/2 x 1/8 x 7/8 | 12,000 | 25 | 36 | 662528 30424 # | 662528 42204 |
| | 12,000 | 25 | 60 | 662528 30425 # | |
| 5 x 1/8 x 7/8 | 12,225 | 25 | 36 | | 662528 42205 |
| 7 x 1/8 x 5/8-11 | 8,600 | 10 | 36 | 662529 39024 | 662529 17052 |
| 7 x 1/8 x 7/8 | 8,600 | 20 | 36 | 662529 39028 # | 662529 17051 |
| *E wheele per dieplay | nack E diank | ny naoko nor | otondard p | akaga | |

*5 wheels per display pack; 5 display packs per standard package.

These wheels are packed 20 per box, and must be used with this specific back plate. Two back plates are included in each box.



Depressed Center Adapter Kit

This reusable adapter kit contains everything you need to mount depressed center wheels and saucers with 7/8" center holes on to portable right angle or vertical shaft grinders. Adapter hubs are threaded for mounting on to standard 5/8"-11 NCRH spindles.

| KIT NO. | WHEEL DIAMETER | WHEEL THICKNESS | PART # | STD. PKG. | |
|---------|----------------|-----------------|---------------------|-----------|--|
| 114 | 6" thru 9" | 1/16" thru 1/4" | 076607 89275 | 1 | |



Cut-off Wheels

no short cuts taken here **SATISFY ALL YOUR CUT-OFF REQUIREMENTS**

From small diameter portable cut-off wheels to large diameter foundry cut-off wheels; from portable high-speed gas saw wheels to precision toolroom and Metlab wheels, our Norton offering encompasses the broadest range of applications.



applifast.com Toll Free 1 800 563 1293





The Norton small diameter cut-off wheel line consists of Type 01/41 straight and Type 27/42 depressed center cut-off wheels from 1-1/2" to 9" diameters. These wheels come in ultra thin .035" for quick burn-free and burr-free cutting to .125" for more durable applications. All are reinforced for the demanding nature of portable cut-off.

Applications: Size Range: **Thickness Range: Abrasive Grain:**

Shape: **Machine Used:** Cutting sheet metal, cutting pipe, and metal fabrication 1-1/2" - 9" diameter .035", .040", .045", .050", .060", 1/16", .090", 3/32" and .125" Ceramic Alumina / Zirconia Alumina, Zirconia Alumina / Aluminum Oxide, Aluminum Oxide, Silicon Carbide, Diamond Type 01/41 Straight and Type 27/42 Depressed Center





PORTABLE CUT-OFF TOOL

RIGHT ANGLE GRINDER

DRILL

How to Pick the Right Wheel Type

| CUT-OFF WHEEL DESCRIPTION CODES | | | | | | | | |
|---------------------------------|----------------|---------------|----------------------------|----------------|-----------------------------------|--|--|--|
| BLANK = All Purpose | ALU = Aluminum | FC = Fast Cut | INOX/SS = Contaminant Free | LL = Long Life | 1-2-3 = Cutting/Notching/Grinding | | | |
| = Masonry | = Stainless | Steel / Metal | | | | | | |

| DESCRIPTION CODE DEFINITIONS | |
|-----------------------------------|---|
| BLANK = All Purpose | Where an excellent blend of cut rate and life is needed |
| ALU = Aluminum | Specially formulated bond for reduced loading and surface contamination while cutting aluminum and soft materials |
| FC = Fast Cut | Where fast stock removal is needed, or the application only allows for low-pressure or under-horsepowered grinders |
| INOX/SS = Contaminate Free | Contain <0.1% iron, sulfur or chlorine for rust-free and corrosion-free results. Will not contaminate stainless steel |
| LL = Long Life | Where durability is needed due to severe application, and when horsepower of the grinder allows for heavy pressure |
| Right = Cutting-off Only | RightCut wheels for cutting only, provide noticeably longer life and faster cut rate versus competitive wheels, and less pressure is required for first cut |
| 1-2-3 = Cutting/Notching/Grinding | Can be used in cutting, notching and grinding applications |

Type-to-Application Recommendation Guide

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| Wheel Type/Thickness | Applications | |
|----------------------------|--|-----------|
| | Type 01/41 straight cut-off wheels are designed for portable cut-off tool applications. All are supplied with full fiberglass reinforcing. | F |
| 035, .040, .060, and 1/16 | Where fast cutting and low kerf loss are desired | • |
| 125 | For tough cutting and notching applications where stability is important | • |
| | Type 01/41 RightCut straight cut-off wheels are designed for use on right angle grinder cut-off applications. All are supplied with full fiberglass reinforcing. | 90° angle |
| 035, 040, .045, .050, 1/16 | Where fast cutting and low kerf loss are desired | • |
| 3/32 | For tough cutting and notching applications where stability is important | • |
| TYPE 27/42 RIGHTCUT | Type 27/42 RightCut depressed center cut-off wheels are designed for use on right angle grinder cut-off applications. Their depressed center shape provides a recess for the hub, which allows flush cutting. All are supplied with full fiberglass reinforcing. | 90° angle |
| .040, .045, 1/16 | Where fast cutting and low kerf loss are desired | • |
| 3/32, .125 | For tough cutting and notching applications where stability is important | |



Material-To-Product Recommendation Guide

| | BEST | | BETTER | GOOD | GOOD | | |
|----------------------------------|----------|-------------|----------|---------|-------|---------|--|
| | Quantum3 | NorZon Plus | BlueFire | Gemini | Metal | Masonry | |
| Mild Carbon / High Tensile Steel | • | • | • | | • | | |
| Stainless Steel / Alloys | • | • | • | • | | | |
| Contaminate Free* | | | | INOX/SS | | | |
| Cast Iron | • | • | • | • | | | |
| Aluminum / Bronze / Brass | | | | ◆ ALU | | | |
| Asphalt / Brick / Concrete | | | | | | • | |

* For use in nuclear and food industry applications that require contaminant free (<0.1% iron, sulfur or chlorine)

Cross Reference Guides

Type 01/41 .035" - .125" Reinforced Cut-off Wheels for Portable Cut-off Tools

TOTAL PERFORMANCE



SPECIALTY

| | BEST | BETTER | GOOD | | |
|-----------|-------------------------|---------------|--------------------------|-----------------------------------|------------------|
| NORTON | NorZon Plus | BlueFire | Gemini Free Cut | Gemini Long Life | Metal |
| Brilliant | _ | Brill-Max ZA | | _ | Safe-Tex FC, LL |
| Bullard | _ | ZA46T, ZA60T | TA36T | TA46T, TA60T | A36T, A60T Comp. |
| Camel | — | ZA60-TBF | A36 RBF | A60 RBF | Fast Cut RBF |
| Flexovit | Flexon Fast Cut A46, 60 | _ | High Perf Fast Grind A36 | High Perf Fast Cut A36, 46, 60 | — |
| Pearl | <u> </u> | SRT, Zirconia | | Premium | Silver Line |
| Pferd | | | | _ | PSF-A |
| Sait | Saittech | _ | A60S | A24R, A36T, A60T | _ |
| Spedecut | _ | _ | | — | A46, 60 TBXX |
| Walter | | | A24 ZIP | A60 ZIP | |

Type 01/41 and Type 27/42 .035" - .125" Reinforced Cut-off Wheels for Right Angle Grinders



90° angle

INITIAL PRICE

| OTAL | PERFORMANCE | |
|-------|-------------|--|
| VIAL. | | |

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BETTER GOOD GOOD Quantum3 Quantum3 Gemini Gemini Gemini NORTON BlueFire Gemini Metal ALU .045" 1/16" Free Cut INOX/SS 3M Cubitron II .045 Brilliant Brill-Blade Brill-Blade Hornet Stinger Extra FC Heavy Duty Bullard ZA60T SGA60U TA46T, TA60T, A46T, A60T Comp. AL46N ____ ____ TA60U ZA A46 A60-T-BF, Camel A36-S-BF Super Quickie Cut Quickie Cut Quickie Cut Quickie Cut WA60R. Quickie Cut HP DeWalt XP Ceramic 1/16", XP XP Ceramic 0.040 Metal ____ _ ____ XP Ceramic 0.045 Flexovit Razorblade Razorblade A24T, Razorblade A60SST 30V, 36T A30Q Metabo Slicer Limited M-Calibur 1/16 Super Slicer Slicer-Plus, **Original Slicer** ____ Edition .040 **Original Slicer LL** Pearl Redline Max Slimcut Slimcut Pro-V, ____ ____ Slimcut Silverline Pferd SG Elastic, SG SG Plus 1.6, SG **PS-Forte** SG-ALU _ ____ _____ Plus 1mm Elastic 1.6 Sait The Ultimate Z-tech SAIT.M.X Sait .045, The A46N XA46R Ceramic Cutoff Ultimate Cutoff .045, Saitech SpedeCut A46, 60 TBXX Walter A-30-ZIP A-60-ZIP A-60-ZIP-ALU A60-SS-ZIP Zip One Zip+ Xtra Tiger Zirc Ultra Cut Tiger Ceramic Weiler Wolverine Tiger 1mm, Tiger INOX .045, Tiger Zirc UltraCut 1mm .045, Tiger INOX .045



SAFFT

Dangerous Pairing: Die Grinders and Cut-off Wheels

While die grinders and cut-off tools may look similar, they are not interchangeable. Small diameter cut-off wheels can be used only on portable cut-off tools. Several crucial differences exist between the two handheld machines.

- Small diameter cut-off wheels must be used on portable cut-off tools with guards for the safety of the operator and bystanders. Also, portable cut-off tool guards prevent use of an oversize wheel.
- flanges on portable cut-off tools as described in the national safety standard for abrasive wheels, ANSI B7.1. Die grinders make use of a collet for mounting.
- These cut-off wheels must be mounted between proper All cut-off wheels must be used at or below their maximum operating speed, marked clearly on the side of the wheel. Die grinders operate above cut-off wheel speeds. Excessive speed can result in breakage and serious personal injury.



TECH TIP

Measure Your Wheel's Thickness

Why should you measure your wheel thickness? Many competitors market their wheels as .045", but they are truly thicker. New Norton Quantum3 RightCut wheels are true to size so you can pick the right wheel for the job whether you need precision cutting or rugged durability. Compare our 1/16" Quantum3 with competitive 0.045" ceramic cut-off wheels and you will see the longest life and fastest cut on the market.



It is the user's responsibility to refer to and comply with ANSI B7.1

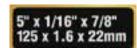
Norton Quantum3 RightCut Wheels

The Norton Quantum3 RightCut is our top tier cut-off wheel, available in 0.045" and 1/16" thickness. If you want speed of cut and work on thin or hollow materials, the 0.045" will get you there with comfort. If you are cutting thicker materials and life of the wheel is important, then the 1/16" is ideal. Whatever your pick is, experience the extra-smooth cutting action, thanks to our premium ceramic grain.

Norton Quantum3 RightCut: 0.045" versus 1/16"

How to match the wheel to the application





| PRODUCT | 0.045" (FAST CUTTING) | 1/16" (LONGEST LIFE) |
|---------------------|--|--|
| Abrasive: | Ceramic | Ceramic |
| Target application: | Thin metals and/or light-style cutting | Thick metals and/or aggressive-style cutting |
| Strengths: | Fast cutting, smooth easy feel, precise and maneuverable, reduced burrs | Long lasting, durable, aggressive easy feel, versatile across applications and metals |





Best choice for stainless steel and carbon steel applications

QUANTUM3 CERAMIC ALUMINA

- 100% advanced ceramic alumina grain with a special shape for comfort and performance guaranteeing 7X the life of aluminum oxide wheels and 3X the life of zirconia alumina wheels
- · Unique bond system prevents premature grain release maximizing wheel life
- Available in type 01 straight and type 27 depressed center cut-off wheels from 4-1/2 inch to 6 inch diameters

Best for metal plate, pipe, tubing, cast iron, carbon and mild steel, foundry and welding applications, and ceramics

DIALAST DIAMOND WHEELS

- A combination of high-quality diamond and advanced brazed single-layer bonding technology for extra-long life versus conventional abrasives or other vacuum-brazed diamond tools
- Retains diamond grains and wheel shape for full life with low sparks, while keeping a continuous grinding depth for
 exceptional wheel life; less blade changes reduces downtime and labor costs
- · Environmentally-friendly grinding for minimal dust, less clean-up and safer working conditions



Best choice for highest productivity for steel, stainless steel and all ferrous metals

NORZON PLUS CERAMIC / ZIRCONIA BLEND

- Patented Norton SG ceramic alumina and zirconia alumina grain blend delivers the fastest cutting wheel available
 on the market, up to 10X faster cutting versus aluminum oxide wheels on 400 series stainless and soft and hard
 carbon steels
- Ultra-thin side reinforcing creates maximum cut rate and minimum kerf loss; ideal when precise thin cut is desired
- High-performance resin bond adds a freer cut and longest life



Better choice for stainless steel, carbon steel, alloys and gray iron

BLUEFIRE ZIRCONIA ALUMINA / A/O BLEND

- A blend of the most advanced zirconia alumina and premium aluminum oxide abrasives delivers 2 to 3 times the life of aluminum oxide wheels
- · Ultra-thin side reinforcing for maximum cut rate with minimum kerf loss; ideal when precise, thin cut is desired
- Broad utility from light-to heavy-pressure applications

Good, versatile choice for steel and ferrous metals

GEMINI ALUMINUM OXIDE

- · Quality aluminum oxide for consistent performance at an economical price
- Designed for portable cut-off tool applications where a fast cut and minimum material loss are desired
- Durable bond designed for fast cut while retaining excellent wheel life



Good choice for grinding alloys, metals, steels, and ferrous metals

METAL ALUMINUM OXIDE

- · Quality aluminum oxide abrasive for quick cutting action
- · Resin bond provides free cutting action with long life
- Good choice when low initial price is needed for small jobs or newer operators

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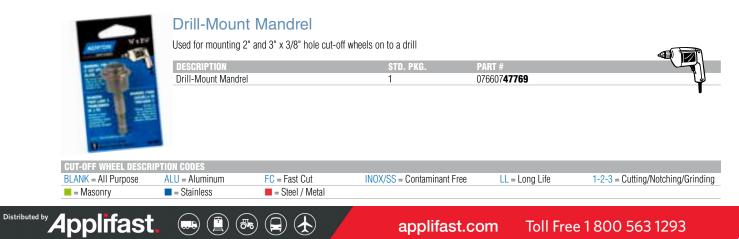
applifast.com Toll Free 1



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|----------------------------------|------------------|-------------------|---|---------------------------------|--------------------------|--|--------------------------|--------------------------|
| | | | | | MOLCHARD I | | UNC GARGEN LUPPE | CAL COM |
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| | | | | mile | In the second | | | 0 |
| | | TIED. | BEST | BETTER | BETTER | GOOD | GOOD | GOOD |
| | | | NORZON PLUS | BLUEFIRE | A60-0BNA2 | GEMINI | GEMINI LONG LIFE | |
| | | SHAPE: | | Type 01/41 | Type 01/41 | Type 01/41 | Type 01/41 | Type 01/41 |
| | | ABRASIVE: | Ceramic Alumina/ | Zirconia Alumina/ | Aluminum Oxide | Aluminum Oxide | Aluminum Oxide | Aluminum Oxide |
| | | ADHAONE. | Zirconia Alumina | Aluminum Oxide | | | | |
| | | MATERIAL: | STAINLESS STEEL/METAL | STAINLESS STEEL/METAL | STAINLESS Steel/Metal | STAINLESS STEEL/METAL | STAINLESS STEEL/METAL | STAINLESS STEEL/METAL |
| | MAX. | STD. | STEEL/METAL | STEEL/WETAL | STEEL/WETAL | STEEL/IVIETAL | STEEL/METAL | STEEL/METAL |
| SIZE (D x T x H) | RPM | PKG. | PART # | PART # | PART # | PART # | PART # | PART # |
| .035", .040", .060 | ", 1/16" | and .125" Typ | e 01/41 – Cut-off | | | | | |
| 1-1/2 x .035 x 1/16 | 40,745 | | | | 662434 27764 | | | |
| 1-1/2 x .035 x 1/8 | 40,745 | | | | 662434 27831 | | | |
| 1-1/2 x .035 x 1/4 | 40,745 | | | | 662434 27875 | | | |
| 2 x .035 x 1/8 2 x .035 x 1/4 | 30,560 30,560 | | | | 662434 28014 | 662434 11392 FC 662434 11393 FC | | |
| 2 x .035 x 1/4 2 x .035 x 3/8 | 30,560 | | | | 002434 20014 | 662434 11393 FC | | |
| 2 x .060 x 1/8 | 30,560 | | | | 662434 28041 | 0024341133410 | | |
| 2 x 1/16 x 1/4 | 30,560 | | | | | 662434 11395 FC | | |
| 2 x 1/16 x 3/8 | 30,560 | | | | | 662434 11396 FC | | |
| 2 x .125 x 1/4 | 30,560 | 25 | | | | 662434 11402 FC | | |
| 2 x .125 x 3/8 | 30,560 | 25 | | | | 662434 11403 FC | | |
| 2-1/2 x .035 x 1/8 | 30,560 | | | | 662435 28476 | | | |
| 2-1/2 x .035 x 1/4 | 30,560 | | | | 662435 28425 | | | |
| 2-1/2 x 1/16 x 1/4 | 30,560 | | | | | 662435 10640 FC | | |
| 2-1/2 x 1/16 x 3/8 | 30,560 | | 00040540000 | | 00040500570 | 662435 10641 FC | | |
| 3 x .035 x 1/4 | 25,465 25,465 | | 662435 10668 662435 31753 5-Pk | | 662435 28573 | 662435 10627 FC | | |
| 3 x .035 x 3/8 | 25,405 | | 662435 10669 | 662528 43174 | 662435 28574 | 662435 10628 FC | 662435 37271 LL | 076607 89451 |
| 3 X .03J X 3/0 | 25,465 | | 00243310009 | 662435 34821 <i>5-Pk</i> | 00243320374 | 0024331002010 | 00243J 37211 LL | 0/000/03431 |
| 3 x 1/16 x 1/4 | 25,465 | | 662435 10670 | | 662435 28471 | 662435 10645 FC | 662435 10649 LL | |
| 3 x 1/16 x 3/8 | 25,465 | | 662435 10671 | 662528 43175 | 662435 28552 | 662435 10647 FC | 662435 10648 LL | 662528 35553 |
| - ,, - | 25,465 | | 662435 10835 LL | | | | | |
| | 25,465 | 25* | | | | | | 076607 47767 5-Pk |
| | 25,465 | | | | | | | 076607 89012 |
| | 25,465 | 10-Pk -ŀ - | | | | | | 662528 43624 |
| | | | | | | | | 5 Whis & 1 Mandrel/ |
| 3 x .125 x 1/4 | 25,465 | 25 | | | | 662435 10650 FC | | Pack |
| 3 x .125 x 3/8 | 25,405 | | 662435 10673 | | | 662435 10650 FC | 662435 10653 | |
| 4 x .035 x 1/4 | 15,300 | | 00210010070 | | 662435 29606 | | 002700 10000 LL | |
| | 19,100 | | | | | 662435 10629 FC | | |
| 4 x .035 x 3/8 | 19,100 | | 662435 10675 | 662528 43173 | 662435 29621 | 662435 10630 FC | 662435 37273 LL | 076607 89453 |
| 4 x .035 x 1/2 | 19,100 | 25 | | | 662435 29622 | | | |
| 4 x .035 x 3/4 | 19,100 | | | | 662435 29609 | | | |
| 4 x .040 x 3/8 | 19,100 | | | | 662435 29516 | | | |
| 4 x 1/16 x 1/4 | 19,100 | | 662435 10676 | | | 662435 10654 FC | | |
| 4 x 1/16 x 3/8 | 19,100 | | 662435 10677 | 662528 43171 | 00040507007 | 662435 10655 FC | | 662528 43848 |
| 4 x 1/16 x 5/8 | 19,100 | 100 | | | 662435 27827 | | | |
| | | | | | FabCut | | | |

4 x .125 x 1/4 662435**10658** FC 19,100 25 662435**10659** FC 4 x .125 x 3/8 19,100 25 662435**10841** 662528**43172** 662435**10661** LL 19,100 25 662435**10680** LL

* 5-wheel Job Packs; wheels are packed 5 wheels/Pack, with 5 Job Packs/carton. Order per each wheel in standard package quantities of 25. Order in multiples of 25. + Order per number of pack, in multiples of 10 packs. Priced per pack.





| | | | NEW | - STOL | | | | METAL |
|--------------------|------------------|------------------|------------------------------|---------------------------------|-----------------------------|---------------------------------|--|---------------------------|
| | | | •• <u>9</u> | - 2- | | | | 1.9 |
| | TR/ | TIER: DENAME: | BEST QUANTUM3 RIGHTCUT | BEST Norzon Plus Rightcut | BEST DIALAST RIGHTCUT | BETTER BLUEFIRE RIGHTCUT | GOOD Gemini Rightcut | GOOD Metal Rightcut |
| | _ | SHAPE | Type 01/41 | Type 01/41 | Type 01/41 | Type 01/41 | Type 01/41 | Type 01/41 |
| 210701 | | | | Ceramic Alumina/ | 71 | Zirconia Alumina/ | <u>, , , , , , , , , , , , , , , , , , , </u> | |
| | | ABRASIVE: | Ceramic Alumina | Zirconia Alumina | Diamond | Aluminum Oxide | Aluminum Oxide | Aluminum Oxide |
| | | ATERIAL: | STAINLESS | STAINLESS | STAINLESS | STAINLESS | STAINLESS | STAINLESS |
| | | | STEEL/METAL | STEEL/METAL | STEEL/METAL | STEEL/METAL | STEEL/METAL | STEEL/METAL |
| SIZE (D x T x H) | MAX. RPM | STD. PKG. | PART # | PART # | PART # | PART # | PART # | PART # |
| | | | nd 3/32" Type 01/41 - | | | FANT # | | rani # |
| x .040 x 5/8 | 15,280 | | 111 0/02 Type 01/41 | Ingillout out-on | | | | 076607 01616 |
| x .045 x 5/8 | 15,280 | | | | | | 662435 27956 | |
| x 3/32 x 5/8 | 15,280 | | | | | | 662435 27955 | |
| -1/2 x .035 x 7/8 | 13,580 | | | | | | | 662528 43846 |
| -1/2 x .040 x 7/8 | 13,580 | | | | | | 662528 43225 | 076607 01617 |
| | 13,580 | | | | | | | 662533 70222 |
| | 13,580 | | | | | | | 662528 40001 |
| 1/0 045 7/0 | 13,580 | | 00050000454 | | | | 0005000000 | 662528 42158 5-P |
| -1/2 x .045 x 7/8 | 13,580 | | 662528 38454 | | | | 662528 23602 | |
| 1 | 13,580 13,580 | | | | | | 662528 41994 ALU 662528 41997 INOX/SS | |
| | 13,580 | | | | | | 662528 41213 | |
| | 13,580 | | | | | | 662528 42160 <i>5-Pk</i> | |
| -1/2 x .050 x 7/8 | 13,580 | | | | 662533 70016 | | 002320 42100 3 7 K | |
| -1/2 x 1/16 x 7/8 | 13,580 | | 662528 38455 | | 00200010010 | 662528 43208 | | 662528 43845 |
| 1 1/2 x 1/10 x 1/0 | 13,580 | | 00202000100 | | | 662528 42159 5-Pk | | 002020.0010 |
| | 13,580 | | | | | 662533 71660 | | |
| -1/2 x 3/32 x 7/8 | 13,580 | 25 | | | | | 662528 23599 | |
| 5 x .040 x 5/8 | 12,225 | | | | | | | 662528 43847 |
| x .040 x 7/8 | 12,225 | | | | | | 662528 43226 | 076607 01618 |
| 5 x .045 x 7/8 | 12,225 | | 662528 38460 | | | | 662528 23603 | |
| | 12,225 | | | | | | 662528 41995 ALU | |
| | 12,225 | | | | | | 662528 41214 | |
| x 050 x 7/0 | 12,225 | | | CCOEOOOOOO N7 This Cut | | | 662528 42170 5-Pk | |
| x .050 x 7/8 | 12,225 | | | 66252809829 NZ ThinCut | 662533 70017 | | | |
| x 1/16 x 7/8 | 12,225 | | 662528 38462 | | 00233370017 | 662528 43209 | | |
| X 1/10 X 1/0 | 12,225 | | 00232030402 | | | 662528 42169 <i>5-Pk</i> | | |
| x 3/32 x 7/8 | 12,225 | | | | | 302020-12100 0 7 K | 662528 23600 | |
| x .040 x 7/8 | 10,185 | | | | | | | 076607 02757 |
| | 10,185 | | | | | | | 662533 70223 |
| | 10,185 | | | | | | | 662528 41212 |
| x .045 x 7/8 | 10,185 | | | | | | 662528 23604 | |
| | 10,185 | | | | | | 662528 41996 ALU | |
| | 10,185 | | | | | | 662528 41999 INOX/SS | |
| | 10,185 | | | | | 660500 10474 E DI | 662528 41215 | |
| x .050 x 7/8 | 10,185 10,185 | | | | 662533 70018 | 002328 42174 3-PK | 662528 42175 5-Pk | |
| x 1/16 x 7/8 | 10,185 | | 662528 38465 | | 00200010010 | 662528 43210 | | |
| x 1/10 x 1/0 | 10,185 | | 00202000400 | | | 662533 71662 | | |
| x 3/32 x 7/8 | 10,185 | | | | | | 662528 23601 | |
| x .045 x 7/8 | 8,600 | 25 | | | | | 662528 32323 | |
| | 8,600 | 20 | | | | | 662528 42000 INOX/SS | |
| ′ x 1/16 x 7/8 | 8,600 | 25 | | 662529 00652 | | | | |
| | 8,600 | 1 | | | 701846 94055 | | | |
| | | | | | | | | |

RightCut wheels are to be used for cutting only * 5-wheel Job Packs; wheels are packed 5 wheels/Pack, with 5 Job Packs/carton. Order per each wheel in standard package quantities of 25. Order in multiples of 25.

+ Bulk packed 250 Wheels/carton; 5 inner boxes of 50 wheels each. Order in multiples of 250 wheels.

CUT-OFF WHEEL DESCRIPTION CODES BLANK = All Purpose ALU = Aluminum = Masonry = Stainless

Distributed by Applifast

FC = Fast Cut Steel / Metal

 (\mathbf{f})

INOX/SS = Contaminant Free

applifast.com

LL = Long Life

1-2-3 = Cutting/Notching/Grinding

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| | | | NEW | Langer A | auster | COMP - | MITTAL - |
|---|------------------------|--------------|----------------------------|--|-----------------------------|--|---------------------|
| | | | | | COV | | 0 |
| | | | | | | | |
| | | | BEST | BEST | BETTER | GOOD | GOOD |
| Right | | | QUANTUM3 Type 27/42 | NORZON PLUS Type 27/42 | BLUEFIRE Type 27/42 | GEMINI Type 27/42 | Type 27/42 |
| | | | Ceramic Alumina | Ceramic Alumina/ | Zirconia Alumina/ | Aluminum Oxide | Aluminum Oxide |
| | | MATERIAL: | | Zirconia Alumina STAINLESS | Aluminum Oxide STAINLESS | STAINLESS | STAINLESS |
| | | | | STEEL/METAL | STEEL/METAL | STEEL/METAL | STEEL/METAL |
| SIZE (D x T x H) | MAX. RPM | STD. PKG. | PART # | PART # | PART # | ALUMINUM PART # | PART # |
| .040, .045, 1/16" - Rig | | – Type 27/42 | the constance constance of | | | | |
| 4 x .045 x 5/8 4-1/2 x .040 x 5/8-11 | 15,280 13,580 | 25 10 | | | | 662528 42180 662528 43227 | 076607 05249 |
| 4-1/2 x .045 x 5/8-11 | 13,580 | 10 | | | | 662528 42025 | |
| 4 1/0 0 45 7/0 | 13,580 | 10 | | | | 662528 41913 INOX/SS | 000000000 |
| 4-1/2 x .045 x 7/8 | 13,580 13,580 | 25 25 | | | | 662528 42026 662528 41912 INOX/SS | 662528 43604 |
| | 13,580 | 25 | | | | 662528 41909 ALU 36 | |
| | 13,580 | 25* | | | | 662528 42161 5-Pk | |
| 4-1/2 x 1/16 x 5/8-11 | 13,580 13,580 | 250 10 | 662528 38457 | | 662528 43223 | 662533 70065 250-Pk | |
| | 13,580 | 10 | 002020 30437 | | 662528 43219 | | |
| | 13,580 | 25 | 662528 38456 | | | | |
| 5 x .040 x 5/8-11 5 x .045 x 5/8-11 | 12,225 12,225 | 10 10 | | | | 662528 43228 662528 41939 | |
| 5 x .045 x 7/8 | 12,225 | 25 | | | | 662528 42036 | 662528 43849 |
| | 12,225 | 25 | | | | 66252841914 INOX/SS | |
| | 12,225 | 25 | | | | 662528 41910 ALU 36 | |
| | 12,225 12,225 | 25* 250 | | | | 662528 42171 5-Pk 662533 70066 250-Pk | |
| 5 x 1/16 x 7/8 | 12,225 | 25 | 662528 38464 | | 662528 43220 | 0020001000020071 | |
| 6 x .045 x 5/8-11 | 10,185 | 10 | | 662528 42007 | | 662528 30587 | |
| 6 x .045 x 7/8 | 10,185 10,185 | 25 25 | | | | 662528 42202 662528 41916 INOX/SS | 662528 42015 |
| | 10,185 | 25 | | | | 662528 41911 ALU 36 | |
| | 10,185 | 25* | | | | 662528 42176 5-Pk | |
| 6 x 1/16 x 7/8 | 10,185 | 250 25 | 662528 38466 | | 662528 43221 | 662533 70067 250-Pk | |
| 7 x .045 x 5/8-11 | 8,600 | 10 | 002020 30400 | | 002320 43221 | 662528 41919 INOX/SS | |
| 7 x .045 x 7/8 | 8,600 | 20 | | | | 662529 12626 | |
| 7 x 1/16 x 7/0 | 8,600 | 20 10 | | | | 662528 41918 INOX/SS | 07660705051 |
| 7 x 1/16 x 7/8 9 x 1/16 x 5/8-11 | 8,600 6,600 | 10 | | | | 662530 19115 | 076607 05251 |
| 9 x 1/16 x 7/8 | 6,600 | 10 | | | | 662530 17734 | |
| RightCut wheels are to be | • | | | | | | h |
| 3/32", .125" – Cut-off - 4 x .125 x 3/8 | - Type 27/42 15,280 | 25 | 10000 | 662528 42001 | | | |
| 4-1/2 x 3/32 x 5/8-11 | 13,580 | 10 | | | | 662528 41903 | Q |
| | 13,580 | 10 | | | | 662528 42027 INOX/SS | |
| | 13,580 13,580 | 25 25 | | | | 662528 41940 662528 42028 INOX/SS | |
| | 13,580 | 25 | | | | 662528 43582 1-2-3 | |
| 4-1/2 x .125 x 5/8-11 | 13,580 | 10 | | 662528 43321 | | 662528 43588 | |
| 4-1/2 x .125 x 7/8 5 x 3/32 x 5/8-11 | 13,580 12,225 | 25 10 | | 662528 43322 | | 662528 43589 662528 41904 | |
| 5 x 3/32 x 7/8 | 12,225 | 25 | | | | 662528 42037 INOX/SS | |
| | 12,225 | 25 | | | | 662528 43587 LL | |
| 5 x .125 x 7/8 | 12,225 | 25 10 | | | | 662528 43595 | |
| 6 x 3/32 x 5/8-11 6 x 3/32 x 7/8 | 10,185 10,185 | 25 | | | | 662528 41905 662528 41906 | |
| | 10,185 | 25 | | | | 662528 32487 INOX/SS | |
| 6 x .125 x 5/8-11 | 10,185 | 10 | | | | 662528 41192 | |
| 6 x .125 x 7/8 7 x 3/32 x 5/8-11 | 10,185 8,600 | 25 10 | | | | 662528 42021 662528 41907 | |
| 7 x 3/32 x 7/8 | 8,600 | 20 | | | | 662528 41908 | |
| 7 105 5 2 11 | 8,600 | 20 | | 00050040555 | | 66252914638 INOX/SS | |
| 7 x .125 x 5/8-11 7 x .125 x 7/8 | 8,600 8,600 | 10 20 | | 662529 12625 662529 12624 | | 66252900619 | |
| 9 x 3/32 x 5/8-11 | 6,600 | 10 | | 00232312024 | 662528 42378 | 002023 00013 | |
| 9 x 3/32 x 7/8 | 6,600 | 20 | | | 662528 42343 | | |

9 x 3/32 x 7/8 6,600 20 662528**42343** These wheels are to be used for cutting only. * 5-wheel Job Packs; wheels are packed 5 wheels/Pack, with 5 Job Packs/carton. Order per each wheel in standard package quantities of 25. Order in multiples of 25.





CUT-OFF WHEELS Circular Saw Reinforced Cut-off

A circular saw uses an abrasive wheel to cut different materials using a rotary motion spinning around an arbor. Norton Circular Saw abrasive cut-off wheels are ideal for use in deburring, cleaning, slotting and cutting all types of metal and masonry.

Applications: Size Range: Thickness Range: Abrasive Grain: Shape: Machine Used: Deburring, cleaning, slotting and cutting 6" - 9" diameter .035", .060", 1/16", .1/8", and .125" Zirconia Alumina / Aluminum Oxide, Aluminum Oxide, Silicon Carbide, Diamond Type 01/41 Straight



CIRCULAR SAW

| | TRADO | | BEST | BETTER | GOOD | GOOD | GOOD |
|-----------------------|-------------|--------------|---------------------|-------------------------------------|---------------------|---------------------|---------------------|
| | | NAME: | | CHARGER | GEMINI | METAL | MASONRY |
| | | SHAPE: | Туре 01/41 | Type 01/41 | Type 01/41 | Type 01/41 | Type 01/41 |
| | ABR | RASIVE: | Diamond | Zirconia Alumina/ Aluminum Oxide | Aluminum Oxide | Aluminum Oxide | Silicon Carbide |
| | MAT | TERIAL: | STAINLESS | STEEL/METAL | STEEL/METAL | STEEL/METAL | MASONRY |
| SIZE (D x T x H) | MAX. RPM | STD. PKG. | PART # | PART # | PART # | PART # | PART # |
| Type 01/41 – Circula | r Saw 🛛 | | | | | | |
| 6 x .035 x 5/8 | 10,185 | 25 | | | 662528 09714 | | 4 |
| 6 x 1/16 x 5/8 | 10,185 | 25 | | | 662528 09718 | | |
| 6-1/2 x .125 x DM-5/8 | 9,405 | 10 | | | | 076607 89098 | 076607 89089 |
| 7 x 1/16 x 5/8 | 8,730 | 25 | | | 662529 05957 | | |
| 7 x .060 x 7/8 | 8,600 | 1 | 701846 94055 | | | | |
| 7 x 1/8 x DM-5/8 | 8,730 | 25 | | | | 076607 89097 | 076607 89088 |
| 8 x 1/16 x 5/8 | 7,640 | 25 | | 662530 17771 LL | 662530 07025 | | |
| | 7,640 | 10 | | | 662530 17795 | | |
| 8 x 1/8 x DM-5/8 | 7,640 | 10 | | | | 076607 89096 | 076607 89086 |
| 9 x .060 x 7/8 | 6,600 | 1 | 701846 94056 | | | | |

| CUT-OFF WHEEL DESCRI | PTION CODES | | | | | |
|----------------------|---------------|----------------|-----------|-------------|---------------|--|
| BLANK = All Purpose | FC = Free Cut | LL = Long Life | = Masonry | = Stainless | Steel / Metal | |





CUT-OFF WHEELS Chop Saw Reinforced Cut-off



A chop saw is a light, low-horsepower portable machine. Although very similar to a compound miter saw, it is designed for cutting denser materials, like metal bar, tubing or pipe. Chop saw cut-off wheels are designed specifically for this machine with finer grit, softer grades, and reinforcement layers that match the application.

Applications:

Size Range: **Thickness Range: Abrasive Grain:** Shape: **Reinforcement Type: Machine Used:**

Cutting small-diameter metal pieces, bar stock, metal pipe, tubing, decking, cable, drywall studs, and metal plate dimensioning 10" - 16" diameter 3/32" and 7/64" Zirconia Alumina / Aluminum Oxide Blend, Aluminum Oxide, and Diamond Type 01/41 Straight Side reinforced, centrally reinforced



Cross Reference Guide

| | TOTAL PERFOR | RMANCE | | | | ICE SPECIALTY | | |
|-----------|-------------------------|-----------------------|-----------------------|---------------------------------|------------------------|---------------------|----------------------|--------------------|
| | BETTER | | | GOOD | | P | GOOD | P |
| NORTON | BlueFire Free Cut | BlueFire Rapid Cut | BlueFire Long Life | Gemini Free Cut | Gemini Rapid Cut | Gemini Long Life | Stud Cutter | Gemini Aluminum |
| Brilliant | | — | — | Super-G | Tube/Pipe | _ | Drywall Stud | Aluminum |
| Bullard | ZA36T | _ | _ | TA36T A46T The Competitor | A36R The Competitor | A36R Ironmaster | A46T Studmaster | AL36R |
| Camel | | — | ZA24-S | A36-P, WA36-P | _ | A36-S | A30-R Mr. Stud | A30-N |
| Dewalt | — | — | XP | GP, Stainless Fabrication | — | | Stud Cutting | — |
| Flexovit | — | — | | A30R Fast Cut A30-Q Free Cut | — | A30S Long Life | A30T Drywall Stud | — |
| Makita | — | — | — | — | General Purpose | — | — | — |
| Pearl | SRT36 | _ | | A36P Premium | A30P Silver Line | _ | A46S Stud Cutting | — |
| Pferd | | — | | A 36 K SG CHOP | PSF CHOP | | A 36 K SG- STUD | — |
| Sait | Saitech Steel Worker | Z-tech | | EZ-Chop | EZ-Chop Attacker | Iron Worker | Stud King | Aluminum |
| Walter | _ | _ | _ | _ | A-30 | A-30-HC+ | | A30-ALU |

Application-to-Product Recommendation Guide

Wheel Type/Reinforcement

TYPE 01/41 STRAIGHT SIDE-REINFORCED Side-reinforced wheels have two full layers of reinforcing and are designed for a fast cut and the most CUT-OFF WHEEL aggressive applications. All Purpose, Free Cut, and Long Life are side reinforced.

TYPE 01/41 STRAIGHT CENTRALLY-REINFORCED CUT-OFF WHEEL

Centrally-reinforced wheels have a single layer of reinforcing with exposed rough sides for free-cutting, non-binding applications where minimal burr and burn are the key requirements. Rapid Cut wheels are centrally reinforced.

How to Pick the Right Bond Type

| DESCRIPTION CODE DEFINITIONS | |
|------------------------------|---|
| BLANK = All Purpose | Where an excellent blend of cut rate and life is needed |
| FC = Free Cut | Used when fast, burn-free cutting is desired or when cutting pieces with larger cross sections |
| LL = Long Life | Where durability is needed due to severe application, and when cutting parts with small cross sections |
| RC = Rapid Cut | Where a free cutting, non-binding wheel is needed for burn-free and burr-free cuts |
| STUD = High-Performance | High-performance aluminum oxide/resin bond combination designed for cleaner cuts and longer life when cutting steel studs |
| ALU = Aluminum | Specially formulated bond for reduced loading/surface contamination when cutting aluminum/soft materials |



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CUT-OFF WHEELS Chop Saw Reinforced Cut-off



Designed for cutting steel, metal studs, stainless steel, non-ferrous materials, tile, brick, plastic and much more

DIALAST DIAMOND

- A combination of high-quality diamond and advanced brazed single-layer bonding technology for extra-long life versus conventional abrasives or other vacuum-brazed diamond tools
- Retains diamond grains and wheel shape for full life with low sparks, while keeping a continuous grinding depth for exceptional wheel life; less blade changes reduce downtime and labor costs
- · Environmentally-friendly grinding for minimal dust, less clean-up and safer working conditions



Better choice for steel, stainless steel and all other ferrous metals

BLUEFIRE ZIRCONIA ALUMINA / A/O BLEND

- Durable, latest generation zirconia alumina and premium aluminum oxide abrasive blend outperforms competitive chop saw zirconia wheels by 20 percent
- · Delivers twice the life and cut rate of aluminum oxide wheels on difficult to cut metals
- · High performance resin bond is designed for free cut and long life



Good choice for all steel and ferrous metals as well as specialty applications in aluminum

GEMINI ALUMINUM OXIDE

- Durable, versatile aluminum oxide abrasive engineered for consistent performance and economical price on chop saw cut-off machine applications
- · Abrasive and bond combination designed for smooth clean cut on low HP machines
- · Good choice for consistent performance at an economical price



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Good choice for drywall studs

METAL ALUMINUM OXIDE

- Quality aluminum oxide abrasive designed for cutting alloys, steels and ferrous metals including 400 series stainless, soft and hard carbon steels
- · Designed with finer grit and softer grades, specifically for chop saw machines that typically have lower horsepower

Toll Free 1 800 563 1293

· Constructed with full fiberglass reinforcing; Stud Cutter version designed specifically for cutting steel studs

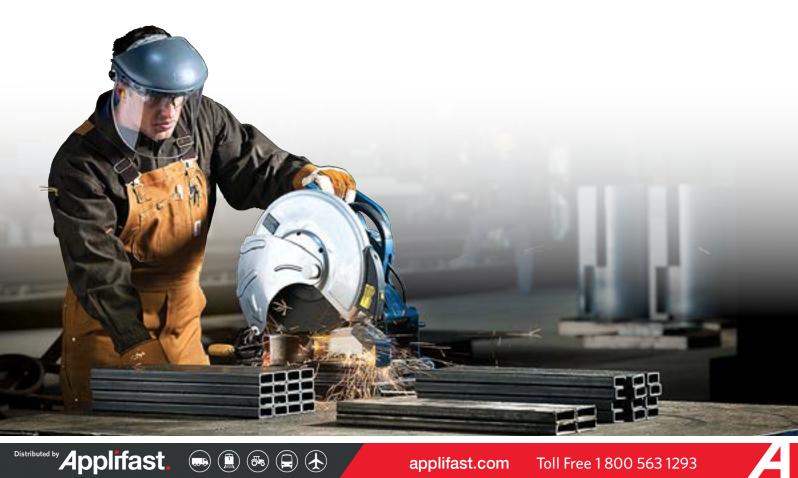


CUT-OFF WHEELS Chop Saw Reinforced Cut-off

| | | | | | | | - | 672 | GA |
|---------------|---------|---------|----------------------|-------------------------------------|-------------------------------------|-------------------------|------------------------|-----------------------------|--------------------------|
| | | | | | | | | | |
| | | | k. V | | | | | | |
| | | TIER: | | BETTER | BETTER | GOOD | GOOD | GOOD | GOOD |
| | TRADEI | | DIALAST | BLUEFIRE | BLUEFIRE | GEMINI | GEMINI | METAL | METAL |
| | S | SHAPE: | Type 01/41 | Type 01/41 | Type 01/41 | Type 01/41 | Type 01/41 | Type 01/41 | Type 01/41 |
| | ABR | ASIVE: | Diamond | Zirconia Alumina/ Aluminum Oxide | Zirconia Alumina/ Aluminum Oxide | Aluminum Oxide | Aluminum Oxide | Aluminum Oxide | Aluminum Oxide |
| | REINFOF | RCING: | | Side | Central | Side | Central | Side | Central |
| | 1117 | FRIAL: | STAINLESS | STAINLESS | STAINLESS | STAINLESS | STAINLESS | STAINLESS | STAINLESS |
| | IVIAI | ERIAL. | | STEEL/METAL | STEEL/METAL | STEEL/METAL | STEEL/METAL | STEEL/METAL | STEEL/METAL |
| SIZE | MAX. | STD. | | | | | | | 1 |
| DxTxH) | RPM | | PART # | PART # | PART # | PART # | PART # | PART # | |
| Sype 01/41 S | | | f | | | | | | |
| 10 x 7/64 x 1 | 6,110 | 10 | | | | 662531 06109 LL | | | |
| 12 x 7/64 x 1 | 5,095 | 10 | | 662528 43250 | | 662532 07554 LL | 662532 14561 RC | | |
| | 5,095 | 5 | | | | | | 076607 89400 | |
| 4 x 3/32 x 1 | 4,365 | 10 | | | | 662533 06627 FC | 662533 13588 RC | 662528 35554 | |
| | 4,365 | 10 | | | | 662533 06626 LL | | 076607 89405 STUD | |
| | 4,365 | 5 V | | | | | | | 07660789399 |
| 4 x 7/64 x 1 | 4,365 | 10 | | 662528 43252 FC | 662528 43254 RC | 662533 14816 ALU | | | |
| | 4,365 | 10 | | 662528 43253 LL | | | | | |
| | 4,365 | 25 | | | | | | | 076607 03970 5-PI |
| 14 x .155 x 1 | 5,400 | 1 | 701846 94053 | | | | | | |
| 6 x 7/64 x 1 | 3,820 | 10 | | 662528 43256 FC | | 662534 10198 LL | | | |
| | 3,820 | 10 | | 662528 43257 LL | | | | | |
| Vendihle 2-v | - / | kane lu | deal for vending mac | hings and small iobs 5 | nacks/carton_Order in | multinles of 10 | | | |

V Vendible 2-wheel Package. Ideal for vending machings and small jobs. 5 packs/carton. Order in multiples of 10.

| CUT-OFF WHEEL DESCRI | PTION CODES | | | | |
|----------------------|----------------|---------------|----------------|----------------|--------------------|
| BLANK = All Purpose | ALU = Aluminum | FC = Free Cut | LL = Long Life | RC = Rapid Cut | STUD = Stud Cutter |
| Masonry | = Stainless | Steel / Metal | | | |





CUT-OFF WHEELS High-Speed Reinforced Cut-off

Norton high-speed cut-off abrasive wheels provide the industry's leading performance in all high-speed gas and electric-powered applications.

| Applications: | Metalworking: steel, stainless, ductile, cast iron, rail steel and metal decking |
|------------------|--|
| | Non-Metal Building Materials: concrete, brick, masonry, asphalt aggregate, stone and schedule 40 and 80 PVC pipe |
| | Rescue and Demolition: steel, acrylic, fiberglass, rubber, glass, wood, concrete, brick and asphalt |
| Size Range: | 12" – 16" diameter |
| Thickness Range: | 1/8" and 5/32" |
| Abrasive Grain: | Aluminum Oxide, Silicon Carbide, Silicon Carbide / Aluminum Oxide Blend |
| Shape: | Type 01/41 Straight |
| Reinforcement: | Wheels are offered in standard two-layer reinforcement as well as three-layer reinforcement for higher-speed saws and heavy-duty applications. |
| Arbor: | Wheels are offered with patented universal arbor that accommodates both 20mm and all other machines with 1" arbors. |
| Machine Used: | |



OR ELECTRIC SAW

Material / Application-to-Product Recommendation Guide

| lcon | | Application |
|------|-------------------|--|
| | Metal | High-performance aluminum oxide grain wheels designed for general purpose cutting of all steel and stainless parts including rebar, steel pipe, structural steel, sheet metal, cable and small to medium diameter solid pieces. |
| | Metal Decking | High-performance aluminum oxide abrasive combined with a thicker wheel (5/32") that stands up to the sharp edges of sheet metal and roof decking. |
| | Ductile/Cast Iron | A special blend of silicon carbide abrasive for cutting and aluminum oxide abrasive for life, designed to cut ductile and cast iron pipe, concrete-lined water pipes, sewer construction and heavy duty PVC. |
| | Rescue | For ventilation, forcible entry, rescue and demolition. A versatile abrasive formula that can be used on a wide range of materials including all types of metals and masonry. |
| | Concrete | Coarse grit silicon carbide abrasive provides a low initial cost solution for cutting brick, block, concrete or other masonry materials. For higher-production applications that require optimum speed of cut and product life, please see our complete selection of high-speed diamond wheels in our Norton Construction diamond product line. |
| 1 | Asphalt | A special blend of extra coarse silicon carbide abrasive grains provides a low initial cost solution for cutting asphalt, green concrete, asphalt over concrete, a wide range of aggregates and abrasive materials. For higher-production applications that require optimum speed of cut and product life, please see our Norton Construction diamond blade product offering in the Construction Product section of this catalog -and the complete offering in our "Diamond, Abrasives and Equipment for the Construction Market Catalog" #7719 found on www.nortonabrasives.com |

Cross Reference Guide

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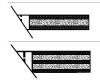
SPECIALTY

| | GOOD | | | | |
|--------------------|--|-------------------------|-------------------------------------|-----------------------------------|-------------------------------|
| NORTON | Gemini Metal | Gemini Metal Decking | Gemini Ductile | Gemini Concrete | Gemini Asphalt |
| Abmast | A 24 R, Kompetitor Metal | A 24 T | AC 24 R, Kompetitor Ductile Iron | C 24 R, Kompetitor Concrete | C 16 T, Kompetitor Asphalt |
| Brilliant | Metal/Stainless | | | Concrete/Masonry | |
| Bullard Blaze & | A24R, ZA24Q, | TA24R | AC24R | C24R, The Competitor | CC20R |
| Road Warrior | The Competitor | | | | |
| Camel | A24-R | A24-T | AC24-R | C24-R | C16-U |
| Flexovit | A24/30SB | A24TB | AC24SB | C30UB | C16UB |
| Husqvarna | Blue XHS, Blue QMS- CM, Blue EHS | Grey QMS-CM | Green QMS-CM, Green EHS | Red XHS, Red QHS-CM, Red EHS | Black QMS-AS |
| Pearl | SRT, Premium A36S, Silver Line A30R | _ | AC30S | Premium C36S, Silver Line C24R | — |
| Pferd | A 24 R SG | A 24 Q SG-RAIL | AC 24 Q SG | C 24 R SG | _ |
| Sait | A24R, A30S, XFC | Brute | Ductile | C24R | Big M.A.C, XFC |
| Tyrolit | A30P, A30BF | _ | AC24, AC30BF | 1C24, C30BF | _ |
| Virginia Abrasives | Metal | _ | Ductile | Concrete | Asphalt |
| Walter | A-24 | _ | — | _ | _ |
| | | | | | |



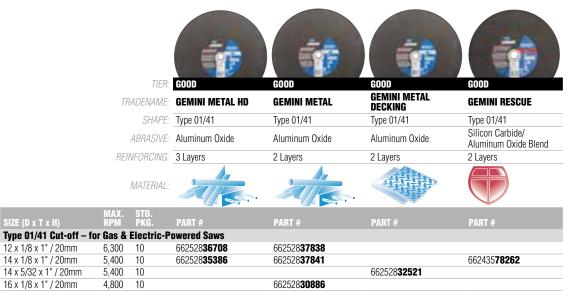
CUT-OFF WHEELS High-Speed Reinforced Cut-off

How to Pick the Right Reinforcement



Two full layers of reinforcing are offered for lower power machines, and light-to-medium applications where speed of cut is the primary selection criterion.

Three full layers of reinforcing are recommended for high-speed, high-power machines where the application is heavy-duty, and durability is the primary selection criterion.



See addtional Rail Cut wheels on the next page for larger-volumne jobs.

| | - | - | - | - | |
|---|---|---|---------------------|---------------------|---------------------|
| TIER: | GOOD | GOOD | GOOD | GOOD | GOOD |
| TRADENAME: | GEMINI DUCTILE HD | GEMINI DUCTILE | GEMINI CONCRETE HD | GEMINI CONCRETE | GEMINI ASPHALT |
| SHAPE: | Type 01/41 | Type 01/41 | Type 01/41 | Type 01/41 | Type 01/41 |
| ABRASIVE: | Silicon Carbide / Aluminum Oxide Blend | Silicon Carbide / Aluminum Oxide Blend | Silicon Carbide | Silicon Carbide | Silicon Carbide |
| REINFORCING: | 3 Layers | 2 Layers | 3 Layers | 2 Layers | 2 Layers |
| MATERIAL: | | | | | |
| | PART # | PART # | DADT # | PART # | PART # |
| SIZE (D x T x H) MAX. RPM PKG. | | FANI# | PART # | PANI # | PANI # |
| Type 01/41 Cut-off – for Gas & Electric-P | owered Saws | 00050000000 | | 00050000000 | 70101050010 |
| 12 x 1/8 x 1" / 20mm 6,300 10 | | 662528 37840 | | 662528 37839 | 701846 70243 |
| 14 x 1/8 x 1" / 20mm 5,400 10 | 662528 35388 | 662528 37843 | 662528 35387 | 662528 37842 | 701846 72877 |
| 16 x 1/8 x 1" / 20mm 4,800 10 | | | | 701846 23029 | |



(55)

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Universal Arbor

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Two Blade Sizes in One

Our Norton patented 1"/20mm knock-out arbor fits all gas and electric high-speed saws. A 20mm bushing is pre-mounted into the 1" molded arbor hole. The wheel, with the 20mm bushing, can be mounted directly on any 20mm arbor high-speed saw. With the bushing removed, exposing the 1" arbor hole, the wheel can be mounted on any 1" arbor high-speed saw. Combining this arbor, with heavy-duty triple reinforcing results in a higher performing, extra strong, longer lasting cutting wheel. Once the 20mm bushing is removed, it cannot be replaced.



ANN-ODBAIN These powerful, s and are normally the machines car Applications: Size Range: Thickness Range: Abrasive Grain: Bond: Shape:

CUT-OFF WHEELS Walk-Behind Reinforced Cut-off

These powerful, self-propelled machines are designed to cut concrete slabs and asphalt and are normally fitted with diamond blades. For inexperienced operators or small jobs, the machines can accommodate these low initial cost, conventional abrasives wheels.

Arbor: Machine Used: Cutting straight sections of concrete surfaces 14" and 18" diameter 3/16" – 3/8" Silicon Carbide Hot Pressed (HP) – for higher-horsepower machine applications where additional durability is needed, may be used wet or dry Cold Pressed (CP) – for lower-horsepower machines, which need a free-cutting wheel Type 01/41 Straight All are 1" with a drive pin

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Cross Reference Guide

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SPECIALTY

| | BETTER | GOOD | GOOD | | | | | |
|------------------------------|-------------------------------|-----------------------------|--------------------------------|--|--|--|--|--|
| NORTON | Gemini | Gemini | Gemini | | | | | |
| NORTON | Asphalt / Green Concrete – HP | Asphalt - CP | Concrete - CP | | | | | |
| Abmast | _ | C 16 T. Kompetitor Asphalt/ | C 24 R | | | | | |
| | | Concrete | | | | | | |
| Bullard Blaze & Road Warrior | _ | C16R & T, C16R3 | <u> </u> | | | | | |
| Camel | _ | C16-U | C24-R | | | | | |
| Flexovit | HPC16AG | C16 G.P. C16UB | C20SB/C16TB | | | | | |
| Husqvarna | Red GC-7A | Black EWC | Gold RTC, Blue RTC, Blue EWC | | | | | |
| Pearl | — | _ | Premium C36S, Silver Line C24R | | | | | |
| Pferd | | C 24 R SG ASP | C 24 R SG GP | | | | | |
| Sait | Street Runner | C16 | C24R, Street Walker | | | | | |
| Tyrolit | Concrete/Asphalt CHP | Asphalt CP | Concrete CP | | | | | |
| Virginia Abrasives | · | GC/Asphalt | Concrete | | | | | |
| Walter | | | C-24 | | | | | |
| | | | | | | | | |

| TIEI | BETTER | GOOD | GOOD |
|---|----------------------------|----------------------------|-----------------------------|
| TRADENAMI | | GEMINI ASPHALT - CP | GEMINI CONCRETE - CP |
| | E Type 01/41 | Туре 01/41 | Туре 01/41 |
| ABRASIVI | Silicon Carbide | Silicon Carbide | Silicon Carbide |
| BONL | 2: Hot Pressed - Long Life | Cold Pressed - Free Cut | Cold Pressed - Free Cut |
| MATERIAL | | 1 | |
| SIZE (D x T x H) MAX. RPM STD. PKG. | PART # | PART # | PART # |
| Type 01/41 Cut-off – For Walk-Behind Saws | | | |
| 14 x 3/16 x 1 Pin Hole 4,365 10 | | 701846 80324 | 701846 80323 |
| 14 x 1/4 x 1 Pin Hole 4,365 5 | | | 701846 70533 |
| 18 x 1/4 x 1 Pin Hole 4,250 5 | 701846 70103 | | |

For higher-production applications, optimum speed of cut and product life, please see our diamond blade product offering for walk-behind saws in the Construction Product section of this catalog and the complete offering in our Diamond, Abrasives and Equipment for the Construction Market Catalog #7719 found on www.nortonabrasives.com.



CUT-OFF WHEELS Stationary Saw Reinforced Cut-off

The Norton stationary saw reinforced cut-off wheel line consists of Type 01/41 straight 10" - 24" wheels, designed to fit on fixed-base stationary saws that are free-standing or mounted on a workbench.

Applications:

Size Range: Thickness Range: Abrasive Grain: Shape: Machine Used: Primary applications are cutting of all metal parts (flat stock, bars, studs, pipes, tubes, angle iron, cable), wire rope and hydraulic hose used in fabrication, construction and plant maintenance. 10" – 20" diameter 3/32", 1/8", 5/32", 3/16"

Zirconia Alumina / Aluminium Oxide Blend, Aluminum Oxide, Silicon Carbide Type 01/41 Straight



STATIONARY SAW

Cross Reference Guide

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TOTAL PERFORMANCE

| INITIAL PRICE | SPECIALITY |
|---------------|------------|
| | < |
| | GOOD |

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| | BEITER | GUUD | | | | GUUD |
|-----------|-----------------|-----------------------------------|-------------------------------------|----------------------|-------------------|-------------------|
| NORTON | BlueFire | Gemini Free Cut | Gemini Long Life | Gemini Rapid Cut* | Norton Masonry | Foundry Cut** |
| Abmast | Z 24 R3 | A 30 R | — | _ | | AC 24 R3 |
| Brilliant | — | GP Fast Cut | GPX Long Life | XL, XLX | — | — |
| Bullard | — | A30-R | A30-T | A300 | C20R | — |
| Camel | ZA24-R | A24-R, A46-T | — | — | C24-R | WA24-S |
| Flexovit | — | A30RB Multi Purpose | A30SB Long Life, A24TB Long Life | — | C24RB | AC24PB Heavy Duty |
| Metabo | _ | A30N, A30R | A30S, A30V | _ | C30S | — |
| Pearl | SRT36 | A30P Premium, A30Q Silver Line | A30S Premium, A36R Premium | — | C24 Silver Line | — |
| Pferd | ZA 24 Q/R SG-HD | A 24 N/P SG-HD | A 24 Q/S SG-HD | _ | C 24 0 SG | _ |
| Sait | _ | A24N, A36R | A24R | _ | C24R | — |
| Tyrolit | — | A30BF | — | — | C30BF | — |
| Walter | _ | A-24-FC | A-24-RIP | | | _ |

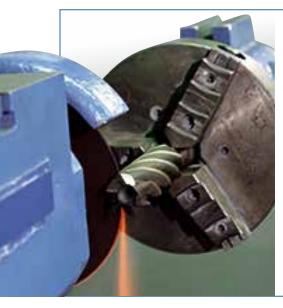
* For Burr-Free applications, please see centrally-reinforced BlueFire Rapid Cut and Gemini Rapid Cut wheels in Chop Saw cut-off wheel section or at www.nortonabrasives.com

** For Foundry and other cut-off wheels, please refer to that section of this Norton Full Line Catalog #7362 or at www.nortonabrasives.com

| TTER: BETTER GOD GOD GOD TRADENAME: BLUEFIRE GEMINI FREE CUT GEMINI LONG LIFE MASONRY SHAPE: Type 01/41 Type 01/41 Type 01/41 Type 01/41 Type 01/41 ABRASINE: Zirconia Alumina/ Aluminum Oxide Aluminum Oxide Aluminum Oxide Silicon Carbide MATERIAL STAINLESS STAINLESS STAINLESS MASONRY SIZE (0 x T x H) MAX. RPM STD. PKG. PART # PART # PART # Type 01/41 Straight Cut-Off STEEL/METAL STEEL/METAL STEEL/METAL PART # 10 x 3/32 x 5/8 6,110 10 66252843248 66253106101 FC 66253207548 LL 12 x 1/8 x 1 5,095 5 14 x 1/8 x 1 4,365 5 18 x 5/32 x 1 3,015 10 66252843255 66253410183 FC 66253410184 LL 18 x 5/32 x 1 | | | 7/50 | | | | |
|---|-----------------------|-----------------------|-----------|------------------------|------------------------|------------------------|---------------------|
| SHAPE Type 01/41 Type 01/41 Type 01/41 Type 01/41 Type 01/41 ABRASIVE Zirconia Alumina/ Aluminum Oxide Aluminum Oxide Aluminum Oxide Silicon Carbide MATERIAL STAINLESS STAINLESS STAINLESS MASONRY SIZE (D x T x H) MAX. RPM STD. PKG. PAR # PAR # PAR # PAR # Type 01/41 Straight Cut-Off I 0 66252843248 66253106101 FC 66253106102 LL O7660789391 12 x 1/8 x 1 5.095 10 66252843249 66253306609 FC 66253306611 LL 14 x 1/8 x 1 4.365 10 66252843255 66253410183 FC 66253410184 LL 18 x 5/32 x 1 3.820 10 66252843255 66253410183 FC 69078609032 LL 20 x 5/32 x 1 2.710 5 66252843259 LL 69078609033 FC 69078609034 LL | | | | | | | |
| ABRASIVE Zirconia Aluminum Oxide Aluminum Oxide Aluminum Oxide Silicon Carbide MATERIAL: STAINLESS STAINLESS STAINLESS STAINLESS MASONRY SIZE (D x T x H) MAX. RPM STD. PKG. PAR # PAR # PAR # PAR # Type 01/41 Straight Cut-Off 0 66252843248 66253106101 FC 66253106102 LL 07660789391 10 x 3/32 x 5/8 6,110 10 66252843249 66253106101 FC 66253207548 LL 07660789391 12 x 1/8 x 1 5,095 5 5 07660789391 1 1 1 66252843251 66253306609 FC 66253306611 LL 1 | | | | | | | |
| ABRASIVE: Aluminum Oxide MATERIAL: STAINLESS STAINLESS STAINLESS MASONRY STEEL/METAL STEEL/METAL STEEL/METAL STEEL/METAL STEEL/METAL STEEL/METAL SIZE (D x T x H) MAX. RPM STD. PKG. PARt # PARt # PARt # PARt # Type 01/41 Straight Cut-Off Image: Control of the straight Cut-Off Image: Contrenteal transment of the strain straight Cut-Off | | | SHAFE. | | | | |
| MATERIAL STAINLESS STAINLESS STAINLESS STAINLESS STAINLESS MASONRY SIZE (D x T x H) MAX. RPM STD. PKG. PART # PART # PART # PART # Type 01/41 Straight Cut-Off 10 66252843248 66253106101 FC 66253106102 LL 07660789391 12 x 1/8 x 1 5,095 10 66252843249 66253306609 FC 66253306611 LL 07660789391 12 x 1/8 x 1 5,095 5 5 5 14 4,365 10 66252843251 66253306609 FC 66253306611 LL 1 <td< td=""><td></td><td></td><td>ABRASIVE:</td><td></td><td></td><td></td><td></td></td<> | | | ABRASIVE: | | | | |
| MATERIAL: STEEL/METAL STEEL/METAL STEEL/METAL STEEL/METAL SIZE (D x T x H) MAX. RPM STD. PKG. PART # PART # PART # Type 01/41 Straight Cut-Off 10 66252843248 66253106101 FC 66253106102 LL 6,110 5 07660789391 0 66252843249 66253207548 LL 12 x 1/8 x 1 5,095 5 0 07660789391 0 14 x 1/8 x 1 4,365 10 66252843251 66253306609 FC 66253306611 LL 4,365 5 | | | | | STAINLESS | STAINLESS | MASONRY |
| Type 01/41 Straight Cut-Off 10 x 3/32 x 5/8 6,110 10 66252843248 66253106101 FC 66253106102 LL 6,110 5 07660789391 0 06252843249 66253207548 LL 12 x 1/8 x 1 5,095 5 07660789391 0 06252843249 66253306609 FC 66253306611 LL 14 x 1/8 x 1 4,365 10 66252843251 66253306609 FC 66253306611 LL 14 x 1/8 x 1 4,365 5 | | | MATERIAL: | | STEEL/METAL | STEEL/METAL | |
| 10 x 3/32 x 5/8 6,110 10 66252843248 66253106101 FC 66253106102 LL 6,110 5 07660789391 0 07660789391 0 07660789391 0 07660789391 0 07660789391 0 0 07660789391 0 <td>SIZE (D x T x H)</td> <td>MAX. RPM</td> <td>STD. PKG.</td> <td>PART #</td> <td>PART #</td> <td>PART #</td> <td>PART #</td> | SIZE (D x T x H) | MAX. RPM | STD. PKG. | PART # | PART # | PART # | PART # |
| 6,110 5 07660789391 12 x 1/8 x 1 5,095 10 66252843249 66253207548 LL 5,095 5 5 5 5 14 x 1/8 x 1 4,365 10 66252843251 66253306609 FC 66253306611 LL 4,365 5 5 5 5 5 5 16 x 5/32 x 1 3,820 10 66252843255 66253410183 FC 66253410184 LL 18 x 5/32 x 1 3,015 10 66252843255 66253410185 FC 5 20 x 5/32 x 1 2,710 5 66252843259 LL 69078609031 FC 69078609032 LL 20 x 3/16 x 1 2,710 5 66252843259 LL 69078609033 FC 69078609034 LL | Type 01/41 Straight 0 | Cut-Off | | | | | |
| 12 x 1/8 x 1 5,095 10 66252843249 66253207548 LL 14 x 1/8 x 1 4,365 5 5 66253306609 FC 66253306611 LL 14 x 1/8 x 1 4,365 5 5 66253207548 LL 66253306611 LL 16 x 5/32 x 1 3,820 10 66252843255 66253410183 FC 66253410184 LL 18 x 5/32 x 1 3,015 10 66253410185 FC 62253410185 FC 20 x 5/32 x 1 2,710 5 66252843258 FC 69078609031 FC 69078609032 LL 20 x 3/16 x 1 2,710 5 66252843259 LL 69078609033 FC 69078609034 LL | 10 x 3/32 x 5/8 | 6,110 | 10 | 662528 43248 | 662531 06101 FC | 662531 06102 LL | |
| 5,095 5 14 x 1/8 x 1 4,365 10 66252843251 66253306609 FC 66253306611 LL 4,365 5 | | | | | | | 076607 89391 |
| 14 x 1/8 x 1 4,365 10 66252843251 66253306609 FC 66253306611 LL 16 x 5/32 x 1 3,820 10 66252843255 66253410183 FC 66253410184 LL 18 x 5/32 x 1 3,015 10 66252843255 66253410185 FC 20 x 5/32 x 1 2,710 5 66252843258 FC 69078609031 FC 69078609032 LL 20 x 3/16 x 1 2,710 5 66252843259 LL 69078609033 FC 69078609034 LL | 12 x 1/8 x 1 | | | 662528 43249 | | 662532 07548 LL | |
| 4,365 5 16 x 5/32 x 1 3,820 10 66252843255 66253410183 FC 66253410184 LL 18 x 5/32 x 1 3,015 10 66253410185 FC 62253410185 FC 20 x 5/32 x 1 2,710 5 66252843258 FC 69078609031 FC 69078609032 LL 20 x 3/16 x 1 2,710 5 66252843259 LL 69078609033 FC 69078609034 LL | | | | | | | |
| 16 x 5/32 x 1 3,820 10 66252843255 66253410183 FC 66253410184 LL 18 x 5/32 x 1 3,015 10 66253410185 FC 60078609031 FC 69078609032 LL 20 x 5/32 x 1 2,710 5 66252843258 FC 69078609031 FC 69078609032 LL 20 x 3/16 x 1 2,710 5 66252843259 LL 69078609033 FC 69078609034 LL | 14 x 1/8 x 1 | | | 662528 43251 | 662533 06609 FC | 662533 06611 LL | |
| 18 x 5/32 x 1 3,015 10 66253410185 FC 20 x 5/32 x 1 2,710 5 66252843258 FC 69078609031 FC 69078609032 LL 20 x 3/16 x 1 2,710 5 66252843259 LL 69078609033 FC 69078609034 LL | | | | | | | |
| 20 x 5/32 x 1 2,710 5 66252843258 FC 69078609031 FC 69078609032 LL 20 x 3/16 x 1 2,710 5 66252843259 LL 69078609033 FC 69078609034 LL | | | | 662528 43255 | | 662534 10184 LL | |
| 2,710 5 66252843259 LL 20 x 3/16 x 1 2,710 5 69078609033 FC 69078609034 LL | | | | | | | |
| 20 x 3/16 x 1 2,710 5 690786 09033 FC 690786 09034 LL | 20 x 5/32 x 1 | | | | 690786 09031 FC | 690786 09032 LL | |
| | | | | 662528 43259 LL | | | |
| | 20 x 3/16 x 1 | 2,710 | 5 | | 690786 09033 FC | 690786 09034 LL | |
| | CUT-OFF WHEEL DESC | RIPTION COD <u>es</u> | | | | | |
| BLANK = All Purpose FC = Free Cut LL = Long Life = Masonry = Stainless = Steel / Metal | BLANK = All Purpose | FC = Free (| Cut | LL = Long Life | = Masonry | = Stainless | Steel / Metal |



CUT-OFF WHEELS Toolroom Cut-off



Reinforced and non-reinforced engineered cut-off wheels for cutting all types of tool steel with fixed-based cut-off machines.

Applications:

Size range: Grit range: Abrasive grain: Bond: Shape:

Reinforced cut-off wheels are designed to resist breakage caused by severe cross-bending and are required on any operation where the work is not securely clamped. Non-Reinforced cut-off wheels are designed for use on fixed-based machines where the work is securely clamped, guarded, and where the wheel operates on a controlled cutting plane. 6" - 12" diameter 36 – 90 grit Aluminum Oxide Resinoid, Rubber, and Shellac

Cross Reference Guide

| | BETTER | | | | | | | |
|-----------|-------------------------|----------------------------|-----------------------------|--|--|--|--|--|
| NORTON | Reinforced A60-OBNA2 | Reinforced 57A364-TB25N | Non-Reinforced 57A60-M8B | | | | | |
| Bates | A602-T-BF | A36-R-BF | - | | | | | |
| Buffalo | A60-R-BF2 | - | - | | | | | |
| Dia. Tool | A80-SP | A46-SP | - | | | | | |
| Radiac | A54-N6-B20 | - | A54-N6-B20 | | | | | |
| Tyrolit | A60-QBF38A2 | - | - | | | | | |

TECH TIP

Type 01/41 Straight

- Smooth side pattern Used when a precise thickness tolerance is needed
- Rough (R) side pattern Abrasive particles protrude from sides of wheel

Troubleshooting Guide

| PROBLEM | POSSIBLE CAUSES | SUGGESTED CORRECTION | | | | |
|-----------------|-----------------------------|--|--|--|--|--|
| Poor cut rate | Insufficient power used | Increase feed or pressure to full power | | | | |
| | Wheel too hard | Use softer grade, or thinner wheel | | | | |
| | Contact area too large | Reduce contact area | | | | |
| | Wheel too coarse | Use finer grit | | | | |
| | Wheel side out of truth | Check spindle runout | | | | |
| Non-square cuts | Work not clamped properly | Check clamp and clean to remove swarf | | | | |
| · | Misaligned spindle bearings | Check for bearing truth and alignment | | | | |
| | Poor coolant distribution | Ensure equal volume of coolant to each wheel side | | | | |
| | Wheel is too hard | Use softer acting wheel: softer grade, or finer grit | | | | |
| Workpiece burn | Insufficient feed rate | Work machine to maximum power available | | | | |
| | Poor coolant flow | Increase volume and direct at cutting point | | | | |
| | Wheel is too coarse | Use finer grit or more machine power | | | | |
| | Wheel is too hard | Use softer grade wheel | | | | |
| | Wheel is running out | Check spindle and flanges | | | | |
| | Wheel speed is too slow | Ensure tight flanges and maximum safe operating speed being used | | | | |
| Poor finish | Too much burr | Use finer grit, or softer grade | | | | |
| | Wheel too coarse | Use finer grit | | | | |
| | | | | | | |

TECH TIP

- Wheels with a "W" reinforcement (reinforcement around the hole) are not considered to be truly reinforced.
- · Clamp or fixture the workpiece for straightest cuts.

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- · Run wheels at the highest possible speed marked on the wheel and make cuts as quickly as possible. Do not overspeed wheels.
- It is recommended that a cut-off machine should have 1 horsepower for every inch of wheel diameter. For less than this, we recommend using a softer specification.
- Using a harder grade wheel increases wheel life, but it also increases burn, power required and decreases cut rate.
- · Using a coarser grit wheel increases wheel life and cut rate, but it also increases burr and power required.



CUT-OFF WHEELS Toolroom Cut-off



Better choice for cutting tool steel on fixed-based machines when work is not securely clamped

TOOLROOM REINFORCED ALUMINUM OXIDE

- Tough, versatile aluminum oxide grain for toolroom cut-off applications
- Constructed with full diameter fiberglass reinforcement on each side of wheel, to provide greatest possible
 resistance to side pressure and bending
- OBNA2 full side reinforced, resin bond; yields maximum cut rate and minimum kerf loss; ideal when thin cut is desired
- · B25N full side reinforced, resin bond; versatile; durable, free cutting; offer greatest stiffness

| | | TIER: | BETTER | | | | TIER: | BETTER | |
|-------------------|---------------|------------|--------------|---------------------|-------------------|---------------|------------|--------------|---------------------|
| SIZE (D x T x H) | MAX. RPM | STD. PKG. | SPEC. | PART # | SIZE (D x T x H) | MAX. RPM | STD. PKG. | SPEC. | PART # |
| Type 01/41 Straig | ght Cut-off – | Reinforced | | | Type 01/41 Straig | ght Cut-off – | Reinforced | | |
| 6 x .035 x 1/2 | 10,190 | 25 | A60-0BNA2 | 662528 35053 | 8 x .035 x 1/2 | 7,640 | 25 | A60-0BNA2 | 662530 430 |
| 6 x .035 x 1-1/4 | 10,190 | 25 | A60-0BNA2 | 662528 35055 | 8 x .035 x 1-1/4 | 7,640 | 25 | A60-0BNA2 | 662530 429 |
| 6 x .060 x 1/2 | 10,190 | 25 | A60-0BNA2 | 662528 35164 | 8 x .060 x 1/2 | 7,640 | 25 | A60-0BNA2 | 662530 430 |
| 6 x .060 x 1/2 | 10,190 | 25 | 57A364-TB25N | 662528 22969 | 8 x .060 x 1-1/4 | 7,640 | 25 | A60-0BNA2 | 662530 429 |
| 6 x .060 x 1-1/4 | 10,190 | 25 | A60-0BNA2 | 662528 35165 | 8 x .060 x 1-1/4 | 7,640 | 25 | 57A364-TB25N | 662530 227 |
| 7 x .035 x 1/2 | 8,730 | 25 | A60-0BNA2 | 662529 38786 | 10 x .060 x 5/8 | 6,110 | 25 | A60-0BNA2 | 662531 493 1 |
| 7 x .035 x 1-1/4 | 8,730 | 25 | A60-0BNA2 | 662529 38788 | 10 x .060 x 1-1/4 | 6,110 | 25 | A60-0BNA2 | 662531 4918 |
| 7 x .060 x 1/2 | 8,730 | 25 | A60-0BNA2 | 662529 38816 | 12 x .060 x 1 | 5,095 | 10 | A60-0BNA2 | 662532 618 1 |
| 7 x .060 x 1-1/4 | 8,730 | 25 | A60-0BNA2 | 662529 38796 | 12 x .075 x 1 | 5,095 | 10 | A60-0BNA2 | 662532 619 |
| 7 x .060 x 1-1/4 | 8,730 | 25 | 57A364-TB25N | 662529 22676 | 12 x .075 x 1-1/4 | 5,095 | 10 | A60-0BNA2 | 662532 618 |

Better choice for cutting tool steel on fixed-based machines when the work is securely clamped



TOOLROOM NON-REINFORCED ALUMINUM OXIDE

- · Tough, durable and versatile aluminum oxide grain for toolroom cut-off applications
- · Non-reinforced, use on fixed-based machines where the work is securely clamped
- B bond (smooth sides); a mild acting resin bond for light cut-off applications
- B25 bond (smooth sides); a versatile, free-cutting, more durable resin bond; ideal for dry cutting metal in high production runs
- E7 bond (smooth sides); a shellac bond with very mild cutting action, recommended for highly critical applications where no burr, heat checks, or discoloration is permitted
- · R30 bond (smooth sides); mild acting rubber bond primarily for wet, ultra-thin cutting

| | | TIER: | BETTER | | | | TIER: | BETTER | |
|-------------------|---------------|--------------|-------------|-----------------------|-------------------|---------------|------------|------------|---------------------|
| SIZE (D x T x H) | MAX. RPN | A STD. PKG. | SPEC. | PART # | SIZE (D x T x H) | MAX. RPM | STD. PKG. | SPEC. | PART # |
| Type 01/41 Straig | ght Cut-off - | - Non-Reinfo | rced | | Type 01/41 Straig | ght Cut-off – | Non-Reinfo | rced | |
| 6 x .015 x 1-1/4 | 6,370 | 25 | 57A90-R0R30 | 662528 22953 | 7 x .060 x 1-1/4 | 6,550 | 25 | 57A46-M8B | 662529 22677 |
| 6 x .020 x 1-1/4 | 6,370 | 25 | 57A90-R0R30 | 662528 22954 | | 6,550 | 25 | 57A60-M8B | 662529 22681 |
| 6 x .035 x 1-1/4 | 6,370 | 25 | 57A60-M8B | 662528 22958 | | 6,550 | 25 | 57A60-08B | 662529 22684 |
| 6 x .060 x 1/2 | 7,640 | 25 | 57A541-RB25 | 662528 22970 | | 5,185 | 25 | 57A60-0E7 | 662529 22683 |
| 6 x .060 x 1-1/4 | 7,640 | 25 | 57A60-M8B | 662528 22975 | 7 x .090 x 1-1/4 | 6,550 | 25 | 57A60-M8B | 662529 22690 |
| 7 x .035 x 1-1/4 | 5,460 | 25 | 57A60-M8B | 662529 22983 | 7 x .125 x 1-1/4 | 6,550 | 25 | 57A60-M8B | 662529 22692 |
| | 5,460 | 25 | 57A60-08B | 662529 22986 | 8 x .035 x 1-1/4 | 4,775 | 25 | 57A60-N8B | 662530 22694 |
| | 5,460 | 25 | 57A60-Q8B | 662529 22987 | 8 x .060 x 1/2 | 5,730 | 25 | 57A60-M8B | 662530 22702 |
| 7 x .035 x 1-1/4 | 5,460 | 25 | 57A601-PB25 | 662529 22988 | 8 x .060 x 1-1/4 | 5,730 | 25 | 57A60-M8B | 662530 22708 |
| | 5,460 | 25 | 57A601-RB25 | 662529 22989 | 8 x .060 x 1-1/4 | 4,540 | 25 | 57A60-0E7 | 662530 22709 |
| 7 x .035 x 1-1/4 | 5,185 | 25 | 57A60-0E7 | 662529 22985 | 10 x .060 x 5/8 | 4,585 | 25 | 57A46-Q8BW | 662531 22816 |
| 7 x .035 x 1-1/4 | 5,460 | 25 | 23A601-PB25 | 662529 38701 | | 4,585 | 25 | 57A60-M8BW | 662531 22818 |
| 7 x .050 x 1-1/4 | 5,460 | 25 | 23A601-PB25 | 662529 38724 * | 10 x .090 x 5/8 | 4,585 | 25 | 57A60-M8BW | 662531 22824 |
| 7 x .060 x 1/2 | 6,550 | 25 | 57A60-08B | 662529 22672 | | | | | |
| *Excention: rough | sides | | | | | | | | |





CUT-OFF WHEELS Metallurgical Non-Reinforced Cut-off

The Norton metallurgical line of Type 01/41 straight cut-off wheels was developed specifically for sectioning off metal samples; burr-free cutting, minimal burn and distortion.

Applications:

Designed specifically for cutting off metal samples ranging from mild steel to super alloys on fixed-based machinery by scientists, engineers, and lab technicians. $9^{\circ} - 13.75^{\circ}$ diameter

Size range:

Cross Reference Guide

| | | NORTO | N | BUEHLER | | LECO | LECO | STRUER | S |
|------------------------|-------------------------------|------------|---------------------|---------------------|-------------------------|-------------|-------------|--------|---------------------|
| SIZE | MATERIAL CUT | SPEC. | PART # | METABRASE PART # | BUEHLERMET II PART # | PART # | PART # | PART # | AXITOM/-5 PART # |
| 9 x .063 x 1-1/4 | Very Hard Steels (Rc 55 - 68) | ML-109 | 662531 17874 | 10-4110-010 | | | | 60A24* | |
| (229mm x 1.6mm x 32mm) | Medium Steels (Rc 30 - 40) | ML-309 | 662531 17877 | 10-4116-010 | 10-5112-010 | 811-043-010 | | 40A24* | |
| | Soft Steels (Rc 20 - 30) | ML-409 | 662531 17828 | 10-4120-010 | 10-5116-010 | 811-049-010 | | 30A24* | |
| 10 x .063 x 1-1/4 | Very Hard Steels (Rc 55 - 68) | ML-110 | 662531 17879 | 10-4210-010 | | 808-673 | 812-231 | 60A25• | |
| (254mm x 1.6mm x 32mm) | Hard Steels (Rc 40 - 55) | ML-210 | 662531 17880 | 10-4212-010 | 10-5210-010 | 811-059-010 | 810-310-010 | 54A25• | |
| | Medium Steels (Rc 30 - 40) | ML-310 | 662531 17881 | 10-4216-010 | 10-5212-010 | 811-067-010 | 810-310-010 | 40A25• | |
| | Soft Steels (Rc 20 - 30) | ML-410 | 662531 17830 | 10-4220-010 | 10-5216-010 | 811-073-010 | | 30A25• | |
| 12 x .078 x 1-1/4 | Very Hard Steels (Rc 55 - 68) | ML-112 | 662533 22151 | 10-4410-010 | | 808-674 | 811-065-010 | 60A30† | |
| (305mm x 2.0mm x 32mm) | Hard Steels (Rc 40 - 55) | ML-212 | 662533 22152 | 10-4412-010 | 10-5410-010 | 811-081-010 | 810-311-010 | 50A30† | |
| 13.75 x .098 x 1-1/4 | Very Hard Steels (Rc 55 - 68) | ML-114 | 662533 22863 | 10-4310-010 | | 808-675 | 812-232 | 60A35▲ | 50A35 |
| (350mm x 2.5mm x 32mm) | Hard Steels (Rc 40 - 55) | ML-214 | 662533 22156 | 10-4312-010 | 10-5310-010 | 809-346 | 811-977-010 | 50A35▲ | 40A35 |
| *Discotom/Labotom • Di | scotom-5/-6/Labotom-3 † Un | itom/Disco | tom-50/-60/-65 | ▲ Exotom/Unito | m-2/-5/-50 | | | | |



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Best choice for wet use when you want burn-free cuts and ultra-clean samples

METLAB 38A ALUMINUM OXIDE

- Quality aluminum oxide abrasive wheel designed specifically for burr-free cutting of soft carbon steels, tool steels, super alloys for microscopic metal analysis
- · Superior bond system generates pure cuts for sectioning off samples while minimizing wheel wear and odor
- Designed to work on Buehler®, LECO® and Struers® machinery

| | | | | | TIER: BEST |
|----------------------------------|--------------|-----------|-----------|-------------------------------|---------------------|
| SIZE (D x T x H) | MAX. RPM | STD. PKG. | PRODUCT # | APPLICATION | PART # |
| Type 01/41 Straight Cut-off – No | n-Reinforced | | | | |
| 9 x .063 x 1-1/4 | 4,025 | 10 | ML-109 | Very Hard Steels (Rc 55 - 68) | 662531 17874 |
| (229mm x 1.6mm x 32mm) | 4,025 | 10 | ML-309 | Medium Steels (Rc 30 - 40) | 662531 17877 |
| | 5,085 | 10 | ML-409 | Soft Steels (Rc 20 - 30) | 662531 17828 |
| 10 x .063 x 1-1/4 | 3,500 | 10 | ML-110 | Very Hard Steels (Rc 55 - 68) | 662531 17879 |
| (254mm x 1.6mm x 32mm) | 3,500 | 10 | ML-210 | Hard Steels (Rc 40 - 55) | 662531 17880 |
| | 3,500 | 10 | ML-310 | Medium Steels (Rc 30 - 40) | 662531 17881 |
| | 4,585 | 10 | ML-410 | Soft Steels (Rc 20 - 30) | 662531 17830 |
| 12 x .078 x 1-1/4 | 3,820 | 10 | ML-112 | Very Hard Steels (Rc 55 - 68) | 662533 22151 |
| (305mm x 2.0mm x 32mm) | 3,820 | 10 | ML-212 | Hard Steels (Rc 40 - 55) | 662533 22152 |
| 13.75 x .098 x 1-1/4 | 2,770 | 10 | ML-114 | Very Hard Steels (Rc 55 - 68) | 662533 22863 |
| (350mm x 2.5mm x 32mm) | 2,770 | 10 | ML-214 | Hard Steels (Rc 40 - 55) | 662533 22156 |
| | | TED | | | |

| | | TIEK: | BEITER | |
|-------------------|---------------|-------------|--------------------|---------------------|
| SIZE (D x T x H) | MAX. RPM | STD. PKG. | SPEC. | PART # |
| Type 01/41 Straig | jht Cut-off – | Non-Reinfor | ced | |
| 10 x 1/16 x 1-1/4 | 4,585 | 5 | 88A901-HB82 Metlab | 662531 49449 |
| 12 x 1/16 x 1-1/4 | 3,820 | 5 | 88A901-HB82 Metlab | 662532 62172 |



The Norton RailCut line is designed for high-speed fixtured hydraulic or gas-powered rail saws.

Applications: Size range: Thickness range: Grit range: Abrasive grain: Shape: Reinforcement: Speed rating: Machines Used: Fixed rail track cutting 14" and 16" diameter 1/8" 14 – 16 Zirconia Alumina / Aluminum Oxide Blend, Zirconia Alumina, and Aluminum Oxide Type 01/41 Straight Side reinforced with R (rough) sides All wheels are rated for 20,000 SFPM applications



FIXTURED HYDRAULIC OR GAS-POWERED RAIL SAW

Cross Reference Guide and Machine-to-Product Recommendation Guide

| | BEST | BETTER | GOOD | GOOD |
|------------------|---|---|----------------------------------|---------------------------|
| NORTON | RailCut X | RailCut NorZon III | RailCut A30X | RailCut Metal |
| Bullard Abrasive | Trackmaster Pro ZA24 Q-BF (Blue) | Trackmaster Pro ZA24 Q-BF (Blue) | Trackmaster A30 R-BF (Red) | _ |
| DiaTool | — | — | — | RailMaster Rail Cut 27 |
| Flexovit USA | | | A30-PB | |
| Giesmar | AM303-R | AM303-R | NR242-Q | NR242-Q |
| Klingspor | A 24 SX Special | A 24 SX Special | _ | — |
| Portaco | A30 R-BF | A30 R-BF | | _ |
| Racine Kwik Kut | A24R | A24R | | _ |

| | BEST | BETTER | | GOOD | |
|------------------------------------|-----------|--------|----------------------------------|-----------------|------------------|
| | RailCut X | | RailCut NorZon III FastCut | RailCut A30X | RailCut Metal |
| HYDRAULIC SAW | • | | | • | • |
| GAS SAW | | | | | |
| High-Horsepower / Newer Machine | • | • | | • | • |
| Low-Horsepower / Older Machine | • | • | • | • | • |



Best choice for high-performance cutting of rails on applications where the hydraulic or gas saw is fixtured and has adequate power

RAILCUT X ZIRCONIA ALUMINA / A/O BLEND

- Highest-performance zirconia alumina and engineered aluminum oxide abrasive blend expertly cuts a broad range
 of rail material
- Rough sides enable fastest cutting and longest lasting wheels
- · Achieve highest productivity with lowest total abrasive costs



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Good choice for price-sensitive jobs with lowest initial price

RAILCUT METAL ALUMINUM OXIDE

- Quality aluminum oxide abrasive wheels designed for jobs where low initial price is a key purchasing criterion
- · Side reinforced with rough sides; rated for 20,000 SFPM applications
- Designed for multi-purpose use; great versatility on a variety of rail materials



CUT-OFF WHEELS Rail Reinforced Cut-off

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Foundry cut-off wheels are designed with abrasives, bonds and reinforcement types specific to foundry machine parameters and materials. Most of the specifications are non-stock. This stock listing is designed to provide popular size and starting specifications.

Reinforced: 14" - 30" diameter; Non-reinforced: 12" - 20" diameter Size Range: **Grit Range:** 24 – 46 arit **Abrasive Grain:** Ceramic Alumina (Norton Quantum; non-stock only), Zirconia Alumina, Aluminum Oxide **Reinforcement:** Reinforced: Engineered with strengthening fabric or filaments, which make wheels resistant to cross-bending breakage. All portable cut-off, swingframe, locked-head push-through and foundry chop stroke operations require reinforced cut-off wheels. B: One or more full diameter pieces of filament molded inside each wheel. This construction leaves the abrasive exposed on the side of the wheel, improving freeness of cut. Used for fixed work operations with low probability of side pressure. N: Full diameter pieces of reinforcement on the side of the wheel. Offers greatest possible resistance to side pressure and bending. Non-Reinforced: Designed for use on fixed-base types of machines where the work is securely clamped and guarded, and where the wheel operates on a controlled cutting plane. W: Reinforcement around the center hole only. These wheels are not considered to be truly reinforced. Smooth sides: Used for precision cutting applications **Side Patterns:** Rough (R) sides: Abrasive particles protrude from sides of wheel Used wet or dry on most metals

Material-to-Product Recommendation Guide

| | BEST | BETTER | GOOD | GOOD |
|--------------------------------|--------------------|--------------------|-----------|---------------|
| | Foundry X Quantum* | Foundry X BlueFire | Foundry X | Foundry Metal |
| INVESTMENT CAST ALLOYS | | | • | |
| Stainless Steel | • | • | • | • |
| Titanium | • | • | • | • |
| CAST IRON | • | • | • | • |
| CAST STEEL | | | • | |
| Carbon and Low Alloy | • | • | • | • |
| Stainless Steel and High Alloy | • | • | • | • |
| Aluminum Alloy | • | • | • | • |
| Copper Alloys, Brass, Bronze | • | • | • | • |

*Foundry X Quantum wheels are non-stock, custom-made to your requirements

Cross Reference Guide

TOTAL PERFORMANCE

INITIAL PRICE

FOUNDRY WHEELS

Foundry Cut-off

| BEST | BETTER | GOOD | GOOD |
|---|--|--|---|
| Foundry X Quantum and B97 (Non-stock; custom-made to your exact requirements) | Foundry X BlueFire | Foundry X | Foundry Metal |
| TA362 R6 8045HA, YW462 MR B2HA | TA302-T6-B6HA, A46-T6-BX5T6A, HF 1247 K – CHALLENGER | _ | Economiser |
| _ | TA30-V680 | A 3226 C7A, C11922 W071 | 92871H |
| — | Steel Shark | _ | _ |
| BV1734R 710 | BV 1397-5284-C | | |
| _ | ZAX30TB | A24PB, A30RB | |
| 20A24-QBF | <u> </u> | _ | _ |
| | | T 1584 HA | _ |
| | 6Z30U-B3F2 | _ | |
| | Foundry X Quantum and B97 (Non-stock; custom-made to your exact requirements) TA362 R6 8045HA, YW462 MR B2HA BV1734R 710 | Foundry X Quantum and B97 (Non-stock; custom-made to your exact requirements)Foundry X BlueFireTA362 R6 8045HA, YW462 MR B2HA 1247 K - CHALLENGERTA302-T6-B6HA, A46-T6-BX5T6A, HF 1247 K - CHALLENGERTA30-V680Steel SharkBV1734R 710BV 1397-5284-CZAX30TB20A24-QBF | Foundry X Quantum and B97 (Non-stock; custom-made to your exact requirements) Foundry X BlueFire Foundry X TA362 R6 8045HA, YW462 MR B2HA TA302-T6-B6HA, A46-T6-BX5T6A, HF 1247 K - CHALLENGER — — TA30-V680 A 3226 C7A, C11922 W071 — Steel Shark — BV1734R 710 BV 1397-5284-C — — ZAX30TB A24PB, A30RB 20A24-QBF — — — — T1584 HA |

Better choice on stainless steel, aerospace alloys, cast iron, and steel

FOUNDRY X BLUEFIRE REINFORCED

- · Next generation self-sharpening zirconia alumina abrasive provides fast cuts on foundry cut-off applications
- Improved durability and heat resistance result in longer abrasive life

· More aggressive; can withstand very demanding applications

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FOUNDRY WHEELS Foundry Cut-Off



Good choice on general purpose applications

FOUNDRY X ALUMINUM OXIDE

- Durable, versatile aluminum oxide abrasive engineered for consistent performance and economical price on foundry cut-off applications
- · Advanced bond technology with improved thermal stability and mechanical strength
- · Excellent value on stainless steel and exotic aerospace alloys

Good choice for price-sensitive jobs with lowest initial price



- Great versatility from multi-purpose aluminum oxide abrasive formulated specifically for typical foundry applications
- · Bond and reinforcement engineered to foundry market machine parameters and materials
- · Good choice for small jobs and quick applications where performance is not measured

Reinforced

| | | TIED | | | 6 | | | |
|---------------------|-------------|---------------------------------|------------------------|------------------------------|-------------------|---------------------|-----------------------|---------------------|
| | | TIER: TRADENAME [,] | BETTER FOUNDRY X BL | | GOOD Foundry X | | good Foundry Metal | |
| | | ABRASIVE: | | A / Aluminum Oxide | Aluminum Oxide | | Aluminum Oxide | |
| SIZE (D x T x H) | MAX. RPM | STD. PKG. | SPEC. | PART # | SPEC. | PART # | SPEC. | PART # |
| Type 01/41 Strai | ight Cut | off – Foundry | Reinforced | | | | | |
| 14 x 1/8 x 1 | 4,365 | 10 | NV24-TB75N | 662533 47674 | U57A30-TB75N | 662533 45779 | Side Reinforced | 662434 85918 |
| | 4,365 | 10 | NV24-VB75N | 662531 79193 | U57A30-VB75N | 662531 79191 | | |
| | 4,365 | 10 | NV24-YB97N | 662533 47698 | | | | |
| 16 x 5/32 x 1 | 3,820 | 10 | NV24-TB75N | 662533 47676 | U57A30-TB75N | 662533 45781 | Side Reinforced | 662434 85919 |
| | 3,820 | 10 | NV24-VB75N | 662531 79147 | U57A30-VB75N | 662531 79148 | | |
| | 3,820 | 10 | NV24-YB97N | 662533 47693 | | | | |
| 20 x 5/32 x 1 | 2,710 | 10 | NV24-TB75N | 662533 47683 | U57A30-TB75N | 662533 47546 | Side Reinforced | 662434 85920 |
| | 2,710 | 10 | NV24-VB75N | 662531 79363 | U57A30-VB75N | 662531 79364 | | |
| | 2,710 | 10 | NV24-YB97N | 662533 47694 | U57A30-YB97N | 662533 47701 | | |
| 20 x 3/16 x 1 | 2,710 | 10 | NV24-TB75B | 662533 47684 | U57A30-TB75B | 662533 47547 | Centrally Reinforced | 662434 85921 |
| | 2,710 | 10 | NV24-VB75B | 662531 79366 | U57A30-VB75B | 662531 79367 | | |
| | 2,710 | 10 | NV24-YB97B | 662533 47699 | U57A30-YB97B | 662533 47702 | | |
| 24 x 7/32 x 1-3/4 | 2,260 | 10 | NV24-TB75B | 662533 47685 | | | | |
| | 2,260 | 10 | NV24-VB75B | 662531 79374 | U57A30-VB75B | 662531 79375 | | |
| | 2,260 | 10 | NV24-YB97B | 662533 47697 | | | | |
| 30 x 1/4 x 1-3/4 | 1,810 | 10 | NV24-TB75B | 662533 47722 | U57A30-TB75B | 662533 47720 | | |
| | 1,810 | 10 | NV24-YB97B | 662533 47723 | U57A30-YB97B | 662533 47721 | | |
| Constitutions and | ina in "P | " are contrally re | inforced: enocifica | tions anding in "N" are side | rainforcad | | | |

Specifications ending in "B" are centrally reinforced; specifications ending in "N" are side reinforced.

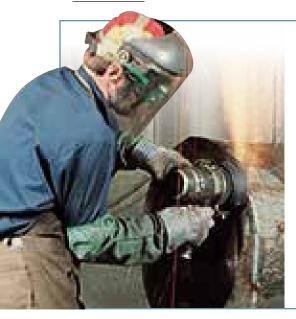
Non-Reinforced

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| TIER: TRADENAME: ABBASIVE: | U57A | | GOOD GEMINI | | Ask your Norton representative about our custom, made-to-order Norton Foundry X Quantum ceramic alumina wheels for high alloys, stainless steel, and |
|--|----------------------|---------------------|----------------|---------------------|--|
| | Aluminum Oxide | | Aluminum Oxide | | aerospace applications. |
| SIZE MAX. STD. (D x T x H) RPM PKG. | SPEC | PART # | SPEC | PART # | |
| Type 01/41 Straight Cut-off - Foundr | y Non-Reinforced R-S | lides | | | CUT-OFF WHEEL DESCRIPTION CODES |
| 12 x 3/32 x 1 5.095 10 | U57A461-PB25 | 662532 61887 | | | AP = All Purpose |
| 16 x 1/8 x 1 3.820 10 | | | AP | 662534 22942 | Where a good blend of cut rate and life |
| 20 x 1/8 x 1 2,710 10 | U57A304-VB25W | 690786 65497 | | | is needed |

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For consistent, quality performance in foundries, welding shops, fabrication facilities, steel mills and shipyards, Norton portable snagging wheels maximize your productivity. Used on horizontal/straight shaft grinders or right angle portable cup grinders.

Removing flaws, cracks, gates, risers and parting lines, smoothing weld seams, cleaning **Applications:** castings, and rough beveling Type 01 Straight Wheels: 2-1/2" - 8" diameter **Size Range:** Type 06 and 11 Cup Wheels: 4" - 6" diameter Cones and Plugs: Type 16, 17, 17R, 18 and 18R **Grit Range:** 14 - 24 **Abrasive Types:** Zirconia Alumina NZ and NV; Zirconia Alumina / Silicon Carbide Blend NVC; Aluminum Oxide 57A and Metal; Aluminum Oxide / Silicon Carbide Blend 57AC, Silicon Carbide 37C and Masonry **Machine Used:** R PORTABLE **RIGHT ANGLE** PORTABLE

GRINDER

GRINDER

Material-To-Product Recommendation Guide

| BEST | BETTER | GOOD | |
|-------------|---|--|---|
| NorZon Plus | BlueFire | Gemini | Metal |
| | | | |
| ◆ NZ14-R | NV16-Q | ◆ 57A16-Q | • |
| ◆ NZ14-R | NV16-Q | ◆ 57A16-Q | • |
| | NVC16-Q | 57AC16-Q | |
| | | | |
| NZ14-Q | • | ◆ 57A16-Q | • |
| ◆ NZ14-P | • | ◆ 57A16-Q | • |
| | NVC16-Q | 57AC16-Q | |
| | NorZon Plus ◆ NZ14-R ◆ NZ14-R ◆ NZ14-Q | NorZon Plus BlueFire ◆ NZ14-R ◆ NV16-Q ◆ NZ14-R ◆ NV16-Q ◆ NZ14-Q ◆ ◆ NZ14-Q ◆ | NorZon Plus BlueFire Gemini |

CUT-OFF TOOL

NOTE: Grade, Grit and Abrasive tuning may be necessary to obtain optimum performance

Cross Reference Guide for Type 01, 06 and 11 Wheels

TOTAL PERFORMANCE

INITIAL PRICE

| | BEST | BETTER | GOOD | | | | | | | |
|-------------|-------------|-------------|------------------|-------------|--------------------|--|--|--|--|--|
| NORTON | NorZon Plus | BlueFire NV | Gemini 57A/Metal | Gemini 57AC | Gemini 37C/Masonry | | | | | |
| Brilliant | _ | ZA16QB | A16QB | _ | C16QB | | | | | |
| Bullard | | ZA16PB | A16R | AC16 | C16P | | | | | |
| Camel | | | A | CA | С | | | | | |
| Flexovit | ZA16PB | | A16QB | AC16QB | C16PB | | | | | |
| Gulf States | Zirconium | _ | A16 | _ | C16 | | | | | |
| Pacific | Z, Z-GPC | _ | A | CA | | | | | | |
| Pearl | _ | _ | A16Q | _ | C16-Q | | | | | |
| Pferd | ZA 16 Q SG | _ | A 16 Q SG | _ | C 16 Q SG | | | | | |
| Sait | | Z16 | A16, 20 | CA16 | C16 | | | | | |
| Tyrolit | | | A16PB | | C16PB | | | | | |
| Walter | _ | | A | _ | С | | | | | |





Best choice for heavy-duty stock removal on medium- and high-horsepower grinders

NORZON PLUS ZIRCONIA ALUMINA

- Tough, durable, premium zirconia alumina grain provides 10X life and 50% faster grinding versus aluminum oxide products
- Engineered to excel on the toughest foundry snagging applications
- Best performance on a wide variety of materials; 300 and 400 series stainless, soft and hard carbon steels, tool
 steels, titanium, super alloys, soft metals, and cast, ductile and gray iron

Better choice for stock removal on high- and medium-horsepower grinders

BLUEFIRE ZIRCONIA ALUMINA

- Friable zirconia alumina grain and durable resin bond technologies deliver sharper grain longer, for extended wheel life, higher metal removal rates, and faster, freer cutting action than standard zirconia alumina blends
- Ideal for foundry snagging, tool sharpening, portable grinding and stock removal applications on high- and medium-horsepower grinders
- Strong operator preference for these smooth-acting wheels that require less pressure and exertion, while improving productivity
- NVC zirconia alumina / silicon carbide blend is highly effective on dirty, scale-covered castings
- · Available with low odor bond to help reduce odors associated with portable grinding when used in confined spaces



Good choice for steel and ferrous metals as well as specialty applications in aluminum and foundries

GEMINI ALUMINUM OXIDE

- Tough, durable aluminum oxide abrasive for heavy-duty work including foundry snagging, tool sharpening, and stock removal
- · Work well with a variety of machines, horsepowers, and operations
- · Good general-purpose choice for numerous small jobs
- · Available with low odor bond to help reduce odors associated with portable grinding when used in confined spaces



Good choice for steel/ferrous metal applications with low initial price

METAL ALUMINUM OXIDE

- Tough, durable aluminum oxide abrasive for heavy-duty work including foundry snagging, tool sharpening, and stock removal
- Work well with a variety of machines, horsepowers, and operations
- Good general-purpose choice for numerous small jobs on 300 and 400 series stainless, soft and hard carbon steels, tool steels, titanium, super alloys, soft metals, and cast, ductile and gray iron

Good choice for masonry applications with low initial price

MASONRY ALUMINUM OXIDE

- · Sharp silicon carbide abrasive for small-volume snagging jobs
- · Delivers rapid stock removal in small areas on a portable cup grinder
- Versatile; good starting specification where initial price is a primary purchasing consideration, especially nonferrous and masonry

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| | | | (| | F | fire | F | | | |
|--|--------------|------------------|-------------------|---------------------|---|-----------------------|---|---------------------|-------------------------------------|---------------------|
| | | | | | | | 1 33 A | | | and the second |
| | TDADE | TIER: NAME: | BEST NORZON PI | 116 | BETTER BLUEFIRE | | GOOD GEMINI | | GOOD Metal/Mason | DV |
| | | | Type 01 and | | Type 01, 06, and | d 11 | Type 01 and 11 | | Type 11 | |
| | ABR | ASIVE: | | rconia Alumina | Zirconia Alumina Zirconia Alumina Silicon Carbide I | a NV a/ | Aluminum Oxide Silicon Carbide 3 Aluminum Oxide, Silicon Carbide 5 | 37C, | Metal – Aluminu Masonry – Silico | |
| SIZE (D x T x H) | MAX. RPM | STD. PKG. | SPEC | PART # | SPEC | PART # | SPEC | PART # | SPEC | PART # |
| Type 01 Straight | 1639 | | | | | | | | | |
| 2-1/2 x 1/2 x 3/8 | 21,700 | 20 | | | | | 57A24-R | 662435 22381 | | |
| 3 x 1/4 x 3/8 | 20,370 | 25 | | | NV20-T | 662533 43872 * | 57A24-T | 662435 28831 | | |
| 3 x 3/8 x 3/8 | 18,080 | 10 | | | - | | 57A24-R | 662435 22415 | | |
| 3 x 1/2 x 3/8 | 18,080 | 10 | | | | | 57A24-P | 662435 22417 | | |
| 4 x 1/4 x 3/8 | 15,280 | 10 | | | NV20-T | 662533 44098 | 57A24-R | 662435 22221 | | |
| 6 x 1 x 5/8 | 8,000 | 5 | | | NV14-R | 662531 98589 | 57A16-QS | 662528 09563 | | |
| S Webs | 8,000 | 5 | | | NZ III 14-Q | 662528 38075 | | | | |
| | 8,000 | 5 | | | NZ III 14-R | 662528 37961 | | | | |
| 8 x 3/4 x 5/8 S Webs | 6,000 | 10 | | | NV14-S | 662533 44347 | | | | |
| 8 x 1 x 5/8 | 6,000 | 5 | NZ IV 16-0 | 662530 30778 | NV16-Q | 662531 98590 | | | | |
| S Webs | 6,000 | 5 | NZ IV 16-Q | 662530 44532 | | | | | | |
| | 6,000 | 10 | | | NV14-R | 662533 44355 | | | | |
| | 6,000 | 10 | | | NV14-T | 662533 44365 | | | | |
| | 6,000 | 10 | | | NVC16-Q | 662531 98592 | | | | |
| Type 06 Straight Cup | | | | | | | | | | |
| 6 x 2 x 5/8-11 Rim 2" Back 3/4" | 6,000 | 5 | | | NZ III 16-R | 662528 38577 | | | | |
| Type 11 Flaring Cup | | Δ | | | | | | | | |
| 4/3 x 2 x 5/8-11 Rim 3/4" Back 3/4" | 9,070 | 10 | NZ IV 16-Q | 662435 30761 | NV16-Q | 662531 98583 | 57A16-Q | 662435 10512 | Masonry C16-Q | 076607 89431 |
| 5/3-3/4 x 2 x 5/8-11 | 7,260 | 5 | | | NV16-Q | 662531 46918 | 57A16-Q | 662528 09598 | Metal 16-Q | 076607 89430 |
| Rim 1" Back 3/4" | 7,260 | 5 | | | 4NZ16-Q RB | 690786 40233 | 57AC16-Q RB | 690786 40234 | | |
| 6/4-3/4 x 2 x 5/8-11 | 6,000 | 5 | | | NV16-Q | 662531 46925 | 57A16-Q | 662528 25201 | | |
| Rim 1" Back 3/4" | 6,000 | 5 | | | NZ III 16-Q | 662528 38568 | - | | | |
| 6/4-3/4 x 2 x 5/8-11 | 6,000 | 5 | NZ IV 16-P | 662528 30765 | NV14-R | 662533 44371 | 37C16-P | 662528 09609 | | |
| Rim 1-1/2" Back 3/4" | 6,000 | 5 | | | NV16-Q | 662531 98584 | 57A16-Q | 662528 09618 | | |
| | 6,000 | 5 | | | NVC16-Q | 662531 46922 | 57AC16-Q | 662528 09608 | | |
| | 6,000 | 5 | | | 4NZ16-Q RB | 690786 40484 | 9CA16-Q RB Ti | 690786 40488 | | |
| | | | | | | | 57AC16-Q RB | 690786 40485 | | |
| Type 11 Flaring Cup w | ith Steel Ba | ack _/ | | | | | | | | |
| 4/3 x 2 x 5/8-11 Rim 3/4" Back 3/4" | 9,070 | 10 | | | NV16-Q | 662531 46917 | | | | |
| 5/3-13/16 x 2 x 5/8-11 Rim 1" Back 3/4" | 7,260 | 10 | | | NV16-Q | 662531 46920 | | | | |
| 6/4-13/16 x 2 x 5/8-11 | 6,000 | 5 | | | NV14-R | 662533 44373 | 57A16-Q | 662528 09599 | | |
| Rim 1-1/2" Back 3/4" | 6,000 | 5 | | | NV16-Q | 662531 98586 | 57AC16-Q | 662528 09600 | | |
| | 6,000 | 5 | | | NVC16-Q | 662531 46929 | 57AC16-Q RB | 690786 40486 | | |
| | 6,000 | 5 | | | 4NZ16-Q RB | 690786 40487 | 9CA16-Q RB Ti | 690786 40489 | | |
| * Ctd Dka E0 | | | | | | | | | | |

* Std.Pkg. = 50

Distributed by Applifast.

RB = Low odor bond. Note: Ti formulation optimized for grinding Titanium

FECH TIP

Norton BlueFire and Gemini Type 11 cup wheels now available in new RB low odor bond to help reduce odors associated with portable grinding when used in confined spaces.



| | | TIER: | BEST | | BETTER | hp | GOOD | VENDIBLE | GOOD | |
|--------------------------------------|--------------------------|-----------|------------------|---------------------|---------------|---------------------|-------------|---------------------|-------------|---------------------|
| | TRADE | | | ; | BLUEFIRE | | GEMINI | | METAL | |
| | ABR | ASIVE: | Zirconia Alumir | na | Zirconia Alum | iina/Aluminum Oxide | Aluminum Ox | ide | Aluminum Ox | kide |
| СI7Е (D и Т и Ш) | MAX. | STD. | | PART # | CDEC | DADT # | SDEC | PART # | CDEC | DADT 4 |
| SIZE (D x T x H) Type 16 Cones | RPM | PKu. | SPEC | FANI# | SPEC | PART # | SPEC | FANI # | SPEC | PART # |
| 1 x 3 x 3/8-24 | 36,290 | 10 | | | NV20-S | 662533 44376 | 57A24-R | 614636 22342 | Metal 24 | 662533 49752 |
| (ME 107019) | 00,200 | 10 | | | 11120 0 | 00200044070 | | 01403022042 | | 00200040102 |
| 1-1/2 x 2-1/2 x 3/8-24 | 24,190 | 10 | | | | | 57A24-R | 614636 22349 | Metal 24 | 662533 49754 |
| (ME 44436) | | | | | | | | | | |
| 1-1/2 x 2-1/2 x 5/8-11 | 24,190 | 10 | | | | | 57A24-R | 690786 40166 | Metal 20 | 690786 40046 |
| ME 171651 | | | | | | | | | | |
| 1-1/2 x 3 x 3/8-24 | 24,190 | 10 | | | NV20-S | 662533 44377 | | | | |
| (ME 139029) | 24,190 | 10 | | | | | | | Metal 20 | 690786 40215 |
| 1-1/2 x 3 x 3/8-24 (ME 171652) | 24,190 | 10 | | | | | | | IVIEIAI ZU | 090/8040213 |
| 1-1/2 x 3 x 5/8-11 | 24,190 | 10 | NZ IV 20-R | 614636 44231 | NV20-S | 662533 44379 | 57A24-R | 614636 22190 | Metal 24 | 662533 49757 |
| (ME 70535) | 21,100 | 10 | 142142011 | 011000-11201 | 11120 0 | 002000-11010 | OTALITY | 01100022130 | Wotar 2 1 | 00200040101 |
| 1-3/4 x 3 x 3/8-24 | 20,735 | 10 | | | | | 57A24-R | 614636 14503 | Metal 24 | 662533 49840 |
| (ME49226) | , | | | | | | | | | |
| 1-3/4 x 3 x 5/8-11 | 20,740 | 10 | | | | | 57A24-R | 614636 22195 | Metal 24 | 662533 49841 |
| (ME 33432) | | | | | | | | | | |
| 2 x 3 x 3/8-24 | 18,145 | 10 | | | | | | | Metal 24 | 662534 76413 |
| ME 157287 | 10 1 15 | 10 | N7 11/00 D | 01400044000 | NIV/00_0 | 00050044004 | 57404 D | 01 400 000 10 | Matal 04 | 000500 400 40 |
| 2 x 3 x 5/8-11 | 18,145 | 10 | NZ IV 20-R | 614636 44232 | NV20-S | 662533 44381 | 57A24-R | 614636 22218 | Metal 24 | 662533 49846 |
| (ME 28229) 2-3/4 x 3-1/2 x 5/8-11 | 13,195 | 10 | | | NV20-S | 662533 44383 | 57A24-R | 614636 22387 | Metal 24 | 662533 49855 |
| (ME 18265) | 10,100 | 10 | | | 11120 0 | 00200044000 | 5172411 | 01403022001 | Wicial 24 | 00200040000 |
| 3 x 3 x 5/8-11 | 12,100 | 10 | | | | | | | Metal 24 | 662434 96885 |
| (ME70537) | | | | | | | | | | |
| Type 17 Cones, Squar | | > | | | | | | | | |
| 1-1/2 / 1/2 x 3 x 3/8-24 | 24,190 | 10 | | | | | 57A24-R | 614636 22194 | Metal 24 | 662533 49753 |
| 1-1/2 / 1/2 x 3 x 5/8-11 | 24,190 | 10 | | | | | 57A24-R | 690786 40225 | Metal 20 | 690786 40224 |
| 2 / 1/2 x 3 x 5/8-11 | 18,145 | 10 | | | | | 57A24-R | 614636 15722 | Metal 24 | 662533 49845 |
| Type 17R Cones, Rour | | | | | | | | | | |
| 2 / 3/4 x 3 x 5/8-11 | 18,145 | 10 | | | NV20-S | 662533 44384 | | | | |
| (ME 151373) Type 18 Plugs, Square | Tin 🔤 | | | | | | | | | |
| 1-1/2 x 2-1/2 x 3/8-24 | e Tip 👼 24,190 | 10 | | | | | 57A24-R | 614636 22217 | Metal 24 | 662533 49755 |
| 1-1/2 X 2-1/2 X 3/0-24 | 24,190 | 1 V | | | | | 57A24-R | 662533 25902 | IVICIAI 24 | 00233343733 |
| 1-1/2 x 2-1/2 x 5/8-11 | 24,190 | 10 | NZ IV 20-R | 614636 44224 | NV20-S | 662533 44385 | 57A24-R | 614636 22351 | Metal 20 | 690786 40226 |
| 1 1/2 / 2 1/2 / 0/0 11 | 24,190 | 1 V | 112112011 | | 11120 0 | 00200044000 | 57A24-R | 662533 25905 | Wiotal 20 | 030100-10220 |
| 1-1/2 x 3 x 5/8-11 | 24,190 | 10 | | | NV20-S | 662533 44386 | 57A24-R | 614636 22191 | Metal 24 | 662533 49838 |
| 1 1/2 / 0 / 0/0 11 | 24,190 | 1 V | | | | 002000 | 57A24-R | 662533 25909 | | 002000 |
| 2 x 3 x 5/8-11 | 18,145 | | NZ IV 20-R | 614636 44234 | NV20-S | 662533 44387 | 57A24-R | 614636 22219 | Metal 24 | 662533 49847 |
| | 18,145 | | - | | NV24-S | 662533 44391 | | | | |
| 2 x 4 x 5/8-11 | 18,145 | | | | | | 57A24-R | 614636 22366 | Metal 24 | 662533 49850 |
| Type 18R Plugs, Roun | | \supset | | | | | | | | |
| 1-1/2 x 2-1/2 x 3/8-24 | 24,190 | 10 | | | | | 57A24-R | 690786 40230 | Metal 20 | 690786 40229 |
| 1-1/2 x 2-1/2 x 5/8-11 | 24,190 | 10 | | | | | 57A24-R | 690786 40228 | Metal 20 | 690786 40227 |
| 1-1/2 x 3 x 3/8-24 | 24,190 | 10 | | | | | 57A24-R | 614636 22192 | Metal 24 | 662533 49756 |
| 1-1/2 x 3 x 5/8-11 | 24,190 | 10 | | | | | | | Metal 24 | 662434 95628 |
| 2 x 3 x 5/8-11 | 18,145 | 10 | | | NV20-S | 662533 44389 | 57A24-R | 614636 22220 | Metal 24 | 662533 49849 |
| 3 x 3 x 3/8-24 | 12,095 | 10 | | | | | 57A24-R | 690786 40232 | | 000700-005 |
| 3 x 3 x 5/8-11 | 12,095 | 10 | achines and smal | | | | | | Metal 20 | 690786 40231 |

V = Vendible Package. Ideal for vending machines and small jobs .

Core Files

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These files consist of coarse grit silicon carbide abrasive in a hard grade, resin-bonded to a reinforcing rod. Half-round in shape, they are a frequent choice for easy cleaning of rough castings.



| | TIE | R: | GOOD | | | | | | |
|---|-----------|-----|----------------|---------------------|--|--|--|--|--|
| | ABRASIV | /E: | Silicon Carbio | de | | | | | |
| SIZE (T x W x L) | STD. PKG. | | SPEC. | PART # | | | | | |
| Stock Resinoid Core Files – Silicon Carbide | | | | | | | | | |
| 1/2 x 1 x 10 | 5 | | 37C24-SB | 614636 10314 | | | | | |





FOUNDRY WHEELS Floorstand and Swingframe Snagging

Norton snagging wheels maximize your productivity in foundries, welding shops, fabrication facilities, steel mills, and ship yards.

Applications:

Size Range: Abrasive Grain: Shape: Reinforcement: Removing unwanted metal on castings, removing flaws and cracks, removing gates, risers and parting lines 24" and 30" diameters in stock; other diameters available as made-to-order Zirconia Alumina, Zirconia Alumina/Silicon Carbide blend, Aluminum Oxide Type 01 Straight

Strong fiberglass webbing and steel rings for maximum strength

Floorstand Snagging Wheel Material-to-Product Recommendation Guide

| | BEST | | BETTER | GOOD | | | | |
|--------------------------|--------------------|--------------------|--------------------|--------------------|---------|---------|-----------|-----------------------|
| | 4ZF1434- R5B38S | 4ZF1434- Q5B38S | 4NZ1434- R5B38S | 4NZ1434- Q5B38S | ZI/25-R | ZI/26-Q | Charger | Gemini All Purpose |
| IRON | | | | | | | | |
| Gray | • | | | | • | • | Long Life | • |
| Ductile/Malleable | | • | | | • | • | Long Life | • |
| STEEL | | | | | | | | |
| Carbon and Low Alloy | | | • | | | | Free Cut | • |
| Stainless and High Alloy | | | | • | | | Free Cut | • |
| | | | | | | | | |

Note: Grade, Grit and Abrasive tuning may be necessary to obtain optimum performance

Swingframe Snagging Wheel Material-to-Product Recommendation Guide

| BEST | | | | | GOOD |
|----------------|----------------|---------------|---|---------|--------------------|
| 4ZF1234-R5B38S | 4ZF1434-R5B38S | NZC142-R5B38S | ZI/25-R | ZI/26-Q | Gemini All Purpose |
| | | | | | |
| • | | | • | • | • |
| • | | | • | • | • |
| | | | | | |
| | • | | | | • |
| | | | | | • |
| | | • | | | |
| | | • | | | |
| | | | BEST 4ZF1234-R5B38S 4ZF1434-R5B38S NZC142-R5B38S | | |

Note: Grade, Grit and Abrasive tuning may be necessary to obtain optimum performance

Troubleshooting Guide

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| PROBLEM | POSSIBLE CAUSES | SUGGESTED CORRECTION | | |
|------------------------------|-------------------------------|--|--|--|
| Poor stock removal | Insufficient pressure applied | Increase pressure to use all available power | | |
| | Wheel too coarse or hard | Use finer grit and/or softer grade wheel | | |
| | Inadequate abrasive | Try NorZon, 4ZF, or ZI/25 specification | | |
| Grinding costs too high | Wheel acting too soft | Use harder and/or coarser wheel | | |
| | Low performance specification | Try NorZon or ZI products | | |
| Wheel loading or glazing | Grade too hard | Try softer grade | | |
| | Grit too coarse | Try finer grit | | |
| | Dirty, scale-covered parts | Try NZC wheels | | |
| Wheels "dusty" | Wheel too soft | Try harder grade | | |
| Wheel doesn't hold corner or | Wheel too coarse | Use finer grit and/or 2 grit combination | | |
| wheel spalling | Wheel too soft | Use harder grade | | |
| Burning the workpiece | Wheel too hard | Use softer grade | | |
| | Wheel glazed or loaded | Dress the wheel face | | |
| | Grinding pressure too low | Increase grinding force | | |
| | Grinding pressure too high | Reduce grinding force | | |
| Surface finish too rough | Wheel too coarse | Try finer grit or try ZI/26 specification | | |
| | Wheel speed too slow | Try higher speed machine (Do not exceed maximum operating speed of wheel) | | |
| | Worn machine bearings | Rebuild machine | | |
| Vibration | Wheel worn out of round | Try truing the wheel | | |
| | Faulty flanges | Check flanges for flatness and burrs (see ANSI B7.1) | | |
| | Bent machine spindle | Check spindle run-out | | |
| | Worn machine bearings | Rebuild machine | | |
| Wheel stalls or slows | Grinding force too high | Reduce pressure or contact area | | |
| | Wheel too hard | Use softer grade wheel | | |
| | Machine power too low | Replace machine with higher power grinder | | |

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Best choice for demanding applications

4ZF, 4NZ, ZI, AND NZC ZIRCONIA ALUMINA

- · Zirconia alumina abrasive engineered for high-pressure, heavy duty, snagging operations including foundry snagging and stock removal
- · These wheels have high-speed steel rings with fine centers and reinforcing webs for added safety
- 4ZF zirconia alumina grain for exceptional wheel life; engineered for high-pressure, heavy-duty, snagging operations, particularly on iron
- 4NZ zirconia alumina grain for sharpness and an exceptionally high cut rate; developed for low- to medium-pressure operations, especially on steel and steel castings; the most operator-friendly wheels
- ZI zirconia alumina grain stays sharper, longer, making it the choice for iron castings: ZI/25 for tough metal removal, ZI/26 for finer surface finish
- NZC zirconia alumina and silicon carbide blend is ideal for dirty, scale-covered castings

Better choice for strong performance to price ratio

CHARGER ZIRCONIA ALUMINA

- · Strong, free-cutting aluminum oxide abrasive for foundry snagging and stock removal
- · These wheels have high-speed steel rings with fine centers and reinforcing webs for added safety
- · Good, general-purpose choice for heavy-duty stock removal on low- to medium-horsepower machines

Good choice for numerous small jobs

5ZF ZIRCONIA ALUMINA AND GEMINI ALUMINUM OXIDE

- · These wheels have high-speed steel rings with fine centers and reinforcing webs for added safety
- · Ideal for lower horsepower machines or low-pressure applications
- · 5ZF Versatile, good quality zirconia alumina abrasive for foundry snagging and stock removal
- · Gemini versatile aluminum oxide formulation works well with a variety of machines, horsepowers, and operations

| | | TIER: | BEST | | BETTER | | GOOD | |
|---|----------|-----------|----------------|---------------------|-------------------|---------------------|------------------|---------------------|
| SIZE (D x T x H) | MAX. RPM | STD. PKG. | SPEC. | PART # | SPEC. | PART # | SPEC. | PART # |
| Type 01 Straight | | | | | | | | |
| 24 x 3 x 12 | 1,990 | 1 | 4ZF1234-R5B38S | 690831 66310 | | | 5ZF14-QS | 690831 66858 |
| HS Steel Rings with Fine Centers, S Webs | 1,990 | 1 | | | | | Gemini All Purp. | 690831 67173 |
| 30 x 2 x 12 | 1,595 | 1 | 4NZ1634-Q5B38S | 692104 21412 | Charger Free Cut | 692104 21417 | 5ZF14-R | 692104 67105 |
| HS Steel Rings with | 1,595 | 1 | 4ZF1434-R5B38S | 692104 66458 | Charger Long Life | 692104 21418 | Gemini All Purp. | 692104 17463 |
| Fine Centers, S Webs | 1,595 | 1 | 4ZF1634-Q5B38S | 692104 66460 | | | | |
| | 1,595 | 1 | ZI/25-R | 662531 19636 | | | | |
| | 1,595 | 1 | ZI/26-Q | 662531 19638 | | | | |
| | 1,595 | 1 | NZC142-R5B38S | 692104 21414 | | | | |

For your safety: all floorstand and swingframe wheels have strong fine centers, steel rings and high-strength fiberglass reinforcement construction.

TECH TIP

- Always ensure proper mounting of floorstand and swingframe wheels by mounting with arrow down as marked on wheel
- · Always use safety guard

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- · Always run wheel for 1 minute before grinding
- For optimum performance, ensure adequate air pressure and air volume when using pneumatic machines

- · Use constant surface foot per minute machines for highest efficiency
- · Do not overdress the wheel face
- Avoid loading or glazing by changing the contact angle
- · Use pressure assist whenever possible to obtain maximum cut rate



It is the user's responsibility to refer to and comply with ANSI B7.1

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Coated & Non-Woven Abrasives

the brightest product solutions from **A TOTAL SPECTRUM OF INNOVATION**

For everything from heavy-to-medium stock removal, to fine finishing, to light blending and polishing, abrasive products are available in many shapes, abrasive grains, specialty coatings and backing configurations to meet many application needs.

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COATED & NON-WOVEN ABRASIVES Coated Abrasive Basics

Coated Abrasives

A coated abrasive product is made up of three basic raw materials: an abrasive grain, the backing onto which the abrasive is applied, and an adhesive bond.

Abrasive Types

Emery (6)

Emery is a dark gray, round-shaped grain which tends to polish rather than abrade a work surface.

For polishing and cleaning metal only

Garnet (5)

Garnet is reddish brown in color. This natural abrasive is medium hard and relatively sharp, but not as durable as synthetic abrasives.

- · For use on wood only
- Particularly good for soft woods such as pine
- · Produces an excellent finish

Silicon Carbide (4)

Silicon carbide is the hardest and sharpest of the manufactured abrasives. Because of its extreme sharpness, this bluish-black abrasive grain permits fast stock removal and cool cut.

- Cast iron
- Non-ferrous metals, i.e. brass, aluminum and bronze
- Non-metallics, i.e. glass, rubber, plastic and stone
- Final finish on wood and stainless steel
- · Abrasive planing particleboard

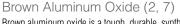
Light Brown Aluminum Oxide (2)

Light brown aluminum oxide is a tough, yet sharp synthetic abrasive characterized by cool cut, long life and the ability to break down under pressure, producing new cutting edges.

- Production wood sanding
- Non-ferrous metal finishing







Brown aluminum oxide is a tough, durable, synthetic abrasive characterized by the long life and wear resistance of its cutting edges. It offers enormous penetrating strength, even at high speeds.

- Ferrous metals
- Aluminum
- Hardwood

Heat-treated Aluminum Oxide (2)

Heat-treated aluminum oxide is a tough but cool cutting abrasive which gives both long life and freeness of cut on a wide range of materials.

- Ferrous metals
- Wood sanding

Zirconia Alumina (8)

Zirconia alumina is an ultra-tough, synthetic abrasive which provides a free, cool cut for high stock removal applications. It is tougher and sharper than aluminum oxide. It has a micro-crystalline structure which allows for controlled breakdown and self-sharpening.

- Heavy-duty snagging and grinding of all ferrous and non-ferrous metals
- · Abrasive planing of wood, plywood and particleboard
- Grinding fiberglass, rubber and plastics

Ceramic Alumina (9)

The sub-micron structure of ceramic alumina allows each grain to continually expose sharp cutting points, resulting in a cooler cutting action and an extended life.

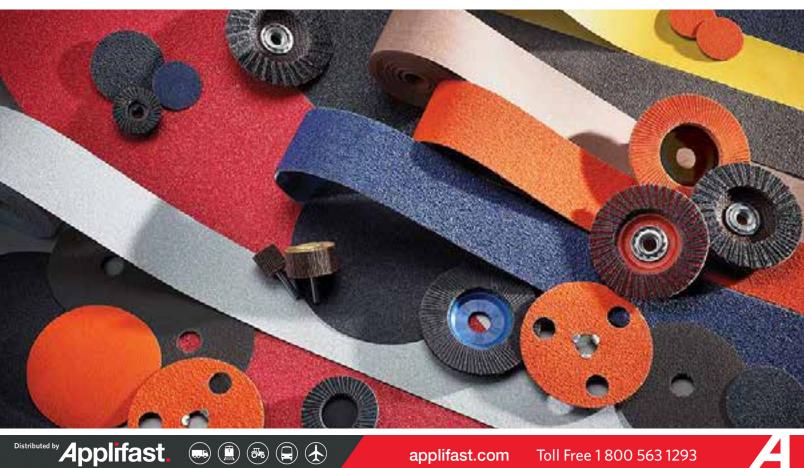
· All ferrous/non-ferrous metals, carbon steel and exotic alloys













Backing Types

Backings are the base for the abrasive minerals and, combined with the adhesive bond, support and anchor the abrasive mineral. The backings used in the manufacture of coated abrasives are:

Paper

Due to the fine surface of paper, a consistent finish is produced. Paper weights include *A*, *B*, *C*, *D*, *E* and *F* weights with *A* being the lightest and most flexible and *F* being the heaviest and least flexible. *A*, *B*, *C* and *D* weight papers are used for hand sanding and light mechanical operations in the form of sheets, PSA (pressure sensitive adhesive) and hook and loop discs and sheet rolls. *E* and *F* weight papers are primarily used for more aggressive mechanical operations in the form of belts and discs.

Cloth

Cloth backings used for coated abrasives are identified by weight. Cloth backings are filled or "finished" with a variety of materials (glues or resins) to create various backing characteristics, most notably flexibility. Several cloth types are used: cotton, polyester, polyester/nylon and polyester/cotton blends, and rayon.

There are three basic weights of cloth: J-weight or "jeans" is the lightest and most flexible. X-weight or "drills" is a heavier cloth that ranges in flexibility, strength and durability and is used on the broadest range of applications. Y-weight is a heavyweight drills cloth used on heavy-duty, high stock removal operations.

Fiber

Vulcanized fiber (cotton fibers which are chemically treated and then pressed under temperature and pressure to form a very durable backing) is used exclusively as the backing for resin fiber discs.

Film

Polyester film backing comes in 3 mil. and 5 mil. thicknesses, which have high strength and surface smoothness. They are used primarily in disc and roll applications requiring consistent surface finish, including powertrain applications.

Foam

Primarily used as backing for sponges, finer grit finishing discs, and buffing and polishing pads for cleaning and moist finishing applications.

Mesh

Mesh matrix backing comprised of thousands of tiny holes allowing for maximum dust extraction.

COATED & NON-WOVEN ABRASIVES Coated Abrasive Basics

Bond Types

An adhesive bond system is required to secure the abrasive mineral to the backing. All coated abrasive products are made with a two stage bonding process, the *make coat* and the *size coat*.

The *make coat* is the first layer of bond applied to the backing. The make coat provides the adhesive base between the abrasive mineral and the backing.

The *size coat* is the second coat, which is applied over the abrasive mineral and make coat to anchor the abrasive mineral and provide the desired physical strength of the finished product.

Glue, urea resin, and *phenolic resin* are the three basic bonding agents most commonly used. There are many size coat and make coat combinations, such as *glue over glue*, *urea over glue*, and *resin over resin*. *Glue over glue* is the most flexible bond while *resin over resin* bond is moisture-resistant, harder, less flexible, heat-resistant and has superior grain retention.

Coating Types

There are two types of abrasive coatings used in the manufacturing of coated abrasives: *open coat* and *closed coat*.

Closed Coat

longest product life.

With a closed coat, the entire surface

most typical coating, permitting the

greatest degree of stock removal and

CLOSED COAT

is covered with abrasive grain, with no voids between the particles. This is the

Open Coat

With an open coat, 50% to 75% of the surface is covered by abrasive grain. There are evenly spaced voids between the particles of grain, helping reduce the effect of loading caused by wood dust or metal particles.



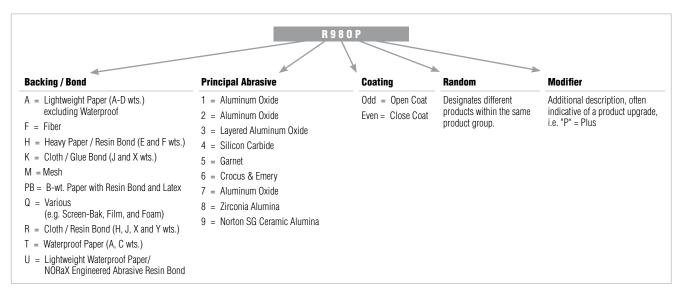
OPEN COAT (1/3 LESS GRAIN THAN CLOSED)

Super Size Coating

The Super Size coat is an optional final coat and grinding aid applied over the size coat to help maintain low grinding temperatures and prevent loading.

How to Read a Coated Abrasive Specification

The Norton coated abrasive marking system includes both a generic and a technical marking, which identifies the actual components which make up the product. The markings identify the tradename, abrasive type, bond, backing, and any special features. An example would be: Norton Blaze R980P.





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Coated Abrasive Grit Comparison Chart

| AVERAGE | GRADING SYST | EMS (OTHER THAN | I EMERY) | EMERY |
|----------------|--------------|-----------------|----------|------------|
| PARTICLE SIZE | ANSI | FEPA | JIS | PRODUCTS |
| 5.0 | - | - | - | - |
| 6.0 | - | - | 3000 | - |
| 6.5 | 1200 | - | 2500 | 4/0 |
| 8.4 | | P2500 | - | - |
| 8.5 | - | - | 2000 | - |
| 9.2 | 1000 | - D2000 | - | 3/0 |
| 10.3 10.5 | - | P2000 | - 1500 | - |
| 12.2 | 800 | _ | 1200 | _ |
| 12.6 | _ | P1500 | - | _ |
| 15.0 | - | - | - | - |
| 15.3 | - | P1200 | 1000 | - |
| 16.0 | 600 | - | - | 2/0 |
| 18.3 | - | P1000 | 800 | - |
| 19.7 | 500 | - | - | 0 |
| 20.0 | - | – P800 | - | |
| 23.6 | 400 | F000 | 600 | |
| 25.0 | - | _ | _ | _ |
| 25.75 | - | P600 | _ | - |
| 28.8 | 360 | - | 500 | - |
| 30.0 | _ | P500 | _ | - |
| 35.0 | _ | P400 | 400 | - |
| 36.0 | 320 | _ | - | |
| 40.0 | - | - | 360 | _ |
| 40.5 | - 280 | P360 | - | - 1 |
| 45.0 | _ | _ | _ | _ |
| 46.2 | _ | P320 | 320 | _ |
| 50.0 | _ | _ | _ | - |
| 52.5 | - | P280 | 280 | - |
| 53.5 | 240 | _ | _ | - |
| 55.0 | - | - | - | - |
| 58.5 | - | P240 | - | - |
| 60.0 | _ | - | 240 | - |
| 64.0 65.0 | - | – P220 | 220 | 2 |
| 66.0 | 220 | - | _ | _ |
| 78.0 | 180 | P180 | 180 | _ |
| 79.0 | | - | - | 3 |
| 93.0 | 150 | - | 150 | |
| 95.0 | - | - | - | FINE |
| 97.0 | - | P150 | - | - |
| 116.0 | 120 | - D100 | 120 | - |
| 127.0 | - | P120 | 100 | |
| 136.0 141.0 | 100 | _ | _ | MEDIUM |
| 156.0 | _ | P100 | _ | _ |
| 189.0 | - | _ | _ | COARSE |
| 192.0 | 80 | _ | 80 | _ |
| 197.0 | - | P80 | - | - |
| 260.0 | - | P60 | - | |
| 268.0 | 60 | - | 60 | |
| 326.0 | - | P50 | 50 | |
| 341.0 351.0 | - 50 | - | - | EX. COARSE |
| 412.0 | - | P40 | 40 | _ |
| 428.0 | 40 | _ | _ | _ |
| 524.0 | _ | P36 | _ | _ |
| 535.0 | 36 | - | 36 | - |
| 622.0 | - | P30 | _ | - |
| 638.0 | 30 | - | 30 | - |
| 715.0 | 24 | - | - | _ |
| 740.0 | - 20 | P24 | 24 | |
| 905.0 984.0 | 20 | – P20 | 20 | |
| 1320.0 | 16 | F20 | 16 | _ |
| 1324.0 | - | P16 | _ | _ |
| 1764.0 | - | P12 | _ | - |
| 1842.0 | 12 | - | - | - |
| | | | | |

(55)

Coated Abrasive Storage

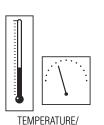
Stored under proper conditions, coated abrasives will retain their efficiency and usefulness over long periods. Improper or inadequate storage can introduce problems of weakened bond, curl, brittleness, and breakage.

Temperature and humidity are the two most important climatic factors influencing coated abrasive performance. Backings and adhesives are sensitive to climatic changes and will gain or lose moisture according to the relative humidity of their surroundings.

Excessive humidity may cause a softening of some types of adhesive bonds so that the product quickly fills and clogs, or loses its grain during use. Excessive dryness may cause brittleness, reduced flexibility, and distortion of product shapes.

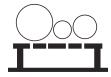
As moisture in the coated abrasive product increases or decreases, dimensional changes can occur. When the backing changes more than the adhesive bond, it causes cupping. High and low humidity can cause concave and convex cupping respectively.

The newer synthetic-backed belts are not affected by moisture. Broad temperature swings will not permanently harm these products either, but cold temperatures will cause a "cold set" condition. Consequently, these products should be allowed to come to room temperature before use.



HUMIDITY





STORE BELTS PROPERLY





KEEP AWAY FROM HEAT/COLD SOURCES

Storage Facilities

The ideal storage (stock) room for coated abrasives would be one in which all the walls are inside partitions, rather than the outside walls of the building.

PRECONDITION

BEFORE USE

- Constant levels of humidity and temperature should be maintained. Stockroom temperature should be 60-degrees to 80-degrees F and relative humidity between 35 and 50%.
- Cartons should be kept away from damp or cold walls and floors, where they might absorb moisture.
- Store coated abrasives away from heat sources steam heated radiators, steam pipes, hot air inlets, heat ducts, or rooms near furnaces or ovens.
- Keep products in original packages. These packages facilitate handling and can be stacked in the most practical and convenient manner.
- Bulk rolls should not be allowed to stand on edge after they have been unpacked. Store flat on shelves or pallets.
- Narrow belts which have been removed from the carton should be rolled up and stored on edge on a clean shelf. Belts may be draped over a large cylinder, such as a gallon can, brake drum, or flanged hanger of the type used for a garden hose. Never hang a belt from a nail – the backing will crease and the abrasive belt might crack.
 Wide belts should be hung over a tube of at least 4" diameter. Center the belt joint over the tube and add a light weight (such as old packaging tubes) to the bottom loop of the belt to aid in removing set. Condition for 24 hours prior to use.
- For maximum product efficiency, precondition coated abrasive products in a chamber of controlled temperature and humidity before use.

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Introduction

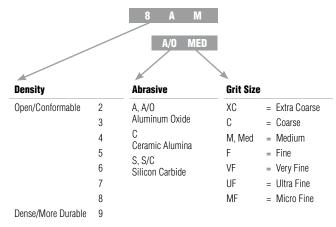
Most Norton Bear-Tex products consist of a non-woven web of nylon fibers impregnated throughout with abrasive grain and bonded with synthetic resins. This design produces a cushioned, three-dimensional material that is extremely pliable and long lasting. The uniform dispersion of abrasive throughout the web provides a continuous supply of new grain as the old grain and fibers wear away during use.

Norton Bear-Tex products, with their open mesh construction, are waterproof, washable, resilient, conformable, non-loading, non-conductive, non-metallic and non-rusting. Non-woven wheels are easily pre-formed to conform to special-shaped work pieces.

Since non-woven products are designed for use where stock removal is not required, they begin where other abrasives leave off. The relatively non-aggressive nature of nylon and grit inherent in the material makes it ideal as a finishing tool. While 60 to 80 grits are considered intermediate sizes in other products, they are considered coarse for non-woven items.

Used wet or dry, Norton Bear-Tex non-woven products offer the following advantages: controlled cut (with little or no stock removal) allows for increased productivity, consistent, uniform finish, ability to automate operations, minimized smearing and reduced operator training. These advantages make our non-woven products an excellent alternative to bristle brushes, set-up wheels, greaseless compounds and steel wool.

Product Identification System



COATED & NON-WOVEN ABRASIVES Non-Woven Basics

Abrasives

Ceramic alumina, silicon carbide and aluminum oxide abrasives are offered. Ceramic alumina cuts the fastest and is the most cost effective on large-volume applications. Silicon carbide is sharper, cuts faster than aluminum oxide, and produces finer scratch patterns on most surfaces. Aluminum oxide is more durable and tends to last longer. It causes less discoloration on aluminum, and is more aggressive on certain applications such as hardened steel parts. Norton Bear-Tex hand pads are also available in a non-abrasive material.

Grits

Grit refers to the size of the abrasive grain impregnated into the nylon web. The coarser the grit, the more aggressive the cut, the rougher the finish. The finer the grit, the less aggressive the cut and the resulting surface finish will be finer, if all other conditions are equal.

| GRIT DESIGNATIONS | GRIT SIZE |
|-------------------|------------|
| Extra Coarse (XC) | 50 |
| Coarse (C) | 60 - 80 |
| Medium (M) | 100 – 150 |
| Fine (F) | 180 - 220 |
| Very Fine (VF) | 240 - 360 |
| Super Fine (SF) | 400 |
| Ultra Fine (UF) | 600 |
| Micro Fine (MF) | 800 - 1200 |

Densities

The product "density" refers to the number of fibers which have been compressed into the nylon web material. Under identical conditions, harder density wheels cut faster, last longer and produce finer finishes than softer density wheels. Softer density wheels offer greater conformability and have less tendency to load or burn the work piece.

Fiber Sizing

Several nylon fiber sizes are used in the manufacture of Norton Bear-Tex and Merit web material because the fiber size is a significant factor in the coating process, as each produces distinct cutting characteristics.

Bonding Agents

Waterproof resins are used in the manufacture of Norton Bear-Tex and Merit web material to bond the nylon fibers together and to firmly anchor the abrasive grains throughout the web.

Conventional Finishing Methods Versus Norton Bear-Tex Non-Woven Products

The following chart outlines the advantages achievable when using our products as alternatives to other cleaning, blending, deburring and finishing methods. These products are listed in the sequence of normal preference for the application stated. However, because of the numerous variables, only testing can ensure selection of the most cost-effective product.

| CONVENTIONAL FINISHING METHOD | KEY Application | NORTON/MERIT Product Alternatives | ADVANTAGES OF NORTON/MERIT PRODUCT Versus Alternate Finishing Methods |
|----------------------------------|------------------------|---|---|
| Bristle Brushes | Cleaning | Rapid Strip, Convolute Wheels, and Rapid Prep Discs | Superior cleaning performance Higher productivity No slurry or compound required More consistent finish Eliminate compound dust |
| Greaseless Compounds | Finishing | Flap Wheels Convolute Wheels Unified Wheels Rapid Prep Discs | Reduced maintenance No compound, instant set-up Elimination of compound dust More uniform finish More consistent work rate |
| Set-up Wheels | Blending/ Deburring | Convolute Wheels Unified Wheels XHD Discs Rapid Prep Discs | No break-in time required More consistent cut More uniform finish Maintain geometry Safer, no flying wheel pieces |
| Steel Wool | Cleaning | Rolls Discs Hand Pads | Faster, longer life Less pressure required Non-rusting, cleaner Safer, no splinters |





Getting the Most Out of Norton Bear-Tex Wheels

Maximum wheel life and best surface conditioning results can be achieved by closely adhering to the following recommendations.

1) Wheel Direction

Convolute, interleaf flap wheels, and conventional flap wheels must always run in the direction indicated by the arrow printed on the side of each wheel. Unified wheels can be run in either direction.

2) Wheel Speed

Wheel speed is an important factor in that it affects product finish, rate of cut, and wheel life. In general, fast wheel speeds give harder action and a finer finish; whereas, slower speeds give a softer action and a coarser finish for the same wheel density.

The following are recommended operating speeds for the most common applications.

| APPLICATION | RECOMMENDED SPEED |
|--|-------------------|
| Cleaning and upgrading of surface conditions | 2200 to 6000 SFPM |
| Cut-buffing on metal surfaces | 6500 to 8000 SFPM |
| Deburring | 5500 to 8000 SFPM |
| Decorative finishing | 500 to 3000 SFPM |
| Imparting decorative finishes | 900 to 3000 SFPM |
| Oxide removal | 3500 to 6500 SEPM |

Testing might show that a slower or faster speed is desirable for specific operations. Never exceed the maximum RPM rating of the wheel.

3) Pressure

Light to medium pressure is recommended for most operations. Flap wheels require much lighter pressure to perform properly than other non-woven wheels; unified wheels can withstand much higher pressures in order to perform deburring jobs. In all cases, avoid excessive pressure which might result in wheel deformation and damage to the work surface.

4) Feed Speed

Low feed speed reduces the number of workpieces completed, while producing a shorter scratch pattern. Slow feed speed allows for longer dwell time and permits more work to be done on each piece. Conversely, a fast feed speed increases the number of workpieces completed, while producing a longer scratch pattern.

5) Oscillation

Oscillation may be used to break up scratch lines and produce a more uniform finish. Additionally, an increase in cut might be experienced.

A general starting point for oscillation is 3/8" amplitude at 200 cycles per minute.

6) Lubricants

Lubricants, such as water, water soluble oil, and straight oil, will decrease the heat generated while running, improve the luster, and reduce the surface finish. The higher the viscosity of the lubricant, the lower the surface finish (RMS value) produced.

Factors in Wheel Choice

This chart provides a relative comparison of other Norton Bear-Tex wheel variables. It can serve as a useful guide in choosing the most suitable product for a given application. However, as many other factors affect wheel performance, this chart can only be general in nature. The most cost-effective results can always be obtained by wheel testing on the application.

| 1 | 1 Wheel Conformability | MOST CONFO | RMABLE (SOFT) | | | LEAST | CONFORMABLE (HARD) |
|---|------------------------|-------------|-----------------|-----------------|---|----------------------------------|--------------------|
| | | Flap Wheels | Clean & Finish | Metal Finishing | Rapid Finish GP 7 Density | Rapid Finish GP 8 & 9 Density | Series 4000 |
| 2 | Wheel Openness | OPEN MESH | | | | | CLOSED MESH |
| | | | Clean & Finish | Metal Finishing | Rapid Finish GP 7 Density | Rapid Finish GP 8 & 9 Density | Series 4000 |
| 3 | Wheel | MOST AGRES | SIVE | | | | LEAST AGGRESSIVE |
| | Aggressiveness | | Metal Finishing | | Clean & Finish | Rapid Finish GP | Flap Wheels |
| 4 | Finishing Action | COARSER | | | | | FINER |
| | | | Metal Finishing | Clean & Finish | Series 4000 | Rapid Finish GP Series 4000 | Flap Wheels |
| 5 | Pressure for | LIGHTER | | | | | HIGHER |
| | Best Results | | Flap Wheels | Clean & Finish | Metal Finishing Rapid Finish GP 7 Density | Rapid Finish GP 8 & 9 Density | Series 4000 |

* On steel surfaces, silicon carbide wheels will produce a brighter finish than aluminum oxide wheels.

Surface Finish Variables

Changes in any one of many factors can affect the surface finish on the work piece. This chart shows the effect on surface finish by changes in single factors of product specifications. Arrows have been used to signify the trend direction. The arrow length does not signify that the effect of each factor is equal.

| Variable Factor | Rough Finish High RMS Reading | Smooth Surface Lower RMS Reading |
|-----------------|-------------------------------|----------------------------------|
| 1 Grit Size | Coarse < | ► Very Fine |
| 2 Wheel Grade | Soft < | → Hard |
| 3 Wheel Speed | Slow < | ► Fast |
| 4 Feed Speed | Faster (Long Scratch) \prec | Slower (Short Scratch) |
| 5 Oscillation | No Oscillation < | ► Oscillation |
| 6 Lubricants | Dry 🗸 🔶 Water 🖌 | Soluble Oil Straight Oil |
| and Compounds | | Compounds |



Distributed by Applifast.





The strongest of coated abrasive discs with resin-over-resin construction on heavy-duty fiber backing. Designed for applications ranging from heavy stock removal to surface blending. Used with back-up pads on portable angle grinders.

4" x 5/8" hole, 4-1/2" - 9-1/8" x 7/8" and 5/8"-11 hole

Stock removal, edge chamfering, weld blending, deburring/deflashing, rust removal,

Applications:

Size Range: Grit Range: Abrasive Grain: Product Options: Accessories: Machines Used:



RIGHT ANGLE GRINDER

16 - 120

cleaning and finishing

VERTICAL SHAFT PORTABLE GRINDER

Ceramic Alumina, Zirconia Alumina Blend, and Aluminum Oxide

Conventional, Speed-Change hubs (5/8"-11), and AVOS technology

Material-to-Product Recommendation Guide

| | BEST | | BETTER | GOOD | |
|--|-------------|------------|----------------|-------------|------------|
| | BlazeX F970 | Blaze F980 | BlueFire F826P | Gemini F726 | Metal F240 |
| Stainless Steel / Titanium / Super Alloys* | | • | • | • | • |
| Mild Carbon Steel / Welds | • | | • | • | • |
| Ferrous Metals / Cast Iron | • | | • | • | • |
| Brass / Bronze / Aluminum | | | | • | • |
| *Nickel/Cobalt Based – Hastelloy, Inconel, Waspalloy | , | æ 🕄 | | | |

Application/Grit Recommendation Guide

COARSER (GRINDING)

| FINER | (FINISHIN | IG) |
|-------|-----------|-----|
| | | |

| | | | | | | | | | | F |
|---|---------------|----|-----------------|---------------|------------------|------|--------------|--------------------|-------|-----|
| | 16 | 24 | 30 | 36 | 40 | 50 | 60 | 80 | 100 | 120 |
| 1 | Stock Removal | | | | | | | | | |
| | | | Edge Chamfering | | | | | | | |
| | | | | Weld Blending | | | | | | |
| | | | | | Deburring/Deflas | hing | | | | |
| | | | | | | | Rust Removal | | | |
| | | | | | | | | Cleaning and Finis | shing | |

Cross Reference Guide

TOTAL PERFORMANCE

INITIAL PRICE

| | BEST | | BETTER | GOOD | | | | |
|-----------------------|-------------------|--------------------------------------|---------------------------------------|----------------|---------------|--|--|--|
| NORTON | BlazeX F970 | Blaze F980 | BlueFire F826P | Gemini F726 | Metal F240 | | | |
| 3M | 782C, 982C, 988C | 785C, 787C, 985C, 987C | 501C | 381C | _ | | | |
| Camel | — | Ceramic | Zirconia | A/0 | — | | | |
| Flexovit | CG | CG+ | ZA | Α | _ | | | |
| GemTex | PMD, Gem Supreme | PMD Supreme, PMD Supreme Plus | Zee-Type, Zee Supreme, Gem Supreme | С-Туре | А-Туре | | | |
| Hermes | — | CR456 | RB414X, RB414X Procut | RB514J | RB314 | | | |
| Klingspor | FS964 ACT | FS966 | CS565, CS570 | FS764 ACT | CS561 | | | |
| Metabo | CER | CER | ZA | | A/0 | | | |
| Mirka | — | _ | Blue, Gold | _ | Red | | | |
| Pearl | Red Line | _ | FZ | Premium A/O | Silver Line | | | |
| Pferd | CO-PMD | CO Cool | Z, Z Cool | A Cool | A | | | |
| United Abrasives/Sait | 7S, 7A-S, 7-11 | 9S, 9-11 | 3Z, Z, AZX | 3A | A/0, 2A | | | |
| SIA | 4515, 4580 | 4515, 4560, | 4815, 4819 | 4924 | 4919, 4961 | | | |
| Standard | Ceramic | Ceramic Pro | Zirconia | _ | A/0 | | | |
| VSM | XF760 | AF890, AF799, XF885, XF870, XF850 | ZF713, ZF714, ZF844 | KF808 | KF708 | | | |
| Walter | Walter Coolcut XX | Walter Coolcut XX | Walter Topcut | Walter Coolcut | _ | | | |
| Weiler | — | Tiger Ceramic | Tiger Zirc, Wolverine Zirc | Tiger A/O | Wolverine A/O | | | |
| | | | | | | | | |







Best choice for carbon steel and other soft-to-grind materials

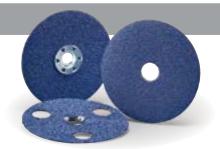
BLAZEX F970 CERAMIC ALUMINA

- Improved ceramic alumina micro-fracturing grain constantly exposes sharper grain edges to significantly increase
 cut rate and life over competitive blended/low-ratio ceramic alumina discs
- · Heavier fiber backing for additional strength and tear resistance
- Non-supersized design for cool cutting and long life on carbon steel and other soft-to-grind materials

Best choice for stainless steel, titanium, and super alloys

BLAZE F980 CERAMIC ALUMINA

- 100% ceramic alumina micro-fracturing grain constantly exposes sharper grain edges to significantly increase cut rate and life over competitive blended/low-ratio ceramic alumina discs
- Self-lubricating grinding aid treatment delivers the coolest cut on stainless steel, high alloy steels, super alloys, titanium, and other difficult to grind materials
- · Heavier fiber backing for additional strength and tear resistance



Better choice for stainless, super alloys, steel, cast iron and high-pressure applications

BLUEFIRE F826P ZIRCONIA ALUMINA

- High-performance zirconia alumina abrasive blend provides 15% faster cut and longer life with less power draw than conventional zirconia discs
- · Advanced resin bond technology with enhanced grain adhesion for extended life
- · Heavier fiber backing for additional strength and tear resistance

Good choice for carbon steel and aluminum applications

GEMINI F726 ALUMINUM OXIDE

- · Premium aluminum oxide blend for aggressive cut and longer life than competitive aluminum oxide discs
- Full resin bond for strength and durability
- · Heavier fiber backing for additional strength and tear resistance



Good choice for small jobs, applications where performance is not measured, and price-sensitive operations

METAL F240 ALUMINUM OXIDE

- Versatile, multi-purpose aluminum oxide abrasive provides consistent performance on numerous materials and small jobs
- · Full resin bond for strength and durability
- · Heavier fiber backing for additional strength and tear resistance; low initial price



| NORTON | |
|--------------|--|
| SAINT-GOBAIN | |

| | | | N | EW | VENDIBLE | | |
|-----------|------|--------------|---------------------|---------------------|------------------------|---------------------|---------------------|
| | | | | | | | |
| | | | | | | Q | |
| | | TIER: | BEST | BEST | BETTER | GOOD | GOOD |
| | | | BLAZEX F970 | BLAZE F980 | BLUEFIRE F826P | METAL F240 | GEMINI F726 |
| | | ABRASIVE: | Ceramic Alumina | Ceramic Alumina | Zirconia Alumina Blend | Aluminum Oxide | Aluminum Oxide |
| | | OTHER: | | Supersize | | | |
| E (D x H) | GRIT | STD. PKG. | PART # | PART # | PART # | PART # | PART # |
| 5/8 | 24 | 25 | | | | 055395 10595 | 666233 95000 |
| -, - | 36 | 25 | | | | 05539510594 | 666233 95001 |
| | 50 | 25 | | | | | 666233 95002 |
| | 60 | 25 | | | | 055395 10592 | 0002000000 |
| | 80 | 25 | | | | | 666233 95004 |
| /2 x 7/8 | 24 | 25 | | 699573 98000 | 662611 38457 | 666233 53309 | 66623395007 |
| | 36 | 25 | 699573 70193 | 699573 98001 | 662611 38456 | 666233 53306 | 666233 95008 |
| | 36 | 50 V | | | 666233 77276 | | |
| | 50 | 25 | 699573 70194 | 699573 98002 | 662611 38454 | 666233 53310 | 666233 95009 |
| | 60 | 25 | 699573 70195 | 699573 98003 | 662611 38453 | 666233 53311 | 666233 95010 |
| | 60 | 50 V | | | 666233 77278 | | |
| | 80 | 25 | 699573 70196 | 699573 98004 | 662611 38452 | 666233 53312 | 666233 95011 |
| | 80 | 50 V | | | 666233 77279 | | |
| | 100 | 25 | | | | 666233 53313 | 666233 95012 |
| | 120 | 25 | | 662544 25332 | | 666233 53314 | 666233 95013 |
| 7/8 | 16 | 25 | | | | 055395 10684 | |
| | 24 | 25 | | 699573 98005 | 662611 38563 | 666233 57276 | 666233 95016 |
| | 36 | 25 | 699573 70197 | 699573 98006 | 662611 38562 | 666233 57277 | 666233 95017 |
| | 36 | 50 V | | | 666233 77283 | | |
| | 50 | 25 | 699573 70198 | 699573 98007 | 662611 38561 | 666233 57278 | 666233 95018 |
| | 60 | 25 | 699573 70199 | 699573 98008 | 662611 38601 | 666233 57279 | 666233 95019 |
| | 80 | 25 | 699573 70200 | 699573 98009 | 662611 38600 | 666233 57280 | 666233 95020 |
| | 100 | 25 | | | | 666233 57281 | 666233 95021 |
| | 120 | 25 | | 662544 09084 | | 666233 57282 | 666233 95022 |
| 7/8 | 24 | 25 | | 662611 60033 | | | |
| | 36 | 25 | | 662611 60034 | | | |
| | 50 | 25 | | 662611 60035 | | | |
| | 80 | 25 | | 662611 60037 | | | |
| 7/8 | 16 | 25 | | | | 055395 10693 | |
| | 24 | 25 | | 699573 98010 | 662611 38594 | 666233 57283 | 666233 95029 |
| | 36 | 25 | 699573 70201 | 699573 98011 | 662611 38593 | 666233 57284 | 666233 95030 |
| | 36 | 50 V | | | 666233 77287 | | |
| | 50 | 25 | 699573 70202 | 699573 98012 | 662611 38592 | 666233 57285 | 666233 95031 |
| | 60 | 25 | 699573 70203 | 699573 98013 | 662611 38591 | 666233 57286 | 666233 95032 |
| | 80 | 25 | 699573 70204 | 699573 98014 | 662611 38590 | 666233 57287 | 666233 95033 |
| | 100 | 25 | | | | 666233 57288 | 666233 95034 |
| | 120 | 25 | | 662544 11528 | | 666233 57289 | 666233 95035 |
| /8 x 7/8 | 24 | 25 | | 699573 98015 | 662611 38584 | 055395 10702 | 666233 95036 |
| | 36 | 25 | | 699573 98016 | 662611 38583 | 055395 10701 | 666233 95037 |
| | 50 | 25 | | 699573 98017 | 662611 38582 | | 666233 95038 |
| | 60 | 25 | | | | 055395 10699 | 666233 95039 |
| | 80 | 25 | | | | | 666233 95040 |
| | 100 | 25 | | | | | 666233 95041 |
| | 120 | 25 | | | | | 666233 95042 |

Note: Fiber discs must be used with back-up pads shown on the last page of this section. V = Vendible Package. Ideal for vending machines and small jobs. 10 discs/package, 5 packages per standard carton. Order in multiples of 50.



Learn the best way to mount a fiber disc on a right angle grinder at https://nortonsga.us/5sdjv



Speed-Change Fiber Discs

These fiber discs feature Norton guick, tool-free, twist-on and -off Speed-Change fasteners. Discs lock to standard back-up pads with a unique nut design and are easily removed, increasing your productivity with more time to grind.

| | | | NEW | | | NEW |
|----------------|------|------------|---------------------|---------------------|------------------------|---------------------|
| | | | () | ۲ | ۲ | |
| | | TIER: | BEST | BEST | BETTER | GOOD |
| | | TRADENAME: | BLAZEX F970 | BLAZE F980 | BLUEFIRE F826P | GEMINI F726 |
| | | ABRASIVE: | Ceramic Alumina | Ceramic Alumina | Zirconia Alumina Blend | Aluminum Oxide |
| | | OTHER: | | Supersize | | |
| SIZE (D x H) | GRIT | STD. PKG. | PART # | PART # | PART # | PART # |
| 4-1/2 x 5/8-11 | 24 | 25 | | 662610 23269 | | 776960 09702 |
| | 36 | 25 | 699573 70205 | 662611 85294 | | 776960 09703 |
| | 50 | 25 | 699573 70206 | | | 776960 09704 |
| | 60 | 25 | 699573 70207 | 662610 42247 | | |
| | 80 | 25 | 699573 70208 | 666233 28529 | | 776960 09715 |
| | 120 | 25 | | | | 776960 09723 |
| 5 x 5/8-11 | 24 | 25 | | 662544 25336 | 662611 38797 | |
| | 36 | 25 | 699573 70209 | 662611 85801 | 662611 38796 | 666233 95014 |
| | 50 | 25 | 699573 70210 | | | |
| | 60 | 25 | 699573 70211 | 662611 85803 | | 666233 95015 |
| | 80 | 25 | 699573 70212 | 666233 16697 | | 776960 09728 |
| 7 x 5/8-11 | 24 | 25 | | 699573 49782 | 662611 38819 | 666233 95023 |
| | 36 | 25 | 699573 70213 | 662610 29863 | 662611 38818 | 666233 95024 |
| | 50 | 25 | 699573 70214 | | 662611 38817 | 666233 95025 |
| | 60 | 25 | 699573 70215 | 662610 42249 | 662611 38816 | |
| | 80 | 25 | 699573 70216 | 662544 74373 | | 666233 95026 |
| | 100 | 25 | | | | 666233 95027 |
| | 120 | 25 | | | | 666233 95028 |

Note: Speed Change fiber discs must always be used with smooth face back-up pads, see next page for details.

NEW Blaze Fiber Disc Test Kits

· Each kit contains one box of 25 BlazeX F970 (36 grit) fiber discs and one box of 25 Blaze F980 (36 grit) fiber discs. Test them for yourself!

AVOS Fiber Discs

Distributed by Applifast.

- · Patented, see-through design allows interrupted cut which reduces heat up to 30% over standard discs
- The scooped holes create air flow to pull swarf away from grinding zone; cool cutting and extended product life
- 15° back-up pad for full utilization of discs no gouging
- Quick, tool-free, twist-on and -off Speed-Lok fasteners



 (\mathbf{t})

| | | TIER: | BEST |
|-------|------|------------|------------------------------------|
| | | TRADENAME: | BLAZEX F970 & BLAZE F980 TEST KITS |
| | | ABRASIVE: | Ceramic Alumina |
| SIZE | GRIT | STD. PKG. | PART # |
| 4-1/2 | 36 | 1 | 776960 95018 |
| 5 | 36 | 1 | 776960 95019 |
| 7 | 36 | 1 | 776960 95020 |
| | | | |

NEW

| | | LIEK: | BEST | BEITER |
|-----------------|------|------------|---------------------|------------------------|
| | | BRAND: | Norton | Norton |
| | | TRADENAME: | BLAZE F980 | BLUEFIRE F826P |
| | | ABRASIVE: | Ceramic Alumina | Zirconia Alumina Blend |
| SIZE | GRIT | STD. PKG. | PART # | PART # |
| 4-1/2 Speed-Lok | 24 | 10 | 662544 68389 | 662611 29718 |
| (3 hole) | 36 | 10 | 662544 68390 | 662611 29719 |
| | 50 | 10 | 662544 68391 | 662611 29720 |
| | 60 | 10 | 662544 68392 | 662611 29721 |
| | 80 | 10 | 662544 68393 | 662611 29722 |
| 5 Speed-Lok | 24 | 10 | 662544 68385 | 662611 26556 |
| (3 hole) | 36 | 10 | 662544 68386 | 662611 26557 |
| | 50 | 10 | 662544 68387 | 662611 26558 |
| | 60 | 10 | 662544 68388 | 662611 26559 |
| | 80 | 10 | | 662611 26560 |
| 7 Speed-Lok | 24 | 10 | 662544 68381 | 662611 37454 |
| (6 hole) | 36 | 10 | 662544 68382 | 662611 37455 |
| | 50 | 10 | 662544 68383 | 662611 37456 |
| | 60 | 10 | 662544 68384 | |
| | 80 | 10 | | 662611 37458 |
| | | | | |

Note: AVOS fiber discs must be used with AVOS Speed-Lok back-up pads, see next page for details.

applifast.com

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COATED & NON-WOVEN ABRASIVES Fiber Disc Accessories

Fiber Disc Accessories



- Fiber Disc Baling Unit
- Places 100 discs on a spindle between two plates
- Locks down with a pinch screw
- Maintains the shape of the discs by maintaining pressure to minimize curl
- User-friendly and reusable



Air-Cooled Standard Back-up Pad Slotted hub design and curved ribs draw heat away from the grinding zone, reducing disc loading and increasing life. All pads have a 5/8"-11 threaded female hub for mounting. We also offer

a no-nose pad for shorter-shafted right

angle grinders.



Smooth Face Speed-Change Back-up Pad Molded rubber back-up pads with a smooth face.

- Hard density pads are for aggressive cutting action
- Medium density pads are for all-purpose applications



AVOS Fiber Disc Back-up Pad

- Patented, see-through design allows interrupted cut which reduces heat up to 30% over standard discs
- The scooped holes create air flow to pull swarf away from grinding zone
- 15° back-up pad for full utilization of discs – no gouging
- Quick, tool-free, twist-on and -off Speed-Lok fasteners

| DESCRIPTION | MAX. RPM | STD. PKG. | PART # |
|--|---|-----------|---------------------|
| Fiber Disc Baling Unit | | | |
| 5" | — | 1 | 776960 01065 |
| 7" | _ | 1 | 776960 01066 |
| Rubber Back-up Pads | | | |
| Air-Cooled Standard for 7/8 Hole Fiber an | d Non-Woven Discs | | |
| 4" Medium | 12,000 | 5 | 636425 04918 |
| 4-1/2" Medium | 11,000 | 5 | 636425 02122 |
| 5" Medium | 10,000 | 5 | 636425 43421 |
| 7" Hard | 8,600 | 5 | 636425 43425 |
| 7" Medium | 8,600 | 5 | 636425 43422 |
| 9" Hard | 6,600 | 5 | 636425 43426 |
| 9" Medium | 6,600 | 5 | 636425 43423 |
| Note: Retainer nuts are not included with back-u | p pads. These must be ordered separately. | | |
| Air-Cooled No-Nose | | | |
| 4-1/2" Medium | 11,000 | 5 | 636425 04872 |
| 5" Medium | 10,000 | 5 | 636425 03000 |
| Smooth Face for Fiber and Non-Woven Sp | eed-Change Discs | | |
| 4-1/2" Medium | 20,000 | 5 | 662544 92277 |
| 5" Medium | 12,000 | 5 | 636425 43235 |
| 7" Hard | 8,600 | 5 | 636425 43240 |
| 7" Medium | 8,600 | 5 | 636425 43245 |
| 7" Soft | 8,600 | 5 | 636425 43250 |
| 9" Medium | 7,000 | 5 | 636425 43270 |
| AVOS Speed-Lok Back-up Pads | | | |
| AVOS Triangular Speed-Lok Back-up Pads | 3 | | |
| 4-1/2" x 5/8-11 | 13,000 | 5 | 636425 02985 |
| 5" x 3/8-24 Pistol Grip* | 20,000 | 5 | 636425 03029 |
| 5" x 5/8-11 | 13,000 | 5 | 636425 02517 |
| 5" x 5/8-11 Thicker | 13,000 | 5 | 636425 03663 |
| 5" x 7/16-20 Pistol Grip* | 20,000 | 5 | 636425 03030 |
| *Use on air pneumatic and high-speed pistol gri | ip sanders | | |
| AVOS Round Speed-Lok Back-up Pads | | | |
| 7" x 5/8-11 Hard | 8,600 | 5 | 636425 04873 |
| Tools | | | |
| #103 Retainer Nut | _ | 10 | 636425 43463 |
| Spanner Wrench | | 5 | 636425 43005 |
| 66NS Short Retainer Nut | | 10 | 636425 43461 |

All fiber disc back-up pads are packed in individual boxes within the shipping carton. Each box can be used in a vending machine.

Corner Store Convenience - Right on the Floor

Industry's best selection of vendible abrasive solutions

- See the many popular products conveniently pre-packed in small quantity packages
- Perfect for vending machines, pegboards, new test orders, small orders and jobs, and carrying cleanly to job site
- Available in fiber, flap, paper, and quick-change discs, belts, hand pads, depressed center, cut-off and bench wheels, mounted points, cones and plugs, and sharpening stones
- Distributed by Applifast. 📼 🖹 👼 🖨 🕁

applifast.com Toll Free 180



Flap discs are versatile grinding and finishing tools having four main components: abrasive flaps, flap density (how the flaps are stacked), backing plate shape (flat or conical), backing plate material (fiberglass or plastic). All flap discs have flaps that are overlapped and glued to the backing plate. The flaps wear during use, exposing new abrasive grain. The different variations of the components above provide a variety of application choices ranging from heavy stock removal to blending to finishing. Flap discs are designed for portable grinder applications and can be the preferred choice over depressed center wheels or fiber discs.

Applications:

Size Range:

Grit Range: **Abrasive Grain: Abrasive Flaps:** Flap Disc Shape: Abrasive Flap Density: Backing Plate Material: Machine Used:

Grinding, stock removal, edge chamfering/beveling, weld blending, deburring/deflashing, rust removal, blending, cleaning and finishing 4": 5/8" hole 4-1/2" - 7" : 5/8"-11 discard mount, 7/8" hole, and 2" - 3" guick-change 24 - 120 Ceramic Alumina, Zirconia Alumina, and Aluminum Oxide Polyester, Cotton/Poly Blend Type 27 Flat and Type 29 Conical Standard or high Fiberglass and plastic RIGHT ANGLE

GRINDER

Flap Disc Shapes



GRIND AT FLATTER ANGLES: $0^{\circ} - 15^{\circ}$

Type 27 Flat - The Best Choice for Finishing Used primarily on flat surfaces

The best choice for blending and smooth finishing

Standard Density

rapid stock removal



GRIND AT STEEPER ANGLES: 15° - 25°

Type 29 Conical – The Best Choice for Aggressive Stock Removal

- Conical flap discs have angled flaps and may be used on both contoured and edge work
- The angle provides greater surface contact for stock removal on flat surfaces
- The best choice when speed and stock removal are primary considerations

High Density

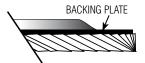
Ideal when working on uneven or curved surfaces, as well as finer grit blending

Backing Plate Materials

Abrasive Flap Densities

All flap discs are a combination of abrasive flaps adhered to a rigid backing plate. It is the backing plate that provides stability during operation. There are two main materials used: fiberglass and plastic. The fiberglass backing plate, along with the flap shape, helps to absorb vibration and is consumed during use with no smearing. Fiberglass is the most popular material because of its high strength and light weight. The plastic backing plate offers some additional conformability and is trimmable.

Excellent for heavy-duty applications and



Why Choose Flap Discs?

Flap discs replace both grinding wheels and fiber discs. The same flap disc can be used for applications ranging from stock removal to blending.



Flap Discs vs. Grinding Wheels · Faster stock removal

- · Smoother finish, no gouging
- Cooler cutting, less glazing
- · Lightweight, easier to control
- Less vibration, less operator fatigue
- Reduced noise





Flap Discs vs. Fiber Discs 20X longer life, reduced abrasive cost

- Fewer disc changes, reduced labor cost
- More consistent finish
- No back-up pad required
- Easier storage, no curling
- Reduced loading
 - Use flap discs one grit size coarser than fiber discs, except in 36 grit







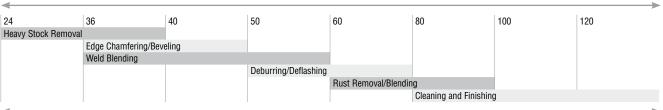


Material-to-Product Recommendation Guide

| | BEST | BETTER | GOOD | |
|---|-------------|----------------|-------------|------------|
| | Blaze R980P | BlueFire R884P | Gemini R766 | Metal R828 |
| TYPE 29 FOR STOCK REMOVAL | | | | |
| Stainless Steel / Titanium / Super Alloys | • | • | • | • |
| Mild Carbon Steel / Welds | | • | • | • |
| Ferrous Metals / Cast Iron | | • | • | • |
| Brass / Bronze / Aluminum | | • | | |
| TYPE 27 FOR BLENDING AND FINISHING | | | | |
| Stainless Steel / Titanium / Super Alloys | • | • | • | • |
| Mild Carbon Steel / Welds | | • | • | • |
| Ferrous Metals / Cast Iron | | • | • | • |
| Brass / Bronze / Aluminum | | • | • | • |

Application/Grit Recommendation Guide

COARSER (GRINDING)



STANDARD DENSITY

Cross Reference Guide

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TOTAL PERFORMANCE

| | | | 0000 | |
|-----------------------|--|---|----------------------|-----------------|
| NORTON | BEST | BETTER | GOOD | Matel D000 |
| NORTON | Blaze R980P | BlueFire R884P | Gemini R766 | Metal R828 |
| 3M | 747D, 947D, 967A, 969F | 546D, 566A, 577F | | _ |
| Camel | Ceramic Pro | ZA Pro | A Pro | ZA |
| CGW/Pasco | Ceramic | Zirconia | A/0 | _ |
| DeWalt | XP Ceramic | HP Zirconia | Zirconia | FlexVolt |
| Flexovit | Zircotex Ceramic | Zircotex, Zirocomax, Tornado | _ | — |
| Garryson | CeramIQ | Zirc+ | Zirconium | A/0 |
| GemTex | Ceramic Flaptec | Zirconia Flaptec | A/O Flaptec | |
| Hermes | — | FL390 | RB48024YX, RB48624YX | Webrax-AN 701 |
| Klingspor | SMT656 | SMT624, SMT626, SMT627, SMT630 | SMT627 | |
| Metabo | Flexiamant Super Ceramic | Flexianmant Zirconia, Novoflex | _ | — |
| Mirka | _ | — | Blue | — |
| Pearl | Redline Maxidics, Stainlessmax Maxidics | Zirconia Maxidisc, Silver Line Zirconia | A/O Maxidisc | Silver Line A/O |
| Pferd | Polifan Z-SG, Polifan SG-CO | Polifan SG Zirkon, Polifan SG ZA, SGP, PSF Zirc | Polifan SG A, A-Cool | Polifan PSF A/O |
| United Abrasives/Sait | Encore Ceramic, Ovation Ceramic | Ovation, Saitlam U | Ovation Attacker | Encore |
| SIA | — | | 2824 SIAFlap | |
| Standard | Ceramic Pro, Ceramic | Zirconia HP, Zirconia AP | Zirconia GP | |
| Tyrolit | Cerabond Ceramic, Premium Ceramic | Fastcut, Premium Longlife | Premium A/O | Basic, Standard |
| VSM (Lehigh Valley) | Ceramic | Zirconia | A/0 | _ |
| Walter | Enduro-Flex Turbo | Enduro-Flex, Enduro-Flex Stainless | Enduro-Flex Alu. | Flexsteel |
| Weiler | Tiger Ceramic, Tiger X, Tiger Saber Tooth | Tiger Paw, Wolverine | Tiger Premium | Tiger |

FINER (FINISHING)

INITIAL PRICE

►

HIGH DENSITY





Best/highest productivity for stainless steel, titanium, and super alloys

BLAZE R980P CERAMIC ALUMINA

- Premium ceramic alumina abrasive grain lasts 50% 200% longer than many flap discs on stainless steel, cobalt, chrome, inconel, titanium and other hard-to-grind materials
- Y-weight polyester flaps with a supersize grinding aid significantly improve life, grain retention, and fray resistance while providing a cool, noticeably fast cut rate
- High-strength fiberglass back on Type 29 and Type 27 High Density is durable, lightweight, and absorbs vibration; Black, flexible plastic backing plate on Type 27 Quick Trim allows for trimmability of the plate





BLUEFIRE R884P ZIRCONIA ALUMINA

- High performance zirconia alumina plus abrasive for aggressive cut and long life, with up to 30% longer life than
 competitive zirconia alumina products
- · Polyester/cotton flaps with semi-open coat provide improved durability and reduces loading on aluminum
- High-strength fiberglass back on Type 29 and Type 27 High Density is durable, lightweight, and absorbs vibration; blue, flexible plastic backing plate on Type 27 Quick Trim allows for trimmability of the plate
- Vendible 2-disc package is ideal for vending machines, small jobs, or carrying to a job site



Good choice for carbon steel and aluminum applications

GEMINI R766 ALUMINUM OXIDE

- Alternating zirconia alumina and aluminum oxide flaps provide higher performance than aluminum oxide while retaining an economical price
- Polyester/cotton flaps are the best choice when speed of job completion and stock removal are primary considerations
- Type 27 Flat with quick trim, flexible plastic backing plate or high-density fiberglass back; Type 29 conical with durable, fiberglass back



Good consistent performance with low initial price

METAL R828 ZIRCONIA ALUMINA

- · Durable zirconia grain provide good cut rate and life with consistent finish
- · Fiberglass/resin backing plates with high strength, light weight, ability to absorb vibration, and operator comfort
- · Good choice for coarse grit blending, deburring, and stock removal



| | | | | | 6 | SOF | | |
|------------------------------|----------|------------------|----------------|---------------------|--|---------------------|---------------------|---------------------|
| | | | TIED. | BEST | BETTER | GOOD | GOOD | GOOD |
| | | | | BLAZE R980P | BLUEFIRE R884P | GEMINI R766 | METAL R828 | METAL R828 |
| | | | | Type 29 Conical | Type 29 Conical | Type 29 Conical | Type 29 Conical | Type 29 Conical |
| | | | FLAP DENSITY: | | Standard | Standard | Standard | High |
| | | | | Ceramic Alumina | Zirconia Alumina Plus | Aluminum Oxide | Zirconia Alumina | Zirconia Alumina |
| | | | BACKING PLATE: | | Fiberglass | Fiberglass | Fiberglass | Fiberglass |
| | ODIT | BAAV D | OTHER: | Supersize | DADT # | D4D7 // | DADT // | |
| IZE (D x H) /pe 29 Conic: | GRIT | | PM STD. PKG. | PARI # | PART # | PART # | PART # | PART # |
| rpe 29 comc x 5/8 | ai 🚤 | 15,300 | 10 | | 666233 99049 | | | |
| X J/0 | 40 | 15,300 | 10 | | 666233 99050 | | | |
| | 60 | 15,300 | 10 | | 666233 99051 | | | |
| | 80 | 15,300 | 10 | | 666233 99052 | | | |
| -1/2 x 5/8-11 | 36 | 13,300 | 10 | 662611 83490 | 662544 61165 | 666233 99028 | 662544 19991 | |
| ., = | 36 | 13,300 | 10 V | USED I I UU TUU | 666233 41104 2-Pack | | 55E0 11 1000 1 | |
| | 40 | 13,300 | 10 | 662611 83491 | 662544 61167 | 666233 99029 | 662544 19994 | 662611 32535 |
| | 60 | 13,300 | 10 | 662611 83492 | 662544 61170 | 666233 99030 | 662544 19996 | 662611 32536 |
| | 60 | 13,300 | 10 V | | 666233 41105 2-Pack | | | |
| | 80 | 13,300 | 10 | 662611 83493 | 662544 61173 | 666233 99173 | 662544 19997 | 662611 32537 |
| | 80 | 13,300 | 10 V | | 666233 41106 2-Pack | | | |
| | 120 | 13,300 | 10 | | | 666233 99174 | | |
| -1/2 x 7/8 | 24 | 13,300 | 10 | | 666233 99204 | | | |
| | 36 | 13,300 | 10 | 662611 83486 | 662544 61155 | 666233 99032 | 662544 19963 | |
| | 36 | 13,300 | 10 V | | 666233 41107 2-Pack | | | |
| | 40 | 13,300 | 10 | 662611 83487 | 662544 61161 | 666233 99033 | 662544 19978 | 662611 32538 |
| | 60 | 13,300 | 10 | 662611 83488 | 662544 61163 | 666233 99034 | 662544 19984 | 662611 32539 |
| | 60 | 13,300 | 10 V | | 666233 41108 2-Pack | | | |
| | 80 | 13,300 | 10 | 662611 83489 | 662544 61164 | 666233 99035 | 662544 19987 | 662611 32540 |
| | 80 | 13,300 | 10 V | | 666233 41109 2-Pack | 0000000485 | | |
| | 120 | 13,300 | 10 | | 000000000000000000000000000000000000000 | 666233 99175 | | |
| x 5/8-11 | 36 40 | 12,000 12,000 | 10 10 | | 666233 99189 | | | |
| | 60 | 12,000 | 10 | | 666233 99190 | | | |
| | 80 | 12,000 | 10 | | 666233 99191 666233 99192 | 666233 99179 | | |
| | 120 | 12,000 | 10 | | 00023399192 | 666233 99180 | | |
| x 7/8 | 24 | 12,000 | 10 | | 666233 99206 | 000233 33100 | | |
| x 1/0 | 36 | 12,000 | 10 | 662611 90001 | 662544 61174 | 666233 99036 | 662544 19998 | |
| | 40 | 12,000 | 10 | 662611 90002 | 662544 61176 | 666233 99037 | 662544 20001 | |
| | 60 | 12,000 | 10 | 662611 90003 | 662544 61177 | 66623399038 | 662544 20002 | |
| | 80 | 12,000 | 10 | 662611 90004 | 662544 61178 | 66623399039 | 662544 20003 | |
| | 120 | 12,000 | 10 | | | 666233 99181 | | |
| x 5/8-11 | 40 | 10,200 | 10 | | | 666233 99040 | 662544 91779 | |
| | 60 | 10,200 | 10 | | | 666233 99041 | 662544 91780 | |
| | 80 | 10,200 | 10 | | | 666233 99042 | 662544 91781 | |
| x 7/8 | 24 | 10,200 | 10 | | 666233 99066 | | | |
| | 36 | 10,200 | 10 | | 666233 99298 | | | |
| | 40 | 10,200 | 10 | | 666233 99193 | 666233 99182 | 662544 91776 | |
| | 60 | 10,200 | 10 | | 666233 99194 | 666233 99183 | 662544 91777 | |
| | 80 | 10,200 | 10 | | 666233 99195 | 666233 99184 | 662544 91778 | |
| x 5/8-11 | 36 | 8,600 | 10 | 662611 83498 | 662544 61188 | 666233 99185 | 662544 20009 | |
| | 40 | 8,600 | 10 | 662611 83499 | 662544 61190 | 666233 99043 | 662544 20010 | |
| | 60 | 8,600 | 10 | 662611 83500 | 662544 61192 | 666233 99044 | 662544 20012 | |
| | 80 | 8,600 | 10 | 662611 83501 | 662544 61193 | 666233 99045 | 662544 20013 | |
| | 120 | 8,600 | 10 | | 000000400 | 666233 99186 | | |
| x 7/8 | 24 | 8,600 | 10 | 66061102404 | 666233 99196 | | CCOE 4 40000 4 | |
| | 36 | 8,600 | 10 | 662611 83494 | 662544 61180 | 6660000046 | 662544 20004 | |
| _ | 40 60 | 8,600 8,600 | 10 10 | 662611 83495 | 662544 61183 | 666233 99046 | 662544 20006 | |
| | | 0.000 | 10 | 662611 83496 | 662544 61185 | | 662544 20007 | |

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See Portable Tools and Specialties section for mini flap discs.



| | | | | | | VENDIBLE | | NEW | NEW | |
|------------------------------|-----------|------------------|----------|--|---------------------|--|--|--|--|--|
| | | | | | 6 | | | | | |
| | | | | | | | | | | |
| | | | | | | | | All transfer | Simmes | |
| | | | דורם. | BEST | BEST | BETTER | BETTER | GOOD | GOOD | GOOD |
| | | TRADE | NAME: | BLAZE R980P | BLAZE R980P | BLUEFIRE R884P | BLUEFIRE R884P | | GEMINI R766 | METAL R828 |
| | | | SHAPE: | Type 27 Flat | Type 27 Flat | Type 27 Flat | Type 27 Flat | Type 27 Flat | Type 27 Flat | Type 27 Flat |
| | | FLAP DI | | | High | Standard | High | Standard | Standard | Standard |
| | | ABR | RASIVE: | Ceramic Alumina | Ceramic Alumina | Zirconia Alumina Plus | Zirconia Alumina Plus | Aluminum Oxide | Aluminum Oxide | Zirconia Alumina |
| | l | BACKING | PLATE: | Quick Trim Plastic | Fiberglass | Quick Trim Plastic | Fiberglass | Quick Trim Plastic | Fiberglass | Fiberglass |
| | | l | OTHER: | Supersize | Supersize | | | | | |
| 017E (D II) | ODIT | MAX. | STD. | DADT # | DADT # | DADT # | DADT # | DADT # | DADT # | DADT # |
| SIZE (D x H) Type 27 Flat | | RPM | PKu. | PART # | PART # | PART # | PART # | PART # | PART # | PART # |
| 4-1/2 x 5/8-11 | 36 | 13,300 | 10 | | 662544 99894 | 666233 99136 | | 666233 99125 | 666233 99205 | 662544 72655 |
| − 1/2 X 0/0 11 | 36 | 13,300 | 10 V | | 00204433034 | 666233 41086 2-Pk | | 00023333123 | 00020033203 | 00204472000 |
| | 40 | 13,300 | 10 | 662544 00257 | 662610 98290 | 666233 99137 | 776960 90086 | 666233 99000 | 666233 99059 | 662544 37013 |
| | 60 | 13,300 | 10 | 662544 00258 | 662610 96435 | 666233 99138 | 77696090087 | 666233 99001 | 666233 99060 | 662544 72656 |
| | 60 | 13,300 | 10 V | | | 666233 41087 2-Pk | | | | |
| | 80 | 13,300 | 10 | 662544 00259 | 662610 96436 | 666233 99139 | 776960 90088 | 666233 99002 | 666233 99061 | 662544 72657 |
| | 120 | 13,300 | 10 | 662544 00261 | | | | 666233 99003 | | |
| 4-1/2 x 7/8 | 36 | 13,300 | 10 | 636425 01865 | 662610 97678 | 666233 99140 | 776960 90081 | 666233 99126 | 666233 99062 | 662544 72653 |
| | 40 | 13,300 | 10 | 662544 00253 | 662610 20628 | 666233 99141 | 776960 90082 | 666233 99004 | 666233 99063 | 662544 37004 |
| | 60 80 | 13,300 13,300 | 10 | 662544 00254 | 662610 20633 | 666233 99142 | 776960 90083 776960 90084 | 666233 99005 | 666233 99064 666233 99065 | 662544 48989 |
| | 120 | 13,300 | 10 10 | 662544 00255 662544 00256 | 662610 20634 | 666233 99143 | 77696090085 | 666233 99006 666233 99007 | 000233 9900 0 | 662544 48990 |
| 5 x 5/8-11 | 36 | 12,000 | 10 | 00234400230 | | 666233 99144 | 11030050005 | 666233 99127 | | |
| 0 / 0/0 11 | 40 | 12,000 | 10 | 776960 90141 | | 666233 99145 | | 666233 99128 | 666233 99208 | |
| | 60 | 12,000 | 10 | 776960 90142 | | 666233 99146 | | 666233 99130 | 666233 99209 | |
| | 80 | 12,000 | 10 | 776960 90143 | | 666233 99147 | | 666233 99131 | 666233 99210 | |
| | 120 | 12,000 | 10 | | | | | 666233 99132 | | |
| 5 x 7/8 | 36 | 12,000 | 10 | | | 666233 99148 | | 666233 99133 | 666233 99211 | |
| | 40 | 12,000 | 10 | 662544 00262 | | 666233 99149 | | 666233 99008 | 666233 99212 | 662544 72660 |
| | 60 | 12,000 | 10 | 662544 00264 | | 666233 99150 | | 666233 99009 | 666233 99213 | 662544 72661 |
| | 80 120 | 12,000 12,000 | 10 10 | 662544 00265 662544 00519 | | 666233 99151 | | 666233 99010 666233 99011 | 666233 99214 | 662544 72662 |
| 6 x 5/8-11 | 40 | 10,200 | 10 | 662611 32128 | 662611 32145 | | | 000233 33011 | 666233 99219 | 662544 91773 |
| 0 x 3/0-11 | 60 | 10,200 | 10 | 662611 32129 | 662611 32145 | | | | 666233 99220 | 662544 91774 |
| | 80 | 10,200 | 10 | 662611 32130 | 662611 32147 | | | | 666233 99221 | 662544 91775 |
| 6 x 7/8 | 36 | 10,200 | 10 | | | | | | 666233 99215 | |
| | 40 | 10,200 | 10 | 662611 32123 | | 666233 99152 | | 666233 99012 | 666233 99216 | 662544 91770 |
| | 60 | 10,200 | 10 | 662611 32124 | 662611 32136 | 666233 99153 | | 666233 99013 | 666233 99217 | 662544 91771 |
| | 80 | 10,200 | 10 | 662611 32125 | | 666233 99154 | | 666233 99014 | 666233 99218 | |
| 7 5/0 11 | 120 | 10,200 | 10 | | | 0000000100 | | 666233 99015 | 0000000000 | 00054480005 |
| 7 x 5/8-11 | 36 | 8,600 | 10 | 00054464000 | 00001100110 | 666233 99155 | 770000000000 | 666233 99134 | 666233 99222 | 662544 72669 |
| | 40 | 8,600 8,600 | 10 | 662544 61066 | 662611 32148 | 666233 99156 666233 99157 | 77696090092 | 666233 99016 666233 99017 | 666233 99067 666233 99068 | 662544 72670 662544 72671 |
| | 60 80 | 8,600 | 10 10 | 662544 61067 662544 61068 | 662611 32168 | 666233 99157 | 776960 90093 776960 90094 | 666233 99017 | 66623399069 | 662544 72671 |
| | 120 | 8,600 | 10 | 662544 61069 | | 00020033100 | 11030030034 | 666233 99019 | 00020033003 | JULJHHILUIL |
| 7 x 7/8 | 36 | 8,600 | 10 | 636425 01866 | | 666233 99159 | | 666233 99135 | 666233 99070 | |
| , o | 40 | 8,600 | 10 | 662544 61059 | 662611 32138 | 666233 99160 | 776960 90089 | 666233 99020 | 666233 99071 | 662544 72665 |
| | 60 | 8,600 | 10 | 662544 61060 | 662611 32139 | 666233 99161 | 776960 90090 | 666233 99021 | | 662544 72666 |
| | 80 | 8,600 | 10 | 662544 61061 | | 666233 99162 | 776960 90091 | 666233 99022 | | 662544 72667 |
| | 120 | 8,600 | 10 | 662544 61063 | | | | 666233 99023 | | |

V = Vendible package. Ideal for vending machines & small jobs. 2 Flap Discs/pack, 5 packs/carton. Order in multiples of 10.

See Portable Tools and Specialties section for mini flap discs.

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ackaged for retail / walk-in selling / small jobs

BLUEFIRE R884P ZIRCONIA ALUMINA

- Zirconia alumina plus abrasive for aggressive cut and long life
- Individual hang cards provides product selling points; ships in merchandise display case of small quantities
- Available wire rack (with header card) allows merchandising of 4" and 4-1/2" product three ways: hung on pegboard, mounted on an upright, or placed on a shelf/counter



| | | | TIER: | BETTER |
|----------------|------|----------|----------------|-----------------------|
| | | | TRADENAME: | BLUEFIRE R884P |
| | | | SHAPE: | Type 29 |
| | | | FLAP DENSITY: | Standard |
| | | | ABRASIVE: | Zirconia Alumina Plus |
| | | | BACKING PLATE: | Fiberglass |
| SIZE (D x H) | GRIT | MAX. RPM | STD. PKG. | PART # |
| 4 x M-10 | 40 | 15,300 | 5 | 076607 03214 |
| | 60 | 15,300 | 5 | 07660703215 |
| | 80 | 15,300 | 5 | 076607 03216 |
| 4-1/2 x 5/8-11 | 40 | 13,300 | 5 | 076607 03211 |
| | 60 | 13,300 | 5 | 076607 03212 |
| | 80 | 13,300 | 5 | 07660703213 |
| 7 x 5/8-11 | 40 | 8,600 | 5 | 076607 03205 |
| | 60 | 8,600 | 5 | 076607 03206 |
| | 80 | 8,600 | 5 | 076607 03207 |
| Wire Rack | | | 2 | 076607 04157 |
| | | | | |

WIRE RACK (WITH HEADER CARD) ALLOWS MERCHANDISING OF 4" AND 4-1/2" PRODUCT THREE WAYS: HUNG ON PEGBOARD, MOUNTED ON AN UPRIGHT, OR PLACED ON A SHELF/COUNTER



See Portable Tools and Specialties section for mini flap discs.







COATED & NON-WOVEN ABRASIVES Non-Woven Discs

Non-woven depressed center discs have three components: strong synthetic fiber mesh and quality abrasives, bonded together by a smear-resistant adhesive. Rapid Strip discs have an open web construction that enables aggressive cutting action while maintaining a cool, non-loading surface. Rapid Blend discs have a unitized construction with varying weave - from open to tighter - for deburring and finishing. Rapid Prep discs have a more open weave that excels in surface preparation and cleaning. Each product provides excellent cutting action while improving surface finish.

Applications:

Size Range: **Grit Range: Abrasive Grain:** Machine Used:

Medium-to-light material removal, deburring, blending, cleaning, finishing, and polishing 4-1/2" - 7"

X-Coarse, Coarse, Medium, Fine, Very Fine Ceramic Alumina, Silicon Carbide, Engineered Aluminum Oxide, Aluminum Oxide



RIGHT ANGLE GRINDER

VERTICAL SHAFT PORTABLE GRINDER

Material/Application-To-Product Recommendation Guide -For All Discs Used on Right Angle Grinders

| Stripping Discs | BEST | BETTER | Deburring, Blending, | BEST | | BETTER | |
|---|------------------------------|--------------------------------|---|-----------------------|----------------------|----------------|---------------|
| | Blaze Rapid Strip Ceramic | Rapid Strip Silicon Carbide | Finishing Discs | Vortex Rapid Blend | Vortex Rapid Prep | Rapid Blend | Rapid Prep |
| Removing scale and coarse welding marks | ◆ XC | ◆ XC | Removing weld marks and weld spatter | ◆ C | | ◆ C | |
| Removing coatings, epoxy/glue, paint and | ◆ XC | ◆ XC | Stainless steel deburring and cleaning | ◆ C | | ◆ C | |
| other clogging material | | | Removing small flashings and | ◆ C | | ◆ C | |
| Removing rust, oxidation, corrosion and residue | ◆ XC ◆ XC | | parting lines Surface preparation before coatings/plating | | ◆ C | | ◆ C |
| Removing parting | ◆ XC | ◆ XC | Light cleaning | | ◆ F | | ♦ F |
| lines and seams on | | ▼ ∧0 | Cleaning and prepping welds | | ◆ M | | ◆ M |
| fiberglass parts | | | Removing blemishes after | | ◆ M | | ◆ M |
| Removing paint/graffiti from concrete/stone | ◆ XC | ◆ XC | welding stainless Blending and finishing all metal parts | ◆ VF | | ♦ VF | |
| | | | Creating decorative finishes on stainless steel | ◆ VF | | ♦ VF | |
| | | | Final finishing and polishing | ♦ VF | | ♦ VF | |
| | | | Final finishing/polishing where | | | | VF |

high conformability is needed XC - Extra Course, C - Coarse, M - Medium, F - Fine, VF - Very Fine

Application/Product Recommendation Guide -For All Discs Used on Right Angle Grinders

MOST AGGRESSIVE / LEAST CONFORMABLE

LEAST AGGRESSIVE / MOST CONFORMABLE

| Depressed Center Discs | Blaze Rapid Strip | Vortex Rapid Blend A/O Med. Rapid Blend A/O Coarse | Rapid Blend A/O Medium | Rapid Blend S/C Fine | |
|------------------------|-------------------|---|------------------------|----------------------|----------------------|
| Discs With Back-Up Pad | | Vortex Rapid Prep Rapid Prep A/O Coarse | Rapid Prep A/O Medium | Rapid Prep A/O Fine | Rapid Prep Very Fine |
| Scale Removal | Best Choice | | | | |
| Stock Removal | Best Choice | Second Choice | | | |
| Heavy Deburring | Second Choice | Best Choice | | | |
| Light Deburring | | Best Choice | Second Choice | | |
| Light Finishing | | Second Choice | Best Choice | | |
| Blending | | | Best Choice | Second Choice | |
| Finishing | | | Second Choice | Best Choice | |
| Polishing | | | | Best Choice | Second Choice |





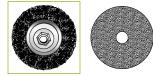
COATED & NON-WOVEN ABRASIVES Non-Woven Discs

Cross Reference Guide – For All Discs Used on Right Angle Grinders

STRIPPING (EXTRA COARSE) SURFACE FINISHING (COARSE - MEDIUM - FINE) SURFACE PREP (VERY FINE)

| | | | | | | , |
|----------|--|--------------------|---|--------------------|-------------------|---------------------------------|
| | BEST | BETTER | BEST | BETTER | BEST | BETTER |
| NORTON | Blaze Rapid Strip | Rapid Strip | Vortex Rapid Blend | Rapid Blend | Vortex Rapid Prep | Rapid Prep |
| 3M | Clean & Strip XT PRO, Clean & Strip XT PRO Extra Cut | Clean & Strip X | Debur and Finish PRO, Cut and Polish | EXL | SE, Duraflex | SC, PD, AI, LS |
| Bibielle | — | SDR Strip-It/Red | — | BUR Unitized | SCHD | SCLS, SCD, SCSB |
| Camel | _ | EZ Strip Black/Red | _ | — | _ | _ |
| Flexovit | _ | Clean & Strip | _ | _ | _ | — |
| Hermes | Strip Discs | Webrax | _ | _ | — | — |
| Pearl | _ | S/C Stripping | _ | — | _ | Surface Preparation |
| Pferd | — | Policlean | — | Poliflex PUR | — | — |
| Sait | _ | Sait-Strip | _ | Unitized | 7S, 8S | 3Z |
| SIA | SiaStrip | _ | _ | _ | 6260 | 6250 |
| Standard | _ | Cleaning | 700/800/900 Series | 700/800/900 Series | FE, GP | FE, GP, RC |
| Superior | _ | Stripping | | XL Unitized | | FD, GD, CC |
| Walter | _ | FX Cleaning | | — | _ | Blendex Surface Conditioning |

Why Choose Non-Woven Depressed Center Discs?



Non-Woven Right Angle Discs vs. Fiber Discs, Wire Wheels, and Depressed Center Wheels

- · Deburring, blending and finishing done with one product to reduce the number of steps
- · To provide a controlled, sustained finish
- To prevent undercutting and gouging
- To provide a cooler grinding action to lessen the chance of warping or discoloration

· When loading is an issue with fiberglass, adhesives and soft metals



 For stripping coatings and paint off of hard materials like concrete, cement and stone · Less vibration and quieter for high operator acceptance

To provide an alternative to wire brushes





Blaze Your Way to Greatest Productivity

Norton Blaze Rapid Strip Type 27 Depressed Center Discs

Strip/clean Cast Iron, Steels, Aluminum, Fiberglass and composites

- Open structure; will not load on sticky coatings, adhesives, and soft metals (e.g. aluminum), or snag and shed like a cloth or fiber disc might
- · Norton Blaze ceramic alumina grain provides 2X cut rate and life over silicon carbide
- Will not shed on heavily rust-encrusted pieces
- Extremely versatile; use one disc; stiff enough to stand abuse, but soft enough to prevent gouging and rework
- Use on edge for blending weld root forms
- Apply some pressure to strip or remove coatings; lighter pressure finishes like a surface finishing disc
- Fewer safety, ergonomic, and environmental issues due to fewer change-outs, less downtime, and less production waste/landfill scrap



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COATED & NON-WOVEN ABRASIVES Non-Woven Depressed Center Discs

Rapid Strip



Best choice for quick and easy rough cleaning and stripping of all materials

BLAZE RAPID STRIP CERAMIC ALUMINA

- · Blaze ceramic grain provides 2X plus faster, consistent rate and life than silicon carbide discs, leaves a thoroughly cleaned surface, ensuring excellent adhesion in subsequent processes such as painting and soldering
- Open web construction for minimal loading; does not shed or snag on rusty pieces; prevents gouging and rework •
- Rapid Strip material provides a unique combination of aggressive performance, long life, and improved finish

Better choice for use on a variety of materials, including metal, fiberglass and stone



RAPID STRIP SILICON CARBIDE

- Sharp silicon carbide abrasive provides fast aggressive cutting action
- · Advanced resin bond prevents shedding, snagging, gouging, and rework
- · Open web construction for minimal loading; great alternative to wire brushes



X-Coarse

ABRASIVE: GRIT SIZE: 36-50 GRADE: X-Coarse

| | | TYPE/BACKING: | Type 27/Fiberglass | Type 27/Fiberglass |
|----------------|----------|---------------|---------------------|---------------------|
| SIZE (D x H) | MAX. RPM | STD. PKG. | PART # | PART # |
| 4-1/2 x 5/8-11 | 12,000 | 10 | 662544 98101 | 662610 09585 |
| 4-1/2 x 7/8 | 12,000 | 10 | 666233 03783 | 662610 09649 |
| 5 x 5/8-11 | 11,000 | 10 | 666233 03915 | |
| 5 x 7/8 | 11,000 | 10 | 666233 03916 | |
| 7 x 5/8-11 | 8,000 | 10 | 666233 03919 | 662610 09650 |
| 7 x 7/8 | 8,000 | 10 | 666233 03920 | 662610 09586 |





Rapid Blend

COATED & NON-WOVEN ABRASIVES Non-Woven Depressed Center Discs





Best choice with revolutionary technology for heavy deburring and finishing

VORTEX RAPID BLEND ALUMINUM OXIDE

- Proprietary engineered Vortex aluminum oxide agglomerated grain performs the medium to fine grit steps of traditional aluminum oxide discs
- Thick nylon web for 2X longer life and faster finishing vs. traditional aluminum oxide discs, with minimal shedding
- Special resin chemistry resists shedding when used on sharp edges, making it ideal for deburring; no smearing

Better choice for surface prep, deburring, blending and removing parting lines, rust, and coatings

RAPID BLEND NEX A/O / S/C

- · Premium aluminum oxide or silicon carbide grain for consistent performance
- · Uniform construction extends life and maintains part tolerance; prevents cutting and gouging
- · Resin formula produces consistent, smear-free finishes



Consistent smear free performance with low entry price

RAPID BLEND ALUMINUM OXIDE

- Premium aluminum oxide grain; engineered for more demanding applications
- Uniform construction maintains part tolerance; prevents cutting and gouging
- · Smear-free bond excels at producing light satin finishes

MOST AGGRESSIVE / LEAST CONFORMABLE

LEAST AGGRESSIVE / MOST CONFORMABLE

| | | | 0 | 0 | 0 | 0 | 0 |
|----------------|----------|---------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| | | TIER: | BEST | BETTER | BETTER | BETTER | BETTER |
| | | TRADENAME: | VORTEX RAPID BLEND | RAPID BLEND NEX | RAPID BLEND NEX | RAPID BLEND NEX | RAPID BLEND |
| | | ABRASIVE: | Engineered A/O | Aluminum Oxide | Aluminum Oxide | Silicon Carbide | Aluminum Oxide |
| | | GRIT SIZE: | 100-120 | 150-180 | 220-280 | 320-400 | 150-180 |
| | SF | PECIFICATION: | Vortex 5AM | NEX-2AM | NEX-2AF | NEX-2SF | High Strength Medium |
| | T | PE/BACKING: | Type 27/Fiberglass |
| SIZE (D x H) | MAX. RPM | STD. PKG. | PART # |
| 4-1/2 x 5/8-11 | 12,000 | 10 | 662544 29243 | 662610 23947 | 662610 23946 | 662610 23943 | 662610 23949 |
| 4-1/2 x 7/8 | 12,000 | 10 | 662544 29268 | 662610 20548 | 662610 20547 | 662610 20546 | 662610 20549 |







COATED & NON-WOVEN ABRASIVES Non-Woven Standard Back-up Pad Discs

Rapid Prep 7/8" Center Hole



Best choice for aggressive stock removal and blending in one step

RAPID PREP XHD

- Coarse and Medium discs solve your most aggressive stock removal and blending challenges; remove weld lines, weld spatter, weld discoloration and blend surfaces in a single step
- Improve cut control and surface blending over traditional coated flap discs and fiber discs from our unique combination of a conformable fiber matrix and premium ceramic grain
- XHD Coarse discs for aggressive weld removal and surface blending on steels and Medium discs on softer metals/alloys



| | | IIER: | BEST |
|---------------|-----------|------------|---------------------|
| | | TRADENAME: | RAPID PREP XHD |
| | | ABRASIVE: | Ceramic Alumina |
| SIZE (D x H) | STD. PKG. | | PART # |
| Coarse | | | |
| 4-1/2" x 7/8" | 40 | | 662611 70275 |
| 5" x 7/8" | 40 | | 662611 70279 |
| 7" x 7/8" | 25 | | 662611 70280 |
| Medium | | | |
| 4-1/2" x 7/8" | 40 | | 662611 70282 |
| 5" x 7/8" | 40 | | 662611 70283 |
| 7" x 7/8" | 25 | | 662611 70284 |

All Vortex and Rapid Prep 7/8 hole discs are non-stock. Contact your Norton representative for current order quantities, and lead-times.

Note: Max RPM is determined by corresponding back up pad.



Norton Rapid Prep Surface Conditioning Products

The Perfect Abrasive, Coating, and Bond Built into Every Disc and Belt

- Available in premium Vortex aluminum oxide aggregate grain and Norton aluminum oxide grain; ideal for many aerospace, metal and stainless steel fabrication, and MRO applications
- Our proprietary coating method extends life and delivers consistent finishes by creating a thick layer of grain throughout the product; grain does not sit on top of fibers as other competitive products can
- Our new Clean Bond resin system guarantees smear-free finishes, even on high nickel content alloys; will not load on aluminum and soft metals, as competitive products can



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Rapid Prep 7/8" Center Hole

COATED & NON-WOVEN ABRASIVES Non-Woven Standard Back-up Pad Discs



Best choice for finishing and blending applications

VORTEX RAPID PREP ALUMINUM OXIDE DISCS

- High-performing, patented Vortex agglomerated aluminum oxide grain provides the cutting power of a coarser grit
 with the finish of finer grits
- Premium high-loft nylon fiber bonded to a strong nylon scrim backing allows a thick layer of resin bond and grain for extended life and provides added durability and stiffness
- Proprietary Clean Bond resin technology guarantees smear-free finishes even on high nickel content alloys and reduces loading on aluminum and other soft metals

Better choice for high nickel content alloys, aluminum and other soft metals



1

RAPID PREP ALUMINUM OXIDE

- Quality aluminum oxide abrasive grain coating provides up to 20% higher cut rate and 50% better performance than competitive products
- Premium high-loft nylon fiber bonded to a strong nylon scrim backing allows a thick layer of resin bond and grain for extended life, added durability and stiffness
- Proprietary Clean Bond resin technology guarantees smear-free finishes even on high nickel content alloys and reduces loading on aluminum and other soft metals



| | TIER: | BEST | BETTER |
|---------------|------------|---------------------------|---------------------|
| | TRADENAME: | VORTEX RAPID PREP | RAPID PREP |
| | ABRASIVE: | Engineered Aluminum Oxide | Aluminum Oxide |
| SIZE (D x H) | STD. PKG. | PART # | PART # |
| Extra Coarse | | | |
| 4-1/2" x 7/8" | 25 | | 666233 26070 |
| 5" x 7/8" | 25 | 666233 34975 | |
| 7" x 7/8" | 25 | 666233 41360 | |
| Coarse | | | |
| 4-1/2" x 7/8" | 25 | 666233 34944 | 662544 73868 |
| 5" x 7/8" | 25 | 666233 34946 | 662610 08293 |
| 7" x 7/8" | 25 | 666233 41362 | 666233 25138 |
| Medium | | | |
| 4-1/2" x 7/8" | 25 | 666233 33612 | 666233 25915 |
| 5" x 7/8" | 25 | 666233 34963 | 662610 17124 |
| 7" x 7/8" | 25 | 666233 41364 | 666233 25919 |
| Fine | | | |
| 4-1/2" x 7/8" | 25 | 666233 33608 | 666233 25153 |
| 5" x 7/8" | 25 | 666233 34954 | 662544 69132 |
| 7" x 7/8" | 25 | 666233 41366 | 666233 25897 |
| Very Fine | | | |
| 4-1/2" x 7/8" | 25 | 666233 33616 | |
| 5" x 7/8" | 25 | | 666233 25943 |
| 7" x 7/8" | 25 | 666233 41368 | 666233 25959 |

All these discs are non-stock. Contact your Norton representative for current order quantities, and lead-times. Note: Max RPM is determined by corresponding back-up pad.

See page 54 for 7/8" Hole Air Cooled Back-up Pads





Rapid Prep

- Speed Change 5/8"-11
- · These discs feature Norton quick, tool-free, twist-on and -off Speed-Change fasteners. Discs lock to standard back-up pads with a unique nut design and are easily removed, increasing your productivity with more time to grind.

COATED & NON-WOVEN ABRASIVES Non-Woven Speed-Change Discs

| | | TIER: | BEST |
|-------------------|------------|--------------|---------------------|
| | TR | ADENAME: | RAPID PREP XHD |
| | | ABRASIVE: | Ceramic Alumina |
| SIZE (D x H) | STD. P | KG. | PART # |
| Coarse | | | |
| 4-1/2" x 5/8-11" | 25 | | 662611 70060 |
| 5" x 5/8-11" | 25 | | 662611 70061 |
| 7" x 5/8-11" | 25 | | 662611 70288 |
| Medium | | | |
| 4-1/2" x 5/8-11" | 25 | | 662611 70062 |
| 5" x 5/8-11" | 25 | | 662611 70063 |
| 7" x 5/8-11" | 25 | | 662611 70289 |
| Max RPM is determ | ined by co | orresponding | i back up pad. |



| | | TIER: | BEST | BETTER |
|------------------------|----------------------|-------------------|---------------------------|---------------------|
| | | TRADENAME: | VORTEX RAPID PREP | RAPID PREP |
| | | ABRASIVE: | Engineered Aluminum Oxide | Aluminum Oxide |
| SIZE (D x H) | STD. PKG. | | PART # | PART # |
| Extra Coarse | | | | |
| 4-1/2" x 5/8-11" | 25 | | 666233 73667 | 666233 73690 |
| 5" x 5/8-11" | 25 | | 666233 73669 | |
| 7" x 5/8-11" | 25 | | 666233 73670 | 666233 73692 |
| Coarse | | | | |
| 4-1/2" x 5/8-11" | 25 | | 666233 73671 | 666233 73693 |
| 5" x 5/8-11" | 25 | | 666233 73674 | 662544 98516 |
| 7" x 5/8-11" | 25 | | 666233 73675 | 662611 92908 |
| Medium | | | | |
| 4-1/2" x 5/8-11" | 25 | | 666233 73678 | 666233 08157 |
| 5" x 5/8-11" | 25 | | 666233 73679 | 666233 73694 |
| 7" x 5/8-11" | 25 | | 666233 73680 | 662611 92913 |
| Fine | | | | |
| 4-1/2" x 5/8-11" | 25 | | 666233 73681 | |
| 5" x 5/8-11" | 25 | | 666233 73682 | 666233 73695 |
| 7" x 5/8-11" | 25 | | 666233 73684 | |
| Very Fine | | | | |
| 5" x 5/8-11" | 25 | | 666233 73686 | 666233 73699 |
| 7" x 5/8-11" | 25 | | 666233 73687 | 666233 73700 |
| Note: Sneed Change dis | re muet alwave he ue | ed with smooth fa | re hack-un nads | |

Note: Speed Change discs must always be used with smooth face back-up pads. Max RPM is determined by corresponding back-up pad.

AVOS Non-Woven Speed-Lok

- · Patented hole design allows for interrupted cut, reducing heat up to 30% over standard surface preparation discs for cooler cutting and longer life
- · With complete vision into the grinding zone, operators can grind more accurately with less re-work; scooped holes create air glow to pull loose abrasive and swarf away from work surface grinding zone - resulting in extended disc life
- The 15° angle back-up pad lets you grind at 5° 15° angle allowing for greater utilization of disc surface and eliminates gouging of workpiece

See page 54 for Speed Change and AVOS Back-up Pads

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TIER: BETTER

| TRADENAME: | RAPID PREP AVOS | |
|------------|-----------------|--|
| ARRASIVE | Aluminum Oxide | |

Aluminum Oxide

| SIZE (DIAMETER) | STD. PKG. | PART # |
|-----------------|-----------|---------------------|
| Coarse | | |
| 4-1/2 | 10 | 662610 10447 |
| 5 | 10 | 666233 74818 |
| Medium | | |
| 4-1/2 | 10 | 662610 10448 |
| 5 | 10 | 666233 74819 |
| Very Fine | | |
| 4-1/2 | 10 | 666233 74823 |
| 5 | 10 | 666233 74824 |

Note: AVOS discs must be used with AVOS Speed-Lok back-up pads. Max RPM is determined by corresponding back up pad.

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COATED & NON-WOVEN ABRASIVES Non-Woven Hook and Loop Discs

Rapid Prep

Non-Woven Hook and Loop Discs



Back-up Pads

Hook & Loop Back-up Pads

TIER: **Best** Tradename: **Rapid Prep XHD**

| | ABRASIVE: | Ceramic Alumina |
|-----------------|-----------|---------------------|
| SIZE (DIAMETER) | STD. PKG. | PART # |
| Coarse | | |
| 4-1/2 | 40 | 662611 70179 |
| 5 | 40 | 662611 70181 |
| 7 | 25 | 662611 70182 |
| Medium | | |
| 4-1/2 | 40 | 662611 70183 |
| 5 | 40 | 662611 70185 |
| 7 | 25 | 662611 70186 |

Max RPM is determined by corresponding back-up pad.

* Standard Package = 80

| PAD Diameter | SPINDLE OR Hole Size | MAX. RPM | 3M EQUIVALENT | STD. PKG. | PART # |
|-----------------|-------------------------|-------------|------------------|--------------|---------------------|
| | | | EQUIVALENT | rku. | FANI # |
| Back-up Pa | ds for Hook and Loo | op Discs | | | |
| 2 | 1/4 Steel Shank | 23,000 | 922 | 5 | 662610 59352 |
| 3 | 1/4 Steel Shank | 20,000 | 923 | 5 | 662610 59354 |
| 4 | 1/4 Steel Shank | 18,000 | 924 | 5 | 662610 59356 |
| | 5/8-11 | 13,000 | 914 | 5 | 662610 59304 |
| | M10 x 1.250 | 13,000 | | 5 | 662610 59305 |
| 4-1/2 | 5/8-11 | 10,000 | 9145 | 5 | 662610 06948 |
| 5 | 5/16-24 Male | 10,000 | 905 | 5 | 662610 59360 |
| | 5/8-11 | 10,000 | 915 | 5 | 662610 59310 |
| 6 | 5/8-11 | 8,000 | 916 | 5 | 662610 59312 |
| 7 | 5/8-11 | 6,000 | 917 | 5 | 662610 59368 |
| 8 | 5/8-11 | 4,500 | 918 | 5 | 662610 59372 |

| | TIER: | BEST | BETTER |
|---------------------------|-------------------------|---------------------|-----------------------|
| | | VORTEX RAPID PREP | RAPID PREP |
| | ABRASIVE: | | Aluminum Oxide |
| SIZE (DIAMETER) | STD. PKG. | PART # | PART # |
| Extra Coarse | | | |
| 2 | 50 | | 662610 17900 |
| 3 | 25 | 666233 33620 | |
| 4-1/2 | 25 | 666233 34972 | 662610 17906 |
| 5 | 25 | 666233 34974 | 662610 17215 |
| 7 | 25 | 666233 34976 | 662611 92846 |
| Coarse | | | |
| 2 | 50 | 666233 34882 | 662610 04431 * |
| 3 | 25 | 666233 34883 | 662610 55015 |
| 4-1/2 | 25 | 666233 34943 | 662610 17806 |
| 5 | 25 | 666233 34945 | 662610 04435 |
| 7 | 25 | 666233 34951 | 662610 55027 |
| Medium | | | |
| 2 | 50 | 666233 34958 | 662610 04441 |
| 3 | 25 | 666233 34956 | 662610 04442 |
| 4-1/2 | 25 | 666233 34961 | 662610 04444 |
| 5 | 25 | 666233 34962 | 662610 55022 |
| 7 | 25 | 666233 34965 | 662610 17813 |
| Fine | | | |
| 2 | 50 | 666233 33604 | 666233 25141 |
| 3 | 25 | 666233 33605 | 666233 25143 |
| 4-1/2 | 25 | 666233 33607 | 666233 25147 |
| 5 | 25 | 666233 33609 | 666233 25154 |
| 7 | 25 | 666233 34955 | 662611 99465 |
| Very Fine | | | |
| 2 | 50 | 666233 33613 | 666233 25926 |
| 3 | 25 | 666233 33614 | 666233 25934 |
| 4-1/2 | 25 | 666233 33615 | 666233 25936 |
| 5 | 25 | 666233 33617 | 666233 25941 |
| 7 | 25 | 666233 34969 | 662610 19990 |
| IVIAX KPIVI IS Determined | bv corresponding back-u | 0.020 | |



Max RPM is determined by corresponding back-up pad.

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* Standard Package = 80





COATED & NON-WOVEN ABRASIVES Cloth PSA Discs and Accessories

Norton PSA (pressure sensitive adhesive) individual cloth discs are used on four different types of machines and the application changes depending on which machine they are used on.

Applications:

Pneumatic and Electric Dual-Action (DA) and Electric Random Orbital Sanders - for use on contours or flat surfaces for light- to medium-pressure grinding, blending, leveling, and finishing applications.

Stationary Disc Sanders – used in woodworking and metalworking for stock removal, sanding/grinding flat surfaces, dimensioning and finishing. 5" - 24" diameter

Size Range: Grit Range: Abrasive Grain: **Back-up Pads:**

Machine Used:

Ceramic Alumina, Zirconia Alumina, Aluminum Oxide Rubber, with hardness variations for different applications, for portable machines. Steel for stationary disc sanders.





Best choice for all hard-to-grind high alloy steels

24 - 180

BLAZE R980P CERAMIC ALUMINA

- 100% ceramic alumina micro-fracturing grain constantly exposes sharper grain edges to provide fastest cut rate and longest life over competitive blended/low-ratio ceramic alumina discs
- Strong resin bond and heavy-duty Y-weight polyester backing for consistent cut, better grain adhesion, edge-tear resistance, and durability
- · Self-lubricating grinding aid treatment delivers the coolest cut on stainless steel, high alloy steels, super alloys, titanium, and other difficult to grind materials

Better choice for grinding and deburring stainless steel

BLUEFIRE R821P ZIRCONIA ALUMINA

- Latest generation of self-sharpening, zirconia alumina abrasive for cooler cut and extended life over aluminum oxide discs
- · Heavy-duty Y-weight cotton backing for edge-tear resistance and durability
- · Pressure sensitive adhesive makes for easy application and removal



Good choice for general-purpose metalworking

GEMINI R228 ALUMINUM OXIDE

- Premium aluminum oxide abrasive gives an excellent initial cut rate
- · Durable X-weight cotton backing makes these discs a good blend of flexibility and life
- · The cotton backing provides good resistance to heat

Good option for light- to medium-pressure grinding, blending, leveling and finishing applications

METAL R243 ALUMINUM OXIDE

- · Aluminum Oxide grain provides consistent cut for general purpose use
- Improved resin bond system provides longer life
- Flexible J-weight cotton backing for added conformability, tabs allow for easy liner removal



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COATED & NON-WOVEN ABRASIVES Cloth PSA Discs and Accessories

Cloth PSA Discs for Dual-Action and Random Orbital Sanders

| | | TIER: | BEST | GOOD | GOOD |
|----------|------|-------------|-----------------------|---------------------|---------------------|
| | | TRADENAME: | | GEMINI R228 | METAL R243 |
| | | | Ceramic Alumina | Aluminum Oxide | Aluminum Oxide |
| | | ATTACHMENT: | | PSA Discs | PSA Discs |
| | | OTHER: | | 1 JA D1363 | I SA DISUS |
| SIZE (D) | GRIT | PKG./CASE | PART # | PART # | PART # |
| 5 | 36 | 50/250 | 662544 61506 * | 662611 36589 | |
| 0 | 40 | 50/250 | 662544 61507 | 66261136588 | |
| | 50 | 50/250 | 662544 61508 | 66261136587 | |
| | 60 | 50/250 | 662544 61509 | 66261136586 | |
| | 80 | 50/250 | 662544 61510 | 66261136585 | 699573 39967 |
| | 100 | 50/250 | 00201101010 | 662611 36584 | 699573 39968 |
| | 120 | 50/250 | 662544 61512 | 662611 36583 | 699573 39969 |
| | 150 | 50/250 | | 662611 36582 | 699573 39970 |
| | 180 | 50/250 | | 662611 36581 | 699573 39971 |
| 6 | 60 | 50/250 | | 662611 36596 | |
| 0 | 80 | 50/250 | | 662611 36595 | 699573 39973 |
| | 100 | 50/250 | | 662611 36594 | 699573 39977 |
| | 120 | 50/250 | | 662611 36593 | 699573 39978 |
| | 150 | 50/250 | | 00201100000 | 699573 39979 |
| | 180 | 50/250 | | 662611 36592 | 699573 39986 |
| } | 36 | 50/250 | | 662611 36350 | |
| 0 | 40 | 50/250 | | 662611 36351 | |
| | 50 | 50/250 | | 662611 36352 | |
| | 60 | 50/250 | | 662611 36576 | |
| | 80 | 50/250 | | 662611 36354 | |
| | 120 | 50/250 | | 662611 36355 | |

*PKG./Case: Blaze R980P 5" 36 grit discs = 50/200



Back-up Pads for Cloth PSA Discs

| DESCRIPTION | MAX. RPM | STD. PKG. | PART # |
|------------------------------------|----------|-----------|---------------------|
| Back-up Pads for Cloth PSA Discs | | | |
| 5" Diameter – Low Profile – Soft | 12,000 | 5 | 636425 06126 |
| 5" Diameter – Low Profile – Medium | 12,000 | 5 | 636425 06131 |
| 5" Diameter – Tapered – Medium | 12,000 | 5 | 636425 06139 |
| 6" Diameter – Low Profile – Soft | 10,000 | 5 | 636425 06127 |
| 6" Diameter – Low Profile – Med | 10,000 | 5 | 636425 06133 |
| 6" Diameter – Tapered – Medium | 10,000 | 5 | 636425 06141 |
| 8" Diameter – Tapered – Medium | 6,000 | 5 | 636425 43112 |



COATED & NON-WOVEN ABRASIVES Cloth PSA Discs and Accessories

Large Diameter Cloth PSA Discs

Used on stationary disc machines for dimensioning and finishing metal workpieces and woodworking. Pressure sensitive adhesive offers fast, convenient mounting. Made without center holes for full-face usage.

| | | | 3. 18 Sec. | | |
|----------|----------|-------------|---------------------|---------------------|---------------------|
| | | | BEST | BETTER | GOOD |
| | | | BLAZE R980P | BLUEFIRE R821P | GEMINI R228 |
| | | | Ceramic Alumina | Zirconia Alumina | Aluminum Oxide |
| | | ATTACHMENT: | | PSA | PSA |
| | | OTHER: | | 10/1 | 10/1 |
| SIZE (D) | GRIT | PKG./CASE | PART # | PART # | PART # |
| 0 | 36 | 25/50 | | | 662611 36606 |
| 0 | 40 | 25/50 | | 662611 38314 | 662611 36604 |
| | 50 | 25/50 | | 00201100014 | 662611 36607 |
| | 60 | 25/50 | | 662611 38316 | 662611 36602 |
| | 80 | 25/50 | | 662611 38317 | 662611 36601 |
| | 100 | 25/50 | | JULUT 1 UUUT | 662611 36600 |
| 12 | 24 | 25/50 | | 662611 38318 | 00201100000 |
| | 36 | 25/50 | 662544 16171 | 662611 38319 | 662611 36635 |
| | 40 | 25/50 | 662544 16172 | 662611 38320 | 662611 36630 |
| | 50 | 25/50 | 662544 16172 | 662611 38321 | 662611 36625 |
| | 60 | 25/50 | 662544 16174 | 662611 38322 | 662611 36620 |
| | 80 | 25/50 | 662544 16175 | 662611 38323 | 662611 36615 |
| | 100 | 25/50 | 00234410173 | 00201130323 | 662611 36614 |
| | 120 | 25/50 | 662544 16176 | | 662611 36613 |
| 15 | 36 | 25/50 | 00204410170 | | 662611 36666 |
| 10 | 60 | 25/50 | | | 662611 36663 |
| | | | | | |
| 0 | 80 36 | 25/50 | | | 662611 36662 |
| 6 | | 25/50 | | | 662611 36700 |
| | 40 | 25/50 | | | 662611 36685 |
| | 50 | 25/50 | | 00001100001 | 662611 36684 |
| | 60 | 25/50 | | 662611 38334 | 662611 36683 |
| | 80 | 25/50 | | | 662611 36701 |
| 18 | 36 | 25/50 | | | 662611 36720 |
| | 60 | 25/50 | | | 662611 36696 |
| | 80 | 25/50 | | | 662611 36723 |
| 20 | 36 | 25/50 | 662544 16165 | 662611 38343 | 662611 36710 |
| | 40 | 25/50 | | 662611 38344 | 662611 36709 |
| | 50 | 25/50 | 662544 16167 | | 662611 36711 |
| | 60 | 25/50 | 662544 16168 | 662611 38346 | 662611 36712 |
| | 80 | 25/50 | 662544 16169 | | 662611 36706 |
| | 120 | 25/50 | 662544 16170 | | |
| 24 | 36 | 10/10 | | | 662611 36718 |
| | 40 | 10/10 | | | 662611 36717 |
| | 50 | 10/10 | | | 662611 36725 |
| | 60 | 10/10 | | | 662611 36726 |
| | 80 | 10/10 | | | 662611 36727 |

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For use on dual action and random orbital sanders. The industry's highest performing and broadest selection of paper discs in PSA (pressure sensitive adhesive) disc rolls and individual discs, and hook and loop discs.

Applications:

Size Range: Grit Range: Abrasive Grain: **Attachment Systems: Paper Weights:** Vacuum Holes: **Machine Used:**

Stripping and preparing primed and painted surfaces for finishing, sanding of plastics, fiberglass and composites, bare wood sanding, light weld blending, preparing and finishing metal, and sanding of all gel coat and body filler compounds. 3" – 8"

36 - 1500

Ceramic Alumina, Zirconia Alumina, Aluminum Oxide, Silicon Carbide PSA (pressure-sensitive adhesive), hook and loop Heavyweight - E and F; Lightweight - B, C, and D See product availability charts



ORBITAL SANDER

VERTICAL SHAFT PORTABLE GRINDER

Material/Application-to-Product Recommendation Guide

| | Heavy-Medium Stock Removal | Light Si Finishir | | Heavy-Me Stock Rem | | Light Stock Removal Finishing | Light Stock Removal Finishing | |
|-------------------------------------|-------------------------------|----------------------|--------------|-----------------------|------------------|-------------------------------------|-------------------------------------|--|
| | SG H920 | Blaze A995 | Dry Ice A975 | BlueFire H875P | BlueFire H822 | A2750P | Gold Reserve A296 | |
| Primed, Painted Surfaces | | • | • | • | | • | • | |
| Fiberglass / Composites / Gel Coats | | • | • | • | | • | • | |
| Wood | | • | • | • | | • | • | |
| Metal | • | • | • | | • | • | • | |
| Body Fillers / Compounds / Plastics | | • | • | • | | • | • | |

Application/Grit Recommendation Guide

COARSER (GRINDING)

| 36 | 40 | 60 | 80 | 100 | 120 | 150 | 180 | 220 | 240 | 280 | 320 | 360 | 400 | 500 | 600 | 800 | 1000 | 1200 | 1500 |
|-------|------------|----------|--------|------------|-----------|-----|-----|-----|---------|---------|-----|-----|-----|-----|-----|----------|------------|------|------|
| Rough | ing to Int | termedia | te | | | | | | | | | | | | | | | | |
| | | | Interm | nediate to | Finishing | | | | | | | | | | | | | | |
| | | | | | | | | | Fine Fi | nishing | | | | | | | | | |
| | | | | | | | | | | | | | | | | Ultra Fi | ne Finishi | ng | |

Cross Reference Guide

TOTAL PERFORMANCE

| | BEST | | | BETTER | | GOOD | | | | |
|-----------|-----------------|--------------------------|------------------------|------------------|------------------------------------|------------------------------------|------------------------------------|-----------------------------------|----------------------|--|
| | F-Weight | X-Weight | B- & C-Weight | F-Weight | E-Weight | B-Weight | B-Weight | C-Weight | B-Weight | |
| NORTON | SG H920 | Blaze A995 | Dry Ice A975 | BlueFire H822 | BlueFire H875P | A275 OP | Durite A475 | A290 | Gold Reserve A296 | |
| 3M | 763U | 732U, 737U, 755L 775L | 334U, 734U, 735U | _ | 740I, 745I, 750U, 751U, 751I | 216U, 255L, 236U, 260L, 334U | 405N, 414N, 415U, 426U, 435U | 236U, 316U, NX | 216U, 236U | |
| Hermes | BW114, CR116 | CR116 | _ | BW115, BW184 | BW110, VC153 | VC154-LL | SF168 | VC151-LL, VC152, WA flex 28 | _ | |
| Indasa | — | HT Line | HT Line, RedLine | — | HeavyLine | PlusLine | — | WhiteLine, YellowLine | — | |
| Klingspor | PS61 | _ | PS36 | PS21 | PS36 | PS33, PS73W | PL35, PS14 | PS33 | PL36 | |
| Mirka | — | — | — | — | Royal CRS. Cut | Q-Silver, Royal Micro | CaratFlex, PolarStar | Bulldog Gold, Basecut | Bulldog Gold | |
| SIA | — | — | Siaprime 5550, 1958 | 1820 | 1820, 1919, 1948 | 1940, 1944,1950 | 1748 | 1947, 1960 | — | |
| VSM | — | — | _ | — | KP510E, KP709 | | CP131A | KP911 | — | |

FINER (FINISHING)

INITIAL PRICE



Heavyweight Paper Discs



Best choice for most demanding stock removal applications

SG H920 CERAMIC ALUMINA

- Durable and friable Norton seeded gel ceramic alumina abrasive ensures fast, aggressive, yet cool cutting action and maximum life
- · Strong F-weight paper, synthetically-coated, provides maximum durability and resistance to edge chipping and shedding
- · Closed coat and sharp grain make this a premiere product for metal fabricating and blending; ideal for soldered and welded areas

Better choice for aggressive metalworking applications

BLUEFIRE H822 ZIRCONIA ALUMINA

- · Patented zirconia alumina abrasive provides 2X-3X life over aluminum oxide products
- · Strong F-weight paper, synthetically-coated for excellent durability and chip resistance; pressure sensitive adhesive and linked disc roll format allow easy application, removal, and dispensing
- · Non-stearated (no anti-loading agents) for non-contaminating; often required for prime auto and aerospace paint applications



BLUEFIRE H875P ZIRCONIA ALUMINA

- Next-generation, self-sharpening zirconia alumina abrasive provides 2-3 times the life of aluminum oxide discs, longer life versus original zirconia alumina discs, improved cut rate, and minimal heat
- · Strong E-weight latex/paper backing resists tearing while staying conformable and flexible
- · Open coat contributes to minimized loading

Heavyweight Disc Rolls Non-Vacuum

| | | | TIER: | BEST | BETTER | BETTER |
|------|------|-----------------|--------------------|---------------------|----------------------|---------------------|
| | | | TRADENAME: | SG H920 | BLUEFIRE H822 | BLUEFIRE H875P |
| | | | ABRASIVE: | Ceramic Alumina | Zirconia Alumina | Zirconia Alumina |
| | | PAP | ER BACKING WEIGHT: | F-Weight | F-Weight | E-Weight |
| | | | FASTENING: | PSA | PSA | PSA |
| SIZE | GRIT | ROLLS/STD. PKG. | DISCS/ ROLL | PART # | PART # | PART # |
| 5 | 60 | 4 | 100 | 662611 49873 | 662611 37310 | |
| | 80 | 4 | 100 | 662611 49872 | 662611 37309 | 662611 24977 |
| | 100 | 4 | 100 | 662611 49871 | 662611 37308 | |
| | 120 | 4 | 100 | 662611 49870 | 662611 37307 | |
| 6 | 60 | 4 | 100 | | 662611 37323 | |
| | 80 | 4 | 100 | 662611 49876 | 662611 37322 | 662611 25573 |
| | 120 | 4 | 100 | 662611 49874 | | |
| 8 | 100 | 4 | 50 | 662611 49879 | | |
| | 120 | 4 | 50 | | 662611 37333 | |

Refer to the Sanding Accessories section for back-up pads and accessories.





Heavyweight Paper Discs

| Teavywe | iyin i a | | | |
|-----------------------------|----------|-----------------------|---------------------|-----------------------------|
| Stick & San Individual D | Discs | | | |
| Non-Vacuui | m and va | | | |
| | | | BETTER | BETTER |
| | | TRADENAME: | BLUEFIRE H875P | BLUEFIRE H875P |
| | | ABRASIVE: | | Zirconia Alumina |
| | | PAPER BACKING WEIGHT: | | E-Weight |
| | | FASTENING: | | PSA Vacuum |
| SIZE | GRIT | PKG./CASE | PART # | PART # |
| 5 | 36 | 50/200 | 662611 25436 | |
| | 40 | 50/200 | 662611 25307 | |
| | 80 | 50/200 | 662611 25244 | |
| | | | | 0 0 0 0 0 6" x 6 Hole |
| | | | | Die #3371 |
| 6 | 36 | 50/200 | 662611 23575 | |
| | 40 | 50/200 | 662611 23574 | 662611 23580 |
| | 80 | 50/200 | 662611 23573 | |
| | | | | |
| | | | | 8" x 8 Hole Die #3370 |
| 8 | 36 | 25/100 | 662611 23578 | 662611 23584 |
| - | 40 | 25/100 | 662611 23577 | |
| | 80 | 25/100 | 662611 23576 | 662611 23582 |
| | | 20,.00 | | |

Hook & Loop Individual Discs

| Non-Vac | uum and V | /accum | 2 | | |
|---------|-----------|-----------------------|---------------------|-----------------------|------------------|
| | | TIER: | BEST | BETTER | BETTER |
| | | TRADENAME: | SG H920 | BLUEFIRE H875P | BLUEFIRE H875P |
| | | ABRASIVE: | Ceramic Alumina | Zirconia Alumina | Zirconia Alumina |
| | | PAPER BACKING WEIGHT: | F-Weight | E-Weight | E-Weight |
| | | FASTENING: | Hook & Loop | Hook & Loop | Hook & Loop |
| | | OTHER: | | | Vacuum |
| SIZE | GRIT | PKG./CASE | PART # | PART # | PART # |
| 5 | 40 | 25/100 | | 662611 25684 | |
| | 60 | 50/250 | 662611 49864 | | |
| | 80 | 50/250 | 662611 49865 | 662611 25444 * | |
| | 100 | 50/250 | 662611 49866 | | |
| | 120 | 50/250 | 662611 49867 | | |
| 6 | 36 | 25/100 | | 662611 23590 | |
| | 40 | 25/100 | | 662611 23589 | |
| | 80 | 25/100 | | 662611 23588 | |
| | | | | | |



25/100 Packaging Standards: Min. / Std. Pkg. * H875P = 25/100

25/100

25/100

36

40

80

8

Distributed by Applifast.

662611**23593**

662611**23592**

662611**23591**



Lightweight Paper Discs



Less dust; more productivity

NEW

MULTI-AIR CYCLONIC HOOK & LOOP VACUUM

- Multi-Air Cyclonic precision laser-cut, spiral vacuum hole design maximizes dust extraction for cleanest work environment and less potential for contamination, while delivering coolest, fastest, most consistent cut rate, and longest life of any paper disc
- Water-based, non-pigmented stearate No-Fil coating and open coat provide maximum load resistance and no color transfer to work
- Exceptional choice for the most demanding paper disc sanding applications; hook and loop back for easy disc mounting and changing

NORTON

| 3 x 0 80 50/200 77696095005 120 50/200 77696095006 150 50/200 77696095008 220 50/200 77696095009 240 50/200 77696095010 320 50/200 77696095011 400 50/200 77696095012 500 50/200 77696095013 600 50/200 77696095014 800 50/200 77696095015 1000 50/200 77696095016 5x 11/16 80 50/200 77696095016 120 50/200 63642597500 77696007745 120 50/200 63642597502 77696007755 180 50/200 63642597503 77696007756 220 50/200 63642597503 77696007756 220 50/200 77696007756 220 220 50/200 77696007765 320 320 50/200 77696007765 320 320 50/200 </th <th></th> <th></th> <th></th> <th>NEW</th> <th>ANTER STREET, STREET,</th> | | | | NEW | ANTER STREET, |
|--|----------------|-------|-----------------|--------------------------|---|
| TRADENAME: BLAZE A995 NO-FIL DRY ICE A975 NO-FIL ABRASIVE: Caramic Alumina Ceramic Alumina PAPER BACKING WEIGHT: C-& D-Weight B-& C-Weight FASTENING: Hook & Loop 07HER: OTHER: P-Graded P-Graded SIZE GRIT PKG/CASE PART # SX 0 80 50/200 77696095005 120 50/200 77696095006 150 50/200 77696095010 220 50/200 77696095010 320 50/200 77696095011 320 50/200 77696095012 500 50/200 77696095013 600 50/200 77696095015 1000 50/200 77696095015 1000 50/200 77696007755 180 50/200 77696007755 180 50/200 77696007755 120 50/200 63642597501 77696007755 120 50/200 63642597502 77696007776 | | | | | ARREN STREET, |
| TRADENAME: BLAZE A995 NO-FIL DRY ICE A975 NO-FIL ABRASIVE: Caramic Alumina Ceramic Alumina PAPER BACKING WEIGHT: C-& D-Weight B-& C-Weight FASTENING: Hook & Loop 07HER: OTHER: P-Graded P-Graded SIZE GRIT PKG/CASE PART # SX 0 80 50/200 77696095005 120 50/200 77696095006 150 50/200 77696095010 220 50/200 77696095010 320 50/200 77696095011 320 50/200 77696095012 500 50/200 77696095013 600 50/200 77696095015 1000 50/200 77696095015 1000 50/200 77696007755 180 50/200 77696007755 180 50/200 77696007755 120 50/200 63642597501 77696007755 120 50/200 63642597502 77696007776 | | | | | · Constanting |
| TRADENAME: BLAZE A995 NO-FIL DRY ICE A975 NO-FIL ABRASIVE: Caramic Alumina Ceramic Alumina PAPER BACKING WEIGHT: C-& D-Weight B-& C-Weight FASTENING: Hook & Loop 07HER: OTHER: P-Graded P-Graded SIZE GRIT PKG/CASE PART # SX 0 80 50/200 77696095005 120 50/200 77696095006 150 50/200 77696095010 220 50/200 77696095010 320 50/200 77696095011 320 50/200 77696095012 500 50/200 77696095013 600 50/200 77696095015 1000 50/200 77696095015 1000 50/200 77696007755 180 50/200 77696007755 180 50/200 77696007755 120 50/200 63642597501 77696007755 120 50/200 63642597502 77696007776 | | | | | ALL ALL AND ALL AND A |
| ABRASIVE: Ceramic Alumina Ceramic Alumina PAPER BACKING WEIGHT: C-& D-Weight B-& C-Weight FASTENING: Hook & Loop Hook & Loop Stze GRIT PKG/CASE PART # 3 x 0 80 50/200 77696095005 120 50/200 77696095006 150 50/200 77696095007 180 50/200 77696095008 220 50/200 77696095008 220 50/200 77696095011 30 50/200 77696095011 30 50/200 77696095012 500 50/200 77696095013 600 50/200 77696095014 800 50/200 77696095015 1000 50/200 77696095015 1000 50/200 77696095015 1000 50/200 77696097745 120 50/200 63642597502 77696007755 180 50/200 77696007766 220 50/200 | | | TIER: | BEST | BEST |
| PAPER BACKING WEIGHT: C- & D-Weight B- & C-Weight FASTENING: Hook & Loop Hook & Loop OTHER: P-Graded P-Graded SIZE GRIT PKG/CASE PART # 3 x 0 80 50/200 77696095005 120 50/200 77696095006 150 50/200 77696095008 220 50/200 77696095009 240 50/200 77696095001 320 50/200 77696095011 400 50/200 77696095012 500 50/200 77696095013 500 50/200 77696095014 800 50/200 77696095015 1000 50/200 77696095015 1000 50/200 63642597501 77696007753 150 50/200 63642597503 77696007755 120 50/200 63642597503 77696007760 220 50/200 63642597503 77696007763 160 50/200 7769600776 | | | TRADENAME: | BLAZE A995 NO-FIL | DRY ICE A975 NO-FIL |
| FASTENING: Hook & Loop Hook & Loop 0THER: P-Graded P-Graded SIZE GRIT PKG/CASE PART # 3 x 0 80 50/200 77696095005 120 50/200 77696095006 150 50/200 77696095007 180 50/200 77696095009 240 50/200 77696095010 320 50/200 77696095012 500 50/200 77696095012 500 50/200 77696095012 500 50/200 77696095013 600 50/200 77696095014 800 50/200 77696095015 1000 50/200 77696095015 1000 50/200 63642597500 77696007753 125 50/200 63642597503 77696007755 180 50/200 63642597503 77696007762 220 50/200 63642597503 77696007765 180 50/200 77696007765 500 | | | ABRASIVE: | Ceramic Alumina | Ceramic Alumina |
| OTHER: P-Graded P-Graded SIZE BRIT PK6/CASE PART # PART # 3 x 0 80 50/200 77696095006 150 50/200 77696095007 180 50/200 77696095008 220 50/200 77696095010 320 50/200 77696095010 320 50/200 77696095011 400 50/200 77696095012 500 50/200 77696095013 600 50/200 77696095014 800 50/200 77696095015 1000 50/200 77696095016 5 x 11/16 80 50/200 77696097753 150 50/200 63642597501 77696007755 180 50/200 63642597503 77696007755 180 50/200 77696007763 220 220 50/200 77696007765 230 50/200 280 50/200 77696007765 500 500/200 7769600776 | | PAPER | BACKING WEIGHT: | | B- & C-Weight |
| SIZE GRIT PKG/CASE PART # PART # 3 x 0 80 50/200 77696095005 120 50/200 77696095006 150 50/200 77696095007 180 50/200 77696095009 220 50/200 77696095009 240 50/200 77696095010 320 50/200 77696095012 500 50/200 77696095013 600 50/200 77696095014 800 50/200 77696095015 1000 50/200 77696095014 800 50/200 77696095015 1000 50/200 63642597500 77696007745 120 50/200 63642597502 77696007755 180 50/200 63642597503 77696007756 220 50/200 63642597504 77696007756 220 50/200 77696007765 320 50/200 220 50/200 77696007765 320 50/200 7 | | | FASTENING: | | Hook & Loop |
| 3 x 0 80 50/200 77696095005 120 50/200 77696095006 150 50/200 77696095008 220 50/200 77696095009 240 50/200 77696095010 320 50/200 77696095011 400 50/200 77696095012 500 50/200 77696095013 600 50/200 77696095014 800 50/200 77696095015 1000 50/200 77696095016 5x 11/16 80 50/200 77696095016 120 50/200 63642597500 77696007745 120 50/200 63642597502 77696007755 180 50/200 63642597503 77696007756 220 50/200 63642597504 77696007756 220 50/200 77696007756 320 220 50/200 77696007765 320 320 50/200 77696007765 320 320 50/200 </td <td></td> <td></td> <td>OTHER:</td> <td></td> <td></td> | | | OTHER: | | |
| 120 50/200 77696095006 150 50/200 77696095007 180 50/200 77696095008 220 50/200 77696095010 320 50/200 77696095011 400 50/200 77696095012 500 50/200 77696095013 600 50/200 77696095014 800 50/200 77696095015 1000 50/200 77696095016 5x 11/16 80 50/200 63642597500 125 50/200 63642597502 77696007755 180 50/200 63642597502 77696007756 120 50/200 63642597502 77696007756 220 50/200 63642597503 77696007756 220 50/200 77696007762 320 320 50/200 77696007765 320 320 50/200 77696007765 500 500 50/200 77696007765 500 50/200 77696007765 <td>SIZE</td> <td>GRIT</td> <td>PKG/CASE</td> <td>PART #</td> <td>PART #</td> | SIZE | GRIT | PKG/CASE | PART # | PART # |
| 150 50/200 77696095007 180 50/200 77696095008 220 50/200 77696095010 320 50/200 77696095011 400 50/200 77696095012 500 50/200 77696095013 600 50/200 77696095013 600 50/200 77696095014 800 50/200 77696095015 1000 50/200 77696095015 1000 50/200 63642597500 77696095015 1000 50/200 63642597501 77696007745 120 50/200 63642597502 77696007756 220 50/200 63642597503 77696007765 180 50/200 77696007763 240 220 50/200 77696007763 240 320 50/200 77696007763 240 400 50/200 77696007763 20 320 50/200 77696007763 20 500 50/200 | 3 x 0 | 80 | 50/200 | | 776960 95005 |
| 180 50/200 77696095008 220 50/200 77696095010 320 50/200 77696095011 400 50/200 77696095012 500 50/200 77696095013 600 50/200 77696095014 800 50/200 77696095014 800 50/200 77696095014 800 50/200 77696095015 1000 50/200 77696095016 1000 50/200 63642597500 77696095016 120 50/200 63642597502 77696007745 120 50/200 63642597503 77696007756 220 50/200 63642597504 77696007765 180 50/200 77696007765 320 240 50/200 77696007765 320 320 50/200 77696007765 320 320 50/200 77696007765 320 400 50/200 77696007765 500 50/200 77696007765 | | 120 | 50/200 | | 776960 95006 |
| 220 50/200 77696095009 240 50/200 77696095010 320 50/200 77696095011 400 50/200 77696095012 500 50/200 77696095013 600 50/200 77696095014 800 50/200 77696095014 800 50/200 77696095015 1000 50/200 77696095016 5x 11/16 80 50/200 63642597500 77696095016 (125mm x 18mm) 120 50/200 63642597502 77696007755 180 50/200 63642597503 77696007756 220 50/200 63642597504 77696007765 240 50/200 77696007763 400 50/200 77696007763 320 50/200 77696007763 1000 50/200 77696007763 400 50/200 77696007765 500 50/200 77696007765 500 50/200 77696007765 500 50/200 77696007773 | | 150 | 50/200 | | |
| 240 50/200 77696095010 320 50/200 77696095011 400 50/200 77696095012 500 50/200 77696095013 600 50/200 77696095015 1000 50/200 77696095015 1000 50/200 77696095015 1000 50/200 77696007745 120 50/200 63642597500 77696007745 120 50/200 63642597502 77696007745 120 50/200 63642597503 77696007755 180 50/200 63642597504 77696007765 220 50/200 63642597504 77696007762 220 50/200 77696007765 500 220 50/200 77696007765 500 500 50/200 77696007765 500 500 50/200 77696007765 500 500 50/200 77696007765 500 6x 11/16 80 50/200 776960077765 <td></td> <td>180</td> <td>50/200</td> <td></td> <td>77696095008</td> | | 180 | 50/200 | | 776960 95008 |
| 320 50/200 77696095011 400 50/200 77696095012 500 50/200 77696095013 600 50/200 77696095014 800 50/200 77696095016 1000 50/200 77696095016 1000 50/200 77696095016 1000 50/200 77696007745 120 50/200 63642597502 77696007753 150 50/200 63642597502 77696007755 180 50/200 63642597503 77696007756 220 50/200 63642597504 77696007760 280 50/200 77696007763 400 400 50/200 77696007763 400 50/200 77696007768 500 50/200 77696007768 600 50/200 77696007768 600 50/200 776960077768 600 50/200 77696007778 1000 50/200 77696007773 150 | | 220 | 50/200 | | 776960 95009 |
| 400 50/200 77696095012 500 50/200 77696095013 600 50/200 77696095014 800 50/200 77696095015 1000 50/200 77696095016 5 x 11/16 80 50/200 63642597500 77696007745 120 50/200 63642597502 77696007755 180 50/200 63642597502 77696007755 180 50/200 63642597503 77696007756 220 50/200 63642597504 77696007760 280 50/200 63642597504 77696007762 320 50/200 77696007763 400 50/200 77696007763 300 50/200 77696007763 280 50/200 77696007768 600 50/200 77696007768 600 50/200 77696007768 800 50/200 77696007778 1000 50/200 63642597505 77696007778 1000 50/200 7696007773 150 50/200 63642597506 | | 240 | 50/200 | | 77696095010 |
| 500 50/200 77696095013 600 50/200 77696095014 800 50/200 77696095015 1000 50/200 77696095016 5 x 11/16 80 50/200 63642597500 77696007745 (125mm x 18mm) 120 50/200 63642597502 77696007755 180 50/200 63642597503 77696007756 220 50/200 63642597504 77696007760 280 50/200 77696007760 280 50/200 77696007762 320 50/200 77696007766 280 50/200 77696007768 600 50/200 77696007768 600 50/200 77696007768 600 50/200 776960077791 800 50/200 776960077793 1000 50/200 63642597505 77696007779 120 50/200 63642597506 77696007779 120 50/200 63642597505 77696007774 150 50/200 63642597507 77696007774 | | 320 | 50/200 | | 776960 95011 |
| 600 50/200 77696095014 800 50/200 77696095015 1000 50/200 77696095016 5 x 11/16 80 50/200 63642597500 77696007745 (125mm x 18mm) 120 50/200 63642597502 77696007753 150 50/200 63642597503 77696007756 220 50/200 63642597504 77696007756 220 50/200 63642597504 77696007762 280 50/200 77696007762 320 320 50/200 77696007763 400 50/200 77696007763 400 50/200 77696007763 600 50/200 77696007765 500 50/200 77696007765 600 50/200 77696007763 1000 50/200 776960077793 1000 50/200 63642597505 77696007773 150 50/200 63642597506 77696007773 150 50/200 63642597508 | | 400 | 50/200 | | 776960 95012 |
| 800 50/200 77696095015 1000 50/200 77696095016 5 x 11/16 80 50/200 63642597500 77696007745 (125mm x 18mm) 120 50/200 63642597501 77696007753 150 50/200 63642597502 77696007755 180 50/200 63642597503 77696007756 220 50/200 63642597504 77696007762 280 50/200 77696007762 320 50/200 77696007762 280 50/200 77696007763 400 50/200 77696007765 500 50/200 77696007765 500 50/200 77696007763 400 50/200 77696007763 400 50/200 77696007763 100 50/200 776960077793 1000 50/200 776960077793 1000 50/200 77696007773 150 50/200 63642597505 77696007775 220 50/200 63642597507 77696007775 120 50/200 6364 | | 500 | 50/200 | | 776960 95013 |
| 1000 50/200 77696095016 5 x 11/16 (125mm x 18mm) 80 50/200 63642597500 77696007745 120 50/200 63642597501 77696007753 150 50/200 63642597502 77696007755 180 50/200 63642597503 77696007756 220 50/200 63642597504 77696007766 240 50/200 77696007763 400 320 50/200 77696007763 400 50/200 77696007763 400 50/200 77696007763 400 50/200 77696007763 400 50/200 77696007763 600 50/200 77696007763 1000 50/200 77696007779 800 50/200 77696007779 120 50/200 77696007773 150 50/200 63642597505 77696007774 180 50/200 63642597507 77696007775 220 50/200 63642597508 77696007 | | 600 | 50/200 | | 776960 95014 |
| 5 x 11/16 (125mm x 18mm) 80 50/200 63642597500 77696007745 120 50/200 63642597501 77696007753 150 50/200 63642597502 77696007755 180 50/200 63642597503 77696007756 220 50/200 63642597504 77696007757 240 50/200 77696007762 320 320 50/200 77696007762 320 320 50/200 77696007765 500 500 50/200 77696007765 500 500 50/200 77696007765 500 500 50/200 77696007765 500 600 50/200 77696007765 500 600 50/200 776960077791 800 50/200 776960077795 6 x 11/16 80 50/200 63642597505 77696007773 150 50/200 63642597507 77696007774 180 50/200 63642597508 77696007775 220 50/200 636425 | | 800 | 50/200 | | 776960 95015 |
| (125mm x 18mm) 120 50/200 63642597501 77696007753 150 50/200 63642597502 77696007755 180 50/200 63642597503 77696007756 220 50/200 63642597504 77696007757 240 50/200 77696007762 320 280 50/200 77696007762 320 50/200 77696007765 500 50/200 77696007763 400 50/200 77696007765 500 50/200 77696007765 500 50/200 77696007763 600 50/200 77696007763 1000 50/200 77696007793 1000 50/200 77696007773 120 50/200 63642597505 77696007773 150 50/200 63642597507 77696007775 120 50/200 63642597508 77696007775 120 50/200 63642597507 77696007775 120 50/200 63642597508 | | 1000 | 50/200 | | 776960 95016 |
| 150 50/200 63642597502 77696007755 180 50/200 63642597503 77696007756 220 50/200 63642597504 77696007757 240 50/200 77696007762 280 50/200 77696007763 400 50/200 77696007763 400 50/200 77696007768 500 50/200 77696007768 600 50/200 77696007768 600 50/200 77696007768 600 50/200 77696007768 600 50/200 77696007778 1000 50/200 77696007795 6 x 11/16 80 50/200 63642597505 120 50/200 63642597506 77696007773 150 50/200 63642597508 77696007775 220 50/200 63642597508 77696007775 220 50/200 63642597509 77696007776 240 50/200 63642597509 77696007776 < | 5 x 11/16 | 80 | 50/200 | 636425 97500 | 776960 07745 |
| 180 50/200 63642597503 77696007756 220 50/200 63642597504 77696007760 240 50/200 77696007762 280 50/200 77696007763 320 50/200 77696007763 400 50/200 77696007763 500 50/200 77696007768 600 50/200 77696007768 600 50/200 77696007768 600 50/200 77696007768 600 50/200 77696007768 600 50/200 77696007778 1000 50/200 63642597505 77696007779 120 50/200 63642597506 77696007774 150 50/200 63642597508 77696007774 180 50/200 63642597509 77696007776 220 50/200 63642597509 77696007776 240 50/200 7696007777 280 50/200 7696007777 | (125mm x 18mm) | 120 | 50/200 | 636425 97501 | 776960 07753 |
| 220 50/200 63642597504 77696007757 240 50/200 77696007760 280 50/200 77696007762 320 50/200 77696007763 400 50/200 77696007765 500 50/200 77696007768 600 50/200 77696007793 1000 50/200 77696007793 1000 50/200 77696007793 1000 50/200 77696007773 150 50/200 63642597505 77696007773 150 50/200 63642597508 77696007774 180 50/200 63642597508 77696007775 220 50/200 63642597508 77696007775 220 50/200 63642597509 77696007776 240 50/200 77696007777 280 50/200 | | 150 | 50/200 | 636425 97502 | 776960 07755 |
| 240 50/200 77696007760 280 50/200 77696007762 320 50/200 77696007763 400 50/200 77696007765 500 50/200 77696007768 600 50/200 77696007791 800 50/200 77696007793 1000 50/200 77696007795 6 x 11/16 80 50/200 63642597505 120 50/200 63642597505 77696007770 150 50/200 63642597505 77696007774 180 50/200 63642597508 77696007774 180 50/200 63642597509 77696007775 220 50/200 63642597509 77696007775 220 50/200 63642597509 77696007776 240 50/200 77696007777 280 50/200 77696007777 | | 180 | 50/200 | 636425 97503 | 776960 07756 |
| 280 50/200 77696007762 320 50/200 77696007763 400 50/200 77696007765 500 50/200 77696007768 600 50/200 77696007791 800 50/200 77696007793 1000 50/200 77696007793 1000 50/200 63642597505 6 x 11/16 80 50/200 63642597506 120 50/200 63642597505 77696007774 150 50/200 63642597507 77696007775 220 50/200 63642597508 77696007775 220 50/200 63642597509 77696007775 220 50/200 63642597509 77696007775 220 50/200 77696007776 240 50/200 240 50/200 77696007777 280 50/200 | | 220 | 50/200 | 636425 97504 | 776960 07757 |
| 320 50/200 77696007763 400 50/200 77696007765 500 50/200 77696007768 600 50/200 77696007791 800 50/200 77696007793 1000 50/200 77696007793 1000 50/200 77696007793 1000 50/200 63642597505 6 x 11/16 80 50/200 63642597506 120 50/200 63642597506 77696007773 150 50/200 63642597507 77696007775 220 50/200 63642597509 77696007775 220 50/200 63642597509 77696007775 220 50/200 63642597509 77696007776 240 50/200 77696007777 280 50/200 77696007778 | | 240 | 50/200 | | 776960 07760 |
| 400 50/200 77696007765 500 50/200 77696007768 600 50/200 77696007791 800 50/200 77696007793 1000 50/200 77696007793 1000 50/200 77696007795 6 x 11/16 80 50/200 63642597505 120 50/200 63642597506 77696007773 150 50/200 63642597507 77696007775 180 50/200 63642597508 77696007775 220 50/200 63642597509 77696007776 240 50/200 7696007777 280 50/200 | | 280 | 50/200 | | 776960 07762 |
| 500 50/200 77696007768 600 50/200 77696007791 800 50/200 77696007793 1000 50/200 77696007795 6 x 11/16 80 50/200 63642597505 120 50/200 63642597506 77696007773 150 50/200 63642597507 77696007774 180 50/200 63642597508 77696007775 220 50/200 63642597508 77696007776 240 50/200 7696007777 280 50/200 | | 320 | 50/200 | | 776960 07763 |
| 600 50/200 77696007791 800 50/200 77696007793 1000 50/200 77696007795 6 x 11/16 80 50/200 63642597505 77696007770 (150mm x 18mm) 120 50/200 63642597506 77696007773 150 50/200 63642597507 77696007774 180 50/200 63642597508 77696007776 220 50/200 63642597509 77696007776 240 50/200 77696007777 280 50/200 | | 400 | 50/200 | | 776960 07765 |
| 800 50/200 77696007793 1000 50/200 77696007795 6 x 11/16 80 50/200 63642597505 77696007770 (150mm x 18mm) 120 50/200 63642597506 77696007773 150 50/200 63642597507 77696007774 180 50/200 63642597508 77696007775 220 50/200 63642597509 77696007776 240 50/200 77696007777 280 50/200 | | 500 | 50/200 | | 776960 07768 |
| 1000 50/200 77696007795 6 x 11/16 (150mm x 18mm) 80 50/200 63642597505 77696007770 120 50/200 63642597506 77696007773 150 50/200 63642597507 77696007774 180 50/200 63642597508 77696007775 220 50/200 63642597509 77696007776 240 50/200 77696007777 280 50/200 77696007778 | | 600 | 50/200 | | 776960 07791 |
| 6 x 11/16 80 50/200 63642597505 77696007770 (150mm x 18mm) 120 50/200 63642597506 77696007773 150 50/200 63642597507 77696007774 180 50/200 63642597508 77696007774 180 50/200 63642597508 77696007775 220 50/200 63642597509 77696007776 240 50/200 77696007777 280 50/200 77696007778 | | 800 | 50/200 | | 776960 07793 |
| 120 50/200 63642597506 77696007773 150 50/200 63642597507 77696007774 180 50/200 63642597508 77696007775 220 50/200 63642597509 77696007776 240 50/200 63642597509 77696007776 280 50/200 776960077778 | | 1000 | 50/200 | | 776960 07795 |
| 150 50/200 63642597507 77696007774 180 50/200 63642597508 77696007775 220 50/200 63642597509 77696007776 240 50/200 77696007777 280 50/200 | 6 x 11/16 | 80 | 50/200 | 636425 97505 | 776960 07770 |
| 180 50/200 63642597508 77696007775 220 50/200 63642597509 77696007776 240 50/200 77696007777 280 50/200 77696007778 | (150mm x 18mm) | 120 | 50/200 | 636425 97506 | 776960 07773 |
| 220 50/200 63642597509 77696007776 240 50/200 77696007777 280 50/200 77696007778 | | 150 | 50/200 | 636425 97507 | 776960 07774 |
| 240 50/200 77696007777 280 50/200 77696007778 | | 180 | 50/200 | 636425 97508 | 776960 07775 |
| 240 50/200 77696007777 280 50/200 77696007778 | | 220 | 50/200 | 636425 97509 | 776960 07776 |
| 280 50/200 776960 07778 | | | | | |
| | | 280 | 50/200 | | 776960 07778 |
| | | 320 | 50/200 | | 77696007781 |
| 400 50/200 776960 07784 | | | | | |
| 500 50/200 776960 07785 | | 500 | | | |
| 600 50/200 776960 07786 | | 600 | | | |
| 800 50/200 776960 07787 | | | | | |
| 1000 50/200 776960 07788 | | 1000 | | | 776960 07788 |



Improved Dust Extraction / Increased Productivity The upgrade to precise, flat, laser-cut holes instead of die-punched holes, dramatically increases surface area contact allowing Norton Multi-Air Cyclonic discs to improve productivity by 32% versus conventional multi-hole sanding and by 60% versus non-vacuum sanding.

The end result is more holes for dust extraction, more abrasive coverage for a better cut and no deformation — for full surface contact utilizing all the cutting power of the premium ceramic grain.

Refer to the Sanding Accessories section for back-up pads and accessories.



Lightweight Paper Discs



Best choice for the most demanding coarse grit stripping, blending, and sanding applications

BLAZE A995 NO-FIL CERAMIC ALUMINA

- P-graded, next-generation sharper-edged ceramic aluminum oxide abrasive ensures fastest cut rate and longest life of any paper disc
- Unique polyester-reinforced, D-weight latex saturated backing provides maximum tear strength while retaining flexibility
- Water-based, non-pigmented stearate No-Fil coating and open coat provide maximum load resistance and no color transfer to work

Best choice for the most demanding sanding applications

DRYICE A975 NO-FIL CERAMIC ALUMINA

- · P-graded seeded-gel ceramic alumina abrasive for fastest cut rate and longest life of any paper disc
- Unique fiber reinforced, flexible B or C-weight latex saturated backing delivers 50% 60% improvement in tear strength while retaining flexibility
- Water-based, non-pigmented stearate No-Fil coating and open coat provide maximum load resistance and no color transfer to work

Better choice for high-performance dry finishing on all materials

A2750P NO-FIL ALUMINUM OXIDE

- Premium P-graded, heat treated, toughened aluminum oxide abrasive delivers superior life, fast cut rate, consistent finish
- Unique fiber reinforced, flexible B-weight latex saturated backing provides 50% 60% improvement in tear strength while retaining flexibility
- Water-based, non-pigmented stearate No-Fil coating and open coat provide maximum load resistance and no color transfer to work
- 5" and 6" individual PSA discs in fine grits have a tabbed, white translucent liner to protect the PSA adhesive from airborne contaminants; the tab allows easier removal of the paper liner



DURITE A475 NO-FIL SILICON CARBIDE

- Sharp and hard, P-graded, silicon carbide abrasive easily penetrates the hardest material and veneers to create finer finishes where finish is critical
- · Flexible, B-weight fiber reinforced, latex paper backing provides flexibility and resistance to tearing
- Water-based, non-pigmented stearate No-Fil coating and open coat provide maximum load resistance and no color transfer to work

Good choice for sanding a broad range of substrates including primed or painted surfaces, wood, composites, aluminum, and ferrous metals

GOLD RESERVE A296 NO-FIL ALUMINUM OXIDE

- · P-graded premium aluminum oxide abrasive produces a quick, cool cut and a more consistent surface finish
- Strong B-weight latex/paper backing resists tearing while staying conformable and flexible
- · Water-based, non-loading (No-Fil) stearate coating minimizes clogging and increases disc life







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Lightweight Paper Discs

| Light | | d (PSA) Disc Ro m | lls | | 0 | OK | | 2 |
|-------|------|-------------------------|---------------------|---------------------|-----------------------|-----------------------|----------------------|---------------------|
| | | | TIER: TRADENAME: | BEST DRYICE A975 | BETTER A2750P | BETTER DURITE A475 | GOOD GOLD RESERVE | G00D A290 |
| | | | | NO-FIL | NO-FIL | NO-FIL | A296 NO-FIL | NO-FIL |
| | | | | Ceramic Alumina | Aluminum Oxide | Silicon Carbide | Aluminum Oxide | Aluminum Oxide |
| | | PAPER BACK | ING WEIGHT: | B- & C-Weight | B-Weight | B-Weight | B-Weight | C-Weight |
| | | | FASTENING: | | PSA | PSA | PSA | PSA |
| | | 20110/ | | P-Graded | P-Graded | P-Graded | P-Graded | P-Graded |
| SIZE | GRIT | ROLLS/ STD. PKG | DISCS/ . Roll | PART # | PART # | PART # | PART # | PART # |
| 3-1/2 | 80 | 4 | 100 | | 662611 36376 | | | |
| 0 1/2 | 120 | 4 | 100 | | 662611 36375 | | | |
| | 180 | 4 | 100 | | 662611 36373 | | | |
| | 220 | 4 | 100 | | 662611 36372 | | | |
| | 280 | 4 | 100 | | 662611 36370 | | | |
| | 320 | 4 | 100 | | 662611 36369 | | | |
| | 400 | 4 | 100 | | 66261136368 | | | |
| 5 | 60 | 4 | 100 | | | | | 662611 49831 |
| | 80 | 4 | 100 | 662611 40502 | 662611 31464 * | 662544 87415 | 662611 83806 | 662611 49830 |
| | 100 | 4 | 100 | 662611 40501 | 662611 31463 * | 662544 87417 | 662611 83807 | 662611 49829 |
| | 120 | 4 | 100 | 662611 40500 | 662611 31462 * | 662544 87418 | 662611 83808 | 662611 49828 |
| | 150 | 4 | 100 | 662611 40499 | 662611 31461 * | 662544 87440 | 662611 83809 | 662611 49827 |
| | 180 | 4 | 100 | 662611 40498 | 662611 31460 * | 662544 87441 | 662611 83810 | 662611 49826 |
| | 220 | 4 | 100 | 662611 42474 | 662611 31459 * | 662544 87442 | 662611 83811 | 662611 49825 |
| | 240 | 4 | 100 | 662611 55380 | 662611 31458 * | 662544 87443 | | 662611 49824 |
| | 280 | 4 | 100 | 662611 55379 | 662611 31457 * | | | 662611 49823 |
| | 320 | 4 | 100 | 662611 55378 | 662611 31456 * | 662544 87444 | 662611 83813 | 662611 49822 |
| | 400 | 4 | 100 | 662611 55377 | 662611 31454 * | 662610 65293 | 662611 83814 | 662611 49821 |
| | 500 | 4 | 100 | | 662611 31453 * | | | |
| | 600 | 4 | 100 | 666233 05608 | 662611 31452 * | 662544 21217 | | |
| | 800 | 4 | 100 | 662544 80230 | 662611 31451 * | | | |
| ĵ | 60 | 4 | 100 | | | | | 662611 49847 |
| | 80 | 4 | 100 | 662611 40512 | 662611 31481 * | 662544 87446 | 662611 83815 | 662611 49842 |
| | 100 | 4 | 100 | 662611 40511 | 662611 31480 * | | 662611 83816 | 662611 49841 |
| | 120 | 4 | 100 | 662611 40510 | 662611 31479 * | 662544 87447 | 662611 83817 | 662611 49840 |
| | 150 | 4 | 100 | 662611 40509 | 662611 31478 * | | 662611 83818 | 662611 49839 |
| | 180 | 4 | 100 | 662611 40508 | 662611 31477 * | 662544 87448 | 662611 83819 | 662611 49838 |
| | 220 | 4 | 100 | 662611 48340 | 662611 31476 * | 662544 87449 | 662611 83820 | 662611 49837 |
| | 240 | 4 | 100 | 662611 55376 | 662611 31475 * | | 662611 83821 | 662611 49836 |
| | 280 | 4 | 100 | | 662611 31474 * | | | 662611 49835 |
| | 320 | 4 | 100 | 662611 55374 | 662611 31473 * | 662544 87450 | 662611 83822 | 662611 49834 |
| | 400 | 4 | 100 | 662611 55373 | 662611 31471 * | | 662611 83823 | 662611 49833 |
| | 500 | 4 | 100 | 636425 06198 | 662611 31470 * | | | |
| | 600 | 4 | 100 | 636425 06199 | 662611 31469 * | | 662610 40261 | |
| | 800 | 4 | 100 | 636425 06200 | 662611 31468 * | | 636425 06164 | |
| } | 80 | 4 | 100 | | 662611 31617 | | | |
| | 120 | 4 | 100 | | 662611 31615 | | | |
| | 150 | 4 | 100 | | 662611 31614 | | | |
| | 180 | 4 | 100 | | 662611 31613 | | | |
| | 220 | 4 | 100 | | 662611 31612 | | | |
| | 320 | 4 lards A275 = 6, | 100 | | 662611 31609 | | | |

Refer to the Sanding Accessories section for back-up pads and accessories.





Lightweight Paper Discs

| | weigh | nd (PSA) It Disc Ro | olls | | • | | | Indiv | & Sar idual E Vacuu | | |
|------|-----------|------------------------|------------|--|-----------|------------|--|-------|---------------------------|--------------------|--|
| | | | | | | | GOOD | | | | BETTER |
| | | | | A2750P NO-FIL | | | A290 NO-FIL | | | | A2750P NO-FIL |
| | | | | Aluminum Oxide | | | Aluminum Oxide | r | | | Aluminum Oxide |
| | | PAPER BACKIN | ASTENING: | | | | C-Weight PSA | F | APER BAU | KING WEIGHT: | PSA Tabbed |
| | | 1 | OTHER: | | | | P-Graded | | | | P-Graded |
| | | ROLLS/ | DISCS/ | | ROLLS/ | DISCS/ | | | | MIN./ | |
| SIZE | GRIT | STD. PKG. | | PART # | STD. PKG. | ROLL | PART # | SIZE | GRIT | STD PKG. | PART # |
| | | | | 0 | | | 0 | 5 | 1000 | 100/400 | 662611 31450 |
| | | | | | | | | | 1200 | 100/400 | 662611 31449 |
| | | | | \smile | | | \smile | 6 | 1000 | 100/400 | 662611 31467 |
| | | | | 5" x 5 Hole | | | 5" x 5 Hole | | 1200 1500 | 100/400 100/400 | 662611 31466 662611 31465 |
| _ | | | | Die #3329 | | 100 | Die #3329 | | 1000 | 100/400 | 00201131403 |
| 5 | 60 | 0 | 100 | 00001101400 | 4 | 100 | 662611 30266 | | | | |
| | 80 100 | <u>6</u> 6 | 100 100 | 662611 31498 662611 31497 | 4 | 100 | 662611 30265 | | | | |
| | 120 | 6 | 100 | 662611 31497 | 4 | 100 | 662611 30263 | | | | |
| | 150 | 6 | 100 | 662611 31495 | 4 | 100 | 662611 30262 | | | | |
| | 180 | 6 | 100 | 662611 31494 | 4 | 100 | 662611 30261 | | | | |
| | 220 | 6 | 100 | 662611 31493 | 4 | 100 | 662611 30260 | | | | |
| | 240 | 6 | 100 | 662611 31492 | | | | | | | |
| | 320 | 6 | 100 | 662611 31490 | 4 | 100 | 662611 30258 | | | | |
| | 400 | 6 | 100 | 662611 31488 | | | | | | | |
| | | | | | | | | | | | |
| | | | | 6" x 6 Hole | | | 6" x 6 Hole | | | | |
| 6 | 00 | 6 | 100 | Die #3333 | 4 | 100 | Die #3333 | | | | |
| 0 | 80 100 | 6 | 100 100 | 662611 31515 662611 31514 | 4 4 | 100 100 | 662611 30276 662611 30275 | | | | |
| | 120 | 6 | 100 | 662611 31513 | 4 | 100 | 662611 30274 | | | | |
| | 150 | 6 | 100 | 662611 31512 | 4 | 100 | 662611 30273 | | | | |
| | 180 | 6 | 100 | 662611 31511 | 4 | 100 | 662611 30272 | | | | |
| | 220 | 6 | 100 | 662611 31510 | 4 | 100 | 662611 30271 | | | | |
| | 240 | 6 | 100 | 662611 31509 | | | | | | | |
| | 280 | 6 | 100 | 662611 31508 | | | | Refe | r to the | e Sanding | Accessories |
| | 320 | 6 | 100 | 662611 31507 | 4 | 100 | 662611 30268 | | | back-up | |
| | 400 | 6 | 100 | 662611 31505 | | | | | | | |
| | 600 | 6 | 100 | 662611 31503 | | | | acce | ssorie | 5. | |



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PSA Disc Roll Dispenser

- Norton disc roll dispensers feature heavy-duty construction and a rubberized finish to protect your product, as well as the finish on your workpiece
- These versatile dispensers are designed to accommodate any 5" or 6" disc roll or sheet roll
- They can be attached to a wall or stacked for multi-grit or multi-diameter operations
- · Discs are individually dispensed and removed from the roll by a cutter bar

| DESCRIPTION | STD. PKG. | PART # |
|------------------------------------|-----------|---------------------|
| PSA Disc Roll Dispenser | | |
| Single Disc Roll Dispenser | 1 | 636425 42772 |
| Double Disc Roll Dispenser (shown) | 1 | 636425 02981 |

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Lightweight Paper Discs

| ndi | ok & Lo vidual 1-Vacut | Discs | NEV | | | | | | |
|------|------------------------------|---------------------------|--|--|------------------|--|-----------------------------|--|--|
| | vaou | | $\mathbf{h} = \mathbf{n}$ | ter i | | See 10 | Sec. 18 | | |
| | | TIFR | BEST | BEST | | BETTER | BETTER | GOOD | GOOD |
| | | CAP CODE: | BLAZE A995 | DRY ICE A975 | | A2750P | DURITE A475 | GOLD RESERVE | A290 |
| | | | NU-FIL | NO-FIL | | NO-FIL | NO-FIL | A296 NO-FIL | NO-FIL |
| E | DADER RAC | ABRASIVE: KING WEIGHT: | Ceramic Alumina | Ceramic Alumina B- & C-Weight | | Aluminum Oxide B-Weight | Silicon Carbide B-Weight | Aluminum Oxide B-Weight | Aluminum Oxide C-Weight |
| 1 | AI LII DAG | | Hook & Loop | Hook & Loop | | Hook & Loop | Hook & Loop | Hook & Loop | Hook & Loop |
| | | | P-Graded | P-Graded | | P-Graded | P-Graded | P-Graded | P-Graded |
| SIZE | GRIT | PKG/CASE | | PART # | PKG/CASE | PART # | PART # | PART # | PART # |
| 3 | 80 | | | | 50/200 | 662611 31532 | | | |
| | 100 | | | | 50/200 | 662611 44926 | | | |
| | 120 | | | | 50/200 | 662611 28688 | | | |
| | 150 | | | | 50/200 | 662611 40385 | | | |
| | 180 | | | | 50/200 | 662611 31528 | | | |
| | 220 240 | | | | 50/200 | 662611 31527 | | | |
| | 320 | | | | 50/200 50/200 | 662611 31526 662611 31524 | | | |
| | 400 | | | | 50/200 | 662611 36995 | | | |
| | 500 | | | | 50/200 | 662611 31521 | | | |
| | 600 | | | | 50/200 | 662611 36996 | | | |
| | 800 | | | | 50/200 | 662611 31519 | | | |
| | 1000 | | | | 50/200 | 66261135900 | | | |
| | 1500 | | | | 50/200 | 662611 47434 | | | |
| | 60 | | | | 100/400 | | | | 662611 30224 |
| | 80 | 50/200 | | 662611 40522 | 100/400 | 662611 31549 | | 666233 77539 | 662611 49907 |
| | 100 | 50/200 | | 662611 40521 | 100/400 | 662611 31548 | | | 662611 49906 |
| | 120 | 50/200 | | 662611 40520 | 100/400 | 662611 31547 | | 666233 77541 | 662611 49905 |
| | 150 | 50/200 | | 662611 40519 | 100/400 | 662611 31546 | | 666233 77542 | 662611 49904 |
| | 180 | 50/200 | | 662611 40518 | 100/400 | 662611 31545 | | 666233 77543 | 662611 49903 |
| | 220 | 50/200 | | 66261149541 | 100/400 | 662611 31544 | | 666233 05637 | 662611 49902 |
| | 240 280 | 50/200 | | 662611 49540 | 100/400 | 662611 31543 662611 31542 | | | |
| | 320 | 50/200 | | 662611 49538 | 100/400 | 662611 31541 | | 66623305638 | 662611 49900 |
| | 400 | 50/200 | | 662611 49537 | 100/400 | 662611 31539 | 662610 52270 | 66623305639 | 662611 49899 |
| | 500 | 50/200 | | 662544 80233 | 100/400 | 662611 31538 | 00201002210 | 0002000000 | 00201140000 |
| | 600 | | | | 100/400 | 662611 31537 | | 662611 05390 | |
| | 800 | 50/200 | | 662544 80232 | 100/400 | 662611 31536 | 662610 52267 | 666233 77544 | |
| | 1000 | | | | 100/400 | 662611 31535 | 662610 52254 | | |
| | 1200 | | | | 100/400 | 662611 31534 | | | |
| | 1500 | | | | 100/400 | 662611 31533 | | | |
| i | 80 | 50/200 | 636425 97510 | 662611 40532 | 100/400 | 662611 31566 | | 636425 06236 * | 662611 49916 |
| | 100 | 50/200 | 00040505511 | 662611 40531 | 100/400 | 662611 31565 | | 636425 06235 * | 662611 49915 |
| | 120 | 50/200 | 636425 97511 | 66261140530 | 100/400 | 662611 31564 | | 63642506234* | 66261149914 |
| | 150 | 50/200 | 636425 97512 | 662611 40529 | 100/400 | 662611 31563 | | 636425 06233 * | 662611 49913 |
| | 180 220 | 50/200 50/200 | 636425 97513 636425 97514 | 662611 40528 662611 49546 | 100/400 | 662611 31562 662611 31561 | | 636425 06232 * 636425 06231 * | 662611 49912 662611 49911 |
| | 240 | JU/200 | 0004203/014 | 002011 43340 | 100/400 | 662611 31560 | | 636425 06225 * | 00201143311 |
| | 240 | | | | 100/400 | 662611 31559 | | UUUTLU UULLU | |
| | 320 | 50/200 | | 662611 49543 | 100/400 | 662611 31558 | | 636425 06230 * | 662611 49909 |
| | 400 | 50/200 | | 662611 49542 | 100/400 | 662611 31556 | | 636425 06229 * | 662611 49908 |
| | 500 | 50/200 | | 636425 06202 | 100/400 | 662611 31555 | | 636425 06228 * | |
| | 600 | 50/200 | | 636425 06203 | 100/400 | 662611 31554 | | 636425 06227 * | |
| | 800 | 50/200 | | 636425 06204 | 100/400 | 662611 31553 | | 636425 06226 * | |
| | 1000 | 50/200 | | 636425 06375 | 100/400 | 662611 31552 | 662610 52255 | | |
| | 1200 | 50/200 | | 636425 06376 | 100/400 | 662611 31551 | | | |
| | 1500 | 50/200 | | 636425 06377 | 100/400 | 662611 31550 | | | |
| | 120 | | | | 100/400 | 662611 31662 | | | |
| | 180 | | | | 100/400 | 662611 31661 | | | |

Packaging Standards: PKG/CASE A296 = 50/250

Refer to the Sanding Accessories section for back-up pads and accessories.



Lightweight Paper Discs

| | : & Loor idual Di um | | ••• | ••• | ••• | | |
|--------|----------------------------|----------------|--|--|--|--|--|
| | | TIER: | BEST | BETTER | GOOD | GOOD | GOOD |
| | | CAP CODE: | DRY ICE A975 No-Fil | A2750P NO-FIL | GOLD RESERVE A296 NO-FIL | A290 No-Fil | A290 No-Fil |
| | | ABRASIVE | Ceramic Alumina | Aluminum Oxide | Aluminum Oxide | Aluminum Oxide | Aluminum Oxide |
| | PAPER B | ACKING WEIGHT: | | B-Weight | B-weight | C-Weight | C-Weight |
| | | FASTENING: | Hook & Loop | Hook & Loop | Hook & Loop | Hook & Loop | Hook & Loop |
| | | OTHER: | P-Graded | P-Graded | P-Graded | P-Graded | P-Graded |
| SIZE | GRIT | PKG./CASE | PART # | PART # | PART # | PART # | PART # |
| | | | © ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° | 0 0 0 5" x 5 Hole | | (| (° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° |
| - | | 100/100 | Die #3328 | Die #3328 | | Die #3328 | Die #3392 |
| 5 | 60 | 100/400 | 00001140547* | 00001101500 | | 662611 30236 * | 662611 30245 * |
| | 80 100 | 100/400 | 662611 40517 * | 662611 31583 662611 31582 | | 662611 30235 * 662611 30234 * | 662611 30244 * 662611 30243 * |
| | 120 | 100/400 | 662611 40515 * | 662611 31581 | | 662611 30233 * | 662611 30242 * |
| | 150 | 100/400 | 00201140313 | 662611 31580 | | 662611 30232 * | 662611 30241 * |
| | 180 | 100/400 | | 662611 31579 | | 662611 30231 * | 662611 30240 * |
| | 220 | 100/400 | | 662611 31578 | | 662611 30230 * | 662611 30239 * |
| | 320 | 100/400 | | 662611 31575 | | 662611 30227 * | 662611 30238 * |
| | 400 | 100/400 | | 662611 31573 | | 662611 30226 * | 00201100200 |
| | 600 | 100/400 | | 662611 31571 | | ODEOTIONELO | |
| | | 100,100 | 0 0 0 0 0 0 6" x 6 Hole Die #3371 | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0 0 0 0 0 6" x 6 Hole Die #3371 | © ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° | |
| 6 | 80 | 100/400 | 662611 40527 * | 662611 31600 | 666233 34786 * | 662611 30255 * | |
| | 100 | 100/400 | | 662611 31599 | 666233 34787 * | | |
| | 120 | 100/400 | | 662611 31598 | 666233 34788 * | 662611 30253 * | |
| | 150 | 100/400 | | 662611 31597 | | | |
| | 180 | 100/400 | | 662611 31596 | 666233 34790 * | 662611 30251 * | |
| | 220 | 100/400 | | 662611 31595 | 666233 34791 * | 662611 30250 * | |
| | 280 | 100/400 | | 662611 31593 | 0000004=00* | | |
| | 320 | 100/400 | | 662611 31592 | 666233 34793 * | | |
| | 400 | 100/400 | | 662611 31590 | 666233 34794 * | | |
| | 600 | 100/400 | | 662611 31588 | 666233 34796 * | | |
| | 800 | 100/400 | | 662611 31587 | 666233 34797 * | | |
| | 1500 | 100/400 | | 662611 31586 662611 31584 | | | |
| Dookoa | | | n. A296 Vacuum. A290 Vacu | | | | |

Packaging Standards: * A975 Vacuum, A296 Vacuum, A290 Vacuum = 50/200

Refer to the Sanding Accessories section for back-up pads and accessories.



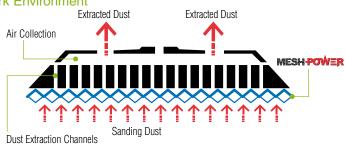
An alternative to traditional perforated paper discs, mesh discs are a multi-functional abrasive, designed with thousands of holes, created by the unique mesh matrix structure. For use with random orbital and rotary sanders, superior performing mesh discs are engineered for maximum dust extraction on composite, automotive, and other fine finishing applications. Norton mesh discs produce superior finishes with virtually dust free sanding.

Applications: Size Range: Grit Range: Machine Used: Surface preparation, Sanding, Finishing 5", 6" 80-400



Powerful Dust Extraction Means A Cleaner, Safer Work Environment

We've answered the demands for a cleaner and safer working environment with Norton MeshPower discs. The open construction of the mesh backing allows dust particles to flow freely through the thousands of tiny holes, creating a virtually dust free sanding environment. Better for your health, better for your application and better for your business!





Good choice for sharp cutting along with powerful dust extraction

MESHPOWER ALUMINUM OXIDE

- Mesh matrix backing with thousands of tiny holes offers powerful dust extraction for a cleaner, healthier working environment
- · Norton No-Fil technology prevents clogging and creates a consistent cut throughout the product life
- Self-grip backing with no designated hole pattern is quick and easy to align to any backing pad just apply and go!

| | | TIEF | R: GOOD |
|------|------|-----------|---------------------|
| | | TRADENAM | E: MESHPOWER |
| | | ABRASIVI | E: Aluminum Oxide |
| SIZE | GRIT | PKG./CASE | PART # |
| 5 | 80 | 50/200 | 636425 06451 |
| | 120 | 50/200 | 636425 06452 |
| | 180 | 50/200 | 636425 06453 |
| | 220 | 50/200 | 636425 06454 |
| | 240 | 50/200 | 636425 06455 |
| | 320 | 50/200 | 636425 06456 |
| | 400 | 50/200 | 636425 06457 |
| 6 | 80 | 50/200 | 636425 06458 |
| | 120 | 50/200 | 636425 06459 |
| | 180 | 50/200 | 636425 06460 |
| | 220 | 50/200 | 636425 06461 |
| | 240 | 50/200 | 636425 06462 |
| | 320 | 50/200 | 636425 06463 |
| | 400 | 50/200 | 636425 06464 |
| - | | | |

Contact your Norton representative for more information on additional grit sizes.

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TECH TIP

Increase performance even further by using the Norton MeshPower discs with the Norton Multi-Air back-up pads - it's the ultimate dust extraction experience!

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COATED & NON-WOVEN ABRASIVES Film and Foam Finishing Discs

For use on random orbital and rotary sanders. The industry's highest performing film and foam finishing discs are engineered for composite, automotive, and other fine finishing applications. Norton microfinishing film discs produce superior finishes dry without sacrificing cut rate while Norton foam finishing discs are used moist to produce a semi-polished surface to reduce buffing time.

> Film discs: final dry finishing of primed and painted surfaces, varnishes, composites, and gel coats before buffing Foam finishing discs: final moist finishing of clear coat, varnishes, composites, and gel coats before buffing Compounds and buffing pads: removes swirl marks and sand scratches

Size Range: Grit Range:

Applications:

Machine Used:

ORBITAL SANDER VERTICAL SHAFT PORTABLE GRINDER

Foam Discs: P1500, P2000, P3000

MINI ANGLE SANDER

Finishing Film



Best choice for final dry finishing of primed and painted surfaces, varnishes, composites, and gel coats

PURE ICE Q175 A/O FINISHING FILM

3", 5" and 6" Film Discs: P80-P1500

- White aluminum oxide grain and patented resin system for better life, cut rate, and finish
- 3 mil polyester film backing for better flexibility and flatness of discs; hook and loop attachment for easy mounting and removal
- Color-coded backprint by grit size



Good choice for dry sanding applications, especially uneven, hard-to-sand surfaces

Q275 NO-FIL A/O FINISHING FILM

- Sharp, P-graded, heat-treated premium aluminum oxide grain ensures faster, yet cooler, cut for a longer life
- 3-mil polyester film backing delivers unmatched durability and tear strength with exceptional flatness for a flawless surface finish and reduced leveling and rework; hook and loop attachment for easy mounting and removal
- · Water-based stearated No-Fil coating provides maximum load resistance when sanding dry for extended life

Finishing Foam



Best choice for moist finishing of clear coats, varnishes, composites, and gel coats

ICE Q255 A/O FINISHING FOAM

- Premium, P-graded fine grit aluminum oxide grain
- Conformable, integrated foam backing eliminates pigtails and costly rework; produces a semi-polished finished that can be quickly buffed out; hook and loop attachment
- Open mesh design distributes pressure evenly for quicker sanding and uniform scratch patterns
- Color coded abrasive face by grit size for easy grit identification

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COATED & NON-WOVEN ABRASIVES Film and Foam Finishing Discs

| | | | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | | | |
|------|----------------|------------------|---------------------------------------|--|--|-----------|------------|---------------------|
| | | | BEST | | GOOD | | BEST | |
| | | TRADENAME: | PURE ICE Q | | Q275 NO-FIL | | ICE Q255 | |
| | | | Aluminum 0 | | Aluminum Oxide | | Aluminum O | xide |
| | | BACKING WEIGHT: | | er Film | 3 mil Polyester Film | | Foam | |
| | | | P-Graded | | P-Graded | | P-Graded | |
| SIZE | GRIT | PKG./CASE | COLOR | PART # | PART # | PKG./CASE | COLOR | PART # |
| 3 | P800 | 50/200 | Black | 776960 88701 | | | | |
| | P1000 | 50/200 | Red | 77696088702 | | | | |
| | P1200 | 50/200 | Green | 776960 88703 | | 0.04 | | 000 10500000 |
| | P1500 | 50/200 | Blue | 776960 88704 | | 6/24 | Blue | 636425 06022 |
| | P2000 | | | | | 6/24 | Magenta | 636425 06021 |
| _ | P3000 | E0 (0.00 | | | | 6/24 | Green | 636425 06020 |
| 5 | P80 | 50/200 | | | 662611 01614 | | | |
| | P120 | 50/200 | | | 662611 01613 | | | |
| | P180 | 50/200 | | | 662611 01610 | | | |
| | P220 | 50/200 | | | 662611 01609 | | | |
| | P240 | 50/200 | | | 662611 01608 | | | |
| | P320 | 50/200 | | | 662611 01607 | | | |
| | P400 | 50/200 | | | 662611 01606 | | | |
| | P600 | 50/200 | | | 662611 01604 | | | |
| 0 | P1200 | 50/200 | | | 662611 01601 | | | |
| 6 | P80 | 50/200 | | | 662611 01628 | | | |
| | P120 | 50/200 | | | 662611 01627 | | | |
| | P180 | 50/200 | | | 662611 01625 | | | |
| | P220 | 50/200 | | | 662611 01624 | | | |
| | P320 P800 | 50/200 | Diasi | 7700000740 | 662611 01622 | | | |
| | P800 P1000 | 50/200 50/200 | Black | 77696088713 | 662611 01618 | | | |
| | P1000 P1200 | 50/200 | Red | 776960 88714 776960 88715 | 662611 01617 | | | |
| | P1200 P1500 | | Green Blue | | 662611 01616 662611 01615 | 15/00 | Blue | 60640E 0601E |
| | | 50/200 | DILLE | 776960 88716 | 00201101010 | 15/60 | | 63642506015 |
| | P2000 | | | | | 15/60 | Magenta | 63642506014 |
| | P3000 | | | | | 15/60 | Green | 636425 06013 |

Refer to the Sanding Accessories section for back-up pads and accessories.





COATED & NON-WOVEN ABRASIVES Flexible Diamond-Coated Discs

Grinding ceramic, glass, composites, carbide and ceramic coatings, fiberglass, and reinforced plastics; removing rust and scale on other materials; producing

Norton flexible diamond coated discs combine the durability and aggressiveness of diamond, on a flexible backing.

Applications:

Size Range:

Grit Range: Abrasive Types: Backing Color: Machine Used:



metallurgical stamps and coupons

PSA (Pressure Sensitive Adhesive) Discs: 2" - 6"

VERTICAL SHAFT

PORTABLE GRINDER

Quick-Change TR (Type III) Discs: 2" and 3"

ORBITAL SANDER

60 - 1500



Better choice for grinding glass, ceramics and composites, removing rust and scale, and producing metallurgical stamps and coupons

D71S PSA DISCS

- Combines the durability and aggressiveness of a unique diamond abrasive face pattern with a flexible backing, to significantly increase life and lower costs versus standard coated and diamond discs
- · Cloth backing provides strength, tear resistance, and flexibility
- · Color-coded, PSA backing for quick, easy mounting and removal and identification of coarse grit sizes/applications

| | | | TIEF | R: BETTER | | | | | | |
|-----------------------------------|--------|------|-----------|---------------------|--|--|--|--|--|--|
| SIZE (D) | COLOR | GRIT | STD. PKG. | PART # | | | | | | |
| Flexible Diamond Coated PSA Discs | | | | | | | | | | |
| 2 | Green | 60 | 1 | 662603 08159 | | | | | | |
| | Black | 120 | 1 | 662603 07722 | | | | | | |
| | Red | 200 | 1 | 662603 07723 | | | | | | |
| | Yellow | 400 | 1 | 662603 08160 | | | | | | |
| | White | 800 | 1 | 662603 07012 | | | | | | |
| 5 | Green | 60 | 1 | 662603 07839 | | | | | | |
| | Black | 120 | 1 | 662603 07838 | | | | | | |
| | Red | 200 | 1 | 662603 07019 | | | | | | |
| | Yellow | 400 | 1 | 662603 07960 | | | | | | |

| | | | TIEI | R: BETTER |
|--------------------|--------------|-------------|-----------|---------------------|
| SIZE (D) | COLOR | GRIT | STD. PKG. | PART # |
| Flexible Di | amond Coated | I PSA Discs | | |
| 6 | Green | 60 | 1 | 662603 06381 |
| | Black | 120 | 1 | 662603 06382 |

See Page 70 – Coated Abrasive Cloth PSA Disc section for back-up pads.



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Better choice for improved cut rate and finish on ceramics, glass, fiberglass, composites, carbide, and other tough metals and coatings

D7210 QUICK-CHANGE TR (TYPE III) DISCS

- Unique, durable diamond abrasive pattern increases life and lowers costs versus standard coated and diamond discs; color-coded backing for easy grit/application identification
- Better choice for improved cut rate and finish on ceramics, glass, fiberglass, composites, carbide, and other tough metals and coatings
- Removes rust and scale on other material; producing metallurgical stamps and coupons

| | | | TIE | R: BETTER | |
|--------------------|--------------|-------------|---------------------|---------------------|--|
| SIZE (D) | COLOR | GRIT | STD. PKG. | PART # | |
| Flexible Di | amond Coated | Quick-Chang | e TR (Type III) Dis | CS | |
| 2 | Green | 60 | 12 | 662603 11778 | |
| | Black | 120 | 12 | 662603 11779 | |
| | Red | 200 | 12 | 662603 11780 | |
| | Yellow | 400 | 12 | 662603 11781 | |
| | White | 800 | 12 | 662603 11782 | |

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| | | | TIEI | R: BETTER |
|---------------------|---------------|---------------|---------------------|---------------------|
| SIZE (D) | COLOR | GRIT | STD. PKG. | PART # |
| Flexible D i | iamond Coated | l Quick-Chang | e TR (Type III) Dis | cs |
| 3 | Green | 60 | 12 | 662603 11783 |
| | Black | 120 | 12 | 662603 11784 |
| | Yellow | 400 | 12 | 662603 11786 |

See Page 147 – Quick-Change Disc Accessories section for back-up pads.



Toll Free 1 800 563 1293



Multi-Air Foam Interface Pads

- Designed for use with fine grit Multi-Air Cyclonic hook and loop sanding discs to improve both surface finish and cut rate
- Use with Multi-Air hook and loop disc back-up pads
- Align the interface pad with the Multi-Air back up pad then simply attach the disc to the interface pad because the holes do not have to be lined up
- Ideal for use with new Mesh discs

SIZE (D x T) DESCRIPTION

| Multi-Air Foam Interface Pads with Vacuum Holes | | | | | |
|---|-------------------------------------|----|---------------------|--|--|
| 5 x 1/2 | Multi-Air Hook & Loop Interface Pad | 8 | 636425 85864 | | |
| 6 x 1/2 | Multi-Air Hook & Loop Interface Pad | 12 | 076607 19359 | | |

COATED & NON-WOVEN ABRASIVES Sanding Accessories

Multi-Air Hook & Loop Back-up Pads with Vacuum Holes

- Innovative design optimized for maximum air flow and powerful dust extraction
- Pads are engineered with a durable urethane foam, heat-resistant plastic, a molded-in 5/16"-24 spindle, and hooked face
- Holes in the disc do not have to be matched up with the holes in the pad, so changeover is fast and easy



Ideal for use with new Mesh discs

| SIZE (D) | DESCRIPTION | MAX. RPM | STD. PKG. | PART # |
|-----------------------------------|-----------------------------|-------------|--------------|---------------------|
| Multi-Air Hook | & Loop Back-up Pads with Va | cuum Hol | es | |
| 5" (125mm) with 5/16"-24 Shank | Medium-Density Urethane Pad | 15,000 | 5 | 666233 76000 |
| 6" (150mm) with 5/16"-24 Shank | Medium-Density Urethane Pad | 15,000 | 5 | 636425 06160 |

Low-Profile Pads for Dual Action / Random Orbital Sanders

- Soft density low-profile pads utilize 1/2" thick foam for fine finish sanding and offer moderate conformability
- Medium low-profile pads have 1/2" thick urethane foam for intermediate and finish sanding
- Available with PSA (pressure sensitive adhesive) or hook and loop faces; both designs are shock resistant and have a fiberglass backing plate with a riveted 5/16"-24 threaded shank for added strength and increased heat resistance



STD. PKG. PART #

 Available with standard hole patterns for vacuum-assist sanding

| | | MAX. | STD. | |
|--------------------------|---------------------------------|--------|------|---------------------|
| SIZE (D) | DESCRIPTION | RPM | PKG. | PART # |
| Low Profile | Pads for DA/Random Orbital Sand | ers | | |
| 3 | Hook & Loop Soft Low-Profile | 12,000 | 10 | 636425 06128 |
| 3-1/4 | Hook & Loop Buffing Pad | | 5 | 662610 85302 |
| 5 | PSA Soft Low-Profile | 12,000 | 5 | 636425 06126 |
| 5 | PSA Medium Low-Profile | 15,000 | 5 | 636425 06131 |
| 5 x 5 holes | PSA Medium Low-Profile | 15,000 | 5 | 636425 06132 |
| 5 | Hook & Loop Soft Low-Profile | 12,000 | 5 | 636425 06129 |
| 5 | Hook & Loop Medium Low-Profile | 15,000 | 5 | 636425 06135 |
| 5 x 5 holes | Hook & Loop Medium Low-Profile | 15,000 | 5 | 636425 06136 |
| 6 | PSA Soft Low-Profile | 12,000 | 5 | 636425 06127 |
| 6 | PSA Medium Low-Profile | 15,000 | 5 | 636425 06133 |
| 6 | Hook & Loop Soft Low-Profile | 12,000 | 5 | 636425 06130 |
| 6 | Hook & Loop Medium Low-Profile | 15,000 | 5 | 636425 06137 |
| 6 x 6 holes | Hook & Loop Medium Low-Profile | 15,000 | 5 | 636425 06138 |
| 8 x 8 holes, 5 screws | Hook & Loop Medium Low-Profile | 1,500 | 5 | 636425 43712 |
| 8 x 8 holes, 6 screws | Hook & Loop Medium Low-Profile | 1,500 | 5 | 636425 43714 |
| Packed in ind | lividual clamshell | | | |

Packed in individual clamshell

Tapered Pads for Dual Action / Random Orbital Sanders

- Designed with medium density polyurethane foam and a tapered edge for conformability, these pads are firm enough for flat surfaces, yet soft enough for severe curves and contours
- Available with either PSA (vinyl, pressure sensitive adhesive) or hook and loop faces in vacuum or non-vacuum
- The 5" and 6" pads are shock resistant and have a fiberglass backing plate with a riveted 5/16"-24 threaded shank for use on random orbital or dual action sanders
- The 8" pads have a 5/8"-11 threaded female hub



| | | WIRAA. | 515. | |
|-------------|---------------------------------|--------|------|---------------------|
| SIZE (D) | DESCRIPTION | RPM | PKG. | PART # |
| Tapered Pad | s for DA/Random Orbital Sanders | | | |
| 5 | PSA Medium Tapered | 15,000 | 5 | 636425 06139 |
| 5 x 5 holes | PSA Medium Tapered | 15,000 | 5 | 636425 06140 |
| 5 | Hook & Loop Medium Tapered | 15,000 | 5 | 636425 06143 |
| 5 x 5 holes | Hook & Loop Medium Tapered | 15,000 | 5 | 636425 06144 |
| 6 | PSA Medium Tapered | 15,000 | 5 | 636425 06141 |
| 6 x 6 holes | PSA Medium Tapered | 15,000 | 5 | 636425 06142 |
| 6 | Hook & Loop Medium Tapered | 15,000 | 5 | 636425 06145 |
| 6 x 6 holes | Hook & Loop Medium Tapered | 15,000 | 5 | 636425 06146 |
| 8 | PSA Medium Tapered | 6,000 | 5 | 636425 43112 |
| 8 | Hook & Loop Medium Tapered | 3,200 | 5 | 636425 43704 |
| | | | | |

Packed in individual clamshell





COATED & NON-WOVEN ABRASIVES Sanding Accessories

Hook & Loop Foam Interface Pads

- Designed for use with our fine grit hook and loop sanding discs
- · Improve both surface finish and cut rate
- · Use with hook and loop back-up pads



| SIZE (D x T) | DESCRIPTION | STD. PKG. | PART # |
|--------------|-----------------------|-----------|---------------------|
| Foam Hook | & Loop Interface Pads | | |
| 3 x 1/2 | Interface Pad | 10 | 636425 05457 |
| 6 x 1/2 | Interface Pad | 5 | 636425 42089 |
| 5 x 3.4 | Interface Pad | 2 | 636425 02161 |
| 6 x 3/4 | Interface Pad | 2 | 636425 02162 |

Half Moon Hand Pad

- The unique half moon pad takes a standard 5" hook and loop disc folded in half, which adheres to the hooks on the pad face
- The straight edge of the pad allows the operator to sand corners, contours, narrow crevices and minute imperfections without over-sanding



| SIZE (D) | DESCRIPTION | STD. PKG. | PART # |
|----------|-------------|-----------|---------------------|
| Half Moo | n Hand Pad | | |
| 5 | Hook & Loop | 10 | 636425 02768 |

Polishing Adapter Pad

- · Converts your standard hook and loop pad into a soft polishing pad
- The foam adapter is 3/8" thick and is excellent for fine grits where minimal removal is required
- It is ideal for either flat or contour surfaces

| | 5 | |
|----------|-----------|--------|
| MAX. RPM | STD. PKG. | PART # |

DESCRIPTION **Polishing Adapter Pad** Hook & Loop Adapter Pad 3,786 63642503121 10 5

Ergonomic Hand Sanders

- · The ergonomic palm sander is uniquely designed to be user-friendly, with finger indentations for the operator
- It quickly converts standard 5" and 6" hook and loop discs into hand sanders for finishing flat surfaces



| SIZE (D) | DESCRIPTION | STD. PKG. | PART # |
|----------|-----------------------|-----------|---------------------|
| | Ergonomic Hand Sander | | |
| 5 | Hook & Loop | 5 | 636425 03147 |
| 6 | Hook & Loop | 5 | 636425 03726 |
| | 1 | | |

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Disc Hand Pads

- · Hand pads eliminate finger sanding
- The ultra-thin 3/16" thick pad is composed of a single layer of neoprene foam and is designed for maximum flexibility - producing excellent finishes
- The 1" thick pad is composed of two layers, neoprene and polyester foam, for excellent conformability and softness, resulting in fine finishes
- Each pad has an elastic hand strap to hold it firmly in place
- Available with either PSA (vinyl, pressure sensitive adhesive) faces or hook and loop face



Panel and Adhesive Cleaner · Removes adhesives, tar, grease, wax,

- body sealers, undercoating sprays, and silicone from most surfaces
- · Aggressive cleaner is safe to use on most paint applications
- Packaged with squirt dispenser
- · Use as directed

| SIZE/DESCRIPTION | STD. PKG. | PART # |
|----------------------------|-----------|---------------------|
| Panel and Adhesive Cleaner | | |
| Quart Can | 12 | 076607 82780 |

| SIZE (D x T |) DESCRIPTION | STD. PKG. | PART # |
|------------------|-----------------------|-----------|---------------------|
| Disc Hand | Pads | | |
| 5 x 3/16 | Soft Foam PSA | 10 | 636425 03111 |
| 5 x 1 | Soft Foam PSA | 10 | 636425 02842 |
| 5 x 1 | Soft Foam Hook & Loop | 10 | 636425 03117 |



Liquid Ice Extra-Cut Compound

- · Water soluble; easy to use and easy to clean up
- Engineered to be used with a selection of 3 pads, depending on the finish required



DESCRIPTION Quart Liquid Ice Extra-Cut Compound

4

1

COATED & NON-WOVEN ABRASIVES Sanding Accessories

Liquid Ice Clean-up / Detailer Spray

- The spray detailer easily cleans up excess buffing residue and produces paint protection
- Spray it on and wipe off with a Norton Microfiber cloth ("Masking Products" section)

| | | | and the | |
|--------|--------------------------------|-----------|-----------|---------------------|
| SIZE | DESCRIPTION | STD. PKG. | STD. CASE | PART # |
| 32 oz. | Spray Bottle Clean-up Detailer | 1 | 4 | 636425 42082 |

8" Hook & Loop Buffing/Polishing Waffle Pads

• These pads can be used with Norton Liquid Ice Extra-Cut Compound



| SIZE (D) | DESCRIPTION | STD. PKG. | STD. CASE | PART # |
|----------|---------------------------------|-----------|-----------|---------------------|
| 8 | Orange Waffle Foam pad - Step 1 | 1 | 6 | 636425 06379 |
| 8 | Blue Waffle Foam Pad - Step 2 | 1 | 6 | 636425 06380 |
| 8 | White Waffle Foam Pad - Step 3 | 1 | 6 | 636425 06381 |

Liquid Ice Ultra-Fine Machine Glaze

- Use on its own for fine scratch removal or as Step 3 in place of Norton Liquid Ice Extra-Cut Compound to eliminate swirl marks and produce a high gloss finish
- · Ideal for dark-colored vehicles



63642597116

| SIZE | DESCRIPTION | STD. PKG. | STD. CASE | PART # |
|-------|--|-----------|-----------|---------------------|
| Quart | Liquid Ice Ultra-Fine Machine Glaze | 1 | 4 | 636425 06092 |

8" and 9" Hook & Loop Buffing/Polishing Pads

· These pads can be used with Norton Liquid Ice Extra-Cut Compound following the step numbers



| SIZE (D) | DESCRIPTION | STD. PKG. | STD. Case | PART # |
|----------|-----------------------------------|--------------|--------------|---------------------|
| 8 | Super Cut Wool Pad - Step 1 | 1 | 6 | 636425 42077 |
| 9 | Blue Cutting Foam Pad - Step 2 | 1 | 6 | 636425 42078 |
| 9 | White Finishing Foam Pad - Step 3 | 1 | 6 | 636425 42079 |

3" Hook & Loop Buffing/Polishing Pads

· For small spot repair



| SIZE (D) | DESCRIPTION | STD. PKG. | STD. Case | PART # |
|----------|-----------------------------------|--------------|--------------|---------------------|
| 3 | Super Cut Wool Pad - Step 1 | 10 | 40 | 636425 43832 |
| 3 | Blue Cutting Foam Pad - Step 2 | 10 | 40 | 636425 05459 |
| 3 | White Finishing Foam Pad - Step 3 | 10 | 40 | 636425 05460 |

Hook & Loop Back-up Pads for 8" and 9" **Buffing Pads**

 Black plastic back-up plate with hook and loop face. Molded-in 5/8"-11 threaded female hub

SIZE (D) DESCRI

8 and 9 Hook &



| PTION | STD. PKG. | STD. CASE | PART # |
|------------------|-----------|-----------|---------------------|
| Look Back-up Pad | 1 | 3 | 636425 42080 |

Black Lambswool Hook & Loop **Polishing Pads**

• Distributing and applying material evenly and consistently, these dense, durable, lambswool pads are designed to repair clearcoat finishes



| SIZE | DESCRIPTION | STD. CASE | PART # |
|------|--------------------------|-----------|---------------------|
| 3 | Pad with Loop – 3/4" nap | 40 | 636425 03670 |
| 4 | Pad with Loop – 3/4" nap | 250 | 636425 03671 |

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Made from non-woven synthetic fiber mesh, which is impregnated with abrasives and bound with resins, non-woven wheels are designed to create desired surface finish where little or no stock removal is required. Non-woven wheels have an open mesh construction that is waterproof, washable, conformable and non-loading.

Non-Woven Convolute wheels are formed by wrapping and bonding web material impregnated with abrasive grain and resin around a center core.

Applications:

- · Burr and flashing removal Surface roughness reduction
- · Blending weld areas on stainless steel
- Blending scratch patterns
- Weld polishing
- Removing rust and oxides
- · Applying decorative finishes including antique patterns

Aluminum Oxide, Silicon Carbide

Medium (M), Fine (F), Very Fine (VF)



Application/Grit Recommendation Guide

| NORTON | Rapid Finish GP Convolute Wheels | Metal Finishing Convolute Wheels | Clean & Finish Convolute Wheels | Light Finishing Convolute Wheels |
|----------------------|----------------------------------|----------------------------------|---------------------------------|----------------------------------|
| Scale Removal | | | | |
| Stock Removal | Second Choice | | | |
| Heavy Deburring | Second Choice | | | |
| Decorative Finishing | | Best Choice | Second Choice | |
| Blending | Best Choice | Second Choice | | |
| Cleaning | | Second Choice | Best Choice | |
| Light Deburring | Second Choice | | | Best Choice |
| Light Finishing | Second Choice | | | Best Choice |
| Polishing | | | | Best Choice |
| Buffing | | | | |

Surface Finish Variables

Changes in any one of many factors can affect the surface finish on the workpiece. This chart shows the effect on surface finish by changes in single factors of product specifications. Arrows have been used to signify the trend direction. The arrow length does not signify that the effect of each factor is equal.

| Variable Factor | Rough Finish High RMS Reading | Smooth Surface Lower RMS Reading | | |
|-----------------|-------------------------------|----------------------------------|--|--|
| 1. Wheel Speed | Slow < | ► Fast | | |
| 2. Feed Speed | Faster (Long Scratch) < | Slower (Short Scratch) | | |
| 3. Oscillation | No Oscillation < | Oscillation | | |
| 4. Lubricants | Dry 🔶 Water 🗲 | Soluble Oil <> Straight Oil | | |
| | | Compounds | | |

Non-Woven Marking System

| ABRASIVE | SILICON CARBIDE | ALUMINUM OXIDE |
|-----------|---|---|
| | SHARPER, FINER/BRIGHTER SCRATCH PATTERN | MORE DURABLE, LONGER LASTING, POLISHED FINISH |
| GRIT SIZE | XC (50) C (60-80) | M (100-150) F (180-220) |
| | FASTER, AGGRESSIVE CUT, ROUGHER FINISH | REDUCED CUT RATE, FINER FINISH |
| DENSITY | 2 | 9 |
| | SOFT, OPEN, CONFORMABLE, LESS BURNING/LOADING | HARDER, MORE DURABLE, FASTER CUTTING, BETTER FINISH |

Cross Reference Guide

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| | BEST | BETTER | BETTER | GOOD | GOOD | GOOD |
|----------|--|---------------------|-----------------|-------------|-----------------|-----------------|
| NORTON | Rapid Finish P | Series 1000 | Metal Finishing | Series 4000 | Light Finishing | Clean & Finish |
| 3M | 3M EXL, General Purpose | EXL Deburring | Metal Finishing | EX2 & EX3 | Light Deburring | Multi Finishing |
| Standard | General Purpose Plus, Light Deburring | Deburring Convolute | Metal Finishing | GP Plus | LDW | Multi Finishing |

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Aggressive Deburring

Good choice for heavy deburring applications



SERIES 4000 ALUMINUM OXIDE & SILICON CARBIDE

- High-quality synthetic web provides long life for heavy deburring, edge-breaking, and parting line removal on exotic metals
- · Advanced resin bond system ensures free cutting action
- · Use both wet and dry

| | | | | TIE | R: GOOD | |
|------------------|----------|------|----------|-----------|---------------------|---------------------|
| | | | | TRADENAN | IE: SERIES 4000 | |
| SIZE (D x T x H) | ABRASIVE | GRIT | MAX. RPM | STD. PKG. | 8 DENSITY PART # | 9 DENSITY PART # |
| 6 x 1/2 x 1 | S/C | F | 6,000 | 4 | | 662610 04021 |
| 6x1x1 | A/0 | М | 6,000 | 3 | 662610 04208 | |
| | S/C | F | 6,000 | 3 | 662610 04142 | 662610 04141 |
| 8x1x3 | A/0 | М | 4,500 | 3 | 662610 04165 | |
| | S/C | F | 4,500 | 3 | 662610 04123 | 662610 04135 |
| 12 x 1 x 5 | S/C | F | 3,000 | 2 | 662610 04284 | 662610 04148 |
| 12 x 2 x 5 | S/C | F | 3,000 | 1 | | 662610 04011 |

General Duty



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Best choice for broad range of applications: general deburring, blending, and finishing on all materials including metals, wood, glass

RAPID FINISH GENERAL PURPOSE A/O & S/C

- Eliminate smearing and loading on a wide range of workpieces (from high-nickel-content alloys to aluminum and other soft metals with patent-pending Norton Clean Bond resin technology
- Increase throughput with a 30% faster finish through new Norton grain/bond configuration, decrease wheel changes with a 10-30% longer life, provided by a new fiber and the high-temperature resin bond
- Ease wheel selection with color-coding wheel to match the primary use (maroon for General Purpose), and fiberglass core to match the abrasive (black for silicon carbide and white for aluminum oxide)

| | | | | | TIER: | BEST | | | |
|------------------|----------|------|----------|-----------|--------------|---------------------|---------------------|---------------------|---------------------|
| | | | | | TRADENAME: | RAPID FINISH GEN | RAL PURPOSE | | |
| SIZE (D x T x H) | ABRASIVE | GRIT | MAX. RPM | STD. PKG. | PRODUCT CODE | 6 DENSITY PART # | 7 DENSITY PART # | 8 DENSITY PART # | 9 DENSITY PART # |
| 6 x 1/2 x 1 | A/0 | М | 6,000 | 4 | C2315 | | 662611 34177 | 662611 34178 | 662611 34179 |
| | S/C | М | 6,000 | 4 | C4315 | | | | 662611 08076 |
| | S/C | F | 6,000 | 4 | C4415 | | 662611 33213 | 662611 06732 | 662611 12985 |
| 6 x 1 x 1 | A/0 | М | 6,000 | 3 | C2315 | 662611 34180 | 662611 34181 | 662611 34182 | 662611 34183 |
| | A/0 | F | 6,000 | 3 | C2408 | 662611 32100 | 662611 32322 | 662611 32324 | |
| | S/C | М | 6,000 | 3 | C4315 | | 662611 08074 | 662611 33215 | 662611 08075 |
| | S/C | F | 6,000 | 3 | C4415 | 662611 14475 | 662611 19988 | 636425 77269 | 636425 81587 |
| | S/C | VF | 6,000 | 3 | C4515 | 662611 31970 | | | |
| 6 x 2 x 1 | A/0 | М | 6,000 | 2 | C2315 | | 662611 34184 | | |
| | S/C | М | 6,000 | 2 | C4315 | | 662611 14471 | | |
| | S/C | F | 6,000 | 2 | C4415 | | 662611 32325 | | |
| 8 x 1 x 3 | S/C | М | 4,500 | 3 | C4315 | | 662611 08066 | 662611 08069 | |
| | S/C | F | 4,500 | 3 | C4415 | 662611 08064 | 662611 08065 | 636425 53754 | 636425 76004 |
| | S/C | VF | 4,500 | 3 | C4515 | | | | 662611 33209 |
| 8 x 2 x 3 | S/C | М | 4,500 | 2 | C4315 | | 662611 14473 | | |
| | S/C | F | 4,500 | 2 | C4415 | | 662611 14480 | 662611 14483 | 662611 14486 |
| | S/C | VF | 4,500 | 2 | C4515 | | | | 662611 33210 |
| 10 x 1 x 5 | A/0 | М | 3,600 | 3 | C2315 | | 662611 34185 | | |
| | S/C | F | 3,600 | 3 | C4415 | | | 662611 06554 | 662611 14488 |
| 10 x 2 x 5 | S/C | F | 3,600 | 1 | C4415 | | | 636425 81044 | 662611 14489 |
| 12 x 1 x 5 | A/0 | М | 3,000 | 2 | C2315 | | | | 662611 34186 |
| | S/C | F | 3,000 | 2 | C4415 | 662611 08053 | 662611 14481 | 662611 14484 | 662611 14074 |
| | S/C | VF | 3,000 | 2 | C4515 | | | | 662611 34187 |
| 12 x 2 x 5 | S/C | F | 3,000 | 1 | C4415 | | 662611 14482 | 662611 12766 | 662611 14490 |



General Duty continued



Better choice for general deburring, blending, and final finishing

SERIES 1000 LONG LIFE A/O & S/C

- · Offered in variety of web densities: more open, cool-cutting 7 density for light deburring, 8 to 9 density a good starting point for deburring, blending, polishing, and finishing
- Smear- and heat-free resin bond guarantees consistent, high-quality results; uniform grain dispersion and coating clean and condition without gouging or changing dimensions of workpiece
- · Conformable and flexible for less operator fatigue

| | | | | TIER: | BETTER | | |
|------------------|----------|------|----------|------------|-----------------------|---------------------|---------------------|
| | | | | TRADENAME: | SERIES 1000 LONG LIFE | | |
| SIZE (D x T x H) | ABRASIVE | GRIT | MAX. RPM | STD. PKG. | 7 DENSITY PART # | 8 DENSITY PART # | 9 DENSITY PART # |
| 6 x 1/2 x 1 | A/0 | Μ | 6,000 | 4 | 662610 18857 | | 662610 18650 |
| | S/C | Μ | 6,000 | 4 | | | 662610 19540 |
| | S/C | F | 6,000 | 4 | 662610 18628 | | 662610 18629 |
| 6 x 1 x 1 | A/0 | М | 6,000 | 3 | 699573 97884 | 662610 18636 | 662610 19337 |
| | S/C | Μ | 6,000 | 3 | 699573 97882 | 699573 97883 | 662610 18630 |
| | S/C | F | 6,000 | 3 | 662610 18631 | 662610 18774 | 662610 18632 |
| 8 x 1 x 3 | A/0 | Μ | 4,500 | 3 | 699573 97885 | 662610 18855 | 662610 18633 |
| | S/C | Μ | 4,500 | 3 | 699573 94610 | 662610 18673 | 662610 18997 |
| | S/C | F | 4,500 | 3 | 662610 18639 | 662610 18640 | 662610 18641 |
| 12 x 1 x 5 | A/0 | Μ | 3,000 | 2 | 699573 97887 | | 662610 18896 |
| | S/C | Μ | 3,000 | 2 | | 662610 18786 | 662610 18908 |
| | S/C | F | 3,000 | 2 | | | 662610 18626 |

Aesthetic Finishing



Better choice for decorative finishing, blending, and final finishing

METAL FINISHING ALUMINUM OXIDE

- · Premium, medium grit aluminum oxide grain generates uniform distinct satin and antique finishes
- · Dense, very durable web allows these wheels to be used for blending applications; strong resin binder provides resiliency and long life
- Uniform grain dispersion and coating clean and condition without gouging or changing dimensions of workpiece

| | | | | | TIER: | BETTER |
|------------------|----------|------|---------|----------|--------------|---------------------|
| | | | | T | | |
| | | | | 1. | RADENAME: | METAL FINISHING |
| СI7Е /D у Т у Ц\ | ABRASIVE | GRIT | DENCITY | MAX. RPM | STD. PKG. | PART # |
| SIZE (D x T x H) | | | DENSITY | | | |
| 6 x 1 x 1 | A/0 | M | 5 | 6,000 | 3 | 662610 07936 |
| | A/0 | Μ | 6 | 6,000 | 3 | 662610 10148 |
| 6 x 2 x 1 | A/0 | М | 5 | 6,000 | 2 | 662610 07957 |
| | A/0 | М | 6 | 6,000 | 2 | 662610 09635 |
| 8 x 1 x 3 | A/0 | М | 5 | 4,500 | 3 | 662610 07831 |
| 8 x 2 x 3 | A/0 | М | 5 | 4,500 | 2 | 662610 07904 |
| | A/0 | М | 6 | 4,500 | 2 | 662610 12971 |
| 12 x 1 x 5 | A/0 | М | 5 | 3,000 | 2 | 662610 07434 |
| | A/0 | М | 6 | 3,000 | 2 | 662610 09481 |
| 12 x 2 x 5 | A/0 | М | 5 | 3,000 | 1 | 662610 07212 |
| 14 x 2 x 8 | A/0 | М | 5 | 2,550 | 1 | 662610 07817 |





Aesthetic Finishing continued



Good choice for light deburring, polishing, and fine finishing applications

LIGHT FINISHING SILICON CARBIDE

- · Advanced manufacturing process produces a consistent web and grain distribution for a consistent finish on intricate polishing applications
- · Superior form holding for consistent, reliable edge breaking and finishing with minimal wheel dressing and reshaping; less dust and shedding with more uniform wear
- · Controlled cut rate prevents "over benching", deburrs and polishes without altering geometry

| | | | TIER: | GOOD | | |
|------------------|----------|------|------------|---------------------|---------------------|---------------------|
| | | | TRADENAME: | LIGHT FINISHING | | |
| SIZE (D x T x H) | ABRASIVE | GRIT | MAX. RPM | 6 DENSITY PART # | 7 DENSITY PART # | 8 DENSITY PART # |
| 6 x 1/2 x 1 | S/C | F | 6,000 | 662610 92322 | 662610 92324 | 662544 21572 |
| 6 x 1 x 1 | S/C | F | 6,000 | 662544 03708 | 662544 03709 | 662544 21573 |
| 8 x 1/2 x 3 | S/C | F | 4,500 | 662544 03707 | 662544 09698 | 662544 21575 |
| 8 x 1 x 3 | S/C | F | 4,500 | 662610 95702 | 662544 09924 | 662544 21577 |

All Light Finishing convolute wheels are non-stock. Ask your Norton representative for current lead-times and order quantities.



Good choice for fine finishing with light pressure

CLEAN & FINISH SILICON CARBIDE

- · Sharp, more aggressive silicon carbide abrasive leaves a fine/brighter scratch pattern
- · Conformable to intricate shapes and contours without changing the workpiece dimension
- · Open web construction makes these ideal for low-to moderate-pressure, low speed applications

| | | | | HER: GOOD | | | | |
|------------------|----------|------|---------|-----------|----------|---------------------|--|--|
| | | | | TR | ADENAME: | CLEAN & FINISH | | |
| | | | | | STD. | | | |
| SIZE (D x T x H) | ABRASIVE | GRIT | DENSITY | MAX. RPM | PKG. | PART # | | |
| 4 x 1 x 1 | S/C | М | 4 | 4,000 | 10 | 662610 58502 | | |
| | | F | 4 | 4,000 | 10 | 662610 58501 | | |
| 6 x 1 x 1 | S/C | М | 4 | 3,000 | 4 | 662610 58507 | | |
| | | F | 4 | 3,000 | 4 | 662610 58506 | | |
| 6 x 2 x 1 | S/C | Μ | 4 | 3,000 | 2 | 662610 58510 | | |
| | | F | 4 | 3,000 | 2 | 662610 58509 | | |
| 6 x 3 x 1 | S/C | Μ | 4 | 3,000 | 1 | 662610 58512 | | |
| 6 x 4 x 1 | S/C | М | 4 | 3,000 | 1 | 662610 58514 | | |
| 8 x 1 x 3 | S/C | Μ | 4 | 2,500 | 3 | 662610 58518 | | |
| 8 x 2 x 3 | S/C | Μ | 4 | 2,500 | 2 | 662610 58521 | | |
| 8 x 3 x 3 | S/C | М | 4 | 2,500 | 1 | 662610 58524 | | |
| 8 x 4 x 3 | S/C | М | 4 | 2,500 | 1 | 662610 58526 | | |
| | | | | | | | | |





Aluminum Reducing Bushings for Flap and Convolute Wheels



- · Durable, aluminum one-piece-design flanges with integrated contact washer
- Snug fit; extended usable life
- · Available in stock and non-stock sizes in many combinations of ID hole reduction

| WHEEL CENTER HOLE | BUSHING REDUCES HOLE SIZE TO | FOR WHEEL DIAMETER | STD. PKG. | PART # |
|-------------------|------------------------------|--------------------|-----------|---------------------|
| 1 | 3/8 | 4 - 6 | 1 Pair | 662610 80522 |
| | 1/2 | 4 - 6 | 1 Pair | 662610 80523 |
| | 5/8 | 4 - 6 | 1 Pair | 662610 80524 |
| | 3/4 | 4 - 6 | 1 Pair | 662610 80525 |
| | 7/8 | 4 - 6 | 1 Pair | 662610 80526 |
| 2 | 1/2 | 6 | 1 Pair | 662610 80527 |
| | 5/8 | 6 | 1 Pair | 662610 80528 |
| | 1 | 6 | 1 Pair | 662610 80529 |
| 3 | 1 | 8 | 1 Pair | 662610 80531 |
| | 1-1/4 | 8 | 1 Pair | 662610 80532 |
| 5 | 1 | 10 and 12 | 1 Pair | 662610 80533 |
| | 1-1/4 | 10 and 12 | 1 Pair | 662610 80534 |
| | 3 | 10 and 12 | 1 Pair | 662610 80535 |
| 8 | 1-1/4 | 14 | 1 Pair | 662610 80536 |

TECH TIP

- · Convolute wheels must always run in the direction indicated by the arrow printed on the side of each wheel.
- Light to medium pressure is recommended. Excessive pressure may result in part damage.
- · Lubricants such as water-soluble oil and straight oil will decrease the heat and improve the surface finish and lustre.

It is the user's responsibility to refer to and comply with ANSI B7.1

COATED & NON-WOVEN ABRASIVES File Belts

Portable file belt sanders have replaced tedious hand filing and sanding. First introduced in pneumatic, they are now also available in electric. Increasingly, tool manufacturers are introducing additional fixtures for additional applications. The belts listed are popular stock sizes, but additional sizes, specifications, backing materials, and edge scallops are available made-to-order.

Applications:

Size Range: Grit Range: Abrasive Grain: Machine Used: Light weld removal and blending, shape and contour sanding, surface preparation prior to coating and plating, removing cutting tool marks from molds and dies, general clean-up and finishing 1/8" to 1" wide, 12" to 30" long 40 - 120Ceramic Alumina, Zirconia Alumina, Aluminum Oxide



Cross Reference Guide

| | BEST | BEST | BETTER | GOOD | GOOD |
|-----------|---|---------------------------------------|-----------------------------|----------------|---------------------------|
| NORTON | Blaze R980P | RedHeat R983 | BlueFire R887D/R823P | Gemini R766 | Gemini R283 |
| 3M | 963G/H, 966F, 967F, 997F, 984F, 784F, 947A | 747D, 777F, 778F, 784F, 987F, 977F | 577F, 551E | 361F, 363F | 241E, 244E, 251E, 261E |
| Hermes | CR456 | _ | RB48624YX, RB48644Z | RB377XY, SB378 | RB530J, RB304J, RB306J |
| Klingspor | CS610 | CS912 | CS411X, CS416, CS409 | CS412, CS413 | CS412 |
| SIA | 2515, 2503 | | 2800,2803, 2815, 2829, 2824 | | |
| VSM | XK875X, XK885Y, XK880Y | XK870X, XK870X | ZK713X, ZK713T, KK715X | LK719X, KK711X | KK711E |
| Sait | — | _ | AZ-X | 1AX, 2AX | LA-X |
| Sunmight | _ | — | <u> </u> | P656W | _ |

Material-to-Product Recommendation Guide

| | BEST | BEST | BETTER | | GOOD | |
|--------------------------|-------------|--------------|----------------|----------------|-------------|-------------|
| | Blaze R980P | RedHeat R983 | BlueFire R887D | BlueFire R823P | Gemini R766 | Gemini R283 |
| Carbon Steel | • | • | • | • | • | • |
| Stainless Steel / Alloys | • | • | • | • | • | |
| Cast Iron | • | • | • | • | • | |
| Brass / Bronze | | | • | • | • | |
| Aluminum | | | • | • | • | |



Best for stainless, cobalt, chrome, inconel, titanium, mild and carbon steel

BLAZE R980P CERAMIC ALUMINA

- Next-generation cooler cutting Norton SG ceramic alumina grain lasts 50% to 200% longer on mild and carbon steel, stainless, cobalt, chrome, inconel and titanium with better metal integrity
- Durable Y-weight polyester, waterproof cloth backing for improved grain adhesion, reduced edge-fray, and better body retention, resulting in longer life and product consistency
- Lubricating grinding aid coating means cooler cut, burn-free grinding of heat-sensitive materials, minimized loading, and improved part finish and integrity



Exceptional performance, especially on hard-to-grind alloys

REDHEAT R983 CERAMIC ALUMINA

- · Premium ceramic abrasive provides sharp cutting, exceptional life and value, especially on hard-to-grind alloys
- "Supersize" grinding-aid for longer life, cooler cut and minimized loading
- Strong Y-weight polyester, waterproof cloth backing for improved grain adhesion, reduced edge-fray and better body
 retention, resulting in longer life and product consistency

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COATED & NON-WOVEN ABRASIVES File Belts



Better choice for stainless and carbon steel

BLUEFIRE R887D/R823P ZIRCONIA ALUMINA

- Strong, self-sharpening zirconia alumina abrasive for fast, aggressive cut and 30% longer life than competitive
 zirconia belts
- Durable resin bond for excellent grain retention and product life
- Strong Y-weight polyester backing R887D for heavy-duty stock removal applications; flexible X-weight polyester backing - R823P for moderate- to light-pressure applications

Good choice for difficult-to-grind materials (aluminum, brass, bronze, stainless, carbon steel, titanium, etc.)

GEMINI R766 ALUMINUM OXIDE

- Premium aluminum oxide abrasive blend is ideal when primary purchasing criteria is a good-performing, economically-priced, general-purpose belt
- Y-weight waterproof polyester backing withstands light- to moderately-demanding applications and provides extended life on dry grinding applications
- · Resin bond system provides improved edge retention and 30% plus improvement in life versus key competitors

Good choice for stainless and carbon steel applications when initial price is the primary purchasing factor

GEMINI R283 ALUMINUM OXIDE

- · P-graded premium aluminum oxide abrasive for consistent, cool cut
- Strong, semi-flexible, smooth X-weight rayon waterproof backing is designed for light- to moderate- pressure applications
- · Durable resin coating provides excellent grain retention and product life

|--|--|--|

| | | TIER: | BEST | BEST | BETTER | GOOD | GOOD |
|--------------|------|------------|---------------------|---------------------|--------------------------|----------------------|---------------------|
| | | TRADENAME: | BLAZE R980P | REDHEAT R983 | BLUEFIRE R887D/R823P | GEMINI R766 | GEMINI R283 |
| | | ABRASIVE: | Ceramic Alumina | Ceramic Alumina | Zirconia Alumina | Aluminum Oxide Blend | Aluminum Oxide |
| | | BACKING: | Y-Weight Polyester | Y-Weight Polyester | Y- or X-Weight Polyester | Y-Weight Polyester | X-Weight Rayon |
| | | OTHER: | Supersize | Supersize | | | |
| SIZE (W x L) | GRIT | STD. PKG. | PART # | PART # | PART # | PART # | PART # |
| 2" Belts | | | | | | | |
| l/8 x 12 | 40 | 50 | | | | 666233 90000 | |
| | 60 | 50 | 662544 05345 | 662544 91522 | 662610 93029 | | |
| | 80 | 50 | | 662544 91523 | | | |
| | 120 | 50 | 662544 91519 | 662544 91524 | | | |
| 1/4 x 12 | 40 | 50 | 662544 91520 | | | 666233 90003 | 662544 91539 |
| | 60 | 50 | 662611 96480 | | 780727 58896 | | |
| | 80 | 50 | | 662544 91526 | 780727 82621 | 666233 90005 | 780727 66143 |
| | 120 | 50 | 662610 63632 | 662544 91527 | 780727 82622 | | 780727 63175 |
| 1/2 x 12 | 40 | 50 | 699573 98018 | 662544 91528 | 662544 92522 | 666233 90006 | 780727 27557 |
| | 50 | 50 | 662610 43759 | 780727 18700 | | 666233 90007 | 662544 91540 |
| | 60 | 50 | 699573 98019 | 780727 18701 | 780727 28745 | 666233 90008 | 780727 27555 |
| | 60 | 25 V | | | 666233 73753 | | |
| | 80 | 50 | 699573 98020 | 780727 18702 | 780727 28744 | 666233 90009 | 780727 27554 |
| | 80 | 25 V | | | 666233 73754 | | |
| | 100 | 50 | 662610 81180 | 662544 91529 | 662544 91534 | | 780727 27553 |
| | 120 | 50 | 662610 42909 | 780727 00518 | 780727 28742 | | 780727 27552 |
| | 120 | 25 V | | | 666233 73755 | | |
| 1 x 12 | 60 | 50 | 662610 63641 | | 780727 53073 | | 780727 73813 |
| | | | | | | | |

Additional sizes, grits and scalloped edge belts are available MTO (made-to-order). Contact your Norton representative for availability, order quantities and lead-times. 40 and 50 grit BlueFire belts are furnished in BlueFire R887D (Y-weight Polyester); 60-120 grits are supplied in BlueFire R823P (X-weight Polyester).

Joints – All belts are PG jointed; a butt joint joined with flexible tape for contour grinding.

V = Vendible package. Ideal for vending machines and small jobs. 5 belts per pack / 5 packs per carton. Order in multiples of 25.

continued

COATED & NON-WOVEN ABRASIVES File Belts



| | | | | | VENDIBLE | | |
|------------------------------|-----------|---------------------|--|--|--|--|--|
| | | TIER: TRADENAME: | BEST BLAZE R980P | BEST REDHEAT R983 | BETTER BLUEFIRE R887D/R823P | GOOD Gemini R766 | GOOD Gemini R283 |
| | | ABRASIVE: | Ceramic Alumina Y-Weight Polyester | Ceramic Alumina Y-Weight Polyester | Zirconia Alumina Y- or X-Weight Polyester | Aluminum Oxide Blend Y-Weight Polyester | |
| | | OTHER: | Supersize | Supersize | | | · · · |
| SIZE (W x L) | GRIT | STD. PKG. | PART # | PART # | PART # | PART # | PART # |
| 13" Belts 3/8 x 13 | 60 | 50 | 699573 45359 | 780727 45459 | 780727 40295 | 666233 90011 | 780727 32112 |
| J/U X 13 | 80 | 50 | 699573 92150 | 780727 4916 | 780727 36062 | 666233 90012 | 780727 71323 |
| 8" Belts | | | | | | | |
| I/8 x 18 | 40 | 50 | 662544 75211 | | | | |
| | 60 | 50 | 662610 80010 | 70070700000 | 662544 91535 | 666233 90014 | |
| | 80 120 | 50 50 | 662610 89120 | 780727 89083 780727 89084 | 780727 60595 636425 95221 | 666233 90015 | |
| 1/4 x 18 | 40 | 50 | 662544 75215 662610 27923 | 662611 98953 | 662544 92525 | 666233 90016 | 662544 91543 |
| 17 1 1 10 | 60 | 50 | 699573 47249 | 780727 74684 | 780727 43583 | 666233 90017 | 780727 71000 |
| | 60 | 25 V | | | 666233 73747 | | |
| | 80 | 50 | 699573 46155 | 780727 03284 | 780727 53075 | | 780727 73921 |
| | 80 | 25 V | 00001005074 | 70070705055 | 666233 73748 | | |
| 1/0 v 10 | 120 40 | 50 50 | 662610 85071 | 780727 85655 780727 66018 | 780727 73764 | 6660000010 | 700707 07564 |
| I/2 x 18 | 40 60 | 50 | 699573 98021 699573 98022 | 780727 66018 780727 18704 | 662544 44193 780727 28569 | 666233 90019 666233 90020 | 780727 27561 780727 27560 |
| | 60 | 25 V | JUJULL | | 666233 73756 | 550200 JUULU | |
| | 80 | 50 | 699573 98023 | 780727 18705 | 780727 28568 | 666233 90021 | 780727 27559 |
| | 80 | 25 V | | | 666233 73757 | | |
| | 120 | 50 | 662610 41384 | 780727 18706 | 780727 28567 | | 780727 27558 |
| | 120 | 25 V | 00057000007 | 20020200470 | 666233 73758 | | 70070704707 |
| 3/4 x 18 | 40 60 | 50 50 | 699573 98027 699573 98028 | 780727 62476 780727 45691 | 662544 92526 780727 09590 | 666233 90022 666233 90023 | 780727 81797 780727 39966 |
| | 60 | 25 V | 09907390020 | 10012143031 | 666233 73762 | 00023390023 | 10012133300 |
| | 80 | 50 | 699573 98029 | 780727 56309 | 780727 58953 | 666233 90024 | 780727 32289 |
| | 80 | 25 V | | | 666233 73763 | | |
| | 120 | 25 V | | | 666233 73764 | | |
| 20-1/2" Belts | | | | | | | |
| 3/4 x 20-1/2 | 40 | 50 | 699573 98030 | 780727 14398 | 662544 57869 | 666233 90025 | 780727 27573 |
| | 50 60 | 50 50 | 699573 44982 699573 98031 | 780727 18714 780727 18715 | 662544 92527 780727 28560 | 666233 90026 666233 90027 | 662544 91544 780727 27571 |
| | 60 | 25 V | 09907390031 | 10012110713 | 666233 73765 | 000233 30027 | 10012121311 |
| | 80 | 50 | 699573 98032 | 780727 18716 | 780727 28559 | 666233 90028 | 780727 27570 |
| | 80 | 25 V | | | 666233 73766 | | |
| | 100 | 50 | 662610 55516 | 780727 71151 | 662610 38911 | | 780727 27569 |
| | 120 | 50 | 662610 44755 | 780727 27380 | 780727 28557 | | 780727 27575 |
| 24" Belts | 10 | 50 | 00001100001 | 700707 47000 | 0005 4 470 400 | | 00054404000 |
| 1/4 x 24 | 40 60 | 50 50 | 662611 98631 699573 45451 | 780727 47823 780727 56534 | 662544 73499 780727 28552 | 666233 90030 | 662544 01929 780727 27548 |
| | 60 | 25 V | 0JJJ1 J 4J4U I | 100121 JUJJ4 | 666233 73750 | 000200 30030 | 10012121340 |
| | 80 | 50 | 636425 96940 | 780727 18340 | 78072767713 | | |
| | 120 | 50 | 662610 80367 | 780727 70718 | 780727 28550 | | |
| 1/2 x 24 | 40 | 50 | 699573 98024 | 780727 60092 | 662544 92528 | 666233 90032 | 780727 27568 |
| | 50 | 50 | 662610 43757 | 780727 18707 | 662544 52237 | 666233 46910 | 780727 27567 |
| | 60 60 | 50 25 V | 699573 98025 | 780727 18708 | 780727 28564 666233 73759 | 666233 90033 | 780727 27566 |
| | 80 | 25 V 50 | 699573 98026 | 780727 18709 | 780727 28566 | 666233 90034 | 780727 27565 |
| | 80 | 25 V | | 10012110/03 | 666233 73760 | 00020000000 | |
| | 100 | 50 | 662610 42203 | 780727 45021 | 780727 53076 | | 662544 91545 |
| | 120 | 50 | 662610 42565 | 780727 18710 | 780727 28565 | | 780727 27564 |
| x 24 | 40 | 50 | 699573 50019 | 662544 91531 | | | |
| | 50 | 50 | 699573 44889 | 780727 10374 | | | 662544 91547 |
| | 60 80 | 50 50 | 699573 53375 699573 45419 | 780727 72209 | 780727 76498 | 666233 34206 | 662610 85068 |
| | 120 | 50 | 662610 85067 | 662544 91532 | 780727 30029 | 00023334200 | 662610 85069 |
| 30" Belts | 120 | 00 | | | | | |
| 1 x 30 | 40 | 50 | 662610 53470 | | 662544 78257 | 666233 90038 | 662611 89958 |
| | 60 | 50 | 699573 45985 | | 780727 28583 | 666233 90039 | 662544 91549 |
| | 80 | 50 | 699573 46105 | 780727 64439 | 780727 28582 | 666233 90040 | 780727 27579 |

Additional sizes, grits and scalloped edge belts are available MTO (made-to-order). Contact your Norton representative for availability, order quantities and lead-times. 40 and 50 grit BlueFire belts are furnished in BlueFire R887D (Y-weight Polyester); 60–120 grits are supplied in BlueFire R823P (X-weight Polyester). Joints – All belts are PG jointed; a butt joint joined with flexible tape for contour grinding. V = Vendible package. Ideal for vending machines and small jobs. 5 belts per pack / 5 packs per carton. Order in multiples of 25.

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5

COATED & NON-WOVEN ABRASIVES Portable Belts





Portable belts are ideal for all your metal and woodworking applications. Choose 36 -50 grits for rough/heavy-duty applications, 60 - 100 for intermediate, and 100 - 220 for finishing/polishing applications.

The belts listed are popular stock sizes, but additional sizes, specifications, and backing materials, are available made-to-order.

Applications:

Size Range: Grit Range: **Abrasive Grain:** Machine used:

Grinding and finishing all metals, blending welds, sanding and finishing wood, glass seaming, and polishing 3" to 4" wide, 15-1/2" to 24" long 36 - 220

Ceramic Alumina, Zirconia Alumina, Aluminum Oxide



IN-LINE DRUM SANDER SANDER

Cross Reference Guide

| | BEST | BETTER | GOOD |
|-----------|------------------------------------|------------------|------------------------------|
| NORTON | RedHeat R983 | BlueFire R831 | Gemini R215/ Metalite R255 |
| 3M | 747D, 777F, 778F, 784F, 987F, 977F | 577F | 240DZ, 340A, 340D |
| Hermes | | RB480 | RB320 |
| Klingspor | CS912 | CS411 | LS309XH |
| Sait | <u> </u> | Z-H | 1A-X, 2A-X, AO-X, LA-X |
| SIA | _ | 2800, 2829, 2925 | 2920, 2928, 2921, 2951, 2925 |
| VSM | XK870X, XK870X | ZK713X | KK504X, KP510E |

BEL1

Material-to-Product Recommendation Guide

| | BEST | BETTER | GOOD | |
|--------------------------------|--------------|---------------|-------------|---------------|
| | RedHeat R983 | Bluefire R831 | Gemini R215 | Metalite R255 |
| Wood | | • | ♦ | • |
| Carbon Steel / Stainless Steel | • | • | | |
| Brass / Bronze / Aluminum | | • | • | • |



Exceptional performance, especially on hard-to-grind alloys

REDHEAT R983 CERAMIC ALUMINA

- · Premium ceramic abrasive provides sharp cutting, exceptional life and value, especially on hard-to-grind alloys
- "Supersize" grinding-aid for longer life, cooler cut and minimized loading
- Strong Y-weight polyester, waterproof cloth backing for improved grain adhesion, reduced edge-fray and better body retention, resulting in longer life and product consistency



Better choice for stainless steel and wood

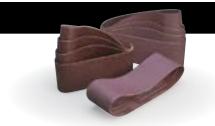
BLUEFIRE R831 ZIRCONIA ALUMINA

- Premium, self-sharpening zirconia alumina abrasive provides superior cut on all surfaces, lasts substantially longer, and cuts faster than the next leading competitor in side-by-side comparisons
- Proprietary patented grain technology produces one of the finest scratch patterns in the industry for finer looking finish; open-coat design and strong Y-weight cotton backing for reduced loading and extended life
- · Reversible butt splice allows belt to be used in either direction for longer life





COATED & NON-WOVEN ABRASIVES Portable Belts



Good choice to minimize loading on wood and soft metals - where initial price is the main concern

GEMINI R215 / METALITE R255 ALUMINUM OXIDE

- Premium aluminum oxide abrasive for fast initial cut rate
- Heavy, durable X-weight cotton backing is ideal for heat sensitive applications
- Strong butt joint that allows the belt to be run in either direction

Portable Belts for Belt Sanders

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|--------------|------|----------------|---------------------|---------------------------|-----------|---------------------|---------------------|
| | | | | and the second | | and the second | |
| | | | | | | | |
| | | | JOBPACK | JOBPACK | | | |
| | | TIER: | BETTER | GOOD | | GOOD | GOOD |
| | | TRADENAME: | BLUEFIRE R831 | GEMINI R215 | | GEMINI R215 | METALITE R255 |
| | | ABRASIVE: | Zirconia Alumina | Aluminum Oxide | | Aluminum Oxide | Aluminum Oxide |
| | | BACKING: | Y-Weight Cotton | X-Weight Cotton | | X-Weight Cotton | X-Weight Cotton |
| | | JOINT: | Plyweld | Plyweld | | Plyweld | Plyweld |
| | | GRAIN COATING: | Open Coat | Open Coat | | Open Coat | Open Coat |
| | | OTHER: | | · | | | UPC Bar Coded |
| SIZE (W x L) | GRIT | PKG./CASE | PART # | PART # | STD. PKG. | PART # | PART # |
| 3 x 18 | 36 | | | | 5 | | 780727 80447 |
| | 50 | 5/25* | 076607 49259 | 076607 00964 | 10 | | 780727 27994 |
| | 80 | 5/25* | 076607 49258 | 076607 00968 | 10 | | 780727 27993 |
| | 120 | 5/25* | 076607 49256 | 076607 00969 | 10 | | 780727 27992 |
| 3 x 21 | 36 | 5/25* | 076607 49266 | 076607 01741 | | | |
| | 40 | | | | 10 | | 780727 27927 |
| | 50 | 5/25* | 076607 49265 | 076607 01740 | 10 | | 780727 27926 |
| | 60 | | | | 10 | 780727 27925 | |
| | 80 | 5/25* | 076607 49264 | 076607 02064 | 10 | | 780727 27924 |
| | 100 | 5/25* | 076607 49263 | | 10 | | 780727 27923 |
| | 120 | 5/25* | 076607 49262 | 076607 02062 | 10 | | 780727 27922 |
| | 220 | 5/25* | | 076607 05287 | | | |
| 3 x 24 | 36 | 5/25* | 076607 49272 | 076607 01743 | 5 | | 780727 81847 |
| | 40 | | | | 10 | | 780727 27937 |
| | 50 | 5/25* | 076607 49271 | 076607 01742 | 10 | | 780727 27936 |
| | 60 | | | | 10 | 780727 27935 | |
| | 80 | 5/25* | | 076607 02067 | 10 | | 780727 27934 |
| | 100 | 5/25* | 076607 49269 | 076607 02066 | 10 | | 780727 27933 |
| | 120 | 5/25* | 076607 49268 | 076607 02065 | 10 | | 780727 27932 |
| 4 x 24 | 36 | 5/25* | 076607 49278 | 076607 01745 | 5 | | 780727 80438 |
| | 40 | | | | 10 | | 780727 27947 |
| | 50 | 5/25* | 076607 49277 | 076607 01744 | 10 | | 780727 27946 |
| | 60 | | | | 10 | 780727 27945 | |
| | 80 | 5/25* | 076607 49276 | 076607 02069 | 10 | | 780727 27944 |
| | 100 | 5/25* | | | 10 | | 780727 27943 |
| | 120 | 5/25* | 076607 49274 | 076607 02068 | 10 | | 780727 27942 |
| | 180 | 5/25* | | 076607 05285 | | | |

*Job Pack packing standards: 5 belts/Job Pack; 5 Job Packs per case. Order by number of packs, in multiples of 5 packs.

Portable Belts for Pneumatic In-Line Drum Sanders

Distributed by Applifast.

| | | TIER: | | BETTER | GOOD |
|----------------|------|----------------|-----------------------|---------------------|---------------------|
| | | TRADENAME: | REDHEAT R983 | BLUEFIRE R823P | GEMINI R215 |
| | | ABRASIVE: | Ceramic Alumina | Zirconia Alumina | Aluminum Oxide |
| | | BACKING: | Y-Weight Polyester | X-Weight Polyester | X-Weight Cotton |
| | | JOINT: | Plyweld | Plyweld | Plyweld |
| | | GRAIN COATING: | Closed Coat/Supersize | Closed Coat | Open Coat |
| SIZE (W x L) | GRIT | STD. PKG. | PART # | PART # | PART # |
| 3-1/2 x 15-1/2 | 36 | 10 | 780727 00783 | | 780727 21997 |
| | 60 | 10 | 780727 18750 | | 780727 22000 |
| | 80 | 10 | 780727 18751 | 780727 53074 | 780727 21995 |
| | 120 | 10 | 780727 18753 | | |

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A broad selection of sizes and grits for most dimensioning, intermediate grinding and polishing applications.

The belts listed are popular stock sizes, but additional sizes, specifications, and backing materials, are available made-to-order.

> Benchstand and Backstand Belts: grinding and deburring of all metals, heavy stock removal, blending, dimensioning and shaping, polishing. Centerless, Conveyor and Platen Belts: intermediate grinding stainless and carbon, moderate-pressure applications, dimensioning and finishing. 1" to 10" wide, 36" to 132" long

Size Range: Grit Range: Abrasive Grain: Machine Used:

Ceramic Alumina, Zirconia Alumina, Aluminum Oxide



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BACKSTAND BELT GRINDER

BENCHSTAND GRINDER

Cross Reference Guide

| | BEST | BEST | BETTER | BETTER | BETTER | GOOD | GOOD |
|-----------|--|---------------------------------------|----------------|--------------------------|--------------------------------|---------------------------|------------------|
| NORTON | Blaze R980P | RedHeat R983 | BlueFire R821P | BlueFire R823P | BlueFire R884P | Gemini R766 | Gemini R228 |
| 3M | 963G/H, 966F, 967F, 997F, 984F, 784F, 947A | 747D, 777F, 778F, 784F, 987F, 977F | _ | 551E | 561D | 361F, 363F | 241D, 251D, 341D |
| Hermes | CR454, CR456 | CN464 | — | RB486 X, RB346, RB486 | RB48024YX, RB48444Z, RB485Z | RB377XY, SB378, RB34MJ | RB320X, HSB |
| Klingspor | CS610 | CS912 | CS411X | CS411X, CS416 | CS411 | CS412, CS413 | CS310 |
| SIA | 2515, 2503 | _ | _ | _ | 2820 | — | 2918, 2928 |
| VSM | XK875X, XK885Y, XK880Y | XK870X, XK870X | — | ZK713X, KK715X | KK716, ZK713T | LK719X, KK711X | KK511X, KK711 |

Material-to-Product Recommendation Guide

| | BEST | BETTER | | | GOOD | |
|----------------------------|-------------|----------------|----------------|---------------|-------------|-------------|
| | Blaze R980P | BlueFire R884P | BlueFire R823P | BlueFire 821P | Gemini R766 | Gemini R228 |
| Aluminum | | • | • | | • | |
| Cast Iron | • | | • | | • | |
| Brass / Bronze | | • | • | | • | |
| Die Castings | • | | • | | • | |
| Carbon Steel | • | | • | | • | • |
| Glass / Ceramics | • | | | • | • | |
| Stainless Steel and Alloys | • | • | • | | • | |
| Wood | | • | | | • | |

Grit Selection Recommendation Guide

| STOCK REMOVAL | INTERMEDIATE | FINISHING |
|---------------|---------------|----------------|
| 24 – 50 grit | 60 – 100 grit | 120 – 320 grit |

TECH TIP

Troubleshooting Guide

| | Problem | Correction |
|-------------------------|---------------|---|
| pressure or belt speed | Belt breakage | Reduce belt tension |
| pressure | | Use less aggressive contact wheel |
| essive contact wheel | | Check tracking mechanism for belts tracking erratically |
| heel if worn or damaged | | |
| ce of belt | | |
| | v | |





Best for mild and carbon steel, stainless, cobalt, chrome, inconel, titanium

BLAZE R980P CERAMIC ALUMINA

- Next-generation cooler cutting Norton SG ceramic alumina grain lasts 50% to 200% longer on mild and carbon steel, stainless, cobalt, chrome, inconel and titanium with better metal integrity
- Durable Y-weight polyester, waterproof cloth backing for improved grain adhesion, reduced edge-fray, and better body retention, resulting in longer life and product consistency
- Lubricating grinding aid coating means cooler cut, burn-free grinding of heat-sensitive materials, minimized loading, and improved part finish and integrity

Exceptional performance, especially on hard-to-grind alloys

REDHEAT R983 CERAMIC ALUMINA

- Premium ceramic abrasive provides sharp cutting, exceptional life and value, especially on hard-to-grind alloys
- "Supersize" grinding-aid for longer life, cooler cut and minimized loading
- Strong Y-weight polyester, waterproof cloth backing for improved grain adhesion, reduced edge-fray and better body
 retention, resulting in longer life and product consistency



Better choice for heaviest-pressure applications

BLUEFIRE R821P/R823P/R884P ZIRCONIA ALUMINA

- Strong, self-sharpening zirconia alumina abrasive for fast, aggressive cut and 30% longer life than competitive zirconia belts
- Durable resin bond for excellent grain retention and product life
- R821P Y-weight cotton backing provides durability and even wear on coarser grit stock removal applications;
- R823 has flexible X-weight polyester waterproof backing to excel on light- to moderate-pressure, applications
- R884P has a durable Y-weight polyester waterproof cloth backing that excels on medium- to high pressure applications



Good choice for difficult-to-grind materials (aluminum, brass, bronze, stainless, carbon steel, titanium, etc.)

GEMINI R766 ALUMINUM OXIDE

- Premium aluminum oxide abrasive blend is ideal when primary purchasing criteria is a good-performing, economically-priced, general-purpose belt
- Y-weight waterproof polyester backing withstands light- to moderately-demanding applications and provides
 extended life on dry grinding applications
- · Resin bond system provides improved edge retention and 30% plus improvement in life versus key competitors

Good choice for fine grit metalworking blending and polishing where initial price is the main concern

GEMINI R228 ALUMINUM OXIDE

- Premium aluminum oxide abrasive delivers fast initial cut rate
- · Heavy, durable X-weight cotton backing is ideal for heat sensitive applications
- Strong butt joint that allows the belt to be run in either direction



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1" to 6" wide, 36" to 72" long

| | | TIER: TRADENAME: | BEST BLAZE R980P | BETTER BLUEFIRE R821P | BETTER BLUEFIRE R823P | GOOD Gemini R766 | GOOD Gemini R228 |
|-------------|------------|---------------------|---------------------|--------------------------|--|----------------------|--|
| | | ABRASIVE: | Ceramic Alumina | Zirconia Alumina | Zirconia Alumina | Aluminum Oxide Blend | Aluminum Oxide |
| | | | Y-Weight Polyester | Y-Weight Cotton | X-Weight Polyester | Y-Weight Polyester | X-Weight Cotton |
| | | OTHER: | Supersize | | | | |
| IZE (W x L) | GRIT | STD. PKG. | PART # | PART # | PART # | PART # | PART # |
| x 42 | 36 | 50 | 662544 76825 | | | | 780727 91710 |
| | 40 | 50 | 699573 45887 | 780727 26905 | | | 780727 20910 |
| | 50 | 50 | 662544 76826 | 780727 26904 | | 666233 90042 | 780727 20905 |
| | 60 | 50 | 699573 45486 | 780727 26903 | 780727 28596 | 666233 34502 | 780727 20900 |
| | 80 | 50 | 662610 41539 | 780727 26902 | 780727 28594 | 666233 90043 | 780727 20895 |
| | 100 | 50 | 662610 43462 | | 780727 28592 | | 780727 20890 |
| | 120 | 50 | 662610 38660 | | 780727 28590 | | 780727 20885 |
| | 150 | 50 | | | 780727 28588 | | 780727 20880 |
| | 180 | 50 | | | 780727 28586 | | 780727 20875 |
| | 220 | 50 | | | 780727 00001 | | 780727 20871 |
| | 240 320 | 50 | | | | | 780727 20870 |
| -1/2 x 60 | 320 | 50 10 | 699573 45578 | | | | 780727 20865 780727 21060 |
| - 1/2 X OU | 40 | 10 | 636425 95003 | | | | 10012121000 |
| | 40 50 | 10 | 00042030000 | | | | 780727 87807 |
| | 60 | 10 | 699573 45631 | | | 666233 90045 | 10012101001 |
| | 80 | 10 | 699573 45579 | | | 666233 90045 | |
| | 100 | 10 | | | 780727 65077 | | 699573 51736 |
| | 120 | 10 | 662610 56493 | | 780727 26984 | | 03301001100 |
| | 220 | 10 | 00201000100 | | 78072708871 | | |
| x 48 | 24 | 10 | | | 10012100011 | | 780727 26130 |
| | 36 | 10 | 636425 92057 | 780727 27103 | | 666233 90047 | 780727 21255 |
| | 40 | 10 | 699573 45193 | 78072727102 | | 666233 90048 | 78072721250 |
| | 50 | 10 | 699573 46716 | 78072727101 | | | 78072721245 |
| | 60 | 10 | 699573 44423 | 78072727100 | 780727 28621 | 666233 90050 | 78072721240 |
| | 80 | 10 | 699573 45100 | 780727 27099 | 780727 28619 | 666233 90051 | 780727 21235 |
| | 100 | 10 | 662610 52522 | | 780727 28617 | | 780727 21230 |
| | 120 | 10 | 662610 52520 | | 780727 28615 | | 780727 21225 |
| | 150 | 10 | | | 780727 28613 | | 780727 23246 |
| | 180 | 10 | | | 780727 28611 | | 780727 21223 |
| | 220 | 10 | | | 780727 28609 | | 780727 63677 |
| | 320 | 10 | | | | | 780727 46387 |
| x 60 | 24 | 10 | | | | | 662610 54787 |
| | 36 | 10 | 699573 45196 | | | 666233 90052 | 780727 01170 |
| | 40 | 10 | 699573 94425 | 780727 27124 | | | 780727 21300 |
| | 50 | 10 | 699573 46149 | | | | 780727 62537 |
| | 60 | 10 | 699573 44901 | 780727 27122 | | 666233 90055 | 780727 21290 |
| | 80 | 10 | 636425 92574 | 780727 27121 | 00004000000 | 666233 90056 | 780727 21285 |
| | 100 | 10 | 662610 52222 | | 662610 82976 | | 780727 21280 |
| | 120 150 | 10 10 | 662610 42738 | | 780727 61958 | | 70070744010 |
| | | 10 | | | 78070707605 | | 780727 44018 |
| | 180 220 | 10 | | | 780727 02695 780727 06282 | | 780727 20441 780727 44020 |
| | 240 | 10 | | | 10012100202 | | 780727 61862 |
| | 320 | 10 | | | | | 78072702825 |
| x 72 | 24 | 10 | 662544 33969 | | | | |
| ~ 1 - | 36 | 10 | 699573 45460 | 780727 27147 | | 666233 90057 | 780727 21335 |
| | 40 | 10 | 699573 46729 | 780727 27146 | | 66623390058 | 780727 21332 |
| | 50 | 10 | 699573 44966 | 780727 27145 | | | 780727 84894 |
| | 60 | 10 | 699573 45157 | 780727 27144 | 780727 28645 | 666233 90060 | 780727 21325 |
| | 80 | 10 | 699573 44961 | 780727 27142 | 780727 28643 | 666233 34237 | 780727 21320 |
| | 100 | 10 | 662610 41897 | | 662610 25537 | | 780727 23235 |
| | 120 | 10 | 662610 44095 | | 780727 28639 | | 780727 21318 |
| | 150 | 10 | | | 78072761770 | | 78072761973 |
| | 180 | 10 | | | 78072763853 | | 780727 18488 |
| | 220 | 10 | | | 78072728633 | | 78072765601 |
| | 320 | 10 | | | | | 780727 21308 |

Continued



1" to 6" wide, 36" to 72" long continued

| | | | | | | the state of | | |
|--------------|------------|-----------|---------------------------------------|-------------------------------------|--|--|--|--|
| | | | | | | | | |
| | | | BEST | BETTER | BETTER | BETTER | GOOD | GOOD |
| | | | BLAZE R980P | BLUEFIRE R821P | BLUEFIRE R823P | BLUEFIRE R884P | GEMINI R766 | GEMINI R228 |
| | | | Ceramic Alumina Y-Weight Polyester | Zirconia Alumina Y-Weight Cotton | Zirconia Alumina X-Weight Polyester | Zirconia Alumina Y-Weight Polyester | Aluminum Oxide Blend Y-Weight Polyester | X-Weight Cotton |
| | | OTHER: | Supersize | t-weight Collon | X-Weight Fulyester | r-weigill rolyester | r-weight ruiyestei | A-Weight Collon |
| ZE (W x L) | GRIT | STD. PKG. | | PART # | PART # | PART # | PART # | PART # |
| 1/2 x 48 | 36 | 10 | | | | | 666233 90061 | 780727 21540 |
| 1,2 / 10 | 50 | 10 | | 780727 27213 | | | 0002000001 | 78072721530 |
| | 60 | 10 | | | | | 666233 90064 | 780727 21525 |
| | 80 | 10 | | | | | 666233 90065 | 780727 21520 |
| -1/2 x 60 | 24 | 10 | | | | 780727 37759 | | 780727 08296 |
| | 36 | 10 | 699573 44963 | 780727 27235 | | | 666233 90066 | 780727 21610 |
| | 40 | 10 | 699573 46523 | 780727 27234 | | | 666233 90067 | 780727 21605 |
| | 50 | 10 | 699573 45300 | 780727 27233 | 20020200000 | 70070704000 | 666233 90068 | 780727 21600 |
| | 60 | 10 | 699573 45002 | 780727 27232 | 780727 28692 | 780727 21383 | 66623390069 | 780727 21595 |
| | 80 100 | 10 10 | 699573 46095 | 780727 27231 | 780727 28690 780727 68991 | | 666233 90070 | 780727 21590 780727 21585 |
| | 120 | 10 | 662610 41380 | | 780727 28686 | | | 780727 21585 780727 21580 |
| | 120 | 10 | | | 780727 28682 | | | 780727 21500 |
| | 220 | 10 | | | 780727 78217 | | | 780727 21565 |
| x 36 | 36 | 10 | | | | | 666233 90071 | 780727 22110 |
| | 40 | 10 | | | | | 0002000000 | 780727 22105 |
| | 50 | 10 | | 780727 27475 | | | 666233 90073 | 780727 22100 |
| | 60 | 10 | | | 780727 28827 | | 666233 90074 | 780727 22095 |
| | 80 | 10 | | 780727 27473 | 780727 28825 | | 666233 90075 | 780727 22090 |
| | 100 | 10 | | | 780727 28823 | | | 780727 22085 |
| | 120 | 10 | | | 780727 28821 | | | 780727 22080 |
| | 150 | 10 | | | | | | 780727 22079 |
| | 180 | 10 | | | | | | 780727 22075 |
| | 240 | 10 | | | | | | 780727 22926 |
| 54 | 320 | 10 | | | | | | 780727 22071 |
| x 54 | 36 40 | 10 10 | | | | | | 780727 22185 780727 22180 |
| | 40 50 | 10 | | | | | 666233 90078 | 780727 22180 780727 22175 |
| | 60 | 10 | 662610 63419 | 780727 27518 | 780727 25116 | | 00023390070 | 780727 22175 |
| | 80 | 10 | 699573 45139 | 10012121310 | 780727 82996 | | | 780727 22165 |
| | 100 | 10 | | | 10012102000 | | | 780727 22160 |
| | 120 | 10 | | | 780727 28847 | | | 78072722155 |
| | 150 | 10 | | | | | | 780727 28381 |
| x 60 | 24 | 10 | 662544 61488 | | | | | 780727 72342 |
| | 36 | 10 | 699573 45298 | | | 780727 37955 | | 780727 05189 |
| | 40 | 10 | 699573 91732 | | | | | 780727 44693 |
| | 50 | 10 | 699573 46715 | | | | | 780727 61630 |
| | 60 | 10 | 636425 94485 | | 780727 74790 | | | 780727 62861 |
| | 80 | 10 | 699573 45099 | | 780727 65086 | | | 78072784685 |
| | 100 120 | 10 10 | 662544 16188 | | 780727 66229 | | | 780727 63161 780727 87840 |
| x 72 | 36 | 10 | 00204410100 | | 10012100229 | 780727 25984 | | 10012101040 |
| x 72 x 48 | 36 | 10 | 699573 45143 | 780727 27698 | | 10012120304 | 666233 90081 | 780727 22590 |
| | 40 | 10 | 00001070190 | 780727 27697 | | | 666233 90082 | |
| | 50 | 10 | | 780727 27696 | | | 666233 90083 | 780727 22580 |
| | 60 | 10 | 699573 44422 | 780727 27695 * | 780727 28937 * | | 666233 90084 | |
| | 80 | 10 | | 780727 27694 * | 780727 28935 * | | 666233 90085 | 780727 22570 |
| | 100 | 10 | | | 78072728933* | | | 780727 22565 |
| | 120 | 10 | | | 78072728931* | | | 780727 22560 |
| | 150 | 10 | | | 780727 70042 | | | 780727 22555 |
| | 180 | 10 | | | | | | 780727 22550 |
| | 220 | 10 | | | | | | 780727 22546 |
| | 240 | 10 | | | | | | 780727 22545 |
| | 320 | 10 | | | | | | 780727 22543 |

Continued



1" to 6" wide, 36" to 72" long continued

| | | | 5 | | | NEW | |
|--------------|----------|------------|---------------------|-----------------------|---------------------|---------------------|-----------------------|
| | | TIER: | BEST | BETTER | BETTER | BETTER | GOOD |
| | | TRADENAME: | BLAZE R980P | BLUEFIRE R821P | BLUEFIRE R823P | BLUEFIRE R884P | GEMINI R228 |
| | | ABRASIVE: | Ceramic Alumina | Zirconia Alumina | Zirconia Alumina | Zirconia Alumina | Aluminum Oxide |
| | | BACKING: | Y-Weight Polyester | Y-Weight Cotton | X-Weight Polyester | Y-Weight Polyester | X-Weight Cotton |
| | | OTHER: | Supersize | | | | |
| SIZE (W x L) | GRIT | STD. PKG. | PART # | PART # | PART # | PART # | PART # |
| 6 x 54 | 60 | 10 | | | | 780727 46982 | |
| 6 x 60 | 36 | 10 | | | | | 780727 22680 |
| | 40 | 10 | | 780727 27762 | | | 780727 22679 |
| | 60 | 10 | 699573 45149 | 780727 28957 * | | | 780727 22665 * |
| | 80 | 10 | | | 780727 28955 | | 780727 22660 * |
| | 100 | 10 | 662544 77452 | | | | |
| | 120 | 10 | | | | | 78072763882 |
| * Std Pka – | 20 Relto | 2 | | | | | |

Std. Pkg. = 20 Belts

Belt Cleaning Stick



- . This solid, rubber cleaning stick is designed to remove wood and other non-metallic materials that build up on belt surface during use
- Apply it to the face of the belt, while running, to remove unwanted materials and prolong the overall life of the belt up to 10 times

| DESCRIPTION | STD. PKG. | PART # | |
|-------------------|-----------|---------------------|--|
| 1-3/8 x 1-3/8 x 6 | 10 | 076607 01717 | |

TECH TIP

A light-bodied grease applied to a benchstand belt surface will reduce loading and greatly enhance the belt life and performance when grinding soft, malleable nonferrous materials such as aluminum, brass, bronze and copper.



For non-stock belts, FastTrack Service offers all the benefits of an ISO 9001 quality manufacturer and the advantages of a coated abrasives express belt service. As the industry's leading producer of abrasive material and backings, our FastTrack service offers an extensive range of Norton made-to-order belts including Blaze ceramic alumina, BlueFire zirconia alumina, and versatile aluminum oxide and silicon carbide belts.

Manufacturing Lead-times:

• Narrow belts: (1/2" - 12" wide) two days

- Wide belts (14" 52" wide) three days
- Size Availability:

• Maximum width: 52"

• 1/2" and greater widths; 25" and greater lengths

Please see the FastTrack Service Made-to-Order Belts section of this catalog for complete details.



Toll Free 1 800 563 1293 applifast.com



2" to 10" wide, over 70" long

| | | | | | 1631 619 | | - 1 T and | |
|--------------|------|-----------|---------------------|---------------------|------------------------|--|----------------------|--|
| | | | | | | | | |
| | | TIFR | BEST | BEST | BETTER | BETTER | GOOD | GOOD |
| | | | BLAZE R980P | REDHEAT R983 | BLUEFIRE R884P | BLUEFIRE R823P | GEMINI R766 | GEMINI R228 |
| | | | Ceramic Alumina | Ceramic Alumina | Zirconia Alumina | Zirconia Alumina | Aluminum Oxide Blend | |
| | | BACKING: | Y-Weight Polyester | Y-Weight Polyester | Y-Weight Polyester | X-Weight Polyester | Y-Weight Polyester | X-Weight Cotton |
| | | OTHER: | Supersize | Supersize | | | | 0 |
| SIZE (W x L) | GRIT | STD. PKG. | PART # | PART # | PART # | PART # | PART # | PART # |
| 2 x 132 | 36 | 10 | | 780727 53086 | 780727 50016 | | 666233 47337 | |
| | 40 | 10 | | | 780727 50015 | | 666233 90089 | |
| | 50 | 10 | | 780727 40771 | 780727 50013 | | 666233 90090 | |
| | 60 | 10 | | | 780727 50011 | | 666233 90091 | 780727 21445 |
| | 80 | 10 | | 780727 01958 | 780727 50008 | | 666233 90092 | 780727 21440 |
| | 120 | 10 | | | | 780727 28662 | | |
| 3 x 79 | 50 | 10 | 662610 90276 | | | | | |
| | 60 | 10 | | | 780727 48280 | | | |
| 3 x 90 | 36 | 10 | 699573 46319 | | | | | 780727 85831 |
| 3 x 132 | 24 | 10 | | | 780727 50140 | | | |
| | 36 | 10 | 699573 44710 | 780727 53087 | 780727 50138 RR | | 666233 90093 | 780727 21900 |
| | 36 | 10 | 00057044004 | 70070704044 | 780727 50139 L | | | |
| | 40 | 10 | 699573 44964 | 78072701614 | 20020250405 | | | 70070701000 |
| | 50 | 10 | 699573 44763 | 780727 03709 | 780727 50135 | 7007070704 | 200000000 | 780727 21890 |
| | 60 | 10 | 699573 44958 | | | 780727 28794 | 66623390096 | 780727 21885 |
| | 80 | 10 10 | 699573 44764 | | | 780727 28792 780727 28790 | 666233 90097 | 780727 21880 |
| | 100 | 10 | | | | 780727 28790 780727 28789 | | 780727 21870 |
| | 120 | 10 | | | | 780727 28785 | | 780727 21870 780727 21860 |
| x 79 | 36 | 10 | | 662610 22622 | | 180/2/28/83 | | 18012121800 |
| 13 | 40 | 10 | | 00201022022 | 780727 74955 | | | |
| x 100 | 36 | 10 | | | 780727 68679 | | | |
| x 132 | 24 | 10 | | | 780727 50289 | | | |
| r x 102 | 36 | 10 | 699573 43852 | 780727 39662 | 780727 50287 | | 666233 26093 | |
| | 40 | 10 | 00001040002 | TOOTETOSOOL | TOULET | | 66623390098 | |
| | 60 | 10 | | | 780727 50281 | | 0002000000 | |
| | 80 | 10 | | | 780727 50279 | | | 780727 22385 |
| | 120 | 10 | | | 10012100210 | | | 780727 22375 |
| 6 x 78-3/4 | 40 | 10 | | | 780727 25150 | | | |
| 6 x 79 | 36 | 10 | | | 780727 38105 | | | |
| - | 80 | 10 | | | 780727 79322 | | | |
| x 107 | 36 | 10 | | | | | | 780727 22795 |
| | 50 | 10 | | | | | | 78072749887 |
| | 60 | 10 | | | | | | 780727 22780 * |
| | 80 | 10 | | | | | | 780727 22775 * |
| 0 x 70-1/2 | 36 | 10 | | | | | | 780727 22840 |
| | 40 | 10 | | | | | | 780727 22835 |
| | 50 | 10 | | | | | | 780727 22830 |
| | 60 | 10 | | | | | 666233 47345 | 780727 22825 |
| | 80 | 10 | | | | | 666233 47346 | 780727 22820 |

* Std. Pkg. = 20 Belts





COATED & NON-WOVEN ABRASIVES Wide Belts

A small selection of stock products in popular sizes are available for wide belt woodworking and metalworking applications.

Applications: Metalworking

Metalworking wide belts are used for plate dimensioning, slag grinding, machining, deburring, and other general metalworking applications. They are usually cloth and are closed coat.

Woodworking

Cloth woodworking wide belts are used for rough stock removal and dimensioning Paper woodworking belts are used to upgrade the finish on furniture and other wood components. Stock: 25" - 52" wide, 48" to 103" long Stock: 36 - 220 Zirconia Alumina, Aluminum Oxide

Metalworking Cloth Belt Recommendation Guide/Cross Reference

Abrasive Grain:

| | TOTAL PERFORMANCE INITIAL PR | | | | | | | | | |
|--------------------|------------------------------|---|---------------------------|--|--------------------------------------|-----------------------------------|------------------------------------|--------------------------------|--|--|
| | BEST H-wt Polyester | V-wt Polyoster | BETTER H-wt. Polyester | | | | GOOD | | | |
| NORTON | Blaze R940P | Blaze R980P | BlueFire R840P | Y-wt. Polyester BlueFire R887D/R884P | X-wt. Polyester BlueFire R823P | Y-wt. Polyester Gemini R766 | X-wt. Polyester Gemini R766X | X-wt. Cotton Gemini R228 | | |
| 3M | 966F, 984F, 994F, 997F | 963G/H, 966F, 967F, 997F, 984F, 784F, 947A | 561F | 577F, 561D | 551E | 361F, 363F | 353F, 384F | 241D, 251D, 341D | | |
| Ekamant/ Uneeda | _ | PS991, PS992 | PZ628 | PZ528, PZ633 | XZ677 | PA631, PG730, PG830 | XA911 | XA167 | | |
| Hermes | CB441Z | CR456 | SB488YR | RB48624YX, RB48644Z, RB48024YX, RB48444Z, RB485Z | RB486 | RB377XY, SB378 | RB377XY | RB320X, HSB | | |
| Klingspor | | CS610 | CS811 | CS409, CS411 | CS411X, CS416 | CS412, CS413 | CS341, CS710 | CS310 | | |
| SIA | — | 2515, 2503 | C888DP | 2803, 2815, 2829, 2824, 2820 | _ | — | 2820 | 2918, 2928 | | |
| VSM | XK888Z, XK877Z | XK875X, XK885Y, XK880Y | KK717 | KK716 | ZK713X, ZK713T, KK715X | LK719X, KK711X | LK719X, KK711X | KK511X | | |

Woodworking Cloth and Paper Belt Recommendation Guide/Cross Reference

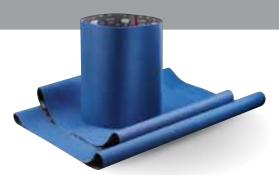
TOTAL PERFORMANCE

INITIAL PRICE

| | BEST | | BETTER | GOOD | | | |
|--------------------|------------------------------|-------------|------------------|---------------------------|-------------|---------------------------------|--|
| | Y-wt. Cotton | F-wt. Paper | Y-wt. Cotton | X-wt. Cotton | F-wt. Paper | F-wt. Paper | |
| | Dust-Less | Dust-Less | | | Dust-Less | Dust-Less | |
| NORTON | SG R963 | SG 975 | BlueFire R831 | Gemini R215 | H295 | H275 | |
| 3M | 960G, 970DZ, 990FZ, 991FZ | 966UZ | _ | 240DZ, 340A, 340D | 260UZ | 364UZ | |
| Ekamant/ Jneeda | | _ | XZ677 | RKX, RKXO | — | ARKFO, EKA1000, EKABlack | |
| lermes | _ | CB115 | RB480 | RB320 | BW114 | BW110, BW114, CB115 | |
| lingspor | | _ | C409, CS411 | LS309XH | PS22 | PS29 | |
| SIA | _ | — | 2803, 2820, 2829 | 2920, 2928, 2921, 2951 | 1919 | 1909,1918,1919 CRS,1993 | |
| /SM | XK760X, XK760Y | XP760 | KK713X, KK715X | KK504X, KP510E | KK508E | KP709, KP520, KP508E, KP510E | |



COATED & NON-WOVEN ABRASIVES Wide Belts



Better choice for all metal and wood applications due to the cut rate and life of the proprietary Norton BlueFire grain

BLUEFIRE R884P/R823P ZIRCONIA ALUMINA CLOTH

- Strong, self-sharpening zirconia alumina abrasive for fast, aggressive cut and 30% longer life than competitive zirconia belts
- · Durable resin bond for excellent grain retention and product life
- R884P has a durable Y-weight polyester waterproof cloth backing that excels on medium- to high pressure metal applications
- R823 has flexible X-weight polyester waterproof backing to excel on light- to moderate-pressure metal applications

Good choice for abrasive planing and dimensioning of glued-up stock and banded particleboard

GEMINI R215 ALUMINUM OXIDE CLOTH

- - · Premium aluminum oxide abrasive for fast initial cut rate
 - · Heavy, durable X-weight cotton backing is ideal for heat sensitive applications
 - Strong butt joint that allows the belt to be run in either direction

| | | | | | and the second s |
|--------------|------|-------------|--------------------------|--------------------------|--|
| | | TIER: | BETTER | BETTER | GOOD |
| | | TRADENAME:: | BLUEFIRE R884P | BLUEFIRE R823P | GEMINI R215 |
| | | ABRASIVE: | Zirconia Alumina | Zirconia Alumina | Aluminum Oxide |
| | | BACKING: | Y-Weight Polyester Cloth | X-Weight Polyester Cloth | X-Weight Cotton Cloth |
| | | JOINT/FLEX: | Plyweld, RR | Plyweld, RR | Plyweld, RR |
| SIZE (W x L) | GRIT | STD. PKG. | | PART # | PART # |
| 25 x 48 | 80 | 3 | | 699573 44781 | |
| 25 x 60 | 80 | 3 | | 699573 28117 | |
| | 120 | 5 | | 699573 28115 | |
| 25 x 75 | 120 | 5 | | 699573 44791 | |
| 36 x 75 | 36 | 2 | 699573 50934 | | |
| | 60 | 3 | 699573 50931 | | |
| | 120 | 5 | | 699573 29014 | |
| | 180 | 5 | | 699573 44869 | |
| 37 x 60 | 50 | 3 | 699573 06219 | | |
| | 80 | 3 | | 699573 29019 | 699573 25709 |
| | 100 | 5 | | 699573 28103 | 699573 25708 |
| | 120 | 5 | | 699573 29018 | 699573 25707 |
| | 150 | 5 | | 699573 28102 | 699573 02955 |
| | 180 | 5 | | 699573 28101 | |
| | 220 | 5 | | 699573 28100 | |
| 37 x 75 | 36 | 2 | 699573 50959 | | |
| | 50 | 3 | 699573 05107 | | |
| | 80 | 3 | 699573 50955 | | 699573 25957 |
| | 100 | 5 | | | 699573 23880 |
| | 120 | 5 | | 699573 07358 | 699573 25760 |
| | 150 | 5 | | | 699573 05737 |
| | 180 | 5 | | 699573 06734 | |
| 52 x 75 | 120 | 5 | | 699573 13510 | |

Due to the wide varieties of machines and applications, the majority of wide belts are non-stock. Our FastTrack belt service is available on the majority of products with 3-day lead-time on orders up to two cases quantity.

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TECH TIP

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6" wide belts can be used on machines that normally use 37" wide belts.



COATED & NON-WOVEN ABRASIVES FastTrack Service Made-to-Order Belts

For many non-stock belts, our FastTrack belt service offers all the benefits of an ISO 9001 quality manufacturer and the advantages of a coated abrasives express belt service. As the industry leader of abrasive belts, our FastTrack belt service has an extensive range of Norton made-to-order belts including Blaze ceramic alumina, BlueFire zirconia alumina, versatile aluminum oxide, and silicon carbide belts.

Manufacturing lead-time is two days for narrow belts (1/2" - 12" wide) and three days for wide belts (14" - 52" wide). Please see the FastTrack belt service chart below for complete details on availability and lead-time.

FastTrack Availability* and Lead-time Information

| WIDTH | GRIT SIZE | MINIMUM ORDER QUANTITY | CASE Quantity | MAXIMUM ORDER Quantity (Equals 2 cases) | CONVERSION Lead-times |
|---------------------------|--------------------|------------------------------|------------------|---|--------------------------|
| Narrow Belts | | | | | |
| 1/2" through 1" | All | 50 | 200 | 400 | 2 |
| Over 1" through 5" | All | 10 | 50 | 100 | 2 |
| Over 5" through 9" | All | 10 | 20 | 40 | 2 |
| Over 9" through 14" | All | 10 | 10 | 20 | 2 |
| Wide Belts | | | | | |
| Over 14" through 20" | All | 5 | 10 | 20 | 3 |
| Over 20" through 52" | 36 & coarser | 2 | 2 | 4 | 3 |
| Over 20" through 52" | 40-80 | 3 | 3 | 6 | 3 |
| Over 20" through 52" | 100 & finer | 5 | 5 | 10 | 3 |
| * FeetTreel, helt service | analise to belle (| CII and avaatas : | a lanath | | |

How to Place a FastTrack Belt Order

- Check the FastTrack belt availability
- Include a full description of belt: quantity, size, Norton CAP code, and grit size
- Send order electronically, fax, or phone to customer service
- When ordering a belt that does not have an existing part number, please call Customer Service to expedite part number creation

* FastTrack belt service applies to belts 25" and greater in length.

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| TIER | PRODUCT Cap Code | SHAPE AVAILABILITY | GRIT SIZE | ABRASIVE Grain | BACKING | APPLICATIONS |
|--------|---------------------|------------------------|---------------------------------|--------------------------------|----------------------|---|
| Metal | working | | | | | |
| Best | R980P | Narrow, Wide | 24-120 | Blaze Ceramic Alumina | Y-wt. Polyester | Latest-generation Norton SG grain, supersized and designed for high-performance grinding on stainless and other alloys |
| Best | R984 | Narrow, Wide | 36-120 | SG Ceramic Alumina | Y-wt. Polyester | Norton SG grain for medium-pressure grinding and finishing heat-sensitive alloys |
| Best | R983 | Narrow | P36-P120 | Red Heat Ceramic Alumina | Y-wt. Plus | P-graded ceramic alumina abrasive with lubricating supersize coat; engineered for maximum productivity on mild carbon steel, ferrous metal, and cast iron applications |
| Better | R884P | Narrow, Wide | 24, 36-80 | BlueFire Zirconia Alumina | Y-wt. Polyester | High-performance zirconia alumina grain designed for medium- to high-pressure grinding |
| Better | R887D | Narrow, Wide | 24, 36-120 | BlueFire Zirconia Alumina | , | High-performance zirconia alumina grain, supersized and designed for medium- to high- pressure grinding of heat-sensitive alloys |
| Better | R823P | Narrow, Wide | 60-220 | BlueFire Zirconia Alumina | , | High-performance zirconia alumina grain on lighter backing designed for light to medium grinding |
| Good | R766 | Narrow | P24-80 | Gemini Aluminum Oxide Blend | | Premium aluminum oxide blend product designed for a variety of applications including soft metals to hard-to-grind stainless and carbon steel |
| Good | R766X | Narrow, Wide | P60-P400 | Gemini Aluminum Oxide Blend | X-wt. Polyester | Quality, P-graded aluminum oxide and broad grit range for stock removal to finer finishing |
| Good | MX240 | Narrow, Wide | P80-P150 | Aluminum Oxide | X-wt. Poly/Cotton | P-graded, heat-treated aluminum oxide X-weight cloth with strong, but flexible, cotton/ polyester backing making it an ideal multi-purpose product |
| Good | R245 | Narrow | P80-P240, P320, P400 | Aluminum Oxide | J-wt. Polyester | Aluminum oxide on flexible, lightweight polyester backing for moderate- to light- pressure applications on mild steel |
| Good | KF376 | Narrow | P80-P320, P400, P600 | Aluminum Oxide | J-wt. Cotton | P-graded, heat-treated aluminum oxide with ceramic coating on a very flexible backing for use wherever flexibility and conformability are needed |
| Good | R445 | Narrow | 60-220 | Silicon Carbide | X-wt. Polyester | Sharp, silicon carbide grain on medium polyester backing for grinding very hard materials – glass, stone, solid surface |
| Good | U243 | Narrow, Wide to 24" | X80, X65, X45, X30, X22, X16 | NORaX Aluminum Oxide | J-wt. Cotton | High-performance, multi-layered NORaX grain on very flexible backing for dry polishing applications |
| Wood | working | | | | | |
| Best | R963 | Narrow, Wide | 24-60, P80 100-150 | SG Ceramic Alumina | Y-wt. Polyester | (MDF, particleboard, plywood) |
| Best | R955 | Narrow | P36-P120 | Red Heat Ceramic Alumina | Y-wt. Cotton | 100% ceramic alumina abrasive with Y-weight cloth backing for dimensioning, intermediate sanding of wood |
| Better | R831 | Narrow, Wide | 24, 36-120 | BlueFire Zirconia Alumina | Y-wt. Cotton | Norton BlueFire open-coat product recommended for dry low-pressure applications or where loading is a problem |
| Good | R215 | Narrow, Wide | 50-180 | Gemini Aluminum Oxide | X-wt. Cotton | Initial starting specification for woodworking applications where loading is a problem, and initial cost a primary concern |
| Good | R490 | Narrow, Wide | P36-P150 | Silicon Carbide | Y-wt. Polyester | Anti-static product for forest product applications (MDF, particle board, plywood) where loading is an issue |
| Good | R422 | Narrow | 50-120 | Silicon Carbide | X-wt. Cotton | Initial starting specification for woodworking applications where loading is not an issue |
| Best | H975 | Narrow, Wide | 60-220 | Red Heat Ceramic Alumina | F-wt. Paper | Ceramic alumina grain, antistatic coating, and open coat; the best choice for applications where loading is a problem (soft woods, etc.) |
| Better | H831 | Wide | 24,36-120 | BlueFire Zirconia Alumina | F-wt. Paper | Durable zirconia alumina grain, antistatic coating, and open coat: the better choice for applications where loading is a problem (soft woods, etc.) |
| Good | H275B | Narrow, Wide | P60-P220 | Aluminum Oxide | F-wt. Paper | Quality aluminum oxide grain, antistatic coating, and open coat make these an economical choice for all heavy-weight paper belt jobs |
| Better | H475 | Narrow, Wide | P120-P400 | Onyx Silicon Carbide | F-wt. Paper | Sharp silicon carbide and antistatic coating create finer finishes on hard materials and veneers where finish is critical |

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COATED & NON-WOVEN ABRASIVES Non-Woven Belts

Norton non-woven belts are a combination of strong synthetic mesh and quality abrasive, bonded together by a smear-resistant adhesive. The open construction of non-woven material enables aggressive cutting action and improved surface finish while maintaining its non-loading feature.

Watch for new and improved narrow belt and file belt joints.

Applications:

Abrasive Grain: Grit Range: **Machine Used:**

Removing surface defects, light edge burrs, parting lines, flashing, rust, oxides, corrosion, paints, and scale; blending mill marks, tool marks, uneven edges, and applying decorative finishes.

Engineered Aluminum Oxide, Aluminum Oxide

Extra Coarse (Black), Coarse (Brown), Medium (Maroon), Fine (Green), Very Fine (Blue)



IN-LINE DRUM SANDER



GRINDER



BACKSTAND **BELT GRINDER**

Application/Grit Recommendation Guide

| | | and the second | A AREA TO A | LYAN CRASS | |
|-----------------|--------------|----------------|----------------------|------------|-----------|
| | | | AN THE SAME | | |
| | EXTRA COARSE | COARSE | MEDIUM | FINE | VERY FINE |
| | | | BEST Choice - Vortex | Rapid Prep | |
| | | | BETTER Choice - R | lapid Prep | |
| Scale Removal | • | | | | |
| Stock Removal | | • | | | |
| Heavy Deburring | | • | | | |
| Light Deburring | | | • | | |
| Light Finishing | | | • | | |
| Blending | | | | • | |
| Finishing | | | | | • |

Vortex Rapid Prep Pump Sleeve Belts



Best choice for finishing and blending applications

VORTEX RAPID PREP ALUMINUM OXIDE

- Patented Vortex agglomerated aluminum oxide grain produces the most consistent cutting and finishing action combining the cutting power of a coarser grit with the finish of finer grits
- Premium high-loft nylon fiber bonded to a strong nylon scrim backing allows a uniformly thick layer of resin bond and grain for extended life, durability, and stiffness
- Proprietary Clean Bond resin technology and open coat guarantee smear-free finishes even on high nickel content alloys and minimize loading on aluminum and other soft metals

| | | | | 3 | | | |
|-------|--------|-------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | | GRIT/COLOR: | EXTRA COARSE | COARSE | MEDIUM | FINE | VERY FINE |
| | | TIER: | BEST | BEST | BEST | BEST | BEST |
| | | TRADENAME: | VORTEX RAPID PREP |
| | | ABRASIVE: | Engineered A/O |
| WIDTH | LENGTH | STD. PKG. | PART # |
| 3-1/2 | 15-1/2 | 8 | 666233 33725 | 666233 35042 | 666233 35118 | 666233 33665 | 666233 35139 |







Rapid Prep File and Narrow Belts



Better choice for finishing and blending applications

RAPID PREP ALUMINUM OXIDE

- · Premium aluminum oxide abrasive grain coating provides up to 20% higher cut rate versus other surface conditioning belts
- · Durable nylon fiber bonded to a strong Y-weight polyester backing with extremely low stretch is ideal for applications where low-stretch and durability are necessary
- Proprietary Clean Bond resin technology and open coat guarantee smear-free finishes even on high nickel content alloys and minimize loading on aluminum and other soft metals

| | | | No. | 3 | | | A Start |
|------------------------|----------------|-------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | | GRIT/COLOR: | EXTRA COARSE | COARSE | MEDIUM | FINE | VERY FINE |
| | | TIER: | BETTER | BETTER | BETTER | BETTER | BETTER |
| | | TRADENAME: | | RAPID PREP | RAPID PREP | RAPID PREP | RAPID PREP |
| | | | Aluminum Oxide |
| WIDTH | LENGTH | STD. PKG. | PART # |
| ile Belt | | 515.1 Ku. | | | | | |
| /4 | 3 18 | 24 | | 662610 11420 | 662610 12524 | 666233 33424 | 666233 33511 |
| ./4 | 24 | 24 | | 699573 92606 | 662610 97565 | 666233 33425 | 666233 33512 |
| /2 | 12 | 24 | | 662610 03177 | 662610 06465 | 666233 18175 | 662544 99884 |
| 1/2 | 18 | 24 | | 662610 55309 | 662610 55310 | 666233 33426 | 662610 55311 |
| | 24 | 24 | | 662610 55312 | 662610 08972 | 662544 90859 | 662610 19876 |
| 3/4 | 18 | 12 | | 662610 02111 | 662610 15808 | 662544 90858 | 662610 03622 |
| 77 | 20-1/2 | 12 | | 662610 83899 | 662610 03260 | 00204430030 | 666233 33515 |
| 1 | 18 | 12 | | 662610 07023 | 662610 17898 | 666233 33429 | 666233 33518 |
| | 21 | 12 | | 666233 33412 | 666233 36005 | 666233 33430 | 666233 33519 |
| Narrow B | | 14 | | 000200 00412 | 000200 JUUUJ | 000200 00400 | 0002000010 |
| variuw d 3/4 | 80 | 12 | | 666233 33411 | 666233 33505 | 666233 33428 | 666233 33516 |
|)/4 | 30 | 12 | | 662610 19801 | 666233 36006 | 666233 33431 | 662610 01972 |
| | 42 | 12 | | 662610 08317 | 662544 41289 | 666233 33432 | 666233 33521 |
| | 60 | 12 | | 00201000317 | 00234441203 | 000200 0402 | 662610 55412 |
| | 64 | 12 | | 666233 33414 | 666233 01513 | 666233 33434 | 662610 55412 |
| | 72 | 12 | | 662611 94240 | 662610 06378 | 662544 93830 | 662610 05583 |
| | 132 | 8 | | 666233 14981 | 00201000370 | 00204450000 | 00201003303 |
| | 132 | 10 | | 00023314301 | 662610 11414 | 662544 36886 | 666233 33525 |
| 1-1/2 | 60 | 8 | | 666233 33415 | 662610 07644 | 00204430000 | 666233 03624 |
| 2 | 18-15/16 | 12 | 662610 18226 | 0002000410 | 666233 33507 | 666233 33436 | 666233 33528 |
| <u> </u> | 34 | 12 | 00201010220 | 662610 63309 | 00023333307 | 666233 33437 | 666233 33529 |
| | 48 | 10 | | 662610 06504 | 662610 06648 | 666233 33438 | 666233 33531 |
| | 60 | 8 | | 666233 33416 | 662611 89669 | 666233 33439 | 666233 33532 |
| | 72 | 8 | | 662610 02571 | 66261007757 | 666233 33440 | 662610 02307 |
| | 132 | 6 | | 00201002371 | 00201007137 | 662610 69525 | 666233 33533 |
| 2-1/2 | 60 | 6 | | 662544 29365 | 662544 41491 | 666233 33441 | 666233 33534 |
| 2-1/2 2-3/4 | 15-1/2 | 10 | 666233 33578 | 666233 33417 | 666233 33508 | 000200 00441 | 666233 33535 |
| 3 | 10-11/16 | 12 | 666233 33580 | 662610 18076 | 662610 67469 | 666233 33443 | 666233 33536 |
| , | 18 | 10 | 662544 28772 | 662544 96043 | 662544 28776 | 666233 33444 | 662610 19836 |
| | 21 | 10 | 666233 33584 | 666233 33418 | 662610 10870 | 666233 33445 | 666233 33537 |
| | 24 | 10 | 662544 33359 | 666233 14158 | 00201010070 | 666233 33446 | 662610 55593 |
| | 72 | 6 | | 666233 33419 | 699573 96833 | 666233 33447 | 662610 03176 |
| | 80 | 4 | | 666233 33420 | 662610 07149 | 666233 33448 | 666233 33542 |
| | 90 | 4 | | 666233 33421 | JULUIUUI ITJ | 666233 33449 | 666233 33541 |
| | 118 | 4 | | 666233 33422 | 666233 33510 | 666233 33450 | 662610 47121 |
| | 132 | 4 | | 662544 90470 | 662610 55322 | 666233 33451 | 666233 33543 |
| 8-1/2 | 15-1/2 | 8 | 666233 33595 | 662610 55324 | 662544 44576 | 666233 33452 | 662610 55326 |
| - 1/2 L | 24 | 8 | 666233 33596 | 662544 95931 | 662610 31667 | | |
| т | 36 | 6 | 0002000000 | 002044333331 | 662610 02321 | 666233 33454 | 666233 33546 |
| | 132 | 2 | | 662610 09056 | 662610 06898 | 666233 33455 | 666233 33547 |
| | 168 | 2 | | 636425 76650 | 662610 09174 | 666233 33456 | 666233 33548 |
| 6 | 48 | 4 | | 662610 55330 | 662610 55331 | 666233 33457 | 662610 55332 |

Most Narrow belts are also available in our Vortex grain. If you do not see the Rapid Prep belts you need in our stock offering contact your Norton Representative for made-to-order availability.





COATED & NON-WOVEN ABRASIVES Cloth Rolls and Sheets

Scouring and light deburring, scale and rust removal, blending and fine sanding, polishing



Engineered for flexibility and fast cutting, cloth sheets and rolls have a longer life than paper. They tear cleanly and straight without shedding and are packed in a protective dispenser to eliminate waste and damage.

Rolls: 1" x 10 yds., 1-1/2" - 2" x 25 yds., 1" - 4" x 50 yds.

lathe turnings, rolls and cylinders, and blending machine tool marks

All purpose, fine finishing, and screen-back

40-600, extra coarse, coarse, medium, fine

Categories: Applications:

Size Range:

Grit Range: Abrasive Grain: Machine Used:



HAND JITTERBUG SANDING SANDER

Sheets: 9" x 11"

Cross Reference Guide

| GOOD | | | | | | | | |
|-------------|---|--|---|--|--|--|--|--|
| Gemini K225 | Metal R243 | K622 Emery | Screen-Bak Q421 | | | | | |
| 011K | 211K, 314D | 011K, Emery Cloth | 481W, 483W | | | | | |
| RB317 | RB232J | _ | GS91350, GS92400 | | | | | |
| LS309 | KL361, LS309 | KL371X | | | | | | |
| DA-F | EA-F | | Sait-Screen | | | | | |
| 2915 | 2601, 2915, 2936 | 1600, 2601 | SIA-Screen | | | | | |
| KK114F | KK505J, KK504X | | | | | | | |
| | Gemini K225 011K RB317 LS309 DA-F 2915 | Gemini K225 Metal R243 011K 211K, 314D RB317 RB232J LS309 KL361, LS309 DA-F EA-F 2915 2601, 2915, 2936 | Gemini K225 Metal R243 K622 Emery 011K 211K, 314D 011K, Emery Cloth RB317 RB232J — LS309 KL361, LS309 KL371X DA-F EA-F — 2915 2601, 2915, 2936 1600, 2601 | | | | | |

Application/Starting Recommendation Guide

| Durability/Stock Removal | Conformability | Slower Cut | Waterproof |
|--------------------------|------------------|-------------|------------------------|
| Fast Cut | Excellent Finish | Fine Finish | Load Resistant |
| Gemini K225 | Metal R243 | K622 Emery | Screen-Bak Durite Q421 |



Good choice for general-purpose metal and woodworking applications

GEMINI K225 ALUMINUM OXIDE

- · Premium P-graded aluminum oxide abrasive for greater cut rate on general purpose metalworking application
- Flexible J-weight backing for superior conformability to complex surfaces and better finishes
- · Advanced full resin bond system for exceptional grain adhesion for longer life



Good choice for small-volume metal and woodworking applications at a low initial price

METAL R243 ALUMINUM OXIDE

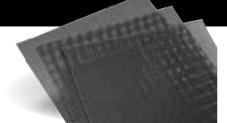
- Quality P-graded aluminum oxide abrasive grain delivers fast cut rate and consistent finish on metals
- Smooth, flexible J-weight cotton backing provides superior conformability to complex surfaces and better finishes
- Advanced full resin bond system provides exceptional grain adhesion for longer life on aluminum, fiberglass, composites, hard woods and soft woods

| stributed by App | līfast | | |
|------------------|--------|--|--|
| | | | |



COATED & NON-WOVEN ABRASIVES Cloth Rolls and Sheets





Good choice for removing rust, paint and scale from metal surfaces

K622 EMERY

- Natural emery abrasive for scouring and polishing non-rated metals and utensils
- · Abrasive is durabonded onto a flexible cloth backing for durability
- · Close coat for the greatest degree of stock removal and longest life

Good choice for sanding softer materials where loading is a major problem such as plastic, copper, brass, plaster, wood, and drywall

SCREEN-BAK Q421 SILICON CARBIDE

- · P-graded silicon carbide for excellent cutting and non-loading properties
- · Open weave screen for extreme resistance to loading when removing scale, rust and corrosion
- · Open mesh design is waterproof and washable, allowing you to rinse and reuse

Cloth and Screen Rolls

| | TIER: | GOOD | GOOD | GOOD | GOOD | GOOD |
|------|------------|---|-----------------------|-----------------------|-----------------------|-----------------------|
| | TRADENAME: | GEMINI K225 | GEMINI K225 | GEMINI K225 | GEMINI K225 | GEMINI K225 |
| | ABRASIVE: | Aluminum Oxide | Aluminum Oxide | Aluminum Oxide | Aluminum Oxide | Aluminum Oxide |
| | BACKING: | J-Weight Cotton | J-Weight Cotton | J-Weight Cotton | J-Weight Cotton | J-Weight Cotton |
| | SIZE: | 1" x 10 yds | 1" x 50 yds | 1-1/2" x 50 yds | 2" x 50 yds | 4" x 50 yds |
| GRIT | STD. PKG. | PART # | PART # | PART # | PART # | PART # |
| 40 | 1 | | 662610 58716 + | 662610 58715 + | 662610 58714 + | |
| 50 | 1 | | 662611 27728 + | 662611 27730 + | 662611 27732 + | |
| 60 | 1 | | 662611 27729 + | 662611 27731 + | 662611 27733 + | |
| 80 | 1 | 662611 34298 | 662611 26276 | 662611 26288 | 662611 26299 | |
| 100 | 1 | 662611 34299 | 662611 26275 | 662611 26287 | 662611 26298 | |
| 120 | 1 | 662611 34300 | 662611 26274 | 662611 26286 | 662611 26297 | 662611 27285 * |
| 150 | 1 | 662611 34301 | 662611 26273 | 662611 26285 | 662611 26296 | |
| 180 | 1 | 662611 34302 | 662611 26272 | 662611 26284 | 662611 26295 | |
| 220 | 1 | | 662611 26271 | 662611 26283 | 662611 26294 | |
| 240 | 1 | 662611 34303 | 662611 26270 | 662611 26282 | 662611 26293 | |
| 280 | 1 | | 662611 26269 | 662611 26281 | 662611 26292 | |
| 320 | 1 | 662611 34304 | 662611 26268 | 662611 26280 | 662611 26291 | |
| 400 | 1 | | 662611 26267 | 662611 26279 | 662611 26290 | |
| 600 | 1 | | 662611 26266 | 662611 26278 | 662611 26289 | |
| 40 | 00 | dense half and the state of the March 1.1.1 | | | | |

+ 40 - 60 grit, are supplied in durable, but flexible X-weight cotton backing

* Packaging Standards: 4" Roll Std. Pkg.: 6 rolls

| | | | a set | | (3) | |
|----------|-----------------------|------------------------------|---------------------|---------------------|-----------------------|-----------------------|
| | | GOOD | GOOD | GOOD | GOOD | GOOD |
| | TRADENAME: | METAL R243 | METAL R243 | METAL R243 | SCREEN-BAK Q421 | SCREEN-BAK Q421 |
| | ABRASIVE: | Aluminum Oxide | Aluminum Oxide | Aluminum Oxide | Silicon Carbide | Silicon Carbide |
| | BACKING: | J-Weight Cotton | J-Weight Cotton | J-Weight Cotton | Mesh | Mesh |
| | SIZE: | 1" x 50 yds | 1-1/2" x 50 yds | 2" x 50 yds | 1-1/2" x 25 yds | 2" x 25 yds |
| | OTHER: | · · · · | | | Waterproof | Waterproof |
| GRIT | STD. PKG. | PART # | PART # | PART # | PART # | PART # |
| 60 | 1 | 662611 36178 | 662611 36190 | 662611 36203 | | |
| 80 | 1 | 662611 36179 | 662611 36192 | 662611 36204 | 662611 07275 * | |
| 100 | 1 | 662611 36180 | 662611 36194 | 662611 36205 | | |
| 120 | 1 | 662611 36181 | 662611 36195 | 662611 36206 | 662611 07270 * | 662611 49811 * |
| 150 | 1 | 662611 36182 | 662611 36196 | 662611 36207 | | |
| 180 | 1 | 662611 36186 | 662611 36199 | 662611 36208 | 662611 07265 * | |
| 240 | 1 | 662611 36187 | 662611 36200 | 662611 36209 | | |
| 320 | 1 | 662611 36188 | 662611 36201 | 662611 36210 | | |
| 400 | 1 | 662611 36189 | 662611 36202 | 662611 36211 | | |
| * Dackar | ing Standards, Screen | -Rak 0421 Std Pka · 10 rolls | | | | |

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* Packaging Standards: Screen-Bak Q421 Std. Pkg.: 10 rolls

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COATED & NON-WOVEN ABRASIVES Cloth Rolls and Sheets

| Cloth S | heets | 7/50 | 11 | | | | Mittin |
|--------------|--------------|---------------------|--|---------------------|---------------------|-----------|----------------------|
| | | TIER: TRADENAME: | GOOD Gemini K225 | GOOD METAL R243 | GOOD K622 EMERY | | GOOD |
| | | | | | | | SCREEN-BAK Q421 |
| | | ABRASIVE: | Aluminum Oxide | Aluminum Oxide | Emery | | Silicon Carbide |
| | | BACKING: OTHER: | J-Weight Cotton | J-Weight Cotton | J-Weight Cotton | | Mesh |
| SIZE (W x L) | GRIT | PKG./CASE | PART # | PART # | PART # | PKG./CASE | Waterproof PART # |
| 9 x 11 | | 25/125 | 662610 58713 + | FANI # | PANI # | PKU./GAJE | FANI# |
| 9711 | 40 50 | 25/125 | 662611 01862 + | | | | |
| | 60 | 25/125 | 662611 01861 + | | | | |
| | 80 | 25/125 | 662611 26340 | 662611 79998 | | 25/125 | 66261100960 |
| | 100 | 50/250 | 662611 26339 | 662611 81503 | | 25/125 | 66261100955 |
| | 120 | 50/250 | 662611 26338 | 662611 81504 | | 25/125 | 66261100950 |
| | 120 | 50/250 | 662611 26337 | 662611 81505 | | 25/125 | 66261100945 |
| | 180 | 50/250 | 662611 26336 | 66261180005 | | 25/125 | 66261100945 |
| | 220 | 50/250 | 662611 26335 | 00201180000 | | 25/125 | 66261100935 |
| | | | | 00001101507 | | 23/125 | 00201100935 |
| | 240 280 | 50/250 | 662611 26334 | 662611 81507 | | | |
| | 320 | 50/250 | 662611 26333 662611 26332 | 662611 80006 | | 05/105 | 662611 00920 |
| | | 50/250 | | | | 25/125 | |
| | 400 | 50/250 | 662611 26331 | 662611 81509 | | 25/125 | 662611 00915 |
| | 600 | 50/250 | 662611 26330 | | 00001101055 | | |
| | Extra Coarse | 25/125 | | | 662611 01255 | | |
| | Coarse | 25/125 | | | 076607 01307 | | |
| | Medium | 50/250 | | | 076607 01309 | | |
| 40 00 | Fine | 50/250 | / | | 076607 01308 | | |

+ 40 - 60 grit are supplied in durable, but flexible X-weight cotton backing



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Paper sheets and rolls are engineered for optimum performance when sanding metal, wood, composites and painted surfaces. The sheets are packed in protective packaging to eliminate waste and permit easy, neat storage.

Categories: Applications:

Size Range: Grit Range: Abrasive Grain: **Paper Weights:** Machine Used:

All purpose, wood sanding, stearated (non-loading), waterproof, and heavyweight Light-duty metal sanding, primer sanding, defect removal from painted surfaces, filler sanding, sanding and finishing of composites and fiberglass, bare wood sanding, sanding between sealer coats

Full Sheets, Cut Sheets, File Strips and Rolls 36 - 2500

Ceramic Alumina, Zirconia Alumina, Aluminum Oxide, Silicon Carbide, and Garnet Heavyweight – E; Lightweight – A through D

HAND JITTERBUG SANDING SANDER



SANDING BOARD

Material-to-Product Recommendation Guide

| | BEST | | | | | | BETTER | | GOOD | | | | |
|--|---------------|-----------------|--------|-------------------|-------------------|--------|----------------|------------------|-------------------------|-------|-----------------------------|----------------|------------------------|
| | Blaze A995 | Dry Ice A975 | A2750P | Black Ice T214 | Black Ice T401 | A259PS | Durite A475 | Blue-Bak T414 | Gold Reserve A296 | PB273 | Garnet | TufBak T461 | Other |
| Unfinished Metal | • | • | • | | | | | | • | • | | | |
| Primed / Painted Surfaces / Between Coats | • | • | • | | | | • | | • | • | | | |
| Fiberglass / Composites | • | • | • | | | | • | | • | • | | | |
| Bare Wood | • | • | • | | | | | | | | ◆ A511, A513, A514 | | |
| Clear Coat Sanding | | | | • | • | | | | | | | • | |
| Sealer Sanding | • | • | • | | | | • | | • | • | | | |
| Lacquer Sanding | | | | • | • | | | • | | | | • | |
| Wet Sanding | | | | • | • | | | • | | | | • | |
| Paint Stripping | • | • | • | | | • | • | | | | | | A290 |
| All Purpose | • | • | • | | | • | | | | | | | A212, A213, A211 |

Cross Reference Guide

| NORTON | 3M | Hermes | Klingspor | Mirka | SIA | VSM |
|---------------------------|---------------------------------|-----------|-------------|--|------------------|------------|
| STEARATED (NON-LOADI | NG) | | | | | |
| Blaze A995 | 732U, 737U, 755L, 775L | CR116 | _ | _ | _ | _ |
| Dry Ice A975 | 334U | _ | PS36 | _ | Siaprime 5550 | _ |
| A2750P | 216U, 255L, 236U, 260L, 334U | VC154-LL | PS33, PS73W | Q-Silver, Royal Micro | 1940, 1944,1950 | — |
| A259PS | 216U, 255L, 236U, 260L, 334U | — | | _ | _ | — |
| Durite A475 | 405N, 414N, 415U, 426U, 435U | SF168 | PL35, PS14 | CaratFlex, PolarStar | 1748 | CP131A |
| Gold Reserve A296 / PB273 | 216U, 236U, 316U, 315U, NX | VC154-LL | PS33, PS73W | Q-Silver, Royal Micro, Bulldog Gold | 19,401,950 | MP10 |
| WATERPROOF | | | | | | |
| Blue Ice T214 | 213Q | WAFlex28 | _ | _ | 1913, 1951, 1600 | _ |
| Blue Ice T401 | 401Q, 414Q, 486Q | WSFlex16 | PL35 | Waterproof (A) | | CP918A |
| Blue-Bak T414 | 413Q | WSFlex 16 | PS14 | Waterproof (A) | _ | CP918A/C |
| TufBak T461 | 431Q | WSFlex 18 | PS14 | — | 1727 | CP918A/C |
| ALL PURPOSE/WOOD | | | | | | |
| A211 | 230U, 240N, 346U | _ | _ | _ | | _ |
| A212 | 210N | _ | PL31 | — | _ | — |
| A213 | 230N | — | PL31 | — | — | |
| Garnet A511 | 110N | — | PS10 | — | 1400 | |
| Garnet A513 | 130N | GCAB | — | _ | — | |
| Garnet A514 | 140N | GCAB | | _ | | |
| HEAVYWEIGHT PAPER | | | | | | |
| BlueFire H875P | 740I, 745I, 750U, 751U, 751I | BW110 | PS36 | Royal CRS. Cut | 1820,1919, 1948 | KP510E, KP |





Application/Grit Recommendation Guide

| COAR | SER (S | тоск | REMO | VAL) | | | | | | | | | | | | | | | FINE | R (FIN | SHING |
|-------------|---------------------|-----------------|-------|---------------------------|----------|-------------|-----|-----|---------|---------|-----|-----|-----|-----|------|---------|-----------|------|-----------------------|--------|-------|
| 36 Rough | 40 | 60 Itermedia | 80 | 100 | 120 | 150 | 180 | 220 | 240 | 280 | 320 | 360 | 400 | 500 | 600 | 800 | 1000 | 1200 | 1500 | 2000 | 2500 |
| nough | | ILEITHEUK | | ediate to | Finishin | Ig | | | | | | | | | | | | | | | |
| | | | | | | | | | Fine Fi | nishing | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | Ultra F | ine Finis | hing | | | |
| Rec | omr | nenc | ded I | <mark>Зас</mark> к н-w | Ŭ | Weig F-V | | E- | WT | D | -WT | C | -WT | I | 3-WT | | A-WT | | | | |
| | st / Stro Aggres | ongest sive | | | | | | | | | | | | | | | | | st Flexik ntest Ap | | ons |

Paper Rolls

Applications



Best choice for fast cut rate and maximum dust extraction

BLAZE A995 MULTI-AIR CYCLONIC CERAMIC ALUMINA

- · P-graded next-generation ceramic aluminum oxide abrasive for fastest cut rate and longest life with innovative spiral hole design to optimize dust extraction
- Proprietary D-weight Polyester-reinforced, flexible latex-saturated backing for 100% improvement in tear strength and edge durability providing longer life in all applications
- Waterbased, non-loading (No-Fil) stearate resists clogging and increases roll life; hook and loop (NorGrip) back for easy mounting and changing



Best choice for the most demanding dry sanding applications

DRYICE A975 CERAMIC ALUMINA

- · P-graded, 100% SG ceramic alumina abrasive delivers fastest cut rate and longest life of any paper roll; available in Multi-Air Cyclonic version with laser-cut, spiral, vacuum-hole design to maximizes dust extraction
- Unique fiber reinforced, flexible B-wt. latex saturated paper backing for 50% 60% improvement in tear strength while retaining flexibility; perforated for easy sizing
- · Water-based non-pigmented stearate No-Fil coating provides improved load resistance and no color transfer to work



Better choice for high performance dry sanding applications

A2750P ALUMINUM OXIDE

- Premium P-graded, heat treated, toughened aluminum oxide abrasive delivers superior life, fast cut rate, consistent finish
- Unique fiber reinforced, flexible B-weight latex saturated backing provides 50% 60% improvement in tear strength while retaining flexibility
- Water-based, non-pigmented stearate No-Fil coating provides maximum load resistance; available in Multi-Air Cyclonic version for maximum dust collection

Good choice and value for dry sanding and finishing aluminum, fiberglass, composites, hard woods and soft woods

A296 GOLD ALUMINUM OXIDE

- · P-graded premium aluminum oxide abrasive produces a quick, cool cut and a more consistent surface finish
- Strong paper backing resists tearing while staying conformable and flexible
- Water-based, non-loading No-Fil stearate coating minimizes clogging and increases disc life

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Paper Rolls continued

TIER. BES

Hook and Loop Paper Rolls





| | TIER: | BEST | RE21 | BEITEK | | BEST | |
|-------|-----------------|---|---|-------------------------------------|-----------|---------------------|---|
| | TRADENAME: | BLAZE A995 NO-FIL Multi-Air Cyclonic | DRY ICE A975 NO-FIL Multi-Air Cyclonic | A2750P NO-FIL Multi-Air Cyclonic | | DRY ICE A975 NO-FIL | |
| | ABRASIVE: | Ceramic Alumina | Ceramic Alumina | Aluminum Oxide | | Ceramic Alumina | |
| E | BACKING WEIGHT: | D-Weight. | C- & B-Weight | D-Weight | | B-Weight. | |
| BACKI | NG ATTACHMENT: | Hook & Loop | Hook & Loop | Hook & Loop | | Hook & Loop | |
| | OTHER: | P-Graded | P-Graded | P-Graded | | P-Graded | |
| | SIZE: | 2-3/4" x 13 yd | 2-3/4" x 13 yd | 2-3/4" x 13 yd | | 2-3/4" x 13 yd | |
| GRIT | PKG./CASE | | PART # | PART # | PKG./CASE | PART # | |
| 80 | 1/4 | 699573 08899 | 636425 06113 | 666233 90523 | 1/4 | 636425 06261 | |
| 120 | 1/4 | 699573 08900 | 636425 06114 | 666233 90522 | 1/4 | 636425 06259 | |
| 150 | 1/4 | 699573 08901 | 636425 06117 | 666233 90521 | 1/4 | 636425 06258 | |
| 180 | 1/4 | 699573 08902 | 636425 06118 | 666233 90520 | 1/4 | 636425 06257 | _ |
| 220 | 1/4 | 699573 08903 | 636425 06119 | 666233 90519 | 1/4 | 636425 06256 | |
| 240 | 1/4 | | 636425 06120 | | | | |
| 320 | 1/4 | | 636425 06121 | 666233 90518 | 1/4 | 636425 06255 | |
| 400 | 1/4 | | 636425 06122 | 666233 90517 | 1/4 | 666233 29518 | |
| 500 | 1/4 | | 636425 06123 | | 1/4 | 666233 29547 | |
| 600 | 1/4 | | 636425 06124 | | 1/4 | 666233 29548 | _ |
| | | | | | | | |

2-3/4" wide hook and loop paper rolls are perforated at 2-3/4" which allows use on all standard lengths of hand blocks and file boards. Additional grit sizes available, contact your Norton rep for more details.

PSA (Pressure Sensitive Adhesive) Paper Rolls TIER: DRY ICE A975 DRY ICE A975 DRY ICE A975 A275 OP A275 OP A275 OP A275 OP **GOLD RESERVE** TRADENAME: NO-FIL NO-FIL NO-FIL NO-FIL NO-FIL NO-FIL NO-FIL A296 NO-FIL ABRASIVE: Ceramic Alumina Ceramic Alumina Ceramic Alumina Aluminum Oxide Aluminum Oxide Aluminum Oxide Aluminum Oxide Aluminum Oxide BACKING WEIGHT: C-Weight. C-Weight. B-Weight. B-Weight. B-Weight. B-Weight. B-Weight. B-Weight PSA PSA PSA PSA PSA PSA PSA PSA OTHER: P-Graded P-Graded P-Graded P-Graded P-Graded P-Graded P-Graded P-Graded 2-3/4" x 30 yd 2-3/4" x 25 yd 2-3/4" x 30 yd 2-3/4" x 45 yd SI7F. 2-3/4" x 25 yd 2-3/4" x 25 yd 2-3/4" x 45 yd 4-1/2 x 10 yd PART # PART # PART PART PART 80 66261149566 66261131691 662611**31697** 63642506153 1/5100 1/5 662611**31690** 662611**31696** 66261149564 66261131689 66261131695 63642506152 120 1/5150 1/5 662611**49563** 662611**31688** 66261131694 636425**06151** 180 66261149562 66261131687 66261131693 63642506150 1/5220 1/5 662611**49561** 662611**31686** 66261131692 636425**06149** 240 1/5 66261131685 320 1/5 662611**49558** 662611**31683** 636425**06148** 400 66261149557 662611**31681** 63642506147 1/5600 1/5 66261131679

Additional attachment options available as non-stock, contact your Norton rep for more details.

Roll Accessories



PSA Roll Dispenser

- · Heavy-duty wire dispenser has a vinyl coating to protect the work surface
- Accommodates two 2-3/4" PSA rolls; stackable for multi-grit operations. Attach to wall or mount on cabinet

| DESCRIPTION | STD. PKG. | PART # |
|--------------------|-----------|---------------------|
| PSA Roll Dispenser | 1 | 636425 42773 |

- PSA/Hook & Loop Sanding Blocks
- · Ergonomically-shaped flexible foam blocks used with 2-3/4" rolls, fit comfortably in your hand
- · Firm block produces a truly flat surface
- · The soft block is designed for flat surfaces and contours

| | BACKING | G ATTACHMENT: | PSA | Hook & Loop |
|---------------|-------------|---------------|---------------------|---------------------|
| SIZE | DESCRIPTION | STD. PKG. | PART # | PART # |
| 2-3/4 x 5 | Soft | 5 | 636425 42090 | 636425 42092 |
| 2-3/4 x 5 | Firm | 5 | 636425 42091 | 636425 42093 |
| 2-3/4 x 7-3/4 | Soft | 5 | | 636425 42095 |
| 2-3/4 x 7-3/4 | Firm | 5 | 636425 42094 | |

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Paper File Strips

Better choice for soft material applications

BLUEFIRE H875P ZIRCONIA ALUMINA

- · Strong zirconia alumina plus abrasive provides 2 3 times life over aluminum oxide products
- Strong E-weight paper, synthetically-coated for excellent durability and chip resistance plus superior bond system
 optimizes grain adhesion and extends product life
- Non-stearated (no anti-loading agents); non-contamination often required for prime auto and aerospace paint applications

Paper File Strips PSA (Pressure Sensitive Adhesive) and Non-PSA

| Sensitive A | | sive) | | | | | | | | | |
|-----------------|---------|------------------|--------------------------------|---------------------|---------------------|--|---------------|---------------------|---------------------|---------------|---------------------|
| and Non-F | PSA | | | | | | | | | | |
| | | TIER: | BEST | BEST | BEST | BEST | | BETTER | BETTER | | BETTER |
| | TF | RADENAME: | A2750P No-Fil | A2750P No-Fil | A2750P No-Fil | A2750P No-Fil | | BLUEFIRE H875P | BLUEFIRE H875P | | BLUEFIRE H875P |
| | | ABRASIVE: | A/0 | A/0 | A/0 | A/0 | | Z/A | Z/A | | Z/A |
| | BACKIN | VG WEIGHT: | B-Weight | B-Weight | B-Weight | B-Weight | | E-Weight | E-Weight | | E-Weight |
| BACH | (ING AT | TACHMENT: | Non-PSA | PSA | Hook/Loop | Hook/Loop Vac | | Non-PSA | PSA | | Hook/Loop |
| | | OTHER: | P-Graded | P-Graded | P-Graded | P-Graded | | | | | |
| SIZE (W x L) | | PKG./ Case | D. D. W | D107 // | | D. D. // | PKG./ Case | | | PKG./ CASE | |
| | GRIT | | PART # | PART # | PART # | PART # | CASE | PART # | PART # | CASE | PART # |
| 2-3/4 x 16 | 100 | 50/500 50/500 | | | | 662611 31657 662611 31656 | | | | | |
| | 120 | 50/500 | | | | 662611 31656 | | | | | |
| 2-3/4 x 16-1/2 | 36 | 30/300 | | | | 00201131034 | 50/250 | | 662611 23610 | 25/125 | 662611 23616 |
| 2-3/4 × 10-1/2 | 40 | | | | | | 50/250 | | 662611 23609 | 25/125 | 662611 23615 |
| | 80 | 50/500 | | 662611 31640 | 662611 31646 | | 50/250 | | 662611 23608 | 25/125 | 662611 23614 |
| | 100 | 50/500 | | 662611 31639 | 662611 31645 | | 00,200 | | 00201120000 | 20,120 | 00201120011 |
| | 120 | 50/500 | | | 662611 31644 | | | | | | |
| | 150 | 50/500 | | 662611 31637 | 662611 31643 | | | | | | |
| | 180 | 50/500 | | 662611 31636 | 662611 31642 | | | | | | |
| | 220 | 50/500 | | | 662611 31641 | | | | | | |
| 2-3/4 x 17-1/2 | 36 | | | | | | 50/250 | 662611 23622 | | | |
| | 40 | | | | | | 50/250 | 662611 23621 | | | |
| | 80 | 50/500 | 662611 31652 | | | | 50/250 | 662611 23620 | | | |
| | 100 | 50/500 | 662611 31651 | | | | 50/250 | 662611 26512 | | | |
| | 120 | 50/500 | 662611 31650 | | | | | | | | |
| | 150 | 50/500 | 662611 31649 | | | | | | | | |
| | 180 | 50/500 | 662611 31648 | | | | 50/250 | 662611 26511 | | | |
| | 220 | 50/500 | 662611 31647 | | | | | | | | |
| • • • • | | | VACUUM HOLE 2-3/4 X 16 FILE | | | | | | | | |

Sanding Boards







PSA/Non-PSA Sanding Board

- This sanding board has a cushioned surface
- Spring clips mounted at each end securely hold 2-3/4" x 16-1/2" PSA file strips and 2-3/4" x 17-1/2" non-PSA file strips

Hook and Loop and Non-PSA Sanding Board

- Lightweight, rugged design for easy sanding of plastic fillers
- Spring clips mounted at each end securely hold 2-3/4" x 16-1/2" hook and loop file strips and 2-3/4" x 17-1/2" non-PSA file strips
- · Air file shoe eliminates the need for clips. The quick-change backing positively locks and unlocks for fast use.

| DESCRIPTION | STD. PKG. | PART # |
|--|-----------|---------------------|
| PSA/Non-PSA File Strip Sanding Board | 6 | 636425 42724 |
| Hook and Loop/Non-PSA File Strip Sanding Board | 5 | 636425 52836 |
| Hook and Loop Air File Shoe | 5 | 636425 52835 |

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Stearated (Non-Loading) 9" x 11" Sheets



The best choice for sanding painted surfaces, composites, plastics or any material that tends to load

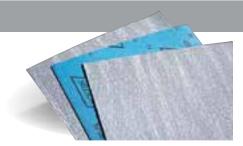
A2750P NO-FIL ALUMINUM OXIDE

- Premium, P-graded, heat-treated aluminum oxide abrasive for consistent surface finish, exceptional performance on all surfaces and coatings
- Unique fiber-reinforced, B-weight latex-saturated backing for 50 60 percent improvement in tear strength, exceptional flexibility, can be folded without cracking
- Non-pigmented, water based stearate (anti-clog) coating, open coat for best resistance to clogging and loading during sanding

Best choice for moderate material removal

A259PS NO-FIL ALUMINUM OXIDE

- · Premium heat-treated abrasive offers faster cut and long sanding life
- · Open coat, non-pigmented, water-based stearate coating prevents color transfer and minimzes loading
- Increased backing weight, fiber-reinforcement and latex saturation offers better grain retention and tear-resistance yet is highly flexible for easy folding and unfolding



The better choice for gel coats, hard composite substrates, abrasion-resistant coatings, and woodworking applications

DURITE A475 NO-FIL SILICON CARBIDE

- · P-graded, silicon carbide abrasive for easy penetration of the hardest surfaces
- Water based stearate, non-pigmented, No-Fil coating resists loading for the longest usable product life; no color transfer to work
- · Fiber-reinforced, latex paper backing provides flexibility and resistance to tearing

Good choice for fast cuts and an even finish

PB273 NO-FIL ALUMINUM OXIDE

- · P-graded, sharp light-brown, aluminum oxide abrasive for fast cut rate, extended life and consistent finish
- Water based non-pigmented stearate provides maximum load resistance and extended life; no dye in coating means
 no risk of color transfer or finish contamination
- · Flexible latex-saturated B-weight backing, with a full resin bond and open coat for improved life





Stearated (Non-Loading) 9" x 11" Sheets continued

| 9 x 11 Paper | | | | JOBPACK | | |
|-----------------|-------|------------|---------------------|-----------------------|-----------------------|---------------------|
| | _ | | BEST A2750P | BEST A259PS | BETTER DURITE A475 | GOOD PB273 |
| | Ti | RADENAME: | NO-FIL | NO-FIL | NO-FIL | NO-FIL |
| | | ABRASIVE: | Aluminum Oxide | Aluminum Oxide | Silicon Carbide | Aluminum Oxide |
| | BACKI | NG WEIGHT: | | C- & B-Weight | B-Weight | B-Weight |
| | | | P-Graded | P-Graded | P-Graded | P-Graded |
| SIZE | | PKG./ | | | | |
| (W x L) | GRIT | CASE | PART # | PART # | PART # | PART # |
| 9 x 11 | 80 | 50/250 | 662611 31634 | 076607 68174 * | 662544 87393 | 666233 11878 |
| | 100 | 100/500 | 662611 31633 | 076607 68173 * | 662544 87394 | 666233 11877 |
| | 120 | 100/500 | 662611 31632 | 076607 68172 * | 662544 87395 | 666233 11876 |
| | 150 | 100/500 | 662611 31631 | 076607 68171 * | 662544 87396 | 666233 11875 |
| | 180 | 100/500 | 662611 31630 | 076607 68168 * | 662544 87397 | 666233 11874 |
| | 220 | 100/500 | 662611 31629 | 076607 68167 * | 662544 87398 | 666233 11873 |
| | 240 | 100/500 | 662611 31628 | | 662544 87399 | 666233 11879 |
| | 280 | 100/500 | 662611 31627 | | | |
| | 320 | 100/500 | 662611 31626 | 076607 68166 * | 662544 87400 | 666233 11871 |
| | 400 | 100/500 | 662611 31624 | 076607 68165 * | | 666233 11870 |
| | 500 | 100/500 | 662611 31623 | | | |
| | 600 | 100/500 | 662611 31622 | | | |
| | 800 | 100/500 | 662611 31621 | | | |
| | 1000 | 100/500 | 662611 31620 | | | |
| | 1200 | 100/500 | 662611 31619 | | | |
| | 1500 | 100/500 | 662611 31618 | | | |

* Packaging Standards: A259PS Job Packs: 20 sheets per pack / 10 packs per standard package for a total of 200 sheets

Rubber Hand Sanding Blocks

· Resilient rubber blocks that conform well to mild contours and flat surfaces







Waterproof 9" x 11" Sheets



Best choice for superior cut and life in wet applications

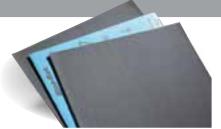
BLACK ICE T214 ALUMINUM OXIDE WATERPROOF

- Premium, P-graded, heat-treated aluminum oxide abrasive for ultimate cut and life in wet applications
- · Strong resin bond for longer life in wet applications
- High-strength B-weight waterproof latex paper backing is extremely flexible, environmentally stable, and resists humidity-caused curling

Best choice for superior finish in wet applications

BLACK ICE T401 SILICON CARBIDE WATERPROOF

- · Premium, JIS graded ultra-fine silicon carbide abrasive provides the ultimate finish in wet applications
- · Strong resin bond for longer life in wet applications
- High-strength B-weight waterproof latex paper backing is extremely flexible, environmentally stable, and resists humidity-caused curling



Better choice for wet finishing applications

BLUE-BAK T414 SILICON CARBIDE

- · Sharp, ANSI graded silicon carbide abrasive for exceptional finishes in wet applications
- · Strong resin bond for longer life in wet applications
- High-strength B-weight waterproof latex paper backing is extremely flexible, environmentally stable, and resists humidity-caused curling



Good choice for medium material removal in wet applications

TUFBAK T461 SILICON CARBIDE

- · ANSI graded silicon carbide abrasive for fast cutting with excellent finish in wet applications
- · Advanced resin bond system for excellent flexibility and abrasive adhesion
- Strong, waterproof C-weight backing is ideal for more aggressive applications while being environmentally stable, resists product curl in humidity



Waterproof 9" x 11" Sheets continued

| 9 x 11 Paper Sh | ieets | TICO | | T | II | I |
|--------------------|-------|-----------------|------------------------|------------------------|-------------------------|---------------------|
| | | TRADENAME: | BEST BLACK ICE T214 | BEST Black ICE T401 | BETTER BLUE-BAK T414 | GOOD Tufbak T461 |
| | | ABRASIVE: | | Silicon Carbide | Silicon Carbide | Silicon Carbide |
| | | = | | | | |
| | | BACKING WEIGHT: | | B-Weight | B-Weight | C-Weight |
| | 0.012 | | P-Graded | JIS Graded | ANSI Graded | ANSI Graded |
| SIZE (W x L) | GRIT | PKG./CASE | PART # | PART # | PART # | PART # |
| 9 x 11 | 60 | 50/250 | | | | 66261101175 |
| | 80 | 50/250 | | | | 66261101170 |
| | 100 | 50/250 | | | | 66261101165 |
| | 120 | 50/250 | | | | 66261101160 |
| | 150 | 50/250 | | | | 662611 01155 |
| | 180 | 50/250 | 00001100000 | | 00001100000 | 662611 01150 |
| | 220 | 50/250 | 662611 39389 | | 662611 39367 | |
| | 240 | 50/250 | 662611 39388 | | 662611 39366 | 662611 30331 |
| | 280 | 50/250 | | | 662611 39365 | |
| | 320 | 50/250 | 662611 39386 | | 662611 39364 | 662611 30332 |
| | 360 | 50/250 | | | 662611 39363 | |
| | 400 | 50/250 | 662611 39385 | | 662611 39362 | 662611 30333 |
| | 500 | 50/250 | 662611 39384 | | 662611 39361 | |
| | 600 | 50/250 | 662611 39383 | | 662611 39360 | 662611 30334 |
| | 800 | 50/250 | 662611 39382 | | | |
| | 1000 | 50/250 | | 662611 39381 | | |
| | 1200 | 50/250 | | 662611 39380 | | |
| | 1500 | 50/250 | | 662611 39379 | | |
| | 2000 | 50/250 | | 662611 39378 | | |
| | 2500 | 50/250 | | 662611 39377 | | |

Waterproof Sanding Blocks - with "Grabbing" Power



Dual Density Wet Sanding Block

- No adhesive required: simply wrap a 5-1/2" x 9" (9" x 11" cut in half) sheet around the block
- The dense side is for more aggressive blocking, while the soft side is for color sanding
- Equalizes sanding pressure for fine grit applications

Holey Block

- No adhesive required: simply wrap a 5-1/2" x 9" (9" x 11" cut in half) sheet around the block
- · A rugged, semi-rigid, multi-purpose sanding block engineered for flat to medium curved surfaces
- A tactical hole pattern side provides numerous cutting edges to create a 30% faster cut rate
- The plain side provides firmness and a comfortable, easy-to-hold surface

| DESCRIPTION | STD. PKG. | PART # |
|-------------------|-----------|---------------------|
| Wet Sanding Block | 12 | 636425 03728 |
| Holey Block | 8 | 636425 03729 |





All-Purpose 9" x 11" Paper Sheets



Good choice for your wood, metal or composite sanding projects

A211/A212/A213 ALUMINUM OXIDE

- · P-graded, aluminum oxide grain, open-coat provides aggressive, long-lasting cutting action
- · Use for dry, general purpose hand sanding on hardwood, metal, and composites
- Available in multiple backing weights: A212 A-weight; A213 C-weight, A211 D-weight

Good choice for use on soft woods such as pine



A513/A511 GARNET

- · Natural garnet abrasive is ideal for soft woods, such as pine, and produces an excellent, consistent finish
- · Use dry on bare wood prior to coating
- · Available in two backing weights: A511 A-wt. and A513 C-wt. for heavy-duty to light-duty hand sanding

| 9 x 11 Paper | | oto | and the second | | | - | | | |
|-----------------|-------|-------------|---------------------|---------------------|---------------------|------------------------|---------------------|---------------------|-----------------------|
| гарег | Shee | 815 | 1 | 1 | 1 | JOBPACK | 11 | 11 | JOBPACK |
| | | TIER: | GOOD | GOOD | GOOD | GOOD | GOOD | GOOD | GOOD |
| | 7 | RADENAME: | A211 | A213 | A212 | MULTISAND A213/A212 | A513 | A511 | WOODSAND A513/A511 |
| | | ABRASIVE: | Aluminum Oxide | Aluminum Oxide | Aluminum Oxide | Aluminum Oxide | Garnet | Garnet | Garnet |
| | BACK | ING WEIGHT: | D-Weight | C-Weight | A-Weight | D-, C- & A-Weight | D- & C-Weight | A-Weight | D-, C- & A-Weight |
| | | OTHER: | P-Graded | P-Graded | P-Graded | P-Graded | | | |
| SIZE | | | | | | | | | |
| (W x L) | GRIT | PKG./CASE | | PART # | PART # | PART # | PART # | PART # | PART # |
| 9 x 11 | 36 | 25/125 | 662611 00335 | | | | | | |
| | 40 | 25/125 | 662611 00330 | | | | | | |
| | 50 | 50/250 | 662611 00325 | | | | | | |
| | 60 | 50/250 | | 662611 00320 | | | 662611 01560 | | |
| | 80 | 50/250 | | 662611 00315 | | | 662611 01555 | 662611 01505 | 076607 01584 * |
| | 100 | 100/500 | | 662611 00295 | | 076607 00358 * | 662611 01535 | 662611 01500 | 076607 01583 * |
| | 120 | 100/500 | | 662611 00290 | | 076607 00357 * | 662611 01530 | 662611 01495 | 076607 01582 * |
| | 150 | 100/500 | | 662611 00285 | | 07660700356* | 662611 01525 | 662611 01490 | 076607 01581 * |
| | 180 | 100/500 | | | 662611 00245 | 076607 00355 * | | 662611 01489 | 076607 01580 * |
| | 220 | 100/500 | | | 076607 00156 | 07660700354* | | 662611 01488 | 076607 01579 * |
| | Asst+ | 100/500 | | | | 076607 00365 * | | | |

* Packaging Standards: Job Packs: 25 sheets per pack / 10 packs per standard package for a total of 250 sheets + Assorted contains 6 each of 60, 100, 150 grit and 7 each of 220 grit

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3-2/3 × 9

| Paper Cu | it She | eets | | |
|--------------|--------|-----------------|---------------------|---------------------|
| | | TIER: | GOOD | GOOD |
| | | TRADENAME: | A290 NO-FIL | A213 |
| | | ABRASIVE: | Aluminum Oxide | Aluminum Oxide |
| | | BACKING WEIGHT: | C-Weight | C-Weight |
| | | OTHER: | P-Graded | P-Graded |
| SIZE (W x L) | GRIT | PKG./CASE | PART # | PART # |
| 3-2/3 x 9 | 60 | 100/1000 | | 662611 02925 |
| | 80 | 100/1000 | 662611 01119 | 662611 02920 |
| | 100 | 100/1000 | | 662611 02900 |
| | 180 | 100/1000 | 662611 01124 | |
| | 220 | 100/1000 | 662611 01123 | |







-

Surface finishing rolls are made of a non-woven nylon web impregnated with abrasive grain and resin bond.

Applications:

Abrasive Grain: Grit Range: **Roll Features:**

Light- to heavy-duty cleaning, deburring, blending, polishing, and finishing of metal, wood, composite, plastics, stone, solid surface and painted surfaces.

Aluminum Oxide, Silicon Carbide

- Medium (M), Fine (F), Very Fine (VF), Ultra Fine (UF), Micro Fine (MF)
- · Economical alternative to cut pads · Can be cut to specific sizes

Machine Used:



Application/Grit Recommendation Guide

MORE AGGRESSIVE, ROUGHER FINISH

LESS AGGRESSIVE, FINER FINISH

| PRODUCT #: | #740 | #644 | #747 | #635 | #851 | #777 | HIGH STRENGTH |
|---------------|--|--|---|--|--|---|---|
| COLOR | Dark Tan | Maroon | Maroon | Gray | Gray | Maroon | Maroon |
| DESCRIPTION: | Heavy Duty | GP – Fine | GP Plus – Very Fine | Clean & Finish | General Cleaning | General Purpose | High Strength |
| ABRASIVE: | AO | AO | AO | SC | SC | AO | AO |
| GRIT SIZE: | Medium 100 - 150 | Fine 180 - 220 | Very Fine 240 - 360 | Ultra Fine 400 - 600 | Very Fine 240 - 360 | Very Fine 240 - 360 | Medium 100 - 150 |
| STEEL WOOL | 4 | 2 | 1 | 00 | 00 | 1 | 4 |
| EQUIVALENT: | Extra Coarse | Medium Coarse | Medium | Very Fine | Very Fine | Medium | Extra Coarse |
| | Smear-free Clean Bond technology | Cleaning and deburring | Light cleaning, deburring and | Light cleaning and finishing of most | Light cleaning and finishing of most | Light cleaning, deburring and | Moderate deburring and surface blending |
| | 2X life | » machinery | finishing | surfaces | surfaces | finishing | |
| | Most durable and | » metal parts | » machinery | » steel, aluminum | » steel, aluminum | » machinery | |
| | aggressive cutting | » plastic | » metal parts | » denibbing plastic | » denibbing plastic | » metal parts | |
| APPLICATIONS: | pad | » solid surface | » plastic | » scuffing acrylics | » scuffing acrylics | » plastic | |
| | Heavy-duty removal | » stone | » solid surface | | | » solid surface | |
| | » rust | // 510110 | » stone | | | » stone | |
| | » oxidation | | | | | | |
| | Deburring | | | | | | |

| | | | | | TIEF | R: BEST | BETTER |
|--------------------------------|----------|------------------------------------|----------|------|------|---------------------|---------------------|
| | | | | GRIT | STD. | | |
| SIZE (W x L) | COLOR | DESCRIPTION | ABRASIVE | | PKG. | PART # | PART # |
| Non-Woven Rolls | | | | | | | |
| 4" x 30 Ft. | Maroon | High Strength Roll | A/0 | М | 3 | 662610 06358 | |
| | Dark Tan | 740 Heavy-Duty Roll | A/0 | М | 3 | | 662610 10081 |
| | Maroon | 644 General Purpose Fine Roll | A/0 | F | 4 | | 662610 58364 |
| | Maroon | 777 General Purpose Very Fine Roll | A/0 | VF | 4 | 662610 06373 | 662610 58361 |
| | Maroon | 747 General Purpose Plus Roll | A/0 | VF | 4 | | 662610 51701 |
| | Gray | 851 General Cleaning Roll | S/C | VF | 4 | | 662610 58360 |
| 6" x 30 Ft. | Gray | 635 Clean & Finish Roll | S/C | UF | 5 | | 662610 58357 |
| 6" x 30 Ft. | Maroon | High Strength Roll | A/0 | М | 2 | 662610 05182 | |
| | Maroon | 747 General Purpose Plus Roll | A/0 | VF | 3 | | 662610 16430 |
| | Maroon | 777 General Purpose Very Fine Roll | A/0 | VF | 3 | 662610 04281 | 662610 58376 |
| | Gray | 851 General Cleaning Roll | S/C | VF | 3 | | 662610 58377 |
| 2" x 15 Ft. Handy Roll Pack | Assorted | 1 each A/O Fine, A/O VF, SC MF | - | - | 1 | | 662610 08108 |



COATED & NON-WOVEN ABRASIVES Abrasive Sponges



Flexible, abrasive sanding sponges for a wide variety of curved, contoured or flat surface applications on wood, metal, paint, plastic, ceramics and drywall.

Applications:

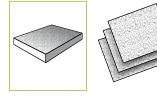
Benefits:

Light stock removal, sanding sealer and wash-coats, touch-up or repair of primer, sanding contours and intricate shapes, and finishing Can be used wet or dry Clog resistant, washable, reusable Easy to use, can be folded without cracking Conformable Generate a consistent surface finish



HAND SANDING

Why Choose Abrasive Sponges Versus Conventional Sheets?



Eliminate Clogging

- The combination of flexible foam backing material and abrasive grit adhesion continually releases sanded material
- Any clogging can be washed out
- **Pressure Control**
- · Foam backing allows optimum pressure distribution to prevent sanding through surfaces
- Pressure spots are eliminated providing even surface pattern

Adapt to Contours

- · Flexible foam allows adaptability to contours, shapes or areas of limited access
- No folding or buckling results in an even pattern without scratching

FINER

FINER

Surface Finishing Chart – Contour Sponges versus Sheets

| COARSER |
|---------|
| |

| SHEETS | P150 | P180 | P220 | P280 | P320 | P400 | P500 | P600 | P800 | P1000 | P1200 | P1500 | P2000 |
|---------|-----------|------|----------|------|--------------|----------------|------------|------|--------------|-------|------------|---------|-------|
| SPONGES | Medium 60 | | | | | | | | | | | | |
| | | | Fine 100 | | | | | | | | | | |
| | | | | | Extra Fine 1 | Extra Fine 150 | | | | | | | |
| | | | | | | | Super Fine | 180 | | | | | |
| | | | | | | | | | Ultra Fine 2 | 20 | | | |
| | | | | | | | | | | | Micro Fine | 280/320 | |

Surface Finishing Chart – Sponges versus Sheets

COARSER

| P80 | P100 | P120 | P150 | P180 | P220 | P280 | P320 | P400 | P500 | P600 | P800 | P1000 | P1200 |
|------------|-------|-----------------------------|-----------------|-----------|------------------------------|-----------------|---|------------------------------|---|---|---|---|--|
| Extra Coar | se 36 | | | | | | | | | | | | |
| | | Coarse 60 | | | | | | | | | | | |
| | | | | Medium 80 |) - 120 | | | | | | | | |
| | | | | | | Fine 120 - |) - 150 | | | | | | |
| | | | | | | | | Very Fine 180 - 220 | | 20 | | | |
| | | | | | | | | | | | | Micro Fine | 280 - 320 |
| | | P80 P100 Extra Coarse 36 | Extra Coarse 36 | | Extra Coarse 36 Coarse 60 | Extra Coarse 36 | Extra Coarse 36 Coarse 60 Medium 80 - 120 | Extra Coarse 36 Coarse 60 | Extra Coarse 36 Coarse 60 Medium 80 - 120 Fine 120 - 150 | Extra Coarse 36 Coarse 60 Medium 80 - 120 Fine 120 - 150 | Extra Coarse 36 Coarse 60 Medium 80 - 120 Fine 120 - 150 | Extra Coarse 36 Coarse 60 Medium 80 - 120 Fine 120 - 150 | Extra Coarse 36 Coarse 60 Medium 80 - 120 Fine 120 - 150 |

Cross Reference Guide

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| | BETTER | GOOD | GOOD | GOOD | GOOD | GOOD |
|-----------|-------------|---------|----------------|------------------|------------------|----------|
| NORTON | SoftTouch | Contour | Small Area | Profile | Sealer Sanding | Flexible |
| 3M | Softback | Contour | Full Size | High Flexibility | Woodworking | Pro Pads |
| Hermes | Single Side | - | Four Sided | - | Two Sided | - |
| Klingspor | _ | - | - | - | Foam Sanding Pad | - |
| SIA | Flat Pad | - | Standard Block | - | Standard Pad | - |





COATED & NON-WOVEN ABRASIVES Abrasive Sponges

For hand-sanding or finishing flat, curved, contoured and hard-to-reach areas on wood, metal, composites, paint and solid surfaces

SOFTTOUCH CONTOUR SPONGES – COATED 1 SIDE

- Superior flexibility
- Premium foam substrate provides for an extremely smooth and uniform sanded surface

| ZE (W x L x T) | GRIT | STD. PKG. | PART # |
|--------------------|----------------|-----------|---------------------|
| 1/2 x 5-1/2 x 3/16 | 60 Medium | 80 | 076607 03074 |
| | 100 Fine | 80 | 076607 03075 |
| | 180 Super Fine | 80 | 076607 03076 |
| | 220 Ultra Fine | 80 | 076607 03077 |
| | 280 Micro Fine | 80 | 076607 03078 |
| | | | |

Good for sanding small diameters and contours

CONTOUR SPONGES – COATED 1 SIDE

| • | Thin, flexible; good for sanding small |
|---|---|
| | diameters and contours such as ceramics |
| | spindles, turnings and railings |

| | SIZE (W x L x T) | GRIT | STD. PKG. | PART # |
|----|----------------------|----------------|-----------|---------------------|
| S, | 4-1/2 x 5-1/2 x 3/16 | 100 Fine | 100 | 076607 02257 |
| | | 150 Extra Fine | 100 | 076607 02256 |
| | | 220 Ultra Fine | 100 | 076607 02255 |



Good for a wide variety of materials and sanding applications where moderate flexibility is needed

SMALL AREA GENERAL PURPOSE SPONGES – COATED 4 SIDES

· Medium to firm density open cell polyurethane foam provides uniform support and moderately aggressive cutting action while generating a smooth surface

PR Ide

| SIZE (W x L x T) | GRIT | STD. PKG. | PART # | BULK PKG. | PART # |
|---------------------|-------------------------|--------------|---------------------|--------------|---------------------|
| 4 x 2-3/4 x 1 | 36/80 Ex. Coarse/Med | 24 | 076607 49505 | 250 | 076607 04735 |
| | 80/80 Med/Med | 24 | 076607 49507 | 250 | 076607 01875 |
| | 80/120 Med/Fine | 24 | 076607 49504 | 250 | 076607 02600 |
| | 120/120 Fine/Fine | 24 | 076607 49506 | | |



Good for corners and flat surfaces on wood, metal, plastic and paint

| PROFILE SPONGES — CC Ideal for cabinet sanding of raised | | - | | " |
|---|------------------|------------|-----------|---------------------|
| profile doors | SIZE (W x L x T) | GRIT | STD. PKG. | PART # |
| | 4 x 2-3/4 x 1/2 | 100 Medium | 500 | 636425 36313 |



Good for sanding primers, sealers and between coats on furniture and cabinets

SEALER SANDING SPONGES – COATED 2 SIDES

· Very flexible; silicon carbide abrasive for sanding primers, sealers and between coats on furniture and cabinets

| SIZE (W x L x T) | GRIT |
|---------------------|----------------|
| 4-3/4 x 3-3/4 x 1/2 | 36 Extra Coars |
| | 60 Coarse |
| | 100 Medium |

PART # BULK PKG. 250 636425**02538** 250 636425**52870** 636425**52869** 250 220 VeryFine 63642552868 250

Ideal for final sanding of surfaces, primer sanding, and between coats sanding

FLEXIBLE ABRASIVE SPONGES – COATED 1 SIDE

Best initial price point for abrasive sponges

| SIZE | | STD. | | BULK | |
|-------------|---------------|------|---------------------|------|---------------------|
| (W x L x T) | GRIT | PKG. | PART # | PKG. | PART # |
| 3 x 4 x 1/2 | 60 Coarse | 48 | 076607 04068 | 108 | 076607 01110 |
| | 80 Medium | 48 | 076607 04067 | 108 | 076607 04070 |
| | 100 Medium | 48 | 076607 04066 | 108 | 076607 00950 |
| | 150 Fine | 48 | 076607 04065 | 108 | 076607 00949 |
| | 220 Very Fine | | | 108 | 076607 04069 |

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Ab Gr Ha Sp

COATED & NON-WOVEN ABRASIVES Non-Woven Hand Pads and Sponges

Surface finishing hand pads are made of a non-woven nylon web impregnated with abrasive grain and resin bond.

| Applications: | Light- to heavy-duty cleaning, deburring, blending, polishing, and finishing of metal, wood, composite, plastics, stone, solid surface and painted surfaces. |
|----------------------|--|
| Abrasive Grain: | Aluminum Oxide, Silicon Carbide |
| Grit Range: | Medium (M), Fine (F), Very Fine (VF), Ultra Fine (UF), |
| | Micro Fine (MF), Non-Abrasive (–) |
| Hand Pad Features: | Flexible; conform to work surface |
| | Gentle action easily removes flashing or burrs without affecting dimension of workpiece |
| | Non-loading; constant supply of new cutting edges |
| | Non-rusting; no workpiece contamination |
| | Resilient construction; long life, increased productivity; solvent resistant; waterproof |
| Sponge Pad Features: | Non-woven material is laminated to a long-lasting sponge for the convenience of 2 pads in one |
| | Superior replacement for steel wool |
| Machine Used: | |

HAND SANDING SANDER

Application/Grit Recommendation Guide

MORE AGGRESSIVE, ROUGHER FINISH

LESS AGGRESSIVE, FINER FINISH

| | | | | | | | | | | | 1 |
|---------------------------|--|--|---|---|---|--|---|--|--|---|---|
| PRODUCT #: | #740 | #746 | #644 | #747 | #796 | #635 | #748 | THIN-FLEX VF | THIN-FLEX UF | THIN-FLEX BP | #456 |
| COLOR: | Dark Tan | Gray | Maroon | Maroon | Green | Gray | Gray | Maroon | Gray | Gold | White |
| DESCRIPTION: | Heavy Duty | Blending | GP – Fine | GP Plus – Very Fine | Scouring | Clean & Finish | Final Shine | Cleaning | Cleaning | Blend Prep | Cleaning |
| ABRASIVE: | AO | SC | AO | AO | AO | SC | SC | AO | SC | AO | Non-Abrasive |
| GRIT SIZE: | Medium 100 - 150 | Medium 100 - 150 | Fine 180 - 220 | Very Fine 240 - 360 | Very Fine 240 - 360 | Ultra Fine 400 - 600 | Micro Fine 800 - 1200 | Very Fine 240 - 360 | Ultra Fine 400 - 600 | Micro-Fine 800 - 1200 | Non-Abrasive |
| STEEL WOOL EQUIVALENT: | 4 Extra Coarse | 3 Coarse | 2 Medium Coarse | 1 Medium | 0 Fine | 00 Very Fine | 00 Very Fine | 00 Very Fine | 000 Extra Fine | 000 Extra Fine | 0000 Super Fine |
| APPLICATIONS: | Smear-free Clean Bond technology 2X life Most durable and aggressive cutting pad Heavy-duty removal » rust » oxidation Deburring | Blending and deburring welds aluminum stainless | Cleaning and deburring » machinery » metal parts » plastic » solid surface » stone | Light cleaning, deburring and finishing machinery machinery metal parts plastic solid surface stone | Removing stains, marks, rust, corrosion or oxidation from stainless equipment Light cleaning of metal surfaces | Light cleaning and finishing of most surfaces » steel, aluminum » denibbing plastic » scuffing acrylics | Final finishing » final rub on wood » final blend on metal » final finish on plastics and acrylics | Maximum flexibility for consistent finishes Cleaning blending, finishing, and deburring in woodwork, metalwork, MRO, and synthetic applications | Maximum flexibility for consistent finishes Cleaning blending, finishing, and deburring in woodwork, metalwork, MRO, and synthetic applications | Fine cleaning Fine polishing (most surfaces) Top coat finishing (water-based and solvent) | Scratch-free cleaning metal fiberglass stone solid surface ceramic Wood high-lighting rubbing |

Cross Reference Guide

| | COARSER | | | | | | | | | F | INER |
|----------|------------|-----------|-------|-------------------------------------|------------|-------|---------|------------------------|----------------------|-------------------|------|
| NORTON | #740 | #746 | #644 | #747/847 | #796 | #635 | #748 | Thin-Flex VF | Thin Flex UF | #456 | |
| 3M | 7440 | 7446 | 64659 | 7447/8447 Production Hand Pad | 96 | 64660 | 7448 | Multi-Flex Maroon | Multi-Flex Gray | 7445 | |
| Camel | Tan | | | Maroon | Green | | Grey | _ | _ | White | |
| Mirka | — | | | Maroon/Red VF | — | _ | _ | Mirlon Total Maroon | Mirlon Total Gray | — | |
| Sait | Brown | | | Maroon | Green | | Gray | | | | |
| SIA | 6912 Brown | 6712 Grey | | 6912 Maroon | 6312 Green | _ | | | | _ | |
| Standard | HD-Tan AO | _ | _ | GP-Maroon VF | Green-AO | HP-VF | UF Gray | — | — | Cleaning White | |

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COATED & NON-WOVEN ABRASIVES Non-Woven Hand Pads and Sponges

| | | | | | TIER: | BEST | BETTER |
|---------------------|--------------|--|----------|--------------|--------------|---------------------|---------------------|
| SIZE (W x L) | COLOR | DESCRIPTION | ABRASIVE | GRIT Size | STD. PKG. | PART # | PART # |
| Hand Pads | 002011 | | ADIAOTYE | UILL | 1 1.01 | | |
| 4-1/2 x 9 | Maroon | Thin Flex Cleaning Pad | A/0 | VF | 25 | 666233 98062 | |
| | Grey | Thin Flex Cleaning Pad | S/C | UF | 25 | 666233 98063 | |
| | Gold | Thin Flex Blend Prep | A/0 | MF | 25 | 662611 13519 | |
| 6 x 9 | Dark Tan | 740 Heavy-Duty Pad | A/0 | Med | 40 | 662610 74000 | |
| | Gray | 746 Blending Pad | S/C | Med | 40 | | 662610 74600 |
| | Maroon | 777 General Purpose Very Fine Pad | A/0 | VF | 60 | | 662610 77700 |
| | Maroon | 747 General Purpose Plus Pad | A/0 | VF | 60 | 662610 74700 | |
| | Maroon | 847 General Purpose Plus Perforated Pad | A/0 | VF | 60 | 662610 84700 | |
| | Green | 796 Scouring Pad | A/0 | VF | 60 | | 662610 79600 |
| | Lt. Green | 696 Food Pro Pad | A/0 | VF | 60 | | 662610 69600 |
| | Gray | 851 General Cleaning Pad | S/C | VF | 40 | | 662610 85100 |
| | Gray | 635 Clean & Finish Pad | S/C | UF | 60 | | 662610 63500 |
| | Gray | 748 Final Shine Pad | S/C | MF | 60 | | 662610 74800 |
| | White | 456 Cleaning Pad | None | - | 60 | | 662610 45600 |
| Hand Pad Holder | | | | | | | |
| 3-1/4 x 5-1/2 | N/A | Hand Pad Holder | | | 10 | | 662610 47583 |
| Scouring Pads/Spo | inges | | | | | | |
| 3-1/4 x 6-1/4 x 3/4 | Green/Yellow | 893 Scour-N-Sponge Pad | A/0 | VF | 40 | | 662610 59403 |
| 3-1/4 x 6-1/4 x 3/4 | White/Yellow | 875 Clean-N-Sponge Pad | None | - | 40 | | 662610 59402 |



THIN and FLEXIBLE: Perfect for Tight Spots

Norton Bear-Tex Thin-Flex High-Performance Hand Pads

- Achieve performance benefits of a coarse and fine grain product in one hand pad; fast cut and definitively better finish than competing pads
- Extremely thin and conformable; ideal for deburring, cleaning, blending, and finishing contoured surfaces and tight spaces
- · Special coated web design for superior and constant cutting action without added effort from user
- · Versatile; ideal for woodworking, metalworking, maintenance operations, and synthetics fabrication





COATED & NON-WOVEN ABRASIVES Foam Hand Pads

Rotolo Foam Sanding Pads

Application/Grit Recommendation Guide

COARSER

| | R | | | | | | | | | | FINEF |
|------------|-----------|-----|-------------|-----|-----|--------------|-----|-------------|-------|-----------|---------|
| 120 | 150 | 180 | 220 | 240 | 280 | 320 | 400 | 500 | 600 | 800 | 1000 |
| Cleaning/R | lepairing | | | | | | | | | | |
| | | | Final Sandi | ng | | | | | | | |
| | | | | | | Feather Edgi | ıg | | | | |
| | | | | | | | | Basecoat Sa | nding | | |
| | | | | | | | | | | Clearcoat | Sanding |

The better choice for fine sanding flat and curved surfaces

A2750P NO-FIL ROTOLO FOAM ROLLS

- Premium, P-graded, heat-treated aluminum oxide abrasive for consistent surface finish, exceptional performance on all surfaces and coatings
- Foam backing is perfect for hand sanding primer without leaving finger marks; 50% 60% improvement in tear strength versus conventional paper rolls; perforated for easy sizing
- Non-pigmented, water based stearate No-Fil coating, open coat for best resistance to clogging and loading • during sanding

| | | TIER: | BETTER |
|--------------|-----------|-----------------|---------------------|
| | | | A275 OP ROTOLO |
| | | | |
| | | ABRASIVE: | |
| | | OTHER: | P-Graded |
| SIZE (W x L) | GRIT SIZE | ROLLS/STD. PKG. | PART # |
| 4-1/2" x 82' | 120 | 2 | 636425 35316 |
| | 150 | 2 | 636425 57584 |
| | 180 | 2 | 636425 57599 |
| | 220 | 2 | 636425 57600 |
| | 240 | 2 | 636425 57602 |
| | 280 | 2 | 636425 57604 |
| | 320 | 2 | 636425 57606 |
| | 400 | 2 | 636425 57608 |
| | 500 | 2 | 636425 57611 |
| | 600 | 2 | 636425 57612 |
| | 800 | 2 | 636425 57613 |
| | 1000 | 2 | 636425 57616 |





COATED & NON-WOVEN ABRASIVES Flexible Diamond-Coated Hand Pads

Diamond coated hand pads: shaping, rapid stock removal, touch-up and repair on ceramics, stone, marble, glass, composites and hard materials; polishing of dies and molds Quadroflex diamond hand pads: surface conditioning, repairs, and removing flash and burrs

Norton flexible diamond coated hand pads combine the durability and aggressiveness of diamond, with a flexible backing.

on aircraft composites and windmill blades

Applications:

Size Range: Grit Range: Abrasive Types: Machine Used:

60 – 1500 Diamond

SANDING

3-1/2" x 2-1/8"



Better choice for shaping, rapid stock removal, surface conditioning, touch-up, repair, and polishing

FLEXIBLE DIAMOND-COATED HAND PADS – CONVENTIONAL AND QUADROFLEX CURVED

- Durable yet lightweight conformable backing is adaptable to a variety of shapes and conditions with long lasting
 performance; offers a uniform finish for improved surface quality
- Can be used wet or dry; color-coded by grit size for easy identification
- Conventional hand pads with precision dot pattern for an aggressive, consistent, fast cut rate and reduced dust and loading; Quadroflex curved hand pads offer ergonomic advantages and longest life for lowest overall total cost





| | | | | TIER | BETTER | BETTER |
|---------|--------|-----------------|----------|-----------|--------------------------|--|
| | | | 7 | RADENAME: | DIAMOND COATED HAND PADS | QUADROFLEX CURVED DIAMOND COATED HAND PADS |
| | | | | ABRASIVE: | Diamond | Diamond |
| SIZE (L | . x W) | COLOR | GRIT | STD. PKG. | PART # | PART # |
| 3-1/2 x | 2-1/8 | Green | 60 | 1 | 662603 06360 | 690141 21517 |
| | | Black | 120 | 1 | 662603 06361 | 690141 21518 |
| | | Red | 200 | 1 | 662603 06362 | 690141 23529 |
| | | Yellow | 400 | 1 | 662603 05852 | 690141 23530 |
| | | White | 800 | 1 | 662603 06363 | 690141 23531 |
| | | Blue | 1500 | 1 | 662603 06364 | |
| | | Kit (one each o | f above) | 1 | 662603 07720 | |





NORION

Portable Tools and Specialties

power... In the palm of Your hand

New Portable Tools and the specialty abrasive products to go along with them. Access hard-to-reach areas with ease with the Norton Merit line of specialty products.



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PORTABLE TOOLS AND SPECIALTIES Mini Angle Sander



Put the world right in the palm of your hand with our 2" and 3" Norton Mini Angle Sanders. Small, compact enough to get into those hard-to-reach areas, and powerful enough to finish the job fast and efficiently.

| Specifications for: | 2" Mini Angle Air Sander | 3" Mini Angle Air Sander |
|--|--|--|
| Weight of tool: | 1.6 lbs. (0.742kg) | 1.8 lbs. (0.816kg) |
| Compressed air: | 6.2 bar (90psi) | 6.2 bar (90psi) |
| Maximum permissible operating pressure: | 6.2 bar (90psi) | 6.2 bar (90psi) |
| Horsepower: | .45 | .9 |
| Free speed: | 22,000 rpm | 20,000 rpm |
| Air consumption @90psi: | 85 liters/min (3 CFM) | 116 liters/min (4.1 CFM) |
| Noise characteristic value in accordance with | | |
| EN ISO 15744 (ISO 15744): | | |
| A-weighted sound pressure level at workstation | 87.3 dB | 83.2 dB |
| A-weighted sound power level | 98.3 dB | 94.2 dB |
| Peak C-weighted instantaneous sound pressure level at workstation | <130 dB | <130 dB |
| Measurement uncertainty (Standard): | 3.00 m/s ² | 5.92 m/s ² |
| Vibration value according to EN ISO 28927-3: | 0.84 m/s ² | 1.09 m/s ² |
| Recommended lubrications: | Air oil 20# | Air oil 20# |
| Sanding tool specifications: | Pad Size 2" Collet | Pad size 3" Collet |
| Applications and suitability: | Collet Chuck 1/4" (6mm) Surface preparation, grind wel finishing applications. | Collet Chuck 1/4" (6mm) ds, spot sanding and light-duty |



Put the power right in the palm of your hand with our Mini Angle Sanders

MINI ANGLE SANDERS

- · A double-bearing spindle generates superb concentricity, reducing vibrations allowing for longer use and finer finishes
- · Finesse your projects by having the ultimate control in both precision and power with the speed regulator
- · Get better tool handling along with reduced fatigue with the ergonomic and streamlined non-slip grip

| DESCRIPTION | STD. PKG. | PART # |
|---|-----------|---------------------|
| Mini Angle Sanders and Kits | | |
| 2" Mini Angle Sander | 1 | 662611 50076 |
| 2" Kit Includes: | 1 | 662611 50077 |
| • 1 – 2" Sander | | |
| 25 – 2" 36 Grit Blaze R980P 3-Ply TR Discs (66261162318) | | |
| 50 – 2" Medium Grit Rapid Prep Non-Woven TR Discs (66261009190) | | |
| 1 – 2" Medium Density Back-Up Pad (66261055103) | | |
| 3" Mini Angle Air Sander | 1 | 699573 82154 |
| 3" Kit Includes: | 1 | 699573 82155 |
| • 1 – 3" Sander | | |
| 25 – 3" 36 Grit Blaze R980P 3-Ply TR discs (66261162328) | | |
| 25 – 3" Medium Grit Rapid Prep Non-Woven TR discs (66261017522) | | |
| • 1 – 3" Medium Density Back-Up Pad (662610 55105) | | |
| | | |



PORTABLE TOOLS AND SPECIALTIES Mini Flap Discs





Mini-flap discs are ideal for use in tight spaces. They feature layered flaps which wear away evenly during use exposing new abrasive grain. The lightweight plastic backing helps to absorb vibration. They can help eliminate the conventional 2-step process in grinding edges and removing welds and rust.

Grinding, stock removal, edge chamfering/beveling, weld blending, deburring/deflashing,

Applications:

Size Range: **Grit Range: Abrasive Grain: Abrasive Flaps:** Attachment: Machine Used:

rust removal, blending, cleaning, and finishing in small areas or tight spots. 2" and 3" Quick-Change 36 - 120 Ceramic Alumina, Zirconia Alumina Polyester, Poly-cotton TR (Type III) and TS (Type II) Backing Plate Material: Extra Heavy-Duty Plastic





Best choice for beveling, blending, deburring, and stock removal in tight spaces

BLAZE R980P CERAMIC ALUMINA

- Premium ceramic alumina abrasive grain lasts 50% 200% longer than many flap discs on stainless steel, cobalt, chrome, Inconel, titanium and other hard-to-grind materials
- Flexible, high-strength, plastic backing plates absorb vibration for optimized ergonomics
- Y-weight polyester flaps with a supersize grinding aid significantly improve life, grain retention, and fray resistance while providing a cool, noticeably faster cut rate

Better choice for blending, deburring, and stock removal in tight places

BLUEFIRE R884P ZIRCONIA ALUMINA PLUS

- High-performance zirconia alumina plus abrasive for aggressive cut and long life
- Flexible, high-strength, plastic backing plates absorb vibration for optimized ergonomics
- · Poly-cotton flaps with semi-open coat provide improved durability and minimizes loading on aluminum



| | | TIER: | BEST | BETTER | BEST | BETTER |
|----------|------|---------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | | TRADENAME: | BLAZE R980P | BLUEFIRE R884P | BLAZE R980P | BLUEFIRE R884P |
| | | ABRASIVE: | Ceramic Alumina | Zirconia Alumina Plus | Ceramic Alumina | Zirconia Alumina Plus |
| | | FLAP: | Polyester | Polyester | Polyester | Polyester |
| | BACK | ING MATERIAL: | Extra Heavy-Duty Plastic | Extra Heavy-Duty Plastic | Extra Heavy-Duty Plastic | Extra Heavy-Duty Plastic |
| | | ATTACHMENT: | TR (Type III) | TR (Type III) | TS (Type II) | TS (Type II) |
| | | | Ì | Ì | \bigcirc | \bigcirc |
| SIZE (D) | GRIT | STD. PKG. | PART # | PART # | PART # | PART # |
| 2 | 36 | 10 | 776960 90145 | 776960 90165 | 776960 90155 | 776960 90175 |
| | 40 | 10 | 776960 90146 | 776960 90166 | 776960 90156 | 776960 90176 |
| | 60 | 10 | 776960 90147 | 776960 90167 | 776960 90157 | 776960 90177 |
| | 80 | 10 | 776960 90148 | 776960 90168 | 776960 90158 | 776960 90178 |
| | 120 | 10 | 77696090149 | 776960 90169 | 776960 90159 | 776960 90179 |
| 3 | 36 | 10 | 776960 90150 | 776960 90170 | 776960 90160 | 776960 90180 |
| | 40 | 10 | 776960 90151 | 776960 90171 | 776960 90161 | 776960 90181 |
| | 60 | 10 | 776960 90152 | 77696090172 | 776960 90162 | 776960 90182 |
| | 80 | 10 | 776960 90153 | 776960 90173 | 776960 90163 | 776960 90183 |
| | 120 | 10 | 776960 90154 | 776960 90174 | 776960 90164 | 776960 90184 |
| DECODID | | | | СТП П// С | | |
| DESCRIPT | | Back-up Pads | MAX. RPM | STD. PKG. | TR (TYPE III) | TS (TYPE II) |





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2" and 3" Medium Density Back Up Pads 30,000 1 08834160172 applifast.com

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08834168539





Tool-free, twist-on and -off fastening systems make fast work of disc changes to maximize productivity by minimizing downtime.

Applications:

Size Range: **Grit Range: Abrasive Grain: Backing: Cloth Flex:** Attachment: **Back-up Pads: Machine Used:**

Fiber and NorKut trimmable hard plastic discs: welding, grinding and blending; heavy metal removal; light deburring and finishing Cloth discs: light- to medium-pressure grinding; blending, leveling and finishing applications; for use on contours or flat surfaces Diamond: Grinding ceramic, glass, composites, carbide and ceramic coatings, fiberglass, and reinforced plastics 9/16" - 4" diameter 24 - 320 Ceramic Alumina, Zirconia Alumina, Aluminum Oxide, Silicon Carbide, Diamond Fiber, cloth, or polymer 3-ply (more aggressive), 2-ply (standard), Type TS (II), Type TR (III), and Type TP (I) Rubber with hardness variations for different applications



MINI ANGLE SANDER

Coated Abrasive Quick-Change Disc Availability

Fiber

- The most heavy-duty discs with resin over resin construction on heavy-duty vulcanized fiber backing
- Premium grain for applications from heavy stock removal to surface blending

NorKut

- Unique polymer backing resists cracking and breakage and can be cut down up to the 1" core
- Use the cores to grind "pinch" welds and other hard-to-reach areas



Diamond

Unique, aggressive, diamond grain pattern on a flexible cloth backing

Cloth 3-Plv

These heavy-duty, 3-ply polyester laminate construction discs are the most aggressive and durable cloth discs on the market

Cloth 2-Ply

Our standard 2-ply laminate construction creates an aggressive and durable cloth disc for flat surfaces

Quick-Change Attachment Systems and Cross Reference Guide

Each system enables quick, safe disc changes, reducing downtime and operating expenses.

Type TS (Type II)

- · Features a turn-on/turn-off style fastener
- · Fastener is made of metal





- Type TR (Type III)
- · Features a roll-on/roll-off style fastener
- · Fastener is made of plastic



Type TP (Type I)

- Features a snap-on/snap-off style fastener
- · Fastener is made of nylon



| NORTON MERIT | TS (Type II) | TR (Type III) | TP (Type I) | |
|--------------|--------------|---------------|--------------|--|
| 3M | Roloc TS/TSM | Roloc TR | Roloc TP | |
| Standard | TS (SocAtt) | TR (Lockit) | TP (ClickOn) | |
| Superior | Type S | Type R | - | |
| Arc | Type S | Type R | Type P | |
| Pferd | Type CD | Type CDR | - | |
| Sait | SAIT-LOK | SAIT-LOK-R | - | |
| Camel | Turn On | Roll On | - | |
| Klingspor | QMC | QRC | - | |
| Garryson | Type S | Туре R | - | |





Material/Application-to-Product Recommendation Guide

| Blaze R980P BlueFire R884P Aluminum Oxide Silico Stainless Steel / Titanium / Super Alloys Mild Carbon Steel / Welds Ferrous Metals / Cast Iron | |
|---|-----------------|
| Mild Carbon Steel / Welds | on Carbide R422 |
| • • • | |
| Forrous Matola / Coat Iron | |
| remous metals / Gast mom | |
| Brass / Bronze / Aluminum 🔶 🔶 | |
| Paint / Glue / Adhesive | |
| Concrete / Stone / Fiberglass | |

Application/Grit Recommendation Guide

COARSER (GRINDING)

| 24 | 36 | 40 | 50 | 60 | 80 | 100 | 120 | 150 | 180 | 240 | 320 |
|---------------|---------------|--------------|---------------|----------|----------------|-----|----------|-----|-----------|-----|-----|
| Heavy Stock R | emoval | | | | | | | | | | |
| | Medium Stock | Removal | | | | | | | | | |
| | Edge Chamferi | ing/Beveling | | | | | | | | | |
| | | Weld Removal | | | | | | | | | |
| | | | Heavy Deburri | ng | | | | | | | |
| | | | | Blending | | | | | | | |
| | | | | | Light Deburrin | g | | | | | |
| | | | | | | | Cleaning | | | | |
| | | | | | | | | | Finishing | | |

Cross Reference Guide

TOTAL PERFORMANCE

INITIAL PRICE

FINER (FINISHING)

| | BEST | | BETTER | GOOD | |
|-----------|--|---|---------------------|--|---------------------|
| Abrasive | Ceramic Alumina | Ceramic Alumina | Zirconia Alumina | Aluminum Oxide | Silicon Carbide |
| Backing | Fiber | Cloth | Cloth | Cloth | Cloth |
| NORTON | Blaze F980 | Blaze R980P | BlueFire R884P | | R422 |
| 3M | 782C, 785C, 787C, 982C, 985C, 987C, 988C | 963G/H, 966F, 967F, 997F, 984F, 784F, 947A | 561D | 361F, 363F | 421A, 441D, 461F |
| Standard | Ceramic, Ceramic Pro | Ceramic Pro, Ceramic | Zirconia | A/O Extra, A/O Pro | Silicon Carbide |
| Superior | — | Ceramic G.A. | Premium Zirc | A/O with Grinding Aid | |
| Arc | _ | _ | Zirconia/Y Standard | A/O/X Plus Coolant | — |
| Pferd | CO, CO Cool | Ceramic | ZA Z | Aluminum Oxide A-Plus, Aluminum Oxide A-INOX-FORTE | Silicon Carbide SiC |
| Sait | 7S,7A, 9S | — | Z | 3A | C-W |
| Camel | Ceramic | _ | Zirconia AO | _ | |
| (lingspor | CS570, FS966 | CS610 | Alumina Zirconia | — | CS333X |
| Garryson | | Ceramic | | | |

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PORTABLE TOOLS AND SPECIALTIES Quick-Change Discs - Fiber



SIZE (D

3

50

60

80

Best choice for tough applications and stainless steel

BLAZE F980 CERAMIC ALUMINA FIBER

- 100% ceramic grain constantly exposes sharper edges to deliver highest productivity at lowest overall costs vs. competitive lower-ratio ceramic discs
- Strong fiber backing, heavier and more rigid than conventional cloth discs, adds strength and tear resistance, and • allows additional pressure for better results when grinding difficult materials
- Advanced self-lubricating grain treatment provides coolest cut and significantly faster cut rates; excels on hard-to-grind materials like 300 and 400 Series stainless and exotic alloys



66261058709

662610**58711**

662610**58712**

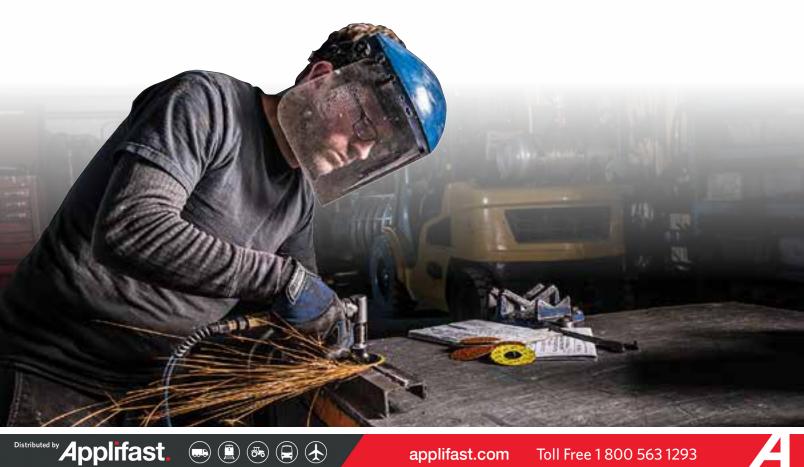
| | | TIER: | BEST |
|----|----------------|----------------|---|
| | | TRADENAME: | BLAZE F980 |
| | | ABRASIVE: | Ceramic Alumina |
| | | BACKING: | Fiber – Heavy Duty |
| | | OTHER: | Supersize |
| | | ATTACHMENT: | TR (Type III) |
| | | | ٢ |
| D) | GRIT | STD. PKG. | PART # |
| | | | |
| | 24 | 25 | 77696090139 |
| | 24 36 | 25 25 | 776960 90139 662610 58704 |
| | | | |
| | 36 | 25 | 662610 58704 |
| | 36 50 | 25 25 | 662610 58704 662610 58705 |
| | 36 50 60 | 25 25 25 | 662610 58704 662610 58705 662610 58706 |

25

25

25

Quick-Change back-up pads shown at the end of the Quick-Change Disc section.







Best choice for tough applications, titanium, super alloys, and stainless steel (3-ply) or contoured surfaces (2-ply)

BLAZE R980P CERAMIC ALUMINA

- 100% ceramic grain constantly exposes sharper edges to deliver highest productivity at lowest overall costs vs. competitive lower-ratio ceramic discs
- · Improved resin bond system maximizes grain retention for longer product life
- Advanced self-lubricating grain treatment provides coolest cut with significantly faster cut rates while minimizing loading on hard-to-grind materials

Better choice for soft metals, wood, stainless steel, and carbon

BLUEFIRE R884P ZIRCONIA ALUMINA

- Premium, versatile, self-sharpening zirconia plus grain provides aggressive cut and up to 30% longer life vs. competitive zirconia discs
- Semi-open coat minimizes loading on soft metals (aluminum, brass, and bronze) and wood, as well as stainless and carbon steels
- Durable Y-weight, polyester waterproof backing stands up to demanding applications: high-pressure and hard-to-grind exotic alloys

Better choice for stainless steel, titanium and other exotic alloys

R801 ZIRCONIA ALUMINA PLUS

- Self-sharpening, zirconia alumina abrasive with grinding aid provides cooler cut, and longer life on hard-to-grind materials
- Durable, Y-weight, 2-ply polyester waterproof blend back stands up to these demanding applications
- Minimized heat build-up allows these discs to outlast conventional aluminum oxide and zirconia alumina discs in many applications

Good choice when initial price is the primary consideration

ALUMINUM OXIDE

- · Versatile aluminum oxide abrasive for aggressive cut and longer life than competitive aluminum oxide discs
- Durable Y-weight 2-ply polyester backing and coating for additional life and faster cut rate on moderately-demanding applications
- · Good choice when initial price is the primary purchasing consideration



Good choice for non-ferrous materials

R422 SILICON CARBIDE

- · Sharp, silicon carbide abrasive provides high initial cut and penetration to resist loading on soft metals
- Strong, X-weight, 2-ply cotton backing construction for extended durability and reduced edge wear
- · When completion time is important, sharp silicon carbide abrasive gets non-ferrous blending jobs done quickly





Ceramic Alumina Quick-Change Cloth Discs

| | | | AD 10 10 5 | 100010 | | |
|----------|------|-------------|---------------------|---------------------|---------------------|---------------------|
| | | | 3 10 / 10 | | 2 | |
| | | | 50 St 51 | 4 06 - | | |
| | | TIER: | BEST | BEST | BEST | BEST |
| | | TRADENAME: | BLAZE R980P | BLAZE R980P | BLAZE R980P | BLAZE R980P |
| | | ABRASIVE: | Ceramic Alumina | Ceramic Alumina | Ceramic Alumina | Ceramic Alumina |
| | | DAOKINO. | Polyester | Polyester | Polyester | Polyester |
| | | BACKING: | 3-Ply Heavy-Duty | 3-Ply Heavy-Duty | 2-Ply Standard | 2-Ply Standard |
| | | OTHER: | Supersize | Supersize | Supersize | Supersize |
| | | | TS (Type II) | TR (Type III) | TS (Type II) | TR (Type III) |
| | | ATTACHMENT: | \sim | A Contraction | S | A S |
| SIZE (D) | GRIT | STD. PKG. | PART # | PART # | PART # | PART # |
| 1-1/2 | 36 | 100 | 662611 62307 | 662611 62308 | 636425 95401 | |
| | 50 | 100 | 662611 62309 | 66261162310 | 636425 95446 | |
| | 60 | 100 | 662611 62311 | 662611 62312 | 636425 95447 | 636425 95468 |
| | 80 | 100 | 662611 62313 | 662611 62314 | 636425 95450 | |
| | 120 | 100 | 662610 43379 | 662610 43380 | 662610 43416 | |
| 2 | 36 | 25 | 662611 62317 | 662611 62318 | 636425 95452 | 636425 95470 |
| | 50 | 25 | 662611 62319 | 662611 62320 | 636425 95456 | 636425 95472 |
| | 60 | 25 | 662611 62321 | 662611 62322 | 636425 95458 | 636425 95476 |
| | 80 | 25 | 662611 62323 | 662611 62324 | 636425 95459 | 636425 95478 |
| | 100 | 25 | 662610 43382 | 662610 43383 | 662610 43418 | 662610 43419 |
| | 120 | 25 | 662610 43384 | 662610 43386 | 662610 43420 | 662610 43421 |
| 3 | 36 | 25 | 662611 62327 | 662611 62328 | 636425 95460 | 636425 95479 |
| | 50 | 25 | 662611 62329 | 662611 62330 | 636425 95462 | 636425 95480 |
| | 60 | 25 | 662611 62331 | 662611 62332 | 636425 95463 | 636425 95481 |
| | 80 | 25 | 662611 62333 | 662611 62334 | 636425 95464 | 636425 95493 |
| | 100 | 25 | 662610 43389 | 662610 43390 | 662610 43422 | 662610 43423 |
| | 120 | 25 | 662610 43391 | 662610 43392 | 662610 43424 | 662610 43425 |

Quick-Change back-up pads shown at the end of the Quick-Change Disc section.





Zirconia Alumina Quick-Change Cloth Discs

| | | | | | | | 10 TA 10 |
|----------|----------|---------------------|--|--------------------------|--------------------------|---|--------------------------|
| | | | | | 0 | | (B) |
| | | | Dely | | A CONTRACT | and the second second | CHC SALE |
| | | | | | | | |
| | | TIER: TRADENAME: | BETTER BLUEFIRE R884P | BETTER BLUEFIRE R884P | BETTER R801 ZIRC PLUS | BETTER R801 ZIRC PLUS | BETTER R801 ZIRC PLUS |
| | | | Zirconia Alumina | Zirconia Alumina | Zirconia Alumina | | Zirconia Alumina |
| | | BACKING: | | Polyester 2-Ply Standard | Polyester 2-Ply Standard | Zirconia Alumina | Polyester 2-Ply Standard |
| | | OTHER: | Polyester Z-Ply Standard | Polyester 2-Ply Standard | Supersize | Polyester 2-Ply Standard Supersize | Supersize |
| | | ATTACHMENT: | | TR (Type III) | TS (Type II) | TR (Type III) | TP (Type I) |
| | | ATTAGRIVIENT. | | | | | |
| | | | | Ì | | I A A A A A A A A A A A A A A A A A A A | |
| SIZE (D) | GRIT | STD. PKG. | PART # | PART # | PART #* | PART #* | PART #* |
| 1 | 36 | 100 | | | | 088341 67093 NS | |
| | 40 | 100 | | | 088341 67052 NS | 088341 67094 NS | |
| | 50 | 100 | | | | 088341 67095 NS | 088341 67011 NS |
| | 60 | 100 | 662611 38608 | | | 088341 67096 NS | 088341 67012 NS |
| | 80 | 100 | 662611 38607 | | | 088341 67097 | 088341 67013 NS |
| | 120 | 100 | | | | 088341 67099 | 088341 67015 NS |
| 1-1/2 | 36 | 100 | 662611 38624 | 662611 21041 | | | |
| | 50 | 100 | | | | 088341 67102 | 088341 67018 NS |
| | 60 | 100 | 662611 38621 | 662611 21043 | 088341 67061 | 088341 67103 | 088341 67019 NS |
| | 80 | 100 | 662611 38620 | 662611 21044 | 088341 67062 | 088341 67104 | |
| | 120 | 100 | | | | 088341 67106 | |
| 2 | 24 | 100 | 662611 38638 * | 662611 38672 * | | | |
| | 36 | 100 | 662611 38637 * | 662611 38671 | 08834167065 | 08834167107 | 088341 67023 |
| | 40 | 100 | 00001100000 | 000011000000 | 08834167066 | 088341 67108 | 00004405005 |
| | 50 | 100 | 662611 38635 * | 662611 38670 * | 08834165583 | 08834167109 | 08834167025 |
| | 60 | 100 | 662611 38634 * | 662611 21048 * | 08834167068 | 08834167110 | 08834167026 |
| | 80 | 100 | 662611 38633 * | 662611 21049 * | 08834167069 | 08834167111 | 08834167027 |
| 3 | 120 | 100 | 660611 30665 * | 662611 38675 * | 088341 67071 | 088341 67113 | 088341 67029 |
| 3 | 24 36 | 50 50 | 662611 38665 * 662611 38664 * | | 088341 67072 | 088341 67114 | 088341 67030 |
| | 40 | 50 | 00201130004 | 662611 38674 * | 08834167073 | 0003410/114 | 0003410/030 |
| | 40 50 | 50 | 662611 38662 * | 662611 38673 * | 08834167074 | 088341 67116 | 088341 67032 |
| | 60 | 50 | 662611 38661 * | 662611 21053 * | 08834167075 | 08834167117 | 08834167033 |
| | 80 | 50 | 662611 38660 * | 662611 21053 | 08834167076 | 08834167118 | 08834167034 |
| | 120 | 50 | | 00201121004 | 08834167078 | 08834167120 | 0000410/034 |
| 4 | 36 | 50 | 662611 38683 * | | 08834167079 | | |
| ſ | 50 | 50 | 662611 38681 * | | | | |
| | 60 | 50 | 662611 37343 * | | | | 088341 67040 NS |
| | 80 | 50 | 662611 38679 * | | 088341 67083 NS | | |
| | 120 | 50 | | | 08834167085 NS | | |
| | 120 | 50 | | | | | |

* Standard Package = 25 discs

NS Non-stock, contact your Norton representative for current order quantities and lead-times.

Quick-Change back-up pads shown at the end of the Quick-Change Disc section.



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Quick-Change Test Kit "D"

Part # 08834165001

 (\mathbf{t})

• Includes 150 discs, assorted grits, in 1", 2", and 3" diameters and 3" back-up pads

applifast.com

Toll Free 1 800 563 1293

- Primarily aluminum oxide cloth quick-change discs
- Several zirconia alumina and aluminum oxide FlexEdge discs are included



Aluminum Oxide Quick-Change Cloth Discs

| | | TIER: | GOOD | GOOD | GOOD |
|----------|----------|------------------|---------------------|---------------------|--|
| | | ABRASIVE: | Aluminum Oxide | Aluminum Oxide | Aluminum Oxide |
| | | BACKING: | Polyester | Polyester | Polyester |
| | | | 2-Ply Standard | 2-Ply Standard | 2-Ply Standard |
| | | ATTACHMENT: | rs (Type II) | TR (Type III) | TP (Type I) |
| | | | |) | |
| 0175 (D) | 0.017 | | | D107 // | |
| SIZE (D) | GRIT | STD. PKG. 100 | PART # | PART # | PART # |
| 3/4 | 40 50 | 100 | 699573 99604 | | 699573 99739 699573 99740 |
| | 60 | 100 | 699573 99605 | 699573 99673 | 699573 99741 |
| | 80 | 100 | 699573 99606 | 699573 99674 | 699573 99742 |
| 1 | 36 | 100 | 699573 99614 | 699573 99682 | 699573 99750 |
| 1 | 40 | 100 | 099070 99014 | 099070333002 | 699573 99751 |
| | 50 | 100 | 699573 99616 | | 699573 99752 |
| | 60 | 100 | 699573 99617 | 699573 99685 | 699573 99753 |
| | 80 | 100 | 699573 99618 | 699573 99686 | 699573 99754 |
| | 100 | 100 | 699573 99619 | 699573 99687 | 699573 99755 |
| | 120 | 100 | 699573 99620 | 699573 99688 | 699573 99756 |
| | 180 | 100 | 699573 99622 | 699573 99690 | 699573 99758 |
| | 240 | 100 | 699573 99623 | 699573 99691 | 699573 99759 |
| 1-1/2 | 36 | 100 | 699573 99626 | 699573 99694 | 69957399762 |
| 1 1/2 | 40 | 100 | 699573 99627 | 699573 99695 | 699573 99763 |
| | 50 | 100 | 699573 99628 | 699573 99696 | 699573 99764 |
| | 60 | 100 | 699573 99629 | 699573 99697 | 699573 99765 |
| | 80 | 100 | 699573 99630 | 699573 99698 | 699573 99766 |
| | 100 | 100 | 699573 99631 | 69957399699 | |
| | 120 | 100 | 699573 99632 | 699573 99700 | 699573 99768 |
| | 150 | 100 | 0000100000 | | 699573 99769 |
| | 180 | 100 | 699573 99634 | 699573 99702 | 699573 99770 |
| | 240 | 100 | 699573 99635 | 699573 99703 | |
| 2 | 24 | 100 | 699573 99637 | 699573 99705 | 699573 99773 |
| | 36 | 100 | 699573 99638 | 699573 99706 | 699573 99774 |
| | 40 | 100 | 699573 99639 | 699573 99707 | 699573 99775 |
| | 50 | 100 | 699573 99640 | 699573 99708 | 699573 99776 |
| | 60 | 100 | 699573 99641 | 699573 99709 | 699573 99777 |
| | 80 | 100 | 699573 99642 | 699573 99710 | 699573 99778 |
| | 100 | 100 | 699573 99643 | 699573 99711 | 699573 99779 |
| | 120 | 100 | 699573 99644 | 699573 99712 | 699573 99780 |
| | 150 | 100 | 699573 99645 | 699573 99713 | 699573 99781 |
| | 180 | 100 | 699573 99646 | 699573 99714 | 699573 99782 |
| | 240 | 100 | 699573 99647 | 699573 99715 | 699573 99783 |
| | 320 | 100 | 699573 99648 | 699573 99716 | 699573 99784 |
| 3 | 24 | 50 | 699573 99649 | 699573 99717 | 699573 99785 |
| | 36 | 50 | 699573 99650 | 699573 99718 | 699573 99786 |
| | 40 | 50 | 699573 99651 | 699573 99719 | 699573 99787 |
| | 50 | 50 | 699573 99652 | 699573 99720 | 699573 99788 |
| | 60 | 50 | 699573 99653 | 699573 99721 | 699573 99789 |
| | 80 | 50 | 699573 99654 | 699573 99722 | 699573 99790 |
| | 100 | 50 | 699573 99655 | 699573 99723 | 699573 99791 |
| | 120 | 50 | 699573 99656 | 699573 99724 | 699573 99792 |
| | 150 | 50 | 699573 99657 | 699573 99725 | 00057000706 |
| | 180 | 50 | 699573 99658 | 699573 99726 | 699573 99794 |
| | 240 | 50 | 699573 99659 | 699573 99727 | 699573 99795 |
| 4 | 320 | 50 | 699573 99660 | 699573 99728 | 699573 99796 |
| 4 | 36 | 50 | 699573 99661 | 699573 99729 | |
| | 50 | 50 | CODE 7000CC / | 699573 99731 | C005700000 |
| | 60 | 50 | 699573 99664 | C005700729 | 699573 99800 |
| | 80 | 50 | | 699573 99733 | 699573 99801 |

Quick-Change back-up pads shown at the end of the Quick-Change Disc section.

PORTABLE TOOLS AND SPECIALTIES SANT-GOBAN **MERIT** Quick-Change Discs – Cloth, Specialty

Silicon Carbide Quick-Change Cloth Discs

| | | TIER: | GOOD | GOOD | GOOD |
|--------|------|-------------|---------------------|---------------------|---------------------|
| | | TRADENAME: | R422 | R422 | R422 |
| | | ABRASIVE: | Silicon Carbide | Silicon Carbide | Silicon Carbide |
| | | BACKING: | Cotton Standard | Cotton Standard | Cotton Standard |
| | | ATTACHMENT: | TS (Type II) | TR (Type III) | TP (Type I) |
| | | | | Ì | |
| ZE (D) | GRIT | STD. PKG. | PART # | PART # | PART # |
| | 40 | 100 | 088341 65252 | 088341 64275 | |
| | 60 | 100 | 088341 65254 | 088341 64163 | 088341 62168 |
| | 80 | 100 | 088341 65255 | 088341 66155 | 088341 62169 |
| | 120 | 100 | | 088341 64837 | 088341 62171 |
| | 180 | 100 | 088341 65259 | 088341 67313 | 088341 62173 |
| | 40 | 50 | 088341 65267 | 088341 64277 | |
| | 60 | 50 | | 088341 64850 | |
| | 80 | 50 | | 088341 66159 | 088341 62188 |
| | 120 | 50 | 08834165272 | 088341 66160 | 088341 62190 |
| | 180 | 50 | 08834165274 | 088341 68177 | |

Quick-Change back-up pads shown at the end of the Quick-Change Disc section.

Some part number are non-stock, contact your Norton representative for status, order quantities and lead-times.

Specialty Quick-Change Discs

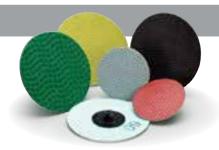


Better choice for hard-to-grind areas where flexibility is not required

NORKUT ZIRCONIA ALUMINA POLYMER

- · Durable zirconia alumina grain is resin bonded to a unique polymer backing which resists cracking and breaking; can be trimmed to the 1 Inch core
- Used with a quick change mandrel: 7/16-20 threaded for hand-held pneumatic grinders or 1/4 inch mandrel for automotive drills
- · Use for deburring and blending; use the core to grind pinch welds and other hard-to-reach areas

| | | TIER: | BETTER | | | |
|---------------------|------|-------------|---------------------|-----------------|-------------|---------------------|
| | | TRADENAME: | NORKUT | - | | |
| | | ABRASIVE: | Zirconia Alumina | - | | |
| | | BACKING: | Extra HD Polymer | | TIER: | BETTER |
| | | ATTACHMENT: | Threaded Hole | | ATTACHMENT: | Threaded Hole |
| SIZE (D) | GRIT | STD. PKG. | PART # | SIZE (D) | STD. PKG. | PART # |
| NorKut Discs | | | | Mandrels | | |
| 3 | 24 | 20 | 636425 03656 | 7/16-20 Mandrel | 5 | 636425 03659 |
| | 36 | 20 | 636425 03657 | 1/4" Mandrel | 5 | 636425 03660 |
| | 50 | 20 | 636425 03658 | | | |



Better choice for improved cut rate and finish on ceramics, glass, fiberglass, composites, carbide, and other tough metals and coatings

D7210 DIAMOND QUICK-CHANGE TR (TYPE III)

- · Unique, durable diamond abrasive pattern increases life and lowers costs versus standard coated and diamond discs; color-coded backing for easy grit/application identification
- · Removes rust and scale on other material; producing metallurgical stamps and coupons

| | | | TIE | R: BETTER |
|--------------------|--------------|---------------|----------------------|---------------------|
| SIZE (D) | COLOR | GRIT | STD. PKG. | PART # |
| Flexible Di | amond Coated | l Quick-Chang | je TR (Type III) Dis | SCS |
| 2" | Green | 60 | 12 | 662603 11778 |
| | Black | 120 | 12 | 662603 11779 |
| | Red | 200 | 12 | 662603 11780 |
| | Yellow | 400 | 12 | 662603 11781 |
| | White | 800 | 12 | 662603 11782 |
| | | | | |

| | | | TIE | R: BETTER |
|--------------|--------------|---------------|---------------------|---------------------|
| SIZE (D) | COLOR | GRIT | STD. PKG. | PART # |
| Flexible Dia | amond Coated | l Quick-Chang | e TR (Type III) Dis | SCS |
| 3" | Green | 60 | 12 | 662603 11783 |
| | Black | 120 | 12 | 662603 11784 |
| | Yellow | 400 | 12 | 662603 11786 |

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applifast.com

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PORTABLE TOOLS AND SPECIALTIES Non-Woven Quick-Change Discs

Non-woven quick-change discs are a combination of strong synthetic mesh and quality abrasives, bonded together by a smear-resistant adhesive. The open construction of the non-woven material enables aggressive cutting action and improved surface finish while maintaining its non-loading feature.

Applications:

Size Range: Grit Range: Abrasive Grain: Attachment: Back-up Pads: Machine Used: Medium-light stock removal, beveling, deburring/deflashing, rust removal, blending, cleaning and finishing, polishing, and decorative finishing 3/4" – 4" diameter X-Coarse, Coarse, Medium, Fine, Very Fine, Super Fine Ceramic Alumina, Engineered Aluminum Oxide, Aluminum Oxide, Silicon Carbide Quick-Change Type TR (Type III), Type TS (Type II) Rubber with hardness variations for different applications



Quick-Change Attachment Systems and Cross Reference Guide

Each system enables quick, tool-free, safe disc changes, reducing downtime and operating expenses.

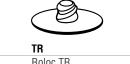
Type TS (Type II)

• Features a turn-on/turn-off style fastener



Type TR (Type III)

- Features a roll-on/roll-off style fastener
- Fastener is made of plastic



| NORTON | TS | TR | |
|-----------|--------------|-------------|--|
| 3M | Roloc TS/TSM | Roloc TR | |
| Standard | TS (SocAtt) | TR (Lockit) | |
| Superior | Type S | Type R | |
| Arc | Type S | Type R | |
| Pferd | Type CD | Type CDR | |
| Sait | SAIT-LOK | SAIT-LOK-R | |
| Camel | Turn On | Roll On | |
| Klingspor | QMC | QRC | |
| Garryson | Type S | Type R | |

Application/Grit Recommendation Guide

MOST AGGRESSIVE

LEAST AGGRESSIVE

| | | | | | F |
|-----------------|---------------|----------------------|-------------------|---------------|---------------------|
| NORTON MERIT | Rapid Strip | Vortex Rapid Blend | Vortex Rapid Prep | Rapid Prep | HS Buffing, Buffing |
| | | Deburring & Blending | | | |
| Scale Removal | Best Choice | | | | |
| Stock Removal | Best Choice | Second Choice | | | |
| Heavy Deburring | Second Choice | Best Choice | | | |
| Light Deburring | | Best Choice | Second Choice | | |
| Light Finishing | | | Best Choice | Second Choice | |
| Blending | | | Best Choice | Second Choice | |
| Cleaning | | | Second Choice | Best Choice | |
| Finishing | | | | Best Choice | Second Choice |









Cross Reference Guide

HEAVY/LIGHT DEBURRING

LIGHT DEBURRING/BLENDING/CLEANING/FINISHING

| BETTER HS Buffing, Buffing – |
|---------------------------------------|
| Buffing |
| _ |
| |
| |
| Buff & Blend - HS, Buff & Blend |
| _ |
| HS, HD A/O |
| Blend & Finish |
| _ |
| Sand-Light Blending |
| - |
| _ |
| - |
| - |
| - |

Abrasive/Grit/Density Key

| ABRASIVE | SILICON CARE | BIDE | | ALUN | CERAMIC ALUMINA | |
|-----------|---------------|--------------------|-----------------|----------------|--------------------|-----------------------|
| | SHARPER, FIN | ER/BRIGHTER SCRAT | CH PATTERN | MORE DU | RABLE, LONGER LAST | TING, POLISHED FINISH |
| GRIT SIZE | XC (50) | C (60-80) | M (100-150) | F (180-220) | VF (240-360) | SF (400-600) |
| | FASTER, AGGF | RESSIVE CUT, ROUGH | ER FINISH | | REDUCED C | UT RATE, FINER FINISH |
| DENSITY | 2 | | | | | 9 |
| | SOFT, OPEN, C | CONFORMABLE, LESS | BURNING/LOADING | HARDER, MORE I | DURABLE, FASTER CU | ITTING, BETTER FINISH |







3D Quick-Change Stripping Discs

Best choice for removing coatings on a variety of substrates, such as wood, metal and plastics

BLAZE RAPID STRIP CERAMIC ALUMINA

- Blaze ceramic grain cuts 2X faster than competitive discs; leaves a thoroughly cleaned surface, ensuring excellent adhesion in subsequent processes such as coating, painting and soldering
- Open web construction for minimal loading; great alternative to wire brushes
- · Rapid Strip material provides a unique combination of aggressive performance, long life, and improved finish

Better choice for removing coatings on a variety of substrates, such as wood, metal and plastics RAPID STRIP SILICON CARBIDE



- Open web construction for minimal loading; great alternative to wire brushes
- Advanced resin bond prevents shedding, snagging, gouging, and rework

| | | | | | 60 |
|-----------------|----------|-------------|-----------------------|-----------|-----------------------|
| | | TIER: | BEST | | BETTER |
| | | TRADENAME: | BLAZE RAPID STRIP | | RAPID STRIP |
| | | ABRASIVE: | Ceramic Alumina | | Silicon Carbide |
| | | GRADE: | XC | | XC |
| | | ATTACHMENT: | TR (Type III) | _ | TR (Type III) |
| | | | Ì | | ٢ |
| SIZE (DIAMETER) | MAX. RPM | STD. PKG. | PART # | STD. PKG. | PART # |
| 2 x 1/2 | 15,500 | 25 | 666233 03912 | 10 | 662610 13402 |
| 3 x 1/2 | 12,000 | 25 | 662610 96557 | 10 | 662610 13403 |
| 4 x 1/2 TR+ | 8,000 | 5 | 666233 03921 * | 5 | 662610 16580 * |

*TR+ attachment show in the group image above

For unified wheels with arbor holes or spindle mounts, see Non-woven Unified Wheels section. Quick-Change back-up pads shown at the end of this section.







3D Quick-Change Deburring & Blending Discs



Best technology for heavy deburring and finishing

BLAZE RAPID BLEND CERAMIC ALUMINA

- Blaze SG ceramic alumina grain provides guickest cut rate and up to 8X longer life than competitive aluminum oxide discs
- Superior resin chemistry resists shedding when used on sharp edges; ideal for deburring
- Abrasive is distributed throughout the entire disc (top, bottom and side) so all three faces can be used versus competitive discs with one bottom layer of abrasive

Best choice for weld blending, polishing and deburring

VORTEX RAPID BLEND ALUMINUM OXIDE

- · Patented Vortex agglomerated aluminum oxide grain provides the cutting power of a coarser grit with the finish of finer grits
- Special resin bond for consistent performance with no smearing
- Abrasive is distributed throughout the entire disc (top, bottom and side) so all three faces can be used versus competitive discs with one bottom layer of abrasive



Better choice for light deburring, blending, and cleaning

RAPID BLEND NEX ALUMINUM OXIDE

- · Quality aluminum oxide delivers durability and long life
- · Resin formula delivers smear-free finishes
- · Abrasive is distributed throughout the entire disc (top, bottom and side) so all three faces can be used versus competitive discs' one bottom layer of abrasive

3D Quick-Change Deburring & Blending TS Discs

| TIER: BEST BEST BEST |
|--|
| TRADENAME: BLAZE RAPID BLEND VORTEX RAPID BLEND |
| ABRASIVE: Ceramic Alumina Engineered Aluminum Oxide |
| ATTACHMENT: TS (Type II) TS (Type II) |
| |
| SIZE MAX. STD. |
| (D x T) ABRASIVE GRIT DENSITY RPM PKG. PART # PART # |
| 1 x 1/4 Ceramic Alumina XC 1 35,000 100 666233 13920 |
| 1-1/2 x 1/4 Ceramic Alumina XC 1 35,000 80 666233 13922 |
| 2 x 1/4 Ceramic Alumina XC 1 22,000 25 666233 13925 |
| Aluminum Oxide M 1 22,000 25 662544 97070 |
| 3 x 1/4 Ceramic Alumina XC 1 15,000 25 666233 13931 |
| Aluminum Oxide M 1 15,000 25 662544 97069 |





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3D Quick-Change Deburring & Blending Discs continued

3D Quick-Change Deburring & Blending TR Discs

| | | | | | | 0 | 6 | 6 |
|-------------|-----------------|----|---------|--------|---------|---------------------|---------------------------------------|---------------------|
| | | | | | TIER: | | BEST | BETTER |
| | | | | | ENAME: | BLAZE RAPID BLEND | VORTEX RAPID BLEND | RAPID BLEND NEX |
| | | | | | RASIVE: | | Engineered Aluminum Oxide | Aluminum Oxide |
| | | | | ATTAC | HMENT: | TR (Type III) | TR (Type III) | TR (Type III) |
| | | | | | |) | I I I I I I I I I I I I I I I I I I I | (B) |
| SIZE | | | | MAX. | STD. | <u> </u> | \sim | <u> </u> |
| (D x T) | ABR. | | DENSITY | RPM | PKG. | PART # | PART # | PART # |
| 1 x 1/4 | Ceramic Alumina | XC | 1 | 35,000 | 100 | 666233 13919 | | |
| 1-1/2 x 1/4 | Ceramic Alumina | XC | 1 | 35,000 | 80 | 666233 13921 | | |
| 2 x 1/8 | Aluminum Oxide | М | 4-6 | 22,000 | 60 | | 662544 25632 | |
| | Aluminum Oxide | М | 7-9 | 22,000 | 60 | | 662544 33509 | |
| 2 x 3/16 | Aluminum Oxide | М | 2-3 | 22,000 | 60 | | 662544 28236 | |
| 2 x 1/4 | Ceramic Alumina | XC | 1 | 22,000 | 25 | 666233 13923 | | |
| | Aluminum Oxide | С | 7-9 | 22,000 | 60 | | | 662610 14921 |
| | Aluminum Oxide | М | 1 | 22,000 | 25 | | 662544 97067 | |
| | Aluminum Oxide | М | 2-3 | 22,000 | 60 | | 662544 28237 | 662610 14897 |
| | Aluminum Oxide | М | 4-6 | 22,000 | 60 | | 662544 13660 | 662610 14911 |
| | Aluminum Oxide | М | 7-9 | 22,000 | 60 | | 662544 33510 | 662610 14935 |
| | Silicon Carbide | F | 2 | 22,000 | 60 | | | 662610 14889 |
| | Silicon Carbide | F | 3 | 22,000 | 60 | | | 662610 17306 |
| 3 x 1/8 | Aluminum Oxide | М | 4-6 | 15,000 | 40 | | 662610 93556 | |
| | Aluminum Oxide | М | 7-9 | 15,000 | 40 | | 662610 90909 | |
| 3 x 3/16 | Aluminum Oxide | М | 7-9 | 15,000 | 40 | | 662544 28239 | |
| 3 x 1/4 | Ceramic Alumina | XC | 1 | 15,000 | 25 | 666233 13930 | | |
| | Aluminum Oxide | С | 7-9 | 15,000 | 40 | | | 662610 14922 |
| | Aluminum Oxide | М | 1 | 15,000 | 25 | | 662544 97068 | |
| | Aluminum Oxide | М | 2-3 | 15,000 | 40 | | 662544 28238 | 662610 14898 |
| | Aluminum Oxide | М | 4-6 | 15,000 | 40 | | 662544 13661 | 662610 14912 |
| | Aluminum Oxide | М | 7-9 | 15,000 | 40 | | 662544 06395 | 662610 14936 |
| | Aluminum Oxide | F | 4-6 | 15,000 | 40 | | | 662610 15419 |
| | Silicon Carbide | F | 2 | 15,000 | 40 | | | 662610 14890 |
| | Silicon Carbide | F | 3 | 15,000 | 40 | | | 662610 16005 |

For unified wheels with arbor holes or spindle mounts, see the Non-woven Unified Wheel section. Quick-Change back-up pads shown at the end of this section.







Quick-Change Surface Preparation Discs

SIZE

MAX.

Best choice for aggressive stock removal and blending in one step

RAPID PREP XHD

- Coarse and Medium discs solve your most aggressive stock removal and blending challenges, remove weld lines, weld spatter, weld discoloration and blend surfaces in a single step
- Improve cut control and surface blending over traditional coated discs with our unique combination of a conformable fiber matrix and premium ceramic grain
- XHD Coarse discs for aggressive weld removal and surface blending on steels and Medium discs on softer metals/ alloys

| TIER: | BEST |
|--------------|-----------------|
| TRADENAME: | RAPID PREP XHD |
| ABRASIVE: | Ceramic Alumina |
| ATTACHMENT: | TR (Type III) |
| | Ì |
| STD. PKG. | PART # |

| | | I Ros | |
|--------|--------|-------|---------------------|
| Coarse | | | |
| 2 | 20,000 | 50 | 662611 70271 |
| 3 | 18,000 | 25 | 662611 70273 |
| 4 | 12,000 | 25 | 662611 70274 |
| Medium | | | |
| 2 | 20,000 | 50 | 662611 70285 |
| 3 | 18,000 | 25 | 662611 70286 |
| 4 | 12,000 | 25 | 662611 70287 |
| | | | |

NORTON

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applifast.com To

CLEAN



Non-Woven Quick-Change Discs

Quick-Change Surface Preparation Discs

Best choice for finishing and blending applications

VORTEX RAPID PREP

- Proprietary engineered Vortex aluminum oxide abrasive grain and coating method combine maximum cutting speed with the consistent finish of finer grits to reduce process times by 50+% by combining multiple grit sequences to 1 step
- Premium high-loft nylon fiber bonded to a strong nylon scrim backing allows a thick layer of resin bond and grain for extended life and provides added durability and stiffness
- Proprietary Clean Bond resin technology guarantees smear-free finishes even on high nickel content alloys and reduces loading on aluminum and other soft metals

Better choice for finishing and blending applications

RAPID PREP ALUMINUM OXIDE

- Quality aluminum oxide abrasive grain coating provides up to 20% higher cut rate and 50% better performance than competitive products
- Thick layer of grain throughout the product extends life; grain does not sit on top of fibers as as it does with other competitive products
- Proprietary Clean Bond resin technology guarantees smear-free finishes even on high nickel content alloys and reduces loading on aluminum and other soft metals

| | | TIER: | BEST | BETTER | BEST | BETTER |
|-------------------------|------------------|--------------------------|--|--|--|--|
| | | TRADENAME: | VORTEX RAPID PREP | RAPID PREP | VORTEX RAPID PREP | RAPID PREP |
| | | ABRASIVE: ATTACHMENT: | Engineered A/O TR (Type III) | Aluminum Oxide TR (Type III) | Engineered A/O TS (Type II) | Aluminum Oxide TS (Type II) |
| | | ATTACITIVILIT. | | | | |
| | | | Ì | Ċ | | \bigcirc |
| IZE (DIAM.) | MAX. RPM | STD. PKG. | PART # | PART # | PART # | PART # |
| xtra Coarse | | | | | | |
| /4 | 25,000 | 50 | 666233 25001 | 666233 40002 | 666233 35324 | |
| | 25,000 | 50 | 666233 25004 | | 666233 25003 | 666233 40006 |
| -1/2 | 20,000 | 50 | 666233 25007 | 666233 40011 | 666233 25006 | 666233 40010 |
| | 20,000 | 50 | 666233 35326 | 662610 16373 | 666233 35325 | 662610 17819 |
| | 18,000 | 25 | 666233 35327 | 662610 16994 | 666233 25010 | 662610 17818 |
| | 12,000 | 25 | 666233 35329 | 662610 16374 | | |
| oarse | | | | | | |
| 3/4 | 25,000 | 50 | 666233 25013 | 666233 40021 | 666233 35410 | 662610 95015 |
| | 25,000 | 50 | 666233 25015 | 666233 40023 | 666233 35537 | 662610 24310 |
| -1/2 | 20,000 | 50 | 666233 35411 | 662610 47579 | 666233 25017 | 666233 40026 |
| | 20,000 | 50 | 666233 35414 | | 666233 35413 | 662610 09183 |
| | 18,000 | 25 | 666233 35417 | 662610 09194 | 666233 35416 | 662610 09186 |
| | 12,000 | 25 | 666233 35419 | 662610 08822 | | |
| ledium | 05.000 | 50 | 000000000000 | 000000 40000 | 000000000000000000000000000000000000000 | 00054400000 |
| /4 | 25,000 | 50 | 666233 25020 | 666233 40032 | 666233 35420 | 662544 28059 |
| | 25,000 | 50 | 666233 35422 | 662544 82331 | 666233 35421 | 662544 82327 |
| -1/2 | 20,000 | 50 | 666233 35424 | 662544 82332 | 666233 35423 | 662544 82328 |
| | 20,000 | 50 | 666233 35427 | 662610 09190 * | 666233 35426 | 662610 09182 |
| | 18,000 | 25 | 666233 35430 | 662610 17522 | 666233 35429 | 662610 09185 |
| • | 12,000 | 25 | 666233 35432 | 662610 08821 | | 662610 55350 |
| ine | 05.000 | 50 | 000000000000 | 00000040050 | 0000000000 | |
| /4 | 25,000 | 50 | 666233 25026 | 666233 40058 | 666233 25025 | 00000400000 |
| -1/2 | 25,000 20.000 | 50 50 | 666233 25029 666233 25032 | 666233 40064 666233 40070 | 666233 25028 | 666233 40062 666233 40068 |
| 2 | | | | | 666233 25031 | |
| } | 20,000 18.000 | 50 25 | 666233 25035 666233 25038 | 666233 40077 666233 40085 | 666233 25034 666233 25037 | 666233 40074 666233 40082 |
| | 12.000 | 25 | 666233 25041 | 666233 40092 | 000233 23U37 | 000233 40082 |
| | 12,000 | 20 | 000233 23041 | 00023340092 | | |
| /ery Fine 3/4 | 25.000 | 50 | 666233 25044 | 666233 40044 | 666233 25043 | 666233 40042 |
| /4 | 25,000 | 50 | 666233 25047 | 662544 82339 | 666233 25045 | 662544 82335 |
| -1/2 | 20.000 | 50 | 666233 25050 | 662544 82340 | 666233 25049 | 662544 82336 |
| -1/2 | 20,000 | 50 | 666233 35433 | 662610 09189 * | 666233 25052 | 662544 82330 |
| | 18.000 | 25 | 666233 35433 | 662610 09192 | 666233 35436 | 662610 09184 |
| | 12.000 | 25 | 00023333431 | 666233 40053 | 000233 33430 | 00201003184 |
| uper Fine | 12,000 | 20 | | 00023340033 | | |
| | 20,000 | 50 | | 662610 91459 | | |
| 2 | 18.000 | 25 | | 662610 91460 | | |



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PORTABLE TOOLS AND SPECIALTIES Non-Woven Quick-Change Discs

Quick-Change Buffing/Polishing Discs



Best choice for light removal of paint or rust

BUFFING/POLISHING DISCS

- This aluminum oxide grain and resin bond combination produce a smooth cut rate and smear-free, uniform finish
- Non-woven nylon fibers are laminated to tough yet conformable nylon backing that resists tearing on burrs and sharp edges
- Designed for light removal of coatings oxidation or rust without affecting the base product

| | | | TIER: | BEST | | BEST | BEST | BETTER | BETTER |
|----------|------|--------|-------------|---------------------|-----------|---------------------|---------------------|---------------------|---------------------|
| | | | TRADENAME: | HIGH-STRENGTH | - | HIGH-STRENGTH | HIGH-STRENGTH | BUFFING | BUFFING |
| | | | ABRASIVE: | Aluminum Oxide | | Aluminum Oxide | Aluminum Oxide | Aluminum Oxide | Aluminum Oxide |
| | | | ATTACHMENT: | TR (Type III) | | TR (Type III) | TS (Type II) | TR (Type III) | TS (Type II) |
| | | | | ٩ | | ٩ | | ٢ | |
| | | MAX. | | | | | | | |
| SIZE (D) | GRIT | RPM | STD. PKG. | PART # | STD. PKG. | PART # | PART # | PART # | PART # |
| 1-1/2 | М | 20,000 | | | 100 | | | 088341 66368 | 088341 66392 |
| | F | 20,000 | | | 100 | | | 08834166369 | |
| 2 | С | 18,000 | | | 50 | | | 08834161649 | 088341 66394 |
| | М | 18,000 | 160 | 662610 14792 | 50 | 088341 64064 | 088341 64244 | 088341 66303 | 08834166395 |
| | F | 18,000 | | | 50 | | | 08834166304 | 08834166396 |
| | VF | 18,000 | | | 50 | 088341 63987 | 088341 64245 | 08834166305 | 088341 66405 |
| 3 | С | 12,000 | | | 25 | | | 088341 61651 | 088341 66397 |
| | Μ | 12,000 | 80 | 662610 14793 | 25 | 088341 64065 | 088341 64252 | 088341 66308 | 088341 66398 |
| | F | 12,000 | | | 25 | | | 08834166309 | 088341 66399 |
| | VF | 12.000 | | | 25 | 08834163559 | 088341 64255 | 08834166310 | 08834166403 |





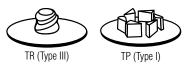


PORTABLE TOOLS AND SPECIALTIES Quick-Change Disc Accessories

Quick-Change Back-up Pads

- Hard density pads are for aggressive cutting action
- Medium density pads are for all-purpose applications
- Soft density pads are used for contours and fine finishing work





| SIZE | | MAX. | STD. | | | |
|----------------|--------------|----------|------|------------------------|---------------------|------------------------|
| (DIAMETER) | DENSITY | RPM | PKG. | TS (TYPE II) | TR (TYPE III) | TP (TYPE I) |
| Quick-Change | Back-up Pads | | | | | |
| 9/16 | | 40,000 | 1 | 662610 54014 NS | | 662610 54013 NS |
| 3/4 | Medium | 40,000 | 1 | 088341 64206 | 088341 64038 | 088341 64001 |
| 1 | Medium | 40,000 | 1 | 088341 64651 | 088341 64037 | 088341 64002 |
| 1-1/2 | Hard | 30,000 | 1 | 088341 64622 | | 088341 63996 |
| | Medium | 30,000 | 1 | 088341 64146 | 088341 61174 | 088341 64003 |
| 2 | Hard | 30,000 | 1 | 088341 64624 | 088341 64643 | 088341 63997 |
| | Medium | 30,000 | 1 | 088341 64198 | 088341 64922 | 088341 64004 |
| | Soft | 30,000 | 1 | 08834161625 | 088341 64641 | 08834163949 |
| 3 | Hard | 20,000 | 1 | 088341 61626 | 088341 64036 | 088341 63998 |
| | Medium | 20,000 | 1 | 088341 64113 | 088341 64949 | 088341 64005 |
| | Soft | 20,000 | 1 | 08834164626 | 08834164644 | 08834163948 |
| 4 | Medium | 15,000 | 1 | 088341 64135 | 088341 64655 | |
| 4 | Medium | 8,000 | 1 | | 636425 55106 | |
| Vendible Quick | -Change Back | -up Pads | | | | VENDIBLE |
| 2 | Medium | 30,000 | 5 | 666233 41082 | 666233 41083 | |
| 3 | Medium | 20,000 | 5 | | 666233 41085 | |

All Quick-Change back-up pads have a 1/4" solid steel shank.

NS Non-stock. Contact your Norton representative for current order quantities and lead-times.

Vendible back-up pad Std. Pkg. Qtys: 1 pad per pack; 5 packs per carton. Order in multiples of 5.

Replacement Medium Density Rubber Pads for Quick-Change TP (Type I) Back-up Pads

 When the rubber pad has worn away, but the steel components of your quick-change back-up are still serviceable, order these replacement rubber pads.

| SIZE (D) | MODEL # | STD. PKG. | PART # |
|------------|---|---|---------------------------------|
| Quick-Chan | ige Replacement Rubbe | er Back-up Pads | |
| 3/4 | RR75 | 1 | 088341 64008 NS |
| 1 | RR10 | 1 | 088341 64009 NS |
| 4 | RR40 | 1 | 088341 64013 NS |
| NO Marcala | I O I I I I I I I I I I I I I I I I I I | and the family of the second stands and | and the stand to set the second |

NS Non-stock. Contact your Norton representative for current order quantities and lead-times.

Replacement Assemblies and Shanks for Quick-Change Back-up Pad

 Assemblies replace all the steel components of a quick-change back-up pad. This shank replaces the screw-in 1/4" solid steel shank only.

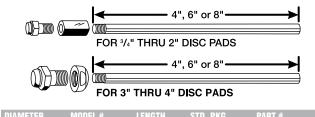
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| DESCRIPTION | STD. PKG. | PART # |
|---|-----------|------------------------|
| Replacement Mandrels and Nut Assembly | | |
| TP (Type I) Assembly RMN3 for 3 - 4 | 1 | 088341 64016 NS |
| TS (Type II) & TR (Type III) Replacement 1/4" Shank | 1 | 088341 64303 |

NS Non-stock. Ask your Norton representative for current order quantities and lead-times

Extension Mandrels and Assembly

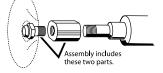


| DIAMETEN | MODEL # | LENGTH | JID. I KU. | |
|-----------------------|---------------------|------------------|---------------------|------------------------|
| Extension Mana | drels and Assem | bly – TP (Type | e I) | |
| 3/4 - 2 | EMN-14 | 4" | 1 | 088341 64017 NS |
| 3/4 - 2 | EMN-16 | 6" | 1 | 088341 64018 NS |
| 3/4 - 2 | EMN-18 | 8" | 1 | 088341 64019 NS |
| 3 - 4 | EMN-34 | 4" | 1 | 088341 64020 NS |
| 3 - 4 | EMN-36 | 6" | 1 | 088341 64026 NS |
| 3 - 4 | EMN-38 | 8" | 1 | 088341 64021 NS |
| All extension man | drels are non-stoci | k Contact vour l | Norton renresentati | ve for current order |

All extension mandrels are non-stock, Contact your Norton representative for current orde quantities and lead-times.

MNA-1 Pad Adapters

• Convert a TP (Type I) back-up pad 1/4" diameter solid shank to a threaded shank



| DISC DIAMETER | MODEL NO. | STD. PKG. | PART # |
|--------------------------|-----------------|-----------|------------------------|
| MNA-1 Pad Adapter | s – TP (Type I) | | |
| 3/4 - 2 | MNA 1/4-20 THD. | 1 | 08834161176 NS |
| 3/4 - 2 | MNA 3/8-24 | 1 | 088341 64055 NS |
| 3/4 - 2 | MNA 5/8-11 | 1 | 088341 63001 NS |
| 3 - 4 | MNA 1/4-20 | 1 | 088341 63002 NS |
| 3 - 4 | MNA 3/8-24 | 1 | 088341 64041 NS |
| 3 - 4 | MNA 5/8-11 | 1 | 088341 64028 NS |

All pad adapters are non-stock. Contact your Norton representative for current order quantities and lead-times.

MNA-23 Pad Adapters

- For use on a right angle grinder: convert TS (Type II) and TR (Type III) back-up pad 1/4" diameter solid shanks to threaded shanks.
- The larger 5/8"-11 adapter (for 4-1/2" discs) is used alone to convert to a 5/8"-11 thread.
- The 3/8"-24 insert (for 4" discs) is screwed into the 5/8"-11 adapter to create a 3/8"-24 thread adapter.



| DISC DIAMETER | MODEL # | STD. PKG. | PART # |
|-----------------------|---------------------------|-----------|------------------------|
| MNA-23 Pad Adapters - | - TS (Type II) and TR (ty | ype III) | |
| 3/4 - 4 | MNA-23 3/8"-24 and | 1 | 088341 62764 NS |
| | 5/8"-11 THD. | | |

NS Non-stock. Ask your Norton representative for current order quantities and lead-times

1/4" Diameter Extension Mandrel

| | USE WITH TP (TYPE I), T | S (TYPE II), TR (TYPE III) | |
|-----------------|-------------------------|----------------------------|---------------------|
| MODEL NO. | LENGTH | STD. PKG. | PART # |
| 1/4" Diameter E | xtension Mandrel 1/4- | 20 Thread | |
| EM-144 | 4" | 1 | 088341 54185 |
| EM-146 | 6" | 1 | 088341 54186 |
| EM-148 | 8" | 1 | 088341 54187 |

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PORTABLE TOOLS AND SPECIALTIES Die Grinder





Our new Norton pneumatic die grinder quickly and comfortably accomplishes many portable applications without changing machines – including jobs for abrasive specialties (cartridge and spiral rolls...), small diameter flap wheels, mounted points, and carbide burrs.

| Weight of tool: | 1.4 lbs. |
|--|-----------------------|
| Compressed air: | 6.2 bar (90psi) |
| Maximum permissible operating pressure: | 6.2 bar (90psi) |
| Recommended operating pressure: | 6.2 bar (90psi) |
| Horsepower: | 0.9HP |
| Free speed: | 25,000 rpm |
| Air consumption @90psi: | 85 I/min (3 CFM) |
| Noise characteristic value in accordance with | |
| EN ISO 15744 (ISO 15744): | |
| A-weighted sound pressure level at workstation | 87.3 dB |
| A-weighted sound power level | 98.3 dB |
| Peak C-weighted instantaneous sound pressure level | < 130 dB |
| at workstation | |
| Measurement uncertainty (Standard) | 3 dB |
| Vibration value according to EN ISO 28927-12: | 3.00 m/s ² |
| Measurement uncertainty (Standard): | 0.84 m/s ² |
| Recommended lubrications: | Air drill oil 20# |
| Sanding tool specifications: | Pad Size 2" Collet |
| | Chuck 1/8" (3 mm |
| Applications and suitability: | Final surface finish |

87.3 dB 98.3 dB < 130 dB 3 dB 3.00 m/s² 0.84 m/s² Air drill oil 20# Pad Size 2" Collet Chuck 1/8" (3 mm) and 1/4" (6 mm) Final surface finishing, chamfering, deburring of architectural millwork, sheet metal and surface prep, zinc casting, aluminum products, injection molds, etc.; general sanding and polishing.



Put the power right in the palm of your hand with our die grinder

PNEUMATIC DIE GRINDER

- Comfortable during prolonged use thanks to vibration-limiting technology, ergonomic design, and streamlined
 non-slip grip
- · Adaptable to the needs of each job with speed regulation and two collet inserts in 1/8" and 1/4"
- Compatible with many accessories including cartridge rolls, spiral rolls, square pads, cross pads, overlap slotted discs, flap wheels, mounted points and carbide burrs

| DESCRIPTION | STD. PKG. | PART # |
|---|-----------|---------------------|
| Norton Pneumatic Die Grinder | | |
| Single Die Grinder with 1/8" and 1/4" collets | 1 | 699573 08000 |
| Die Grinder Kit* | 1 | 699573 08001 |
| Kit includes: | | |

1 die grinder with 1/8" and 1/4" collets 100 – 3/8" x 1-1/2" x 1/8", 80 grit Metal R228 cartridge rolls (088341**80232**)

1- M9 cartridge roll mandrel (088341**81209**)

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- 10-1" x 1" x 1/4" shank, 60 grit Blaze R920 flap wheels (66261151170)
- 5 1" x 1" W220, 1/4" x 1-1/2" spindle Gemini 38A60-P mounted points (614636**24566**)

1 – 1/2" x 1" SF5 Double-Cut carbide burr (69957308021)



YouTube

Learn more about how to safely and effectively use a die grinder on our Youtube page https://nortonsga.us/44yj2 or visit http://nortonsga.us/diegrinder

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PORTABLE TOOLS AND SPECIALTIES Cartridge Rolls



Cartridge rolls are strips of abrasive cloth rolled and glued to form a solid shape that is designed to break down during use and reveal the next layer of abrasive. A valuable abrasive tool for reaching into corners, where larger diameter tools cannot work

Applications:

Stock Shapes: Grit Range: Abrasive Grain: Backing: Construction: Maximum RPM:

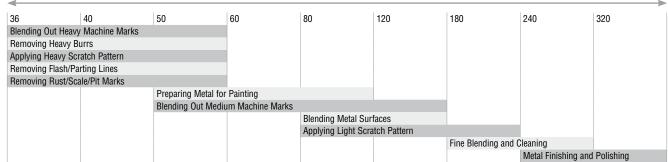
Machine Used:

Used on inside surfaces and inside corners where other abrasive shapes cannot reach. Typically these are used on high-speed air grinders and are always mounted on a mandrel. Ideal for flash removal, polishing or removing machine tool marks, and edge breaking. Cartridge rolls, half-glued 36 - 320 Ceramic Alumina, Aluminum Oxide X-weight cotton, X-weight poly-cotton All cartridge roll part numbers shown are resin bond, half-glued. Quarter and full glue are also available for quotation as made-to-order products. 1/8" to 1/2" – 23,000 5/8" to 1" – 18,000 1" to 1-1/2" – 15,000 DIE GRINDER

Application/Grit Recommendation Guide

COARSER (GRINDING)

FINER (FINISHING)





Best choice for hard-to-grind materials including super alloys (cobalt, inconel, and titanium) and stainless steel

BLAZE R920 CERAMIC ALUMINA

- Premium ceramic alumina abrasive grain provides greatest productivity with significantly faster cut rates; resists wear resulting in 50% – 300% longer life; supersized for cool cutting
- X-weight cotton cloth provides extended durability, conformability, and superior wear resistance; strong resin bond system provides good grain retention and life
- · Constructed of rolled and half-glued abrasive strips that break down to expose next layer of abrasive



Better choice for accessing tight areas and where long life & fast cut are required

PINK R928 CERAMIC ALUMINA

- Excellent option for reaching into corners and small areas, ceramic grain provides better performance than aluminum oxide or zirconia alumina alternatives
- Improved resin bond system provides longer life; supersized for cool cutting
- Versatile X-weight poly cotton backing for flexibility and life



R228 ALUMINUM OXIDE

- Quality aluminum oxide abrasive delivers long life
- X-weight cotton cloth provides extended durability, conformability, and superior wear resistance; strong resin bond system provides good grain retention and life
- · Constructed of rolled and half-glued abrasive strips that break down to expose next layer of abrasive

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PORTABLE TOOLS AND SPECIALTIES Cartridge Rolls

| | | | | NEW |
|-------------------|------|------------|---------------------|---------------------|
| | | TIER: | BEST | BETTER |
| | | TRADENAME: | BLAZE R920 | PINK R928 |
| | | ABRASIVE: | Ceramic Alumina | Ceramic Alumina |
| | | OTHER: | Supersize | Supersize |
| SIZE (D x L x H) | GRIT | STD. PKG. | PART # | PART # |
| 1/4 x 1-1/2 x 1/8 | 60 | 100 | 662611 94384 | 699573 39765 |
| Use M-9 Mandrel | 80 | 100 | 662611 94394 | 699573 39766 |
| | 120 | 100 | 662611 94397 | 699573 39767 |
| 3/8 x 1-1/2 x 1/8 | 60 | 100 | 662611 94392 | 699573 39768 |
| Use M-9 Mandrel | 80 | 100 | 662611 94395 | 699573 39769 |
| | 120 | 100 | 662611 94398 | 699573 39770 |
| 1/2 x 1-1/2 x 1/8 | 60 | 100 | 662611 94393 | 699573 39771 |
| Use M-9 Mandrel | 80 | 100 | 662611 94396 | 699573 39772 |
| | 120 | 100 | 662611 94399 | 699573 39774 |



| TRADENAME: R228 ABRASIVE: Aluminum Oxide SIZE (0 x L x H) GRIT STD. PKG. PART # 3/16 x 3/4 x 3/32 80 100 08834180005 3/16 x 1 x 3/32 3/16 x 1 x 3/32 60 100 08834180023 Use M-2E Mandrel 80 100 08834180024 100 100 08834180025 120 100 08834180025 120 100 08834180026 150 100 08834180026 150 100 08834180027 180 100 08834180028 240 100 08834180042 Use M-3 or M-7 Mandrel 80 100 08834180060 1/4 x 1 x 1/8 50 100 08834180060 1/4 x 1 x 1/8 100 008334180061 1/4 x 1 x 1/8 1/0 100 08834180062 1/0 1/0 0.8834180063 1/2 1/0 0.8834180063 1/2 1/0 0.8834180065 1/1 1/1 1/2 1/0 0.8834180065 1/1 1/1 1/2 1/0 0.8834180065 1/1 |
|--|
| SIZE (0 x L x H) GRIT STD. PKG. PART # 3/16 x 3/4 x 3/32 80 100 08834180005 3/16 x 1 x 3/32 80 100 08834180023 Use M-2E Mandrel 60 100 08834180024 100 100 08834180025 120 120 100 08834180026 150 120 100 08834180027 180 180 100 08834180028 240 240 100 08834180042 00 1/4 x 3/4 x 1/8 50 100 08834180043 1/4 x 1 x 1/8 50 100 08834180060 Use M-3 or M-7 Mandrel 80 100 08834180061 80 100 08834180061 80 100 1/4 x 1 x 1/8 50 100 08834180062 100 Use M-4 or M-8 Mandrel 60 100 08834180065 120 100 100 08834180065 120 100 08834180065 120 |
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| 1/4 x 3/4 x 1/8 60 100 08834180042 Use M-3 or M-7 Mandrel 80 100 08834180043 1/4 x 1 x 1/8 50 100 08834180060 Use M-4 or M-8 Mandrel 60 100 08834180061 80 100 08834180061 80 100 08834180062 100 100 08834180062 100 08834180062 100 120 100 08834180063 120 100 08834180065 180 100 08834180065 180 100 08834180065 180 100 08834180065 120 100 08834180065 120 100 08834180065 120 100 08834180065 120 100 08834180065 120 100 08834180065 120 100 08834180080 80 100 08834180080 80 100 08834180080 80 100 08834180081 100 100 120 100 08834180083 120 100 08834180083 120 100 100 </td |
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| Use M-4 or M-8 Mandrel 60 100 08834180061 80 100 08834180062 100 100 08834180063 120 100 08834180064 150 100 08834180065 180 100 08834180065 320 100 08834180070 1/4 x 1-1/2 x 1/8 50 100 08834180070 Use M-9 Mandrel 60 100 08834180080 80 100 08834180080 100 100 08834180081 100 100 08834180082 120 100 08834180083 |
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| 120 100 08834180064 150 100 08834180065 180 100 08834180066 320 100 08834180070 1/4 x 1-1/2 x 1/8 50 100 08834180079 Use M-9 Mandrel 60 100 08834180080 80 100 08834180080 100 100 08834180081 100 100 08834180082 120 100 08834180083 |
| 150 100 08834180065 180 100 08834180066 320 100 08834180070 1/4 x 1-1/2 x 1/8 50 100 08834180079 Use M-9 Mandrel 60 100 08834180080 80 100 08834180081 100 100 08834180082 120 100 08834180083 |
| 180 100 08834180066 320 100 08834180070 1/4 x 1-1/2 x 1/8 50 100 08834180079 Use M-9 Mandrel 60 100 08834180080 80 100 08834180081 100 100 08834180081 120 100 08834180083 |
| 320 100 08834180070 1/4 x 1-1/2 x 1/8 50 100 08834180079 Use M-9 Mandrel 60 100 08834180080 80 100 08834180081 100 100 08834180081 100 100 08834180082 120 100 08834180083 |
| 1/4 x 1-1/2 x 1/8 50 100 08834180079 Use M-9 Mandrel 60 100 08834180080 80 100 08834180081 100 100 08834180082 120 100 08834180083 |
| Use M-9 Mandrel 60 100 08834180080 80 100 08834180081 100 100 08834180082 120 100 08834180083 |
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| 100 100 08834180082 120 100 08834180083 |
| 120 100 088341 80083 |
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| 150 100 088341 80084 |
| 180 100 088341 80085 |
| 320 100 088341 80089 |
| 1/4 x 2 x 1/8 80 100 088341 80100 |
| Use M-10 Mandrel 120 100 08834180102 |
| 5/16 x 1 x 1/8 80 100 088341 80138 |
| Use M-4 or M-8 Mandrel 120 100 088341 80140 |
| 5/16 x 1-1/2 x 1/8 80 100 088341 80157 Use M-9 Mandrel |

Some part numbers are non-stock; contact your Norton representative for status, order quantities and lead-times.

Continued

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Refer to the back of this section for mandrels.



| | | TIER: | GOOD |
|------------------------------------|------|------------|---------------------|
| | | TRADENAME: | R228 |
| | | ABRASIVE: | Aluminum Oxide |
| SIZE (D x L x H) | GRIT | STD. PKG. | PART # |
| 3/8 x 3/4 x 1/8 | 120 | 100 | 088341 80197 |
| Use M-7 Mandrel | | | |
| 3/8 x 1 x 1/8 | 60 | 100 | 088341 80213 |
| Use M-8 Mandrel | 80 | 100 | 088341 80214 |
| | 100 | 100 | 088341 80215 |
| | 120 | 100 | 088341 80216 |
| | 150 | 100 | 088341 80217 |
| | 180 | 100 | 088341 80218 |
| | 240 | 100 | 088341 80220 |
| 3/8 x 1-1/2 x 1/8 | 36 | 100 | 088341 80228 |
| Use M-9 Mandrel | 40 | 100 | 088341 80229 |
| | 50 | 100 | 088341 80230 |
| | 60 | 100 | 088341 80231 |
| | 80 | 100 | 088341 80232 |
| | 100 | 100 | 088341 80233 |
| | 120 | 100 | 088341 80234 |
| | 180 | 100 | 088341 80236 |
| | 240 | 100 | 088341 80238 |
| | 320 | 100 | 088341 80240 |
| 3/8 x 2 x 1/8 | 60 | 100 | 088341 80250 |
| Use M-10 Mandrel | 80 | 100 | 088341 80251 |
| | 120 | 100 | 088341 80253 |
| 1/2 x 3/4 x 1/8 Use M-7 Mandrel | 80 | 100 | 088341 80270 |
| 1/2 x 1 x 1/8 | 50 | 100 | 088341 80287 |
| Use M-8 Mandrel | 60 | 100 | 088341 80288 |
| | 80 | 100 | 088341 80289 |
| | 100 | 100 | 088341 80290 |
| | 120 | 100 | 088341 80291 |
| | 150 | 100 | 088341 80292 |
| | 180 | 100 | 088341 80293 |
| | 240 | 100 | 088341 80295 |
| Continued | | | |

Continued



PORTABLE TOOLS AND SPECIALTIES Cartridge Rolls

| | | TIER: | GOOD |
|------------------------------------|------|------------|---------------------|
| | | TRADENAME: | R228 |
| | 0.01 | ABRASIVE: | Aluminum Oxide |
| SIZE (D x L x H) | GRIT | STD. PKG. | PART # |
| 1/2 x 1-1/2 x 1/8 | 36 | 100 | 088341 80304 |
| Use M-9 Mandrel | 40 | 100 | 088341 80305 |
| | 50 | 100 | 088341 80306 |
| | 60 | 100 | 088341 80307 |
| | 80 | 100 | 088341 80308 |
| | 100 | 100 | 088341 80309 |
| | 120 | 100 | 088341 80310 |
| | 150 | 100 | 088341 80311 |
| | 180 | 100 | 088341 80312 |
| | 240 | 100 | 088341 80314 |
| | 320 | 100 | 088341 80316 |
| 1/2 x 2 x 1/8 | 60 | 100 | 088341 80326 |
| Use M-10 Mandrel | 80 | 100 | 088341 80327 |
| | 120 | 100 | 088341 80329 |
| 1/2 x 2 x 3/16 | 60 | 100 | 088341 80350 |
| Use M-17 Mandrel | 80 | 100 | 088341 80653 |
| | 120 | 100 | 088341 80338 |
| 1/2 x 2 x 1/4 | 80 | 100 | 088341 80351 |
| Use M-22 Mandrel | | | |
| 5/8 x 1 x 3/16 Use M-15 Mandrel | 80 | 100 | 088341 80364 |
| 5/8 x 1-1/2 x 1/8 | 60 | 100 | 088341 80275 |
| Use M-9 Mandrel | 80 | 100 | 08834180789 |
| | 120 | 100 | 08834180394 |
| 5/8 x 1-1/2 x 3/16 | 60 | 100 | 088341 80382 |
| Use M-16 Mandrel | 80 | 100 | 088341 80383 |
| 5/8 x 2 x 1/8 | 60 | 100 | 08834182505 |
| Use M-10 Mandrel | 80 | 100 | 088341 81080 |
| 5/8 x 2 x 3/16 | 50 | 100 | 088341 80400 |
| Use M-10 Mandrel | 60 | 100 | 088341 80401 |

| | | TIER: | GOOD |
|------------------------------------|------|------------|---------------------|
| | | TRADENAME: | |
| | | ABRASIVE: | Aluminum Oxide |
| SIZE (D x L x H) | GRIT | STD. PKG. | PART # |
| 3/4 x 1-1/2 x 1/8 | 60 | 100 | 088341 80490 |
| Use M-9 Mandrel | 80 | 100 | 08834180527 |
| | 120 | 100 | 088341 80487 |
| 3/4 x 1-1/2 x 3/16 | 36 | 100 | 088341 80474 |
| Use M-16 Mandrel | 50 | 100 | 088341 80476 |
| | 60 | 100 | 088341 80477 |
| | 80 | 100 | 08834180478 |
| | 120 | 100 | 088341 80480 |
| | 180 | 100 | 08834180482 |
| 3/4 x 1-1/2 x 1/4 | 36 | 100 | 088341 80907 |
| 100/box 400/case | 60 | 100 | 088341 80489 |
| Use M-21 Mandrel | 80 | 100 | 088341 80358 |
| | 120 | 100 | 088341 80488 |
| | 150 | 100 | 088341 82807 |
| 3/4 x 2 x 1/8 | 60 | 100 | 088341 80791 |
| Use M-10 Mandrel | | | |
| 3/4 x 2 x 3/16 | 40 | 100 | 088341 80494 |
| Use M-17 Mandrel | 60 | 100 | 088341 80496 |
| | 80 | 100 | 088341 80497 |
| | 100 | 100 | 088341 80498 |
| | 120 | 100 | 088341 80499 |
| 3/4 x 2 x 1/4 | 60 | 100 | 088341 80506 |
| Use M-22 Mandrel | 80 | 100 | 088341 81297 |
| | 100 | 100 | 088341 80509 |
| | 120 | 100 | 088341 80507 |
| 1 x 1-1/2 x 1/8 Use M-9 Mandrel | 80 | 100 | 088341 80584 |
| 1 x 1-1/2 x 1/4 | 36 | 100 | 088341 81195 |
| Use M-21 Mandrel | 60 | 100 | 088341 80587 |
| | 80 | 100 | 088341 80583 |
| 1 x 2 x 3/16 | 60 | 100 | 088341 80591 |
| Use M-17 Mandrel | 80 | 100 | 088341 80592 |
| 1 x 2 x 1/4 | 60 | 100 | 088341 80603 |
| Use M-22 Mandrel | 80 | 100 | 088341 80606 |

Some part numbers are non-stock; contact your Norton representative for status, order quantities and lead-times. Continued

100

100

100

100

100

088341**80402** 088341**80469**

08834181543

08834180459

08834180461

80

80

80

120

120

3/4 x 1 x 1/8

3/4 x 1 x 3/16

Use M-8 Mandrel

Use M-15 Mandrel

Refer to the back of this section for mandrels.

PORTABLE TOOLS AND SPECIALTIES Spiral Rolls





Spiral rolls are strips of abrasive cloth rolled and glued to form a solid shape that is designed to break down during use and reveal the next layer of abrasive.

Shapes: Grit Range: Abrasive Grain: Backing: Construction:

Applications:

Maximum RPM:

Machine Used:

Typically these are used on high-speed air grinders and are always mounted on a mandrel. Ideal for flash removal, polishing, or removing machine tool marks, and edge breaking. Full taper (all stock part numbers), half taper, and sidewall taper 36 - 240 Ceramic Alumina, Aluminum Oxide X-weight cotton, X-weight poly cotton All spiral roll part numbers shown are full tapered, resin bond, half glued Half-tapered and sidewall-tapered are available for quotation as made-to-order products Quarter and full glue are also available for quotation as made-to-order products 1/8" to 1/2" - 23,000 5/8" to 1" - 18,000 1" to 1-1/2" - 15,000

Used on inside surfaces and inside corners where other abrasive shapes cannot reach.

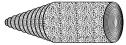


Full Taper

- Especially useful for grinding/polishing of channels, fillets and radii, and deburring small holes
- Full taper used when the area to be finished is hard to reach with a full cartridge roll
- · The tapered roll conforms to smaller areas
- · Fits into irregular concaves, contours, channels

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All part numbers shown are full tapered



Half Taper

• Used when the area to be finished is not narrow but a beginning point on the roll is needed

DIE GRINDER

- The portion of the roll that is not tapered is then used to finish off the sides
- Available for quotation as made-to-order products



Sidewall Taper

- The portion of the roll that is tapered guides the roll down to the area to be finished
- The sidewall then finishes off the sides Available for quotation as made-to-order products

Application/Grit Recommendation Guide

| COARSER | (GRINDING) |
|---------|------------|
| - | |

| | | | | | | | | } |
|--------------------|-----------------|---------------------|------------------|---------------------|--------------|---------------------|---------------------|-----------|
| 36 | 40 | 50 | 60 | 80 | 120 | 180 | 240 | 320 |
| Blending Out Heavy | / Machine Marks | | | | | | | |
| Removing Heavy B | urrs | | | | | | | |
| Applying Heavy Sci | ratch Pattern | | | | | | | |
| Removing Flash/Pa | rting Lines | | | | | | | |
| Removing Rust/Sca | ale/Pit Marks | | | | | | | |
| | | Preparing Metal for | Painting | | | | | |
| | | Blending Out Media | um Machine Marks | | | | | |
| | | | | Blending Metal Sur | faces | | | |
| | | | | Applying Light Scra | atch Pattern | | | |
| | | | | | | Fine Blending and C | Cleaning | |
| | | | | | | | Metal Finishing and | Polishing |

FINER (FINISHING)



PORTABLE TOOLS AND SPECIALTIES Spiral Rolls



NEW

Best choice for hard-to-grind materials including super alloys (cobalt, inconel, and titanium) and stainless steel

BLAZE R920 CERAMIC ALUMINA

- See significantly faster, cooler, burn-free results on the toughest jobs from the premium, sharp, longest-lasting P-graded ceramic abrasive grains and advanced grinding aid lubricant; supersized for cool cutting
- · X-weight cotton cloth provides extended durability, conformability, and superior wear resistance; strong resin bond system provides good grain retention and life
- Full taper construction consisting of rolled and half-glued abrasive strips that break down to expose next layer of abrasive

Better choice for accessing tight areas and where long life and fast cut are required

PINK R928 CERAMIC ALUMINA

- · Excellent option for reaching into corners and small areas, ceramic grain provides better performance than aluminum oxide or zirconia alumina alternatives
- Improved resin bond system provides longer life; superiszed for fast cutting
- · Versatile X-weight poly cotton backing for flexibility and life



Good choice for cooler grinding/polishing of channels, fillets and radii, and deburring small holes at a low initial price

R228 ALUMINUM OXIDE

- · Quality aluminum oxide abrasive delivers long life
- · X-weight cotton cloth provides extended durability, conformability, and superior wear resistance; strong resin bond system provides good grain retention and life
- Full taper construction consisting of rolled and half-glued abrasive strips that break down to expose next layer of abrasive





| | | | BEST | BETTER | GOOD | | |
|------------------------------------|------------|------------|---------------------|---------------------|--|--|--|
| | | TRADENAME: | | PINK R928 | R228 | | |
| | | | Ceramic Alumina | Ceramic Alumina | Aluminum Oxide | | |
| | | | Supersize | Supersize | | | |
| SIZE (D x L x H) | GRIT | | PART # | PART # | PART # | | |
| 3/8 x 1 x 1/8 | 60 | 100 | | | 088341 81714 | | |
| Use M-8 Mandrel | 80 | 100 | | | 088341 81715 | | |
| 0/0 1 1/0 1/0 | 120 | 100 | 0000110101 | 00057000775 | 08834181717 | | |
| 3/8 x 1-1/2 x 1/8 | 60 | 100 | 662611 94481 | 699573 39775 | 08834181724 | | |
| Use M-9 Mandrel | 80 | 100 | 662611 94490 | 699573 39785 | 08834181708 | | |
| | 120 180 | 100 | 662611 94491 | 699573 39787 | 088341 81727 | | |
| 1/0 v 1 v 1/0 | 60 | 100 | | | 08834181709 | | |
| 1/2 x 1 x 1/8 Use M-8 Mandrel | | | | | 08834181734 | | |
| | 80 | 100 | | | 088341 81735 | | |
| 1/2 x 1-1/2 x 1/8 | 36 | 100 | | | 088341 81737 | | |
| Use M-9 Mandrel | 50 | 100 | | | 088341 81230 088341 81743 | | |
| Use IVI-9 IVIaliulei | <u> </u> | 100 | 662611 94484 | 699573 39790 | 08834181743 | | |
| | 80 | 100 | 662611 94492 | 699573 39791 | 088341 81745 | | |
| | 100 | 100 | 002011 94492 | 0990/339/91 | 08834181745 | | |
| | 120 | 100 | 662611 94495 | 699573 39792 | 088341 81747 | | |
| | 120 | 100 | 00201194495 | 0990/339/92 | 08834181749 | | |
| | 240 | 100 | | | 08834181750 | | |
| 1/2 x 2 x 1/8 | 60 | 100 | | | 088341 81754 | | |
| Use M-10 Mandrel | 80 | 100 | | | 088341 81755 | | |
| | 120 | 100 | | | 088341 81757 | | |
| 5/8 x 1-1/2 x 1/8 | 120 | 100 | | | 088341 81776 | | |
| Use M-9 Mandrel | 120 | 100 | | | 08834181777 | | |
| 5/8 x 1-1/2 x 3/16 | 80 | 100 | | | 088341 81444 | | |
| Use M-16 Mandrel | 00 | 100 | | | 00004101444 | | |
| 3/4 x 1-1/2 x 1/8 | 60 | 100 | | | 088341 81286 | | |
| Use M-9 Mandrel | 80 | 100 | | | 08834180886 | | |
| 3/4 x 1-1/2 x 3/16 | 60 | 100 | | | 08834181808 | | |
| Use M-16 Mandrel | 80 | 100 | | | 08834181809 | | |
| | 120 | 100 | | | 08834181811 | | |
| 3/4 x 2 x 3/16 | 60 | 100 | | | 088341 81820 | | |
| Use M-17 Mandrel | | | | | | | |
| 1 x 1-1/2 x 1/8 Use M-9 Mandrel | 60 | 100 | | 699573 39790 | 088341 81240 | | |
| 1 x 2 x 3/16 | 36 | 100 | | | 088341 81875 | | |
| Use M-17 Mandrel | 60 | 100 | | | 088341 81878 | | |
| | 80 | 100 | | | 08834181879 | | |

Some part numbers are non-stock; contact your Norton representative for status, order quantities and lead-times.

Refer to the back of this section for mandrels.

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NORTON MERT Square & Cross Pads, Overlap Slotted Discs

Square pads, cross pads and overlap slotted discs are all used on high-speed pneumatic tools for deburring, blending, cleaning, and polishing applications. All of these abrasive specialties are designed for applications in small, tight, hard-to-access locations on parts that are being finished.

| Benefits: | Variety of shapes and sizes to fit application a Shapes provide flexibility for the application, the sanding action | 1 0 5 |
|-----------------|---|---|
| | Cross pads allow visibility of the surface whi material is removed | le sanding, to ensure correct amount of |
| Grit Range: | 50 - 180 | |
| Abrasive Grain: | Ceramic Alumina, Aluminum Oxide | |
| Backing: | X-weight cotton, X-weight poly-cotton | |
| Construction | Standard quick-change eyelet for easy moun minimizes downtime; Mandrel use increases | 5 1 5 |
| Maximum RPM: | 1" Diameter – 25,000 | 3" Diameter – 12,000 to 14,000 |
| | 1-1/2" to 2" Diameter – 18,000 to 23,000 | 4" Diameter - 8,000 to 12,000 |
| | 2-1/2" Diameter – 14,000 to 18,000 | 5" to 6" Diameter – 5,500 to 7,500 |
| Machine Used: | | |

DIE GRINDER

Application/Grit Recommendation Guide

COARSER (GRINDING)

FINER (FINISHING)

| 50 | 60 | 80 | 100 | 120 | 150 | 180 |
|---------------------|-------------------------|----------------------|-----|----------|-----------|-----|
| Light Stock Removal | | | | | | |
| | Edge Chamfering/Bevelin | g | | | | |
| | Blending | | | | | |
| | | Deburring/Deflashing | | | | |
| | | | | Cleaning | | |
| | | | | | Finishing | |



Best choice for hard-to-grind materials including super alloys (cobalt, inconel, and titanium) and stainless steel

BLAZE R920 CERAMIC ALUMINA

- See significantly faster, cooler, burn-free results on the toughest jobs from the sharp, longest-lasting P-graded ceramic abrasive grains and advanced supersize grinding aid for cool cutting
- X-weight cotton cloth provides extended durability, conformability, and superior wear resistance; strong resin bond system provides good grain retention and life
- Corners wear down consistently, exposing fresh abrasive; as these become round, they become less aggressive and run even smoother, with less stock removal – to retain workpiece shape



Better choice for accessing tight areas and where long life & fast cut are required

PINK R928 CERAMIC ALUMINA

- Excellent option for reaching into corners and small areas, ceramic grain provides better performance than aluminum oxide and zirconia alternatives
- Improved resin bond system provides longer life; supersized for cool cutting
- Versatile X-weight poly cotton backing for flexibility and life

Good for most ID deburring and polishing applications

R228 ALUMINUM OXIDE

- Versatile, quality aluminum oxide abrasive grain ensures good cut rate
- X-weight cotton cloth provides extended durability, conformability, and superior wear resistance; strong resin bond system provides good grain retention and life
- Corners wear down consistently, exposing fresh abrasive; as these become round, they become less aggressive and run even smoother, with less stock removal – to retain workpiece shape



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NORTON MERIT Square & Cross Pads, Overlap Slotted Discs





Square Pads

- · Corners wear down consistently exposing fresh abrasive; the pad becomes round for less aggressive stock removal
- · Grind almost as fast as hard wheels, but are much smoother and easier to control
- · For quick blending of channels, fillets, corners, or spotting flat surfaces

| | | | | • | NEW | |
|---------------------|--------|------|------------|---------------------|---------------------|---------------------|
| | | | TIER: | BEST | BETTE4R | GOOD |
| | | | TRADENAME: | BLAZE R920 | PINK R928 | R228 |
| | | | ABRASIVE: | Ceramic Alumina | Ceramic Alumina | Aluminum Oxide |
| | | | OTHER: | Supersize | Supersize | |
| SIZE (L x W x T) | EYELET | GRIT | STD. PKG. | PART # | PART # | PART # |
| 1 x 1 x 6 ply | 8-32 | 80 | 100 | | | 088341 84826 |
| 1 x 1 x 8 ply | | 80 | 100 | | | 088341 84124 |
| 1-1/2 x 1-1/2 x 1/2 | 1/4-20 | 60 | 100 | | | 088341 84463 |
| | | 80 | 100 | | | 088341 84125 |
| 2 x 2 x 1/2 | 1/4-20 | 60 | 100 | 662611 94520 | 699573 40138 | |
| | | 80 | 100 | 662611 94552 | 699573 40139 | 088341 84397 |
| | | 120 | 100 | 662611 94554 | 699573 40141 | |
| 2 x 2 x 3/4 | 1/4-20 | 80 | 100 | | | 088341 84394 |
| 3 x 3 x 1/4 | 1/4-20 | 60 | 100 | 662611 94531 | 699573 40142 | |
| | | 80 | 100 | 662611 94555 | 699573 40143 | |
| | | 120 | 100 | 662611 94556 | 699573 40144 | |
| 3 x 3 x 1/2 | 1/4-20 | 50 | 100 | | | 088341 82152 |
| | | 60 | 100 | 662611 94528 | 699573 40146 | 088341 82057 |
| | | 80 | 100 | 662611 94557 | 699573 40147 | 088341 84336 |
| | | 120 | 100 | 662611 94558 | | |

Some part numbers are non-stock; contact your Norton representative for status, order quantities and lead-times.

Refer to the back of this section for mandrels.

NORTON MERT Square & Cross Pads, Overlap Slotted Discs





Cross Pads

- The shape of cross pads enables you to see through to the contact area, and provides greater flexibility than square pads to conform to variable internal diameters
- Used for close-tolerance polishing of small radii and channels, deburring, and finishing of bell-mouth configurations
- · All pads are furnished with standard quick-change eyelet, as listed
- Plain hole sizes must be specified and are available for quotation as made-to-order products

| | | | | | • | | |
|---------------------|-----|--------|------|------------|---------------------|-----------------------|---------------------|
| | | | | TIER: | | BETTER | GOOD |
| | | | | TRADENAME: | BLAZE R920 | PINK R928 | R228 |
| | | | | ABRASIVE: | | Ceramic Alumina | Aluminum Oxide |
| | | | | OTHER: | | Supersize | |
| SIZE (L x W x T) | PLY | EYELET | GRIT | STD. PKG. | PART # | PART # | PART # |
| 3/4 x 3/4 x 3/8 | 8 | 3-48 | 80 | 100 | | | 088341 85578 |
| 1 x 1 x 3/8 | 8 | 3-48 | 60 | 100 | | | 088341 84943 |
| | | | 80 | 100 | | | 08834185519 |
| | | | 100 | 100 | | | 088341 84195 |
| | | | 120 | 100 | | | 088341 85164 |
| 1-1/2 x 1-1/2 x 1/2 | 8 | 8-32 | 60 | 100 | 662611 94496 | 699573 39793 | 088341 84258 |
| | | | 80 | 100 | 662611 94508 | 699573 39794 | 088341 84465 |
| | | | 100 | 100 | | | 088341 82196 |
| | | | 120 | 100 | 662611 94511 | 699573 39804 | 088341 82148 |
| 2 x 2 x 1/2 | 8 | 8-32 | 60 | 100 | | | 08834182156 |
| | | | 80 | 100 | | | 08834182157 |
| | | | 120 | 100 | | | 08834182132 |
| 2 x 2 x 3/4 | 8 | 8-32 | 60 | 100 | 662611 94502 | 699573 39806 | 08834184128 |
| | | | 80 | 100 | 662611 94513 | 699573 40133 | 08834184194 |
| | | | 120 | 100 | 662611 94516 | 699573 40134 | |
| 2-1/4 x 2-1/4 x 1/2 | 8 | 8-32 | 80 | 100 | | | 08834184402 |
| 2-1/2 x 2-1/2 x 3/4 | 8 | 8-32 | 80 | 100 | | | 08834184206 |
| 3 x 3 x 1 | 8 | 1/4-20 | 60 | 100 | 662611 94504 | | 08834182135 |
| | | | 80 | 100 | 662611 94549 | | 08834184119 |
| | | | 120 | 100 | 662611 94551 | | 08834184116 |
| 3 x 3 x 1 | 8 | 1/4-20 | 60 | 100 | | 699573 40135 | |
| | 10 | 1/4-20 | 80 | 100 | | 699573 40136 * | 08834182140 |
| | 8 | 1/4-20 | 120 | 100 | | 699573 40137 | |
| 3 x 3 x 1-1/2 | 10 | 1/4-20 | 80 | 100 | | | 088341 82184 |
| 4x4x1 | 8 | 1/4-20 | 60 | 100 | | | 088341 84142 |
| | - | .,3 | 80 | 100 | | | 088341 84135 |
| | | | 120 | 100 | | | 088341 84377 |
| 4 x 4 x 1-1/2 | 8 | 1/4-20 | 80 | 100 | | | 088341 84129 |
| | 0 | 1/1 20 | 00 | 100 | | | |

* Pink R928 3 x 3 x 1 are 8 ply.

Ceramic Alumina and Alumina Oxide cross pads are also available upon request as made-to-order products. Some part numbers are non-stock; contact your Norton representative for status, order quantities and lead-times.

Refer to the back of this section for mandrels.





PORTABLE TOOLS AND SPECIALTIES SANT-GOBAN MERIT Square & Cross Pads, Overlap Slotted Discs

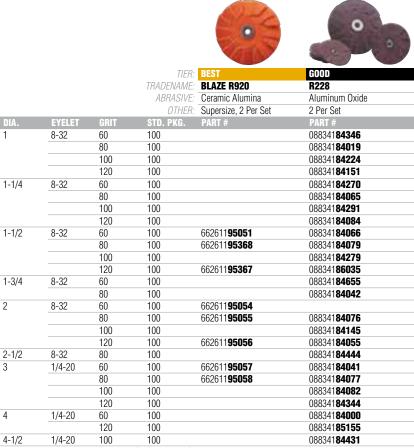


Overlap Slotted Discs



Overlap Slotted Discs

- · Used for deburring and polishing radii, holes and cylinder walls
- Our "2 to a set" configuration cuts on the inward motion only
- The "4 to a set" configuration, assembled back to back, cuts on both the inward and outward motions
- · All discs are furnished with standard quick-change eyelet
- Plain hole sizes must be specified and are available for quotation as made-to-order products



All overlap slotted discs are available (made-to-order) reinforced with a fiber washer

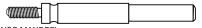
Ceramic Alumina and Alumina Oxide overlap slotted discs are also available upon request as made-to-order products. Some part numbers are non-stock; contact your Norton representative for status, order quantities and lead-times.

Quick-Change Mandrels for Overlap Slotted Discs, Square and Cross Pads

 (\mathbf{f})

| SQUARE PAD SIZE DIA. | OVERALL LENGTH | MODEL NO. | THD. SIZE | PART # |
|-------------------------------------|---|--|--|--|
| | 2-1/2 | MM48-4 | 3-48 | 088341 83162 |
| Up thru 1-1/2 sq. x 1/2 thick | 3 | MM32-4 | 8-32 | 088341 83163 |
| 2 sq. x 1/4 or 3/8 thick | 4 | MM-32-4-4 | 8-32 | 088341 21680 |
| | 6 | MM-32-4-6 | 8-32 | 088341 21681 |
| 2 sq. x 1/4 or 1/2 thick and larger | 3 | MM20-4 | 1/4-20 | 088341 83164 |
| | Up thru 1-1/2 sq. x 1/2 thick 2 sq. x 1/4 or 3/8 thick | 2-1/2 Up thru 1-1/2 sq. x 1/2 thick 3 | 2-1/2 MM48-4 Up thru 1-1/2 sq. x 1/2 thick 3 MM32-4 2 sq. x 1/4 or 3/8 thick 4 MM-32-4-4 6 MM-32-4-6 | 2-1/2 MM48-4 3-48 Up thru 1-1/2 sq. x 1/2 thick 3 MM32-4 8-32 2 sq. x 1/4 or 3/8 thick 4 MM-32-4-4 8-32 6 MM-32-4-6 8-32 |

For overlap slotted discs, choose a mandrel with the same thread size as the disc



QUICK-CHANGE MANDREL

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EXTENDED MANDREL

PORTABLE TOOLS AND SPECIALTIES Spiral Bands



Best product for blending and polishing contours when smooth running is a primary concern. Used for finishing hard-to-reach areas, removing parting lines, imperfections, and burrs on all surfaces.

Spiral construction avoids shadow marks and provides smooth, chatter-free cutting action.

Achieves close tolerances when finishing curved, contoured, and hard-to-reach areas. Fast

cutting and removes toughest metal. Bands are easily removed and replaced.

Benefits:

Grit Range: Abrasive Grain: Backing: Other: Machine Used:

24 - 320 Ceramic Alumina, Aluminum Oxide X-weight cotton Use with rubber expanding drum



DIE GRINDER

Application/Grit Recommendation Guide

COARSER (GRINDING)

FINER (FINISHING)

| 24 | 36 | 40 | 50 | 60 | 80 | 120 | 180 | 240 | 320 |
|------------|-------------|--------------------|-------------|--------------------|--------------|---------------------|--------------|----------------|------------------|
| Heavy Stoc | k Removal | | | | | | | | |
| | Blending Ou | t Heavy Machine | Marks | | | | | | |
| | Removing H | leavy Burrs | | | | | | | |
| | Applying He | avy Scratch Patte | rn | | | | | | |
| | Removing F | lash/Parting Lines | ; | | | | | | |
| | Removing F | Rust/Scale/Pit Mar | ks | | | | | | |
| | | | Preparing M | Netal for Painting | | | | | |
| | | | Blending O | ut Medium Machin | e Marks | | | | |
| | | | | | Blending Me | etal Surfaces | | | |
| | | | | | Applying Lig | ght Scratch Pattern | | | |
| | | | | | | | Fine Blendin | g and Cleaning | |
| | | | | | | | | Metal Finishi | ng and Polishing |



Best choice for hard-to-grind materials including super alloys (cobalt, inconel, and titanium) and stainless steel

BLAZE R920 CERAMIC ALUMINA

- See significantly faster, cooler, burn-free results on the toughest jobs from the next-generation of sharp, longest-lasting P-graded ceramic abrasive grains and advanced grinding aid lubricant
- · Advanced, full resin bond system designed to promote exceptional grain retention for additional product life
- X-weight cotton backing and spiral construction avoid shadow marks and provide smooth, chatter-free cutting action

Good starting specification for all types of metal



R228 ALUMINUM OXIDE

- Tough and durable quality aluminum oxide abrasive removes tough metal
- · X-weight cotton backing and spiral construction avoid shadow marks and provide smooth, chatter-free cutting action
- Achieves close tolerances on curved, contoured, and hard-to-reach areas

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PORTABLE TOOLS AND SPECIALTIES Spiral Bands





TIER: BE

| | | TRADEI | NAME: BLAZE R920 |
|---------------|------|-----------|------------------------|
| | | | ASIVE: Ceramic Alumina |
| | | 0 | THER: Supersize |
| SIZE (D x W) | GRIT | STD. PKG. | PART # |
| 1/2 x 1 | 40 | 100 | 662611 46012 |
| | 60 | 100 | 662611 46013 |
| | 80 | 100 | 662611 46014 |
| | 120 | 100 | 662611 46015 |
| 3/4 x 1 | 40 | 100 | 662611 46016 |
| | 60 | 100 | 662611 46017 |
| | 80 | 100 | 662611 46018 |
| | 120 | 100 | 662611 46019 |
| 1 x 1 | 40 | 100 | 662611 46020 |
| | 60 | 100 | 662611 46021 |
| | 80 | 100 | 662611 46022 |
| | 120 | 100 | 662611 46023 |
| 1-1/2 x 1-1/2 | 40 | 100 | 662611 46024 |
| | 60 | 100 | 662611 46025 |
| | 80 | 100 | 662611 46026 |
| | 120 | 100 | 662611 46027 |
| 2 x 2 | 40 | 100 | 662611 46028 |
| | 60 | 100 | 662611 46029 |
| | 80 | 100 | 662611 46030 |
| | 120 | 100 | 662611 46031 |
| 3 x 3 | 40 | 50 | 662611 46032 |
| | 60 | 50 | 662611 46033 |
| | 80 | 50 | 662611 46034 |
| | 120 | 50 | 662611 46035 |
| | | | |



TIED. 000

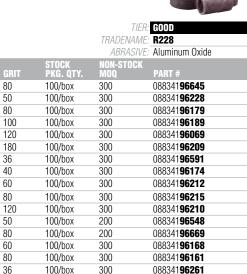
| | | | TIER: | GOOD |
|---------------|------|-----------|------------|---------------------|
| | | | TRADENAME: | R228 |
| | | | ABRASIVE: | Aluminum Oxide |
| | | STOCK | NON-STOCK | |
| SIZE (D x W) | GRIT | PKG. QTY. | MOQ | PART # |
| 1 x 1 | 36 | 100/box | 300 | 08834196072 |
| | 40 | 100/box | 300 | 088341 96073 |
| | 50 | 100/box | 300 | 088341 96184 |
| | 60 | 100/box | 300 | 088341 96075 |
| | 80 | 100/box | 300 | 08834196074 |
| | 120 | 100/box | 300 | 088341 96177 |
| 1 x 1-1/2 | 36 | 100/box | 200 | 08834196525 |
| 1 x 2 | 80 | 100/box | 200 | 08834196268 |
| | 100 | 100/box | 200 | 08834196750 |
| 1 x 3 | 36 | 100/box | 100 | 08834196665 |
| | 50 | 100/box | 100 | 08834197688 |
| | 60 | 100/box | 100 | 08834196676 |
| | 80 | 100/box | 100 | 088341 96195 |
| | 120 | 100/box | 100 | 088341 96197 |
| 1-1/2 x 1-1/2 | 36 | 100/box | 200 | 08834196164 |
| | 40 | 100/box | 200 | 088341 96171 |
| | 50 | 100/box | 200 | 088341 96176 |
| | 60 | 100/box | 200 | 088341 96091 |
| | 80 | 100/box | 200 | 08834196165 |

Some part numbers are non-stock; contact your Norton representative for status, order quantities and lead-times.

200

100/box

Continued



40

50

60

80

120

24

60

80

80

100/box

100/box

100/box

100/box

100/box

100/box

100/box

100/box

100/box

300

300

300

300

300

300

300

300

200

08834196517

08834196515

08834196070

08834196071

08834196219

08834196596

08834196554

08834196249

08834196756

 (\mathbf{t})

SIZE (D x W

3/8 x 1

1/2 x 1

1/2 x 2

3/4 x 3/4

3/4 x 1

3/4 x 1-1/2

3/4 x 2

1/2 x 1/2

120

08834196066

PORTABLE TOOLS AND SPECIALTIES Spiral Bands

TIER: GOOL





TIER: GOOD



| | | | 11-11 | |
|--------------|------|-----------|-----------|---------------------|
| | | | TRADENAME | R228 |
| | | | ABRASIVE | Aluminum Oxide |
| | | STOCK | NON-STOCK | |
| SIZE (D x W) | GRIT | PKG. QTY. | MOQ | PART # |
| 1-1/2 x 2 | 60 | 100/box | 200 | 088341 96067 |
| | 80 | 100/box | 200 | 088341 96533 |
| 1-1/2 x 3 | 36 | 100/box | 100 | 088341 97063 |
| | 60 | 100/box | 100 | 088341 96703 |
| | 80 | 100/box | 100 | 088341 96809 |
| | 120 | 100/box | 100 | 088341 96343 |
| | 180 | 100/box | 100 | 088341 97869 |
| 2 x 1 | 80 | 100/box | 200 | 088341 96166 |
| | 120 | 100/box | 200 | 088341 96595 |
| 2 x 2 | 36 | 100/box | 200 | 088341 96110 |
| | 40 | 100/box | 200 | 088341 96172 |
| | 60 | 100/box | 200 | 088341 96173 |
| | 80 | 100/box | 200 | 088341 96181 |
| | 120 | 100/box | 200 | 088341 96585 |
| 2 x 3 | 50 | 100/box | 100 | 088341 96152 |
| | 60 | 100/box | 100 | 088341 96175 |
| | 80 | 100/box | 100 | 088341 96198 |
| 2-1/4 x 3 | 36 | 100/box | 100 | 088341 97140 |
| | 50 | 100/box | 100 | 088341 96620 |
| | 80 | 100/box | 100 | 088341 96270 |
| | 120 | 100/box | 100 | 088341 96729 |
| | 150 | 100/box | 100 | 088341 95857 |
| | | | | |

| | | | TRADENAME | R228 |
|--------------|------|-----------|-----------|---------------------|
| | | | ABRASIVE | Aluminum Oxide |
| | | STOCK | NON-STOCK | |
| SIZE (D x W) | GRIT | PKG. QTY. | MOQ | PART # |
| 3 x 2 | 40 | 100/box | 100 | 088341 96090 |
| | 50 | 100/box | 100 | 088341 96264 |
| | 60 | 100/box | 100 | 088341 96530 |
| | 80 | 100/box | 100 | 088341 96265 |
| | 120 | 100/box | 100 | 088341 96531 |
| 3 x 3 | 24 | 100/box | 100 | 088341 96256 |
| | 36 | 100/box | 100 | 088341 96262 |
| | 40 | 100/box | 100 | 088341 96555 |
| | 50 | 100/box | 100 | 088341 96253 |
| | 60 | 100/box | 100 | 088341 96188 |
| | 80 | 100/box | 100 | 088341 96159 |
| | 100 | 100/box | 100 | 088341 96250 |
| | 120 | 100/box | 100 | 088341 96572 |
| | 150 | 100/box | 100 | 088341 96452 |
| | 180 | 100/box | 100 | 088341 96131 |
| | 320 | 100/box | 100 | 088341 97968 |
| | | | | |

Some part numbers are non-stock; contact your Norton representative for status, order quantities and lead-times.

Expanding Rubber Drums

Spiral Bands are easily removed and replaced on the rubber expanding drum.



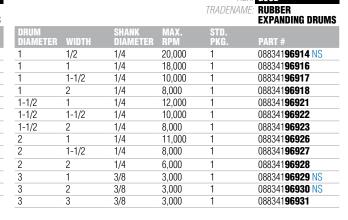


TIER: GOOD

TIER: <u>Good</u> Tradename: Rubber Expanding Drums

| DRUM DIAMETER | WIDTH | SHANK DIAMETER | MAX. RPM | STD. PKG. | PART # |
|------------------|-------------------|-------------------|-------------------|--------------|------------------------|
| 1/4 | 1/2 | 1/8 | 30,000 | 1 | 088341 96030 |
| 3/8 | 1/2 | 1/4 | 30,000 | 1 | 088341 96944 NS |
| 3/8 | 1 | 1/8 | 18,000 | 1 | 088341 96011 NS |
| 1/2 | 1/2 | 1/4 | 30,000 | 1 | 088341 96904 |
| 1/2 | 1 | 1/4 | 15,000 | 1 | 088341 96906 |
| 1/2 | 1-1/2 | 1/4 | 12,000 | 1 | 088341 96907 |
| 1/2 | 2 | 1/4 | 10,000 | 1 | 088341 96908 |
| 3/4 | 1/2 | 1/4 | 27,000 | 1 | 088341 96909 NS |
| 3/4 | 3/4 | 1/4 | 24,000 | 1 | 088341 96910 NS |
| 3/4 | 1 | 1/4 | 17,000 | 1 | 088341 96911 |
| 3/4 | 1-1/2 | 1/4 | 10,000 | 1 | 08834196912 |
| 3/4 | 2 | 1/4 | 10,000 | 1 | 088341 96913 |
| NC Man ata | al. a a mha a h a | Mastan same | a a a station for | a | |

NS Non-stock, contact your Norton representative for current order quantities and lead-times.





PORTABLE TOOLS AND SPECIALTIES Tapered Cone Points

Tapered cone points are strips of abrasive cloth rolled and glued to form a solid shape that is designed to break down during use and reveal the next layer of abrasive. Tapered cone points are similar to cartridge rolls but their shape lends greater accessibility to many difficult-to-reach work areas. They are used for deburring holes and in close tolerance work areas.

| Applications: | Used on inside surfaces and inside corners where other abrasive shapes cannot reach. Typically these are used on high-speed air grinders and are always mounted on a mandrel. Ideal for flash removal, polishing, or removing machine tool marks, and edge breaking. |
|-----------------|--|
| Grit Range: | 50 - 320 |
| Abrasive Grain: | Aluminum Oxide |
| Backing: | X-weight cotton |
| Construction: | Popular sizes and mandrels are listed, with additional sizes available upon request as made-to-order products |
| | Ceramic alumina and silicon carbide cone points are available upon request as made-to-order products |
| Maximum RPM: | 1/8" to 1/2" – 23,000 |
| | 5/8" to 1" - 18,000 |
| | 1" to 1-1/2" – 15,000 |
| Machine Used: | |
| | DIE GRINDER |

Application/Grit Recommendation Guide

COARSER (GRINDING)

FINER (FINISHING)

| < | | | | | | | |
|----------------------------------|---------------------|------------------|---------------------|-------------|---------------------|---------------------|-------------|
| 36 40 | 50 | 60 | 80 | 120 | 180 | 240 | 320 |
| Blending Out Heavy Machine Marks | | | | | | | |
| Removing Heavy Burrs | | | | | | | |
| Applying Heavy Scratch Pattern | | | | | | | |
| Removing Flash/Parting Lines | | | | | | | |
| Removing Rust/Scale/Pit Marks | | | | | | | |
| | Preparing Metal for | r Painting | | | | | |
| | Blending Out Medi | um Machine Marks | | | | | |
| | | | Blending Metal Sur | faces | | | |
| | | | Applying Light Scra | tch Pattern | | | |
| | | | | | Fine Blending and C | Cleaning | |
| | | | | | | Metal Finishing and | l Polishing |



Good starting specification for flash removal, polishing, or removing machine tool marks and edge breaking on all types of metal in difficult-to-reach work areas

R228 ALUMINUM OXIDE TAPERED CONE POINTS

- · Quality aluminum oxide abrasive delivers long life
- X-weight cotton cloth provides extended durability, conformability, and superior wear resistance; strong resin bond system provides good grain retention and life
- Full taper construction consisting of rolled and half-glued abrasive strips that break down to expose next layer of abrasive

| | | TIER: | GOOD |
|-------------------|------|------------|---------------------|
| | | TRADENAME: | R228 |
| | | ABRASIVE: | Aluminum Oxide |
| SIZE (D x L x H) | GRIT | STD. PKG. | PART # |
| 3/16 x 1 x 2-1/2° | 50 | 500 | 088341 86892 |
| Use K-110 Mandrel | 60 | 500 | 088341 86893 |
| | 80 | 500 | 088341 80918 |
| | 100 | 500 | 088341 82197 |
| | 120 | 500 | 088341 82199 |
| | 150 | 500 | 088341 82200 |
| | 180 | 500 | 088341 86894 |
| | 240 | 500 | 088341 86895 |
| | 320 | 500 | 088341 82855 |

| | | TIER | GOOD |
|-------------------|------|-----------|---------------------|
| | | TRADENAME | R228 |
| | | ABRASIVE | Aluminum Oxide |
| SIZE (D x L x H) | GRIT | STD. PKG. | PART # |
| 5/16 x 1-1/2 x 5° | 80 | 500 | 088341 80873 |
| Use B-20 Mandrel | 100 | 500 | 088341 82043 |
| | 120 | 500 | 088341 82717 |
| | 150 | 500 | 088341 86890 |
| | 180 | 500 | 088341 82535 |
| | 240 | 500 | 088341 82044 |
| | 320 | 500 | 088341 82537 |
| | 320 | 500 | 088341 82537 |

Refer to next page for mandrels.

Continued





PORTABLE TOOLS AND SPECIALTIES Mandrels

Cartridge and Spiral Roll Mandrels

| MODEL # | PILOT DIA. | PILOT LENGTH | SHANK DIA. | SHANK LENGTH | OVERALL LENGTH | PART # |
|------------------------|----------------------|--------------|------------|--------------|----------------|------------------------|
| Cartridge and S | Spiral Roll Mandrels | | | | | |
| M-2E | 3/32 | 3/4 | 1/4 | 1 | 3 | 088341 83799 NS |
| M-2 | 3/32 | 1 | 1/8 | 1 | 3 | 088341 81202 |
| M-3 | 1/8 | 1/2 | 1/8 | 1 | 2-1/2 | 088341 81203 |
| M-4 | 1/8 | 3/4 | 1/8 | 1 | 2-1/2 | 088341 81204 |
| M-5 | 1/8 | 1 | 1/8 | 1 | 2-3/4 | 088341 81205 |
| M-6 | 1/8 | 1-1/2 | 1/8 | 1 | 2-1/2 | 088341 81206 NS |
| M-7 | 1/8 | 1/2 | 1/4 | 1-1/4 | 2-1/4 | 088341 81207 |
| M-8 | 1/8 | 3/4 | 1/4 | 1-1/4 | 2-1/2 | 088341 81208 |
| M-9 | 1/8 | 1 | 1/4 | 1-1/4 | 2-3/4 | 088341 81209 |
| M-10 | 1/8 | 1-1/2 | 1/4 | 1-1/4 | 3-1/4 | 088341 81210 |
| M-11 | 1/8 | 2 | 1/4 | 1-1/4 | 4 | 088341 81211 NS |
| M-12 | 3/16 | 1/2 | 1/8 | 1-1/4 | 2-1/4 | 088341 81212 NS |
| M-13 | 3/16 | 3/4 | 1/8 | 1-1/4 | 2-1/2 | 088341 81213 NS |
| M-14 | 3/16 | 1/2 | 1/4 | 1-1/4 | 2-1/2 | 088341 81214 NS |
| M-15 | 3/16 | 3/4 | 1/4 | 1-1/4 | 2-3/4 | 088341 81215 NS |
| M-16 | 3/16 | 1 | 1/4 | 1-1/4 | 3 | 088341 81216 |
| M-17 | 3/16 | 1-1/2 | 1/4 | 1-1/4 | 3-1/2 | 088341 81217 |
| M-18 | 3/16 | 2 | 1/4 | 1-1/4 | 4 | 088341 81218 |
| M-19 | 1/4 | 1/2 | 1/4 | 1-1/4 | 2-1/2 | 088341 81219 NS |
| M-20 | 1/4 | 3/4 | 1/4 | 1-1/4 | 2-3/4 | 088341 81220 NS |
| M-21 | 1/4 | 1 | 1/4 | 1-1/4 | 3 | 088341 81221 |
| M-22 | 1/4 | 1-1/2 | 1/4 | 1-1/4 | 3-1/2 | 088341 81222 |
| M-23 | 1/4 | 2 | 1/4 | 1-1/4 | 4 | 088341 81223 NS |
| M-24 | 5/16 | 3/4 | 1/4 | 1-1/4 | 2-3/4 | 088341 81224 NS |
| M-25 | 5/16 | 1 | 1/4 | 1-1/4 | 3 | 088341 81225 NS |
| M-26 | 5/16 | 1-1/2 | 1/4 | 1-1/4 | 3-1/2 | 088341 81226 NS |
| M-27 | 5/16 | 2 | 1/4 | 1-1/4 | 4 | 088341 81227 NS |

NS Non-stock. Contact your Norton representative for current order quantities and lead-times. Standard Package = 1

Recommended Pilot Length for Mandrels

| 3/4 Roll Length | Use 1/2 Pilot |
|-------------------|-----------------|
| 1 Roll Length | Use 3/4 Pilot |
| 1-1/2 Roll Length | Use 1 Pilot |
| 2 Roll Length | Use 1-1/2 Pilot |

Extra Shank Length Mandrels for Cartridge Rolls and Spiral Rolls

| MODEL # | SHANK LENGTH | OVERALL LENGTH | PART NO. |
|---------------------|-----------------|----------------|------------------------|
| Extras Shank | Length Mandrels | | |
| M-8-4 | 4 | 5-1/4 | 088341 80116 |
| M-8-6 | 6 | 7-1/4 | 088341 80122 |
| M-9-2.5 | 2-1/2 | 4 | 088341 80096 |
| M-9-3 | 3 | 4-1/2 | 088341 80129 |
| M-9-4 | 4 | 5-1/2 | 088341 80074 NS |
| M-9-6 | 6 | 7-1/2 | 088341 80131 |
| M-10-4 | 1-3/4 | 4 | 088341 80092 NS |
| M-10-6 | 3-3/4 | 6 | 08834180145 |

All Extra Shank Length mandrels are 1/4" diameter

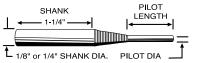
NS Non-stock. Contact your Norton representative for current order quantities and lead-times. Standard Package = 1

Tapered Cone Point Mandrels

| DESCRIPTION | SHANK | PART # |
|--------------------------|-------|---------------------|
| Cone Point Mandre | s | |
| A-10 | 1/4 | 088341 81300 |
| B-20 | 1/4 | 088341 81301 |
| C-30 | 1/4 | 088341 81302 |
| D-40 | 1/4 | 088341 81303 |
| E-50 | 1/4 | 088341 81304 |
| F-60 | 1/4 | 088341 81305 |
| G-70 | 1/4 | 088341 81306 |
| 1-90 | 1/4 | 088341 81308 |
| K-110 | 1/8 | 088341 81310 |
| Chanderd Declares 1 | | |

Standard Package = 1

Distributed by Applifast.





PORTABLE TOOLS AND SPECIALTIES Test Kits

These test kits feature the most popular range and sizes of our coated specialty products in convenient kit formats. Ideal for small job shops, or for travelling to a job site. Our cartridge roll kits are great when you need a small quantity, but a wide range of grits and sizes





MERIT

Ceramic Alumina Cartridge Roll Test Kit

- Part # 66261066726
- · Kit includes a variety of our ceramic alumina cartridge rolls, spiral rolls and mandrels in popular sizes and grits.

Aluminum Oxide Cartridge Roll Test Kit "CR"

- Part # 08834181061
- · Includes over 120 pieces of our most popular sizes, grits and shapes with their appropriate mandrels.



General Purpose Test Kit "GP"

- Part # 08834169025
- Includes samples of various abrasive specialties. One of these kits could be worth the cost of the entire kit by solving your problems in deburring, polishing and grinding.



Porting Test Kit "APK-MO"

- Part # 08834169032
- The samples in this kit highlight specialties for general metal and wood working polishing and finishing applications.

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PORTABLE TOOLS AND SPECIALTIES Non-Woven Specialties

Surface Preparation Stars

The perfect item for ID work



SURFACE PREPARATION STARS

- · Star shape design is tough yet conformable to intricate shapes and contours without changing the workpiece dimension
- · Premium aluminum oxide grain for excellent cutting and finishing
- · Firm durable web for high resistance to tearing on burrs and sharp edges

| | | TIER: | BETTER |
|-------------------|------|-------------|---------------------|
| | | TRADENAME: | SURFACE PREP |
| | | ABRASIVE: | Aluminum Oxide |
| | | ATTACHMENT: | 1/4-20 Eyelet |
| SIZE (D x EYELET) | GRIT | STD. PKG. | PART # |
| 1-1/2" x 1/4-20 | С | 100 | 088341 85923 |
| | Μ | 100 | 088341 85924 |
| | VF | 100 | 088341 85925 |
| 2" x 1/4-20 | С | 100 | 088341 85926 |
| | Μ | 100 | 088341 85927 |
| | VF | 100 | 088341 85928 |
| 3" x 1/4-20 | С | 100 | 088341 85929 |
| | Μ | 100 | 088341 85678 |
| | VF | 100 | 088341 85931 |
| 4" x 1/4-20 | С | 100 | 088341 85932 |
| | Μ | 100 | 088341 85933 |
| | VF | 100 | 088341 85934 |

Some part number are non-stock, contact your Norton representative for status, order quantities and lead-times.

1/4-20 eyelets attach to MM20-4 mandrel, Part # 08834183164 (See description at end of Overlap Slotted Disc Section.)

Cross Buffs



Best choice for blending, cleaning and polishing

CROSS BUFFS

- · Unique design is tough yet conformable to intricate shapes and contours without changing the workpiece dimension
- · Premium aluminum oxide grain for excellent cutting and finishing
- · Firm durable web for high resistance to tearing on burrs and sharp edges

| | | | | TIER: BEST | BETTER |
|--------------|-----------|-----|-----------|-----------------------|---------------------|
| | | | TRADEN | VAME: HIGH STRENGTH | BUFFING |
| | | | ABRA | ASIVE: Aluminum Oxide | Aluminum Oxide |
| | | | ATTACHI | MENT: 8-32 Eyelet | 8-32 Eyelet |
| SIZE (D x W) | GRIT | PLY | STD. PKG. | PART # | PART # |
| 1-1/2 x 1/2 | Coarse | 2 | 100 | | 088341 88761 |
| | Medium | 2 | 100 | 088341 89306 | 08834187312 |
| | Very Fine | 2 | 100 | 088341 89307 | 088341 88585 |
| 1-1/2 x 1/2 | Coarse | 3 | 100 | | 666233 01763 |
| | Medium | 3 | 100 | 08834189308 | 088341 87311 |
| | Very Fine | 3 | 100 | 08834189309 | 088341 88586 |

8-32 eyelets: Attach to MM32-4 mandrel. Part No. 08834183163 (See description at end of Overlap lotted Disc Section)





PORTABLE TOOLS AND SPECIALTIES Non-Woven Specialties

Non-Woven Disc Wheels with 1/4" Steel Shank



BLAZE RAPID STRIP DISCS

- · Ceramic alumina grain provides 2X cut rate, 2X life over silicon carbide products
- · Advanced resin bond does not shed on rust-encrusted pieces, and prevents gouging and rework; does not snag when used for deburring
- Leave a thoroughly cleaned surface that ensures excellent adhesion for subsequent processes such as coating, painting and soldering

Better choice for light deburring and finishing

DISC WHEELS

- · Durable, longer lasting aluminum oxide abrasive leaves a more polished finish
- · Discs are ganged together to form a wheel that is tough yet conformable to intricate shapes and contours without changing the workpiece dimension
- These wheels are mounted on a 1/4 inch steel mandrel embedded in a strong epoxy core



TIER: B TRADENAME: BLAZE RAPID STRIP

TIER. DETTED

| | | | | ABR | ASIVE: Ceramic Alumina |
|--------------------------|--------------|-------|----------|-----------|------------------------|
| SIZE (D x W x 1/4 SHANK) | GRIT | PLY | MAX. RPM | STD. PKG. | PART # |
| 4 x 1/2 | Extra Coarse | 1 Ply | 8,000 | 5 | 776960 05713 |
| 4 x 1 | Extra Coarse | 2 Ply | 8,000 | 5 | 666233 75051 |



| | | | | | HER. DEITER |
|--------------------------|-----------|-------|----------|-----------|--------------------------|
| | | | | | ABRASIVE: Aluminum Oxide |
| SIZE (D x W x 1/4 SHANK) | GRIT | PLY | MAX. RPM | STD. PKG. | PART # |
| 2 x 1/2 | Medium | 2 Ply | 12,000 | 10 | 088341 31551 |
| 2 x 1 | Medium | 4 Ply | 12,000 | 10 | 088341 31554 |
| 3 x 1/2 | Medium | 2 Ply | 8,000 | 10 | 088341 31558 |
| | Very Fine | 3 Ply | 8,000 | 10 | 088341 31560 |
| 3 x 1 | Medium | 4 Ply | 8,000 | 10 | 088341 31496 |
| | Fine | 5 Ply | 8,000 | 10 | 088341 31557 |
| | Very Fine | 5 Ply | 8,000 | 10 | 088341 31497 |
| 4 x 1/2 | Fine | 3 Ply | 6,000 | 10 | 088341 31562 |
| 4 x 1 | Medium | 4 Ply | 6,000 | 10 | 088341 31564 |
| 5 x 1/2 | Medium | 2 Ply | 4,000 | 10 | 088341 31567 |
| 5 x 1 | Medium | 4 Ply | 4,000 | 10 | 088341 31570 |
| | Fine | 5 Ply | 4,000 | 10 | 088341 31571 |
| | | | | | |

Disc wheels are constructed by number of plys. The actual face width will vary and will not match the listed width exactly. Face width is given for reference only.





Flap wheels are an ideal choice for a wide variety of blending, deburring and finishing applications common in the metal fabrication, welding and polishing industries. Flap wheels are conformable to intricate shapes and contours. Designed to deliver a consistent finish with a uniform rate of cut, flap wheels wear away, continually exposing fresh abrasives.

Applications:

Size Range:

Grit Range: **Abrasive Grain: Machine Used:**

Used for a wide range of metal fabrication and welding applications including stock removal, blending, deburring, cleaning, finishing, and polishing Flap wheels with mounted steel shanks: 3/8" - 3" diameter Flap wheels with mounted 1/4"-20 thread: 1" - 3" diameter Flap wheels with arbor holes: 3" - 16" diameter 40 - 320

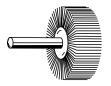
Ceramic Alumina, Aluminum Oxide Blend, Aluminum Oxide



Shape Recommendation Guide

Shape

Description/Application



Flap Wheels with Mounted Steel Shanks

Wheels are designed with a 1/8" or 1/4" steel shank as an integral part of each wheel. These shanks run through the wheel creating better balance, a reduction of chatter, and reduced operator fatigue. They also permit quick changes on air tools when using other abrasive products.



Flap Wheels with Mounted 1/4"-20 Thread

Wheels are designed with a 1/4"-20 thread and flange as an integral part of the wheel. These threads facilitate the quickest changes on air tools using flap wheels exclusively, as there are no special tools needed to change the flap wheel. Also allow extended reach with accessory mandrels.

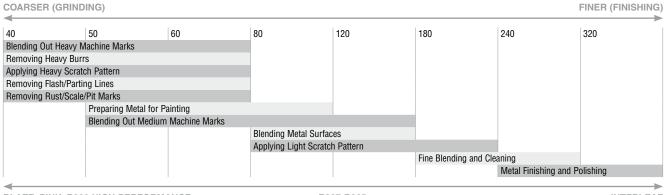


Flap Wheels with Arbor Holes

For use on larger portable and fixed-base tools where the wheel must fit on an existing arbor.

Application/Grit Recommendation Guide

COARSER (GRINDING)



BLAZE, PINK, R369 HIGH PERFORMANCE See Non-Woven Flap Wheel section for Interleaf Flap Wheels INTERLEAF





NEW

Best choice for hard-to-grind materials, including superalloys (cobalt, inconel, and titanium) and stainless steel

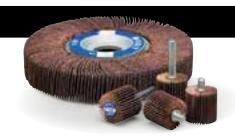
BLAZE R920 CERAMIC ALUMINA

- See significantly faster, cooler, burn-free results on the toughest jobs from the next-generation of sharp, longest-lasting P-graded ceramic abrasive grains and advanced grinding aid lubricant
- X-weight cotton flaps provide conformability and even wear
- Advanced self-lubricating grain treatment reduces heat on hard-to-grind materials



PINK R928 CERAMIC ALUMINA

- Ceramic grain provides better performance than zirconia alternatives
- Improved resin bond system provides longer life
- Versatile X-weight poly cotton backing for flexibility and life



Good choice for more durable flap wheel applications where aggressive cut and superior life are required

R369 HIGH PERFORMANCE ALUMINUM OXIDE BLEND

- · Long-lasting premium aluminum oxide blend with 2 to 3 times longer life
- Delivers an excellent cut rate on finishing operations
- Heavy cotton/polyester blended flaps provide extended durability, conformability, and superior wear resistance



Good choice for more flexible flap wheel applications where finish is required

R207 ALUMINUM OXIDE

- · P-graded, solid-performing aluminum oxide abrasive delivers uniform stock removal and long life
- Heavy X-weight cotton flaps provide conformability and even wear
- Good general purpose starting specification for small deburring and cleaning jobs



Good choice when initial price is a key purchasing criteria

R265 ALUMINUM OXIDE

- Quality aluminum oxide abrasive provides good cut rate and life
- Heavy cotton/polyester blended flaps provide extended durability, conformability, and superior wear resistance
- Designed for all-purpose use where price is the major consideration



Micro-Mini Flap Wheels with 1/8" Mounted Steel Shanks



| • | The smallest flap wheels, ranging from 3/8" to 1-3/16" diameter, mounted on a 1/8" diameter steel shank |
|---|--|
| • | Provide fast polishing and light deburring of internal workpieces with holes or grooves as small as 1/2" |

| | | | TIER: | GOOD |
|--------------------|------|-------------|--------------|---------------------|
| | | | TRADENAME: | |
| | | | ABRASIVE: | |
| | | | BACKING: | Y-Weight Cotton |
| SIZE (D x W x SK.) | GRIT | MAX. RPM | STD. PKG. | PART # |
| 3/8 x 3/8 x 1/8 | 60 | 40.000 | 10 | 088341 37470 |
| 3/0 X 3/0 X 1/0 | 80 | 40,000 | 10 | 088341 37471 |
| | 120 | 40,000 | 10 | 088341 37472 |
| | 120 | 40,000 | 10 | 088341 37473 |
| | 240 | 40,000 | 10 | 088341 37474 |
| | 320 | 40,000 | 10 | 088341 37475 |
| 5/8 x 5/8 x 1/8 | 60 | 37,000 | 10 | 088341 37480 |
| J/U X J/U X 1/U | 80 | 37,000 | 10 | 088341 37481 |
| | 120 | 37,000 | 10 | 088341 37482 |
| | 180 | 37,000 | 10 | 088341 37483 |
| | 240 | 37,000 | 10 | 088341 37484 |
| | 320 | 37,000 | 10 | 088341 37485 |
| 5/8 x 3/4 x 1/8 | 80 | 37,000 | 10 | 088341 37541 |
| J/0 X J/4 X 1/0 | 120 | 37,000 | 10 | 088341 37542 |
| | 180 | 37,000 | 10 | 088341 37543 |
| | 240 | 37,000 | 10 | 088341 37544 |
| | 320 | 37,000 | 10 | 088341 37545 |
| 3/4 x 3/16 x 1/8 | 60 | 35,000 | 10 | 088341 37550 |
| J/H X J/ 10 X 1/0 | 80 | 35,000 | 10 | 088341 37551 |
| | 120 | 35,000 | 10 | 088341 37552 |
| | 180 | 35,000 | 10 | 088341 37553 |
| | 240 | 35,000 | 10 | 088341 37554 |
| | 320 | 35,000 | 10 | 088341 37555 |
| 3/4 x 3/8 x 1/8 | 60 | 35,000 | 10 | 088341 37560 |
| J/T X J/U X 1/U | 80 | 35,000 | 10 | 088341 37561 |
| | 120 | 35,000 | 10 | 088341 37562 |
| | 120 | 35,000 | 10 | 088341 37563 |
| | 240 | 35,000 | 10 | 088341 37564 |
| | 320 | 35,000 | 10 | 088341 37565 |
| 3/4 x 1/2 x 1/8 | 60 | 35,000 | 10 | 088341 37570 |
| 0, 1 A 1/L A 1/0 | 80 | 35,000 | 10 | 088341 37571 |
| | 120 | 35,000 | 10 | 088341 37572 |
| | 180 | 35,000 | 10 | 088341 37573 |
| | 240 | 35,000 | 10 | 088341 37574 |
| | 270 | 00,000 | 10 | |

| | | | TRADENAME: | R369 |
|---------------------|------|-------------|--------------|------------------------|
| | | | ABRASIVE: | Premium Aluminum Oxide |
| | | | BACKING: | Y-Weight Cotton |
| SIZE (D x W x SK.) | GRIT | MAX. RPM | STD. PKG. | PART # |
| 3/4 x 5/8 x 1/8 | 60 | 35,000 | 10 | 088341 37580 |
| | 80 | 35,000 | 10 | 088341 37581 |
| | 120 | 35,000 | 10 | 088341 37582 |
| | 180 | 35,000 | 10 | 088341 37583 |
| | 240 | 35,000 | 10 | 088341 37584 |
| | 320 | 35,000 | 10 | 088341 37585 |
| 3/4 x 3/4 x 1/8 | 60 | 35,000 | 10 | 088341 37590 |
| | 80 | 35,000 | 10 | 088341 37591 |
| | 120 | 35,000 | 10 | 088341 37592 |
| | 240 | 35,000 | 10 | 088341 37594 |
| | 320 | 35,000 | 10 | 088341 37595 |
| I-3/16 x 1/8 x 1/8 | 80 | 30,000 | 10 | 088341 37491 |
| | 120 | 35,000 | 10 | 088341 37492 |
| | 180 | 35,000 | 10 | 088341 37493 |
| | 320 | 35,000 | 10 | 088341 37495 |
| I-3/16 x 3/16 x 1/8 | 60 | 30,000 | 10 | 088341 37508 |
| | 80 | 35,000 | 10 | 088341 37501 |
| | 120 | 35,000 | 10 | 088341 37502 |
| | 180 | 35,000 | 10 | 088341 37503 |
| | 240 | 35,000 | 10 | 088341 37504 |
| | 320 | 35,000 | 10 | 088341 37505 |
| I-3/16 x 3/8 x 1/8 | 80 | 30,000 | 10 | 088341 37511 |
| | 120 | 35,000 | 10 | 088341 37512 |
| | 180 | 35,000 | 10 | 088341 37513 |
| | 240 | 35,000 | 10 | 088341 37514 |
| | 320 | 35,000 | 10 | 088341 37515 |

Some part numbers are non-stock; contact your Norton representative for status, order quantities and lead-times.



320

35,000

10

Micro-Mini Test Kit "MMC"

• Part # 088341**31493**

08834137575

- Includes five wheels, 3/8" to 1-3/16" diameter in various grits, mounted on a 1/8" diameter hardened steel shank
- The "MMC" kit is ideal for fast polishing and light deburring of internal holes or grooves as small as 1/2"

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Mini Flap Wheels with 1/4" Mounted Steel Shanks

1

• Small flap wheels, ranging from 1" to 3" diameter, mounted on a 1/4" diameter steel shank

· Very durable, long-lasting mini flap wheels for demanding, heavy stock removal applications

NEW

| | | | | | | | | 10 M |
|--------------------|------|---------|-------------|---------------------|----------------------|---------------------------|---------------------|---------------------|
| | | | | BEST | BETTER | GOOD | GOOD | GOOD |
| | | | TRADENAME: | BLAZE R920 | PINK R928 | R369 | R207 | R265 |
| | | | | Ceramic Alumina | Ceramic Alumina | Premium Aluminum Oxide | Aluminum Oxide | Aluminum Oxide |
| | | | BACKING: | X-Weight Cotton | X-Weight Poly/Cotton | Y-Weight Cotton | X-Weight Cotton | |
| IZE (D x W x SK.) | GRIT | MAX. RP | M STD. PKG. | PART # | PART # | PART # | PART # | PART # |
| x 1/2 x 1/4 | 80 | 30,000 | 10 | | | | | 088341 49801 |
| | 120 | 30,000 | 10 | | | | | 088341 49802 |
| x 5/8 x 1/4 | 40 | 30,000 | 10 | | | 088341 37105 | | |
| | 60 | 30,000 | 10 | | | 088341 37100 | 636425 02576 | |
| | 80 | 30,000 | 10 | | | 088341 37101 | 636425 02577 | |
| | 120 | 30,000 | 10 | | | 088341 37102 | 636425 02578 | |
| | 180 | 30,000 | 10 | | | 088341 31536 | | |
| | 240 | 30,000 | 10 | | | 088341 37104 | | |
| x 1 x 1/4 | 40 | 30,000 | 10 | | 699573 39701 | 088341 31259 | | 088341 49803 |
| | 60 | 30,000 | 10 | 662611 51170 | 699573 39702 | 088341 37310 | 636425 02580 | 088341 49804 |
| | 80 | 30,000 | 10 | 662611 51171 | 699573 39703 | 088341 37311 | 636425 02581 | 088341 49805 |
| | 120 | 30,000 | 10 | 662611 51172 | 699573 39704 | 088341 37312 | 636425 02582 | 088341 49806 |
| | 180 | 30,000 | 10 | | | 088341 37313 | | 088341 49807 |
| | 240 | 30,000 | 10 | | | 088341 37114 | | |
| | 320 | 30,000 | 10 | | | 088341 37315 | | |
| -3/8 x 5/8 x 1/4 | 60 | 30,000 | 10 | | | 088341 37320 | | |
| | 80 | 30,000 | 10 | | | 088341 37321 | | |
| | 120 | 30,000 | 10 | | | 088341 37322 | | |
| | 180 | 30,000 | 10 | | | 088341 37323 | | |
| | 240 | 30,000 | 10 | | | 088341 37324 | | |
| -1/2 x 1/2 x 1/4 | 60 | 25,000 | 10 | | | | | 088341 49810 |
| | 80 | 25,000 | 10 | | | | | 088341 49811 |
| -1/2 x 1 x 1/4 | 40 | 25,000 | 10 | | | 088341 35140 | | |
| | 60 | 25,000 | 10 | | | 088341 37340 | 636425 02592 | 088341 49816 |
| | 80 | 25,000 | 10 | | | 088341 37141 | 636425 02593 | 088341 49817 |
| | 120 | 25,000 | 10 | | | 088341 37142 | 636425 02594 | 088341 49818 |
| | 180 | 25,000 | 10 | | | 088341 37343 | | |
| | 240 | 25,000 | 10 | | | 088341 32101 | | |
| -1/2 x 1-1/2 x 1/4 | 40 | 25,000 | 10 | | | 088341 30642 | | |
| | 60 | 25,000 | 10 | | | 088341 30643 | | |
| | 80 | 25,000 | 10 | | | 088341 30644 | | |
| | 120 | 25,000 | 10 | | | 088341 30641 | | |
| | 180 | 25,000 | 10 | | | 088341 30695 | | |
| x 1/2 x 1/4 | 60 | 25,000 | 10 | | | | | 088341 49821 |
| | 80 | 25,000 | 10 | | | | | 088341 49822 |
| | 120 | 25,000 | 10 | | | | | 088341 49823 |
| x 3/4 x 1/4 | 40 | 25,000 | 10 | | | 088341 37158 | | |
| | 60 | 25,000 | 10 | | | 088341 37160 | | |
| | 80 | 25,000 | 10 | | | 088341 37161 | | |
| | 120 | 25,000 | 10 | | | 088341 37162 | | |
| | 100 | | 1.0 | | | | | |

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Some part numbers are non-stock; contact your Norton representative for status, order quantities and lead-times. Continued

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25.000

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Mini Flap Wheels with 1/4" Mounted Steel Shanks continued

| | | | | | NEW | | | |
|--------------------|----------|----------|------------|---------------------|----------------------|--|---------------------|---------------------|
| | | | | BEST | BETTER | GOOD | GOOD | GOOD |
| | | | TRADENAME: | BLAZE R920 | PINK R928 | R369 | R207 | R265 |
| | | | ABRASIVE: | Ceramic Alumina | Ceramic Alumina | Premium Aluminum Oxide | Aluminum Oxide | Aluminum Oxide |
| | | | BACKING: | X-Weight Cotton | X-Weight Poly/Cotton | Y-Weight Cotton | X-Weight Cotton | |
| SIZE (D x W x SK.) | GRIT | MAX. RPM | STD. PKG. | | PART # | PART # | PART # | PART # |
| 2 x 1 x 1/4 | 40 | 25,000 | 10 | | 699573 39705 | 088341 37377 | | 088341 49824 |
| | 50 | 25,000 | 10 | | | 088341 37169 | | |
| | 60 | 25,000 | 10 | 662611 51173 | 699573 39706 | 088341 37370 | 636425 02600 | 088341 49825 |
| | 80 | 25,000 | 10 | 662611 51174 | 699573 39711 | 088341 37371 | 636425 02601 | 088341 49826 |
| | 120 | 25,000 | 10 | 662611 51175 | 699573 39712 | 088341 37372 | 636425 02602 | 088341 49827 |
| | 180 | 25,000 | 10 | - | | 088341 37373 | | 088341 49828 |
| | 240 | 25,000 | 10 | | | 08834137374 | | |
| | 320 | 25,000 | 10 | | | 08834137375 | | |
| x 1-1/2 x 1/4 | 40 | 25,000 | 10 | | | 08834137183 | | |
| | 60 | 25,000 | 10 | | | 088341 37380 | | |
| | 80 | 25,000 | 10 | | | 088341 37381 | | |
| | 120 | 25,000 | 10 | | | 08834137382 | | |
| | 180 | 25,000 | 10 | | | 088341 37383 | | |
| -1/2 x 1 x 1/4 | 40 | 20,000 | 10 | | | 088341 37408 | | |
| ,, . | 60 | 20,000 | 10 | | | 088341 37410 | 636425 02608 | |
| | 80 | 20,000 | 10 | | | 088341 37411 | 636425 02609 | |
| | 120 | 20,000 | 10 | | | 088341 37412 | 636425 02610 | |
| | 180 | 20,000 | 10 | | | 088341 37413 | 00012002010 | |
| | 240 | 20,000 | 10 | | | 088341 37633 | | |
| | 320 | 20,000 | 10 | | | 088341 37415 | | |
| -1/2 x 1-1/2 x 1/4 | 60 | 20,000 | 10 | | | 088341 37420 | | |
| 1/2 × 1 1/2 × 1/1 | 80 | 20,000 | 10 | | | 088341 37421 | | |
| | 120 | 20,000 | 10 | | | 088341 37422 | | |
| x 1/2 x 1/4 | 60 | 20,000 | 10 | | | | 636425 02612 | 088341 49834 |
| X 1/2 X 1/ 1 | 80 | 20,000 | 10 | | | | 636425 02613 | 088341 49835 |
| | 120 | 20,000 | 10 | | | | 636425 02614 | 00034143003 |
| x 3/4 x 1/4 | 60 | 20,000 | 10 | | | 088341 37440 | | |
| X 0/ T X 1/ T | 80 | 20,000 | 10 | | | 088341 37441 | | |
| x 1 x 1/4` | 40 | 20,000 | 10 | | 699573 39713 | 088341 37456 | | 088341 49836 |
| A I A I/T | 60 | 20,000 | 10 | 662611 51176 | 699573 39714 | 088341 37450 | 636425 02620 | 088341 49837 |
| | 80 | 20,000 | 10 | 662611 51177 | 699573 39715 | 088341 37451 | 636425 02621 | 088341 49838 |
| | 120 | 20,000 | 10 | 662611 51178 | 699573 39716 | 088341 37252 | 636425 02622 | 088341 49839 |
| | 180 | 20,000 | 10 | 00201131170 | 03337333710 | 088341 37253 | 03042302022 | 088341 49840 |
| | 240 | 20,000 | 10 | | | 088341 35339 | | 00034143040 |
| | 320 | 20,000 | 10 | | | 088341 35341 | | |
| x 2 x 1/4 | 40 | 12,000 | 10 | | | 088341 37460 | | |
| ∧∠X I/4 | 40 60 | 12,000 | 10 | | | 088341 37460 | | |
| | 80 | 12,000 | 10 | | | 088341 37260 088341 37261 | | |
| | 120 | | 10 | | | | | |
| | 120 | 12.000 | IU | | | 088341 37262 | | |

Some part numbers are non-stock; contact your Norton representative for status, order quantities and lead-times.



Mini 1/4" Steel Shank Test Kit "CMM"

- Part # 08834138004
- Includes ten wheels, 1" to 3" diameter in various grits mounted on a 1/4" diameter hardened steel shank





Mini Flap Wheels with 1/4"-20 Thread

- · Mini flap wheels ranging from 1" to 3" diameter, mounted on a 14-20 thread that allows you to quickly spin the wheels on and off with no tools
- Designed for polishing and finishing intricate surfaces; cost-effective replacement for brushes, rubber points, and felt bobs



| | | | | | | and the second second |
|----------------------|------|-------------|--------------|----------------------|-------------------------|-----------------------|
| | | | | BETTER | GOOD | GOOD |
| | | | TRADENAME: | | R369 | R207 |
| | | | | Ceramic Alumina | Premium Aluminum Oxide | Aluminum Oxide |
| | | | BACKING: | X-Weight Poly/Cotton | Y-Weight Cotton | X-Weight Cotton |
| SIZE (D x W x THD.) | GRIT | MAX. RPM | STD. PKG. | PART # | PART # | PART # |
| 1 x 5/8 x 1/4-20 | 60 | 30.000 | 10 | | 088341 31001 | 636425 02624 |
| 1 X 0/0 X 1/1 20 | 80 | 30,000 | 10 | | 088341 31002 | 636425 02625 |
| | 120 | 30,000 | 10 | | 088341 31003 | 636425 02626 |
| 1 x 1 x 1/4-20 | 40 | 30,000 | 10 | 699573 39718 | 088341 31027 | |
| 1 X 1 X 17 1 20 | 60 | 30,000 | 10 | 699573 39719 | 088341 31008 | 636425 02628 |
| | 80 | 30,000 | 10 | 699573 39720 | 088341 31009 | 636425 02629 |
| | 120 | 30.000 | 10 | 699573 39721 | 088341 31010 | 636425 02630 |
| | 180 | 30,000 | 10 | | 088341 31011 | |
| | 240 | 30,000 | 10 | | 088341 31012 | |
| | 320 | 30.000 | 10 | | 088341 31013 | |
| 1-3/8 x 5/8 x 1/4-20 | 60 | 30,000 | 10 | | 088341 32001 | 636425 02632 |
| | 80 | 30,000 | 10 | | 088341 32002 | 636425 02633 |
| | 120 | 30,000 | 10 | | 088341 32003 | 636425 02634 |
| 1-5/8 x 1 x 1/4-20 | 40 | 25,000 | 10 | | 088341 32051 | |
| | 60 | 25,000 | 10 | | 088341 32015 | 636425 02638 |
| | 80 | 25,000 | 10 | | 088341 32016 | 636425 02639 |
| | 120 | 25,000 | 10 | | 088341 32017 | 636425 02640 |
| | 180 | 25,000 | 10 | | 088341 32018 | |
| | 320 | 25,000 | 10 | | 088341 32020 | |
| 2 x 1/2 x 1/4-20 | 80 | 25,000 | 10 | | | 636425 02643 |
| | 120 | 25,000 | 10 | | | 636425 02644 |
| 2 x 3/4 x 1/4-20 | 60 | 25,000 | 10 | | 088341 33008 | |
| | 80 | 25,000 | 10 | | 088341 33009 | |
| | 120 | 25,000 | 10 | | 088341 33010 | |
| | 180 | 25,000 | 10 | | 088341 33011 | |
| 2 x 1 x 1/4-20 | 40 | 25,000 | 10 | 699573 39722 | 088341 33044 | |
| | 60 | 25,000 | 10 | 699573 39723 | 088341 33015 | 636425 02646 |
| | 80 | 25,000 | 10 | 699573 39735 | 088341 33016 | 636425 02647 |
| | 120 | 25,000 | 10 | 699573 39736 | 088341 33017 | 636425 02648 |
| | 180 | 25,000 | 10 | | 088341 33018 | |
| | 240 | 25,000 | 10 | | 088341 33019 | |
| | 320 | 25,000 | 10 | | 088341 33020 | |
| 2 x 1-1/2 x 1/4-20 | 60 | 25,000 | 10 | | 088341 35201 | |
| | 80 | 25,000 | 10 | | 088341 35202 | |
| | 120 | 25,000 | 10 | | 088341 35203 | |
| 2-1/2 x 1 x 1/4-20 | 40 | 20,000 | 10 | | 088341 34061 | |
| | 60 | 20,000 | 10 | | 088341 34022 | 636425 02654 |
| | 80 | 20,000 | 10 | | 088341 34023 | |
| | 120 | 20,000 | 10 | | 088341 34024 | |
| 3 x 1/2 x 1/4-20 | 80 | 20,000 | 10 | | | 636425 02659 |
| | 120 | 20,000 | 10 | | 0000 / J 0 7 7 7 | 636425 02660 |
| 3 x 3/4 x 1/4-20 | 80 | 20,000 | 10 | | 088341 35009 | |
| | 120 | 20,000 | 10 | 0005700077 | 088341 35010 | |
| 3 x 1 x 1/4-20 | 40 | 20,000 | 10 | 699573 39737 | 088341 35230 | |
| | 60 | 20,000 | 10 | 699573 39738 | 088341 35015 | 636425 02664 |
| | 80 | 20,000 | 10 | 699573 39739 | 088341 35016 | 636425 02665 |
| | 120 | 20,000 | 10 | 699573 39740 | 088341 35017 | 636425 02666 |
| | 180 | 20,000 | 10 | | 088341 35018 | |
| | 240 | 20,000 | 10 | | 088341 35019 | |

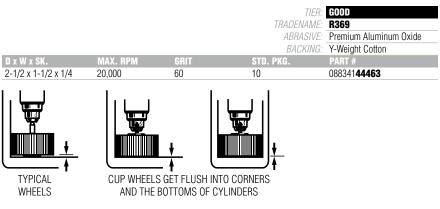
Some part numbers are non-stock; contact your Norton representative for status, order quantities and lead-times. For adapters for flap wheels with 1/4"-20 thread, see the end of this section





Cup-Type Mini Flap Wheels with 1/4" Mounted Steel Shanks

- · Primarily used for bottom or side-wall type sanding where conventional tools do not reach
- Cup-type mini flap wheels will not mar your workpiece while reaching flush into areas where other wheels cannot reach





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Flap Wheel Test Kits

Mini 1/4"-20 Thread Test Kit "CQ"

Part # 088341**38001**

 Includes ten, 1" to 3" diameter, 1/4"-20 thread mini flap wheels

• Each kit includes a 1/4"-20 QC-4 quick-change adapter

- Mini1/4" Steel Shank Test Kit "CMM"
- Part # 08834138004
- Includes ten wheels, 1" to 3" diameter in various grits
- The flap wheels are mounted on a 1/4" diameter hardened steel shank

Micro Mini 1/8" Steel Shank Test Kit "MMC"

- Part # 08834131493
- Includes 5 wheels, 3/8" to 1-3/16" in diameter
- The flap wheels are mounted on a 1/8" diameter hardened steel shank
- Ideal for fast polishing and light deburring of holes or grooves



3" - 8" Flap Wheels with Arbor Holes

• Flap wheels ranging from 3" to 8" diameter with arbor holes

Heavy cotton backing and premium abrasive grains combine to provide superior life with aggressive cut on a wide
range of polishing and finishing applications



| | | | | O | |
|---------------------|------------|----------|------------|--|---------------------|
| | | | | GOOD | GOOD |
| | | | TRADENAME: | | R207 |
| | | | | Premium Aluminum Oxide | Aluminum Oxide |
| | | | | Y-Weight Cotton | X-Weight Cotton |
| SIZE (D x W x H) | GRIT | MAX. RPM | | PART # | PART # |
| 3 x 2 x 3/8 | 60 | 12,000 | 10 | 088341 35050 | |
| | 80 | 12,000 | 10 | 088341 35051 | |
| | 120 | 12,000 | 10 | 088341 35052 | |
| 3-1/2 x 1 x 5/8 | 40 | 12,000 | 10 | 088341 22001 | |
| | 50 | 12,000 | 10 | 088341 22002 | |
| | 60 | 12,000 | 10 | 088341 22003 | |
| | 80 | 12,000 | 10 | 088341 22004 | |
| | 120 | 12,000 | 10 | 088341 22006 | |
| | 180 | 12,000 | 10 | 088341 22007 | |
| | 240 | 12,000 | 10 | 088341 22008 | |
| | 320 | 12,000 | 10 | 088341 22009 | |
| 3-1/2 x 1-1/2 x 5/8 | 40 | 12,000 | 10 | 088341 22011 | |
| | 50 | 12,000 | 10 | 088341 22012 | |
| | 60 | 12,000 | 10 | 088341 22013 | |
| | 80 | 12,000 | 10 | 088341 22014 | |
| | 120 | 12,000 | 10 | 088341 22016 | |
| | 180 | 12,000 | 10 | 088341 22018 | |
| | 320 | 12,000 | 10 | 088341 22020 | |
| 3-1/2 x 2 x 5/8 | 40 | 12,000 | 10 | 088341 22022 | |
| | 60 | 12,000 | 10 | 088341 22024 | |
| | 80 | 12,000 | 10 | 088341 22025 | |
| | 120 | 12,000 | 10 | 088341 22027 | |
| | 180 | 12,000 | 10 | 088341 22028 | |
| 1 x 1 x 5/8 | 40 | 12,000 | 10 | 088341 22032 | |
| | 50 | 12,000 | 10 | 088341 22033 | |
| | 60 | 12,000 | 10 | 088341 22034 | 636425 02673 |
| | 80 | 12,000 | 10 | 088341 22035 | 636425 02674 |
| | 120 | 12,000 | 10 | 088341 22037 | 636425 02675 |
| | 180 | 12,000 | 10 | 088341 22038 | |
| | 240 | 12,000 | 10 | 088341 22039 | |
| | 320 | 12,000 | 10 | 088341 22040 | |
| 1 x 1-1/2 x 5/8 | 40 | 12,000 | 10 | 088341 22042 | |
| | 60 | 12,000 | 10 | 088341 22044 | |
| | 80 | 12,000 | 10 | 088341 22045 | |
| | 120 | 12,000 | 10 | 088341 22047 | |
| | 240 | 12,000 | 10 | 088341 22050 | |
| 1 x 2 x 5/8 | 40 | 12,000 | 10 | 088341 22053 | |
| | 60 | 12,000 | 10 | 088341 22055 | |
| | 80 | 12,000 | 10 | 088341 22056 | |
| | 120 | 12,000 | 10 | 088341 22058 | |
| | | , | | | |
| | 180 | 12.000 | 10 | 088341 22059 | |
| | 180 240 | 12,000 | 10 | 088341 22059 088341 22060 | |

Some part numbers are non-stock; contact your Norton representative for status, order quantities and lead-times. For flap wheel with arbor hole adapters and bushings, see the end of this section. A set of reducing bushing will be included for 1" center hole wheels at no charge when purchased with flap wheels and specified on the order.

Continued

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PORTABLE TOOLS AND SPECIALTIES Flap Wheels

3" - 8" Flap Wheels with Arbor Holes continued

| | | | | | | 0 | |
|------------------|------------|----------------|------------------------|---------------------|--|--|--|
| | | | | BEST BLAZE R920 | GOOD R369 | GOOD R207 | GOOD R265 |
| | | | TRADENAME: ABRASIVE | Ceramic Alumina | Premium Aluminum Oxide | Aluminum Oxide | Aluminum Oxide |
| | | | | X-Weight Cotton | Y-Weight Cotton | X-Weight Cotton | Aldrindin Oxido |
| SIZE (D x W x H) | GRIT | | M STD. PKG. | PART # | PART # | PART # | PART # |
| 5 x 1-1/2 x 5/8 | 40 | 12,000 | 10 | | 088341 22063 | | |
| | 50 60 | 12,000 | 10 | | 08834122064 | | |
| | 80 | 12,000 | 10 10 | | 088341 22065 088341 22066 | | |
| | 120 | 12,000 | 10 | | 088341 22068 | | |
| | 180 | 12,000 | 10 | | 088341 22070 | | |
| | 240 | 12,000 | 10 | | 088341 22071 | | |
| | 320 | 12,000 | 10 | | 088341 22072 | | |
| 6 x 1/2 x 1 | 40 | 6,000 | 10 | | 088341 23001 | | |
| | 60 120 | 6,000 6,000 | 10 10 | | 088341 23003 088341 23005 | | |
| | 120 | 6,000 | 10 | | 088341 22198 | | |
| | 180 | 6,000 | 10 | | 088341 23006 | | |
| 6x1x1 | 40 | 6,000 | 5 | | 088341 23009 | | 088341 20167 |
| | 50 | 6,000 | 5 | | 088341 23010 | | 088341 20168 |
| | 60 | 6,000 | 5 | 662611 46104 | 088341 23011 | 636425 02680 | 088341 20169 |
| | 80 | 6,000 | 5 | 662611 46105 | 088341 23012 | 636425 02681 | 08834120170 |
| | 100 120 | 6,000 6,000 | 5 5 | 662611 46106 | 088341 23014 | 636425 02682 | 088341 20171 088341 20172 |
| | 150 | 6,000 | 5 | 00201140100 | 088341 23015 | 030423 02002 | 00034120172 |
| | 180 | 6,000 | 5 | | 088341 23016 | | 088341 20174 |
| | 240 | 6,000 | 5 | | 08834123017 | | 08834120176 |
| | 320 | 6,000 | 5 | | 088341 23018 | | 088341 20177 |
| 6 x 1-1/2 x 1 | 40 | 6,000 | 5 | | 088341 23020 | | |
| | 50 | 6,000 | 5 | | 088341 23021 | 000 105 00000 | |
| | 60 80 | 6,000 6,000 | 5 5 | | 088341 23022 088341 23023 | 636425 02686 636425 02687 | |
| | 120 | 6,000 | 5 | | 088341 23025 | 030423 02007 | |
| | 180 | 6,000 | 5 | | 088341 23027 | | |
| | 240 | 6,000 | 5 | | 08834123028 | | |
| | 320 | 6,000 | 5 | | 088341 23029 | | |
| 6 x 2 x 1 | 40 | 6,000 | 5 | | 088341 23031 | | 088341 20189 |
| | 50 | 6,000 | 5 | | 08834123032 | 60640E00C01 | 00024120101 |
| | 60 80 | 6,000 | 5 | | 088341 23033 088341 23034 | 636425 02691 636425 02692 | 088341 20191 088341 20192 |
| | 100 | 6,000 | 5 | | 00034123034 | 030423 02032 | 088341 20192 |
| | 120 | 6,000 | 5 | | 088341 23036 | 636425 02694 | |
| | 180 | 6,000 | 5 | | 088341 23038 | | 088341 20197 |
| | 240 | 6,000 | 5 | | 088341 23039 | | 088341 20199 |
| | 320 | 6,000 | 5 | | 088341 23040 | | |
| 6 x 3 x 1 | 50 | 6,000 | 3 | | 08834123054 | | |
| | 60 80 | 6,000 6,000 | 3 | | 088341 23055 088341 23056 | | |
| | 120 | 6,000 | 3 | | 088341 23058 | | |
| | 180 | 6,000 | 3 | | 088341 23060 | | |
| | 240 | 6,000 | 3 | | 088341 23061 | | |
| 3 x 1 x 1 | 40 | 4,500 | 3 | | 088341 23070 | | |
| | 50 | 4,500 | 3 | | 088341 23071 | | |
| | 60 80 | 4,500 4,500 | 3 | | 088341 23072 088341 23073 | | |
| | 120 | 4,500 | 3 | | 088341 23075 | | |
| | 180 | 4,500 | 3 | | 088341 23077 | | |
| 3 x 2 x 1 | 40 | 4,500 | 3 | | 088341 23092 | | |
| | 50 | 4,500 | 3 | | 088341 23093 | | |
| | 60 | 4,500 | 3 | | 088341 23094 | 636425 02700 | |
| | 80 | 4,500 | 3 | | 08834123095 | 636425 02701 | |
| | 120 | 4,500 | 3 | | 088341 23097 | | |
| | 180 240 | 4,500 | 3 | | 088341 23099 088341 23100 | | |
| | 320 | 4,500 | 3 | | 088341 23101 | | |

Some part numbers are non-stock; contact your Norton representative for status, order quantities and lead-times.

For flap wheel with arbor hole adapters and bushings, see the end of this section.

A set of reducing bushing will be included for 1" center hole wheels at no charge when purchased with flap wheels and specified on the order.





10" - 16" Large Flap Wheels with Arbor Holes

Wide range of applications:

- · For polishing/grinding jobs in production work as well as clean-up and maintenance jobs
- Work on metals, plastic, rubber and wood

Easy to operate:

• No adjustments, dressing, or preparation required before or during operation

Fewer rejected parts:

- · More forgiving than other abrasive products
- Reduce the possibility of flattening, gouging and surface deformation

| | | | TIER: | GOOD |
|--------------------|------|----------|-----------|------------------------|
| | | 7 | RADENAME: | R369 |
| | | | ABRASIVE: | Premium Aluminum Oxide |
| | | | BACKING: | Y-Weight Cotton |
| SIZE (D x W x H) | GRIT | MAX. RPM | STD. PKG. | PART # |
| 10 x 1 x 1-3/4 | 40 | 4,000 | 4 | 088341 22223 |
| | 80 | 4,000 | 4 | 088341 24003 |
| | 120 | 4,000 | 4 | 088341 24005 |
| | 180 | 4,000 | 4 | 088341 24007 |
| | 240 | 4,000 | 4 | 088341 22889 |
| | 320 | 4,000 | 4 | 088341 24009 |
| 10 x 1-1/2 x 1-3/4 | 60 | 4,000 | 4 | 088341 24022 |
| | 80 | 4,000 | 4 | 088341 24023 |
| | 180 | 4,000 | 4 | 088341 24027 |
| 10 x 2 x 1-3/4 | 60 | 4,000 | 2 | 088341 24042 |
| | 80 | 4,000 | 2 | 088341 24043 |
| | 120 | 4,000 | 2 | 088341 24045 |
| | 180 | 4,000 | 2 | 088341 24047 |
| 10 x 3 x 1-3/4 | 60 | 4,000 | 2 | 088341 24077 |
| | 80 | 4,000 | 2 | 088341 22316 |
| | 180 | 4,000 | 2 | 088341 22132 |
| 12 x 1 x 1-3/4 | 60 | 3,000 | 4 | 088341 24085 |
| | 80 | 3,000 | 4 | 088341 22349 |
| | 120 | 3,000 | 4 | 088341 22311 |
| | 180 | 3,000 | 4 | 088341 22315 |
| 12 x 2 x 1-3/4 | 40 | 3,000 | 2 | 088341 22248 |
| | 50 | 3,000 | 2 | 088341 22249 |
| | 60 | 3,000 | 2 | 088341 22250 |
| | 120 | 3,000 | 2 | 088341 22269 |
| | 150 | 3,000 | 2 | 088341 22270 |
| | 180 | 3,000 | 2 | 088341 22271 |
| | 240 | 3,000 | 2 | 088341 22273 |
| | 320 | 3,000 | 2 | 088341 22275 |
| 12 x 4 x 1-3/4 | 180 | 2,400 | 1 | 088341 20017 |
| | | | | |

| | | | TRADENAME: ABRASIVE: | |
|-------------------|------|----------|-------------------------|------------------------|
| SIZE (D x W x H) | GRIT | MAX. RPM | STD. PKG. | Y-Weight Cotton PART # |
| 14 x 1 x 1-3/4 | 60 | 2,400 | 1 | 088341 20020 |
| 11, 1, 1, 1, 0, 1 | 120 | 2,400 | 1 | 08834120022 |
| 14 x 2 x 1-3/4 | 60 | 2,400 | 1 | 088341 20028 |
| | 80 | 2,400 | 1 | 08834123215 |
| | 120 | 2,400 | 1 | 088341 22907 |
| | 240 | 2,400 | 1 | 088341 20032 |
| 14 x 3 x 1-3/4 | 120 | 2,400 | 1 | 088341 20035 |
| 14 x 4 x 1-3/4 | 240 | 2,000 | 1 | 088341 20041 |
| 16 x 1 x 1-3/4 | 80 | 2,400 | 1 | 088341 20043 |
| | 120 | 2,400 | 1 | 088341 20044 |
| | 240 | 2,400 | 1 | 088341 20046 |
| 16 x 2 x 1-3/4 | 60 | 2,400 | 1 | 088341 20047 |
| | 120 | 2,400 | 1 | 088341 20050 |
| | 180 | 2,400 | 1 | 088341 20051 |
| | 240 | 2,400 | 1 | 088341 20052 |
| 16 x 3 x 1-3/4 | 120 | 2,400 | 1 | 088341 20055 |

Some part numbers are non-stock; contact your Norton representative for status, order quantities and lead-times.

For flap wheel with arbor hole adapters and bushings, see the end of this section.



Adapter and Bushings for Flap Wheels with Arbor Holes

| WHEEL DIAMETER | ADAPTERS | PART # |
|------------------|---------------|------------------------|
| Shank Adapters | | |
| 3-1/2 | 1/4 Shank | 088341 25001 |
| 3-1/2 | 3/8 Shank | 088341 25007 NS |
| 4-8 | 1/4 Shank | 088341 25003 |
| Threaded Mountin | g Adapters | |
| 4-8 | 5/8-11 Thread | 088341 25027 |
| Reducing Bushing | 5 | |
| 6-8 | 1 to 3/8 | 088341 25016 NS |
| | 1 to 1/2 | 088341 25017 |
| | 1 to 5/8 | 088341 25018 NS |
| | 1 to 3/4 | 088341 25019 NS |
| | 1 to 7/8 | 088341 25020 NS |
| 10 - 16 | 1 to 5/8 | 088341 22069 NS |

For additional aluminum reducing bushings see non-woven convolute wheel section

08834125001







Adapters for 1/4"-20 Thread Mini and Arbor Hole Flap Wheels

| MODEL # | DESCRIPTION | PART # |
|----------|-----------------------------------|------------------------|
| Adapters | | |
| ADAPT C | Fits 3 x 2 x 3/8 arbor flap wheel | 088341 37009 NS |
| MA-100 | Fits A.H. Mini Wheel | 088341 37007 NS |
| QC-8 | 1/8 x 5/8 | 088341 37002 NS |
| QC-4 | 1/4 SK. Dia. x 5/8 SK. L. | 088341 37001 |
| QC-44 | 1/4 x 4 | 088341 37003 |
| QC-46 | 1/4 x 6 | 088341 37004 |
| QC-48 | 1/4 x 8 | 088341 37005 |
| QC-T | 1/4-20 Thread | 088341 37012 |
| QC-T | 3/8-24 Thread | 088341 37010 |

Standard package = 1 adapter

Other thread sizes available for quotation

NS Non-stock. Contact your Norton representative for current order quantities and lead-times.

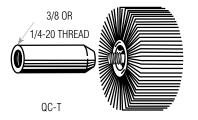




08834125016

QC-46

MM











Sand-O-Flex Wheels

With their firm cushioning brushes, Sand-O-Flex's abrasive strips are forced into, around and over corners, hollow and fluted surfaces, and small openings. Pressure is distributed evenly over the surface to prevent loss of detail and the flattening of rounded areas; for sanding metals, woods, plastics, rubber and ceramic.

PORTABLE TOOLS AND SPECIALTIES

Flap Wheels

Sand-O-Flex wheels eliminate the need to hand-sand and are designed to fit most standard equipment. They load quickly and easily by turning the index knob as needed, allowing you to change grit size in minutes. Sand-O-Flex refills are available both scored (for finer, less aggressive work) and unscored. And, with the use of adapters, Sand-O-Flex wheels will fit most electric bench grinders.

Sand-O-Flex Wheel - Model 350-RP

- Diameter: 6-1/2" overall, 4" diameter high-impact plastic body
- 1" wide abrasive strips backed by 8 cushioning brushes
- 1/4" diameter steel shank
- Weight: 9-1/2 oz.
- Maximum operating speed: 2,400 RPM
- Special adapter required for bench grinder use
- Some assembly required

| | | TIER: | GOOD |
|---|------|------------|---------------------|
| | | TRADENAME: | SAND-O-FLEX |
| | | ABRASIVE: | Aluminum Oxide |
| MODEL # | GRIT | STD. PKG. | PART # |
| Sand-O-Flex Wheel | | | |
| 350-RP | | 1 | 088341 11051 |
| Comes assembled with 80 grit A/O resin bond scored refill and brushes | | | |
| Sand-O-Flex Accessories | | | |
| Replacement Brushes for 350-RP; 8 per set | | 1 set | 088341 13003 |
| Resin Bond Refills | | | |
| 350-RP SCORED | 60 | 10 | 088341 11052 |
| | 80 | 10 | 088341 11053 |
| | 100 | 10 | 088341 12114 |
| | 120 | 10 | 088341 11054 |
| | 180 | 10 | 088341 11057 |
| Glue Bond Refills | | | |
| 350-RP SCORED | 80 | 10 | 088341 12054 |
| | 100 | 10 | 088341 12055 |
| | 120 | 10 | 088341 12056 |
| 350-RP UNSCORED | 80 | 10 | 088341 12044 |





PORTABLE TOOLS AND SPECIALTIES Non-Woven Flap Wheels



Non-woven surface finishing flap wheels are an ideal choice for a wide variety of blending and finishing applications common in the metal fabrication, welding and polishing industries. Flap wheels are conformable to intricate shapes and contours. Designed to deliver a consistent finish with a uniform rate of cut, flap wheels wear away continually exposing fresh abrasives.

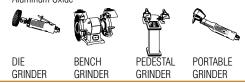
There are two types of non woven flap wheels: non-woven only abrasive flaps where finishing is the primary application, and interleaf with alternating cloth and non-woven abrasive flaps (less conformable, more aggressive) for stock removal and finishing. Interleaf flap wheels must always be run in the direction indicated by the arrow.

Applications: Size Range:

Grit Range: Abrasive Grain: Machine Used: deburring, cleaning, finishing, and polishing Flap wheels with mounted steel shanks: 2" - 4" diameter Flap wheels with arbor holes: 3" - 12" diameter 60 - 320

Used for a wide range of metal fabrication and welding applications including blending,

Aluminum Oxide



Application/Grit Recommendation Guide

COARSER (GRINDING)

FINER (FINISHING)

NON- WOVEN FLAP WHEEL

| 60 | 80 | 120 | 180 | 240 | 320 |
|------------------------------|-------------------------------|----------------------------|-----|-------------------------------|-----|
| Preparing Metal for Painting | | | | | |
| Blending Out Medium Mach | ine Marks | | | | |
| | Blending Metal Surfaces | | | | |
| | Applying Light Scratch Patter | 'n | | | |
| | | Fine Blending and Cleaning | | | |
| | | | | Metal Finishing and Polishing | |
| | | | | | > |

INTERLEAF FLAP WHEEL



Good choice for fine grit cleaning and blending and finishing applications

INTERLEAF

- Alternating cloth and non-woven flaps make interleaf wheels less conforming and more aggressive than non-woven flap wheels, but less aggressive than all-cloth flap wheels
- Premium aluminum oxide grain with durable resin bond and web that wears away continually exposing fresh abrasives
- · Tough yet conformable to intricate shapes and contours without changing the workpiece dimension



Good choice for fine grit light cleaning and finishing

NON-WOVEN

- Premium aluminum oxide grain with durable resin bond and web that wears away continually exposing fresh abrasives
- Tough yet conformable to intricate shapes and contours without changing the workpiece dimension
- Designed with a steel shank as an integral part of the wheel or with and arbor hole





PORTABLE TOOLS AND SPECIALTIES Non-Woven Flap Wheels

1/4" Mounted Steel Shanks

Wheels are designed with a 1/4" steel shank as an integral part of each wheel. These shanks run through the wheel creating better balance, a reduction of chatter, and reduced operator fatigue. They also permit quick changes on air tools when using other abrasive products.





| S. 1 | | | | | | | |
|-----------------------|----------|----------------|-------------------|-------------|--------------|---------------------|-----------------------|
| | | | | | TIER: | GOOD | GOOD |
| | | | | | TRADENAME: | INTERLEAF | NON-WOVEN |
| SIZE (D x W x SK.) | ABRASIVE | COATED Grit | NON-WOVEN Grit | MAX. RPM | STD. PKG. | PART # | PART # |
| 2 x 1 x 1/4 | A/0 | 60 | Very Fine | 12,000 | 10 | 088341 38122 | |
| | A/0 | 80 | Very Fine | 12,000 | 10 | 088341 38123 | |
| | A/0 | | Medium | 12,000 | 20 | | 662611 89992 * |
| | A/0 | 120 | Very Fine | 12,000 | 10 | 088341 44457 | |
| | A/0 | 180 | Very Fine | 12,000 | 10 | 088341 44458 | |
| | A/0 | 320 | Very Fine | 12,000 | 10 | 088341 44459 | 699573 99202 |
| 2 x 1-1/2 x 1/4 | A/0 | 80 | Very Fine | 12,000 | 10 | 088341 38125 | |
| | A/0 | 120 | Very Fine | 12,000 | 10 | 088341 38126 | |
| | A/0 | 320 | Very Fine | 12,000 | 10 | 088341 38128 | |
| 3 x 1 x 1/4 | A/0 | 60 | Very Fine | 12,000 | 10 | 088341 38129 | |
| | A/0 | 80 | Very Fine | 12,000 | 10 | 088341 38130 | |
| | A/0 | | Medium | 12,000 | 10 | | 088341 31921 |
| | A/0 | 120 | Very Fine | 12,000 | 10 | 088341 38118 | |
| | A/0 | 180 | Fine | 12,000 | 10 | 088341 38120 | |
| | A/0 | 320 | Very Fine | 12,000 | 10 | 088341 38119 | |
| 3 x 2 x 1/4 | A/0 | 120 | Very Fine | 8,000 | 10 | 088341 44460 | |
| | A/0 | 180 | Very Fine | 8,000 | 10 | 088341 44461 | |
| 4 x 2 x 1/4 | A/0 | 80 | Very Fine | 12,000 | 10 | 088341 21115 | |
| | A/0 | 120 | Very Fine | 12,000 | 10 | 088341 20458 | |

*Standard package quantity = 20

Arbor Hole Mounts

For use on larger portable and fixed-base tools where the wheel must fit on an existing arbor.



| Q | | | | | TIED. | GOOD | GOOD |
|-----------------------|----------|----------------|-------------------|-------------|---------------------|---------------------|---------------------|
| | | | | | TIER: TRADENAME: | INTERLEAF | NON-WOVEN |
| SIZE (D x W x SK.) | ABRASIVE | COATED GRIT | NON-WOVEN Grit | MAX. RPM | STD. PKG. | PART # | PART # |
| 3 x 2 x 3/8 | A/0 | 60 | Very Fine | 12,000 | 10 | 088341 39000 | |
| | A/0 | 120 | Very Fine | 12,000 | 10 | 088341 39001 | |
| | A/0 | 240 | Very Fine | 12,000 | 10 | 088341 39028 | |
| | A/0 | 320 | Very Fine | 12,000 | 10 | 088341 39024 | |
| 4 x 2 x 5/8 | A/0 | 60 | Very Fine | 12,000 | 10 | 088341 26025 | |
| | A/0 | 240 | Very Fine | 12,000 | 10 | 088341 26014 | |
| | A/0 | 320 | Very Fine | 12,000 | 10 | 088341 26027 | |
| 6 x 1 x 1 | A/0 | 120 | Very Fine | 6,000 | 10 | 088341 26006 | |
| | A/0 | 240 | Very Fine | 6,000 | 10 | 088341 26030 | |
| 6 x 1 x 2 | S/C | _ | Very Fine | 3,000 | 4 | | 05539512658 |
| 6 x 2 x 1 | A/0 | 80 | Very Fine | 6,000 | 10 | 088341 26009 | |
| | A/0 | 180 | Very Fine | 6,000 | 10 | 088341 26018 | |
| 6 x 3 x 1 | A/0 | 80 | Very Fine | 6,000 | 6 | 088341 26055 | |
| 8 x 2 x 3 | A/0 | - | Medium | 2,500 | 2 | | 05539512677 |
| 12 x 2 x 5 | A/0 | - | High Strength | 1,900 | 1 | | 055395 62637 |

Refer to Non-Woven **Convolute Wheel** section for Flap Wheel **Reducing Bushings.**





PORTABLE TOOLS AND SPECIALTIES Arbor Hole (Gangable) Discs

Non-Woven High Strength Discs

Applications include rust/oxide or coating removal, pipe ID and OD polishing, casting cleaning, highlighting (antiquing), contaminant removal, removal of handling marks, gasket removal, cleaning and blending of surface imperfections, prepping prior to soldering, removal of filling materials, cleaning angles and odd shapes. Will not stretch or shed. Ganging increases versatility. For use on larger portable and fixed-base tools where the wheel must fit on an existing arbor.



Best choice for light deburring and finishing

HIGH STRENGTH DISCS

- · Premium aluminum oxide grain; engineered for more demanding applications
- Tough but flexible web resists tearing on burrs and sharp edges; and conforms to intricate shapes and contours
 without changing the workpiece dimension; can be ganged together and used as a wheel
- · Smear-free bond excels at producing light satin finishes

| | | | TIER: | BEST |
|--------------|------|----------|-----------|---------------------------------|
| | | | | HIGH STRENGTH Aluminum Oxide |
| SIZE (D x H) | GRIT | MAX. RPM | STD. PKG. | PART # |
| 6 x 1/4 | VF | 4,000 | 70 | 662610 07628 |
| 6 x 1/2 | М | 4,000 | 70 | 662610 05073 |
| | VF | 4,000 | 70 | 662610 04980 |
| 8 x 1/2 | М | 3,000 | 50 | 662610 05491 |
| | VF | 3,000 | 50 | 662610 04506 |
| 12 x 1-1/4 | VF | 1,900 | 25 | 662610 08723 |



| FITS Hole | FOR DISC WIDTH | FOR DISC DIAMETER | SHANK DIAMETER | OVERALL Length | WASHER DIAMETER | STD. PKG. | PART # |
|--------------|-------------------|----------------------|-------------------|-------------------|--------------------|--------------|---------------------|
| Mandre | el Assemblies Foi | Using Discs On | Edge | | | | |
| 1/4" | 1/2" (Standard) | up to 6" | 1/4" | 2-1/2" | 1-1/2" | 1 | 662610 09502 |
| 1/2" | 1/2" (Standard) | Up to 8" | 1/4" | 3-1/8" | 2-1/4" | 1 | 662610 59420 |





PORTABLE TOOLS AND SPECIALTIES Bore Polishers

Flaps The fla To cree Applic Grit Ra Abrasi

Flaps of abrasive cloth are stacked, inserted into a holder, and then attached to a mandrel. The flaps are designed to break down during use and reveal the next layer of abrasive.

To create an interleaf bore polisher, cloth flaps are mixed with non-woven flaps.

Applications:

For deburring, sizing, cleaning and polishing the interior diameters of cylinders, tubes and hydraulic fittings. Flaps adjust automatically to inside diameter, polishing the entire surface area with each pass.

Bore polishers are self-centering, so they apply equal pressure to full wall of inside diameter. Spring action design gives faster inside diameter cleaning, deburring and polishing to cylinders, deep bores and tubes.

Interleafed bore polishers are designed to polish and finish in one easy application. The abrasive flaps cut, while the non-woven flaps apply a fine finish. 60 - 240 Aluminum Oxide

Grit Range: Abrasive Grain:

Application-to-Product Shape Recommendation Guide

| Shape | Application |
|--------------|--|
| Solid Flaps | For 5/8" to 1" interior diameter bores |
| B-3 Series | 3 abrasive packs 1-1/2" wide, bonded to hub |
| | Use with QC-5 mandrel Part # 088341 54182 |
| Solid Flaps | For 1" to 4" interior diameter bores |
| B-4 Series | 4 abrasive packs 1-1/2" wide, bonded to hub |
| | Use with BPM-4 mandrel Part # 08834154183 |
| Solid Flaps | For 2" to 5-7/8" interior diameter bores |
| B-8 Series | 8 abrasive packs 1-1/2" wide, bonded to hub |
| <u>*</u> | Use with BPM-8 mandrel Part # 088341 54184 |
| Scored Flaps | Available upon request as made-to-order products. |
| Interleaf | Cloth flaps are mixed with non-woven flapes. Interleaf bore polishers do double duty. Designed to polish and finish in one easy application, they are the ideal choice when close tolerances must be maintained, while giving an interior a polished finish. |

Application/Grit Recommendation Guide

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| COARSER (MATERIAL REMO | OVAL) | | | FINER (FINISHING) |
|--------------------------------|--------------------------------|--------|-------------------------------|-------------------|
| 60 | 80 | 120 | 180 | 240 |
| Blending Out Medium Machine Ma | urks | | | |
| Sizing Cylinders | | | | |
| | Deburring Cylinders | | | |
| | Blending Metal Surfaces | | | |
| | Cleaning Cylinders | | | |
| | Applying Light Scratch Pattern | | _ | |
| | | | Fine Blending and Cleaning | |
| | | | Metal Finishing and Polishing | |
| < | | | | > |
| SOLID FLAP | | SCORED | | INTERLEAF |

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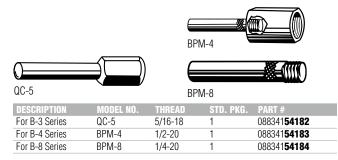
PORTABLE TOOLS AND SPECIALTIES **Bore Polishers**

Aluminum Oxide Bore Polishers

| | | | TIER: TRADENAME: | GOOD R369 |
|------------------------|------|----------|---------------------|----------------------|
| | | | ABRASIVE: | Aluminum Oxide |
| | | | BACKING: | Y-weight Cotton/Poly |
| DESCRIPTION | GRIT | MAX. RPM | STD. PKG. | PART # |
| Bore Polishers – Soli | | | | |
| B-305 | 60 | 25.000 | 10 | 088341 54190 |
| Fits ID 5/8 to 1 | 80 | 25.000 | 10 | 088341 54191 |
| | 120 | 25,000 | 10 | 088341 54193 |
| | 180 | 25,000 | 10 | 088341 54195 |
| | 240 | 25,000 | 10 | 088341 54197 |
| B-405 | 60 | 22.000 | 10 | 088341 54091 |
| Fits ID 1 to 1-1/2 | 80 | 22.000 | 10 | 088341 54092 |
| | 120 | 22,000 | 10 | 088341 54093 |
| | 180 | 22,000 | 10 | 088341 54094 |
| B-410 | 60 | 20.000 | 10 | 088341 54100 |
| Fits ID 1-1/2 to 2 | 80 | 20.000 | 10 | 088341 54101 |
| | 120 | 20,000 | 10 | 08834154102 |
| | 180 | 20.000 | 10 | 088341 54103 |
| | 240 | 20,000 | 10 | 088341 54104 |
| B-415 | 60 | 16,000 | 10 | 088341 54109 |
| Fits ID 2-1/8 to 2-1/2 | 80 | 16,000 | 10 | 088341 54110 |
| | 120 | 16,000 | 10 | 088341 54111 |
| | 180 | 16,000 | 10 | 088341 54112 |
| B-420 | 60 | 15,000 | 10 | 088341 54118 |
| Fits ID 2-1/2 to 3 | 80 | 15,000 | 10 | 08834154119 |
| | 120 | 15,000 | 10 | 088341 54120 |
| | 180 | 15,000 | 10 | 088341 54121 |
| | 240 | 15,000 | 10 | 088341 54122 |
| B-425 | 60 | 10,000 | 10 | 088341 54127 |
| Fits ID 3-1/8 to 4 | 80 | 10,000 | 10 | 088341 54128 |
| | 120 | 10,000 | 10 | 088341 54129 |
| | 180 | 10,000 | 10 | 088341 54130 |
| | | | | |

NS Non-stock. Contact your Norton representative for current order quantities and lead-times.

Mandrels for Bore Polishers





| | | | | 0000 |
|----------------------------------|-------------------------|--------------|---------------------|--|
| | | | TIER: TRADENAME: | GOOD R369 |
| | | | ABRASIVE: | |
| | | | BACKING: | |
| DESCRIPTION | GRIT | MAX. RPM | STD. PKG. | Y-weight Cotton/Poly PART # |
| Bore Polishers – Solio | | | STD. PKG. | PARI # |
| Bore Polisiiers – Solio B-810 | и гіар в-о 60 | | 10 | 00004164106 |
| Fits ID 2 to 2-1/2 | 80 | 16,000 | 10 | 088341 54136 |
| 1 113 ID 2 10 2-1/2 | 120 | 16,000 | 10 | 088341 54137 088341 54138 |
| | | 16,000 | | |
| | 180 | 16,000 | 10 | 088341 54139 NS |
| B-815 | 240 60 | 16,000 | 10 10 | 088341 54140 NS |
| Fits ID 2-5/8 to 3 | | 15,000 | | 088341 54145 |
| FIIS ID 2-3/8 (0 3 | 80 | 15,000 | 10 | 088341 54146 |
| | 120 | 15,000 | 10 | 088341 54147 |
| | 180 | 15,000 | 10 | 088341 54148 NS |
| D 000 | 240 | 15,000 | 10 | 088341 54149 NS |
| B-820 | 60 | 10,000 | 10 | 088341 54154 |
| Fits ID 3-1/8 to 4 | 80 | 10,000 | 10 | 088341 54155 |
| | 120 | 10,000 | 10 | 088341 54156 |
| | 180 | 10,000 | 10 | 088341 54157 |
| | 240 | 10,000 | 10 | 088341 54158 NS |
| B-825 | 60 | 8,000 | 10 | 088341 54163 |
| Fits ID 4-1/4 to 5-1/4 | 80 | 8,000 | 10 | 088341 54164 |
| | 120 | 8,000 | 10 | 088341 54165 |
| | 180 | 8,000 | 10 | 088341 54166 |
| | 240 | 8,000 | 10 | 088341 54167 |
| B-830 | 60 | 8,000 | 10 | 088341 54172 |
| Fits ID 5-1/4 to 5-7/8 | 80 | 8,000 | 10 | 088341 54173 |
| | 120 | 8,000 | 10 | 088341 54174 |
| | 180 | 8,000 | 10 | 088341 54175 |
| | 240 | 8,000 | 10 | 088341 54176 |
| Bore Polishers – Scoi | red Flaps | | | |
| Available on request as n | nade-to-ord | ler products | | |
| Bore Polishers – Inte | rleaf | | | |
| B-405 Interleaf | 80 | 22,000 | 10 | 088341 50271 |
| | 100 | | 10 | |

Extension Mandrels for Bore Polishers

180

22,000

10

| DIAMETER x LENGTH | MODEL NO. | THREAD | STD. PKG. | PART # |
|--------------------------|-----------|--------|-----------|---------------------|
| 1/4 x 4 | EM-144 | 1/4-20 | 1 | 088341 54185 |
| 1/4 x 6 | EM-146 | 1/4-20 | 1 | 088341 54186 |
| 1/4 x 8 | EM-148 | 1/4-20 | 1 | 088341 54187 |

To extend a B-4 series bore polisher, attach the adapter piece of the BPM-4 mandrel to the bore polisher, then attach the desired length extension mandrel above to the BPM-4 adapter piece. To extend a B-8 series bore polisher, attach the desired length extension mandrel above directly to the bore polisher.

Bore Polisher Test Kit "BP"

Part # 08834154181

Fits ID 1 to 1-1/2

Contains ten bore polishers and two mini 1/4"-20 thread flap wheels in assorted sizes • and grits for finishing 1" to 5" interior diameters, and mandrel for 1/4" chuck.



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PORTABLE TOOLS AND SPECIALTIES FlexDrums



FlexDrum abrasive segments sweep away flaws. Their extreme longevity and perfect balance make them well-suited for automatic as well as offhand use. Hubs and abrasive segments can be combined to fit your job perfectly.

Applications

burrs and work flaws, graining stainless, brush-finishing and satin-finishing aluminum, removing rust, deflashing molded plastic and rubber parts, and preparing surfaces for painting or plating. Diameter of loaded FlexDrum: 8" - 18" Width of FlexDrum: 1-1/2" - 12" Custom die-cut segments as well as extra wide segments, in widths up to 144" are also available as made-to-order products. 50 - 240Resin or glue Heavyweight cotton Premium Aluminum Oxide

Blending out parting lines on castings, smoothing out pre-ground welded areas, removing

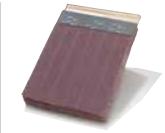
Shape/Application Recommendation Guide



Plain Segment For flat or mildly contoured surfaces



1/4 Scored (SC) Segment Great for complex parts Provides a fine finish



1/2 Slash (SL) Segment Great for mild and moderate contours



Interleaf Segment

- Plain cloth segments are mixed with non-woven segments. Interleaf FlexDrums do double duty. Designed to polish and finish in one easy application,
- Available upon request as made-to-order product

Loading Flex Drum Hubs



FlexDrum hub end plate removes for easy loading of abrasive segments.



Custom profiled segments eliminate break-in resulting in maximum productivity. Contact your sales representative for more information.



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Plain Segments – for flat or mildly curved surfaces

| | | TIER: | GOOD | | | | | | |
|-------|--------------|------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | | TRADENAME: | R369 |
| | | ABRASIVE: | A/0 |
| | | BACKING: | Y-weight Cotton |
| | | GRIT: | 50 | 60 | 80 | 100 | 120 | 180 | 240 |
| WIDTH | TRIM LENGTH* | STD. PKG. | PART # |
| 1-1/2 | 2-3/4 | 12 | 088341 55002 | 088341 55003 | 088341 55004 | | 088341 55006 | 088341 55008 | 088341 55010 |
| 2 | 2-3/4 | 12 | 088341 55013 | 088341 55014 | 088341 55015 | 088341 55016 | | 088341 55019 | |
| 2 | 4 | 20 | | 088341 55313 | 088341 55314 | 088341 55315 | | 088341 55318 | |
| 2 | 5 | 20 | | 088341 55568 | 088341 55569 | | | | |
| 3 | 2-3/4 | 12 | | 088341 55026 | 088341 55027 | | 088341 55029 | 088341 55031 | |
| 3 | 4 | 20 | | | 088341 55326 | | | 088341 55330 | |
| 3 | 5 | 20 | | 08834155579 | | | 088341 55582 | 088341 55584 | |
| 4 | 2-3/4 | 12 | 088341 55036 | | | | 088341 55040 | | |
| 4 | 4 | 20 | 088341 55336 | 088341 55337 | 088341 55338 | | 088341 55340 | | |
| 4 | 5 | 20 | | 088341 55590 | | | | | |

All FlexDrum segments are non-stock; contact your Norton representative for current order quantities and lead-times.

1/4" Scored Segments – for complex parts and providing a fine finish

| | | | TIER: | GOOD | | | | | |
|-------|------------|-------|------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | | | TRADENAME: | R369 | R369 | R369 | R369 | R369 | R369 |
| | | | ABRASIVE: | A/0 | A/0 | A/0 | A/0 | A/0 | A/0 |
| | | | BACKING: | Y-weight Cotton |
| | | | GRIT: | 50 | 60 | 80 | 100 | 120 | 180 |
| WIDTH | TRIM LTH.* | SCORE | STD. PKG. | PART # |
| 1-1/2 | 2-3/4 | 1/4 | 12 | | 088341 55083 | 088341 55084 | 088341 55085 | 088341 55086 | 088341 55088 |
| 2 | 2-3/4 | 1/4 | 12 | 088341 55094 | 088341 55095 | 088341 55096 | 088341 55097 | 088341 55098 | 088341 55100 |
| 3 | 2-3/4 | 1/4 | 12 | | 088341 55107 | 088341 55108 | 088341 55109 | | 088341 55112 |
| 4 | 2-3/4 | 1/4 | 12 | 08834155117 | 088341 55118 | 08834155119 | | 088341 55121 | 088341 55123 |

All FlexDrum segments are non-stock; contact your Norton representative for current order quantities and lead-times.

1/2" Slashed Segments - for mild and moderate contours

| | | | TIER: | | | | | |
|-------|------------|-------|------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | | | TRADENAME: | R369 | R369 | R369 | R369 | R369 |
| | | | ABRASIVE: | A/0 | A/0 | A/0 | A/0 | A/0 |
| | | | BACKING: | Y-weight Cotton |
| | | | GRIT: | 60 | 80 | 120 | 180 | 240 |
| WIDTH | TRIM LTH.* | SLASH | STD. PKG. | PART # |
| 2 | 4 | 1/2 | 20 | 088341 55420 | 088341 55421 | 088341 55423 | 088341 55425 | 088341 55427 |
| 2 | 5 | 1/2 | 20 | | | 088341 55639 | | |
| 3 | 4 | 1/2 | 20 | | 088341 55432 | | | |
| 4 | 4 | 1/2 | 20 | | 088341 55445 | 088341 55447 | 088341 55449 | 088341 55451 |
| 4 | 5 | 1/2 | 20 | | 088341 55659 | | | |

All FlexDrum segments are non-stock; contact your Norton representative for current order quantities and lead-times. *Trim Length is the actual usable length of segment when loaded

TECH TIP

FlexDrums can be used for polishing large IDs. Just load half the segments with a wheel diameter ½" to 1" larger than the ID of your workpiece.

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Hub Units

- FlexDrum hubs are perfectly balanced, last indefinitely and are available in widths from 1-1/2" to 12"
- · Extra wide widths are available up to 144" as made-to-order products

| MODEL NO. | D x W | ARBOR HOLE/THREAD | SEGMENTS PER HUB | PART # |
|--------------------|---------------|-------------------|------------------|---------------------|
| FlexDrum Hub Units | | | | |
| 81.5-B | 2-3/8 x 1-1/2 | 1 AH | 12 | 088341 40065 |
| 82-B | 2-3/8 x 2 | 1 AH | 12 | 088341 41049 |
| | | 5/8-11 THD | 12 | 088341 40048 |
| 83-B | 2-3/8 x 3 | 1 AH | 12 | 088341 41018 |
| | | 5/8-11 THD | 12 | 088341 40034 |
| 84-B | 2-3/8 x 4 | 1 AH | 12 | 088341 40066 |
| | | 5/8-11 THD | 12 | 088341 40049 |
| 122-B | 4 x 2 | 1-1/4 AH | 20 | 088341 40050 |
| 123-B | 4 x 3 | 1-1/4 AH | 20 | 088341 40051 |
| 124-B | 4 x 4 | 1-1/4 AH | 20 | 088341 40061 |
| 142-B | 6 x 2 | 1-1/4 AH | 30 | 088341 40062 |
| 143-B | 6 x 3 | 1-1/4 AH | 30 | 699573 99208 |
| 144-B | 6 x 4 | 1-1/4 AH | 30 | 088341 41060 |
| 840-B2 | 8 x 2 | 1-1/4 AH | 40 | 636425 92550 |
| 840-B4 | 8 x 4 | 1-1/4 AH | 40 | 636425 92548 |

All FlexDrum hub units are non-stock; contact your Norton representative for current order quantities and lead-times.







2-3/8" DIAMETER HUB WITH 1" ARBOR HOLE 8" WHEEL WHEN LOADED



2-3/8" DIAMETER HUB ALSO AVAILABLE WITH 5/8"-11 ARBOR 8" WHEEL WHEN LOADED



14" OR 16" WHEEL WHEN LOADED



16" OR 18" WHEEL WHEN LOADED





FlexDrum Reference Charts

FlexDrums can be mounted on any type of arbor.

Weights

| 0 | | | | |
|---|-----------------------------|--|--|--|
| DIAMETER | WEIGHT | | | |
| Weight of Hubs* | | | | |
| 4" Diameter Hub | 1.5 lbs./inch of width | | | |
| 6" Diameter Hub | 2 lbs./inch of width | | | |
| 8" Diameter Hub | 2.5 lbs./inch of width | | | |
| Weight of Hubs with Segments* | | | | |
| 4" Diameter Hub | 3.4 - 4 lbs./inch of width | | | |
| 6" Diameter Hub | 5 - 5.5 lbs./inch of width | | | |
| 8" Diameter Hub | 6.75 - 7 lbs./inch of width | | | |
| *Approximate values. Actual weight will depend on abrasive type and overall width of hub. | | | | |
| | | | | |

FlexDrum Maximum RPM

| WHEEL DIAMETER | MAXIMUM RPM |
|----------------|-------------|
| 8 | 4,500 |
| 12 | 3,000 |
| 14 | 2,500 |
| 16 | 2,200 |
| 18 | 2,000 |

Recommended H.P. Required

| HUB | H.P. | |
|-----------------|-------------------------|--|
| 4" Diameter Hub | 1/2 H.P. /inch of width | |
| 6" Diameter Hub | 3/4 H.P./inch of width | |
| 8" Diameter Hub | 1 H.P./inch of width | |

Recommended Surface Feet per Minute

| for using | J FlexDrum | Wheels | on Various | Materials |
|-----------|------------|--------|------------|-----------|
|-----------|------------|--------|------------|-----------|

| MATERIAL | SFPM |
|--------------------------|-------|
| Mild Steel | 5,000 |
| Stainless Steel | 6,500 |
| Alloy Steel | 5,000 |
| Titanium | 3,500 |
| Hard Aluminum | 5,500 |
| Nonferrous | 5,000 |
| Rubber | 4,500 |
| Hardwood (edge breaking) | 4,000 |
| Softwood | 3,500 |
| Thermoplastic | 3,000 |
| | |

SPEC CHECK



FlexDrum Hub Specification Chart

| MODEL NO. | 82-B | 121-B | 141-B | 840-B | | | |
|----------------------------|------------|--------|----------|----------|--|--|--|
| Diameter of Finished Wheel | 8 | 12 | 14 or 16 | 16 or 18 | | | |
| Diameter of Hub Alone | 2-3/8 | 4 | 6 | 8 | | | |
| Arbor Hole | 1 or | 3/4 to | 1 to | 1-1/4 | | | |
| | 5/8-11 thd | 1-3/4 | 3-1/2 | to 5 | | | |
| Segments Per Hub | 12 | 20 | 30 | 40 | | | |

How to Determine Diameter of Finished FlexDrums

| HUB DIAMETER | TRIM LENGTH (X2) | FINISHED WHEEL |
|--------------|------------------|----------------|
| 2-3/8 | 2-3/4 | 8 |
| 4 | 4 | 12 |
| 4 | 5 | 14 |
| 6 | 4 | 14 |
| 6 | 5 | 16 |
| 8 | 4 | 16 |
| 8 | 5 | 18 |

TECH TIP

For surface feet per minute, use the following calculation: SFPM=.262 x DIA (in inches) x RPM.







Made from non-woven synthetic fiber mesh, which is impregnated with abrasives and bound with resins, non-woven wheels are designed to create desired surface finish where little or no stock removal is required. The industry's broadest offering is available for light stock removal, deburring, blending, finishing and polishing. Non-woven wheels have an open mesh construction that is waterproof, washable, conformable and non-loading.

Applications:

Abrasive Grain: Grit Range: Machine Used: Cleaning and removing imperfections on metal surfaces, cleaning built-up residue, deburring or finishing a variety of surfaces, blending weld seams or creating decorative finishes. Non-woven surface finishing products have excellent versatility. Ceramic Alumina, Engineered Aluminum Oxide, Aluminum Oxide, Silicon Carbide Extra Coarse (XC), Coarse (C), Medium (M), Fine (F)

BENCH

GRINDER

the second se





die Grinder

FLEXIBLE SHAFT GRINDER

PORTABLE

GRINDER

Application/Grit Recommendation Guide

MOST AGGRESSIVE

LEAST AGGRESSIVE

| NORTON | Rapid Strip Wheels | Rapid Blend Unified Wheels | Non-Woven / Interleaf Flap Wheels |
|--------------------------|--------------------|----------------------------|-----------------------------------|
| Scale Removal | Best Choice | | |
| Painting/Coating Removal | Best Choice | | |
| Stock Removal | | Best Choice | |
| Heavy Deburring | | Best Choice | |
| Polishing | | | Second Choice |
| Buffing | | | Best Choice |

Surface Finish Variables

Changes in any one of many factors can affect the surface finish on the workpiece. This chart shows the effect on surface finish by changes in single factors of product specifications. Arrows have been used to signify the trend direction. The arrow length does not signify that the effect of each factor is equal.

| Variable Factor | Rough Finish High RMS Reading | Smooth Surface Lower RMS Reading |
|-----------------|-------------------------------|----------------------------------|
| 1. Wheel Speed | Slow < | ► Fast |
| 2. Feed Speed | Faster (Long Scratch) | Slower (Short Scratch) |
| 3. Oscillation | No Oscillation < | Oscillation |
| 4. Lubricants | Dry 🔶 Water 🗲 | Soluble Oil |
| | | Compounds — > |

Non-Woven Marking System

| ABRASIVE | SILICON CARBIDE | | | ALUMINUM OXIDE |
|-----------|--------------------|-----------------------------|------------------------------|--------------------------|
| | SHARPER, FINER/BRI | GHTER SCRATCH PATTERN | MORE DURABLE, LONGER L | ASTING, POLISHED FINISH |
| GRIT SIZE | XC (50) | C (60-80) | M (100-150) | F (180-220) |
| | FASTER, AGGRESSIVE | E CUT, ROUGHER FINISH | REDUCE | D CUT RATE, FINER FINISH |
| DENSITY | 2 | | | 9 |
| | SOFT, OPEN, CONFOR | MABLE, LESS BURNING/LOADING | HARDER, MORE DURABLE, FASTER | CUTTING, BETTER FINISH |

Cross Reference Guide

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| | STRIPPING HEAVY/LIGH | T DEBURRING | LIGHT DEBURRING/BLI | ENDING/POLISHING | CLEANING/FINISHING |
|----------|---|-------------|---|------------------|-----------------------------------|
| | BEST | BETTER | BEST | BETTER | GOOD |
| NORTON | Blaze Rapid Strip | Rapid Strip | Vortex Rapid Blend | Rapid Blend NEX | Non-Woven / Interleaf Flap Wheels |
| 3M | Clean and Strip XT PRO, Clean and Strip XT PRO Extra Cut | Clean Strip | Cut & Polish Unitized, Deburr and Finish PRO | EXL Unitized | Finishing Flap Brush |
| Standard | | Britestrip | 800 & 900 Series | 500 - 700 Series | Buff & Blend Flap Brush |





Best choice for removing rust, scale and paint/coatings on a variety of substrates, such as wood, metal and plastics

BLAZE RAPID STRIP CERAMIC ALUMINA

- Norton Blaze ceramic alumina grain provides 2X cut rate, 2X life over silicon carbide products
- Advanced resin bond does not shed on rust-encrusted pieces, and prevents gouging and rework; does not snag when used for deburring
- Leave a thoroughly cleaned surface that ensures excellent adhesion for subsequent processes such as coating, painting and soldering

Better choice for removing coatings on a variety of substrates such as wood metal and plastics

RAPID STRIP SILICON CARBIDE

- Faster cutting, sharp, extra coarse silicon carbide abrasive provides a unique combination of aggressive performance, long life, and improved finish
- Advanced resin bond prevents shedding on rust-encrusted pieces and gouging and rework; does not snag when used for deburring
- Leaves a thoroughly clean surface that ensures excellent adhesion in subsequent processes such as coating, painting
 and soldering





MAX. RPM

8,000

8,000

4.000

4,000

Arbor Hole 4 x 1/4

4 x 1/2

6 x 1/4

6 x 1/2

| FITS Hole | FOR DISC WIDTH | FOR DISC DIAME | SHANK ETER DIAMETER | OVERALL Length | WASHER DIAMETER | STD. PKG. | PART # |
|--------------|-------------------|-------------------|------------------------|-------------------|--------------------|--------------|---------------------|
| Mandr | el Assemblies Fo | r Non-Woven | Unified Wheels | 5 | | | |
| 1/4" | 1/2" (Standard) | up to 6" | 1/4" | 2-1/2" | 1-1/2" | 1 | 662610 09502 |
| 1/2" | 1/2" (Standard) | Up to 8" | 1/4" | 3-1/8" | 2-1/4" | 1 | 662610 59420 |







Rapid Blend Unified Wheels continued

Designed for maintenance operations needing an efficient and cost-effective method of deburring, polishing, cleaning or finishing metals and composites. Easily preformed for use on a wide variety of shapes/contours. Hold shape well; less wheel dressing. Non-metallic so no contamination of workpiece. Uniform construction maintains part tolerance; prevents cutting or gouging.



Best choice for light weld bead and weld spatter removal, heavy deburring and finishing applications

VORTEX RAPID BLEND ALUMINUM OXIDE

- · High-performance, medium grit, engineered aluminum oxide grain and improved resin bond system provide aggressive, fast, stock removal, reduced cycle times, and excellent part quality
- Thick nylon web delivers 2X longer life and faster finishing with minimal shedding vs competitive wheels
- · Controlled porosity ensures cool cutting and improved cut rate

| | | | TIER: | BEST | | | | | | |
|------------------|-----------|-----------|------------|---------------------|----------|---------------------|----------|---------------------|----------|---------------------|
| | | | TRADENAME: | VORTEX RAPID | BLEND | | | | | |
| | | | ABRASIVE: | Aluminum Oxide | | | | | | |
| SIZE (D x T x H) | GRIT SIZE | STD. PKG. | MAX. RPM | 3 DENSITY PART # | MAX. RPM | 5 DENSITY Part # | MAX. RPM | 7 DENSITY Part # | MAX. RPM | 9 DENSITY PART # |
| 2 x 1/8 x 1/8 | М | 60 | | | 22,000 | 662544 25657 | 20,000 | 662544 10849 | | |
| 2 x 1/8 x 1/4 | М | 60 | | | | | 22,000 | 662611 91446 | | |
| 2 x 1/4 x 1/4 | М | 60 | 18,000 | 662544 28456 | 22,000 | 662544 33504 | 22,000 | 662610 80270 | | |
| 2 x 1 x 1/4 | М | 15 | | | | | 22,000 | 662610 80269 | | |
| 3 x 1/8 x 1/4 | М | 40 | | | 18,000 | 662610 93448 | 18,000 | 662611 91445 | | |
| 3 x 1/8 x 3/8 | М | 40 | | | 18,000 | 662544 33503 | 18,000 | 662544 01131 | | |
| 3 x 1/4 x 1/4 | М | 40 | 12,000 | 662544 28454 | 18,000 | 662544 14832 | 18,000 | 662611 99696 | | |
| 3 x 1/4 x 3/8 | М | 40 | 12,000 | 662544 33505 | 12,000 | 662544 33506 | | | | |
| 3 x 1/2 x 1/4 | М | 20 | | | 18,000 | 662544 32925 | 18,000 | 662610 80267 | 18,000 | 662544 33507 |
| 3 x 1/2 x 3/8 | М | 20 | | | 18,000 | 662544 33508 | 18,000 | 662610 80266 | 18,000 | 662544 20696 |



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Better choice for light deburring and blending

RAPID BLEND NEX ALUMINUM OXIDE AND SILICON CARBIDE

- · Uniform construction provides extra long life and holds shape well for less wheel dressing
- Smear free resin binder formula provides smear-free finishes
- · A great option for light deburring and blending applications

| | | | | TIER: | BETTER | | | | |
|---------------------|----------|------|----------|------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | | | | TRADENAME: | RAPID BLEND NEX | | | | |
| SIZE (D x T x H) | ABRASIVE | GRIT | MAX. RPM | STD. PKG. | 2 DENSITY Part # | 3 DENSITY Part # | 4 DENSITY Part # | 6 DENSITY PART # | 8 DENSITY PART # |
| 1 x 1 x 3/16 | A/0 | С | 30,000 | 50 | | | | | 662610 14915 |
| | A/0 | М | 18,000 | 50 | 662610 14891 | | | | |
| | A/0 | Μ | 30,000 | 50 | | | | 662610 14908 | 662610 14924 |
| | S/C | F | 18,000 | 50 | 662610 14883 | | | | |
| | S/C | F | 30,000 | 50 | | | | 662610 14904 | 662610 14923 |
| 2 x 1/8 x 1/4 | A/0 | М | 22,000 | 60 | | | | | 662610 14927 |
| 2 x 1/4 x 1/4 | A/0 | М | 18,000 | 60 | 662610 14892 | | | | |
| | A/0 | М | 22,000 | 60 | | | | | 662610 14926 |
| | A/0 | F | 22,000 | 60 | | | | 662610 14901 | |
| | S/C | F | 18,000 | 60 | 662610 14884 | | | | |
| 2 x 1/2 x 1/4 | A/0 | М | 22,000 | 30 | | | | | 662610 14925 |
| 3 x 1/4 x 1/4 | A/0 | С | 18,000 | 40 | | | | | 662610 14919 |
| | A/0 | М | 18,000 | 40 | | | | 662610 14909 | 662610 14930 |
| | S/C | F | 12,000 | 40 | 662610 14886 | | | | |
| 3 x 1/4 x 3/8 | A/0 | С | 18,000 | 40 | | | | | 662610 14920 |
| | A/0 | М | 12,000 | 40 | 662610 14895 | | | | |
| | A/0 | М | 18,000 | 40 | | | | 662610 14910 | 662610 14933 |
| | A/0 | F | 12,000 | 40 | | | 662610 14899 | | |
| | S/C | F | 12,000 | 40 | 662610 14887 | 662610 16006 | | | |
| 3 x 1/2 x 1/4 | A/0 | М | 12,000 | 20 | 662610 14893 | | | | |
| | A/0 | Μ | 18,000 | 20 | | | | 662610 14928 | |
| 0 1 10 0 15 | S/C | F | 12,000 | 20 | 662610 14885 | | | | |
| 3 x 1/2 x 3/8 | A/0 | М | 18,000 | 20 | | | | | 662610 14929 |
| 3 x 1 x 3/8 | S/C | XC | 18,000 | 10 | | | | 662610 14914 | |
| 6 x 1/2 x 1 | A/0 | Μ | 7,500 | 4 | | | | | 662610 14931 |
| 6 x 1 x 1 | S/C | F | 5,000 | 2 | 662610 14888 | | | | |

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Assemblies and Mandrels for Unified Wheels

| FITS WHEEL CENTER HOLE | FOR WHEEL WIDTH | FOR WHEEL DIAMETER | SHANK Diameter | OVERALL LENGTH | WASHER DIAMETER | 3M Equivalent | STD. PKG. | PART # |
|---------------------------|---------------------------|-----------------------|-------------------|-------------------|--------------------|------------------|--------------|---------------------|
| Mandrel Assem | blies for Unified V | Vheels and Discs O | n Edge | | | | | |
| 3/16 | 1/8 – 1/2 | 1 – 2 | 1/4 | 2 | 7/16 | 994 | 1 | 662610 09852 |
| 1/4 - 5/16 | Up to 1/2 | Up to 2 | 1/4 | 2 | 5/8 | 932 | 1 | 662610 15146 |
| 1/4 - 5/16 | Up to 1 | Up to 2 | 1/4 | 2-1/2 | 5/8 | 932 | 1 | 662610 59422 |
| | Up to 1 | 2-3 | 1/4 | 2-1/2 | 1 | 933 | 1 | 662610 59421 |
| 3/8 | Up to 1/2 | 2-4 | 1/4 | 2-1/2 | 1 | 990 | 1 | 662610 09851 |
| 1/2 | Up to 1 | 3-6 | 1/4 | 3-1/8 | 1-5/8 | 934 | 1 | 662610 09850 |
| FOR CENTER Hole | USE WITH UNIFIED WHEEL | SHANK DIAMETER | SHANK Length | | | 3M Equivalent | STD. PKG. | PART # |
| Threaded Mana | drel for Unified Wh | eels | | | | | | |
| 3/16 | 1 x 1 x 3/16 | 1/4" | 1-3/4" | | | 948 | 5 | 662610 47584 |







MANDREL ASSEMBLY 66261059421

THREADED MANDREL 66261047584

MANDREL ASSEMBLY 66261059422





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PORTABLE TOOLS AND SPECIALTIES Mounted Points



Used in a multitude of operations in almost every industry and on a variety of machines, mounted points are small grinding wheels permanently fastened to its own spindle. These vitrified bond mounted points are available in a wide range of shapes.

Industries:

Aerospace Tool and Die Construction Metal Fabrication Automotive

Abrasive Grain: Shape Availability: Machine Used:



Cutlery Mold Shops Stainless Steel Equipment Foundries

Measurement Guide

Description of Overhang

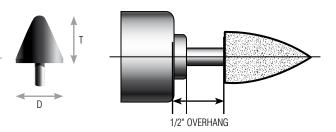
Overhang is the distance between the grinder chuck and the abrasive on the spindle. The larger the overhang, the lower the maximum safe operating speed.

Size

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Applifast

Measured by diameter (D) x thickness (T)





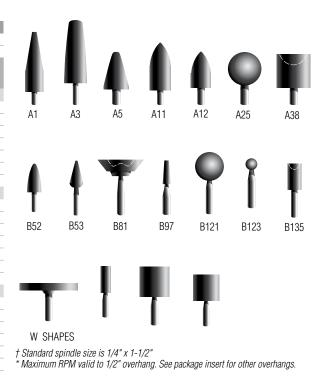
Better medium grit option for blending and deburring

PINK ALUMINUM OXIDE - VITRIFIED BOND

applifast.com

- · Sharp versatile 86A aluminum oxide grain is free cutting and resists burn
- · Excellent form holding compared to more friable white aluminum oxides
- Medium grit for blending and deburring

| | | | | TIER: | BETTER | |
|------------|----------------|------------------|--------------|--------------|------------|---------------------|
| | | | TRA | ADENAME: | PINK | |
| | | | A | ABRASIVE: | 86A Alumin | um Oxide |
| | | | | MIN./ | | |
| SHAPE | SIZE (D x T) | SPINDLE DIA.† | MAX. RPM* | STD. PKG. | SPEC | PART # |
| | d Bond Mounted | | | T Ku. | JILU | |
| A1 | 3/4 x 2-1/2 | 1/4 | 19,800 | 5/25 | 86A80-S | 690786 45335 |
| A3 | 1 x 2-3/4 | 1/4 | 16.100 | 5/25 | 86A80-S | 690786 45333 |
| A5 | 3/4 x 1-1/8 | 1/4 | 45,000 | 5/25 | 86A80-S | 690786 45339 |
| A11 | 7/8 x 2 | 1/4 | 19.860 | 5/25 | 86A80-S | 690786 45336 |
| A11 A12 | 11/16 x 1-1/4 | 1/4 | 48,000 | 5/25 | 86A80-S | 690786 45344 |
| A12 A25 | 1" Ball | 1/4 | 35,620 | 5/25 | 86A80-S | 690786 45341 |
| | | | , | | | |
| A38 | 1x1 | 1/4 | 34,500 | 5/25 | 86A80-S | 690786 45345 |
| | d Bond Mounted | | | | | |
| B52 | 3/8 x 3/4 | 1/8 | 45,370 | 5/25 | 86A80-S | 690786 45334 |
| B53 | 5/16 x 5/8 | 1/8 | 60,000 | 5/25 | 86A80-S | 690786 45340 |
| B81 | 3/4 x 3/16 | 1/8 | 50,930 | 5/25 | 86A80-S | 690786 45347 |
| B97 | 1/8 x 3/8 | 1/8 | 105,000 | 5/25 | 86A80-S | 690786 45337 |
| B121 | 1/2" Ball | 1/8 | 45,370 | 5/25 | 86A80-S | 690786 45338 |
| B122 | 3/8" Ball | 1/8 | 61,650 | 5/25 | 86A80-S | 690786 45360 |
| B135 | 1/4 x 1/2 | 1/8 | 60,000 | 5/25 | 86A80-S | 690786 45342 |
| Vitrifie | d Bond Mounted | Points – V | / Shapes | | | |
| W163 | 1/4 x 1/2 | 1/8 | 60,000 | 5/25 | 86A80-S | 690786 45346 |
| W177 | 3/8 x 3/4 | 1/8 | 33,750 | 5/25 | 86A80-S | 690786 45355 |
| W185 | 1/2 x 1/2 | 1/4 | 61,500 | 5/25 | 86A80-S | 690786 45354 |
| W200 | 3/4 x 1/8 | 1/8 | 50,930 | 5/25 | 86A80-S | 690786 45356 |
| W220 | 1x1 | 1/4 | 25,500 | 5/25 | 86A80-S | 690786 45359 |
| W235 | 1-1/2 x 1/4 | 1/4 | 25,470 | 5/25 | 86A80-S | 690786 45343 |
| | | | , - | | | |



Toll Free 1 800 563 1293

Refer to the Precision Offhand/Portable section for the full offering of mounted points.



PORTABLE TOOLS AND SPECIALTIES Carbide Burrs

L2



Our double-cut style carbide burrs have stronger tooth formulation and numerous cutting edges to outperform other double-cut carbide burrs with better stock removal, granular chip break, and longer life.

Pair up these long-lasting burrs with our pneumatic die grinder to quickly and comfortably accomplish many portable applications on one machine – including jobs using specialties, small diameter flap wheels, and mounted points.

Deburring, medium-to-light surface cleaning and stock removal, weld removal and prep, chamfering

A, B, C, D, E, F, G, H, L, M 1/4"

Applications:

Shank Diameter:

Machine Used:

Shapes:



Understanding the Product

| - | D.: | 10 A |
|------|------|---|
| Burr | Dime | nsions |
| Dan | | 11010110 |

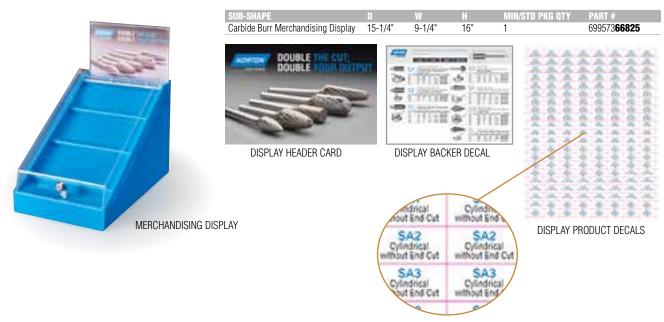
| D1 | L1 | D2 | L2 | |
|----------|--------|----------|--------------|----|
| HEAD | HEAD | SHANK | OVERALL BURR | L1 |
| DIAMETER | LENGTH | DIAMETER | LENGTH (OL) | |

TECH TIP

Each carbide burr is packed individually in a clear, protective plastic case with Norton-blue end-caps. Each burr is marked with the burr head diameter and length for easy identification.

Carbide Burrs Merchandising Display

For those last minute point-of-purchase sales the Carbide Burr merchandiser is an ideal addition to any counter or display shelf. Holds twenty-four burrs in the lockable front display with plenty of storage in the back drawer.





PORTABLE TOOLS AND SPECIALTIES **Carbide Burrs**

699573**08002** 699573**08003**

699573**08004**

699573**08005**

699573**60674**



Double cut burrs are a popular choice because of their universal cutting style

DOUBLE CUT CARBIDE BURRS

- · Hard tungsten carbide burrs with strong tooth formulations and numerous cutting edges for extended life and less changeover downtime versus other cutting tools
- · Higher stock removal, and smaller, granular chip-break on hard-to-grind workpieces versus other carbide burrs
- Perform well at higher temperatures and can be used longer than high-speed steel tools even if your operation . generates some heat

The ends of these burrs are flat, with no cutting edges and are used for contour finishing and to get into right-angled corners.

2"

2-1/2"

2-1/2

2-3/4"

6"

Carbide Burrs for Standard Metal Removal

ΜΔΧ Ι

25,000

25,000

25,000

25,000

25,000

SA1

SA2

SA3

SA5

SA5







Cylindrical with End Cut

Cylindrical without End Cut

1/4"

5/16'

3/8"

1/2"

1/2"

The cutting edge at the end of the burr makes these burrs a good choice for contour finishing.

3/4"

3/4"

3/4"

1"

1"

| SUB-SHAPE | MAX. RPM | D1 | L1 | L2 | MIN/STD PKG QTY | PART # |
|-----------|----------|------|------|--------|-----------------|---------------------|
| SB3 | 25,000 | 3/8" | 3/4" | 2-1/2" | 1 | 699573 08006 |
| SB3 | 25,000 | 3/8" | 3/4" | 6" | 1 | 699573 40156 |
| SB5 | 25,000 | 1/2" | 1" | 2-3/4" | 1 | 699573 08007 |
| SB5 | 25,000 | 1/2" | 1" | 6" | 1 | 699573 40157 |
| SB6 | 25,000 | 5/8" | 1" | 2-3/4" | 1 | 699573 08008 |



Ball-Nosed Cylindrical

Use these round-nosed burrs for smoother operation and better tool control.

| SUB-SHAPE | MAXRPM | D1 | L1 | L2 | MIN/STD PKG QTY | PART # |
|-----------|--------|-------|------|--------|-----------------|---------------------|
| SC1 | 25,000 | 1/4" | 3/4" | 2" | 1 | 699573 08009 |
| SC2 | 25,000 | 5/16" | 3/4" | 2-1/2" | 1 | 699573 08010 |
| SC3 | 25,000 | 3/8" | 3/4" | 2-1/2" | 1 | 699573 08011 |
| SC3 | 25,000 | 3/8" | 3/4" | 6" | 1 | 699573 60678 |
| SC5 | 25,000 | 1/2" | 1" | 2-3/4" | 1 | 699573 08012 |
| SC5 | 25,000 | 1/2" | 1" | 6" | 1 | 699573 60679 |
| SC5 | 25,000 | 1/2" | 1" | 12" | 1 | 699573 60905 |
| SC6 | 25,000 | 5/8" | 1" | 2-3/4" | 1 | 699573 08013 |



Ball Shape

Use these carbide burrs to create a concave and to hollow out a workpiece.

| SUB-SHAPE | MAXRPM | D1 | L1 | L2 | MIN/STD PKG QTY | PART # |
|-----------|--------|-------|--------|----------|-----------------|---------------------|
| SD1 | 25,000 | 1/4" | 1/4" | 2" | 1 | 699573 08014 |
| SD2 | 25,000 | 5/16" | 1/4" | 2" | 1 | 699573 08015 |
| SD3 | 25,000 | 3/8" | 5/16" | 2-1/8" | 1 | 699573 08016 |
| SD5 | 25,000 | 1/2" | 7/16" | 2-3/16" | 1 | 699573 08017 |
| SD5 | 25,000 | 1/2" | 7/16" | 6" | 1 | 699573 60686 |
| SD9 | 25,000 | 1" | 15/16" | 2-15/16" | 1 | 699573 60865 |



SF **Oval Shape**

Use the oval-shaped carbide burrs for good reach and round head for shaping.

| SUB-SHAPE | MAXRPM | D1 | L1 | L2 | MIN/STD PKG QTY | PART # |
|-----------|--------|------|------|----|-----------------|---------------------|
| SE3 | 25,000 | 3/8" | 5/8" | 6" | 1 | 699573 40158 |
| SE5 | 25,000 | 1/2" | 7/8" | 6" | 1 | 699573 40159 |







SF1 SF2 SF3 SF3 SF5 SF5 SF5

SF6

Carbide Burrs for Standard Metal Removal



Ball-Nosed Tree

Designed to round off edges and make concave cuts.

| \square | | | 1 |
|-----------|--------------|---|---|
| | 2 | | |
| | All C | 2 | |
| ~ | | / | |
| | \checkmark | | |

| B-SHAPE | MAXRPM | D1 | L1 | L2 | MIN/STD PKG QTY | PART # |
|---------|--------|-------|------|--------|-----------------|---------------------|
| | 25,000 | 1/4" | 3/4" | 2" | 1 | 699573 08018 |
|) | 25,000 | 5/16" | 3/4" | 2-1/2" | 1 | 699573 08019 |
| 3 | 25,000 | 3/8" | 3/4" | 2-1/2" | 1 | 699573 08020 |
| } | 25,000 | 3/8" | 3/4" | 6" | 1 | 699573 60689 |
| 5 | 25,000 | 1/2" | 1" | 2-3/4" | 1 | 699573 08021 |
| 5 | 25,000 | 1/2" | 1" | 6" | 1 | 699573 60691 |
| 5 | 25,000 | 1/2" | 1" | 12" | 1 | 699573 60904 |
| 6 | 25,000 | 5/8" | 1" | 2-3/4" | 1 | 699573 08022 |



SG Tree with Taper

The taper allows access to hard-to-reach areas, such as angled contours.

| SUB-SHAPE | MAXRPM | D1 | L1 | L2 | MIN/STD PKG QTY | PART # |
|-----------|--------|-------|--------|--------|-----------------|---------------------|
| SG1 | 25,000 | 1/4" | 3/4" | 2" | 1 | 699573 08023 |
| SG2 | 25,000 | 5/16" | 3/4" | 2-1/2" | 1 | 699573 08024 |
| SG3 | 25,000 | 3/8" | 3/4" | 2-1/2" | 1 | 699573 08025 |
| SG5 | 25,000 | 1/2" | 1" | 2-3/4" | 1 | 699573 08026 |
| SG5 | 25,000 | 1/2" | 1" | 6" | 1 | 699573 60712 |
| SG6 | 25,000 | 5/8" | 1" | 2-3/4" | 1 | 699573 08027 |
| SG13 | 25,000 | 3/4" | 1-1/2" | 3/4" | 1 | 699573 66821 |
| SG15 | 25,000 | 3/4" | 1-1/2" | 1/4" | 1 | 699573 60886 |





Flame Shape

Great for channel working and shaping due to its long fluted sides and rounded head.

| SUB-SHAPE | MAXRPM | D1 | L1 | L2 | MIN/STD PKG QTY | PART # |
|-----------|--------|------|--------|----|-----------------|---------------------|
| SH5 | 25,000 | 1/2" | 1-1/4" | 6" | 1 | 699573 66822 |
| | | | | | | |





This cone shape is excellent for imparting fine finishes.

| SUB-SHAPE | MAXRPM | D1 | L1 | L2 | MIN/STD PKG QTY | PART # |
|-----------|--------|-------|---------|----------|-----------------|---------------------|
| SL2 | 25,000 | 5/16" | 7/8" | 2-3/4" | 1 | 699573 08028 |
| SL3 | 25,000 | 3/8" | 1 3/16" | 2-15/16" | 1 | 699573 08029 |
| SL3 | 25,000 | 3/8" | 1-1/16" | 6" | 1 | 699573 60716 |
| SL4 | 25,000 | 1/2" | 1 3/16" | 3" | 1 | 699573 08030 |
| SL4 | 25,000 | 1/2" | 1-3/16" | 6" | 1 | 699573 60720 |
| SL5 | 25,000 | 1/2" | 1" | 6" | 1 | 699573 66823 |



Pointed Cone

(75)

 (\mathbf{t})

Ideal for rounded edges or reaching difficult, tight areas.

| SUB-SHAPE | MAXRPM | D1 | L1 | L2 | MIN/STD PKG QTY | PART # |
|-----------|--------|------|------|----|-----------------|---------------------|
| SM4 | 25,000 | 3/8" | 5/8" | 6" | 1 | 699573 66824 |
| SM5 | 25,000 | 1/2" | 7/8" | 6" | 1 | 699573 60767 |

Carbide Burr Kit



Distributed by Applifast

| SUB-SHAPE | MIN/STD PKG QTY | PART # |
|---|-----------------|----------------------|
| Carbide Burr Kit* | 1 | 699573 08060 |
| * Kit Includes one each of: SA5 (699573 08005), SF3 (699573 08020), SF5 (699573 0802 | | 99573 08030) |

Toll Free 1 800 563 1293 applifast.com



SA

PORTABLE TOOLS AND SPECIALTIES Carbide Burrs

Carbide Burrs for Aluminum and Non-Ferrous Materials



| Cylindrical without End Cut |
|-----------------------------|
|-----------------------------|

The ends of these burrs are flat, with no cutting edges and are used for contour finishing and to get into right-angled corners.



| SUB-SHAPE | MAX. RPM | D1 | L1 | L2 | MIN/STD PKG QTY | PART # |
|-----------|----------|------|------|--------|-----------------|---------------------|
| SA3 NF | 25,000 | 3/8" | 3/4" | 21/2" | 1 | 699573 40148 |
| SA5 NF | 25,000 | 1/2" | 1" | 2-3/4" | 1 | 699573 40149 |



Ball-Nosed Cylindrical

Use these round-nosed burrs for smoother operation and better tool control.

| SUB-SHAPE | MAXRPM | D1 | 11 | L2 | MIN/STD PKG QTY | PART # |
|-----------|--------|------|------|--------|-----------------|---------------------|
| SC3 NF | 25,000 | 3/8" | 3/4" | 2-3/4" | 1 | 699573 40150 |
| SC5 NF | 25,000 | 1/2" | 1" | 6" | 1 | 699573 60657 |
| | | | | | | |



Ball Shape

Use these carbide burrs to create a concave and to hollow out a workpiece.





MAX.-RPI MIN/STD PKG QTY SD3 NF 25,000 3/8" 5/16" 2-1/8" 69957366820 1 SD5 NF 25,000 7/16" 69957340152 1/2" 2-3/16



Ball-Nosed Tree

SF Designed to round off edges and make concave cuts.

| SUB-SHAPE | MAXRPM | D1 | L1 | L2 | MIN/STD PKG QTY | PART # |
|-----------|--------|------|------|--------|-----------------|---------------------|
| SF1 NF | 25,000 | 1/4" | 3/4" | 2" | 1 | 699573 40153 |
| SF3 NF | 25,000 | 3/8" | 3/4" | 2-1/2" | 1 | 699573 40154 |
| SF5 NF | 25,000 | 1/2" | 1" | 2-3/4" | 1 | 699573 60647 |



Tree with Taper

The taper allows access to hard-to-reach areas, such as angled contours.



| SUB-SHAPE | MAXRPM | D1 | L1 | L2 | MIN/STD PKG QTY | PART # |
|-----------|--------|------|----|--------|-----------------|---------------------|
| SG5 NF | 25,000 | 1/2" | 1" | 2-3/4" | 1 | 699573 60646 |





 (\mathbf{t})

This cone shape is excellent for imparting fine finishes.

| SUB-SHAPE | MAXRPM | D1 | L1 | L2 | MIN/STD PKG QTY | PART # |
|-----------|--------|------|--------|----|-----------------|---------------------|
| SL4 NF | 25,000 | 1/2" | 1-1/4" | 6" | 1 | 699573 60651 |
| | | | | | | |



Distributed by Applifast

Pointed Cone

SI

(55)

Ideal for rounded edges or reaching difficult, tight areas.

| SUB-SHAPE | MAXRPM | D1 | L1 | L2 | MIN/STD PKG QTY | PART # |
|-----------|--------|------|------|----|-----------------|---------------------|
| SM3 NF | 25,000 | 1/2" | 7/8" | 2" | 1 | 699573 40155 |

we've got you covered FROM DIY TO TOOLCRIB TO PRODUCTION FLOOR

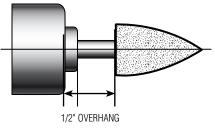
Available in vitrified bond, resin bond, center lap and cotton fiber, and in a variety of shapes our mounted points offer fast, free cutting grinding and finishing capability. Produce sharp edges with the Norton line of sharpening stones - bringing solutions for craftsmen and hobbyists alike for over 190 years.

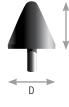


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Measurement Guide





Description of Overhang

Overhang is the distance between the grinder chuck and the abrasive on the spindle. The larger the overhang, the lower the maximum safe operating speed.

Size

Measured by diameter (D) x thickness (T)

Cotton Fiber

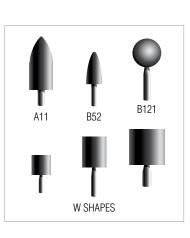


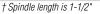
Good for blending and polishing

COTTON FIBER ALUMINUM OXIDE - RESIN BOND

- · Aluminum oxide grain provides an excellent blend of cut rate and life
- · The cotton fibers ensure smooth, chatter-free grinding
- Designed for blending and polishing in one step; use 80 grit for most materials and 120 for polishing and stainless steel applications

| | | | | | GOOD | |
|------------------|----------------|---------------|-----------|----------------|----------------|---------------------|
| | | | | TRADENAME: | COTTON FIBER | |
| | | | | ABRASIVE: | Aluminum Oxide | |
| SHAPE | SIZE (D x T) | SPINDLE DIA.† | MAX. RPM* | MIN./STD. PKG. | SPEC | PART # |
| Cotton Fi | ber Mounted Po | oints | | | | |
| A11 | 7/8 x 2 | 1/4 | 19,860 | 5/25 | A80-HBF3 | 614636 22664 |
| B52 | 3/8 x 3/4 | 1/8 | 45,370 | 5/25 | A120-HBF3 | 614636 20242 |
| B121 | 1/2" Ball | 1/8 | 45,370 | 5/25 | A80-HBF3 | 614636 22657 |
| W163 | 1/4 x 1/2 | 1/8 | 60,000 | 5/25 | A80-HBF3 | 614636 22655 |
| | | | 60,000 | 5/25 | A120-HBF3 | 614636 22656 |
| W176 | 3/8 x 1/2 | 1/8 | 45,370 | 5/25 | A80-HBF3 | 614636 22654 |
| W185 | 1/2 x 1/2 | 1/8 | 34,500 | 5/25 | A80-HBF3 | 614636 22649 |
| W187 | 1/2 x 1 | 1/8 | 20,620 | 5/25 | A80-HBF3 | 614636 22651 |
| W220 | 1 x 1 | 1/4 | 25,500 | 5/25 | A80-HBF3 | 614636 22646 |





* Maximum RPM valid to 1/2" overhang. See package insert for other overhangs.

Distributed by Applifast. 📾 🖲 🐻 🖨 🕁



Resin bond, vitrified bond, center lap, and cotton fiber mounted points are available in a wide range of shapes.

| Industries: | Aerospace | |
|---------------------|--------------------------------------|---|
| | Tool and Die | |
| | Construction | |
| | Metal Fabrication | |
| | Automotive | |
| | Cutlery | |
| | Mold Shops | |
| | Stainless Steel Equi | pment |
| | Foundries | |
| Abrasive Grain: | Ceramic Alumina, Z Aluminum Oxide | irconia Alumina, Zirconia Alumina / Aluminum Oxide Blend, |
| Shape Availability: | A, B, and W | |
| Machine Used: | | |
| | die and Pencil | HORIZONTAL/ STRAIGHT SHAFT |
| | GRINDER | PORTABLE GRINDER |



Center Lap





Better for Excell-O center lap and similar machines

CENTER LAP ALUMINUM OXIDE - VITRIFIED BOND

- Specially formulated wheel treatment provides added lubricity to the wheel, minimizing risk of metallurgical damage
- · The larger diameter spindle ensures minimal deflection and rigid support
- · Precise dimensional tolerances ensure accurate location of part centers

| | | | | TIER: | BETTER | |
|-----------------|----------------|---------------|-----------|----------------|----------------|---------------------|
| | | | | TRADENAME: | CENTER LAP | |
| | | | | ABRASIVE: | Aluminum Oxide | |
| SHAPE | SIZE (D x T) | SPINDLE DIA.† | MAX. RPM* | MIN./STD. PKG. | SPEC | PART # |
| Center L | ap Mounted Po | ints | | | | |
| - | 1/2 x 2** | 1/2 | 65,000 | 5/25 | A80-VVM | 614636 21421 |
| - | 1 x 2** | 1/2 | 15,900 | 5/25 | A80-VVM | 614636 22926 |
| 10: 11 | 1 11 1 4 4 148 | | | | | |

CH

Dress the center lap mounted points frequently to ensure accurate and smooth center holes.

It is the user's responsibility to refer to and comply with ANSI B7.1

† Spindle length is 1-1/4

Maximum RPM valid to 1/2" overhang. See package insert for other overhangs. ** Pointed 60°

Resin Bond



Best choice for fast stock removal

NORZON ZIRCONIA ALUMINA – RESIN BOND

- · Zirconia alumina abrasive blend for 2X faster cut rate than standard aluminum oxide
- · Strong grain and specially formulated organic bond provide 4X greater life than aluminum oxide points, while reducing vibration and wheel chatter
- · Ideal for removing parting lines, fins and small risers from castings, and smoothing and blending of welded areas

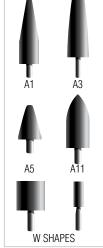


Better choice for fast stock removal and long life

CHARGER Z/A & A/O BLEND – RESIN BOND

- Durable zirconia alumina and aluminum oxide abrasive blend delivers 35% faster cut rate than standard aluminum oxide; an aggressive, free cut, and more parts cleaned in less time to substantially increase productivity
- · Specially formulated organic bond provides 2X greater life than standard resin bonds while reducing vibration and wheel chatter
- Better choice for removing parting lines, fins and small risers from castings, and smoothing and blending welded areas
- Charger mounted point pre-packed in small packages are ideal for vending machines, pegboards, small jobs, and carrying to job site

| | | | | TIER: | BEST | | BETTER | |
|-----------------|------------------|---------------|-----------|----------------|------------------|---------------------|---------------|---------------------|
| | | | | TRADENAME: | NORZON | | CHARGER | |
| | | | | ABRASIVE: | Zirconia Alumina | l | Zirconia Alum | ina/Aluminum Oxide |
| SHAPE | SIZE (D x T) | SPINDLE DIA.† | MAX. RPM* | MIN./STD. PKG. | SPEC | PART # | SPEC | PART # |
| Resin Bo | nd Mounted P | oints | | | | | | |
| A1 | 3/4 x 2-1/2 | 1/4 | 19,800 | 5/25 | NZ24-UBXR1 | 614636 16457 | Charger | 614636 16458 |
| A3 | 1 x 2-3/4 | 1/4 | 16,100 | 5/25 | NZ24-UBXR1 | 614636 16459 | Charger | 614636 16460 |
| A5 | 3/4 x 1-1/8 | 1/4 | 45,000 | 5/25 | | | Charger | 614636 16462 |
| A11 | 7/8 x 2 | 1/4 | 19,860 | 5/25 | NZ24-UBXR1 | 614636 16463 | Charger | 614636 16464 |
| W189 | 1/2 x 2 | 1/4 | 24,000 | 5/25 | NZ24-UBXR1 | 614636 16465 | Charger | 614636 16466 |
| W197 | 5/8 x 2 | 1/4 | 21,000 | 5/25 | NZ24-UBXR1 | 614636 16467 | | |
| W207 | 3/4 x 1-1/2 | 1/4 | 24,000 | 5/25 | | | Charger | 614636 16470 |
| W208 | 3/4 x 2 | 1/4 | 18,750 | 5/25 | NZ24-UBXR1 | 614636 16471 | Charger | 614636 16472 |
| W220 | 1 x 1 | 1/4 | 25,500 | 5/25 | NZ24-UBXR1 | 614636 17520 | Charger | 614636 17521 |
| | | | 25,500 | 5 V | | | Charger | 662533 25930 |
| W221 | 1 x 1-1/2 | 1/4 | 19,120 | 5/25 | NZ24-UBXR1 | 614636 16473 | Charger | 614636 16474 |
| W222 | 1 x 2 | 1/4 | 15,900 | 5/25 | NZ24-UBXR1 | 614636 16475 | Charger | 614636 16476 |
| + Snindle | length is 1-1/2" | | | | | | | |



† Spindle length is 1-1/2" * Maximum RPM valid to 1/2" overhang. See package insert for other overhangs.

V = Vendible package. Ideal for vending machines and small jobs. Min. Pkg. Qty = number of mounted points per vendible pack. Order in multiples of min gty.





Vitrified Bond



NEW



QUANTUM CERAMIC ALUMINA - VITRIFIED BOND

- · Quantum grain with unique, engineered ceramic grain and shape, specifically developed for high-volume, high-speed alloy grinding operations
- Minimal loading and heat build-up; provide up to 33% longer life and 37% better metal removal rates versus other ceramic points
- Versatile; optimized for all low-, medium-, and high-force vitrified applications
- Oil and Gas 36 grit mounted points; specifically engineered to efficiently grind the carbide matrix material of oil field drill heads

Better medium grit option for blending and deburring

PINK ALUMINUM OXIDE – VITRIFIED BOND

- · Sharp versatile 86A aluminum oxide grain is free cutting and resists burn
- Excellent form holding compared to more friable white aluminum oxides
- Medium grit for blending and deburring



Good value for general purpose, small job shop applications

GEMINI ALUMINUM OXIDE - VITRIFIED BOND

- 38A abrasive is designed to be cool cutting to minimize burn
- · High temperature vitrified bond maximizes form holding and life
- · Wide grit range for stock removal, blending/deburring, and finishing/polishing

- For best mounted point performance, always run the mounted point at the maximum allowable speed according to ANSI B7.1. Refer to the speed chart included in each shipment for proper operating speeds.
- Use "A" shapes for medium- to heavy-duty blending
- Use "B" shapes for light deburring and finishing/polishing.
- · Use "W" shapes for offhand and precision grinding of medium to heavy stock.
- · Use 36 grit and coarser for rough grinding.
- Use 60 and 90 grits for imparting fine finishes or when grinding on narrow surfaces.



It is the user's responsibility to refer to and comply with ANSI B7.1



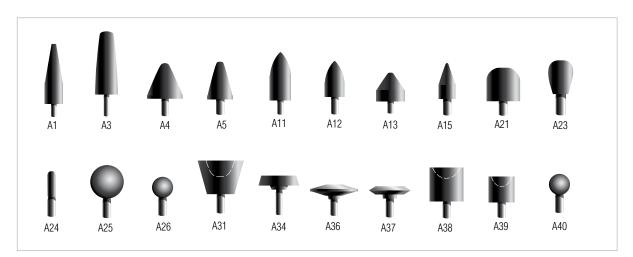
PRECISION OFFHAND/PORTABLE **Mounted Points**



Vitrified Bond

| | | | | TIER: | BEST | | BETTER | NEW | GOOD | |
|------------|------------------------|---------|--------|------------|--------------|---------------------|-------------|---------------------|-------------|---------------------|
| | | | | TRADENAME: | QUANTUM | | PINK | | GEMINI | |
| | | | | ABRASIVE: | Ceramic Alum | ina | 86A Aluminu | um Oxide | 38A Aluminu | um Oxide |
| | | | | MIN./ | | | | | | |
| | | SPINDLE | MAX. | STD. | 0050 | D4.D7 // | 0070 | | 0000 | |
| SHAPE | SIZE (D x T) | DIA.† | RPM* | PKG. | SPEC | PART # | SPEC | PART # | SPEC | PART # |
| | Bond Mounted F | | | 05/050 | 0.1 0 0 00 | 01 1000 00100 | | | | |
| A1 | 3/4 x 2-1/2 | 1/4 | 19,800 | 25/250 | Oil & Gas 36 | 614636 86139 | | | 00400 T | |
| A1 | 3/4 x 2-1/2 | 1/4 | 19,800 | 5/25 | 3NQ80 | 690831 49139 | 86A80-S | 690786 45335 | 38A36-T | 614636 24374 |
| A1 | 3/4 x 2-1/2 | 1/4 | 19,800 | 5/25 | | | | | 38A60-P | 614636 24375 |
| A3 | 1 x 2-3/4 | 1/4 | 16,100 | 25/250 | 0il & Gas 36 | 614636 86138 | | | | |
| A3 | 1 x 2-3/4 | 1/4 | 16,100 | 5/25 | | | 86A80-S | 690786 45333 | 38A36-T | 614636 24377 |
| A3 | 1 x 2-3/4 | 1/4 | 16,100 | 5/25 | | | | | 38A60-P | 614636 24378 |
| A4 | 1-1/4 x 1-1/4 | 1/4 | 30,560 | 5/25 | | | | | 38A60-P | 614636 24380 |
| A5 | 3/4 x 1-1/8 | 1/4 | 45,000 | 5/25 | | | 86A80-S | 690786 45339 | 38A36-T | 614636 24381 |
| A5 | 3/4 x 1-1/8 | 1/4 | 45,000 | 5/25 | | | | | 38A60-P | 614636 24382 |
| A11 | 7/8 x 2 | 1/4 | 19,860 | 5/25 | 3NQ80 | 690831 49141 | | | 38A36-T | 614636 24384 |
| A11 | 7/8 x 2 | 1/4 | 19,860 | 5/25 | | | 86A80-S | 690786 45336 | 38A60-P | 614636 24385 |
| A12 | 11/16 x 1-1/4 | 1/4 | 48,000 | 5/25 | | | 86A80-S | 690786 45344 | 38A60-P | 614636 24388 |
| A13 | 1-1/8 x 1-1/8 | 1/4 | 33,950 | 5/25 | | | | | 38A60-P | 614636 24389 |
| A15 | 1/4 x 1-1/16 | 1/4 | 72,750 | 5/25 | | | | | 38A60-P | 614636 24391 |
| A21 | 1x1 | 1/4 | 34,500 | 5/25 | | | | | 38A60-P | 61463624392 |
| A23 | 3/4 x 1 | 1/4 | 39,370 | 5/25 | | | | | 38A60-P | 61463624394 |
| A24 | 1/4 x 3/4 | 1/4 | 76,500 | 5/25 | | | | | 38A60-P | 61463624395 |
| A25 | 1" Ball | 1/4 | 35.620 | 5/25 | | | 86A80-S | 690786 45341 | 38A60-P | 614636 24396 |
| A26 | 5/8" Ball | 1/4 | 61,120 | 5/25 | | | | | 38A60-P | 61463624397 |
| A31 | 1-3/8 x 1 | 1/4 | 27,780 | 5/25 | | | | | 38A60-P | 61463624399 |
| A34 | 1-1/2 x 3/8 | 1/4 | 25,470 | 5/25 | | | | | 38A60-P | 614636 24402 |
| A36 | 1-5/8 x 3/8 | 1/4 | 23,520 | 25/250 | Oil & Gas 36 | 662531 45562 | | | 00.001 | 0 |
| A36 | 1-5/8 x 3/8 | 1/4 | 23,520 | 5/25 | 0.1 0. 000 | | | | 38A60-P | 614636 24404 |
| A37 | 1-1/4 x 1/4 | 1/4 | 30,560 | 5/25 | | | | | 38A60-P | 614636 24405 |
| A38 | 1 x 1 | 1/4 | 34,500 | 5/25 | | | 86A80-S | 690786 45345 | 38A60-P | 614636 24405 |
| A39 | 3/4 x 3/4 | 1/4 | 47,250 | 5/25 | | | 00/00-0 | 03010043343 | 38A60-P | 614636 24407 |
| A39 A40 | 3/4 X 3/4 3/4" Ball | 1/4 | 47,250 | 5/25 | | | | | 38A60-P | 614636 24407 |
| | 3/4 Dall | | 47,200 | 0/20 | | | | | 30A00-L | 014030 24400 |

f Standard spindle size is 1/4" x 1-1/2"
 * Maximum RPM valid to 1/2" overhang. See package insert for other overhangs.





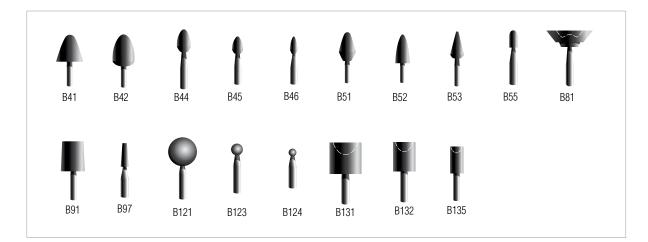
PRECISION OFFHAND/PORTABLE Mounted Points



Vitrified Bond

| | | | | TIER: | BEST | | BETTER | NEW | GOOD | |
|-------|--------------|------------------|--------------|--------------|-------------|---------------------|------------|---------------------|------------|---------------------|
| | | | | TRADENAME: | QUANTUM | | PINK | | GEMINI | |
| | | | | ABRASIVE: | Ceramic Alu | mina | 86A Alumir | ium Oxide | 38A Alumin | um Oxide |
| | | | | MIN./ | | | | | | |
| SHAPE | SIZE (D x T) | SPINDLE DIA.+ | MAX. RPM* | STD. PKG. | SPEC | PART # | SPEC | PART # | SPEC | PART # |
| | Bond Mounted | | | | | | | | | |
| B41 | 5/8 x 5/8 | 1/8 | 33.570 | 5/25 | | | | | 38A60-P | 614636 24410 |
| B42 | 1/2 X 3/4 | 1/8 | 33,570 | 5/25 | | | | | 38A60-P | 61463624412 |
| B44 | 7/32 x 3/8 | 1/8 | 68,400 | 5/25 | | | | | 38A60-P | 61463624414 |
| B45 | 3/16 x 5/16 | 1/8 | 104,250 | 5/25 | | | | | 38A60-P | 614636 24415 |
| B46 | 1/8 x 5/16 | 1/8 | 105,000 | 5/25 | | | | | 38A60-P | 614636 24416 |
| B51 | 7/16 x 3/4 | 1/8 | 45,370 | 5/25 | | | | | 38A60-P | 614636 24418 |
| B52 | 3/8 x 3/4 | 1/8 | 45,370 | 5/25 | | | 86A80-S | 690786 45334 | 38A60-P | 614636 24420 |
| B52 | 3/8 x 3/4 | 1/4 | 81,000 | 5/25 | | | | | 38A60-P | 614636 24419 |
| B52 | 3/8 x 3/4 | 1/8 | 45,370 | 5/25 | | | | | 38A90-Q | 614636 24422 |
| B53 | 5/16 x 5/8 | 1/8 | 60,000 | 5/25 | | | 86A80-S | 690786 45340 | 38A60-P | 614636 24423 |
| B55 | 1/8 x 1/4 | 1/8 | 105,000 | 5/25 | | | | | 38A60-P | 614636 24425 |
| B81 | 3/4 x 3/16 | 1/8 | 50,930 | 5/25 | | | 86A80-S | 690786 45347 | 38A60-P | 614636 24437 |
| B91 | 1/2 x 5/8 | 1/8 | 34,500 | 5/25 | | | | | 38A60-P | 614636 24443 |
| B96 | 1/8 x 1/4 | 1/8 | 105,000 | 5/25 | | | | | 38A90-Q | 614636 24449 |
| B97 | 1/8 x 3/8 | 1/8 | 105,000 | 5/25 | 3NQ80 | 690831 49048 | 86A80-S | 690786 45337 | 38A60-P | 614636 24451 |
| B121 | 1/2" Ball | 1/8 | 45,370 | 5/25 | | | 86A80-S | 690786 45338 | 38A60-P | 614636 24466 |
| B122 | 3/8" Ball | 1/8 | 61,650 | 5/25 | 3NQ80 | 690831 49050 | 86A80-S | 690786 45360 | 38A60-P | 614636 24470 |
| B123 | 3/16" Ball | 1/8 | 104,250 | 5/25 | | | | | 38A60-P | 614636 24472 |
| B124 | 1/8" Ball | 1/8 | 105,000 | 5/25 | | | | | 38A90-Q | 614636 24474 |
| B131 | 1/2 x 1/2 | 1/8 | 34,500 | 5/25 | | | | | 38A60-P | 614636 24475 |
| B132 | 3/8 x 1/2 | 1/8 | 45,370 | 5/25 | | | | | 38A60-P | 614636 24479 |
| B135 | 1/4 x 1/2 | 1/8 | 60,000 | 5/25 | | | 86A80-S | 690786 45342 | 38A60-P | 614636 24484 |

f Spindle size is 1/8" or 1/4" x 1-1/2"
 * Maximum RPM valid to 1/2" overhang. See package insert for other overhangs.



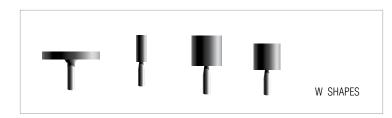
PRECISION OFFHAND/PORTABLE Mounted Points



Vitrified Bond

| | | | | TIER: | BEST | | GOOD | NEW | GOOD | |
|--------------|------------------------|---------|---------|------------|---------------|---------------------|------------|---------------------|------------|---------------------|
| | | | | TRADENAME: | QUANTUM | | PINK | | GEMINI | |
| | | | | ABRASIVE: | Ceramic Alum | iina | 86A Alumin | um Oxide | 38A Alumin | um Oxide |
| | | | | MIN./ | | | | | | |
| | 0175 (D T) | SPINDLE | MAX. | STD. | 0050 | DADT # | 0050 | DADT # | 0050 | DADT # |
| SHAPE | SIZE (D x T) | DIA.† | RPM* | PKG. | SPEC | PART # | SPEC | PART # | SPEC | PART # |
| | Bond Mounted F | | | E (0E | | | | | 00400 D | 01400004400 |
| W144 | 1/8 x 1/4 | 1/8 | 105,000 | 5/25 | | | | | 38A60-P | 614636 24488 |
| W145 | 1/8 x 3/8 | 1/8 | 105,000 | 5/25 | | | | | 38A60-P | 614636 24489 |
| W146 | 1/8 x 1/2 | 1/8 | 105,000 | 5/25 | | | | | 38A60-P | 614636 24491 |
| W152 | 3/16 x 1/4 | 1/8 | 105,000 | 5/25 | | | | | 38A60-P | 614636 24495 |
| W153 | 3/16 x 3/8 | 1/8 | 80,850 | 5/25 | | | | | 38A60-P | 614636 24496 |
| W154 | 3/16 x 1/2 | 1/8 | 70,500 | 5/25 | 3NQ80 | 690831 49133 | | | 38A60-P | 614636 24497 |
| W162 | 1/4 x 3/8 | 1/8 | 64,800 | 5/25 | | | | | 38A60-P | 614636 24503 |
| W163 | 1/4 x 1/2 | 1/8 | 60,000 | 5/25 | | | 86A80-S | 690786 45346 | 38A60-P | 614636 24504 |
| W164 | 1/4 x 3/4 | 1/8 | 45,900 | 5/25 | | | | | 38A60-P | 614636 24505 |
| W170 | 5/16 x 1/2 | 1/8 | 52,500 | 5/25 | | | | | 38A60-P | 614636 24511 |
| W175 | 3/8 x 3/8 | 1/8 | 54,000 | 5/25 | | | | | 38A60-P | 614636 24516 |
| W176 | 3/8 x 1/2 | 1/8 | 45,370 | 5/25 | | | | | 38A60-P | 614636 24517 |
| W177 | 3/8 x 3/4 | 1/8 | 33,750 | 5/25 | | | 86A80-S | 690786 45355 | 38A60-P | 614636 24518 |
| W179 | 3/8 x 1-1/4 | 1/4 | 20,415 | 25/250 | Oil & Gas 36 | 690831 54055 | | | | |
| W185 | 1/2 x 1/2 | 1/8 | 34,500 | 5/25 | 3NQ80 | 690831 49137 | | | 38A60-P | 614636 24525 |
| W185 | 1/2 x 1/2 | 1/4 | 61,500 | 5/25 | | | 86A80-S | 690786 45354 | 38A60-P | 614636 24526 |
| W186 | 1/2 X 3/4 | 1/4 | 51,000 | 5/25 | | | 00,100 0 | | 38A60-P | 614636 24528 |
| W188 | 1/2 x 1-1/2 | 1/4 | 30,370 | 5/25 | | | | | 38A60-P | 614636 24530 |
| W189 | 1/2 x 2 | 1/4 | 24,000 | 25/250 | Oil & Gas 36 | 614636 86137 | | | 30400 1 | 01403024300 |
| W189 | 1/2 x 2 | 1/4 | 24,000 | 5/25 | 011 & 0.03 00 | 01403000107 | | | 38A60-P | 614636 24531 |
| W105 | 5/8 x 1 | 1/4 | 35,250 | 5/25 | | | | | 38A60-P | 614636 24539 |
| W190 W200 | 3/4 x 1/8 | 1/4 | 50,930 | 5/25 | | | 86A80-S | 690786 45356 | 38A60-P | 614636 24543 |
| W200 | 3/4 x 1/0 3/4 x 1/8 | 1/8 | 50,930 | 5/25 | | | 00A0U-3 | 090/00 43330 | 38A90-Q | 614636 24544 |
| | | | | | | | | | | |
| W204 | 3/4 x 3/4 | 1/4 | 42,750 | 5/25 | | | | | 38A60-P | 614636 24549 |
| W205 | 3/4 x 1 | 1/4 | 34,500 | 5/25 | | | | | 38A60-P | 614636 24550 |
| W208 | 3/4 x 2 | 1/4 | 18,750 | 5/25 | | | | | 38A60-P | 614636 24553 |
| W215 | 1 x 1/8 | 1/8 | 38,200 | 5/25 | | | | | 38A60-P | 614636 24560 |
| W216 | 1 x 1/4 | 1/4 | 38,200 | 5/25 | | | | | 38A60-P | 614636 24562 |
| W218 | 1 x 1/2 | 1/4 | 38,200 | 25/250 | 0il & Gas 36 | 690831 54061 | | | | |
| W218 | 1 x 1/2 | 1/4 | 38,200 | 5/25 | | | | | 38A60-P | 614636 24564 |
| W220 | 1x1 | 1/4 | 25,500 | 5/25 | | | 86A80-S | 690786 45359 | 38A60-P | 614636 24566 |
| W222 | 1 x 2 | 1/4 | 15,900 | 5/25 | | | | | 38A60-P | 614636 24569 |
| W230 | 1-1/4 x 1-1/4 | 1/4 | 20,400 | 5/25 | | | | | 38A60-P | 614636 24578 |
| W235 | 1-1/2 x 1/4 | 1/4 | 25,470 | 5/25 | | | 86A80-S | 690786 45343 | 38A60-P | 614636 24583 |
| W236 | 1-1/2 x 1/2 | 1/4 | 25,470 | 5/25 | | | | | 38A60-P | 614636 24585 |
| W237 | 1-1/2 x 1 | 1/4 | 22,500 | 5/25 | | | | | 38A60-P | 614636 24587 |
| W238 | 1-1/2 x 1-1/2 | 1/4 | 15,600 | 5/25 | | | | | 38A60-P | 614636 24588 |
| W242 | 2 x 1 | 1/4 | 19,100 | 5/25 | | | | | 38A60-P | 614636 24592 |

f Spindle size is 1/8" or 1/4" x 1-1/2"
 * Maximum RPM valid to 1/2" overhang. See package insert for other overhangs.







Since 1823, Norton stones have lead the marketplace with conventional and diamond benchstones, waterstones, sharpening systems, files, slips and specialty stones for industrial, commercial and DIY sharpening applications. Our comprehensive line of sharpening and finishing products is the industry's broadest line with premier performance and quality.

Aluminum Oxide (India), Silicon Carbide (Crystolon), Arkansas (Soft and Hard Translucent),

Deburring, dimensioning, sharpening, honing

Coarse, Medium, Fine, Extra Fine, Ultra Fine

Applications: Grit Range: Abrasive Types:

Machine Used:

and Diamond

HAND SHARPENING

Application-to-Product Recommendation Guide Benchstones Abrasive Files

| | Coarse/Medium Sharpening | Fine Stoning | Finish Honing |
|----------------|-----------------------------|------------------------------|-----------------|
| Chip Breakers | - | Fine Crystolon Benchstone | - |
| Draw Knives | Coarse Crystolon | Fine | Hard Arkansas |
| | Benchstone | India Benchstone | Benchstone |
| Scrapers | Coarse Crystolon | Fine India | Hard Arkansas |
| | Benchstone | Benchstone | Benchstone |
| Chisels (Wood) | Coarse Crystolon | Fine India | Hard Arkansas |
| | Benchstone | Benchstone | Benchstone |
| | 1000 Waterstone | 4000 Waterstone | 8000 Waterstone |
| Plane Blades | Coarse Crystolon | Fine India | Hard Arkansas |
| | Benchstone | Benchstone | Benchstone |
| | 1000 Waterstone | 4000 Waterstone | 8000 Waterstone |

Slips

| | Coarse/Medium Sharpening | Fine Stoning |
|----------------|---------------------------------|--|
| Milling Cutter | Medium India Round Edge Slip | Fine India Round Edge Slip |
| Carbide Tools | | Fine Crystolon Slip for Carbide Tools |

| | Coarse/Medium Sharpening | Fine Stoning | Finish Honing |
|------------------|--|--|----------------------------------|
| Form Cutter | Coarse or Medium India Knife Blade | Fine India Knife Blade | _ |
| Keyways | Coarse or Medium India Square File | Fine India Square File | - |
| Lathe Bits | Medium India Square File | Fine India Square File | _ |
| Radius Tools | Medium India Round File | Fine India Round File | _ |
| Reamers | Medium India Reamer Stone | Fine India Reamer Stone | _ |
| Router Bits | - | Fine India Square File | _ |
| Saws | Coarse India Triangular File | Fine India Tapered Triangular File | _ |
| Center Punches | Medium India Triangular File | Fine India Triangular File | _ |
| Magnetic Chucks | Medium Crystolon Round File | Fine India Round File | - |
| Molding Cutters* | Coarse or Medium India File | Fine India File | _ |
| Countersinks | Coarse India Triangular File | Fine India Triangular File | Hard Arkansas Triangular File |
| Tap Threads | - | Fine India Triangular File | - |
| | | | |

* Select shape to fit configuration

Instructional Videos

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Find the latest instructional sharpening stone videos on our youtube channel at https://nortonsga.us/kb542

Ideal for sales training and end-user self-study. Learn to efficiently use these sharpening products to maintain tools at peak performance and prolong their life – to make all your sharpening, honing, etc. applications easier.

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om Toll Free 1 800 563 1293



Relative Sharpening Comparisons for Norton Products

| Crystolon (Silicon Carbide); India (Aluminum Oxide) | Arkansas (Soft, Hard Translucent) | Diamond Stones | Waterstones | Coated Abr (Waterproo | Diamond Compound | |
|---|--------------------------------------|----------------------------|-------------|--------------------------|---------------------|--------|
| (maininain exite) | | | JIS | CAMI | FEPA | MICRON |
| | | | (Japan) | (USA) | (Europe) | Size |
| | | | , | . , | P100 | 141 |
| Coarse Crystolon | | | | | P120 | 127 |
| | | | | 120 | | 116 |
| Coarse India | | | | | P150 | 97 |
| | | | | 150 | | 93 |
| Medium Crystolon | | | | 180 | P180 | 78 |
| | | Extra Coarse Diamond (220) | Norton 220 | | P220 | 65 |
| | | | | 220 | | 60 |
| | | | | | P240 | 58 |
| Medium India | | | | 240 | | 53.5 |
| | | | | | P280 | 52.5 |
| | | | | | | 50 |
| | | | | | P320 | 46 |
| Fine Crystolon | | | | | | 45 |
| | | Coarse Diamond (325) | | 280 | | 43 |
| | | | | | P360 | 40.5 |
| | | | 360 | 320 | | 36 |
| Fine India | | | | | P400 | 35 |
| | | | | 360 | | 29 |
| | | | | | P600 | 25.8 |
| | | | | 400 | 1000 | 23 |
| | Soft Arkansas | Fine Diamond (600) | 600 | | P800 | 22 |
| | | | | | | 20 |
| | | | 800 | 600 | P1200 | 16 |
| | | | Norton 1000 | 700 | 11200 | 14 |
| | | | | 800 | P1500 | 12.6 |
| | | | 1200 | 000 | 11000 | 11 |
| | | | 1200 | | P2000 | 10.3 |
| | | | 1500 | 1000 | 1 2000 | 9.2 |
| | | | 1000 | 1000 | | 9 |
| | | | | 1500 | P2500 | 8.4 |
| | | | | 1000 | 12000 | 7.5 |
| | Hard Translucent Arkansas | | Norton 4000 | 2000 | | 6 |
| | | | | 2000 | | 5 |
| | | | Norton 8000 | | | 3 |
| | | | | | | 1.2 |
| | | | | | | 1.2 |
| | | | 15000 | | | 0.5 |
| | | | 10000 | | | 0.0 |

Benchstones



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Better choice for sharpening tools and knives

PRECISION BENCHSTONES

- Jewelers' Benchstones These stones are excellent for sharpening the fine, precision cutting tools used by jewelers, engravers and artisans
- Penknife Precision Benchstones Ideal for sharpening cutting tools, laboratory blades, surgical instruments, engravers' and die makers' tools, and pocket knives to the keenest edge

applifast.com

| | | TIER: | BETTER | |
|------------------------|---------------|--|------------|---------------------|
| SIZE (L x W x H) | QTY./ Case | SPEC. | PRODUCT # | PART # |
| Precision Bench | | | | FANI# |
| FIECISIUII DEIICII | Stolles - | JEMEICI2 | | |
| 4 x 2 x 3/8 | 5 | Ultra Fine – Hard Translucent Arkansas | HB24 | 614636 87525 |
| 6 x 2 x 3/8 | 5 | Ultra Fine – Hard Translucent Arkansas | HB26 | 614636 87530 |
| Jewelers' stones and | e packed in | n individual boxes within a case. Order in multiples of st | ones/case. | |
| Precision Bench | stones – | Penknife | | |
| 3 x 1 x 3/8 | 5 | Extra Fine – Soft Arkansas | SB13 | 614636 87560 |
| | | Ultra Fine – Hard Translucent Arkansas | HB13 | 614636 87550 |
| 4 x 1 x 3/8 | 5 | Extra Fine – Soft Arkansas | SB14 | 614636 87565 |
| | | Ultra Fine – Hard Translucent Arkansas | HB14 | 614636 87555 |
| | | | | |

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Benchstones continued



Better choice for edge shaping and honing

SINGLE GRIT ABRASIVE BENCHSTONES

- Crystolon sharp premium silicon carbide abrasive, delivers fast stock removal for quick edge shaping with minimal loading
- India smooth cutting aluminum oxide abrasive produces a strong, keen, long-lasting edge and is the choice for the best blend of cut rate and finish
- Arkansas Natural premium Novaculite quarried in Arkansas and available in Soft or Hard Translucent

| | | TIE | R: BETTER | |
|-----------------------------|---------------|----------------|--------------------|-----------------------|
| SIZE (L x W x H) | QTY./ Case | SPEC. | PRODUCT # | PART # |
| | | | | PARI # |
| Single Grit Benchsto | | | | |
| 4 x 1 x 1/4 | 5 | Coarse | CJB14 | 614636 85470 |
| | 5 | Medium | MJB14 | 614636 85465 |
| | 5 | Fine | FJB14 | 614636 85460 |
| | 5 V | Fine | FJB14-V | 662533 25915 + |
| 4 x 1 x 1/2 | 5 | Coarse | CJB24 | 614636 85485 |
| | 5 | Medium | MJB24 | 614636 85480 |
| | 5 | Fine | FJB24 | 614636 85475 |
| 5 x 2 x 5/8 | 5 | Medium | MJB35 | 614636 85495 |
| | 5 | Fine | FJB35 | 614636 85490 |
| 6 x 2 x 1 | 5 | Coarse | CJB6 | 614636 85510 |
| | 5 | Medium | MJB6 | 614636 85505 |
| | 5 | Fine | FJB6 | 614636 85500 |
| 8 x 2 x 1 | 5 | Coarse | CJB8 | 614636 85525 |
| | 5 | Medium | MJB8 | 614636 85520 |
| | 5 | Fine | FJB8 | 614636 85515 |
| 8 x 3 x 1/2 | 5 | Coarse | CJB83 | 614636 54459 * |
| | 5 | Medium | MJB83 | 614636 54458 * |
| | 5 | Fine | FJB83 | 614636 54457 * |
| 11-1/2 x 2-1/2 x 1/2 | 1 | Coarse | JM3 | 614636 85980 # |
| | 1 | Medium | JM6 | 61463685975# |
| Single Grit Benchsto | nes – Sof | t Arkansas | | |
| 4 x 2 x 3/4-1 | 5 | Extra Fine | SB4 | 614636 85670 |
| 6 x 2 x 3/4-1 | 5 | Extra Fine | SB6 | 614636 85675 |
| 8 x 2 x 3/4-1 | 5 | Extra Fine | SB8 | 614636 85680 |
| V Vandible Deelege | [| adiaa maabinaa | amall intra and as | union to tak alta |

V = Vendible Package. Ideal for vending machines, small jobs, and carrying to job site. Pre-packed in sturdy boxes of 5 per pack. Order by total number of stones needed in multiples of 5.

* May be used as replacement stone for IM-83 Sharpening System.

May be used as replacement stone for IM-313 Sharpening Stone System. These benchstones (except for 8 x 3 x 1/2 and vendibles) are packed in individual boxes within a case. Order in multiples of stones/case.

| | TIE | R: BETTER | |
|------------|--|--|--|
| QTY./ | 0050 | DDODUOT # | DADT # |
| | | | PART # |
| | • | | 01400005500 |
| | | | 614636 85580 |
| | | | 614636 85575 |
| | | | 614636 85570 |
| | | | 662533 25919 |
| 5 | | | 614636 85595 |
| 5 | | | 614636 85590 |
| | | | 614636 85585 |
| 5 | | | 614636 85605 |
| 5 | | | 614636 85600 |
| 5 | Coarse | CB6 | 614636 85620 |
| 5 | Medium | MB6 | 614636 85615 |
| | Fine | FB6 | 614636 85610 |
| | Coarse | CB8 | 614636 85635 |
| | Medium | MB8 | 614636 85630 |
| 5 | Fine | FB8 | 614636 85625 |
| 5 | Coarse | CB83 | 614636 54462 * |
| | Medium | MB83 | 614636 54461 * |
| 5 | Fine | FB83 | 614636 54460 * |
| 1 | Medium | IM6 | 614636 54214 # |
| 1 | Fine | IM9 | 614636 85970 # |
| ones – Har | d Translucent | Arkansas | |
| 5 | Ultra Fine | HB4 | 614636 85655 |
| 5 | Ultra Fine | HB6 | 614636 85660 |
| 5 | Ultra Fine | HB8 | 614636 85665 |
| 5 | Ultra Fine | HTB83 | 61463654464* |
| 1 | Ultra Fine | HM11 | 61463685965# |
| | CASÉ intervention of the second seco | QTY./ CASE SPEC. pnes - India (Aluminum f 5 Coarse 5 Medium 5 Fine 5 Coarse 5 Medium 5 Fine 1 Medium 1 Fine 1 Medium 1 Fine 5 Ultra Fine 5 Ultra Fine 5 Ultra Fine 5 Ultra Fine | QTY./ CASE SPEC. PRODUCT # 5 Coarse CB14 5 Medium MB14 5 Fine FB14 5 Fine FB14 5 Coarse CB24 5 Medium MB24 5 Fine FB24 5 Medium MB35 5 Fine FB24 5 Medium MB35 5 Fine FB35 5 Coarse CB8 5 Medium MB6 5 Fine FB8 5 Coarse CB8 5 Medium MB8 5 Fine FB8 5 Coarse CB83 5 Fine FB83 1 Medium MB83 5 Fine FB83 1 Fine IM9 mes Hard Translucent Arkansas 5 Ult |

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Benchstones continued



Better choice for economical solution for general sharpening and finishing with one stone

COMBINATION GRIT ABRASIVE BENCHSTONES

- · Crystolon Combination Coarse and fine grit sharp-cutting silicon carbide abrasive surfaces for general sharpening (to moderate tolerances) when the speed of sharpening is more important than the fineness of the cutting edges. Gray in color.
- India Combination Coarse and fine grit aluminum oxide abrasive surfaces produce strong, keen, long-lasting edges on quality tools. Orange/brown in color.
- Crystolon/India Combination Fast-sharpening, medium grit silicon carbide (Crystolon) and fine aluminum oxide (India) abrasive surfaces for keen, long-lasting edges on quality tools. Crystolon side is dark gray in color, India side is orange.
- · Giant Combination Stones 11-1/2" and 12" bench oil stones are used to sharpen large edge tools with long sweeping strokes.

Application-to-Product Recommendation Guide

| | FAST CUT STOCK REMOVAL | INITIAL SHARPENING | FINAL SHARPENING | HONING | SHARPEST EDGE |
|---------------|------------------------|--------------------|------------------|---------------|---------------|
| Grit Size | Coarse | Medium | Fine | Extra Fine | Ultra Fine |
| Abrasive | Crystolon | Crystolon | India | Soft Arkansas | Hard Arkansas |
| Product/Color | Grey | Grey | Orange | Milky White | Translucent |

| | | | TIER: | BETTER | |
|----------------------------|---------------|----------------------------------|-------|-----------|---------------------|
| SIZE (L x W x H) | QTY./ Case | SPEC. | | PRODUCT # | PART # |
| Combination Grit Be | enchstone | s – Crystolon (Silicon Carbide) | | | |
| 4 x 1 Round | 5 | Coarse/Fine | | JB64 | 614636 85435 |
| 4 x 1-3/4 x 5/8 | 5 | Coarse/Fine | | JB134 | 614636 85440 |
| 5 x 2 x 3/4 | 5 | Coarse/Fine | | JB45 | 614636 85445 |
| 6 x 2 x 1 | 5 | Coarse/Fine with Anniversary Box | | JB6 | 614636 85450 |
| 8 x 2 x 1 | 5 | Coarse/Fine with Anniversary Box | | JB8 | 614636 85455 |
| 11-1/2 x 2-1/2 x 1 | 2 | Coarse/Fine | | JUM3 | 614636 85840 |
| 12 x 2-1/2 x 1-1/2 | 2 | Coarse/Fine | | JUM4 | 614636 85855 |
| Combination Grit Be | enchstone | s – India (Aluminum Oxide) | | | |
| 4 x 1 Round | 5 | Coarse/Fine | | IB64 | 614636 85545 |
| 4 x 1-3/4 x 5/8 | 5 | Coarse/Fine | | IB134 | 614636 85550 |
| 5 x 2 x 3/4 | 5 | Coarse/Fine | | IB45 | 614636 85555 |
| 6 x 2 x 1 | 5 | Coarse/Fine with Anniversary Box | | IB6 | 614636 85560 |
| 8 x 2 x 1 | 5 | Coarse/Fine with Anniversary Box | | IB8 | 614636 85565 |
| 11-1/2 x 2-1/2 x 1 | 2 | Coarse/Fine | | IM2 | 614636 85851 |
| Combination Grit Be | enchstone | s – Crystolon/India | | | |
| 6 x 2 x 1 | 5 | Medium/Fine | | IC6 | 614636 85643 |
| 11-1/2 x 2 x 1 | 2 | Medium/Fine | | IC11 | 614636 87239 |



These benchstones are packed in individual boxes within a case. Order in multiples of stones/case.



Waterstones

Waterstones are synthetic stones designed to be softer than oil stones. These softer grade stones are used with water as the lubricant (versus oil) to develop a fast cutting slurry. The Norton Waterstone system was designed in a carefully planned sequence to create sharpening efficiency. You get the level of abrasiveness you need at each stage, without wasting time trying to sharpen your tools on a grit that is too fine, too soon.



Better choice for producing superior edges on planes and straight chisels

WATERSTONES

- · Synthetic stones designed to work together, with water for fast sharpening, fine finish
- · Softer than traditional oilstones providing lapping action for superb results with low pressure
- · Color-coded by grit: 220 grit for repairing badly damaged tools, 1000 grit for initial cut, 4000 grit for excellent finishing, and 8000 grit for polishing

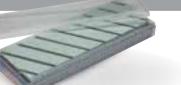
Better choice for raising slurry



PREP STONE

- This synthetic stone enhances the performance of waterstones by speeding up the slurry-making process needed to cut and polish with waterstones
- This prep stone is designed to raise the slurry on waterstones without significantly altering the dimensions of the stone
- · Waterstones are great for producing superior edges for planes and straight chisels





FLATTENING STONE

- · Coarse grit silicon carbide stone promotes fast results
- Diagonal grooves increase swarf removal
- · Superbly flat with hard bond to produce extremely flat surfaces on all waterstones

| | | | TIER: BETTER |
|--------------------|---------------|---|---------------------|
| SIZE (L x W x H) | QTY./ Case | SPEC. | PART # |
| Vaterstones – Sing | | | |
| 3x3x1 | 5 | 220 | 614636 89505 |
| | 5 | 1000 | 614636 89506 |
| | 5 | 4000 | 614636 89507 |
| | 5 | 8000 | 614636 89508 |
| Set | 1 | 4 Stones: 220, 1000, 4000, 8000 Grit | 614636 24334 |
| Vaterstones – Com | bination G | rit | |
| 3 x 3 x 1 | 5 | 220 / 1000 | 614636 24335 |
| | 5 | 1000 / 4000 | 614636 24450 |
| | 5 | 1000 / 8000 | 699366 55039 |
| | 5 | 4000 / 8000 | 614636 24336 |
| rep Stone | | | |
| 20mm x 20mm x 3" | 5 | Aluminum Oxide | 662434 39361 |
| Flattening Stone | | | |
| 9 x 3 x 3/4 | 5 | Silicon Carbide | 699366 87444 |
| Naterstone Kit | | | |
| V/A | 1 | Kit includes: 1-220/1000 and 1-4000/8000 waterstone, 1 flattening stone | 076607 87943 |

CH TIP

nizing Waterstone mance

- aterstone
- enly with the prep stone to create slurry
- g off the high spots will make for equent flattening of the waterstones
- tones wear concave with use; periodically with flattening stone

Waterstones are packed in individual boxes within a case. Order in multiples of stones/case.

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Instructional Videos

Distributed by Applifast.

Find the latest instructional waterstone and other sharpening stone videos on our youtube channel at YouTube https://nortonsga.us/kb542

Ideal for sales training and end-user self-study. Learn to efficiently use these sharpening products to maintain tools at peak performance and prolong their life - to make all your sharpening, honing, etc. applications easier.

applifast.com



Diamond Benchstones

Made in the USA, these benchstones have unique stackable non-skid rubber feet designed to keep the diamond plate steady while you sharpen, and efficiently stacked for space-saving storage when not in use. Our simple grit-size color-coding makes them easy to differentiate.



Better choice for producing superior edges on planes and straight chisels

STACKABLE DIAMOND BENCHSTONES

- Flat, diamond surface plated onto a nickel coated steel bar precision ground to a tolerance of .001 in. for fast, even blade and tool edge sharpening
- Continuous diamond sharpening surface for excellent sharpening performance across entire surface of stone
- · Choose 220 grit for badly worn tools, 325 for initial sharpening, 600 grit for final sharpening
- · Color-coded tabs on stones and packaging for easy identification of grit sizes for use and displaying
- · Stackable; the stones firmly stack on top of each other for easy, small-profile storage
- Non-skid rubber base stays in place while sharpening for smoother, efficient sharpening

TIER: BETTER Size with Rubber FEET QTY./ CASE SPEC. PART # Stackable Diamond Benchstones 6 2 × 1/4* 5 D220 66253268082 6 6 x 2 × 1/4* 5 D325 66253268081 6 6 6 2 × 1/4* 5 D300 66253268081 6 6 6 2 × 1/4* 5 D600 66253268080 6 6 5 0 6 5 0 6 5 0 6 5 0 6 5 0 6 5 0 6 5 0 6 5 0 6 5 0 6 5 0 6 5 0 6 5 0 6 5 2 6 6 5 0 6 5 0 0 6 5 0 6 5 0 6 5 0 6 5 0 6 5 0 0 0

Diamond benchstones are packed in individual boxes within a case. Order in multiples of stones/case.



6" stones come retail packaged

Sharpening Stone Oil



Better choice for improving sharpening stone performance

SHARPENING STONE OIL

- · Highly refined lubricating oil which is specifically formulated for sharpening stone use
- Will not load or "gum-up" sharpening stones, meets U.S. Pharmacopoeia standards for mineral oil purity; may be used around food preparation operations
- · Equally ideal for all lubricating jobs

| | | Th | ER: BETTER | | |
|------------------|---------------|-------|------------|---------------------|--|
| SIZE | QTY./ Case | SPEC. | PRODUCT # | PART # | |
| Sharpening State | Stone Oil | | | | |
| 4-1/2 oz. | 20 | Oil | XB1 | 614636 87760 | |
| 1 Pint | 20 | Oil | XB5 | 614636 87770 | |
| 1 Quart | 5 | Oil | XB2 | 614636 87775 | |
| 1 Gallon | 4 | Oil | XB6 | 662534 57631 | |
| | | | | | |

TECH TIP

- All oil stones are porous in nature; oil is required to keep the pores open and working efficiently
- Use Norton oil to optimize the performance of Crystolon, India and Arkansas stones
- While sharpening knives, blades and tools, be careful to keep fingers away from sharp edges



Sharpening Systems

Tri-Stone Systems

The base of the tri-stone system acts as an oil reservoir permitting continuous submersion of the unused stones, keeping them clean and saturated, ready for immediate use and years of utility. Rotating the handle brings the desired stone into position for sharpening. All offer a range of replacement stones to replace worn or damaged stones, or substitute different specifications to customize the system.



Better choice for large, straight-edged tool sharpening

IM313 MULTI-OILSTONE SHARPENING SYSTEM

- Considered by many to be the ultimate sharpening system, the IM313 contains three oil stones. The 11-1/2" stone length permits long, sweeping strokes for faster and more precise sharpening and honing of all large, wider straight-edged tools. The heavy base has a non-skid bottom.
- Coarse Crystolon stone quickly restores worn edges for general sharpening; medium Crystolon stone produces the average edge needed for most tools; and fine India stone hones for a sharper edge
- Each IM313 system is included with a pint of Norton oil, plastic angle guide, and reservoir unit



Better choice for a versatile, multi-size tool and knife sharpener

IM200 PROFESSIONAL SHARPENING SYSTEM

- The smaller 8" stone IM200 system provides the same quality sharpening features as the IM313 making it the
 perfect choice for small restaurants and home DIYers
- Coarse Crystolon stone quickly restores worn edges for general sharpening; medium Crystolon stone produces the average edge needed for most tools; and fine India stone hones for a sharper edge
- · Contains 4-1/2 oz. of lubricating oil, plastic angle guide, and the reservoir unit



Better choice for small straight-edged tool sharpening

IM100 3-IN-1 TOOL AND KNIFE SHARPENING SYSTEM

- The smallest system, designed for general sharpening, the IM100 is an affordable choice for small knives, cutlery, and woodworking tools
- Coarse Crystolon stone quickly restores worn edges for general sharpening; medium Crystolon stone produces the average edge needed for most tools; and fine India stone hones for a sharper edge
- 4-1/2 oz. of lubricating oil and a reservoir unit included

Portable Sharpening Systems



Better choice for all sharpening enthusiasts who carry their system with them

IM83 PORTABLE SHARPENING STONE SYSTEM

- Sturdy metal latches secure the cover and storage case where small tools can be housed. The IM83
 system is designed like all our other sharpening systems; the stones can be replaced to customize the unit to
 individual requirements
- · Ideal for industrial toolrooms, restaurants, knife manufacturers, DIYers, and sportsmen
- Both IM83 systems include 3 sharpening stones, and a reservoir carrying case; the oil stone system also
 includes 4-1/2 oz. oil
- IM83-W Portable Waterstone System Tool Repair to Fine Finishes This portable sharpening system is equipped with a carefully engineered sequence of waterstones for clean, efficient sharpening. The waterstones can easily be maintained with the flattening stone provided
- IM83-O Portable Oil Stone System Straight-Edged Tool Sharpening The coarse silicon carbide (Crystolon) stone in this system repairs damaged edges quickly; the medium aluminum oxide (India) stone imparts a durable, smooth cutting edge; and the fine aluminum oxide (India) stone provides the final sharpening and polishing stage

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Sharpening Systems continued

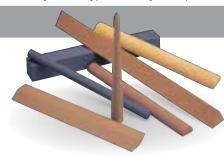
Portable Sharpening Systems continued

| | inig eyea | | TIER: BETTER | |
|---------------------------|-----------------|---|------------------------|---------------------|
| SIZE | QTY./ Case | SPEC. | PRODUCT # | PART # |
| IM313 Multi-Oilstone S | Sharpening Sy | stem | | |
| 11-1/2 x 2-1/2 x 1/2 | 1 | 1 Coarse Crystolon, 1 Medium Crystolon, and 1 Fine India Stone, 1 Pint Oil, Angle Guide, Reservoir Unit | IM313 | 614636 85960 |
| IM200 Professional Sh | arpening Syst | em | | |
| 8 x 2 x 3/8 | 1 | 1 Coarse Crystolon, 1 Medium Crystolon, and 1 Fine India Stone, 4-1/2 oz. Oil, Angle Guide, Reservoir Unit | IM200 | 614636 91260 |
| IM100 3-in-1 Tool and | Knife Sharpen | ing System | | |
| 6 x 2 x 1/2 | 1 | 1 Coarse Crystolon, 1 Medium Crystolon, and 1 Fine India Stone, 4-1/2 oz. Oil, Reservoir Unit | IM100 | 614636 85356 |
| IM83 Portable Systems | 5 | | | |
| 8 x 3 x 1/2 | 1 | Oilstones: 1 Coarse Crystolon, 1 Medium India, 1 Fine India, 4-1/2 oz. Oil, Reservoir Carrying Ca | se IM83-0 | 662435 82823 |
| 8 x 3 x 1 | 1 | Waterstones: 1 ea. of 1000, 4000, 8000 Grit, 1 Flattening Stone, Reservoir Carrying Case | IM83-W | 662435 82825 |
| For sharpening system rep | lacement stones | s: see single grit benchstone charts, or your Norton representative for replacement stones and parts w | hich mav be used as ri | eplacements or to |

our Norton representative for rep. acement stones and parts which may be used as rep customize your system.

Abrasive Files

Norton abrasive files hold their shape while imparting the finest, most uniform finish on precision machine parts and in tool and die making. They are ideal for any deburring, chamfering or radiusing job, or for filing delicate parts. Select the file shape that matches the contour of the surface being stoned.



Better choice for any deburring, chamfering or radiusing job, or for filing delicate parts

ABRASIVE FILES

- · Crystolon Files Fast-acting silicon carbide products, Crystolon files are designed for use where moderate tolerances are acceptable, and speed of sharpening is more important than fineness
- India Files India files are ideal when close tolerance, and strong, keen, long-lasting edges are needed
- Hard Translucent Arkansas Files Hard Arkansas has an ultra fine grit that produces the finest edge possible while maintaining tolerances unequalled by any other abrasive file. It will also produce a highly polished finish

Square Abrasive Files

Square File applications range from dimensioning keyways to maintain fit, stoning faces on router bits, touching-up edges of reamer teeth, and lapping/honing to close tolerances to produce the finest edge on precision instruments, die work and delicate tools.



| | | Ti | ER: BETTER | |
|---------------------|---------------|------------------|-------------|---------------------|
| SIZE (L x H) | QTY./ Case | SPEC. | PRODUCT # | PART # |
| Square Abras | ive Files – (| Crystolon (Silic | on Carbide) | |
| 4 x 1/2 | 5 | Medium | MJF44 | 614636 86045 |
| | 5 | Fine | FJF44 | 614636 86040 |
| Square Abras | ive Files – I | Hard Transluce | nt Arkansas | |
| 3 x 1/4 | 5 | Ultra Fine | HF13 | 614636 86590 |
| 3 x 3/8 | 5 | Ultra Fine | HF33 | 614636 86595 |
| 3 x 1/2 | 5 | Ultra Fine | HF43 | 614636 86600 |
| All square files | are bulk pack | ed | | |

All square files are bulk packed

Distrib

| | | T | IER: BETTER | |
|---------------|---------------|----------------|-------------|---------------------|
| SIZE (L x H) | QTY./ Case | SPEC. | PRODUCT # | PART # |
| Square Abrasi | ve Files – I | ndia (Aluminui | n Oxide) | |
| 4 x 1/4 | 5 | Coarse | CF14 | 614636 86075 |
| | 5 | Medium | MF14 | 614636 86070 |
| | 5 | Fine | FF14 | 614636 86065 |
| 4 x 3/8 | 5 | Coarse | CF34 | 614636 86090 |
| | 5 | Medium | MF34 | 614636 86085 |
| | 5 | Fine | FF34 | 614636 86080 |
| 4 x 1/2 | 5 | Coarse | CF44 | 614636 86105 |
| | 5 | Medium | MF44 | 614636 86100 |
| | 5 V | Medium | MF44-V | 662533 25913 |
| | 5 | Fine | FF44 | 614636 86095 |
| 6 x 1/2 | 5 | Coarse | CF46 | 614636 86120 |
| | 5 | Medium | MF46 | 614636 86115 |
| | 5 | Fine | FF46 | 614636 86110 |
| 6 x 5/8 | 5 | Medium | MF56 | 614636 86130 |
| | 5 | Fine | FF56 | 614636 86125 |
| 6 x 3/4 | 5 | Coarse | CF66 | 614636 86150 |
| | 5 | Medium | MF66 | 614636 86145 |
| | 5 | Fine | FF66 | 614636 86140 |
| 6 x 1 | 5 | Coarse | CF76 | 614636 86165 |
| | 5 | Medium | MF76 | 614636 86160 |
| | 5 | Fine | FF76 | 614636 86155 |
| | | | | |

V = Vendible Package. Ideal for vending machines, small jobs, and carrying to job site. Pre-packed in sturdy boxes of 5 per pack. Order by total number of stones needed in multiples of 5.



Abrasive Files continued

Triangular Abrasive Files

Triangular Files are used for a variety of deburring, chamfering and radiusing applications including cleaning tap threads, stoning cutting surfaces of milling cutters, lapping honing tools, dies and molds, and putting precision points on center punches.

The India line also offers Tapered Triangles, used by mechanics and tool and die makers to impart the correct edge in the least time.



| | | Ti | ER: BETTER | |
|----------------------|------------------|------------------|-----------------|---------------------|
| | QTY./ | | | |
| SIZE (L x H) | CASE | SPEC. | PRODUCT # | PART # |
| Triangular Ab | rasive Files | s – Crystolon (S | ilicon Carbide) | |
| 4 x 1/4 | 5 | Fine | FJF114 | 614636 86185 |
| 4 x 1/2 | 5 | Fine | FJF144 | 614636 86205 |
| Triangular Ab | rasive Files | s – Hard Translu | icent Arkansas | |
| 3 x 1/4 | 5 | Ultra Fine | HF113 | 614636 86620 |
| 3 x 3/8 | 5 | Ultra Fine | HF133 | 614636 86625 |
| 3 x 1/2 | 5 | Ultra Fine | HF143 | 614636 86630 |
| All Trianaular fi | laa aya huullu m | a alva d | | |

All Triangular files are bulk packed

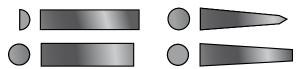
Round Abrasive Files

Half Round Files offer both a round and a flat surface for imparting a fine finish on precision machine parts, tools and dies.

Round Files are ideal for deburring, chamfering, radiusing, lapping, honing, cleaning radius tools to a burr-free edge, and dimensioning compound curves on templates.

Round Pointed Files are ideally suited for engravers and die sinkers for stoning difficult recesses on instruments and die tools.

Round Tapered Files are used by craftsmen, woodworkers, and die makers as their unique shape imparts the correct edge quickly.



| | | 7 | IER: BETTER | |
|---------------|---------------|-----------------|-------------|---------------------|
| SIZE (L x D) | QTY./ Case | SPEC. | PRODUCT # | PART # |
| Half Round Ab | rasive File | s – India (Alum | inum Oxide) | |
| 4 x 1/4 | 5 | Medium | MF314 | 614636 86355 |
| | 5 | Fine | FF314 | 614636 86350 |
| 4 x 3/8 | 5 | Medium | MF334 | 614636 86385 |
| | 5 | Fine | FF334 | 614636 86380 |
| 4 x 1/2 | 5 | Coarse | CF344 | 614636 86405 |
| | 5 | Medium | MF344 | 614636 86400 |
| | 5 | Fine | FF344 | 614636 86395 |

All Half-Round and Round files are bulk packed

PRECISION OFFHAND/PORTABLE Sharpening Stones

| | OTV / | 1 | ER: BETTER | |
|----------------|---------------|-----------------|-------------------|---------------------|
| SIZE (L x H) | QTY./ Case | SPEC. | PRODUCT # | PART # |
| Triangular Ab | asive Files | - India (Alumi | num Oxide) | |
| 4 x 1/4 | 5 | Coarse | CF114 | 614636 86240 |
| | 5 | Medium | MF114 | 614636 86235 |
| | 5 | Fine | FF114 | 614636 86230 |
| 4 x 3/8 | 5 | Coarse | CF134 | 614636 86255 |
| | 5 | Medium | MF134 | 614636 86250 |
| | 5 | Fine | FF134 | 614636 86245 |
| 4 x 1/2 | 5 | Coarse | CF144 | 614636 86270 |
| | 5 | Medium | MF144 | 614636 86265 |
| | 5 | Fine | FF144 | 614636 86260 |
| 6 x 1/2 | 5 | Coarse | CF146 | 614636 86285 |
| | 5 | Medium | MF146 | 614636 86280 |
| | 5 | Fine | FF146 | 614636 86275 |
| 6 x 5/8 | 5 | Medium | MF156 | 614636 86295 |
| | 5 | Fine | FF156 | 614636 86290 |
| 6 x 3/4 | 5 | Medium | MF166 | 614636 86310 |
| | 5 | Fine | FF166 | 614636 86305 |
| 6 x 1 | 5 | Medium | MF176 | 614636 86325 |
| | 5 | Fine | FF176 | 614636 86320 |
| Triangular Tap | ered Abras | ive Files – Ind | ia (Aluminum Oxid | e) |
| 4 x 1/2 x 1/4 | 5 | Medium | MF544 | 61463686685 |
| | 5 | Fine | FF544 | 61463686680 |

| | | TIER: | BETTER | |
|----------------------|---------------|---------------------|----------------|---------------------|
| SIZE (L x D) | QTY./ Case | SPEC. | PRODUCT # | PART # |
| Round Abrasive | Files – C | rystolon (Silicon C | arbide) | |
| 4 x 1/4 | 5 | Medium | MJF214 | 614636 86430 |
| | 5 | Fine | FJF214 | 614636 86425 |
| 4 x 3/8 | 5 | Medium | MJF234 | 614636 86440 |
| Round Abrasive | Files – II | ndia (Aluminum Ox | ide) | |
| 4 x 1/4 | 5 | Coarse | CF214 | 614636 86480 |
| | 5 | Medium | MF214 | 614636 86475 |
| | 5 | Fine | FF214 | 614636 86470 |
| 4 x 3/8 | 5 | Coarse | CF234 | 614636 86495 |
| | 5 | Medium | MF234 | 614636 86490 |
| | 5 | Fine | FF234 | 614636 86485 |
| 4 x 1/2 | 5 | Coarse | CF244 | 614636 86510 |
| | 5 | Medium | MF244 | 614636 86505 |
| | 5 | Fine | FF244 | 614636 86500 |
| 6 x 1/2 | 5 | Coarse | CF246 | 614636 86525 |
| | 5 | Medium | MF246 | 614636 86520 |
| | 5 | Fine | FF246 | 614636 86515 |
| 6 x 5/8 | 5 | Medium | MF256 | 614636 86535 |
| 6 x 3/4 | 5 | Medium | MF266 | 614636 86550 |
| 6 x 1 | 5 | Medium | MF276 | 614636 86565 |
| Round Abrasive | Files – H | ard Translucent A | kansas | |
| 3 x 1/4 | 5 | Ultra Fine | HF813 | 614636 86800 |
| Round Pointed | Abrasive | Files – India (Alum | inum Oxide) | |
| 3 x 5/16 Base | 5 | Coarse | CF723 | 614636 86750 |
| | 5 | Medium | MF723 | 614636 86745 |
| | 5 | Fine | FF723 | 614636 86740 |
| Round Pointed | Abrasive | Files – Hard Transl | ucent Arkansas | |
| 3 x 1/4 Base | 5 | Ultra Fine | HF863 | 614636 86825 |
| Round Tapered | Abrasive | Files – India (Alun | inum Oxide) | |
| 4 x 1/2 x 1/4 | 5 | Coarse | CF644 | 614636 86660 |
| | 5 5 | Medium | MF644 | 614636 86655 |
| | | | | |

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Abrasive Files *continued*

Diamond-Shaped Abrasive Files

Diamond-shaped Files are precision sharpening favorites for cleaning acute angles in dies and molds, and for stoning geometric chasers and sewing machine feeds.



| | | TIER: | BETTER | |
|-----------------------|----------------|---------------------|-----------------|---------------------|
| | QTY./ | | | |
| SIZE (L x W x H) | CASE | SPEC. | PRODUCT # | PART # |
| Diamond-Shaped | d Abrasive | e Files – India (Al | uminum Oxide) | |
| 4 x 9/16 x 3/16 | 5 | Coarse | CT134 | 614636 86720 |
| | 5 | Medium | MT134 | 614636 86715 |
| | 5 | Fine | FT134 | 614636 86710 |
| Diamond-Shaped | d Abrasive | e File – Hard Tran | slucent Arkansa | s |
| 3 x 1/2 x 3/16 | 5 | Ultra Fine | HF843 | 614636 86815 |
| All Diamond-shape | ed files are l | bulk packed | | |

Beveled Abrasive Files

Beveled Files are preferred by exacting artisans, jewelers, mechanics, and watchmakers for honing the finest of finishes. These extremely hard files provide years of service.



| | | Ti | ER: BETTER | |
|-----------------------|--------------|----------------|-------------|---------------------|
| | QTY./ | | | |
| SIZE (L x W x H) | CASE | SPEC. | PRODUCT # | PART # |
| Beveled Abrasi | ive File – I | Hard Transluce | nt Arkansas | |
| 3 x 3/8 x 1/8 | 5 | Ultra Fine | HF833 | 614636 86810 |
| All Revolad files | are hulk nac | ked | | |

All Beveled files are bulk packed

Flat Abrasive Files

The Flat File is the choice of mechanics, artisans and jewelers. This long lasting file produces the finest finishes.



| | | 7 | IER: BETTER | |
|-----------------------|---------------|-----------------|-------------|---------------------|
| SIZE (L x W x H) | QTY./ Case | SPEC. | PRODUCT # | PART # |
| Flat Abrasive F | ile – Har | d Translucent A | Arkansas | |
| 3 x 3/8 x 1/8 | 5 | Ultra Fine | HF823 | 614636 86805 |
| All Flat files are bu | ulk packed | | | |

Oval Abrasive Files

The Oval File's shape makes it ideal for finishing and honing recesses or curved edges of precision instruments.



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| | | T | IER: BETTER | |
|------------------------|---------------|-----------------|-------------|---------------------|
| SIZE (L x W x H) | QTY./ Case | SPEC. | PRODUCT # | PART # |
| Oval Abrasive F | ile – Har | d Translucent A | rkansas | |
| 3 x 1/2 x 3/16 | 5 | Ultra Fine | HF853 | 614636 86820 |
| All Oval files are b | ulk packed | 1 | | |

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Knife Blade Abrasive Files

Knife Blade Files are used by clock and watch makers to quickly sharpen, hone, and maintain the edges and points of cutting tools.



| | | | TIER: BETTER | |
|----------------------|------------|-----------------|-----------------|---------------------|
| | QTY./ | 0050 | | |
| SIZE (L x W x H) | CASE | SPEC. | PRODUCT # | PART # |
| Knife Blade Abr | asive File | es – India (Alu | minum Oxide) | |
| 4 x 1 x 1/8 Back | 5 | Coarse | CF724 | 614636 86780 |
| | 5 | Medium | MF724 | 614636 86775 |
| | 5 | Fine | FF724 | 614636 86770 |
| Knife Blade Abr | asive File | e – Hard Trans | lucent Arkansas | |
| 3 x 3/4 x 1/8 | 5 | Ultra Fine | HF873 | 614636 86830 |
| All Knife Blade file | s are bulk | packed | | |

Abrasive File Sets

Hard Translucent Arkansas File Set

This set provides a selection of our most popular square, triangular, round and knife blade files in ultra fine Hard Translucent Arkansas for honing and polishing a wide range of configurations.

Hard Translucent Arkansas-India File Set

This set contains an assortment of files for finishing, honing and polishing applications. It contains a selection of the most popular square, triangular, round and knife blade files in both fine grit India and ultra fine grit Hard Translucent Arkansas.



| | TIER: | BETTER | |
|-----------------------------|---------------------------|-------------------|---------------------|
| QTY Size (L x W x H) Cas | | PRODUCT # | PART # |
| File Set – Hard Trans | | PRODUCI # | FANT# |
| 1 | | | 614636 86839 |
| 1 Each of Ultra Fine Harc | l Arkansas HF13, HF113, I | HF813, and HF873 | |
| File Set - Hard Trans | lucent Arkansas and l | ndia (Aluminum (| Dxide) |
| 1 | | | 614636 86840 |
| 1 Each of Ultra Fine Hard | I Arkansas HF13, HF43, H | F113, HF813, HF87 | 73, |

1 Each of Ultra Fine Hard Arkansas HF13, HF43, HF113, HF813, HF873, and Fine India FF14, FF44, FF114, FF214, FF724

See the "Norton Professional Sharpening Products and Dressing Sticks Catalog #200" on www.nortonabrasives.com to view the complete list and descriptions of our many sharpening products.



Abrasive Files continued

Engravers' Chuck & Points

Engravers' Points are the choice of professional die-makers for cleaning tight corners and recesses where close tolerances and accuracy are a must. The Engravers' Chuck is a knurled nickel-plated tool designed to hold the Engravers' Point.

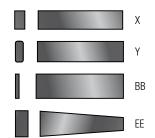
| | | | TIER: BETTER | | |
|---------------------------------------|---------------|------------|--------------|---------------------|-----------|
| SIZE (L x POINT) | QTY./ Case | SPEC. | PRODUCT # | PART # | ********* |
| Engravers' Chuck | | | | | |
| Engravers' Chuck | 5 | | XT1 | 614636 87485 | |
| Engravers' Point – India (Aluminum Ox | (ide) | | | | |
| 1 x 1/8 Point | 5 | Fine | FT11 | 614636 87495 | |
| Engravers' Point – Soft Arkansas | | | | | |
| 1 x 1/8 Point | 5 | Extra Fine | AT11 | 614636 87490 | |
| | | | | | |

All Engravers' Chucks and Points are bulk packed.

Silversmith Precision Files

These aluminum oxide precision-shaped stones are designed for use by silversmiths and mechanics for close tolerance lapping, touching-up instruments, and for cleaning tools and dies.

| | | | TIER: BETTER | |
|-------------------------------------|----------------|--------|--------------|---------------------|
| | QTY./ | | | |
| SIZE | CASE | SPEC. | PRODUCT # | PART # |
| Silversmith Precision Files - India | (Aluminum Oxid | e) | | |
| 4 x 5/16 x 3/16 x 5/16 x 1/16 - X | 5 | Medium | MF414 | 614636 86855 |
| | 5 | Fine | FF414 | 614636 86850 |
| 4 x 3/8 x 3/16 x 1/8 x 1/16 - Y | 5 | Fine | FF424 | 614636 86910 |
| 4 x 1/2 x 1/16 - BB | 5 | Coarse | CF444 | 614636 86965 |
| | 5 | Medium | MF444 | 614636 86960 |
| | 5 | Fine | FF444 | 614636 86955 |
| 4 x 1/2 x 1/4 x 5/16 x 1/8 - EE | 5 | Medium | MF474 | 614636 87005 |
| | 5 | Fine | FF474 | 614636 87000 |



All Silversmith Precision Files are bulk packed.

Pocket Stones



Better choice for outdoor enthusiasts

POCKET STONES

- · Convenient and easily transported
- · Ideal for outdoor enthusiasts to sharpen scissors, knives, axes, etc.
- · Available in a protective case

| | | TIE | R: BETTER | |
|--|----------------|-------------------|-----------|---------------------|
| SIZE (L x W x H) | QTY./ Case | SPEC. | PRODUCT # | PART # |
| Sportsman Pocket Stone – India (Alumi | inum Oxide) | | | |
| 3 x 1-1/2 x 1/2 | 50 | Coarse/Fine | IBP4 | 614636 90705 |
| Pocket Stone – India (Aluminum Oxide) | | | | |
| 4 x 3/4 x 1/4 | 25 | Fine | IBP4 | 614636 24153 |
| Pocket Stone with Case – India (Alumiı | num Oxide) | | | |
| 3 x 7/8 x 3/8 with case | 50 | Fine | FBP3 | 614636 91122 |
| Pocket Stone with Case – Crystolon (Si | ilicon Carbide |) | | |
| 3 x 7/8 x 3/8 with case | 50 | Fine | JP14 | 614636 90703 |
| Pocket Stone with Case – Soft Arkansa | IS | | | |
| 4 x 1 x 3/4 with case; in retail package | 5 | Extra Fine | | 662531 42544 |
| Fish Hook Stone With Pouch – Crystolo | n Half-Round | (Silicon Carbide) | | |
| 3 x 1/2 with pouch | 50 | Fine | | 614636 24072 |

All Pocket Stones except 66253142544 are bulk packed.

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Abrasive Slips



Better choice for imparting fine, uniform finishes

ABRASIVE SLIPS

- Norton abrasive slips impart the finest, most uniform finishes on curved knives and tools, molders' knives, wood gouges, bead planers, and carbide—tipped tools
- The Crystolon and India stones are designed for preliminary sharpening; the Norton Hard Translucent Arkansas stones are the choice for achieving the finest finish possible
- These fast-acting slips hold their shape and are long lasting

Carbide Tool Slips

Crystolon (silicon carbide) Slips are used to maintain the edge of carbide tools – keeping regrinding costs and time to an absolute minimum. Not oil-filled.

Round Edge Slips

Round Edge Slips are ideal for precision sharpening and honing of bead planers, curved knives and tools, molders' knives and wood gouges.





| | | TIEF | E BETTER | |
|--------------------------------|----------------|-----------------------|-----------|---------------------|
| SIZE | QTY./ Case | SPEC. | PRODUCT # | PART # |
| Carbide Tool Slips – Crystolo | | | | |
| 3-1/2 x 3/4 x 1/2 | 5 | Coarse | CJT63 | 614636 87295 |
| 5 1/2 × 6/ 1 × 1/2 | 5 | Medium | MJT63 | 614636 87290 |
| | 5 | Fine | FJT63 | 614636 87285 |
| Set of Three Above | 5 | Coarse, Medium & Fine | J63 | 614636 87300 |
| Carbide Tool Slips – India (Al | uminum Axide | , | 000 | 01100001000 |
| 2-1/4 x 7/8 x 3/16 | 5 | Medium | MS12 | 614636 87215 |
| Round Edge Slips – Crystolon | (Silicon Carbi | | more | 01100001210 |
| 4-1/2 x 1-3/4 x 1/4 x 3/32 | 5 | Medium | MJS24 | 614636 87080 |
| 1 1/2 / 1 0/7 / 1/7 / 0/02 | 5 | Fine | FJS24 | 614636 87075 |
| 4-1/2 x 1-3/4 x 1/2 x 3/16 | 5 | Coarse | CJS44 | 614636 87100 |
| , 0,, 0, . 0 | 5 | Medium | MJS44 | 614636 87095 |
| | 5 | Fine | FJS44 | 614636 87090 |
| 6 x 2-1/4 x 3/4 x 3/8 | 5 | Medium | MJS66 | 614636 87110 |
| | 5 | Fine | FJS66 | 614636 87105 |
| Round Edge Slips – India (Alu | minum Oxide) | | | |
| 4 x 1 x 7/16 x 3/16 | 5 | Medium | MS14 | 614636 87140 |
| ,, - | 5 | Fine | FS14 | 61463687135 |
| 4-1/2 x 1-3/4 x 1/4 x 3/32 | 5 | Coarse | CS24 | 61463687155 |
| | 5 | Medium | MS24 | 614636 87150 |
| | 5 | Fine | FS24 | 61463687145 |
| 4-1/2 x 1-3/4 x 3/8 x 1/8 | 5 | Coarse | CS34 | 614636 87170 |
| | 5 | Medium | MS34 | 614636 87165 |
| | 5 | Fine | FS34 | 614636 87160 |
| 4-1/2 x 1-3/4 x 1/2 x 3/16 | 5 | Coarse | CS44 | 614636 87185 |
| | 5 | Medium | MS44 | 614636 87180 |
| | 5 | Fine | FS44 | 614636 87175 |
| 5 x 1 x 5/16 x 3/32 | 5 | Medium | MS15 | 614636 87195 |
| | 5 | Fine | FS15 | 614636 87190 |
| Round Edge Slips – Soft Arka | nsas | | | |
| 4 x 1-3/4 x 3/8 x 1/8 | 5 | Extra Fine | SS4 | 614636 87055 |
| Round Edge Slips – Hard Tran | slucent Arkans | sas | | |
| 3 x 1-3/4 x 1/4 x 1/16 | 5 | Ultra Fine | HS3 | 614636 87040 |
| 4 x 1-1/4 x 1/4 x 1/8 | 5 | Ultra Fine | HS14 | 614636 87050 |
| 4 x 1-3/4 x 3/8 x 1/8 | 5 | Ultra Fine | HS4 | 614636 87045 |
| A# 0# 1 # 1 1 | | | | |

All Slips are bulk packed.



Specialty Stones



Better choice for specific sharpening or deburring applications

SPECIALTY STONES

 Norton continues to offer specialty stones with optimum specifications and unique shapes that conform to, and quickly sharpen, specific tools

Specialty Stones for Machine Tools

Gouge Sharpening Stone

This stone has a unique shape for sharpening and lapping inside and outside curved surfaces on gouges and other cutting tools.

Jointer Stones

These stones provide a fast method of restoring and maintaining the cutting edges of mechanical jointing devides on automatic planers.

Machine Knife Stone

Crystolon (silicon carbide) machine knife stones offer both coarse and fine sides for sharpening and honing paper and cloth-cutting knives and planer knives on the machine. The groove around the middle of the stone protects fingers and provides a secure hold.

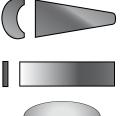
Reamer Stones

Durable, fast-cutting stones designed for imparting a professional edge on reamers, taps, and rough rounders on shoe machine tools.

Boat Stones

Boat Stones are medium grit, medium grade stones that are easy to hold and use. Excellent for deburring and breaking sharp edges on dies, fixtures and machined parts, and for deburring grinder magnetic chucks.

| | | TL | ER: BETTER | |
|---|---------------|------------------------|-----------------------|---------------------|
| SIZE | QTY./ Case | SPEC. | PRODUCT # | PART # |
| Gouge Sharpening Stone – India (Alumi | | 51 20. | | |
| 6 x 2 x 1 x 1/2 x 3/8 | 5 | Fine | FS76 | 614636 87305 |
| Jointer Stones | | | | |
| 4 x 3/4 x 3/8 – Crystolon (Silicon Carbide) | 5 | Medium | JE74 | 614636 87335 |
| 4 x 3/4 x 3/8 – India (Aluminum Oxide) | 5 | Coarse | IE74 | 614636 87375 |
| Machine Knife Stone – Crystolon (Silico | on Carbide) | | | |
| 4" Diam. x 1-1/2" Thick | 5 | Coarse/Fine | JB74 | 614636 87570 |
| Reamer Stones – India (Aluminum Oxide | e) | | | |
| 4-1/2 x 1 x 5/16 | 10 | Medium | MT124 | 614636 87420 |
| | 10 | Fine | FT124 | 614636 87415 |
| 5 x 1 x 3/16 | 10 | Medium | MT125 | 614636 87430 |
| | 10 | Fine | FT125 | 614636 87425 |
| 6 x 1 x 1/4 | 10 | Medium | MT126 | 614636 87440 |
| | 10 | Fine | FT126 | 614636 87435 |
| Boat Stone – Crystolon (Silicon Carbide |) | | | |
| 9 x 2-1/2 x 1-1/2 | 10 | 37C80-HV | | 614636 10369 |
| Boat Stone – India (Aluminum Oxide) | | | | |
| 9 x 2-1/2 x 1-1/2 | 10 | 38A60-IVBE | | 614636 10503 |
| Boat and Reamer Stones are bulk packed. All t | hese other Sp | ecialty Stones are pac | cked in individual bo | xes within a case. |





Large Specialty Stones

Tradesmen's Utility Stones

Distributed by Applifast

Used for sharpening trimming knives and as an abrasive file in many different industries. The JT910 does not have a handle, while the JT920 and JT930 have wooden handles.

Sickle and Scythe Stones

These silicon carbide stones quickly produce a fast-cutting edge on sickles, scythes, and brush hooks. These stones are most frequently chosen where the speed of sharpening is the primary consideration.

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| | | T | ER: BETTER | |
|--|------------|-------------|------------|---------------------|
| | QTY./ | | | |
| SIZE | CASE | SPEC. | PRODUCT # | PART # |
| Tradesmen's Utility Stones - Crystolon (| Silicon Ca | rbide) | | |
| 10 x 1-1/4 x 3/4 | 10 | Medium | JT910 | 614636 87665 |
| 14-3/4 Overall (with Handle) | 10 | Coarse/Fine | JT930 | 614636 87675 |
| | 10 | Medium | JT920 | 614636 87670 |
| Sycle and Scythe Stones | | | | |
| 10 x 1-1/4 x 3/4 Crystolon (Silicon Carbide) | 10 | Coarse | TJ3 | 614636 87731 |
| 10 x 1-5/16 x 3/4 India (Aluminum Oxide) | 10 | Coarse | TD1 | 614636 87715 |
| Utility File - Crystolon (Silicon Carbide) | | | | |
| 14 Overall (w/ Handle) | 10 | Coarse | JD2 | 614636 87750 |
| All Large Specialty Stones are bulk packed. | | | | |

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Utility File

A long wedge-shaped stone with four flat sides designed for sharpening coarse cutting edges on cutting implements and edged garden tools. Wooden handles make them easy to use. They will outlast and out-sharpen metal files.

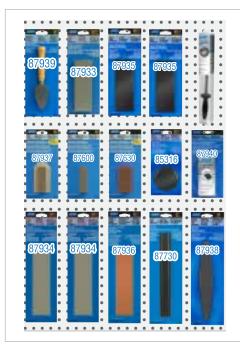


Toll Free 1 800 563 1293



Retail Packaged Sharpening Products

Our retail-packaged line brings Norton quality to your distributor showroom, vending machine, tool crib, and your tool box. Each stone is specifically designed for a popular sharpening application and packaged to sell or carry to the job site.





Distributed by Applifast.

| | | TIER: | BETTER |
|---|---|-------|---------------------|
| 617E /I. v. W. v. U\ | ODE0 | QTY./ | DADT # |
| SIZE (L x W x H) | SPEC. | CASE | PART # |
| Axe and Hatchet Sharpe 3 x 5/8 round | Coarse/Fine Crystolon (Silicon Carbide) | 10 | 076607 85316 |
| Pocket Knife Sharpener | | 10 | 0/000/03310 |
| 3 x 7/8 x 3/8 | Fine Crystolon (Silicon Carbide) | 5 | 076607 87600 |
| 3 x 7/8 x 3/8 with case | Medium India (Aluminum Oxide) | 5 | 07660787937 |
| 3 x 1-1/2 x 1/2 with case | Coarse/Fine India (Aluminum Oxide) | 5 | 07660787630 |
| Economy Tool & Knife B | | 0 | 01000101000 |
| 6 x 2 x 3/4 | Coarse/Fine Crystolon (Silicon Carbide) | 5 | 07660787933 |
| 8 x 2 x 3/4 | Coarse/Fine India (Aluminum Oxide) | 10 | 07660787934 |
| 8x2x1 | Coarse/Fine India (Aluminum Oxide) | 10 | 614636 85755 |
| High Quality Tool & Knif | | 10 | 01100000100 |
| 6 x 2 x 3/4 | Coarse/Fine Crystolon (Silicon Carbide) | 5 | 07660787935 |
| Chisel & Planer Blade S | | 0 | 01000101000 |
| 8 x 2 x 3/4 | Coarse/Fine India (Aluminum Oxide) | 10 | 076607 87936 |
| Household Knife & Tool | , | 10 | |
| 7-1/2 | Fine Crystolon (Silicon Carbide) | 5 | 07660787939 |
| Farm Tool Sharpener | | U | 01000101000 |
| 10 x 1-1/4 x 3/4 | Coarse Crystolon (Silicon Carbide) | 10 | 076607 87730 |
| Lawn & Garden Tool Sha | | | |
| 9-1/2 x 1-3/8 x 1/2 | Medium Crystolon (Silicon Carbide) | 10 | 076607 87938 |
| Sharpening Stone Oil | | | |
| 4-1/2 oz. | Oil | 5 | 076607 87940 |
| Sharpening Steel | | | - |
| 1/2 x 10 | Round file with rubber handle | 8 | 662532 40433 |
| Vitrified Dressing Stick | | | |
| 1x1x6 | Medium Silicon Carbide | 5 | 076607 10466 |
| | | | |

Knife and Scissor Sharpener

The knife and scissor mechanical sharpener is a quick and portable tool for hundreds of sharpening applications.

| SPECIFICATION | QTY./ Case | PART # |
|-----------------------------|---------------|---------------------|
| Knife and Scissor Sharpener | | |
| Carbide | 6 | 076607 87520 |

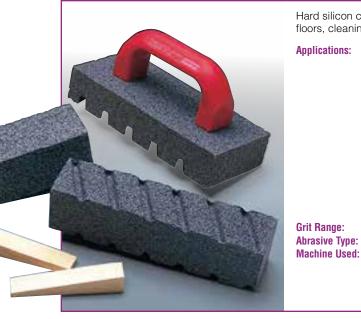
Norton Professional Sharpening Products and Dressing Sticks

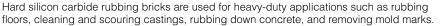
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See the "Norton Professional Sharpening Products and Dressing Sticks Catalog #200" on www.nortonabrasives.com to view the complete list and descriptions of our many sharpening products.



PRECISION OFFHAND/PORTABLE **Rubbing Bricks**





Applications:

Floor Rubbing Bricks – are used to rub down concrete and remove mold marks. These are designed to fit the chucks of common concrete floor grinding equipment. Reusable wooden wedges anchor the bricks to the equipment chucks.

Plain Hand Rubbing Bricks – are the choice of mechanics and foundry workers for dressing grinding wheels and cleaning or scouring castings.

Fluted Hand Rubbing Bricks - are used by masons and stone workers for rubbing down concrete and removing mold marks. The diagonal flutes provide sharp edges, a clean shearing action, and carry away debris.

Fluted Hand Rubbing Bricks with Handle – make quick work of removing mold marks and rubbing down concrete. The firmly attached handle reduces fatigue and facilitates overhead, wall, and floor work.

Griddle Bricks - quickly clean away carbon build-up and other residue on your grill without leaving fibers, which grill brushes often do.

6-120 Silicon Carbide



ELECTRIC FLOOR STRIPPER













| SIZE (L x W x H) | QTY./ CASE | SPEC. | ABRASIVE | PART # |
|------------------------|------------------|-----------|-----------------|---------------------|
| Plain Floor Rub | bing Bricks with | Wooden We | dges | |
| 4 x 2 x 2 | 6 | C6-R | Silicon Carbide | 614636 53292 |
| | 6 | C10-R | Silicon Carbide | 614636 53293 |
| | 6 | C24-R | Silicon Carbide | 614636 53294 |
| | 6 | C80-R | Silicon Carbide | 614636 53295 |

| SIZE (L x W x H) | QTY./ CASE | PART # |
|------------------|------------|---------------------|
| Wooden Wedges | | |
| | 6 | 614636 85297 |

| SIZE (L x W x H) | QTY./ CASE | SPEC. | ABRASIVE | PRODUCT # | PART # |
|--------------------------|------------|-------|-----------------|-----------|---------------------|
| Plain Hand Rubbin | g Bricks | | | | |
| 8 x 2 x 2 | 5 | C24 | Silicon Carbide | BP28 | 614636 87830 |

| SIZE (L x W x H) | QTY./ CASE | SPEC. | ABRASIVE | PRODUCT # | PART # |
|-----------------------|--------------|-------|-----------------|-----------|---------------------|
| Fluted Hand Ru | bbing Bricks | | | | |
| 6 x 2 x 2 | 5 | C20 | Silicon Carbide | BF26 | 614636 87840 |
| 8 x 2 x 2 | 5 | C20 | Silicon Carbide | BF28 | 614636 87845 |

| SIZE (L x W x H) | QTY./ CASI | E SPEC. | ABRASIVE | PRODUCT # | PART # |
|-------------------------|--------------|------------|-----------------|-----------|---------------------|
| Fluted Hand Rubb | ing Bricks w | ith Handle | | | |
| 6 x 3 x 1 | 5 | C20 | Silicon Carbide | BFH6 | 614636 87800 |
| 8 x 3-1/2 x 1-1/2 | 5 | C20 | Silicon Carbide | 235 | 614636 87795 |

| SIZE (L x W x H) | QTY./ CASE | SPEC. | ABRASIVE | PART # |
|------------------|------------|--------|----------|---------------------|
| Griddle Brick | | | | |
| 4-1/2 x 3 x 2 | 5 | Medium | Alundum | 614636 87870 |





Precision Grinding Wheels



improve your PROCESS, PRODUCTIVITY, AND COST POSITION

You know the industry-leading performance of our engineered abrasives. Norton R&D has now created new formulations of these abrasives with our exclusive, proprietary Norton Vitrium³ (VS3) bond. You won't get better productivity from any other grinding wheels and segments.

- Cooler cutting with better chip clearance; improved coolant flow; significantly reduced burn
- Reduced wheel loading
- Improved part quality
- Improved precision profile; ultra-radius accuracy
- Extended wheel life
- Reduced dressing frequency and cost
- Improved cycle and process time
- Able to run at higher operating speed; increased throughput and productivity
- Leverage existing equipment; optimize machine efficiency

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iGrind App

Created by Norton engineers and updated based on feedback from you, the Norton iGrind app features calculators and conversion tools designed to help optimize your grinding processes.

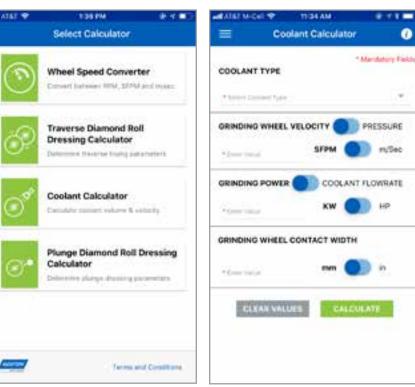
With Norton iGrind, you can calculate the starting parameters for traverse or plunge truing your grinding wheel, determine the ideal setup for delivering coolant to the grinding zone, and convert wheel speeds between RPM, SFPM (Surface Feet Per Minute), and M/Sec to ensure a safe grinding operation.

https://www.nortonabrasives.com/en-us/igrind

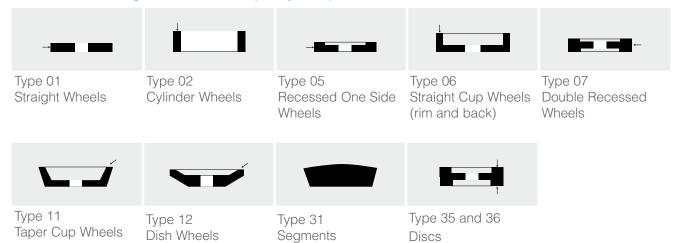
App Features:

- · Wheel Speed Convertor
- Traverse Diamond Roll Dressing Calculator
- Coolant Calculator
- Plunge Diamond Roll Dressing Calculator
- Stationary Tool Dressing Calculator





Standard Grinding Wheel and Periphery Shapes



PRECISION GRINDING WHEELS **Bonded Abrasives Basics**

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How to Read an Abrasive Product Specification

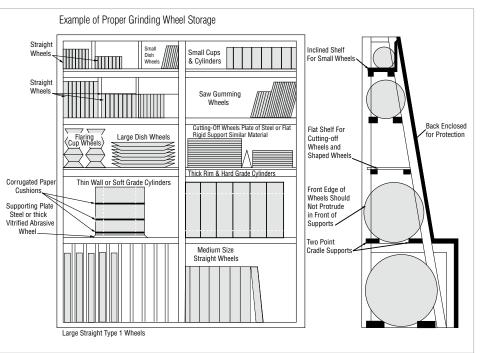
| | | | | Con | vention 32A | | indin 8 V B | | els | | | |
|--|--|---|--|----------------------------|----------------------------------|--------------------------------------|-----------------------|--------------------------------------|--------------------------------------|--|---|--|
| Abrasive Aluminum | Ceramic | Silicon | Zirconia | Grit Siz | ze Medium | Fine | Grade Soft | Medium | Hard | Structure Relative grain | Bond Type Resin = B | Norton Symbol |
| Aluminum Oxide 23A 25A 32A 32AC (blend) 38A 48A 53A 55A 57A 57A U57A 64A 86A 90A Alundum FabCut India Gemini Metal Vortex | Aluminum Oxide 3SGP 3SGR 5SG BRG SG SXG NorZon Plus (blend) NQ Quantum Targa | Carbide 37C 39C Crystolon Masonry | Alumina Alumina 4NZ 4ZF 5ZF AZ (blend) BlueFire Charger (blend) NZ NZC (blend) NZC (blend) NZIII NZIV NorZon ZI | 12 14 16 20 24 | 30 36 46 54 60 70 | 90 90 100 120 150 220 | D E F G H | I J K L M N O P | Q R S T U V Y Z | Dense 2 4 5 6 8 12 16 19 25 28 Open | Shellac = E Plastic = P Rubber = R Vitrified = V | variation or modification to bond. |

Shelf Life and Proper Storage of Grinding Wheels

It has always been Saint-Gobain Abrasives recommendation that resinoid bonded grinding wheels be used within 2 years from the date of manufacture. This recommendation assumes that resinoid bonded grinding wheels have been stored under ideal storage conditions. It might be true that under ideal storage conditions bonded grinding wheels have been stored under ideal storage conditions.

wheels can survive without any degradation in strength for well over two years. However, it is always wise to suspect any wheels over two years old and have them reinspected or re-speed tested to determine if there has been any degradation in strength. If the wheels are stored under less than ideal conditions, they might have a much shorter shelf life depending upon the severity of storage conditions. These same comments also apply to rubber and shellac bonded grinding wheels.

As for vitrified grinding wheels, the shelf life is less influenced by humidity and adverse storage conditions as compared to resinoid, rubber or shellac, but even vitrified grinding wheels do not have an infinite shelf life. The best procedure and the best rule of thumb is to have any wheel that is two years old or older re-speed tested and reinspected to ensure it is fit for use. The procedure for having this done and the charges will be explained by our Customer Service Department, but the cost of shipping as well as the cost of re-inspection is the customer's responsibility. Also, any wheels rejected or otherwise lost in the re-inspection process will also be the responsibility of the customer.



Keep in mind, however, that this procedure is good to verify the reliability of a product but must not be performed until you are ready to consume the wheel. If wheels are sent back after the two year time frame for re-inspection and re-testing and then put back on the shelf, there is no telling how long they will be fit for use after that last inspection. Therefore, these wheels must be consumed as soon as is practical.



The Norton bench and pedestal wheel line consists of numerous wheel diameters and arbor sizes, abrasive types and grit sizes. Our offering answers all metal removal, deburring, shaping and sharpening needs: white aluminum oxide for high-speed tool steels, brown aluminum oxide for carbon steel, and silicon carbide for non-ferrous metals and carbide tooling.

Applications: Size Range: Grit Range: **Abrasive Types: Bushings**: Machine Used:

5" - 18" 24 - 150 Premium Ceramic Alumina, Aluminum Oxide, Silicon Carbide Telescopic arbor bushings to fit all popular grinders are packaged with the wheel

Offhand deburring and sharpening of parts and tools



PEDESTAL GRINDER

Application/Grit Recommendation Guide

COARSER (GRINDING)

FINER (FINISHING)

| 24 | 36 | 46 | 60 | 80 | 100 | 150 |
|---------------------|----------------------|---------------------|-------------------|------------|-----------------|-----|
| Heavy Stock Removal | | | | | | |
| | Medium Stock Removal | | | | | |
| | | Light Stock Removal | | | | |
| | | | Deburring/Shaping | | | |
| | | | | Sharpening | | |
| | | | | | Final Finishing | |

TECH TIP

- Unsecured machines can move, causing grinding breakage and injury. Fixed-based bench and pedestal grinders MUST be secured.
- Do not grind wood, plastic, or any other non-metallic material on a bench or pedestal grinder.
- All bench and pedestal wheels must be dressed to prevent loading. Loading can cause excessive heat, damage to the workpiece, and wheel breakage. Dressing exposes new cutting edges and provides chip clearance.
- Recommended starting dressing stick: 1" x 1" x 6" 37C24-SVK Part # 61463610462

It is the user's responsibility to refer to and comply with ANSI B7.1

Bench and Pedestal Wheel Arbor Bushings

| WHEEL DIAMETER | WHEEL Center Hole | 1/2" | 5/8" | 3/4" | 7/8" | | 1-1/4" |
|-------------------|----------------------|------|------|------|------|---|--------|
| 5", 6", 7" 8" | 1" | • | • | • | • | | |
| 8" | 1" | | • | • | • | | |
| 10" | 1-1/4" | | | • | • | • | |
| 12" x 2" | 1-1/4" | | | | | • | |
| 12" and 14" | 1-1/2" | | | | | • | • |

These size bushings shipped free of charge with your wheel order.















Best choice for deburring and tool sharpening on bench and pedestal grinders

PREMIUM CERAMIC ALUMINA 3SG

- Type 01 straight wheel with ceramic alumina grain has fast cut, minimal burn, and long wheel life
- · High performance bond for versatility and exceptional form holding
- · Especially great for hollow grinding of plane blades and chisels; telescoping bushings to fit popular arbor hole sizes

Better choice for light metal removal and sharpening of high-speed tool steels (55 Rc and higher)

PREMIUM WHITE ALUMINUM OXIDE

- Type 01 straight wheel with premium white aluminum oxide for maximum cut rate and cool grinding action on hardened or high-speed tool steels
- · Vitrified bonded for superb shape holding and resistance to wear
- Better choice for deburring and tool sharpening on bench and pedestal grinders; telescoping bushings to fit popular arbor hole sizes

Better choice for light to medium stock removal

57A ALUMINUM OXIDE

- Type 01 straight wheel, the better choice for the end-user that needs a specific grit size and hardness for engineered applications
- Vitrified bond for superb shape holding and resistance to wear
- · Excellent choice for deburring and tool sharpening on bench and pedestal grinders

Better choice for medium grit and grade for light to medium stock removal on carbide tooling and non-ferrous materials

39C SILICON CARBIDE

- Type 01 straight wheel with sharp, green silicon carbide; use for performance applications on carbide tooling and non-ferrous materials
- · Vitrified bond for superb shape holding and resistance to wear
- · Excellent choice for deburring and tool sharpening on bench and pedestal grinders

Good choice for all general-purpose bench and pedestal applications

GEMINI ALUMINUM OXIDE

- Type 01 straight wheel with quality, aluminum oxide for general purpose bench and pedestal grinder applications on steel
- · Vitrified bond for superb shape holding and resistance to wear
- Good choice for deburring and tool sharpening on bench and pedestal grinders; telescoping bushings to fit popular arbor hole sizes

Good choice for all general-purpose bench and pedestal applications on non-ferrous materials and carbide tooling

GEMINI SILICON CARBIDE

- Type 01 straight wheel with sharp, green silicon carbide for general-purpose applications on carbide tooling and non-ferrous materials
- · Vitrified bond for superb shape holding and resistance to wear
- · Available in many sizes and coarse to fine grits; for sharpening to fine shaping applications



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| | | | | | - | - | - | 7- |
|---------------------|--------|------------|----------------|---------------------|----------------|---------------------|----------------|---------------------|
| | | TIER: | BEST | 1917 | BETTER | | BETTER | |
| | | TRADENAME: | | RAMIC ALUMINA | PREMIUM ALUI | MINUM OXIDE | 57A | |
| | | ABRASIVE: | 3SG Ceramic Al | umina | White Aluminum | Oxide | Brown Aluminum | Oxide |
| | MAX. | MIN./STD. | | | | | | |
| SIZE (D x T x H) | RPM | PKG. | SPEC | PART # | SPEC | PART # | SPEC | PART # |
| 6 x 3/4 x 1 | 4,140* | 1/5 | 3SG-46K | 076607 05411 | Medium 60 | 076607 88246 | | |
| | 4,140* | 1/5 | 3SG-60I | 076607 04684 | Fine 100 | 076607 88247 | | |
| | 4,140* | 1/5 | 3SG-80K | 076607 05412 | Very Fine 150 | 076607 88248 | | |
| | 4,140* | 1/5 | 3SG-100I | 076607 04682 | | | | |
| 6 x 1 x 1 | 4,140* | 1/5 | 3SG-46K | 076607 05413 | Medium 60 | 076607 88261 | | |
| | 4,140* | 1/5 | 3SG-80K | 076607 05414 | Fine 100 | 076607 88262 | | |
| | 4,140 | 1/5 | | | Very Fine 150 | 076607 88263 | | |
| 8x1x1 | 3,600 | 1/5 | 3SG-46I | 076607 04660 | Medium 60 | 076607 88281 | | |
| | 3,600 | 1/5 | 3SG-46K | 076607 05421 | Fine 100 | 076607 88282 | | |
| | 3,600 | 1/5 | 3SG-60I | 076607 04659 | Very Fine 150 | 076607 88283 | | |
| | 3,600 | 1/5 | 3SG-80K | 076607 05422 | | | | |
| | 3,600 | 1/5 | 3SG-100I | 076607 04657 | | | | |
| 10 x 1 x 1-1/4 | 2,485 | 1/5 | | | | | 57A46-MVBE | 662531 16274 |
| | 2,485 | 1/5 | | | | | 57A60-MVBE | 662531 16273 |
| 10 x 1-1/2 x 1-1/4 | 2,485 | 1/5 | | | | | 57A46-MVBE | 662531 16280 |
| 12 x 1 x 1-1/4 | 2,070 | 1/5 | | | | | 57A46-MVBE | 662532 20947 |
| 12 x 2 x 1-1/2 | 2,070 | 1/4 | | | | | 57A30-MVBE | 662532 20951 |
| | 2,070 | 1/4 | | | | | 57A36-OVBE | 662532 20952 |
| | 2,070 | 1/4 | | | | | 57A46-MVBE | 662532 20953 |
| | 2,070 | 1/4 | | | | | 57A60-MVBE | 662532 20955 |
| 14 x 2 x 1-1/2 | 1,800 | 1/3 | | | | | 57A24-QVBE | 662533 19972 |
| • | 1,800 | 1/3 | | | | | 57A36-0VBE | 662533 19973 |
| | 1,800 | 1/3 | | | | | 57A46-MVBE | 662533 19974 |
| 14 x 2-1/2 x 1-1/2 | 1,800 | 1/2 | | | | | 57A24-QVBE | 662533 19976 |
| ,=,= | 1,800 | 1/2 | | | | | 57A46-MVBE | 662533 19975 |
| 14 x 3 x 1-1/2 | 1,800 | 1/2 | | | | | 57A36-0VBE | 662533 19977 |
| 18 x 3 x 1-1/2 | 1,000 | 1/2 | | | | | 57A24-QVBE | 662534 62610 |
| * Max RPM for Premi | , - | -,= | - 410 | | | | | |

* Max. RPM for Premium Ceramic Alumina Wheels is 5,410

Bench and Pedestal Wheel Arbor Bushings

| WHEEL Center Hole | 1/2" | 5/8" | 3/4" | 7/8" | | 1-1/4" |
|----------------------|---|--|---|---|---|---|
| 1" | • | • | • | • | | |
| 1" | | • | • | • | | |
| 1-1/4" | | | • | • | • | |
| 1-1/4" | | | | | • | |
| 1-1/2" | | | | | • | • |
| | CENTER HOLE 1" 1" 1-1/4" 1-1/4" | CENTER HOLE 1/2" 1" • 1" • 1" • 1-1/4" • | CENTER HOLE 1/2" 5/8" 1" • • 1" • • 1" • • 1-1/4" • • | CENTER HOLE 1/2" 5/8" 3/4" 1" • • • 1" • • • 1" • • • 1" • • • 1-1/4" • • • | CENTER HOLE 1/2" 5/8" 3/4" 7/8" 1" • <td>CENTER HOLE 1/2" 5/8" 3/4" 7/8" 1" 1" •</td> | CENTER HOLE 1/2" 5/8" 3/4" 7/8" 1" 1" • |

These size bushings shipped free of charge with your wheel order.







39C (GREEN) / 37C (GRAY) cii



GEMINI SILICON CARBIDE

| | | | ME: GEMINI ALUMINUM UXIDE | | | 39C (GREEN) / 3 | 3/C (GRAY) | | GEMINI SILICUN CARBIDE | | |
|-------------------|-------------|--------------|---------------------------|---------------------|-------|-----------------|---------------------|--------------|------------------------|--|--|
| | AL | BRASIVE: | Brown Aluminum | Oxide | | Silicon Carbide | | | Green Silicon Car | pide | |
| | | MIN./ | | | MIN./ | | | MIN./ | | | |
| SIZE (D x T x H) | MAX. RPM | STD. PKG. | SPEC | PART # | STD. | SPEC | PART # | STD. PKG. | SPEC | PART # | |
| 5 x 1/2 x 1 | 4,965 | 1/5 | Medium 60/80 | 076607 88202 | FKU. | JEG | FANI # | FKU. | JFEU | FANI # | |
| J X 1/2 X 1 | 4,905 | 1/5 | Fine 100/120 | 076607 88201 | | | | | | | |
| 5 x 3/4 x 1 | 4,905 | 1/5 | Medium 60/80 | 076607 88210 | | | | | | | |
| 3 X 3/4 X I | 4,905 | 1/5 | Fine 100/120 | 07660788205 | | | | | | | |
| 5 x 1 x 1 | 4,905 | 1/5 | Medium 60/80 | 07660788225 | | | | | | | |
| 6 x 1/2 x 1 | 4,905 | 1/5 | Coarse 36/46 | 662528 36132 | | | | 1/5 | Medium 60 | 662528 36571 | |
| U X 1/2 X 1 | 4,140 | 1/5 | Medium 60/80 | 662528 36131 | | | | 1/5 | Fine 80 | 662528 36572 | |
| | 4,140 | 1/5 | Fine 100/120 | 662528 36133 | | | | 1/5 | Extra Fine 120 | 662528 36573 | |
| 6 x 3/4 x 1 | | 1/5 | Coarse 36/46 | 076607 88245 | | | | | Medium 60 | 662528 36573 | |
|) X 3/4 X I | 4,140 | 1/5 | Medium 60/80 | 076607 88240 | | | | 1/5 | Fine 80 | 662528 37191 | |
| | | | | | | | | 1/5 | | | |
| 044 | 4,140 | 1/5 | Fine 100/120 | 07660788235 | | | | 1/5 | Extra Fine 120 | 662528 37192 | |
| 6 x 1 x 1 | 4,140 | 1/5 | Coarse 36/46 | 07660788260 | | | | 1/5 | Medium 60 Fine 80 | 662528 37187 662528 37193 | |
| | 4,140 | 1/5 | Medium 60/80 | 07660788255 | | | | 1/5 | | | |
| 744 | 4,140 | 1/5 | Fine 100/120 | 07660788250 | | | | 1/5 | Extra Fine 120 | 662528 37194 | |
| 7 x 1 x 1 | 3,600 | 1/5 | Coarse 36/46 | 07660788275 | | | | 1/5 | Medium 60 | 662529 42300 | |
| | 3,600 | 1/5 | Medium 60/80 | 076607 88270 | | | | 1/5 | Fine 80 | 662529 42301 | |
| | 3,600 | 1/5 | Fine 100/120 | 076607 88265 | | | | 1/5 | Extra Fine 120 | 662529 42302 | |
| 3 x 3/4 x 1 | 3,600 | 1/5 | Coarse 36/46 | 076607 88278 | | | | | | | |
| | 3,600 | 1/5 | Medium 60/80 | 076607 88277 | | | | | | | |
| | 3,600 | 1/5 | Fine 100/120 | 662530 42317 | | | | | | | |
| 3 x 1 x 1 | 3,600 | 1/5 | Very Coarse 24 | 662530 44454 | | | | 1/5 | Medium 60 | 662530 44087 | |
| | 3,600 | 1/5 | Coarse 36/46 | 076607 88286 | | | | 1/5 | Fine 80 | 662530 44534 | |
| | 3,600 | 1/5 | Medium 60/80 | 076607 88285 | | | | 1/5 | Extra Fine 120 | 662530 44535 | |
| | 3,600 | 1/5 | Fine 100/120 | 076607 88280 | | | | | | | |
| 0 x 1 x 1-1/4 | 2,485 | 1/2 | Very Coarse 24 | 662531 60788 | 1/5 | 39C60-IVK | 662531 16262 | 1/2 | Medium 60 | 662531 44536 | |
| | 2,485 | 1/2 | Coarse 36/46 | 076607 88295 | | | | 1/2 | Fine 80 | 662531 60366 | |
| | 2,485 | 1/2 | Medium 60/80 | 076607 88290 | | | | | | | |
| | 2,485 | 1/2 | Fine 100/120 | 662531 60350 | | | | | | | |
| 0 x 1-1/4 x 1-1/4 | 2,485 | 1/2 | Coarse 36/46 | 662531 61250 | | | | | | | |
| | 2,485 | 1/2 | Medium 60/80 | 662531 61251 | | | | | | | |
| 0 x 1-1/2 x 1-1/4 | 2,485 | 1/2 | Coarse 36/46 | 662531 61393 | 1/5 | 39C60-IVK | 662531 16265 | | | | |
| | 2,485 | 1/2 | Medium 60/80 | 662531 61395 | | | | | | | |
| 2 x 1-1/2 x 1-1/2 | 2,070 | 1/2 | Coarse 36/46 | 662532 63052 | | | | | | | |
| | 2,070 | 1/2 | Medium 60/80 | 662532 63053 | | | | | | | |
| 2 x 2 x 1-1/4 | 2,070 | | | | | | | 1/2 | Medium 60 | 662532 63359 | |
| | 2,070 | | | | | | | 1/2 | Fine 80 | 662532 63360 | |
| 12 x 2 x 1-1/2 | 2,070 | 1/2 | Very Coarse 24 | 662532 63054 | | | | | | | |
| | 2,070 | 1/2 | Coarse 36/46 | 662532 63055 | | | | | | | |
| | 2,070 | 1/2 | Medium 60/80 | 662532 63056 | 1/4 | 39C60-KVK | 662532 20942 | | | | |
| | | .,_ | | | 1/3 | 37C24-RVK | 662533 19967 | | | | |
| 14 x 2 x 1-1/2 | 1,800 | | | | 1/3 | 3/624-HVN | 002000 330/ | | | | |

Bench and Pedestal Wheel Arbor Bushings

| WHEEL | WHEEL | | | | | | |
|---------------|-------------------|-----------|------|------|------|---|--------|
| DIAMETER | CENTER HOLE | 1/2" | 5/8" | 3/4" | 7/8" | | 1-1/4" |
| 5", 6", 7" | 1" | • | • | • | • | | |
| 8" | 1" | | • | • | • | | |
| 10" | 1-1/4" | | | • | • | • | |
| 12" x 2" | 1-1/4" | | | | | • | |
| 12" and 14" | 1-1/2" | | | | | • | • |
| These size h. | ahing ahing al fu | a af abau | | | | | |

These size bushings shipped free of charge with your wheel order.



PRECISION GRINDING WHEELS Sawgumming Wheels



Keep circular saws, band saws and other cutting tools razor sharp when you use the NorZon NZ ZA Type 01 sawgumming wheel. Featuring a resin bond to provide a smooth performance and deliver exceptional strength, this hardy wheel is specially designed for use in timber industries and for woodworking and saw manufacturing applications. Ideal for frequent use, the wheel has a zirconia alumina abrasive that ensures sharp cuts while it enhances the wheel's durability.

Applications: Size Range: Abrasive Grain: Shape: Machine Used:

Tool Sharpening 12" Zirconia Alumina Type 01 Straight





Best choice for saw sharpening in the timber, woodworking, and saw manufacturing industries

NORZON NZ ZIRCONIA ALUMINA

- · Durable, sharp zirconia alumina abrasive delivering the highest performance under frequent use conditions
- Strong, yet smooth-running resin bond
- Designed to excel at shaping and resharpening various types of saws including large circular and band saw blades used primarily for timber harvesting

| | | | TIER: | BEST |
|------------------|----------|-----------|------------|------------------------|
| | | | TRADENAME: | NORZON NZ |
| | | | ABRASIVE: | Zirconia Alumina |
| SIZE (D x T x H) | MAX. RPM | STD. PKG. | SPEC | PART # |
| Type 01 Straight | | | | |
| 12 x 5/8 x 1-1/4 | 3,025 | 5 | SG2981 | 662532 62303 |
| 12 x 3/4 x 1-1/4 | 3,025 | 5 | SG2181 | 662532 62305 |
| 12 x 3/4 x 1-1/4 | 3,025 | 5 | SG2981 | 662532 62306 |
| 12 x 3/4 x 1-1/4 | 3,025 | 5 | SG2981 | 662532 62307 |
| 12 x 7/8 x 1-1/4 | 3,025 | 5 | SG2981 | 662532 62462 |
| 12 x 7/8 x 1-1/4 | 3,025 | 5 | SG2181 | 662532 62461 |
| 12 x 1 x 1-1/4 | 3,025 | 5 | SG2981 | 662532 62487 NS |

NS Non-stock, Contact your Norton representative for current order quantities and lead-times.





Used on surface, cylindrical, and tool and cutter grinders, Norton precision, form-holding vitrified toolroom wheels maximize your productivity. Available in latest-generation ceramic alumina, aluminum oxide, and silicon carbide – for every ferrous and non-ferrous MRO, small job shop, and production operation.

Applications: Shapes:

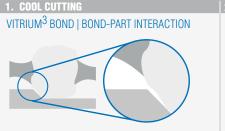
Size Range: Grit Range: Abrasive Grain: Surface grinding, tool and cutter grinding, and resharpening Type 01 Straight, Type 02 Cylinder, Type 05 and 07 Recessed 1 and 2 Sides, Type 06 and 11 Straight and Flaring Cups, Type 12 Dish, Type 20 Concaved 1 Side, and Type 35 Plate Mounted Disc 3/4" – 18" diameter 46 – 220 Ceramic Alumina, Aluminum Oxide, Silicon Carbide

Material-to-Product Recommendation Guide

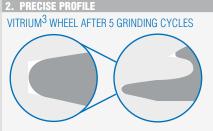
| | PERFORM | ANCE/PRO | DUCTIVITY | | | | | | |
|---|------------|------------|------------|-----------|------------|------------|---------------------------|---------------------------|---------------------------|
| APPLICATION / MATERIAL | Narrow Con | tact Area | | Medium Co | ntact Area | | Wide Contact | Area | |
| | BEST | BETTER | GOOD | BEST | BETTER | GOOD | BEST | BETTER | GOOD |
| Tool Resharpening | | | | | | | | | |
| Heavy Stock Removal (> .004) | | | | | | | | | |
| HSS & Tool Steel RC 50-68 | 5SG46-KVS | 32A46-KVBE | 38A46-KVBE | 5SG46-JVS | 32A46-JVBE | 38A46-JVBE | 5SG46-GVSP 3SGR46-GVP2 | 32A46-GVBEP 48A46-GVP2 | 38A46-GVBEP 38A46-GVP2 |
| Moderate Stock Removal (.002004) | | | | | | | | | |
| HSS & Tool Steel RC 50-68 | 5SG60-KVS | 32A60-KVBE | 38A60-KVBE | 5SG60-JVS | 32A60-JVBE | 38A60-JVBE | 5SG60-GVSP 3SGR60-GVP2 | 32A60-GVBEP 48A60-GVP2 | 38A60-GVBEP |
| Carbide | | | 39C60-JVK | | | 39C60-JVK | | | |
| Surface Grinding | | | | | | | | | |
| Heavy Stock Removal (> .004) | | | | | | | | | |
| HSS & Tool Steel RC 50-68 400 Series Stainless | 5NQ46-JVS | 32A46-JVBE | 38A46-JVBE | 5SG46-IVS | 32A46-IVBE | 38A46-IVBE | 5SG46-GVSP 3SGR46-GVP2 | 32A46-GVBEP 48A46-GVP2 | 38A46-GVBEP 38A46-GVP2 |
| Soft Steels RC 30-45 | 5SG46-KVS | 32A46-KVBE | 38A46-KVBE | 5SG46-JVS | 32A46-JVBE | 38A46-JVBE | 5SG46-HVSP | 32A46-HVBEP | 38A46-HVBEP |
| 300 Series Stainless | | | | | | | 3SGR46-HVP2 | 48A46-HVP2 | 38A46-HVP2 |
| Cast Iron: Ductile & Gray | 5SG46-KVS | 32A46-KVBE | 38A46-KVBE | 5SG46-JVS | 32A46-JVBE | 38A46-JVBE | 5SG46-HVSP 3SGR46-GVP2 | 32A46-HVBEP 48A46-HVP2 | 38A46-HVBEP 38A46-HVP2 |
| Non-ferrous Alloys | | | 39C46-JVK | | | 39C46-IVK | | | |
| Moderate Stock Removal (.002004) | | | | | | | | | |
| HSS & Tool Steel RC 50-68 400 Series Stainless | 5NQ60-JVS | 32A60-JVBE | 38A60-JVBE | 5SG60-IVS | 32A60-IVBE | 38A60-IVBE | 5SG60-GVSP 3SGR60-GVP2 | 32A60-GVBEP 48A60-GVP2 | 38A60-GVBEP |
| Soft Steels RC 30-45 300 Series Stainless | 5SG60-KVS | 32A60-KVBE | 38A60-KVBE | 5SG60-JVS | 32A60-JVBE | 38A60-JVBE | 3SGR60-HVP2 | 32A60-HVBEP 48A60-HVP2 | 38A60-HVBEP 38A60-HVP2 |
| Cast Iron: Ductile & Gray | 5SG60-KVS | 32A60-KVBE | 38A60-KVBE | 5SG60-JVS | 32A60-JVBE | 38A60-JVBE | 3SGR60-HVP2 | 32A60-HVBEP 48A60-HVP2 | 38A60-HVBEP 38A60-HVP2 |
| Non-ferrous Alloys | | | 39C60-JVK | | | 39C60-IVK | | | |
| Light Stock Removal and Finishing (<.0 | 01) | | | | | | | | |
| HSS & Tool Steel RC 50-68 | - / | 32A80-JVBE | 38A80-JVBE | | 32A80-IVBE | 38A80-IVBE | | 32A80-HVBE | 38A80-HVBE |
| 400 Series Stainless | | | | | | | | | |
| Soft Steels RC 30-45 | | 32A80-KVBE | 38A80-KVBE | | 32A80-JVBE | 38A80-JVBE | | 32A80-IVBE | 38A80-IVBE |
| 300 Series Stainless | | | | | | | | | |
| Cast Iron: Ductile & Gray | | 32A80-KVBE | 38A80-KVBE | | 32A80-JVBE | 38A80-JVBE | | 32A80-IVBE | 38A80-IVBE |
| Nonferrous Alloys | | | 39C80-JVK | | | 39C80-IVK | | | 39C80-HVK |

Upgrade to Vitrium³ to improve your process and productivity in 3 ways Vitrium³ bond (VS3) wheels for enhanced-performance are available with these abrasives: NQ, SG, 32A, and 48A

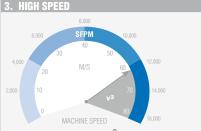
 (\mathbf{f})



Improved holding power (using less bond-to-abrasive ratio) exposes a larger grain surface area, improving freer cut rate.



Superior grain-holding properties significantly improve wheel form and corner holding vs. other bond systems – reducing dressing time and dresser wear.



High Speed – Norton Vitrium³ bond provides the ultimate wheel strength. This allows for high speed operation on equipment designed and rated for high speed.

Distributed by Applifast. 💀 🖹 🐼 🖨

applifast.com

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Vitrified Wheel Bonds

Bond Description

| VS3 | Quantum (white) and Norton SG (white): Patented technology produces a strong, exceptionally cool-cutting bond with unprecedented form holding; able to run at higher operating speed; increased throughput and productivity; versatile, for all areas of contact |
|------|--|
| VS3P | Quantum (white) Norton SG (white): Porous bond; use where heat is an issue; patented technology produces a strong, exceptionally cool- cutting bond with unprecedented form holding; versatile, for all areas of contact |
| VS | Quantum (green) and Norton SG (blue): High stock removal; narrow/medium contact area; roughing/finishing; cool cutting |
| VSP | Quantum (green) and Norton SG (blue): Porous bond; use where heat is an issue; high stock removal; medium/wide contact area; cool cutting; high chip clearance |
| VBE | 32A (purple), 38A (white) and 57A (brown): General purpose; narrow/medium contact area; versatile; economical. |
| VBEP | 32A (purple) and 38A (white): Porous bond; use where heat is an issue; medium/wide contact area; cool cutting; high chip clearance; high stock removal |
| V | 38A (orange): For fine grit, form/corner holding applications; narrow contact area |
| VK | 37C (black) and 39C (green): Designed specifically for silicon carbide abrasives; medium to narrow area of contact; for non-steel applications |
| VCP | 32A (purple) and 23A (blue/grey): Induced-pore, wide contact area, surface/creepfeed grinding applications |
| VP2 | 3SGR (ruby), 48A (ruby), 25A (pink) and 38A (white): Unique, controlled-porosity (NORPOR) bond for heat-sensitive applications |

TECH TIP

SELECTNG A WHEEL WITH THE CORRECT BOND TYPE

- Use VBE, V, VS, VS3, and VK bonds for general purpose applications or medium contact areas.
- Use VBEP, VSP, VS3P, VCP, and VP2 bonds on wide contact areas where heat is an issue.



It is the user's responsibility to refer to and comply with ANSI B7.1

Application/Grit Recommendation Guide

| Grit | Requirement | Finish | Minimum Corner Radius |
|----------|---------------------|-------------------|-----------------------|
| 46 | General Purpose | 32 Ra and rougher | 0.020" |
| 60 | Commercial Finish | 32 Ra and better | 0.016" |
| 80 - 100 | Fine Finish | 20 Ra and better | 0.0105" |
| 120 | Very Fine Finish | 10 Ra and better | 0.006" |
| 150 | Corner-Form Holding | | 0.005" |
| 180 | Corner-Form Holding | | 0.0035" |
| 220 | Corner-Form Holding | | 0.0026" |

Cross Reference Guide

| NORTON | CAMEL | CINCINNATI | RADIAC | TYROLIT | WINTERTHUR |
|-------------|--------------------|-------------------|--------------------|----------|---------------|
| Quantum 5NQ | _ | 5M5B | — | | — |
| 3SGR | AS3 | 3BP | 7BP, 8BP | | — |
| 5SG | SZA | 5MSB | 7BW, 8BW | | _ |
| 25A | PA | 12A | RAA | 88A | 57A |
| 32A | AZ | 4A, 12A, 29A, 32A | 32A, WRA | 90A | 67A, 68A |
| 38A | 83A, WA, AZ (Blue) | 9A, 10A, 11A, 82A | WA, 9A | 88A, 89A | 53A, 49A, 42A |
| 48A | _ | _ | RA | 91A | 68A |
| 53A | 91A, DA | 29A, 97A | 43A, 45A, 97A, WPA | 50A | 61A, 64A |
| 57A | 94A, CGW, A | A, AK | A | A, 52A | А |
| 370 | | 6C | С | 10 | С |
| 39C | — | 5C | GC | С | 11C |



Starting Recommendations for Truing and Dressing Norton Toolroom Wheels

TRUING & DRESSING: DRESSING STICK STARTING RECOMMENDATIONS

| Size/ Spec. | High Performance Stick Part # | Size/ Spec. | Conventional Stick Part # |
|------------------------|-------------------------------|--------------------------------|------------------------------|
| 3 x 1/2 x 1/4" Norbide | 614636 10148 | 6 x 1 x 1" 37C24-SVK | 614636 10462 |
| | | 8 x 1 x 1" 37C24-SVK | 614636 10471 |
| | | Other sizes are available. See | the Dressing Stick section. |

DRESSING: SINGLE POINT DRESSING TOOL STARTING RECOMMENDATIONS

| | | Ceramic (NQ, Nort 37C & 39C Wheels | | 25A, 32A, 38A, 48A, 53A, 57A, 64A, 86A Wheels | | |
|-------------|---------------------|---------------------------------------|---------------------|--|---------------------|--|
| Wheel Sizes | Tool Shank Diameter | Product No. | Part # | Product No. | Part # | |
| Up to 7" | 3/8 | BCSG2M6 | 662601 57007 | BC2M6 | 662601 95000 | |
| | 7/16 | BCSG2M7 | 662601 56905 | BC2M7 | 662601 95001 | |
| 8" to 10" | 3/8 | BCSG3M6 | 662601 57008 | BC3M6 | 662601 95002 | |
| | 7/16 | BCSG3M7 | 662601 56906 | BC3M7 | 662601 95003 | |
| 12" to 14" | 3/8 | BCSG5M6 | 662601 57009 | BC5M6 | 662601 95004 | |
| | 7/16 | BCSG5M7 | 662601 56907 | BC5M7 | 662601 95005 | |

These tools are a standard recommendation; see the "Diamond Tool" section for additional tools

See the Fliesen Tool section for Furioso tools, engineered specifically for Quantum vitrified wheel dressing

<u>TECH TIP</u>

Wheel Dressing

Single Point Diamond Tools

- Rigidly mount Single Point tools at a 10°-15° angle to the wheel centerline with a line drawn through the center of the wheel, pointing in the direction of wheel travel
- Point of contact should be slightly below centerline of wheel
- Use coolant whenever possible
- Normal infeed is .001" per pass

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- Lead selections range from .002" .010" per wheel revolution
- Rotate the tool 1/4 turn periodically to maintain a sharp point
- Use VBE, V, VS, VK bonds for general purpose applications or medium contact areas.
- Use VBEP, VSP, VS3P, VCP, VP2 bonds on wide contact areas where heat is an issue.

Multi-Point Diamond Tools

- Most multi-point tools are used for straight face dressing
- · Tool should have full face contact with the wheel
- With new tool, 3 to 5 passes at .005" per pass should be taken to expose diamonds
- Infeed per pass .001" .002"
- Use coolant whenever possible
- Use appropriate lead (and traverse rate)

Contact your Norton representative for proper tool selection for Targa (TG) wheels



It is the user's responsibility to refer to and comply with ANSI B7.1

Dressing Ceramic Wheels

- Use our specially designed Norton SG diamond tools when dressing ceramic wheels
- When first using a Norton SG tool, make 3 to 5 passes at .005" infeed to ensure full face contact between the dressing tool and wheel face
- Reduce normal dressing infeed by half. Do not exceed infeed of .002" per pass.
- The lead selection should be between .006" .030" per wheel revolution. Faster traverse with Norton SG tools generally provides an open wheel face that can maximize productivity of the ceramic abrasive.
- To optimize applications using ceramic abrasives and/ or tools, normal dressing parameters must change.
 Reduce infeed by 25%. Significant reductions in the amount of infeed and frequency of dress will result in substantially lower cost per part ground.
- See the Fliesen Tool section for Furioso tools, engineered specifically for Quantum vitrified wheel dressing.



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Single-Pack Toolroom Wheels

The Small Quantity Order Solution

Available in our most popular specification of BEST, BETTER and GOOD performance tiers. Norton single-pack toolroom wheels provide many opportunities:

- Test order small quantities of a variety of wheel specifications
- · Display and safely store your most often used wheels
- · No need to repackage small orders from bulk shipments
- Ensure your wheel arrives on site undamaged



Troubleshooting Guide

- Check the obvious first. Before changing the grinding wheel specification, investigate the following most common causes for most grinding problems:
- 1. Diamond dressing tool condition (check if worn or dull, rotate tool or replace if necessary)
- 2. Coolant direction, volume and filtration
- 3. Wheel dressing procedures (dress more open to free up cut rate, dress more closed to improve finish)

| PROBLEM | POSSIBLE CAUSE | CORRECTION | | | |
|---------------------------|----------------------------------|---|--|--|--|
| Workpiece burn | Poor coolant direction | Redirect coolant into grinding zone | | | |
| | Restricted or low coolant volume | Increase coolant volume | | | |
| | Wheel too hard | Use one grade softer wheel | | | |
| | Wheel structure too closed | Use porous bond wheel | | | |
| | Wheel dressed too fine | Dress wheel coarser, more "open" | | | |
| | Worn dressing tool | Inspect, rotate or replace dressing tool | | | |
| | Work speed too slow | Increase work speed | | | |
| | Infeed too fast | Reduce stock removed per pass or upgrade to 5SG or 5NQ | | | |
| Vheel loading and glazing | Wheel too fine | Use coarser grit or softer grade wheel | | | |
| | Wheel too hard | Use one grade softer wheel | | | |
| | Too durable abrasive | Use a sharper, more friable abrasive | | | |
| | Poor coolant quality | Change coolant or use high detergent type | | | |
| | Wheel structure too closed | Use a porous bond wheel | | | |
| | Wheel too finely dressed | Dress wheel very open | | | |
| | Diamond dressing tool worn | Replace diamond and dress coarse (open) | | | |
| | Depth of cut too small | Increase feed and traverse speed | | | |
| natter | Unsupported work | Increase work support | | | |
| | Machine vibration | Check for worn bearings | | | |
| | Too heavy cut rate | Reduce cut rate | | | |
| | Wheel too hard | Use one grade softer wheel | | | |
| | Wheel structure too closed | Use a porous bond wheel | | | |
| | Wheel out of balance | Check wheel balance or try new wheel | | | |
| hatter marks on workpiece | Worn spindle bearings | Check and correct for truth and end play | | | |
| | Wheel out of truth | Redress wheel and check mounting | | | |
| | Poorly clamped wheel | Check tightness of mounting nuts | | | |
| | Glazed face of wheel | Redress wheel with sharp dressing tool | | | |
| Poor surface finish | Incorrect wheel dress | Dress wheel finer (slow down dressing tool traverse) | | | |
| | Worn dressing tool | Inspect, rotate, or replace dressing tool | | | |
| | Too coarse grit size | Use a finer grit size | | | |
| | Wheel too hard | Use softer grade | | | |
| lot holding form | Wheel too soft | Use one grade harder wheel | | | |
| | Wheel structure too open | Use a more closed wheel structure | | | |
| Not holding corner | Incorrect wheel dress | Dress wheel finer. Face and side true wheel. | | | |
| - | Too large grit size | Use smaller grit size (maximum grit diameter less than 1.5 times corner radius) | | | |
| | Wheel too soft | Use harder grade wheel | | | |
| | Wheel structure too open | Use more closed structure wheel | | | |







Best choice for versatility, maximum performance and cost savings

QUANTUM (5NQ) CERAMIC ALUMINA

- Revolutionary, proprietary, engineered ceramic grain shape and chemistry for all low-, medium- and high-force
 applications ranging from cast iron, to stainless steel, and hard-to-grind Inconel and titanium
- Proven tough vitrified bond stands up to extreme grinding forces; perform well on old and new CNC cutting tool, cylindrical and surface grinding machines
- 33% to 100% longer life, 30% higher MRR (material removal rate), and 15% lower threshold power versus competitive ceramic products

Best choice for high productivity, low total per-part grinding cost

SG CERAMIC ALUMINA

- Exceptionally high-performance ceramic alumina and friable aluminum oxide abrasive blend for fast stock removal, cool, superior cutting; 3 - 5 times more life than aluminum oxide wheels; double rough stock removal rate versus conventional abrasives
- High performance bond for versatility (for grinding high speed tool steels, hardened and soft steels, and aerospace alloys) and exceptional form holding
- Self-sharpening abrasive minimizes burn and dressing to maximize sharp edge on tools and dies for longer life in production

Better choice for medium-to-heavy stock removal

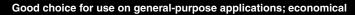
32A ALUMINUM OXIDE

- Strong, sharp monocrystalline aluminum oxide grain, ideal for precision production medium-to-heavy stock removal applications
- The most versatile vitrified bond, especially recommended for CNC cutting tool machines, and cylindrical and surface grinding
- · Grinds with an exceptional cool, fast cutting action, requires minimum dressing

Good choice for light grinding of tool steel

38A ALUMINUM OXIDE

- Friable aluminum oxide abrasive for cool and burn-free cutting toolroom applications with light-to-moderate feed rates
- The most versatile vitrified bond, especially recommended for CNC cutting tool machines, and cylindrical and surface grinding applications on hard and very heat-sensitive high-speed tool steels; cool fast cutting
- · Consistent quality for excellent balance and dimensional accuracy time after time



GEMINI ALUMINUM OXIDE

- · Specially blended aluminum oxide abrasive for many surface and cylindrical grinding applications
- Durable vitrified bond for high stock removal on narrow to medium contact areas
- Good general-purpose choice when a broad range of parts are ground on one machine



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Vitrified Wheels For Steel Applications

| | | TIED. | BEST | C | BETTER | | | GOOD | |
|----------------------------------|------------------|-------------------------------|----------------------|-----------------------|-------------------------|-----------------------|----------------|----------------------------|---|
| | | TRADENAME: | QUANTUM / NOP | RTON SG | 32A | | | 38A | |
| 817E (D v T v U) | | ABRASIVE: M Min./Std. PKG. | Ceramic Alumina | PART # | Aluminum Oxide SPEC. | PART # | MIN./STD. PKG. | Aluminum Oxide | PART # |
| | | | JFEG. | FANI # | SPEG. | FANI # | WIN./STD. FKG. | SPEG. | FANI # |
| ype 01 Straig | | <u>. *</u> | | | 001001005 | | | | |
| 2 x 1/2 x 3/8 | 16,235 | 10/50 | | | 32A60-KVBE | 662434 28214 | | | |
| 3 x 1/4 x 1/2 | 10,825 | 10/50 | | | 32A60-KVBE | 662435 28696 | 10/50 | | 00040500000 |
| 3 x 1/2 x 3/8 | 10,825 | 10/50 | | | 32A60-KVBE | 662435 28825 | 10/50 | 38A60-JVBE | 662435 29032 |
| 8 x 1/2 x 1/2 8 x 1 x 1/2 | 10,825 10,825 | 10/50 | | | 32A60-KVBE | 662435 28828 | 10/10 | 38A60-MVBE | 662435 29145 |
|) X X /2 | 10,825 | | | | | | 10/10 | 38A80-MVBE | 662435 29146 |
| x 1/4 x 1/2 | 8,120 | 1/10 | | | 32A60-KVBE | 662435 29532 | 1/10 | 38A60-KVBE | 662435 29777 |
| IX I/ IX I/ E | 8,120 | 1/10 | | | OLNOU TRUDE | | 1/10 | 38A100-IVBE | 662435 29782 |
| x 1/4 x 3/4 | 8,120 | 1/10 | | | 32A60-KVBE | 662435 29736 | 17.10 | 00,1100 1102 | 00210020102 |
| x 1/2 x 1/2 | 8,120 | 1,10 | | | 02/100 11/02 | 00210020700 | 1/10 | 38A60-KVBE | 662435 29947 |
| ,,_ | 8,120 | | | | | | 1/10 | 38A100-KVBE | 662435 29954 |
| x 1/2 x 3/4 | 8,120 | 1/10 | | | 32A60-KVBE | 662435 29849 | 1/10 | 38A60-KVBE | 662435 29961 |
| | 8,120 | 1/10 | | | 32A80-KVBE | 662435 29850 | | | |
| x 1 x 1/2 | 8,120 | | | | | | 1/10 | 38A60-MVBE | 662435 30126 |
| 6 x 1/8 x 1-1/4 | 4,140 | 1/10 | | | 32A80-KVBE | 662528 35361 | 1/10 | 38A150-LVBE | 662528 35506 |
| x 1/4 x 1/2 | 4,140 | 1/10 | | | 32A60-KVBE | 662528 35784 | | | |
| x 1/4 x 1-1/4 | 4,140 | 1/10 | | | 32A60-KVBE | 662528 35786 | 1/10 | 38A60-KVBE | 662528 35803 |
| | 4,140 | | | | | | 1/10 | 38A80-KVBE | 662528 35807 |
| | 4,140 | | | | | | 1/10 | 38A150-KV | 662528 35759 |
| x 1/2 x 1/2 | 4,140 | 1/10 | | | 32A60-KVBE | 662528 36394 | 1/10 | 38A60-KVBE | 662528 36530 |
| | 4,140 | | | | | | 1/10 | 38A80-KVBE | 662528 36548 |
| x 1/2 x 1-1/4 | 4,140 | 1/10 | 50000 10/0 | 0005000000 | 32A46-KVBE | 662528 36380 | 1/10 | 38A46-KVBE | 662528 36520 |
| | 4,140 | 1/10 | 5SG60-KVS | 662528 03344 | 32A60-KVBE | 662528 36396 B | 1/10 | 38A60-KVBE | 662528 36533 |
| | 4,140 | 1/10 | | | 32A80-JVBE | 662528 36405 | 1/10 | 38A80-KVBE | 662528 36550 |
| | 4,140 | 1/10 | | | | 0000007400 | 1/10 | 38A120-KVBE | 662528 36664 |
| x 3/4 x 1/2 | 4,140 | 1/10 | | | 32A60-KVBE | 662528 37420 | 1/10 | | 66050077444 |
| 5 x 3/4 x 5/8 5 x 3/4 x 1-1/4 | 4,140 | 1/10 | | | 32A60-KVBE | 662528 37421 | 1/10 1/10 | 38A60-KVBE 38A60-KVBE | 662528 37444 662528 37445 |
| 5 x 1 x 1-1/4 | 4,140 | 1/10 | | | 32A60-KVBE | 662528 37921 B | 1/10 | JOAUU-RVDE | 00202037443 |
| ' x 1/8 x 1-1/4 | 3,275 | 1/10 | | | 32A60-IVBE | 662529 39112 | 1/10 | 38A80-IVBE | 662529 39219 |
| X 1/U X 1-1/4 | 3,600 | 1/10 | | | JZAUU-IVDL | 00232333112 | 1/10 | 38A100-KVBE | 662529 39223 |
| ′ x 1/4 x 1-1/4 | 3,600 | 1/10 | | | 32A46-HVBE | 662529 39543 | 1/10 | 38A46-HVBE | 662529 39690 |
| ,, . | 3,600 | 1/10 | 5NQ46-IVS3 | 662434 95257 | 32A46-IVBE | 662529 39544 | 1/10 | 38A46-IVBE | 662529 39691 |
| | 3,600 | 1/10 | 5NQ60-JVS | 662532 93579 | 32A46-JVBE | 662529 39545 | 1/10 | 38A46-JVBE | 66252909755 |
| | 3,600 | 1/10 | 5NQ60-JVS3 | 662434 95258 | 32A46-KVBE | 662529 39862 | 1/10 | 38A60-HVBE | 66252939695 |
| | 3,600 | 1/10 | 5SG46-IVS | 662529 40207 B | 32A60-HVBE | 662529 39547 | 1/10 | 38A60-IVBE | 662529 39696 |
| | 3,600 | 1/10 | | | 32A60-IVBE | 662529 39548 B | 1/10 | 38A60-JVBE | 662529 39698 |
| | 3,600 | 1/10 | 5SG60-IVS | 662529 39459 B | 32A60-IVBE | 662532 88569 S | 1/10 | 38A60-KVBE | 662529 39700 |
| | 3,600 | 1/10 | | | 32A60-JVBE | 662529 39549 B | 1/10 | 38A80-HVBE | 662529 39707 |
| | 3,600 | 1/10 | | | 32A60-KVBE | 662529 39552 B | 1/10 | 38A80-IVBE | 662529 39808 |
| | 3,600 | 1/10 | 5SG60-JVS | 662529 39460 | 32A60-KVBE | 662532 88570 S | 1/10 | 38A80-JVBE | 662529 39809 |
| | 3,600 | 1/10 | 5SG60-KVS | 662529 39461 B | | | 1/10 | 38A80-KVBE | 662529 39812 |
| | 3,600 | 1/10 | | | 32A80-HVBE | 662529 39557 | 1/10 | 38A100-IVBE | 662529 39823 |
| | 3,600 | 1/10 | 5SG80-IVS | 662529 39462 | 32A80-IVBE | 662529 39658 B | | | |
| | 3,600 | 1/10 | 5SG80-JVS | 662529 39463 | 32A80-IVBE | 662532 88571 S | 1/10 | 38A100-JVBE | 662529 39826 |
| | 3,600 | 1/10 | 5SG80-KVS | 662529 39464 | 32A80-JVBE | 662529 39660 B | 1/10 | 38A100-KVBE | 662529 3982 7 |
| | 3,600 | 1/10 | 5SG100-JVS | 662529 39467 | 32A80-KVBE | 662529 39662 B | 1/10 | 38A100-LVBE | 662529 3983 |
| | 3,600 | 1/10 | 5SG100-KVS | 662529 39468 B | 32A80-KVBE | 662532 88572 S | 1/10 | 38A120-JVBE 38A120-KVBE | 66252939833 |
| | 3,600 3,600 | 1/10 1/10 | | | 32A100-IVBE | 662529 39670 B | 1/10 1/10 | 38A120-KVBE 38A150-KVBE | 662529 3983 4 662529 39838 |
| | 3,600 | 1/10 | | | 32A100-JVBE | 662529 39670 B | 1/10 | 38A150-KVBE 38A150-LVBE | 662529 3983 |
| | 3,600 | 1/10 | | | 32A100-JVBE | 662532 88573 S | 1/10 | 38A150-LVBE | 662529 3952 1 |
| | 3,600 | 1/10 | | | 32A100-IVBL | 662529 39673 B | 1/10 | 38A220-KV | 662529 3952 |
| | 3,600 | 1/10 | | | JEATOU-INDE | 502020 3013 D | 1/10 | 38A220-LV | 662529 3952 |
| | 3,600 | 1/10 | | | 32A120-IVBE | 662529 39680 | 1/10 | 38A220-LVBE | 662529 3984 7 |
| | 3,600 | 1/10 | | | 32A120-KVBE | 662529 39682 | 1/10 | 38A220-MV | 662529 3953 |
| | 3,600 | 1/10 | | | 32A220-LVBE | 662529 39689 | ., | | 0020200000 |
| x 3/8 x 1-1/4 | 3,600 | 1/10 | | | 32A60-KVBE | 662529 40276 | 1/10 | 38A60-KVBE | 662529 4029 4 |
| , . | 3,600 | 1/10 | | | 32A80-KVBE | 662529 40284 | 1/10 | 38A80-IVBE | 662529 4029 7 |
| | -, | · / · · | tions for many satis | | | | | | |



Vitrified Wheels For Steel Applications continued

| | | | 0 | 6 | | - | | 0 | 6 |
|-----------------|----------------|-----------------|----------------------------|--|---------------------------|--|----------------|----------------------------|--|
| | | | | 10 | | | _ | | |
| | | | R: BEST | | BETTER | | | GOOD | |
| | | TRADENAM | | TON SG | 32A / 48A | | _ | 38A / 25A / GEM | IINI |
| | | ABRASIV | | | Aluminum Oxide | | | Aluminum Oxide | D107 // |
| IZE (D x T x H) | | M MIN./STD. PKG | i. SPEC. | PART # | SPEC. | PART # | MIN./STD. PKG. | SPEC. | PART # |
| ype 01 Straig | ht 🔤 | * | | | | | | | |
| x 1/2 x 1-1/4 | 3,600 | 1/10 | 5NQ46-HVS3 | 662533 75053 | 32A46-FVBEP | 662529 41203 | 1/10 | 25A46-HVP2 | 662529 16219 |
| | 3,600 | 1/10 | 5NQ46-IVS | 690831 59103 | 32A46-GVBE | 662529 40862 | 1/10 | 25A60-HVP2 | 662529 16221 |
| | 3,600 | 1/10 | 5NQ46-IVS3 | 662533 75052 | 32A46-GVBEP | 662529 41204 B | 1/10 | 38A46-GVBE | 662529 41022 |
| | 3,600 | 1/10 | 5NQ46-JVS | 690831 59104 | 32A46-HVBE | 662529 40863 B | 1/10 | 38A46-GVBEP | 662529 41323 |
| | 3,600 | 1/10 | 5NQ60-GVSP | 690831 59105 | 32A46-HVBE | 662532 88775 S | 1/10 | 38A46-HVBE | 662529 41023 |
| | 3,600 | 1/10 | 5NQ60-IVS3 | 662533 75047 | 32A46-HVBEP | 662529 41205 B | 1/10 | | 00000044004 |
| | 3,600 | 1/10 | 5NQ60-JVS | 690831 59106 | 32A46-HVS3 | 662434 94107 | 1/10 | 38A46-HVBEP | 662529 41324 |
| | 3,600 | 1/10 1/10 | 5NQ60-JVS3 | 662533 75046 | 32A46-IVBE 32A46-IVBE | 662529 40864 B | 1/10 1/10 | 38A46-HVP2 | 66252916223 |
| | 3,600 | 1/10 | 3SGP46-GVSP 3SGR46-HVP2 | 662529 11717 662529 16211 | 32A46-IVBE 32A46-IVBEP | 662532 88776 S 662529 41206 | 1/10 | 38A46-IVBE 38A46-JVBE | 662529 41024 662529 41026 |
| | 3,600 | 1/10 | 3SGR60-HVP2 | 662529 16213 | 32A40-IVBEF 32A46-IVS3 | 662434 95357 | 1/10 | 38A46-JVBE | 662532 941020 |
| | 3,600 | 1/10 | 5SG46-GVSP | 662529 40522 | 32A40-IV33 | 662529 40865 B | 1/10 | 38A46-KVBE | 662529 4102 |
| | 3,600 | 1/10 | 5SG46-HVS3 | 662533 75050 | 32A46-JVBE | 662532 88777 S | 1/10 | 38A60-HVBE | 662529 4103 |
| | 3,600 | 1/10 | 5SG46-HVSP | 662529 41130 | 52A40 3VDL | 002002001110 | 1/10 | 38A60-HVBEP | 662529 4133 |
| | 3,600 | 1/10 | 5SG46-IVS | 662529 40193 B | 32A46-KVBE | 662529 40867 B | 1/10 | 38A60-IVBE | 662529 4103 6 |
| | 3,600 | 1/10 | 5SG46-IVS | 662532 88788 S | OEATIO TRADE | 002020100010 | 1/10 | 38A60-JVBE | 662529 4103 |
| | 3,600 | 1/10 | | 002002001000 | 32A54-IVBE | 662529 40873 | 1 | 38A60-JVBE | 662532 88766 |
| | 3,600 | 1/10 | 5SG46-IVSP | 662529 40523 | 32A60-GVBEP | 662529 41313 | 1/10 | 38A60-KVBE | 662529 4104 1 |
| | 3,600 | 1/10 | 5SG46-JVS | 662529 40194 B | 32A60-HVBE | 662529 40879 B | 1 | 38A60-KVBE | 66253288769 |
| | 3,600 | 1/10 | 5SG46-JVS | 662532 88789 S | 32A60-HVBEP | 66252941314 | 1/10 | 38A60-LVBE | 66252911677 |
| | 3,600 | 1/10 | 5SG46-JVS3 | 662434 95263 | 32A60-IVBE | 662529 40880 B | 1/10 | 38A80-HVBE | 66252941047 |
| | 3,600 | 1/10 | 5SG46-KVS | 662529 40195 | 32A60-IVBE | 662532 88779 S | 1/10 | 38A80-IVBE | 66252941048 |
| | 3,600 | 1/10 | 5SG60-GVSP | 662529 40524 | 32A60-IVS3 | 662434 95363 | 1/10 | 38A80-JVBE | 66252941049 |
| | 3,600 | 1/10 | 5SG60-IVS | 662529 40196 B | 32A60-JVBE | 662529 40882 B | 1/10 | 38A80-KVBE | 662529 4105 4 |
| | 3,600 | 1/10 | | | 32A60-JVBEP | 662529 41316 | 1 | 38A80-KVBE | 662533 5064 1 |
| | 3,600 | 1/10 | | | 32A60-JVS3 | 662434 95364 | 1/10 | 38A80-LVBE | 662529 4105 6 |
| | 3,600 | 1/10 | 5SG60-IVSP | 662529 40525 | 32A60-KVBE | 662529 40885 B | 1/10 | 38A100-IVBE | 662529 41163 |
| | 3,600 | 1/10 | 5SG60-JVS | 662529 40197 B | 32A60-KVBE | 662532 88782 S | 1/10 | 38A100-JVBE | 662529 4116 5 |
| | 3,600 | 1/10 | | | 32A60-LVBE | 662529 40888 | 1/10 | 38A100-KVBE | 662529 4116 |
| | 3,600 | 1/10 | 5SG60-JVS3 | 662533 75043 | 32A80-HVBE | 662529 40894 | 1/10 | 38A120-JVBE | 66252941174 |
| | 3,600 | 1/10 | 5SG60-KVS | 662529 40198 | 32A80-IVBE | 662529 40895 B | 1/10 | 38A120-KVBE | 6625294117 |
| | 3,600 | 1/10 | 5SG60-LVS | 662529 40199 | 32A80-IVBE | 662532 88783 S | 1/10 | 38A150-JVBE | 66252941179 |
| | 3,600 | 1/10 | 5SG80-IVS | 662529 40200 | 32A80-JVBE | 662529 40897 B | 1/10 | 38A150-MV | 662529 4059 |
| | 3,600 | 1/10 | 5SG80-IVSP 5SG80-JVS | 662529 40527 | 32A80-KVBE | 662529 40899 B | 1/10 | 38A220-QV | 662529 4060 |
| | 3,600 3,600 | 1/10 1/10 | 22090-172 | 662529 40201 B | 32A80-KVBE 32A80-LVBE | 662532 88784 S 662529 40900 | 10/10 | Comini 46 I | 662532 46800 |
| | 3,600 | 1/10 | 5SG80-KVS | 662529 40202 | 32A80-LVBE | 662529 40900 | 10/10 | Gemini 46-I Gemini 46-J | 662532 46802 |
| | 3,600 | 1/10 | 5SG80-LVS | 662529 40202 | 32A100-IVBE | 662529 40907 | 10/10 | | 00200240002 |
| | 3,600 | 1/10 | 5SG100-JVS | 662529 40203 | 32A100-JVBE | 662529 41018 B | | | |
| | 3,600 | 1/10 | 5SG100-KVS | 662529 4020 4 | 32A120-LVBE | 662532 88786 S | | | |
| | 3,600 | 1/10 | | 00202010200 | 48A46-HVP2 | 662529 16215 B | 10/10 | Gemini 60-K | 662532 4682 * |
| | 3,600 | 1/10 | | | 48A60-HVP2 | 662529 16217 B | 10/10 | dominio | 002002 |
| x 5/8 x 1-1/4 | 3,600 | 1/10 | | | 32A60-IVBE | 662529 41762 | | | |
| x 3/4 x 1-1/4 | 3,600 | 1/10 | 5SG46-IVS | 662529 42304 | 32A46-GVBEP | 662529 42070 | 1/10 | 38A46-HVBE | 662529 4195 (|
| | 3,600 | 1/10 | 5SG46-KVS | 662529 42305 | 32A46-HVBE | 662529 41930 | 1/10 | 38A46-KVBE | 66252941954 |
| | 3,600 | 1/10 | 5SG60-JVS | 662529 42307 | 32A46-IVBE | 662529 41931 | 1/10 | 38A60-IVBE | 662529 4220 7 |
| | 3,600 | 1/10 | 5SG60-KVS | 662529 42308 | 32A46-KVBE | 662529 41935 | 1/10 | 38A60-KVBE | 662529 4206 0 |
| | 3,600 | 1/10 | | | 32A60-IVBE | 662529 41938 | | | |
| | 3,600 | 1/10 | | | 32A60-KVBE | 662529 41943 | | | |
| | 3,600 | 1/10 | | | 32A80-IVBE | 662529 41946 | | | |
| x 1 x 1-1/4 | 3,600 | 1/10 | 5SG60-JVS | 662529 42429 | 32A46-HVBE | 662529 42513 | 1/10 | 38A46-HVBE | 662529 4253 4 |
| | 3,600 | 1/10 | 5SG60-KVS | 662529 42430 | 32A46-JVBE | 662529 42268 | | | |
| | 3,600 | 1/10 | | | 32A60-IVBE | 662529 42524 | | | |
| | 3,600 | 1/10 | | | 32A60-KVBE | 662529 42709 | | | |

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Vitrified Wheels For Steel Applications continued

| | | | 6 | 6 | | | | C | 6 |
|------------------|----------------|----------------|--------------------------|--|--------------------------|--|----------------|-----------------------|-----------------------|
| | | | - | 10 | | | | | - |
| | | | BEST QUANTUM / NOI | RTON SC | BETTER 32A / 48A | | | GOOD 38A / 25A / G | MINI |
| | | ABRASIVE: | | nion 3a | Aluminum Oxide | | - | Aluminum Oxid | |
| SIZE (D x T x H) | MAX. RPM | MIN./STD. PKG. | | PART # | SPEC. | PART # | MIN./STD. PKG. | | PART # |
| ype 01 Straigh | ıt 🔤 | | | | | | | | |
| x 1/4 x 1-1/4 | 3,105 / 3,600* | 1/10 | 5SG60-KVS | 662530 43351 * | 32A46-HVBE | 662530 43412 | 1/10 | 38A60-IVBE | 662530 43431 * |
| X 1/ 1 X 1 1/ 1 | 3,105 / 3,600* | 1/10 | 5SG80-KVS | 662530 43353 * | 32A46-IVBE | 662530 43310 | 1/10 | 38A60-JVBE | 662530 43432 * |
| | 3,600 | 1/10 | | 002000 | 32A46-KVBE | 662530 43413 | 1/10 | 38A60-KVBE | 662530 10825 |
| | 3,600 | 1/10 | | | 32A60-IVBE | 662530 43416 B | 1/10 | 38A80-IVBE | 662530 43437 |
| | 3,600 | 1/10 | | | 32A60-IVBE | 662532 88796 S | 1/10 | 38A80-JVBE | 662530 43439 |
| | 3,600 | 1/10 | | | 32A60-JVBE | 662530 43417 | 1/10 | 38A80-KVBE | 662530 43461 |
| | 3,600 | 1/10 | | | 32A60-KVBE | 662530 43399 | 1/10 | 38A100-IVBE | 662530 43445 |
| | 3,600 | 1/10 | | | 32A80-IVBE | 662530 43421 | 1/10 | 38A100-KVBE | 662530 43447 |
| | 3,600 | 1/10 | | | 32A80-KVBE | 662530 43458 B | 1/10 | 38A120-KVBE | 662530 43450 |
| | 3,600 | 1/10 | | | 32A80-KVBE | 662532 88797 S | 1/10 | 38A150-KVBE | 662530 43451 |
| | 3,600 | 1/10 | | | 32A80-LVBE | 662530 43425 | | | |
| | 3,600 | 1/10 | | | 32A100-IVBE | 662530 43426 | | | |
| 0/0 1 1/4 | 3,600 | 1/10 | | | 32A100-KVBE | 662530 43428 | | | |
| x 3/8 x 1-1/4 | 3,600 | 1/10 | | 00000000011 | 32A60-KVBE | 662530 43565 | 1/10 | | 000000400054 |
| x 1/2 x 1-1/4 | 3,105 / 3,600* | 1/10 | 5NQ46-HVS3 5NQ46-IVS | 662533 87211 690831 59107 | 32A46-GVBEP | 662530 43882 B | 1/10 | 25A46-HVP2 | 662530 19354 |
| | 3,105 3,105 | 1/10 1/10 | 5NQ46-IVS | 662533 87212 | 32A46-HVBE 32A46-HVBE | 662530 43712 B 662532 88800 S | 1/10 | 38A46-HVBE | 662530 43746 |
| | 3,105 / 3,600* | 1/10 | 5NQ46-JVS | 690831 59108 * | 32A40-HVBEP | 662530 43883 *† B | 1/10 | 38A46-HVBEP | 662530 43891 |
| | 3,105 / 3,000 | 1/10 | 211040-2102 | 03003133100 | JZA40-ITVDLI | 00233043003 D | 1/10 | 38A46-IVBE | 662530 43749 |
| | 3,105 / 3,600* | 1/10 | 5NQ60-GVSP | 690831 59109 | | | 1/10 | 38A46-JVBE | 662530 43752 * |
| | 3,105 / 3,600* | 1/10 | 5NQ60-IVS3 | 662533 87214 * | 32A46-IVBE | 662530 43713 B | 1/10 | 38A46-KVBE | 662530 43762 * |
| | 3,600 | 1/10 | 5NQ60-JVS | 690831 59110 | 02,110,1102 | 002000.001000 | 1/10 | 38A60-HVBE | 662530 43756 |
| | 3,600 | 1/10 | 5NQ60-JVS3 | 662533 87213 | 32A46-JVBE | 662530 43715 B | 1/10 | 38A60-IVBE | 662530 43757 |
| | 3,105 / 3,600* | 1/10 | 3SGP46-HVSP | 662530 11505 | 32A46-JVBE | 662532 88801 * S | 1/10 | 38A60-JVBE | 66253043858 |
| | 3,600 | 1/10 | 3SGP46-JVH | 662530 13796 | 32A46-JVS3 | 662434 95314 | 1/10 | 38A60-KVBE | 662530 43861 |
| | 3,600 | 1/10 | 3SGR46-GVP2 | 662530 19345 | 32A46-KVBE | 662530 43716 B | 1/10 | 38A80-IVBE | 662530 43866 |
| | 3,600 | 1/10 | 3SGR46-HVP2 | 662530 19346 | | | 1/10 | 38A80-JVBE | 662530 13787 |
| | 3,600 | 1/10 | 3SGR60-HVP2 | 662530 19348 | 32A60-GVBEP | 662530 43887 † | 1/10 | 38A80-KVBE | 662530 43869 |
| | 3,105 / 3,600* | 1/10 | 5SG46-GVSP | 662530 43649 | 32A60-HVBE | 662530 43724 * | 1/10 | 38A100-KVBE | 662530 43877 |
| | 3,600 | 1/10 | 500 10 10 00 | | 32A60-HVBEP | 662530 43888 | 10/10 | Gemini 46-H | 662532 46841 * |
| | 3,105 / 3,600* | 1/10 | 5SG46-HVSP | 662530 43915 *† | | 662530 43725 * B | 10/10 | Gemini 46-I | 662532 46843 |
| | 3,105 / 3,600* | 1/10 | 5SG46-IVS | 662530 44089 B | | 662532 88802 * S | 10/10 | Gemini 46-J | 662532 46845 |
| | 3,105 / 3,600* | 1/10 | 5SG46-IVS | 662532 88804 S | | 662530 43727 * B | | | |
| | 3,105 / 3,600* | 1/10 1/10 | 5SG46-IVS3 5SG46-IVSP | 662533 87221 662530 43650 | 32A60-KVBE | 662530 43729 * B | | | |
| | 3,600 | 1/10 | 5SG40-IVSF 5SG46-JVS | 662530 43050 B | 32A60-KVBE | 662532 88803 * S 662530 43733 | | | |
| | 3,600 | 1/10 | 5SG40-JVS 5SG46-JVS | 662532 88806 S | | 662530 43734 | | | |
| | 3,600 | 1/10 | 5SG46-KVS | 662530 44091 | 32A80-JVBE | 662530 43736 | | | |
| | 3,600 | 1/10 | 5SG60-GVSP | 662530 43651 † | 32A80-5VBE | 662530 43737 | | | |
| | 3,600 | 1/10 | 5SG60-IVS | 662530 44092 | 32A100-IVBE | 662530 43740 | | | |
| | 3,600 | 1/10 | 5SG60-IVS3 | 662533 87225 | 32A100-KVBE | 662530 43742 | | | |
| | 3,600 | 1/10 | 5SG60-IVSP | 662530 43652 | 48A46-HVP2 | 662530 19350 B | | | |
| | 3,600 | 1/10 | 5SG60-JVS | 662530 44093 B | | | | | |
| | 3,600 | 1/10 | 5SG60-KVS | 662530 44094 | | | | | |
| | 3,600 | 1/10 | 5SG80-JVS | 662530 44096 | | | | | |
| | 3,600 | 1/10 | 5SG80-KVS | 662530 44097 | | | | | |
| | 3,600 | 1/10 | 5SG100-KVS | 662530 19435 | | | | | |

S Single Pack

* Indicates wheel max RPM has been tested to 3,600 as explained in the tech tip below

TIP

- * 8" Type 01 and Type 05 Vitrified Toolroom Wheels' Maximum Operating Speeds:
- Stock NorPor VP2 wheels = 3,600 RPMs
- All other 46 grit, J grade and harder = 3,600 RPMs
- All other 54 grit, I grade and harder = 3,600 RPMs
- All other 60 grit and finer, H grade and harder = 3,600 RPMs
- † Exceptions to the rule: speed-tested to 3,600 RPM
- All other specifications = 3,105 RPMs

It is the user's responsibility to refer to and comply with ANSI B7.1 A

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Vitrified Wheels For Steel Applications continued

| | | TIER: | BEST | 0 | BETTER | | 1 | GOOD | 3 |
|------------------|----------------|----------------|---------------|------------------------|----------------|-----------------------|----------------|----------------|-----------------------|
| | | | QUANTUM / NOF | TON SG | 32A / 48A | | | 38A / 57A | |
| | | ABRASIVE: | | | Aluminum Oxide | | _ | Aluminum Oxide | |
| SIZE (D x T x H) | | MIN./STD. PKG. | | PART # | SPEC. | PART # | MIN./STD. PKG. | | PART # |
| | | MIN./515.1Kd. | 01 20. | | 51 2.0. | | MIN./515.1Ku. | 01 20. | |
| Type 01 Straigh | nt 🔄 🗌 | | | | | | | | |
| 8 x 3/4 x 1-1/4 | 3,105 | 1/10 | 5NQ46-IVS | 690831 59111 | 32A46-GVBEP | 662530 44195 | 1/10 | 38A46-HVBE | 662530 44175 |
| | 3,105 | 1/10 | 5NQ46-IVS3 | 662434 94089 | 32A46-HVBE | 662530 44159 | 1/10 | 38A46-IVBE | 662530 44177 |
| | 3,600 | 1/10 | 5NQ46-JVS | 690831 59112 | 32A46-HVBEP | 66253044196*† | 1/10 | 38A46-KVBE | 662530 44180 |
| | 3,105 / 3,600* | 1/10 | 5NQ46-JVS3 | 662434 94090 * | 32A46-IVBE | 662530 44215 | 1/10 | 38A60-IVBE | 662530 44184 * |
| | 3,105 / 3,600* | 1/10 | 5NQ60-GVS3P | 662434 95369 | 32A46-JVBE | 662530 44161 * | ., | | |
| | 3,105 / 3,600* | 1/10 | 5NQ60-GVSP | 690831 59113 | 32A46-KVBE | 662530 44165 * | | | |
| | 3,600 | 1/10 | 5NQ60-JVS | 690831 59114 | 32A60-GVBEP | 662530 44198 | | | |
| | 3,600 | 1/10 | 511000 510 | 03003133114 | 32A60-HVBE | 662530 44168 | | | |
| | 3,105 / 3,600* | | | 66050044000 | 32A60-IVBE | | | | |
| | | 1/10 | 5SG46-IVS | 662530 44098 | | 662530 44169 * | | | |
| | 3,600 | 1/10 | 3SGP46-JVH | 662530 13792 | 32A60-JVBE | 662530 44171 | | | |
| | 3,600 | 1/10 | 5SG46-JVS | 662530 44099 B | 32A60-KVBE | 662530 44173 | | | |
| | 3,600 | 1/10 | | | 32A80-KVBE | 662530 44064 | | | |
| | 3,600 | 1/10 | 5SG60-IVS | 662530 44101 | | | | | |
| | 3,600 | 1/10 | 5SG60-JVS | 662530 44102 | | | | | |
| | 3,600 | 1/10 | 5SG60-KVS | 662530 44103 | | | | | |
| 3 x 1 x 1-1/4 | 3,105 / 3,600* | 1/10 | 5SG46-KVS | 662530 02588 * | 32A46-HVBE | 662530 44616 | 1/10 | 38A46-IVBE | 662530 44636 |
| | 3,105 / 3,600* | 1/10 | 5SG60-GVSP | 662530 03228 *† | 32A46-IVBE | 662530 44617 | 1/10 | 38A60-IVBE | 662530 44456 * |
| | 3,600 | 1/10 | 5SG60-IVS | 662530 02639 | 32A46-KVBE | 662530 44622 | 1/10 | 57A60-MVBE | 662530 44270 |
| | 3,600 | 1/10 | | | 32A60-IVBE | 662530 44624 | | | |
| | 3,600 | 1/10 | | | 32A60-KVBE | 662530 44629 | | | |
| 10 x 1/4 x 3 | 2,485 | ., | | | | | 1 | 38A80-KVBE | 662531 49572 |
| 10 x 1/2 x 3 | 2,485 | 1 | | | 32A60-JVBE | 662531 49729 | 1 | 38A60-KVBE | 662531 49859 |
| 10 x 1/2 x 0 | 2,485 | 1 | | | OLNOO OVDL | 00200140120 | 1 | 38A80-KVBE | 662531 49865 |
| 10 x 3/4 x 3 | 2,485 | 1 | | | 32A46-IVBE | 662531 60024 | 1 | 38A46-JVBE | 662531 60158 |
| 10 x 3/4 x 3 | 2,485 | 1 | | | 32A40-IVBE | 662531 60137 | 1 | 38A60-IVBE | 662531 60163 |
| | | 1 | | | | | 1 | 30A00-IVDE | 00203100103 |
| 10 1 1 1 1 1 | 2,485 | • | | | 32A60-KVBE | 662531 60143 | | | |
| 10 x 1 x 1-1/4 | 2,485 | 1 | | | 32A60-KVBE | 662531 60774 | | | |
| 10 x 1 x 2 | 2,485 | 1 | | | 32A46-IVBE | 662531 60749 | | | |
| 10 x 1 x 3 | 2,485 | 1 | 5SG46-GVSP | 662531 60494 | 32A46-HVBE | 662531 60747 | 1 | 38A46-IVBE | 662531 60889 |
| | 2,485 | 1 | 5SG46-IVS | 662531 60400 | 32A46-IVBE | 662531 60750 | 1 | 38A46-JVBE | 662531 60892 |
| | 2,485 | 1 | 5SG46-JVS | 662531 60401 | 32A46-JVBE | 662531 60754 | 1 | 38A60-IVBE | 662531 60898 |
| | 2,485 | 1 | | | 32A46-KVBE | 662531 60758 | 1 | 38A60-KVBE | 662531 60900 |
| | 2,485 | 1 | 5SG46-KVS | 662531 60402 | 32A60-IVBE | 662531 60769 | | | |
| | 2,485 | 1 | 5SG60-GVSP | 662531 60495 | 32A60-KVBE | 662531 60777 | | | |
| | 2,485 | 1 | 5SG60-IVS | 662531 60403 | 32A80-KVBE | 66253160782 | | | |
| | 2,485 | 1 | 5SG60-JVS | 662531 60404 | | | | | |
| | 2,485 | 1 | 5SG60-KVS | 662531 60405 | | | | | |
| 10 v 1 /0 v 2 | 2,070 | 2 | 35000 1105 | 00200100400 | 32A60-JVBE | 662532 62134 | | | |
| 12 x 1/2 x 3 | 2,070 | 2 | | | | | | | |
| 10 v 1/0 v E | | | | | 32A80-KVBE | 66253262110 | | | |
| 12 x 1/2 x 5 | 2,070 | 2 | | | 32A60-KVBE | 662532 62107 | | | |
| | 2,070 | 2 | 500 40 11/0 | 000500005 | 32A80-KVBE | 662532 62111 | | 00140 11/055 | |
| 12 x 3/4 x 3 | 2,070 | 1 | 5SG46-IVS | 662532 62204 | 32A46-GVBEP | 662532 62392 | 1 | 38A46-JVBE | 662532 62281 |
| | 2,070 | 1 | | | 32A46-HVBE | 662532 62260 | | | |
| | 2,070 | 1 | | | 32A46-IVBE | 662532 62261 | | | |
| | 2,070 | 1 | | | 32A60-IVBE | 662532 62270 | | | |
| | 2,070 | 1 | | | 32A60-KVBE | 662532 62273 | | | |
| 12 x 1 x 1-1/4 | 2,070 | 1 | | | 32A46-KVBE | 662532 62570 | | | |

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S Single Wheel Pack
* Indicates wheel max RPM has been tested to 3,600 as explained in the tech tip below

TIP

- * 8" Type 01 and Type 05 Vitrified Toolroom Wheels' Maximum Operating Speeds:
- Stock NorPor VP2 wheels = 3,600 RPMs
- All other 46 grit, J grade and harder = 3,600 RPMs
- All other 54 grit, I grade and harder = 3,600 RPMs
- All other 60 grit and finer, H grade and harder = 3,600 RPMs

- † Exceptions to the rule: speed-tested to 3,600 RPM
- All other specifications = 3,105 RPMs

Æ It is the user's responsibility to refer to and comply with ANSI B7.1

(5%) (\mathbf{f}) applifast.com



Vitrified Wheels For Steel Applications continued

| | | TIFR | BEST | C | BETTER | | | GOOD | 6 |
|--------------------|----------------|----------------|-------------------------|--|---------------------------|--|---|--------------------------|---------------------|
| | | | QUANTUM / NO | RTON SG | 32A / 48A | | | 38A | |
| | | | Ceramic Alumina | | Aluminum Oxide | 3 | | Aluminum Oxid | de |
| SIZE (D x T x H) | MAX. RPM | MIN./STD. PKG. | | PART # | SPEC. | PART # | MIN./STD. PKG. | | PART # |
| Type 01 Straigh | | | | | | | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | |
| •• • | | | | 0005000005* | | 00050060040 | 4 | | 000500000700 |
| 12 x 1 x 3 | | 1 | 3SGR46-HVP2 | 662532 20885 * | 32A46-GVBEP | 662532 62840 | 1 | 38A46-HVBE | 662532 62700 |
| | 2,070 | 1 | 5SG46-HVSP | 662532 62488 | 32A46-HVBE | 662532 62562 | 1 | 38A46-IVBE 38A46-JVBE | 662532 62702 |
| | 2,070 | 1 | 5SG46-IVS 5SG46-JVS | 662532 62500 662532 62501 | 32A46-HVBEP 32A46-IVBE | 662532 62842 | 1 | | 66253262704 |
| | 2,070 2,070 | <u>1</u> 1 | 5SG46-JVS 5SG46-JVS3 | 662434 95317 | 32A46-IVBE 32A46-JVBE | 662532 62564 662532 62567 | | 38A60-IVBE | 662532 62713 |
| | | 1 | | | 32A40-JVBE 32A46-KVBE | | | | |
| | 2,070 2,070 | 1 | 5SG46-KVS 5SG46-KVS3 | 662532 62502 662434 95318 | 32A40-RVBE | 662532 62572 662532 62580 | | | |
| | 2,070 | 1 | 5SG60-GVSP | 662532 62593 | 32A60-IVBE | 662532 62581 | | | |
| | 2,070 | 1 | 5SG60-IVS | 662532 62593 | 32A60-TVBL | 662532 62689 | | | |
| | 2,070 | 1 | 5SG60-JVS | 662532 62504 | 32A80-KVBE | 662532 62532 | | | |
| | 2,070 / 2,710* | 1 | 5SG60-KVS | 662532 62505 | 48A60-HVP2 | 662532 20891 * | | | |
| 12 x 1 x 5 | 2,070 / 2,710 | 1 | 5SG46-GVSP | 662532 62594 | 32A46-GVBEP | 662532 62841 | 1 | 38A46-IVBE | 662532 62703 |
| 12 X 1 X J | 2,070 | 1 | 5SG46-IVS | 662532 62594 | 32A46-HVBE | 662532 62563 | 1 | 38A60-KVBE | 662532 62719 |
| | 2,070 | 1 | 5SG46-JVS | 662532 62509 B | 32A46-IVBE | 662532 62565 | 1 | JOAUU-IVDL | 00233202719 |
| | 2,070 | 1 | 5SG46-KVS | 662532 62510 | 32A46-KVBE | 662532 62573 | | | |
| | 2,070 | 1 | 5SG60-GVSP | 662532 62595 | SZA40-NVDE | 00203202013 | | | |
| | 2,070 | 1 | 5SG60-IVS | 662532 62595 | 32A60-IVBE | 662532 62582 | | | |
| | 2,070 | | 5SG60-JVS | | | 662532 62582 | | | |
| | , | 1 | | 662532 62512 | 32A60-JVBE | | | | |
| | 2,070 | 1 | 5SG60-KVS | 662532 62513 662532 62515 | 32A60-KVBE | 66253262691 B 66253262696 | | | |
| | 2,070 | 1 | 5SG80-JVS | 00203202010 | 32A80-JVBE | | | | |
| 01.1/10 | 2,070 | • | | | 32A80-KVBE | 662532 62697 | | | |
| 12 x 1-1/4 x 3 | 2,070 | 1 | | | 32A46-IVBE | 662532 62301 | | | |
| 12 x 1-1/2 x 1-1/4 | , | 1 | 500 40 IV/0 | 00050000000 | 32A46-KVBE | 662532 63146 | | | |
| l2 x 1-1/2 x 3 | 2,070 | 1 | 5SG46-IVS | 662532 02820 | 32A46-HVBE | 662532 63143 | | | |
| | 2,070 | 1 | | | 32A46-IVBE | 662532 63144 | | | |
| | 2,070 | 1 | 5110 40 11/0 | 00000100110 | 32A60-JVBE | 662532 63123 | | 00140 11/05 | 00050044005 |
| 12 x 1-1/2 x 5 | 2,070 | 1 | 5NQ46-IVS | 690831 59115 | 32A46-GVBEP | 662532 63192 | 1 | 38A46-IVBE | 662532 14987 |
| | 2,070 | 1 | 5NQ46-IVS3 | 662434 94092 | 32A46-HVBE | 662532 63128 | | | |
| | 2,070 | 1 | 5NQ46-JVS | 690831 59116 | 32A46-IVBE | 662532 63145 | | | |
| | 2,070 | 1 | 5NQ46-JVS3 | 662434 94093 | 32A46-JVBE | 662532 63120 | | | |
| | 2,070 | 1 | 5NQ60-GVSP | 690831 59117 | 32A60-HVBE | 662532 63149 | | | |
| | 2,070 | 1 | 5NQ60-JVS | 690831 59118 | 32A60-KVBE | 662532 63034 | | | |
| | 2,070 | 1 | 3SGP60-GVSP | 662532 15030 | | | | | |
| | 2,070 | 1 | 5SG46-GVSP | 662532 03453 | | | | | |
| | 2,070 | 1 | 5SG46-IVS | 662532 02842 | | | | | |
| | 2,070 | 1 | 5SG46-IVS3 | 662434 95319 | | | | | |
| | 2,070 | 1 | 5SG46-JVS | 662532 02926 | | | | | |
| | 2,070 | 1 | 5SG60-GVSP | 662532 62596 | | | | | |
| 2 x 2 x 1-1/4 | 2,070 | 1 | | | 32A46-KVBE | 662532 63461 | | | |
| | 2,070 | 1 | | | 32A46-MVBE | 662532 63463 | | | |
| 2 x 2 x 3 | 2,070 | 1 | | | 32A46-IVBE | 662532 63459 | | | |
| 2 x 2 x 5 | 2,070 | 1 | | | 32A46-HVBE | 662532 63403 | | | |
| | 2,070 | 1 | | | 32A46-IVBE | 662532 62302 | | | |
| | 2,070 | 1 | | | 32A60-KVBE | 662532 63465 | | | |
| I4 x 1/2 x 5 | 1,800 | 1 | 5SG80-KVS | 662533 63814 | 32A60-KVBE | 662533 63761 | | | |
| 14 x 3/4 x 5 | 1,800 | 1 | | | 32A60-KVBE | 662533 63772 | | | |
| l4 x 1 x 3 | 1,800 | 1 | 5SG46-IVS | 662533 63960 | 32A46-HVBE | 662533 63912 | | | |
| | 1,800 | 1 | | | 32A46-IVBE | 662533 63914 | | | |
| | 1,800 | 1 | | | 32A60-IVBE | 662533 63927 | | | |

* 12" Type 01 Wheel Maximum RPM: NORPOR VP2 Wheels = 2,710; all others = 2,070

(5%)

 (\mathbf{f})

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Vitrified Wheels For Steel Applications continued

| | | TIER: | BEST | C | BETTER | | 1 | GOOD | 3 |
|------------------|----------|----------------|-----------------|-----------------------|----------------|-----------------------|----------------|----------------|---------------------|
| | | TRADENAME: | QUANTUM / NO | RTON SG | 32A | | - | 38A / 57A | |
| | | ABRASIVE: | Ceramic Alumina | | Aluminum Oxide | | _ | Aluminum Oxide | |
| SIZE (D x T x H) | MAX. RPM | MIN./STD. PKG. | SPEC. | PART # | SPEC. | PART # | MIN./STD. PKG. | SPEC. | PART # |
| Type 01 Straig | ht 🗄 | | | | | | | | |
| 14 x 1/2 x 5 | 1,800 | 1 | 5SG80-KVS | 662533 63814 | 32A60-KVBE | 662533 63761 | | | |
| 14 x 3/4 x 5 | 1,800 | 1 | 30000 100 | 0020000014 | 32A60-KVBE | 662533 63772 | | | |
| 14 x 1 x 3 | 1.800 | 1 | 5SG46-IVS | 662533 63960 | 32A46-HVBE | 662533 63912 | | | |
| | 1,800 | 1 | 000101100 | 002000000000 | 32A46-IVBE | 662533 63914 | | | |
| | 1,800 | 1 | | | 32A60-IVBE | 662533 63927 | | | |
| 4 x 1 x 5 | 1.800 | 1 | 5SG46-GVSP | 662533 64108 | 32A46-GVBEP | 66253364074 | 1 | 38A46-HVBE | 662533 64043 |
| 17170 | 1,800 | 1 | 5SG46-HVSP | 662533 13990 | 32A46-HVBE | 662533 63913 | 1 | 38A60-IVBE | 662533 63947 |
| | 1,800 | 1 | 5SG46-IVS | 662533 63970 | 32A46-IVBE | 662533 63915 | 1 | 38A60-JVBE | 662533 64051 |
| | 1.800 | 1 | 5SG46-JVS | 662533 63971 | 32A46-JVBE | 662533 63919 | 1 | 38A60-KVBE | 662533 64053 |
| | 1,800 | 1 | | 00200000011 | 32A46-KVBE | 662533 63921 | 1 | 38A80-KVBE | 662533 64058 |
| | 1,800 | 1 | 5SG60-IVS | 662533 63974 | 32A60-GVBEP | 662533 64077 | 1 | 57A60-KVBE | 662533 64065 |
| | 1.800 | 1 | 5SG60-IVSP | 662533 63871 | 32A60-HVBE | 662533 63926 | 1 | 57A60-LVBE | 662533 64066 |
| | 1,800 | 1 | 5SG60-JVS | 662533 63975 | 32A60-JVBE | 662533 63930 | 1 | 57A80-MVBE | 662533 64070 |
| | 1,800 | 1 | 5SG60-KVS | 662533 63976 | 32A60-KVBE | 662533 63932 | · · | 011100 111102 | |
| | 1.800 | 1 | 5SG80-JVS | 662533 63979 | 32A60-LVBE | 662533 64035 | | | |
| | 1,800 | 1 | 5SG80-KVS | 662533 64003 | 32A80-JVBE | 662533 64038 | | | |
| | 1,800 | 1 | 000000 | | 32A80-KVBE | 662533 64039 | | | |
| 4 x 1 x 8 | 1.800 | 1 | | | 32A60-IVBE | 662533 63887 | | | |
| 4 x 1-1/2 x 5 | 1,800 | 1 | 5NQ46-HVS3 | 662533 87216 | 32A46-GVBEP | 662533 64238 | 1 | 38A46-HVBE | 662533 13968 |
| | 1,800 | 1 | 5NQ46-IVS3 | 662533 87219 | 32A46-HVBE | 662533 64335 B | 1 | 38A46-HVBEP | 662533 13969 |
| | 1,800 | 1 | 5NQ46-IVS | 690831 59119 | 32A46-HVBEP | 662533 64243 | 1 | 38A46-IVBE | 662533 64090 |
| | 1,800 | 1 | 5NQ46-JVS | 690831 59120 | 32A46-IVBE | 662533 64336 | 1 | 38A46-JVBE | 662533 64240 |
| | 1,800 | 1 | 5NQ46-JVS3 | 662434 94095 | 32A46-JVBE | 662533 64337 | 1 | 38A60-IVBE | 662533 64247 |
| | 1,800 | 1 | 5NQ60-GVS3P | 662434 95372 | 32A46-KVBE | 662533 64339 | - | | |
| | 1,800 | 1 | 5NQ60-GVSP | 690831 59122 | 32A60-HVBE | 662533 64340 | | | |
| | 1,800 | 1 | 5NQ60-JVS | 690831 59124 | 32A60-IVBE | 662533 64239 | | | |
| | 1,800 | 1 | 5NQ60-JVS3 | 662434 94096 | 32A60-JVBE | 662533 64341 | | | |
| | 1,800 | 1 | 3SGP46-GVSP | 662533 06780 | 32A60-KVBE | 662533 64342 | | | |
| | 1,800 | 1 | 3SGP46-HVSP | 662533 07025 | 32A80-JVBE | 662533 64246 | | | |
| | 1.800 | 1 | 3SGP46-JVH | 662533 13976 | | | | | |
| | 1,800 | 1 | 5SG46-GVSP | 662533 64320 | | | | | |
| | 1,800 | 1 | 5SG46-HVS3 | 662533 87231 | | | | | |
| | 1,800 | 1 | 5SG46-HVSP | 662533 02625 | | | | | |
| | 1,800 | 1 | 5SG46-IVS | 662533 64097 | | | | | |
| | 1,800 | 1 | 5SG46-IVS3 | 662533 87234 | | | | | |
| | 1,800 | 1 | 5SG46-IVSP | 662533 02498 | | | | | |
| | 1,800 | 1 | 5SG46-JVS | 662533 64098 B | | | | | |
| | 1,800 | 1 | 5SG60-IVS | 662533 64100 | | | | | |
| | 1,800 | 1 | 5SG60-JVS | 662533 64101 | | | | | |
| | 1,800 | 1 | 5SG60-KVS | 662533 02160 | | | | | |
| | 1,800 | 1 | 5SG80-KVS | 662533 63815 | | | | | |
| 4 x 2 x 5 | 1,800 | 1 | 5SG60-JVS | 662533 64414 | 32A46-IVBE | 662533 64323 | | | |
| 2 | 1,800 | 1 | | | 32A46-JVBE | 662533 64508 | | | |
| | 1,800 | 1 | | | 32A46-KVBE | 662533 64509 | | | |
| | 1,800 | 1 | | | 32A60-KVBE | 662533 64510 | | | |

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Dressing: Single Point Dressing Tool Starting Recommendations

| | | Ceramic (NQ, Nort | on SG, TG, etc.), 37C & 39C Wheels | f ri | 1 | 1 |
|-------------|---|-------------------|------------------------------------|------|---|---|
| WHEEL SIZES | TOOL SHANK DIAMETER | PRODUCT NO. | PART # | | | |
| 12" to 14" | 3/8" | BCSG5M6 | 662601 57009 | | Γ | |
| | 7/16" | BCSG5M7 | 662601 56907 | | | F |
| | standard recommendation; see to nol section for Furioso tools, engin | | | | - | |

| 25A, 32A, 38A, 48A | , 53A, 57A, 64A, 86A Wheels |
|--------------------|-----------------------------|
| PRODUCT NO. | PART # |
| BC5M6 | 662601 95004 |
| BC5M7 | 662601 95005 |
| | |





Vitrified Wheels For Steel Applications continued

| | | | | - | | | | | |
|---------------------------------|----------------|------------------|--------------------------|--|---------------------------|--|----------------|---------------|---------------------|
| | | TIER | BEST | - | BETTER | | | GOOD | 3 |
| | | | QUANTUM / NO | RTON SG | 32A / 23A / 48/ | A | | 38A / 53A / 5 | 7A |
| | | ABRASIVE. | | | Aluminum Oxide | | | Aluminum Oxi | |
| SIZE (D x T x H) | MAX. RP | M MIN./STD. PKG. | | PART # | SPEC. | PART # | MIN./STD. PKG. | | PART # |
| Type 02 Cylinder | | | | | | | | | |
| 6x1x4 | 3,600 | 1/10 | | | 32A46-KVBE | 662528 38308 | 1/10 | 38A80-HVBE | 662528 38314 |
| Rim 1" | 3,600 | 1/10 | | | 32A40-KVBE | 662528 38309 | 1/10 | 30A0U-TIVDE | 00202030314 |
| Plate A47466 | 3,000 | 1/10 | | | SZAOU-JVDE | 00202030309 | | | |
| 8 x 2 x 5-1/2 | 2,865 | | | | | | 1/8 | 53A46-KVBE | 662530 44942 |
| Rim 1-1/4" | 2,000 | | | | | | 1/0 | SONIO INDE | 002000-110-12 |
| Plate A50831 | | | | | | | | | |
| 10 x 2 x 7-1/2 | 2,295 | 1 | | | 32A54-JVG | 662531 61687 | 1 | 53A60-KVG | 662531 61701 |
| Rim 1-1/4" | , | | | | | | | | |
| (ME62845) | | | | | | | | | |
| Plate A110170 | | | | | | | | | |
| 11 x 5 | 1,910 | 1 | | | 32A30-HVBE | 662531 61800 | | | |
| Rim 1" (ME33437) | | | | | | | | | |
| Tape Wound | 4 7 10 | | | | 00400 51555 | 000501 | | 00140.0175 | 00050/0105 |
| 11 x 5 | 1,740 | 1 | | | 32A36-EVBEP | 662531 61780 | 1 | 38A46-GVBE | 662531 61807 |
| Rim 1" (ME52726) | 1,910 | 1 | | | 32A36-GVBEP | 662531 61808 | | | |
| Tape Wound | 1,910 | 1 | | | 32A46-HVBE | 662531 61893 | | | |
| 18 x 5 Rim 1-1/2" | 1,065 | 1 | | | 32A30-E19VCP | 662534 65142 | | | |
| (ME15536) | | | | | | | | | |
| Tape Wound 18 x 5 Rim 1-1/2" | 1,170 | 1 | | | 23A30-F19VCP | 662534 65235 | | | |
| (ME52719) | 1,170 | I | | | 23A30-F19VUF | 00203400200 | | | |
| Tape Wound | | | | | | | | | |
| Includes Strips | | | | | | | | | |
| Type 05 Recessed | Ane Side | | | | | | | | |
| 3/4 x 3/4 x 1/4 | 43,290 | 5/40 | | | 32A60-KVBE | 662434 27582 | | | |
| Recess 1/S 3/8 x 3/8 | 40,200 | 5/40 | | | JEROU INDE | UULTUTLIJUL | | | |
| 1 x 1 x 1/4 | 32,470 | 5/40 | | | 32A60-KVBE | 662434 27769 | | | |
| Recess 1/S 1/2 x 1/2 | 02,0 | 0,10 | | | 02.000 | 00210121100 | | | |
| 1 x 1 x 3/8 | 32,470 | 5/40 | | | 32A60-KVBE | 662434 27773 | | | |
| Recess 1/S 1/2 x 1/2 | ., | ., . | | | | | | | |
| 1-1/4 x 1 x 3/8 | 25,975 | 5/40 | | | 32A60-KVBE | 662434 27799 | | | |
| Recess 1/S 5/8 x 1/2 | | | | | | | | | |
| 1-1/2 x 1 x 3/8 | 25,975 | 5/40 | | | 32A60-KVBE | 662434 27938 | | | |
| Recess 1/S 5/8 x 1/2 | | | | | | | | | |
| 1-1/2 x 1 x 3/8 | 21,645 | 5/40 | | | 32A60-KVBE | 662434 27937 | | | |
| Recess 1/S 3/4 x 1/2 | | | | | | | | | |
| 2 x 1 x 3/8 | 16,235 | 5/40 | | | 32A60-KVBE | 662434 28329 | | | |
| Recess 1/S 3/4 x 1/2 | | | | | | | | | |
| 2 x 1-1/2 x 5/8 | 16,235 | 10/30 | | | 32A60-KVBE | 662434 28332 | | | |
| Recess 1/S 1 x 3/4 | 0.000 | 1/10 | | 660E00 44 070 | | 660500 40000 | 1/10 | | 660500 40000 |
| 7 x 3/4 x 1-1/4 | 3,600 | 1/10 | 5SG46-IVS | 662529 41976 | 32A46-HVBE | 662529 42209 | 1/10 | 38A46-IVBE | 662529 42222 |
| Rec 1/S 2-3/4 x 1/4 | 3,600 | 1/10 | | | 32A46-IVBE | 662529 42211 | 1/10 | 38A60-IVBE | 662529 42225 |
| | 3,600 | 1/10 | | | 32A46-JVBE | 662529 42213 | | | |
| | 3,600 | 1/10 | | | 32A60-IVBE | 662529 42217 | | | |
| | 3,600 | 1/10 | | | 32A60-JVBE 32A60-KVBE | 662529 42218 662529 42205 | | | |
| 7 x 1 x 1-1/4 | 3,600 3,600 | 1/10 1/10 | | | 32A60-KVBE 32A46-GVBEP | 662529 42205 | | | |
| Rec 1/S 2-3/4 x 1/2 | 3,600 | 1/10 | | 66252016220 | 32A46-GVBEP 32A46-HVBE | | | | |
| 100 1/0 2 0/4 × 1/2 | 3,600 | 1/10 | 3SGR46-HVP2 5SG46-IVS | 662529 16228 662529 42318 | 32A46-HVBEP | 662529 42688 662529 42828 | | | |
| | 3,600 | 1/10 | JJU40-1VJ | 00232342310 | 32A46-IVBE | 662529 42628 | | | |
| | 3,600 | 1/10 | 5SG46-JVS | 662529 42427 | 32A40-IVBE 32A46-KVBE | 662529 42091 | | | |
| | | 1/10 | JOU40-JVO | 00232342421 | | | | | |
| | | 1/10 | | | 22/160. N/DL | | | | |
| | 3,600 | 1/10 | 55660- 11/0 | 66252042421 | 32A60-IVBE | 662529 42699 | | | |
| | 3,600 3,600 | 1/10 | 5SG60-JVS | 662529 42431 | 32A60-JVBE | 662529 42701 | | | |
| | 3,600 | | 5SG60-JVS | 662529 42431 | | | | | |

Continued

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Vitrified Wheels For Steel Applications continued

| | | TIED | BEST | C | BETTER | | | GOOD | C |
|--|-------------------------|----------------|--------------|--|--------------------------|--|------------------|--------------------------|--|
| | | TRADENAME: | | DRTON SG | 32A / 48A | | | 38A / GEMINI | |
| | | ABRASIVE: | | | Aluminum Oxic | 0 | _ | Aluminum Oxic | 0 |
| SIZE (D x T x H) | MAX. RPM | MIN./STD. PKG. | | a PART # | SPEC. | PART # | MIN./STD. PKG. | | PART # |
| Type 05 Recessed | | | 01 20. | 1000 # | 01 20. | | Mint./OTD. T Ku. | 01 20. | |
| | | | 5110 40 11/0 | 00050080004 | | 000500 10000 | 1/10 | | 000500 40505 |
| x 1 x 1-1/4 | 3,600 | 1/10 | 5NQ46-IVS | 662533 50691 | 32A46-HVBE | 662529 42689 | 1/10 | 38A46-HVBE | 662529 42707 |
| Rec 1/S 3 x 1/2 | 3,600 | 1/10 1/10 | 5SG46-IVS | 662529 01814 | 32A46-IVBE 32A60-IVBE | 662529 42690 | 1/10 | 38A46-IVBE | 662529 42809 |
| | 3,600 3,600 | 1/10 | 5SG60-IVS | 66050006007 | 32A00-IVBE | 662529 42686 | 1/10 1/10 | 38A46-KVBE 38A60-IVBE | 662529 42793 662529 42815 |
| | 3,600 | 1/10 | 5SG60-IVS | 662529 06907 662434 94102 | | | 1/10 | 38A60-JVBE | 662529 42815 |
| | 3,600 | 1/10 | 33000-1733 | 002434 34102 | | | 1/10 | 38A60-5VBL | 662529 42810 |
| | 3,600 | | | | | | 10/10 | Gemini 46-J | 662532 46835 |
| ′ x 1-1/4 x 1-1/4 | 3,600 | 1/5 | | | 32A46-HVBE | 662529 42833 | 10/10 | | 002002-0000 |
| Rec 1/S 2-3/4 x 5/8 | 3,600 | 1/5 | | | 32A60-IVBE | 662529 42859 | | | |
| | 3,600 | 1/5 | | | 32A60-JVBE | 662529 42835 | | | |
| 7 x 1-1/2 x 1-1/4 | 3,600 | 1/5 | | | 32A46-IVBE | 662529 42843 | | | |
| Rec 1/S 2-3/4 x 3/4 | 3,600 | 1/5 | | | 32A60-IVBE | 662529 42844 | | | |
| 3 x 3/4 x 1-1/4 | 3,105 | 1/10 | | | 32A46-IVBE | 662530 44213 | | | |
| Rec 1/S 3-1/4 x 1/4 | -, | ., | | | | | | | |
| 3 x 1 x 1-1/4 | 3,600 | | | | | | 10/10 | Gemini 46-J | 662532 46850 |
| Rec 1/S 3 x 1/2 | | | | | | | | | |
| 3 x 1 x 1-1/4 | 3,105 | 1/10 | 5SG46-IVS | 662530 13543 | 32A46-IVBE | 662530 44790 | | | |
| Rec 1/S 3-1/4 x 1/2 | 3,600 | 1/10 | | | 32A46-JVBE | 662530 44382 | | | |
| | 3,600 | 1/10 | 5SG46-JVS | 662530 03301 | 32A46-JVS3 | 662434 95329 | | | |
| | 3,600 | 1/10 | | | 32A60-IVBE | 662530 44753 | | | |
| | 3,600 | 1/10 | | | 32A60-KVBE | 662530 44810 | | | |
| 0 x 3/4 x 2 lec Side A x 3/16 Face Bev lide A 75 Deg rom 1/8" Flat | 2,485 | 1 | | | 32A60-JVBE | 662531 60189 | | | |
| 12 x 1-1/2 x 3 Rec 1/S 6 x 1/2 | 2,070 | 1 | | | 32A46-IVBE | 662532 63186 | | | |
| l2 x 1-1/2 x 5 | 2,070 / 2,710* | 1 | 3SGR46-HVP2 | 662532 20904 * | 32A46-HVBEP | 662532 63180 | 1 | 38A46-IVBE | 662532 63175 |
| Rec 1/S 7-1/2 x 1/2 | 2,070 | 1 | 5SG46-GVSP | 662532 63127 | 32A46-IVBE | 662532 63166 | | | |
| | 2,070 | 1 | | | 32A46-JVBE | 662532 63169 | | | |
| | 2,070 | 1 | 5SG46-IVS | 662532 02883 | 32A46-KVBE | 662532 63170 | | | |
| | 2,070 | 1 | | | 32A60-KVBE | 662532 63172 | | | |
| | | | 5SG60-IVSP | 662532 63050 | | | | | |
| 4 x 1-1/2 x 5 | 1,800 / 2,320* | 1 | 3SGR46-GVP2 | 662533 19953 * | 32A46-HVBE | 662533 64359 | | | |
| lec 1/S 8 x 1/2 | 1,800 / 2,320* | 1 | 3SGR46-HVP2 | 662533 19954 * | 32A46-IVBE | 662533 64300 | | | |
| | 1,800 / 2,320* | 1 | 3SGR60-HVP2 | 662533 19956 * | 32A46-KVBE | 662533 64362 | | | |
| | 1,800 | 1 | 5SG46-IVS | 662533 64102 | 32A60-JVBE | 662533 64364 | | | |
| | 1,800 | 1 | 5SG46-IVS3 | 662434 94106 | 32A60-KVBE | 662533 64365 | | | |
| | 1,800 | 1 | 5SG46-JVS | 662533 64103 | | | | | |
| | 1,800 | 1 | 5SG60-IVS | 662533 64104 | | | | | |
| | | | | | | | | | |
| | 1,800 | 1 | 5SG60-JVS | 662533 64105 | 101.10.10.000 | 000500 | | 05440.18/86 | 000500100 |
| 4 x 2 x 5 | 1,800 2,320 | 1 | 3SGR46-GVP2 | 662533 19936 | 48A46-HVP2 | 662533 19941 | 1 | 25A46-HVP2 | 662533 19945 |
| 4 x 2 x 5 Rec 1/S 8 x 1/2 | 1,800 2,320 2,320 | 1 1 1 | | | 48A46-HVP2 | 662533 19941 | 1 | 38A46-HVP2 | 662533 19949 |
| | 1,800 2,320 | 1 1 1 | 3SGR46-GVP2 | 662533 19936 | 48A46-HVP2 32A60-KVBE | 662533 19941 662533 64390 | • | | |

* 12" Type 05 Wheel Maximum RPM: NORPOR VP2 Wheels = 2,710; all others = 2,070

* 14" Type 05 Wheel Maximum RPM: NORPOR VP2 Wheels = 2,320; all others = 1,800

(%)

 (\mathbf{f})

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PRECISION GRINDING WHEELS Toolroom Vitrified Wheels

Vitrified Wheels For Steel Applications continued

| | | | BEST | | BETTER | | 1 | GOOD | 3 |
|--|-------|-------------------|----------------|---------------------|-------------------------|---------------------|----------------|----------------|---------------------|
| | | | NORTON SG | | 32A / 48A | | - | 38A / 25A / 53 | |
| SIZE (D x T x H) | | PM MIN./STD. PKG. | Ceramic Alumin | PART # | Aluminum Oxide SPEC. | PART # | MIN./STD. PKG. | Aluminum Oxid | PART # |
| Type 06 Straight Cup | | | JFLU. | FANT # | JFLU. | FANT # | WIN./310. FRG. | SFLU. | FANT # |
| | | | | | | | 1 11 0 | | 000 105 000 00 |
| 3-1/2 x 1-1/2 x 1/2 Rim 1/2" Back 1/2" | 6,550 | | | | | | 1/10 | 38A60-KVBE | 662435 29372 |
| 100mm x 50mm x 20mm Rim 10mm, Back 13mm | 6,550 | | | | | | 1/10 | 38A80-JVBE | 662435 30429 |
| 4 x 1-1/2 x 1/2 Rim 1/2" Back 1/2" | 5,730 | 1/10 | | | 32A60-KVBE | 662435 30218 | | | |
| 4 x 1-1/2 x 1-1/4 Rim 1/2" Back 1/2" | 5,730 | | | | | | 1/10 | 38A60-KVBE | 662435 30221 |
| 4 x 2 x 20mm Rim 3/8" Back 1/2" | 5,730 | | | | | | 1/10 | 38A80-JVBE | 662435 30523 |
| 5 x 1-1/2 x 1-1/4 | 4,585 | 1/10 | | | 32A46-KVBE | 662528 30832 | 1/10 | 38A46-KVBE | 662528 30842 |
| Rim 3/8" Back 3/8" | 4,585 | 1/10 | | | 32A60-JVBE | 662528 30837 | 1/10 | 38A60-KVBE | 662528 30846 |
| Face Y (ME19243) | 4,585 | 1/10 | | | 32A60-KVBE | 662528 30838 | | | |
| 5 x 2 x 5/8 Rim 1/2" Back 1/2" | 4,585 | 1/10 | | | 32A60-JVBE | 662528 30987 | | | |
| 6 x 1-1/2 x 1/2 Rim 1" Back 1/2" | 3,820 | 1/10 | | | 32A46-KVBE | 662528 38458 | | | |
| 6 x 2 x 1-1/4 | 3,820 | 1/10 | | | 32A46-IVBE | 662528 38544 | 1/10 | 38A60-KVBE | 662528 38486 |
| Rim 1/2" Back 1/2" | 3,820 | 1/10 | | | 32A60-JVBE | 662528 38538 | | | |
| 7 x 2 x 1-1/4 Rim 1/2" Back 1/2" | 3,275 | 1/8 | | | 32A46-JVBE | 662529 42856 | | | |
| 9-1/2 x 1-1/2 x 1-1/2 Rim 1-1/2" Back 5/8" | 2,415 | | | | | | 1 | 53A46-LVBE | 662531 49136 |
| 10 x 4 x 1-1/2 Rim 1-1/4" Back 1" Tape Wound | 2,295 | | | | | | 1 | 38A46-IVBE | 662531 61797 |
| 12 x 2-1/2 x 7 Rim 1-1/2" Back 7/8" | 1,910 | 1 | | | 32A46-LVBE | 662532 63614 | | | |
| Type 07 Recessed Two | Sides | | | | | | | | |
| 12 x 2 x 3 Rec 2/S 5-1/2 x 3/8 | 2,070 | 1 | | | 32A46-IVBE | 662532 63588 | | | |
| 12 x 2 x 3 | 2.070 | 1 | | | 32A46-HVBE | 662532 63590 | | | |
| Rec 2/S 7-1/4 x 1/2 | 2,070 | 1 | | | 32A46-JVBE | 662532 63348 | | | |
| 12 x 2 x 5 | 2,070 | 1 | | | 32A46-IVBE | 662532 63594 | | | |
| Rec 2/S 7-1/4 x 1/2 12 x 2 x 5 | 2.070 | 1 | 5SG46-JVS | 662532 09930 | 32A46-HVBE | 662532 63591 | 1 | 38A46-IVBE | 662532 63600 |
| Rec 2/S 7-1/2 x 1/2 | 2,070 | 1 | JJUHU-JVJ | 00203203330 | 32A40-HVBEP | 662532 63603 | I. | JUNHU-IVDL | 00200200000 |
| 100 L/OT 1/L A 1/L | 2,070 | 1 | | | 32A40-IIVBEF | 662532 63483 | | | |
| | 2,070 | 1 | | | 32A46-KVBE | 662532 63596 | | | |
| | 2,070 | 1 | | | 32A60-IVBE | 662532 63597 | | | |

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PRECISION GRINDING WHEELS **Toolroom Vitrified Wheels**

Vitrified Wheels For Steel Applications continued

| | | | | | - | | | | |
|---|----------------|------------------|-------------------|---------------------|--------------------------|--|----------------|----------------|---------------------|
| | | TIED | DECT | | DETTED | | | 0000 | |
| | | TRADENAME: | BEST Norton SG | | BETTER 32A | | | GOOD 38A | |
| | | | Ceramic Alumina | | Aluminum Oxide | | _ | Aluminum Oxide | |
| SIZE (D x T x H) | MAX. RP | M MIN./STD. PKG. | | PART # | SPEC. | PART # | MIN./STD. PKG. | | PART # |
| Type 11 Flaring Cup | | 1 | | | | | | | |
| 3/2-1/4 x 1-1/4 x 3/4 | 7,640 | 1/10 | | | 32A60-JVBE | 662435 29183 | 1/10 | 38A60-JVBE | 662435 29197 |
| Rim 1/4" Back 3/8" Face Z (ME21560) | 7,640 | 1/10 | | | 32A60-KVBE | 662435 29187 | ., | | |
| 3-1/2/2-3/4 x | 7,640 | 1/10 | | | 32A60-KVBE | 662435 29358 | | | |
| 1-1/2 x 1-1/4 Rim 1/4" Back 3/8" Face Z (ME24327) | | | | | | | | | |
| 4/3 x 1-1/2 x 1-1/4 | 5,730 | 1/5 | 5SG46-IVSP | 662435 30127 | 32A46-IVBE | 662435 30240 | 1/10 | 38A46-KVBE | 662435 30378 |
| Rim 1/4" Back 1/2" | 5,730 | 1/5 | 5SG46-KVS | 662435 03342 | | 662435 30246 | 1/10 | 38A60-JVBE | 662435 30387 |
| Face Z (ME19237) | 5,730 | 1/5 | | | 32A60-JVBE | 662435 30256 | 1/10 | 38A60-KVBE | 662435 30390 |
| | 5,730 | 1/5 | 5SG60-JVS | 662435 30415 | 32A60-KVBE | 662435 30361 | 1/10 | 38A80-JVBE | 662435 30393 |
| | 5,730 | 1/5 | | | | | 1/10 | 38A80-KVBE | 662435 30395 |
| | 5,730 | 1/5 | 5SG60-LVS | 662435 30417 | 32A80-KVBE | 662435 30368 | | | |
| | 5,730 | 1/5 | 5SG80-JVS | 662435 30419 | | | | | |
| | 5,730 | 1/5 | 5SG80-KVS | 662435 30420 | 0014010/05 | | | | |
| 4-1/2/3-3/4 x 2 x 1-1/4 Rim 1/4" Back 1/2"(ME20115) | 5,730 | 1/5 | | | 32A46-KVBE | 662528 30539 | | | |
| 5/3-3/4 x 1-3/4 x 1-1/4 | 4,585 | 1/5 | 5SG46-KVS | 662528 03291 | 32A46-JVBE | 662528 30858 | 1/5 | 38A46-KVBE | 662528 30971 |
| Rim 1/4" Back 1/2" | 4,585 | 1/5 | 5SG60-KVS | 662528 30737 | 32A46-KVBE | 662528 30859 | 1/5 | 38A60-JVBE | 66252830973 |
| Face Z (ME21563) | 4,585 | 1/5 | | | | | 1/5 | 38A60-KVBE | 662528 30975 |
| | 4,585 | 1/5 | 5SG60-LVS | 662528 30736 | 32A60-JVBE | 662528 30962 | | | |
| | 4,585 | 1/5 | | | 32A60-KVBE | 662528 30964 | | | |
| 6/4-1/2 x 2 x 1-1/4 | 3,820 | 1/5 | | | 32A46-JVBE | 662528 38491 | 1/5 | 38A46-KVBE | 662528 38495 |
| Rim 3/8" Back 1/2" | 3,820 | 1/5 | | | 32A46-KVBE | 662528 38528 | 1/5 | 38A60-KVBE | 662528 38497 |
| Face Z (ME19241) | 3,820 | 1/5 | | | 32A60-JVBE | 662528 38492 | | | |
| 7/5 x 2 x 1-1/4 Rim 3/4" Back 1/2" (ME19242) | 3,275 | 1/8 | | | 32A46-JVBE | 662529 42959 | 1/8 | 38A46-HVBE | 662529 42963 |
| Type 12 Dish 🛛 🔪 | | | | | | | | | |
| 4 x 1/2 x 3/4 (ME19226) | 6,207 | 1/10 | | | 32A60-KVBE | 662435 30067 | | | |
| 6 x 1/2 x 1-1/4 | 4,140 | 1/10 | 5SG60-LVS | 662528 36574 | 32A46-JVBE | 662528 36860 | 1/10 | 38A60-JVBE | 662528 36977 |
| (ME19229) | 4,140 | 1/10 | 50000 1/1/0 | 00050007774 | 32A60-JVBE | 662528 36966 | | | |
| 6 x 3/4 x 1-1/4 | 4,140 | 1/10 | 5SG60-KVS | 662528 37771 | 32A46-KVBE | 662528 37732 | | | |
| (ME19230) | 4,140 | 1/10 | | | 32A60-JVBE | 662528 37734 | | | |
| 7 x 1/2 x 1-1/4 | 4,140 | 1/10 | | | 32A60-KVBE | 662528 37735 | | | |
| (ME13717) | 3,600 3,600 | 1/10 1/10 | | | 32A46-KVBE 32A60-KVBE | 662529 41644 662529 41647 | | | |
| 8 x 3/4 x 1-1/4 (ME19231) | 3,600 | 1/10 | | | JZAUU-RVDE | 00232941047 | 1/10 | 38A60-KVBE | 662530 44319 |
| 10 x 1 x 1 (ME38702) | 2,485 | 1 | | | 32A54-JVBE | 662531 61196 | | | |
| 10 x 1 x 1-1/4 (ME38702) | 2,485 | 1 | | | 32A54-JVBE | 662531 61197 | | | |
| Type 20 Concave One S | ide 🗌 | | | | | | | | |
| 14 x 1-1/2 x 5 | 1,800 | 1 | 5SG60-JVS | 662533 02265 | 32A60-JVBE | 662533 64250 | | | |
| Concave from Periphery 1/2" Deep to 8" Flat Spot | 1,800 | 1 | | | 32A60-KVBE | 662533 64332 | | | |
| Type 35 Plate Mounted | | | | | | 000500 4044 - | | | |
| 9 x 2 x 4-15/16 Pim 2 1/22" (ME21120) | 2,550 | 1 | | | 32A46-MVBE | 662530 49115 | | | |
| Rim 2-1/32" (ME31130) Plate A47248 | 2,550 | 1 | | | 32A60-J25VCF2 | | | | |
| 1 1010 /171 240 | 2,550 | 1 | | | 32A70-JVBEP | 662530 49112 | | | |

For non-stock toolroom wheels: if you don't see the toolroom wheel you need in our stock listing, call your local authorized Norton distributor to check our made-to-order non-stock availability - including our revolutionary new Quantum ceramic and Vitrium³ bond wheels.





These sharp silicon carbide, vitrified wheels are used for grinding non-ferrous applications.

Applications:

Shapes: Size Range: Grit Range: Abrasive Grain: Use 39C (green silicon carbide) for cemented carbides, titanium, metal matrix composites and plasma sprayed materials. Use 37C (black silicon carbide) on 300 series stainless steels, irons, nonferrous metals (aluminum, brass, bronze and copper) and non-metallic materials (stone, marble, rubber, ceramics and glass). Type 01 Straight, Type 02 Cylinder, and Type 05 Recessed 1 Side 3" – 14" diameter 24 – 120 39C Green Silicon Carbide, 37C Black Silicon Carbide

Vitrified Wheels For Non-Ferrous Applications

| | | 7/50 | | |
|---------------------|----------|-----------------------------|--------------------------|-----------------------|
| | | | GOOD | |
| | | TRADENAME: | 39C / 37C | |
| SIZE (D x T x H) | MAX. RPM | ABRASIVE: MIN./STD. PKG. | Silicon Carbide SPEC. | PART # |
| | | | SPEG. | FANI # |
| Type 01 Straight | | 3 | | |
| 3 x 1/2 x 1/2 | 10,825 | 10/50 | 37C60-MVK | 662435 29041 |
| 3 x 1 x 1/2 | 10,825 | 10/10 | 37C60-MVK | 662435 29166 |
| | 10,825 | 10/10 | 37C80-HVK | 662435 29170 |
| | 10,825 | 10/10 | 37C80-MVK | 662435 29171 |
| | 10,825 | 10/10 | 37C100-HVK | 662435 29172 |
| | 10,825 | 10/10 | 37C100-MVK | 662435 29070 |
| 3-1/2 x 1-1/2 x 7/8 | 7,095 | 1/10 | 37C24-SVK | 662435 29339 |
| (ME622) | 7,095 | 1/10 | 37C30-SVK | 662435 29338 |
| 4 x 1/2 x 1/2 | 8,120 | 1/10 | 37C60-MVK | 662435 29960 |
| | 8,120 | 1/10 | 39C100-IVK | 662435 30064 |
| 6 x 1/2 x 1-1/4 | 4,140 | 1/10 | 39C60-IVK | 662528 36706 |
| | 4,140 | 1/10 | 39C80-IVK | 662528 36816 |
| | 4,140 | 1/10 | 39C100-IVK | 662528 36827 |
| | 4,140 | 1/10 | 39C120-IVK | 662528 36836 |
| 6 x 3/4 x 1-1/4 | 4,140 | 1/10 | 39C60-IVK | 662528 37584 |
| | 4,140 | 1/10 | 39C80-IVK | 662528 37598 |
| | 4,140 | 1/10 | 39C100-IVK | 662528 37717 |
| 6 x 1 x 1-1/4 | 4,140 | 1/10 | 39C60-IVK | 662528 38161 |
| | 4,140 | 1/10 | 39C80-IVK | 662528 38173 |
| 7 x 1/4 x 1-1/4 | 3,600 | 1/10 | 39C80-JVK | 662529 40007 |
| | 3,600 | 1/10 | 39C100-IVK | 662529 40109 |
| | 3,600 | 1/10 | 39C120-IVK | 66252940111 |
| 7 x 1/2 x 1-1/4 | 3,600 | 1/10 | 37C46-JVK | 662529 41488 |
| | 3,600 | 1/10 | 37C60-0VK | 662529 41498 |
| | 3.600 | 1/10 | 39C60-IVK | 662529 41609 |
| | 3,600 | 1/10 | 39C60-JVK | 662529 41611 |
| | 3,600 | 1/10 | 39C60-KVK | 662529 41613 |
| | 3,600 | 1/10 | 39C80-IVK | 66252941617 |
| | 3,600 | 1/10 | 39C80-JVK | 66252941618 |
| | 3,600 | 1/10 | 39C100-HVK | 66252941622 |
| | 3,600 | 1/10 | 39C100-IVK | 662529 41624 |
| | 3,600 | 1/10 | 39C120-IVK | 662529 41632 B |
| 7 x 3/4 x 1-1/4 | 3,600 | 1/10 | 39C80-JVK | 662529 42096 |
| -, , | 3,600 | 1/10 | 39C100-JVK | 66252942104 |
| 7 x 1 x 1-1/4 | 3,600 | 1/10 | 39C60-IVK | 662529 42666 |
| | 3,600 | 1/10 | 39C80-IVK | 662529 42413 |
| | 3,600 | 1/10 | 39C120-IVK | 662529 42416 |
| 8 x 1/4 x 1-1/4 | 3,600 | 1/10 | 39C80-IVK | 662530 14526 |
| 8 x 3/8 x 1-1/4 | 3,600 | 1/10 | 39C80-IVK | 699366 64144 |
| 8 x 1/2 x 1-1/4 | 3,600 | 1/10 | 39C60-IVK | 662530 44013 |
| | 3,600 | 1/10 | 39C80-IVK | 662530 44015 |
| | 3,600 | 1/10 | 39C100-IVK | 662530 44017 B |
| | 2,000 | ., | | |

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| | | TRADENAME: | 39C / 37C | |
|---|----------|----------------|-----------------|---------------------|
| | | ABRASIVE: | Silicon Carbide | |
| SIZE (D x T x H) | MAX. RPM | MIN./STD. PKG. | SPEC. | PART # |
| Type 01 Straight | | | | |
| 8 x 3/4 x 1-1/4 | 3,600 | 1/10 | 39C60-JVK | 662530 44312 |
| | 3,600 | 1/10 | 39C80-IVK | 662533 50645 |
| | 3,600 | 1/10 | 39C100-IVK | 662530 44314 |
| 8 x 1 x 1-1/4 | 3,600 | 1/10 | 39C60-JVK | 662530 44770 |
| | 3,600 | 1/10 | 39C80-IVK | 662530 44425 |
| | 3,600 | 1/10 | 39C100-IVK | 662530 44379 |
| 10 x 1 x 3 | 2,485 | 1 | 39C60-JVK | 662531 60348 |
| 10 x 1-1/2 x 2 | 2,485 | 1 | 39C60-JVK | 662531 61640 |
| 12 x 1 x 3 | 2,070 | 1 | 39C60-IVK | 662532 62985 |
| 12 x 1 x 5 | 2,070 | 1 | 39C60-IVK | 662532 62884 |
| | 2,070 | 1 | 39C80-JVK | 662532 62988 |
| 14 x 1 x 5 | 1,800 | 1 | 39C60-JVK | 662533 64206 |
| | 1,800 | 1 | 39C80-JVK | 662533 64208 |
| 14 x 1-1/2 x 5 | 1,800 | 1 | 39C60-JVK | 662533 64242 |
| 14 x 2 x 5 | 1,800 | 1 | 39C60-JVK | 662533 64322 |
| Type 02 Cylinder | | | | |
| 6 x 1 x 4 | 3,600 | 1/10 | 39C60-IVK | 662528 38322 |
| Rim 1" | 3,600 | 1/10 | 39C60-JVK | 662528 38324 |
| Plate A47466 | 3,600 | 1/10 | 39C80-IVK | 662528 38327 |
| | 3,600 | 1/10 | 39C100-IVK | 662528 38330 |
| | 3,600 | 1/10 | 39C120-IVK | 662528 38193 |
| 6 x 1-1/4 x 4 Rim 1" Plate A47466 | 3,600 | 1/10 | 39C60-IVK | 662528 38345 |
| 10 x 2 x 7 | 2,100 | 1 | 39C60-HVK | 662531 61675 |
| Rim 1-1/2" | 2,295 | 1 | 39C60-JVK | 662531 61678 |

Type 05 Recessed One Side

14 x 1-1/2 x 5 1,800 1 39C60-IVK 66253364328 Rec 1/S 8 x 1/2

B = Best Seller; performs well in a variety of applications for many satisfied customers

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PRECISION GRINDING WHEELS Large Surface Grinding Wheels

Large surface grinding wheels are generally used to grind flat stock or flat surfaces within a workpiece. These wheels are typically used on horizontal spindle machines. Applications can vary from heavy, rapid stock removal to precision tolerance operations.

Applications:

- Producing flat stock Grinding large molds and dies
- Sharpening knives, blades and cutlery

Shape: Size Range:

Abrasive Grain:

Manufacturing broaches
 Type 01 Straight, Type 07 Recessed 2 Sides
 Stock: 20" diameter
 1" - 6" thickness
 Aluminum Oxide

Cross Reference Guide

| | GOOD | |
|---------------------|---------------|--|
| NORTON | GEMINI | |
| Camel | 91A | |
| Cincinnati Milacron | 29A, 97A | |
| Radiac | WAA, 97A, 45A | |

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Good choice when a broad range of parts are ground on a few machines

GEMINI ALUMINUM OXIDE BLEND

- Specially blended aluminum oxide abrasive for many surface grinding applications
- · Porous bond is cool cutting on medium to wide contact areas; high chip clearance and stock removal
- Faster grinding rates remove stock, lower rates produce finer finishes; ideal when a broad range of tool steel parts are ground on a few machines

TIER: GOOD

| | | | TRADENAME: | GEMINI | |
|--------------------|---|----------|------------|---------------------------|---------------------|
| | | | ABRASIVE: | Aluminum Oxide | |
| SIZE (D x T x H) | RECESS | MAX. RPM | STD. PKG. | SPEC. | PART # |
| Type 01 Straight W | heels | | | | |
| 20 x 1 x 8 | - | 1,625 | 1 | Norton Gemini A46-H | 662532 46937 |
| 20 x 2 x 10 | - | 1,625 | 1 | Norton Gemini A36-J | 662532 46956 |
| Type 07 Recessed | Two Sides | | | | |
| 20 x 2 x 8 | Recess 2 Sides 11-1/2 x 1/2 | 1,625 | 1 | Norton Gemini 59A46-I | 662532 46949 |
| | Recess 2 Sides 11-1/2 x 1/2 | 1,625 | 1 | Norton Gemini A46-G VSP | 662532 46953 |
| 20 x 3 x 8 | Recess 2 Sides 11-1/2 x 1/2 | 1,625 | 1 | Norton Gemini A46-G VSP | 662532 46972 |
| | Recessed 2 Sides 11-1/2 x 1/2 | 1,625 | 1 | Norton Gemini A46-H | 662532 46969 |
| | Recess 2 Sides 11-1/2 x 1/2 | 1,625 | 1 | Norton Gemini A46-I | 662532 46960 |
| 20 x 3 x 10 | Recess 2 Sides 12-1/4 x 3/4 | 1,625 | 1 | Norton Gemini 59A46-1 VSP | 662530 58315 |
| | Recess Side A 12-1/2 x 1/2, Side B 12-1/2 x 1 | 1,625 | 1 | Norton Gemini A36-J VSP | 662532 46980 |
| | Recess Side A 12-1/2 x 1/2, Side B 12-1/2 x 1 | 1,625 | 1 | Norton Gemini A46-D VSP | 662532 46988 |

There are many more sizes and specifications available made-to-your-order. Contact your Norton representative with your custom requirements.

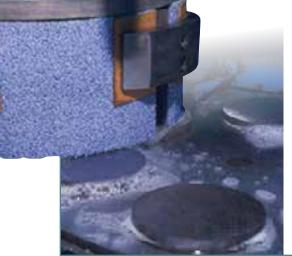


PRECISION GRINDING WHEELS Surface Grinding Segments

Surface grinding segments are generally used to grind flat stock or flat surfaces within a workpiece. The segment moves over the workpiece in a flat plane or vice versa. Applications can vary from heavy, rapid stock removal to precision tolerance operations.

Applications:

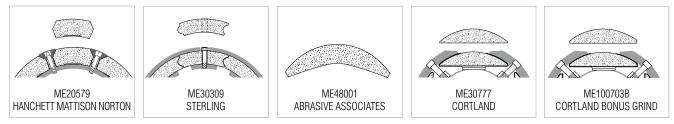
- · Vertical spindle surface grinding Grinding large molds, dies and plates
- Producing flat stock
- **Abrasive Grain:**
- · Sharpening knives, blades, cutlery
 - Ceramic Alumina, Aluminum Oxide



Material-to-Product Recommendation Guide

| | HEAVY-DUTY | | | | GENERAL-DUTY | | |
|---------------------|---------------|---------------|---------------|---------------|--------------|-------------|-------------|
| MATERIAL | QuantumX 20-G | QuantumX 30-F | 86A24-G20VTX2 | 86A30-E20VTX2 | Gemini 30-E | Gemini 30-F | Gemini 30-G |
| Aluminum | | | | • | • | | |
| Bronze (hard) | | | | | | | • |
| Cast Iron | • | | | | | | • |
| Hastalloy | | | • | | • | | |
| Inconel | | • | | | • | | |
| Hardened Steel | • | | | | • | | |
| High Speed Steel | • | | | | • | | |
| Soft Steel | | | • | • | | | • |
| Stainless Steel 300 | | | | • | • | | |
| Stainless Steel 400 | | | | | | • | |

Segment Blueprints



Troubleshooting Guide

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| PROBLEM | CORRECTION |
|-------------------------|---|
| Segment acting too hard | Increase rate of downfeed |
| | Increase table rotation speed (watch amp-meter) |
| | Dress more frequently |
| | Consider reducing area of table load |
| Segment acting too soft | Decrease rate of downfeed |
| | Decrease table rotation speed |
| | Check for abnormal machine vibration |
| Glazing and/or burning | Choose a softer grade |
| | Increase table speed (watch amp-meter) |

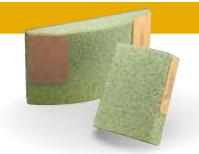
ECH TIP

- Choose as coarse a grit size as possible in order to remove stock as quickly as possible (in big chips).
- · To maximize production, choose the hardest grade possible that will not overload the machine.

It is the user's responsibility to refer to and comply with ANSI B7.1



PRECISION GRINDING WHEELS Surface Grinding Segments



Best choice for all low-, medium-, and high-force applications ranging from cast iron, to stainless steel and hard-to-grind alloys

QUANTUM AND QUANTUM X CERAMIC ALUMINA

- Revolutionary, versatile engineered ceramic grain shape and chemistry produce highest productivity with the lowest total grinding costs
- 33% to 100% longer life versus competitive ceramic products, 30% plus higher metal removal rate, with 15% plus lower threshold power
- Excellent performance on both old and new machines

Better choice for versatile, consistent performance

86A ALUMINUM OXIDE

- · Sharper aluminum oxide abrasive grain delivers cooler-cutting, consistent performance
- Segments available for Hanchett, Mattison Norton, Sterling, Abrasive Associates, Cortland, and Cortland Bonus Grind machines
- · Better choice with porous vitrified bond for increasesd chip clearance and cool cutting in heat-sensitive applications



Good choice when a broad variety of parts are ground on a few machines

GEMINI ALUMINUM OXIDE BLEND

- · Specially blended aluminum oxide abrasive for many surface grinding applications
- The porous vitrified bond increases chip clearance and maximizes coolant flow, reduces loading, and is cool cutting in heat-sensitive applications
- For use in Hanchett, Mattison, and Norton, and Cortland and Cortland Bonus Grind chucks on surface grinding machines

| 8 8 86A24-H20VTX2 66253350602 Gemini 30-F 6625305 1-1/2 6 ME30309 8 86A30-F12VBEP 61463650273 Gemini 30-G 6625305 1 2-1/8 6 ME48001 5 86A24-G20VTX2 66253350605 Gemini 30-E 6993669 1-1/4 2-1/4 6 ME30777 5 QUANTUMX 20-G 66253350608 86A24-G20VTX2 66253350605 Gemini 30-E 6993669 5 QUANTUMX 20-H 66253350608 86A24-G20VTX2 66253350605 Gemini 30-F 6993669 5 QUANTUMX 20-H 66253350608 86A30-E12VBEP 61463650287 Gemini 30-F 6993669 5 QUANTUMX 20-H 66253350612 86A30-E12VBEP 61463650287 Gemini 30-F 6993669 5 QUANTUMX 20-G 66253350612 86A30-E12VBEP 61463650287 Gemini 30-F 6993669 6 2-1/4 8 ME30777 QUANTUMX 20-G 66253350613 Gemini 30-F 6993669 6 QUANTUM | | | | | TIER: | BEST | | BETTER | | GOOD | |
|---|-----------|-------|-----------|----------------------|---------------|---------------------|-----------------------|---------------------|---------------------|---------------------|---------------------|
| VIDTH THICK HEIGHT BLUEPRINT NO. STD. PKG. SPEC. UPC NO. SPEC. UPC NO. Gemini 30-E 6625305 1-1/2 6 ME20579 8 QUANTUMX 20-G 66253350603 Gemini 30-F 6625305 Gemini 30-F 6625305 1-1/2 6 ME30309 8 86A24-H20VTX2 66253350602 Gemini 30-F 6625305 1 2-1/8 6 ME4001 5 86A24-G20VTX2 66253350605 Gemini 30-E 6993669 1-1/4 2-1/4 6 ME30777 5 QUANTUMX 20-G 66253350607 86A24-G20VTX2 66253350605 Gemini 30-E 6993669 5 QUANTUMX 20-G 66253350608 86A24-G20VTX2 66253350605 Gemini 30-F 6993669 5 QUANTUMX 20-H 66253350608 86A24-G20VTX2 66253350605 Gemini 30-F 6993669 5 QUANTUMX 20-H 66253350612 86A30-F12VBEP 61463650289 Gemini 30-F 6993669 5 QUANTUMX 20-F 662533506 | | | | | TRADENAME: | QUANTUM/QUAN | тим х | 86A | | GEMINI | |
| 1-1/2 6 ME20579 8 QUANTUMX 20-G 66253350603 Gemini 30-E 6625305 i-1/2 6 ME30309 8 86A24-H20VTX2 66253350602 Gemini 30-F 6625305 i-13/16 1-1/2 6 ME30309 8 86A24-G20VTX2 66253350595 Gemini 30-F 6625305 1 2-1/8 6 ME48001 5 86A24-G20VTX2 66253350505 Gemini 30-E 6993669 1-1/4 2-1/4 6 ME30777 5 QUANTUMX 20-H 66253350607 86A24-C20VTX2 6625335055 Gemini 30-E 6993669 1-1/4 2-1/4 6 ME30777 5 QUANTUMX 20-H 66253350612 86A24-C20VTX2 66253350605 Gemini 30-E 6993669 5 3NQP36-G12VSP 66253350612 86A30-F12VBEP 61463650285 Gemini 30-F 6993669 1-1/4 2-1/4 8 ME30777 5 QUANTUMX 20-H 66253350612 86A30-F12VBEP 61463650287 Gemini 30-F 6993669 <tr< th=""><th></th><th></th><th></th><th></th><th>ABRASIVE:</th><th>Ceramic Alumina</th><th></th><th>Aluminum Oxide</th><th></th><th>Aluminum Oxide</th><th>Blend</th></tr<> | | | | | ABRASIVE: | Ceramic Alumina | | Aluminum Oxide | | Aluminum Oxide | Blend |
| 8 86A24-H20VTX2 66253350602 Gemini 30-F 6625305 1-1/2 6 ME30309 8 86A30-F12VBEP 61463650273 Gemini 30-G 6625305 1 2-1/8 6 ME48001 5 86A24-G20VTX2 66253350586 1-1/4 2-1/4 6 ME30077 5 QUANTUMX 20-G 66253350607 86A24-G20VTX2 66253350605 Gemini 30-E 6993669 1-1/4 2-1/4 6 ME30777 5 QUANTUMX 20-G 66253350607 86A24-G20VTX2 66253350605 Gemini 30-E 6993669 5 QUANTUMX 20-H 66253350608 86A24-G20VTX2 66253350605 Gemini 30-F 6993669 5 QUANTUMX 20-H 66253350612 86A30-F12VBEP 61463650287 Gemini 30-F 6993669 5 QUANTUMX 20-G 66253350612 86A30-F12VBEP 61463650287 Gemini 30-F 6993669 6 2 300P36-F12VSP 66253350615 Gemini 30-F 6993669 1-1/4 2 -1/4 | DTH | THICK | HEIGHT | BLUEPRINT NO. | STD. PKG. | SPEC. | UPC NO. | SPEC. | UPC NO. | SPEC. | UPC NO. |
| 13/16 1-1/2 6 ME30309 8 86A30-F12VBEP 61463650273 Gemini 30-G 6625305 1 2-1/8 6 ME4001 5 86A24-G20VTX2 66253350586 66253350586 1-1/4 2-1/4 6 ME30777 5 QUANTUMX 20-G 66253350607 86A24-G20VTX2 66253350605 Gemini 30-E 6993669 1-1/4 2-1/4 6 ME30777 5 QUANTUMX 20-G 66253350608 86A24-G20VTX2 66253350605 Gemini 30-E 6993669 5 QUANTUMX 20-H 66253250608 86A24-G20VTX2 66253350605 Gemini 30-F 6993669 5 QUANTUMX 20-H 66253250508 86A30-F12VBEP 61463650285 Gemini 30-H 6624344 5 QUANTUMX 20-G 66253350612 86A30-G12VBEP 61463650289 Gemini 30-E 6993669 1-1/4 2-1/4 8 ME30777 5 QUANTUMX 20-G 66253387810 86A30-F20VTX2 66253387812 Gemini 30-E 6993669 1-1/4 2-1/ | | 1-1/2 | 6 | ME20579 | 8 | QUANTUMX 20-G | 662533 50603 | | | Gemini 30-E | 662530 50295 |
| -13/16 1-1/2 6 ME30309 8 86A24-G20VTX2 66253350595 1 2-1/8 6 ME48001 5 86A24-G20VTX2 66253350586 1-1/4 2-1/4 6 ME30777 5 QUANTUMX 20-G 66253350607 86A24-E12VBEP 61463650279 Gemini 30-E 69936693 1-1/4 2-1/4 6 ME30777 5 QUANTUMX 20-H 66253350608 86A24-G20VTX2 66253350605 Gemini 30-E 69936693 5 3NQP36-G12VSP 66253350608 86A24-G20VTX2 66253350605 Gemini 30-E 69936693 5 3NQP36-G12VSP 66253350608 86A24-G20VTX2 66253350605 Gemini 30-H 6624344 5 3NQP36-G12VSP 61463650287 61463650289 Gemini 30-H 6624344 5 0UANTUMX 20-G 66253350615 Gemini 30-F 69936693 6147 5 0UANTUMX 20-H 662533507615 Gemini 30-F 69936693 5 0UANTUMX 20-F 662533507811 86A30-F20VTX2 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>86A24-H20VTX2</td><td>66253350602</td><td>Gemini 30-F</td><td>66253050297</td></t<> | | | | | | | | 86A24-H20VTX2 | 662533 50602 | Gemini 30-F | 662530 50297 |
| 1 2-1/8 6 ME48001 5 86A24-G20VTX2 66253350586 1-1/4 2-1/4 6 ME30777 5 QUANTUMX 20-G 66253350607 86A24-E12VBEP 61463650279 Gemini 30-E 6993669 5 QUANTUMX 20-H 66253350608 86A24-G20VTX2 66253350605 Gemini 30-E 6993669 5 QUANTUMX 20-H 66253251527 Gemini 30-E 6993669 5 QUANTUMX 20-H 66253350608 86A30-E12VBEP 61463650285 Gemini 30-E 6993669 5 QUANTUMX 20-G 66253350612 86A30-E12VBEP 61463650287 Gemini 30-H 6624344 5 QUANTUMX 20-G 66253350612 86A46-D12VBEP 61463650289 Gemini 30-E 6993669 5 QUANTUMX 20-G 66253387810 86A30-E20VTX2 66253350612 66253350612 66243442 6 QUANTUMX 30-E 66253387810 86A30-E20VTX2 66253387813 Gemini 30-E 6993669 5 QUANTUMX 30-E 66253387810 86A30-E20VTX2 66 | | | | | 8 | | | 86A30-F12VBEP | 614636 50273 | Gemini 30-G | 662530 50299 |
| 1-1/4 2-1/4 6 ME30777 5 QUANTUMX 20-G 66253350607 86A24-E12VBEP 61463650279 Gemini 30-E 69936693 5 QUANTUMX 20-H 66253350608 86A24-G20VTX2 66253350605 Gemini 30-F 69936693 5 QUANTUMX 20-H 66253251527 Gemini 30-G 69936693 5 3NQP36-G12VSP 66253251527 Gemini 30-H 6624344 5 86A30-F12VBEP 61463650287 Gemini 30-H 6624344 5 0UANTUMX 20-G 66253350612 86A30-G12VBEP 61463650287 5 QUANTUMX 20-G 66253350612 86A46-D12VBEP 61463650242 1-1/4 2-1/4 8 ME30777 5 QUANTUMX 20-H 66253350615 Gemini 30-F 69936693 5 QUANTUMX 20-H 66253350615 Gemini 30-F 69936693 Gemini 30-F 69936693 5 QUANTUMX 30-F 66253387810 86A30-F20VTX2 66253387813 Gemini 30-F 69936693 1-1/4 3 ME100703B 4 | 13/16 | 1-1/2 | 6 | | 8 | | | 86A24-G20VTX2 | 662533 50595 | | |
| 5 QUANTUMX 20-H 66253350608 86A24-G20VTX2 66253350605 Gemini 30-F 69936693 5 3NQP36-G12VSP 66253251527 Gemini 30-G 69936693 5 3NQP36-G12VSP 66253251527 Gemini 30-F 69936693 5 86A30-F12VBEP 61463650285 Gemini 30-H 6624344 5 86A30-G12VBEP 61463650287 66253350609 Gemini 30-F 69936693 1-1/4 2-1/4 8 ME30777 5 QUANTUMX 20-H 66253350612 86A24-G20VTX2 66253350609 Gemini 30-F 69936693 1-1/4 2-1/4 8 ME30777 5 QUANTUMX 20-H 66253350612 86A24-G20VTX2 66253350609 Gemini 30-F 69936693 5 QUANTUMX 30-F 66253350615 Gemini 30-F 69936693 5 QUANTUMX 30-F 66253350612 86A24-G20VTX2 66253387812 Gemini 30-F 69936693 1-1/4 3 8 ME100703B 4 QUANTUMX 20-G 66253387811 86A24-G20VTX2 | | 2-1/8 | 6 | ME48001 | 5 | | | 86A24-G20VTX2 | 662533 50586 | | |
| 5 3NQP36-G12VSP 66253251527 Gemini 30-G 69936693 5 86A30-E12VBEP 61463650285 Gemini 30-H 6624344 5 86A30-F12VBEP 61463650287 6624344 5 86A30-G12VBEP 61463650289 6624344 5 86A30-G12VBEP 61463650289 6624344 6 936693 86A46-D12VBEP 61463650289 66936693 1-1/4 8 ME30777 5 QUANTUMX 20-G 66253350612 86A24-G20VTX2 66253350609 Gemini 30-E 69936693 1-1/4 8 ME30777 5 QUANTUMX 20-G 66253350612 86A30-E20VTX2 66253387812 Gemini 30-E 69936693 5 QUANTUMX 30-E 66253387810 86A30-E20VTX2 66253387813 Gemini 30-I 6624344 1-1/4 3 8 ME100703B QUANTUMX 20-G 66253350623 86A24-G20VTX2 66253350617 Gemini 30-I 66243444 1-1/4 3 8 ME100703B QUANTUMX 20-G 66253350623 <td< td=""><td>-1/4</td><td>2-1/4</td><td>6</td><td>ME30777</td><td>5</td><td>QUANTUMX 20-G</td><td>66253350607</td><td>86A24-E12VBEP</td><td>61463650279</td><td>Gemini 30-E</td><td>69936699706</td></td<> | -1/4 | 2-1/4 | 6 | ME30777 | 5 | QUANTUMX 20-G | 662533 50607 | 86A24-E12VBEP | 614636 50279 | Gemini 30-E | 699366 99706 |
| 5 3NQP36-G12VSP 66253251527 Gemini 30-G 69936693 5 86A30-E12VBEP 61463650285 Gemini 30-H 6624344 5 86A30-F12VBEP 61463650287 6624344 5 86A30-G12VBEP 61463650289 6624344 5 86A30-G12VBEP 61463650289 66253350619 -1/4 8 ME30777 5 QUANTUMX 20-G 66253350612 86A24-G20VTX2 66253350609 Gemini 30-E 69936693 -1/4 8 ME30777 5 QUANTUMX 20-H 66253350615 Gemini 30-E 69936693 5 QUANTUMX 30-E 6625337810 86A30-E20VTX2 66253387812 Gemini 30-E 69936693 -1/4 3 NP30-F12VSP 6625337811 86A30-F20VTX2 66253350617 Gemini 30-H 6624344 -1/4 3 8 ME100703B QUANTUMX 20-G 66253350623 86A24-G20VTX2 66253350617 Gemini 30-H 6624344 -1/4 3 QUANTUMX 20-F 66253370623 86A24-G20VTX2 | | | | | 5 | QUANTUMX 20-H | 662533 50608 | 86A24-G20VTX2 | 662533 50605 | Gemini 30-F | 699366 99709 |
| 5 86A30-F12VBEP 61463650287 5 86A30-G12VBEP 61463650289 5 86A46-D12VBEP 61463650442 1-1/4 2-1/4 8 ME30777 5 QUANTUMX 20-G 66253350612 86A24-G20VTX2 66253350609 Gemini 30-E 6993669 5 QUANTUMX 20-H 66253350615 Gemini 30-F 6993669 5 QUANTUMX 30-E 66253350615 Gemini 30-F 6993669 5 QUANTUMX 30-F 66253387810 86A30-E20VTX2 66253387812 Gemini 30-G 6993669 5 QUANTUMX 30-F 66253387811 86A30-F20VTX2 66253387813 Gemini 30-H 6624344 5 3NQP30-F12VSP 66253387811 86A24-G20VTX2 66253350617 Gemini 30-F 6993669 1-1/4 3 8 ME100703B 4 QUANTUMX 20-H 66253387808 Gemini 30-F 6993669 1-1/4 3 8 ME100703B 4 QUANTUMX 20-H 66253387808 Gemini 30-F 6993669 4 | | | | | | 3NQP36-G12VSP | 662532 51527 | | | Gemini 30-G | 699366 99710 |
| 5 86A30-G12VBEP 61463650289 5 86A46-D12VBEP 61463650442 1-1/4 2-1/4 8 ME30777 5 QUANTUMX 20-G 66253350612 86A24-G20VTX2 66253350609 Gemini 30-E 6993669 5 QUANTUMX 20-H 66253350615 Gemini 30-F 6993669 5 QUANTUMX 30-E 66253387810 86A30-E20VTX2 66253387812 Gemini 30-G 6993669 5 QUANTUMX 30-F 66253387810 86A30-E20VTX2 66253387813 Gemini 30-H 6624344 5 3NQP30-F12VSP 66253387613 86A24-G20VTX2 66253350617 Gemini 30-H 6624344 1-1/4 3 8 ME100703B 4 QUANTUMX 20-H 66253350623 86A24-G20VTX2 66253350617 Gemini 30-F 6993669 1-1/4 3 8 ME100703B 4 QUANTUMX 20-H 66253350623 86A24-G20VTX2 66253350617 Gemini 30-F 6993669 4 QUANTUMX 20-H 66253350624 Gemini 30-F 6993669 6423 | | | | | 5 | | | 86A30-E12VBEP | 614636 50285 | Gemini 30-H | 662434 47588 |
| 5 86A46-D12VBEP 61463650442 I-1/4 2-1/4 8 ME30777 5 QUANTUMX 20-G 66253350612 86A24-G20VTX2 66253350609 Gemini 30-E 69936693 5 QUANTUMX 20-H 66253350615 Gemini 30-F 69936693 5 QUANTUMX 30-E 66253387810 86A30-E20VTX2 66253387812 Gemini 30-G 69936693 5 QUANTUMX 30-F 66253387811 86A30-F20VTX2 66253387813 Gemini 30-H 6624344 5 3NQP30-F12VSP 6625338761 86A24-G20VTX2 66253350617 Gemini 30-F 69936693 1-1/4 3 ME100703B 4 QUANTUMX 20-H 66253350623 86A24-G20VTX2 66253350617 Gemini 30-F 69936693 1-1/4 3 ME100703B 4 QUANTUMX 20-H 66253350623 86A24-G20VTX2 66253350617 Gemini 30-F 69936693 1-1/4 3 ME100703B 4 QUANTUMX 20-H 66253350623 86A24-G20VTX2 66253350617 Gemini 30-F 69936693 <tr< td=""><td></td><td></td><td></td><td></td><td>5</td><td></td><td></td><td>86A30-F12VBEP</td><td>61463650287</td><td></td><td></td></tr<> | | | | | 5 | | | 86A30-F12VBEP | 614636 50287 | | |
| 1-1/4 2-1/4 8 ME30777 5 QUANTUMX 20-G 66253350612 86A24-G20VTX2 66253350609 Gemini 30-E 6993669 5 QUANTUMX 20-H 66253350615 Gemini 30-F 6993669 5 QUANTUMX 30-E 66253350615 Gemini 30-F 6993669 5 QUANTUMX 30-F 66253387810 86A30-E20VTX2 66253387813 Gemini 30-H 6624344 5 QUANTUMX 30-F 6625338276 Gemini 30-H 6624344 6 QUANTUMX 20-H 66253350623 86A24-G20VTX2 66253350617 Gemini 30-H 6624344 1-1/4 3 ME100703B 4 QUANTUMX 20-H 66253350623 86A24-G20VTX2 66253350617 Gemini 30-E 69936693 1-1/4 3 ME100703B 4 QUANTUMX 20-H 66253350623 86A24-G20VTX2 66253350617 Gemini 30-E 69936693 1-1/4 3 ME100703B 4 QUANTUMX 20-H 66253350623 86A24-G20VTX2 66253350617 Gemini 30-F 69936693 4 QUANTUMX 30-E 6625337608 Gemini 30-G 69936693 Gemin | | | | | 5 | | | 86A30-G12VBEP | 614636 50289 | | |
| 5 QUANTUMX 20-H 66253350615 Gemini 30-F 6993669 5 QUANTUMX 30-E 66253387810 86A30-E20VTX2 66253387812 Gemini 30-F 6993669 5 QUANTUMX 30-F 66253387811 86A30-E20VTX2 66253387813 Gemini 30-F 6993669 5 QUANTUMX 30-F 66253387811 86A30-F20VTX2 66253387813 Gemini 30-H 6624344 5 3NQP30-F12VSP 66253380623 86A24-G20VTX2 66253350617 Gemini 30-H 6624344 1-1/4 3 8 ME100703B 4 QUANTUMX 20-G 66253350623 86A24-G20VTX2 66253350617 Gemini 30-E 6993669 4 QUANTUMX 20-H 66253350624 Gemini 30-F 6993669 6993669 4 QUANTUMX 30-E 66253387808 Gemini 30-G 6993669 4 QUANTUMX 30-F 66253387809 Gemini 30-H 6624344 4 3NQP30-F12VSP 69083156473 Gemini 30-H 6624344 | | | | | 5 | | | 86A46-D12VBEP | 614636 50442 | | |
| 5 QUANTUMX 30-E 66253387810 86A30-E20VTX2 66253387812 Gemini 30-G 69936693 5 QUANTUMX 30-F 66253387811 86A30-F20VTX2 66253387813 Gemini 30-H 6624344 5 3NQP30-F12VSP 66253387811 86A30-F20VTX2 66253387813 Gemini 30-H 6624344 1-1/4 3 8 ME100703B 4 QUANTUMX 20-G 66253350623 86A24-G20VTX2 66253350617 Gemini 30-E 69936693 4 QUANTUMX 20-H 66253350624 Gemini 30-F 69936693 4 QUANTUMX 30-E 66253387808 Gemini 30-F 69936693 4 QUANTUMX 30-F 66253387809 Gemini 30-H 6624344 4 3NQP30-F12VSP 69083156473 Gemini 30-H 6624344 | -1/4 | 2-1/4 | 8 | ME30777 | 5 | QUANTUMX 20-G | 662533 50612 | 86A24-G20VTX2 | 662533 50609 | Gemini 30-E | 699366 99712 |
| 5 QUANTUMX 30-F 66253387811 86A30-F20VTX2 66253387813 Gemini 30-H 6624344 5 3NQP30-F12VSP 6625328276 Gemini 30-I 6624344 I-1/4 3 8 ME100703B 4 QUANTUMX 20-G 66253350623 86A24-G20VTX2 66253350617 Gemini 30-E 69936693 4 QUANTUMX 20-H 66253350624 Gemini 30-F 69936693 4 QUANTUMX 30-E 66253387808 Gemini 30-F 69936693 4 QUANTUMX 30-E 66253387808 Gemini 30-G 69936693 4 QUANTUMX 30-F 66253387809 Gemini 30-H 6624344 3 3NQP30-F12VSP 69083156473 Gemini 30-I 6624344 | | | | | 5 | QUANTUMX 20-H | 662533 50615 | | | Gemini 30-F | 699366 99716 |
| 5 3NQP30-F12VSP 66253238276 Gemini 30-I 6624344 I-1/4 3 8 ME100703B 4 QUANTUMX 20-G 66253350623 86A24-G20VTX2 66253350617 Gemini 30-E 69936693 4 QUANTUMX 20-H 66253350624 Gemini 30-F 69936693 4 QUANTUMX 30-E 66253387808 Gemini 30-G 69936693 4 QUANTUMX 30-E 66253387809 Gemini 30-G 69936693 4 3NQP30-F12VSP 69083156473 Gemini 30-I 6624344 | | | | | 5 | QUANTUMX 30-E | 662533 87810 | 86A30-E20VTX2 | 662533 87812 | Gemini 30-G | 699366 99717 |
| I-1/4 3 8 ME100703B 4 QUANTUMX 20-G 662533 50623 86A24-G20VTX2 662533 50617 Gemini 30-E 69936693 4 QUANTUMX 20-H 662533 50624 Gemini 30-F 69936693 4 QUANTUMX 30-E 662533 7808 Gemini 30-G 69936693 4 QUANTUMX 30-F 662533 7808 Gemini 30-H 6624344 4 3NQP30-F12VSP 690831 56473 Gemini 30-I 6624344 | | | | | 5 | QUANTUMX 30-F | 662533 87811 | 86A30-F20VTX2 | 662533 87813 | Gemini 30-H | 662434 47591 |
| 4 QUANTUMX 20-H 66253350624 Gemini 30-F 6993669 4 QUANTUMX 30-E 66253387808 Gemini 30-G 6993669 4 QUANTUMX 30-F 66253387809 Gemini 30-H 6624344 4 3NQP30-F12VSP 69083156473 Gemini 30-I 6624344 | | | | | 5 | 3NQP30-F12VSP | 662532 38276 | | | Gemini 30-I | 662434 47592 |
| 4 QUANTUMX 30-E 66253387808 Gemini 30-G 69936699 4 QUANTUMX 30-F 66253387809 Gemini 30-H 6624344 4 3NQP30-F12VSP 69083156473 Gemini 30-I 6624344 | 1-1/4 3 8 | 8 | ME100703B | 4 | QUANTUMX 20-G | 662533 50623 | 86A24-G20VTX2 | 662533 50617 | Gemini 30-E | 699366 99725 | |
| 4 QUANTUMX 30-F 66253387809 Gemini 30-H 6624344 4 3NQP30-F12VSP 69083156473 Gemini 30-I 6624344 | | | | 4 | QUANTUMX 20-H | 662533 50624 | | | Gemini 30-F | 699366 99727 | |
| 4 3NQP30-F12VSP 690831 56473 Gemini 30-I 6624344 | | | | | 4 | QUANTUMX 30-E | 662533 87808 | | | Gemini 30-G | 699366 99728 |
| | | | | | 4 | QUANTUMX 30-F | 662533 87809 | | | Gemini 30-H | 662434 47594 |
| 1_5/8 10 Vitrified Burr 61/636 50268 * | | | | | 4 | 3NQP30-F12VSP | 690831 56473 | | | Gemini 30-I | 662434 47595 |
| | | | 1-5/8 | | 10 | Vitrified Burr | 614636 50268 * | | | | |

*Minimum Quantity = 2

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(5)

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PRECISION GRINDING WHEELS Cylindrical Wheels



Cylindrical wheels are used most often when the part is held between centers and in chucks. There are three methods of cylindrical grinding: plunge, traverse, and angular.

- Plunge grinding wheel is thrust or plunged into the part
- Traverse grinding wheel moves across the part
- Angular grinding wheel contacts the part at an angle

Typical Industries:Automotive, shipbuilding, engine building, bearing, land- and air-based turbine blades,
and toolroomShape:Type 01 Straight, Type 05 Recessed One Side, and Type 07 Recessed 2 SidesSize Range:16", 18", 20", 24" and 30" diameterAbrasive Grain:Ceramic Alumina and Aluminum Oxide

Stationary Dressing Tool Recommendations for Cylindrical Wheels

| | | Single Point | t | Multi-Poin | nt (Grit) | | | | |
|-------------------------------|----------------------------|---------------------------------|---------------------|--------------------------------|---------------------|-----------------|--------------------------------|---------------------|-----------------|
| Grinding Wheel Diameter | Diamond Carat Weight | Tool Product/Pai 0° Angle | t# | Tool Product/Pa 0° Angle | art # | Shape | Tool Product/F 15° Angle | | Shape |
| 16" - 20" | 3/4 | BC7M7 | 662601 95007 | BC62 | 662601 95012 | 1/4 x 1/2 Rect. | BC63 | 662601 95013 | 1/4 x 1/2 Rect. |
| | | NS7M7 | 662601 95132 | 2A6D7 | 662601 95046 | | 2A6E7 | 662601 95049 | |
| 21" + | 1 | BC10M7 | 662601 95009 | BC61 | 662601 95011 | 1/4 x 3/4 Rect. | BC60 | 662601 95010 | 1/4 x 3/4 Rect. |
| | | NS10M7 | 662601 95137 | 1A6A7 | 662601 95031 | | 1A6C7 | 662601 95039 | |

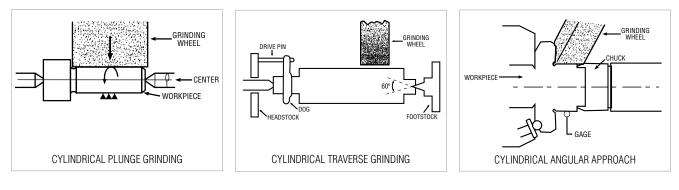
NS Single Point Diamond Tools are resettable. BC Diamond Tools are not resettable. All tools specified above have 7/16" diameter shanks.

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Troubleshooting Guide

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| PROBLEM | POSSIBLE CAUSES | SUGGESTED CORRECTION | |
|-----------------------------|---|---|--|
| Burn or cracks on workpiece | Wheel too hard | Try softer wheel or make wheel act softer (see Tech Tip on next page) | |
| | Dress is too fine | Dress faster | |
| | Nozzle not directing coolant properly | Redirect flow | |
| | Work speed too slow or wheel speed too fast | Adjust speeds | |
| | Wheel feed too slow causing excess contact time | Increase feed rate | |
| Chatter marks on workpiece | Loose spindle, end play, bearing failure | Check wheel spindle on assembly | |
| | Work drive faults, out-of-truth plate | Check gear action, truth, drive on pin pressure | |
| | Wheel too hard, poor truing, poor mounting | Use softer grade; dress wheel correctly; secure mounting | |
| Poor quality finish | Poor quality dressing | Reduce final depth of dress on wheel | |
| | Diamond insecurely held | Check and replace diamond and secure properly | |
| | Misalignment of head and tail stocks | Check for properly aligned workpiece | |
| | Dirty coolant | Clean coolant frequently; use efficient filter | |
| | Scored workpiece centers | Check and lap center holes as required | |





Best choice for highest productivity, lowest total per-part grinding cost

5SG CERAMIC ALUMINA/ALUMINUM OXIDE BLEND

- Exceptionally high-performing seeded gel ceramic alumina and friable aluminum oxide abrasive blend for fast stock removal, cool, superior cutting; 3 5 times more life than
 aluminum oxide wheels; 2 times stock removal rate vs. conventional abrasives
- · High-performance versatile bond for cylindrical and surface grinding high-speed tool steels, hardened and soft steels, and aerospace alloys: exceptional form holding
- · Self-sharpening abrasive minimizes burn and required dressing, to maximize sharp edge on tools and dies for longer life in production

Better choice for medium to heavy stock removal

32A ALUMINUM OXIDE

- . Exceedingly strong, sharp monocrystalline aluminum oxide grain, for precision production medium to heavy stock removal applications
- · The most versatile vitrified bond, especially recommended for toolroom, cylindrical, and surface grinding
- · Grinds with an exceptional cool; fast cutting action, requires minimum dressing

Better choice for longer wheel life

86A ALUMINUM OXIDE

- · Premium abrasive and superior bond system produce high grinding G-Ratios (metal removal/wheel wear) for increased productivity
- · Hold form for better part geometry; decreased dress frequency and/or dress compensation
- · Engineered for easy use, grind cycles do not need to be altered, no special operator training is needed

Good choice for versatile performance at an economical price

64A ALUMINUM OXIDE BLEND

- · Specially blended aluminum oxide abrasive for production cylindrical applications
- · A superior vitrified bond that maintains high grinding rates without wheel breakdown
- Good choice for small job shops grinding numerous materials on a few machines

Good choice for smallest volume, lowest initial price applications

GEMINI 2 ALUMINUM OXIDE

- · Upgraded aluminum oxide abrasive blend delivers an efficient cut rate and improved grinding wheel life to your precision operations
- Made in the USA, these quality, low initial price wheels are ideal for small- to medium-sized manufacturing facilities that perform a variety of jobs
- · Carefully chosen, versatile specifications and sizes meet many cylindrical and surface grinding requirements



NURTIN

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PRECISION GRINDING WHEELS Cylindrical Wheels



| | | BEST | | BETTER | | GOOD | |
|-----------------|------------|-------------------|---------------------|------------------------------|--|--------------------------------|--|
| | TRADENAME: | | | 32A, 86A | | 64A, GEMINI, OR | GEMINI2 |
| | | Ceramic Alumina / | | Aluminum Oxide | | Aluminum Oxide | |
| IZE (D x T x H) | STD. PKG. | SPEC. | PART # | SPEC. | PART # | SPEC. | PART # |
| ype 01 Straight | ින දිනි | | | | | | |
| 6 x 1 x 5 | 1 | 5SG60-JVS | 662534 67007 | 32A60-J8VBE | 662534 64836 | 64A60-K8V127 | 662534 66722 |
| | 1 | | | 32A60-K5VBE | 662534 64837 | Gemini2 60-I | 662434 97801 |
| | 1 | | | | | Gemini2 60-K | 662434 95077 |
| | 1 | | | | | Gemini2 60-M | 662434 97802 |
| | 1 | | | | | Gemini2 100-I | 662434 97804 |
| | 1 | | | | | Gemini2 100-K Gemini2 100-M | 662434 97806 662434 97807 |
| 6 x 1 x 8 | 1 | | | 32A60-K5VBE | 662534 64826 | | 002434 37007 |
| 6 x 1-1/2 x 5 | 1 | 5SG60-KVS | 662534 67010 | 32A46-H8VBE | 662534 64925 | | |
| 6 x 2 x 5 | 1 | | | 32A46-J8VBE | 662534 64995 | 64A60-K8V127 | 662534 66721 |
| | 1 | | | 32A60-K5VBE | 662534 64960 | Gemini2 60-I | 662434 97810 |
| | 1 | | | | | Gemini2 60-K | 662434 95078 |
| | 1 | | | | | Gemini2 100-I | 662434 97812 |
| | 1 | | | | | Gemini2 100-K | 662434 97815 |
| 6 x 3 x 5 | 1 | | | | | Gemini2 60-I | 662434 97820 |
| 8 x 1 x 5 | 1 | | | | | Gemini2 100-I Gemini2 60-I | 662434 97821 |
| CXIXU | 1 | | | | | Gemini2 60-K | 662434 83777 662434 97610 |
| | 1 | | | | | Gemini2 60-K | 662434 97611 |
| | 1 | | | | | Gemini2 100-I | 662434 97612 |
| | 1 | | | | | Gemini2 100-K | 662434 97613 |
| | 1 | | | | | Gemini2 100-M | 662434 97615 |
| 8 x 2 x 5 | 1 | | | | | 64A60-K8V127 | 662534 66719 |
| | 1 | | | | | Gemini2 60-I | 662434 83779 |
| | 1 | | | | | Gemini2 60-K | 662434 97618 |
| | 1 | | | | | Gemini2 100-I | 662434 97619 |
| | 1 | | | | | Gemini2 100-K | 662434 97620 |
| 8 x 3 x 5 | 1 | | | | | Gemini2 60-I | 662434 83780 |
| 010 | 1 | | | 00400 101/107 | 0007000000 | Gemini2 100-I | 662434 97621 |
| 0 x 1 x 8 | 1 | | | 86A60-J8V127 86A80-J8V127 | 690786 08982 690786 08983 | Gemini2 60-I Gemini2 60-K | 662434 83782 662434 97840 |
| | 1 | | | 00A00-J0V127 | 09070000503 | Gemini2 60-M | 662434 97841 |
| | 1 | | | | | Gemini2 100-I | 662434 97842 |
| | 1 | | | | | Gemini2 100-K | 662434 97843 |
| | 1 | | | | | Gemini2 100-M | 662434 97846 |
| 0 x 1 x 10 | 1 | | | | | Gemini2 60-I | 662434 95332 |
| | 1 | | | | | Gemini2 60-K | 662434 97789 |
| | 1 | | | | | Gemini2 60-M | 662434 97791 |
| | 1 | | | | | Gemini2 100-I | 662434 97793 |
| | 1 | | | | | Gemini2 100-K | 662434 97796 |
| 0110 | 1 | | | | | Gemini2 100-M | 662434 97798 |
| 0 x 1 x 12 | 1 | | | | | Gemini2 60-I | 662434 83787 |
| | 1 | | | | | Gemini2 60-K Gemini2 60-M | 662434 97827 662434 97831 |
| | 1 | | | | | Gemini2 100-I | 662434 97835 |
| | 1 | | | | | Gemini2 100-K | 662434 97837 |
| | 1 | | | | | Gemini2 100 K | 662434 97838 |
| 0 x 1-1/2 x 5 | 1 | | | 32A46-H8VBE | 690786 65382 | | |
| 0 x 2 x 5 | 1 | | | | | 64A60-J8V127 | 690786 66713 |
| 0 x 2 x 8 | 1 | | | 32A46-I8VBE | 690786 65433 | 64A60-K8V127 | 690786 66712 |
| | 1 | | | 32A60-K5VBE | 690786 65490 | Gemini2 60-I | 662434 83785 |
| | 1 | | | | | Gemini2 60-K | 662434 97855 |
| | 1 | | | | | Gemini2 100-I | 662434 97856 |
| 0 v 0 v 10 | 1 | | | | | Gemini2 100-K | 662434 97857 |
| 0 x 2 x 10 | 1 | | | | | Gemini2 60-I | 662434 95334 |
| | 1 | | | | | Gemini2 60-K Gemini2 100-I | 662434 97848 |
| | 1 | | | | | Gemini2 100-1 Gemini2 100-K | 662434 97849 662434 97850 |
| 0 x 2 x 12 | 1 | | | 32A46-18VBE | 690786 65455 | Gemini2 100-K | 662434 83788 |
| 2 A E A 16 | 1 | | | ULI ITU IUVDL | | Gemini2 60-K | 662434 97851 |
| | 1 | | | | | Gemini2 100-I | 662434 97852 |
| | 4 | | | | | Gemini2 100-K | 662434 97854 |

For additional stock cylindrical wheels, see the large surface grinding wheel section of this catalog

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Contact your Norton representative with your custom cylindrical wheel requirements. There are many more sizes and specifications available made-to-your-order, including wheels made from Norton 55A and Quantum blank stock. Our revolutionary Norton Quantum and Vitrium³ bond ceramic wheels bring a quantum leap in technology to your operation. See 55A and Quantum Blank Stock FastTrack Service catalog sections for more details.

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PRECISION GRINDING WHEELS Cylindrical Wheels

| | | BEST 5SG | BETTER 32A, 86A | | GOOD 64A, GEMINI, OR | CEMINI2 |
|------------------------------------|-----------|--|--------------------|---------------------|-------------------------|---------------------|
| | ABRASIVE: | Ceramic Alumina / Aluminum Oxide | Aluminum Oxide | | Aluminum Oxide | UEIVIINIZ |
| SIZE (D x T x H) | STD. PKG. | | SPEC. | PART # | SPEC. | PART # |
| | | SFEG. FART# | JEU. | FANI # | JFEG. | FANI # |
| Type 01 Straight | ිංංසින් | | | | | |
| 20 x 3 x 8 | 1 | | | | 64A46-I8V127 | 690786 66447 |
| | 1 | | | | 64A60-J8V127 | 690786 08140 |
| | 1 | | | | Gemini2 60-I | 662434 83786 |
| | 1 | | | | Gemini2 100-I | 662434 97862 |
| 20 x 3 x 10 | 1 | | | | Gemini2 60-I | 662434 95333 |
| | 1 | | | | Gemini2 100-I | 662434 97859 |
| 20 x 3 x 12 | 1 | | | | Gemini2 60-I | 662434 83789 |
| | 1 | | | | Gemini2 100-I | 662434 97860 |
| 24 x 1 x 12 | 1 | | | | Gemini2 60-I | 662434 83790 |
| | 1 | | | | Gemini2 60-K | 662434 97863 |
| | 1 | | | | Gemini2 100-I | 662434 97866 |
| | 1 | | | | Gemini2 100-K | 662434 97868 |
| | 1 | | | | Gemini2 100-M | 662434 97870 |
| 24 x 2 x 12 | 1 | | | | 64A60-K8V127 | 690831 66710 |
| | 1 | | | | 64A80-K8V127 | 690831 66711 |
| | 1 | | | | Gemini2 60-I | 662434 83792 |
| | 1 | | | | Gemini2 60-K | 662434 97872 |
| | 1 | | | | Gemini2 100-I | 662434 97873 |
| | 1 | | | | Gemini2 100-K | 662434 97874 |
| 24 x 3 x 12 | 1 | | | | Gemini2 60-I | 662434 83793 |
| | 1 | | | | Gemini2 100-I | 662434 97877 |
| 30 x 2 x 12 | 1 | | | | 64A60-J8V127 | 692104 66704 |
| | 1 | | | | Gemini2 60-J | 662434 97878 |
| | 1 | | | | Gemini2 60-L | 662434 97986 |
| 30 x 3 x 12 | 1 | | | | 64A60-J8V127 | 69210466697 |
| | 1 | | | | 64A60-K8V127 | 692104 66698 |
| | 1 | | | | Gemini2 60-J | 662434 97987 |
| | 1 | | | | Gemini2 60-L | 662434 97988 |
| 30 x 4 x 12 | 1 | | | | 64A60-J8V127 | 692104 01774 |
| 00 X 1 X 12 | 1 | | | | Gemini2 60-J | 662434 97989 |
| | 1 | | | | Gemini2 60-L | 66243497990 |
| . | T | | | | | 002 10 101 000 |
| Type 07 Recessed | E | | | | | |
| 18 x 2 x 8 | 1 | | 32A46-I8VBE | 662534 65110 | | |
| Rec 2/S 10-1/2 x 1/2 | | | 00116 | 000705 | | |
| 20 x 2 x 8 | 1 | | 32A46-I8VBE | 690786 65537 | | |
| Rec 2/S 11-1/2 x 1/2 | | | | | | |
| 20 x 3 x 8 Rec 2/S 11-1/4 x 1/2 | 1 | | 32A46-I8VBE | 690786 65686 | | |
| 20 x 3 x 8 | 1 | | | | Gemini 46-H | 66050046060 |
| 20 x 3 x 8 Rec 2/S 11-1/2 x 1/2 | | | | | GEIIIIII 40-11 | 662532 46969 |
| 20 x 3 x 10 | 1 | | 32A46-I8VBE | 690786 65575 | | |
| Rec 2/S 12-1/4 x 5/8 | | | SEALS IN TO THE | | | |
| 20 x 6 x 10 | 1 | | 32A46-I8VBE | 690786 65854 | | |
| Rec Side A 12-1/4 x 2 | | | 02.1.5 10402 | | | |
| Rec Side B 12-1/4 x | | | | | | |
| | | ls, see the large surface grinding wheel section | on of this catalon | | | |

Contact your Norton representative with your custom cylindrical wheel requirements. There are many more sizes and specifications available made-to-your-order, including wheels made from Norton 55A and Quantum blank stock. Our revolutionary Norton Quantum and Vitrium³ bond ceramic wheels bring a quantum leap in technology to your operation. See 55A and Quantum Blank Stock FastTrack Service catalog sections for more details.

TECH TIP

- To make a wheel act softer:
- Increase work speed
- · Increase traverse speed
- · Increase infeed
- · Decrease wheel speed
- Increase dresser traverse rate
- · Increase depth of dress per traverse
- Dress more often

To make a wheel act harder:

- Decrease work speed
- · Decrease traverse speed
- Decrease infeed
- · Increase wheel speed (do not exceed MAX RPM marked on wheel)
- Dress at slower traverse rate
- · Decrease depth of dress per traverse

It is the user's responsibility to refer to and comply with ANSI B7.1

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PRECISION GRINDING WHEELS Centerless and Feed Wheels

Centerless grinding is a production process that produces extremely close tolerances on metal cylindrical forms or parts. Centerless grinding is used on a wide variety of workpieces. The key components in the process are the grinding wheel, the work rest blade (used to support the work) and the regulating or "feed" wheel (the drive mechanism for the workpiece).

| Applications: | High production operations on large volume continuous grinding Parts ranging from miniature roller bearings to train axles and bearings Fastener and tool manufacturing |
|-----------------|---|
| | Steel mills |
| | Automotive related components |
| | Bearing |
| | Machine tools |
| | Aircraft |
| | Turbine blades – land- and air-based |
| Shape: | Centerless wheels: Type 01 Straight |
| | Feed wheels: Type 01 Straight and Type 07 Recessed 2 Sides |
| Size Range: | Centerless wheels: 16", 20", and 24" diameter |
| - | Feed wheels: 12" and 14" diameter |
| Abrasive Grain: | Ceramic Alumina. Aluminum Oxide. Aluminum Oxide/Silicon Carbide Blend |

Material-to-Product Recommendation Guide

| | 55A60-KVS3 | 55A80-LVS3 | 32AC90-QB | 32AC54-QB | 2NQMC54-QB45 |
|--------------------------------|------------|------------|-----------|-----------|--------------|
| Alnico | • | | | • | |
| Cast Iron | • | | | • | |
| Hastalloy | • | | | | |
| Inconel | • | | | | |
| Stainless | • | | | | |
| Stainless Steel 300 | • | | | | |
| Stainless Steel 400 | • | | | | |
| Steel - Hard or Soft | | | | | |
| Less than 1/2" Diameter | | • | | | |
| 5/8" to 2 1/2" Diameter | • | | | | |
| Over 2 1/2" Diameter | • | | | | • |
| High Speed (commercial finish) | • | | | | • |
| High Speed (fine finish) | | | • | | |

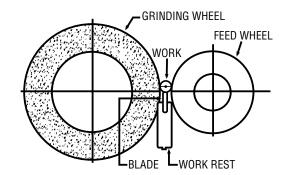
Stationary Dressing Tool Recommendations for Centerless Wheels

| | | Single Point | Indexable Single Point | Multi-point (Grit) | | | |
|-------------------------------|----------------------------|--------------------------------------|--------------------------------------|--------------------------------------|-----------|---------------------------------------|-----------|
| Grinding Wheel Diameter | Diamond Carat Weight | Tool Product # Part # 0° Angle | Tool Product # Part # 0° Angle | Tool Product # Part # 0° Angle | Shape | Tool Product # Part # 15° Angle | Shape |
| 11" - 14" | 1/2 | BC5M7 66260195005 | BCUD5 66260195025 | BC65 66260195015 | 3/8 Round | BC63 66260195013 | 1/4 x 1/2 |
| | | NS5M7 66260195127 | NSUD5 66260195163 | 2R6K7 662601 95096 | | 2A6E7 662601 95049 | Rectangle |
| 15" - 20" | 3/4 | BC7M7 66260195007 | N/A | BC62 66260195012 | 1/4 x 1/2 | BC63 66260195013 | 1/4 x 1/2 |
| | | NS7M7 66260195132 | NSUD7 66260195164 | 2A6D7 662601 95046 | Rectangle | 2A6E7 662601 95049 | Rectangle |
| 21" + | 1 | BC10M7 66260195009 | N/A | BC61 662601 95011 | 1/4 x 3/4 | BC60 66260195010 | 1/4 x 3/4 |
| | | NS10M7 66260195137 | NSUD10 66260195165 | 1A6A7 662601 95031 | Rectangle | 1A6C7 662601 95039 | Rectangle |

Stationary Dressing Tool Recommendations for Feed Wheels

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| | | Indexable Single Point | | |
|------------|------------|------------------------|-----------|---------------------|
| Feed Wheel | Tool Carat | Tool Shank | Tool | Tool |
| Diameter | Weight | Diameter | Product # | Part # |
| Up to 14" | 1/2 | 7/16" | NSUD5 | 662601 95163 |
| | | | | |





PRECISION GRINDING WHEELS Centerless and Feed Wheels

TECH TIP

Proper Wheel Mounting

- 1. Thoroughly clean spindle and flange bearing area of all dirt and foreign material.
- 2. Inspect for worn, distorted or damaged areas on flanges and spindle.
- If mounting a wide centerless wheel on a spindle (i.e., twin-grip), do not use grease or other petroleum lubricants. Use a silicone spray lubricant on the spindle to ease mounting the wheel, if necessary.
- 4. Ensure mount up arrow is at the top of the wheel. In the case of butted sets, assemble so that the arrow is formed across the top of the wheel face.
- 5. Ensure proper blotters are installed; one on each flange mating surface. Always use new blotters.
- 6. Install blotter flange and snug up the bolts only finger tight.
- 7. Using a torque wrench, tighten all bolts in an alternating pattern from side to side to 15 foot pounds.
- 8. Repeat the same tightening sequence, increasing the torque to 35 foot pounds.
 - » for wide wheels (18"-20"), torque the bolts at 45 to 50 foot pounds
 - $\,\,$ » for narrower wheels (2"-12"), a torque of 35 foot pounds is sufficient
- 9. Retorque the flange bolts to specification after the first eight hours of operation.

TECH TIP

- Use vitrified bond wheels for form holding and plunge grinding
- Use resinoid bond wheels for stock removal, long irregular parts and faster throughfeed grinding
- Vitrified Centerless Wheel Speeds:
 - » 64A46-KVCE wheels: 6,500 SFPM max. operating speed
 - $\,\,{}^{\scriptscriptstyle >}\,$ All other vitrified centerless stock products: 8,500 SFPM max. operating speed
 - » Always check wheel speed markings on wheels before running wheel

It is the user's responsibility to refer to and comply with ANSI B7.1

TECH TIP

- To make a wheel act softer:
- Increase work speed/regulating wheel speed
- Increase throughput speed/regulating wheel speed
- Increase infeed
- Decrease wheel speed
- Dress at a faster traverse rate

To make a wheel act harder:

- Decrease work speed/regulating wheel speed
- Decrease throughput speed/regulating wheel speed
- Decrease infeed
- Increase wheel speed (observe safe limits)







Best choice for cast iron to stainless and hard-to-grind materials and alloys (titanium, Inconel...)

QUANTUM (2NQ) CENTURY45 CERAMIC ALUMINA

- Proprietary 2NQ ceramic abrasive and Century45 (B45) resin bond formulation engineered specifically to maximize productivity of centerless applications
- Achieve over 30% improvement of stock removal, and up to 50% reduction in cycle time
- · Less grinding noise significantly improves operator safety

Better choice for performance to price ratio

55A-VS3 ALUMINUM OXIDE



- Monocrystalline 55A aluminum oxide offers superior performance on centerless plunge and throughfeed surface grinders with 2 plus times the life of competitive aluminum oxide wheels
- Vitrium 3 VS3 bond allows cool cutting, high-speed, and precise form holding
- · Ideal for simple- to complex-shaped components, with increased productivity; more quality parts at low cost per part

Better choice when one wheel is used to grind several different materials

32AC ALUMINUM OXIDE / SILICON CARBIDE BLEND

- Aluminum oxide/silicon carbide abrasive blend in a strong resin bond is ideal when one wheel is used to grind several different materials from high-to-low tensile strength
- · Norton resin bond centerless wheels are the choice for stock removal, long irregular paths, and faster through feed grinding
- Ideal for full range of simple- to complex-shaped components

Good choice for hard-to-grind fasteners

57A ALUMINUM OXIDE WITH FINE / HARD SIDE

- · Tough, durable aluminum oxide abrasive for heavy duty work
- Superior vitrified bond system for longer wheel life and excellent form holding when toolroom and centerless grinding
- 3/16 inch thick fine/hard side provides good form holding while grinding stainless and Inconel fasteners

Good choice for grinding a variety of materials, economically

64A ALUMINUM OXIDE BLEND

- Good intermediate type aluminum oxide abrasive blend for production centerless applications
- A superior vitrified bond that maintains high grinding rates without wheel breakdown
- Good choice for small job shops grinding numerous materials on a few machines

Good choice for smallest volume, lowest initial price applications

GEMINI 2 ALUMINUM OXIDE

Distributed by Applifast.

- Upgraded aluminum oxide abrasive blend delivers an efficient cut rate and improved grinding wheel life to your precision operations
- · Made in the USA, these quality, low initial price wheels are ideal for small- to medium-sized manufacturing facilities that perform a variety of jobs
- · Carefully chosen, versatile specifications and sizes meet many centerless grinding requirements



PRECISION GRINDING WHEELS Centerless and Feed Wheels

Centerless Wheels

| | TIER: | BEST | | BETTER | | BETTER | EXPANDED | GOOD | |
|--|--------------|-------------------------------|--------------------------|-------------------------------|-----------------------------|---------------------|---------------------|--------------------------------|----------------------------------|
| TRA | DENAME: | QUANTUM CENT CENTERLESS RE | rury45 Esinoid Wheels | 32AC / 32AC C Centerless R | ENTURY 45 Esinoid Wheels | 55A Centerless \ | VITRIFIED WHEELS | 53A, 57A,64A, Centerless Vi | GEMINI, GEMIN2 TRIFIED WHEELS |
| A | ABRASIVE: | Ceramic Alumina | | Aluminum Oxide | /Silicon Carbide | Aluminum Oxide | 9 | Aluminum Oxide | |
| SIZE (D x T x H) | STD. PKG. | SPEC. | PART # | SPEC. | PART # | SPEC. | PART # | SPEC. | PART # |
| Type 01 Straight | S. 24 | ्र | | | | | | | |
| 16 x 4 x 10 | 1 | 244 | | | | | | 57A80-L8VCN | 662534 65001 |
| 20 x 2 x 12 | 1 | | | | | | | | |
| 20 x 4 x 12 | 1 | | | | | | | 64A60-KVCE | 690786 66723 |
| | 1 | | | | | | | 64A80-LVCE | 690786 66727 |
| 20 x 6 x 12 | 1 | 2NQMC54-QB45 | 662434 96406 | 32AC80-NB45 | 662434 96398 | 55A60-KVS3 | 662533 87817 | 64A60-KVCE | 690786 66729 |
| | 1 | | | 32AC54-QB | 690786 66545 | 55A80-LVS | 662534 90781 | Gemini 60-L | 662532 46994 |
| | 1 | | | | | 55A80-MVS | 662534 90788 | | |
| 20 x 8 x 12 | 1 | 2NQMC54-QB45 | 662434 96407 | 32AC80-NB45 | 662434 96400 | 55A60-KVS3 | 662533 87819 | 64A60-KVCE | 690786 66748 |
| | 1 | | | 32AC54-QB | 690786 66546 | 55A80-LVS | 662534 90783 | 64A60-LVCE | 690786 66749 |
| | 1 | | | | | 55A80-MVS | 662534 90785 | 64A80-KVCE | 690786 66751 |
| | 1 | | | | | | | Gemini 54-J | 662532 47001 |
| | 1 | | | | | | | Gemini2 60-K | 662534 51857 |
| 24 x 1-1/2 x 12 | 1 | | | | | | | 57A 80/120 0/Q | 662531 93575 |
| w/ 3/16" fine/hard laye | er 1 | | | | | | | 57A 80/120 P/R | 662533 54449 |
| 24 x 2-1/2 x 12 | 1 | | | | | | | 57A A80/120 P/R | 662534 91223 |
| 24 x 2-1/2 x 12 | 1 | | | | | | | 57A 80/120 O/Q | 662532 85629 |
| w/ 3/16" fine/hard laye | er 1 | | | | | | | 57A 80/120 P/R | 662533 40540 |
| 24 x 3 x 12 | 1 | | | | | | | 64A60-K8V127 | 690831 66708 |
| 24 x 4 x 12 | 1 | | | | | | | Gemini2 60-K | 662534 51860 |
| | 1 | | | | | | | Gemini2 100-L | 662534 51861 |
| 24 x 6 x 12 | 1 | 2NQMC54-QB45 | 662434 96408 | 32AC80-NB45 | 662434 96401 | 55A80-LVS3 | 662533 87821 | Gemini 60-K | 662532 47047 |
| | 1 | | | 32AC54-QB | 690831 66547 | | | Gemini2 60-K | 662534 51862 |
| 24 x 8 x 12 | 1 | 2NQMC54-QB45 | 662434 96409 | 32AC80-NB45 | 662434 96403 | 55A60-KVS | 662534 90791 | Gemini2 60-K | 662534 51864 |
| | 1 | | | 32AC54-QB | 690831 66548 | 55A60-LVS | 662534 90762 | | |
| | 1 | | | | | 55A80-LVS3 | 662533 87825 | | |
| | 1 | | | | | 55A60-MVS | 662534 90782 | | |
| 24 x 10 x 12 | 1 | 2NQMC54-QB45 | 662434 96410 | 32AC80-NB45 | 662434 96404 | 55A60-KVS3 | 662533 87830 | Gemini2 60-K | 662534 51866 |
| | 1 | | | 32AC54-QB | 690831 66549 | 55A80-LVS3 | 662533 87828 | | |
| 24 x 20 x 12 | 1 | | | 32AC54-QB | 690831 66552 | | | | |
| Composed of 2 Wheel 10" Thick (ME90362) | s 1 | | | 32AC54-SB | 690831 66553 | | | | |

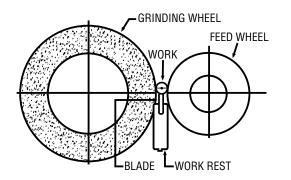
Rubber Bond Feed Wheels

Distributed by Applifast.

| | TIFR | BETTER | |
|---|-----------|----------------|---------------------|
| | ABRASIVE: | Aluminum Oxide | |
| SIZE (D x T x H) | STD. PKG. | SPEC. | PART # |
| Type 01 Straight | 5 | | |
| 12 x 2 x 5 | 1 | 57A80-RR51 | 662532 22840 |
| Type 07 Recessed Two | Sides 📄 | | |
| 12 x 4 x 5 Rec 2 Sides 7-1/2 x 1/2 | 1 | 57A80-RR51 | 662532 22844 |
| 12 x 6 x 5 Rec Side A 7-1/2 x 1-1/2 Rec Side B 7-1/2 x 1/2 | 1 | 57A80-RR51 | 662532 22846 |
| 12 x 6 x 5 Rec 2 Sides 7-1/2 x 1-1/2 | 1 | 57A80-RR51 | 662532 22847 |
| 12 x 8 x 5 Rec Side A 7-1/2 x 2-1/2 Rec Side B 7-1/2 x 1-1/2 | 1 | 57A80-RR51 | 662532 22850 |
| 14 x 8 x 5 Rec Side A 8 x 2 Rec Side B 8 x 1-1/2 | 1 | 57A80-RR51 | 662533 22859 |
| 14 x 20 x 6 Rec 2 Sides 8-1/2 x 1-1/2 Butted Feed Wheels Composed of 2 Wheels 10" Thick (ME91512) | 1 | 57A80-RR51 | 662533 22196 |

Plastic Bond Feed Wheels

| | TIER: | BETTER | |
|--------------------------|-----------|----------------|---------------------|
| | ABRASIVE: | Aluminum Oxide | |
| SIZE (D x T x H) | STD. PKG. | SPEC. | PART # |
| Type 07 Recessed Two | Sides 📄 | | |
| 12 x 8 x 5 | 1 | 57A80-RP4 | 662532 22199 |
| Rec Side A 7-1/2 x 2-1/2 | | | |
| Rec Side B 7-1/2 x 1-1/2 | | | |



There are many more sizes and specifications available made-to-your-order, including wheels made from our blank stock FastTrack Service for rush orders.

Contact your Norton representative with your custom centerless requirements.





Creepfeed Blank Stock FastTrack Service

Norton creepfeed wheels are the best performing creepfeed wheels in the industry. These high-performance blank stock wheels can be altered to your dimensional requirements.

Applications: Typical Industries: Size Range:

Grade/Porosity: Abrasive Grain: Heat-sensitive, porous grinding of difficult-to-grind alloys Aerospace, automotive, toolroom, gear, energy Blank Stock: 16" – 25" diameter Finished Wheel: 14" – 25" diameter C28 – F26 Ceramic Alumina, Fused Aluminum Oxide



Best choice for versatility, maximum performance, and highest productivity

QUANTUM X CERAMIC ALUMINA AND VORTEX ALUMINUM OXIDE BLEND

- Leading Norton technologies produce the most free-cutting creepfeed wheel: patented pore-induced construction, a blend of Norton Quantum ceramic and Vortex aluminum oxide abrasives, and the newest, strongest Norton bond: Vitrium
- Excel on large area of contact applications with exceptional form and corner-holding and 20+% less power draw; best MRR vs. all other ceramic creepfeed wheels, with reduced cycle times of up to 50%
- · Versatile; for all low-, medium- and high-force applications on hard-to-grind Inconel, titanium, and aerospace alloys



Better choice for heat-sensitive, porous grinding of difficult-to-grind alloys

VORTEX ENGINEERED ALUMINUM OXIDE

· High-performance, engineered and optimally spaced fused aluminum oxide abrasive

applifast.com

- High metal removal rates; able to grind large areas of contact with exceptional part integrity and quality and superior surface finish
- · Long wheel life: dramatically shorter grinding cycles = less wheel changes and more parts/wheel = high productivity

Toll Free 1800 563 1293

Key Program Features

Distributed by Applifast. 📾 🗐 🐻 🖨 🕁

- Standard lead-time: 2 weeks
- Alteration Parameters:
 - » Diameter may be altered to 2" smaller than the original blank stock diameter
 - » Thickness may be altered to 1/2 the original blank stock thickness



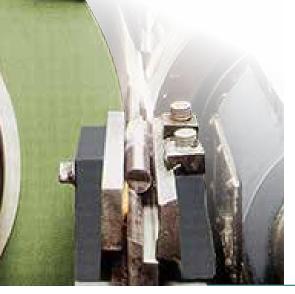
PRECISION GRINDING WHEELS Creepfeed Blank Stock FastTrack Service

| IAME: QUANTUM X 3NQX, | TG | VORTEX | |
|-----------------------|---|---|--|
| CERAMIC UNFINISH | TG Ed blank stock | A/O UNFINISHED | BLANK STOCK |
| SPEC. | UF BLANK PART # | SPEC. | UF BLANK PART # |
| Sou Sof | | | |
| 3NQX60/1-D24VTX2 | 003105 01586 | | |
| 3NQX60/1-E24VTX2 | 003105 01589 | | |
| 3NQX60/1-E24VTX2 | 00310501590 | | |
| TG2120/1-E24VTX2 | 003105 01591 | | |
| 3NQX60/1-C28VTX2 | 003105 03234 | | |
| 3NQX60/1-C28VTX2 | 00310503235 | | |
| 3NQX60-C28VTX2 | 00310438575 | | |
| 3NQX60-D28VTX2 | 00310425238 | | |
| 3NQX60-D+28VTX2 | 003104 79157 | | |
| 3NQX60-E24VTX2 | 00310425239 | | |
| 3NQX80-E+28VTX2 | 00310479160 | | |
| 3NQX60-C28VTX2 | 00310438656 | | |
| | 003104 25240 | | |
| 3NQX60-D+28VTX2 | 003104 79158 | | |
| 3NQX60-E24VTX2 | 00310425241 | | |
| 3NQX80-D+28VTX2 | 003104 79163 | | |
| 3NQX80-E+28VTX2 | 003104 79161 | | |
| | | IPA60-D29VTX | 003103 12485 |
| | | IPA60-E26VTX | 003103 12486 |
| 3NQX60-D28VTX2 | 003104 25242 | | |
| 3NQX60-E24VTX2 | 00310425243 | | |
| 3NQX60-C28VTX2 | 00310438657 | | |
| 3NQX80-D+28VTX2 | 00310479164 | | |
| 3NQX80-E+28VTX2 | 00310479162 | | |
| 3NQX60-C28VTX2 | 00310438658 | | |
| 3NQX60-D28VTX2 | 00310425244 | | |
| 3NQX60-E24VTX2 | 00310425245 | | |
| | | IPA60-E26VTX | 003103 03130 |
| | | IPA60-F17VTX | 00310303131 |
| | | IPA80-D29VTX | 00310303132 |
| 3NQX60-C28VTX2 | 00310438659 | | |
| 3NQX60-D28VTX2 | 00310425256 | | |
| 3NQX60-E24VTX2 | 00310425257 | | |
| <u> </u> | | IPA60-D29VTX | 003103 03133 |
| | | IPA60-E26VTX | 003103 03134 |
| 3NQX60-D28VTX2 | 003104 25258 | | |
| 3NQX60-E24VTX2 | 003104 25259 | | |
| 3NQX60-C28VTX2 | 003104 38660 | | |
| | | IPA60-C29VTX | 031039 25091 |
| | | IPA60-D29VTX | 003104 06547 |
| | | IPA60-F26VTX | 00310303135 |
| | | IPA60-E26VTX | 003104 04613 |
| | | IPA60-E26VTX | 003104 04678 |
| | 3NQX60/1-D24VTX2 3NQX60/1-E24VTX2 3NQX60/1-E24VTX2 3NQX60/1-E24VTX2 3NQX60/1-C28VTX2 3NQX60/1-C28VTX2 3NQX60-C28VTX2 3NQX60-D28VTX2 3NQX60-L28VTX2 3NQX60-C28VTX2 3NQX60-D28VTX2 3NQX60-L28VTX2 3NQX60-D28VTX2 3NQX60-C28VTX2 3NQX60-D28VTX2 3NQX60-C28VTX2 3NQX60-D28VTX2 3NQX60-D28VTX2 3NQX60-D28VTX2 3NQX60-D28VTX2 3NQX60-D28VTX2 | 3NQX60/1-D24VTX2 00310501586 3NQX60/1-E24VTX2 00310501589 3NQX60/1-E24VTX2 00310501590 TG2120/1-E24VTX2 00310501591 3NQX60/1-C28VTX2 00310503234 3NQX60/1-C28VTX2 003104053235 3NQX60-C28VTX2 00310438575 3NQX60-D28VTX2 00310425238 3NQX60-E24VTX2 00310425239 3NQX60-E24VTX2 00310425239 3NQX60-C28VTX2 00310425240 3NQX60-D28VTX2 00310425240 3NQX60-D28VTX2 00310425241 3NQX60-E24VTX2 00310479163 3NQX60-E24VTX2 00310479163 3NQX80-E+28VTX2 00310479161 | 3NQX60/1-D24VTX2 00310501586 3NQX60/1-E24VTX2 00310501590 TG2120/1-E24VTX2 00310501591 3NQX60/1-C28VTX2 00310503234 3NQX60-10-28VTX2 00310438575 3NQX60-D28VTX2 00310425238 3NQX60-D28VTX2 00310479157 3NQX60-D28VTX2 00310479160 3NQX60-28VTX2 00310479160 3NQX60-28VTX2 00310479160 3NQX60-28VTX2 00310479163 3NQX60-D28VTX2 00310479163 3NQX80-E+28VTX2 00310479161 3NQX80-E+28VTX2 00310479163 3NQX80-E+28VTX2 00310479161 3NQX80-E+28VTX2 00310479161 3NQX80-E+28VTX2 00310479161 3NQX80-E+28VTX2 00310479161 3NQX80-E+28VTX2 00310425242 3NQX80-E+28VTX2 00310425243 3NQX80-E+28VTX2 00310438657 3NQX80-E+28VTX2 00310479162 3NQX80-E+28VTX2 00310479162 3NQX80-E28VTX2 00310425244 3NQX60-D28VTX2 00310425245 IPA60 |

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Merer Applifast





PRECISION GRINDING WHEELS Quantum Blank Stock FastTrack Service

The newest-generation ceramic Norton Quantum vitrified wheels deliver the highest productivity of any wheel in the marketplace. They will grind with superior results in many applications. They can be altered to your specific needs within two weeks of receipt of your order.

Applications:

- · Centerless plunge and throughfeed grinding Surface grinding
- Size Range:

Grit Range: Grade Range: Abrasive Grain:

· Cylindrical grinding Blank Stock: 18" - 30" diameter Finished Wheel: 16" - 30" diameter 60, 80, and 120 I – M Ceramic Alumina



Best choice for versatility, maximum performance, and cost savings

QUANTUM CERAMIC ALUMINA

- · Revolutionary, sharp, durable engineered ceramic alumina grain shape and chemistry; highly-porous
- Perform well on old and new machines with 30%+ higher metal removal rate and 15%+ lower threshold power; achieve highest productivity with lowest total grinding cost
- Versatile; for all low-, medium- and high-force applications ranging from cast iron, to stainless steel and hard-to-grind Inconel and titanium

| | TIER: | BEST | |
|------------------|------------|--------------------------|-------------------------|
| | TRADENAME: | QUANTUM Ceramic Unfin | IISHED BLANK STOCK |
| SIZE (D x T x H) | | SPEC. | UNFINISHED BLANK PART # |
| Type 01 Straight | 5. S | | |
| 18 x 1 x 5 | | 3NQ80-K10VS | 003104 05993 |
| 18 x 2 x 5 | | 3NQ80-K10VS | 003104 05994 |
| 18 x 3 x 5 | | 3NQ80-K10VS | 003104 05995 |
| 20 x 1 x 8 | | 3NQ80-K10VS | 003104 05985 |
| 20 x 1 x 12 | | 3NQ80-K10VS | 003104 06017 |
| | | 3NQ120-MVS | 003104 05924 |
| 20 x 2 x 8 | | 3NQ80-K10VS | 003104 06036 |
| 20 x 3 x 8 | | 3NQ80-K10VS | 003104 06037 |
| 20 x 6 x 12 | | 3NQ80-L10VS | 003104 06018 |
| 20 x 8 x 12 | | 3NQ80-L10VS | 003104 06026 |
| 24 x 1 x 8 | | 3NQ80-K10VS | 003104 06034 |
| 24 x 1 x 12 | | 3NQ80-K10VS | 003104 06038 |
| 24 x 2 x 8 | | 3NQ80-K10VS | 003104 06035 |
| 24 x 2 x 12 | | 3NQ80-K10VS | 003104 06029 |
| 24 x 3 x 8 | | 3NQ60-J10VS | 003104 25121 |
| | | 3NQ80-K10VS | 003104 06046 |
| 24 x 3 x 12 | | 3NQ60-J10VS | 003104 25120 |
| | | 3NQ80-K10VS | 003104 06030 |
| 24 x 6 x 12 | | 3NQ80-L10VS | 003104 06031 |
| 24 x 8 x 12 | | 3NQ80-L10VS | 003104 06032 |
| 24 x 10 x 12 | | 3NQ80-L10VS | 003104 06033 |
| 30 x 2 x 12 | | 3NQ80-I10VS | 003104 27211 |
| | | 3NQ80-J10VS | 003104 06047 |
| | | 3NQ80-K10VS | 003104 06048 |
| 30 x 3 x 12 | | 3NQ60-I10VS | 003104 27212 |

There are many finished sizes and specifications available. Contact your local Norton distributor or salesperson with your size and specification requirements for quantity guidelines, quotations and helpful ordering instructions.

Please note "2-week delivery request" if needed, on your order.

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Distributed by Applifast.

PRECISION GRINDING WHEELS 55A Blank Stock FastTrack Service

55A-VH blank stock wheels are competitively-priced, monocrystalline grain wheels specifically engineered for numerous carbon steel applications requiring moderate to heavy stock removal rates. They can be altered to your specific needs within two weeks of receipt of your order.

Applications:

Size Range:

Grit Range: Grade Range: Abrasive Grain: Centerless plunge and throughfeed grinding Surface grinding Cylindrical grinding Blank Stock: 18" – 42" diameter Finished Wheel: 16" – 42" diameter 60 – 120 I – M Aluminum Oxide



Better choice for precision grinding of carbon steel and cast iron

55A-VH ALUMINUM OXIDE

- Advanced combination of monocrystalline 55A aluminum oxide abrasive and superior VH bond
- Superior performance on centerless plunge and throughfeed, surface, and cylindrical grinders with up to 2X the life
 of competitive aluminum oxide wheels
- Ideal for simple- to complex-shaped components with increased productivity, more quality parts, and lowest cost per part

| | | TIER: | BETTER |
|------------------|----------|--------|---|
| | | OTHER: | 55A-VH Aluminum Oxide Unfinished Blank Stock |
| SIZE (D x T x H) | GRIT | GRADE | UNFINISHED BLANK PART # |
| Type 01 Straight | 6.24 6.2 | | |
| 18 x 1 x 5 | 80 | К | 003104 04552 |
| 18 x 2 x 5 | 80 | К | 003104 04554 |
| 18 x 3 x 5 | 80 | К | 003104 04555 |
| 20 x 1 x 8 | 60 | K | 003100 20910 |
| 20 x 1 x 12 | 100 | K | 003103 02177 |
| | 120 | К | 003103 02220 |
| | 120 | М | 003100 64512 |
| 20 x 1-1/2 x 12 | 80 | К | 003103 02221 |
| | 100 | К | 00310302222 |
| 20 x 2 x 8 | 80 | К | 003100 20918 |
| | 100 | К | 003100 20920 |
| | 120 | М | 003100 64252 |
| 20 x 3 x 8 | 80 | К | 003104 25116 |
| 20 x 3 x 12 | 80 | К | 003104 25117 |
| 20 x 6 x 12 | 80 | К | 003100 20965 |
| 24 x 1 x 8 | 80 | К | 003100 21884 |
| 24 x 1 x 12 | 60 | К | 003100 20921 |
| | 80 | М | 003100 20923 |
| 24 x 1-1/4 x 12 | 60 | М | 003103 02224 |
| 24 x 1-1/2 x 8 | 80 | К | 003103 02223 |
| 24 x 1-1/2 x 12 | 80 | К | 003103 02225 |
| | 80 | М | 003103 02226 |
| 24 x 2 x 8 | 80 | К | 003100 21885 |
| 24 x 2 x 12 | 60 | К | 003100 20924 |
| | 80 | | 003100 20926 |
| 24 x 3 x 8 | 80 | К | 003100 21757 |
| 24 x 5 x 12 | 60 | L | 003103 02227 |
| 24 x 6 x 12 | 60 | К | 003100 20968 |
| 24 x 8 x 12 | 100 | К | 003103 02228 |
| 24 x 10 x 12 | 80 | К | 003100 20972 |
| 30 x 2 x 12 | 60 | L | 003100 20929 |
| 30 x 3 x 12 | 60 | L | 003100 20930 |
| 42 x 1-1/2 x 12 | 60 | Μ | 003100 20931 |

There are many finished sizes and specifications available. Contact your local Norton distributor or salesperson with your size and specification requirements for quantity guidelines, quotations and helpful ordering instructions.

Please note "2-week delivery request" if needed, on your order.

_____ Please _____ reques

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Gear Wheel Blank Stock FastTrack Service

Key Program Features

Norton quality non-stock gear wheels are designed to produce high metal removal rates with less power draw. The blank stock wheels below comprise our FastTrack alteration service. All Norton FastTrack wheels are altered on state-of-the-art CNC controlled machines and are finished using Norton dressing wheels. The Norton dressing wheels and machines give these wheels excellent accuracy and repeatability.

Vitrium³ VS3G Bond Wheels

Our revolutionary, exclusive bond platform provides unprecedented wheel performance and finished part accuracy across many precision grinding applications – while lowering process time and cost in three ways:

- 1. Coolest cutting with maximum chip clearance
- 2. Optimized precision profile delivers ultra radius accuracy
- 3. Able to run at higher operating speeds (maximizing your older and newer machines' performances)

| Size Range: | Blank Stock: 120mm – 450mm diameter |
|-----------------|--|
| | Finished Wheel: 115mm – 450mm diameter |
| Grit Range: | 60 - 120 |
| Abrasive Grain: | Ceramic Alumina and Aluminum Oxide |

Standard lead time:

- Alteration Parameters:
- 2 weeks
- » Diameter may be altered to 2" smaller than the original blank stock diameter
- » Thickness may be altered to 1/2 the original blank stock thickness

Best choice for versatility, highest productivity, and lowest total cost

QUANTUM X CERAMIC ALUMINA AND VORTEX ALUMINUM OXIDE BLEND

- Leading Norton technologies produce the most free-cutting gear wheels: patented pore-induced construction, Norton Quantum X ceramic alumina and Vortex aluminum oxide abrasive blend, and strong Norton bond
- · Best MRR (metal removal rate) versus all other ceramic gear wheels; reduce grinding cycle times up to 50%, best choice for grinding from solid
- Versatile; for all low-, medium- and high-force applications on hard-to-grind Inconel, titanium, and aerospace alloys; excel on large area of contact applications with exceptional form and corner-holding; 20+% less power draw

Excellent choice for the most demanding operations

TARGA TG, 3TG, 5TG CERAMIC ALUMINA

- The unique elongated shape of our second generation Norton seeded gel ceramic alumina abrasive offers exceptional durability for the most demanding applications and materials
- · Consider Targa (TG) when your requirements for SG have been exceeded
- VS3G Vitrium³ bond is the newest, strongest bond in the Norton portfolio: patented pore-induced construction; for all low-, medium- and high-force applications; excels on hard-to-grind aerospace alloys and large areas of contact; exceptional form and corner-holding

Excellent choice for high productivity, low total per-part grinding cost

SG CERAMIC ALUMINA

- High-performance seeded gel ceramic aluminum oxide abrasive provides fast stock removal, cool, superior cutting, and 3X 5X more life than aluminum oxide wheels, and double
 rough stock removal rate versus conventional abrasives
- Self-sharpening abrasive for less burn, less dressing; very consistent performing wheel
- 5SG durable Norton SG and aluminum oxide blend blue, for high stock removal rates, excellent productivity, long wheel life, low overall grinding cost; versatile, high-performance VS and VSP bonds provide exceptional form holding

Better choice for versatile, consistent performance

86A ALUMINUM OXIDE

- Sharper aluminum oxide abrasive for cooler cutting
- VS3G Vitrium3 bond is the newest, strongest bond in the Norton portfolio: patented pore-induced construction; for all low-, medium- and high-force applications
- · Excels on hard-to-grind aerospace alloys and large areas of contact; exceptional form and corner-holding

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PRECISION GRINDING WHEELS Gear Wheel Blank Stock FastTrack Service

| TIER: | BEST | | BEST | | BETTER | | BETTER | |
|--------------------------------|---|---------------------|---|---------------------|---|---------------------|---|---------------------|
| TRADENAME: | NORTON QUANTUN Norton Quantun NQ, 3NQ, 5NQ VS3G = VITRIUM ³ | И: | NORTON SEEDED G 3tgp, Sg, 5sg VS3g = Vitrium ³ | | BRGL VS3G = VITRIUM ³ | BOND | 86A, 25A, X25A VS3G = VITRIUM ³ | BOND |
| ABRASIVE: | Ceramic Alumina Unfinished Blank Sto | ock | Ceramic Alumina Unfinished Blank Stoo | ck | BRGL – Ceramic Alu Unfinished Blank St | | 86A, 25A, X25A – Al Unfinished Blank Sto | |
| SIZE (D x T x H) | SPEC. | BLANK PART # | SPEC. | BLANK PART # | SPEC. | BLANK PART # | SPEC. | BLANK PART # |
| Type 01 Straight | 65 | | | | | | | |
| Worm Profile Wheels | 112-2 | | | | | | | |
| 220mm x 180mm x 76.2mm | | | | | BRGL80-GVPHS | 003100 48274 | | |
| 275mm x 125mm x 160mm | | | | | DHULOU-UVI HS | 00310040214 | 86A90-J10VS3G | 003104 77165 |
| 27311111 × 12311111 × 10011111 | | | | | | | 86A100/5-I10VTX2 | 003104 58402 |
| 275mm x 160mm x 160mm | 5NQM90-J10VS3G | 003104 91163 | | | | | 86A90-J10VS3G | 003104 86397 |
| 27311111 × 10011111 × 10011111 | 314014130-3104330 | 00310431103 | | | | | 25A100-I10VS3G | 00310460909 |
| 280mm x 160mm x 115mm | NQ80-H8VS3G | 003104 48492 | SG80-HVX | 003104 19856 | | | X25A70-G16VPAP | 00310410369 |
| 2001111 × 10011111 × 11311111 | 11000-1101330 | 00310440452 | 5000-1177 | 00310413030 | | | 25A80-H8VS3G | 003104 18303 |
| | | | | | | | 86A80-H10VS3G | 003104 70137 |
| 300mm x 125mm x 160mm | 3NQ90-J10VH | 003103 94338 | | | | | 86A100/5-J10VTX2 | 003104 58405 |
| | 3NQ90-J10VS3G | 003103 94330 | | | | | 86A100/5-I10VTX2 | 003104 58404 |
| 300mm x 160mm x 160mm | 211/230-2104220 | 00310477103 | | | | | 86A90-J10VS3G | 003104 86981 |
| 5001111 × 10011111 × 10011111 | | | | | | | 86A120-J10VS3G | 00310486983 |
| 320 x 125 x 115 | NQ80-H8VS3G | 003104 72371 | | | | | 00A120-J10V330 | 00310400903 |
| 350mm x 104mm x 160mm | 1100-1101330 | 00310472371 | | | BRGL80-GVPHS | 003100 66976 | | |
| 5501111 × 10411111 × 10011111 | | | | | BRGL100-GVPLS | 00310066991 | | |
| 350mm x 125mm x 160mm | 3NQ90-H10VS3G | 003104 48495 | | | DIGLIOU-GVELS | 00310000331 | 25A90-H10VS3G | 003104 48496 |
| Single Rib Wheels | 311030 11107030 | 00010 | | | | | 23730 1110/030 | 00010440430 |
| 120mm x 30mm x 20mm | 5NQX100-G20VTX2 | 003104 90920 | 3TGP80/3-G12VS3G | 003104 48502 | | | | |
| 300mm x 30mm x 50.8mm | 5NQX60-G20VTX2 | 00310490863 | 3TGP80/3-G12VS3G | | | | | |
| 300mm x 60mm x 50.8mm | 5NQX60-G20VTX2 | 00310490864 | 3TGP80/3-G12VS3G | | | | | |
| 400mm x 50mm x 127mm | JINQA00-020V1A2 | 00310490004 | 3TGP60-G20VSPF | 00310446500 | | | | |
| 400mm x 60mm x 127mm | 5NQX60-G20VTX2 | 003104 90865 | 310100-0200311 | 00310404330 | | | | |
| 400mm x 75mm x 127mm | JINQX00-0201172 | 00310430003 | 3TGP60-G20VSPF | 003104 04597 | | | | |
| 400mm x 100mm x 127mm | 5NQX60-G20VTX2 | 003104 90916 | 3TGP60-G20VSPF | 003104 04597 | | | | |
| 400mm x 150mm x 127mm | 5NQX60-G20VTX2 | 00310490917 | 310100-0200311 | 00310404330 | | | | |
| 450mm x 50mm x 127mm | | 00010430317 | 3TGP80/3-G12VS3G | 00310448400 | | | | |
| 450mm x 60mm x 127mm | 5NQX60-G20VTX2 | 003104 90918 | 510100/5-012/030 | 00010440433 | | | | |
| 450mm x 100mm x 127mm | 5NQX60-G20VTX2 | 00310490921 | 3TGP80/3-G12VS3G | 00310///8/09 | | | | |
| 450mm x 150mm x 127mm | 5NQX60-G20VTX2 | 00310490919 | | | | | | |
| | | 00010430313 | 510100/5-012/030 | 00010440431 | | | | |
| | TIER: | BEST | | | | | | |

| | 11L11. | DEGI | |
|-------------------------|------------|----------------------|---------------------|
| | TRADENAME: | NORTON SEEDED G | EL: TG, 5TG, 5SG |
| | ABRASIVE: | Ceramic Alumina Unfi | nished Blank Stock |
| SIZE (D x T x RIM) | PLATE # | SPEC. | BLANK PART # |
| Type 02 Plate-Mounted C | ylinder | | |
| 3.000 x 3.000 x .600 | A311220 | 5SG80-JVS | 00310485211 |
| 3.350 x 3.000 x .650 | A311220 | 5SG80-JVS | 003104 85212 |
| 3.750 x 3.000 x .650 | A311220 | 5SG80-JVS | 003104 85213 |
| | | | |

| 0.000 / 0.000 / .000 | 1011220 | 00000 000 | |
|-----------------------|---------|-----------------|---------------------|
| 3.350 x 3.000 x .650 | A311220 | 5SG80-JVS | 00310485212 |
| 3.750 x 3.000 x .650 | A311220 | 5SG80-JVS | 00310485213 |
| 4.100 x 3.000 x .700 | A311220 | 5SG80-JVS | 00310485214 |
| 5.200 x 3.500 x .800 | A311250 | 5SG80-JVS | 00310485215 |
| 5.700 x 3.500 x .800 | A311250 | 5SG80-JVS | 003104 85226 |
| 7.000 x 3.500 x 1.050 | A311251 | 5SG80-JVS | 003104 85227 |
| 8.400 x 3.500 x 1.050 | A311384 | 5SG80-JVS | 003104 85228 |
| | | TG280-H12V-X575 | 003104 85229 |
| 8.346 x 3.500 x 1.043 | A311384 | 5TG80-3-J8VH | 00310480245 |

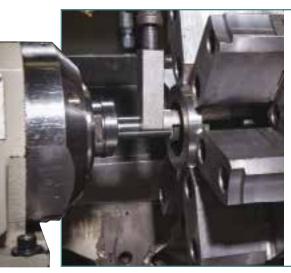
Gear blank stock alteration orders must include complete blueprint information.

Please ask your Norton representative for appropriate blueprint worksheet to fill in:

- Worm wheel blueprint worksheet: ME161508
- Single rib wheel blueprint worksheet: ME161178



PRECISION GRINDING WHEELS ID, Race and Superfinishing Wheels and Sticks



The most extensive line of Pressed-To-Size ID and Race wheels to choose from to maximize performance and cost savings.

In addition to VFL wheels, VS3L-bonded wheels are also available. VS3L is the Vitrium3 high-strength, cool-cutting bond with improved cutting efficiency, productivity, and wheel life. VFL and VS3L wheels are the fastest way to get Make-to-Order Norton ID and Race Grinding wheels. Norton VFL and VS3L wheels are available in both ceramic abrasives and conventional aluminum oxide abrasives in diameters up to 5".

Additional dimensions and grinding faces are available as made-to-order products with 4-week lead-times.

Wheel Types: Abrasive Types: Type 01 and 05 Ceramic Alumina, Aluminum Oxide

ID and Race Wheels

ID and Race Wheel FastTrack Availability

| Type 01 Straight | | For more program details, ask your |
|------------------------------|--------------------------|---------------------------------------|
| Diameter: 0.172" thru 4.532" | Maximum thickness: 3.75" | Norton sales representative to review |
| Type 05 Recessed One Side | | the FirstLine VFL & VS3L ID and Race |
| Diameter: 0.407" thru 5" | Maximum thickness: 3.10" | Wheels Brochure #6981 with you. |

VFL Availability

| ABRASIVE | 25A, 32A, 38A, 48A, 53A, 57A, 86A | 5TG* | 1SG, 3SG, 5SG | 32AA | NQ, 1NQ, 3NQ, 5NQ, 1NQP, 3NQP, 5NQP, 1NQM, 3NQM, 5NQM |
|--------------------------|--------------------------------------|-------------|------------------|-------|---|
| GRIT | 54 - 120 | 80/1, 120/1 | 54-120 | 54-80 | 54-150 |
| GRADE | J - P | I - M | I – N | I - M | I - N |
| STRUCTURE | 6 (Not Shown) | | | | |
| BOND | VFL | | | | |
| WHEEL TYPES | 01, 05 | | | | |
| SHAPES | Special faces not available | | | | |
| SPEED | 8,500 SFPM*** | | | | |
| TREAT 22 | Not Available | | | | |
| * 5TG is available in /1 | combination, only | | | | |

**Speeds up to 12,500 SFPM by request and Safety approval

VS3L Availability

| , | | | | |
|-----------|----------------------------|-------------|---------------|--|
| ABRASIVE | 25A, 32A, 38A, 55A, 86A | 5TG* | 1SG, 3SG, 5SG | NQ, 1NQ, 3NQ, 5NQ, 1NQP, 3NQP, 5NQP, 1NQM, 3NQM, 5NQM |
| GRIT | 54-120 | 80/1, 120/1 | 54-120 | 54-150 |
| GRADE | H - P | I - K | I - N | I - N |
| STRUCTURE | 8, 10 | 8 | 8, 10 | 8, 10 |
| BOND | VS3L | | | |

| DOND | 1002 |
|-------------|-----------------------------|
| WHEEL TYPES | 01, 05 |
| SHAPES | Special faces not available |
| SPEED | 8,500 SFPM*** |
| TREAT OF | ALL A PLAT |

TREAT 22 Not Available

* 5TG is available in /1 combination, only

** Speeds up to 12,500 SFPM by request and Safety approval

Dimensional Tolerances

| IF DIAMETER IS: | DIAMETER | THICKNESS | HOLE |
|-------------------|----------|-----------|---------------|
| 0.532" and less | +/003" | +.004"000 | +.001" +.006" |
| > 0.532" - 2.907" | +/005" | +/005" | +.001" +.006" |
| > 2.907" - 4.407" | +/015" | +/015" | +.001" +.006" |





PRECISION GRINDING WHEELS ID, Race and Superfinishing Wheels and Sticks

Blank Stock FastTrack Made-to-Order Microabrasive Superfinishing Sticks



Superfinishing blank stock encompasses a wide range of different specifications. These blanks can be finished to your dimensional requirements within two weeks from the date that the order is received at Norton Customer Service. Small lots, for test purposes, can be express shipped.

| APPLICATIONS | ABRASIVE TYPE – BOND | GRIT RANGE | TREATMENT TYPE |
|----------------------------|----------------------|------------|----------------|
| Superfinishing / Finishing | NLA – V | 240 - 1200 | Sulfur, Wax |
| | NMVC – VCA | | |
| | NSA – V | | |
| Honing | SG – VS | 54 - 220 | |
| | SGG – VS1 | | |

Rubber Finishing Sticks

These sticks are used for manual or mechanical honing on machines where they are mounted in holders or fixtures. Intended for use where precision dimensional limits and grade controls are required, such as die polishing.

| STD. PKG./CASE | SPEC. | PART # |
|----------------|------------------|---------------------|
| g Sticks | | |
| 5/20 | 57A120-B2RR | 614636 10608 |
| 5/20 | 57A120-B2RR | 614636 10609 |
| | g Sticks 5/20 | 5/20 57A120-B2RR |



our dressing tools MAKE THE PERFECT POINT

The Norton Winter full line of expertly-crafted stationary and rotary dressing tools - whether stock or custom-engineered delivers your every application need. And, our expert resetting and relapping services renew used tools to reduce your "cost per dress".



NORTON

applifast.com



WINTER

DRESSING SOLUTIONS Diamond Stationary Dressing Tools

Our Norton Winter offering is the industry's most comprehensive line of stock and made-to-order products to true (restore the wheel's profile) and dress (opening - to remove stock - or closing to finish) the face of the wheel. In addition to these catalog stock stationary tools, Norton Winter manufactures a full line of custom stationary tools, rotary diamond dressers and truing/dressing devices to meet all your specific application needs.

Applications: Tool Types:

Truing and dressing conventional and superabrasive wheels, straight, step, radius and form dressing

Stationary: Single Point, Toolroom, Multi-Point, Blade, Form, and Cluster Tools, and Truing Devices

Rotary: Reverse Plated and Infiltrated Form Plunge Diamond Rolls, Diamond CNC Traversing Discs, and Dressing Spindles

Determining the Best Value

Remember that diamonds are a rare commodity-the larger the stone and the better the quality, the higher the initial cost. The key to successful diamond tool productivity and use is based on the "cost per dress." Normally, higher quality diamonds and a proactive resetting program will result in the lowest "cost per dress." In those situations where a resetting program is not feasible or low initial cost is the primary purchasing consideration, Norton Winter offers a complete line of non-resettable tools.

Resetting Your Used Diamond Tools

Resetting - Minimizing Your Cost

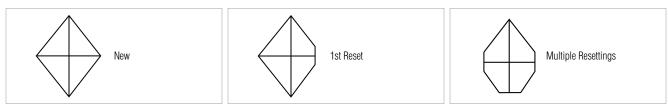
Buving a higher quality diamond is your best value, especially if you participate in a proactive resetting program. Although initial cost may be higher, the payback comes through several factors:

- Diamond durability, providing longer tool life
- Tighter form tolerances
- Consistent finish rates
- · Resetting the diamond lowers the overall tooling cost

Used properly, the overall cost of a higher quality, resettable diamond will compare favorably with that of an inexpensive, non-resettable diamond. Initially, the best diamond point is selected for use. When returned, the next best diamond point is selected for resetting, and so on.

To ensure you get the best value for your diamond:

- · Rotate the diamond tool ¼ turn periodically to maintain a sharp point
- Use proper flow of coolant to protect the diamond from heat which can create fracturing of the diamond
- · Excessive wear on the diamond point may impact the ability to reset the diamond. The widest point of the diamond is referred to as the girth. The diamond girth is buried in a powder metal matrix. Using a diamond into the girth zone might impact the ability to reset other diamond points



TECH TIP

Selecting the Correct Diamond Tool

To determine the type of dressing tool to use, it is best to think about the desired shape of the wheel face. Finished wheel face shapes are generally categorized into six types, as illustrated below.

Typical Wheel Forms Dressed by Stationary Diamond Tools

Look for the applicable wheel forms beside each product type to help you choose the correct product for your application.



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NDRTDN

Single Point Tools

Our Norton Winter line of single point tools is used in straight and simple form dressing applications. It includes: resettable and non-resettable products, tools for all abrasive types (conventional and advanced ceramic grains) and the technology-leading "Indexable" tool design.

Wheel Forms Dressed by These Tools

TAPERED





SPEC CHECK

Selection Guide

Stock Tools for Ceramic Abrasive Wheels

| SG/Ceramic | Engineered for use on ceramic (SG, NQ, Targa, etc.) wheels but may also provide significant benefits when used on conventional abrasive products. These tools are furnished with top quality specially selected diamonds. |
|--------------|--|
| BCSG/Ceramic | Economical alternative to an "SG" tool. Best choice when a disposable tool is preferred. |

WINTER

Stock Tools for Conventional Abrasive Wheels

- NS Engineered for use on conventional abrasives. These high quality, value-priced tools can be used for a variety of dressing applications.
- BC Economical alternative to an "NS" tool. Best choice when a disposable tool is preferred.

Selecting the Correct Single Point Tool:

- Identify the wheel abrasive type: aluminum oxide, silicon carbide, or ceramic
- · Determine the wheel diameter to select the optimum carat weight
- · Determine the tool holder size to select appropriate shank diameter

Examples of Single Point Tool Selection

| Conventional Wheel Spec: | 32A46-IVBE 7" x 1/2" x 1-1/4" | | | | |
|--------------------------|--------------------------------------|----------------------------|--|--|--|
| | Machine has a 7/16" tool holder | | | | |
| Tool Selections: | Resettable: | NS2M7 or NSUD2 (Indexable) | | | |
| | Non-Resettable: | BC2M7 or BCUD2 (Indexable) | | | |
| Ceramic Wheel Spec: | 5SG60-JVS or 5NQ60-IVS 10" x 1" x 3" | | | | |
| | Machine has a 3/8" | tool holder | | | |
| Tool Selections: | Resettable: | SG3M6 | | | |
| | Non-Resettable: | BCSG3M6 | | | |

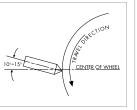
TECH TIP

- Rigidly mount single point tools at a 10° 15° angle to the wheel centerline with a line drawn through the center of the wheel, pointing in the direction of wheel travel
- Point of contact should be slightly below centerline of wheel as shown
- Use coolant whenever possible
- Normal infeed is .001" per pass
- Lead selections range from .002" .010" per wheel revolution

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 Rotate the tool 1/4 turn periodically to maintain a sharp point

To optimize applications using ceramic abrasives and/or tools, normal dressing parameters must change. Reduce infeed by 25%. Significant reductions in the amount of infeed and frequency of dress will result in substantially lower cost per part ground.



Single Point Dress Traverse Rate

Select a Lead Value based on desired Surface Finish and run the formula below.

| Finish | Lead Value (Per Wheel Revolutions) |
|------------------------------------|------------------------------------|
| For Coarse Finish (approx. 64 RMS) | .008" to .010" |
| For Medium Finish (approx. 32 RMS) | .005" to .009" |
| For Fine Finish (approx, 16 RMS) | .002" to .004" |

Lead Value x Wheel Speed (RPM) = Traverse Rate in Inches/Minute

- Slower traverse rates result in a closed wheel face and lower surface finish readings on the workpiece.
- Faster traverse rates result in an open wheel face that produces greater stock removal and a rougher workpiece finish.

It is the user's responsibility to refer to and comply with ANSI B7.1



Single Point Tools for Truing/Dressing Ceramic Abrasives



SINGLE POINT TOOLS FOR SG/CERAMIC

- Specially selected broad-shaped, diamond withstands the increased grinding pressures of ceramic abrasives
- · Each diamond is hand selected for stone shape, quality and structural integrity for consistent tool performance
- Multi-purpose can accommodate most straight dressing and simple form dressing applications; stands up to the sharpness of ceramic abrasives (SG, Quantum, Targa, etc.) but can also be used to dress conventional abrasives

Resettable Single Point Tools for SG/Ceramic

· High quality diamond and a proactive resetting program will result in the lowest dressing cost per part for ceramic abrasives

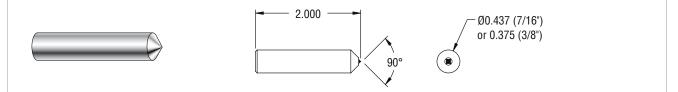
Non-Resettable Single Point Tools for BCSG/Ceramic

• The best selection for ceramic abrasives when a resetting program is not feasible or low initial cost is the primary purchasing consideration

| | | | TIER. | BEST | | GOOD | | Wheel Form | ns Dressed b | M |
|-------------------|----------------------|------------------|----------------|--------------|-------------------------------------|--------------|--------------------------|-------------|---|--------|
| WHEEL DIAMETER | TOOL Carat Weight | TOOL Diameter | TOOL Length | PRODUCT # | 3 SETTABLE PTS (2 RESETS) PART # | PRODUCT # | NON-RESETTABLE Part # | These Tools | | |
| Stock Singl | le Point Tools for ' | Truing/Dress | ing Ceram | ic Abrasives | | | | | | |
| Up to 7" | 1/4 (.25) | 3/8" | 2" | SG2M6 | 662601 95365 | BCSG2M6 | 662601 57007 | | 3. 33 | |
| | | 7/16" | 2" | SG2M7 | 662601 95366 | BCSG2M7 | 662601 56905 | | Le la | |
| 8" to 10" | 1/3 (.33) | 3/8" | 2" | SG3M6 | | BCSG3M6 | 662601 57008 | | Y. | |
| | | 7/16" | 2" | SG3M7 | 662601 95368 | BCSG3M7 | 662601 56906 | | | |
| 11" to 14" | 1/2 (.50) | 3/8" | 2" | SG5M6 | 662601 95369 | BCSG5M6 | 662601 57009 | STRAIGHT | TAPERED | CONVEX |
| | | 7/16" | 2" | SG5M7 | 662601 95370 | CSG5M7 | 662601 56907 | | | |
| 15" to 20" | 3/4 (.75) | 7/16" | 2" | SG7M7 | 662601 95372 | BCSG7M | 662601 56908 | | | |
| 21"+ | 1 (1.00) | 7/16" | 2" | | | BCSG10M7 | 662601 57010 | | | |

Standard Package = 1 tool

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| k Single Poi | nt Tool Marking Sys | stem | | |
|--------------|---------------------|--------------|----------------|--|
| nond Quality | Diamond Size | Shank Design | Shank Diameter | |
| eramic | 1 = 1/5 (.20) carat | Μ | 6 = 3/8" | |
| G/Ceramic | 2 = 1/4 (.25) carat | J | 7 = 7/16" | |
| | 3 = 1/3 (.33) carat | | | |
| | 5 = 1/2 (.50) carat | | | |
| | 7 = 3/4 (.75) carat | | | |
| | 10 = 1 carat | | | |



Single Point Tools for Truing/Dressing Conventional Abrasives



SINGLE POINT TOOLS FOR CONVENTIONAL ABRASIVES

- · Consistent diamond structure and shape for repeatable dressing performance on conventional abrasives
- · Well defined, sharp, durable diamond point offers maximum cost effectiveness
- Steeper 60 degree angle head design allows for greater machine and part clearance to produce forms with tighter tolerances

Resettable NS (Norton Standard) Single Point Tools

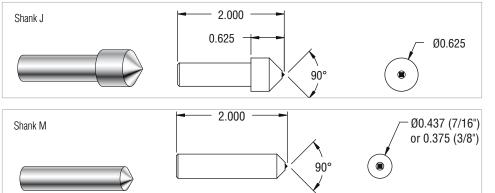
Selection of the correct tool and a proactive resetting program will usually result in the lowest dressing cost per part on conventional abrasives with these value priced, high quality diamonds

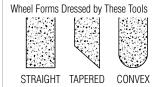
Non-resettable BC Single Point Tools

· The best selection for conventional abrasives when a resetting program is not feasible or low initial cost is the primary purchasing consideration

| | | TIER: | BETTER | | GOOD | |
|------------------------|------------------------|----------------------|----------------------|------------------------------------|-----------|-----------------------|
| | | TRADENAME: | NS (NORTON STANDARD) | | BC | |
| WHEEL DIAMETER | TOOL Carat weight | TOOL DIAMETER | PRODUCT # | 2 SETTABLE PTS (1 RESET) PART # | PRODUCT # | NON RESETTABLE PART # |
| Stock Single Po | int Tools for Truing/L | Dressing Conventiona | l Abrasives | | | |
| Internal Wheel | 1/5 (.20) | 3/8" | | | BC1M6 | 662601 95021 |
| | | 7/16" | | | BC1M7 | 662601 95022 |
| Up to 7" | 1/4 (.25) | 3/8" | NS2M6 | 662601 95116 | BC2M6 | 662601 95000 |
| | | 7/16" | NS2M7 | 662601 95117 | BC2M7 | 662601 95001 |
| 8" to 10" | 1/3 (.33) | 3/8" | NS3M6 | 662601 95121 | BC3M6 | 662601 95002 |
| | | 7/16" | NS3M7 | 662601 95122 | BC3M7 | 662601 95003 |
| 11" to 14" | 1/2 (.50) | 3/8" | NS5M6 | 662601 95126 | BC5M6 | 662601 95004 |
| | | 7/16" | NS5M7 | 662601 95127 | BC5M7 | 662601 95005 |
| 15" to 20" | 3/4 (.75) | 3/8" | | | BC7M6 | 662601 95006 |
| | | 7/16" | NS7M7 | 662601 95132 | BC7M7 | 662601 95007 |
| | | 7/16" | NS7J7* | 662601 95130 | | |
| 21" + | 1 (1.00) | 3/8" | NS10M6 | 662601 95136 | BC10M6 | 662601 95008 |
| | | 7/16" | NS10M7 | 662601 95137 | BC10M7 | 662601 95009 |
| | | 7/16" | NS10J7 * | 662601 95135 | | |

* J-shank tools are available in 7/16" diameter with 5/8" head. Standard Package = one tool





Refer to our Diamond and cBN Superabrasive Standard Product Catalog #8068 sections on www.nortonabrasives.com or your Norton representative for more in-depth information on all Norton Winter superabrasive stock and made-to-order products.



DRESSING SOLUTIONS Single Point Tools

Indexable Single Point Tools

Indexable tools are specifically designed to alleviate any misalignment issues and are the tools of choice for CNC grinders. They feature a two-part construction with the head and shank as separate pieces. After the initial installation, operators simply turn the indexable head with a wrench, while the tool shank remains secure (and aligned) in the tool holder.



INDEXABLE SINGLE POINT TOOLS

- · These indexable tools are easily turned without having to remove the tool from the holder, making it easier to turn than conventional tools and increasing frequency of beneficial tool turning
- U-Dex-It and Mini-Dex tools have a 60° included angle head design providing additional form versatility through better machine and part clearance
- Offers an excellent choice for regulating wheels

Indexable Single Point Tools for Truing/Dressing Conventional Abrasives

Resettable NS (Norton Standard) Indexable Single Point Tools

- Selection of the correct tool and a proactive resetting program will usually result in the lowest dressing cost per part on conventional abrasives with these value priced, high quality diamonds
- Ideal for centerless grinders; using standard 5/8" wrench, the head can be turned through the hole in the side of the wheel guard without removing the guard

Resettable NS (Norton Standard) Mini-Dex Indexable Single Point Tools

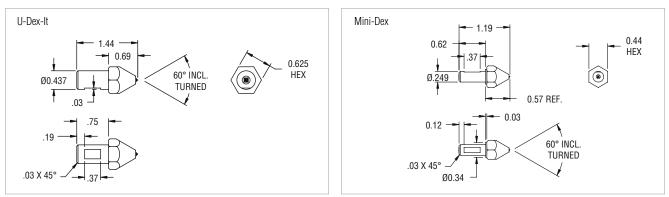
- Selection of the correct tool and a proactive resetting program will usually result in the lowest dressing cost per part on conventional abrasives with these value priced, high quality diamonds
- Use a standard 7/16" wrench to turn; designed for internal, bearing race, and twist drill flute machines

Non-Resettable Indexable Single Point Tools

- The best selection for conventional abrasives when a resetting program is not feasible or low initial cost is the primary purchasing consideration
- Ideal for centerless grinders; using standard 5/8" wrench, the head can be turned through the hole in the side of the wheel guard without removing the guard

| | | TIEI | R: BETTER | | GOOD | |
|------------------------|-----------------------|--------------------------------|--------------|---------------------------------|-----------|-----------------------|
| WHEEL DIAMETER | TOOL CARAT WEIGHT | TOOL SIZE | PRODUCT # | 2 SETTABLE PTS (1 RESET) PART # | PRODUCT # | NON-RESETTABLE PART # |
| Stock Indexable | Single Point Tools fo | r Truing/Dressing Convention | al Abrasives | | | |
| Up to 7" | 1/4 (.25) | 7/16" x 1-7/16" with 5/8" head | | | BCUD2 | 662601 95023 |
| | | 1/4" x 1-3/16" with 7/16" head | NSMD2 | 662601 95171 | | |
| 8" to 10" | 1/3 (.33) | 7/16" x 1-7/16" with 5/8" head | NSUD3 | 662601 95162 | | |
| 11" to 14" | 1/2 (.50) | 7/16" x 1-7/16" with 5/8" head | NSUD5 | 662601 95163 | BCUD5 | 662601 95025 |
| 15" to 20" | 3/4 (.75) | 7/16" x 1-7/16" with 5/8" head | NSUD7 | 662601 95164 | | |
| Ctandard Daalvaga | ana taal | | | | | |

Standard Package = one tool



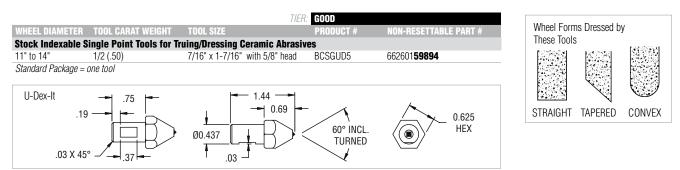


Indexable Single Point Tools continued

Indexable Single Point Tools for Truing / Dressing Ceramic Abrasives

Non-Resettable Ceramic Indexable Single Point Tools

- U-Dex-It BCSG tool contain specially selected diamonds to withstand increased ceramic (SG, Quantum, Targa, etc.) grinding pressures
- Ideal for centerless grinders; using standard 5/8" wrench, the head can be turned through the hole in the side of the wheel guard without removing the guard
- The best selection when a resetting program is not feasible or low initial cost is the primary purchasing consideration



Refer to our Diamond and cBN Superabrasive Standard Product Catalog #8068 sections on www.nortonabrasives.com or your Norton representative for more in-depth information on all Norton Winter superabrasive stock and made-to-order products.





DRESSING SOLUTIONS Single Point Tools

Internal Grinding Tools



Stock Internal Grinding Tools

Standard Package = 1 Tool

1/5 (.20)

7/16"

TYPE

Heald

Resettable Tools For Internal Grinding

• Q style shank is used on a Heald internal grinder (resettable)

TIER: BEST

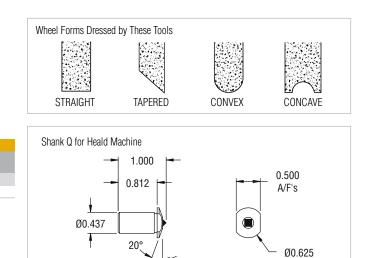
1"

PRODUCT

NI21Q7

2 SETTABLE PTS (1 RESET) PART

662601**95180**



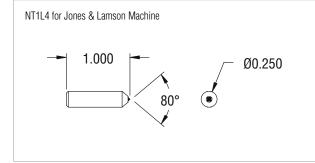
Thread Grinding Tools

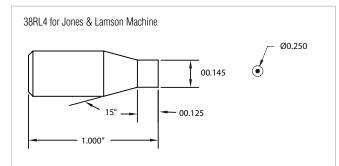


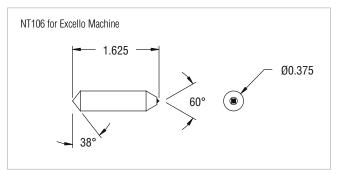
Thread Grinding Tools For SG / Ceramic Abrasives

. These wheels are used on J & L and Excello thread grinding machines to accurately dress the grinding wheels that form the desired thread configuration (non-resettable)

| | | | | TIER: | BEST | | Wheel Forme Dreesed by | |
|----------------------------------|---------------------------------------|------------------|-------------------|-------------------------|-----------|--------------------------|---------------------------------------|---|
| MACHINE Type | SHANK Diameter | TOOL Length | INCLUDED ANGLE | MAX. RADIUS On Point | PRODUCT # | NON-RESETTABLE Part # | Wheel Forms Dressed by These Tools | |
| Stock Thread | Grinding Tools | ; | | | | | | |
| J&L | 1/4" | 1" | | | 38RL4* | 662601 95100 | | |
| J&L | 1/4" | 1" | 80° | .010" | NT1L4 | 662601 95187 | | |
| EXCELLO | 3/8" | 1-5/8" | 60° | .010" | NT106 | 662601 95190 | | |
| * 38RL4 is a mi Standard Pacl | ulti-point (grit) 30 kage – 1 Tool |) - 40 mesh tool | | | | | STRAIGHT TAPEREI | D |







Refer to our Diamond and cBN Superabrasive Standard Product Catalog #8068 sections on www.nortonabrasives.com or your Norton representative for more in-depth information on all Norton Winter superabrasive stock and made-to-order products.

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DRESSING SOLUTIONS TOOIroom Tools

MULTI-ANGLED



Toolroom Tools

Norton Winter Toolroom Dressing Tools are primarily used on surface grinders to form the grinding wheel to an exact concave or convex radius. Although some tools are designed for use on a specific machine, many radius tools can be used on any grinder having the correct set-up.

Used generally on 8" diameter and smaller vitrified toolroom wheels, our Norton Winter offering includes phono-point, conventional radius, and full ball radius tools.

Wheel Forms Dressed by These Tools







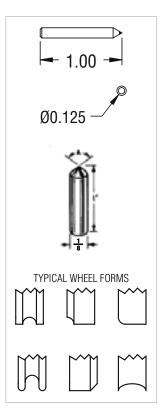
- Non-Resettable Phono-Point Tools
- · For general toolroom concave and convex dressing on small diameter grinding wheels

| | | TIER: | BETTER | | GOOD | |
|-------------------|-------------------|----------------|-----------|--------------------------|-----------|--------------------------|
| INCLUDED ANGLE | SHANK DIAMETER | TOOL Length | PRODUCT # | NON-RESETTABLE Part # | PRODUCT # | NON-RESETTABLE Part # |
| Stock Phon | o-Point Tools | | | | | |
| 60° | 1/8" | 1" | NP1M2 | 662601 95225 | BCPP-60 | 662601 95017 |
| | 3/16" | 1" | NP1M3 | 662601 95226 | | |
| | 1/4" | 1" | NP1M4 | 662601 95227 | | |
| 75° | 1/8" | 1" | NP2M2 | 662601 95228 | BCPP-75 | 662601 95018 |
| | 1/4" | 1" | NP2M4 | 662601 95230 | | |
| 90° | 1/8" | 1" | NP3M2 | 662601 95231 | BCPP-90 | 662601 95019 |
| | 3/16" | 1" | NP3M3 | 662601 95232 | | |
| | 1/4" | 1" | NP3M4 | 662601 95233 | | |

Standard Package = one tool

| Forms Dressed se Tools | | CHECK | _ | |
|------------------------|--------------------------------|------------------------------|---------------------------|-------------------|
| #\$ <i>\$\$666</i> 4 | Phono-F | Point Tool Markin | g System | |
| | Diamond Type | Included Angle On Diamond | Shank Style | Shank Diameter |
| | NP | 1 = 60° | Μ | 2 = 1/8" |
| NVEX | BCPP | 2 = 75° | | 3 = 3/16" |
| | | 3 = 90° | | 4 = 1/4" |
| | Example: N | P1M3 | | |
| | | | | |
| | TECH | I TIP | | |
| ICAVE | How to | Use Toolroom To | ols | |
| | We recomm | nend dressing with coolant | . However, if dressing to | otally dry, allow |
| | three to five | e seconds between passes | for diamond to cool. | |
| | Use extrem | ely light cuts from .0002" t | o .001" maximum. | |
| | D | THE REPORT OF A | | |

- Rotate tool if the application and set-up allow.
- Custom Full Ball Radius Tools should be returned for relap after minimum wear.





Radius Tools

Concave Radius Tools

This line offers a specially-shaped single point diamond, designed for forming concave radii on small diameter grinding wheels; not resettable.

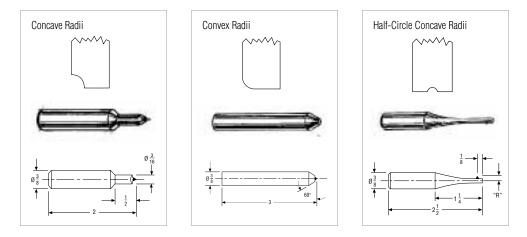
Convex Radius Tools

This line offers a specially-shaped single point diamond, designed for forming convex radii on small diameter grinding wheels; not resettable.

- Half-Circle Concave Radius Tools (Available as Non-stock Only)
- . This line offers a specially-shaped diamond set in the side of the shank for forming half-circle radii on small diameter grinding wheels.
- The tool is rotated to form the radius. Commonly called a "rat tail dresser"; not resettable.

| | | TIER: | BEST | | GOOD | |
|------------------------------|-------------------|----------------|-----------|--------------------------|-----------|--------------------------|
| RADIUS SIZE TO BE DRESSED | SHANK DIAMETER | TOOL LENGTH | PRODUCT # | NON-RESETTABLE Part # | PRODUCT # | NON-RESETTABLE Part # |
| Stock Concave R | adius Tools | | | | | |
| .010" to .015" | 3/8" | 2" | NR1P6 | 662601 95210 | | |
| .016" to .020" | 3/8" | 2" | NR2P6 | 662601 95211 | | |
| .021" to .032" | 3/8" | 2" | NR3P6 | 662601 95212 | | |
| .033" to .062" | 3/8" | 2" | NR4P6 | 662601 95213 | BCRD | 662601 95016 |
| .063" to .125" | 3/8" | 2" | NR5P6 | 662601 95214 | BCRD | 662601 95016 |
| .126" to .250" | 3/8" | 2" | NR6P6 | 662601 95215 | BCRD | 662601 95016 |
| Stock Convex Ra | dius Tools | | | | | |
| .020" to .125" | 3/8" | 2" | NR2M6 | 662601 95216 | | |
| .126" to .250" | 3/8" | 2" | NR12M6 | 662601 95217 | | |

Standard Package = one tool



Full-Ball Radius Tools for precision plunge form dressing of concave radii in the center of a grinding wheel are available made to your custom requirements. Ask your Norton representative for details.

Refer to our Diamond and cBN Superabrasive Standard Product Catalog #8068 sections on www.nortonabrasives.com or your Norton representative for more in-depth information on all Norton Winter superabrasive stock and made-to-order products.



DRESSING SOLUTIONS Multi-Point (Grit) Tools



Multi-Point (Grit) Tools

Since Norton Winter conventional and high-performance Multi-Point tools never need turning or resetting, they are the most economical way to accomplish a variety of straight, tapered, and step dressing operations on all sizes of cylindrical, centerless, surface, and toolroom grinding wheel applications.

Examples of Multi-Point Tool Selection

Conventional Wheel Spec:

Tool Selection:

Tool Selections:

Ceramic Wheel Spec:

Wheel Forms Dressed by These Tools



STRAIGHT TAPERED

SPEC CHECK

Selection Guide

- Identify the wheel abrasive type: ceramic (SG, Quantum, Targa), aluminum oxide, or silicon carbide
- Determine the wheel diameter and grit size
- · Determine the tool's approach angle to the centerline of the wheel
- Identify the tool holder diameter
- Use 1E shape for angular wheel slide, cylindrical grinding and for shoulder or step truing

TECH TIP

Multi-Point Tools – Straight Face Dressing and Truing

- Most multi-point tools are used for straight face dressing
- Tool should have full face contact with the wheel
- With new tool, 3–5 passes at .005" per pass should be taken to expose diamonds
- Infeed per pass .001" .002"
- · Use coolant whenever possible
- Use appropriate lead (and traverse rate)
- Contact your Norton representative for proper tool selection for Targa wheels

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 Multi-Point Dress Traverse Rate

Select a Lead Value based on desired Surface Finish and run the formula below.

1R6J6

SG1R6J7

| FINISH | LEAD VALUE (PER WHEEL REVOLUTIONS) |
|------------------------------------|------------------------------------|
| For Coarse Finish (approx. 64 RMS) | .023" to .030" (.58mm – .76mm) |
| For Medium Finish (approx. 32 RMS) | .013" to .022" (.33mm – .57mm) |
| For Fine Finish (approx. 16 RMS) | .006" to .012" (.15mm – .33mm) |
| 1 1111 HA 10 1(DDM) T | |

32A46-IVBE 7" x 1/2" x 1-1/4"

Machine has a 3/8" tool holder

Machine has a 7/16" tool holder

5SG60-JVS or 5NQ60-IVS 10" x 1" x 3"

Lead Value x Wheel Speed (RPM) = Traverse Rate in Inches/Minute

- Slower traverse rates result in a closed wheel face that produces less stock removal and improved workpiece finish.
- Faster traverse rates result in an open wheel face that produces greater stock removal and a rougher workpiece finish.

It is the user's responsibility to refer to and comply with ANSI B7.1

TECH TIP

Optimizing SG Multi-Point Tool Performance

- To optimize applications using ceramic abrasives/tools, normal dressing parameters must change. Significant reductions in the amount of infeed and frequency of dress will
 result in significantly lower cost per part ground.
- While all SG/Ceramic tools have been designed to improve the efficiency of ceramic grinding applications, they can also offer significant benefits in many applications using conventional abrasives.
- When first using a SG/Ceramic tool, make 3 to 5 passes at .005" infeed to ensure full face contact between the dressing tool and wheel face.
- Reduce normal dressing infeed by half. Do not exceed infeed of .002" per pass.
- The lead selection should be between .006"-.030" per wheel revolution. Faster traverse with a SG/Ceramic tool generally provides an open wheel face that can maximize productivity of the ceramic abrasive.



Multi-Point Tool Marking System

Tool Diamond

=

=

Size

4

6

8

12

14

Example: 1A 6 A 7

DRESSING SOLUTIONS Multi-Point (Grit) Tools

ΓΕСΗ ΤΙΡ

Diamond

Shape

1A

2A

3A

1E

2E

1R

2R

Multi-Point Tool Diamond Section Specifications

| SHAPE | WIDTH | LENGTH | DEPTH | TOOL APPROACH Angle to wheel | FOR WHEEL DIAMETER |
|-------|------------|--------|-------|---------------------------------|--------------------|
| 1A | 1/4" | 3/4" | 5/16" | 0° | Over 20" |
| 2A | 1/4" | 1/2" | 3/8" | 0° | 15" – 20" |
| 3A | 5/32" | 3/8" | 1/4" | 0° | Over 20" |
| 1E | 5/32" | 3/8" | 5/16" | _ | |
| 2E | 1/4" | 1/2" | 1/2" | - | 20" x 2" and up |
| 1R | 1/4" Round | | 1/4" | 0° | Up to 10" |
| 2R | 3/8" Round | | 3/8" | 0° | 11" – 14" |

Shank

Design

See the following pages

for shank configurations

To Dress Grinding

46 grit

54 - 100 grit

150+ grit

120 - 150 grit

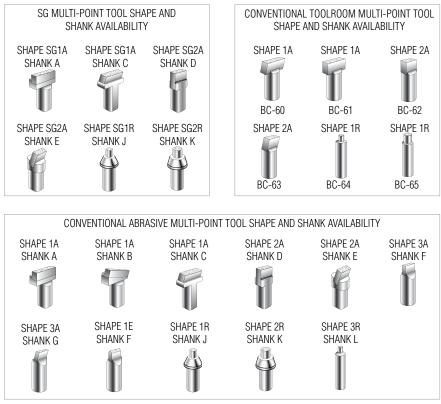
Special Applications

Wheels With Grit Size Of:



Shank Diameter Shape A is used primarily for straight face dressing. 6 = 3/8" 7 = 7/16" Shape E (double angle top face) lis 8 = 1/2" used for standard N-Face wheels, angular wheels, face and side truing of cylindrical wheels, and in step dressing. Shape R is used for straight face dressing where the tool holder is perpendicular to the wheel face (no drag angle), and on thread grinding machines

Multi-Point Tools for Straight Dressing



Shapes 3A (F and G Shanks) are used for form, shape, and step truing. Shape 1E is used for angle dressing

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MULTI-POINT TOOLS

- · Uniformly distributed diamonds in a tough, durable matrix for consistent performance throughout tool life
- Fresh, multiple diamond points exposed in truing operation; no turning or resetting required for faster, more
 consistent straight face dressing and longer tool life than single point tools
- Overall diamond weight exceeds equivalent single point tool making this the most economical way to dress straight and tapered forms

Multi-Point Tools for Truing and Straight Dressing

Multi-Point Tools For SG/Ceramic Abrasives

- Designed specifically for use on ceramic (SG, Quantum, Targa, etc.) abrasives, SG tools contain a higher diamond concentration to withstand the increased grinding pressures
 generated by the ceramic abrasives
- · These tools have improved life and dress quality; they can also offer significant benefits in many applications when used on conventional abrasives

Standard Multi-Point Tools

- · The ideal selection for use on conventional abrasives in high-production applications
- **BC Multi-Point Tools**
- · General-purpose tools ideal for conventional toolroom applications with a specially selected diamond size for a broad range of dressing applications

| | | | TIER | | | BETTER | | GOOD | |
|---------------|------------------|---------------|----------|-----------|---------------------|-----------|---------------------|-----------|---------------------|
| | | | | SG/CERAMI | C | STANDARD | | BC | |
| | | TOOL | | | | | | | |
| WHEEL | WHEEL | APPROACH | | | | | | | |
| DIAMETER | GRIT SIZE | ANGLE | DIAMETER | PRODUCT # | PART # | PRODUCT # | PART # | PRODUCT # | PART # |
| Nulti-Point | t Tools for Stra | ight Dressing |] | | | | | | |
| Up to 10" | 54 to 100 | 0° | 7/16" | | | 1R6J7 | 662601 95088 | BC64 | 662601 95014 |
| | | 0° | 3/8" | | | 1R6J6 | 662601 95085 | | |
| 11" to 14" | 54 to 100 | 0° | 7/16" | SG2R6K7 | 662601 95378 | 2R6K7 | 662601 95096 | BC65 | 662601 95015 |
| 15" to 20" 46 | 46 | 15° | 7/16" | | | 2A4E7 | 662601 95048 | | |
| | 54 to 100 | 0° | 7/16" | SG2A6D7 | 662601 95375 | 2A6D7 | 662601 95046 | BC62 | 662601 95012 |
| | | 15° | 7/16" | SG2A6E7 | 662601 95376 | 2A6E7 | 662601 95049 | BC63 | 662601 95013 |
| | 120 to 150 | 0° | 7/16" | | | 2A8D7 | 662601 95047 | | |
| | | 15° | 7/16" | | | 2A8E7 | 662601 95050 | | |
| 21" + | 46 | 15° | 7/16" | | | 1A4C7 | 662601 95038 | | |
| | 54 to 100 | 0° | 7/16" | SG1A6A7 | 662601 95373 | 1A6A7 | 662601 95031 | BC61 | 662601 95011 |
| | | 15° | 7/16" | | | 1A6B7 | 662601 95035 | | |
| | | 15° | 7/16" | SG1A6C7 | 662601 95374 | 1A6C7 | 662601 95039 | BC60 | 662601 95010 |
| | 120 to 150 | 15° | 7/16" | | | 1A8C7 | 662601 95040 | | |

Standard Package = one tool

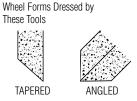
Multi-Point Tools for Form, Shape, or Step Dressing Conventional Abrasives

| | | | TIE | R: BETTER | |
|-------------------|---------------------|------------------------|------------------|-----------|---------------------|
| WHEEL DIAMETER | WHEEL GRIT SIZE | TOOL Approach angle | TOOL DIAMETER | PRODUCT # | PART # |
| Stock Multi- | Point Tools for For | m, Shape, and Step Dre | ssing | | |
| All | 54 to 100 | 0° | 7/16" | 3A6F7 | 662601 95055 |
| | | 15° | 7/16" | 3A6G7 | 662601 95975 |
| Ole al De d | | | | | |

Standard Package = one tool

| | | | TIE | R: BETTER | |
|-------------------|--------------------|-------------------------|------------------|-----------|---------------------|
| WHEEL DIAMETER | WHEEL GRIT SIZE | TOOL Approach angle | TOOL Diameter | PRODUCT # | PART # |
| Stock Multi-Po | int Tools for Ang | ular Dressing Conventio | nal Abrasives | | |
| All | 54 to 100 | 0° | 7/16" | 1E6F7 | 662601 95080 |
| Standard Package | e = one tool | | | | |







DRESSING SOLUTIONS High Performance Grit Tools



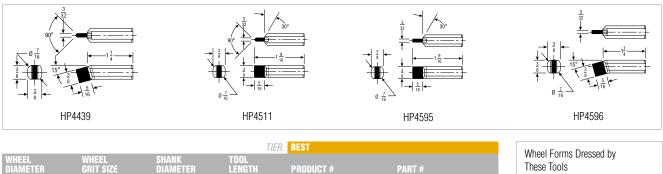
High Performance Grit Tools

Norton Winter High Performance grit tools are used in the same manner as multi-point tools, but are designed to produce a superior finish. They are used on 120 - 150 grit wheels. The traverse rates are equal to or faster than ordinary tools. Mounted on standard shanks, standard High Performance grit tools have a 3/8" wide by .100" thick diamond impregnated blade with a greater number of sharp points than in ordinary multi-point tools.

Since High Performance grit tools contain a higher concentration of diamond than found in standard multi-point tools, they are well suited for ceramic abrasive applications.

Typical Machines and Applications

- · HP4439: cylindrical machines, grinding thrust walls, bearing diameters and multi-diameter shafts with radii
- · HP4511: angular machines plunge grinding multi-diameter shafts and plunge grinding on dual-wheel forms
- · HP4595: cylindrical machines grinding main bearing and lobes on camshafts
- HP4596: centerless machines step grinding and machines dual-wheel grinding transmission shafts



| DIAMETER | GRIT SIZE | DIAMETER | LENGTH | PRODUCT # | PART # | These Tools | |
|----------------|---------------------|----------|---------|-----------|---------------------|-------------|---------|
| Stock High Pe | erformance Grit Too | ols | | | | | 82 C |
| Up to 20" | 120 to 150 | 7/16" | 1-9/16" | HP4439 | 662601 95270 | | 3 |
| Up to 20" | 120 to 150 | 7/16" | 1-9/16" | HP4511 | 662601 95271 | | a a a |
| Up to 20" | 120 to 150 | 7/16" | 1-9/16" | HP4595 | 662601 95272 | | ×. |
| Up to 20" | 120 to 150 | 7/16" | 1-9/16" | HP4596 | 662601 95273 | | |
| Standard Packa | ne – one tool | | | | | STRAIGHT | TAPERED |

Standard Package = one tool

Refer to our Diamond and cBN Superabrasive Standard Product Catalog #8068 sections on www.nortonabrasives.com or your Norton representative for more in-depth information on all Norton Winter superabrasive stock and made-to-order products.

DRESSING SOLUTIONS Blade Tools



NORTON

Blade Tools

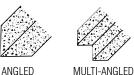
With the choice of natural and synthetic diamond in three performance/price tiers, blade tools can meet all your angle, step, and radius dressing requirements for cylindrical, surface, and centerless grinding.

Wheel Forms Dressed by These Tools





TAPERED





Synthetic Blade Tools – For USB and Quantum

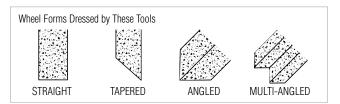
- · Synthetic diamond with a controlled diamond shape provides a constant cross section of diamond to the wheel throughout the life of the tool
- Provides consistent wheel conditioning from the first dress to last; economical, long-lasting alternative to chisel-type tools for centerless form grinding
- · USB (made-to-order) for dressing aluminum oxide wheels; Quantum (made-to-order) for dressing ceramics and silicon carbide wheels

Multi-Cut Blade Tools (Available in Stock and Made-To-Order)

- Manufactured with top quality natural or processed elongated diamond
- · Customizable diamond type depending on wheel specification and application requirements
- · Durable performing tools in a medium price range

| | | TIER: | BEST | | BETTER | |
|----------------------------------|------------------------|-------------------|--------------|------------------------|--------------|---------------------|
| | | TRADENAME: | SYNTHETIC BL | ADE TOOLS | MULTI-CUT TO | OLS |
| WHEEL DIAMETER (WIDTH < = 9") | TOOL Approach angle | SHANK Diameter | PRODUCT # | PART # | PRODUCT # | PART # |
| Blade Tools | | | | | | |
| 12" to 17" | 0° | 7/16" | NQ20A7 | 079587 47944 NS | | |
| | 15° | 7/16" | NQ215A7 | 079587 47945 NS | MC355 | 662601 95266 |
| 18" to 29" | 0° | 7/16" | NQ30A7 | 079587 47946 NS | | |
| | 15° | 7/16" | NQ315A7 | 079587 47947 NS | | |
| 30" - 36" | 0° | 7/16" | NQ50A7 | 079587 47948 NS | | |
| | 15° | 7/16" | NQ515A7 | 079587 47950 NS | | |

These stock tools are composed of 1 layer with 3 diamonds. These tools are not resettable or relappable. NS Non-Stock: Please contact your Norton representative for current lead-times. Standard Package = one tool





DRESSING SOLUTIONS Form Tools



Form Tools

Norton Winter Form Tools have diamond lapped to specific angles and radii required for a particular application, machine, contour dressing system, or CNC operation. Due to the high degree of accuracy necessary, the diamond is of special shape and quality.

Used tools can be relapped - the tip geometry can be restored on worn tools at a reduced cost.

Wheel Forms Dressed by These Tools





ANGLED



TECH TIP

- How to Use Form Dressing Tools
- · Proper centerline and light infeeds are essential to minimize side pressure. Excessive pressure will cause the diamond to fracture.
- Cone point tools should be rotated approximatley 1/4 turn daily.

Refer to our Diamond and cBN Superabrasive Standard Product Catalog #8068 sections on www.nortonabrasives.com or ask your Norton representative for information on our made-to-order form tools for the following machines:

- Jones & Lamson
- Moore Pantograph
- Hoglund
- Dia-Form

Cone Point Tools

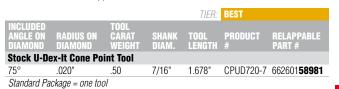


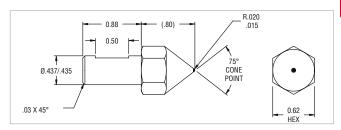
CONE POINT TOOLS

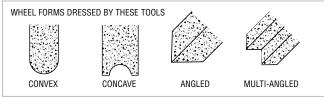
- · Norton Winter vacuum braze technology used in the manufacturing surpasses all traditional diamond retention methods
- Absolute diamond retention, diamond pullout prevention during the dressing cycle, and longer tool life through multiple relaps
- Diamond is accurately coned to the specific included angle and radius making these tools ideal when the most intricate, precise forms and radii are required

U-Dex-It Cone Point Tool

- · Used for precision dressing of intricate forms and radii
- Specially designed with 5/8" indexable head for easy turning during use
- · These tools can be relapped







SPEC CHECK

Cone Point Tool Marking System

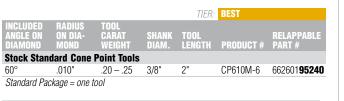
| Tool Type | Included Angle On Diamond | Radius On Diamond | Carat Weight | Shank Diameter |
|--------------|---------------------------------|-------------------------|-----------------|-------------------|
| CP | 6 = 60° | 05 = .005" | L = .1015 | 6 = 3/8" |
| | 7 = 75° | 10 = .010" | M = .2025 | 7 = 7/16" |
| | $9 = 90^{\circ}$ | 15 = .015" | H = .33 | |
| | | 20 = .020" | X = .50 | |
| | | 25 = .025" | | |
| | | 30 = .030" | | |
| Exampl | e: CP 6 10 N | 1-6 | | |

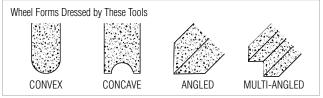


Cone Point Tools continued

Standard Cone Point Tool

· These tools are used for precision dressing when the most intricate forms and radii are required; can be relapped



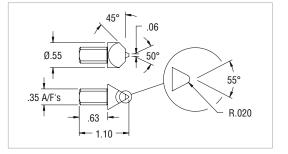


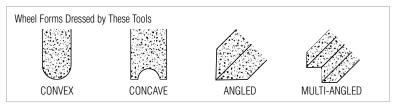
Chisel Point Tools

Chisel Point Tool for Toyoda Grinders

- · High-precision chisel point tool designed for forming intricate shapes and radii
- Specifically engineered to fit Toyoda machine series GL32 and GL4, it can also be used on various straight and angle-head grinders - for dressing conventional and ceramic abrasive wheels, sizes 12" to 24"
- · This tool can be reset/relapped

| | | | | TIER: | BEST | |
|------------------------------|----------------------|----------------------|-------|----------------|-----------|----------------------|
| INCLUDED ANGLE ON DIAMOND | RADIUS ON Diamond | TOOL CARAT WEIGHT | | TOOL Length | PRODUCT # | RELAPPABLE PART # |
| Stock Chisel Point Tool | | | | | | |
| 55° | .020" | .75 | 7/16" | 1.10" | CHT520-7 | 662601 03741 |
| Standard Package = 0 | one tool | | | | | |





SPEC CHECK

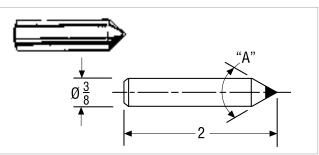
Chisel Point Tool Marking System

| Tool Type | Included Angle On Diamond | Radius On Diamond | Carat Weight | Shank Diameter |
|--------------|------------------------------|----------------------|-----------------|-------------------|
| СН | 6 = 60° | 05 = .005" | L = .1015 | 6 = 3/8" |
| (Natural | 7 = 75° | 10 = .010" | M = .2025 | 7 = 7/16" |
| Diamond) | 9 = 90° | 15 = .015" | H = .33 | |
| | | 20 = .020" | X = .50 | |
| | | 25 = .025" | | |
| | | 30 = .030" | | |



Chisel Point Tools Chisel Point Tools should be rotated 180° when dulling or contour problems occur.

Refer to our Diamond and cBN Superabrasive Standard Product Catalog #8068 sections on www.nortonabrasives.com or your Norton representative for more in-depth information on all Norton Winter superabrasive stock and made-to-order products.



DRESSING SOLUTIONS Cluster Tools



NDRTDN

SAINT-GOBAII

Cluster Tools

Norton Winter Cluster tools are designed specifically for straight face dressing of large diameter, coarse grit grinding wheels on single or double disc, centerless, or surface grinders.

Wheel Forms Dressed by These Tools



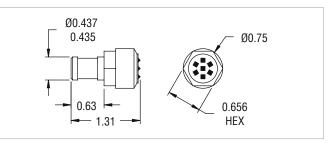
STRAIGHT TAPERED

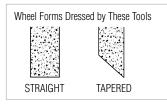
Multi-Point Cluster Tools

 Multi-Point Cluster tools are typically used for straight face dressing on disc and centerless operations

- For greatest efficiency, these tools should be mounted at a 15° angle so that three diamonds are in contact with the wheel face at all times
- The tool should be rotated at frequent intervals; not resettable

| | | TIER: | BETTER | |
|---------------------|--------------|-------------|-----------|--------------------------|
| DIAMONDS ON FACE | SHANK | TOOL LENGTH | PRODUCT # | NON-RESETTABLE Part # |
| Stock Multi- | | | | |
| 7 | 7/16" | 1-5/16" | NC7K7 | 662601 95206 |
| Standard Packa | age = 1 Tool | | | |

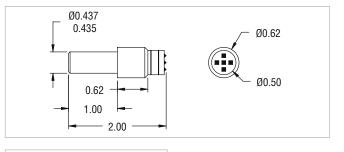




Dia-Pak Tools

- Dia-Pak tools are primarily used in straight face disc grinding, but are extremely versatile and may also be used in centerless and surface operations
- Designed for maximum economy, three layers of diamond are carefully arranged so that a new layer is exposed before the previous layer is completely worn away; not resettable

| | | | TIER: | BETTER | |
|---------------|---------------|----------|--------|---------|---------------------|
| FOR WHEEL | DIAMONDS | SHANK | TOOL | PRODUCT | NON-RESETTABLE |
| DIAMETERS | PER LAYER | DIAMETER | LENGTH | | PART # |
| Stock Dia-P | ak Tools | | | | |
| Up to 14" | 5-4-5 | 7/16" | 2" | DP20 | 662601 95200 |
| Up to 20" | 7-6-7 | 7/16" | 2" | DP30 | 662601 95201 |
| Any | 7-6-7 | 7/16" | 2" | DP35 | 662601 95202 |
| Standard Paci | kage = 1 Tool | | | | |



Wheel Forms Dressed by These Tools

TECH TIP

Cluster and Dia-Pak Tools - Straight face dressing of hard / coarse wheels:

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- Tool should approach the wheel at a 15° angle and be rotated periodically to keep three diamonds in contact with the wheel at all times.
- Tools can also be used at a 90° to the wheel face.

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- Multi-Point Cluster tools should be rotated at frequent intervals.
- Infeed per pass should not exceed .0015" (.001" with ceramic – Norton SG, Quantum, Targa TG, etc. – wheels).
- Use coolant whenever possible.
- These tools permit a faster traverse rate providing a freer cutting wheel than when dressed by a single-point tool.



DRESSING SOLUTIONS Accessories



Tool Holder/Hand Dresser

- Designed for use when offhand truing and dressing on tool and cutter, or benchstand grinders.
- This stock hand dresser will not rust, and is 10-1/2" long, with a hollow shaft that accepts any tool shank length from 3/4" to 9". The 1-3/4" diameter plastic knob ensures a firm grip. The collet accepts a 7/16" diameter tool shank.

| DESCRIPTION | PART NUMBER |
|--------------|---------------------|
| Hand Dresser | 662601 95020 |
| Ø1.75 | - 10.50 |







Open or Closed Dressing... You Can Count on Fliesen Tools

Whether dressing a wheel OPEN or CLOSED you can count on Fliesen tools. Open wheels (sharp, free-cutting abrasive grains are exposed) are created by increasing the speed a Fliesen tool moves across the wheel when dressing. Generally considered the most favorable wheel conditioning, open wheels avoid workpiece burn while maximizing a wheel's ability to remove metal quickly when grinding.

Slowing a Fliesen tool as it moves across the wheel creates a closed wheel condition (abrasive grains are smoother, less sharp); a very helpful condition when trying to lower part surface finish readings.

- Harder, H-bond metal formulation tools have been specifically engineered to efficiently dress durable silicon carbide and ceramic wheels
- Furioso Fliesen tools have a unique bond system developed for optimal performance when dressing Norton Quantum (NQ) ceramic wheels
- · W-bond Fliesen tools are designed for conventional aluminum oxide wheels

The Benefits of Fliesen Tools

Spend More Time Grinding

Single point, chisel, and cone point tools require operator attention to ensure proper tool rotation at regular intervals. Fliesen tools require no adjustments. Simply install the tool, dress the wheel to break it in, and the tool will do the rest. Operators spend more time grinding – rather than making non-productive dressing adjustments.

Longer Tool Life

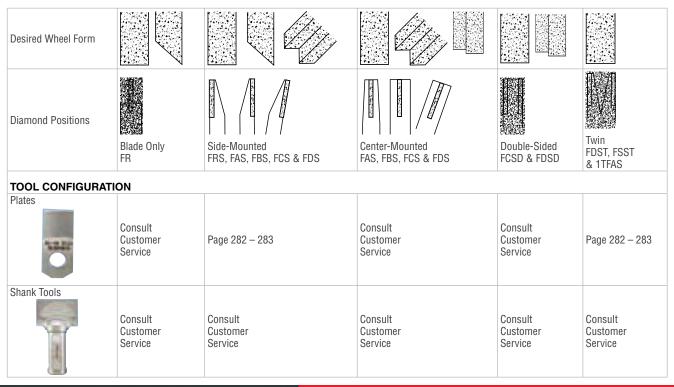
Expect long life when using a Fliesen tool. Other stationary tools, made with a single diamond stone, develop flat spots ("wear flats") over time – which create chatter and burn. Fliesen tools use hand-set, fine diamond grit, eliminating the creation of wear flats.

Fliesen Tool Configurations: Plate and Shank

Fliesen tools are available in two basic tool configurations. The most common is a plate configuration, which is somewhat rectangular-shaped with a mounting hole. Fliesen shank tool configurations are plates mounted in shanks of varying sizes and shapes. Most grinding machines accommodate one or the other tool configuration. To find the correct tool configuration for your machine, check the existing dressing tool, or consult your grinding machine manual.

Choosing The Correct Fliesen Tool

Using the chart below, find your desired wheel form – then locate the preferred diamond position. Next, find the correct tool configuration for your machine: plate or shank tool. Follow down that column to find the Fliesen page for your plate or standard shank tool configuration. Go to the appropriate page. Locate the corresponding zone for your wheel diameter and width on the graph. Find that zone number in the part number chart. Next, moving to the right, find your wheel abrasive type and grit size. Locate the part number for your Fliesen tool.



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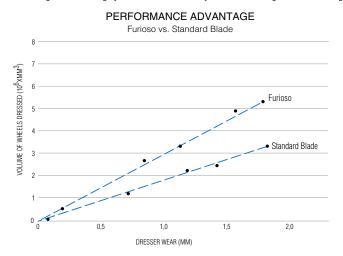
Toll Free 1 800 563 1293



Diamond Stationary Fliesen Tools

Furioso Tools

The new generation of highly wear-resistant stationary diamond dressing tools for dressing modern ceramic abrasives







Best choice for optimum performance of Norton Quantum or other ceramic wheels

FLIESEN FURIOSO TOOLS

- The optimized combination of diamond quality, bond and setting pattern when dressing Norton Quantum (NQ) or other ceramic grinding wheels
- · Improved wear-resistance and enhanced tool life; excellent dressing behavior with optimum consistency
- Constant surface roughness

Plate or Special Mounts Plate Only, With Adapter FAS - Furioso Twin 1TFAS - Furioso 15 0 Ť S 5 Plate or Special Mounts Typical Shank-Mounted FBS - Furioso Design 42 Ť 25 mm

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Toll Free 1 800 563 1293

These three pages highlight a small sample of our Fliesen tool offering. Refer to our Diamond and cBN Superabrasive Standard Product Catalog #8068 sections on www.nortonabrasives.com or ask your Norton representative for complete product listing and information on these tools.

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Standard Furioso Plate Drawings

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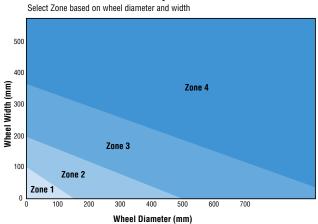


Diamond Stationary Fliesen Tools

Furioso Plates; Side-Mounted and Twin

Use the Wheel/Tool Graph to identify your grinding wheel's Zone number, and the chart below to find the Furioso tool for your application.

Wheel / Furioso Tool Graph



| | | TIER: TO DRESS: | BEST Norton Ou | ANTUM NO CERAMI | C WHEELS | SP | EC C | HECK |
|-----------|---|--|--|---|--|------------------------|------------------------------|---|
| | ZONE NO. / SERIES | WHEEL GRIT SIZE | TOOL # | PART # | DESCRIPTION | Blad | e Size | |
| Side-Moun | ted Zone 2 FBS Series Zone 3 FAS Series | 36 - 54 54 - 80 80 - 120 120 - 180 36 - 54 54 - 80 80 - 120 120 - 120 | DT1463 DT1462 DT1461 DT1460 DT1467 DT1466 DT1465 DT1464 | 69014122948* 69014122947* 69014122946* 69014122946* 69014122944* 69014122952* 60157690579* 60157690579* 600157693885* | FBS 140 Furioso FBS 115 Furioso FBS 90 Furioso FBS 75 Furioso FAS 140 Furioso FAS 115 Furioso FAS 90 Furioso | 1 2 3 | iption FBS FAS TFAS | DIMENSION 10 mm thick, 15 mm usable length 20 mm thick, 15 mm usable length Twin blade with cooling duc it Size |
| ſwin | | 120 - 180 | DT1464 | 690141 22950 * | FAS 75 Furioso | DESCR | IPTION | FEPA |
| - | Zone 4 1TFAS Series | 36 - 54 54 - 80 80 - 120 120 - 180 | DT1471 DT1470 DT1469 DT1468 | 690141 22956 * 690141 22955 * 690141 22954 * 690141 22953 * | 1TFAS 140 Furioso 1TFAS 115 Furioso 1TFAS 90 Furioso 1TFAS 75 Furioso | 140 115 90 75 | | D1181 D1001 D711 D501 |

* All Furioso Plates shown ship in 10 business days from receipt of order.

Furioso Shank Tools

Made-to-order Furioso shank tools are also available. Ask your Norton representative for ordering assistance.

Side-Mounted Diamond Sections

Tools are available in different offset positions and angles.

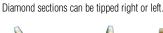
Zero Offset





Offset Left, Specify angle amount

Offset Right, Specify angle amount



Tipping the Diamond Plates on Shank Tools



Diamond Diamond Tipped Left, Tipped Right, Specify angle Specify angle



There are many different diamonds making up a single plate as this cut-away view shows.





DRESSING SOLUTIONS Diamond Rotary Dressing Tools



Norton Winter diamond rotary truing and dressing tools provide a very efficient way to modify the shape and topography of your grinding wheels.

Products:

- Form Rolls: Plunge Dressing

 Infiltrated diamond form rolls
- · Reverse plated diamond form rolls
- Dressing Discs: CNC Traverse Dressing
- Infiltrated dressing discs
- BPR dressing discs (for dressing superabrasive wheels)
- IDW dressing discs (for dressing superabrasive wheels)
- Truing and Dressing Spindles and Devices

Form Roll: Plunge Dressing

- Diamond roll geometry matches geometry of part to be ground
- · Roll is fed into grinding wheel to generate the desired form and wheel surface condition
- Used where lowest cycle time and highest accuracy is required

Dressing Disc: CNC Traverse Dressing

- Diamond dressing disc has a thin diamond section that is traversed across the face of the grinding wheel
- · Profile is generated with a CNC program or template
- · Used for simple profiles or where flexibility is necessary



How to Order Rotary Dressing Tools

Provide the following information to your local sales representative or customer service representative

Legible blueprint of roll, wheel, or part with the following geometry:

- Overall diameter
- Overall length
- Bore size and tolerances required
- Mounting pattern
- Any feature with tolerances less than 0.0002" (5 um) must be clearly defined for engineering review
- If designing from a part, a fully dimensioned part drawing is required
- Abrasive type (natural diamond, synthetic diamond, CVD stones, etc.)
- · Specification of wheel to be dressed (need at least the grit type and size)
- Dressing type (Plunge or CNC Profiling)



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Request the "Rotary Truing and Dressing" brochure, form # 8535, and contact your Norton representative for more information and expert assistance with your dressing operation.



WINTER

DRESSING SOLUTIONS Truing Devices



Brake Controlled Truing Devices

Designed for truing diamond and cBN wheels rapidly, effectively, and with a minimum of superabrasive loss. Recommended for wheels up to 12" in diameter.

Applications:

- Truing straight, cup and cylinder wheels:
- Straight wheels, used on chip breaker, tool and cutter, surface, and cylindrical grinding machines
- Cup wheels, used on vertical spindle surface grinders
- Internal grinding wheels
- Cut-off wheels

YouTube

Visit https://nortonsga.us/qnfx2 to watch our True to Form, Dress to Cut video.

Non-Stock 4597 Brake Controlled Truing Device

The 4597 is engineered for heavier and more frequent truing applications. The adjustable speeds allow for varying conditions (between 1050 and 1500 SFPM). It comes complete with a reusable case, two 3" 38A60-M8VBE* vitrified wheels, Truing Device Tips book and a dressing stick. It can be rebuilt using the 4597RK Rebuild Kit.

Worn #4597 Brake Controlled Truing Devices (UPC 662601**95350**) in need of reconditioning (beyond new shoes and springs) may be returned to be rebuilt. Contact Customer Service for return instructions and quote.

Stock 3597 Pacesetter Brake Controlled Truing Device

The Pacesetter model is ideal for light-duty use. The pre-set brake speed requires no adjusting. This model includes one 3" 38A60-M8VBE* vitrified wheel and can be rebuilt using the 3597RK Rebuild Kit.

Stock 4597RK and 3597RK Rebuild Kits

The truing devices can be rebuilt with these kits, consisting of 3 brake shoes, 3 springs, and 3 screws.

| TIER: | BETTER | | GOOD | | SPEC CHE | CK |
|-------------------------------------|-------------|------------------------|-------------|---------------------|---------------------------------|---------------|
| ITEM | PRODUCT NO. | PART # | PRODUCT NO. | PART # | | |
| Truing Devices | | | | | Truing Diamond a | nd |
| 4597 Brake Controlled Truing Device | 4597 | 662601 95350 NS | | | U U | |
| 3597 Pacesetter Brake-Controlled | 3597 | 662601 35578 | | | cBN Wheels | |
| Truing Device | | | | | | TRUING WHEEL |
| Truing Device Rebuild Kits | | | | | SUPERABRASIVE WHEEL | SPECIFICATION |
| 4597 Rebuild Kit | 4597RK | 662601 95351 | | | Resin and Vitrified Bond | |
| 3597 Pacesetter Rebuild Kit | 3597RK | 662601 35595 | | | 80, 100, and 120 grits | 38A60-MVBE |
| Replacement Wheels | | | | | | 37C60-MVK |
| 3 x 1 x 1/2 | | | 38A60-MVBE | 662435 29145 | 150, 180, and 220 grits | 38A80-MVBE |
| | | | 38A80-MVBE | 662435 29146 | | 37C80-MVK |
| | | | 37C60-MVK | 662435 29166 | 320 and finer grits | 37C100-HVK |
| | | | 37C80-HVK | 662435 29170 | Metal Bond | |
| | | | 37C80-MVK | 662435 29171 | 80, 100, and 120 grits | 38A60-MVBE |
| | | | 37C100-HVK | 662435 29172 | 150, 180, and 220 grits | 38A80-MVBE |
| | | | 37C100-MVK | 662435 29070 | 240 and finer grits | 37C80-HVK |

NS Non-Stock: Please contact your Norton representative for current lead-times.

TECH TIP

- Prior to truing the wheel, run a wax crayon over the wheel face. Important: do NOT use any liquid-based ink on superabrasive wheels.
- Any crayon left on the wheel face after truing will reveal untrued areas.
- Indicate the superabrasive wheel runout before starting... usually within .001" to .002", to minimize wheel loss.
- Mount the device spindle parallel to the wheel spindle to ensure proper straight face truing.
- For cup-shaped wheels, the device spindle will be mounted perpendicular to the wheel spindle.

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• Always use the brake-controlled truing device dry.

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 Bring the diamond/cBN wheel and the truing wheel together until they almost touch.

- Start the diamond/cBN wheel to normal speed; spin the truing wheel in the same direction at point of contact.
- · Bring the two wheels together until they touch.
- · Make sure the truing wheel is spinning at time of contact.
- Traverse the wheel back and forth at 30 to 60 inches/minute.
- Downfeed .0005" to .001" at the end of each traverse.
- At the end of truing, the diamond/cBN wheel should be smooth and in truth.
- · Apply a dressing stick to sharpen the wheel.



It is the user's responsibility to refer to and comply with ANSI B7.1

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Regular use of properly selected dressing sticks will help you achieve maximum performance from your grinding wheels.

Applications: Grit range: Abrasive grain: Shape: Machine Used: Truing, cleaning, and dressing diamond, cBN, and conventional abrasive grinding wheels 16 – 1200 Aluminum Oxide, Boron Nitride, Silicon Carbide Square, rectangular, and round

DRESSING SOLUTIONS

Dressing Sticks

HAND DRESSING

Grinding Wheel-to-Product Recommendation Guide

Selecting the appropriate dressing stick for each application depends on the wheel size, type, speed, specification, and grit size, as well as the workpiece material. Initial starting specifications are listed below. We recommend testing several sticks to find the best one for your application.



| | Product | Specification |
|--|---------------------------------|---------------|
| Superabrasive Wheels - Resin and Vitrified Bo | ind | |
| - 80, 100, and 120 grits | Dressing Stick | 38A150-HVBE |
| - 150, 180, and 220 grits | Dressing Stick | 38A220-HVBE |
| - 320 and finer grits | Superfine Stick | NMVC400-J5VCA |
| Superabrasive Wheels - Metal Bond | | |
| - 80, 100, and 120 grits | Dressing Stick | 37C80-NV |
| - 150, 180, and 220 grits | Dressing Stick | 37C150-KV |
| - 240 and finer grits | Dressing Stick | 37C220-KV |
| Conventional Vitrified Wheels - Vitrified Bond | | |
| - 46 grit and finer and M grade and softer | High Performance Dressing Stick | Norbide |
| | Conventional Dressing Stick | 37C24-SVK |
| | | |

TECH TIP

Dressing Diamond and cBN Wheels

- Resin and Vitrified Bond Diamond, and cBN Wheels: choose a dressing stick one or two grit sizes finer than the abrasive in the wheel in a soft grade (H or I)
- Metal Bond Diamond, and cBN Wheels: choose a stick the same grit size or one grit size coarser than the abrasive in the wheel in a medium grade (K-M)

It is the user's responsibility to refer to and comply with ANSI B7.1

Offhand Grinding Wheel Dressing Stick and Holder

This convenient metal holder is widely used by mechanics and foundry-men for truing, dressing and changing the face of the wheel. The JT246 dressing stick – an extra coarse grit silicon carbide for dressing conventional vitrified wheels – is firmly held and adjusted by the knurled control.



| | | TIE | R: BETTER | | | |
|-----------------------|--|-----------|-----------|---------------------|--|--|
| SIZE (D x L) | SPEC. | STD. PKG. | PRODUCT # | PART # | | |
| Offhand Grindi | Offhand Grinding Wheel Dressing Stick and Holder | | | | | |
| 1/2 x 6 Round | Silicon Carbide Extra Coarse Grit Round Dressing Stick | 5 | JT246 | 614636 87900 | | |
| 10 Overall | Dressing Stick Holder | 5 | H6 | 614636 87895 | | |

Norbide High-Performance Sticks

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For offhand truing and dressing of medium grit, soft- and medium-grade conventional vitrified grinding wheels. Norton Norbide sticks are the hardest sticks you can buy. Made from boron nitride, they are well suited for dressing tool and cutter wheels 10" and smaller, especially cup and saucer shapes.

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| | TIEF | R: BETTER | |
|----------------------------|---------------|-----------|---------------------|
| SIZE (T x W x L*) | STD. PKG. | SPEC. | PART # |
| High Performance Lo | ng Life Stick | | |
| 1/4 x 1/2 x 3 | 5 | Norbide | 614636 10148 |
| * Thickness x Width x Le | ength | | |

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Vitrified Dressing Sticks

Aluminum Oxide (White)

For dressing and cleaning diamond and cBN superabrasive wheels.

Silicon Carbide (Black)

Coarse grit (16 - 46) and hard-grade (R and harder) sticks are used for dressing conventional vitrified wheels. Finer grit and softer grades are used for dressing diamond wheels.

| | TIEF | R: BETTER | | |
|--------------------|------------------|-------------|---------------------|-----------|
| SIZE (T x W x L) | STD. PKG. | SPEC. | PART # | SIZE (T x |
| Vitrified Dressing | Sticks – Alumi | num Oxide | | Vitrified |
| 3/8 x 3/4 x 4 | 5 | 38A150-IVBE | 614636 39635 | 1/2 x 1/2 |
| 1/2 x 1/2 x 4 | 5 | 38A220-HVBE | 614636 10555 | |
| 1/2 x 1/2 x 6 | 5 | 38A150-IVBE | 614636 10303 | |
| | 5 | 38A220-HVBE | 614636 10103 | |
| 1/2 x 3/4 x 4 | 5 | 38A60-LVBE | 614636 10415 | |
| 1/2 x 1 x 4 | 5 | 38A180-IVBE | 614636 99705 | |
| 3/4 x 3/4 x 4 | 5 | 38A60-LVBE | 614636 10440 | 3/4 x 3/4 |
| | 5 5 5 5 | 38A80-MVBE | 614636 10362 | 1 x 1 x 6 |
| | 5 | 38A90-LV | 614636 39632 | |
| | 5 | 38A150-HVBE | 614636 10291 | |
| | 5 5 | 38A150-IVBE | 614636 10368 | |
| | 5 | 38A220-HVBE | 614636 10290 | |
| 3/4 x 3/4 x 8 | 5 | 38A220-HVBE | 614636 10280 | |
| 1 x 1 x 6 | 5 | 38A150-HVBE | 614636 10405 | |
| | 5 | 38A150-IVBE | 614636 10453 | 1 x 1 x 8 |
| | 5 | 38A220-HVBE | 614636 10406 | |
| 1 x 1 x 8 | 5 | 38A120-IVBE | 614636 10390 | 1 x 2 x 8 |
| | 5 | 38A150-IVBE | 614636 10455 | |
| | | | | 000 |

| | TIER: | BETTER | |
|--------------------|------------------|------------------|---------------------|
| SIZE (T x W x L) | STD. PKG. | SPEC. | PART # |
| Vitrified Dressing | Sticks – Silicon | Carbide | |
| 1/2 x 1/2 x 6 | 5 | 37C24-SVK | 614636 10285 |
| | 5 5 5 | 37C100-LV | 614636 10201 |
| | 5 | 37C150-KV | 614636 10205 |
| | 5 | 37C150-LV | 614636 10206 |
| | 5 | 37C150-MV | 614636 10207 |
| | 5 | 37C220-KV | 614636 10214 |
| 3/4 x 3/4 x 6 | 5 | 37C150-LV | 614636 10375 |
| 1x1x6 | 5 | 37C20-SVK | 614636 10459 |
| | 5 | 37C24-SVK | 614636 10462 |
| | 5 | 37C24-TVK | 614636 10354 |
| | 5 | 37C46-RVK | 614636 10466 |
| | 5 5 5 | 37C80-NV | 614636 10393 |
| | 5 | 37C150-KV | 614636 10438 |
| | | 37C220-KV | 614636 10398 |
| 1x1x8 | 5 | 37C20-SVK | 614636 10469 |
| | 5 | 37C24-SVK | 614636 10471 |
| 1 x 2 x 8 | 5 | 37C16-TVK | 614636 10482 |
| | 5 | 37C24-TVK | 614636 10485 |
| 2 x 2 x 8 | 5 | 37C24-SVK | 614636 10490 |
| Vitrified Round Dr | essing Sticks – | Silicon Carbide | |
| 1/2 x 6 | 5 | 37C24-SVK | 614636 10371 |
| 1 x 6 | 5 | S/C Ex-C (JT276) | 614636 87905 |

Vitrified Superfine Sticks

For dressing diamond and cBN superabrasive wheels.

| TIER: BETTER | | | | | | | |
|---|-----------------|-----------------------|---------------------|--|--|--|--|
| SIZE (T x W x L) | STD. PKG. | SPEC. | PART # | | | | |
| Vitrified Superfine Sticks – Aluminum Oxide | | | | | | | |
| 1 x 1 x 6 | 5 | PCD Coarse - 400 grit | 614636 47865 | | | | |
| | 5 | PCD Fine - 800 grit | 614636 47867 | | | | |
| 1 x 1 x 8 | 5 | NSA320-H8V | 614636 10597 | | | | |
| Vitrified Superfine | Sticks – Silico | n Carbide | | | | | |
| 1/2 x 1/2 x 6 | 5 | NMVC320-J5VCA | 614636 10599 | | | | |
| | 5 | NMVC400-J5VCA | 614636 50324 | | | | |
| 1 x 1 x 6 | 5 | NMVC320-J5VCA | 614636 10605 | | | | |
| | 5 | NMVC400-J5VCA | 614636 50450 | | | | |

Organic Silicon Carbide Micro Dressing Wheel

Type 01 straight dressing wheels with sharp high-purity green silicon carbide abrasive. For micro-dressing fine grit polyimide superabrasive diamond wheels.

| | | | TIER: | BEST |
|------------------------|----------|----------------|---|-----------------------|
| | | | ABRASIVE: | Silicon Carbide |
| SIZE (D x T x H) | MAX. RPM | MIN./STD. PKG. | SPEC. | PART # |
| Type 01 Straight | | | | |
| 200mm x 10mm x 31.75mm | 2,870 | 5 | 320 Silicon Carbide Organic Micro Dressing Wheels | 662532 96349 * |
| + E - C | 1. | | | |

* For fine grit diamond Polymide wheels

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For additional silicon carbide wheels that can be used for dressing see page 242 in the Precision Grinding Silicon Carbide Toolroom Wheels section



Truing and Dressing Guide

Diamond and cBN Wheel Mounting, Truing and Dressing Guide

To achieve the best results using Norton Winter diamond and cBN products, the following steps for mounting, truing and dressing should be practiced:

MOUNTING - Putting Wheel on Machine Spindle

- Examine wheel flanges and spindle carefully.
- Be sure flanges' surfaces are clean and free of damage.
- Ensure that the mounting flanges are flat and of equal diameter, especially on wheels with rigid centers, such as vitrified bond wheels.
- Paper or plastic blotters should only be used when mounting superabrasive wheels with vitrified cores. Using paper or plastic blotters on any other core material might result in the wheel loosening during grinding.
- Inspect machine spindle for excessive runout.
 - » TIR (Total Indicated Runout) should be no greater than 0.0002".
- Mount wheel between hand-tightened flanges.
- Using a dial indicator, tap the wheel lightly with a rubber or wooden block to minimize runout to less than .0010".

TRUING - Making Wheel Round and Concentric with the Spindle Axis

- Prior to truing the wheel, run a wax crayon over the wheel face. Important: do not use any liquid-based ink on superabrasive wheels.
- Any crayon left on the wheel face after truing will reveal untrued areas.
- Indicate the superabrasive wheel runout before starting... usually within .001" to .002", to minimize wheel loss.
- Brake controlled truing devices are most commonly used to true Diamond and cBN straight, cup and cylinder wheels.
- » Mount the device spindle parallel to the wheel spindle to ensure proper straight face truing.
- » For cup wheels, the device spindle will be mounted perpendicular to the wheel spindle.
- » Always use brake controlled truing device dry.

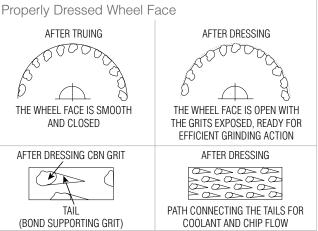
DRESSING – Opening the Face of a Trued Wheel

- Dressing the abrasive a cleaning/sharpening process to expose sharp, free-cutting grit:
- » For resinoid and vitrified bond wheels, the dressing stick should be one or two grit sizes finer than the abrasive in the diamond/cBN wheel – in a soft grade such as H or I.
- » For metal bond wheels, choose a stick with the same grit or one grit coarser than the wheel abrasive in a medium grade (K N).
- » See the "Dressing Stick" section for recommendations.

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- Tighten flange securely and recheck with indicator.
- Allow a newly mounted wheel to operate for one full minute before grinding.
- The use of one permanent mounting for the life of the wheel is recommended whenever possible:
- » If the grinding machine has a tapered spindle, mount each straight, flaring cup or dish wheel on a separate collet or adapter.
- » When changing wheels the entire unit is removed, keeping the wheel in running truth.
- » When needed again, the entire unit can be placed directly on the spindle or arbor, thereby eliminating the time and abrasive lost in retruing.
- » Bring the diamond/cBN wheel and the truing wheel together until they almost touch.
- » Start the diamond/cBN wheel to normal speed; start the truing wheel in the same direction.
- » Bring the two wheels together until they touch.
- » Make sure the truing wheel is spinning at time of contact.
- » Traverse the wheel back and forth at 30 to 60 inches per minute.
- » Downfeed .0005" to .001" at the end of each traverse.
- » At the end of truing, the diamond/cBN wheel should be smooth and in truth.
- » Apply a dressing stick to sharpen the truing wheel.
- Dressing the core The core material (the part of the wheel that holds and supports the abrasive-bearing section) should never contact the work piece during grinding; rubbing will generate excessive heat. As the abrasive section of a cup wheel wears, the core material might become exposed, necessitating dressing.
- » Use a single-point carbide or steel tool to dress an exposed resaloy core.
- » Clamp the tool in a vise.
- $\,\gg\,$ Direct the cutting edge accurately to leave a 1/16" of abrasive section exposed.





Diamond & cBN Abrasives

setting a new industry standard FOR PRODUCTIVITY

From the most comprehensive stock offering to the industry's largest custom-manufactured availability, our Norton Winter superabrasive product portfolio gives you the most options with uncompromising performance.

- Diamond / cBN Stock Wheels
- B99 Express Made-to-Order **Resin Wheels**
- CNC Wheels
- Electroplated Products
- Lapping Compound

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Norton Winter Diamond Product Identification System / Usage Information

| ASD | 120 | – R | 75 | B99 | 1/8 | _ |
|-----|-----|-----|----|-----|-----|---|
| | _ | / | 1 | | | |

| Abrasive Type | Grit Size | Grade | Concentration | Bond | Abrasive Depth |
|---|--|---|---|---|---|
| SD Used with B99 and B105 bonds Armored Durable Versatile Use wet or dry Carbide/steel operations Carbide/steel operations Carbide/steel operations Carbide/steel operations Used with B99 bond M3D Used with B99 bond W4D Used with M99 bond W4D Used with P99 and V99 bonds Norton standard Use wet or dry Free cutting Low horsepower (3/4 hp or less) | 100S – Roughing 120 – Roughing/cutting-off 150 – Combined roughing and finishing 180 – Improving finish 220, 320 & 400 – Finishing only 10/20 mic 6/12 mic | Resin Bond R – Norton standard N – Free cutting Metal Bond N – Norton standard Vitrified Bond P – Norton standard R – Most durable | 50 Most economical For broad area of contact 75 Norton standard Freer cutting than 100 Dry grinding with ASD 100 Very durable For flood coolants Use with 220 grit or finer Use for cutting-off 115 For CNC grinding machines 125 Form holding For high volume, high pressure coolant, precision applications on high-speed tool steels | B99 Resin bond Use wet or dry Tool making; resharpening B105 Premium resin bond Advanced heat-reducing bond Use dry; reconditioning B610 and B80 For CNC grinding machines M99 Metal bond 1A1R cut-off Glass and ceramics MSL Metal single layer Type 6A2C only Use dry Offhand reconditioning/ finishing carbide V99 Vitrified bond Offhand finishing of carbide tools Plunge grinding | 1/16" 1/8" 1/4" 9/32" 3/8" 1/2" 3/4" Solid |

CB 120-T B99 1/8

| Abrasive Type | Grit Size | Grade | Bond | Abrasive Depth |
|-------------------------|---|---|--|----------------|
| B – cubic Boron Nitride | • 100 - Roughing | Q | B99 | 1/16" |
| Used with B99 bond | 120 — Roughing/cutting-off | Approx. 50 concentration | Resin bond | 1/8" |
| Armored | 150 — Combined roughing and | Type 6A2 | Use wet or dry | 1/4" |
| Use wet or dry | finishing | Broad area of contact | Aztec III | 1/2" |
| | 180 — Improving finish | Т | Premium resin bond | Solid |
| | 220, 320, 400 – For finishing | Approx. 75 concentration | Use dry | |
| | only | Norton standard | Tool resharpening | |
| | | First choice | Aztec .007 | |
| | | Lower horsepower | Premium resin bond | |
| | | Broad area of contact | Use dry | |
| | | Dry grinding | Increased feed rates | |
| | | Resharpening applications | Heavy stock removal | |
| | | W | Heavier cuts | |
| | | Approx. 100 concentration | | |
| | | Most durable | | |
| | | | | |

- High volume coolant
- Flute polishing
- Surface grinding
- Cylindrical grinding

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DIAMOND & CBN ABRASIVES Diamond / CBN Basics

Application-to-Product Recommendation Guide – Diamond Wheels

| | | COMMON WHEEL SIZE, TYPE & BLUEPRINT | APPLICATION VARIABLES | | RECOMMENDED SPECIFICATION |
|---|-------------------------|--|---|----------------------|---------------------------|
| Carbide Grindiı Blanchard Grind | ng – Toolroom Productio | n 10", 11", 16" & 18" diameters | Wet – solid carbide | 1" or larger | SD100-R75B99E* |
| Vertical Spindle Surface Grinding | | Type 2A2T | | pieces – roughing | 30100-11/3033E |
| | | | | Small pieces | ASD100-R75B99E* |
| | | | Carbide & steel (combin | | ASD100-R75B99E* |
| land | | 6" x 3/32" x 1-1/4" | Dry | , | ASDC320B-R125B99 |
| Burr Grinding | | Type 1V1P V – 20° ME89562 | | | |
| Centerless wet) | Throughfeed Grinding | 12", 14", 16", 18" & 20" diameters Type 1A1 | Roughing | | ASD100-R75B99E* |
| | Unison Dedtru Grinder | 7" x 1" x 1-1/4" Type 1A1 | | | ASD150-R75B99E* |
| Cutting Off (we | t) | 6" x .035" x 1-1/4" | Most durable | | ASD100S-R100B99 |
| | | Type 1A1R ME43572 | Free cutting | | SD100-R75B99 |
| | | 10" x .050" x 1-1/4" Type 1A1R ME43565 | | | SD120-R100B99 |
| Cylindrical Grin | ding (wet) | 10", 12", 14", 16" & 20" diameters | Wet, rough grinding of cemented carbides, hard (55 Rc+) plasma and ceramic spray coatings | | ASD180-R100B99 |
| | | Туре 1А1 | | | ASD180-R75B99E* |
| | | | | | ASD150-R75B99 |
| | | | | | ASD120-R75B99 |
| | | | Wet, finish grinding of all carbides, plasma and ceramic spray coatings | | SD220-R100B99E* |
| Tool Sharpener Bench Grinder (wet) | | 5" x 1" x 1-1/4" Type 6A2H ME27084 Rim Width (W) = 1-1/16 | Tool sharpening | | SD320-R50B99 |
| land Honing (d | dry) | Various sizes | | | ASD100-R100B99 |
| | | Type HH1 or HH2 | | | SD320-100V99 |
| amination Dies | s (wet) | Various sizes Type 1A1 | Surface grinding of carbide | | ASD120-R75B99 |
| Surface Grindin | | Various sizes | Roughing | Durable | ASD100S-R100B99E* |
| Straight Wheels | 3 | Type 1A1 | | Free cutting | SD100S-R100B99 |
| | | | Finishing only | | SD220-R100B99 |
| | | | General purpose | | ASD150-R75B99 |
| ool & Cutter G | rinding | Various sizes Type 11V9, 12V9 or 15V9 | Wet or dry | | ASD120-R7599 |
| arbide Grindiı | ng – Offhand | | | | |
| Single-Point Ca | rbide Tools | 6" x 3/4" x 1-1/4" | Wet roughing | Durable | RMD150-P50V99* |
| | | Type 6A2C ME27853 | | Free cutting | SD150-P50V99 |
| | | | Wet finishing | Durable | RMD220-P50V99* |
| | | | | Free cutting | SD220-P50V99 |
| | | | Wet or dry grinding | Roughing | ASD120-R75B99 |
| | | | where free-cutting and self-dressing wheels are required | Finishing | SD220-R50B99E* |

Note: Diamond depths are not indicated in above listings. When ordering, be sure to include Diamond depth (1/16, 1/8, etc.). *Express Made-To-Order; Refer to the B99E Express Made-to-Order Wheel section.



DIAMOND & CBN ABRASIVES Diamond / CBN Basics

Application-to-Product Recommendation Guide - cBN Wheels

| APPLICATION OR COMMON MACHINE TYPE | COMMON WHEEL SIZE, TYPE & BLUEPRINT | APPLICATION VARIABLES | RECOMMENDED SPECIFICATION |
|------------------------------------|---|-----------------------|---------------------------|
| Toolroom Grinding | | | |
| Cutter Sharpening | 3-3/4" x 1-1/2" x 1-1/4" | Dry | Aztec III 120T |
| Milling Cutters, Broaches, | Type 11V9 ME92192 | Wet | CB120-TB99 |
| Reamers, etc. | 6" x 1" x 1-1/4" Type 12A2 ME27758 | Wet or dry | CB120-TB99 |
| | 6" x 3/4" x 1-1/4" Type 12V9 ME48666 | Wet or dry | CB120-TB99 |
| | 6" x 3/4" x 1-1/4" Type 15V9 ME40633 | Wet or dry | CB100-WB99E* |
| Surface Grinding | 10" x 1/2" x 3" Type 1A1 | Wet or dry | CB100-TB99E* |
| Cylindrical Grinding | 12" x 1/2" x 3" Type 1A1 | Wet or dry | CB150-WB99E* |
| Internal Grinding Tools | Thinner than 1/2" Type DW | Wet or dry | CB100-WB99 |
| | 1/2" or thicker Type 1A1 | Wet or dry | CB120-TB99E* |
| Slotting | 7" x .040" x 1-1/4" Type 1A1R | Water-base coolant | CB120-WB99E* |

Note: cBN depths are not indicated in above listings. When ordering, be sure to include cBN depth (1/16, 1/8, etc.)

*Express Made-To-Order; Refer to the B99E Express Made-to-Order Wheel section.







DIAMOND & CBN ABRASIVES Diamond / CBN Basics

Troubleshooting Guide – Dry Grinding

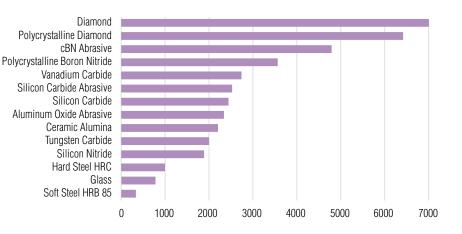
| Problem | Possible Causes | Suggested Correction |
|--------------------------|------------------------|---|
| Burning (excessive heat) | Wheel loaded or glazed | Dress wheel with a dressing stick |
| | Excessive feed rate | Reduce infeed of wheel or workpiece |
| | Wheel too durable | Use freer cutting specification or slow down wheel speed |
| Poor finish | Grit size too coarse | Select a finer grit size |
| | Excessive feed rate | Reduce infeed of wheel or workpiece |
| Chatter | Wheel out of truth | True wheel; ensure it is not slipping on mount (See "Mounting, Truing and Dressing Guide") |

Troubleshooting Guide - Wet Grinding

| Problem | Possible Causes | Suggested Correction |
|--------------------------|---------------------------------|--|
| Burning (excessive heat) | Wheel glazed or loaded | Re-dress wheel |
| | Poor coolant placement | Apply coolant directly to wheel/workpiece interface |
| | Excessive material removal rate | Reduce downfeed and/or crossfeed |
| Poor finish | Excessive dressing | Use lighter dressing pressure |
| | | Stop dressing as soon as wheel starts to consume stick rapidly |
| | Grit size too coarse | Select a finer grit size |
| | Poor coolant flow or location | Apply heavy flood so it reaches wheel/work interface |
| Chatter | Wheel out of truth | True wheel; ensure it is not slipping on mount |
| Wheel will not cut | Glazed by truing | Dress lightly until wheel opens up |
| | Wheel loaded | Dress lightly until wheel opens up |
| | | Increase coolant flow to keep wheel surface clean |
| | | Never run wheel with coolant turned off |
| Slow cutting | Low feeds and speeds | Increase feed rate; increase wheel speed (Do not exceed wheel MOS) |
| Short wheel life | Incorrect coolant flow | Apply coolant to flood wheel/work surface |
| | Low wheel speed | Increase wheel speed (observe maximum operating speed) |
| | Excessive dressing | Use lighter dressing pressure |
| | Wheel too soft or too hard | Change grit or grade; use higher concentration |

Material Hardness Scale

Superabrasives is a term used to describe those abrasives of extreme hardness which produce outstanding results when properly used on specific applications. This graph provides a hardness comparison (Knoop Hardness Scale) between diamond and cBN superabrasives, aluminum oxide and silicon carbide standard abrasives, and some common materials these abrasives are used to grind.



TECH TIP

Avoid Grinding Steel

- Avoid steel when grinding with diamond wheels. Keep the amount of steel ground to an absolute minimum.
- On brazed tools, use aluminum oxide
 wheel to back off the steel shank.
- A high lubricity grinding fluid should be used.
- For some steels, an armored (AMD) diamond wheel might prove most economical.

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Use Rigid Work Support

- All workpieces should be supported firmly during the grinding process. Any amount of vibration will cause wheel wear and produce chatter or wave marks on the ground surface.
- On work ground between centers, centerholds should be properly prepared.
- Minimize work overhang.
- If the ground work is supported by a work finger, ensure the finger is strong enough to provide vibrationfree support.

Coolant - Grind Wet

- Diamond wheels should be used with a full flood coolant properly directed toward the grinding zone. Water with a rust inhibitor is recommended.
- Vitrified diamond wheels should be used only with a coolant.
- When flood application can't be used, try mist or spray application.
- » Use compressed air to "atomize" water or soluble oil.
- » Direct the spray at the grinding zone to help dissipate heat and prevent heat damage to the work.

Avoid Excessive Feeds

- Excessive feeds will result in premature wheel wear. Excessive feed rates are characterized by:
 - » A hard grinding sound
 - » Chatter
 - » Burn
 - » High wheel wear rate
 - » Vibration

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DIAMOND & cBN ABRASIVES Diamond / cBN Basics

Decimal and Metric Equivalents of **Common Fractions**

| FRACTI | ONS | DECIMALS | |
|---------|-------|------------|-------------|
| OF AN I | NCH | OF AN INCH | MILLIMETERS |
| | 1/64 | .0156 | 0.397 |
| 1/32 | | .0313 | 0.794 |
| | 3/64 | .0469 | 1.191 |
| 1/16 | | .0625 | 1.588 |
| | 5/64 | .0781 | 1.985 |
| 3/32 | · · · | .0938 | 2.381 |
| | 7/64 | .1094 | 2.778 |
| 1/8 | ., | .1250 | 3.175 |
| ., | 9/64 | .1406 | 3.572 |
| 5/32 | 0,01 | .1563 | 3.969 |
| 0,02 | 11/64 | .1719 | 4.366 |
| 3/16 | 11/04 | .1875 | 4.762 |
| 5/10 | 13/64 | .2031 | 5.159 |
| 7/32 | 13/04 | .2031 | 5.556 |
| 1/32 | 15/64 | | |
| 1/4 | 15/64 | .2344 | 5.953 |
| 1/4 | 17/04 | .2500 | 6.350 |
| | 17/64 | .2656 | 6.747 |
| 9/32 | | .2813 | 7.144 |
| | 19/64 | .2969 | 7.541 |
| 5/16 | | .3135 | 7.937 |
| | 21/64 | .3281 | 8.334 |
| 11/32 | | .3438 | 8.731 |
| | 23/64 | .3594 | 9.128 |
| 3/8 | | .3750 | 9.525 |
| | 25/64 | .3906 | 9.922 |
| 13/32 | | .4063 | 10.319 |
| | 27/64 | .4219 | 10.716 |
| 7/16 | | .4375 | 11.112 |
| | 29/64 | .4531 | 11.509 |
| 15/32 | | .4688 | 11.906 |
| | 31/64 | .4844 | 12.303 |
| 1/2 | | .5000 | 12.700 |
| .,_ | 33/64 | .5156 | 13.097 |
| 17/32 | ,- | .5313 | 13.494 |
| 11/02 | 35/64 | .5469 | 13.891 |
| 9/16 | 00/01 | .5625 | 14.287 |
| 5/10 | 37/64 | .5781 | 14.684 |
| 19/32 | 51/04 | .5938 | 15.081 |
| 13/02 | 39/64 | .6094 | 15.478 |
| 5/8 | 39/04 | .6250 | 15.875 |
| J/0 | 41/64 | | 16.272 |
| 01/00 | 41/04 | .6406 | |
| 21/32 | 40/04 | .6563 | 16.688 |
| 14/40 | 43/64 | .6719 | 17.085 |
| 11/16 | 45/04 | .6875 | 17.462 |
| 00/00 | 45/64 | .7031 | 17.859 |
| 23/32 | | .7188 | 18.256 |
| 0.11 | 47/64 | .7344 | 18.653 |
| 3/4 | | .7500 | 19.050 |
| | 49/64 | .7645 | 19.447 |
| 25/32 | | .7813 | 19.843 |
| | 51/64 | .7969 | 20.240 |
| 13/16 | | .8125 | 20.637 |
| | 53/64 | .8281 | 21.034 |
| 27/32 | | .8438 | 21.430 |
| | 55/64 | .8594 | 21.827 |
| 7/8 | | .8750 | 22.224 |
| | 57/64 | .8906 | 22.621 |
| 29/32 | | .9063 | 23.018 |
| ,0_ | 59/64 | .9219 | 23.415 |
| 15/16 | 00/01 | .9375 | 23.812 |
| 10/10 | 61/64 | .9531 | 24.209 |
| 31/32 | 01/04 | .9688 | 24.606 |
| 01/02 | 63/64 | .9000 | 25.003 |
| 1 | 03/04 | .9844 | 25.003 |

1.0000

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Expected Surface Finish by Grit Size

Use these charts as guides only. Surface finish is affected by several variables: machine type and condition, type of material ground, coolant, wheel speed, bond system, etc.

DIAMOND

| Grit Size | Expected Finish Micro Inch AA | Maximum Depth of Cut per Pass for Grit Size |
|-----------|-------------------------------|---|
| 100 | 24 to 32 | 0.001" to 0.002" |
| 120 | 16 to 18 | 0.001" to 0.002" |
| 150 | 14 to 16 | 0.001" to 0.002" |
| 180 | 12 to 14 | 0.0007" to 0.001" |
| 220 | 10 to 12 | 0.0007" to 0.001" |
| 320 | 8 | 0.0004" to 0.0006" |
| 400 | 7 to 8 | 0.0003" to 0.0005" |

cBN

| CDIN | | |
|------------|----------------------------------|------------------------|
| Grit Size | Expected Finish With Oscillation | Expected Finish Plunge |
| 100 | 35 – 40 | 40 - 45 |
| 120 | 30 – 35 | 35 - 40 |
| 150 | 25 – 30 | 30 – 35 |
| 180 | 20 – 25 | 25 - 30 |
| 220 | 15 – 20 | 20 – 25 |
| 320 400 | 10 – 15 | 15 – 20 |
| 400 | 4 – 8 | 5 – 10 |
| | | |

Recommended Wheel Speeds for Diamond and cBN Wheels

| WET GRINDING | Cup Wheels 11V9, 12V9, 15V9, etc. | Peripheral Wheels 1A1, 1V1, 1A1R, etc. |
|-------------------------|--------------------------------------|---|
| Diamond Grinding Wheels | | |
| Resin Bond Wheels | 4921 to 7874 SFPM | 4921 to 7874 SFPM |
| | 25 to 40 m/s | 25 to 40 m/s |
| Metal Bond Wheels | | 3937 to 5906 SFPM |
| | | 20 to 30 m/s |
| Vitrified Bond Wheels | 2953 to 5906 SFPM | 2953 to 5906 SFPM |
| | 15 to 30 m/s | 15 to 30 m/s |
| cBN Grinding Wheels | | |
| Resin Bond Wheels | 5906 to 9843 SFPM | 5906 to 9843 SFPM |
| | 30 to 50 m/s | 30 to 50 m/s |
| DRY GRINDING | Cup Wheels 11V9, 12V9, 15V9, etc. | Peripheral Wheels 1A1, 1V1, 1A1R, etc. |
| Diamond Grinding Wheels | | |
| Resin Bond Wheels | 2756 to 3543 SFPM | 2756 to 3543 SFPM |
| | 14 to 18 m/s | 14 to 18 m/s |
| cBN Grinding Wheels | | |
| Resin Bond Wheels | | 2953 to 5906 SFPM |
| | 2953 to 5906 SFPM | 2953 10 5900 SFPIN |
| | 2953 to 5906 SFPM 15 to 30 m/s | 15 to 30 m/s |

Note: These are not the maximum operating speeds (MOS). Consult ANSI B7.1 or contact your Norton representative for MOS.

Wheel Speed Calculation

| To convert M/S to SFPM: | Multiply M/S x 196.85 = SFPM |
|---------------------------------------|---|
| To convert SFPM to M/S: | Divide SFPM by 196.85 = M/S |
| To convert RPM to SFPM: | Multiply wheel diameter in inches x RPM x 0.262 |
| M/S = meters/second RPM = Revolutions | Per Minute SFPM = Surface Feet Per Minute |



DIAMOND & CBN ABRASIVES Diamond / CBN Wheels



Norton Winter offers an extensive line of stock Diamond and cBN (cubic Boron Nitride) grinding products, including resin, vitrified, metal and MSL (metal single layer) bond offerings, under the "99" quality line. Premium, high-performance stock resin bond options are also available.

Applications:

- · Sharpening cemented carbide cutting tools
- · Cutting off carbide rod

B99 Diamond Wheels

- · Grinding or cutting off non-ferrous materials such as ceramics or glass
- · Surface grinding dies
- 0.D. grinding spray coatings
- B99 cBN Wheels
- Sharpening high-speed (M2, D2, T15, etc.) steel cutting tools
- · Surface and ID grinding hardened steel die components
- Precision grinding steel parts Rc 50 or harder

Stock Shapes:

Abrasive Grain: Abrasive Bonds: DW Mounted Points, HH1 and HH2 Hand Hones, and 1A1, 1A1R, 1V1P, 4A2P, 6A2C, 6A2H, 11V9, 12A2, 12V9, and 15V9 Wheels

Diamond and cBN (cubic Boron Nitride)

Resin, Metal, Metal Single Layer, and Vitrified



Superior performance for grinding non-ferrous materials

DIAMOND WHEELS

- · High quality synthetic diamond
- · High material removal rates with longer wheel life vs. conventional green silicon carbide wheels
- · Wide variety of stock wheel shapes and bond options available

Diamond Bond Types

| BONDS | DESCRIPTION |
|--|--|
| Diamond Wheel Bonds | |
| Pre-engineered resin bond – B99 | Free cutting; superior form holding; efficient wet or dry |
| Premium, heavy-duty resin bond – B105 | Ideal for dry toolroom reconditioning applications |
| Metal bond – M99 | Ideal for 1A1R cut-off applications and grinding glass or ceramic materials |
| MSL (metal single layer) diamond tools; no wheel dressing required | Fast stock removal, cool cutting; excellent for dry offhand finishing of carbide |
| Vitrified bond – V99 | Most durable under high grinding forces; excellent for wet, offhand finishing of carbide tools |



Superior performance for grinding ferrous materials

cBN WHEELS

- · cBN (cubic Boron Nitride) abrasive material is second in hardness to diamond
- · Easily cuts difficult-to-grind steel parts Rc 50 or harder
- · Highly wear resistant and thermally stable

cBN Bond Types

| BONDS | DESCRIPTION |
|---------------------------------|---|
| cBN Wheel Bonds | |
| Pre-engineered resin bond – B99 | Free cutting, superior form holding |
| Premium Aztec III resin bond | Most efficient for dry tool resharpening |
| Premium Aztec .007 resin bond | Most efficient for dry tool resharpening where heavy stock removal is desired |



How to Select Diamond Wheels

| SELECT: | | | |
|---------------------|--|----------------------|--|
| WHEEL | Select desired | | |
| SHAPE | wheel shape | | |
| WHEEL DIMENSIONS | | DxTxH | Select Diameter x Thickness x Hole from the availability tables. Use blueprint numbers where available. |
| ABRASIVE | Select the abrasive based | Resin Bond | 1 Wheels: |
| | on horsepower, grinding wet or dry, and contact | ASD | Armored diamond, durable. Versatile: can be used wet or dry. Also should be used when carbide and steel are ground in the same operation. |
| | with steel. | D | Micron-sized diamond. Used for finishing and polishing operations. |
| | | SD | Free cutting standard. Used wet or dry; should be used on low horsepower (3/4 hp or less) machines. |
| | | Metal Bond | |
| | | M4D | Armored, durable standard. A strong, blocky crystal designed for high performance on glass ceramics, refractories and other non-metallics. |
| | | Vitrified Bo | nd Wheels: |
| | | RMD | Medium strength. Specifically designed for use with vitrified bonds. |
| | | SD | Free cutting standard. |
| GRIT SIZE | Select the abrasive grit | 100 | Roughing. The most common grit size for roughing operations. |
| | size based on finish | 120 | For roughing where 100 is too coarse. Also for cut-off applications. |
| | and material removal | 150 | Medium stock removal plus good finish. For combined roughing and finishing applications. |
| | rate required. | 180 | Medium stock removal plus good finish. To improve finish. |
| | | 220 | Finishing |
| | | 320 | Finishing |
| | | 400 | Fine Finishing |
| | | | Super Fine Finishing |
| | | 6/12Mic | Super Fine Finishing |
| GRADE | The hardness of the wheel | Resin Bond | |
| | | R | Norton standard |
| | | N | Free cutting |
| | | Metal Bond | |
| | | N Mituifia d. D.a | Norton standard |
| | | | nd Wheels: |
| | | P R | Norton standard |
| | Select the abrasive | | Most durable |
| CONCENTRATION | concentration based on grinding wet or dry, material removal rates and form-holding | 50 75 | Most economical. For broad area of contact grinding. Norton standard. Freer cutting than 100 and the most economical for dry grinding with |
| | | | ASD diamond. |
| | | 100 | Very durable. Recommended under flood coolant conditions; for use with 220 grit or finer, when durability is required, and for cut-off applications. |
| | requirements. | 125 | Form holding. Used in high volume, high pressure coolant, precision applications on high-speed tool steels. |
| BOND | Select the bond | Resin Bond | |
| | based on the material being ground and | B99 | Norton standard. Versatile enough to be used wet or dry on most tool making or resharpening applications. |
| | grinding application. | B105 | Premium, heat-reducing bond. For dry toolroom reconditioning applications. |
| | | Metal Bond | |
| | | M99 | Best suited for 1A1R cut-off applications as well as grinding glass or ceramic materials. |
| | | MSL | Metal Single Layer. Available in shape 6A2C for dry, offhand reconditioning of carbide tools. |
| | | Vitrified Bo | |
| | | V99 | Best for wet offhand finishing of carbide tools as well as plunge grinding of carbide tools. |
| ABRASIVE DEPTH | Usable abrasive | 1/16 | |
| | | 1/8 | |
| | | 1/4 | |
| | | 9/32 | |
| | | Solid | |



How to Select Stock cBN Wheels

| SELECT: | | | |
|---------------------|---|------------|--|
| WHEEL SHAPE | Select desired wheel shape | | |
| WHEEL DIMENSIONS | | DxTxH | Select Diameter x Thickness x Hole from the availability tables. Use blueprint numbers where available. |
| ABRASIVE | Select cBN abrasive | Resin Bond | 1 Wheels: |
| | to grind hard tool steels such as A2, D2, T15, etc., and tough alloy steels. | CB | Norton standard coated cBN (cubic Boron Nitride). Optimized for high performance in resin bond systems. |
| GRIT SIZE | Select the grit size | 100 | Roughing. The most common grit size for roughing operations. |
| | based on finish and | 120 | For roughing where 100 is too coarse. Also for cut-off applications. |
| | material removal rate required. | 150 | Medium stock removal plus good finish. For combined roughing and finishing applications. |
| GRADE | The hardness of | Q | Approximately 50 concentration. Used on wide area of contact applications. |
| | the wheel | Т | Norton standard. Approximately 75 concentration. T is the first choice for lower horsepower equipment or large area of contact between the wheel and the work piece. Ideal for resharpening applications with 11V9, 12A2, 4A2P, and 15V9 wheel shapes when dry grinding. |
| | | W | Most durable. Approximately 100 concentration, W is recommended for high volume coolant operations: flute grinding from solid, flute polishing, surface, and cylindrical grinding. |
| BOND | Select the bond depending on the type | B99 | Norton standard. Pre-engineered for optimal performance with cBN abrasive. Available in all shapes. |
| | of grinding application. | Aztec III | The advanced heat-reducing, lubricating resin bond. Used for dry grinding tool steels. |
| | | Aztec .007 | The premium resin bond for increased feed rates, high stock removal and heavier cuts – when dry grinding tool steels. |
| ABRASIVE DEPTH | Usable abrasive | 1/16 | |
| | | 1/8 | |
| | | 1/4 | |
| | | Solid | |

Competitive Cross Reference Guides

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| | Abrasives | | | | Bonds | | | | | | |
|--|------------------------------------|------------------|------------------|----------------------------|-----------------------------|------------------|------------------|----------------------|---------------------|--------------|----------|
| | Resin Diamond | Resin Diamond | Metal Diamond | Resin/ Vitrified cBN | Resin Diamond | Resin Diamond | Metal Diamond | Vitrified Diamond | Resin cBN | Resin cBN | Resin cB |
| NORTON WINTER | ASD | SD | M4D | СВ | B99/ B99E | B105 | M99 | V99 | B99/ B99E | B99EF | AZTEC |
| 3M / General Industrial Diamond / Diamond Productions, Inc | CGD, ND | GD, D, MD | | CB | PS | | | V | | BC | |
| Abrasive Technology | SN | S | | cBN | В | | Μ | | В | | |
| Accurate Diamond Tool | NCD | D, MD | | BN | В | | Μ | | | | |
| Citco | 5SD, 6SD | SD | MD | CB | B43, B52 | | Μ | | B26 | C3 | |
| Engis | NMD | D, MD | | cBN, CB | | | | | | | |
| Noritake | | | | CBC | | BX4 | | | BD/B38 | | BX4 |
| Radiac / US Diamond | NCD, WD, 1WD, MDC | D, MD | MD4C | B, CB, BZ | B7Z, BB, B5, B56,BN | | M, MF | V | BZ, BN | | |
| Regal Diamond | | | | B, BB | BJ | | | | | | |
| Superabrasives, Inc. | MDN | D, MD | | В | | | | | B82 | B5 | |
| Tyrolit / Wickman / Bay State / Cincinnati | SDM, XDL, XDN, D, 7D, CMD | SD, D, 6D, MD | 1D | 5B,1BN, BN, BM | BD, BC, BX33, B52, B6 | Amigo | MI, MSS, MB | | B72, B56, BG, B7 | BXU8 | Amigo |
| Wendt / Slip Naxos / | SDK | | | B, BXW | | | | | RN | RR | |
| Winterthur | | | | | | | | | | | |
| | ABRASIV | ES | | | BONDS | | | | | | |
| NORTON WINTER | | | | | | | | | | | |

| DIAMOND AND | cBN |
|-------------|---------|
| | |
| UNIVEL | G-FORCE |
| BP | BPP |
| Р | C5 |
| | Р |



ΓΕСΗ ΤΙΡ

- · Truing makes the wheel concentric with the spindle
- · Dressing opens the wheel's cutting face
- · Always true and dress diamond and cBN wheels prior to use
- Diamond and cBN wheels with grit sizes 100 180 can be trued with a Brake Controlled Truing Device
- · Refer to the "Mounting, Truing and Dressing Guide" for more information

It is the user's responsibility to refer to and comply with ANSI B7.1

TECH TIP

Diamond Grinds: In general, diamond is used to grind

non-ferrous materials, because of an adverse reaction between diamond and iron.

- · Cemented carbide
- Glass
- · Ceramics
- · Fiberglass
- · Plastics
- Stone
- Abrasives
- · Electronic components and materials

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It is the user's responsibility to refer to and comply with ANSI B7.1

cBN Grinds:

- cBN is used to grind ferrous materials.
- · High-speed tool steels
- Die steels
- · Hardened carbon steels
- · Alloy steels
- Aerospace alloys
- · Hardened stainless steel
- · Abrasion-resistant ferrous materials

B99 Express Service

The B99 Express service is designed to offer you up to 65,000 made-to-order choices of resin bond Diamond and cBN wheels. Almost all popular sizes are offered.

12" and less diameter B99 Express wheels will ship in two weeks or less from the date the order is received. 14" and larger wheels are available at standard lead-times.

Our Norton Winter line offers a comprehensive stock product selection to service most of your needs with the fastest delivery and lowest total costs.

Review this stock section first. If you can not find the specification you need:

- Then refer to the brief descriptions of our B99 Express and CNC lines (following this section)
- See the more in-depth B99 Express product availability in our "Diamond and cBN Superabrasives Standard Catalog" #8068 on www.nortonabrasives.com or contact your Norton representative for a complete listing of made-to-order superabrasive products.

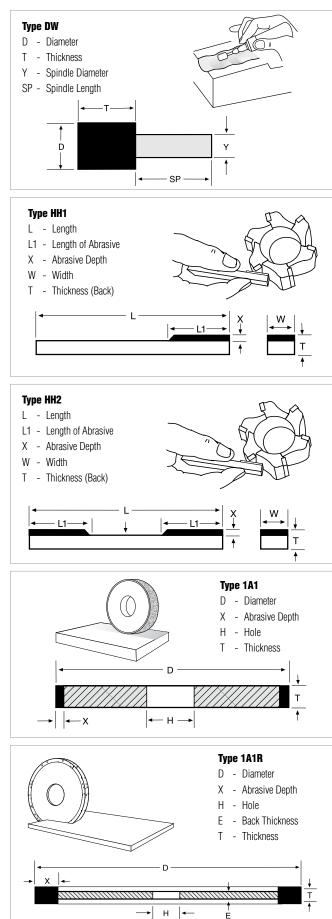
DIAMOND & cBN ABRASIVES Diamond / cBN Wheels





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DIAMOND & cBN ABRASIVES Diamond / cBN Wheels

| SIZE (D x T) | SPECIFICATION | PART # |
|---|--|---|
| Type DW Mounted Points – I 3/16 x 1/4 | | 60014100000 |
| 3/16 x 1/4 Steel Spindle 1/8 x 1-1/2 | SD100-R100B99-SOLID | 690141 92238 |
| 1/2 x 1/2 | SD220-R100B99-SOLID | 690141 92249 |
| Steel Spindle 1/4 x 1-1/2 | | |
| 3/4 x 3/8 | SD150-R100B99-SOLID | 690141 92251 |
| Steel Spindle 1/4 x 1-1/2 1 x 1/2 | SD100-R100B99-SOLID | 690141 92428 |
| Steel Spindle 1/4 x 1-1/2 | 2D 100-K 100B33-20FID | 09014192420 |
| Type DW Mounted Points – o | BN | |
| 3/16 x 1/4 | CB150-WB99-SOLID | 690141 92258 |
| Carbide Spindle .125 x 1-3/4 | | |
| SIZE (T x W x L) | SPECIFICATION | PART # |
| Type HH1 Hand Hones – Dian | | |
| 1/4 x 1/4 x 6 | ASD220-R100B99-1/16 | 690141 92139 |
| One 1/16 deep 1" long insert in one 1/4 surface | | |
| 1/4 x 3/8 x 4 | ASD100-R100B99-1/16 | 690141 92141 |
| One 1/16 deep 1" long insert in | ASD180-R100B99-1/16 | 690141 92142 |
| one 3/8 surface | ASD220-R100B99-1/16 | 690141 91670 |
| | ASD320-R100B99-1/16 | 690141 91672 |
| | ASD400-R100B99-1/16 | 690141 92143 |
| | D10/20MIC-R100B99-1/16 SD320-100V99-1/16 | 690141 92144 690141 92140 |
| Type HH2 Hand Hones – Dian | | 03014132140 |
| 1/4 x 3/8 x 4 | ASD120/220-R100B99-1/16 | 690141 92150 |
| Two 1/16 deep 1" long inserts in | | 690141 92178 |
| one 3/8 surface | ASD220/400-R100B99-1/16 | 690141 92179 |
| | ASD320/400-R100B99-1/16 | 690141 92180 |
| | SD220/320-100V99-1/16 | 690141 92149 |
| SIZE (D x T x H) | SPECIFICATION | PART # |
| Type 1A1 Straight – Diamond | | |
| $\frac{1 \times 1/4 \times 1/4}{1 \times 1/9 \times 1/9}$ | SD100-R100B99-1/8 | 690141 92175 |
| 1-1/2 x 1/2 x 1/2 2 x 1/8 x 1/4 | D6/12MIC-N100B99-1/8 SD100-R100B99-1/8 | 690141 92176 690141 92184 |
| 3 x 1/4 x 3/4 | SD180-N100B99-1/8 | 690141 92187 |
| 4 x .020 x 1-1/4 | SD320-R100B99-1/8 | 690141 92188 |
| 4 x 1/32 x 1-1/4 | SD100S-R100B99-1/4 | 690141 92192 |
| 4 x 1/16 x 1-1/4 | SD100S-R100B99-1/4 | 662602 73583 |
| | SD150-R100B99-1/4 SD220-R100B99-1/4 | 662602 73584 662602 73586 |
| 4 x 1/8 x 3/4 | SD150-R100B99-1/4 | 690141 92024 |
| 4 x 1/8 x 1-1/4 | SD150-R100B99-1/4 | 690141 91677 |
| 4 x 1/4 x 1/2 | SD150-R100B99-1/4 | 662602 73590 |
| 4 x 1/4 x 3/4 | SD150-R100B99-1/4 | 662602 73592 |
| 4 x 1/4 x 1-1/4 | SD100S-R100B99-1/4 | 662602 73587 |
| | SD120-R100B99-1/4 | 662602 73588 |
| 4 x 1/2 x 1-1/4 | SD150-R100B99-1/4 SD150-R100B99-1/4 | 662602 73589 662602 73594 |
| 6 x 1/32 x 1-1/4 | | 00200210034 |
| | SD220-R100B99-1/8 | 690141 92197 |
| 6 x 1/16 x 1-1/4 | SD220-R100B99-1/8 SD100-R100B99-1/4 | 690141 92197 662602 73596 |
| | SD100-R100B99-1/4 SD150-R100B99-1/4 | |
| | SD100-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 | 662602 73596 662602 73597 662602 73598 |
| 6 x 1/16 x 1-1/4 | SD100-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 SD220-R100B99-1/4 | 662602 73596 662602 73597 662602 73598 662602 73599 |
| | SD100-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 SD220-R100B99-1/4 ASD150-R75B99-1/4 | 662602 73596 662602 73597 662602 73598 662602 73599 662602 73599 662602 73617 |
| 6 x 1/16 x 1-1/4 | SD100-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 SD220-R100B99-1/4 ASD150-R75B99-1/4 SD100-R100B99-1/4 | 662602 73596 662602 73597 662602 73598 662602 73599 662602 73599 662602 73617 662602 73611 |
| 6 x 1/16 x 1-1/4 | SD100-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 SD220-R100B99-1/4 ASD150-R75B99-1/4 | 662602 73596 662602 73597 662602 73598 662602 73599 662602 73599 662602 73617 |
| 6 x 1/16 x 1-1/4 6 x 1/8 x 1-1/4 | SD100-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 SD220-R100B99-1/4 ASD150-R75B99-1/4 SD100-R100B99-1/4 SD150-R100B99-1/4 | 66260273596 66260273597 66260273598 66260273599 66260273599 66260273617 66260273611 66260273613 |
| 6 x 1/16 x 1-1/4 | SD100-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 SD20-R100B99-1/4 ASD150-R75B99-1/4 SD150-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 SD220-R100B99-1/4 ASD100S-R75B99-1/4 | 66260273596 66260273597 66260273598 66260273599 66260273617 66260273613 66260273613 66260273614 66260273615 662014192205 |
| 6 x 1/16 x 1-1/4 6 x 1/8 x 1-1/4 | SD100-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 SD220-R100B99-1/4 SD150-R75B99-1/4 SD100-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 SD220-R100B99-1/4 ASD100S-R75B99-1/4 ASD120-R75B99-1/4 | 66260273596 66260273597 66260273598 66260273599 66260273617 66260273617 66260273613 66260273614 66260273615 69014192205 69014192769 |
| 6 x 1/16 x 1-1/4 6 x 1/8 x 1-1/4 | SD100-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 SD220-R100B99-1/4 SD150-R75B99-1/4 SD100-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 SD120-R100B99-1/4 ASD100S-R75B99-1/4 ASD120-R75B99-1/4 | 66260273596 66260273597 66260273598 66260273599 66260273617 66260273617 66260273611 66260273613 66260273614 66260273615 69014192205 69014192769 66260273609 |
| 6 x 1/16 x 1-1/4 6 x 1/8 x 1-1/4 | SD100-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 SD220-R100B99-1/4 SD150-R75B99-1/4 SD150-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 ASD100S-R75B99-1/4 ASD100S-R75B99-1/4 ASD150-R75B99-1/4 ASD180-R75B99-1/4 | 66260273596 66260273597 66260273598 66260273599 66260273617 66260273611 66260273613 66260273614 66260273615 69014192205 69014192769 66260273609 69014192770 |
| 6 x 1/16 x 1-1/4 6 x 1/8 x 1-1/4 | SD100-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 SD220-R100B99-1/4 SD150-R75B99-1/4 SD100-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 SD120-R100B99-1/4 ASD100S-R75B99-1/4 ASD120-R75B99-1/4 | 66260273596 66260273597 66260273598 66260273599 66260273617 66260273617 66260273611 66260273613 66260273614 66260273615 69014192205 69014192769 66260273609 |
| 6 x 1/16 x 1-1/4 6 x 1/8 x 1-1/4 | SD100-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 SD220-R100B99-1/4 SD150-R75B99-1/4 SD150-R100B99-1/4 SD150-R100B99-1/4 SD20-R100B99-1/4 ASD100S-R75B99-1/4 ASD100S-R75B99-1/4 ASD120-R75B99-1/4 ASD120-R75B99-1/4 ASD20-R75B99-1/4 | 66260273596 66260273597 66260273598 66260273599 66260273617 66260273611 66260273613 66260273614 66260273615 66260273615 66260273615 69014192205 69014192770 69014192771 |
| 6 x 1/16 x 1-1/4 6 x 1/8 x 1-1/4 | SD100-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 SD220-R100B99-1/4 SD100-R100B99-1/4 SD100-R100B99-1/4 SD180-R100B99-1/4 SD220-R100B99-1/4 ASD120-R75B99-1/4 ASD120-R75B99-1/4 ASD180-R75B99-1/4 ASD180-R75B99-1/4 ASD220-R75B99-1/4 ASD220-R75B99-1/4 ASD220-R75B99-1/4 RMD180-P100V99-1/8 SD120-R100B99-1/4 | 66260273596 66260273597 66260273598 66260273599 66260273617 66260273613 66260273613 66260273614 66260273615 69014192205 6620273609 69014192770 69014192771 69014192772 69014192772 69014192771 69014192772 69014192771 69014192772 69014192173 69014192173 |
| 6 x 1/16 x 1-1/4 6 x 1/8 x 1-1/4 | SD100-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 SD220-R100B99-1/4 SD100-R100B99-1/4 SD100-R100B99-1/4 SD150-R100B99-1/4 SD150-R100B99-1/4 ASD120-R75B99-1/4 ASD120-R75B99-1/4 ASD180-R75B99-1/4 ASD180-R75B99-1/4 ASD220-R75B99-1/4 ASD220-R75B99-1/4 ASD220-R75B99-1/4 SD120-R100B99-1/4 SD120-R100B99-1/4 SD120-R100B99-1/4 | 66260273596 66260273597 66260273598 66260273599 66260273617 66260273617 66260273613 66260273613 66260273614 66260273615 69014192205 69014192769 66260273609 69014192770 69014192772 69014192772 69014192203 6901419263 69014192772 6901419263 6901419263 69014192772 6901419263 6901419263 6901419263 |
| 6 x 1/16 x 1-1/4 6 x 1/8 x 1-1/4 | SD100-R100B99-1/4 SD150-R100B99-1/4 SD180-R100B99-1/4 SD220-R100B99-1/4 SD100-R100B99-1/4 SD100-R100B99-1/4 SD180-R100B99-1/4 SD220-R100B99-1/4 ASD120-R75B99-1/4 ASD120-R75B99-1/4 ASD180-R75B99-1/4 ASD180-R75B99-1/4 ASD220-R75B99-1/4 ASD220-R75B99-1/4 ASD220-R75B99-1/4 RMD180-P100V99-1/8 SD120-R100B99-1/4 | 66260273596 66260273597 66260273598 66260273599 66260273617 66260273613 66260273613 66260273614 66260273615 69014192205 6620273609 69014192770 69014192771 69014192772 69014192772 69014192771 69014192772 69014192771 69014192772 69014192173 69014192173 |

Standard Package = 1 mounted point, hand hone, or wheel Continued

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| SIZE (D x T x H) | SPECIFICATION | PART # | SIZE (D x T x H) |
|-------------------------|------------------------|---------------------|--------------------|
| Type 1A1 Straight - Dia | amond <i>continued</i> | | Type 1A1 Straig |
| 6 x 3/8 x 1-1/4 | ASD120-R75B99-1/4 | 690141 92773 | 6 x 1/8 x 1-1/4 |
| | ASD150-R75B99-1/4 | 690141 91695 | 6 x 1/4 x 1-1/4 |
| | SD150-R100B99-1/4 | 690141 91696 | 6 x 1/2 x 1-1/4 |
| 6 x 1/2 x 1-1/4 | ASD120-R75B99-1/4 | 690141 92777 | 7 x 1/4 x 1-1/4 |
| | ASD150-R75B99-1/4 | 690141 91698 | 7 x 1/2 x 1-1/4 |
| | ASD220-R75B99-1/4 | 690141 92779 | 12 x 1/2 x 5 |
| | ASD320-R75B99-1/4 | 690141 92780 | 12 x 1 x 5 |
| | SD120-R100B99-1/4 | 662602 73557 | Type 1A1R Cut- |
| | SD150-R100B99-1/4 | 662602 73561 | 3 x .020 x 1/2 |
| | SD180-R100B99-1/4 | 690141 91700 | (ME104177) |
| 7 x 1/4 x 1-1/4 | ASD150-R75B99-1/4 | 690141 91701 | 4 x .012 x 1/2 |
| | SD100S-R100B99-1/4 | 690141 92210 | (ME104180) |
| | SD120-R100B99-1/4 | 662602 73566 | 4 x .020 x 1/2 |
| | SD150-R100B99-1/4 | 690141 91703 | (ME104180) |
| | SD180-R100B99-1/4 | 690141 91704 | 4 x .030 x 1/2 |
| | SD220-R100B99-1/4 | 690141 91705 | (ME104180) |
| 7 x 3/8 x 1-1/4 | SD120-R100B99-1/4 | 690141 91849 | 4 x 1/32 x 3/4 |
| | SD220-R100B99-1/4 | 690141 91852 | (ME43570) |
| 7 x 1/2 x 1-1/4 | ASD100-R75B99-1/4 | 690141 92211 | 4 x 1/32 x 1-1/4 |
| | ASD150-R75B99-1/4 | 690141 91853 | (ME43570) |
| | ASD180-R75B99-1/4 | 690141 92212 | 5 x .015 x 1/2 |
| | SD120-R100B99-1/4 | 690141 91854 | (ME104180) |
| | SD150-R100B99-1/4 | 690141 91855 | 6 x .017 x 1-1/4 |
| | SD180-R100B99-1/4 | 690141 91856 | (ME104180) |
| | SD220-R100B99-1/4 | 690141 91857 | 6 x .025 x 1-1/4 |
| 8 x 1/2 x 1-1/4 | SD150-R100B99-1/4 | 662602 73574 | (ME104180) |
| 10 x 1/2 x 3 | ASD120-R75B99-1/4 | 690141 92305 | 6 x .035 x 5/8 |
| | ASD180-R100B99-1/4 | 690141 92306 | (ME104177) |
| 12 x 1/2 x 3 | ASD150-R75B99-1/4 | 690141 92310 | - 6 x .035 x 1-1/4 |
| 12 x 1/2 x 5 | ASD150-R75B99-1/4 | 690141 92311 | — (ME43572) |
| 12 x 1 x 3 | ASD120-R75B99-1/4 | 690141 92312 | |
| 12 x 1 x 5 | ASD120-R75B99-1/4 | 690141 92313 | |
| 14 x 1/2 x 5 | ASD150-R75B99-1/4 | 690141 92314 | |
| 14 x 1 x 5 | ASD120-R75B99-1/4 | 690141 92316 | |
| 20 x 1 x 12 | ASD120-R75B99-1/4 | 690141 92325 | Continued |

| Dian | nond / cBN | Wheels |
|-------------------------------|--------------------|---------------------|
| | | |
| SIZE (D x T x H) | SPECIFICATION | PART # |
| Type 1A1 Straight – cBN | | |
| 6 x 1/8 x 1-1/4 | CB120-TB99-1/4 | 662602 73601 |
| 6 x 1/4 x 1-1/4 | CB120-TB99-1/4 | 662602 73605 |
| 6 x 1/2 x 1-1/4 | CB120-TB99-1/4 | 662602 73607 |
| 7 x 1/4 x 1-1/4 | CB120-TB99-1/4 | 690141 92021 |
| 7 x 1/2 x 1-1/4 | CB120-TB99-1/4 | 662602 73567 |
| 12 x 1/2 x 5 | CB150-TB99-1/4 | 662602 73560 |
| 12 x 1 x 5 | CB150-TB99-1/4 | 662602 73562 |
| Type 1A1R Cut-Off – Diamond | 1 | |
| 3 x .020 x 1/2 | M4D150-N50M99-1/8 | 690141 92060 |
| (ME104177) | | |
| 4 x .012 x 1/2 | M4D180-N75M99-1/8 | 690141 92063 |
| (ME104180) | M4D220-N75M99-1/8 | 690141 92064 |
| 4 x .020 x 1/2 | M4D220-N100M99-1/8 | 690141 92067 |
| (ME104180) | | |
| 4 x .030 x 1/2 | M4D150-N75M99-1/8 | 690141 92068 |
| (ME104180) | | |
| 4 x 1/32 x 3/4 | SD100S-R100B99-1/4 | 690141 92151 |
| (ME43570) | SD120-R100B99-1/4 | 690141 91706 |
| 4 x 1/32 x 1-1/4 (ME43570) | SD100S-R100B99-1/4 | 690141 92152 |

M4D220-N100M99-1/8

M4D150-N100M99-1/8

M4D220-N100M99-1/8

M4D150-N100M99-1/8

M4D100-N75M99-1/8

SD100-R75B99-1/4

ASD100S-R100B99-1/4

ASD120-R100B99-1/4

SD100-R100B99-1/4

SD100S-R100B99-1/4

SD220-R100B99-1/4

69014192070

69014192082

69014192083

69014192086

690141**92088**

69014192155

69014192158

690141**92159**

690141**91858**

690141**92156**

69014192157

DIAMOND & CBN ABBASIVES

Standard Package = 1 wheel

TIP

- Cylindrical Grinding Applications 1A1 wheels:
- Includes all outside grinding of round parts, even though the finished product is not always a true cylinder
- Infeed at both ends of the traverse to keep wheel face flat
- Use work supports to prevent deflection
- · Rough grinding traverse speed should be 1/2 to 2/3 of the thickness of the wheel per work revolution
- Finishing grinding traverse speed should be 1/2" or less per work revolution

It is the user's responsibility to refer to and comply with ANSI B7.1

FCH

Diamond Grinds:

- · Cemented carbide
- Glass
- Ceramics
- Fiberglass
- Plastics
- Stone
- Abrasives
- · Electronic components and materials

Cut-off Applications - 1A1R wheels:

- Use the largest diameter flanges possible
- · Use flanges of equal diameter
- · Use the thickest wheel possible for increased stiffness and straightness

cBN wheels are used on hardened steels. Diamond wheels are used to cut or slot

carbide, glass or ceramic parts.

It is the user's responsibility to refer to and comply with ANSI B7.1

Can't Find Your Specification Here?

Review this stock section first. If you can not find the specification you need:

- Then refer to the brief descriptions of our B99 Express and CNC lines (following) this section)
- See the more in-depth B99 Express product availability in our "Diamond and cBN Superabrasives Standard Catalog" #8068 on www.nortonabrasives.com or contact your Norton representative for a complete listing of made-to-order superabrasive products.

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cBN Grinds:

Die steels

· Alloy steels

Aerospace alloys

· Hard stainless steel

· Abrasion-resistant ferrous materials

· High-speed tool steels

· Hardened carbon steels

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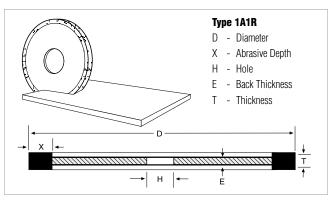
SIZE (D x T x H) Type 1A1R Cut-Off - Diamond 6 x .035 x 1-1/4 ASD100S-R100B99-9/32 69014192164 (ME73316) ASD120-R100B99-9/32 690141**92165** SD100-R100B99-9/32 690141**92161** SD120-R100B99-9/32 690141**92162** SD150-R100B99-9/32 69014192163 6 x .045 x 1-1/4 SD100-R50B99-1/8 690141**92166** (ME83991) M4D100-N75M99-1/8 690141**92099** 6 x .055 x 1-1/4 (ME104177) 7 x .035 x 1-1/4 ASD100-R100B99-1/4 66260238686 (ME82347) 7 x .055 x 1-1/4 M4D120-N100M99-1/8 690141**92108** (ME104177) 8 x .030 x 1-1/4 M4D180-N75M99-1/8 69014192110 (ME104180) SD120-R100B99-1/4 690141**92167** 8 x .045 x 5/8 (ME43569) 8 x .045 x 1-1/4 SD120-R100B99-1/4 69014192169 (ME43569) 8 x .050 x 1-1/4 M4D180-N75M99-1/8 690141**92114** (ME104180) 10 x .050 x 1-1/4 ASD120-R100B99-1/4 662602**30236** (ME 43565) CD100-R100B99-1/4 690141**92815** SD120-R100B99-1/4 690141**92170** 12 x .070 x 3/4 SD150-R100B99-1/4 690141**92173** (ME 43567) Type 1A1R Cut-off - cBN 6 x .035 x 1-1/4 CB100-WB99-1/4 69014192160 (ME43572) Type 1V1P Fluting - Diamond 6 x 3/32 x 1-1/4 ASDC320C-R100B99-1/4 690141**92761** Face Bevel 1 Side 20 Deg ASD320B-R125B99-1/4 690141**92302** Copper Core (ME89562) Type 4A2P Dish - Diamond 6 x 3/8 x 1-1/4 ASD120-R75B99-1/16 69014192280 Rim Width 1/4" (ME88369)

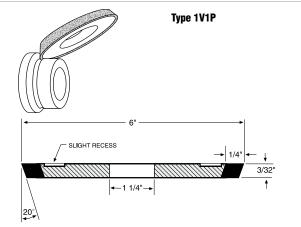
Standard Package = 1 wheel

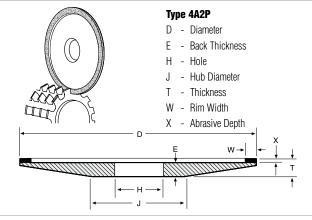
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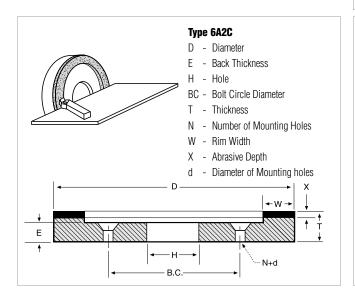
Refer to "Brake Controlled Truing Devices" and "Dressing Sticks" in the Dressing Solutions section for truing and dressing products.





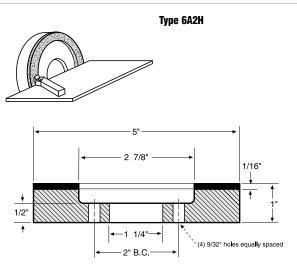






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DIAMOND & CBN ABRASIVES Diamond / CBN Wheels

| SIZE (D x T x H) | SPECIFICATION | PART # |
|--|--------------------|---------------------|
| Type 6A2C Straig | ht cup – Diamond | |
| 6 x 7/16 x 1-1/4 Rim Width 1" (0640185M) | D120/140-H-MSL | 662602 69172 |
| 6 x 3/4 x 1-1/4 | SD220-R50B99-1/16 | 690141 91665 |
| Rim Width 3/4" | ASD120-R75B99-1/16 | 690141 91860 |
| (ME27853) | ASD120-R75B99-1/8 | 690141 92786 |
| | SD150-P50V99-1/16 | 690141 92217 |
| | SD220-P50V99-1/8 | 690141 91623 |
| 6 x 3/4 x 1-1/4 Rim Width 1/2" (ME30621) | ASD120-R75B99-1/8 | 662602 73565 |

| SIZE (D x T x H) | SPECIFICATION | PART # |
|---|-------------------|---------------------|
| Type 6A2H Straight Cu | p – Diamond | |
| 5 x 1 x 1-1/4 Rim Width 1-1/16" (ME27084) | SD320-R50B99-1/16 | 690141 92221 |
| Standard Package = 1 whe | el | |

Standard Package = 1 wheel

Best choice for dry grinding carbide tools

ASD DIAMOND / B105 RESIN BOND WHEELS

- · Premium quality diamond produces keen cutting tools that hold their shape, are easier to sharpen, and require fewer reconditionings
- Advanced, self lubricating bond minimizes heat generation and thermal damage to tool for increases tool life and productivity; lasts more than 2X as long as standard diamond wheels for lowest total wheel costs and highest productivity
- · Unique self-dressing core eliminates wheel core damage and downtime to dress core

| | | ER: BEST | | | IER: BETTER |
|---|---------------------|---------------------|----------------------------|---------------------|---------------------|
| | BOI | | | | ND: B99 |
| SIZE (D x T x H) | SPECIFICATION | PART # | SIZE (D x T x H) | SPECIFICATION | PART # |
| Type 11V9 Flaring Cup · | | | Type 11V9 Flaring Cup – D | | |
| -3/4 x 1-1/2 x 1-1/4 | ASD120-R75B105-1/16 | 690141 91905 | 3 x 1-1/4 x 3/4 | ASD120-R75B99-1/16 | 690141 92291 |
| nsert Length 3/8" | ASD150-R75B105-1/16 | 690141 91906 | Insert Length 3/8" | ASD150-R75B99-1/16 | 690141 92292 |
| ME92192) | ASD100S-R75B105-1/8 | 690141 91908 | (ME93912) | SD150-R100B99-1/16 | 690141 92293 |
| | ASD120-R75B105-1/8 | 690141 91909 | 3-3/4 x 1-1/2 x 3/4 | ASD120-R75B99-1/16 | 690141 92022 |
| | ASD150-R75B105-1/8 | 690141 91910 | Insert Length 3/8" | | |
| x 1-3/4 x 1-1/4 | ASD120-R75B105-1/16 | 690141 91913 | (M92192) | | |
| sert Length 7/16" | ASD150-R75B105-1/16 | 690141 91914 | 3-3/4 x 1-1/2 x 1-1/4 | ASD150C-R50B99-1/8 | 690141 90751 |
| ME98298) | ASD100S-R75B105-1/8 | 690141 91916 | Insert Length 3/8" | ASD120-R75B99-1/16 | 690141 91660 |
| | ASD150-R75B105-1/8 | 690141 91918 | (ME92192) | ASD150-R75B99-1/16 | 690141 91725 |
| | | | | ASD100S-R75B99-1/8 | 690141 91653 |
| | Type 11V9 | | | ASD120-R75B99-1/8 | 690141 91652 |
| D - Diameter K - Inside Diar H - Hole | | | | ASD150-R75B99-1/8 | 690141 91651 |
| | // | | | ASD180-R75B99-1/8 | 690141 91650 |
| | K - Inside D | ameter of Flat | | SD120-R100B99-1/16 | 690141 91657 |
| | | | SD150-R100B99-1/16 | 690141 91656 | |
| | E - Back Thi | cknoss | | SD220-R100B99-1/16 | 690141 91654 |
| | /// | | | SD320-R100B99-1/16 | 690141 92814 |
| | T - Thicknes | S | | SD100S-R100B99-1/8 | 690141 92427 |
| | J - Hub Dia | neter | | SD120-R100B99-1/8 | 690141 91649 |
| | U - Insert Le | nath | | SD150-R100B99-1/8 | 690141 91648 |
| | X - Abrasive | 0 | | SD180-R100B99-1/8 | 690141 91647 |
| | | | | SD220-R100B99-1/8 | 690141 91646 |
| | S - Face An | gle | 5 x 1-3/4 x 1-1/4 | ASD100S-R75B99-1/16 | 690141 91645 |
| · | D | → | Insert Length 7/16" | ASD120-R75B99-1/16 | 690141 91644 |
| | ←──── К ───→ | x→ ← | (ME98298) | ASD150-R75B99-1/16 | 690141 91643 |
| | | | | ASD100S-R75B99-1/8 | 690141 91637 |
| Ň | | U | | ASD120-R75B99-1/8 | 690141 91636 |
| | | + | | ASD150-R75B99-1/8 | 690141 91635 |
| | | T Y | | ASD180-R75B99-1/8 | 690141 91634 |
| | | | | SD120-R100B99-1/16 | 690141 91641 |
| s Mi | |) Е | | SD150-R100B99-1/16 | 690141 91640 |
| <u> </u> | | ⊻ <u> </u> | | SD220-R100B99-1/16 | 690141 91638 |
| | ← H → | | | SD150-R100B99-1/8 | 690141 91632 |
| | | • | | SD180-R100B99-1/8 | 690141 91631 |
| 1. | | 1 | Standard Package = 1 Wheel | | |





Best choice for dry tool resharpening

AZTEC cBN WHEELS

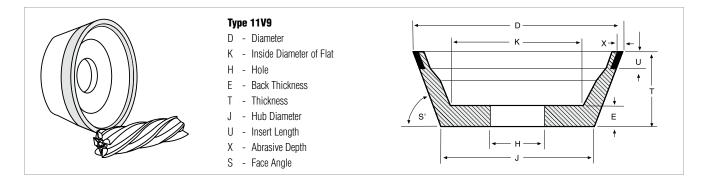
- · Consistent, high quality cBN (cubic Boron Nitride) abrasive which offers 85% longer life than standard cBN wheels
- Advanced heat-reducing bond conducts heat away from the workpiece for freer cutting action and extended wheel life; helps maintains cutting tool steel integrity and extends tool life
- AZTEC III lubricating bond eliminates steel braze and loading; AZTEC .007 allows increased infeed (start at .007) for high stock removal

| | | TIER: BEST |
|-------------------------|---------------------|---------------------|
| | B | OND: AZTEC |
| SIZE (D x T x H) | SPECIFICATION | PART # |
| Type 11V9 Flaring Cup - | cBN | |
| 3-3/4 x 1-1/2 x 1-1/4 | AZTEC .007-100-1/16 | 690141 95683 |
| Insert Length 3/8" | AZTEC .007-150-1/16 | 690141 95679 |
| (ME92192) | AZTEC III 100T-1/16 | 690141 91832 |
| | AZTEC III 120T-1/16 | 690141 91833 |
| | AZTEC III 150T-1/16 | 690141 91834 |
| | AZTEC III 100T-1/8 | 690141 91838 |
| | AZTEC III 120T-1/8 | 690141 91839 |
| | AZTEC III 150T-1/8 | 690141 91840 |
| 5 x 1-3/4 x 1-1/4 | AZTEC .007-100-1/16 | 690141 95685 |
| Insert Length 7/16" | AZTEC III 100T-1/16 | 690141 91841 |
| (ME98298) | AZTEC III 120T-1/16 | 690141 91842 |
| | AZTEC III 150T-1/16 | 690141 91843 |
| | AZTEC .007-100-1/8 | 690141 95686 |
| | AZTEC .007-150-1/8 | 690141 95682 |
| | AZTEC III 100T-1/8 | 690141 91844 |

| | | TIER: BETTER |
|----------------------------------|-----------------|---------------------|
| | В | OND: B99 |
| SIZE (D x T x H) | SPECIFICATION | PART # |
| Type 11V9 Flaring Cup | – cBN | |
| 3-3/4 x 1-1/2 x 1-1/4 | CB100-TB99-1/16 | 690141 91719 |
| Insert Length 3/8" | CB100-TB99-1/8 | 690141 91722 |
| (ME92192) | CB120-TB99-1/8 | 690141 91723 |
| | CB150-TB99-1/8 | 690141 91724 |
| | CB120-WB99-1/16 | 690141 91720 |
| 5 x 1-3/4 x 1-1/4 | CB120-TB99-1/8 | 690141 91715 |
| Insert Length 7/16" (ME98298) | CB150-TB99-1/8 | 690141 91716 |

Standard Package - 1 Wheel

Standard Package = 1 Wheel



Refer to "Brake Controlled Truing Devices" and "Dressing Sticks" in the Dressing Solutions section for truing and dressing products.



WINTER

| | | TIER: | BETTER |
|---|--------------------|-------|---------------------|
| | | BOND: | B99 |
| SIZE (D x T x H) | SPECIFICATION | | PART # |
| Type 12A2 Dish – Diamond | | | |
| 4 x 1/2 x 1-1/4 Rim Width 1/4" (ME40745) | SD180-R75B99-1/8 | | 690141 92223 |
| 6 x 1 x 1-1/4 | ASD120-R75B99-1/8 | | 690141 91630 |
| Rim Width 3/16" (ME27758) | ASD180-R75B99-1/8 | | 690141 92226 |
| Type 12A2 Dish – cBN | | | |
| 6 x 1 x 1-1/4 Rim Width 3/16" (ME27758) | CB120-TB99-1/16 | | 690141 92227 |
| Type 12V9 Dish – Diamond | | | |
| 3 x 7/16 x 3/4 Insert Length 7/16" (ME41755) | SD150-R100B99-1/16 | | 690141 92228 |
| 4 x 1/2 x 1-1/4 Insert Length 1/4" (ME58734) | SD180-R100B99-1/8 | | 690141 91629 |
| 6 x 3/4 x 1-1/4 Insert Length 3/8" (ME48666) | ASD150-R75B99-1/16 | | 690141 91628 |
| Type 12V9 Dish – cBN | | | |
| 4 x 1/2 x 1-1/4 Insert Length 1/4" (ME58734) | CB120-TB99-1/8 | | 690141 92229 |
| 6 x 3/4 x 1-1/4 | CB120-TB99-1/8 | | 690141 92020 |
| Insert Length 3/8" (ME48666) | CB150-TB99-1/8 | | 690141 92784 |
| Type 15V9 Dish – Diamond | | | |
| 6 x 3/4 x 1-1/4 Insert Length 3/8" | SD150-R100B99-1/16 | | 690141 92230 |
| Standard Package = 1 wheel | | | |

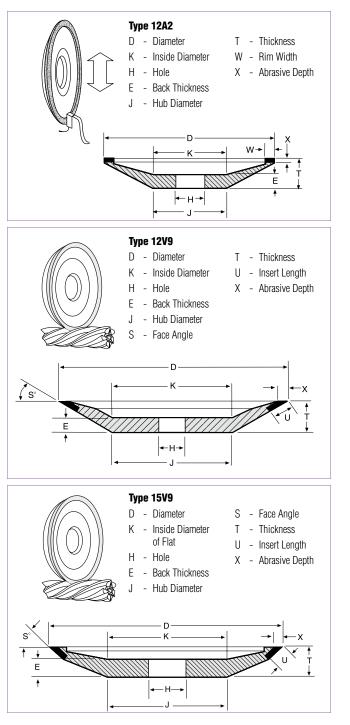
Can't Find Your Specification Here?

We offer a comprehensive stock product selection to service most of your needs

- with the fastest delivery and lowest total cost. Review this stock section first. If you can not find the specification you need:

- · Then refer to the brief descriptions of our B99 Express and CNC lines (following this section)
- · See the more in-depth B99 Express product availability in our "Diamond and cBN Superabrasives Standard Catalog" #8068 on www.nortonabrasives.com or contact your Norton representative for a complete listing of made-to-order superabrasive products.

DIAMOND & cBN ABRASIVES Diamond / cBN Wheels





DIAMOND & CBN ABRASIVES B99 Express Resin Bond Wheels



65,000+ made-to-order resin products; 25 wheel shapes, with one- and two-week lead-times for 12" and less diameter wheels. 14" and larger wheels and 80 grit and coarser wheels are available with standard made-to-order lead-times. If you do not find the resin specification and/or shape you need in our stock offering, you will most likely find it in our B99 Express made-to-order offering.

Applications:

- B99E Diamond Wheels
 - Sharpening cemented carbide cutting tools
 - Cutting-off carbide rod
 - Grinding or cutting-off non-metallic materials such as ceramics or glass
 - Surface grinding dies
 - 0.D. grinding spray coatings
 - B99E cBN Wheels
 - Sharpening high-speed (M2, D2, T15, etc.) steel cutting tools
 - Surface and ID grinding hardened steel die components
 - · Precision grinding steel parts Rc 50 or harder

Superior performing diamond and cBN wheels custom made to your requirements

B99 EXPRESS MADE-TO-ORDER DIAMOND AND cBN RESIN BOND WHEELS

- · Superior diamond or cBN abrasives with durable resin bond systems
- · With thousands of abrasive, grit, grade, concentration, and bond combinations there is a B99 Express wheel for almost every resin bond application
- Offering exceptional quality and performance, these wheels are made in our state-of the art, USA, ISO-certified facilities; excellent performance/price ratio with convenient two-week (or less) lead-times

How to Select B99 Express Made-to-Order Diamond Wheels

| SELECT: | | | |
|---------------------|--|-----------|---|
| WHEEL SHAPE | Select desired wheel shape | | |
| WHEEL DIMENSIONS | | D x T x H | Select Diameter x Thickness x Hole from the availability tables in Catalog #8068. Use blueprint numbers where available. |
| ABRASIVE | Select the abrasive based on horsepower, grinding wet or | ASD | Armored diamond; most durable. Versatile: can be used wet or dry. ASD should be used when carbide and steel are ground in the same operation. |
| | dry, and contact with steel. | SD | Free cutting standard. Can be used wet or dry; should be used on low horsepower (3/4 hp or less) machines. |
| GRIT SIZE | Select the grit size based on | 80 | Roughing |
| | finish and material removal | 100 | Roughing. The most common grit size for roughing operations. |
| | rate required. | 120 | For roughing where 100 is too coarse. Also for cut-off applications. |
| | Note: Standard made-to-order lead-times apply to 80 grit | 150 | Medium stock removal plus good finish. For combined roughing and finishing applications. |
| | and coarser wheels. | 180 | Medium stock removal plus good finish. To improve finish. |
| | | 220 | Finishing |
| | | 320 | Finishing |
| | | 400 | Fine finishing |
| GRADE | The hardness of the wheel | R | Resin bond standard |
| CONCENTRATION | Select the concentration | 50 | Shape 2A2T only. For broad area of contact grinding. |
| | based on grinding wet or dry, material removal rates, | 75 | Norton standard. Freer cutting than 100 grit and the most economical for dry grinding with ASD diamond. |
| | and form holding requirements. | 100 | Very durable. Recommended under flood coolant conditions. For use with 220 grit or finer, when durability is required. Also for cut-off applications. |
| | | 125 | Improved form holding. Used with B99EF bond only for form holding in high-volume, high-pressure coolant applications. Used with ASD abrasive. |
| BOND | Select the bond based on the material being ground and grinding application. | B99E | Norton standard pre-engineered resin bond. Versatile enough to be used wet or dry on most tool making or resharpening applications as well as for grinding non-metallic materials such as ceramics or glass. Available in all shapes. |
| | _ • • • | B99EF | Improved form holding. More durable than B99E. Improved heat dissipation in wet or dry applications. Available in wheel shapes 1V1, 1B1, 1E1, 1EE1, 1F1 and 1FF1. |
| ABRASIVE DEPTH | Usable abrasive | 1/16 | |
| | | 1/8 | |
| | | 1/4 | |
| | | 1/2 | |



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DIAMOND & CBN ABRASIVES B99 Express Resin Bond Wheels

How to Select B99 Express Made-to-Order cBN Wheels

| SELECT: | | | |
|---------------------|--|-------|--|
| WHEEL SHAPE | Select desired wheel shape | | |
| WHEEL DIMENSIONS | Note: Standard made-to-order lead-times apply to 14" and larger wheels. | DxTxH | Select Diameter x Thickness x Hole from the availability tables. Use blueprint numbers where available. |
| ABRASIVE | Select cBN abrasive to grind hard tool steels such as A2, D2, T15, etc., and tough alloy steels. | СВ | Norton standard coated cBN (cubic Boron Nitride). Optimized for high performance in resin bond systems. |
| GRIT SIZE | Select the grit size based on | 100 | Roughing. The most common grit size for roughing operations. |
| | finish and material removal | 120 | For roughing where 100 is too coarse. Also for cut-off applications. |
| | rate required. | 150 | Medium stock removal plus good finish. For combined roughing and |
| | Note: Standard made-to-order | | finishing applications. |
| | lead-times apply to 80 grit and | 180 | Medium stock removal plus good finish. To improve finish. |
| | coarser wheels. | 220 | Finishing |
| | | 320 | Finishing |
| | | 400 | Fine finishing |
| GRADE | The hardness of the wheel | Т | Norton standard. Approximately 75 concentration, T is the first choice for lower horsepower equipment or wide area of contact between the wheel and the workpiece. Ideal for resharpening applications with 11V9, 12A2, 4A2P, and 15V9 wheel shapes when dry grinding. |
| | | W | Very durable. Approximately 100 concentration, W is recommended for high volume coolant operations: flute grinding from solid, flute polishing, surface, and cylindrical grinding. |
| | | Z | Form holding. Approximately 125 concentration, Z grade is extremely durable and is recommended where long life or form holding is required in high-volume, high-pressure coolant applications. Used with B99EF bond only. |
| BOND | Select the bond depending on the type of grinding application. | B99E | Norton standard resin bond. Pre-engineered for optimal performance with cBN abrasive. Available in all shapes. |
| | | B99EF | Improved form holding. More durable than B99E. Improved heat dissipation in wet or dry applications. Available in wheel shapes 1V1, 1B1, 1E1, 1EE1, 1F1 and 1FF1. |
| ABRASIVE DEPTH | Usable abrasive | 1/16 | |
| | | 1/8 | |
| | | 1/4 | |
| | | 1/2 | |

See the more in-depth B99 Express product availability in our "Diamond and cBN Superabrasives Standard Catalog" #8068 on www.nortonabrasives.com or contact your Norton representative for a complete listing of made-to-order superabrasive products.

TECH TIP

Diamond Grinds:

In general, diamond is used to grind non-ferrous materials, because of an adverse reaction between diamond and iron.

- · Cemented carbide
- Glass
- Ceramics
- Fiberglass
- Plastics
- Stone
- Abrasives
- Electronic components and materials

It is the user's responsibility to refer to and comply with ANSI B7.1

- cBN Grinds:
- cBN is used to grind ferrous materials.
- · High-speed tool steels
- Die steels
- Hardened carbon steels
- Alloy steels
- · Aerospace alloys
- · Hardened stainless steel
- Abrasion-resistant ferrous materials

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DIAMOND & CBN ABRASIVES Diamond / CBN CNC Wheels



These superior, pre-engineered wheels have been specifically developed to meet the demanding needs of precision cutting tool manufactures as well as re-sharpeners. The use of the highest quality diamond and cBN abrasives matched to superior high temperature bond systems, guarantees high performing wheels. These wheels are manufactured under the strictest quality control protocols ensuring the same, consistent, high-performing product. Cutting tool manufactures who use these wheels report much improved dimensional accuracy and superior cutting edges.

This product offering provides wheel sizes for most CNC machines and wheels shapes to produce the required cutting tool geometries. If you do not find a wheel in this offering to suit your specific needs, a custom-made wheel can be provided.

Applications:

CNC cutting tool manufacturing and resharpening: fluting, end fluting, gashing, and OD relief

Diamond CNC Wheels



Best choice for CNC tungsten carbide round tool manufacturing

PARADIGM DIAMOND WHEELS

- Truable online and offline for maximum productivity
- Wear and load resistance deliver superior grinding performance on tough-to-grind carbides with 6-12% cobalt content
- High grain retention and uniform structure generate high G-ratio; up to 2.5 times longer life and 30% higher MRR than existing superabrasive wheels



Better choice for CNC tungsten carbide round tool manufacturing

G-FORCE AND UNIVEL POLYIMIDE DIAMOND WHEELS

- Polyimide bond systems provide superior form-holding and lower-power requirements compared to premium competitive wheels, reducing frequency of dresses, and decreasing chances of burn and heat damage to the part
- Unique bond technology excels on round, carbide and steel tools; excellent depth of cut, traverse rates, and form holding; reduces total grinding costs by 30% or more
- · Self-dressing; maintains a consistently sharp grinding edge which allows for lights-out manufacturing



Good choice for short runs and frequent geometry changes

DIAMOND CNC WHEELS

- A price competitive alternative to premium wheels; ideal for short-run manufacturing jobs where frequent wheel profile changes are required
- · Consistent wheel-to-wheel performance for reduced cycle times, less dressing = longer wheel life
- Ideal for resharpening and short-run manufacturing operations; competitively-priced while providing good performance

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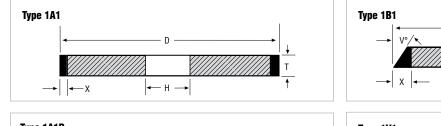


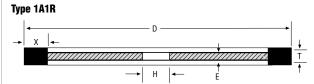
DIAMOND & cBN ABRASIVES Diamond / cBN CNC Wheels

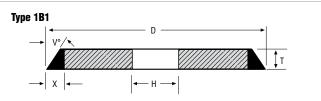
Diamond CNC Wheels

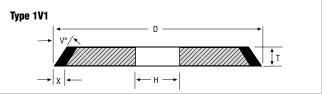
| | TIER: | BEST | | | BETTER | _ | | GOOD | | |
|------------------------------------|------------|------------------|-------|------------------------|----------------------------|-------|------------------------|-----------------|------------|--|
| TRΔ | DENAME: | | | | G-FORCE/UNIVEL | | | NORTON WINTER | | |
| SIZE | DEIWAIVIE. | | ABR. | | | ABR. | | NOTITON WHITEI | ABR. | |
| (D x T x H) | | | DEPTH | | | DEPTH | | | DEPTH | |
| Û, W | | SPECIFICATION | X | PART # | SPECIFICATION | X | PART # | SPECIFICATION | X | PART # |
| TYPE 1A1 – Di | amond F | | | | | | | | | |
| 4 x 1/2 x 1-1/4 | | SD320-D168-P100C | 3/8 | | AD320-UP061 G-Force | 1/4 | 601576 63909 | | | |
| 5 x 3/8 x 1-1/4 | | SD320-D168-P100C | 1/2 | 079587 83058 NS | AD320-UP061 G-Force | 1/2 | 601576 68409 | A4D220-R115B610 | 1/2 | 690141 18255 |
| 5 x 1/2 x 1-1/4 | | SD320-C176-P100C | 1/2 | 079587 83061 | AD320-UP061 G-Force | 1/2 | 601576 62240 | A4D180-R115B610 | 1/2 | 690141 18202 |
| 5 x 5/8 x 1-1/4 | | SD320-C176-P100C | 1/2 | 079587 83063 NS | AD320-UP061 G-Force | 1/2 | | A4D180-R115B610 | 1/2 | 690141 18203 NS |
| 6 x 1/2 x 1-1/4 | | SD320-C176-P100C | 1/2 | 079587 83064 | AD320-UP061 G-Force | 1/4 | 601576 82133 NS | A4D180-R115B610 | 1/4 | 690141 18216 NS |
| TYPE 1A1 – Di | amond P | olish | | | | | | | | |
| 5 x 1/2 x 1-1/4 | | | | | 80D1000-100UP731 Univel | 1/2 | 079587 84316 NS | | | |
| TYPE 1A1 – Di | amond R | elief | | | Univer | | | | | |
| 6 x 1/2 x 1-1/4 | | SD320-E168-P100C | 1/2 | 079587 83073 NS | AD320-UP892 G-Force | 1/2 | 690141 17684 NS | A4D180-R115B610 | 1/2 | 690141 18217 NS |
| TYPE 1A1RN - | Diamon | | 1/ - | | | 1/ - | | | 1/ - | |
| 5 x 3/8 x 1-1/4 | Planon | SD320-D168-P100C | 1/2 | 079587 83067 NS | AD320-UP061 G-Force | 1/2 | 601576 63501 | A4D180-R115B610 | 1/2 | 690141 18201 |
| 5 x 1/2 x 1-1/4 | | 30320 0100 11000 | 1/2 | 01330100001100 | AD220-UP061 G-Force | 1/2 | 662603 22280 | | 1/2 | 03014110201 |
| 5 x 5/8 x 1-1/4 | | | | | AD220-UP061 G-Force | 1/2 | 601576 64141 | | | |
| TYPE 1B1 – Di | amond F | luto | | | | 1/2 | 00107004141 | | | |
| 4 x 3/8 x 1-1/4 | | SD320-D168-P100C | 3/8 | 079587 83054 | | | | | | |
| TYPE 1B1 – Di | | | 5/0 | 01930103034 | | | | | | |
| 5 x 3/8 x 1-1/4 | | SD320-E168-P100C | 1/2 | 079587 83065 | | | | | | |
| TYPE 1B1 – Di | | | 1/2 | 01930103003 | | | | | | |
| 5 x 1/2 x 1-1/4 | | SD320-E168-P100C | 1/4 | 079587 83062 NS | | | | | | |
| 5 x 1/2 x 1-1/4 5 x 1/2 x 1-1/4 | | SD320-E168-P100C | 1/4 | 07958783062 NS | | | | | | |
| 5 x 1/2 x 1-1/4 5 x 1/2 x 1-1/4 | | SD320-E168-P100C | 3/4 | 079587 83060 NS | | | | A4D320-R115B610 | 3/4 | 690141 18207 |
| 3 X 1/2 X 1-1/4 | V=30 | SD320-E108-P1000 | 3/4 | 0/958/ 830/0 NS | | | | D220-C100-K+925 | | |
| 5 x 1/2 x 1-1/4 | 1/ 450 | SD320-E168-P100C | 3/4 | 07050700000 NO | AD320-UP531 G-Force | 3/4 | 662603 29603 | A4D320-R115B610 | 6mm 3/4 | 601576 13112 690141 18208 |
| 3 X 1/2 X 1-1/4 | V=40 | SD320-E108-P1000 | 3/4 | 0/908/83008 NS | AD320-0P331 G-FUICE | 3/4 | 002003 29003 | D220-C100-K+925 | | 601576 23673 |
| | | | | | | | | D220-0100-K+920 | 6mm | 0010/0230/3 |
| TYPE 1V1 – Di | | lute | | | | 1/4 | 00000040504 | | 1/4 | 000141400000 |
| 4 x 3/8 x 1-1/4 | | 00000 0470 04000 | 1/0 | 07050700074 10 | AD320-UP061 G-Force | 1/4 | 66260316591 | A4D180-R115B610 | 1/4 | 690141 18263 |
| 5 x 1/2 x 1-1/4 | | SD320-C176-P100C | 1/2 | | AD320-UP061 G-Force | 1/2 | 662601 16723 | A4D180-R115B610 | 1/2 | 690141 18204 |
| 5 x 1/2 x 1-1/4 | v=20° | SD320-C176-P100C | 1/2 | 079587 83074 | AD320-UP061 G-Force | 1/2 | 601576 93843 | A4D180-R115B610 | 1/2 | 690141 18205 |
| | 14.000 | 00000 0170 01000 | 1/0 | 07050700005 | 10000 10071 0 5 | 1/0 | 00157000045 | D220-C100-K+925 | 6mm | 601576 23953 |
| 5 x 1/2 x 1-1/4 | | SD320-C176-P100C | 1/2 | 0/9587 83085 NS | AD320-UP671 G-Force | 1/2 | 601576 93841 | A4D180-R115B610 | 1/2 | 690141 18206 |
| TYPE 1V1 – Di | | lute/Gash | | | | | | | | |
| 5 x 3/8 x 1-1/4 | | | | | AD320-UP531 G-Force | 1/2 | 601576 96562 | A4D320-R115B610 | 1/2 | 690141 18257 |
| TYPE 1V1 – Di | | ash | | | | | | | | |
| 5 x 1/2 x 1-1/4 | | | | | AD320-UP531 G-Force | 1/4 | 662603 29604 | A4D320-R115B610 | 1/4 | 690141 18209 |
| 5 x 1/2 x 1-1/4 | V-60° | | | | AD320-UR331 Univel | 1/4 | 662603 29469 | | | |

NS Non-stock, contact your Norton representative for current lead-times. All holes (bores) are machined to (H7) class fit.











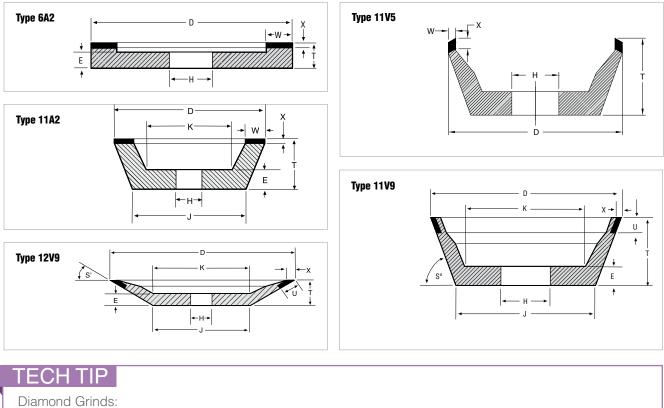
DIAMOND & cBN ABRASIVES Diamond / cBN CNC Wheels

Diamond CNC Wheels

| | TIER: | BEST | | | BETTER | | | GOOD | | |
|-------------------------------|------------|--------------------|--------------------|------------------------|-----------------------|--------------------|------------------------|-----------------|--------------------|------------------------|
| TRADE | | PARADIGM | | | G-FORCE/UNIVEL | | | NORTON WINTER | | |
| SIZE (D x T x H) | ANGLE V | SPECIFICATION | ABR. DEPTH X | PART # | SPECIFICATION | ABR. Depth X | PART # | SPECIFICATION | ABR. DEPTH X | PART # |
| TYPE 6A2 – Diam | ond Po | | | | | | | | ~ | |
| 4 x 1-1/4 x 1-1/4 W=1/4 | | SD320-E168-P100C | 1/4 | 079587 83057 NS | AD320-UP251 G-Force | 1/4 | 690141 18644 NS | ASD320C-R100B56 | 1/4 | 690141 18219 NS |
| TYPE 11A2 - Dia | nond R | elief | | | | | | | | |
| 3 x 1-1/4 x 1-1/4 W=1/4 | | | | | 10D320-NB100U Univel | 1/4 | 601576 92199 | | | |
| 4 x 1-1/4 x 1-1/4 W=1/4 | | SD320-E168-P100C | 1/4 | 079587 83059 NS | AD320-UP701 G-Force | 1/4 | 601576 96315 | ASDC320-R100B80 | 1/4 | 690141 18213 |
| 4 x 1-1/4 x 1-1/4 W=1/4 | | | | | AD320-UP561 G-Force | 1/4 | 690141 18479 NS | ASDC320-R100B80 | 1/4 | 690141 18265 NS |
| TYPE 11V5 - Dia | nond R | elief | | | | | | | | |
| 4 x 1-1/4 x 1-1/4 W=1/4 | V=30° | | | | AD320-UP561 G-Force | 1/4 | 690141 17838 | ASDC320-R100B80 | 1/4 | 690141 18211 |
| 4 x 1-1/4 x 1-1/4 V W=3/8 | V=10° | | | | AD320-UP561 G-Force | 1/4 | 690141 17812 | ASDC320-R100B80 | 1/4 | 690141 18212 |
| TYPE 11V9 - Dia | nond R | elief | | | | | | | | |
| 3-3/4 x 1-1/2 x 1-1/ U=3/8 | /4 | | | | 10D240-PB125-U Univel | 1/8 | 662603 22134 | ASDC320-R100B80 | 1/8 | 690141 18259 |
| 5 x 1-3/4 x 1-1/4 U=5/8 | | | | | 10D240-PB125-U Univel | 1/8 | 662601 18300 | ASDC320-R100B80 | 1/8 | 690141 18215 |
| TYPE 12V9 - Dia | nond R | elief | | | | | | | | |
| 4 x 3/4 x 1-1/4 U=3/8 | | | | | AD320-UP531 G-Force | 1/8 | 662601 27950 NS | ASDC320-R100B80 | 1/8 | 690141 18221 NS |
| 5 x 3/4 x 1-1/4 U=1/2 | | Natar and the form | | | AD320-UP531 G-Force | 1/8 | 662601 27911 NS | ASDC320-R100B80 | 1/8 | 690141 18222 NS |

NS Non-stock, contact your Norton representative for current lead-times.

All holes (bores) are machined to (H7) class fit.



In general, diamond is used to grind non-ferrous materials, because it reacts with iron.

- Cemented carbide
- Glass
- · Ceramics
- Fiberglass

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Y It is the user's responsibility to refer to and comply with ANSI B7.1

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| • F | lastics |
|-----|---------|
|-----|---------|

- Stone
- Abrasives
- · Electronic components and materials

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DIAMOND & cBN ABRASIVES Diamond / cBN CNC Wheels

cBN CNC Wheels



Best choice for CNC HSS round tool manufacturing

G-FORCE / UNIVEL cBN WHEELS

- · Truable online and offline for lights-out manufacturing and maximum productivity
- Wear and load resistance deliver superior grinding performance on tough-to-grind carbides with 6-12% cobalt content
- · Low specific cutting energy for faster grinding with lower power draw and less burn

Good choice for short runs and frequent geometry changes



cBN CNC WHEELS

- A price competitive alternative to premium wheels; ideal for short-run manufacturing jobs where frequent wheel profile changes are required
- Consistent wheel-to-wheel performance for reduced cycle times, less dressing = longer wheel life

6mm

B220-V240-KSS920

601576**23776**

Ideal for resharpening and short-run manufacturing operations; competitively-priced while providing good performance

| | TIER: | BEST | | | GOOD | | |
|----------------------|------------------|-----------------------|---------------|------------------------|------------------|---------------|------------------------|
| TR | ADENAME: | G-FORCE/UNIVEL | | | NORTON WINTER | | |
| SIZE (D x T x H) | ANGLE | | ABR. Depth | | | ABR. Depth | |
| Ù, W | V | SPECIFICATION | X | PART # | SPECIFICATION | X | PART # |
| TYPE 1A1 – 0 | cBN Flute | | | | | | |
| 4 x 1/2 x 1-1/4 | Ļ | BX220-UP241 G-Force | 1/4 | 601576 69935 NS | BAM180-WBXD3037 | 1/4 | 690141 18223 NS |
| | | | | | B220-V240-KSS920 | 6mm | 601576 23498 |
| 5 x 3/8 x 1-1/4 | Ļ | BX220-UP241 G-Force | 1/2 | 690141 18436 NS | BAM320C-WBXD3037 | 1/2 | 690141 18256 NS |
| 5 x 1/2 x 1-1/4 | Ļ | BX220-UP241 G-Force | 1/2 | 601576 70869 NS | BAM180-WBXD3037 | 1/2 | 690141 18224 NS |
| | | | | | B220-V240-KSS920 | 6mm | 601576 02944 |
| 5 x 5/8 x 1-1/4 | Ļ | BX220-UP241 G-Force | 1/2 | 662603 29385 NS | BAM180-WBXD3037 | 1/2 | 690141 18225 NS |
| 6 x 1/4 x 1-1/4 | ļ | BX240-UP241 G-Force | 1/4 | 690141 18435 NS | BAM180-WBXD3037 | 1/4 | 690141 18240 NS |
| TYPE 1A1 – 0 | BN Relie | f | | | | | |
| 6 x 1/2 x 1-1/4 | - | BX320-UP892 G-Force | 1/2 | 690141 17679 NS | BAM180-WBXD3037 | 1/2 | 690141 18237 NS |
| TYPE 1A1RN | – cBN Flu | ite | | | | | |
| 5 x 1/4 x 1-1/4 | | BX150-UP241 G-Force | 1/2 | 079587 73216 NS | | | |
| 5 x 3/8 x 1-1/4 | 1 | BX150-UP241 G-Force | 1/2 | 079587 73217 NS | | | |
| 5 x 1/2 x 1-1/4 | | BX150-UP241 G-Force | 1/2 | 690141 41373 NS | | | |
| TYPE 1B1 – 0 | | | | | | | |
| 5 x 1/2 x 1-1/4 | V=30° | BX320-UP701 G-Force | 3/4 | 662603 29388 NS | BAM320C-WBXD3037 | 3/4 | 690141 18229 NS |
| 5 x 1/2 x 1-1/4 | V=45° | BX320-UP531 G-Force | 3/4 | 662603 29391 NS | BAM320C-WBXD3037 | 3/4 | 690141 18230 NS |
| | | | -, - | | B220-V240-KSS920 | 6mm | 601576 23542 |
| TYPE 1V1 – (| cBN Flute | | | | | | |
| 4 x 3/8 x 1-1/4 | V=20° | BX220-UP241 G-Force | 1/4 | 690141 18342 NS | BAM180C-WBXD3037 | 1/4 | 690141 18264 NS |
| 5 x 1/2 x 1-1/4 | | BX220-UP241 G-Force | 1/2 | 601576 80042 NS | BAM180-WBXD3037 | 1/2 | 690141 18227 NS |
| | - | | | | B220-V240-KSS920 | 6mm | 601576 23944 NS |
| 5 x 1/2 x 1-1/4 | V=30° | BX220-UP241 G-Force | 1/2 | 601576 91380 NS | BAM180-WBXD3037 | 1/2 | 690141 18228 NS |
| 5 x 1/2 x 1-1/4 | | BX220-UP241 G-Force | 1/2 | 662601 19876 NS | BAM180-WBXD3037 | 1/2 | 690141 18226 NS |
| TYPE 1V1 – (| | /Gash | | | | | |
| 5 x 3/8 x 1-1/4 | | BX220-UP531 G-Force | 1/2 | 601576 97699 NS | BAM320C-WBXD3037 | 1/4 | 690141 18262 NS |
| | | U | ., = | | B220-V240-KSS920 | 6mm | 601576 23524 |
| TYPE 1V1 – (| :BN Gash | | | | | | |
| 5 x 1/2 x 1-1/4 | | BX320-UR331 Univel | 1/4 | 662603 29461 NS | BAM320C-WBXD3037 | 1/4 | 690141 18232 NS |
| 5 x 1/2 x 1-1/4 | | BX320-UP531 G-Force | 1/4 | 662603 29275 NS | BAM320C-WBXD3037 | 1/4 | 690141 18231 NS |
| | | 2 | ., . | | | ., . | |

cBN Grinds:

ΤΙΡ

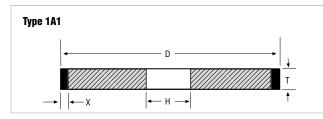
cBN is used to grind ferrous materials.

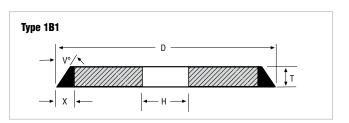
- · High-speed tool steels Die steels
- Hardened carbon steels
- · Alloy steels
- Aerospace alloys
- · Hardened stainless steel
- · Abrasion-resistant ferrous materials

It is the user's responsibility to refer to and comply with ANSI B7.1

NS Non-stock, contact your Norton representative for current lead-times. All holes (bores) are machined to (H7) class fit.

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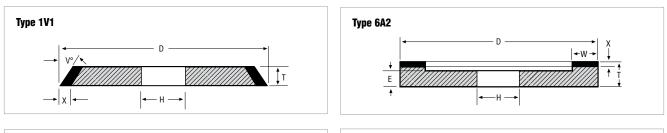
(**5**.) (\mathbf{f}) applifast.com

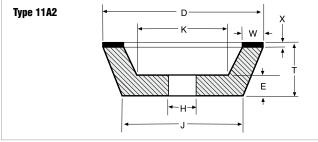


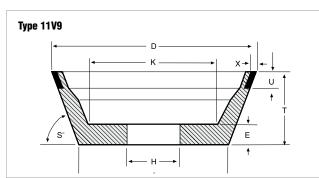
cBN CNC Wheels

| | R: BEST | | | GOOD | | |
|----------------------------------|-----------------------|---------------|------------------------|------------------|---------------|------------------------|
| TRADENAM | G-FORCE/UNIVEL | 100 | | NORTON WINTER | 100 | |
| SIZE (D x T x H) | | ABR. Depth | | | ABR. Depth | |
| Ù, W ANGLE | V SPECIFICATION | X | PART # | SPECIFICATION | X | PART # |
| TYPE 6A2 – cBN Point | | | | | | |
| 4 x 1-1/4 x 1-1/4 W=1/4 | BX320-UP241 G-Force | 1/4 | 690141 18543 NS | CB320C-WBB | 1/4 | 690141 18239 NS |
| 5 x 1-1/4 x 1-1/4 W=1/2 | BX320-UP241 G-Force | 1/4 | 690141 18447 NS | CB320C-WBB | 1/4 | 690141 18238 NS |
| TYPE 11A2 - cBN Relie | f | | | | | |
| 5 x 1-1/2 x 2 W=1/4 | BX320-UP531 G-Force | 1/4 | 690141 18406 NS | BAM220-WBE | 1/4 | 690141 18254 NS |
| TYPE 11A2 - cBN Relie | f | | | | | |
| 4 x 1-1/4 x 1-1/4 W=1/4 | BX320-UP531 G-Force | 1/4 | 690141 18445 NS | BAM220-WBE | 1/4 | 690141 18266 NS |
| TYPE 11V5 - cBN Relief | f | | | | | |
| 4 x 1-1/4 x 1-1/4 V=30° | BX320-UP701 G-Force | 1/4 | 690141 17833 NS | BAM220-WBE | 1/4 | 690141 18233 NS |
| W=1/4 | | | | B220-J240-KSS63Y | 6mm | 601576 23563 |
| 4 x 1-1/4 x 1-1/4 V=10° W=3/8 | BX320-UP701 G-Force | 1/4 | 690141 17820 NS | BAM220-WBE | 1/4 | 690141 18234 NS |
| TYPE 11V9 - cBN Relie | f | | | | | |
| 3-3/4 x 1-1/2 x 1-1/4 U=3/8 | 90B240-PB125-U Univel | 1/8 | 690141 18345 NS | BAM220-WBE | 1/8 | 690141 18260 NS |
| TYPE 11V9 - cBN Relief | f | | | | | |
| 3-3/4 x 1-1/2 x 1-1/4 U=3/8 | 90B240-PB125-U Univel | 1/8 | 690141 18029 NS | BAM220-WBE | 1/8 | 690141 18235 NS |
| 5 x 1-3/4 x 2 U=3/8 | 90B240-PB125-U Univel | 1/8 | 690141 18043 NS | BAM220-WBE | 1/8 | 690141 18248 NS |
| TYPE 12V9 - cBN Relie | f | | | | | |
| 4 x 3/4 x 1-1/4 U=3/8 | BX320-UP531 G-Force | 1/8 | 690141 18470 NS | BAM220-WBE | 1/8 | 690141 18241 NS |
| 5 x 3/4 x 1-1/4 U=1/2 | BX320-UP531 G-Force | 1/8 | 690141 18441 NS | BAM220-WBE | 1/8 | 690141 18242 NS |

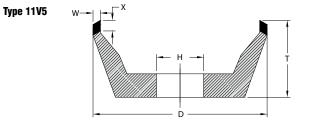
NS Non-stock, contact your Norton representative for current lead-times. All holes (bores) are machined to (H7) class fit.

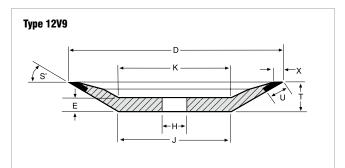






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WINTER

CNC Express Wheel Service for WC and HSS Tools

- G-Force Diamond and cBN wheels altered from blank stock
- Available for a large range of special geometries
- 2-week standard lead time for first-time orders (new part numbers)
- 1-week lead-time for repeat orders (existing part numbers)
- How To Request An Express Wheel Quote And Order

Refer to this chart and choose:

- Wheel shape by application
- Diameter "D"
- Thickness "T" from the range of 7/16" to 1/2"
- Hole "H" from the range of 1/2" to 2"
- Angle ("V"), Radius ("R") dimensions from the range provided
- Abrasive depth "X" will always be 1/2" for these CNC wheels
- Specifications required for material and application
- NOTE: Please remember to include the "E" at the end of the specification to indicate Express lead-time is required

CNC Express Blank Stock for Made-To-Order Wheels

Blank Stock Inventory to be altered to your specifications within 5-10 days

| Wheel Shape | Tool Material | Application | G-Force Specification AD = Diamond BX = cBN | Diameter D | THK. T | Hole H | Abr. Depth X | Angle (V) or Radius (R) |
|---|------------------|-------------|--|---------------|-------------------------|-----------------------|--------------------|----------------------------|
| 1A1 | WC | Fluting | AD320-UP061E | 5 | | | | - |
| | HSS | Fluting | BX320-UP241E | 5 | | | | |
| | WC | Fluting | AD320-UP061E | 6 | | | | |
| 1B1 | WC | Fluting | AD320-UP061E | 5 | | | | 1 deg 30 deg. |
| ← D | WC | Fluting | AD320-UP061E | | | | | 0 0 |
| $ \begin{array}{c} \rightarrow \\ \hline \\ \hline \\ \rightarrow \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\$ | HSS | Fluting | BX320-UP241E | 5 | | | | |
| 1V1 | WC | Gashing | AD320-UP531E | 5 | - | | | 1 deg 55 deg. |
| | HSS | Gashing | BX320-UP531E | | _ | | | r uey 55 uey. |
| $ \rightarrow \begin{matrix} V^{\mu} \land & & \\ V^{\mu} \land & & \\ \downarrow T \\ \rightarrow \end{matrix} \begin{vmatrix} \chi \end{vmatrix} \leftarrow \qquad \lvert \leftarrow H \rightarrow \rvert $ | поо | Gasning | DX320-0F331E | 5 | | | 1/2" | |
| 1E1 | WC | Fluting | AD320-UP061E | 5 | | | | 90 deg. to |
| | HSS | Fluting | BX320-UP241E | 5 | 7/16" | 1/2" | | 178 deg. |
| | WC | Fluting | AD320-UP061E | 6 | min. to 1/2" max. | min. to 2" max. | | |
| 1F1 | WC | Fluting | AD320-UP061E | 5 | | | | T/2 or greater |
| | HSS | Fluting | BX320-UP241E | 5 | | | | |
| | WC | Fluting | AD320-UP061E | 6 | | | | |
| 1L1 | WC | Fluting | AD320-UP061E | 5 | _ | | | Less than T/2 |
| | HSS | Fluting | BX320-UP241E | 5 | - | | | L633 111011 1/2 |
| | WC | Fluting | AD320-UP241E | | - | | | |
| | 440 | riuuniy | AD020-OLOOIE | 0 | | | | |
| 1Q1 | WC | Fluting | AD320-UP061E | 5 | | | | Less than T/2 |
| | HSS | Fluting | BX320-UP241E | 5 | | | | |
| | WC | Fluting | AD320-UP061E | 6 | | | | |

Note: all of the wheel shapes listed can also be designated to have .010 relief(s) 1 side, or 2 sides on 1A1P and 1A1RN wheels.

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DIAMOND & cBN ABRASIVES Electroplated Products

Our extensive offering of stock diamond and cBN electroplated products has been engineered to meet the diverse demands of traditional and emerging tool and die, ceramic, and composite applications.

Applications:

Small hole/ID grinding, deburring, cleaning, honing, precision drilling, forming dies and molds, routing, reaming, blending radii, notching and cutting-off with saw blades in ceramic, tool and die, and composite applications · Mounted points

Product Types:

- Mandrels
- Drills
- Routers
- Contour tools
- Wheels
- Files
- Saw blades Diamond or cBN (cubic Boron Nitride)
- Abrasive Grain:

Maintain tight tolerances and provide superior form holding; can be used wet or dry

ELECTROPLATED PRODUCTS

- · Nickel alloy matrix creates a tough, durable bond
- · Single layer of abrasive offers an economical choice
- · Exposed particles for aggressive cutting action

Identifying Target Markets

An industry is provided beside each product. This key identifies markets that typically use the product.

TARGET MARKET SYMBOLS = Ceramics ▲ = Tool & Die

= Composites

TECH TIP

Abrasive Applications

Although diamond and cBN (cubic Boron Nitride) are both superabrasives, the use of diamond and cBN varies, depending upon the materials to be ground.

Diamond Grinds:

- · Cemented carbide
- Glass
- Ceramics
- Fiberglass
- Plastics
- Abrasives • Stone

· Composites

· Electronic components and materials

cBN Grinds:

Alloy steels

- · High-speed tool steels
- Die steel
- · Hardened carbon steels
- · Hardened stainless steels
- Aerospace alloys Abrasion-resistant ferrous materials

In general, cBN is used to grind ferrous materials. Diamond is used to grind non-ferrous materials, because of an adverse reaction between diamond and iron.





DIAMOND & CBN ABRASIVES Electroplated Products

Made-to-Order Electroplated Product Guide

The stock electroplated products offered on the following pages have been engineered to meet the diversity of demands typical in today's manufacturing environment. When special forms, shapes, and configurations are required, Norton Winter electroplated diamond and cBN products can be fabricated in almost any geometry.

Customer-Supplied Preforms and Blanks

Customers may prefer to manufacture their own preforms/blanks for custom products and in many cases this can reduce cost and lead-times. The instructions below detail the necessary allowances for each grit size. Please refer to these whenever manufacturing blanks.



Area to be plated (female radius)

Female radius must be larger than the finished size required. Example – If a .500 female radius is required with 60/80 grit, then the blank should be manufactured .011 larger = .511



Area to be plated (male radius)

A male radius must be smaller than the finished size required.

Example - If a .500 male radius is required with 60/80 grit, then the blank should be manufactured .011 smaller = .489

Grit Size Allowance for Plated Products

| ALLOWANCE/GRIT SIZE | PARTICLE SIZE |
|-------------------------------------|---|
| 20/30 | .035 |
| 30/40 | .025 |
| 40/50 | .018 |
| 60/80 | .011 |
| 80/100 | .008 |
| 100/120 | .007 |
| 120/140 | .006 |
| 140/170 | .005 |
| 170/200 | .004 |
| 200/230 | .0035 |
| 270/325 | .003 |
| 4.5 Micron – 400 | .0025 |
| 30 Micron – 600 | .0016 |
| 15 Micron – 1200 | .001 |
| This should be used as a guide when | manufacturing blanks to be plated with diamond or cBN |

Surface Finish

Use this chart only as a guide. Surface finish is affected by a number of variables: machine type and condition, type of material, coolant, wheel speed, bond system, etc.

Expected RMS Finish

| GRIT SIZE | ELECTROPLATED |
|-----------|---------------|
| 80 | 90-125 |
| 100 | 64-90 |
| 120 | 48-64 |
| 150 | 32-48 |
| 180 | 24-32 |
| 220 | 20-24 |
| 240 | 16-20 |
| 320 | 16-20 |
| 400 | 14-20 |
| 500 | 12-13 |
| 600 | 12 |
| | |

Strip and Replate Services

Ask Customer Service for information and quotations on our complete strip and replate services on many electroplated products.

TECH TIP

Coolants

Although coolants may not be necessary, using a coolant produces superior surface finishes, a longer tool life, higher performance, and reduces tool loading.

Feeds

Suggested feeds for jig or internal grinding are from .0002" – .0004" per pass.

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Speeds

Maximum Operating Speeds (MOS)

Never exceed the maximum operating speed marked on the superabrasive product being used.

Electroplated Products: 25,000 SFPM0 SFPM

Maximum speeds of mounted points are a function of the length of overhang and size of the product. Refer to "Safe Operating Speeds" in form #2872, provided with your product.

Recommended Operating Speeds

The preceding speed is the maximum safe speed and not necessarily the most efficient. Superabrasive products operate most effectively at speeds lower than the maximum. The following are general recommendations. cBN products, in many cases, are used effectively at higher speeds.

- Electroplated Diamond Products: 5,000 to 10,000 SFPM
- Electroplated cBN Products: 8,000 to 10,000 SFPM

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Calculating Operating Speed

The following formula may be used to quickly calculate wheel speed:

- RPM = Revolutions Per Minute
- SFPM = Surface Feet Per Minute

To convert SFPM to RPM: (Multiply SFPM x 3.82) divided by wheel diameter in inches

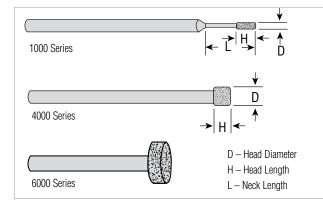


DIAMOND & CBN ABRASIVES Electroplated Products

Electroplated Mounted Points

Diamond and cBN Mounted Points • A

- · Use diamond mounted points for precise, small hole, jig and internal grinding of carbide, ceramics, sapphire, glass, and a variety of tough, super alloys
- · For grinding tough, high carbon, high chrome steel, use cBN mounted points
- Mandrels are made of high-speed tool steel to withstand operating pressure



| | | HEAD DIAMETER | HEAD | NECK | GRIT |
|---------------------|------------------|---------------|--------|--------|------|
| PART # | PRODUCT # | INCHES | LENGTH | LENGTH | SIZE |
| 1000 Series – E | | | | | |
| | 1/4" Overall Len | | | | |
| 662603 92429 | 1016FD | .016 | .079 | 1/8 | 200 |
| 662603 92432 | 1020MD | .020 | .079 | 1/8 | 150 |
| 662603 92431 | 1020FD | .020 | .079 | 1/8 | 200 |
| 662603 92436 | 1025MD | .025 | .079 | 1/8 | 150 |
| 662603 92435 | 1025FD | .025 | .079 | 1/8 | 200 |
| 662603 92440 | 1030MD | .030 | .079 | 1/4 | 150 |
| 662603 92439 | 1030FD | .030 | .079 | 1/4 | 200 |
| 662603 92445 | 1035CD | .035 | .118 | 1/4 | 100 |
| 662603 92444 | 1035MD | .035 | .118 | 1/4 | 150 |
| 662603 92443 | 1035FD | .035 | .118 | 1/4 | 200 |
| 662603 92451 | 1040CD | .040 | .118 | 1/4 | 100 |
| 662603 92450 | 1040MD | .040 | .118 | 1/4 | 150 |
| 662603 92449 | 1040FD | .040 | .118 | 1/4 | 200 |
| 662603 92457 | 1045CD | .045 | .118 | 1/4 | 100 |
| 662603 92456 | 1045MD | .045 | .118 | 1/4 | 150 |
| 662603 92455 | 1045FD | .045 | .118 | 1/4 | 200 |
| 662603 92463 | 1050CD | .050 | .118 | 1/2 | 100 |
| 662603 92462 | 1050MD | .050 | .118 | 1/2 | 150 |
| 662603 92461 | 1050FD | .050 | .118 | 1/2 | 200 |
| 662603 92469 | 1050LCD | .050 | .118 | 1 | 100 |
| 662603 92468 | 1050LMD | .050 | .118 | 1 | 150 |
| 662603 92467 | 1050LFD | .050 | .118 | 1 | 200 |
| 662603 92475 | 1055CD | .055 | .118 | 1/2 | 100 |
| 662603 92474 | 1055MD | .055 | .118 | 1/2 | 150 |
| 662603 92473 | 1055FD | .055 | .118 | 1/2 | 200 |
| 662603 92481 | 1060CD | .060 | .157 | 1/2 | 100 |
| 662603 92480 | 1060MD | .060 | .157 | 1/2 | 150 |
| 662603 92479 | 1060FD | .060 | .157 | 1/2 | 200 |
| 662603 92487 | 1060LCD | .060 | .157 | 1 | 100 |
| 662603 92492 | 1065MD | .065 | .157 | 1/2 | 150 |
| 662603 92491 | 1065FD | .065 | .157 | 1/2 | 200 |
| 662603 92499 | 1070CD | .070 | .157 | 1/2 | 100 |
| 662603 92498 | 1070MD | .070 | .157 | 1/2 | 150 |
| 662603 92497 | 1070FD | .070 | .157 | 1/2 | 200 |
| 662603 92505 | 1070LCD | .070 | .157 | 1 | 100 |
| 662603 92511 | 1075CD | .075 | .157 | 1/2 | 100 |
| 662603 92510 | 1075MD | .075 | .157 | 1/2 | 150 |
| 662603 92509 | 1075FD | .075 | .157 | 1/2 | 200 |
| Continued | | | | | |

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| PART # | PRODUCT # | HEAD DIAMETER Inches | HEAD Length | NECK Length | GRIT Size |
|--|-------------------|-------------------------|----------------|----------------|--------------|
| 1000 Series – D | iamond (continu | | | | |
| | 1/4" Overall Leng | | | | |
| 662603 92517 | 1080CD | .080 | .157 | 1/2 | 100 |
| 662603 92516 | 1080MD | .080 | .157 | 1/2 | 150 |
| 662603 92515 | 1080FD | .080 | .157 | 1/2 | 200 |
| 662603 92523 | 1080LCD | .080 | .157 | 1 | 100 |
| 662603 92521 | 1080LFD | .080 | .157 | 1 | 200 |
| 662603 92529 | 1085CD | .085 | .157 | 1/2 | 100 |
| 662603 92528 | 1085MD | .085 | .157 | 1/2 | 150 |
| 662603 92535 | 1090CD | .090 | .157 | 1/2 | 100 |
| 662603 92534 | 1090MD | .090 | .157 | 1/2 | 150 |
| 662603 92533 | 1090FD | .090 | .157 | 1/2 | 200 |
| 662603 92541 | 1090LCD | .090 | .157 | 1 | 100 |
| 662603 92540 | 1090LMD | .090 | .157 | 1 | 150 |
| 662603 92547 | 1095CD | .095 | .157 | 1/2 | 100 |
| 662603 92546 | 1095MD | .095 | .157 | 1/2 | 150 |
| 662603 92553 | 1100CD | .100 | .157 | 1/2 | 100 |
| 662603 92552 | 1100MD | .100 | .157 | 1/2 | 150 |
| 662603 92551 | 1100FD | .100 | .157 | 1/2 | 200 |
| 662603 92565 | 1105CD | .105 | .157 | 1/2 | 100 |
| 662603 92563 | 1105FD | .105 | .157 | 1/2 | 200 |
| 662603 92577 | 1110CD | .110 | .157 | 1/2 | 100 |
| 662603 92576 662603 92583 | 1110MD 1110LCD | .110 .110 | .157 .157 | 1/2 | 150 100 |
| 662603 92589 | 1115CD | .115 | .157 | 1/2 | 100 |
| 662603 92588 | 1115MD | .115 | .157 | 1/2 | 150 |
| 662603 92595 | 1120CD | .120 | .157 | 1/2 | 100 |
| 662603 92594 | 11200D | .120 | .157 | 1/2 | 150 |
| 662603 92593 | 1120FD | .120 | .157 | 1/2 | 200 |
| 662603 92601 | 1125CD | .125 | .157 | 1/2 | 100 |
| 662603 92600 | 1125MD | .125 | .157 | 1/2 | 150 |
| 662603 92599 | 1125FD | .125 | .157 | 1/2 | 200 |
| 662603 92607 | 1130CD | .130 | .197 | 1 | 100 |
| 662603 92606 | 1130MD | .130 | .197 | 1 | 150 |
| 662603 92613 | 1135CD | .135 | .236 | N/A | 100 |
| 662603 92612 | 1135MD | .135 | .236 | N/A | 150 |
| 662603 92611 | 1135FD | .135 | .236 | N/A | 200 |
| 662603 92619 | 1140CD | .140 | .236 | N/A | 100 |
| 662603 92625 | 1156CD | .156 | .236 | N/A | 100 |
| 662603 92624 | 1156MD | .156 | .236 | N/A | 150 |
| 662603 92623 | 1156FD | .156 | .236 | N/A | 200 |
| 662603 92730 | 1171MD | .171 | .236 | N/A | 150 |
| 662603 92730 | 1171MD | .171 | .236 | N/A | 150 |
| 662603 92737 | 1187CD | .187 | .312 | N/A | 100 |
| 662603 92735 | 1187FD | .187 | .312 | N/A | 200 |
| 662603 92742 | 1203MD | .203 | .312 | N/A | 150 |
| 662603 92741 | 1203FD | .203 | .312 | N/A | 200 |
| 66260392748 | 1218MD | .218 | .312 | N/A | 150 |
| 662603 92747 | 1218FD | .218 | .312 | N/A | 200 |
| 662603 92755 | 1250CD | .250 | .312 .312 | N/A | 100 |
| 662603 92754 662603 92753 | 1250MD 1250FD | .250 .250 | .312 | N/A | 150 200 |
| 662603 92753 | 1250FD 1750MD | | | N/A | 150 |
| 00200303430 | UNID | .750 | .035 | N/A | 100 |

Continued

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= Composites

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DIAMOND & CBN ABRASIVES Electroplated Products

Electroplated Mounted Points

Diamond and cBN Mounted Points • A

| PART # | PRODUCT # | HEAD DIAMETER | HEAD Length | NECK Length | GRIT Size | PART |
|---------------------|-------------------|---------------|----------------|----------------|--------------|------|
| 1000 Series – | cBN | | | | | 4000 |
| | -1/4" Overall Ler | gth | | | | 1/4" |
| 66260392434 | 1020MC | .020 | .079 | 1/8 | 150 | 6626 |
| 662603 92442 | 1030MC | .030 | .079 | 1/4 | 150 | 6626 |
| 662603 92453 | 1040MC | .040 | .118 | 1/4 | 150 | 6626 |
| 662603 92460 | 1045CC | .045 | .118 | 1/4 | 100 | 6626 |
| 662603 92466 | 1050CC | .050 | .118 | 1/2 | 100 | 6626 |
| 662603 92465 | 1050MC | .050 | .118 | 1/2 | 150 | 6626 |
| 662603 92464 | 1050FC | .050 | .118 | 1/2 | 200 | 6626 |
| 662603 92484 | 1060CC | .060 | .157 | 1/2 | 100 | 6626 |
| 662603 92483 | 1060MC | .060 | .157 | 1/2 | 150 | 6626 |
| 662603 92482 | 1060FC | .060 | .157 | 1/2 | 200 | 6626 |
| 662603 92496 | 1065CC | .065 | .157 | 1/2 | 100 | 6626 |
| 662603 92502 | 1070CC | .070 | .157 | 1/2 | 100 | 6626 |
| 662603 92501 | 1070MC | .070 | .157 | 1/2 | 150 | 6626 |
| 662603 92500 | 1070FC | .070 | .157 | 1/2 | 200 | 6626 |
| 662603 92514 | 1075CC | .075 | .157 | 1/2 | 100 | 6626 |
| 662603 92520 | 1080CC | .080 | .157 | 1/2 | 100 | 6626 |
| 662603 92532 | 1085CC | .085 | .157 | 1/2 | 100 | 6626 |
| 662603 92538 | 1090CC | .090 | .157 | 1/2 | 100 | 6626 |
| 662603 92537 | 1090MC | .090 | .157 | 1/2 | 150 | 6626 |
| 662603 92536 | 1090FC | .090 | .157 | 1/2 | 200 | 6626 |
| 662603 92543 | 1090LMC | .090 | .157 | 1 | 150 | 6626 |
| 662603 92556 | 1100CC | .100 | .157 | 1/2 | 100 | 6626 |
| 662603 92554 | 1100FC | .100 | .157 | 1/2 | 200 | 6626 |
| 662603 92561 | 1100LMC | .100 | .157 | 1 | 150 | 6626 |
| 662603 92568 | 1105CC | .105 | .157 | 1/2 | 100 | 6626 |
| 662603 92567 | 1105MC | .105 | .157 | 1/2 | 150 | 4000 |
| 662603 92580 | 1110CC | .110 | .157 | 1/2 | 100 | 1/4" |
| 662603 92578 | 1110FC | .110 | .157 | 1/2 | 200 | 6626 |
| 662603 92598 | 1120CC | .120 | .157 | 1/2 | 100 | 6626 |
| 662603 92604 | 112500 | .125 | .157 | 1/2 | 100 | 6626 |
| 662603 92603 | 1125MC | .125 | .157 | 1/2 | 150 | 6626 |
| 662603 92602 | 1125FC | .125 | .157 | 1/2 | 200 | 6626 |
| 662603 92610 | 1130CC | .130 | .197 | 1 | 100 | 6626 |
| 662603 92608 | 1130FC | .130 | .197 | 1 | 200 | 6626 |
| 662603 92616 | 1135CC | .135 | .236 | N/A | 100 | 6626 |
| 662603 92615 | 1135MC | .135 | .236 | N/A | 150 | 6626 |
| 662603 92622 | 1140CC | .140 | .236 | N/A | 100 | 6626 |
| 662603 92628 | 1156CC | .156 | .236 | N/A | 100 | 6626 |
| 662603 92627 | 1156MC | .156 | .236 | N/A | 150 | 6626 |
| 662603 92626 | 1156FC | .156 | .236 | N/A | 200 | 6626 |
| 662603 92734 | 1171CC | .171 | .236 | N/A | 100 | 6626 |
| 662603 92733 | 1171MC | .171 | .236 | N/A | 150 | 6626 |
| 662603 92740 | 1187CC | .187 | .312 | N/A | 100 | 6626 |
| 662603 92739 | 1187MC | .187 | .312 | N/A | 150 | 6626 |
| 662603 92738 | 1187FC | .187 | .312 | N/A | 200 | 6626 |
| 662603 92745 | 1203MC | .203 | .312 | N/A | 150 | 6626 |
| 662603 92751 | 1218MC | .218 | .312 | N/A | 150 | 6626 |
| 662603 92758 | 1250CC | .250 | .312 | N/A | 100 | 6626 |
| 662603 92757 | 1250MC | .250 | .312 | N/A | 150 | 6626 |
| | LOONIO | .200 | .012 | | 100 | 0020 |

| PART # | PRODUCT # | HEAD DIAMETER Inches | HEAD Length | NECK Length | GRIT Size |
|--------------------------------|------------------|-------------------------|----------------|----------------|--------------|
| 4000 Series – D | | monito | | | 0.22 |
| 1/4" Shank x 3" | | | | | |
| 662603 92630 | 4156CD | .156 | .250 | 1 | 100 |
| 662603 92629 | 4156FD | .156 | .250 | 1 | 200 |
| 662603 92634 | 4187CD | .187 | .250 | 1 | 100 |
| 662603 92633 | 4187FD | .187 | .250 | 1 | 200 |
| 662603 92638 | 4203CD | .203 | .250 | 1 | 100 |
| 662603 92642 | 4218CD | .218 | .250 | 1 | 100 |
| 662603 92641 | 4218FD | .218 | .250 | 1 | 200 |
| 662603 92646 | 4236CD | .236 | .250 | 1 | 100 |
| 662603 92645 | 4236FD | .236 | .250 | 1 | 200 |
| 662603 92650 | 4250CD | .250 | .250 | 1 | 100 |
| 662603 92649 | 4250FD | .250 | .250 | 1 | 200 |
| 662603 92654 | 4282CD | .282 | .250 | N/A | 100 |
| 662603 92653 | 4282FD | .282 | .250 | N/A | 200 |
| 662603 92658 | 4312CD | .312 | .375 | N/A | 100 |
| 662603 92657 | 4312FD | .312 | .375 | N/A | 200 |
| 662603 92662 | 4375CD | .375 | .375 | N/A | 100 |
| 662603 92661 | 4375FD | .375 | .375 | N/A | 200 |
| 662603 92666 | 4390CD | .390 | .375 | N/A | 100 |
| 662603 92670 | 4406CD | .406 | .375 | N/A | 100 |
| 662603 92674 | 4437CD | .437 | .375 | N/A | 100 |
| 662603 92678 | 4500CD | .500 | .375 | N/A | 100 |
| 662603 92677 | 4500FD | .500 | .375 | N/A | 200 |
| 662603 92682 | 4730CD | .730 | .375 | N/A | 100 |
| 662603 92690 | 41000CD | 1.000 | .375 | N/A | 100 |
| 662603 92689 | 41000FD | 1.000 | .375 | N/A | 200 |
| 4000 Series – c | | | | | |
| 1/4" Shank x 3" 66260392632 | | .156 | 050 | 1 | 100 |
| 662603 92631 | 4156CC 4156FC | .156 | .250 .250 | 1 | 100 200 |
| 662603 92636 | 4187CC | .187 | .250 | 1 | 100 |
| 662603 92635 | 4187FC | .187 | .250 | 1 | 200 |
| 662603 92640 | 4203CC | .203 | .250 | 1 | 100 |
| 662603 92639 | 4203FC | .203 | .250 | 1 | 200 |
| 662603 92644 | 4218CC | .218 | .250 | 1 | 100 |
| 662603 92643 | 4218FC | .218 | .250 | 1 | 200 |
| 662603 92648 | 4236CC | .236 | .250 | 1 | 100 |
| 662603 92647 | 4236FC | .236 | .250 | 1 | 200 |
| 662603 92652 | 4250CC | .250 | .250 | 1 | 100 |
| 662603 92651 | 4250FC | .250 | .250 | 1 | 200 |
| 662603 92656 | 4282CC | .282 | .250 | N/A | 100 |
| 662603 92655 | 4282FC | .282 | .250 | N/A | 200 |
| 662603 92660 | 4312CC | .312 | .375 | N/A | 100 |
| 662603 92659 | 4312FC | .312 | .375 | N/A | 200 |
| 662603 92664 | 4375CC | .375 | .375 | N/A | 100 |
| 662603 92663 | 4375FC | .375 | .375 | N/A | 200 |
| 662603 92668 | 4390CC | .390 | .375 | N/A | 100 |
| 662603 92672 | 4406CC | .406 | .375 | N/A | 100 |
| 662603 92676 | 4437CC | .437 | .375 | N/A | 100 |
| 662603 92675 | 4437FC | .437 | .375 | N/A | 200 |
| 662603 92680 | 4500CC | .500 | .375 | N/A | 100 |
| 662603 92679 | 4500FC | .500 | .375 | N/A | 200 |
| 662603 92684 | 4730CC | .730 | .375 | N/A | 100 |
| 662603 92692 | 41000CC | 1.000 | .375 | N/A | 100 |

= Ceramics

Distributed by Applifast

🔺 = Tool & Die

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OVERAL Length

60

60

60

60

60

150

150

150

431

OVERA Lengti

3

3

3-1/2

3-1/2

3-1/2

Electroplated Mounted Points, Mandrels, Tapered Hones and Micro Drills

Diamond and cBN Mounted Points • A

| PART # | PRODUCT # | HEAD DIAMETER | HEAD Length | GRIT SIZE |
|---------------------|-----------|---------------|----------------|-----------|
| 6000 Series – D | | INGILS | LENGTH | unit Size |
| 3/8" Shank x 3- | | nath | | |
| 662603 92694 | 6406CD | .406 | .375 | 80 |
| 662603 92693 | 6406MD | .406 | .375 | 150 |
| 662603 92698 | 6437CD | .437 | .375 | 80 |
| 662603 92697 | 6437MD | .437 | .375 | 150 |
| 662603 92702 | 6500CD | .500 | .375 | 80 |
| 662603 92701 | 6500MD | .500 | .375 | 150 |
| 662603 92706 | 6562CD | .562 | .375 | 80 |
| 662603 92710 | 6625CD | .625 | .375 | 80 |
| 662603 92709 | 6625MD | .625 | .375 | 150 |
| 662603 92718 | 6750CD | .750 | .375 | 80 |
| 662603 92717 | 6750MD | .750 | .375 | 150 |
| 662603 92721 | 6875MD | .875 | .400 | 150 |
| 662603 92726 | 61000CD | 1.000 | .500 | 80 |

| DADT # | | HEAD DIAMETER | HEAD | |
|---------------------|-------------------|---------------|--------|-----------|
| PART # | PRODUCT # | INCHES | LENGTH | GRIT SIZE |
| 6000 Series – 0 | | | | |
| 3/8" Shank x 3- | ·3/4" Overall Len | gth | | |
| 662603 92696 | 6406CC | .406 | .375 | 80 |
| 662603 92695 | 6406MC | .406 | .375 | 150 |
| 662603 92700 | 6437CC | .437 | .375 | 80 |
| 662603 92699 | 6437MC | .437 | .375 | 150 |
| 662603 92704 | 6500CC | .500 | .375 | 80 |
| 662603 92703 | 6500MC | .500 | .375 | 150 |
| 662603 92708 | 6562CC | .562 | .375 | 80 |
| 662603 92712 | 6625CC | .625 | .375 | 80 |
| 662603 92716 | 6687CC | .687 | .375 | 80 |
| 662603 92715 | 6687MC | .687 | .375 | 150 |
| 662603 92720 | 6750CC | .750 | .375 | 80 |
| 662603 92719 | 6750MC | .750 | .375 | 150 |
| 662603 92724 | 6875CC | .875 | .400 | 80 |
| 662603 92728 | 61000CC | 1.000 | .500 | 80 |
| 662603 92727 | 61000MC | 1.000 | .500 | 150 |
| | | | | |

PRODUCT

HSR-1/4

HSR-3/8

HSR-1/2

HSR-3/4

TH25-12MD

TH25-14MD

TH25-16MD

230010

HSR-1

PART #

HSR Series - cBN

662603**95426**

662603**95428**

66260395429

66260395431

662603**95432**

662603**95543**

66260395544

662603**95545**

DIAMETER

1/4

3/8

1/2

3/4

1

LENGTH

1/4

3/8

3/8

3/8

3/8

3/8

3/8

3/8

3/8

3/8

1/4

1/4

1/4

HEAD Lengti

cBN Heavy Stock Removal Mandrels 🔺

 For heavy stock removal on jig, internal, and offhand operations on tool steels and hardened aerospace alloys. Made with super coarse abrasive grit for long tool life



Diamond Tapered Hones for Drawing Dies • A

 Used primarily for forming carbide drawing dies, but also can be used for small hole honing in ceramics, fiberglass, plastics, and composite materials

| 1/47 | |
|------|--|

| PART # | PRODUCT # | INCLUDED Angle | SHANK Diameter | GRIT SIZE |
|---------------------|--------------------|-------------------|-------------------|-----------|
| Tapered Hone | es for Drawing Die | es – Diamond | | |
| 3" Overall Le | ngth | | | |
| 662603 95540 | TH12-6MD | 6° | 1/8 | 150 |
| 662603 95541 | TH12-8MD | 8° | 1/8 | 150 |
| 662603 63371 | TH25-12CD | 12° | 1/4 | 100 |
| 66260395542 | TH12-12MD | 12° | 1/8 | 150 |

12°

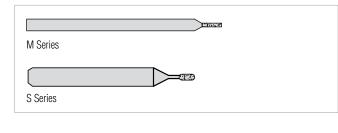
14°

16°

DIAMETER

| Diamond Mic | croDrills 🔵 🔺 🗖 |
|-------------|-----------------|
|-------------|-----------------|

- A modification of mounted points, these tools are specifically designed for drilling holes in the .007" to .065" diameter range
- Perfect for drilling sapphire and high density alumina ceramics for hybrid micro-circuit substrates
- M-Series Carefully-sized, uniformly-shaped diamond particles are used on all M-Series drills
- · S-Series Recommended for adapting to ultrasonic drill heads



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| TANUET MANKET STMDULS | |
|-----------------------|----------------|
| = Ceramics | ▲ = Tool & Die |

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M-Series Micro Drills – Diamond Shank Diameter .040" (1mm) 662603**95516** M7 .007 .028 11/16 600 662603**95517** M10 010 049 11/16400 66260395518 325 M12 .012 .056 13/16 662603**95519** M15 .015 .077 13/16 325 HEAD Length DVERALL S-Series Micro Drills – Diamond 1/8" Shank x 1" Overall Length 662603**95520** .016 .062 .093 200 S16FD 662603**92841** S18FD .018 .062 .125 200 66260395521 S20FD .020 .062 .125 200 66260395522 S25FD .025 .093 .156 200 66260395523 S30MD .030 .093 .156 150 662603**95524** .035 .093 .187 150 S35MD S40MD 040 66260395525 .125 .218 150 662603**95526** S45CD .045 .125 .218 100 662603**95527** 050 125 250 100 S50CD 66260395528 S60CD .060 .125 .312 100 662603**95529** S65CD .065 .125 .312 100

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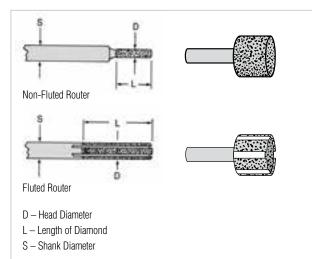


DIAMOND & CBN ABRASIVES Electroplated Products

Electroplated Routers and Mounted Contour Tools

Diamond Routers

- · Used with hand operated tools, drill presses, and milling machines
- Ideal for routing and reaming the highly-abrasive materials of alumina, fiberglass, plastics, and other nonmetallic composite materials.



| PART # | PRODUCT # | HEAD DIAMETER | LENGTH OF DIAMOND | SHANK | OVERALL LENGTH | GRIT |
|----------------------|-------------|------------------|----------------------|-------|-------------------|------|
| Non-Fluted Ro | | | DIAMOND | | LENGTH | UILL |
| 662603 64302 | RNF1410CD | 1/4 | 1 | 1/4 | 2-1/2 | 40 |
| Fluted Router | s – Diamond | | | | | |
| 662603 64310 | RSF1812CD | 1/8 | 1/2 | 1/4 | 2-1/2 | 60 |
| 662603 64309 | RSF1810CD | 1/8 | 1 | 1/4 | 2-1/2 | 60 |
| 662603 64308 | RSF1412CD | 1/4 | 1/2 | 1/4 | 2-1/2 | 40 |
| 662603 64307 | RSF1410CD | 1/4 | 1 | 1/4 | 2-1/2 | 40 |
| 662603 02715 | RSF3412CD | 3/4 | 1/2 | 1/2 | 2-1/2 | 40 |
| 662603 02715 | RSF3412CD | 3/4 | 1/2 | 1/2 | 2-1/2 | 40 |

Type 6A2C cup and Type 01 straight bench and pedestal electroplated wheels are available as madeto order products. Contact your Norton representative for availability and quotation.

Diamond and cBN Mounted Contour Tools • 🔺

- For contour grinding applications on carbide, ceramics, glass, ferrites, and many tough alloys and cements. Best suited for blending radii and deburring operations
- Operating speeds: 15,000-20,000 RPM range
- Variety of tool shapes available as stock to satisfy most tool and die and deburring requirements

| Cones | |
|-----------------------|--|
| Ball Ends (Spherical) | |
| C Round End Tapers | |
| Round End Cylinders | |
| | |

| PART # | PRODUCT # | CONE BASE Diameter | INCLUDED Angle | CONE Length | GRIT SIZE |
|---------------------|---------------|-----------------------|-------------------|----------------|-----------|
| Cones – Diamond | l | | | | |
| 1/8" Shank x 2" 0 | verall Length | | | | |
| 662603 95484 | C14CD | 1/8 | 14° | 1/2 | 100 |
| 662603 95488 | C35CD | 5/32 | 35° | 1/4 | 100 |
| 662603 95490 | C60CD | 11/64 | 60° | 5/32 | 100 |
| 662603 95492 | C90CD | 3/16 | 90° | 3/32 | 100 |
| Cones – cBN | | | | | |
| 1/8" Shank x 2" 0 | verall Length | | | | |
| 662603 95483 | C14CC | 1/8 | 14° | 1/2 | 100 |
| 662603 95485 | C26CC | 3/16 | 26° | 13/32 | 100 |
| 662603 95487 | C35CC | 5/32 | 35° | 1/4 | 100 |
| 662603 95489 | C60CC | 11/64 | 60° | 5/32 | 100 |
| 662603 95491 | C90CC | 3/16 | 90° | 3/32 | 100 |

| PART # | PRODU | о т 4 | BALL DIAMETER | 0 | RIT SIZE | |
|---------------------|----------------|------------------------|------------------------|----------------|---------------|--------------|
| Ball Ends (Sph | | | DIAWETEN | U. | NIT 312E | - |
| 1/8" Shank x 2 | | | | | | |
| 662603 95434 | BE1CD | yui | 3/64 | 1(| 10 | |
| 662603 95436 | BEICD | | 1/16 | 10 | | |
| 662603 95438 | BE3CD | | 5/64 | 10 | | |
| 662603 95440 | BE30D BE4CD | | 3/32 | 10 | | |
| 662603 95442 | BESCD | | 1/8 | 10 | | |
| 662603 95444 | BE6CD | | 3/16 | 10 | | |
| 662603 95448 | BE8CD | | 3/8 | 10 | | |
| 662603 95450 | BE9CD | | 1/2 | 10 | | |
| Ball Ends (Sph | | 1 | .,_ | | | |
| 1/8" Shank x 2 | | | | | | |
| 662603 95437 | BE3CC | J | 5/64 | 10 | 00 | |
| 662603 95439 | BE4CC | | 3/32 | 10 | 00 | |
| 662603 95441 | BE5CC | | 1/8 | 10 | 00 | |
| 662603 95443 | BE6CC | | 3/16 | 1(| 00 | |
| 662603 95445 | BE7CC | | 1/4 | 10 | 00 | |
| | | | | | | |
| PART # | PRODUCT # | SMALL HEAD DIAMETER | LARGE HEAD DIAMETER | HEAD Length | INC. Angle | GRIT SIZE |
| Round End Tap | nere – Diamo | | DIAMETEN | LENGTH | ANGLL | 3121 |
| 1/8" Shank x 2 | | | | | | |
| 662603 95506 | RT44CD | .044 | .066 | 5/16 | 4° | 100 |
| 662603 95510 | RT78CD | .078 | .110 | 5/16 | | 100 |
| Round End Tap | | .070 | .110 | 0/10 | 0 | 100 |
| 1/8" Shank x 2 | | ath | | | | |
| 662603 95509 | RT78CC | .078 | .110 | 5/16 | 6° | 100 |
| 002000000000 | | | | 6,10 | • | |
| | | HEA | | HEAD | | GRIT |
| PART # | PRODU | | /IETER | LENGT | H | SIZE |
| Round End Cy | | | | | | |
| 1/8" Shank x 2 | | | | | | 100 |
| 662603 95494 | RE1CD | 1/16 | | 1/4 | | 100 |
| 662603 95496 | RE2CD | 5/64 | | 1/4 | | 100 |
| 662603 95498 | RE3CD | 3/32 | - | 1/4 | | 100 |
| 662603 95500 | RE4CD | 1/8 | | 1/4 | | 100 |
| 662603 95502 | RE5CD | 3/16 | 3 | 5/16 | | 100 |

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RE6CD

662603**95504**

5/16

100



DIAMOND & CBN ABRASIVES Electroplated Products

Electroplated Files

Diamond Machine Files • A

- For use in reciprocating hand profiling machines
- Ideal for reworking and finishing carbide dies and molds, blending radii, and deburring and cleaning slots and grooves

| PART # | PRODUCT # | DIMENSIONS | ABRASIVE Location | GRIT SIZE |
|----------------------|-------------------|---------------------|----------------------|-----------|
| Machine Files | - Diamond | | | |
| 5/8" Diamond | Length, 1/8" Shan | k, 2" Overall Lengt | th | |
| 662603 95585 | 1ECD | .020 x .125 | : : | 100 |
| 662603 95586 | 2ECD | .030 x .125 | : : | 100 |
| 662603 95587 | 3ECD | .040 x .125 | : : | 100 |
| 662603 95589 | 3FCD | .120 x .040 | ····· | 100 |
| 662603 95590 | 4FCD | .157 x .040 | ····· | 100 |
| 662603 95591 | 5FCD | .203 x .078 | ••••• | 100 |
| 662603 95592 | 6FCD | .120 x .040 | | 100 |
| 662603 95593 | 1CCD | .098 x .196 | Ö | 100 |
| 662603 95594 | 2CCD | .120 x .250 | Ö | 100 |
| 662603 95596 | 3TCD | .127 side | | 100 |
| 662603 95598 | 1RCD | .042 diam. | :Ö: | 100 |
| 662603 95599 | 2RCD | .080 diam. | ÿ | 100 |
| 662603 95600 | 3RCD | .127 diam. | Ö | 100 |
| | | | | |

Diamond Hand Files • A

- Indispensable aid for the toolroom
- All purpose hand-held tool useful for deburring, notching, dressing, and honing hard, brittle materials

| PART # | PRODUCT # | DIMENSIONS | LOCATION | GRIT SIZE |
|---------------------|-------------------|------------|------------|-----------|
| Hand Files - Dia | mond | | | |
| 6" Overall Lengt | h, 1-1/2" Diamono | d Length | | |
| 662603 95605 | DF1CD | 1/8 x 1/8 | | 100 |
| 662603 95606 | DF2CD | 1/8 x 1/4 | ····· | 100 |
| 662603 95607 | DF2WCD | 1/8 x 1/4 | | 100 |
| 662603 95608 | DF3CD | 1/8 x 3/8 | ····· | 100 |
| 662603 92844 | DF3FD | 1/8 x 3/8 | ····· | 200 |
| 662603 95609 | DF3WCD | 1/8 x 3/8 | | 100 |
| 662603 64241 | DF3SCD | 1/8 x 1/2 | | 100 |
| 662603 95611 | DF4CD | 1/8 | Ö | 100 |
| 662603 00134 | DF4WCD | 1/4 | ö | 100 |
| 662603 95613 | DF5CD | 1/8 | . <u>.</u> | 100 |
| 662603 92846 | DF5FD | 1/8 | | 200 |
| 662603 95614 | DF5WCD | 1/4 | | 100 |
| 662603 95615 | DF6CD | 1/8 | Ö | 100 |
| | | | | |

E = Ceramics
= Tool & Die

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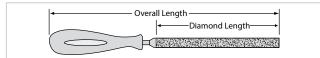
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Electroplated Files and Drills

Diamond Needle Files

- · Indispensable aid for the toolroom
- · An all-purpose hand-held tool, useful for deburring, notching, dressing, and honing hard, brittle materials



| PART # | PRODUCT # | GRIT SIZE |
|----------------------|-------------------|-----------|
| NFK-6 Needle File K | it – Diamond | |
| 662603 64008 | NFK-6 | |
| Contains one each o | of the following: | |
| | NF1FD | 200 |
| | NF2FD | 200 |
| | NF3FD | 200 |
| | NF4FD | 200 |
| | NF5FD | 200 |
| | NF6FD | 200 |
| DFS-6 Die File Kit - | Diamond | |
| 662603 91830 | DFS-6 | |
| Contains one each o | of the following: | |
| | 1571 | 100 |
| | 1572 | 100 |
| | 1573 | 100 |
| | 1574 | 100 |
| | 1575 | 100 |
| | 1576 | 100 |

| Eleo | ctropla | ated | Proc | lucts | |
|-----------|------------|----------------------|-------|--------------|--|
| PRODUCT # | DIMENSIONS | ABRASIVE Location | SHAPE | GRIT Size | |

DIAMOND & cBN ABRASIVES

| PART # | PRODUCT # | DIMENSIONS | LOCATION | SHAPE | SIZE |
|---------------------|----------------|-----------------|---------------|--------------|------|
| Needle Files - | Diamond | | | | |
| 4-1/4" Diamon | d Length, 8-1/ | 2" Overall Len | gth | | |
| 662603 02432 | LNF2CD | .400 x .100 | | Equaling | 100 |
| 662603 05611 | LNF2FD | .400 x .100 | | Equaling | 200 |
| 662603 02898 | LNF3CD | .450 x .150 | Ä | Half Round | 100 |
| 662603 05612 | LNF3FD | .485 x .150 | ä | Half Round | 200 |
| 2-3/4" Diamon | d Length, 5-3/ | 4" Overall Leng | gth, With Har | dle | |
| 662603 91729 | 1571 | .055 x .190 | | Flat | 100 |
| 662603 91730 | 1572 | .075 x .210 | Ä | Half Round | 100 |
| 662603 91731 | 1573 | .145 x .145 | .⇔. | Triangle | 100 |
| 662603 91732 | 1574 | .100 x .100 | | Square | 100 |
| 662603 91733 | 1575 | .120 | Ö | Round | 100 |
| 662603 91734 | 1576 | .055 x .190 | | Pointed Flat | 100 |
| 3" Diamond Le | ngth, 5-1/2" 0 | verall Length, | With Handle | | |
| 662603 95575 | NF1FD | .150 x .105 | Ö | Oval | 200 |
| 662603 95576 | NF2FD | .218 x .072 | ä | Half Round | 200 |
| 662603 95577 | NF3FD | .205 x .058 | | Equaling | 200 |
| 662603 95578 | NF4FD | .096 x .096 | | Square | 200 |
| 662603 95579 | NF5FD | .138 x .138 | . <u></u> | Triangle | 200 |
| 662603 95580 | NF6FD | .118 | :Ö: | Round | 200 |
| | | | | | |

| Needle Fil | e Shape and Application Key: |
|---------------|--|
| Barrette: | A triangle with diamond on the bottom side only |
| Crossing: | Elongated oval, with more pointed ends than an oval file; has diamonds all around |
| Equaling: | A rectangle with diamond on all four sides; ideal for filing both sides of an ID simultaneously |
| Pointed Flat: | A cone with a flat top with diamond on the sides of the cone |

Diamond Core Drills

- · High performance on glass and ceramic applications while providing fast, reliable cutting
- · Submersed drilling is highly recommended for optimum operating performance



| PART # | PRODUCT # | OUTER DIAMETER | INNER DIAMETER | GRIT SIZE |
|---------------------|----------------------|-------------------|-------------------|------------------|
| Core Drills – | Diamond | | | |
| Straight Tube | e Type, 2" Overall L | ength | | |
| 662603 95530 | A1MD | 1/16 | .023 | 150 |
| 662603 95531 | A2MD | 3/32 | .048 | 150 |
| 662603 95532 | A3MD | 1/8 | .075 | 150 |
| 662603 95533 | A4MD | 5/32 | .110 | 150 |
| 662603 95534 | A5CD | 3/16 | .140 | 100 |
| 662603 95535 | A6CD | 1/4 | .195 | 100 |
| 662603 95536 | A7CD | 5/16 | .255 | 100 |

Diamond Twist Drills

- · Recommended for precision drilling on circuit boards containing fiberglass, nylon, and similar tough, abrasive materials
- · Diamond twist drills are also useful for drilling plastics and resin composites and have been successful in drilling soft ductile materials as well as "green" carbide
- Operating procedures are similar to those of standard twist drills •



▲ = Tool & Die

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| PART # | PRODUCT # | DRILL DIAMETER | DRILL LENGTH | GRIT SIZE |
|---------------------|------------------------|----------------|--------------|-----------|
| Twist Drills – | Diamond | | | |
| 662603 95549 | TW-1/16 | 1/16 | 1-3/4 | 100 |
| 662603 95550 | TW-1/8 | 1/8 | 2-3/4 | 100 |
| 662603 95551 | TW-1/4 | 1/4 | 4 | 100 |
| Diameter tolerar | nce equals + or – 1/64 | 1 | | |

neter tolerance equals + or

TARGET MARKET SYMBOLS = Ceramics

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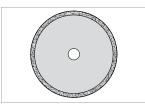


DIAMOND & CBN ABRASIVES Electroplated Products

Electroplated Saw Blades

Diamond Continuous Rim Cut-off Saw Blades

 Ideal for cutting-off highly-abrasive materials such as alumina, fiberglass, plastics, and other nonmetallic composite materials

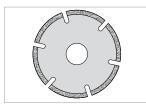


Additional diamond continuous rim and slotted cut-off saw blades, with extended wraps to avoid binding, are available as made-to-order products. Please contact your Norton representative.

| PART # | PRODUCT # | DIAM. | OVERALL Thickness | HOLE Size | GRIT Size |
|-----------------------|-------------------|-------------|----------------------|--------------|--------------|
| Continuous Rin | n Cut-off Saw Bla | des – Diamo | nd | | |
| 662603 01990 | DS2062-250 | 2 | 1/16 | 1/4 | 40 |
| 662603 91474 | DS2094-250 | 2 | 3/32 | 1/4 | 40 |
| 662603 91473 | DS3094-250 | 3 | 3/32 | 1/4 | 40 |
| 662603 63036 | DS3094-375 | 3 | 3/32 | 3/8 | 40 |
| 662603 95554 | DS4094-500 | 4 | 3/32 | 1/2 | 40 |
| 662603 00197 | DS4094-750 | 4 | 3/32 | 3/4 | 40 |
| 662603 95557 | DS8094-625 | 8 | 3/32 | 5/8 | 40 |

Diamond Slotted Cut-off Saw Blades

 3/4" wrap: additional 3/4" of electroplated diamond on the blade core increases life of blade on deep cuts, and reduces binding and grinding on the core

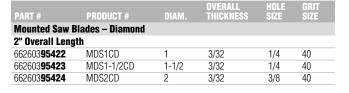


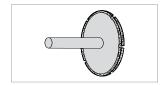
Additional diamond continuous rim and slotted cut-off saw blades, with extended wraps to avoid binding, are available as made-to-order products. Please contact your Norton representative.

| PART # | PRODUCT # | DIAM. | OVERALL Thickness | HOLE Size | GRIT SIZE | | | |
|------------------------|---|-------|----------------------|--------------|--------------|--|--|--|
| | Slotted Cut-off Saw Blades – Diamond | | | | | | | |
| 662603 01989 | DSS2062-250 | 2 | 1/16 | 1/4 | 40 | | | |
| 662603 64258 | DSS3094-250 | 3 | 3/32 | 1/4 | 40 | | | |
| 662603 95559 | DSS4094-500 | 4 | 3/32 | 1/2 | 40 | | | |
| 662603 95560 | DSS6094-500 | 6 | 3/32 | 1/2 | 40 | | | |
| 662603 62981 | DSS10125-625 | 10 | 1/8 | 5/8 | 40 | | | |
| 662603 64253 | DSS14156-500 | 14 | 5/32 | 1/2 | 40 | | | |
| 662603 62989 | DSS14156-1 | 14 | 5/32 | 1 | 40 | | | |
| 662603 95565 | DSS16156-1 | 16 | 5/32 | 1 | 40 | | | |
| 662603 95566 | DSS18156-1 | 18 | 5/32 | 1 | 40 | | | |
| Slotted Cut-off | Slotted Cut-off Saw Blades with 3/4" Wrap – Diamond | | | | | | | |
| 662603 13423 | DSSW4094-750 | 4 | 3/32 | 3/4 | 40 | | | |

Diamond Mounted Saw Blades

- Ideal for cutting-off highly-abrasive materials such as alumina, fiberglass, plastics, and other nonmetallic composite materials
- 3/4" wrap additional 3/4" of electroplated diamond on the blade core increases life of blade on deep cuts, andreduces binding and grinding on the core





= Ceramics
 = Tool & Die

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WINTER NDRTDN SAINT-GOBAIN

510



Norton Winter diamond lapping compound polishes all materials - hard and soft. Diamond powders are uniformly distributed in a liquid vehicle for aggressive polishing and consistent part quality. Easy-to-use plastic syringe for quick clean-up.

Applications:

Syringe Size: Type:

charging of lapping plates and discs, and other processes that require mirror finish and close tolerance performance. 5 and 18 gram syringes Water soluble - when soap/water is used for clean-up

For mold, die, and tool polishing, polishing to final tolerance of ceramic parts, initial

Oil soluble - when solvent is used for clean-up

| PRODUCT # | MICRO | N GRADE | COLOR | PART # |
|-----------------|----------|-------------|----------|---------------------|
| Diamond Compo | und – Wa | ter Soluble | | |
| 5 Gram Syringes | | | | |
| 5PS1/4WSSTD | 1/4 | Ultra Fine | Gray | 662603 00362 |
| 5PS1/2WSSTD | 1/2 | Ultra Fine | Lt. Gray | 662603 00417 |
| 5PS1WSSTD | 1 | Ultra Fine | lvory | 662603 00368 |
| 5PS3WSSTD | 3 | Super Fine | Yellow | 662603 00667 |
| 5PS6WSSTD | 6 | Super Fine | Orange | 662603 00372 |
| 5PS9WSSTD | 9 | Super Fine | Green | 662603 00375 |
| 5PS12WSSTD | 12 | Super Fine | Aqua | 662603 00376 |
| 5PS15WSSTD | 15 | Fine | Blue | 662603 00379 |
| 5PS30WSSTD | 30 | Fine | Red | 662603 00383 |
| 5PS45WSSTD | 45 | Fine | Brown | 662603 00384 |
| 5PS60WSSTD | 60 | Fine | Purple | 662603 00388 |
| 5PS90WSSTD | 90 | Fine | Black | 662603 00389 |
| 18 Gram Syringe | S | | | |
| 18PS1/4WSSTD | 1/4 | Ultra Fine | Gray | 662603 00392 |
| 18PS1/2WSSTD | 1/2 | Ultra Fine | Lt. Gray | 662603 00394 |
| 18PS1WSSTD | 1 | Ultra Fine | lvory | 662603 00396 |
| 18PS3WSSTD | 3 | Super Fine | Yellow | 662603 00398 |
| 18PS6WSSTD | 6 | Super Fine | Orange | 662603 00400 |
| 18PS9WSSTD | 9 | Super Fine | Green | 662603 00402 |
| 18PS15WSSTD | 15 | Fine | Blue | 662603 00406 |
| 18PS20WSSTD | 20 | Fine | Auburn | 662603 00408 |

| PRODUCT # | MICRO | N GRADE | COLOR | PART # |
|------------------------|-------------|---------------------|--------------------|------------------------|
| Diamond Compo | und – Oil | Soluble | | |
| 5 Gram Syringes | | | | |
| 5PS1/40SSTD | 1/4 | UltraFine | Gray | 614636 91123 NS |
| 5PS1/20SSTD | 1/2 | UltraFine | Lt. Gray | 662603 00363 |
| 5PS10SSTD | 1 | UltraFine | lvory | 614636 91133 |
| 5PS30SSTD | 3 | Super Fine | Yellow | 614636 91138 |
| 5PS60SSTD | 6 | Super Fine | Orange | 614636 91143 |
| 5PS90SSTD | 9 | Super Fine | Green | 614636 91148 |
| 5PS150SSTD | 15 | Fine | Blue | 614636 91153 |
| 5PS300SSTD | 30 | Fine | Red | 614636 91158 |
| 5PS450SSTD | 45 | Fine | Brown | 614636 91163 |
| 5PS600SSTD | 60 | Fine | Purple | 662603 00386 |
| 5PS900SSTD | 90 | Fine | Black | 662603 00390 |
| 18 Gram Syringe | s | | | |
| 18PS1/40SSTD | 1/4 | UltraFine | Gray | 662603 00391 |
| 18PS10SSTD | 1 | UltraFine | lvory | 614636 91134 NS |
| 18PS30SSTD | 3 | Super Fine | Yellow | 614636 91139 |
| 18PS60SSTD | 6 | Super Fine | Orange | 662603 00399 |
| 18PS90SSTD | 9 | Super Fine | Green | 614636 91149 NS |
| 18PS150SSTD | 15 | Fine | Blue | 614636 91154 |
| 18PS200SSTD | 20 | Fine | Auburn | 662603 00407 |
| 18PS300SSTD | 30 | Fine | Red | 662603 00409 |
| 18PS450SSTD | 45 | Fine | Brown | 614636 91164 NS |
| 18PS600SSTD | 60 | Fine | Purple | 662603 00413 |
| 18PS900SSTD | 90 | Fine | Black | 662603 00415 |
| NS Non-stock; con | tact your N | orton representativ | e for current lead | l-times. |

Marking System

| 5 PS 1/4 OS STD | | | | | | |
|-----------------|----------------------|---|---|---------------|--|--|
| SYRINGE Size | CARTRIDGE Type | MICRON GRADE | VEHICLE Type | CONCENTRATION | | |
| 5 Gram | PS | 1/4 – Gray | OS | Standard | | |
| 18 gram | (Plastic Syringe) | 1/2 – Light Gray 1 – Ivory 3 – Yellow 6 – Orange | (Oil Soluble) WS (Water Soluble) | | | |
| | | 9 – Green 12 – Aqua 15 – Blue | | | | |
| | | 20 – Auburn 30 – Red 45 – Brown | | | | |
| | | 45 – Brown 60 – Purple 90 – Black | | | | |

ECH T

Diamond Compound Application Guide

| APPLICATION | MICRON GRADE | MICRON Range | MESH Size Equiv. | COLOR | CONC. |
|--|-----------------|-----------------|------------------------|----------|-------|
| ULTRA FINE | 1/4 | (0-1/2) | 100,000 | Gray | Std. |
| Applying finest finishes on metals and ceramics | 1/2 | (0-1) | 60,000 | Lt. Gray | Std. |
| | 1 | (0-2) | 14,000 | lvory | Std. |
| SUPER FINE | 3 | (2-4) | 8,000 | Yellow | Std. |
| Final finishing of dies, | 6 | (4-8) | 3,000 | Orange | Std. |
| molds, seals, most | 9 | (8-12) | 1,800 | Green | Std. |
| applications (RMS 4-12) | 12 | (9-15) | 1,500 | Aqua | Std. |
| FINE FINISH | 15 | (12-22) | 1,200 | Blue | Std. |
| Preparatory lapping | 20 | (15-25) | 800 | Auburn | Std. |
| (RMS 12-20) | 30 | (22-36) | 600 | Red | Std. |
| | 45 | (36-45) | 325 | Brown | Std. |
| | 60 | (54-80) | 230 | Purple | Std. |
| | 90 | (80-100) | 170 | Black | Std. |

Construction Products

the Norton Clipper brand **HITS THE PAVEMENT**

The leader for diamond blades, tools, and light machines for construction and cutting materials is "Redefining Jobsite Muscle – Rugged. Reliable. Affordable."



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CONSTRUCTION PRODUCTS **Diamond Blades**



With faster cut rates, constant depth of cut, and less downtime, Norton Clipper diamond blades are the choice of professionals versus conventional abrasive blades. Norton Clipper diamond blades are available for high-speed saws, portable hand-held saws, and walk-behind saws. For the full offering of diamond blades, see the Norton Clipper Construction Products Catalog #7719.

Applications: Size Range: **Thickness Range:** Segment Height: Range: **Abrasive Grain: Mounting Options:** Shape: **Machines Used:**

Cutting concrete, stone, tile, and other building materials 4" - 18"

.080" - .375" .210" - .550"

Diamond 1"/20mm universal arbor, 7/8"-5/8"-20mm, DM-7/8"-5/8", 5/8"-11 Type 01

OR ELECTRIC SAW



SAW



WALK-BEHIND SAW

Diamond Blade Rim Types

There are three main diamond blade rim types: segmented, turbo, and continuous rim.



Most aggressive cutting action for general-purpose and

· Use when cutting speed and productivity are more

masonry applications

important than finish

· Best life, best cut rate, good finish

Turbo

- Aggressive cutting action with a smoother quality of cut than segmented rim blades
- · For use on harder materials, such as granite, marble, and stone to reduce chipping
- · Better life and cut rate, better finish

Continuous

GRINDER

- · Provides the smoothest of cuts
- · Best performance when used wet
- · Use on porcelain, tile, marble, and other hard materials requiring a high-quality cut
- · Good life, good cut rate, best finish

Material / Application-to-Product Recommendation Guide

| lcon | Description | Application |
|------|--|---|
| | Multi-Purpose, All Materials | Concrete, reinforced concrete, granite, building materials, thin steel sections, angle iron up to 1/2" material thickness, rebar up to no. 5. |
| | Natural Stone and Tiles | Ceramic and stone tiles, granite, marble, very hard bricks and other very hard and dense materials. |
| | Reinforced Concrete and Harder Building Materials | Reinforced concrete, hard bricks, limestone, terrazzo, and other hard materials. |
| | General Purpose and Masonry Building Materials | Blocks, medium-hard building bricks, paving slabs, concrete roof tiles and other medium-hard materials. |
| | Asphalt | Asphalt, green concrete, asphalt over concrete, abrasive blocks, mortar and other abrasive materials. |

Diamond Performance Tiers

Best Best Performance

Better High Performance

(**5**)

Value and Good Consistent Performance

TECH TIP

- · Never twist or turn a segmented blade in the cut because it may result in segment breakage Never use wet blades dry
- · Remove dry blades from cut for 10 seconds of each minute of cut to air cool
- · Never operate any saw, wet or dry, without the blade guard

It is the user's responsibility to refer to and comply with ANSI B7.1

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CONSTRUCTION PRODUCTS – DIAMOND BLADES High-Speed Saw Blades

For Reinforced Concrete and Harder Building Materials

DRY – Segmented Rim ()+()

DUO EVO

The unique shape of the DUO EVO segments optimizes the angle of attack while enhancing the evacuation of the debris. With a new manufacturing process, the DUO EVO segments provide an exceptional cutting speed for optimum performance and increased life up to 20% over the original DUO EVO design.

| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # | |
|---------------------|----------------|---------|-------------|---------------------|--|
| 12 x .110 x 1"/20mm | .590" | 6,300 | DU0EV012110 | 701846 84217 | |
| 14 x .118 x 1"/20mm | .590" | 5,460 | DU0EV014118 | 701846 84218 | |
| 16 x .125 x 1"/20mm | .590" | 4,500 | DU0EV016125 | 701846 93356 | |

DUO

Our exclusive design has become a dominant name in the market. The unique dual segment per land technology provides excellent cutting speed with low vibration and high comfort of cut. The exclusive arrow shape gullets not only indicate blade direction, but also assist in fast removal of cutting debris. Maximum general purpose performance when cutting medium to low reinforcement, hard materials.

| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # |
|--------------------|----------------|---------|---------------|---------------------|
| 12 x .110 x 1/20mm | .393" | 6,300 | DU012110 | 701846 83611 |
| 14 x .110 x 1/20mm | .393" | 5,460 | DU014110 | 701846 83612 |
| 14 x .110 x 1/20mm | .393" | 5,460 | DU014110 6PK | 701846 84430 |
| 14 x .110 x 1/20mm | .393" | 5,460 | DU014110 12PK | 701846 84431 |
| 14 x .125 x 1/20mm | .393" | 5,460 | DU014125 | 701846 83613 |
| 14 x .125 x 1/20mm | .393" | 5,460 | DU014125 6PK | 701846 84432 |
| 14 x .125 x 1/20mm | .393" | 5,460 | DU014125 12PK | 701846 84433 |
| 16 x .125 x 1/20mm | .393" | 4,500 | DU016125 | 70184683798 |

For Asphalt and Abrasive Materials

DRY – Segmented Rim

DUO ASPHALT

Dry cutting laser-welded blade for asphalt and green concrete. The laser-welded, wear-retardant drop segments extend blade life. Scoop gullets for faster swarf removal increases cut speed. Stroboscopic indicators to control cut depth and show rotation direction.

| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # | |
|--------------------|----------------|---------|-------------|---------------------|--|
| 12 x .110 x 1/20mm | .393" | 6,300 | DU0ASP12125 | 701846 84543 | |
| 14 x .125 x 1/20mm | .393" | 5,460 | DU0ASP14125 | 701846 84315 | |
| 16 x .125 x 1/20mm | .393" | 4,500 | DUOASP16125 | 701846 84544 | |

DUO ABRASIVE

01200

Utilizes the basic characteristics of the original DUO blade and adds a unique segment shape that optimizes the angle of attack while enhancing the evacuation of the particles. The result is an exceptional cutting speed allied with very good performance and life in abrasive materials and concrete block. The bond specification lends additional life when high-speed cutting.

| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # | |
|--------------------|----------------|---------|------------|---------------------|--|
| 14 x .110 x 1/20mm | .393" | 5,460 | DUOAB14110 | 701846 84291 | |
| 14 x .125 x 1/20mm | .393" | 5.460 | DUOAB14125 | 701846 84292 | |

For General-Purpose and Masonry Building Materials

```
DRY – Segmented Rim
```

| ULASSIC | | | | |
|-------------------------------|-------------------------------|---------------------------|----------------------------------|--------------------------|
| The improved bond provides lo | nger life at an economical pr | ice in medium-hard materi | ials such as concrete with light | to medium reinforcement. |
| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # |
| 12 x .110 x 1/20mm | .314" | 6,300 | COHSGP1220 | 701846 81383 |
| 14 x .110 x 1/20mm | .275" | 5,460 | COHSGP1420 | 701846 81309 |
| 14 x .125 x 1/20mm | .314" | 5,460 | COHSGP1420P | 701846 84268 |
| 16 x .125 x 1/20mm | .259" | 4,500 | COHSGP1620 | 701846 40356 |

VALUPLUS

Distributed by Applifast.

| For value and performance | e on small- to medium-size jo | bs. The sintered blade | cuts unreinforced soft-to-medium | concrete fast on saws up to | 13 HP. |
|---------------------------|-------------------------------|------------------------|----------------------------------|-----------------------------|--------|
| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # | |
| 12 x .110 x 1/20mm | .393" | 6,300 | VPHSGP1220 | 701846 84180 | |
| 14 x .110 x 1/20mm | .393" | 5,460 | VPHSGP1420 | 701846 84181 | |
| 14 x .110 x 1/20mm | .393" | 5.460 | VPHSGP1420 20PK | 701846 84428 | |

















CONSTRUCTION PRODUCTS – DIAMOND BLADES High-Speed Saw Blades

Multi-Purpose, For All Materia

Dry – Segmented Rim ()+

4X4 MAX CUT

Taking high-speed cutting versatility to an all new level. The same standard features as the 4X4 with its anti-crack gullets and patented depth indicators that not only cool the blade, but also allow the operator to know how deep they are cutting. An all-new bond and diamond specification improves blade life in a wide range of materials while excelling in steel. New segment wear indicators give the operator an idea of remaining blade life.

| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # |
|--------------------|----------------|---------|------------|---------------------|
| 12 x .118 x 1/20mm | .472" | 6,300 | 4X4MC12118 | 701846 45927 |
| 14 x .125 x 1/20mm | .472" | 5,460 | 4X4MC14125 | 701846 45926 |
| | | | | |

Multi-purpose laser welded blade for dry cutting a range of construction materials without sacrificing performance or price. Depth of cut is easily controlled with the patented depth-of-cut indicators cut into the steel core. Anti-crack gullets for enhanced safety cutting steel and metal (up to 5mm thick).

| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # | |
|--------------------|----------------|---------|----------|---------------------|--|
| 12 x .110 x 1/20mm | .393" | 6,300 | 4X412110 | 701846 84548 | |
| 14 x .125 x 1/20mm | .393" | 5,460 | 4X414125 | 701846 84547 | |
| 16 x .125 x 1/20mm | .393" | 4,500 | 4X416125 | 701846 45306 | |

| 3X3 | | | | $\otimes \otimes \otimes \otimes$ | |
|---|----------------|---------|----------|-----------------------------------|--|
| It's everything expected for high-speed cutting when both performance and price are a factor. The laser welded 3X3 cuts concrete, reinforced | | | | | |
| concrete, asphalt and abrasive building materials and more. High quality diamond increases the speed of cut on a variety of materials without | | | | | |
| changing blades. Premium blade characteristics and price point that would normally take multiple sintered blades to achieve. | | | | | |
| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # | |
| 12 x .118 x 1/20mm | .314" | 6,300 | 3X312118 | 701846 47500 | |
| 14 x .118 x 1/20mm | .314" | 5,460 | 3X314118 | 701846 47499 | |







TECH TIP

High-Speed Hand Saw Blades – Maximum Blade Cutting Depths and Recommended Operating Speeds

Note: Diamond blade cutting depths listed are approximate. Actual cutting depth will vary with the exact blade diameter or saw type, or the exact diameter of the blade flanges. Cutting depth will also be reduced if saw components extend below the blade flanges.

| BLADE DIAMETER | CUTTING DEPTH | MAXIMUM SPEED (RPM) |
|----------------|---------------|---------------------|
| 12" | 4" | 6,300 |
| 14" | 5" | 5,460 |
| 16" | 6" | 4.500 |

It is the user's responsibility to refer to and comply with ANSI B7.1



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CONSTRUCTION PRODUCTS – DIAMOND BLADES Hand-Held Saw Blades

70184683859

For Reinforced Concrete and Harder Building Materials

DRY – Crack Chasing ()+()

| | CHARGER | | | | |
|---|-------------------------|----------------|---------|----------|-------------|
| A heavy V-shaped segment designed with a special bond and diamond content for maximum removal of grout, mortar jointing, crack ch crack widening. Fast cutting and long life in abrasive materials using portable tools. Highly competitive to others of its kind in the market | | | | | |
| | SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # |
| | 4 x .375 x 7/8-5/8-20mm | .550" | 15.000 | CGCC0400 | 70184683856 |

For Asphalt and Abrasive Materials

.550"

Dry – Tuck Pointing ()+()

7 x .250 x 7/8-5/8-20mm

CLASSIC

An economical solution for small to medium tuck pointing jobs. High-quality performance for heavy grout removal or mortar jointing. The heavy-duty wide segment reduces wear in abrasive materials.

| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # | |
|------------------------|----------------|---------|------------|---------------------|--|
| 4 x .250 x 7/8-5/8 | .275" | 15,000 | CHTUCK0400 | 701846 81776 | |
| 4-1/2 x .250 x 7/8-5/8 | .275" | 13,300 | CHTUCK0450 | 701846 81777 | |
| 5 x .250 x 7/8-5/8 | .275" | 12,225 | CHTUCK0500 | 701846 81778 | |
| 7 x .250 x 7/8-5/8 | .275" | 8,730 | CHTUCK0700 | 701846 81779 | |
| 8 x .250 x 7/8-5/8 | .275" | 7,640 | CHTUCK0800 | 701846 81780 | |

8,730

CGCC0700

For General-Purpose and Masonry Building Materials

Dry – Segmented Rim ()+

CHARGER High-performance dry cutting of a variety of materials. The segment specification allows extended life and fast cut for medium to large jobs.

| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # |
|-----------------------------|----------------|---------|------------|---------------------|
| 4 x .080 x 7/8-5/8-20mm | .393" | 15,000 | CGDSEG0400 | 701846 81505 |
| 4-1/2 x .080 x 7/8-5/8-20mm | .393" | 13,300 | CGDSEG0450 | 076607 04021 |
| 5 x .080 x 7/8-5/8-20mm | .393" | 12,225 | CGDSEG0500 | 701846 82851 |
| 6 x .080 x 7/8-5/8-20mm | .393" | 10,185 | CGDSEG0600 | 701846 83820 |
| 7 x .090 x DM-7/8-5/8 | .393" | 8,730 | CGDSEG0700 | 076607 04020 |
| 8 x .090 x DM-7/8-5/8 | .393" | 7,640 | CGDSEG0800 | 701846 81513 |
| 9 x .090 x 7/8-5/8" | .393" | 6,600 | CGDSEG0900 | 701846 69483 |

VALUPLUS

For value and performance on small- to medium-size jobs cutting soft abrasive materials like brick and tile. The sintered rim delivers a quality cut and good life.

| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # | |
|-----------------------------|----------------|---------|-----------|---------------------|--|
| 4 x .080 x 7/8-5/8-20mm | .315" | 15,000 | VPSEG0400 | 701846 84098 | |
| 4-1/2 x .080 x 7/8-5/8-20mm | .315" | 13,300 | VPSEG0450 | 701846 84099 | |
| 7 x .090 x DM-7/8-5/8 | .315" | 8,730 | VPSEG0700 | 701846 84100 | |

Dry – Turbo Rim

Combines the characteristics of a standard Charger blade with a turbo rim configuration for cutting hard, dense materials with minimal effort. A better bond and diamond concentration for maximum cutting speed, life and quality of cut.

| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # |
|-----------------------------|----------------|---------|------------|---------------------|
| 4 x .080 x 7/8-5/8-20mm | .393" | 15,000 | CGTURB0400 | 076607 05475 |
| 4-1/2 x .080 x 7/8-5/8-20mm | .393" | 13,300 | CGTURB0450 | 076607 04023 |
| 5 x .080 x 7/8-5/8-20mm | .393" | 12,225 | CGTURB0500 | 701846 82853 |
| 7 x .090 x DM-7/8-5/8 | .393" | 8,730 | CGTURB0700 | 076607 04022 |
| 8 x .090 x DM-7/8-5/8 | .393" | 7,640 | CGTURB0800 | 701846 81512 |

For Natural Stone and Tiles

Dry – Continuous Rim ()+

Distributed by Applifast

An economical solution for small- to medium-size jobs cutting softer ceramic tile and stone materials with efficient cutting ability.

| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # |
|-----------------------------|----------------|---------|---------|---------------------|
| 4 x .080 x 7/8-5/8-20mm | .275" | 15,000 | CON4DT | 076607 02793 |
| 4-1/2 x .080 x 7/8-5/8-20mm | .275" | 13,300 | CON45DT | 076607 01194 |
| 7 x .090 x DM-7/8-5/8 | .275" | 8,730 | CON7DT | 076607 02788 |

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CONSTRUCTION PRODUCTS – DIAMOND BLADES Walk-Behind Saw Blades

For Reinforced Concrete and Harder Building Materials

WET – Medium Aggregates

CHARGER

| The steel core is designed to keep the cut straight while the .410" segment height prolongs cutting wear. Suitable for cutting mediu | m aggregates |
|--|--------------|
| with up to 35 HP walk-behind saws. | |
| | |

| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | POWER | PART # | UPC # |
|------------------|----------------|---------|-------|------------|---------------------|
| 14 x .125 x 1 | .410" | 4,365 | 35hp | CGWCMD1412 | 701846 81366 |
| 18 x .125 x 1 | .410" | 3,395 | 35hp | CGWCMD1812 | 701846 81368 |

CLASSIC

Laser welded blade at an economical price for general purpose cutting of cured concrete, medium-hard aggregate and no steel reinforcement. The bond and diamond combination allow fast cutting action on limited horse powered walk-behind saws.

| | | .g | | | |
|------------------|----------------|---------|-------|------------|---------------------|
| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | POWER | PART # | UPC # |
| 14 x .125 x 1 | .326" | 4,365 | 35hp | CHWCGP1412 | 701846 81359 |
| 18 x .125 x 1 | .326" | 3,395 | 35hp | CHWCGP1812 | 701846 81361 |

For Asphalt and Abrasive Materials

DRY – Green/Cured Concrete ()+()

| GMAX – MULTI-PUR | POSE | | | | | | |
|-----------------------|--|---------------------|-------------------------------|-------------------------------|---------------------------|--|--|
| Designed specifically | Designed specifically for our GC55/GC25E down-cut green concrete push saw, the GMAX Multi-Purpose blade is excellent in both green and cured | | | | | | |
| concrete. The unique | segment specification and | anchor slot gullets | allow this blade to be used i | n a variety of applications v | vith outstanding results. | | |
| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | POWER | PART # | UPC # | | |
| 8 x 095 x 7/8-5/8 | 372" | 8 730 | 6hn | NXDGRN0895 | 7018/683758 | | |

| 8 x .095 x 7/8-5/8 | .372" | 8,730 | 6hp | NXDGRN0895 | 701846 83758 |
|-----------------------|-------|-------|-----|------------|---------------------|
| 9 x .110 x 7/8-5/8 | .372" | 6,600 | 6hp | EE9110 | 701846 75125 |
| 10 x .110 x 1-7/8-5/8 | .372" | 6,115 | 6hp | EE10110 | 701846 84508 |

WET – Asphalt

CHARGER

For large road and construction jobs with saws up to 35 HP. Higher diamond content increases productivity and offers faster cutting and longer life in asphalt and green concrete applications.

| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | POWER | PART # | UPC # |
|------------------|----------------|---------|-------|------------|---------------------|
| 14 x .125 x 1 | .327" | 4,365 | 35hp | CGWASP1412 | 701846 81478 |
| 18 x .125 x 1 | .307" | 3,395 | 35hp | CGWASP1812 | 701846 81479 |

CLASSIC

Distributed by Applifast

An economical choice for fast cutting and good life when performing jobs in a variety of abrasive materials such as green concrete and asphalt on saws up to 35 HP.

| SIZE (D x T x H) | SEGMENT HEIGHT | MAX RPM | POWER | PART # | UPC # |
|------------------|----------------|---------|-------|------------|---------------------|
| 14 x .125 x 1 | .326" | 4,365 | 35hp | CHWASP1412 | 701846 81375 |
| 18 x .125 x 1 | .326" | 3,395 | 35hp | CHWASP1812 | 701846 81376 |











Walk-Behind Saw Blades – Maximum Blade Cutting Depths and Recommended Operating Speeds

Note: Diamond blade cutting depths listed are approximate. Actual cutting depth will vary with the exact blade diameter or saw type, or the exact diameter of the blade flanges. Cutting depth will also be reduced if saw components extend below the blade flanges.

| BLADE Diameter | CUTTING Depth | IDEAL SPEED (RPM) | MAXIMUM SPEED (RPM) |
|-------------------|------------------|----------------------|------------------------|
| 8" | 2" | 4,536 | 7,640 |
| 8" 9" | 2-1/2" | 2,640 | 6,600 |
| 10" 14" | 3" | 2,446 | 6,115 |
| 14" | 4-5/8" | 2,592 | 4,365 |
| 18" | 6-5/8" | 2,016 | 3,395 |
| | | | |

It is the user's responsibility to refer to and comply with ANSI B7.1



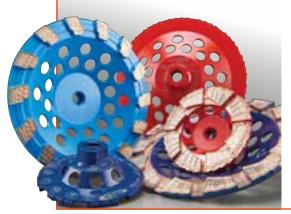
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CONSTRUCTION PRODUCTS **Diamond Cup Grinders**



Norton Clipper cup grinders are available in a range of specifications and diameters providing a solution for a number of applications in the building and construction industry. There are many benefits to diamond grinding. It's very fast, low-cost and creates little noise compared to other concrete cutting options. It has become a very popular choice in the commercial construction and DIY home improvement industries.

Applications: Size Range: Segment Height: **Range:**

Used on right angle grinders to grind concrete, stone and masonry materials. 4" - 7"

Abrasive Grain: **Mounting Options: Options:**

.177", .210"

Diamond 5/8"-11 attachment optimized for all popular angle grinders, 7/8-5/8"-20mm

Standard - single row or double row available

Machines Used:

iHD (Infiltrated High-Density) has thicker body, larger ventilation holes for better cooling RIGHT-ANGLE

GRINDER



Dry – Cup Grinder ()+

3X3 WITH IHD TECHNOLOGY

The 3X3 cup grinder ensures very high material removal rate, extreme comfort while working without vibrations and a self-sharpening feature. These new iHD cups offer the best finishing and longest life even on softer, more abrasive materials.

| SIZE (D x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # | |
|--------------|----------------|---------|-----------|---------------------|--|
| 4 x 5/8"-11 | .177" | 15,000 | 3X3CG0400 | 701846 01763 | |
| 5 x 5/8"-11 | .177" | 12,225 | 3X3CG0500 | 701846 01766 | |
| 7 x 5/8"-11 | .177" | 8,730 | 3X3CG0700 | 701846 01769 | |

RGER WITH IHD TECHNOLOGY

The Charger cup grinder ensures a high material removal rate and more comfortable work. These new iHD cups provide a better finish and long life on a wide range of materials.

| SIZE (D x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # | |
|--------------|----------------|---------|----------|---------------------|--|
| 4 x 5/8"-11 | .177" | 15,000 | CGCG0400 | 701846 01762 | |
| 5 x 5/8"-11 | .177" | 12,225 | CGCG0500 | 701846 01765 | |
| 7 x 5/8"-11 | .177" | 8,730 | CGCG0700 | 701846 01768 | |

CLASSIC WITH IHD TECHNOLOGY

The Classic cup grinder provides efficient material removal rate thanks to the small contact surfaces of the segments. The cups also have flat sides to avoid damaging walls or ceilings during flush grinding.

| SIZE (D x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # | |
|--------------|----------------|---------|----------|---------------------|--|
| 4 x 5/8"-11 | .177" | 15,000 | CCCG0400 | 701846 01761 | |
| 5 x 5/8"-11 | .177" | 12,225 | CCCG0500 | 701846 01764 | |
| 7 x 5/8"-11 | .177" | 8,730 | CCCG0700 | 701846 01767 | |

CLASSIC

Available in a range of sizes and segment designs for optimum performance by life or by speed. Ideal for leveling all types of masonry materials, brick, block, concrete and stone. Strategically placed hole designs help ventilate dust from the surface to extend the life of the cups.

| | otonio. Otratogioany placed ne | to doorgrid holp volitilat | | | |
|------------------------------|--------------------------------|----------------------------|------------|---------------------|--|
| SIZE (D x H) | SEGMENT HEIGHT | MAX RPM | PART # | UPC # | |
| Single Row for Fast St | ock Removal | | | | |
| 4 x 7/8-5/8-20mm | .210" | 15,000 | CHSCPH0400 | 701846 82585 | |
| 5 x 7/8-5/8-20mm | .210" | 12,225 | CHSCPH0500 | 701846 84035 | |
| 7 x 7/8-5/8-20mm | .210" | 8,730 | CHSCPH0700 | 701846 82594 | |
| 4 x 5/8"-11 | .210" | 15,000 | CHSCPT0400 | 701846 82555 | |
| 5 x 5/8"-11 | .210" | 12,225 | CHSCPT0500 | 701846 84036 | |
| 7 x 5/8"-11 | .210" | 8,730 | CHSCPT0700 | 701846 82593 | |
| Double Row for Long L | ife, Smooth Finish | | | | |
| 4 x 7/8-5/8-20mm | .210" | 15,000 | CHDCPH0400 | 701846 82588 | |
| 5 x 7/8-5/8-20mm | .210" | 12,225 | CHDCPH0500 | 701846 84037 | |
| 7 x 7/8-5/8-20mm | .210" | 8,730 | CHDCPH0700 | 701846 82596 | |
| 4 x 5/8"-11 | .210" | 15,000 | CHDCPT0400 | 701846 82586 | |
| 5 x 5/8"-11 | .210" | 12,225 | CHDCPT0500 | 701846 84038 | |
| 7 x 5/8"-11 | .210" | 8,730 | CHDCPT0700 | 701846 82595 | |
| | | | | | |

Accessories

VACUUM SHROUD KIT

The Vacuum Shroud's design creates a cyclonic affect extracting dust and debris from the work surface into the support vacuum. This prolongs the life of the grinding cup and grinder and provides a smoother surface while decreasing the chance of dust particle inhalation.

DESCRIPTION

Distributed by Applifast

Kit includes: one shroud, five different adapter rings to fit most popular right-angle grinders, and one 7" Norton Clipper Classic single row cup wheel















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CONSTRUCTION PRODUCTS **Diamond Core Bits**



Core bits are cutting tools used to remove a cylindrically shaped piece of material. A core drill is designed to cut a hole and remove a core sample or to drill a hole without leaving material behind. Diamond core bits have diamond cutting tips and are frequently used for drilling in materials such as concrete, stone, and asphalt.

Applications: Size Range: Segment Height Range: .254", .393" Abrasive Grain: **Mounting Options: Machines Used:**

Used on core drills in materials such as concrete, stone and other hard materials 2" - 10"





Reinforced Concrete and Harder Building Materials

WET – Hard Aggregates

| Premium diamond in the turbo segment permits the core to penetrate quickly and efficiently into the toughest cured concrete, for significantl | ly |
|---|----|
| increased performance. The 14" tube length with 1-1/4"-7 threads fits a wide range of core drill mounting arbors. | |

| morodood portorm | | iongai mari i i i i and | sado nito a mao rango or c | oro ann mounting arboro. | |
|------------------|------------|-------------------------|----------------------------|--------------------------|---------------------|
| SIZE IN INCHES | SIZE IN MM | SEGMENT HEIGHT | MAX RPM | PART # | UPC # |
| 2" | 51mm | .490" | 2,000 | PDBIT0200 | 701846 01410 |
| 2-1/2" | 64mm | .490" | 1,300 | PDBIT0250 | 701846 01411 |
| 3" | 76mm | .490" | 1,300 | PDBIT 0300 | 701846 01412 |
| 3-1/2" | 89mm | .490" | 1,300 | PDBIT0350 | 701846 01413 |
| 4" | 102mm | .490" | 1,000 | PDBIT0400 | 701846 01414 |
| 4-1/2" | 114mm | .490" | 800 | PDBIT0450 | 701846 01415 |
| 5" | 127mm | .490" | 800 | PDBIT0500 | 701846 01416 |
| 6" | 152mm | .490" | 665 | PDBIT0600 | 701846 01417 |
| 7" | 178mm | .490" | 600 | PDBIT0700 | 701846 01418 |
| 8" | 203mm | .490" | 500 | PDBIT0800 | 701846 01419 |
| 10" | 254mm | .490" | 400 | PDBIT1000 | 701846 01706 |
| | | | | | |



CLASSIC

PARADIGM

| CENCOID | | | | | |
|-------------------|---------------------|---------------------------|-------------------|-------------------------------|---------------------|
| Economical choice | e for use in harder | concrete with heavy reinf | orcement and maso | nry materials with good perfo | ormance. |
| SIZE IN INCHES | SIZE IN MM | SEGMENT HEIGHT | MAX RPM | PART # | UPC # |
| 2" | 51mm | .350" | 2,000 | CHBIT0200 | 701846 82762 |
| 3" | 76mm | .350" | 1,300 | CHBIT0300 | 701846 82765 |
| 4" | 102mm | .350" | 1,000 | CHBIT0400 | 701846 82767 |
| 6" | 152mm | .350" | 665 | CHBIT0600 | 701846 82771 |
| 8" | 203mm | .350" | 500 | CHBIT0800 | 701846 82773 |
| 10" | 254mm | .350" | 400 | CHBIT1000 | 701846 82774 |





Distributed by Applifast

TECH TIP

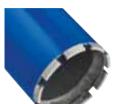
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Core Bits - Minimum and Maximum **Recommended Operating Speeds**

| R MINIMUM RPM | IDEAL SPEED (RPM) | MAXIMUM RPM |
|---------------|---|---|
| 2,400 | 3,200 | 4,000 |
| 1,200 | 1,600 | 2,000 |
| 800 | 1,050 | 1,300 |
| 600 | 800 | 1,000 |
| 475 | 640 | 800 |
| 400 | 530 | 665 |
| 340 | 450 | 600 |
| 300 | 400 | 500 |
| 240 | 320 | 400 |
| | 1,200 800 600 475 400 340 300 | 2,400 3,200 1,200 1,600 800 1,050 600 800 475 640 400 530 340 450 300 400 |

Note: For half inch increments, go to the next larger bit diameter.

44 It is the user's responsibility to refer to and comply with ANSI B7.1



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CONSTRUCTION PRODUCTS Equipment



High-Speed Gas Saws

No more pre-mixing oil and fuel – the patented iLube option automatically controls mixing for maximum efficiency, and the saw drops to idle speed when the oil is low – eliminating possible machine damage

Walk-Behind Saws

Proven, robust and functional for ideal user comfort. The professionals' choice for outstanding walk behind cutting performance, wet or dry.

Masonry Saws

Norton introduced the first masonry saw over 70 years ago and they have become the industry standard for masons worldwide.

For the full line of quality Norton Clipper equipment, please contact your local Norton sales representative

High-Speed Gas Saws

CP500 SERIES HIGH-SPEED SAWS

The Norton Clipper CP500 high-speed cut-off saw might be new to the market, but it's destined to be an asset on any crew. It's fully designed with the user in mind to not only cut a smooth, fast track, but it's also fully equipped to handle the everyday performance of any jobsite with unrelenting durability and reliability. Select a standard model or upgrade to the world's first patented automatic lubrication system, Norton Clipper iLube.

The patented iLube option automatically controls mixing of oil and fuel for maximum efficiency. An electronic sensor will indicate a low oil level and adjust the engine to idle to prevent engine damage.

| DESCRIPTION | SHAFT RPM | PART # | UPC # |
|-------------------------------------|-----------|------------------|---------------------|
| 12" Standard High-Speed Cut-Off Saw | 4,500 | CP512-300 | 701846 47559 |
| 12" iLube High-Speed Cut-Off Saw | 4,500 | CP512-300i iLube | 701846 47561 |
| 14" Standard High-Speed Cut-Off Saw | 4,500 | CP514-350 | 701846 47563 |
| 14" iLube High-Speed Cut-Off Saw | 4,500 | CP514-350i iLube | 701846 47565 |
| ACCESSORIES | | | |
| High-Speed Saw Wheel Kit | | | 005101 09845 |
| High-Speed Saw Tool Kit | | | 005101 09846 |





Walk-Behind Push Saws



GC55 EARLY ENTRY/GREEN SAW

Distributed by Applifast.

With a compact, light-weight design backed by the reliable Honda 5HP gasoline engine, the GC55 early entry saw is intended for a variety of applications. From green, cured or decorative concrete cutting to expansion joints, the features of this small push saw are hard to beat in a single saw. The low, wide profile of the frame, along with the front mount blade, contribute to producing a more disciplined cut.

| UPC # | MOTOR | WEIGHT | GUARD |
|---------------------|-------------|---------|-------|
| 701846 30005 | Honda GX160 | 115 lbs | 10" |

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(**5**-



C1318P GASOLINE SAW

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The next generation of 13HP saws. The C1318P features shock-absorbing handle bars. The new sleek design of the water tank, with increased capacity and improved securing, adds an additional 1.5 gallons of water over the cut. And, a newly-designed belt tensioning system helps keep the saw cutting tried and true. All these features, coupled with the Honda 13HP engine, make the C1318P the premiere choice for rental and service work.

| UPC # | MOTOR | WEIGHT | GUARD |
|---------------------|-------------|---------|-------|
| 701846 42453 | Honda GX390 | 220 lbs | 18" |



C13PE GASOLINE SAW

Rental equipment has to withstand any and all conditions by user and application. For that reason, the Norton Clipper C13PE or CP14PE suits any rental fleet that both the novice and expert will appreciate to hold-up through tough situations. The 18" blade guard, ride-on water system and quick-release blade guard lock all keep safety in mind while the rugged frame, powerful engine and easy-to-use console makes cutting a breeze.

| UPC # | MOTOR | WEIGHT | GUARD |
|---------------------|-------------|---------|-------|
| 701846 47524 | Honda GX390 | 220 lbs | 18" |

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Toll Free 1 800 563 1293



Large Masonry Saws

BBL BLOCKBUSTER LARGE MASONRY SAWS

Having introduced the first masonry saw over 70 years ago, the Norton Clipper BBL heavy-duty block saws have become the industry standard for masons worldwide. These models are equipped with single-phase electric motors and come with a blade capacity of 14" or 20". Extended water pan and open back frame allow cutting of larger materials. The balanced cutting head makes for effortless cutting depth positioning. Having a rugged all-steel frame design with forklift brackets allows these saws to resist twisting and damage during transport around a job site.

For other sizes and horsepower machines, or for gasoline-powerered versions, contact your Norton sales representative.

| DESCRIPTION | HP | PART # | UPC # |
|---|----|--------|---------------------|
| BBL547 Blockbuster Saw with Baldor electric motor; 14" blade guard capacity | 5 | BBL547 | 701846 83211 |
| BBL527 Blockbuster Saw with Baldor electric motor; 20" blade guard capacity | 5 | BBL527 | 701846 83150 |
| ACCESSORIES | | | |
| Electric Water Pump – PE-1 | | | 701846 68392 |
| Conveyor Cart Replacement for BBL | | | 003100 07390 |



Compact Masonry Saws

BBC BLOCKBUSTER COMPACT MASONRY SAW

Combines the performance of a full size masonry saw with the convenience of portability. Also available in gas or electric versions, the BBC saws have a rugged jig-welded frame, durable enough for even the heaviest work load. Standard rear wheel dolly design and removable legs make transport and set-up easy.

For other sizes and horsepower machines, or for gasoline-powered versions, contact your Norton sales representative...

| DESCRIPTION | HP | PART # | UPC # |
|---|-----|--------|---------------------|
| BBC157 Blockbuster Saw with Baldor electric motor; 14" blade guard capacity | 1.5 | BBC157 | 701846 82488 |
| BBC207 Blockbuster Saw with Baldor electric motor; 14" blade guard capacity | 2 | BBC207 | 701846 82501 |
| BBC207 Blockbuster Saw with Baldor electric motor; 20" blade guard capacity | 3 | BBC307 | 701846 30011 |
| BBC547 Blockbuster Saw with Honda gasoline motor; 14" blade guard capacity | 5.5 | BBC547 | 701846 82175 |
| BBC507 Blockbuster Saw with Honda gasoline motor; 20" blade guard capacity | 5.5 | BBC507 | 701846 30012 |
| ACCESSORIES | | | |
| Electric Water Pump – PE-1 | | | 701846 68392 |
| Conveyor Cart Replacement for BBC | | | 003100 07367 |



Mini Masonry Saws

Distributed by Applifast.

BBM BLOCKBUSTER MINI MASONRY SAWS

The innovative design of these small masonry saws has been copied many times due to its compact, all-steel unibody construction, giving the best weight-to-strength distribution. A 14" blade capacity and ergonomically-designed, three-position locking, cutting head provides a safe, clear view of the work area. Whether your choice is the 3HP brush motor or the 1.5HP induction motor for heavier commercial use, both come with features such as overload protection, garden hose connection and a channeled-flow water pan to direct dust and slurry away from the operator.

| - | - | | |
|--|----|--------|---------------------|
| DESCRIPTION | HP | PART # | UPC # |
| Blockbuster Mini Masonry Saw with AC universal motor; gear drive | 3 | BBM307 | 701846 00684 |
| Blockbuster Mini Masonry Saw with Induction motor; belt drive | 2 | BBM158 | 701846 26327 |
| ACCESSORIES | | | |
| Vacuum Adaptor Kit (includes: back splash, adaptor and hardware) | | | 701846 00753 |
| Wet Kit | | | 701846 00704 |
| Stand | | | 701846 00691 |



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CONSTRUCTION PRODUCTS Equipment



All saws on this page come equipped with genuine Norton Clipper

applifast.com

diamond blades.

Wire Brushes

get wired FOR SUCCESS

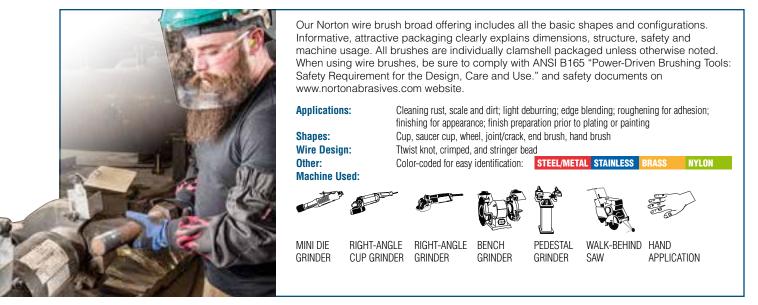
Our broad wire brush offering includes the shapes, wire configurations and filament materials you'll need for heavy- to light-duty brushing applications.

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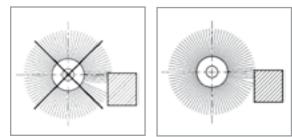


WIRE BRUSHES Wire Brush Basics



Why Use Wire Brushes vs. Other Brushes, Coated Abrasive, and Surface-Cleaning Products

Norton Wire brushes remove rust and oxidations, paint, slag, weld spatter and other unwanted surface contaminants, without removing any base material. Other products can remove base material along with the surface contaminant. Our flexible wire brushes are able to clean hard-to-reach places and conform to irregular surfaces, which more rigid products cannot do.



Let the tip of the wire brush do the work – operate the brush with the lightest pressure. If heavy pressure is used, wires will be overstressed, resulting in a wiping action, which, if continued, creates wire fatigue and will shorten brush life. Reversing the rotation periodically sharpens the wire tips for faster cutting action and longer life. Use finest suitable wire size.





Crimped



Standard Twist Knot



Stringer Bead Twist Knot

TECH TIP

When to Use Crimped Wire vs. Standard Twist Knot vs. Stringer Bead Twist Knot Brushes

Crimped Wire Brushes

Crimped wire brushes' individual filaments are supported only by each other – creating extra flexibility.

Ideal for work on irregular surfaces, finer surface finishing, and light- to medium-duty contaminant removal applications.

Standard Twist Knot Wire Brushes

Ensuring longer life, making them the choice for more aggressive applications requiring higher-impact action, and a rougher surface finish.

Standard twist knot brushes are made with straight wire filaments that are twisted together to make more rigid rope- or cable-like pieces.

Stringer Bead Twist Knot Wire Brushes

Stringer bead twist knots (vs. standard twist knots) are more tightly twisted to the end of the knot, creating a narrower face and highest-impact action.

The choice for tough weld scale cleaning, removing the bead scale that occurs at the initial joining of two sections of pipe, root and hot weld pass cleaning, and the most aggressive brushing applications.

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Wire Diameter

Choose the appropriate wire brush wire diameter for the job

• Very fine to fine wire for light-duty applications

| Very fine to fine wir | e for light-o | duty application | ons | Med | Medium to coarse wire for heavy-duty applications | | | | | | | |
|---|---------------|------------------|------------------|-------------------------|---|--------|------|------|------|-----------|--|--|
| Wire | Coarse | | Medium to Coarse | | Medium | Medium | | Fine | | Very Fine | | |
| DIAMETER IN INCHES | .032 | .020 | .020 | .015 | .012 | .0104 | .010 | .008 | .006 | .005 | | |
| DIAMETER IN MM | .80 | .50 | .50 | .37 | .30 | .26 | .25 | .20 | .15 | .13 | | |

TECH TIP

Trim Length

Choose the appropriate trim length for the job. "Trim Length" equals the amount of usable filament:

- Longer trim lengths are more flexible, making them the choice for irregular surfaces
- · Shorter trim lengths are fast acting and more rigid, so better for more severe applications

ECH

Filament Do's and Don'ts

Excessive pressure bends and could break brush filaments. Instead of increasing the pressure applied, consider:

- A more aggressive brush:
- · Increasing wire diameter
- Shorter trim length
- · Different brush type, e.g. twist knot versus crimped wire
- · Increasing RPM without exceeding the MAX RPMs marked on the brush



To learn which wire style is the best choice for your job and see what makes Norton Wire Brushes the ultimate power tool accessories visit https://nortonsga.us/wgazw



Better choice for deburring, removing rust, paint, corrosion and weld spatter from metal surfaces

BLUEFIRE WIRE BRUSHES

- · Perfect for removing rust, scale, paint, and dirt from metal and other surface
- Available in a variety of brush types and sizes for large flat areas to small, tight spaces
- · Durable design provides a uniform finish while offering the longest life



Good choice for removing rust oxidation, paint, slag and weld spatter without removing base material

GEMINI WIRE BRUSHES

- · Ideal low-impact solution for refining surfaces without removing any base material
- Flexible design for cleaning hard-to-reach places and conforming to irregular surfaces, which more rigid products cannot do

Economically priced yet solid-performing to complement your projects perfectly while bringing real savings to the bottom line





WIRE BRUSHES Wire Cup Brushes



Deburring; roughing; cleaning rust, scale, paint and oxidation; cleaning corners, recesses, and other hard-to-reach areas and removing concrete and large surfaces

WIRE CUP BRUSHES

- Used on right angle cup grinders
- Twist Knot style for heavy-duty applications
- · Crimped cup for light- to medium-duty applications

Twist Knot Wire Saucer Cup Brushes





Twist Knot Wire Cup Brushes

- · Their more rigid structure allows efficient, high-impact cutting and cleaning on more demanding applications.
- · Single row construction limits flaring of the brush on corners and angles

6" x 0.020" x 5/8"-11

6,000

5

| | | | TIER: | BETTER | BETTER |
|---------------------------|-----------------------|----------------|------------|---------------------|---------------------|
| | | | TRADENAME: | BLUEFIRE | BLUEFIRE |
| | | | WIRE TYPE: | CARBON | STAINLESS |
| SIZE | TRIM LENGTH | | STD. PKG. | PART # | PART # |
| | | | | FANI# | FANI # |
| Twist Knot Wire Saucer Cu | ip brusnes - Single i | KUW - WILLI AF | DUL HOIG | | |
| 4" x 0.020" x 5/8"-11 | 7/8" | 15,000 | 5 | 662528 33483 | |
| 5" x 0.020" x 5/8-11 | 1-1/8" | 12,500 | 10 | 662528 35585 | 662528 35586 |
| | | | | | |

| Twist Knot Wire C | Cup Brusł | nes | | | | 8 | | | |
|---|----------------------|--------------|------------|---------------------|---------------------|----------|----------|---------------------|---------------------|
| Their more rigid structure allow cutting and cleaning on more c | , 0 | | | TELLUS | Wirth | | | Anient | mine |
| Single row construction limits | flaring of the brush | n on | TIER: | BETTER | BETTER | BETTER | BETTER | GOOD | GOOD |
| corners and angles | 0 | | TRADENAME: | BLUEFIRE | BLUEFIRE | BLUEFIRE | BLUEFIRE | GEMINI | GEMINI |
| | | | WIRE TYPE: | CARBON | STAINLESS | CARBON | CARBON | CARBON | STAINLESS |
| SIZE | TRIM LENGTH | MAX. RPM | STD. PKG. | PART # | PART # | PART # | PART # | PART # | PART # |
| Twist Knot Wire Cup Brushes | - Single Row – | With Arbor H | ole | | | | | | |
| 2-3/4" x 0.014" x 5/8"-11 | 3/4" | 14,000 | 1 | 699573 70106 | 699573 70107 | | | | |
| 2-3/4" x 0.014" x 5/8"-11 | 7/8" | 14,000 | 5 | | | | | 662528 38870 | 662528 38871 |
| 2-3/4" x 0.014" x 5/8"-11 | 1" | 14,000 | 5 | | | | | 662528 39109 | |
| 2-3/4" x 0.020" x 5/8"-11 | 3/4" | 14,000 | 5 | 699366 53336 | 699366 53340 | | | | |
| 2-3/4" x 0.020" x 5/8"-11 | 7/8" | 14,000 | 5 | | | | | 662528 38872 | |
| 2-3/4" x 0.020" x 5/8"-11 | 1" | 14,000 | 10 | | | | | 662528 39033 | 662528 38812 |
| 2-3/4" x 0.020" x 1/2"-13 | 3/4" | 14,000 | 1 | 699573 70108 | | | | | |
| 2-3/4" x 0.020" x 1/2"-24 | 3/4" | 14,000 | 1 | 699573 70109 | | | | | |
| 2 2// V 0 020 V M10 V 1 25 | 2// | 15 000 | 5 | 60026652330 | | | | | |

| | 1 | 17,000 | 10 | | | | 0020200000 | 0020200012 |
|------------------------------------|--------------|------------------|--------|---------------------|---------------------|---------------------|---------------------|---------------------|
| 2-3/4" x 0.020" x 1/2"-13 | 3/4" | 14,000 | 1 | 699573 70108 | | | | |
| 2-3/4" x 0.020" x 1/2"-24 | 3/4" | 14,000 | 1 | 699573 70109 | | | | |
| 2-3/4" x 0.020" x M10 x 1.25 | 3/4" | 15,000 | 5 | 699366 53338 | | | | |
| 3" x 0.020" x 5/8"-11 | 7/8" | 14,000 | 5 | | | | 662528 38835 | 662528 39127 |
| 3" x 0.020" x M10 | 7/8" | 14,000 | 5 | | | | 662528 39075 | |
| 3-1/2" x 0.020" x 5/8"-11 | 7/8" | 13,000 | 5 | | | | 662528 38813 | |
| 3-1/2" x 0.020" x 5/8"-11 | 1-3/8" | 13,000 | 5 | | | | 662528 38868 | |
| 3-1/2" x 0.023" x 5/8"-11 | 7/8" | 13,000 | 1 | 699573 70110 | | | | |
| 4" x 0.014" x 5/8"-11 | 1-1/16" | 9,000 | 1 | 699573 70111 | | | | |
| 4" x 0.014" x 5/8"-11 | 1-1/4" | 9,000 | 5 | | | | 662528 39060 | |
| 4" x 0.020" x 5/8"-11 | 1-1/8" | 9,000 | 10 | | | | 662528 39103 | |
| 4" x 0.020" x 5/8"-11 with bridle | 1-1/16" | 9,000 | 5 | 699366 53345 | 662528 33947 | | | |
| 4" x 0.023" x 5/8"-11 | 1-1/4" | 9,000 | 5 | | | | 662528 39090 | |
| 6" x 0.014" x 5/8"-11 | 1-3/8" | 6,600 | 1 | 699573 70112 | | | | |
| 6" x 0.014" x 5/8"-11 | 1-3/8" | 6,600 | 5 | | | | 662528 39037 | |
| 6" x 0.020" x 5/8"-11 | 1-3/8" | 6,000 | 5 | 699366 05965 | 662533 71115 | | 662528 39104 | 662528 39129 |
| 6" x 0.023" x 5/8"-11 | 1-3/8" | 6,000 | 5 | | | | 662528 39091 | |
| 6" x 0.035" x 5/8"-11 | 1-3/8" | 6,000 | 5 | 699366 02003 | | | | |
| Twist Knot Wire Cup Brushes | - Single Row | - With Arbor Ho | le and | Protective Guard | | | | |
| 2-3/4" x 0.020" x 5/8"-11 | 3/4" | 15,000 | 5 | | | 662528 33492 | | |
| 4" x 0.020" x 5/8"-11 | 1-1/8" | 9,000 | 5 | | | 662528 33496 | | |
| 5" x 0.020" x 5/8"-11 | 1-1/8" | 6,500 | 5 | | | 662528 33497 | | |
| Twist Knot Wire Cup Brushes | - Double Roy | w - With Arbor H | ole | | | | | |

699366**53346**

1-3/8"





WIRE BRUSHES Wire Cup Brushes

Crimped Wire Cup Brushes

For light- to medium-duty brushing applications on flat or irregular surfaces, and bevel buffing where added flexibility is needed; fast-cutting and flexible, with heavy wire fill

- Machine for cups with arbor holes: right angle cup grinder
- Machine for shank mounted cups: straight in-line grinder, pencil grinder



| | | | | P |
|---|----------------|-------------|--------------|-------------|
| | | | TIER: | BETTER |
| | | | TRADENAME: | BLUEFIRE |
| | | | WIRE TYPE: | CARBON |
| SIZE | TRIM Length | MAX. RPM | STD. PKG. | PART # |
| High Performance Cable - With Arbor Hole and Pro | | | hes | |
| 3" x (12 x 0.009") x 5/8"-11 | 7/8" | 15.000 | 5 | 66252833493 |
| J X (12 X 0.003) X 0/0 11 | 1/0 | .0,000 | | 00202000 |





| | | | 11610 | | | |
|--------------------------------|---------------|----------|------------|---------------------|---------------------|----------------------|
| | | TR | ADENAME. | BLUEFIRE | BLUEFIRE | GEMINI |
| | | l | NIRE TYPE. | CARBON | STAINLESS | CARBON |
| | TRIM | | STD. | | | |
| SIZE | LENGTH | MAX. RPM | PKG. | PART # | PART # | PART # |
| Crimped Wire Cup Brushe | es – With Arl | or Hole | | | | |
| 2-3/4" x 0.014" x 5/8"-11 | 1" | 14,000 | 5 | | | 662528 38856 |
| 2-3/4" x 0.020" x 3/8"-24 | 1" | 14,000 | 5 | | | 662528 3908 |
| 3" x 0.014" x 5/8"-11 | 13/16" | 14,000 | 5 | | | 662528 3907 6 |
| 3" x 0.014" x 5/8"-11 | 7/8" | 14,000 | 5 | 699366 53341 | 662528 36362 | |
| 3" x 0.014" x 5/8"-11 | 1" | 14,000 | 10 | | | 662528 3903 4 |
| 4" x 0.014" x 5/8"-11 | 1-3/16" | 9,000 | 5 | 699366 53347 | | |
| 4" x 0.014" x 5/8"-11 | 1-1/8" | 9,000 | 10 | | | 662528 3912 1 |
| 4" x 0.020" x 5/8"-11 | 1-3/16" | 9,000 | 5 | | 662528 43844 | |
| 5" x 0.014" x 5/8"-11 | 1-3/8" | 8,000 | 5 | | | 662528 3910 |
| 6" x 0.014" x 5/8"-11 | 1-1/8" | 6,000 | 5 | 699366 53348 | | |
| 6" x 0.020" x 5/8"-11 | 1-1/8" | 6,000 | 5 | 699366 53349 | | |



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| | | | | - | - | C. |
|------------------------------|----------------|-------------|--------------|---------------------|---------------------|---------------------|
| | | | TIER: | GOOD | GOOD | GOOD |
| | | | TRADENAME: | GEMINI | GEMINI | GEMINI |
| | | | WIRE TYPE: | CARBON | STAINLESS | BRASS |
| SIZE | TRIM Length | MAX. RPM | STD. PKG. | PART # | PART # | PART # |
| Crimped Wire Cup Brus | hes - Shank M | ounted | | | | |
| 5/8" x 0.005" x 1/8" | 1/4" | 37,000 | 100 | | | 662528 39087 |
| 1-3/4" x 0.006" x 1/4" | 1/2" | 13,000 | 10 | 662528 38857 | | |
| 1-3/4" x 0.012" x 1/4" | 1/2" | 13,000 | 10 | 662528 38858 | | |
| 1-3/4" x 0.012" x 1/4" | 3/4" | 13,000 | 12 | 662528 39028 | | |
| 2" x 0.010" x 1/4" | 5/8" | 10,500 | 12 | | 662528 38859 | |
| 2" x 0.012" x 1/4" | 5/8" | 13,000 | 12 | 662528 39110 | | |
| 2-1/4" x 0.014" x 1/4" | 5/8" | 4,500 | 10 | 662528 38860 | | |
| | | | | | | |





WIRE BRUSHES Wire Wheel Brushes





Applications range from the toughest, more aggressive surface cleaning applications, including removing weld scale, spatter, extra-heavy rust and corrosion, cleaning pipe joints, or surface roughening to light- to medium- duty surface cleaning and contaminant removal

WIRE WHEEL BRUSHES

- · Available in Standard Twist Knot, Stringer Bead Twist Knot, and Crimped
- · See specific machines for each wire wheel below

Standard Twist Knot Wire Wheel Brushes

Our twist knot wire design provides added rigidity for extra cutting and cleaning power, and a rougher surface finish.

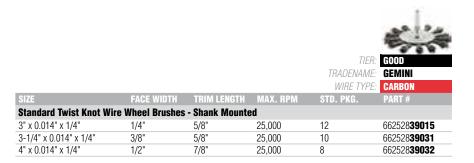
- · Wheel brushes with arbor holes perform well on more aggressive applications requiring high-impact action: tough welding and metal fabrication applications, including removing weld scale, spatter, extra-heavy rust.
- These shank-mounted wheel brushes are used for small-to medium-duty jobs requiring some flexibility and lighter brushing action for corrosion, or surface roughing applications. These brushes are used on straight shaft, die, pencil grinders, drills and right angle grinders.

| | | | | 11616 | | | DETTEN | uuuu | UUUD |
|--------------------------------------|---------------|----------------|-------------|--------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | | | 7 | TRADENAME: | BLUEFIRE | BLUEFIRE | BLUEFIRE | GEMINI | GEMINI |
| | | | | WIRE TYPE: | CARBON | STAINLESS | PIPELINE | CARBON | STAINLESS |
| SIZE | FACE Width | TRIM Length | MAX. RPM | STD. PKG. | PART # |
| Standard Twist Knot Wire Wheel | | | | | | | | | |
| 3" x 0.15" x 1/2"-3/8" | 3/8" | 5/8" | 20,000 | 6 | 699366 53314 | | | | |
| 3" x 0.014" x 3/8" | 3/8" | 5/8" | 25,000 | 1 | | | | 662528 39021 | |
| " x 0.014" x 5/8"-11 | 5-16" | 7/8" | 20,000 | 5 | | | | 662528 39011 | |
| " x 0.014" x 5/8"-11 | 1/2" | 7/8" | 20,000 | | | | | 662528 39052 | |
| " x 0.020" x 5/8"-11 | 1/4" | 3/4" | 20,000 | 10 | | | | | 662528 39132 |
| " x 0.020" x 5/8"-11 | 1/2" | 3/4" | 20,000 | 5 | 662528 38300 | | | | |
| " x 0.020" x 5/8"-11 | 1/2" | 7/8" | 20,000 | 10 | | | | 662528 39035 | 662528 39020 |
| " x 0.020" x 5/8"-11 | 1/2" | 7/8" | 20,000 | 5 | | | | 662528 39078 | |
| " x 0.020" x 5/8"-11 | 9/16" | 7/8" | 20,000 | 10 | | | | 662528 39019 | |
| -1/2" x 0.020" x 5/8"-11 | 1/2" | 1" | 20,000 | 5 | 699366 06275 | | | | |
| -1/2" x 0.020" x 5/8"-11 (black hub) | 1/2" | 1" | 20,000 | 6 | | | 662528 40466 | | |
| I-1/2" x 0.020" x 5/8"-11 | 1/2" | 1" | 20,000 | 6 | 699366 53331 | | | | |
| -1/2" x 0.020" x 5/8"-11 | 1/2" | 1" | 20,000 | 5 | | 699366 53333 | | | |
| 5" x 0.020" x 5/8"-11 | 1/2" | 1" | 12,500 | 5 | 662528 33487 | 662528 33488 | | | |
| 5" x 0.014" x 5/8"-11 | 1/2" | 1-1/2" | 12,000 | 5 | | | | 662528 39014 | |
| 5" x 0.020" x 5/8"-11 | 1/2" | 1-3/8" | 12,000 | | 699366 53352 | 662533 71540 | | | |
| 6" x 0.020" x 5/8"-11 | 5/8" | 1-1/4" | 12,000 | | | | | 662528 39107 | 662528 39594 |
| 6" x 0.020" x 5/8"-11 | 1/2" | 1-3/8" | 12,000 | | 699366 53327 | | | | |
| 6" x 0.025" x 5/8"-11 | 5/8" | 1-1/4" | 9,000 | 5 | | | | 662528 39593 | |
| | | | | | | | | | |



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Distributed by Applifast.





WIRE BRUSHES Wire Wheel Brushes



Stringer Bead Twist Knot Wire Wheel Brushes

The choice for toughest weld scale cleaning; removing the bead scale that occurs at the initial joining of two sections of pipe; root, and hot weld pass cleaning, and the most aggressive brushing applications. Stringer Bead Twist Knot Wire Wheel Brushes are best used on right angle grinders for difficult jobs.

| A COLOR | MA | ALD. | | | | | 6 | 6 | Ster. | STOR A | ALL |
|-------------------------------|----------|-----------|-----------|---------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------|---|
| the second | A. L. M. | | | TIER: | BETTER | BETTER | BETTER | BETTER | BETTER | GOOD | GOOD |
| | | | TRAD | ENAME: | BLUEFIRE | BLUEFIRE | BLUEFIRE | BLUEFIRE | BLUEFIRE | GEMINI | GEMINI |
| | | | WIF | E TYPE: | CARBON | CARBON | CARBON | STAINLESS | STAINLESS | CARBON | STAINLESS |
| | | | | OTHER: | | Pipeline | Heavy-Duty | | Pipeline | | |
| | FACE | TRIM | MAX. | STD. | | | | | · | | |
| SIZE | WIDTH | LENGTH | RPM | PKG. | PART # | PART # | PART # |
| Stringer Bead Knot Wir | e Wheel | Brushes - | – With Ar | bor Hol | e | | | | | | |
| 3" x 0.020" x 1/4" | 3/8" | 1" | 20,000 | 10 | | | | | | 662528 39096 | |
| 4" x 0.020" x 5/8"-11 | 3/16" | 7/8" | 20,000 | 5 | 699366 06277 | | | 699366 06278 | | | |
| 4" x 0.020" x 5/8"-11 | 3/16" | 7/8" | 20,000 | 6 | 662528 33489 * | 662528 40467 * | | | 662528 42233 * | | |
| 4" x 0.020" x 5/8"-11 | 3/16" | 7/8" | 20,000 | 10 | 662533 70022 * | | | | | 662528 39036 | 662528 39039 |
| 4" x 0.020" x 5/8"-11 | 1/4" | 7/8" | 20,000 | 5 | | | | | | 662528 38997 | |
| 4" x 0.020" x 5/8"-11 | 1/4" | 7/8" | 20,000 | 10 | | | | | | | 662528 38989 |
| 4" x 0.020" x 5/8"-11 | 1/2" | 7/8" | 20,000 | 10 | | | | | | 662528 39130 | |
| 4" x 0.020" x 5/8"-11 | 1/2" | 1" | 20,000 | 10 | | | | | | 662528 39106 | |
| 4" x 0.020" x M10 | 3/16" | 7/8" | 20,000 | 6 | | | | 699573 70144 | | | |
| 4" x 0.020" x M10 | 3/16" | 7/8" | 20,000 | 10 | | | | | | | 662528 39038 |
| 4-1/2" x 0.020" x 5/8"-11 | 3/16" | 3/16" | 15,000 | 5 | | | | | | 662528 39111 | |
| 4-1/2" x 0.020" x 5/8"-11 | 3/16" | 1-1/8" | 15,000 | 6 | | 662528 42299 * | 662528 44886 | | | | |
| 5" x 0.020" x 5/8"-11 | 3/16" | 7/8" | 12,500 | 10 | 662528 33490 * | | | 662528 33491 * | | | |
| 5" x 0.020" x 5/8"-11 | 1/2" | 7/8" | 12,500 | 5 | | | | | | 662528 39133 | |
| 6" x 0.020" x 5/8"-11 | 3/16" | 1-3/8" | 9,000 | 10 | 699366 53350 | 662528 40469 * | 662528 44887 | 699366 53351 | | | |
| 6-7/8" x 0.020" x 5/8"-11 | 3/16" | 1-1/8" | 9,000 | 5 | | | | | | 662528 39026 | |
| 6-7/8" x 0.020" x 5/8"-11 | 3/16" | 1-1/8" | 9,000 | 10 | 699366 53329 * | 662528 40468 * | 662528 43919 * | 662533 71116 * | | | |
| 6-7/8" x 0.020" x 5/8"-11 | 3/16" | 1-1/8" | 9,000 | 6 | 662528 10992 | | | | | | |
| Double Hub | | | | | | | | | | | |
| 9" x 0.020" x 5/8"-11 | 3/16" | 2-1/8" | 6,000 | 6 | 662528 37993 | | | | | | |
| Stringer Bead Knot Wir | | | | | | ning with Walk | -Behind Machi | nes | | | |
| 12" x 0.035" x 1"-DP | 3/8" | 3-1/4" | 4,500 | 2 | 699366 06280 | | | | | | |

*Bulk Packed Item



Radial Wheel

Distributed by Applifast.

Nylon Radial Wheel Brushes are best used for deburring, surface and light cleaning, adding an edge radius, on ferrous and non-ferrous parts. The long trim length is ideal when used on intricate or irregular parts.

 (\mathbf{t})

• *Machine:* Bench and Pedestal, Automated CNC, Inline Grinders

| | | | | | | _ |
|------------------|-------|--------|--------|----------|---------------------|---|
| | | | | TIE | R: GOOD | |
| | | | | TRADENAN | IE: GEMINI | |
| | | | | WIRE TYP | PE: NYLON | |
| | FACE | TRIM | MAX. | STD. | | |
| SIZE | WIDTH | LENGTH | RPM | PKG. | PART # | |
| Radial Wheel | | | | | | |
| 3" x 3/8" x 5/8" | 3/8" | 15/16" | 15,000 | 12 | 662528 38842 | |

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WIRE BRUSHES Wire Wheel Brushes



Crimped Wire Wheel Brushes

Shank-mounted wheel brushes are used on straight shaft, die, and pencil grinders, and drills. Wheel brushes with arbor holes are used on bench and pedestal grinders. Their extra flexibility and lower impact makes these brushes an excellent choice for cleaning irregular surfaces and finer surface finishing, and light to medium duty surface contaminant removal applications. May be used individually or stacked on a shaft.

- Narrow-faced brushes are ideal for general-purpose brushing of uneven or difficult-to-reach surfaces.
- Medium-faced brushes clean larger surface areas and have longer life.



Crimped Wire Narrow Face -Carbon Steel - with Arbor hole



Crimped Wlre - Carbon Steel - Shank Mounted

| | | | TF | RADENAME: | BLUEFIRE | GEMINI | GEMINI |
|----------------------------|-----------|-----------|------------|------------|---------------------|---------------------|---------------------|
| | | | | WIRE TYPE: | CARBON | CARBON | STAINLESS |
| | FACE | TRIM | MAX. | STD. | | | |
| SIZE | WIDTH | LENGTH | RPM | PKG. | PART # | PART # | PART # |
| Crimped Wire Wheels I | Brushes w | | v Face - \ | Nith Arbor | Hole | | |
| 1" x 0.008" x 5/16" | 5/32" | 3/16" | 20,000 | 20 | | 662528 38949 | |
| 2" x 0.014" x 1/2" | 3/8" | 1/2" | 20,000 | 12 | | 662528 39023 | |
| 3" x 0.005" x 1/2" | 1/4" | 1" | 20,000 | 20 | | | 662528 38960 |
| 3" x 0.014" x 1/2" | 5/8" | 1" | 20,000 | 10 | | 662528 39024 | |
| 4" x 0.014" x 5/8"-11 | 7/16" | 7/8" | 15,000 | 5 | | 662528 39001 | |
| 6" x 0.014" x 1/2"-2 | 3/4" | 1-1/8" | 6,500 | 5 | 699366 53306 | | |
| 6" x 0.014" x 5/8" | 3/4" | 1-1/8" | 6,000 | 5 | | 662528 39097 | |
| 6" x 0.014" x 5/8" | 3/4" | 1-7/16" | 6,000 | 5 | | 662528 39088 | |
| 8" x 0.014" x 5/8" | 3/4" | 1-9/16" | 4,000 | 5 | | 662528 39099 | |
| 8" x 0.014" x 5/8" | 3/4" | 2-1/16" | 6,000 | 5 | | 662528 39089 | |
| 8" x 0.014" x 1-1/4" | 5/8" | 1-1/2" | 4,000 | 5 | | 662528 38978 | |
| Crimped Wire Wheels | Brushes w | ith Mediu | m Face - | With Arbo | r Hole | | |
| 4-1/2" x 0.014" x 5/8"-11 | | 1" | 13,000 | 6 | 662533 70278 | | |
| 6" x 0.014" x 1/2"-2 | 1" | 1-1/8" | 6,500 | 5 | 699366 53324 | | |
| 6" x 0.014" x 5/8" | 1" | 1-1/8" | 6,500 | 5 | | 662528 39098 | |
| 8" x 0.014" x 1/2"-2 | 1-1/16" | 1-5/8" | 4,500 | 5 | 699366 53326 | | |
| 8" x 0.014" x 5/8" | 1" | 1-9/16" | 4,000 | 5 | | 662528 39100 | |
| 8" x 0.014" x 2" | 1" | 1-3/8" | 4,500 | 5 | | 662528 39025 | |
| 10" x 0.014" x 3/4" | 1-9/16" | 2-1/2" | 3,600 | 1 | | 662528 39102 | |
| 12" x 0.012" x 2" | 2" | 3-1/4" | 3,600 | 1 | | 662528 39006 | |



| | | | TR | ADENAME: | GEMINI | GEMINI | GEMINI |
|----------------------------|-------|--------|--------|------------|---------------------|---------------------|---------------------|
| | | | V | VIRE TYPE: | CARBON | STAINLESS | BRASS |
| 0.22 | FACE | TRIM | MAX. | STD. | | D407 // | |
| SIZE | WIDTH | LENGTH | RPM | PKG. | PART # | PART # | PART # |
| Crimped Wire Wheels | | | | | | | |
| 3/4" x 0.005" x 3/16" | 1/32" | 3/16" | 37,000 | 100 | 662528 39084 | | |
| 1" x 0.005" x 1/8" | 1/8" | 5/16" | 37,000 | 100 | | | 662528 39085 |
| 1-1/2" x 0.008" x 1/4" | 1/4" | 1/4" | 25,000 | 20 | 662528 38962 | | |
| 1-1/2" x 0.0118" x 1/4" | 7/16" | 3/8" | 20,000 | 12 | 662528 38999 | | |
| 1-1/2" x 0.014" x 1/4" | 1/4" | 1/4" | 25,000 | 20 | 662528 38963 | | |
| 2" x 0.006" x 1/4" | 3/8" | 1/2" | 20,000 | 20 | 662528 39029 | | |
| 2" x 0.008" x 1/4" | 3/8" | 7/16" | 25,000 | 20 | 662528 38964 | | |
| 2" x 0.0118" x 1/4" | 3/8" | 1/2" | 20,000 | 20 | 662528 39030 | | |
| 2" x 0.014" x 1/4" | 3/8" | 7/16" | 25,000 | 12 | 662528 38965 | | |
| 2" x 0.020" x 1/4" | 3/8" | 7/16" | 25,000 | 20 | 662528 38966 | | |
| 2-1/2" x 0.008" x 1/4" | 7/16" | 11/16" | 25,000 | 10 | 662528 38967 | | |
| 2-1/2" x 0.014" x 1/4" | 7/16" | 11/16" | 25,000 | 12 | 662528 38968 | | |
| 3" x 0.008" x 1/4" | 1/2" | 1" | 20,000 | 10 | 662528 39092 | | |
| 3" x 0.008" x 1/4" | 7/16" | 3/4" | 25,000 | 10 | 662528 38969 | | |
| 3" x 0.008" x 1/4" | 7/16" | 3/4" | 25,000 | 12 | | 662528 38972 | |
| 3" x 0.0118" x 1/4" | 1/2" | 1" | 20,000 | 10 | 662528 39093 | | |
| 3" x 0.014" x 1/4" | 3/8" | 1/4" | 20,000 | 12 | 662528 39000 | | |
| 3" x 0.014" x 1/4" | 7/16" | 3/4" | 25,000 | 10 | 662528 38970 | | |
| 3" x 0.014" x 1/4" | 7/16" | 3/4" | 25.000 | 12 | | 66252838973 | • |
| 3" x 0.014" x 1/4" | 1/2" | 1" | 20,000 | 20 | | 662528 39048 | 8 |
| 3" x 0.020" x 1/4" | 7/16" | 3/4" | 25,000 | 12 | 662528 38971 | | · |
| 3" x 0.020" x 1/4" | 1/2" | 1" | 20,000 | 12 | 662528 39096 | | |
| 4" x 0.014" x 1/4" | 1/2" | 1" | 25,000 | 12 | 662528 38974 | | |
| | .,= | • | ,000 | | | | |



WIRE BRUSHES **End Brushes**



Clean and deburr recessed areas or inside diameters of tubes and pipes to proper surface finish; rubber and plastic flash removal; paint and rust removal, and mold and tool polishing

END BRUSHES

- Used on CNC, Robotic, die grinders, and drill presses
- Twist knot wire end brushes for more aggressive cutting
- Crimped wire end brushes for lighter brushing action and contoured surfaces



Twist Knot Wire End Brush

| Their added wire rigidity r | nakes these brushes t | he choice | TIER: | BETTER | BETTER | GOOD | GOOD |
|-----------------------------|-----------------------|-----------|------------|-----------------------|---------------------|---------------------|---------------------|
| or more aggressive cuttin | | | TRADENAME: | BLUEFIRE | BLUEFIRE | GEMINI | GEMINI |
| on more aggreeente eatan | .9. | | WIRE TYPE: | CARBON | STAINLESS | CARBON | STAINLESS |
| SIZE | TRIM LENGTH | MAX. RPM | STD. PKG. | PART # | PART # | PART # | PART # |
| Twist Knot Wire End B | rushes – Shank-Mo | unted | | | | | |
| 1/2" x 0.006" x 1/4" | 1-1/8" | 22,000 | 20 | | | 662528 38876 | |
| 1/2" x 0.014" x 1/4" | 1-1/8" | 22,000 | 20 | | | 662528 38877 | |
| 3/4" x 0.014" x 1/8" | 7/8" | 22,000 | 20 | | | 662528 39056 | |
| 3/4" x 0.014" x 1/4" | 7/8" | 22,000 | 10 | 699573 70164 | 699573 70165 | | |
| 3/4" x 0.014" x 1/4" | 7/8" | 22,000 | 20 | | | 662528 38879 | |
| 3/4" x 0.020" x 1/4" | 7/8" | 22,000 | 10 | 699366 53316 * | 699573 70166 | | |
| 3/4" x 0.020" x 1/4" | 7/8" | 22,000 | 20 | | | 662528 39057 | |
| 3/4" x 0.020" x 1/4" | 1" | 22,000 | 20 | | | 662528 39116 | 662528 39118 |
| 3/4" x 0.020" x 1/4" | 1-1/8" | 22,000 | 20 | | | 662528 38878 | |
| l" x 0.006" x 1/4" | 1-1/8" | 22,000 | 20 | | | | 662528 38885 |
| l" x 0.010" x 1/4" | 1-1/8" | 22,000 | 25 | | | | 662528 38886 |
| " x 0.014" x 1/4" | 7/8" | 22,000 | 10 | 699366 06279 * | 699573 70167 | | |
| " x 0.014" x 1/4" | 1" | 22,000 | 20 | | | 662528 38882 | 662528 38887 |
| " x 0.020" x 1/4" | 7/8" | 22,000 | 10 | 699366 53310 * | 699573 70168 | | |
| 1" x 0.020" x 1/4" | 1" | 22,000 | 20 | | | | 662528 39119 |
| 1" x 0.020" x 1/4" | 1" | 22,000 | 25 | | | 662528 39117 | |
| * Pulk Packod Itom | | | | | | | |

* Bulk Packed Item



Insert Circular Flared Crimped Wire End Brush

The flared end configuration facilitates interior side cleaning and will not harm the bottom of the hole.

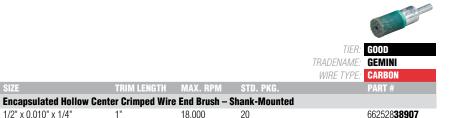


Encapsulated Hollow Center Crimped Wire End Brush

Their hollow centers effectively allow these brushes to clean around protrusions and also prevent the wires from meshing together. Encapsulating a portion of the wires' length shortens the free wires, increasing the wires' stiffness, thereby creating greater control of the brush.

Distributed by Applifast





1"

1/2" x 0.010" x 1/4"



WIRE BRUSHES End Brushes

the sale

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TIER: GOOD



Crimped Wire End Brushes

| Designed to generate lighter b | rushing action and reach | | T | IER: BETTER | BETTER | GOOD | GOOD |
|---------------------------------|--------------------------|----------|-----------|---------------------|---------------------|---------------------|---------------------|
| into contoured surfaces. | aoning aonon ana roaon | | TRADENA | ME: BLUEFIRE | BLUEFIRE | GEMINI | GEMINI |
| | | | WIRE TY | (PE: CARBON | STAINLESS | CARBON | STAINLESS |
| SIZE | TRIM LENGTH | MAX. RPM | STD. PKG. | PART # | PART # | PART # | PART # |
| Crimped Wire End Brushes | - Shank-Mounted | | | | | | |
| 1/4" x 0.005" x 1/8" | 7/16" | 37,000 | 12 | | | | 662528 39086 |
| 1/2" x 0.005" x 1/4" | 1" | 25,000 | 20 | | | | 662528 38902 |
| 1/2" x 0.006" x 1/4" | 3/8" | 25,000 | 20 | | | 662528 39040 | |
| 1/2" x 0.006" x 1/4" | 1" | 25,000 | 20 | | | 662528 38889 | 662528 39043 |
| 1/2" x 0.010" x 1/4" | 1" | 25,000 | 20 | | | 662528 38890 | 662528 39044 |
| 1/2" x 0.014" x 1/4" | 7/8" | 25,000 | 20 | | | 662528 39042 | |
| 1/2" x 0.014" x 1/4" | 1" | 25,000 | 20 | | | | 662528 38888 |
| 1/2" x 0.020" x 1/4" | 1" | 25,000 | 20 | | | 662528 38891 | |
| 3/4" x 0.006" x 1/4" | 1" | 22,000 | 10* | | 699366 06145 | | |
| 3/4" x 0.010" x 1/4" | 3/8" | 22,000 | 20 | | | 662528 39053 | |
| 3/4" x 0.014" x 1/4" | 1" | 22,000 | 10* | 699366 53317 | | | |
| 3/4" x 0.020" x 1/4" | 7/8" | 22,000 | 20 | | | 662528 39112 | |
| 3/4" x 0.020" x 1/4" | 1" | 22,000 | 20 | | | 662528 38892 | |
| 1" x 0.005" x 1/4" | 1" | 22,000 | 20 | | | | 662528 38896 |
| 1" x 0.006" x 1/4" | 1" | 22,000 | 25 | | | 662528 39045 | 662528 38838 |
| 1" x 0.010" x 1/4" | 3/8" | 22,000 | 20 | | | 662528 39054 | |
| 1" x 0.010" x 1/4" | 1" | 22,000 | 25 | | | | 662528 39055 |
| 1" x 0.010" x 1/4" | 1" | 22,000 | 20 | | | | 662528 38897 |
| 1" x 0.014" x 1/4" | 3/4" | 20,000 | 20 | | | 662528 39094 | |
| 1" x 0.014" x 1/4 | 1" | 22,000 | 20 | | | 662528 39046 | |
| 1" x 0.020" x 1/4 | 7/8" | 22,000 | 20 | | | 662528 39095 | |
| 1" x 0.020" x 1/4 | 1" | 22,000 | 20 | | | 662628 39113 | 662528 39115 |
| 1" x 0.020" x 1/4 | 1-3/16" | 20,000 | 10* | 699366 53309 | | | |
| | | | | | | | |

* Bulk Packed Item



Pencil Crimped Wire End Brush

These brushes are designed to clean counter bores, slots, blind holes, and small crevices; and light spot facing of aluminum or iron sand castings.

| | | | | ME: Gemini (PE: Stainless |
|---------------------------|-------------|----------|-----------|--|
| SIZE | TRIM LENGTH | MAX. RPM | STD. PKG. | PART # |
| Pencil Crimped Wire End E | | | | |
| 1/4" x 0.010" x 5/16" | 3/8" | 10,000 | 12 | 662528 38906 |



Pilot End Brush

Distributed by Applifast.

Specially designed to clean around rivet or bolt holes; the pilot guides the brushes.

 (\mathbf{t})

| | | | | TIER: | GOOD |
|---|-----------------------------------|--------------|----------|------------|---------------------|
| | | | | TRADENAME: | GEMINI |
| | | | | WIRE TYPE: | CARBON |
| | SIZE | TRIM LENGTH | MAX. RPM | STD. PKG. | PART # |
| 2 | Pilot Crimped Wire End Brush – Si | hank-Mounted | | | |
| , | 1/2" x 0.004" x 1/4" | 3/8" | 25,000 | 20 | 662528 38904 |





WIRE BRUSHES **Tube Brushes**



Cleaning, polishing, reaming, finishing and removing debris, burrs, rust, residues, and surface contaminants inside cylindrical items, including tubes, pipes, bottles, smooth-sided and threaded holes, and other industrial components

TUBE BRUSHES

- · Use manually or fastened to portable or fixed machines (including drills, drill presses, and CNC machines)
- · Available in single and double stem providing firm support when working internally
- A wide selection of shapes and filament variations to achieve the best results on many different applications

Single Stem, Single Spiral Tube Brush – With Eye Loop

Tertification and

These spiral brushes have a single layer of filament twisted around a stem wire to create additional

| strength and higher density fill brush | hes. This spiral | | | | | | | |
|--|------------------|----------|------|------------|---------------------|---------------------|---------------------|---------------------|
| configuration ensures consistent and | d constant abra | sive | | TIER: | GOOD | GOOD | GOOD | GOOD |
| contact with the tube. Formed eye lo | op at the end o | f the | | TRADENAME: | GEMINI | GEMINI | GEMINI | GEMINI |
| stem for convenient hand use. | | | | WIRE TYPE: | CARBON | STAINLESS | BRASS | NYLON |
| | TRIM | MAX. | STD. | | | | | |
| SIZE | LENGTH | RPM | PKG. | | PART # | PART # | PART # | PART # |
| Single Stem, Single Spiral Tube | e Brush – With | Eye Loop | | | | | | |
| 3/16" x 0.003" x 0.094" | 1-1/2" | 2,000 | 12 | | 662528 38822 | | | |
| 3/16" x 0.004" x 0.094" | 5/64" | 3,000 | 12 | | 662528 38913 | | | |
| 1/4" x 0.003" x 0.094" | 1-1/2" | 2,000 | 12 | | 662528 38823 | 662528 38824 | 662528 38840 | |
| 1/4" x 0.004" x 0.115" | 5/64" | 3,000 | 12 | | 662528 38914 | | | |
| 1/4" x 0.006" x 0.115" | 5/64" | 3,000 | 12 | | 662528 38915 | | | |
| 3/8" x 0.004" x 0.125" | 2" | 2,000 | 12 | | | 662528 38825 | 662528 38826 | |
| 3/8" x 0.004" x 0.132" | 1/8" | 3,000 | 12 | | 662528 38916 | | | |
| 3/8" x 0.006" x 0.168" | 1/8" | 3,000 | 12 | | 662528 38917 | | | |
| 3/8" x 0.006" x 0.168" | 1-1/2" | 3,000 | 12 | | | 662528 38946 | | |
| 7/16" x 0.010" x 0.125" | 7/64" | 3,000 | 12 | | | | | 662528 38947 |
| 1/2" x 0.008" x 0.221" | 9/64" | 3,000 | 12 | | 662528 38918 | | | |



Single Stem, Single Spiral Tube Brush

Similar to the single stem, single spiral tube brushes, but without eye loop. These brushes are ideal for complete internal cleaning and deburring of tubes and pipes and intricate area ensuring constant filament to surface contact.

| | | | | No. |
|----------------------------|-------------|----------|-----------|-----------------------|
| | | | 7 | IER: GOOD |
| | | | TRADENA | ME: GEMINI |
| | | | WIRE T | YPE: CARBON |
| SIZE | TRIM LENGTH | MAX. RPM | STD. PKG. | PART # |
| Single Stem, Single Spiral | Tube Brush | | | |
| 7/16" x 0.005" x 0.125" | 11/64" | 3,000 | 12 | 662528 38911 * |
| 1" x 0.010" x 0.250" | 2-1/2" | 2,000 | 12 | 662528 39074 * |
| | | | | |

* No eye loop

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Double Stem, Single Spiral Tube Brush - with Stem

These brushes have two stem wires. This results in a brush with high strength and one with consistent and constant abrasive contact with the tube.

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| SIZE TRIM LENGTH MAX. RPM STD. PK | KG. PART # PART # |
|---|---------------------|
| | |
| Double Stem, Single Spiral Tube Brush – With Stem | |
| 1/2" x 0.006" x 0.188" 2" 2,000 12 | 662528 38839 |
| 3/4" x 0.040" x 0.238" 3/8" 3,000 12 | 662528 38850 |

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TIER: GOOD

Toll Free 1 800 563 1293

TRADENAME: GEMINI

GOOD

GEMINI



WIRE BRUSHES Tube Brushes



Power Burr, Single Spiral Tube Brush – with Stem

Power burr brushes are used to remove burrs resulting from previous operations. They are designed to remove burrs without creating secondary burrs or leaving sharp edges.

| | | | TIER: | GOOD | GOOD |
|---------------------------------|---------------------|----------|------------|---------------------|---------------------|
| | | ī | RADENAME: | GEMINI | GEMINI |
| | | | WIRE TYPE: | CARBON | STAINLESS |
| SIZE | TRIM LENGTH | MAX. RPM | STD. PKG. | PART # | PART # |
| Power Burr Single Spiral | Tube Brushes – With | Stem | | | |
| 1/4" x 0.004" x 0.125" | 1" | 2,000 | 12 | 662528 39061 | 662528 39081 |
| 3/8" x 0.004" x 0.125" | 1" | 2,000 | 12 | 662528 39062 | 662528 39050 |
| 3/8" x 0.005" x 0.125" | 9/64" | 2,000 | 12 | 662528 38910 | |
| 1/2" x 0.005" x 0.188" | 1" | 2,000 | 12 | 662528 39063 | 662528 39051 |
| 5/8" x 0.005" x 0.188" | 1" | 2,000 | 12 | 662528 39064 | |
| 3/4" x 0.006" x 0.219" | 1" | 2,000 | 12 | 662528 39065 | 662528 39082 |
| 1" x 0.005" x 0.125" | 15/32" | 2,000 | 12 | 662528 38912 | |
| 1" x 0.005" x 0.250" | 1" | 2,000 | 12 | 662528 39066 | 662528 39083 |



GOOD



Double Stem, Double Spiral Tube Brush – With Stem

Brush filaments are twisted between two stem wires with two layers of filament bristles. Each layer is perpendicular to the other with a single stem wire in each of the brush's four sections. This configuration ensures consistent and constant abrasive contact with the tube.

| | | | TRADENAME: | GEMINI | GEMINI |
|-----------------------------------|-------------------|----------|------------|---------------------|---------------------|
| | | | WIRE TYPE: | CARBON | STAINLESS |
| SIZE | BRUSH LENGTH | MAX. RPM | STD. PKG. | PART # | PART # |
| Double Stem, Double Spiral | Tube Brush – With | Stem | | | |
| 3/8" x 0.060" x 0.125" | 1-1/2" | 2,000 | 12 | 662528 38827 | |
| 1/2" x 0.004" x 0.156" | 2" | 2,000 | 12 | 662528 38828 | |
| 1/2" x 0.004" x 0.187" | 5/32" | 3,000 | 12 | 662528 38919 | |
| 1/2" x 0.006" x 0.156" | 2" | 2,000 | 12 | 662528 39067 | 662528 38829 |
| 1/2" x 0.006" x 0.187" | 5/32" | 3,000 | 12 | 662528 38920 | |
| 5/8" x 0.005" x 0.187" | 2" | 2,000 | 12 | 662528 39068 | |
| 5/8" x 0.006" x 0.208" | 2" | 3,000 | 12 | 662528 38921 | |
| 5/8" x 0.008" x 0.219" | 2" | 2,000 | 12 | 662528 38831 | |
| 5/8" x 0.010" x 0.208" | 13/64" | 3,000 | 12 | 662528 38922 | 662528 38930 |
| 3/4" x 0.004" x 0.250" | 2-1/2" | 2,000 | 12 | 662528 39072 | |
| 3/4" x 0.006" x 0.238" | 1/4" | 3,000 | 12 | 662528 38923 | |
| 3/4" x 0.006" x 0.250" | 2-1/2" | 2,000 | 12 | 662528 39069 | |
| 3/4" x 0.006" x 0.250" | 2-1/2" | 2,000 | 12 | 662528 38832 | |
| 3/4" x 0.010" x 0.238" | 1/4" | 3,000 | 12 | 662528 38924 | |
| 7/8" x 0.004" x 0.250" | 2-1/2" | 2,000 | 12 | 662528 39073 | |
| 7/8" x 0.006" x 0.238" | 2" | 3,000 | 12 | 662528 38925 | |
| 7/8" x 0.006" x 0.250" | 2-1/2" | 2,000 | 12 | 662528 39070 | |
| 1" x 0.006" x 0.238" | 25/64" | 3,000 | 12 | 662528 38926 | |
| 1" x 0.006" x 0.250" | 2-1/2" | 2,000 | 12 | 662528 39071 | |
| 1" x 0.010" x 0.238" | 2" | 3,000 | 12 | 662528 38927 | |
| 1-1/4" x 0.004" x 0.250" | 2-1/2" | 2,000 | 12 | 662528 38833 | |
| 1-1/4" x 0.010" x 0.238" | 1/2" | 3,000 | 12 | 662528 38928 | |
| 2" x 0.010" x 0.238" | 7/8" | 3,000 | 12 | 662528 38929 | |



Encapsulated Double Stem, Double Spiral Tube Brush – With Stem

Encapsulating a portion of the wires' length shortens the free wires, increasing their stiffness, thereby creating greater control of the brush and a brush with the highest filament density and highest strength.

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| | | | TIER: | GOOD |
|--------------------------------|-----------------------|------------------|------------|---------------------|
| | | | TRADENAME: | GEMINI |
| | | | WIRE TYPE: | CARBON |
| SIZE | BRUSH LENGTH | MAX. RPM | STD. PKG. | PART # |
| Encapsulated Double Ste | m, Double Spiral Tube | Brush – With Ste | m | |
| 7/8" x 0.010" x 0.250" | 2-1/4" | 3.000 | 20 | 662528 38948 |

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Toll Free 1 800 563 1293





Flue Double Spiral Tube Brushes - With 1/4" x 2" NPT Pipe Nipple with Stem

These aggressive brushes are designed specifically for efficient pipe and boiler cleaning.

WIRE BRUSHES **Tube Brushes**

GOOD TRADENAME: GEMINI

TIER: GOOD

| | | | WIRE I | YPE: CARBUN |
|-----------------------------|-----------------------|-----------------|---------------|---------------------|
| SIZE | TRIM ENGTH | MAX. RPM | STD. PKG. | PART # |
| Flue Double Spiral Tube Bru | shes – With 1/4" x 2" | NPT Pipe Nipple | e – With Stem | |
| 3/4" x 0.010" x 0.238" | 1/4" | 3,000 | 12 | 662528 38931 |
| 1" x 0.010" x 0.313" | 25/64" | 3,000 | 12 | 662528 38932 |
| 1-1/4" x 0.012" x 0.313" | 1/2" | 3,000 | 12 | 662528 38933 |
| 1-3/4" x 0.012" x 0.313" | 1/2" | 3,000 | 12 | 662528 38934 |
| 2-1/4" x 0.012" x 0.313" | 1/2" | 3,000 | 12 | 662528 38935 |
| 2-3/4" x 0.014" x 0.313" | 1/2" | 3,000 | 12 | 662528 38936 |



Side-Action Tube (Burrite) **Crimped Wire Tube Brushes** - with Stem

Their dense side filament configuration creates increased bristle rigidity with minimal flexing, to aggressively clean the tube without changing its geometry or surface finish.

| | | | TRADENAN | IE: GEMINI | | | | |
|---|------------|----------|-----------|---------------------|--|--|--|--|
| | | | WIRE TY | PE: CARBON | | | | |
| SIZE | TRIM ENGTH | MAX. RPM | STD. PKG. | PART # | | | | |
| Side-Action (Burrite) Crimped Wire Tube Brush – With Stem | | | | | | | | |
| 1/4" x 0.003" x 0.094" | 5/64" | 3,000 | 12 | 662528 38908 | | | | |
| 5/16" x 0.005" x 0.094" | 9/16" | 2,000 | 10 | 662528 38834 | | | | |
| 5/8" x 0.005" x 0.125" | 1/4" | 3,000 | 12 | 662528 38909 | | | | |



Internal Finishing Crimped Wire Tube Brush

This square-trimmed crimped wire brush is used to clean internal surfaces in a single operation because it can simultaneously brush both the sides and bottom of a hole.

| | | | | TIER: | GOOD |
|-------------------------------------|----------------|---------------|-------------|--------------|---------------------|
| | | | | TRADENAME: | GEMINI |
| | | | | WIRE TYPE: | CARBON |
| SIZE | TRIM LENGTH | FACE Width | MAX. RPM | STD. PKG. | PART # |
| Internal Finishing Crimped V | | | | | |
| 1-1/4" x 0.006" x 0.250" | 1/2" | 3/8" | 4,500 | 10 | 662528 38945 |



Micro Abrasive Single Spiral Nylon Tube Brush – With Stem

Micro brushes are ideal for ultra-fine deburring, cleaning, polishing and finishing applications.

Distributed by Applifast.

| | | | TRADENAME | GEMINI |
|---------------------------------------|-------------------|---------------|-----------|---------------------|
| | | | WIRE TYPE | NYLON/AO 600 GRIT |
| SIZE | TRIM LENGTH | MAX. RPM | STD. PKG. | PART # |
| Micro Abrasive Single Spiral I | Nylon Tube Brushe | s – With Stem | | |
| 3/16" x 0.012" x 0.093" | 3/64" | 3,000 | 12 | 662528 38853 |
| 0.190" x 0.012" x 0.087" | 1" | 1,500 | 12 | 662528 38814 |
| 0.260" x 0.012" x 0.115" | 1" | 1,500 | 12 | 662528 38815 |
| 0.325" x 0.012" x 0.115" | 1" | 1,500 | 12 | 662528 38816 |
| 0.325" x 0.012" x 0.121" | 1" | 3,000 | 12 | 662528 38854 |
| 33/64" x 0.012" x 0.175" | 3/16" | 3,000 | 12 | 662528 38855 |
| 33/64" x 0.022"x 0.175" | 3/16" | 3,000 | 12 | 662528 38851 |
| 1-1/64" x 0.022" x 0.255" | 3/8" | 3,000 | 12 | 662528 38852 |

TIER: GOOD



WIRE BRUSHES Hand Brushes

TIER: GOOD



Single Spiral Nylon Hand Tube Brush – With Eye Loop

These brushes are made with larger stem wires to give them the strength and rigidity needed for manual cleaning applications.

| | | | TRADENA | ME: GEMINI |
|------------------------------------|-----------------------|----------|-----------|---------------------|
| | | | WIRE TY | (PE: NYLON |
| SIZE | TRIM LENGTH | MAX. RPM | STD. PKG. | PART # |
| Single Spiral Nylon Hand Tu | be Brush – With Eye L | oop | | |
| 1/4" x 0.005" x 0.094" | 9/64" | 3,000 | 12 | 662528 38937 |
| 1/4" x 0.005" x 0.094" | 2" | 2,000 | 12 | 662528 38818 |
| 3/8" x 0.005" x 0.094" | 2" | 2,000 | 12 | 662528 38819 |
| 3/8" x 0.005" x 0.094" | 9/64" | 3,000 | 12 | 662528 38938 |
| 1/2" x 0.008" x 0.094" | 3" | 3,000 | 12 | 662528 38939 |
| 1/2" x 0.010" x 0.125" | 3" | 2,000 | 12 | 662528 38820 |
| 3/4" x 0.012" x 0.125" | 21/64" | 3,000 | 12 | 662528 38940 |
| 3/4" x 0.012" x 0.125" | 3" | 2,000 | 12 | 662528 38821 |
| 1" x 0.010" x 0.156" | 25/64" | 3,000 | 12 | 662528 38941 |
| 1" x 0.022" x 0.156" | 2-1/2" | 1,500 | 12 | 662528 38817 |
| 1-1/4" x 0.010" x 0.156" | 1/2" | 3,000 | 12 | 662528 38942 |
| 1-1/4" x 0.010" x 0.219" | 1/2" | 3,000 | 12 | 662528 38943 |
| 2" x 0.010" x 0.219" | 1/2" | 3,000 | 12 | 662528 38944 |

Hand Brushes

Hand brushes come in a variety of handle and filament shapes and styles for most hand scratching applications. They are favored by many in removing scale, surface coatings, or removing weld debris.



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For steel/stainless

HAND BRUSHES

- Long handle and shoe handle brushes are made with a high-carbon, brass-coated steel; stainless steel is made with a 304L stainless
- Plastic ergonomic handle scratch brush with curved face to access hard-to-reach places. Crimped wire for longer life. Wires are wrapped up and around the metal post so they never come out.
- · Narrow brush allows access into tight areas and slots

| | | | | | - | - | | Samuel | a sum | |
|-----------------------|-------------------|------------|----------------|---------------------|---------------------|---------------------|---------------------|---------------------|--|-------------|
| | | | | University | University of the | ununum | unnunnu | The second second | and the second s | Auru |
| | | | TIER: | BETTER | BETTER | BETTER | BETTER | BETTER | BETTER | BETTER |
| | | | TRADENAME: | BLUEFIRE | BLUEFIRE | BLUEFIRE | BLUEFIRE | BLUEFIRE | BLUEFIRE | BLUEFIRE |
| | | | WIRE TYPE: | CARBON | STAINLESS | CARBON | STAINLESS | CARBON | STAINLESS | STAINLESS |
| SIZE | TRIM Length | MAX RPM | . STD. PKG. | PART # | PART # |
| Hand Scratch B | Brushes – With Ha | ndle | | | | | | | | |
| 3" x 19" | 1-3/16" | - | 12 | 662528 33948 | 662528 33950 | | | | | |
| 4" x 16" | 1-3/16" | - | 12 | | | 662528 33949 | 662528 33951 | | | |
| 5" x 10" | 1-1/8" | - | 24 | | | | | 662528 33954 | 662528 33953 | |
| 3" x 7" | 1/2" | - | 36 | | | | | | | 66252833952 |



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WIRE BRUSHES Nylon Brushes



When maximum conformability is needed, tough, Norton nylon brushes' flexible nylon filaments embedded with abrasive grain provide exceptional finishing and polishing and eliminate the need for costly and inconsistent hand deburring applications.

Norton nylon brushes are precision-engineered with the highest quality abrasive grains for those markets with the strictest requirements - for easy integration into today's automated machinery, CNC machining centers, transfer lines, robotic cells, and other highly-specialized machinery, as well as hand tools.

| Applications: | Deburring, cleaning, finishing, and polishing |
|-----------------------|--|
| Brush Configurations: | Radial wheel brushes, narrow face wheel brushes, disc brushes, end brushes, and twisted brushes |
| Markets: | Aerospace/aircraft, automotive, construction/utility products, medical, metal finishing, woodworking |
| Abrasive Grain: | Ceramic Alumina, Silicon Carbide |

Why Choose Nylon Abrasive Brushes?

- · Abrasive grain cutting points are increased as the grain is exposed and cut equally when pressure is applied to the side or tip of the filament
- · Uniform distribution of grain throughout the filaments allows cutting and finishing performance levels to remain consistent throughout the life of the brush - making Norton abrasive brushes ideal for automated applications
- · Heat- and stress-resistant filaments prolong brush life and allow for superior conformability to irregular surface shapes
- The grain impregnated filaments act as a flexible file to deburr and radius edge profiles with precision, without gouging or affecting the overall geometry of a part
- The filaments bend at various angles to fit contours, creating a less prominent, more uniform surface finish in comparison to wire wheels or coated abrasive products
- Brush conformability allows usage on variety of complex part shapes without the need for ultra-precise programming and fixturing that is required with other deburring and finishing tools

Currently, all Norton Blaze ceramic alumina nylon abrasive brushes are custom-made to your exact requirements. The Norton Blaze Nylon Brushes Brochure #8571 provides technical information and product availability. Your Norton representative would be pleased to review availability, quotations, and lead-times with you.







complementing our **ABRASIVES PORTFOLIO**

To help you finish the job, Norton tapes, masking products and micro-fiber cloths let you one-stop shop. Our goal is to get it finished faster, easier and with less hassle of multiple vendors and invoices.



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MASKING PRODUCTS





Norton masking tapes feature a special solvent-based, rubber adhesive system and strong holding properties. These tapes adhere and release cleanly while providing clean edges on a variety of flat, contoured, and irregular surfaces. Norton sheetings provides superior solvent, paint, and contaminant penetration resistance. Use them during paint preparation and anywhere you need work area protection. Tear-resistant properties allow movement without ripping.

Products: Machine Used:

Attachment Tape, Masking Tape, Masking Film, Sheeting, Masking Paper

HAND APPLICATION



Best choice for general industrial application replacing permanent fastening systems (rivets, welds and liquid adhesives)

NORTON ATTACHMENT TAPE

- Double sided, gray foam tape used in bonding performance for many interior and exterior commercial applications.
- Incredible conformability and application stretching
- · Weather degradation resistance from UV and high temperatures
- Outstanding static shear adhesion
- · Excellent performance in T-Block and dynamic shear
- Durable adhesion at elevated temperature
- High shock and stress absorption

| DESCRIPTION | THICKNESS | 1/4" x 108" | 1/2" x 108" | 3/4" x 108" | 7/8" X 108" | 1" X 108" | 1-1/2" X 108" |
|-------------------------------------|---------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Blue Liner | | | | | | | |
| Gray Double-Sided Acrylic Foam Tape | .043" (1.1mm) | 636425 06044 | 636425 06045 | 636425 06046 | 636425 06047 | 662611 75888 | 662611 51041 |
| Rolls/Case | | 40/1 | 20/1 | 10/1 | 10/1 | 10/1 | 6/1 |
| DESCRIPTION | THICKNESS | 1/4" X 20 YDS | 1/2" X 20 YDS | | 7/8" X 20 YDS | | |
| Red Liner | | | | | | | |
| Gray Double-Sided Acrylic Foam Tape | .043" (1.1mm) | 636425 05620 | 636425 05621 | - | 636425 05622 | - | - |
| Rolls/Case | | 12/1 | 12/1 | | 12/1 | | |
| Adhesion Promoter | | | | | | | |
| Brush-Top Can - 220ml | | 636415 05623 | | | | | |
| Rolls/Case | | 12 | | | | | |

Technical Data

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Performance tests are run using standard test procedures. The values presented are typical values and should not be used for specification purposes.

| THICKNESS in. (mm) | 90 |)° PEEL ADHESIO Ib/in (| | L) | T-BLOCK ² Ib/in (N/cm) | DYNAMIC SHEAR ³ Ib/in (N/cm) | STATIC SHEAR ⁴ 7 Days /1 kg | SERVICE TEMPERATURE |
|-------------------------------|---------------------------|----------------------------|---------------------------|--------------|--------------------------------------|--|---|-----------------------------------|
| WITHOUT LINER | GLASS | ALUMINUM | S/S | РММА | ALUMINUM | S/S | S/S | |
| .043 (1.1) | 20 (35) | 33 (57) | 20 (34) | 17 (29) | 100 (29) | 48 (33) | Pass and Exceeds | -35°F to 200°F (-35°C to 93°C) |
| ¹ Based on ASTM D3 | 3330 ² Based o | on ASTOM D897 | ³ Based on AST | TM D1002 4 E | Based on ASTM D3654 | | | |





Best choice for high temperature applications including high-heat curing

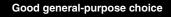
PREMIUM HIGH TEMPERATURE GREEN MASKING TAPE

- Ideal for conditions that include exposure to the high-heat curing temperatures found in automobile, truck, bus, and
 other transportation assembly operations, as well as aerospace manufacturing applications
- · Superior strength and excellent cornering ability
- Ideal for high temperatures; can be effectively used up to 250°F (120°C) for 30 minutes without any significant loss
 of properties or adhesive transfer
- Can also be used up to 175°F (80°C) for one hour without leaving residues after exposure
- UV resistance for 2 days
- · Can be exposed to wet sanding without adhesive transfer

Better choice for medium-temperature applciations

MEDIUM TEMPERATURE MASKING TAPE

- · Designed for excellent performance in moderate-temperature applications
- Can be used up to 220 °F (105°C) for 30 minutes and 175°F (80°C) for one hour without any significant loss of
 properties; removes cleanly without leaving residues after exposure



GENERAL PURPOSE MASKING TAPE

- · Ideal for splicing, holding, packaging, and general purpose masking
- Good adhesion onto a wide variety of surfaces
- Good performance up to 175°F (80°C) for one hour without any significant loss of properties; removes cleanly
 without leaving residues after exposure



BLUE CORE 14-DAY TAPE

- Our paint masking tape has a specially formulated adhesive system that provides optimum low- to medium-tack
 adhesion and clean removal from a variety of surfaces, for up to 14 days
- · Blue Core masking tape can be used indoors or out
- The crepe paper backing is designed to enable easy unrolling and to minimize slivering



Better choice for fine line masking needs

FINE LINE BLUE MASKING TAPE

- Masking color separation on plastic (TPO and RIM) automotive fascia, trim, and finished metals in high-temperature OEM bake cycles, aircraft and clean room paint operations
- Thermally-stabilized PVC backing with a rubber-based pressure sensitive adhesive
- · Highly conformable, waterproof, and solvent-resistant
- Can be used from 40°F (4.4°C) to 280°F (138°C) without any significant loss of properties; removes cleanly without leaving residues after exposure



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MASKING PRODUCTS Tape

| TIER: | BEST | BETTER | GOOD | GOOD | BETTER |
|--------------------------------|--|---|-------------------------|--------------------------|--------------------------------|
| | PREMIUM HIGH TEMP GREEN | MEDIUM TEMPERATURE | GENERAL PURPOSE | BLUECORE 14 DAY TRAPE | FINE LINE Blue |
| CAP CODE | C995 | C988 | C903 | | |
| BACKING | Crepe paper | Crepe paper | Crepe paper | Fine Crepe Paper | PVC |
| ADHESIVE | Solvent-based rubber | Solvent-based rubber | Solvent-based rubber | Synthetic Rubber | Natural Rubber |
| TENSILE STRENGTH | 3.0 kgf/cm, 29 N/10mm | 2.6 kgf/cm, 25 N/10mm | 2.5 kgf/cm, 25 N/10mm | 23 lbs/in (101 N/25mm) | 15 lb/in. of width, 65.6N/25mm |
| ELONGATION AT BREAK | 8.50% | 7.0% | 7.0% | 11% | 150% |
| PEEL ADHESION AT 180° ANGLE | 400 gf/cm, 3.9 N/10mm | 370 gf/cm, 3.6 N/10mm | 300 gf/cm, 2.9 N/10mm | | 23 oz./in. of width, 6.3N/25mm |
| TOTAL THICKNESS | 120 microns (0.120mm) | 110 microns (0.110mm) | 100 microns (0.100mm) | 5.5 mils (0.14mm) | 5.4mils (.14mm) |
| TEMPERATURE | 250°F (120°C) for 30 min. 175°F (80°C)for 1 hour | 220°F (105°C) for 30 min. 175°F (80°C)for 1 hour | 175°F (80°C) for 1 hour | | 40°F (4.4°C) to 280°F (138°C) |

| METRIC | IMPERIAL | ROLLS/CASE | PART # |
|------------------------|--------------------------|-------------------|---------------------|
| Premium High-Te | emp Green Tape | | |
| 12mm x 50m | 0.47 inches x 54.7 yards | 72 | 699573 10320 |
| 18mm x 50m | 0.71 inches x 54.7 yards | 48 | 666233 09768 |
| 24mm x 50m | 0.94 inches x 54.7 yards | 36 | 666233 27752 |
| 36mm x 50m | 1.42 inches x 54.7 yards | 24 | 699573 10323 |
| 48mm x 50m | 1.89 inches x 54.7 yards | 20 | 666233 09770 |
| 72mm x 50m | 2.83 inches x 54.7 yards | 12 | 699573 10325 |
| 100mm x 50m | 3.93 inches x 54.7 yards | 8 | 699573 45060 |
| 200mm x 50m | 7.87 inches x 54.7 yards | 4 | 699573 45063 |
| Medium-Tempera | ature Tape | | |
| 12mm x 50m | 0.47 inches x 54.7 yards | 72 | 699573 10326 |
| 18mm x 50m | 0.71 inches x 54.7 yards | 48 | 055395 44799 |
| 24mm x 50m | 0.94 inches x 54.7 yards | 36 | 699573 10327 |
| 36mm x 50m | 1.42 inches x 54.7 yards | 24 | 662610 70829 |
| 48mm x 50m | 1.89 inches x 54.7 yards | 20 | 055395 44800 |
| General-Purpose | | | |
| 18mm x 40m | 0.71 inches x 43.7 yards | 48 | 662611 03314 |
| 24mm x 40m | 0.94 inches x 43.7 yards | 36 | 662611 03315 |
| 36mm x 40m | 1.42 inches x 43.7 yards | 24 | 699573 45064 |
| 48mm x 40m | 1.89 inches x 43.7 yards | 20 | 662611 03317 |
| 72mm x 40m | 2.83 inches x 43.7 yards | 12 | 699573 45065 |
| Blue Core 14-Day | y Tape | | |
| 36mm x 54.8m | 1-1/2" x 60 yards | 24 | 076607 21954 |
| 48mm x 54.8m | 2" x 60 yards | 24 | 07660721955 |
| Bulk packed as inc | lividual rolls | | |
| Fine Line Blue Ta | ape | | |
| 3.17mm x 32.9m | | 360* | 662611 82688 |
| 6.35mm x 32.9m | 1/4 inches x 36 yards | 168* | 662611 82686 |
| 12.7mm x 32.9m | 1/2 inches x 36 yards | 78* | 662611 82685 |

* Master case quantity









Good masking choice for multiple transportation applications

ANCHOR BRAND HAND MASK

- IPG's Anchor® brand Hand Mask is a pre-folded, high density polyethylene masking film designed for multiple transportation applications
- The thick and durable 12 micron film is corona treated to resist overspray flaking during paint applications
- . This special film is designed with a reinforced top edge formulated to prevent the underlying film from sticking
- Designed to work with multiple hand dispensers and the 1" core fits most masking machines.

| | 54.8M (60YD) ROLL | 90' ROLL | 180' ROLL |
|-------------|----------------------|---------------------|---------------------|
| WIDTH | ROLL HEIGHT | PART # | PART # |
| 24" | 5.35" | _ | 087143 00214 |
| 24" 48" | 8.78" | _ | 087143 00216 |
| 72" | 9.57" | 087143 00217 | - |
| 99" | 13.0" | 087143 00218 | - |
| 99" Case | | 12 | 12 |

Udst



Good multi-purpose choice provides durability and excellent protection

HIGH DENSITY SHEETING (HDPE)

Our multi-purpose painters' plastic sheeting protects virtually any area from sanding dust and paint overspray with ease – even after repositioning. Our High Density Plastic Sheeting (HDPE) is designed to be one of the strongest most durable products on the market.

- Resists tearing and solvent bleed-through with light weight .31 mil High Density Polyethylene plastic (HDPE)
- · Holds in place as it clings to horizontal or vertical surfaces during taping with its natural electrostatic properties
- Attracts and holds sanding debris for a dust-free finish
- · Drapes easily over furniture

| SIZE | THICKNESS | COLOR | QTY/PACK | PACKS/CASE | PART # |
|------------------|---------------|-------|----------|------------|---------------------|
| 9' x 400' | .31 mil | Clear | 1 | 1 | 076607 68142 |
| 12' x 400' | .31 mil | Clear | 1 | 1 | 076607 68143 |
| Also available l | hy the nallet | | | | |

Also available by the pallet.



Good choice for all of your masking needs

GREEN MASKING PAPER

- · Made from recyclable virgin wood pulp fiber, recycled fiber, or a combination of the two
- These fibers provide a machine finish kraft paper with non-contaminating cleanliness, sustainability, and superior strength properties
- · Smooth paper surface ensures no fiber linting leading to rework
- · Flexible, easy to work with and shape; conforms to uneven surfaces

| SIZE | 3" | 6" | 12" | 18" | 20" | 24" | 36" | 46" | 69" |
|--------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| DESCRIPTION | PART # |
| (750' boxed) | 699573 13146 | 699573 13147 | 699573 13148 | 699573 13149 | 699573 13151 | 699573 13152 | 699573 13153 | 699573 13154 | 699573 13155 |
| Logs/Case | 12/1 | 6/1 | 3/1 | 2/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| | | | | | | | | | |

Order per number of logs:

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Each "log" is a total of 36" wide - comprised of the width of the individual roll in inches x the number of rolls/box,

e.g. 6" roll x 6 rolls in the box = one 36" wide log; 12" roll x 3 rolls in the box = one 36" wide log, etc., except for the 24" and 36" rolls which are single logs.



MASKING PRODUCTS **Micro-Fiber Cloths**



A micro-fiber is a single fiber with a thickness less than a human hair that has been split 16 times and woven into various products. The surface area of a micro-fiber product is increased over 15 times, creating millions of spaces between the fibers which trap dirt, grime or liquids, making this product one of the most absorbent materials. These cloths save you labor, time, and additional costs of multiple cleaning products and chemicals.

Applications: Cleaning Cloth: Used for general-purpose wet or dry applications. Works best when sprayed with a light water mist to deep clean. Dry Tack Cloth: This woven terry cloth has a low profile to resist snagging and help pick up embedded debris. Polishing Cloth: Streak-free cleaning of mirrors, optical lens and highly-polished items. Other: Color-coded for easy identification Cleaning Cloth: Blue Dry Tack Cloth: Red Polishing Cloth: Yellow **Machine Used:**

TECH TIP

- · Use these micro-fiber cloths dry for general cleaning
- · To remove spills, stains or grime, lightly dampen the cloth for best results
- · All micro-fiber cloths can be used with or without chemicals
- · Micro-fiber cloths can be washed up to 300+ times without losing cleaning and trapping abilities
- Clean often for best results

It is the user's responsibility to refer to and comply with all safety regulations.



| DESCRIPTION | COLOR | STD. PKG. | PART # |
|-----------------------------|--------|-----------|---------------------|
| Micro-Fiber Cleaning Cloth | | | |
| 16" x 16" | Blue | 20 | 076607 05300 |
| Micro-Fiber Dry Tack Cloth | | | |
| 16" x 16" | Red | 20 | 076607 04025 |
| Micro-Fiber Polishing Cloth | | | |
| 16" x 16" | Yellow | 20 | 076607 05301 |

HAND APPLICATION



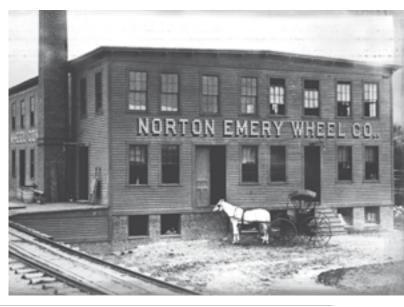
Safety Leadership / References

100 Years of Safety Leadership

The year 2016 marked the 100-year anniversary of the leadership of the former Norton Company in the creation of the first ever safety code for abrasives.

In 1916, following more than a decade of safety research, advocacy, and leadership by the Norton Company (now Norton | Saint-Gobain Abrasives), "The Safety Code for the Use and Care of Abrasive Wheels" was published. This 13-page booklet, containing an unprecedented set of safety device recommendations and procedures, was the spark that changed the entire future of the abrasives industry.

In the 1970s, this code received the ultimate endorsement when selected by OSHA as the basis of new federal regulations concerning abrasive wheel machinery. Today, the ever-evolving "Safety Requirements for the Use, Care and Protection of Abrasive Wheels" (commonly known as the ANSI B7.1 standard) continues to mirror the latest technologies and remains the global authoritative abrasives safety standard.



Breakages/Personal Injury

In the event of on-machine breakage of Norton abrasive products, call your local Norton distributor immediately. Whether involving personal injury or not, the abrasive user should leave the equipment and other evidence undisturbed until a Norton sales representative has been notified and conducts an investigation. Prompt action on the part of abrasive users, distributor, and Norton sales personnel is important to ensure swift determination of the breakage cause and to guard against recurrence.





It is the user's responsibility to refer to and comply with ANSI B7.1 and B7.7 - Contact us for a free copy.



Safety Poster (Form # 7868-English, 7868-French, 7868-Spanish)

To order this poster for your shop, mailto:nortonliterature@saint-gobain.com

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Abrasive Safety References



Safety Information on the Web

Norton website <u>nortonsga.us/safety</u> UAMA (United Abrasives Manufacturers Association) website at <u>http://www.safety.uama.org</u>

YouTube

Safety Videos

Watch our videos on: YouTube.com/NortonAbrasives

- Safety, It's The Smart Thing To Do (Safety information for portable grinding and cutting wheels)
- Foundry Safety

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- First in Precision Grinding Safety
- Proper Grinding Wheel Mounting
- Railroad Abrasive Safety
- Coated Abrasive Belt and Disc Safety

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UAMA Approved Safety Icons

The UAMA has approved a new set of standardized icons to be used throughout the Abrasive industry to convey safety information to the users. Below are the approved icon types and their definitions.

| ICON TYPES | EXAMPLE |
|---|----------|
| Safety Icon: A pictorial whose purpose is to relay safety related information to the user. | |
| Hazard Alert Icon: This type of safety icon conveys information primarily related to the nature of a hazard. It contains a graphical depiction of the hazard drawn within a yellow equilateral triangle. | <u>A</u> |
| Prohibition Icon: This type of safety icon conveys actions that should not be taken. It consists of a red circular band with a 45° diagonal red band from upper left to lower right. The icon contains a black depiction of what should not be done within the red band on a white background. | |
| Mandatory Action Icon: This type of safety icon conveys actions that should be taken to avoid hazards. It consists of a white image within a solid blue or black circular surround shape. | |
| Proper Machine Use Icon: This type of icon is designed to show the use of the wheel on a proper machine. The icon can be a bit more realistic to show components such as a safety guard and an auxiliary handle. The recommended angle of use may also be depicted. | |

| ICON | MEANING | ICON | MEANING |
|------|---|-------|--|
| | Improper use may break wheel and cause serious injury or death. | | Always use wheel guard for angle grinder. |
| | No side grinding. Cutting only. | GUARD | Always use wheel guard for non-portable machine. |
| | No side grinding. Cutting only | | Protect your eyes. |
| | No cutting. Side grinding only. | | Protect your face. |
| | No cutting. Side grinding only, grouped icon. | | Protect your lungs against dust. |



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Safety Icon Meanings

UAMA Approved Safety Icons continued

| CON MEANING | ICON | MEANING |
|--|--------|---|
| Do not use a damaged wheel. | | Protect your hearing. |
| Do not use on High Speed Gas Saws. | Ċ | Protect your eyes and face. |
| Do not use on Angle Grinders. | et) | Protect your eyes and hearing. Combined icon. |
| Do not use on die grinders | | Protect your eyes, ears and lungs. |
| Warning alert symbol. | MP. | Protect your hands. |
| Read OSHA and ANSI B7.1. | | Use matched diameter, relieved flanges. |
| Read OSHA and ANSI B7.1. Visit the industry safety page: www.safety.UAN | MA.org | |
| | | |
| T I destroyers | | |

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Coated Abrasive Disc and Wheel Safety Do's and Don'ts

Warning

Improper use may cause wheel breakage and serious injury. Comply with ANSI B7.7, OSHA and safety guide provided with the package. Always follow all manufacturer's recommended procedures and safety instructions. Never exceed tool manufacturer's maximum operating speed.

Exposure to DUST generated from workpiece and/or abrasive materials can result in lung damage and/or other physical injury. Use dust capture or local exhaust as stated in the SDS. Wear government-approved respiratory protection and eye and skin protection. Failure to follow this warning can result in serious lung damage and/or physical injury.

Lead Poisoning can develop as a result of inhalation and/or ingestion of the dust generated from sanding any product containing lead, including lead based paint. Lead Poisoning is an illness which can permanently damage the body's physical, neurological and/or reproductive systems. Care must be taken to avoid the inhalation and/or ingestion of dust containing lead

| | DO'S | DON'TS |
|---------------------------|--|--|
| INSPECT / STORAGE / SPEED | D0 read all manuals, operating instructions and warnings D0 read SDS for the disc/wheel and the work-piece material. D0 check all products for damage before mounting. D0 make sure the machine speed does not exceed the speed marked on the package or back up pad. D0 store products prior to use at 35 – 50% relative humidity and 60 – 80°F. | DON'T use products that have been dropped or damaged. DON'T use on machines that do not show a MAX RPM speed. |
| MOUNT / GUARD | D0 use the wheel guard provided with machine. Position it so it protects the operator and covers the wheel. D0 use recommended back up pad or mandrel for the product. D0 run wheels ONLY in direction of directional arrow stenciled on wheel and in core (except Unified Wheels, which can be run in either direction). D0 run discs/wheels in a protected area for one minute before grinding. | DON'T remove or modify any guard. ALWAYS use a proper guard. DON'T use excessive pressure when mounting a wheel. Tighten enough only to hold wheel firmly. |
| PROTECT | D0 wear ANSI Z87+ safety glasses and face protection, if required. D0 wear safety shoes, arm guards, leather gloves and aprons. D0 employ dust controls and/or protective measures appropriate to the material being ground. | • DON'T use products near bystanders if they are not wearing protective equipment. |
| OPERATE | D0 support work-piece firmly. D0 hold machine firmly in two hands. D0 stop the equipment at once if chattering or vibration occurs during use. Determine cause of the problem and correct before remounting. D0 ease the disc into the work piece at a 5-100 angle to the work piece surface. | DON'T allow untrained people to handle, store, mount or use discs/wheels. DON'T twist, jam or bend any wheel. DON'T force or bump wheel so that the tool motor stalls. DON'T use discs/wheels in the presence of combustible materials. DON'T use disc/wheel for applications other than for which they were designed. Refer to ANSI B7.7. |



Portable Grinding Safety

Portable Grinding Safety Do's and Don'ts

| | DO'S | DON'TS |
|-----------------|--|--|
| INSPECT / SPEED | D0 read all manuals, operating instructions and warnings. D0 read SDS for the wheel and workpiece material. D0 check all wheels for cracks or other damage before mounting. D0 make sure the machine does not exceed the maximum operating speed marked on the wheel. D0 store according to ANSI B7.1. | DON'T use wheels that have been dropped or damaged. DON'T use on grinders that do not show a MAX RPM. |
| MOUNT / GUARD | DO use an ANSI B7.1 wheel guard. Position it so it protects the operator. DO be sure wheel hole oR threads fit machine properly and that the flanges are clean, flat, undamaged and the proper type. DO run wheel in a protected area for one minute before grinding. | • DON'T mount more than one wheel on an arbor. |
| PROTECT | DO wear ANSI Z87+ safety glasses and face protection, if required. DO wear gloves, hearing and body protection. DO employ dust controls and/or protective measures appropriate to the material being ground. DO comply with OSHA regulations 29 CFR 1926.1153 when working on materials containing crystalline silica such as concrete. | • DON'T use wheels near bystanders if they are not wearing protective equipment. |
| OPERATE | • DO hold grinder firmly with two hands. | DON'T allow untrained people to handle, store, mount or use wheels. DON'T use grinding wheels or cutting wheels on pistol grip air sanders. DON'T use any cutting wheel for grinding nor apply side pressure on a cutting wheel. Use for CUTTING ONLY. DON'T use a cutting wheel to cut curves. Cut in straight lines only. DON'T twist, bend or jam any wheel. DON'T force or bump wheel so that the tool motor slows or stalls. DON'T use wheels in the presence of combustible materials. DON'T use wheels for applications other than for which they were designed. |

Dangerous Pairing: Die Grinders and Cut-off Wheels

While die grinders and portable cut-off tools may look similar, they are by no means interchangeable. Several crucial differences exist between the two handheld machines.

GUARD

Cut-off wheels must be used on guarded machines for the safety of the operator and bystanders.

SPEED

Cut-off wheels must be used at or below their maximum operating speed, marked clearly on the side of the wheel. Excessive speed can result in breakage and serious personal injury.

Die grinders often operate above 25,000 rpm and therefore are too fast for abrasive wheels. The speed hazard is increased by the absence of a guard. Portable cut-off tools, however, rotate at speeds compatible with the abrasive wheels for which they are designed. And, their guards prevent use of an oversize wheel.

MOUNTING

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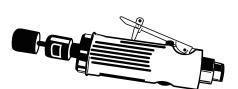
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Cut-off wheels must be mounted between proper flanges, as described in the national safety standard for abrasive wheels, ANSI B7.1. Die grinders make use of a collet for mounting

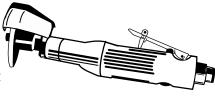
Portable cut-off tools use flanges for mounting, flanges designed according to the ANSI B7.1 safety standard.

Now that you have learned the three crucial differences between die grinders and portable cut-off tools – GUARD, SPEED and MOUNTING – be on watch for the dangerous pairing of cut-off wheels and die grinders, and warn your friends and colleagues of the same.

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Portable Cut-off Tool

Toll Free 1 800 563 1293

Α



SAFETY Starting a Grinding Wheel / Ring Test



A Deadly Equation

Pistol Grip Air Sander + Grinding Wheel = Certain Injury!

- Never use a high-speed air sander as a portable grinder
- Use only sanding discs specifically designed for sanders
- Because the speed of these sanders far exceeds the maximum rated speeds for grinding wheels, a potentially lethal wheel breakage might occur

Starting a Grinding Wheel

ANSI's Procedure for Starting an Abrasive Wheel

This article is designed to remind users of the proper procedure when starting a machine with a new abrasive wheel mounted on it, starting a machine after the machine and wheel have been stored for a period of time, or remounting a wheel. ANSI B7.1 requires the following procedure when starting a newly mounted grinding wheel.

9.8 Starting the Wheel (Requirements)

All abrasive wheels shall be run at operating speeds with the safety guard in place or in a protected enclosure for at least one minute before applying work. During this time no one shall stand in front of or in line with the wheel. (See section 4, for safety guard requirements.) This provision shall apply each time one of the following conditions occur: a) a new wheel has been mounted; or b) a used wheel has been remounted.

E 9.8 Starting the Wheel (Explanatory Information)

An abrasive wheel may be damaged in shipment or storage, or the wheel may be subjected to improper, excessive stresses during mounting. Wheels which have been damaged or are under excessive stress, are likely to fracture within the first minute of rotation at operating speed. While this procedure is most important at the time when an abrasive wheel is mounted or remounted, damage may also occur to a wheel during a shut down of the machine on which it is mounted. The user should evaluate the circumstances and length of machine shut down to determine additional times that the operating rule should be followed.

Improper wheel mounting is a major cause of wheel breakages. Always use proper mounting procedures as outlined in ANSI B7.1, machine manufacturer's instructions and those supplied with the abrasive wheel. Be safe, know and follow the rules!



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How to Perform a Ring Test on a Grinding Wheel

One method of grinding wheel inspection is called ring testing. OSHA, ANSI and the grinding wheel manufacturers require this method of grinding wheel inspection. It must be performed BEFORE the wheel is mounted on a grinding machine. Ring testing depends on the damping characteristics of a cracked wheel to alter the sound emitted when the wheel is tapped lightly. It is subject to interpretation by the inspector and is primarily applicable to vitrified bonded wheels. To perform the ring test, wheels should be tapped gently with a light nonmetallic implement, such as the handle of a screw driver for light wheels, or a wooden mallet for heavier wheels.

- Tap wheels about 45 degrees each side of the vertical line and about 1" or 2" from the periphery. Rotate the wheel 45 degrees and repeat the test.
- Large and thick wheels may be given the ring test by striking the wheel on the periphery rather than the side of the wheel.
- A sound and undamaged wheel will give a clear tone. If cracked, there will be a dead sound and not a clear ring and the wheel should not be used.
- Wheels must be dry and free of sawdust when applying the ring • test, otherwise the sound may be deadened. The ring test is not applicable to certain wheels because of their size, shape or composition.

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| Speeds |
|----------|
| - Wheel |
| I Table |
| nversion |
| ပိ |

REVOLUTIONS PER MINUTE FOR VARIOUS DIAMETERS OF GRINDING WHEELS TO GIVE SURFACE SPEED IN FEET PER MINUTE AS INDICATED (FOR WHEEL MARKING PURPOSES THE CALCULATED RPM FIGURES LISTED BELOW ARE ROUNDED OFF TO THE NEXT 5)

20,000 76,395 38,195 25,465 10,915 19,100 15,280 12,730 9,550 8,490 2,120 2.010 1,910 1,820 7,640 6,365 5,455 4,775 4,245 3,470 3,185 2,940 2,730 2,545 2,245 3,820 2,385 19,685 75,190 37,595 25,065 18,800 15,040 12,530 10,740 9,400 8,355 7,520 6,265 5,370 4,700 4,175 3,420 3,135 2,890 2,090 1,980 1,790 3,760 2,685 2,505 2,350 2,210 1,880 17,000 64,935 32,465 21,645 16,235 12,985 10,820 3,245 9,275 8,115 7,215 6,495 5,410 4,640 4,060 3,605 1,545 2,950 2,705 2,495 2,165 1,910 1,085 1,710 2,320 2,030 1,625 16,500 63,025 31,510 21,010 12,605 15,755 10,505 9,005 7,880 7,000 6,300 5,250 3,940 1,750 4,500 3,500 3,150 2,865 2,625 2,425 2,250 2,100 1,970 1,855 1,660 1,575 1,500 16,000 61,116 30,558 20,372 15,278 12,224 10,186 8,732 7,640 6,792 6,112 5,092 4,366 3,820 3,396 3,056 2,776 2,546 2,352 2,182 2,056 1,910 1,796 1,698 1,608 1,528 1,464 14,200 54,240 27,120 18,080 13,560 10,850 9,040 7,750 6,780 6,030 5,425 4,520 3,875 3,390 3,015 2,715 2,465 1,510 1,430 1,355 2,260 2,090 1,940 1,810 1,595 1,295 1,695 Surface Speed in Feet Per Minute (SFPM) 12,500 15,915 23,875 47,745 11,940 9,550 3,410 1,140 7,960 6,820 5,970 5,305 4,775 3,980 2,985 2,655 2,390 2,170 1,330 1,260 1,195 1,990 1,840 1,705 1,495 1,405 1,595 For intermediate diameters not listed use the formula listed in Section 1.2.10 of ANSI B7 12,000 Revolutions Per Minute (RPN 45,836 22,918 15,278 11,459 9,168 1,910 1,273 1,146 1,090 7,639 6,548 5,729 5,092 4,584 3,820 3,274 2,865 2,546 1,206 2,292 2,084 1,762 1,528 1,432 1,348 1,637 10,000 38,196 19,098 12,732 9,549 5,456 4,775 7,640 6,366 3,183 1,910 4,244 3,820 2,728 2,387 2,122 1,736 1,468 1,274 1,591 1,364 1,194 1,124 1,061 1,006 956 908 36,287 18,143 9,500 12,096 2,016 9,072 7,258 6,048 5,183 4,535 3,629 3,023 2,268 1,814 1,649 1,512 1,210 4,032 2,592 1,395 1,296 1,134 1,007 1,067 955 806 863 9,000 17,188 34,377 11,459 8,595 6,876 5,729 3,820 3,438 2,864 2,455 2,149 1,910 1,719 1,146 4,297 1,562 1,433 1,322 1,228 4,911 1,074 1,011 954 818 904 860 16,238 8,500 32,467 10,822 8,116 6,494 5,411 4,638 4,058 3,606 2,705 2,319 2,029 1,803 1,623 1,476 1,248 3,247 1,353 1,159 1,082 1,014 SFPM = .262 x wheel diameter in inches x RPM. 955 902 854 812 775 30,558 15,278 10,186 8,000 6,112 7,640 5,092 4,366 3,820 3,396 3,056 2,546 2,182 1,910 1,698 1,528 1,274 1,176 1,388 1,092 1,018 954 848 898 804 764 732 7,500 28,647 14,328 9,549 7,162 5,730 4,775 4,092 3,580 3,182 2,865 2,386 2,046 1,791 1,432 1,302 1,194 1,023 1,591 1,101 955 716 895 843 795 754 682 7,000 13,368 26,737 8,913 6 685 5,348 4,456 3,820 3,342 2,970 2,674 2,228 1,910 1,672 1,485 1,215 1,115 1,337 1,028 891 836 786 742 704 955 669 636 12,414 6,500 24,828 8,276 4,966 4,138 3,103 2,758 2,483 2,069 1,773 1,552 1,379 1,128 6,207 3,547 1,034 1,241 887 955 828 776 730 690 653 620 591 of Wheel in Inches Diameter 12 4 9 3 30 25 24 22 18 4 38 40 42 9 ထေတ



Wheel Speed Conversion Table

To convert SFPM to m/s: SFPM/196.85 = m/s. To convert RPM to SFPM: Wheel Diameter x RPM x 0.262 = SFPM

To convert meters per second (m/s) to SFPM: m/s x 196.85 = SFPM

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Silica and What You Need to Know

Background and Health impacts

Silica (SiO2) is one of the most common minerals in the earth's crust. Glass, beach sand, silicone and granite are all "silica" materials. Products containing silica have been used for thousands of years in building and is a key ingredient in many products we use every day. There are two forms of silica; crystalline and non-crystalline. Crystalline silica is a mineral that occurs in several forms. Quartz, the most common form, is a component of sand, stone, rock concrete, brick, block and mortar. Non-crystalline silica is found in glass, silicon carbide and silicone.

When rocks containing crystalline silica are cut, crushed, ground, drill or used in similar industrial processes, dust particles are produced. These particles are very fine, at least 100 times smaller than ordinary beach sand – known as respirable crystalline silica or RCS. Inhaling very small or respirable crystalline silica particles is most hazardous and may cause multiple diseases such as silicosis, followed in severe cases by lung cancer.

Who is at risk from exposure to crystalline silica?

It is estimated that 2.3 million workers are exposed to crystalline silica on the job. The majority of the workers, about 2 million, are in the construction industry. The hazard exists when specific activities create respirable dust that is released into the air.

The New OSHA Standard

OSHA's recently implemented silica standards for Construction "29 CFR 1926.1153" and General Industry "29 CFR 1910.1053" suggests procedures applicable for work in these environments. This new standard affects all activities that generate silica dust on a jobsite. Trades involving brick, stone, concrete and other materials that are difficult to replace must comply with the standard. This is a change around "process", not specific products.

Impacts on Industry

Industries affected by this regulation include Construction, Glass manufacturing, Pottery products, Structural clay products, Concrete products, Foundries, Cut stone and Stone products, Railroads, Refractory products and Asphalt products manufacturing to name a few. Always read the Safety Data Sheet for the workpiece and abrasive before use.

The Occupational Safety and Health Administration (OSHA) has a number of available resources to help companies understand the general information and requirements to explain the new regulations including:

OSHA's Crystalline Silica Rule: Construction https://www.osha.gov/Publications/OSHA3681.pdf

OSHA Fact Sheet https://www.osha.gov/publications/OSHA3682.pdf

Small Entity Compliance Guide for Respirable Crystalline Silica Standard for Construction <u>https://www.osha.gov/publications/OSHA3902.pdf</u>

Small Entity Compliance Guide for Respirable Crystalline Silica Standard for General Industry and Maritime https://www.osha.gov/publications/OSHA3911.pdf

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