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# MAGNUM

PRECISION ENGINEERED  
RESIN-BONDED  
CUTTING AND GRINDING  
ABRASIVE WHEELS

2014



## WARRANTY

Magnum Abrasives products are guaranteed to be free from defects. Our obligation to the user shall be to replace any items proven to be defective, or to refund the purchase price. User assumes responsibility for selecting the appropriate product for use and for complying with safety regulations set by OSHA and ANSI SAFETY CODE B7.1 covering wheel speed, safety guards, eye and face protection, flanges and mounting procedures, and assumes all other risks, if any.

## STANDARD SIZES AND GRADES

Magnum Abrasives offers a full range of standard grades and sizes to meet the requirements of most "general" cutting and grinding operations. Your specific operation may require a special grade or formulation for best results, and we are ready to address your unique requirements. Contact your local distributor with your inquiry.

Magnum Abrasives products are manufactured in the United States of America, by skilled personnel using modern equipment, advanced production methods, and high-quality raw materials.

## SAMPLE POLICY

We encourage comparative job-site tests of our products with other brands. The user can determine our product quality and performance under actual conditions, using on-site equipment and materials.

Test samples of premium formulated wheels can be purchased in small quantities, with pricing based on a normal ordering quantity. The customer will receive full refund or a credit adjustment toward re-engineered or standard product, if test performance is unsatisfactory.

## YOUR SAFETY IS OUR CONCERN

Magnum Abrasives products are manufactured under strict quality controls and specifications. We use only the highest quality grains, bond systems, and reinforcement fabrics available, all designed for optimal performance, with operator safety in mind.

Users of abrasive products should familiarize themselves with ANSI B7.1 and OSHA published standards concerning the proper use, handling and storage of abrasive wheels.

## SAFETY GUIDE & TIPS

**SPEEDS** - Do not exceed the maximum operating speed established for the wheel. Overspeed is a common cause of wheel breakage. Routine machine speed readings should be made with a tachometer on a weekly basis, or every time a new wheel is mounted.



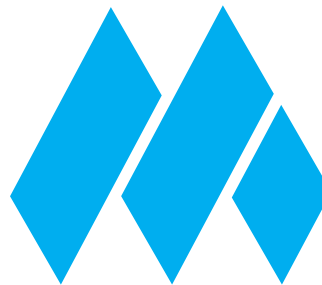
**PORTABLE GRINDING** - Inspect portable grinders at routine intervals. Flanges should be in good condition, of proper size and shape. Speed governing unit should be operating properly, and DO inspect the grinder to be sure that no damage has occurred as a result of careless or abusive handling.

**SAFETY GUARDS** - Machine guards should always be in place and should conform to requirements outlined in ANSI B-7.1 (section 4).

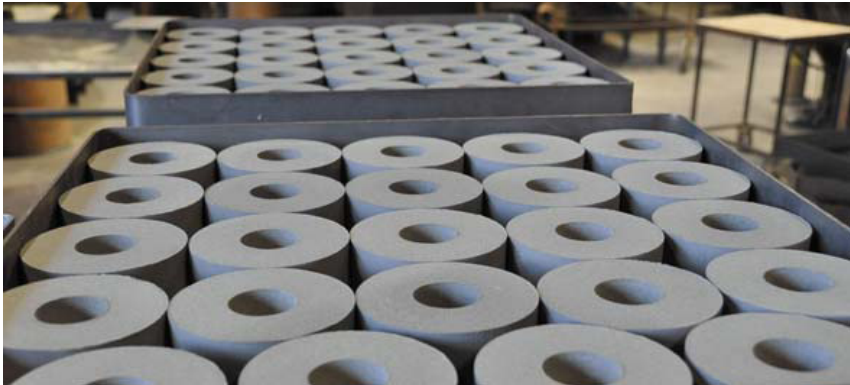
**FLANGES** - Type 1 cut-off wheels should be mounted between properly relieved flanges with matching bearing surfaces, and be at least the minimum diameter specified in ANSI B-7.1 (section 5). Flanges must be kept in good repair and routinely checked for flatness, burrs or wear.

**PROTECTIVE EYE WEAR AND CLOTHING** - Always wear impact resistant safety goggles. Always wear protective clothing.

This guide is not intended as a substitute for a full knowledge of ANSI (American National Standards Institute) and OSHA (Occupational Safety and Health Administration) standards. Additional safety information can be found on page 24 of this catalog.







## MANDRELS

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Magnum is the industry leader in Very High Performance, custom formulated cutting and grinding wheels. See this section for an informative discussion and guidelines for helping us create the ULTIMATE cutting or grinding wheel for your specific requirements. 6

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Note: This catalog is effective 1 Jan, 2010 with minor revisions May 2014, and supercedes all previous versions. Magnum Abrasives, Inc. reserves the right to discontinue, or to change or alter the specifications for any product listed in this catalog, without prior notice.

Visit our website at <http://www.magnumabrasives.com>

For the name of the distributor nearest you, call us at:

**1(800) 262-4686**

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[customerservice@magnumabrasives.com](mailto:customerservice@magnumabrasives.com)



## NEED A CUTTING OR GRINDING WHEEL FOR AN EXOTIC MATERIAL? HAVE A UNIQUE INDUSTRIAL APPLICATION, OR WANT A RUBBER-RESIN BONDED WHEEL FOR WET CUTTING? A METRIC DIMENSIONED WHEEL?

In addition to our extensive standard line of high performance cut-off and grinding wheels, we design, engineer & manufacture specialized and improved abrasives for many different industries.

Our own in-house lab and mold making facility allows us to quickly respond to most special requirements.

Magnum engineered abrasives are currently providing excellent performance in dental labs, industrial & specialty foundries, on specialized rail grinding machines, on automated pipe deburring equipment, on automated nickel alloy foundry cut-off equipment... and the list goes on.





# MAGNUM IS YOUR BEST SOURCE FOR A WIDE VARIETY OF APPLICATION-SPECIFIC, CUSTOM FORMULATED, PROFESSIONALLY ENGINEERED HIGH PERFORMANCE CUTTING & GRINDING WHEELS

Magnum has over 25 years of experience formulating high performance resin bonded and rubber-resin bonded abrasive products, providing superior cuts on titanium, specialty steels and cross-sections.

We have the expertise and resources to make almost any shape or size abrasive wheel that you may require, in diameters from 1 to 34 inches.

Require a special size or shape wheel for a new piece of application specific machinery? We can probably help.

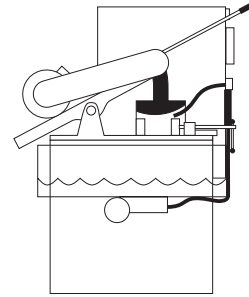
Call us Toll-Free at [1\(800\)262-4686](tel:1(800)262-4686) to discuss your requirements.



## CUSTOM CUT-OFF WHEELS UP TO 34" DIA., FOR SPECIFIC CUTTING OPERATIONS ON SPECIFIC MATERIALS, WITH SPECIFIC RESULTS.

When cutting expensive materials, an ordinary wheel may not provide the cool, smooth, burr-free and burn-free cuts that are required. An incorrectly designed wheel can quickly turn expensive castings, forgings, extrusions, spinnings, formings, composites, etc. into scrap. Reinforcement is typically used on wheels rated at speeds above 9500 surface feet per minute. High-strength fiberglass reinforcement is generally recommended.

Special applications may require zone, or non-reinforced wheels, due to the machine horsepower or the material being cut. A correctly designed wheel provides reduced costs, faster cutting, more cuts per wheel, and a better finished cut.



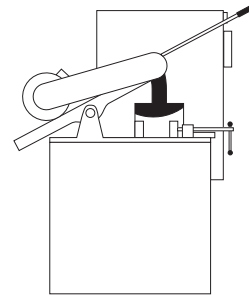
### CUSTOM GRADES FOR PRODUCTION WET CUTTING:

Rubber-resin bonded wheels are used on cut-off machines with coolant tanks and circulating pumps that deliver coolant to the wheel and the workpiece to dissipate heat. The wet cutting process is used on sensitive materials like titanium, ceramics, exotic alloys, stainless steels, non-ferrous and composite materials. Wheel grade selection is extremely important, as these expensive materials can be damaged by heat-checking and breakage. Wet cutting with rubber-resin wheels can provide high quality cuts and good wheel life. Magnum can provide a wheel that will minimize burn and burr, and help to reduce finishing costs. These wheels generally run in the 7500 to 9500 surface feet per minute speed range, however slower speeds may produce better quality cuts without a significant reduction in cutting rates.

**Note:** Premium wheels can be ordered in quantities suitable for test and / or minimal production requirements. Please contact factory technical customer service. Provide detailed information on your job requirements; Magnum will provide the expert analysis and recommendation. (See page 2)

### CUSTOM GRADES FOR PRODUCTION DRY CUTTING:

Most dry cutting is performed with cold-pressed, resin-bonded wheels. The added durability and extra-fast cutting action of a premium wheel will save enough in reduced labor to make it more cost effective than a standard wheel. Whether cutting cross-sections or tube, a fast rate of cut is the key to efficient operation. In dry cutting, wheel speeds (12,000 to 16,000 surface feet per minute) are higher than those used in wet cutting. Special combinations of thermosetting resins, blended with premium grains and fillers, produce a tough bond that stands up under heat and pressure in most applications. Reinforcement patterns allow for pebbled, rough side surface to reduce side friction and provide faster, cooler cutting, while maximizing the power of a cut-off saw.



**Note:** Consult Magnum's customer technical services for test samples, quantities & pricing details. 5/8", 3/4", 1", 1-1/4", 1-1/2", 1-3/4", 2" & 3" arbor sizes are available. Non-standard arbors or pin-hole patterns are also available in custom grades. Please specify on request.

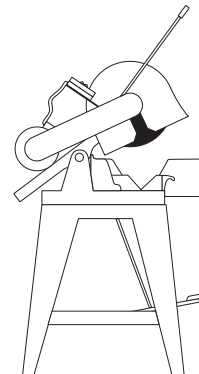
### CUSTOM GRADES FOR FOUNDRY CUTTING WITH FIXED-HEAD, PUSH-THRU, CHOP-STROKE OR SWING-FRAME CUT-OFF MACHINES:

In foundry casting operations, abrasive cut-off wheels are used to trim gates and risers from the castings. These aggressive operations will involve swing frame, floor & table machines, utilizing wheels specifically designed to match the machine type and horsepower, as well as the characteristics and cross-section size of the material being cut. All foundry applications require wheels reinforced with high-strength fiberglass fabric, to provide the ability to withstand the typical twisting and side-pressure forces encountered. These wheels are designed for use on industrial production machines with adequate power.

**The basic Rule-of-Thumb:** the machine should draw about 1 horsepower per inch of wheel diameter. This ratio will minimize "burr" and "burn", and maximize the efficiency of the cut.

**Note:** Triple reinforced patterns are recommended for swing-frame applications.

Contact factory for specific grade recommendations based on your customer's material, machines, cutting operations and performance requirements.



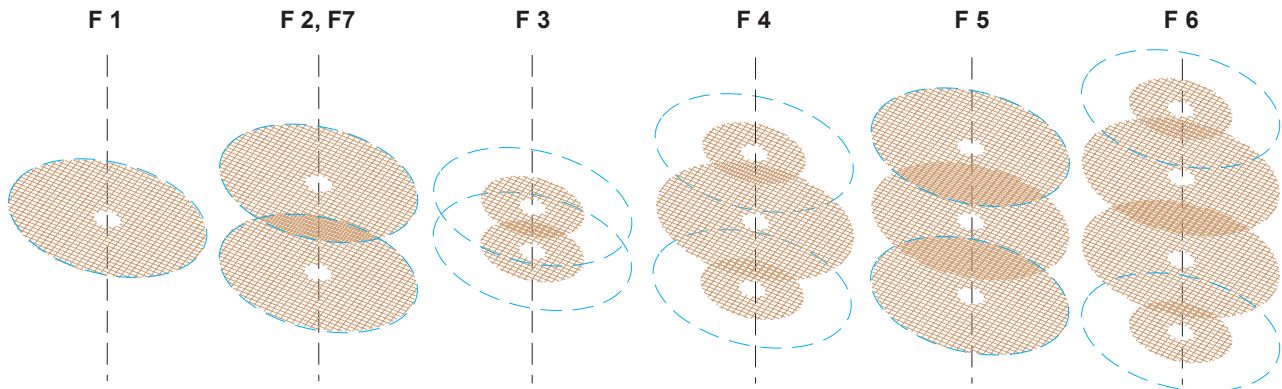


## A GENERAL GUIDE TO MAGNUM WHEEL GRADE CODE

# TA 24 R B F2 5

ABRASIVE TYPE	GRAIN SIZE	HARDNESS	BOND TYPE	REINFORCEMENT (NO F = NONE)	SPECIAL MFG. CODE (optional)
<b>A</b> = Standard Aluminum Oxide	<b>12</b> = Coarse <b>16</b> =	<b>A</b> = Softest ...	<b>B</b> = Resinoid <b>B33</b> = Premium Resinoid	<b>F1</b> = Internal Reinforced	Indicates specific bonds, special side treatments or manufacturing processes.
<b>TA</b> = Treated Aluminum Oxide	<b>20</b> = <b>24</b> =	...	<b>R55</b> = Premium Rubber-Resin	<b>F2</b> = Double Reinforced	
<b>C</b> = Silicon Carbide	<b>30</b> = Medium <b>36</b> =	...		<b>F3</b> = Hub Reinforced	
<b>CA</b> = Silicon Carbide & Aluminum Oxide	<b>46</b> =	<b>M</b> = Medium		<b>F4</b> = Hub & Internal Reinforced	
<b>SKA</b> = Special coated Alumina blend	<b>60</b> = <b>80</b> = Fine	...		<b>F5</b> = Triple Reinforced	
<b>SKZ</b> = Special Alumina blend	<b>90</b> = <b>100</b> =	...		<b>F6</b> = Hub & Double Full Internal Reinforced	
<b>2Z</b> = Zirconium & Aluminum Oxide	<b>120</b> = <b>220</b> =	...	<b>Z</b> = Hardest	<b>F7</b> = Double Full Internal Reinforced	
<b>4Z</b> = Premium Zirconium & Aluminum Oxide					

### ABRASIVE WHEEL REINFORCEMENT CONFIGURATIONS



### ABRASIVE WHEEL COMPONENTS

The abrasive wheel brings thousands of miniature cutting tools (abrasive grains) into contact with the work-piece, in rapid succession, as the wheel spins. These grains are harder than the metal alloys being cut, and each individual grain removes a small chip of metal as it comes in contact with the workpiece repeatedly, at high speed. This results in the rapid cutting of the material.

The design and manufacture of high quality cut-off wheels requires a knowledgeable integration of key components:

**ABRASIVES** - Several kinds of abrasives are commonly used; Aluminum Oxide, Silicon Carbide, and Zirconia - Aluminum Oxide; all designed with variations in size and structure, to significantly affect the specific cutting or grinding application.

**BOND** - The bonding system holds the abrasives together in the wheel shape. Consisting of resins & fillers, it allows the wheel to wear away at a specific rate, to achieve the

required cutting action. Wheels with tenacious bonds are called "hard"; those that break down more rapidly are considered "soft". Resinoid bonding systems are used for dry-cutting of most materials. Rubber-Resin bonding systems are used for most wet-cutting applications.

**STRUCTURE** - To provide space for the abrasive grain - bond matrix, the wheel must be constructed with the proper number, size and distribution of minute "spaces" in the structure. Structures with more spaces are considered "open", those with fewer spaces are considered "closed".

**REINFORCEMENT** - For added strength, a woven fabric of long strand fiberglass, impregnated with phenolic resins, is molded into the wheel during the manufacturing process. The strand size, weave and strength is determined by the requirements of the cutting job, and is engineered to meet the stresses of the application.



## PRECISION MACHINED MOUNTING MANDRELS FOR SMALL TYPE 1 CUTTING & GRINDING WHEELS

**MAGNUM PREMIUM MANDRELS** - PRECISION MACHINED FROM EXTRA HIGH TENSILE-STRENGTH ALLOY STEEL. RECESSED FLANGES HOLD THE WHEEL STRAIGHT & TRUE FOR MAXIMUM OPERATOR CONTROL AND LONG WHEEL LIFE.

**MAGNUM ECONOMY MANDRELS** - PRECISION FABRICATED FROM HIGH TENSILE-STRENGTH ALLOY STEEL WITH RECESSED FLANGES HOLD THE WHEEL STRAIGHT & TRUE. USE WHERE HEAD CLEARANCE IS NOT AN ISSUE.

MAGNUM MANDRELS ARE DESIGNED TO MEET ANSI & OSHA REQUIREMENTS.



### FOR MICRO-DIMENSION CUTTING WHEELS - PREMIUM

MANDREL SIZE ARBOR x SHANK (1/8" COLLET)	PART NUMBERS for .025" - .035" thick wheels	STD PACK	
		QTY	WT
1/16 arbor* x 1/8 shank <small>(*Includes washer)</small>	8002	10	1 LB
ARBOR x SHANK (1/8" COLLET)	for .025" - 1/16" thick wheels	QTY	WT
1/8 arbor x 1/8 shank	8004	10	1 LB

### FOR SMALL TYPE 1 CUTTING WHEELS - PREMIUM

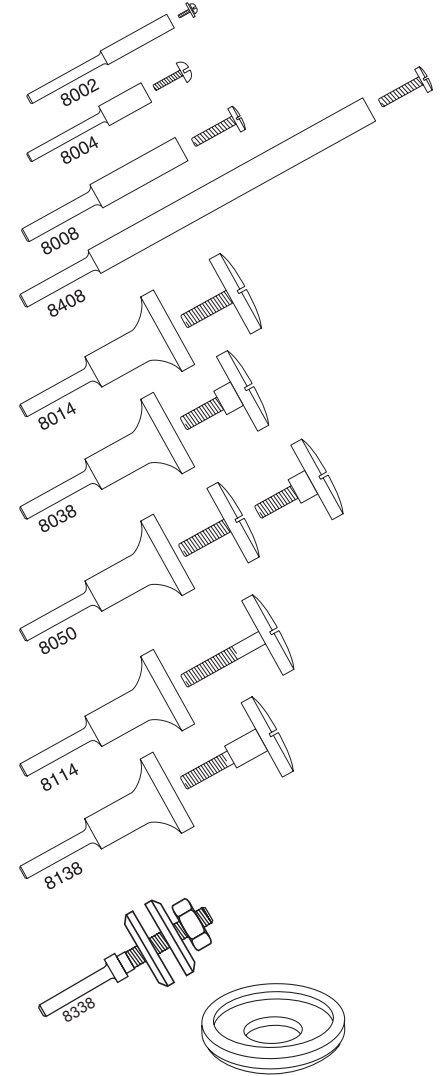
MANDREL SIZE ARBOR x SHANK (1/4" COLLET)	PART NUMBERS for .025" - 1/8" thick wheels	STD PACK	
		QTY	WT
1/8 arbor x 1/4 shank	8008	10	1 LB
1/8 arbor x 1/4 shank (4" shaft)	8408	10	1 LB
ARBOR x SHANK (1/4" COLLET)	for .035" - 1/4" thick wheels	QTY	WT
1/4 arbor x 1/4 shank	8014	10	1 LB
3/8 arbor x 1/4 shank	8038	10	1 LB
1/4 & 3/8 ARBOR x 1/4 shank (combo pack)	8050	10	1111 LB

### FOR SMALL TYPE 1 GRINDING WHEELS - PREMIUM

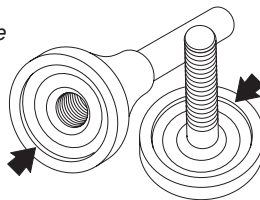
MANDREL SIZE ARBOR x SHANK (1/4" COLLET)	PART NUMBERS for 1/4" - 3/8" thick wheels	STD PACK	
		QTY	WT
1/4 arbor x 1/4 shank	8114	10	1 LB
3/8 arbor x 1/4 shank	8138	10	1 LB

### FOR SMALL TYPE 1 THICK SNAGING WHEELS

MANDREL SIZE ARBOR x SHANK (1/4" COLLET)	PART NUMBERS for 1/4" - 3/8" thick wheels	STD PACK	
		QTY	WT
3/8 arbor x 1/4 shank	8338	10	1 LB



**Note:** Magnum's Premium Grade Mandrels are machined with recessed flanges to insure straight and true wheel mounting on wheels up to 1/2" diameter.



Magnum's 8138 Mandrels are fabricated with recessed flanges to insure straight and true wheel mounting on wheels up to 1/2" thick.





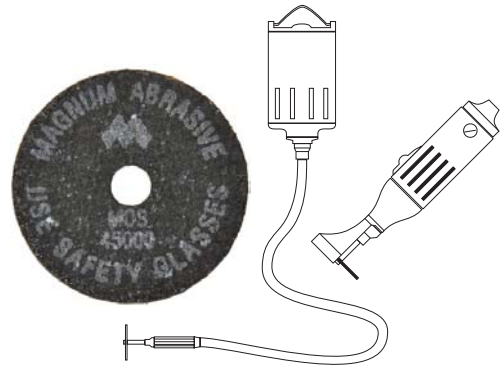
## MICRO-DIMENSION CUT-OFF WHEELS FOR VERY HIGH SPEED ROTARY TOOLS

**A 80 TB** - VERY FINE, BURR-FREE PRECISION CUTTING & SLOTTING ON STAINLESS STEEL, THIN-WALL TUBING AND HIGH TENSILE ALLOYS.

**CA 80 TB** - VERY FINE, BURR-FREE PRECISION CUTTING & SLOTTING ON ALUMINUM, BRASS, BRONZE, COPPER, FIBERGLASS, HIGH DENSITY PLASTICS AND COMPOSITES.

**A 60 TBF2** - REINFORCED FOR ADDED STRENGTH / VERY FINE, BURR-FREE CUTTING ON STAINLESS STEEL, THIN-WALL TUBING AND HIGH TENSILE ALLOYS.

**C 60 TBF2** - REINFORCED FOR ADDED STRENGTH / VERY FINE, BURR-FREE CUTTING ON ALUMINUM, BRASS, BRONZE, COPPER, FIBERGLASS, HIGH DENSITY PLASTICS AND COMPOSITES.



## NON-REINFORCED WHEELS

WHEEL SIZE DIA x THICK x ARBOR	MAX RPM	STANDARD GRADES & PART NUMBERS		STD PACK	
		A 80 TB	CA 80 TB	QTY	WT
1 x .025 x 1/16	45830	0926	0927	100	1 LB
1 x .025 x 1/8	45830	0928	0929	100	1 LB
1-1/2 x .030 x 1/16	30550	0930	0931	100	1 LB
1-1/2 x .030 x 1/8	30550	0932	0933	100	1 LB
2 x .035 x 1/8	23000	0934	0935	100	1 LB

## REINFORCED WHEELS

WHEEL SIZE DIA x THICK x ARBOR	MAX RPM	STANDARD GRADES & PART NUMBERS		STD PACK	
		A 60 TBF2	C 60 TBF2	QTY	WT
1 x .035 x 1/16	61000	0940	0941	100	1 LB
1 x .035 x 1/8	61000	0942	0943	100	1 LB
1 x 1/16 x 1/8	61000	0944	0945	100	1 LB
1-1/2 x .035 x 1/16	45000	0946	0947	100	1 LB
1-1/2 x .035 x 1/8	45000	0948	0949	100	1 LB
1-1/2 x .035 x 1/4	45000	0962	0963	100	1 LB
1-1/2 x 1/16 x 1/8	45000	0950	0951	100	1 LB
1-1/2 x 1/16 x 1/4	45000	0952	0953	100	1 LB
2 x .035 x 1/8	30000	0954	0955	100	1 LB
2 x 1/16 x 1/8	30000	0956	0957	100	1 LB



**Note:** Always use a high quality mandrel with these wheels. See page 10



**Caution:** Abrasive wheels can be dangerous if improperly used.

The material being cut or ground may create hazardous dust. Always use appropriate personal protection, as recommended by OSHA & ANSI B-7.1 Safety Regulations.

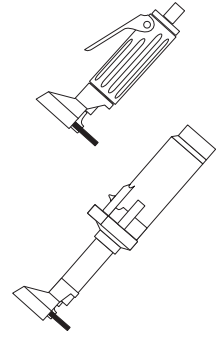


## HIGH SPEED DIE GRINDERS TYPE 1 REINFORCED CUT-OFF WHEELS STANDARD GRADES

**A 36 TBF2** - FAST CUTTING / GOOD WHEEL LIFE ON STAINLESS & STRUCTURAL STEEL, FERROUS & NON-FERROUS METALS.

**A 60 TBF2** - FINE FINISH CUTTING / BURR FREE CUTTING ON THIN-WALL TUBING, LIGHT DIMENSION STRUCTURAL STEEL.

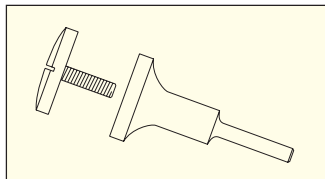
*These wheels are the most commonly used grades for a variety of typical applications. Over the years they have proven to be generally appropriate and cost effective for most common uses. You may benefit from a more precisely engineered formulation and configuration for your specific application. Magnum has the experience & technology to provide you with the perfect cutting wheel for your operation.*



WHEEL SIZE DIA x THICK x ARBOR	MAX RPM	STANDARD GRADES & PART NUMBERS		STD PACK	
		A 36 TBF2	A 60 TBF2	QTY	WT
2 x .035 x 1/4	30000		1072	100	1 LB
2 x .035 x 3/8	30000		1078	100	1 LB
2 x 1/16 x 1/4	30000	1088	1090	100	1 LB
2 x 1/16 x 3/8	30000	1094	1096	100	1 LB
2 x 1/8 x 1/4	30000	1106	1108	100	2 LB
2 x 1/8 x 3/8	30000	1112	1114	100	2 LB
2-1/2 x .035 x 1/4	27000		1120	50	1 LB
2-1/2 x .035 x 3/8	27000		1126	50	1 LB
2-1/2 x 1/16 x 1/4	27000	1130	1132	50	2 LB
2-1/2 x 1/16 x 3/8	27000	1136	1138	50	2 LB
3 x .035 x 1/4	25000		1154	50	1 LB
3 x .035 x 3/8	25000		1158	50	1 LB
3 x 1/16 x 1/4	25000	1160	1162	50	2 LB
3 x 1/16 x 3/8	25000	1164	1166	50	2 LB
3 x 1/8 x 1/4	25000	1168	1170	50	4 LB
3 x 1/8 x 3/8	25000	1172	1174	50	4 LB
4 x .035 x 1/4	19000		1178	50	2 LB
4 x .035 x 3/8	19000		1182	50	2 LB
4 x .035 x 5/8	19000		1183	50	2 LB
4 x 1/16 x 1/4	19000	1184	1186	50	4 LB
4 x 1/16 x 3/8	19000	1188	1190	50	4 LB
4 x 1/16 x 5/8	19000	1192		50	4 LB
4 x 1/8 x 1/4	19000	1196	1198	50	7 LB
4 x 1/8 x 3/8	19000	1200	1202	50	7 LB
5 x .035 x 3/8	12200		1209	50	3 LB
5 x 1/16 x 3/8	12200	1212	1214	50	5 LB



**Note:** The use of Type 1 wheels with right angle grinders requires flat, recessed mounting flanges. Check with your tool manufacturer for availability.



**Note:** Magnum also offers a variety of excellent, precision machined mandrels for small Type 1 cutting & grinding wheels. See page 21.

**Warning:** Do not exceed recommended wheel speeds. Undue stress caused by over-speed may cause wheel breakage and can cause physical injury.

Refer to catalog page 24 for further information.

**NOTE: SILICON CARBIDE GRADES FOR CUTTING ALUMINUM, BRASS, BRONZE, NON-FERROUS METALS & COMPOSITES ARE ALSO AVAILABLE. CONTACT CUSTOMER SERVICE FOR DETAILS.**

NATIONAL TOLL FREE  
ORDER NUMBER:  
**1 (800) 262-4686**

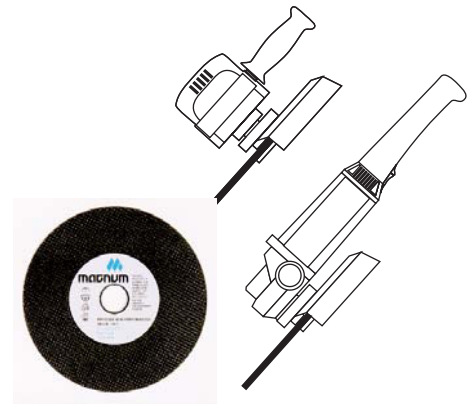


## HIGH SPEED RIGHT ANGLE GRINDERS TYPE 1 REINFORCED CUT-OFF WHEELS STANDARD GRADES / HIGH PERFORMANCE

**MAGNUM** has engineered and developed this new, high performance line of cutting wheels with special new formulations, integrating premium materials, special high strength reinforcement, and advanced manufacturing processes. **These tough wheels will stand up to rigorous use in adverse field conditions.**

**SKZ 46 TBF2** - Designed for fast, cool, easy cutting on steel, mild steel alloys, stainless and non-ferrous metals. Maximum life on sheet and light plate.

**SKA 60 TBF2** - Engineered with premium grains for quick, blade-like cutting action and durability. Ideal choice for stainless, alloys and steel. Designed to withstand the toughness of thin metal cutting, while providing long life performance.

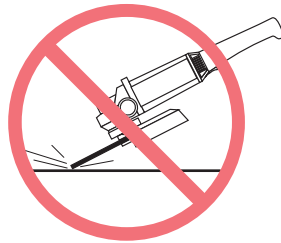
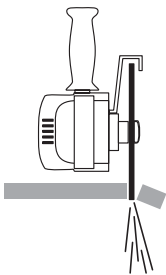


WHEEL SIZE DIA x THICK x ARBOR	MAX RPM	PREMIUM GRADE PART NUMBERS		STD PACK	
		SKZ 46 TBF2	SKA 60 TBF2	QTY	WT
4 x .040 x 5/8	19000	1311	1312	50	2 LB
4 x 1/16 x 5/8	19000	1315	1316	50	4 LB
4-1/2 x .040 x 7/8	13500	1317	1318	50	3 LB
4-1/2 x 1/16 x 7/8	13500	1319	1320	50	5 LB
5 x .040 x 5/8	12200	1323	1324	50	4 LB
5 x .040 x 7/8	12200	1325	1326	50	4 LB
5 x 1/16 x 5/8	12200	1329	1330	50	7 LB
5 x 1/16 x 7/8	12200	1331	1332	50	7 LB
6 x .040 x 7/8	10200	1337	1338	50	6 LB
6 x 1/16 x 7/8	10200	1343	1344	25	4.5 LB
7 x .040 x 7/8	8740	1347	1348	50	8 LB
7 x 1/16 x 7/8	8740	1351	1352	50	13 LB

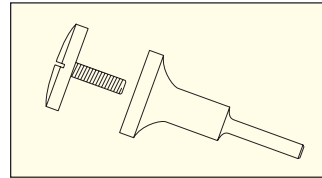


**Warning:** Do not use these wheels for grinding.

**Use for cutting off only.** These **Type 1** wheels are designed specifically for **hand held Right Angle electric & air grinders.**



**Note:** The use of these wheels with right angle grinders requires flat, recessed mounting flanges. Check with your tool manufacturer for availability.



**Note:** Magnum also offers a variety of excellent, precision machined mandrels for small Type 1 cutting & grinding wheels. See page 10.

**Warning:** Do not exceed recommended wheel speeds. Undue stress caused by over-speed may cause wheel breakage and can cause physical injury.

**NOTE: SILICON CARBIDE GRADES FOR CUTTING ALUMINUM, BRASS, BRONZE, NON-FERROUS METALS & COMPOSITES ARE ALSO AVAILABLE. CONTACT CUSTOMER SERVICE FOR DETAILS.**



**Caution:** Abrasive wheels can be dangerous if improperly used. The material being cut or ground may create hazardous dust. Always use appropriate personal protection, as recommended by OSHA & ANSI B-7.1 Safety Regulations.



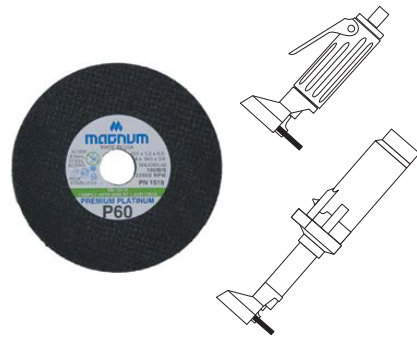


## HIGH SPEED DIE GRINDERS TYPE 1 THIN REINFORCED CUT-OFF WHEELS PREMIUM PLATINUM GRADE / EXTRA LONG LIFE

These **NEW, IMPROVED PREMIUM PLATINUM** grade cutting wheels are blended with **patented ceramic** and other durable abrasive grains. When combined with our **advanced, proprietary bonding system**, they provide **exceptional cutting rates and extra long life**. **PREMIUM PLATINUM** grade wheels are **also** offered with a new **Fe FREE, INOX RATED** formulation; **FREE** of IRON, SULPHUR and CHLORINATED FILLERS, for **CONTAMINATE FREE** cutting of STAINLESS STEEL. (**NFE PART NUMBERS**)

**PLATINUM 36** - EXCEPTIONAL WHEEL LIFE AND SUPERIOR CUTTING RATES. OUTSTANDING PRODUCTIVITY ON STAINLESS STEEL, HEAT-SENSITIVE ALLOYS, TITANIUM AND OTHER METALS.

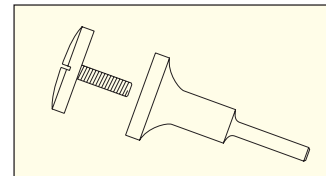
**PLATINUM 60** - COMBINES FREE CUTTING ACTION & HIGH QUALITY CUTS, WITH OUTSTANDING PRODUCTIVITY ON STAINLESS STEEL, HEAT-SENSITIVE ALLOYS, TITANIUM AND OTHER METALS.



WHEEL SIZE DIA x THICK x ARBOR	MAX RPM	PREMIUM PLATINUM GRADE PART NUMBERS				STD PACK	
		P36	P36NFE	P60	P60NFE	QTY	WT
3 x .045 x 1/4	26000			1502	1702	50	2 LB
3 x .045 x 3/8	26000			1504	1704	50	2 LB
3 x 1/16 x 1/4	26000	1507	1707			50	2 LB
3 x 1/16 x 3/8	26000	1509	1709			50	2 LB
4 x .045 x 1/4	22000			1514	1714	50	2 LB
4 x .045 x 3/8	22000			1516	1716	50	2 LB
<b>4 x .045 x 5/8</b>	<b>22000</b>			<b>1518</b>	<b>1718</b>	<b>50</b>	<b>2 LB</b>
4 x 1/16 x 1/4	22000	1521	1721			50	4 LB
4 x 1/16 x 3/8	22000	1523	1723			50	4 LB
<b>4 x 1/16 x 5/8</b>	<b>22000</b>	<b>1525</b>	<b>1725</b>			<b>50</b>	<b>4 LB</b>
4-1/2 x .045 x 7/8	13500			1530	1730	25	2 LB
4-1/2 x 1/16 x 7/8	13500	1533	1733			25	2 LB
5 x .045 x 3/8	12500			1536	1736	25	2 LB
<b>5 x .045 x 5/8</b>	<b>12500</b>			<b>1538</b>	<b>1738</b>	<b>25</b>	<b>2 LB</b>
<b>5 x .045 x 7/8</b>	<b>12500</b>			<b>1540</b>	<b>1740</b>	<b>25</b>	<b>2 LB</b>
5 x 1/16 x 3/8	12500	1543	1743			25	4 LB
<b>5 x 1/16 x 5/8</b>	<b>12500</b>	<b>1545</b>	<b>1745</b>			<b>25</b>	<b>4 LB</b>
<b>5 x 1/16 x 7/8</b>	<b>12500</b>	<b>1547</b>	<b>1747</b>			<b>25</b>	<b>4 LB</b>
6 x .045 x 1/2	11000			1552	1752	25	3 LB
6 x .045 x 5/8	11000			1554	1754	25	3 LB
<b>6 x .045 x 7/8</b>	<b>11000</b>			<b>1556</b>	<b>1756</b>	<b>25</b>	<b>3 LB</b>
6 x 1/16 x 1/2	11000	1559	1759			25	5 LB
6 x 1/16 x 5/8	11000	1561	1761			25	5 LB
<b>6 x 1/16 x 7/8</b>	<b>11000</b>	<b>1563</b>	<b>1763</b>			<b>25</b>	<b>5 LB</b>
7 x .045 x 5/8	8800			1568	1768	25	4 LB
<b>7 x .045 x 7/8</b>	<b>8800</b>			<b>1570</b>	<b>1770</b>	<b>25</b>	<b>4 LB</b>
7 x 1/16 x 5/8	8800	1573	1773			25	7 LB
<b>7 x 1/16 x 7/8</b>	<b>8800</b>	<b>1575</b>	<b>1775</b>			<b>25</b>	<b>7 LB</b>

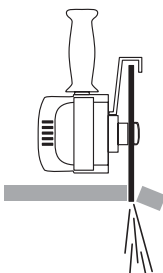


**Warning:** Do not exceed recommended wheel speeds. Undue stress caused by over-speed may cause wheel breakage and can cause physical injury.



**Note:** Magnum also offers a variety of excellent, precision machined mandrels for small Type 1 cutting & grinding wheels. See page 21.

**NOTE: BOLD-FACE PART NUMBERS** - These Type 1 wheels are designed specifically for **hand-held Right-Angle electric and air grinders**.



**PLEASE NOTE! THE WHEELS ON THIS PAGE ARE NEW, IMPROVED PREMIUM PLATINUM GRADE, WITH PART NUMBERS FOR NEW Fe FREE, INOX RATED WHEELS: FREE OF IRON, SULPHUR AND CHLORINATED FILLERS, FOR CONTAMINATE-FREE CUTTING OF STAINLESS STEEL. CONTACT CUSTOMER SERVICE FOR DETAILS.**

### TYPE-1 =TYPE 41 (EUROPEAN STANDARD 12413)

**Note:** The use of Type 1 wheels with right angle grinders requires flat, recessed mounting flanges. Check with your tool manufacturer for availability.



**Caution:** Abrasive wheels can be dangerous if improperly used. The material being cut or ground may create hazardous dust. Always use appropriate personal protection, as recommended by OSHA & ANSI B-7.1 Safety Regulations.



## RIGHT-ANGLE GRINDERS PREMIUM PLATINUM GRADE / EXTRA LONG LIFE TYPE 27 THIN DEPRESSED CENTER CUT-OFF WHEELS

**PLATINUM 36** - EXCEPTIONAL WHEEL LIFE AND SUPERIOR CUTTING RATES. OUTSTANDING PRODUCTIVITY ON STAINLESS STEEL, HEAT-SENSITIVE ALLOYS, TITANIUM AND OTHER METALS.

**PLATINUM 60** - COMBINES FREE CUTTING ACTION & HIGH QUALITY CUTS, WITH OUTSTANDING PRODUCTIVITY ON STAINLESS STEEL, HEAT-SENSITIVE ALLOYS, TITANIUM AND OTHER METALS.

*These new premium Type 27 thin cutting wheels have a blend of zirconia-alumina and other durable, coated abrasive grains, combined with an advanced, proprietary bonding system, and have been engineered to provide exceptional wheel life and cutting rates.*

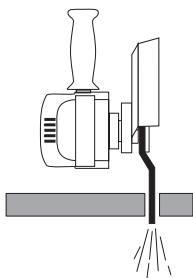
- 2 to 3 times the life of ceramic-alumina blended wheels!
- up to 6 times the life of regular aluminum oxide wheels!

WHEEL SIZE DIA x THICK x ARBOR	MAX RPM	PREMIUM GRADE PART NUMBERS		STD PACK	
		PLATINUM 36	PLATINUM 60	QTY	WT
4-1/2 x .045 x 7/8	13500		1630	25	2 LB
4-1/2 x 1/16 x 7/8	13500	1631		25	4 LB
5 x .045 x 7/8	12500		1632	25	2.5 LB
5 x 1/16 x 7/8	12500	1633		25	5 LB
6 x .045 x 7/8	11000		1634	25	5 LB
6 x 1/16 x 7/8	11000	1635		25	10 LB



**Warning:** Do not use these wheels for grinding.

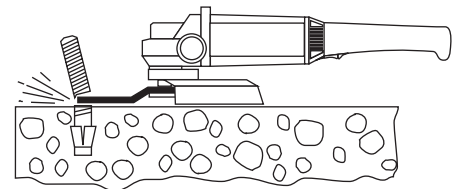
**Use for cutting off only.**  
These **Type 27 Thin** wheels are designed specifically for **hand held Right Angle electric & air grinders.**



**Warning:** Special Speed Rated wheels should only be used on tools that are maintained and tested in accordance with ANSI B-7.1 standards.



# NEW!



**THIN TYPE 27 DEPRESSED-CENTER CUT-OFF WHEELS** OFFER PRECISION, CLOSER CUTTING OFF ON FLAT SURFACES WITH RIGHT-ANGLE GRINDERS.

**OUTSTANDING PERFORMANCE** ON HEAT-SENSITIVE ALLOYS, TITANIUM AND OTHER EXOTIC MATERIALS!

**NEW!** ALSO AVAILABLE AS **Fe FREE INOX RATED WHEELS:** FREE OF IRON, SULPHUR AND CHLORINATED FILLERS, FOR **CONTAMINATE-FREE CUTTING** OF STAINLESS STEEL.

**CONTACT CUSTOMER SERVICE FOR DETAILS.**

**TYPE-27 =TYPE 42 (EUROPEAN STANDARD 12413)**

NATIONAL TOLL FREE  
ORDER NUMBER:  
**1 (800) 262-4686**

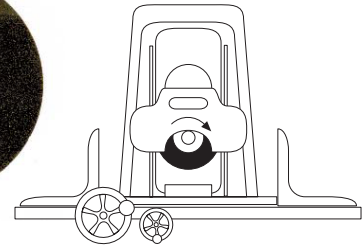


## NON-REINFORCED CUT-OFF WHEELS, PRECISION MANUFACTURED FOR TOOL ROOM & FABRICATING APPLICATIONS

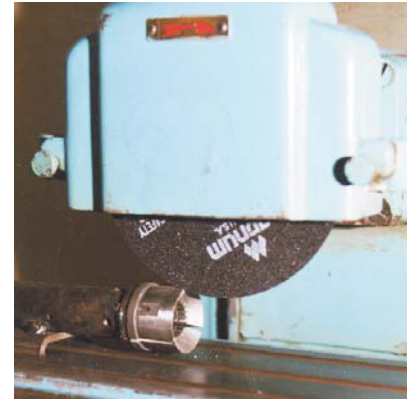
**A 60 PB** - COOL, BURR-FREE PRECISION CUTTING AND SLOTTING ON STAINLESS, ALLOY AND HIGH TENSILE STEEL.

*Non reinforced cut-off wheels offer efficient, economical cuts under conditions where the work-piece is firmly clamped and the wheel motion is mechanically controlled. Recommended only for use by skilled operators, in applications where wheel breakage is not a problem.*

**These wheels are also available in rubber resin bond for precision wet cutting applications.**



WHEEL SIZE DIA x THICK x ARBOR	MAX RPM	STANDARD GRADES & PART NUMBERS		STD PACK	
		A 60 PB		QTY	WT
6 x .035 x 1/2	7600	2190	25	2 LB	
6 x .035 x 5/8	7600	2192	25	2 LB	
<b>6 x .035 x 1-1/4</b>	<b>7600</b>	<b>2194</b>	<b>25</b>	<b>2 LB</b>	
6 x 1/16 x 1/2	7600	2196	25	4 LB	
6 x 1/16 x 5/8	7600	2198	25	4 LB	
<b>6 x 1/16 x 1-1/4</b>	<b>7600</b>	<b>2200</b>	<b>25</b>	<b>4 LB</b>	
7 x .035 x 1/2	6800	2202	25	3 LB	
7 x .035 x 5/8	6800	2204	25	3 LB	
<b>7 x .035 x 1-1/4</b>	<b>6800</b>	<b>2206</b>	<b>25</b>	<b>3 LB</b>	
7 x 1/16 x 1/2	6800	2208	25	5 LB	
7 x 1/16 x 5/8	6800	2210	25	5 LB	
<b>7 x 1/16 x 1-1/4</b>	<b>6800</b>	<b>2212</b>	<b>25</b>	<b>5 LB</b>	
8 x .035 x 1/2	5970	2214	25	5 LB	
8 x .035 x 5/8	5970	2216	25	5 LB	
<b>8 x .035 x 1-1/4</b>	<b>5970</b>	<b>2218</b>	<b>25</b>	<b>5 LB</b>	
8 x 1/16 x 1/2	5970	2220	25	8 LB	
8 x 1/16 x 5/8	5970	2222	25	8 LB	
<b>8 x 1/16 x 1-1/4</b>	<b>5970</b>	<b>2224</b>	<b>25</b>	<b>8 LB</b>	
10 x 1/16 x 5/8	4775	2230	25	11 LB	



**Note:** color blue indicates wheels designed for cutting or slotting operations on **surface grinders**.

**These wheels** are the most commonly used grade for a variety of typical applications. Over the years, they have proved to be generally appropriate and cost effective for many common uses.

**You may benefit** from a more precisely engineered formulation and configuration for your specific application.

**Magnum** has the experience & technology to provide you with the perfect cutting or grinding wheel for your application.

Contact your distributor for details.

**THESE WHEELS ARE ALSO AVAILABLE IN RUBBER RESIN BOND GRADES FOR PRECISION WET CUTTING APPLICATIONS. CONTACT CUSTOMER SERVICE FOR DETAILS.**

**Non-reinforced wheels** should only be used when three important conditions are met:

1. The cutting plane must be rigidly controlled, with no lateral stresses on the wheel.
2. The work-piece must be securely clamped to prevent lateral movement during the cut.
3. The machine must have adequate wheel guarding.



**Caution:** Abrasive wheels can be dangerous if improperly used. The material being cut or ground may create hazardous dust. Always use appropriate personal protection, as recommended by OSHA & ANSI B-7.1 Safety Regulations.

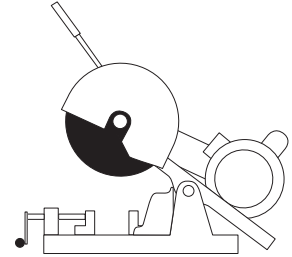




## TOOL ROOM & FABRICATING APPLICATIONS PRECISION MANUFACTURED TYPE 1 REINFORCED CUT-OFF WHEELS

**A 36 TBF2** - FAST CUTTING, GOOD WHEEL LIFE ON THIN WALL PIPE, STRUCTURAL STEEL

**A 60 TBF2** - FINE FINISH, BURR-FREE CUTTING ON THIN-WALL TUBE, SMALL SECTION STAINLESS, HARDENED SHEET STEEL.



WHEEL SIZE DIA x THICK x ARBOR	MAX RPM	STANDARD GRADES & PART NUMBERS		STD PACK	
		A 36 TBF2	A 60 TBF2	QTY	WT
6 x .035 x 1/2	10200		2004	25	2 LB
6 x .035 x 5/8	10200		2008	25	2 LB
6 x .035 x 1-1/4	10200		2009	25	2 LB
6 x 1/16 x 1/2	10200			25	4 LB
6 x 1/16 x 5/8	10200	2010	2014	25	4 LB
6 x 1/16 x 1-1/4	10200		2017	25	4 LB
6 x 1/8 x 1/2	10200		2018	25	6 LB
6 x 1/8 x 5/8	10200		2022	25	6 LB
7 x .035 x 1/2	8740		2028	25	3 LB
7 x .035 x 5/8	8740		2032	25	3 LB
7 x .035 x 1-1/4	8740		2036	25	3 LB
7 x 1/16 x 1/2	8740			25	5 LB
7 x 1/16 x 5/8	8740	2038	2040	25	5 LB
7 x 1/16 x 1-1/4	8740	2042	2044	25	5 LB
7 x 1/16 x 1-1/4	8740		2048	25	5 LB
7 x 1/8 x 1/2	8740			25	11 LB
7 x 1/8 x 5/8	8740	2050		25	11 LB
		2054		25	11 LB
8 x .035 x 1/2	7640		2059	25	5 LB
8 x .035 x 5/8	7640		2060	25	5 LB
8 x .035 x 1-1/4	7640		2061	25	5 LB
8 x 1/16 x 5/8	7640	2062	2064	25	8 LB
8 x 1/8 x 5/8	7640	2070		25	16 LB
10 x .035 x 5/8	6100		2076	20	5 LB
10 x 1/16 x 5/8	6100			10	5 LB
10 x 1/16 x 1	6100	2078	2080	10	5 LB
10 x 3/32 x 5/8	6100		2082	10	5 LB
10 x 3/32 x 1	6100		2086	10	8 LB
			2090	10	8 LB



*These wheels are the most commonly used grades for a variety of typical applications. They have been proven over the years to be generally appropriate and cost effective for common uses.*

*You may benefit from a more precisely engineered formulation and configuration for your specific application.*

*Magnum has the experience & technology to provide you with the perfect cutting or grinding wheel for your application.*

*Reinforced cutting wheels should be used for all off-hand cut-off applications, and in operations where the workpiece is not securely clamped.*

*In operations where the cutting plane is controlled, wheel reinforcing helps to resist side pressure which may occur during the cut.*

*Reinforced wheels should also be used where the rigidity of the cut-off machine is not good.*

**THESE WHEELS ARE ALSO AVAILABLE IN RUBBER RESIN BOND GRADES FOR PRECISION WET CUTTING APPLICATIONS. CONTACT CUSTOMER SERVICE FOR DETAILS.**

**SEARCHING FOR AN UNUSUAL OR UNIQUE CUTTING OR GRINDING WHEEL? UNABLE TO LOCATE A SPECIFIC GRADE OR SIZE? WE ARE HERE TO HELP. CONTACT MAGNUM CUSTOMER SERVICE AT 1(800)262-4686 FOR DETAILS.**



**Caution:** Abrasive wheels can be dangerous if improperly used. The material being cut or ground may create hazardous dust. Always use appropriate personal protection, as recommended by OSHA & ANSI B-7.1 Safety Regulations.

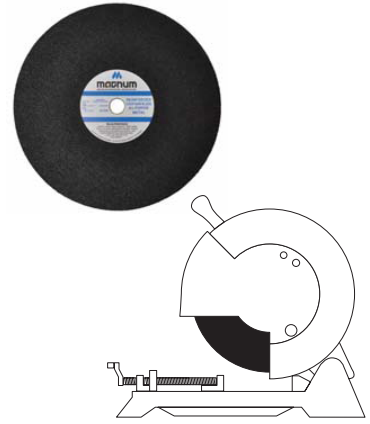


## REINFORCED ZIRCONIA CUT-OFF WHEELS PORTABLE CHOP-SAWS

New Zirconia portable chop saw wheels are hand crafted using precision processes in our USA manufacturing plant. They are designed to out perform generic imports. Using premium Zirconia grains combined with a superior bonding system and two-sided reinforcement, these chop-saw cut-off wheels provide:

- Exceptional wheel life.
- Superior cutting rates on stainless steel, heat-sensitive alloys and other metals.
- Ideal on stainless steel tubing, angle iron, structural shapes and non-ferrous metals
- Outstanding cutting performance on stainless steel exhaust systems & steel studs.

WHEEL SIZE DIA x THICK x ARBOR	MAX RPM	STANDARD GRADES & PART NUMBERS	STD PACK	
		ZA36RBF2	QTY	WT
12 x 7/64 x 1	5100	3632	15	16 LB
14 x 7/64 x 1	4400	3634	15	20 LB
16 x 1/8 x 1	3600	3636	10	22 LB



## SAFETY GUIDE & TIPS

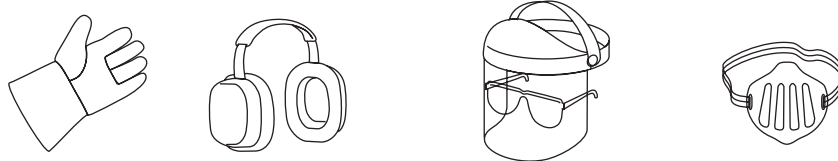
**SPEEDS** - Do not exceed the maximum operating speed established for the wheel. Overspeed is a common cause of wheel breakage. Routine machine speed readings should be made with a tachometer on a weekly basis, or every time a new wheel is mounted.

**PORTABLE GRINDING** - Inspect portable grinders at routine intervals. Flanges should be in good condition, of proper size and shape. Speed governing unit should be operating properly, and DO inspect the grinder to be sure that no damage has occurred as a result of careless or abusive handling.

**SAFETY GUARDS** - Machine guards should always be in place and should conform to requirements outlined in ANSI B-7.1. (section 4)

**FLANGES** - Type 1 cut-off wheels should be mounted between properly relieved flanges with matching bearing surfaces, and be at least the minimum diameter specified in ANSI B-7.1 (section 5). Flanges must be kept in good repair and routinely checked for flatness, burrs or wear.

**PROTECTIVE EYE WEAR AND CLOTHING** - Always wear impact resistant safety goggles. Always wear protective clothing. This guide is not intended as a substitute for a full knowledge of ANSI (American National Standards Institute) and OSHA (Occupational Safety and Health Administration) standards.



**ALWAYS COMPLY WITH REQUIREMENTS FOUND IN ANSI  
B7.1, EURO 12413 AND OSHA SAFETY STANDARDS**



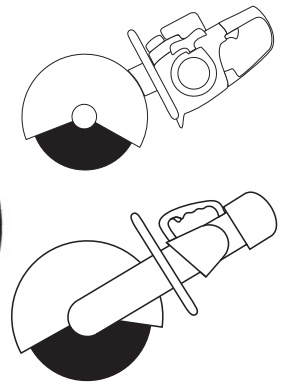
## HIGH-SPEED REINFORCED CUT-OFF WHEELS FOR PORTABLE GAS OR ELECTRIC SAWS

**A 24 TBF2 - METAL** - AGGRESSIVE CUTTING, LONG WHEEL LIFE ON STEEL DECKING, SHEET METAL AND OTHER FERROUS METALS.

**A 30 PBF2 - RAIL** - FAST, STRAIGHT CUTS FOR RAIL CROPPING. DESIGNED FOR USE ON NEW HEAT TREATED OR WEAR-HARDENED RAIL.

**C 24 SBF2 - MASONRY** - HIGH SPEED CUTTING, GOOD WHEEL LIFE ON MASONRY, CONCRETE, AGGREGATE STONE, BRICK AND SOME CAST IRON APPLICATIONS.

**CA 24 SBF2 - DUCTILE** - (BLEND) - FAST CUTTING, GOOD WHEEL LIFE ON DUCTILE & CAST IRON PIPE IN SEWER & WATER-MAIN CONSTRUCTION & MAINTENANCE APPLICATIONS.



WHEEL SIZE DIA x THICK x ARBOR	MAX RPM	STANDARD GRADES & PART NUMBERS				STD PACK	
		A 24 TBF2 METAL	A 30 PBF2 RAIL	C 24 SBF2 MASONRY	CA 24 SBF2 DUCTILE	QTY	WT
12 x 5/32 x 1	6300	3008	3009			10	14 LB
12 x 5/32 x 20mm	6300	3013				10	14 LB
12 x 5/32 x 7/8	6300	3018	3019			10	14 LB
14 x 5/32 x 1	5200	3023	3024			10	18 LB
14 x 5/32 x 20mm	5200	3028				10	18 LB
12 x 5/32 x 1	6300			3010	3012	10	14 LB
12 x 5/32 x 20mm	6300			3015	3017	10	14 LB
12 x 5/32 x 7/8	6300			3020	3022	10	14 LB
14 x 5/32 x 1	5200			3025	3027	10	18 LB
14 x 5/32 x 20mm	5200			3030	3031	10	18 LB
16 x 5/32 x 1	4800		3026			10	28 LB



Constructed with two layers of heavy-duty fiberglass reinforcement and specially formulated bonds, these tough wheels are engineered to withstand the hostile conditions and stresses normally encountered on the job-site.



**Warning:** Abrasive wheels can be dangerous if improperly used. The material being cut or ground may create hazardous dust. Always use appropriate personal protection, as recommended by OSHA & ANSI B-7.1 Safety Regulations.





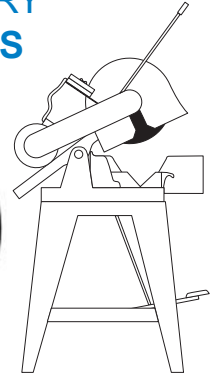
## REINFORCED CUT-OFF WHEELS FOR GENERAL PURPOSE DRY CUTTING ON STATIONARY CHOP SAWS & CUT-OFF MACHINES

**A 24 RBF2** - GENERAL PURPOSE CUTTING ON STRUCTURAL STEELS, IRON AND FERROUS METALS. AGGRESSIVE AND DURABLE

**A 36 RBF2** - MINIMUM BURR ON BARS, ANGLES AND TUBING. GOOD LIFE WHEN CUTTING LIGHT GAUGE MATERIAL WITH NOMINAL CONTACT AREA.

**A 24 SBF2 / A 24 SBF4** - GENERAL PURPOSE CUTTING OF MOST STRUCTURAL STEELS. FEATURES AGGRESSIVE CUTTING, LONG LIFE AND DURABILITY

**A 36 RBF2 / A 36 RBF4** - FAST, MINIMUM BURR CUTTING ON MOST PROFILES - ANGLES, BARS, TUBING AND CHANNEL. GOOD LIFE AND PERFORMANCE.



WHEEL SIZE DIA x THICK x ARBOR	MAX RPM	STANDARD GRADES & PART NUMBERS		STD PACK	
		A 24 RBF2	A 36 RBF2	QTY	WT
12 x 3/32 x 1	5100	2101	2102	10	10 LB
12 x 1/8 x 1	5100	2103	2104	10	14 LB
14 x 3/32 x 1	4400	2105	2106	10	14 LB
14 x 1/8 x 1	4400	2107	2108	10	15 LB

WHEEL SIZE DIA x THICK x ARBOR	MAX RPM	STANDARD GRADES & PART NUMBERS				STD PACK	
		A 24 SBF2	A 36 RBF2	A 24 SBF4	A 36 RBF4	QTY	WT
16 x 1/8 x 1	3800	2109	2110			10	25 LB
18 x 5/32 x 1	3400	2111	2112			10	35 LB
20 x 5/32 x 1	3050	2113	2114			10	46 LB
22 x 3/16 x 1	2465	2115	2116			10	60 LB
24 x 7/32 x 1	2260			2117	2118	5	40 LB
26 x 7/32 x 1	2080			2119	2120	5	47 LB
30 x 1/4 x 1		30" and 34" wheels are available in custom grades for specific applications. See page 6.					



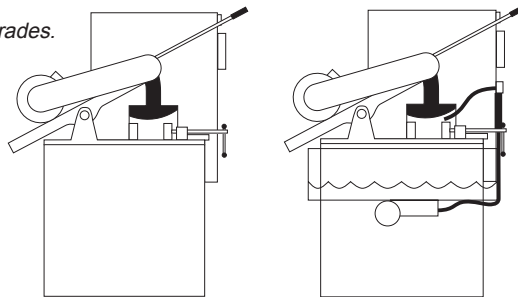
**These wheels** are the most commonly used grades for a variety of typical applications. They have been proven over the years to be generally appropriate and cost effective for common uses.

**You may benefit** from a more precisely engineered formulation and configuration for your specific application.

**Magnum** has the experience & technology to provide you with the perfect cutting or grinding wheel for your application.

Non-standard **arbors** or **pin-hole patterns** are available in custom grades. See page 6,7 & 8 for details.

**Note:** Up to 34" wheels are also available, in custom grades for **wet or dry** cutting applications. See page 6,7 & 8 for details.



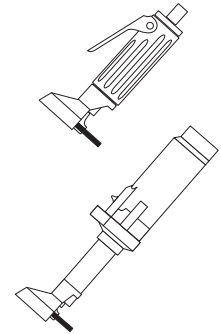
**Caution:** Abrasive wheels can be dangerous if improperly used. The material being cut or ground may create hazardous dust. Always use appropriate personal protection, as recommended by OSHA & ANSI B-7.1 Safety Regulations.



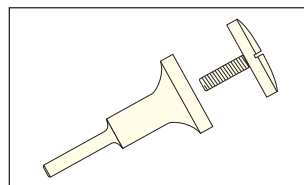
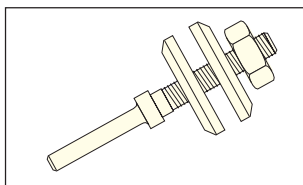
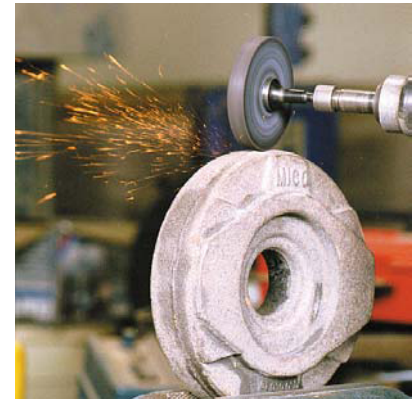
## REINFORCED GRINDING WHEELS FOR ELECTRIC OR PNEUMATIC DIE-GRINDERS

**A 24 TBF2** - GOOD STOCK REMOVAL RATE ON STEEL AND NON-FERROUS METALS. A DURABLE PERFORMER ON WELDS, BURR REMOVAL, AND FOR SURFACE CONDITIONING.

**A 36 TBF2** - RAPID GRINDING, GOOD FINISH ON STEEL. IDEALLY SUITED FOR PREPARATION OF THE CLEAN SURFACES NEEDED FOR GOOD WELDS, AND FOR FINISHING & BLENDING OF COMPLETED WELDS.



WHEEL SIZE DIA x THICK x ARBOR	MAX RPM	STANDARD GRADES & PART NUMBERS		STD PACK	
		A 24 TBF2	A 36 TBF2	QTY	WT
2 x 3/16 x 1/4	30000	4001	4002	25	2 LB
2 x 3/16 x 3/8	30000	4003	4004	25	2 LB
2 x 1/4 x 1/4	30000	4005	4006	25	2 LB
2 x 1/4 x 3/8	30000	4007	4008	25	2 LB
2 x 3/8 x 1/4	27000	4009	4010	25	3 LB
2 x 3/8 x 3/8	27000	4011	4012	25	3 LB
2 x 1/2 x 1/4	27000	4013	4014	25	4 LB
2 x 1/2 x 3/8	27000	4015	4016	25	4 LB
3 x 3/16 x 1/4	23000	4017	4018	25	4 LB
3 x 3/16 x 3/8	23000	4019	4020	25	4 LB
3 x 1/4 x 1/4	23000	4021	4022	25	4 LB
3 x 1/4 x 3/8	23000	4023	4024	25	4 LB
3 x 3/8 x 1/4	18000	4025	4026	20	5 LB
3 x 3/8 x 3/8	18000	4027	4028	20	5 LB
3 x 1/2 x 1/4	18000	4029	4030	20	7 LB
3 x 1/2 x 3/8	18000	4031	4032	20	7 LB
4 x 3/16 x 3/8	19000	4035	4036	25	6 LB
4 x 1/4 x 3/8	19000	4039	4040	25	8 LB
4 x 3/8 x 3/8	13500	4043	4044	20	9 LB
4 x 1/2 x 3/8	11900	4045	4046	20	11 LB
5 x 1/4 x 3/8	10800	4049	4050	25	11 LB
5 x 1/4 x 5/8	10800	4051	4052	25	11 LB
5 x 1/2 x 5/8	9500	4053	4054	20	17 LB
6 x 1/4 x 5/8	9040	4059	4060	40	25 LB
6 x 1/2 x 5/8	7950	4061	4062	20	25 LB



**Note:** Magnum offers a variety of tool grade, precision machined mandrels for small Type 1 grinding wheels. See page 10.



**Caution:** Abrasive wheels can be dangerous if improperly used. The material being cut or ground may create hazardous dust. Always use appropriate personal protection, as recommended by OSHA & ANSI B-7.1 Safety Regulations.



## TYPE 16, 17, 18 & 18R PLUGS AND CONES FOR PORTABLE GRINDERS

### FOR TYPICAL INDUSTRIAL PRODUCTION AND CONSTRUCTION USES.

**A 16 PB** - VERY AGGRESSIVE GRINDING, LONG WHEEL LIFE. FOR HEAVY STOCK REMOVAL, BLENDING FERROUS METAL WELDMENTS, CASTINGS AND FORGINGS.

**A 24 PB** - AGGRESSIVE GRINDING, LONG WHEEL LIFE, SMOOTHER FINISH.

**CA 16 PB** - AGGRESSIVE GRINDING & GOOD STOCK REMOVAL ON CAST IRON, DUCTILE AND NON-FERROUS MATERIALS. GOOD STOCK REMOVAL.

**CA 24 PB** - FOR SMOOTHING, FINISHING OF WELDMENTS, GRINDING OFF BURRS AND ROUGH SURFACES.



WHEEL SIZE DIA x THICK x ARBOR	MAX RPM	STANDARD GRADES & PART NUMBERS				STD PACK	
		A 16 PB	A 24 PB	CA 16 PB	CA 24 PB	QTY	WT

#### TYPE 16

1-1/2 x 2 x 3/8-24	24000	7102				10	4 LB
1-1/2 x 3 x 3/8-24	24000	7106				10	4 LB
1-1/2 x 3 x 5/8-11	24000	7110				10	5 LB
2 x 3 x 3/8-24	18000	7117		7114	7119	7120	10 8 LB
2 x 3 x 5/8-11	18000	7118		7122		10	8 LB
2-3/4 x 3-1/2 x 5/8-11	13500	7121	7122	7123		10	12 LB

#### TYPE 17

1-1/2 x 2-1/2 x 3/8-24	24000	7126				10	5 LB
1-1/2 x 2-1/2 x 5/8-11	24000	7130				10	5 LB
2 x 3 x 3/8-24	18000	7137		7134	7139	7140	10 8 LB
2 x 3 x 5/8-11	18000	7138		7143		10	8 LB

#### TYPE 18

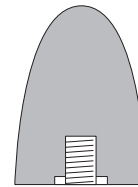
1-1/2 x 3 x 3/8-24	24000	7145		7142	7147	7148	10 8 LB
1-1/2 x 3 x 5/8-11	24000	7146		7153		10	8 LB
2 x 3 x 3/8-24	18000	7149	7150	7151	7152	10	14 LB
2 x 3 x 5/8-11	18000	7153	7154	7155	7156	10	14 LB
2 x 4 x 5/8-11	18000	7157	7158	7159		5	10 LB
3 x 3 x 5/8-11	12000	7161	7162	7163		5	10 LB

#### TYPE 18R

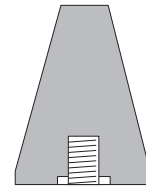
1-1/2 x 3 x 3/8-24	24000	7169		7166	7171	7172	10 8 LB
1-1/2 x 3 x 5/8-11	24000	7170		7173		10	8 LB
2 x 3 x 5/8-11	18000	7173	7174	7175		10	14 LB
3 x 3 x 5/8-11	12000	7177	7178	7179		5	12 LB

Also available in Silicon Carbide (C), and Zirconia / Aluminum Oxide blend (2Z) grades. Contact your local distributor for details.

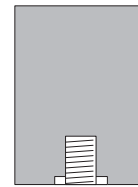
**Notice:** The part numbers for some of these products have been changed. Use these new part numbers for any re-orders.



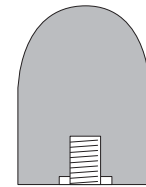
TYPE 16



TYPE 17

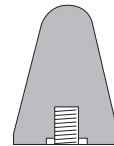


TYPE 18

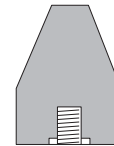


TYPE 18R

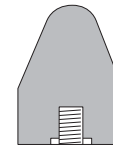
### ALSO AVAILABLE:



TYPE 17R



TYPE 19



TYPE 19R





## TYPE 11 FLARED CUP GRINDING WHEELS FOR GENERAL PURPOSE INDUSTRIAL APPLICATIONS

**A 16 PB** - VERY AGGRESSIVE GRINDING, LONG WHEEL LIFE ON WELDMENTS, CASTINGS, STEEL AND FERROUS METALS IN HEAVY-DUTY FOUNDRY WORK

**C 16 PB** - VERY AGGRESSIVE GRINDING, LONG WHEEL LIFE ON MASONRY, POURED CONCRETE, TILT-UP PANELS, LARGE ALUMINUM CASTINGS AND ALL NON-FERROUS METALS.

**ZA 16 RB** - FOR OPTIMUM GRINDING PERFORMANCE, STOCK REMOVAL AND LONG LIFE ON CAST STEEL, ALLOY STEEL, MALLEABLE AND DUCTILE IRON. ZIRCONIA & ALUMINIUM OXIDE GRAINS COMBINED WITH HIGH-PERFORMANCE RESIN BOND.

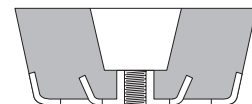


**Note: Some Part Numbers and Grades on this page have been changed.**

WHEEL SIZE DIA x THICK x ARBOR	MAX RPM	STANDARD GRADES & PART NUMBERS			STD PACK	
		A 16 PB	C 16 PB	ZA 16 RB	QTY	WT
4/3 x 2 x 5/8-11	9050	5190			5	9 LB
4/3 x 2 x 5/8-11s	9050	5192			5	11 LB
5/4 x 2 x 5/8-11	7250	6001			5	15 LB
5/4 x 2 x 5/8-11s	7250	6005			5	15 LB
6/4-3/4 x 2 x 5/8-11	6050	6009			5	20 LB
6/4-3/4 x 2 x 5/8-11s	6050	6013			5	22 LB
4/3 x 2 x 5/8-11	9050		5191		5	8 LB
4/3 x 2 x 5/8-11s	9050		5193		5	10 LB
5/4 x 2 x 5/8-11	7250		6002		5	12 LB
5/4 x 2 x 5/8-11s	7250		6006		5	12 LB
6/4-3/4 x 2 x 5/8-11	6050		6010		5	18 LB
6/4-3/4 x 2 x 5/8-11s	6050		6014		5	20 LB
4/3 x 2 x 5/8-11	9050			7813	5	8 LB
4/3 x 2 x 5/8-11s	9050			7814	5	10 LB
5/4 x 2 x 5/8-11	7250			7815	5	12 LB
5/4 x 2 x 5/8-11s	7250			7816	5	12 LB
6/4 x 2 x 5/8-11	6050			7817	5	18 LB
6/4 x 2 x 5/8-11s	6050			7818	5	20 LB



**Note:** Type 11 cup wheels with a **full steel back** for use in extremely rough working conditions are also available. (Indicated by letter "S" added to the arbor size).



**Note:** Also available in Silicon Carbide / Aluminum Oxide blend (CA), and Zirconia / Aluminum Oxide blend (ZZ) grades. Call factory technical customer service for grade consultation and price quote.



**Caution:** Abrasive wheels can be dangerous if improperly used. The material being cut or ground may create hazardous dust. Always use appropriate personal protection, as recommended by OSHA & ANSI B-7.1 Safety Regulations.



## THE IMPORTANCE OF GRINDING & CUT-OFF WHEEL SAFETY:

The safe use of grinding and cut-off wheels is extremely important to everyone concerned with the manufacture and use of bonded abrasive products.

For some time, grinding wheel manufacturers have been involved in compliance with, and publishing information about, the safe use of these products. One of these basic documents is the American National Standards Institute ANSI B-7.1 1988 & Addendum entitled "Safety Requirements for the Use, Care & Protection of Abrasive Wheels".

The safe use of abrasive wheels relies upon common

sense, and recognition of these two factors:

- **Grinding wheels can be broken.**
- **Rotating wheels develop stresses, which can cause the wheel to break.**

Since wheels can be broken, they must be handled, stored and used with care. Because rotating wheels develop stresses, their safe operating speed must never be exceeded. Ultimately, the user assumes responsibility for carefully selecting, properly handling, and safely using any abrasive grinding or cutting wheel.

## RESPONSIBLE HANDLING OF ABRASIVE PRODUCTS:

**This is not intended to be a complete guide to the use, care and protection of abrasive wheels.**

**All users should read and familiarize themselves with "American National Safety Standards" (ANSI B-7.1) for complete safety and use requirements.**

**NEVER** use a wheel that has been dropped. The impact may have caused cracks that will result in breakage.

**NEVER** force a wheel onto the machine or alter the size of the arbor hole. Don't use a wheel that fits the arbor too loosely.

**NEVER** exceed maximum operating speed of the wheel.

**NEVER** use dirty, nicked, warped or sprung mounting flanges. Don't tighten mounting nut excessively.

**NEVER** grind on the side of the wheel, unless the wheel is specifically designed for that purpose.

**NEVER** start machine without safety guard in place.

**NEVER** jam work into the wheel. Don't cut or grind material for which the wheel was not designed.

**NEVER** stand directly in wheel's plane of rotation when machine is started.

**NEVER** forget that cutting and grinding wheels are dangerous when misused or improperly handled.

**ALWAYS** select the right wheel for the job.

**ALWAYS** use the right equipment and machines. They should be maintained and checked regularly, and any substandard conditions should be corrected before use, for safety and efficiency.

**ALWAYS** inspect, handle and store wheels in a careful manner. Wheels should be stored horizontally on flat surfaces. Do not lean wheels against equipment, or roll wheels on the floor.

**ALWAYS** use wheel guards or protective hoods. Certain small sizes, and cones & plugs (type 16,17, & 18) are exceptions. Refer to ANSI B-7.1 for details.

**ALWAYS** use proper mounting procedures for wheels, particularly for cones and plugs.

**ALWAYS** wear safety glasses or other suitable eye protection equipment.

**ALWAYS** check maximum wheel operating speed against rated speed of equipment. Do not over-speed wheels.

**ALWAYS** determine that mounting flanges are at least the minimum diameter specified in ANSI B-7.1 (section 5).

**ALWAYS** run machine at operating speed for at least one minute (with guard in place) before cutting or grinding.



**Warning:** Abrasive wheels can be dangerous if improperly used. The material being cut or ground may create hazardous dust. Always use appropriate personal protection, as recommended by OSHA & ANSI B-7.1 Safety Regulations.



## CHOOSING THE RIGHT CUT-OFF WHEEL

Selection of a wheel for any cutting job involves several factors. The desired end result is usually most important, whether it involves high-speed production cutting, or a precision, fine finish cutting application. Knowing the following information can help in the selection process.

**MATERIAL** - Type of material to be cut: it's hardness, size and shape, quality of cut sought.

**MACHINE** - Type to be used: chop-stroke, oscillating or swing-frame, make and model, size, horsepower, spindle speed, how the workpiece is secured, wet or dry cutting.

**WHEEL** - Dimensional features of wheel currently in use: diameter, thickness, arbor and reinforcement pattern, manufacturer's specifications (name, grade, rpm).

### Use a soft grade when:

- Machine has low horsepower.
- Good finish is important - fine grains normally used to provide minimum burr.
- Operators cut slowly.

### Use a medium grade when:

- Softer grades do not provide enough cuts - longer wheel life is required.
- Cutting normal materials. Machine horsepower will support faster cutting rates.

### Use a hard grade when:

- Maximum wheel life is sought.
- Machine has adequate horsepower (1 hp per inch of wheel diameter is recommended).
- Burr and finish requirements are minimal. (note that fast cuts will produce a reasonably good finish).

## TROUBLESHOOTING CUTTING PROBLEMS

PROBLEM	CAUSE
Excessive wheel wear -	Cutting too fast. Wheel grade too soft.
Burned cut surface -	Cutting too slow. Wheel grade too hard.
Broken wheels -	Wrong wheel for the job. Wheel grade too hard.
Wobbling wheels -	Worn flanges or bearings. Warped wheels.
Crooked cuts -	Worn flanges or bearings. Poor clamping. Warped wheels.
Glazing of wheel -	Cutting too slow. Belt slippage. Wheel grade too hard.

## EVALUATING WHEEL FUNCTION

**Notice** how much pressure is required to feed the wheel through the work. The material should cut easily.

**Listen** to the "sound" of the wheel as it cuts. A wheel that is cutting properly requires less power and pressure to work, will be substantially free of burn or burr, and cuts straight, with less noise.

**Pay attention** to how the wheel edge is wearing down.

## INSPECT WHEELS FOR INDICATIONS OF TROUBLE

To prevent serious damage to wheels and equipment, stay aware of your machine's cutting action by inspecting the edge of the wheel for signs of trouble.

**ROUND FACE** (fig 1) - Normal when using the correct wheel to cut large solids.

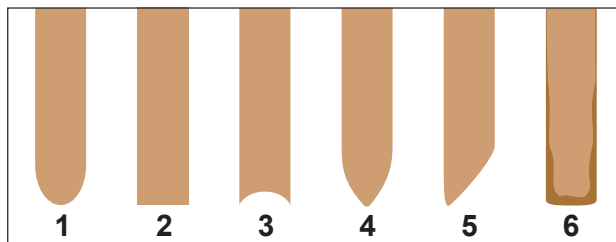
**SQUARE FACE** (fig 2) - Normal when using the correct wheel to cut small solids, structural shapes, medium wall pipe and tubing.

**CONCAVE FACE** (fig 3) - Normal when using the correct wheel to cut tubing and thin-wall sections.

**POINTED FACE** (fig 4) - Indicates wheel is too hard. May cause binding, breakage and excessive burr on the cut.

**CHISEL FACE** (fig 5) - Wet cutting problem. Usually indicates wrong application of coolant. May cause breakage and crooked cuts.

**GLAZED SIDES & FACE** (fig 6) - Indicates wheel is too hard or cutting too slow. Requires excessive pressure and power to cut. Causes breakage, excessive burr and burn.



## COMMON DIMENSIONAL CONVERSIONS

1 inch = 2.54 cm (1 inch = 25.4 mm)

1 centimeter = 0.39370078 inch (1 millimeter = 0.039370078 inch)

FRACTION	=	DECIMAL INCH	=	MILLIMETER*
1/32"	=	0.03125"	=	0.79375mm
1/16"	=	0.0625"	=	1.5875mm
3/32"	=	0.09375"	=	2.38125mm
1/8"	=	0.125"	=	3.175mm
5/32"	=	0.15625"	=	3.96875mm
3/16"	=	0.1875"	=	4.7625mm
7/32"	=	0.21875"	=	5.55625mm
1/4"	=	0.25"	=	6.35mm
9/32"	=	0.28125"	=	7.14375mm
5/16"	=	0.3125"	=	7.9375mm
11/32"	=	0.34375"	=	8.73125mm
3/8"	=	0.375"	=	9.525mm
13/32"	=	0.40625"	=	10.31875mm
7/16"	=	0.4375"	=	11.1125mm
15/32"	=	0.46875"	=	11.90625mm
1/2"	=	0.5"	=	12.7mm
17/32"	=	0.53125"	=	13.49375mm
9/16"	=	0.5625"	=	14.2875mm
19/32"	=	0.59375"	=	15.08125mm
5/8"	=	0.625"	=	15.875mm
21/32"	=	0.65625"	=	16.66875mm
11/16"	=	0.6875"	=	17.4625mm
23/32"	=	0.71875"	=	18.25625mm
3/4"	=	0.75"	=	19.05mm
25/32"	=	0.78125"	=	19.84375mm
13/16"	=	0.81251"	=	20.637754mm
27/32"	=	0.84375"	=	21.43125mm
7/8"	=	0.875"	=	22.225mm
29/32"	=	0.90625"	=	23.01875mm
15/16"	=	0.9375"	=	23.8125mm
31/32"	=	0.96875"	=	24.60625mm
1/1"	=	1.0"	=	25.4mm

MILLIMETER	=	DECIMAL INCH*
1mm	=	.03937"
2mm	=	.07874"
3mm	=	.11811"
4mm	=	.15748"
5mm	=	.19685"
6mm	=	.23622"
7mm	=	.27559"
8mm	=	.31496"
9mm	=	.35433"
10mm	=	.39370"
11mm	=	.43307"
12mm	=	.47244"
13mm	=	.51181"
14mm	=	.55118"
15mm	=	.59055"
16mm	=	.62992"
17mm	=	.66929"
18mm	=	.70866"
19mm	=	.74803"
20mm	=	.78740"
21mm	=	.82677"
22mm	=	.86614"
23mm	=	.90551"
24mm	=	.94488"
25mm	=	.98425"
25.4mm	=	1.0"

### basic conversion formulas:

(mm = millimeters) (in = inches)  
(cm = centimeters)

$$\begin{aligned} (\text{mm}) \times 0.039370078 &= (\text{in}) \\ (\text{in}) \times 25.4 &= (\text{mm}) \\ (\text{in}) \times 2.54 &= (\text{cm}) \end{aligned}$$

\*rounded down to 5 decimal places / use formula for greater precision

