Bonded Abrasives

Bonded abrasive products are used for applications requiring heavy material removal such as rough grinding, weld removal, snagging, cutting and parting.

Grinding

Type 27 Products:

These products range from 4" to 9" diameters and are available in 1/4" thick for grinding and 1/8" thick for light grinding or cutting. Type 27 Wheels are offered in aluminum oxide or zirconium grain with a choice of a 5/8"-11 hub.

Cutting

Type 27 Products:

Type 27 Wheels are offered in .045", .060" and 3/32" wheel thicknesses. Diameters range from 4" to 9" and are available in aluminum oxide or zirconium grain, with a choice of a 5/8"-11 hub.

Type 1 Products:

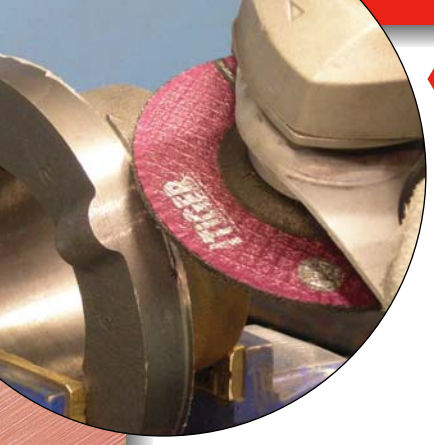
This product category includes wheels ranging from 1-1/2" to 14" diameters in various grit sizes and aluminum oxide and silicon carbide abrasive grains. Type 1 Wheels are for use on electric or air die grinders, tool room grinders, circular saws, stationary machines, portable gas or electric saws and chop saws.

Wheel Selection Guide

Grain	
A	Aluminum Oxide: for general purpose use on all metals except titanium
C	Silicon Carbide: for cutting non-metallics and titanium (Type 1 only)
CA	Combination Silicon Carbide/Aluminum Oxide: for cutting ductile iron and non-ferrous metals (Type 1 only)
TA	Treated Aluminum Oxide: for extended wheel life and improved performance of large diameter wheels in coarser grits (Type 1 only)
Z	Zirconium: for higher cut rates in high pressure applications (Type 27 only)
Grit	
24	Coarse: for fast, aggressive cutting and maximum wheel life
30	Medium/Coarse: for fast cutting and long wheel life
36	Medium/Coarse: excellent for general purpose cutting
46	Fine/Medium: for a smoother finish and reduced burr
60	Fine: for a burr-free cut
Grade	
T-V	Hard: for maximum wheel life
R	Medium/Hard: for cutting large cross sections and improved rate of stock removal
P	Medium: for cutting very large cross sections and applications demanding very rapid stock removal
N	Soft/Medium: for maximum cut rate

Safety

Abrasive users and others in area must wear goggles or face shields over safety glasses. Safety guards must be used. Do not exceed maximum RPM.



Chamfering an edge on a machine component prior to welding.

Grinding & Cutting Wheels

All Weiler wheels are resin bond formulated for fast, high quality grinding and cutting, and are reinforced with fiberglass webbing to provide stability.

Weiler's Type 27 Wheels contain no fillers and are made with 100% abrasive grain to maximize cut rate.

Weiler:
A side view of Weiler's Tiger® Abrasives Type 27 Grinding Wheel shows the even distribution of grain from the top to the bottom of the wheel. This provides a consistent rate of cut throughout the product life.

Competition:
A side view of competitor's Type 27 Grinding Wheel shows abrasive grain on the bottom portion of the wheel and filler grain on the top portion. The cut rate deteriorates dramatically when the filler portion of the wheel is reached.

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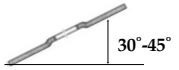
Applications

- ✔ Weld removal
- ✔ Cutting and parting
- ✔ Rough Grinding
- ✔ Snagging

Type 27 Grinding Wheels -

For rough grinding applications on various metals.



Diameter x Thickness x Arbor Hole	Max. RPM	Grain/ Grit/ Grade	Item Number	Grain/ Grit/ Grade	Item Number	Grain/ Grit/ Grade	Item Number
4" x 1/4" x 5/8"	15,200	-	-	A24R	56473	-	-
4-1/2" x 1/4" x 7/8"	13,300	A24N	56457	A24R	56464	Z24T	56456
4-1/2" x 1/4" x 5/8"-11		A24N	56455	A24R	56454	Z24T	56453
5" x 1/4" x 7/8"	12,200	-	-	A24R	56466	-	-
5" x 1/4" x 5/8"-11		-	-	A24R	56449	-	-
7" x 1/4" x 7/8"	8,500	-	-	A24R	56467	-	-
7" x 1/4" x 5/8"-11		-	-	A24R	56468	-	-
9" x 1/4" x 7/8"	6,600	-	-	A24R	56442	-	-
9" x 1/4" x 5/8"-11		-	-	A24R	56470	-	-

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Marking System

A: Grain Type
24: Grit Size
R: Grade (Hardness)

NOTE

For mounting wheels with 7/8" arbor holes on right angle grinders, use adapting nuts (Item No. 56494) as illustrated on page 112.

Grain Selection Guide

A24N: Fast Cut - Ideal for use on hard welds and steel, stainless steel, and in low pressure, large contact grinding where the harder wheel grade (R) dulls or glazes.

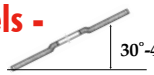
A24R: Long Life - Offers longer life than the softer wheel grade (N). Ideal for all general purpose grinding on structural steel, or in foundries or heavy fabrication applications.

Z24T: High Performance Zirconium - Offers improved cut rate in high pressure applications. Ideal when grinding or cutting stainless steel, high carbon steel, cast iron and other metals.

Notching a steel bar prior to welding.

Type 27 Cutting and Light Grinding Wheels -

For root pass grinding, light grinding and cutting.



Diameter x Thickness x Arbor Hole	Max. RPM	Grain/ Grit/ Grade	Item Number
4" x 1/8" x 5/8"	15,200	A24T	56431
4-1/2" x 1/8" x 7/8"	13,300	A24T	56430
4-1/2" x 1/8" x 5/8"-11		A24T	56429
5" x 1/8" x 7/8"	12,200	A24T	56428
5" x 1/8" x 5/8"-11		A24T	56427
7" x 1/8" x 7/8"	8,500	A24T	56426
7" x 1/8" x 5/8"-11		A24T	56425
9" x 1/8" x 7/8"	6,600	A24T	56424
9" x 1/8" x 5/8"-11		A24T	56423

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Type 27 Thin Cutting Wheels -

For fast, burr-free cutting of various metals.

Diameter x Thickness x Arbor Hole	Max. RPM	Grain/ Grit/ Grade	Item Number	Grain/ Grit/ Grade	Item Number
4-1/2" x .045" x 7/8"	13,300	A60V	56393	Z46T	56389
5" x .045" x 7/8"	12,200	A60V	56392	Z46T	56388
7" x .060" x 7/8"	8,500	A36V	56391	Z36T	56387

Type 27 Cutting Wheels -

For a wide range of metal-cutting applications.

Diameter x Thickness x Arbor Hole	Max. RPM	Grain/ Grit/ Grade	Item Number
4" x 3/32" x 5/8"	15,200	A24T	56474
4-1/2" x 3/32" x 7/8"	13,300	A24T	56475
4-1/2" x 3/32" x 5/8"-11		A24T	56385
5" x 3/32" x 7/8"	12,200	A24T	56476
5" x 3/32" x 5/8"-11		A24T	56384
7" x 3/32" x 7/8"	8,500	A24T	56383
7" x 3/32" x 5/8"-11		A24T	56477
9" x 3/32" x 7/8"	6,600	A24T	56382
9" x 3/32" x 5/8"-11		A24T	56381

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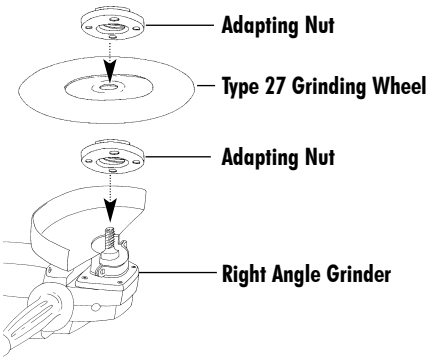
Tech NOTE

Adapting Nut Assembly



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Adapting Nuts -

For mounting wheels with 7/8" arbor holes on right angle grinders.

Thread Size	Item Number
5/8"-11	56494

When mounting, adapters must be nested, see illustration at left.

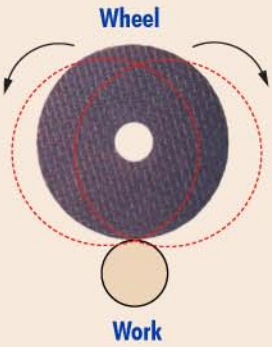
Cut-Off Wheel General Operating Recommendations

Fixture the work-piece
to minimize wheel contact area for a faster, cooler cut.

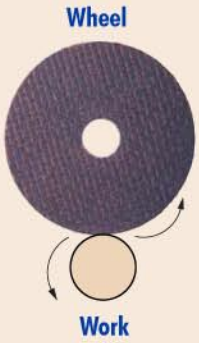
Incorrect
(Wide contact point)

Correct
(Two small contact points)

Use an oscillating head
when cutting thicker cross sections (over 3"). This reduces arc of contact and permits larger sections to be cut with a given diameter wheel.



Counter rotation of the work-piece
is recommended for cutting large cross sections (over 8") and when cutting tubular stock.



Operation Guide

Grain	To maximize performance, run at or close to the Maximum Safe Free Speed or RPM. NEVER EXCEED the MSFS or RPM.
Feed Rate	Only the operator can determine if the feed rate is proper for an efficient operation. A good starting point for dry cutting most materials is 2-3 seconds per square inch.

Application Solutions Guide

There are many variables in using Cut-Off Wheels. If the product you are using does not accomplish the desired results, select a solution from the suggestions below for your specific application or call Weiler's **Application Engineering Hotline at 888-299-2777.**

Problem	Cause	Recommended Solutions
Slow cut rate	• Insufficient power being used	• Increase feed rate; run machine at full power
	• Contact area too large	• Reduce contact area
	• Side run out	• Check for spindle run out
	• Wheel binding	• Provide relief under part
Workpiece burn	• Insufficient feed rate	• Increase feed rate
	• Wheel speed too slow	• Check for wheel slippage
	• Wheel too coarse	• Use finer grit or increase power
Non-square cuts	• Work not properly fixtured	• Support both sides and fixture properly
	• Worn spindle bearings	• Check spindle
Too much burr	• Improper fixturing	• Check part fixturing
	• Grit too coarse	• Use a finer grit

Safety

Abrasive users and others in area must wear goggles or face shields over safety glasses. Safety guards must be used. Do not exceed maximum RPM.