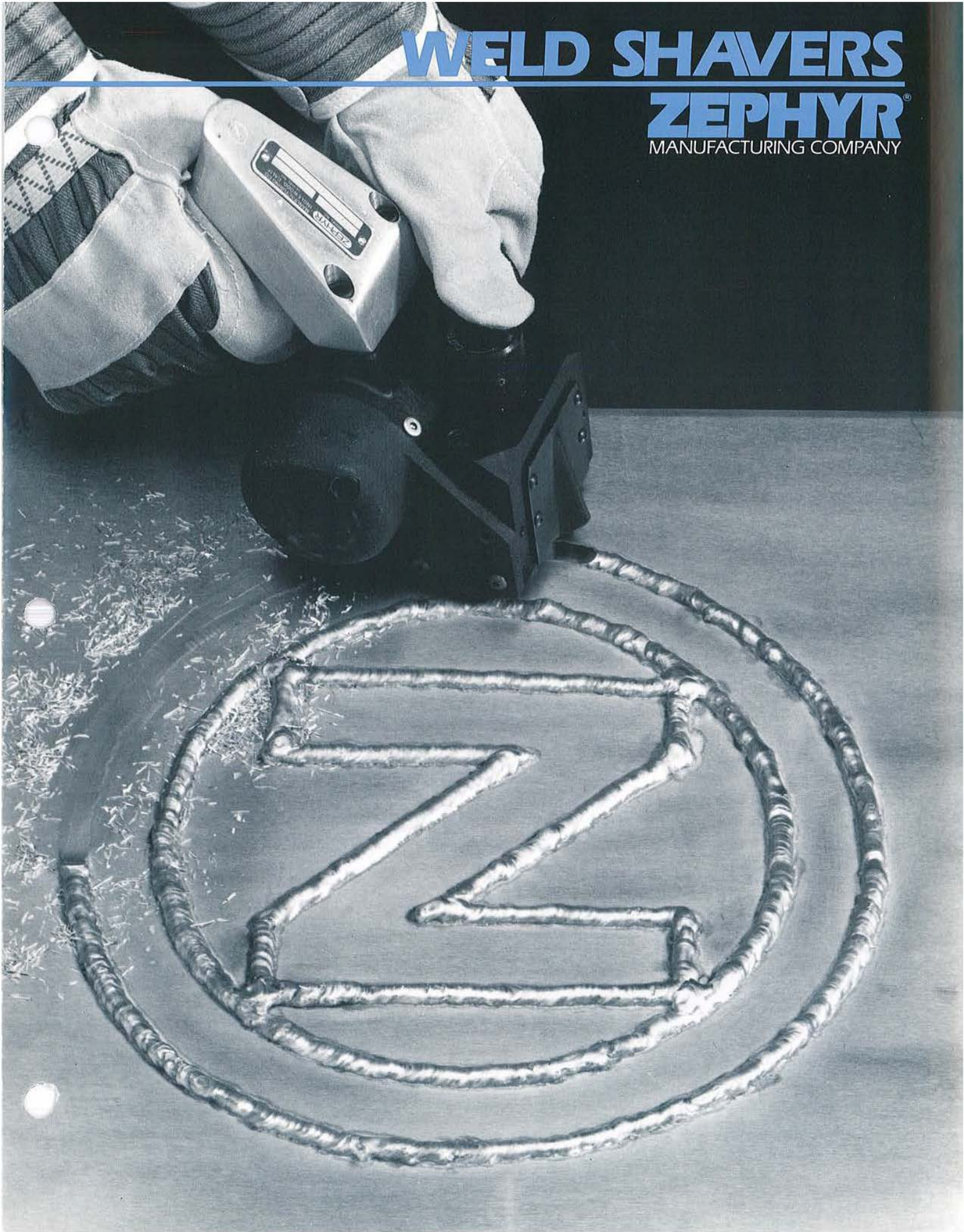


# WELD SHAVERS

## ZEPHYR<sup>®</sup>

MANUFACTURING COMPANY



## **R**emove welds in one step instead of three.

The old method was a grind. And with chipping and sanding, it was also a costly, time consuming, three-stage process. But now, with Zephyr Z-Mill™ Pneumatic Weld Shavers, you can remove a weld bead in just one pass.

A Zephyr Weld Shaver will remove a weld bead up to ten times faster than a hand held grinder. Because we've combined three steps into one, you save more than time. You save money.

### **Aluminum, titanium, exotic metals, and more.**

Born in the aerospace industry, we understand specialized materials. That's why we've designed our Weld Shavers to be precision milling tools. You can set them for the depth of shaving you need—something that would be unthinkable with a hand held grinder.

Zephyr Weld Shavers have already proven themselves in application after application: in naval shipyards, in trailer manufacturing plants, even in the facilities of specialized tank manufacturers.

### **Satisfied customers in your industry.**

Builders of electrical and computer cabinetry, refrigeration equipment, and truck and trailer bodies are just a few of the types of companies enjoying the advantages of Zephyr Weld Shavers.

We have complete case studies of Weld Shaver applications by firms like yours. Ask your Zephyr representative for an example in your area of interest.

Then see for yourself how Zephyr Z-Mill™ Weld Shavers will improve your weld finish as well as your bottom line.



# ZT708 & ZT709

## STANDARD DUTY WELD SHAVERS

Remove stainless steel or titanium weld beads with the ZT708. Remove aluminum, copper, magnesium, or other non-ferrous metal weld beads with the ZT709.

Both are portable air-powered tools designed to shave weld beads to a pre-determined height—above, below, or flush to the surface. Each can solve special requirements such as burr removal, beveling, and working at angles or in close quarters. Grooving is accomplished with the ZT709 aluminum shaver only. No matter what your application, these Weld Shavers will perform with precision, giving you a smooth finished surface in less time than ever before.

Here's how they work: two adjustable ball bearing rollers straddle the weld bead, centering the cutter over the weld. The ball bearings keep the cutter at a constant height on any surface, whether flat, convex, or concave.

You have absolute control over the cutter height and can make adjustments in increments of 0.001 inch. You also can select a variety of cutter widths. The different cutter widths require a different roller bracket shaft assembly, each one of which can be rapidly removed when changing or re-sharpening the cutters. This ensures rapid turn-around time on the job. Both Weld Shavers are designed to have the exhaust air blow chips from the work area and cool the cutter.

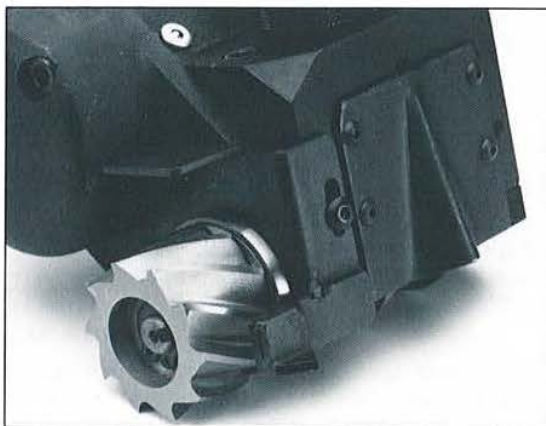
The ZT708 will shave a maximum weld bead of .030" high by  $\frac{7}{8}$ " wide in one pass. Cutters are slab type, and available in widths of  $\frac{3}{8}$ " to 1" with a chip breaker, or  $\frac{3}{8}$ " to  $\frac{1}{2}$ " without chip breaker.

The ZT709 will shave a maximum bead of 0.125" high by  $\frac{7}{8}$ " wide. Cutters are slab type, and are available in widths of  $\frac{3}{8}$ " to  $\frac{3}{4}$ " in high speed steel;  $\frac{3}{8}$ " to 1" in carbide; and grooving cutters of  $\frac{1}{2}$ " in 60°, 75°, and 88° angles. Grooving aluminum is now a faster process. The grooving cutter can be used to remove a poor weldment that does not have deep roots, which saves the work piece for a re-weld.

Please see our Specification Sheet for complete details.



## OUTRIGGER & BEVEL ATTACHMENTS



Right hand and left hand outtrigger attachments enable you to remove corner fillets or radius welds which are adjacent to 90° plates, walls, or structures. You can shave a 90° weld to  $\frac{9}{64}$ " with a standard slab cutter  $\frac{3}{4}$ " wide. Perform flush cutting with a side recessed 1" cutter. A radius fillet weld finish can be achieved with a side recessed edge radius cutter.

The standard attachment is manually adjusted for depth control without requiring any basic modification of the Weld Shaver. Optional mechanically controlled outriggers are also available to micro-adjust depth and distance from a side plate or wall surface.

The bevel attachment is designed for two jobs: to bevel or chamfer plates prior to welding, and to bevel or chamfer edges of aluminum and stainless steel. A right hand and left hand bevel attachment is available with a standard 60° slide.

# ZT550 & ZT553

## LIGHT DUTY WELD SHAVERS



Both of these Weld Shavers are designed for light duty close-quarters work. The ZT550 shaves aluminum weld beads and grooves aluminum plates. The ZT553 shaves stainless steel weld beads and is therefore slightly larger and heavier.

Adjustable ball bearing rollers straddle the weld bead with the cutter rotating in between. You can shave a weld bead parallel to a flat, concave, or convex work surface. In precise applications, the positive micro-stop adjustment controls cutting depth in 0.0005 inch increments.

Slab cutters for shaving weld beads are available in  $\frac{3}{8}$ " to  $\frac{1}{2}$ " wide in high speed steel and  $\frac{1}{4}$ " to  $\frac{1}{2}$ " wide in carbide. Grooving cutters are available in high speed steel,  $\frac{3}{8}$ " wide, in 40° and 60° angles.

Each cutter width requires a different roller bracket shaft assembly which is easily removed to change or re-sharpen the cutters. The exhaust air serves a dual purpose: blowing chips away from the work area and cooling the cutter.

Please refer to our Specification Sheet for more detailed information.

# ZT501

## HEAVY DUTY WELD SHAVER



Here is a portable milling machine designed for heavy duty use with aluminum, magnesium, and copper. This tool may be used in three ways: to shave weld beads, as a slab mill, and to groove non-ferrous metals.

As in all our Weld Shavers, the ball bearing roller bracket straddles the weld bead with the cutter rotating in between. This design ensures that the weld bead is shaved tangent to the work surface, whether flat, concave, or convex. Positive micro-stop adjustment of the cutter is calibrated in 0.001 inch increments, permitting a shave of a pre-determined height or flush with the work surface.

Slab cutter widths are  $\frac{3}{4}$ " to 2", while the grooving cutters are 1  $\frac{1}{2}$ " wide for 60° or 1  $\frac{5}{8}$ " wide for 70° to a depth of 1  $\frac{1}{16}$ ".

The motor is governor controlled to assure a constant speed. Air exhaust blows away chips and controls the temperature of the cutter. The roller bracket assembly is easily removed, enabling you to rapidly replace the cutter.

Please consult our Specification Sheet for complete details.

# SAFETY

Zephyr products are designed to be safe under proper working conditions. Be sure that you know the proper way to use a tool before working with it. We recommend the wearing of eye protection when using any hand tool or machine shop tool.

Keep your tools clean, lubricated, inspect them from time to time, and replace worn or damaged tools. The nominal cost will be more than offset by the reduction in mistakes and the savings on rework.

# ZEPHYR<sup>®</sup>

TOOL

**ZEPHYR<sup>®</sup> Manufacturing Co., Inc.**  
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## ZT501 Porta Mil Heavy Duty Weld Shaver



The Porta-Mill is a heavy duty hand held milling machine designed to be used on aluminum, magnesium and copper. The Porta-Mill may be used in 3 ways: to shave weld beads, as a slab mill and to groove non-ferrous metals.

As with all our Weld Shavers, the ball bearing roller bracket straddles the weld bead with the cutter rotating in between. This insures that the weld bead is shaved tangent to the work surface, whether flat, concave or convex. Positive depth control allows the cutter height to be set in increments of .001 inch, making it ease to shave flush to the work surface or to a pre-determined depth.

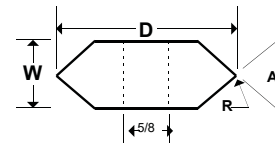
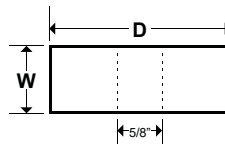
The motor is governor controlled to assure a constant speed. The air exhaust blows away the shavings and helps control the temperature of the cutter. The roller bracket is easily removed, enabling the end user to replace the cutter quickly.

**How to Order:** The basic Porta-Mill assembly consists of the **ZT501 Porta-Mill Shaver**, and two accessories, a **Cutter** and a **Roller Shaft Assembly**. All three are required and must be ordered separately. To select the accessory part numbers refer to the table below. Simply determine the cutter style and the cutter width. The two accessory part numbers will be at either end of that row, in **Bold**.

Cutter Number	Cutter Material	D Diameter	W Width	Number Of Teeth	A Angle	Cutter Style	R Radius	Roller Shaft Assembly
<b>ZT501-19</b>	Carbide	2"	3/4"	10		Slab		<b>ZT5010124</b>
<b>ZT501-20</b>	Carbide	2"	1"	10		Slab		<b>ZT5010121</b>
<b>ZT501-21</b>	Carbide	2"	1 1/2"	10		Slab		<b>ZT5010122</b>
<b>ZT501-22</b>	Carbide	2"	2"	10		Slab		<b>ZT5010123</b>
<b>ZT501-30</b>	Carbide Tipped	3 3/8"	1 1/2"	8	60°	Groove	.156"	<b>ZT5010126</b>
<b>ZT501-31</b>	Carbide Tipped	3 3/8"	1 5/8"	8	70°	Groove	.156"	<b>ZT5010128</b>

### ZT501 Weld Shaver Specification

Horse Power	3.6 hp
Free speed	4700 rpm
Weight	29 lbs
Air consumption at free run (min)	44 cfm
PSI (min)	90 psi
Sound level at free speed	
Air inlet thread	NPT
Hose size (min)	





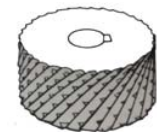
## CUTTERS FOR ZT708

For use on Titanium, Stainless Steel, Monel and similar high strength materials.

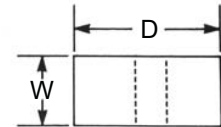
Cutter Part No.	Cutter Material	D	W	Cutter		Roller Shaft Assembly	Cutter Adjustment		Number of Teeth
		Diameter	Width	Style	Type		In	Out	
ZT508-20B	Carbide	1 1/2	1/2	Slab	I	ZT709041	.230	.206	49
ZT508-21B	Carbide	1 1/2	3/4	Slab	I	ZT709042	.230	.206	49
ZT508-22B	Carbide	1 1/2	3/8	Slab	I	ZT709040	.230	.206	49
ZT508-26B	Carbide	1 1/2	1/2	Slab	II	ZT709041	.230	.206	49
ZT508-27B	Carbide	1 1/2	3/4	Slab	II	ZT709042	.230	.206	49
ZT508-28B	Carbide	1 1/2	3/8	Slab	II	ZT709040	.230	.206	49
ZT508-29B	Carbide	1 1/2	5/8	Slab	II	ZT709098	.230	.206	49
ZT508-35B	Carbide	1 1/2	3/8	Slab	II	ZT709040	.230	.206	36
ZT508-36B	Carbide	1 1/2	1/2	Slab	II	ZT709041	.230	.206	36
ZT508-37B	Carbide	1 1/2	3/8	Slab	II	ZT709042	.230	.206	36
ZT508-38B	Carbide	1 1/2	15/16	Slab	II	ZT708031	.230	.206	36
ZT708-20B	Carbide	1 1/2	1	Slab	II	ZT709043	.230	.206	49



Type I slab cutter w/o chipbreaker



Type II slab cutter w/ chipbreaker

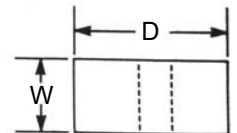


Slab Type

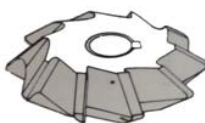
## CUTTERS FOR ZT709

For use on Aluminum, Magnesium, Copper and Softer alloys.

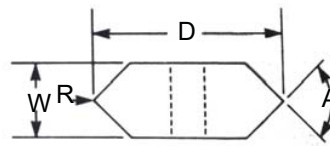
Cutter Part No.	Cutter Material	D	W	A	Cutter Style	R Radius	Roller Shaft Assembly	Cutter Adjustment		Number of Teeth
		Diameter	Width	Angle				In	Out	
ZT509-20	H.S.S.	1 1/2	1/2	-	Slab	-	ZT709041	.230	.206	15
ZT509-21	H.S.S.	1 1/2	3/4	-	Slab	-	ZT709042	.230	.206	15
ZT509-22B	Carbide	1 1/2	1/2	-	Slab	-	ZT709041	.230	.206	15
ZT509-23B	Carbide	1 1/2	3/4	-	Slab	-	ZT709042	.230	.206	15
ZT509-24	H.S.S.	1 1/2	3/8	-	Slab	-	ZT709040	.230	.206	15
ZT509-25B	Carbide	1 1/2	3/8	-	Slab	-	ZT709040	.230	.206	15
ZT509-32B	Carbide	1 1/2	5/8	-	Slab	-	ZT709098	.230	.206	15
ZT509-37B	Carbide	1 1/2	1/2	-	Slab	-	ZT709041	.230	.206	10
ZT509-38B	Carbide	1 1/2	1.00	-	Slab	-	ZT709043	.230	.206	15
ZT509-39B	Carbide	1 1/2	3/4	-	Slab	-	ZT709042	.230	.206	10
ZT509-33	H.S.S.	1 15/16	1/2	75°	Groove	.046	ZT709041	.046	.420	10
ZT509-36B	Carbide Tip	1.906	1/2	60°	Groove	.062	ZT709041	.015	.409	6
ZT509-45B	Carbide Tip	1.687	1/2	88°	Groove	.062	ZT709043	.137	.299	6



Slab Type



Grooving Type





## OUTRIGGER ATTACHMENT FOR ZT708/ZT709

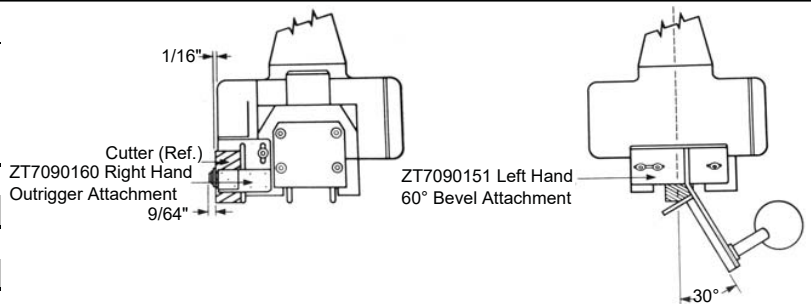
Specify ZT7090160 for right hand cutting, Specify ZT7090170 for left hand cutting

Weld Shaver Number	Outrigger Attachment	Standard Cutter Number	Recessed Flush Cutter Flush	Recessed Radius Flush Cutter	Cutter Radius	Roller Bracket Needed*
ZT708	ZT7090160 Right Hand	ZT508-21B				ZT709046
		ZT508-27B	ZT708-21B	ZT708-23B	.250	ZT709046
		ZT508-37B				ZT709046
ZT708	ZT7090170 Left Hand	ZT508-21B				ZT709046
		ZT508-27B	ZT708-22B	ZT708-24B	.250	ZT709046
		ZT508-37B				ZT709046
ZT709	ZT7090160 Right Hand	ZT509-21				ZT709046
		ZT509-23B	ZT709-20B	ZT709-21B	.250	ZT709046
		ZT509-39B				ZT709046
ZT709	ZT7090170 Left Hand	ZT509-21				ZT709046
		ZT509-23B	ZT709-22B	ZT709-23B	.250	ZT709046
		ZT509-39B				ZT709046

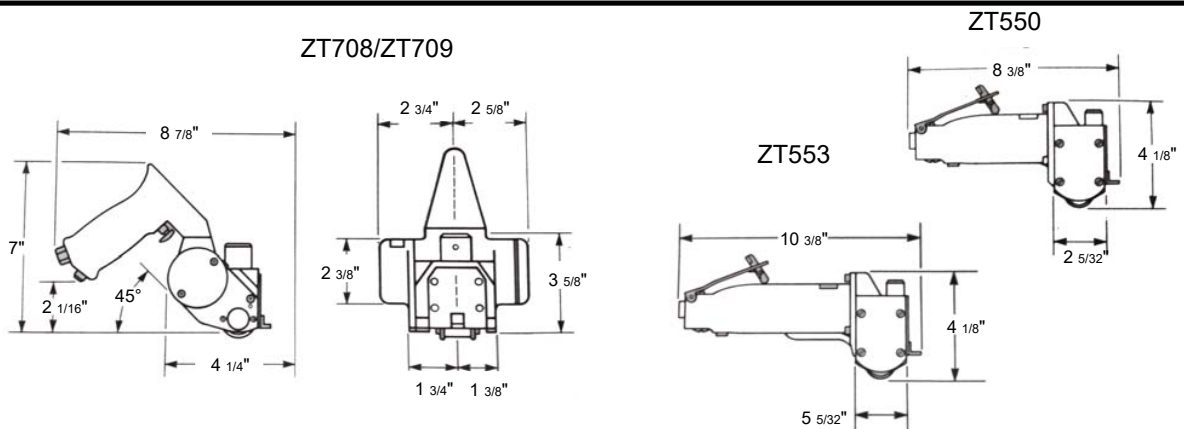
\*Recommended for stability if your ZT708 or ZT709 does not have 3/4" wide roller bracket.

## BEVEL ATTACHMENTS FOR ZT708/ZT709

Weld Shaver Number	Bevel Attachment Number 60°	Cutter Number	Style
ZT708	ZT7090150	ZT708-20B	Right Hand
	ZT7090151	ZT708-20B	Left Hand
ZT709	ZT7090150	ZT509-38B	Right Hand
	ZT7090151	ZT509-38B	Left Hand



## DIMENSIONS AND SPECIFICATIONS OF WELD SHAVERS

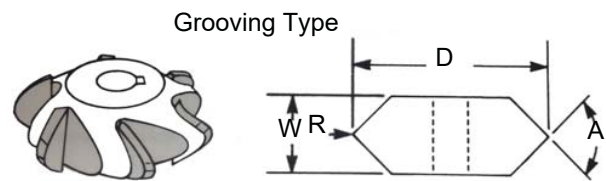
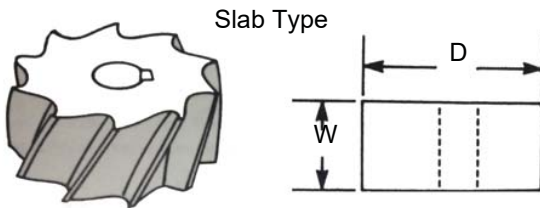




## CUTTERS FOR ZT550

For use on Aluminum, Magnesium, Copper and Softer alloys.

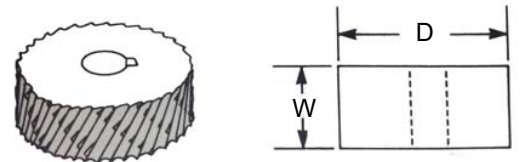
Cutter Part No.	Cutter Material	D	W	A	Cutter Style	R	Roller Shaft Assembly	Cutter Adjustment		Number of Teeth
		Diameter	Width	Angle		Radius		In	Out	
ZT550-21	H.S.S.	1 1/8	3/8	-	Slab	-	ZT550069	.125	.187	10
ZT550-23	H.S.S.	1 1/8	1/2	-	Slab	-	ZT550070	.125	.187	10
ZT550-30	Carbide	1 1/8	1/4	-	Slab	-	ZT550069	.125	.187	10
ZT550-31	Carbide	1 1/8	3/8	-	Slab	-	ZT550069	.125	.187	10
ZT550-32	Carbide	1 1/8	1/2	-	Slab	-	ZT550070	.125	.187	10
ZT550-29	H.S.S.	1 5/16	3/8	60°	Groove	.062	ZT550069	.000	.234	6
ZT550-40	H.S.S.	1 31/64	3/8	40°	Groove	.062	ZT550069	.086	.320	8
ZT550-451	H.S.S.	1 5/16	3/8	40°	Groove	.062	ZT550069	.000	.234	6



## CUTTERS FOR ZT553

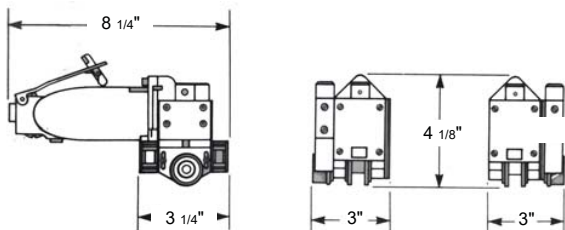
For use on Titanium, Stainless Steel, Monel and similar high strength materials.

Cutter Part No.	Cutter Material	D	W	Cutter Style	Roller Shaft Assembly	Cutter Adjustment		Number of Teeth
		Diameter	Width			In	Out	
ZT553-26	Carbide	1 1/8	1/2	Slab	ZT550070	.125	.187	34
ZT553-28	Carbide	1 1/8	3/8	Slab	ZT550069	.125	.187	34



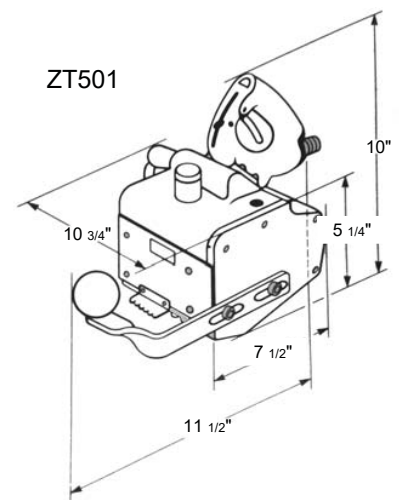
Slab Type

### ZT551/ZT552 ZT554/ZT555



	ZT708	ZT709	ZT550	ZT553	ZT501
Cutter Rotation	2,700	13,500	15,000	3,500	4,600
Weight	6 lbs.	6 lbs.	3 3/4 lbs.	5 lbs.	25 lbs.
Required CFM (Min)	35	35	29	29	44
Required PSI (Min)	90	90	90	90	90

### ZT501



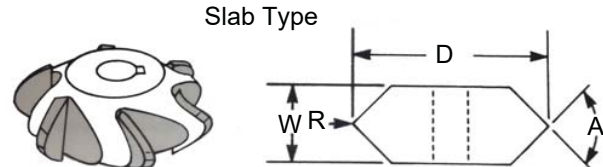
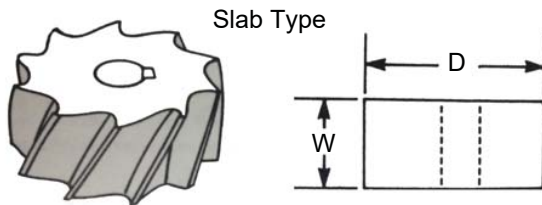




## CUTTERS FOR ZT550

For use on Aluminum, Magnesium, Copper and Softer alloys.

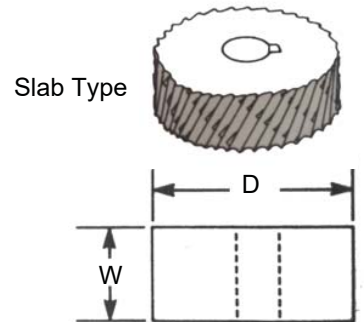
Cutter Part No.	Cutter Material	D	W	A	Cutter Style	R	Cutter Adjustment		Number of Teeth
		Diameter	Width	Angle		Radius	In	Out	
ZT551-30	Carbide	1 1/4	1/2	70°	Groove	.156	.078	.218	6
ZT551-31	H.S.S.	1 1/4	1/2	70°	Groove	.156	.078	.218	6
ZT551-32	Carbide	1 1/8	1/2	-	Slab	-	.125	.187	10
ZT552-32	Carbide	1 1/8	1/2	-	Slab	-	.125	.187	10
ZT552-30	Carbide	1 1/4	1/2	70°	Groove	.156	.078	.187	6



## CUTTERS FOR ZT554/ZT555

For use on Titanium, Stainless Steel, Monel and similar high strength materials.

Cutter Part No.	Radius Cutter	Cutter Material	Cutter Radius	D	W	Cutter Style	Cutter Adjustment		Number of Teeth
				Diameter	Width		In	Out	
ZT554-31B		Carbide		1 1/8	1/2	Slab	.125	.187	34
ZT554-30		Carbide	.250	1 3/8	1/2	Slab	.250	.062	24
ZT555-31B		Carbide		1 3/8	1/2	Slab	.125	.187	34
ZT555-30		Carbide	.250	1 3/8	1/2	Slab	.250	.062	-



## CUTTERS FOR ZT501

For use on Aluminum, Magnesium, Copper and Softer alloys.

Cutter Part No.	Cutter Material	D	W	A	Cutter Style	R	Roller Shaft Assembly	Cutter Adjustment		Number of Teeth
		Diameter	Width	Angle		Radius		In	Out	
ZT501-19	Carbide	2	3/4	-	Slab	-	ZT5010124	-.240	.240	10
ZT501-20	Carbide	2	1	-	Slab	-	ZT5010121	-.240	.240	10
ZT501-21	Carbide	2	1 1/2	-	Slab	-	ZT5010122	-.240	.240	10
ZT501-22	Carbide	2	2	-	Slab	-	ZT5010123	-.240	.240	10
ZT501-30	Carbide	3 3/8	1 1/2	60°	Groove	.156	ZT5010126	.000	1.060	8
ZT201-31	Carbide	3 3/8	1 5/8	70°	Groove	.156	ZT5010128	.000	1.060	8

