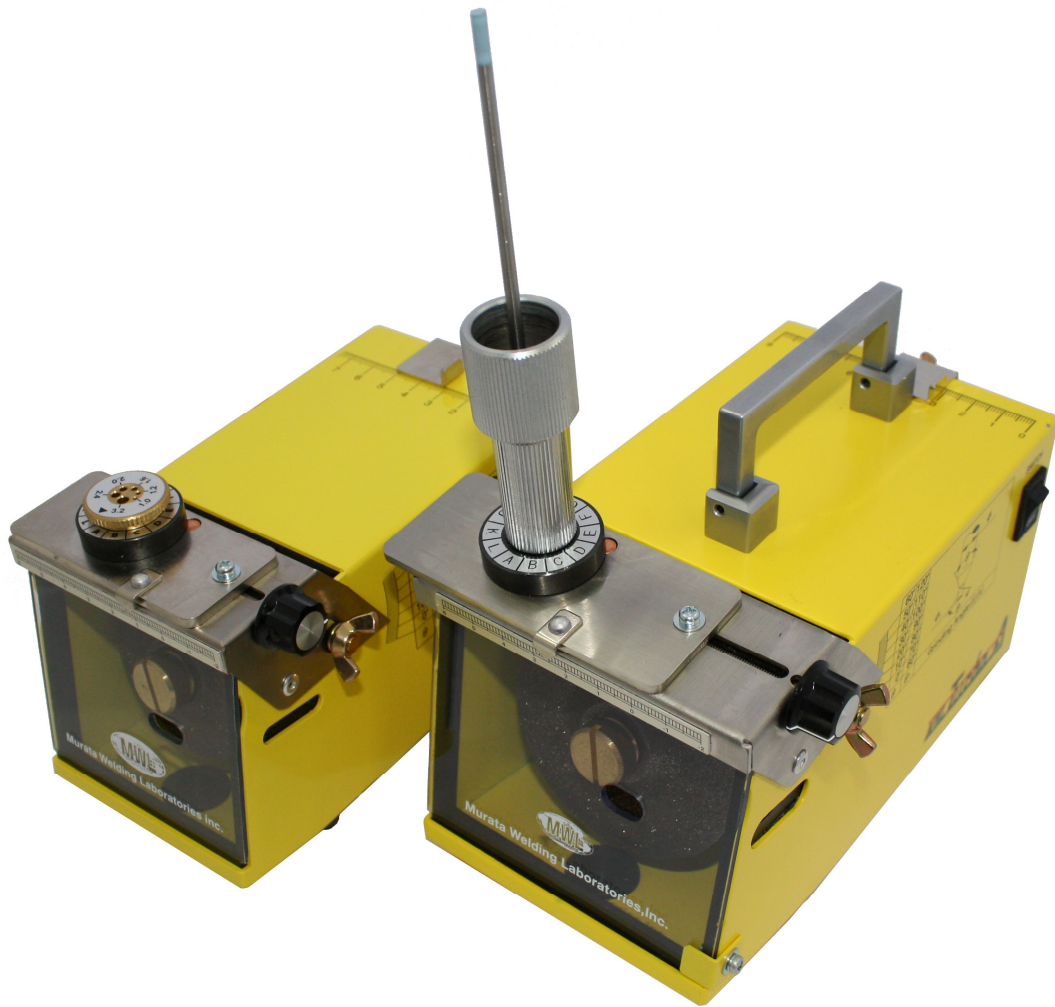




The Welding Accessory Experts™

MWL-MT-10M Turbo 4 Medium Duty & MWL-MT-11M Super Turbo Heavy Duty Tungsten Electrode Grinders



Operations Guide



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Table of Contents

Technical Specifications	2
Parts Diagram MWL-MT-10M Turbo 4	3
Parts Diagram MWL-MT-11M Super Turbo	4
Grinding a Tip Flat	5
Cutting Tungsten Electrodes	5
Grinding a 2-Stage Taper	6-7
Grinding a Single Stage Taper	6
Grinding a Tip Flat & 2-Stage Taper	8

Thank you for purchasing Arc-Zone.com's Turbo Series tungsten electrode grinder. Please read this user manual completely before operating, and contact an Arc-Zone.com technician with any questions.

Important Safety Notes:

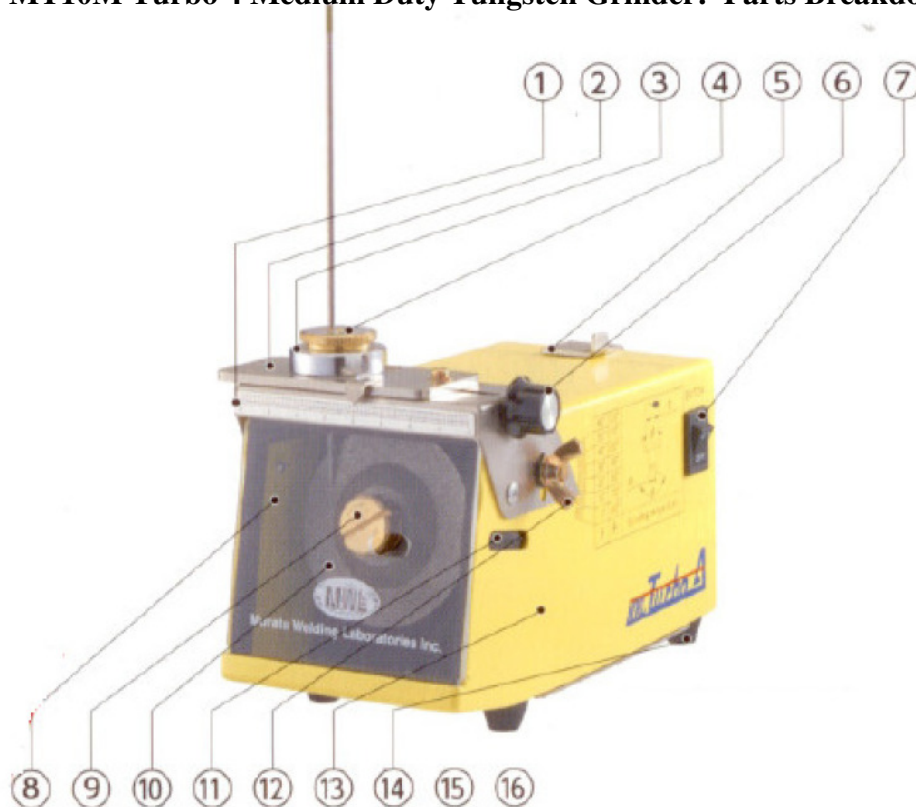
- Never open the transparent safety cover during operation.
- Never operate this machine on uneven/unstable surfaces or in any position other than upright.
- The motor is equipped with an internal thermostat to protect the life of the motor. If the motor stops during operation, turn the machine off and allow the grinder housing to cool to room temperature before continuing operation.
- Always wear proper hand and eye protection when operating this machine.
- Always take precautions for the safety of others in the immediate area while this machine is in operation.
- To ensure the proper operation and long life of this machine, always use high quality diamond grinding wheels designed specifically for this machine by Arc-Zone.com.

MWL-MT-10M & MWL-MT-11M Turbo Series Tungsten Electrode Grinders **Technical Specifications**

	MWL-MT-11M Super Turbo	MWL-MT-10M Turbo 4
Power Supply	AC 100/110V, 50/60Hz	
Power Consumption	90/100W	60/70W
Power Cord	6' (1.8m) Flat Vinyl Cable With Plug	
Dimensions	4.75" (120mm) x 8.25" (210mm) x 6" (150mm)	4" (100mm) x 7.25" (185mm) x 5" (125mm)
Net Weight	4.5 lbs (2.0Kg)	3.3 lbs (1.5Kg)
Grind Capacity	.040" (1.0mm)–5/32" (4.0mm) <i>optional 3/16" (4.8mm)</i>	.040" (1.0mm)–1/8" (3.2mm)
Grind Angle	5° – 60° Included Angle	



MWL-MT10M Turbo 4 Medium Duty Tungsten Grinder: Parts Breakdown



Ref #	Part #	Part Name
1	MWL-T4110-1	Angle Adjustment Plate w/ Front Scale
2	MWL-T4110-2	Lateral Slide Plate w/ Indicator
3	MWL-T4110-3	Electrode Guide Housing
4a	MWL-T4100	Small Electrode Guide Collet: 1.0mm (.040"), 1.2mm, 1.6mm (1/16"), 2.0mm, 2.4mm (3/32"), 3.2mm (1/8")
4b	MWL-T4110	Large Electrode Guide Collet: 2.4mm (3/32"), 3.2mm (1/8"), 4.0mm (5/32")
5	MWL-T4110-5	Electrode Set Gauge (used w/ short tungsten grinding kit)
6	MWL-T4110-6	Lateral Adjustment Knob
7	MWL-T4110-7	On/Off Switch
8	MWL-T4110-8	Transparent Safety Cover
9	MWL-T4110-9	Grinding Wheel Mounting Screw
10	MWL-T4400D	Diamond Grinding Wheel
11		Tungsten Cutting Access Hole
12	MWL-T4110-12	Grinding Angle Set Screw
13	MWL-T4110-13	Grinder Housing
14	MWL-T4110-14	Rubber Foot
15	MWL-T4110-15	Power Cable w/ Plug
16	MWL-T4110-16	Motor

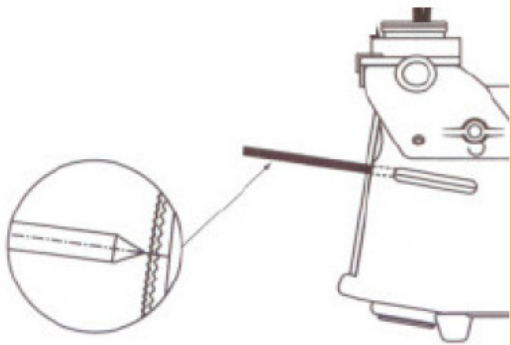


MWL-MT11M Super Turbo Heavy Duty Tungsten Grinder: Parts Breakdown



Ref #	Part #	Part Name
1	MWL-T4111-1	Angle Adjustment Plate w/ Front Scale
2	MWL-T4111-2	Lateral Slide Plate w/ Indicator
3	MWL-T4111-3	Electrode Guide Housing
4a	MWL-T4100	Small Electrode Guide Collet: 1.0mm (.040"), 1.2mm, 1.6mm (1/16"), 2.0mm, 2.4mm (3/32"), 3.2mm (1/8")
4b	MWL-T4110	Large Electrode Guide Collet: 2.4mm (3/32"), 3.2mm (1/8"), 4.0mm (5/32")
5	MWL-T4111-5	Electrode Set Gauge (used w/ short tungsten grinding kit)
6	MWL-T4111-6	Lateral Adjustment Knob
7	MWL-T4111-7	On/Off Switch
8	MWL-T4111-8	Transparent Safety Cover
9	MWL-T4111-9	Grinding Wheel Mounting Screw
10	MWL-T4400D-11	Diamond Grinding Wheel
11		Tungsten Cutting Access Hole
12	MWL-T4111-12	Grinding Angle Set Screw
13	MWL-T4111-13	Grinder Housing
14	MWL-T4111-14	Rubber Foot
15	MWL-T4111-15	Power Cable w/ Plug
16	MWL-T4111-16	Motor

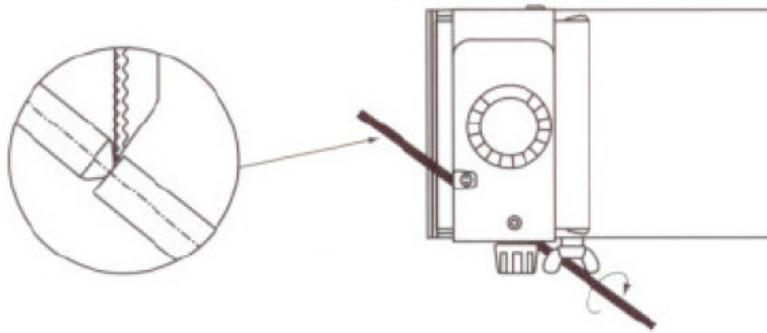




Grinding a Tip Flat

(Instead of single stage or second stage tip tapers)

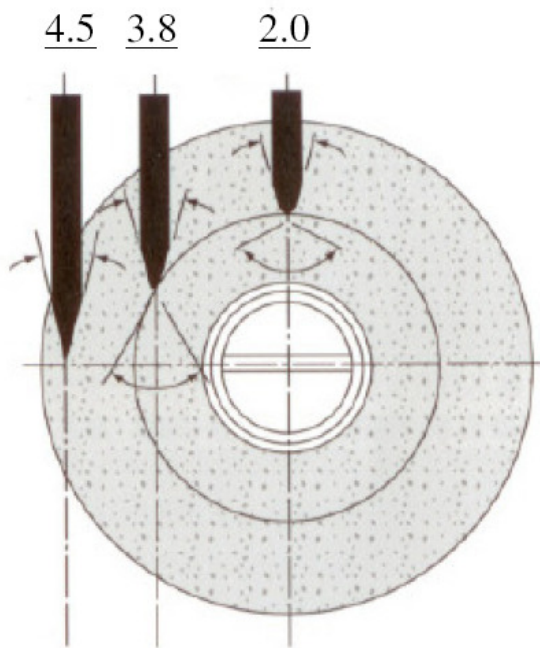
8. After the tungsten electrode is ground to a point. With the machine running, insert the tapered end of the electrode through the transparent safety cover so that it briefly impacts the grinding wheel.
 - a. A slightly blunted electrode tip provides arc stability and reduces arc wander.



Cutting Tungsten Electrodes

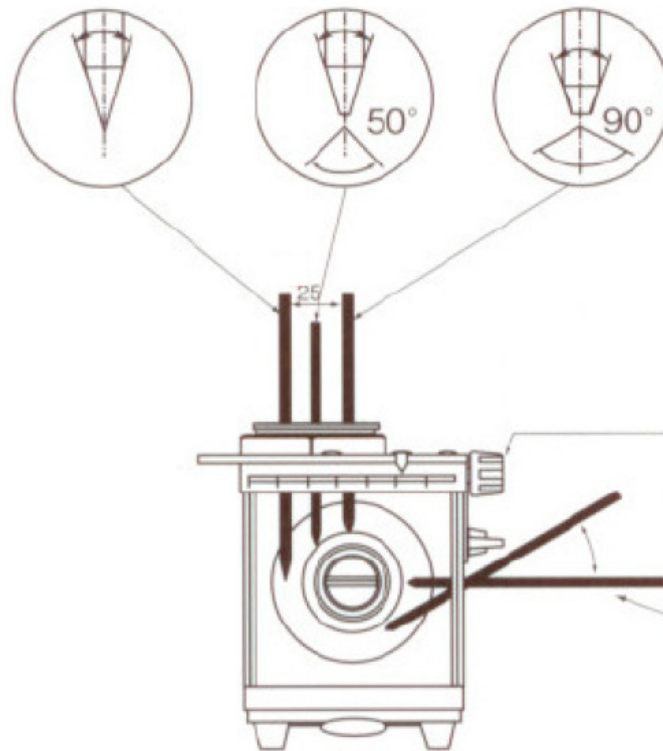
9. Insert the tungsten electrode through the tungsten cutting access hole in the grinder housing and the transparent safety cover.
10. Rotate the tungsten electrode as it impacts the grinding wheel.
11. For best results, notch the electrode completely through; however, to preserve the life of the diamond grinding wheel, the electrode can be notched evenly all the way around; then, using the electrode guide collet to support the electrode directly next to the notch, the electrode can be snapped cleanly.
 - Caution: If the electrode is not sufficiently notched, or is not supported close enough to the notched area, it may become fractured or splintered, resulting in poor weld performance.

Lateral Slide Plate Settings



Standard Taper

2-Stage Taper



2-Stage Electrode Tapers

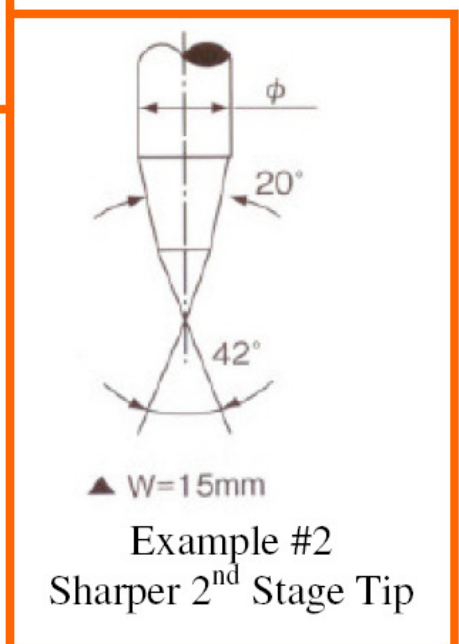
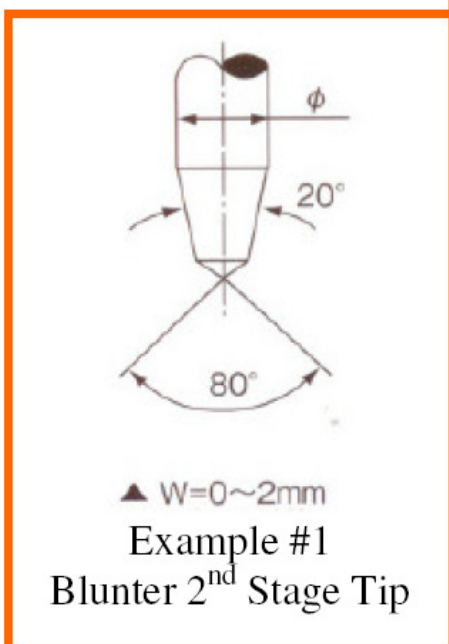
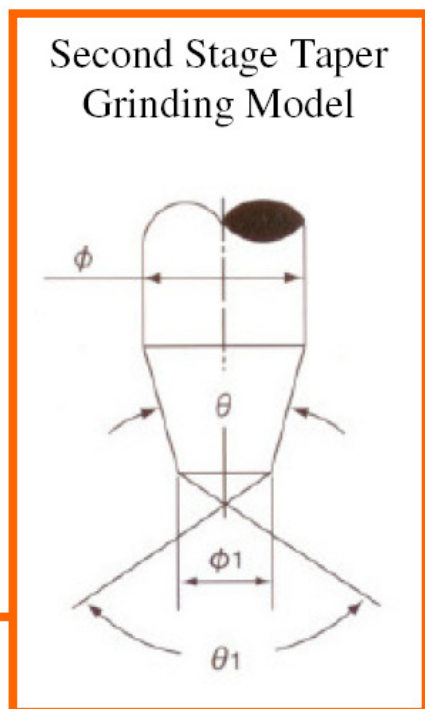
(for extra-long weld runs and specialty applications)

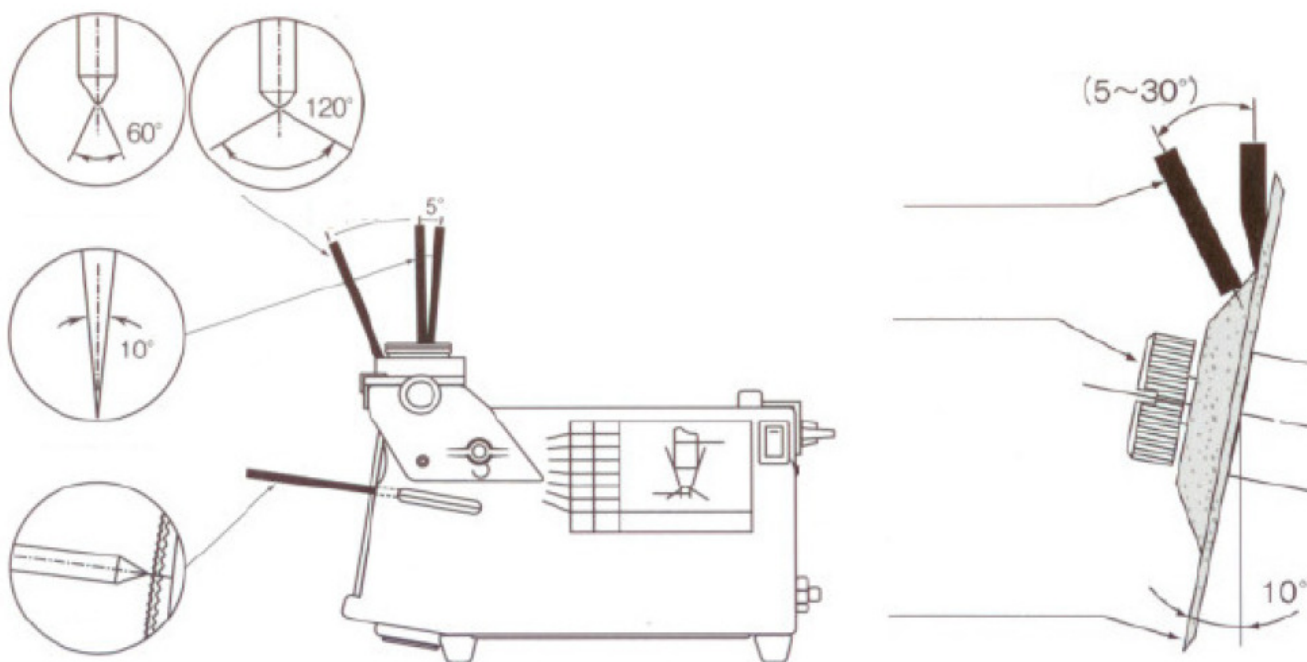
6. Set the lateral slide plate between 2.0 and 3.8 on the front scale.
 - Setting the lateral slide plate at 2.0 allows for fast grinding and for a very blunt second stage tip, but the electrode may need to be polished on the outer portion of the wheel to smooth any lateral grinding grooves that may cause arc wander.
 - Setting the lateral slide plate at 2.0 designates a second stage tip angle that corresponds with Θ_1 from the grind angle reference chart printed on the grinder housing.
7. For less blunt second stage tapers, set the lateral slide plate between 2.0 and 3.8. Refer to the table on the next page to calculate the corresponding second stage grind angle.
 - Rotating the electrode guide collet will also increase the second stage taper as well. This process is described in the previous single stage taper instructions.

Table for Calculating Second Stage Grind Angles

Θ	W	2-2.2	2.3-2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.89
10°	70	68	66	64	62	58	54	50	40	37	34	32	28	24	18	
20°	80	78	76	74	72	68	64	60	50	47	44	42	38	34	28	
30°	90	88	86	84	82	78	74	70	60	57	54	52	48	44	38	
40°	100	98	96	94	92	88	84	80	70	67	64	62	58	54	48	
50°	110	108	106	104	102	98	94	90	80	77	74	72	68	64	58	
60°	120	118	116	114	112	108	104	100	90	87	84	82	78	74	68	

Θ = Grind Angle Setting Indicated on Grinder Housing
 W = Lateral Slide Plate Setting on Front Scale





Adjusting the Grind Angle

For electrodes with a standard included angle.

1. Use the lateral adjustment knob to set the lateral slide plate between 3.8 and 4.5 on the front scale.
2. Loosen the grinding angle set screw and select desired grind angle. Retighten set screw.
3. Electrode guide collet should be positioned so that the tungsten electrode is in the rear-ward most position to match up with the grind angle table printed on the side of the machine and designated by Θ .
4. With the machine running, rotate the electrode by hand until the electrode has been ground to a point.

Adding a single stage taper to the already ground electrode

5. Rotating the guide collet, thereby bringing the tungsten electrode position forward with respect to the machine, will allow for a single stage taper on the electrode tip. (This is recommended for welding applications that require long welds).
 - a. This single stage tip method increases the tip angle incrementally as you rotate the guide collet, 5°-30°.