



The Welding Accessory Experts™

# MWL-MT10DX Turbo Ace Semi-Automated Tungsten Electrode Grinder



## Operations Guide



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Thank you for purchasing Arc-Zone.com's semi-automated precision 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 engineered specifically for this machine by Arc-Zone.com.

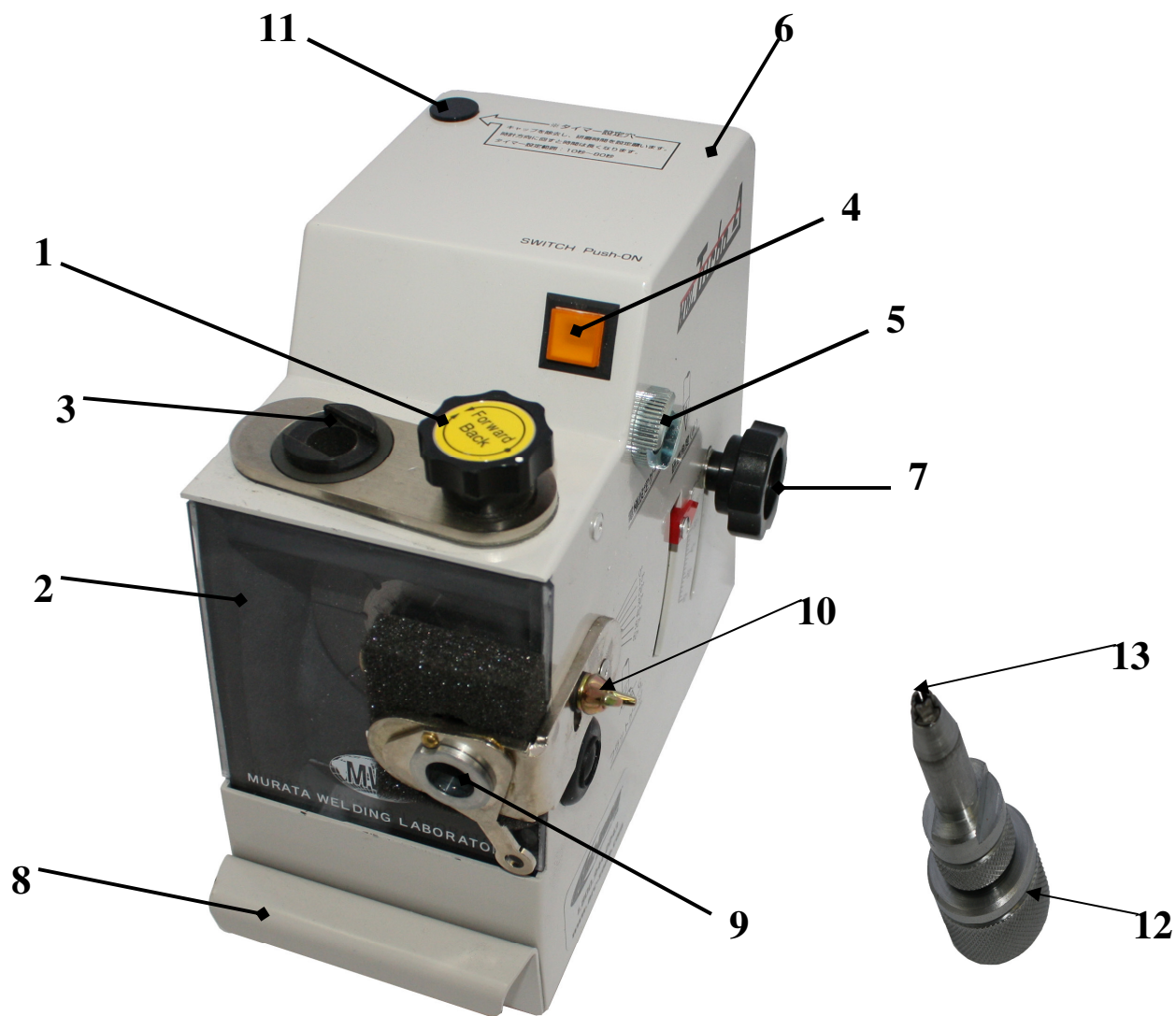
## **MWL-MT-10DX Turbo Ace Semi Automated Tungsten Electrode Grinder**

### **Technical Specifications**

- Power Supply: AC 100/110V, 50/60Hz
- Power Consumption: 65/75W
- Primary Cable: 1.8 meters (flat vinyl cable with plug)
- Dimensions: 3.9" (100mm) Wide x 9.5" (240mm) Long x 7.5" (190mm) Tall
- Net Weight: 7.7 lbs.(3.5Kg)
- Minimum Grind Length: 1.18" (30mm)
- Grind Angle Range: 10° — 60°
- Grinding Time: 5 — 60 Seconds (Adjustable)



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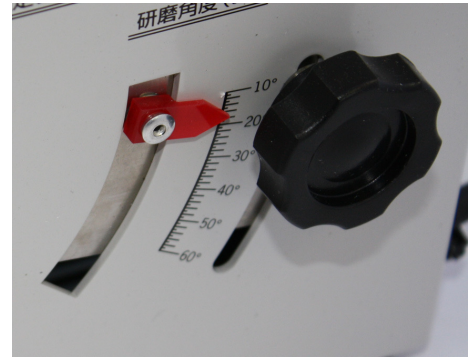
Ref #	Part Name	Reference Information
1	Lateral Pickup Adjustment	Adjusts where the electrode impacts the grinding wheel.
2	Safety Cover	
3	Slotted Chuck Port	This secures and auto-rotates the precision collet chuck.
4	On/Off Switch	This is a momentary style On/Off switch.
5	Electrode Set Gauge	Once set, this ensures that electrodes will be ground to exactly the same specifications.
6	Grinder Housing	
7	Angle Fixation Knob	This is used to select the exact grind angle of the electrode.
8	Dust Collection Case	Use care when emptying the collected grinding dust.
9	Tip Flat Grinding Guide	
10	Second Stage Angle Adjustment	This allows for grinding a Tip Flat or 2 <sup>nd</sup> stage tip angle.
11	Timer Set Screw	This allows for the adjustment of the grinding time.
12	Collet Chuck Assembly	
13	Precision Collet Chuck	Available for tungsten diameters: .040" (1.0mm), 1/16" (1.6mm), 3/32" (2.4mm), 1/8" (3.2mm)



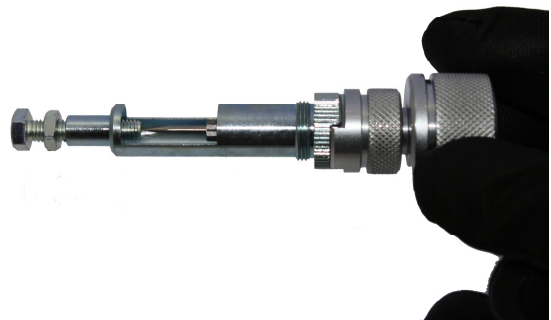
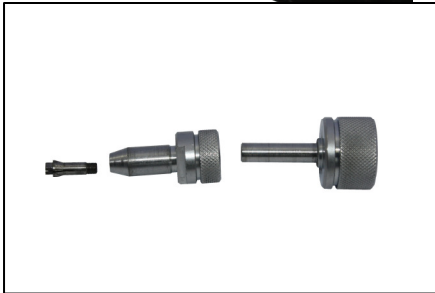
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## Grinding Instructions:

Use the Angle Fixation Knob to set the desired grind angle.



Insert the tungsten electrode into the Collet Chuck Assembly.



Use the electrode set gauge for identical grind angles on every electrode. Insert the Collet Chuck Assembly with the tungsten electrode into the Electrode Set Gauge so that the notched portion of the assembly fits completely into the notched portion of the receptacle and the tungsten electrode is making contact with the set gauge.

Tighten the Collet Chuck Assembly so that the tungsten electrode is held securely.



Place the Collet Chuck Assembly into the slotted chuck port..

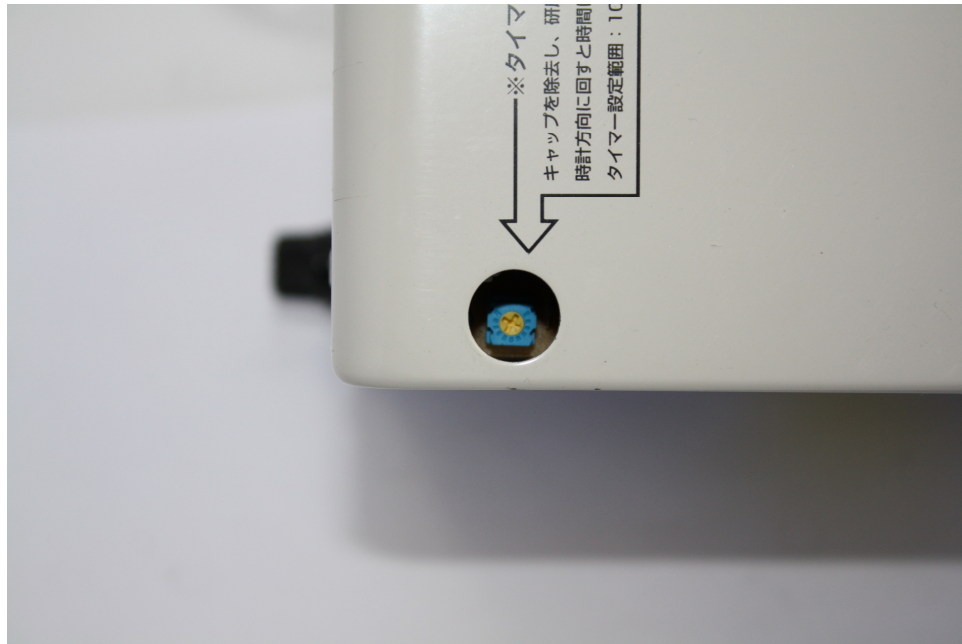
Press the On/Off Switch to begin the automatic grinding sequence.

The grinder will automatically shut off after the preset grinding period.



## Adjusting Preset Grinding Time:

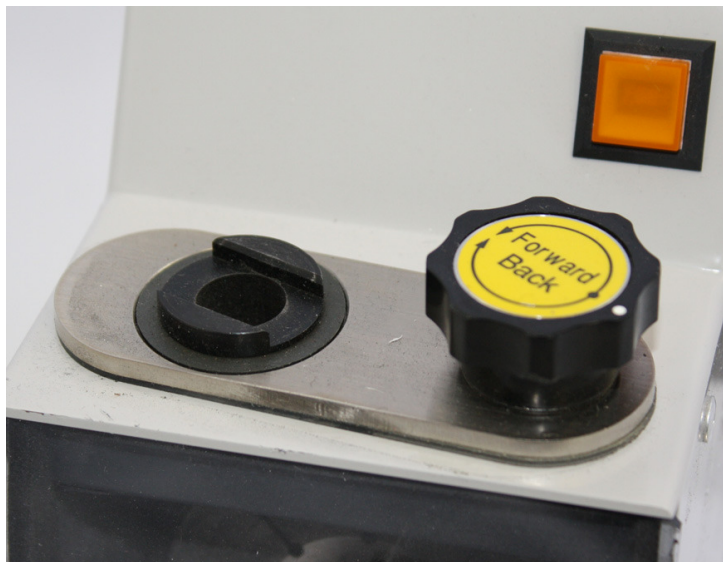
There is a removable plug on the top rear portion of the grinding case that covers the timer adjustment. Using a screw driver, the preset grinding time can be adjusted between 5 – 60 seconds.



The grinding time can also be monitored manually; pressing the On/Off switch while the grinder is in operation will turn the grinder off, regardless of the preset timer.

## Adjusting the Contact Point on the Wheel:

As the grinding wheel begins to get grooves, the Lateral Pickup Adjustment knob on the top of the machine can be used to adjust the where the tungsten electrode impacts the grinding wheel—extending the life of the double sided grinding wheel.



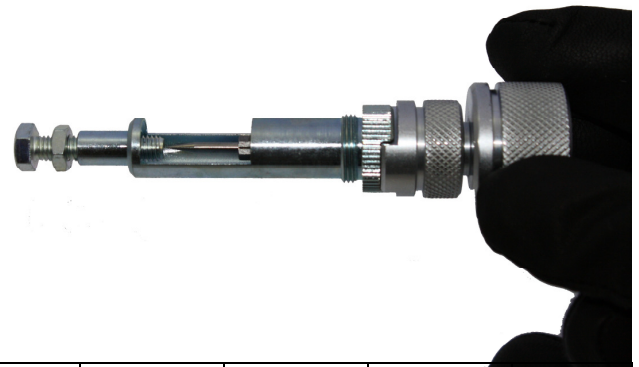
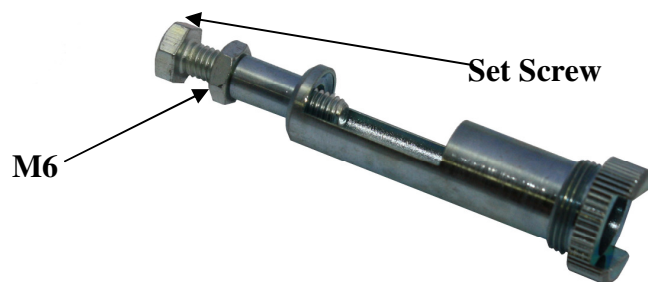
## Adjusting the Electrode Set Gauge:

The electrode set gauge allows for the electrodes to be set at exactly the same depth in the Collet Chuck Assembly. This will allow every electrode to be set up quickly, easily, and it will yield exactly the same grind angle every time.

The Electrode Set Gauge unscrews from the grinder housing.



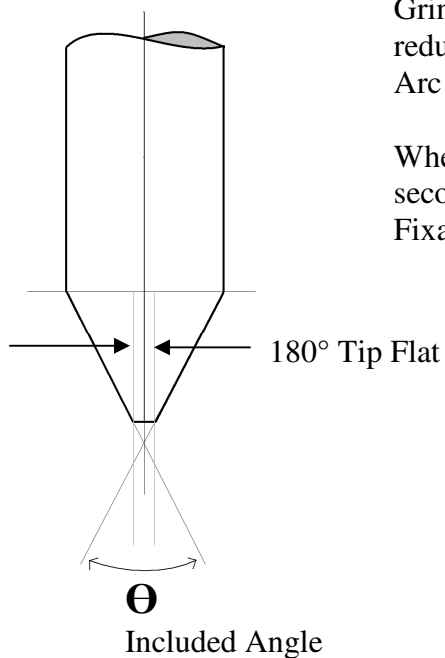
By loosening the M6 Locking Nut, the depth of the set screw can be adjusted. Please refer to the following table for adjusting the depth according to the diameter of the electrode and the desired angle.



Angle	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°
Length										
.040" (1.0mm)	0.255" 8.5mm	0.413" 12.5mm	0.512" 15.0mm	0.571" 16.5mm	0.610" 17.5mm	0.629" 18.0mm	0.649" 18.5mm	0.677" 19.2mm	0.689" 19.5mm	0.709" 20.0
1/16" (1.6mm)	N/A	0.539" 13.7mm	0.638" 16.2mm	0.697" 17.7mm	0.736" 18.7mm	0.756" 19.2mm	0.775" 19.7mm	0.803" 20.4mm	0.815" 20.7mm	0.835" 21.2mm
3/32" (2.4mm)	N/A	0.602" 15.3mm	0.701" 17.8mm	0.760" 19.3mm	0.799" 20.3mm	0.819" 20.8mm	0.838" 21.3mm	0.866" 22.0mm	0.878" 22.3mm	0.898" 22.8mm
1/8" (3.2mm)	N/A	0.665" 16.9mm	0.764" 19.4mm	0.823" 20.9mm	0.862" 21.9mm	0.812" 22.4mm	0.901" 22.9mm	0.929" 23.6mm	0.941" 23.9mm	0.961" 24.4mm

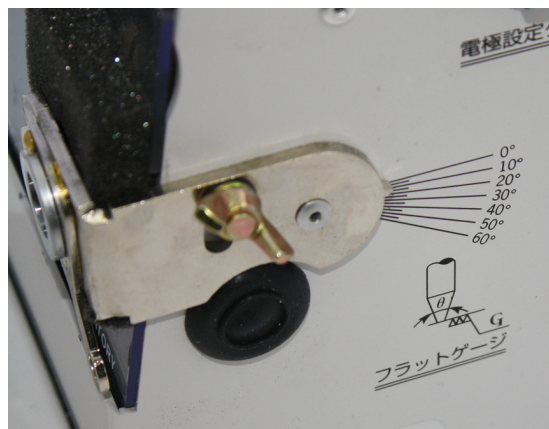


## Grinding Tip Flat & 2-Stage Tapers:



Grinding a tip flat on electrodes increases arc stability and reduces arc wander. Many TIG, Automated TIG, and Plasma Arc Welding applications call for precision tip flat.

When using the Turbo Ace tip flat grinding guide, setting the second stage angle adjustment at the same angle as the Angle Fixation Knob will yield an exact 180° tip flat on the electrode.



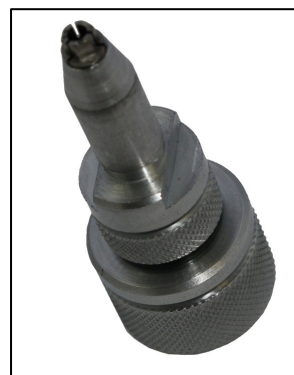
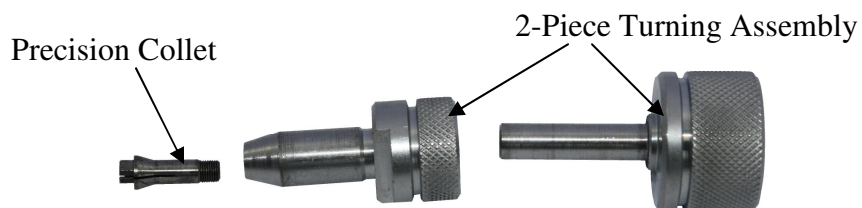
The Turbo Ace tungsten electrode grinder also offers the option of grinding a 2-stage tip by setting the second stage grind angle, inserting the Collet Chuck Assembly into the Tip Flat Grinding Guide and manually rotating the Collet Chuck Assembly. Note: The actual angle of the second stage adjustment is relative to the angle of the grinding wheel. For example, if the grinding wheel is set at 30° and the 2<sup>nd</sup> stage angle adjustment is set at 20°, the second stage of the electrode tip will be at a 10° less than the 180° flat tip setting—resulting in a secondary angle of 170°.



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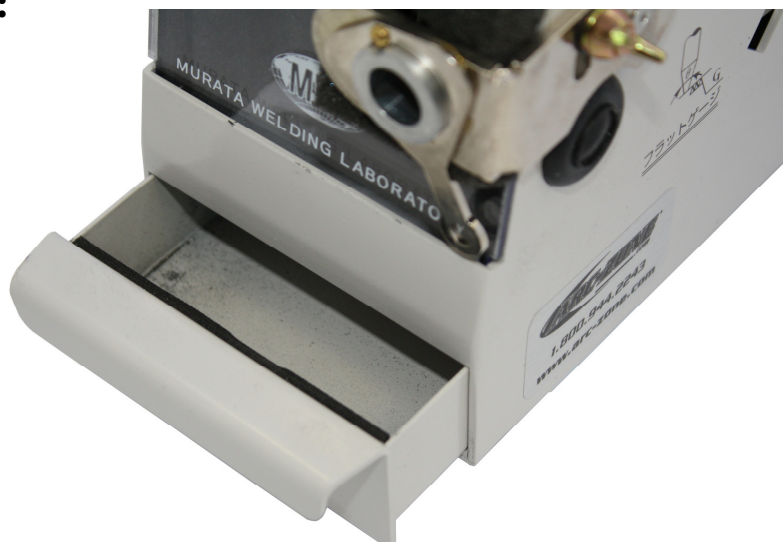
## The Collet Chuck Assembly:

The Collet Chuck Assembly is comprised of three pieces: The 2-piece turning assembly, which is fitted specifically for the Turbo Ace grinding machine and designed with a wide knurled body for easy use and maximum operator safety and comfort; and the Precision Collet, which is sized for the exact diameter of tungsten electrode to be ground—grinding of different electrode diameters requires different Precision Collets. The Precision Collet threads into the Collet Chuck Assembly and, when tightened, locks the entire assembly and the tungsten electrode into place.



## Disposal of Grinding Dust:

The MT-10DX Turbo Ace Semi-Automated Tungsten Grinder features an enclosed grinding chamber. This design provides unmatched user safety. The grinding dust is collected and deposited in the removable Dust Collection Case where it can be disposed of quickly and easily.



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