

# Ultrasonic Die Polishing Machine

## MODEL: USM 150 / 250 / 300



\*Box Type Die Table With Oscillation



\*Open Type Die Table With Oscillation



\*Open type Die Table

These machines are designed and developed for resizing and repolishing of Polycrystalline, Natural & Mono diamond dies.

The simple and manually operated ultrasonic machine consists of an ultrasonic generator, drilling head and die table. Drilling head assembly consists of a sandwich type piezo ceramic transducer, which produces fine and continuous ultrasonic power. Ultrasonic head up and down movement is by rack and pinion mechanism. Die table assembly is with counter weight balance.

Die rotation speed is continuously variable. Needle fixing is by soldering for Optimum transfer of ultrasonic power. Collet arrangement can be supplied as an optional accessory. A separate bench grinder is provided for needle grinding.

This machine can also be used for drilling round holes on Sapphire, Ruby, hard metals etc.

The machine is supplied with a set of spares and standard accessories, which makes a package and ready to use.

### STANDARD ACCESSORIES

#### USM150:

Soldering type horns:  $\phi$  0.6, 1, 2 & 3 no's each  
 Needles:  $\phi$  1, 2, 3 – 100 no's each  
 Spanner 14-15 :- 1no  
 Weight: W,X,Y,Z – 1 no each.  
 Pot meter: 100  $\Omega$ , 25K, 1K – 1 no each  
 Fuse: 3A, 5A – 5 no's each  
 Belt:  $\phi$  4X500 mm – 1 no  
 Water can: 1no, Grinding motor: 1 no  
 Wax cake: 1 no, Soldering paste : 250Gms.

#### USM250:

Soldering type horns:  $\phi$  1, 2, 3, 4, 5 – 2 no's each,  
 Needles:  $\phi$  1, 2, 3, 4, 5 – 100 no's each  
 Spanner: 14-15  
 Weight: W,X,Y,Z – 1 no each.  
 Pot meter: 100  $\Omega$ , 25K, 1K – 1 no each  
 Fuse: 3A, 5A – 5 no's each  
 Belt:  $\phi$  3X500 mm – 1 no  
 Water can: 1no, Grinding motor: 1 no  
 Wax cake: 1 no, Soldering paste : 250 Gms.

#### USM300:

Soldering type horns:  $\phi$  2, 3, 4, 5, 6, 8, 10, 12, & 14 – 2each  
 Needles:  $\phi$  2, 3, 4, 5 – 100 no's each  
 Spanner 14-15:- 1no  
 Weight: W,X,Y,Z – 1 no each.  
 Pot meter: 100  $\Omega$ , 25K, 1K – 1 no each  
 Fuse: 3A, 5A – 5 no's each  
 Belt:  $\phi$  3X500 mm – 1 no  
 Water can: 1no, Grinding motor: 1 no  
 Wax cake: 1 no, Soldering paste : 250Gms.

ITEM	USM 150	USM 250	USM 300
Die size range	0.010 - 1.50mm	0.10 to 2.50mm	0.10 to 8.00mm
Ultrasonic Generator	150watts	250 watts	300 watts
System	continuous current	Continuous current	Continuous current
Mx.hf current	400ma	500ma	600ma
Frequency Tuning	Coarse & fine	coarse & fine	coarse & fine
Input mains	220v, 50hz	220v, 50hz	220v, 50hz
Power consumption	200VA	300VA	400VA
Main fuse	5Amps	5 Amps	5 Amps
Transducer			
System	Pizo Electric	Piezo electric	Piezo electric
Frequency	22KHz + 5%	22KHz + 5%	22KHz + 5%
Type	Sandwitch	Sandwitch	Sandwitch
Machine			
Operation	Manual / osc	Manual / osc	Manual / osc
Die Rotation Speed'	60 - 120rpm	60 - 120rpm	60 - 120rpm
Net wt.	64 Kgs.	72 Kgs.	72 Kgs.
Gross wt.	110 Kgs	120 Kgs	120 Kgs

### Optional Accessories

1. Collet type ultrasonic horn, collet and nut.
2. Needle grinder for accurate grinding of soldered needles (along with horn)
3. Needle soldering fixture : To solder ultrasonic needles in the horn concentrically
4. Template for needle angle checking.

\*The machine with Box type die table is recommended for die sizes above 0.100mm, Open type is for super fine sizes, and with oscillation type is for polishing of sizes above 0.100mm. The customer has to choose based on their maximum usage.

**MIKROTEK**  
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