SOLBRAZE
Ultrasonic Soldering, Resistance Soldering and Brazing

MODEL UM250 ULTRASONIC SOLDERING SYSTEM

Ultrasonic Probe and Solder Bath

UM250 system including Ultrasonic Generator, Temperature Control Unit, Acoustic Transducer & Probe, Solder Bath and Autoclean Dross Removal.

Features:

- On/Off switch
- Run LED indicators
- Standby, continuous and timed modes
- Mains input lead with filtered IEC connector
- Transducer connector and lead
- Transducer temperature alarm and over-ride
- Continuously variable power output control
- Activity meter
- External control of operation by timer or footswitch

Specification:

- Frequency of operation 20 kHz (nominal)
- Output power 0- 250 Watts (electrical)
- Input voltage 200-250V 50-60Hz
- Power input 550 VA (maximum)
- Timer, standard 0.1 to 9.9 seconds

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The Solbraze Ultrasonic Soldering System makes possible the dip tinning of a wide range of both metallic and non-metallic materials without the use of any flux.

The UM250 Ultrasonic Generator produces 250W of energy at 20kHz which is transmitted to the solder bath via a transducer and energy horn or acoustic probe. This horn or probe enters through the side of the solder bath and is partially immersed in the solder.

20 kHz vibrations from the Ultrasonic Generator via a transducer attached to the horn are transmitted to the molten solder resulting in cavitation of the molten solder. The imploding cavitation bubbles have a scrubbing effect on any submerged work piece and mechanically remove oxides. The cleaned surface is immediately coated with the solder in which it is immersed.

The process does not require the use of a flux which has immediate benefits in the elimination of the fluxing operation and the procedures and equipment associated not only with its application but also with storage, residue removal etc. The soldering temperature can often be lowered simply because it is not necessary to ensure activation of a flux and this in itself reduces dross formation.

The absence of a flux and its surface tension reducing properties means that there is no "wicking" of solder in the ultrasonic soldering process. Whereas this can be a disadvantage under certain conditions it is advantageous in the tinning of stranded wires and connector pins.

The transducer needs to be protected in terms of temperature and the horn is therefore supplied with an air cooling collar requiring connection to a compressed air supply, in addition to an integral cooling fan.

The solder bath is based on the established SP5 unit with internal dimensions of 127 mm (5”) x 89mm (3 1/2”) x 89mm (3 1/2”) and has an element rating of 700W and a capacity of approx. 10 kgs.

The dross that accumulates on the solder surface needs to be removed before dip soldering or tinning takes place and the solder bath is fitted with a manual blade system. This draws the dross from the solder surface onto a sloping exit plate to fall into a collection box. Options include the Autoclean dross removal system, automatic solder level control and automated dipping of components.

The solder bath temperature is controlled via a +/- 5°C controller linked to the bath by a thermocouple assembly located in a bar welded externally to bath base.

The solder bath is supplied complete with removable lid and the bath and transducer are positively located on a steel base plate to prevent relative movement between them.