

ULTRASONIC SOLDERING SYSTEM

SUNBONDER USM-560

Hand operated soldering iron, ultrasonic power 15W/60kHz, tip diameter 1.0 to 4.0mm

- ✓ Soldering on glass, ceramics, aluminium, silver, copper, molybdenum, stainless steel, metal oxides, transparent conductive oxides etc.
- ✓ Flux-free soldering with ultrasonic vibrations
- ✓ PLL system for best soldering performance
- ✓ New calibration system for easier tip exchange



Japanese portable ultrasonic soldering system with ultrasonic transducer activated by a foot switch. Includes automatic tuning function using phase-locked loop that automatically locks the generator to the resonant frequency of the transducer, even under varying conditions of temperature and load. Ideal soldering device for small area applications.

GENERATOR SPECIFICATION

Frequency	60 kHz \pm 5 kHz (auto tuning to the transducer's resonant freq.)
Output power (ultrasonic)	1 - 12 W (adjustable in 1W increments)
Temperature range	200°C - 500°C (adjustable in 10 °C increments)
Display	Frequency, temperature, ultrasonic power and amplitude
Data interface	Analog (optionable Ethernet for control via PLC)
Power supply	AC 100V/240V, 50 - 60Hz, 150 VA
Dimensions	210 (W) x 90 (H) x 235 (D) mm
Weight	5.0 kilograms
Foot switch cable length	2.0 m

SOLDERING IRON SPECIFICATION

Transducer	PZT Langevin type (60 kHz)
Tip material	Stainless steel
Tip size	4.0 mm standard (1.0 - 3.5 mm on request)
Tip cutting angle	30° standard (other on request)
Heater	High performance sheath heater 65 W
Dimensions	\varnothing 36 mm x 250 mm
Cable length	1.0 m
Weight	210 grams



PARTS DELIVERED WITHIN STANDARD ORDER

1x Ultrasonic generator USM-5 (60kHz)
1x Soldering iron with Ø4.0 mm tip (standard)
1x Foot switch
1x Power cord
1x Tool for tip replacement
1x Soldering iron stand
2x Fuse

HOW ULTRASONIC SOLDERING TECHNOLOGY WORKS?

Standard soldering methods use chemical agent (flux) to dissolve the oxide layers present on the soldered surface. Ultrasonic soldering is flux-free method that uses high-frequency vibrational energy to induce cavitation phenomenon at the tip of the soldering tool to disrupt and dislocate surface oxides and promote wetting. Vibrations also ensure that the solder joint is free of voids, since vibrational energy forces the liquid solder into micropores of the soldered substrate. Moreover, joints made by ultrasonic soldering are hole free, ultrasonic vibrations presses out gas bubbles of the liquid solder.

WHY WE CAN SOLDER ON GLASS, CERAMICS, ALUMINIUM ETC. ?

During many years of extensive research of glass-metal bonding, Japanese engineers developed special solder alloy called CERASOLZER. This active solder alloy has very unique bonding abilities and is specially formulated to work with ultrasonic soldering method. Components of CERASOLZER solder alloy have a high chemical affinity with oxygen, they combine with ambient oxygen to form oxides that chemically bind to glass, ceramics, metals and other materials previously considered as hard to solder.

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