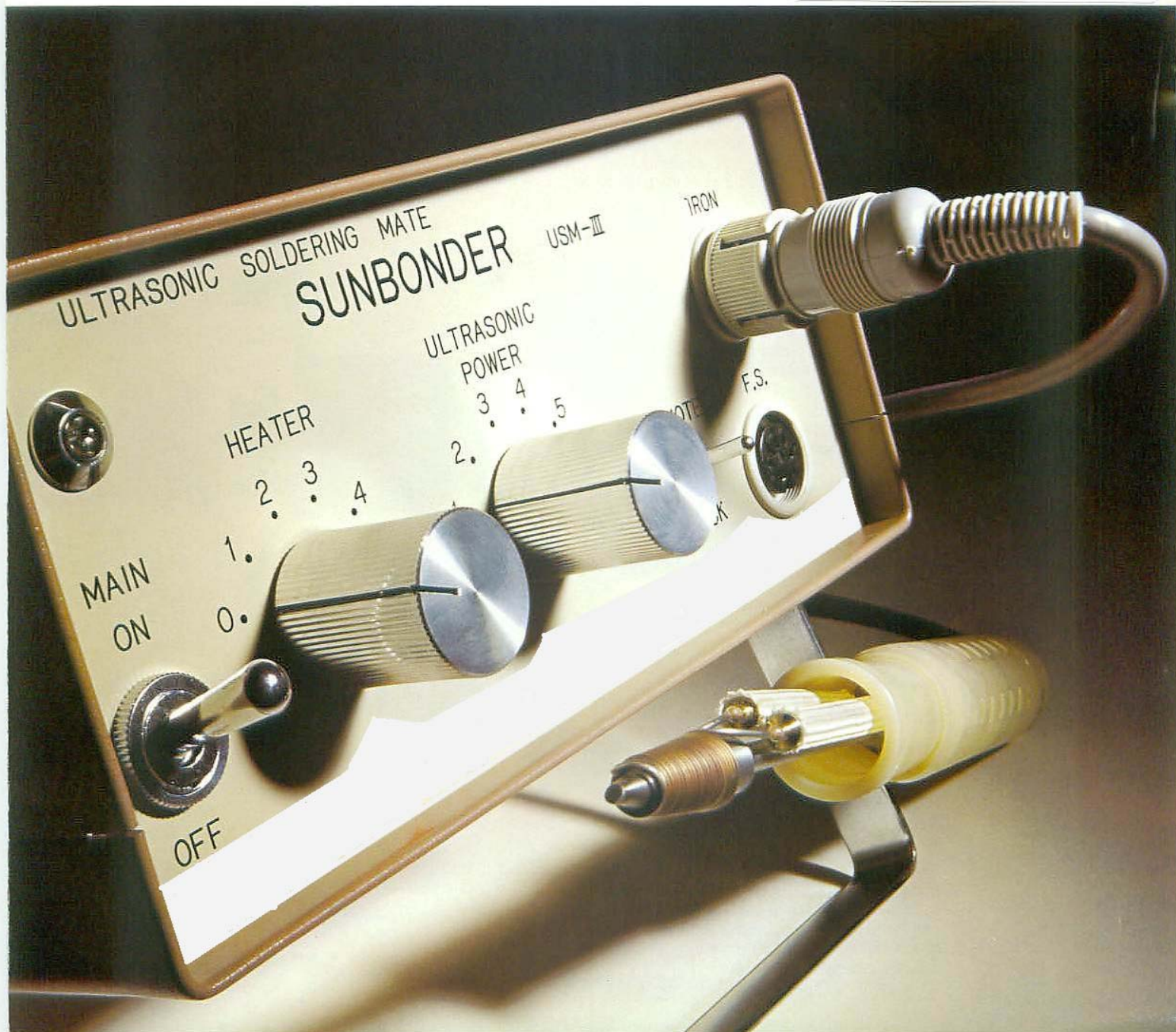


SUNBONDER[®]

Ultrasonic Soldering Device

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SUNBONDER[®]

Employs an ultrasonic soldering process Glass, ceramics as well as metals Flux is not required

Sunbonder

Sunbonder is a portable ultrasonic soldering device which operates in basically the same way as a conventional soldering iron but does not require the use of flux. By using Cerasolzer it is possible to solder to glass or ceramics without silver-baking the surface of substrate thus greatly simplifying the bonding process.

Cerasolzer

Cerasolzer is a special metal solder developed for use on glass and ceramics.

It has excellent adhesive properties hitherto unattainable with conventional bonding methods such as indium solder, silver paste, etc.

Moreover, it enables the bonding process to be extremely simple. It has a high degree of adhesive strength together with excellent airtightness, weather-proof, humidity resistance and electro-conductivity.

Thus, Cerasolzer is a unique product which can be used widely. It adheres to metal and almost all metal oxides such as glass and ceramics.

Features of Sunbonder

- Bonding is performed by means of ultrasonic vibration. Flux used in conventional soldering is rendered unnecessary.
- Apart from degreasing no other pre-treatment is necessary.
- If Cerasolzer is used, silver-baking required in conventional glass and ceramic soldering, can be eliminated.
- It is possible to solder directly to metals, such as aluminium and stainless steel, and also metal oxides which have been previously considered difficult to solder.
- Product reliability is improved and also a considerable reduction in the length of time manufacturing processes take is feasible.
- A stable ultrasonic vibration is achieved owing to the use of the PLL system.
- Problems are eliminated as a result of the use of integrated circuit devices.
- The device is compact and lightweight enabling it to be carried around with ease.

Pilot lamp

Main switch

Foot switch

Heater temperature control knob

The desired temperature can be selected by setting the knob to one of five stepped positions.

Ultrasonic power control knob

The degree of ultrasonic vibration can be adjusted to an optimum level in accordance with the type of the materials to be bonded and the shape of the tip by setting the knob to one of six stepped positions.



Ultrasonic soldering iron. Metal can be easily soldered. No heat required.

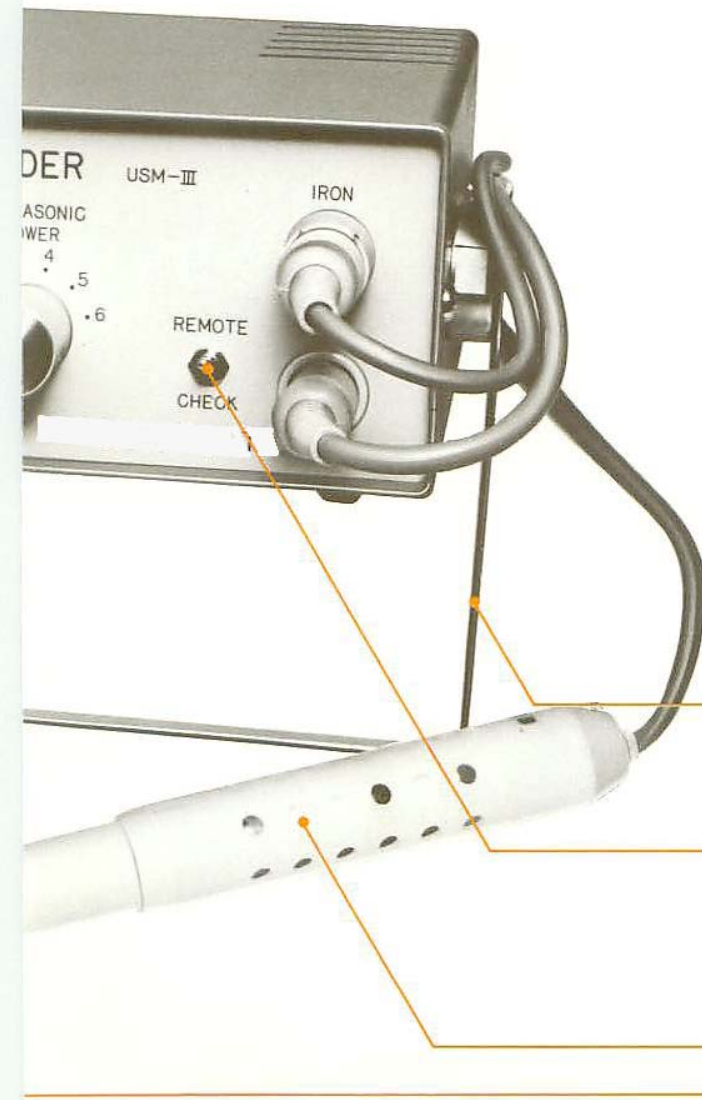
Specifications (USM-III model)

Ultrasonic oscillation frequency:	59.5 ± 1 KHz (PLL system)
Ultrasonic oscillation output:	15 W (Max.)
Tip temperature regulation:	Stepped voltage regulator control
Tip of soldering iron:	Special stainless steel/tip can be machined to any desired shape. Standard diameter range 1.0 mm dia.—3.5 mm dia.
Heater:	High performance sheath heater. Temperature 450°C (Max.)
Vibrator cooling method:	Natural air cooling
Power requirement:	AC 100 V 50/60 Hz 60 W
Dimensions and weight:	Oscillator and power supply unit/ 180 mm Wide x 215 mm Deep x 80 mm High, 4 kg. Soldering iron 24 mm Dia. (Max.) x 245 mm Long, 200 g (incl. weight of cord)
Accessories:	foot switch, solder cleaner, earthed line

Specifications and exterior design are subject to change without notification.

Options

- (1) N₂ purging case (SO-1)
This is used to provide a suitable flow of N₂ gas over the work area to prevent the oxidation of solder and also to ensure a good finish.
- (2) Replacement tips (SO-2, SO-2S)
The tip shape should be specified.
(Minimum area 1.0 mm dia., maximum 3.5 mm dia.)
Special tips made of highly durable metals are also available.
- (3) Automatic solder feeder (SO-3)
This device is used to automatically feed a constant amount of solder to the workpiece. It is suitable for continuous soldering.
- (4) Soldering iron stand (SO-4)
The soldering iron is fixed to a lever and can be moved up and down by means of a handle making for greater bonding accuracy.
- (5) Hot plate (SO-5)
The hot plate is used to pre-heat the pieces to be bonded. It is fitted with an accurate control device permitting uniform heating up to 500°C. (by Corning Glass Works, U.S.A.)
- (6) Special Sunbonder (SO-6)
This is a modified version of the USM-III model which can connect large tips in the range of 5 mm dia.—8 mm dia. It is suitable for fast-bonding materials which have large thermal capacity or are of a large area.



Handle

The handle is used to tilt the front panel of the Sunbonder to the desired angle when in use. It is also used to grip the device when carrying it.

Remote/check switch

Normally, this switch is left in the REMOTE position so that the foot switch can be used during the bonding operation to apply vibration for the necessary length of time. When adjusting or setting the vibration conditions it is put in the CHECK position.

Soldering iron

Heater (high performance sheath heater)