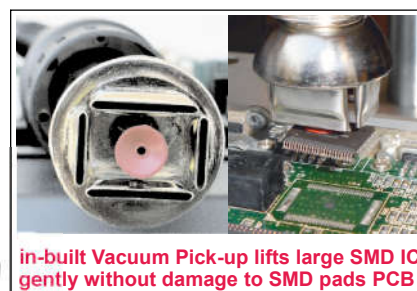


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**All the 3 functions of Hot Air Reflow, Thru-Hole Desoldering & fine SMD Soldering, work independently at the same time
No external Compressor required, needs Mains Supply only**



RS232 to USB Cable for connection to USB Port of external Computer



Software CD



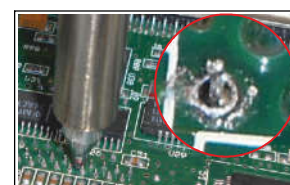
Fine pitch SMD Soldering



Thru-hole Soldering



Large SMD IC Reworking



Thru-hole Desoldering

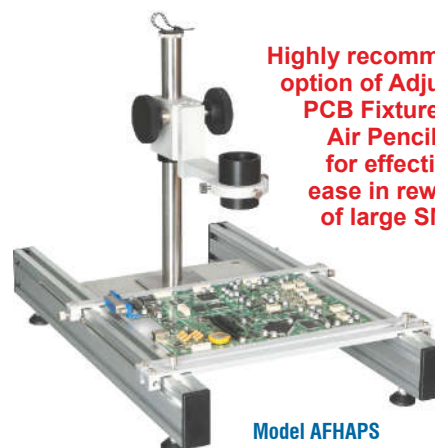
Single System suffices for SMD soldering, Thru-hole desoldering & SMD ICs reworking

Scope of Supply:

- MFRS-500SUSB Main Control Unit
- High Power Hot Air Pencil with in-built vacuum pick-up
- Hot Air Pencil Holder
- Soldering Pencil fitted with 2.4mm Chisel Soldering Tip
- Support Rack with Cleaning Sponge and Dry Cleaner
- Desoldering Gun fitted with Desoldering Tip
- Support Rack with Cleaning Sponge for Desoldering Gun

Specifications

- Power : 1180 Watt
- Temperature Range
 - Soldering/Desoldering : 200°C ~ 480°C
 - Hot Air Pencil : 100°C ~ 500°C
- Airflow Range : upto 120 litre/minute
- Vacuum Suction : 600mmHg



Highly recommended option of Adjustable PCB Fixture & Hot Air Pencil Stand for effective and ease in reworking of large SMD ICs

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OPTIONAL attachment AFHAPS Adjustable PCB Fixture & fine Up/Down Hot Air Pencil Holder is highly recommended to increase effectiveness of 3-in-1 SMD/PTH MFRS500SUSB System

The PCB Fixture retains and secures the PCB under repair and allows positioning of the board in X and Y directions. It permits PCBs upto a maximum size of 350mm x 280mm both single and double sided to be accommodated in a perfectly flat condition.

It also incorporates a pivoting stand to mount the Hot Air Pencil. This stand provides fine Up & Down movement of Hot Air Pencil for raising and lowering it onto the component under repair. The pre-heating plate IRPH-4 can be fitted under the PCB Fixture to provide gentle bottom heating.

Features

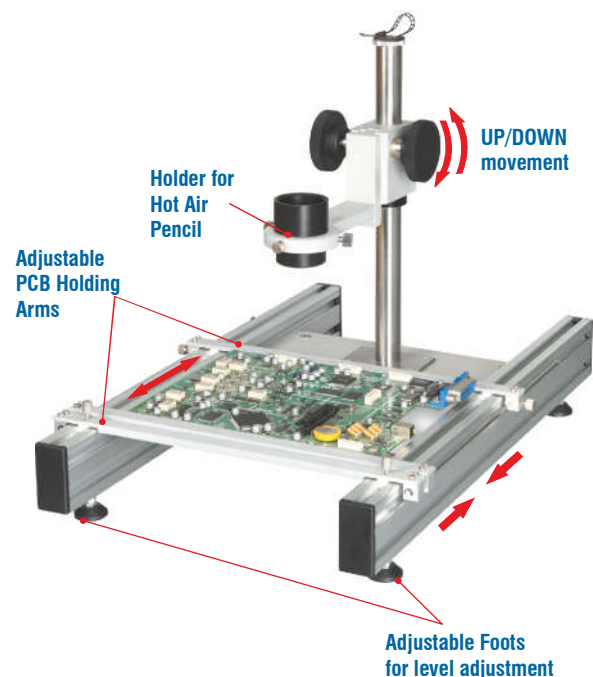
- Hot Air Pencil Stand integrated with adjustable PCB Fixture is available optionally
- Maximum PCB size: 350 x 280 mm
- PCB can be positioned in X & Y directions
- Pre-Heating Plate can be positioned under the PCB
- It has 4 adjustable foot to adjust the level of PCB holder.

Specifications

Coarse height range	: 0 ~ 230mm
Fine height adjustment	: 0 ~ 60mm
Maximum width of PCB	: 280mm

How to desolder large size expensive SMD ICs on expensive multilayer Printed Circuit Boards?

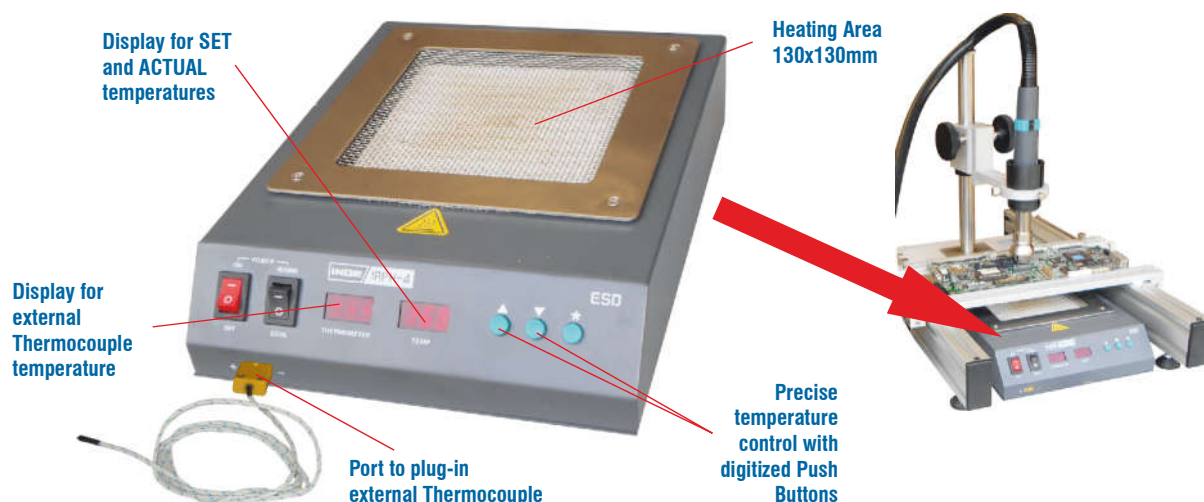
- ☐ Choose an appropriate hot air nozzle and fix the PCB on PCB Fixture and position the SMD IC exactly under the Hot Air Pencil.
- ☐ Adjust airflow and temperature between 400°C ~ 500°C depending upon the size of SMD IC.
- ☐ Adjust the temperature of bottom pre-heater so that the temperature on the top side of PCB reaches around 120°C. Check the temperature on the component using Thermocouple supplied with Pre-heat plate.
- ☐ Switch-on the hot air and blow hot air from small distance to pre-heat the SMD IC to avoid any thermal shock to it.
- ☐ Lower the Hot Air Pencil on SMD IC and wait for solder to melt.
- ☐ Once the solder melts, switch-on the vacuum and lift the Hot Air Pencil, SMD IC will be lifted safely by Hot Air Nozzle due to its vacuum pick-up.



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OPTIONAL Programmable Hi-Power infrared Pre-heating Plate 600 Watt Model IRPH-4 necessary for high heat sink and multilayer Printed Circuit Boards reworking & repair

The IRPH-4 Pre-heating Plate enhances the effectiveness of the MFRS500USB systems. It provides bottom heating to the PCB under repair, therefore minimizing the risk of thermal damage to expensive SMD ICs and warping of expensive multilayer PCBs. Additionally it also speeds up the rework/repair process.



Features:

- High quality, long life IR Ceramic Heating Elements ensure fast and even pre-heating with high efficiency
- in-built temperature measurement with thermocouple allows continuous monitoring of PCB temperature
- Pre-set temperature is achieved accurately and remains stable due to closed loop PID control design.

Specifications:

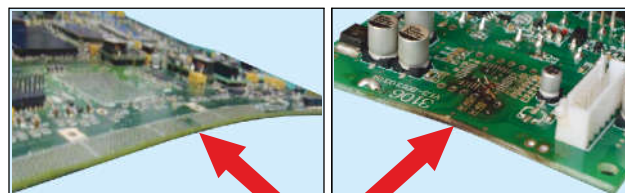
- | | | | |
|------------------|---------------------|----------------------|-----------------------|
| • Heating Power | : 600 Watt | • Temperature Sensor | : K-type Thermocouple |
| • Plate Area | : 130 x 130mm | • Temperature Range | : 50°C ~ 350°C |
| • Heating Source | : IR Ceramic Heater | • Measurement Range | : 0 ~ 600°C |

Why bottom Preheating is recommended ?

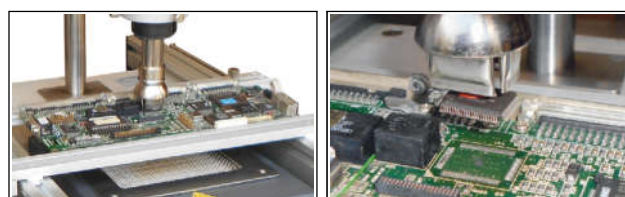
Today's electronics design has higher density of expensive devices on the multilayer PCBs which inherently require gentle pre-heating of PCBs to avoid thermal damaging of expensive SMD ICs, and also must avoid warping of PCBs.

If pre-heating is not used, it can lead to pad lifting, delamination, warping and burning of expensive PCBs & large SMD ICs during rework/repair. Beside these visible defects, the invisible defects like internal layer cracking etc. will also result if pre-heating is not used.

To avoid above failures, PCBs will normally need even pre-heating around 120°C on top side while reworking. The Pre-heater model IRPH-4 serves this purpose. PCBs are heated evenly and gently from bottom side for safe reworking of SMD ICs.



PCB warping/burning possibility without pre-heating



Safe reworking of SMD ICs using bottom Preheater

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1000 Watt high heat power and very powerful **upto 120 litre/minute** Hot Air Pencil also has **in-built** Vacuum Pick-up provision for safe desoldering of large SMD ICs. Gentle lifting by Vacuum Pick-up does not damage SMD Pads of expensive PCBs.


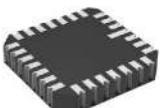
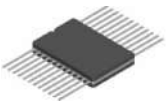

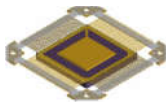

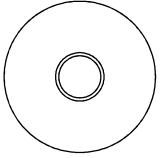
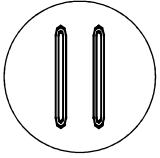
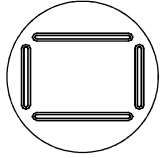
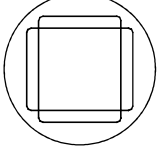
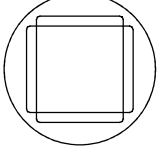
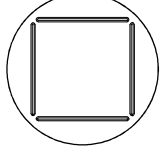
The ergonomic and powerful Hot Air Pencil (1000 Watt) together with the extensive range of Hot Air Nozzles make this tool very versatile. Hot Air Nozzles are secured to the tool by press fitting. It has integrated in-built powerful vacuum pick-up for gentle lifting of large SMD ICs during desoldering without any damage to SMD pads of expensive PCBs. Temperature controlled Hot Air Pencil provides adjustable high volume of airflow. Different Hot Air Nozzles are available for different shapes and sizes of SMD ICs.



Specifications of Hot Air Pencil

- Power: 1000 Watt
- Temperature Range: 100°C ~ 500°C
- Airflow Volume: upto 120 litre/minute

Wide range of Hot Air Nozzles available to desolder/solder miniature chip components and even as large as 50 x 50 mm size Fine-Pitch SMD ICs like: QFPs, PLCCs, TSOPs

 Large PLCCs like PLCC 84	 LCC leadless Chip Carrier	 Flat Packs	 Large QFPs as 208 & 304 Pins	 Ceramic Quad Flat Packs	 Thin SOP ICs
NK2064 6.4mm dia Suitable for SMD Chips		NK3131 Size: 4x10mm Suitable for SOP 4.4x10		NK3128 Size: 15x21mm Suitable for QFP 14x20	
NK3136 Size: 19x19mm Suitable for PLCC 20x20		NK3137 Size: 24x24mm Suitable for PLCC 25x25		NK3264 Size: 39x39mm Suitable for QFP 40x40	

Other size Hot Air Nozzles are also available as per customer's requirement, please tell size of SMD IC.

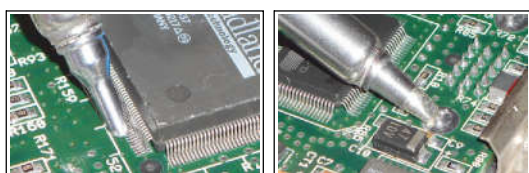
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Unique design of Soldering Pencil for SMD and PTH soldering

The Soldering Pencil uses unbreakable heating element in coiled form encased in metal tube with sensor placed very close to the soldering tip for precise control of temperature. Push-fit design allows quick and easy change of Soldering Tips.

Specifications

- Heating Power : 90 Watt
- Temperature Range : 100°C ~ 500°C
- Tip to ground Potential : <2mV
- Tip to ground Resistance : <2Ω



Fine pitch SMD Soldering

Thru-hole Soldering

Unique SMD Soldering Tip for soldering fine pitch SMD ICs without bridging

Specially designed 200G-CM SMD Soldering Tip has concave cavity to hold the molten solder. It helps to solder one side of IC completely in a single go by dragging the soldering tip on the PCB tracks slowly without any bridging.

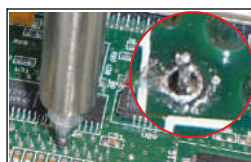


Easy-to-hold Desoldering Pencil for Desoldering Thru-Hole Components

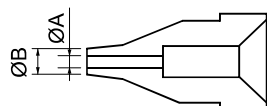
Desoldering Pencil, with internal solder reservoir, desolders thru-hole components. Finger Switch controls quick start of fast action vacuum pump.

Specifications

- Heating Power : 90 Watt
- Temperature Range : 200°C ~ 480°C
- Vacuum Pressure : 600mmHg
- Tip to ground Potential : <2mV
- Tip to ground Resistance : <2Ω



Desoldering Nozzles available to desolder different PTH components



P/N	Ø A mm	Ø B mm
A1005	1.0	2.5
A1006	1.3	3.0
A1007	1.6	3.0


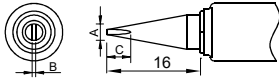

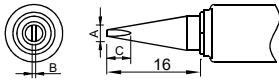

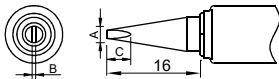

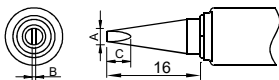

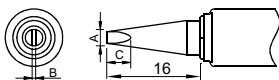

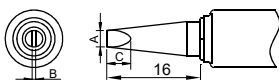

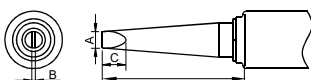

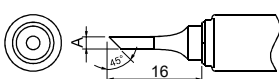

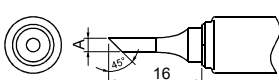

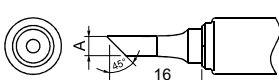

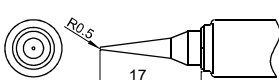

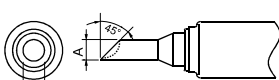


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Warranty is 12 months from the date of invoice. It excludes all consumable parts as Heating Elements, Temperature Sensors, Soldering/Desoldering Tips, Cleaning Sponges etc.

Wide range of Soldering Tips are available for different soldering applications

Description	Actual Picture	Dimensional Diagram	Width A (mm)	Part Number
Chisel Tip for leadfree soldering			0.8	200G-0.8D
Chisel Tip for leadfree soldering			1.2	200G-1.2D
Chisel Tip for leadfree soldering			1.6	200G-1.6D
Chisel Tip for leadfree soldering			2.4	200G-2.4D
Chisel Tip for leadfree soldering			3.2	200G-3.2D
Chisel Tip for heavy mass soldering			4.2	200G-4.2D
Long Chisel Tip for heavy mass soldering			5.0	200G-5LD
Sloped Tip for Solar Panels			Ø3	200G-3C
Sloped Tip for Solar Panels			Ø4	200G-4C
Sloped Tip for Solar Panels			Ø5	200G-5C
Round Tip for Fine Soldering			Ø0.5	200G-B
Tip for SMD Soldering			2	200G-2CM

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