

METCAL



MFR-1100 SERIES

Single Output Soldering & Rework System

MFR-2200 SERIES

Dual Simultaneous Output
Soldering & Rework System

MFR-1100 & MFR-2200 Series User Guide

MFR-1100 & MFR-2200 Serie Betriebsanleitung

Série MFR-1100 & MFR-2200 Manuel d'utilisation

Serie MFR-1100 & MFR-2200 Manuale dell'utente

Serie MFR-1100 & MFR-2200 Guía del usuario

WARNING

With power applied, the tip temperature can be > 300°C. Failure to observe the following precautions may lead to injury to users or damage the equipment:

- Do not touch any metallic parts of the hand-piece
- Do not use near flammable items
- Do not use unit for any function other than described in this manual
- Use only genuine MFR replacement parts
- Use in a well-ventilated area
- Do not use the equipment with wet hands
- Connect only to properly grounded outlets to prevent risk of electric shock.
- Always place hand-piece back into the work stand to prevent accidental burning of oneself or surrounding objects.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.

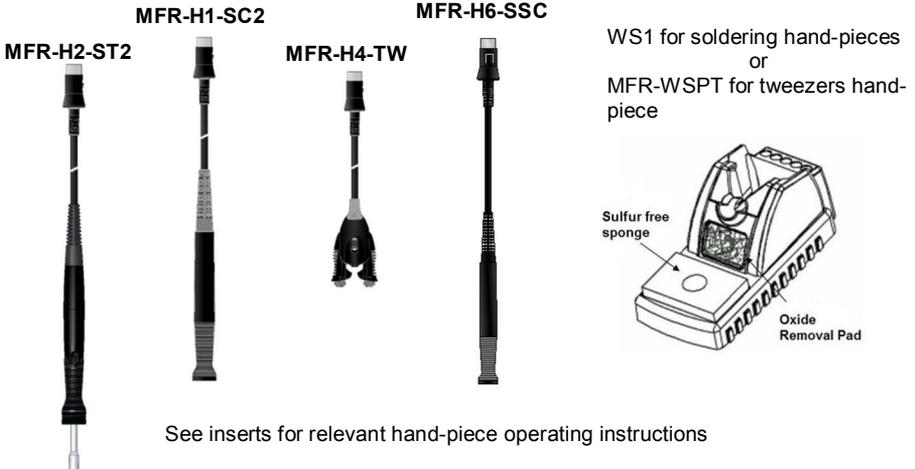
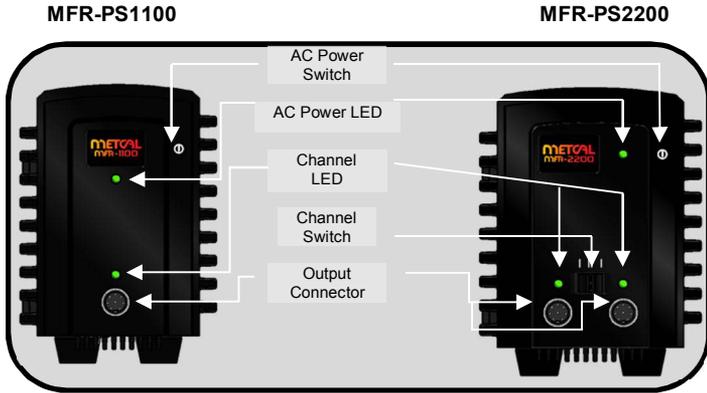
Although the systems offer superior EOS (Electrical Overstress) protection, periodic checks of the instrument cord should be incorporated into standard operator maintenance procedures.

Waste Electrical and Electronic Equipment Directive - WEEE (2002/96/EC).

When this product is no longer required, if it cannot be re-used, we ask our customers not to dispose of it as unsorted municipal waste but to appropriately recycle the product.



Contents and Identification of Features



See inserts for relevant hand-piece operating instructions

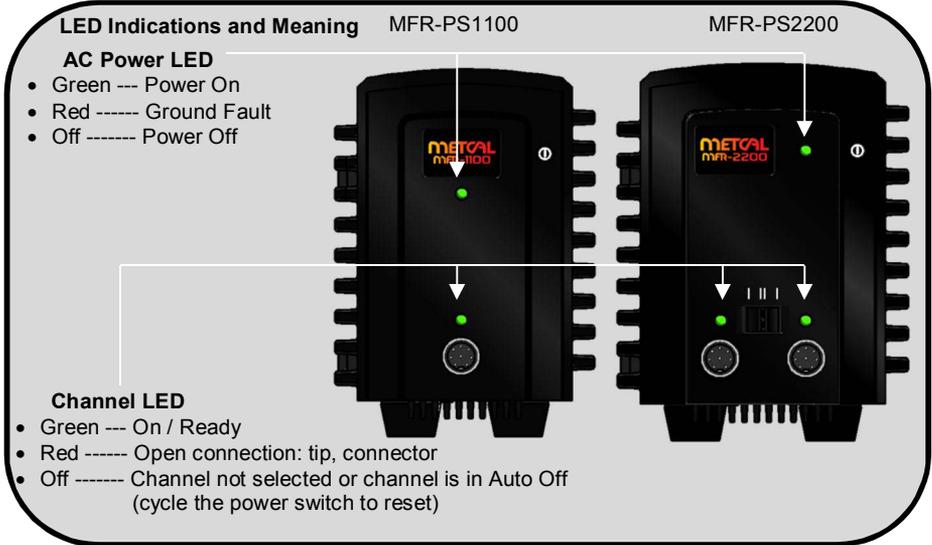
Initial Setup & Operation.

1. Connect hand-piece(s) to power unit output connector(s).
2. Insert your selected tip or cartridge into the hand-piece. Push the tip or cartridge all the way until it seats (See instructions supplied with each hand-piece).
3. Place hand-piece(s) into associated work stand(s).
4. Add **distilled water** to work stand sponge (sulfur free).
5. (MFR-2200) Select the desired channel using the selector switch. Either Left, Right or Both (Selector switch is in the center position to run both channels simultaneously)
6. Plug the power cord into a grounded wall socket of the rated input line voltage.
7. To turn the unit on, push the AC power switch. The AC power LED should light up in green.
8. Unit must be grounded, otherwise it will not work, and the AC power LED will light in red.
9. Unit will not work in electrical network where an isolation transformer has been used.

Always use tip removal pad for changing tips.

Auto-Sleep and Auto Off Functions

To prolong tip life, MFR systems with a soldering hand-piece (MFR-H1-SC2, MFR-H2-ST2) include an “Auto-Sleep Workstand” (WS1). When the hand-piece is placed into the workstand, the “Auto-Sleep Workstand” immediately reduces power to the hand-piece. All MFR systems have an “Auto Off” Function. The “Auto Off” Function will be engaged when the hand-piece has been idle in the sleep stand for a period of two hours. The channel LED indicator light will go from green to off. The “Auto Off” Function can be reset by cycling the power switch.



System Specifications

Ambient Operating Temperature	10- 40°C
Maximum Enclosure Temperature	55°C
Input Line Voltage	100- 240 VAC, grounded circuit
Input Line Frequency	50/60 Hz
Power Consumption	
MFR-1100	70 Watts max.
MFR-2200	130 Watts max. (With both channels on)
Output Power Max.	60 Watts max. Per channel at 22°C ambient temperature
Output Frequency	450--480 KHz
Power Cord 3-Wire	183cm (18/3) SJT
Dimensions w x d x h	
MFR-1100	90mm (3.5"), 297mm (8"), 142 mm (5.6")
MFR-2200	122mm (4.8"), 200mm (8"), 152.5mm (6")
Certification / Marking	cTUVus, CE
Tip-to-Ground Potential	<2mV
Tip-to-Ground Resistance	<2 ohms
Idle Temperature Stability	± 1.1°C in still air
Hand-piece Cable Length	L=122cm (48"), burn proof, ESD safe
Hand-piece Connector	8-pin circular DIN
Workstand Dimensions w x d x h	100 mm (4") x 200 mm (8") x 100 mm (4") max

Accessories & Spares

The following upgrade kits provide extra hand-pieces with workstands as a set

MFR-UK1	Upgrade Kit: Solder cartridge hand-piece & WS1 workstand
MFR-UK2	Upgrade Kit: Solder tip hand-piece & WS1 workstand
MFR-UK4	Upgrade Kit: Tweezers hand-piece & MFR-WSPT workstand
MFR-UK6	Upgrade Kit: SSC Solder cartridge hand-piece & WS1 workstand
AC-CP2	Soldering cartridge / tip removal pad
MFR-CA3	Coil Assembly for MFR-H2-ST2 hand-piece
MFR-PM70	Power meter, MFR, 0-70W scale

Soldering and Rework Tips and Cartridges

OKi offers a comprehensive range of cartridges and tips for each of its handpieces.

MFR-H2-ST2 Soldering tip hand-piece

SxV Series production soldering & touch-up soldering tips
CxV "Clean-up" blade tips for BGA pad clean-up



MFR-H1-SC2 Soldering cartridge hand-piece

SxP Soldering cartridge tips
RxP Rework cartridge tips

MFR-H1-SC2 Soldering cartridge hand-piece

SxP Soldering cartridge tips



MFR-H4-TW Precision tweezers handpiece

TxP Series cartridges for SMD rework



MFR-H6-SSC Soldering cartridge hand-piece

SSC Soldering cartridge tips



SmartHeat® & Calibration

Each cartridge or tip is equipped with a self-regulating heater which 'senses' its own temperature and tightly maintains its pre-set idle temperature for the life of the heater-tip; all controlled by OK International's proprietary SmartHeat® Technology. The tip temperature is determined by the inherent metallurgical properties of the heater; **no external adjustment or equipment is required.** The power delivered to the tip automatically varies in direct response to the thermal load. This eliminates spikes and transients associated with electrically switched elements found in conventional soldering irons. Please feel free to contact your OK International representative with any questions.

Warranty

OK International warrants the MFR against any defects in materials or workmanship for one (1) year from the date of purchase by the original owner. This Warranty excludes normal maintenance and shall not apply to any opened, misused, abused, altered or damaged items. If the product should become defective within the warranty period, OK International will repair or replace it free of charge at its sole option. The repaired or replacement item will be shipped, freight prepaid, to the original purchaser. The warranty period will start from the date of purchase. If the date of purchase cannot be substantiated the date of manufacture will be used as the start of the warranty period.

The MFR-H2-ST2 hand-piece uses a coil assembly (MFR-CA3) which is a replaceable item. OK International warrants the coil for 30-days regular use.