

# MFR Multi Function Rework Systems



## The All in One Solution

Imagine performing all of your production soldering, rework and desoldering tasks with just one tool. The new Multi Function Rework Systems (MFR) not only expertly perform rework, they also have tools for SMT and through-hole soldering. These flexible systems feature two switchable outputs with a comprehensive choice of tools that support today's complex PCB and component technologies.

## Systems are configured with the following tools:

- Soldering and Rework
- Production Soldering
- Adjustable Desoldering Hand-Piece
- Standard Tweezer
- Precision Tweezer



## Perfect for Lead-Free

The MFR Series uses SmartHeat® Technology to deliver the power required for lead-free connections. SmartHeat® Technology's variable power instantaneously senses and continuously delivers the precise thermal energy to the pad, yielding high quality solder joints while protecting sensitive components from damage.

## Tip and Cartridge Options

With the MFR Series you can use heater tips or tip cartridges, each filling a specific need. Heater tips are cost effective to meet the demands of point to point, production soldering. While tip cartridges are suited for high performance and rework applications. Both options incorporate the popular quick change design OK tips are well known for, which eliminates the maintenance associated with traditional irons. The OK cartridge tip has the slimmest diameter allowing access to the tightest applications and its single piece design provides a secure ground connection protecting sensitive components.

## Versatility, Performance and Value

These high performance systems can be adapted to your exact needs, whether it is cost effective production soldering, more complicated rework with cartridges, handling small components with the unique Precision Tweezer hand-piece or performing through-hole desoldering.

All units include "Auto Standby" and "Auto Off" functions which can be programmed to activate on different timing to help save tip life, especially when working on a lead-free process.

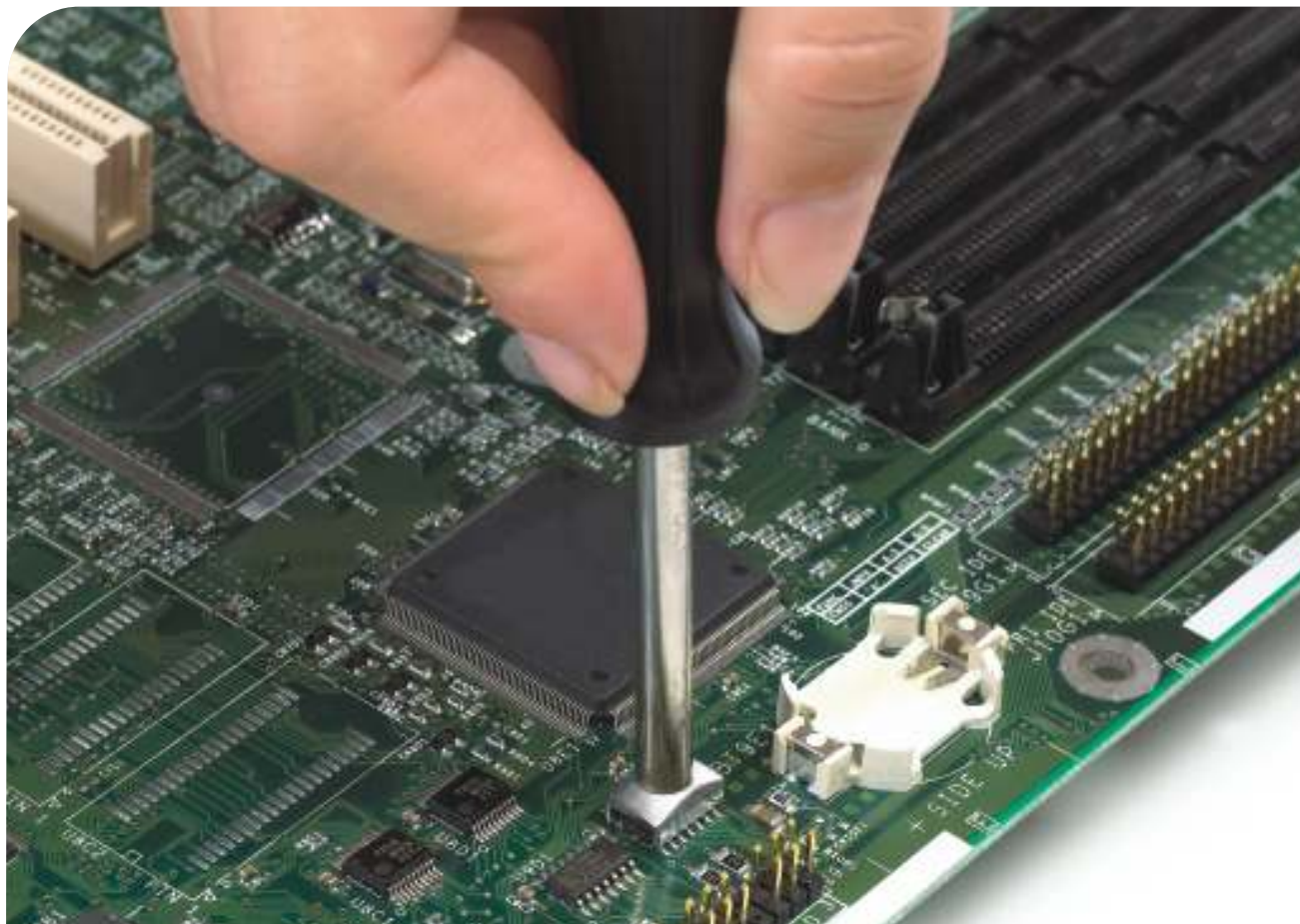
Proprietary built-in motion detection then brings the unit back to life when the operator lifts the hand-piece from the cradle. In addition, a specially designed lead-free workstand provides efficient tip cleaning and maintenance options.

And, when multiple units are used on the same bench or for the same process, smart mechanical design allows for the units to be interlocked, maximizing bench space.

## Comfort and Simplicity

The short tip-to-grip distance of the MFR hand-piece improves process precision for fine pitch applications. The cartridge system provides the slimmest shaft for maximum access whilst the precision tweezer design enables rework of the smallest chips and resistors, such as 0201 chips. Ergonomic design delivers superior performance with operator comfort and control.





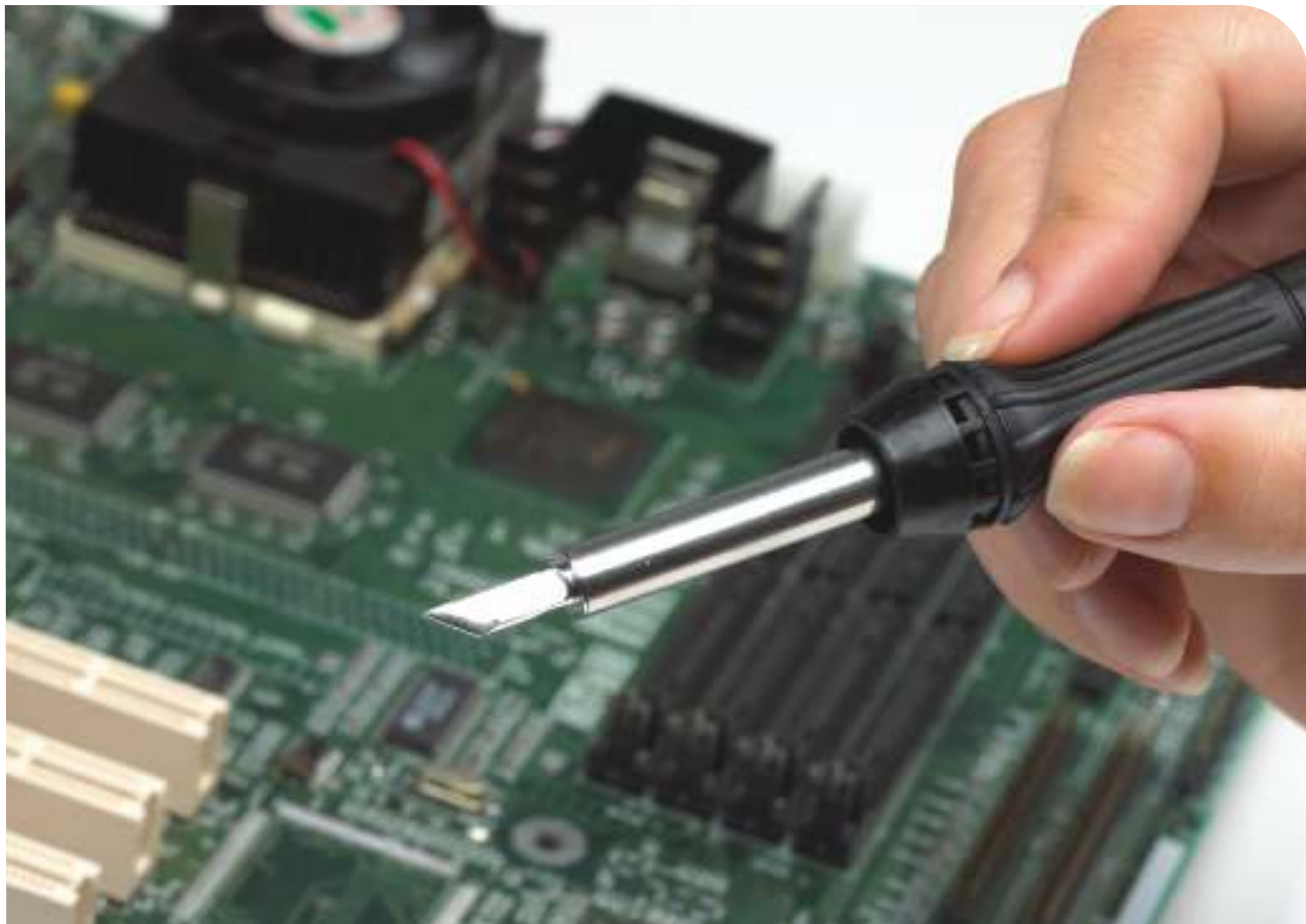
## Soldering and Rework System

Cartridge heater technology provides soldering and rework performance to suit even the most demanding SMT removal and placement applications. The cartridges provide fast thermal performance and respond quickly to the load demands. A small shaft diameter provides access to tightly cramped rework areas and enables the most difficult operations to be performed effortlessly.

### MFR-SRC Soldering & Rework System

| Part No.        | Description                             |
|-----------------|-----------------------------------------|
| MFR-SRC         | Soldering and Rework System             |
| <i>Includes</i> |                                         |
| MFR-PS1K        | Two Port Universal Voltage Power Supply |
| MFR-HSR         | Soldering and Rework Hand-piece         |
| MFR-WSSR        | Soldering Workstand                     |





## Production Soldering System

The Production Solder Tip System is designed for production soldering applications where superior SmartHeat® Technology is needed to provide the performance for lead-free, but with a lower cost of ownership due to the innovative tip design. The two-piece, long life heater and cost effective tip design provide a viable production alternative for regular and lead-free soldering.

### MFR-PST Production Soldering System

| Part No.        | Description                                       |
|-----------------|---------------------------------------------------|
| MFR-PST         | Production Soldering System                       |
| <b>Includes</b> |                                                   |
| MFR-PS1K        | Two Port Universal Voltage Power Supply           |
| MFR-HPS         | Production Soldering Hand-piece and Coil Assembly |
| MFR-WSSR        | Soldering Workstand                               |





## Precision Tweezer, Soldering and Rework System

The Precision Tweezer has been ergonomically designed to be lightweight and easy to use for removing even the smallest of discrete components, such as 0201 packages. The Precision Tweezer has a double sided pivot for "true tweezer" action and a dual position pitch adjustment to help the operator target the component to skillfully complete the application.

### MFR-PTZ Precision Tweezer, Soldering & Rework System

| Part No.        | Description                                    |
|-----------------|------------------------------------------------|
| <b>MFR-PTZ</b>  | Precision Tweezer, Soldering and Rework System |
| <b>Includes</b> |                                                |
| <b>MFR-PS1K</b> | Two Port Universal Voltage Power Supply        |
| <b>MFR-HPT</b>  | Precision Tweezer Hand-piece                   |
| <b>MFR-WSPT</b> | Tweezer Workstand                              |
| <b>MFR-HSR</b>  | Cartridge Solder / Rework Hand-piece           |
| <b>MFR-WSSR</b> | Soldering Workstand                            |



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## Tweezer, Soldering and Rework System

This combination system offers flexibility with the rework versatility of the Solder/Rework Cartridge Hand-piece with a standard tweezer system for discrete and SO symmetrical components

| Part No.               | Description                             |
|------------------------|-----------------------------------------|
| <b>MFR-STZ</b>         | Tweezer, Soldering and Rework System    |
| <i><b>Includes</b></i> |                                         |
| <b>MFR-PS1K</b>        | Two Port Universal Voltage Power Supply |
| <b>MFR-HSR</b>         | Soldering & Rework Hand-piece           |
| <b>MFR-WSSR</b>        | Soldering Workstand                     |
| <b>MFR-HST</b>         | Standard Tweezer Hand-piece             |
| <b>MFR-WSPT</b>        | Tweezer Workstand                       |

## Upgrade Kits

Add versatility to your MFR System. Hand-piece Upgrade Kits can be ordered to compliment any of the MFR Systems. Kits include both the hand-piece and workstand.

| Part No.          | Description                                                     |
|-------------------|-----------------------------------------------------------------|
| <b>MFR-STZ-AD</b> | Standard Tweezer Upgrade Kit, hand-piece and workstand          |
| <b>MFR-SRC-AD</b> | Solder / Rework Cartridge Upgrade Kit, hand-piece and workstand |
| <b>MFR-PTZ-AD</b> | Precision Tweezer Upgrade Kit, hand-piece and workstand         |
| <b>MFR-PST-AD</b> | Production / Solder Tip Upgrade Kit, hand-piece and workstand   |

*Note: Tips and cartridges are not included and need to be ordered separately.*





## Versatile Pencil and Pistol Grip Combination Hand-piece System

The MFR Desoldering Systems provides superior thermal transfer to the joint, effectively reflowing the solder and then quickly and efficiently removing all solder. SmartHeat® Technology makes through-hole desoldering easy and safe from board damage. The state-of-the-art hand-piece can be adjusted from a pencil to a gun with a simple press of a button. Operators can find the most comfortable and efficient position to tackle the rework challenge. The paper solder collection chamber and filter system is quick and easy to change, and provides low cost maintenance.

Two MFR Desoldering Systems are available. The MFR-DSX system requires shop air for desoldering. If shop air is not available, the MFR-DSI features an internal vacuum pump.

| Part No.               | Description                                                                    |
|------------------------|--------------------------------------------------------------------------------|
| <b>MFR-DSX</b>         | Desolder System, External Air                                                  |
| <b>MFR-DSI</b>         | Desolder System, Internal Air Pump                                             |
| <b>System Includes</b> |                                                                                |
| <b>MFR-PS2X</b>        | Two Port Universal Voltage Power Supply, External Air (MFR-DSX only)           |
| <b>MFR-PS2K</b>        | Two Port Universal Voltage Power Supply, with Internal Air Pump (MFR-DSI only) |
| <b>MFR-HDS</b>         | Desolder Hand-piece                                                            |
| <b>MFR-WSDS</b>        | Desolder Workstand                                                             |

## Complete MFR System for Soldering, Desoldering and Rework

The MFR Solder / Desoldering Systems include both the innovative desoldering hand-piece and the solder/rework cartridge hand-piece to cover all your rework needs.

Two MFR Soldering / Desoldering Systems are available. The MFR-SDX system requires shop air for desoldering. If shop air is not available, the MFR-SDI features an internal vacuum pump that provides suction.



| Part No.               | Description                                                                   |
|------------------------|-------------------------------------------------------------------------------|
| <b>MFR-SDX</b>         | Solder / Desolder System, External Air                                        |
| <b>MFR-SDI</b>         | Solder / Desolder System, Internal Air Pump                                   |
| <b>Systems Include</b> |                                                                               |
| <b>MFR-PS2X</b>        | Two Port Universal Voltage Power Supply External Air (MFR-SDX only)           |
| <b>MFR-PS2K</b>        | Two Port Universal Voltage Power Supply with Internal Air Pump (MFR-SDI only) |
| <b>MFR-HSR</b>         | Soldering and Rework Hand-piece                                               |
| <b>MFR-WSSR</b>        | Soldering Workstand                                                           |
| <b>MFR-HDS</b>         | Desoldering Hand-piece                                                        |
| <b>MFR-WSDS</b>        | Desoldering Workstand                                                         |

Note: Tips and cartridges are not included and need to be ordered separately.

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## Soldering Tip Heater Options

With hand soldering, the task is to make a quality solder connection, without damaging the substrate and without negatively impacting throughput. All of the standard MFR Series power tips & rework cartridges are designed for use with glass fiber (FR4) PCB substrates. This is denoted by the second letter in the part number: "F". For example: SFP-CH10, DFP-CN3, and SFV-CNL10.

However, some specialist applications require working with thermally demanding or temperature sensitive substrates, such as ceramic hybrids or flexible circuits. OK International has developed specialty heaters that quickly deliver the necessary power, but operate at temperatures that minimize the risk of substrate damage. These are denoted by replacing the "F" in the part number with a "T" for temperature sensitive or a "C" for demanding loads. Please contact your local representative for information and availability of specialty tip heaters. For example: STP-CH10 and DCP-CN3.

**F** = Standard FR4 Substrate

**T** = Temperature Sensitive

**C** = Ceramic or Heavy Load

## Standard Soldering Tip Cartridges

The Standard Soldering Tip Cartridges are used with the MFR-HSR Soldering & Rework Hand-piece and have been designed to deliver outstanding performance for the majority of point-to-point soldering and basic rework applications. The geometries within the range have been optimized to deliver maximum accessibility combined with optimal thermal efficiency within a narrow cartridge diameter

|  |                                                                      |  |                                                                     |
|--|----------------------------------------------------------------------|--|---------------------------------------------------------------------|
|  | <b>SFP-BVL10</b><br>Bevel Cartridge,<br>60° 1.0mm (.04")             |  | <b>SFP-CN05</b><br>Conical Cartridge,<br>0.5mm (.02")               |
|  | <b>SFP-CH10</b><br>Chisel Cartridge,<br>30° 1.0mm (.04")             |  | <b>SFP-CNB04</b><br>Conical Cartridge Bent,<br>0.4mm (.016")        |
|  | <b>SFP-CH15</b><br>Chisel Cartridge,<br>30° 1.5mm (.06")             |  | <b>SFP-CNB05</b><br>Conical Cartridge Bent,<br>0.5mm (.02")         |
|  | <b>SFP-CH20</b><br>Chisel Cartridge,<br>30° 2.0mm (.08")             |  | <b>SFP-CNL04</b><br>Conical Cartridge Long Reach,<br>0.4mm (.016")  |
|  | <b>SFP-CH25</b><br>Chisel Cartridge,<br>30° 2.5mm (.10")             |  | <b>SFP-DRH05</b><br>Drag Soldering Cartridge, Hoof<br>0.5mm (.02")  |
|  | <b>SFP-CH50</b><br>Chisel Cartridge,<br>30° 5.0mm (.20")             |  | <b>SFP-DRH15</b><br>Drag Soldering Cartridge, Hoof<br>1.5mm (.06")  |
|  | <b>SFP-CHB15</b><br>Chisel Cartridge,<br>30° Bent 1.5mm (.06")       |  | <b>SFP-DRH35</b><br>Drag Soldering Cartridge, Hoof<br>3.5mm (.14")  |
|  | <b>SFP-CHL20</b><br>Chisel Cartridge,<br>60° Long Reach 2.0mm (.08") |  | <b>SFP-DRK50</b><br>Drag Soldering Cartridge, Knife<br>5.0mm (.20") |
|  | <b>SFP-CN04</b><br>Conical Cartridge,<br>0.4mm (.016")               |  |                                                                     |

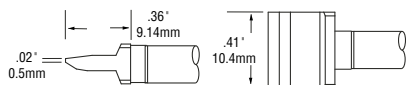
To order specialty versions of the Soldering Tip Cartridges replace the "F" in the part number with the appropriate letter designate for your application when ordering: **T** = Temperature Sensitive, **C** = Ceramic or Heavy Load

Dimensions and artwork listed are for indication/guidance only. Numbers have been rounded up.

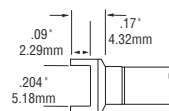
Please contact your local technical support if you require specific technical information.

## Rework Cartridges

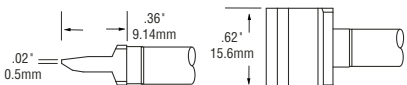
The Rework Cartridges are used with the MFR-HSR Soldering & Rework Hand-piece for conduction rework of surface mount components. The geometries are compatible with common SMT Chip and SOIC components.



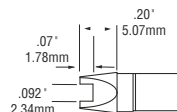
**RFP-BL1**  
Blade Cartridge,  
10mm (0.4")



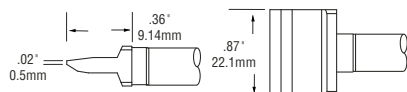
**RFP-DL2**  
Tunnel Cartridge,  
SOIC 8 Chip Package



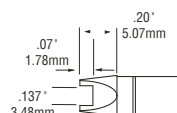
**RFP-BL2**  
Blade Cartridge,  
16mm (0.63")



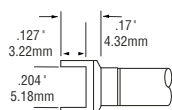
**RFP-SL1**  
Slot Cartridge,  
0805 Chip Package



**RFP-BL3**  
Blade Cartridge,  
22mm (0.87")



**RFP-SL2**  
Slot Cartridge,  
1206 Chip Package



**RFP-DL1**  
Tunnel Cartridge,  
SOIC 14-16 Chip Package

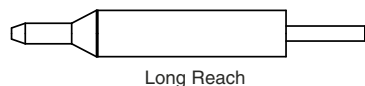
To order specialty versions of the Rework Cartridges replace the "F" in the part number with the appropriate letter designate for your application when ordering: **C** = Ceramic or Heavy Load

## Desoldering Tips

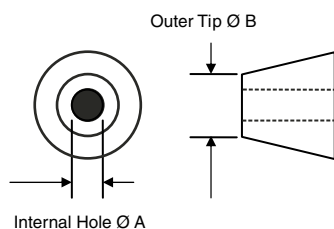
The Desoldering Tips are used with the MFR-HDS Desoldering Hand-piece, primarily for solder removal on through-hole components. The tips are supplied in a range of diameters as well as in a long reach configuration to allow improved access on tightly packed PCBs.



Regular



Long Reach



| Part Number     | Description             | Ø A mm (in)    | Ø B mm (in)    |
|-----------------|-------------------------|----------------|----------------|
| <b>DFP-CN2</b>  | Desolder Tip            | 0.67mm (.026") | 1.80mm (.070") |
| <b>DFP-CN3</b>  | Desolder Tip            | 0.79mm (.031") | 2.05mm (.080") |
| <b>DFP-CN4</b>  | Desolder Tip            | 1.05mm (.041") | 2.30mm (.090") |
| <b>DFP-CN5</b>  | Desolder Tip            | 1.31mm (.052") | 2.65mm (.104") |
| <b>DFP-CN6</b>  | Desolder Tip            | 1.55mm (.061") | 2.85mm (.112") |
| <b>DFP-CN7</b>  | Desolder Tip            | 2.44mm (.096") | 3.65mm (.143") |
| <b>DFP-CNL3</b> | Desolder Tip Long Reach | 0.79mm (.031") | 2.05mm (.080") |
| <b>DFP-CNL4</b> | Desolder Tip Long Reach | 1.05mm (.041") | 2.30mm (.090") |
| <b>DFP-CNL5</b> | Desolder Tip Long Reach | 1.31mm (.052") | 2.65mm (.104") |

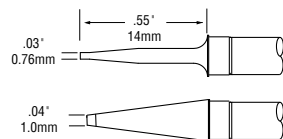
To order specialty versions of the Desoldering Tips replace the "F" in the part number with the appropriate letter designate for your application when ordering: **C** = Ceramic or Heavy Load

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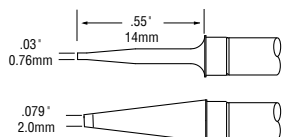
Please contact your local technical support if you require specific technical information.

## Precision Tweezer Cartridges

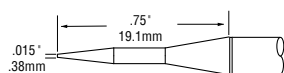
The Precision Tweezer Cartridges are supplied in pairs to be used in the MFR-HPT Precision Tweezer Hand-piece for conduction rework of very fine surface mount chip components.



**TFP-BLP1**  
Tweezer Cartridge,  
Blade 1.0mm (0.04") Pair



**TFP-BLP2**  
Tweezer Cartridge,  
Blade 2.0mm (0.08") Pair

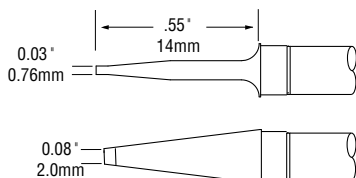


**TFP-CNP1**  
Tweezer Cartridge,  
Conical 0.4mm (.015") Pair



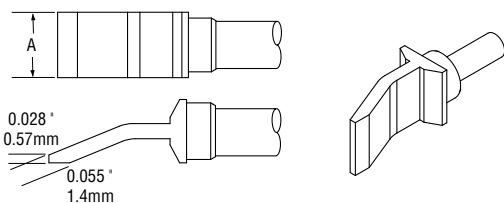
## Standard Tweezer Cartridges

The Standard Tweezer Cartridges are supplied in pairs and are designed to work with the MFR-HST Standard Tweezer Hand-piece for conduction removal of two sided surface mount components. The geometries are specifically designed for larger SMT Chip and Dual in-line SOIC components. All tweezer cartridges are sold in pairs.



Fine Point Tip

**TFP-BLH3** Tweezer Heavy Duty Cartridge, 2.0mm (0.08") Pair



Blade Tip

**TFP-BLH4** Tweezer Heavy Duty Cartridge, A = 6.35mm (.25") Pair

**TFP-BLH5** Tweezer Heavy Duty Cartridge, A = 16mm (.62") Pair

**TFP-BLH6** Tweezer Heavy Duty Cartridge, A = 20.5mm (.81") Pair

**TFP-BLH7** Tweezer Heavy Duty Cartridge, A = 28mm (1.1") Pair

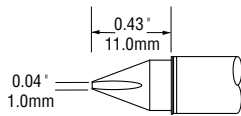
To order specialty versions of the Precision Tweezer Cartridges replace the "F" in the part number with the appropriate letter designate for your application when ordering: **T** = Temperature Sensitive **C** = Ceramic or Heavy Load

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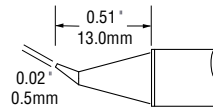
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## Power Tips for Production Soldering

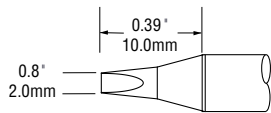
The Power Heater Tips offer a combination of performance and value. The replaceable tips are used on the MFR-HPS Production Soldering Hand piece and deliver high power, economical soldering in high volume production applications. The tips come in a thermally optimized large diameter tip that includes additional iron plating for longer life.



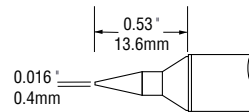
**SFV-CH10**  
Chisel Solder Tip,  
30° 1.0mm (.04")



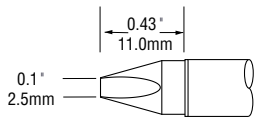
**SFV-CNB05**  
Conical Bent Solder Tip,  
0.5mm (.02")



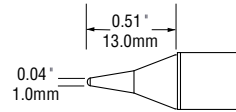
**SFV-CH20**  
Chisel Solder Tip,  
2.0mm (.08")



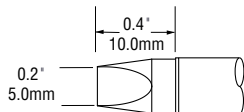
**SFV-CNL04**  
Conical Long Solder Tip,  
0.4mm (.016")



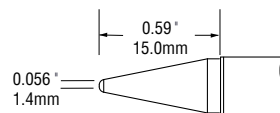
**SFV-CH25**  
Chisel Solder Tip,  
2.5mm (.10")



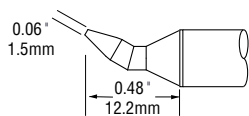
**SFV-CNL10**  
Conical Long Solder Tip,  
1.0mm (.04")



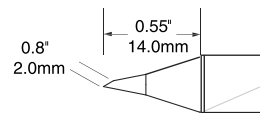
**SFV-CH50**  
Extra Large Chisel Solder Tip,  
5.0mm (.20")



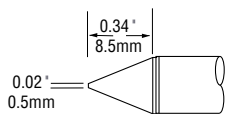
**SFV-CNL14**  
Conical Long Tip,  
1.4mm (.056")



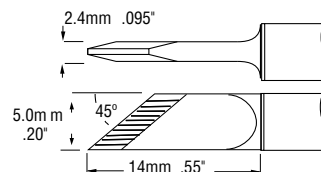
**SFV-CHB15**  
Chisel Bent 30° Solder Tip,  
1.5mm (.06")



**SFV-DRH20**  
Conical Bevel Solder Tip,  
2.0mm (.08")



**SFV-CN05**  
Conical Solder Tip,  
0.5mm (.02")



**SFV-DRK50**  
Knife Solder Tip,  
5.0mm (.20")

To order specialty versions of the Power Heater Tips replace the "F" in the part number with the appropriate letter designate for your application when ordering: **T** = Temperature Sensitive **C** = Ceramic or Heavy Load

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Please contact your local technical support if you require specific technical information.

## MFR-PTZ, MFR-SRC, MFR-PST, MFR-STZ

| 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                 | 65 Watts max.                                          |
| Output Power                      | 50 Watts max. at 22°C ambient temperature              |
| Output Frequency                  | 450 KHz                                                |
| Power Cord (3-wire)               | 183cm (72")                                            |
| Power Supply Dimensions w x d x h | 122mm x 200mm x 152.5mm (4.8" x 8" x 6")               |
| Agency Tested Per                 | IEC 61000-6-1, EC 61000-6-3 and UL499, FCC CFR Part 15 |
| Tip-to-Ground Potential           | <2mV                                                   |
| Tip-to-Ground Resistance          | <2 ohms                                                |
| Idle Tip Temperature Stability    | ± 1.1°C in still air                                   |
| Hand-piece Cable Length           | L=71cm (48"), burn proof, ESD safe                     |
| Hand-piece Connector              | 8-pin power connector                                  |
| Workstand Dimensions w x d x h    | 100mm x 200mm x 100mm (4" x 8" x 4")                   |

## MFR-DSI, MFR-SDI, MFR-DSX, MFR-SDX

| 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              | 90 Watts max.                             |
| Output Power                   | 50 Watts max. at 22°C ambient temperature |
| Output Frequency               | 450 KHz                                   |
| Power Cord (3-wire)            | 183cm (72")                               |
| Dimensions w x d x h           | 170mm x 200mm x 152.5mm (7" x 8" x 6")    |
| Agency Tested Per              | IEC 60335-2-45 and UL499, FCC CFR Part 15 |
| Tip-to-Ground Potential        | <2mV                                      |
| Tip-to-Ground Resistance       | <2 ohms                                   |
| Idle Tip Temperature Stability | ± 1.1°C in still air                      |
| Hand-piece Cable Length        | L=71cm (48"), burn proof, ESD safe        |
| Hand-piece Connector           | 8-pin power connector                     |
| Workstand Dimensions w x d x h | 100mm x 200mm x 100mm (4" x 8" x 4")      |
| Recommended Air Pressure Input | 450kPa (65PSI) - shop air versions only   |
| Noise Level                    | Less than 70dBA                           |
| Vacuum Suction Force           | 22" Hg at vacuum pump (at sea level)      |



## Hand-pieces and Cords

| Part No.       | Description                                  |
|----------------|----------------------------------------------|
| <b>MFR-HPT</b> | Precision Tweezer Hand-piece W/Cord          |
| <b>MFR-HSR</b> | Cartridge Solder / Rework Hand-piece W/Cord  |
| <b>MFR-HPS</b> | Heater Tip Hand-piece W/Coil Assembly & Cord |
| <b>MFR-HDS</b> | Convertible Desolder Hand-piece              |
| <b>MFR-HST</b> | Standard Tweezer Hand-piece W/Cord           |
| <b>MFR-CA1</b> | Coil Assembly for MFR-HPS Hand-piece         |

## Replacement Workstands & Upgrades

In addition to the regular workstands, Auto Sleep Workstands and Cradles are now available. These new stands help extend tip life by reducing the temperature when the hand-piece is idle in the workstand.



| Part No.        | Description                             |
|-----------------|-----------------------------------------|
| <b>MFR-WSPT</b> | Tweezer Workstand                       |
| <b>MFR-WSSR</b> | Soldering Workstand                     |
| <b>MFR-WSDS</b> | Desolder Workstand                      |
| <b>MFR-WSAS</b> | Auto Sleeper Workstand                  |
| <b>MFR-WSC1</b> | Solder Rework Cradle Auto Sleep (Black) |
| <b>AC-Y10</b>   | Yellow Sponge (pack of 10)              |
| <b>AC-BP</b>    | Brass Pad (pack of 10)                  |



## Lead-Free Process Identification

For factories that are transitioning to lead-free, it is important to identify which processes are using lead-free to avoid accidental cross-contamination of solder materials. To easily identify the lead-free processes, we have designed visual indicators that fit on the system parts where cross-contamination can occur, such as tips & workstand sponges.



| Part No.        | Description                                                                |
|-----------------|----------------------------------------------------------------------------|
| <b>MFR-WSC2</b> | Green Solder Rework Cradle - Auto Sleep                                    |
| <b>AC-CK1</b>   | Green cartridge identification ring for MFR & PHT Consumables (Pack of 50) |
| <b>AC-CK4</b>   | Green cartridge identification ring for SFV Power Tips (Pack of 50)        |



## Miscellaneous Accessories

| Part No.          | Description                  |
|-------------------|------------------------------|
| <b>AC-BRUSH-P</b> | Soft Brass Brush             |
| <b>AC-CP2</b>     | Cartridge Removal Pad        |
| <b>AC-FX1</b>     | Fume Extraction Kit          |
| <b>AC-IK</b>      | Inter Locking / Mounting Kit |
| <b>AC-MFR-PM</b>  | Power Meter                  |

## MFR Desoldering Accessories & Maintenance Tools

| Part No.       | Description                          | Part No.      | Description                     |
|----------------|--------------------------------------|---------------|---------------------------------|
| <b>AC-TC-P</b> | Desoldering Tip Cleaner (Pack of 12) | <b>AC-PR1</b> | Pump Re-build Kit               |
| <b>DP-SL3</b>  | Front Seal                           | <b>AC-PM1</b> | Pump with Motor Replacement Kit |
| <b>AC-VL</b>   | ESD Air Hose                         | <b>AC-CC</b>  | Solder Collection Chamber       |
| <b>AC-DFP</b>  | Chamber Liner, Filter & Fume         |               |                                 |