

## Products & Applications

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### MFR-1110

The cartridge hand-piece uses small diameter cartridges for easy access and includes a full range of cartridges, including SMD rework.

#### Key Features & Benefits

- SmartHeat® Technology provides exceptional power for high thermal demand applications
- High power output at a fixed temperature provides high throughput with excellent yields
- MFR-H1-SC hand-piece has a comprehensive range of cartridges for maximum flexibility
- Hand-pieces are ergonomic for operator safety and comfort



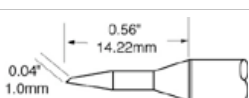
#### MFR-1110 Single output, one cartridge soldering hand-piece, workstand

Part No.	Description
MFR-1110	Single output, one cartridge soldering hand-piece, workstand
<b>System Components</b>	
MFR-H1-SC	Hand-piece, Soldering Cartridge
MFR-PS1100	Power Supply, Single Output
WS1	Auto Sleep Workstand

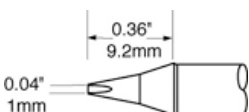
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#### Standard Soldering Tip Cartridges

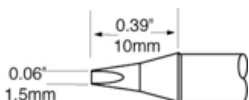
The Standard Soldering Tip Cartridges are used with the MFR-H1-SC Hand-piece and have been designed to deliver outstanding performance for the majority of point-to-point soldering and basic rework applications. The geometries within the range have been optimized to deliver maximum accessibility combined with optimal thermal efficiency within a narrow cartridge diameter.



**SFP-BVL10**  
Bevel Cartridge, 60° 1.0mm (.04")



**SFP-CH10**  
Chisel Cartridge, 30° 1.0mm (.04")



**SFP-CH15**  
Chisel Cartridge, 30° 1.5mm (.06")

#### Technical Specifications

MFR-1110, MFR-1120, MFR-1140, MFR-1160, MFR-1161

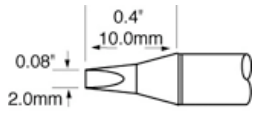
- Input Line Voltage / Frequency:** 100- 240 VAC, 50/60 Hz grounded circuit
- Power Consumption:** 65 Watts maximum
- Power Output Maximum:** 60 Watts max. at 22° C
- Output Frequency:** 450 KHz
- Idle Temperature Stability:** ± 1.1° C (2° F)
- Ambient Operating Temperature:** 10- 40° C (50° F - 104° F)
- Maximum Enclosure Temperature:** 55° C (131° F)
- Power Cord 3-Wire:** 183cm (18/3") SJT
- Hand-piece Cable Length:** L=122cm (48"), burn resistant, ESD safe
- Hand-piece Connector:** 8-pin circular DIN
- Tip-to-Ground Potential:** < 2mV
- Tip-to-Ground Resistance:** < 2 ohms
- Certification / Marking:** cTUVus, CE
- Power Supply Dimensions w x d x h:** 90mm x 142mm x 197mm (3.5" x 5.6" x 7.8")
- Workstand Dimensions w x d x h:** 100 mm x 200 mm x 100 mm (4" x 8" x 4")
- Surface Resistivity:** 10<sup>5</sup>-10<sup>9</sup> Ohms

#### Weight:

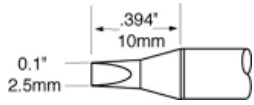
- MFR-PS1100:** 2.3 kg (5.05 lbs)
- Hand-piece:** 0.12 kg (0.26 lbs)
- Workstand:** 0.69 kg (1.51 lbs)
- MFR-PS100 w/ hand-piece and workstand:** 3.1 kg (6.84 lbs)

#### Soldering Tip Heater Options

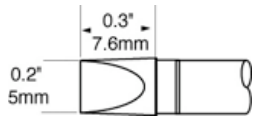
With hand soldering, the task is to make a quality solder connection, without damaging the substrate and without negatively impacting throughput. All of the standard MFR Series power tips & rework cartridges are designed for use with glass fiber (FR4) PCB substrates. This is denoted by the second letter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



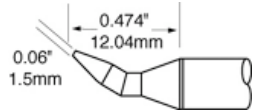
**SFP-CH20**  
Chisel Cartridge, 30° 2.0mm (.08")



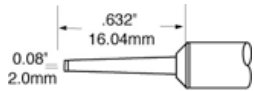
**SFP-CH25**  
Chisel Cartridge, 30° 2.5mm (.10")



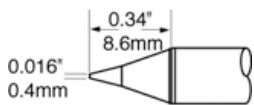
**SFP-CH50**  
Chisel Cartridge, 30° 5.0mm (.20")



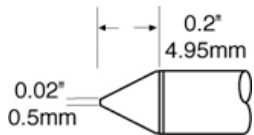
**SFP-CHB15**  
Chisel Cartridge, 30° Bent 1.5mm (.06")



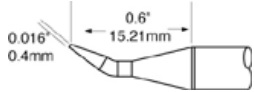
**SFP-CHL20**  
Chisel Cartridge, 60° Long Reach 2.0mm (.08")



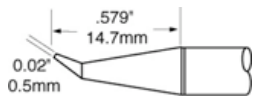
**SFP-CN04**  
Conical Cartridge, 0.4mm (.016")



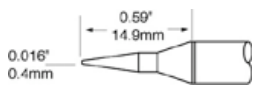
**SFP-CN05**  
Conical Cartridge, 0.5mm (.02")



**SFP-CNB04**  
Conical Cartridge Bent, 0.4mm (.016")



**SFP-CNB05**  
Conical Cartridge Bent, 0.5mm (.02")



**SFP-CNL04**  
Conical Cartridge Long Reach, 0.4mm (.016")



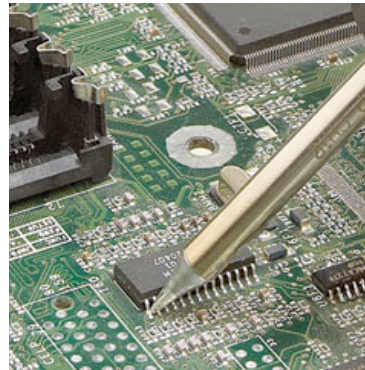
**SFP-DRH05**  
Drag Soldering Cartridge, Hoof 0.5mm (.02")

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: **S**TP-CH10 and **D**CP-CN3.

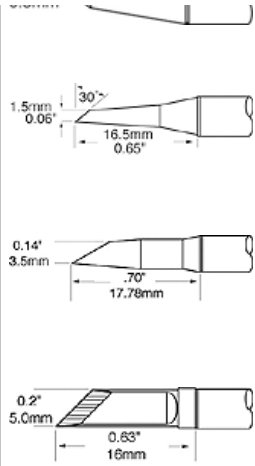
- F** = Standard FR4 Substrate
- T** = Temperature Sensitive
- C** = Ceramic or Heavy Load



**MFR-1110 in Action**



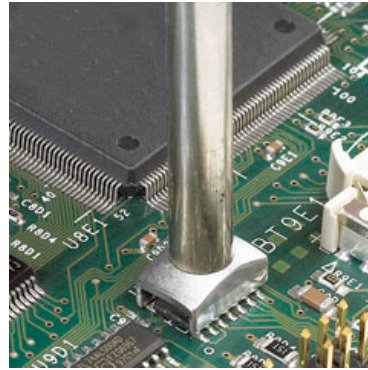
**MFR Series Cartridge in Action**



**SFP-DRH15**  
 Drag Soldering Cartridge, Hoof 1.5mm (.06")

**SFP-DRH35**  
 Drag Soldering Cartridge, Hoof 3.5mm (.14")

**SFP-DRK50**  
 Drag Soldering Cartridge, Knife 5.0mm (.20")



**MFR Series SMT Rework**

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

### Rework Cartridges

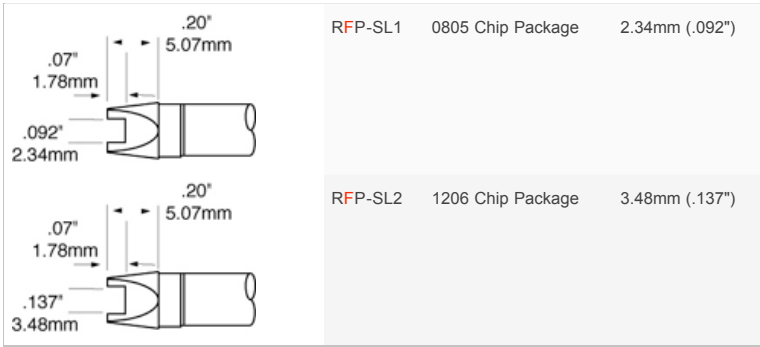
The Rework Cartridges are used with the MFR-HSR Soldering & Rework Hand-piece for conduction rework of surface mount components. The geometries are compatible with common SMT Chip and SOIC components.

### Blade Cartridges

	Part No.	Description	A
	RFP-BL1	Blade Cartridge	10mm (0.4")
	RFP-BL2	Blade Cartridge	16mm (0.63")
	RFP-BL3	Blade Cartridge	22mm (0.87")

### Slot Cartridges

Part No.	SMT Type	A
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### Tunnel Cartridges

Dimensions in mm (")

Part No.	SMT Type	A2	A	B	D
RFP-DL1	SOIC 14-16	5.18 (.204)	5.18 (.204)	4.32 (.17)	3.22 (.127)
RFP-DL2	SOIC 8	5.18 (.204)	5.18 (.204)	4.32 (.17)	2.29 (.090)
RFP-DL13	SOIC 16	6.86 (.270)	6.86 (.270)	11.18 (.44)	2.29 (.090)

### Quad Cartridges

Dimensions in mm (")

Part No.	SMT Type	A2	A	B2	B	D
RFP-QD4	PLCC 32	11.43 (.450)	12.70 (.500)	13.97 (.550)	15.24 (.600)	3.81 (.150)
RFP-QD6	PLCC 44	16.76 (.660)	17.78 (.700)	16.76 (.660)	17.78 (.700)	3.81 (.150)
RFP-QD7	PLCC 68	24.38 (.960)	25.27 (.995)	24.38 (.960)	25.27 (.995)	5.59 (.220)
RFP-QD10	PLCC 52	19.30 (.760)	20.32 (.800)	19.30 (.760)	20.32 (.800)	3.81 (.150)
RFP-QD15	TQFP 80	12.32 (.485)	13.34 (.535)	12.32 (.485)	13.34 (.535)	2.79 (.110)
RFP-QD19	QFP 44	16.13 (.635)	16.13 (.635)	16.13 (.635)	16.13 (.635)	3.30 (.130)
RFP-QD20	QFP 100	16.51 (.650)	16.51 (.650)	22.48 (.885)	22.48 (.885)	3.30 (.130)

The second digit denotes substrate material (damage tolerance). **F** = FR4 / Glass Fiber, for most

standard applications. Two other series are also available; just replace F with either T or C.

T = Temperature Sensitive C = Ceramic or Heavy Load

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