

# MFR-1100 Series

60W Single Output Solder / Rework System



## MFR-1100 Series Features and Benefits

- Many options enable you to create the system you need
- 60W output gives you the power you need while using lower and safer temperatures.
- SmartHeat® tips and cartridges sense the load and instantly delivers the right amount of heat to the joint.
- No calibration required which saves money and down-time.

## MFR-1100: 5 Handpiece Options: There Is A System That's Right For You

Metcal's MFR-1100 Soldering Systems are powerful, cost-effective systems with a wide variety of **options and accessories to meet just about any application**. The MFR-1100 power supply has a powerful 60W output, and a wide variety of cartridges and tips are available so your operators can complete just about any task. 5 hand-pieces are available, including a desoldering option, so the MFR-1100 can meet just about any need.

The MFR-1100 series uses SmartHeat® Technology, a microprocessor controlled heating system which operates at lower temperatures and eliminates calibration time. With soldering and desoldering capabilities, the MFR-1100 eliminates the need for two separate units.

The MFR-1100 series is your best choice for a versatile soldering system with a small footprint.

## 5 Hand-piece Options



**Solder Cartridge Hand-piece (MFR-H1-SC2)**  
Standard equipment with MFR-1110/1161



**Tip Solder Hand-piece (MFR-H2-ST2)**  
Standard equipment with MFR-1120



**SSC Cartridge Solder Hand-piece (MFR-H6-SSC)**  
Standard equipment with MFR-1160/1161



**Precision Tweezer Solder Hand-piece (MFR-H4-TW).**  
Standard equipment with MFR-1140



**Desolder Hand-piece (MFR-H5-DS).**  
Available as an accessory; see page 3

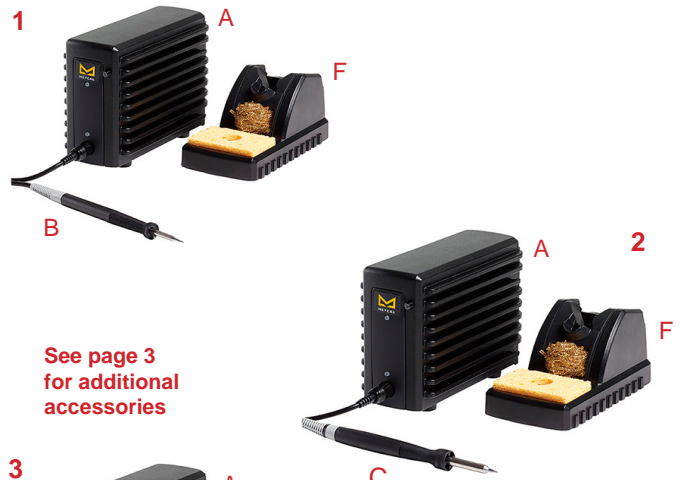
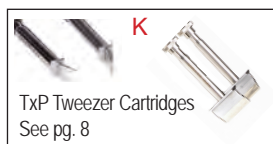
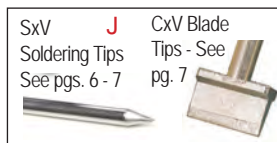
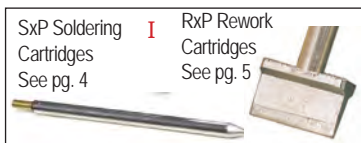
## Technical Specifications

Power Supply Part No.	MFR-PS1100
Ambient Operating Temp.	10 - 40°C (50 - 104°F)
Max. Enclosure Temp.	55°C (131°F)
Input Line Voltage	100 - 240 VAC
Power Consumption	70W Max.
Input Line Frequency	50/60 Hz grounded circuit
Output Power	60W @ 22°C/output*
Output Frequency	450 KHz
Power Cord (3-wire)	183cm (6'), 18/3 SJT
Dimensions (approx.) W x D x H	90 x 142 x 197.5mm (3.5" x 5.6" x 7.8")
Weight	2.3 kg (5.05 lbs)
Surface Resistivity	10 <sup>5</sup> - 10 <sup>9</sup> Ohms
Certification / Marking	cTUVus, CE
Soldering Handle and Coil Assembly Specifications	
Tip-to-Ground Potential	< 2 mV RMS
Tip-to-Ground Resistance	<2 ohms
Idle Temperature Repeatability	± 1.1°C (2°F) in still air
Handle Cord Assembly Length	122cm (4') – burn proof, ESD safe
Connector	8-pin circular DIN
Workstand W x D x H	100 x 200 x 100mm (4" x 8" x 4")
Workstand Weight	0.69 kg (1.51 lbs)

\* RF SmartHeat Technology provides greater power. More details at [www.metcal.com](http://www.metcal.com)

## MFR-1100 Series Systems

Part No.	Photo	Qty.	Description
MFR-1110	<b>1</b>		Solder System w/Solder Cartridge Hand-piece
Includes:			
MFR-PS1100	<b>A</b>	1	MFR-PS1100 Power Supply (60W)
MFR-H1-SC2	<b>B</b>	1	Soldering Cartridge Hand-piece
WS1	<b>F</b>	1	Universal Soldering Workstand
SxP & RxP Cart.	<b>I</b>		Soldering/Rework Cartridges (SOLD SEPARATELY)
MFR-1120	<b>2</b>		Solder System w/Solder/Blade Tip Hand-piece
Includes:			
MFR-PS1100	<b>A</b>	1	MFR-PS1100 Power Supply (60W)
MFR-H2-ST2	<b>C</b>	1	Soldering Tip Hand-piece
WS1	<b>F</b>	1	Universal Soldering Workstand
SxV & CxV Tips	<b>J</b>		Soldering/Blade Tips (SOLD SEPARATELY)
MFR-1140	<b>3</b>		Solder System w/Tweezer Cartridge Hand-piece
Includes:			
MFR-PS1100	<b>A</b>	1	MFR-PS1100 Power Supply (60W)
MFR-H4-TW	<b>D</b>	1	Tweezer Cartridges Hand-piece
MFR-WSPT	<b>G</b>	1	Tweezer Hand-piece Workstand
TxP Tips	<b>K</b>		Tweezer Cartridges (SOLD SEPARATELY)
MFR-1160	<b>4</b>		Solder System w/SSC Solder Cartridge Hand-piece (Replacement System for Metcal's SP200)
Includes:			
MFR-PS1100	<b>A</b>	1	MFR-PS1100 Power Supply (60W)
MFR-H6-SSC	<b>E</b>	1	SSC Soldering Cartridge Hand-piece
WS2	<b>H</b>	1	Soldering Workstand For H6-SSC
SSC Cartridges	<b>L</b>		SSC Soldering Cartridges** (SOLD SEPARATELY)
MFR-1161	<b>5</b>		Solder System w/Soldering & SSC Cart. Hand-pieces
Includes:			
MFR-PS1100	<b>A</b>	1	MFR-PS1100 Power Supply (60W)
MFR-H1-SC2	<b>B</b>	1	Soldering Cartridge Hand-piece
MFR-H6-SSC	<b>E</b>	1	SSC Soldering Cartridge Hand-piece
WS1	<b>F</b>	1	Universal Soldering Workstand
WS2	<b>H</b>	1	Soldering Workstand For H6-SSC
SxP & RxP Cart.	<b>I</b>		Soldering/Rework Cartridges (SOLD SEPARATELY)
SSC Cartridges	<b>L</b>		SSC Soldering Cartridges** (SOLD SEPARATELY)

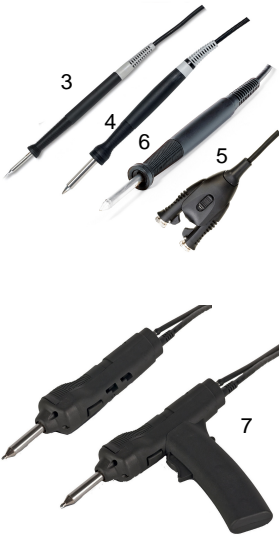


**MFR-UK5 Desoldering Kit - Desolder Hand-piece (MFR-H5-DS) and Vacuum Workstand (MFR-WSDSX) available as an accessory. See page 3 for additional upgrade kits.**



**Also Available From Metcal - MFR-2200 60W Dual Output Series: Dual output w/3 position switch enables users to use a single hand-piece or 2 hand-pieces simultaneously.**

# Metcal MFR-1100 Series Accessories and Replacement Parts



## Hand-pieces and replacement coils

MFR-H1-SC2	3	Cartridge Solder / Rework Hand-piece (MFR)
MFR-H2-ST2	4	Tip Solder Hand-piece (MFR)
MFR-CA3		Coil Assembly for MFR-H2-ST2 Hand-piece (MFR)
MFR-H4-TW	5	Precision Tweezer Hand-piece (MFR)
MFR-H6-SSC	6	SSC Cartridge Solder Hand-piece (MFR)
MFR-H5-DS	7	Desolder Hand-piece
MFR-HSREC		Cartridge Solder / Rework Hand-piece with long cord (1.83m / 6ft)
MFR-HSRLR		Cartridge Solder / Rework Hand-piece with long reach access

## Lead-Free Process Identification

WS1G		Green Universal Auto Sleep Workstand
WS1CG		Green Solder Rework Cradle Replacement for WS1 Workstand
WS2CG		Green Solder Rework Cradle Replacement for WS2 Workstand
AC-CK1	13	Green Identification Ring for SxV Cartridges (Pack of 50)
AC-CK3		Green Identification Ring for SSC Cartridges (Pack of 50)
AC-CK4	14	Green Identification Ring for SxV Tips (Pack of 50)

## Miscellaneous Accessories

AC-BRUSH		Soft Brass Brush
AC-CP2		Cartridge and Tip Removal Pad
AC-FX1	16	Fume Extraction Kit
AC-IK		Interlocking / Mounting Kit
MFR-PM70		Power Meter for MFR Series
AC-Y10		Yellow Sponge for WS1 Workstand (Pack of 10)
AC-YS4		Yellow Sponge Round for WS2 Workstand (Pack of 10)
AC-BP		Brass Pad (Pack of 10)

## Workstands

WS1		Universal Auto Sleep Workstand
WS2		Round Auto Sleep Workstand
WS2-NS	9	Solder Workstand (PS-900)
MFR-WSPT	10	Non Sleeper Precision Tweezer Workstand
MFR-WSDSX	11	Venturi Workstand for Desolder Hand-piece
MFR-WSDSU		Non Sleeper Workstand for Desolder Hand-piece
WS1CB		Solder Rework Cradle Replacement for WS1 Workstand
WS2CB		Solder Rework Cradle Replacement for WS2 Workstand
MFR-WSDSCB		Replacement cradle for all MFR Desolder Workstands

\* for all rectangular MFR workstands

## Upgrade Kits

MFR-UK1		Solder Cartridge Hand-piece (MFR-H1-SC2) and Workstand (WS1)
MFR-UK2		Solder Tip Hand-piece (MFR-H2-ST2) and Workstand (WS1)
MFR-UK4		Tweezer Cartridge Hand-piece (MFR-H4-TW) and Workstand (MFR-WSPT)
MFR-UK5		Desolder Hand-piece (MFR-H5-DS) and Workstand (MFR-WSDSX)
MFR-UK6		Solder Cartridge Hand-piece (MFR-H6-SSC) and Workstand (WS2)
MFR-H5-DS-C		Desolder Hand-piece (MFR-H5-DS) and Workstand cradle (MFR-WSDSCB)

## Desoldering Accessories

MFR-DC10	17	Disposable Collection Chamber for MFR-H5-DS (pack of 10)
MFR-DC100		Disposable Collection Chamber for MFR-H5-DS (pack of 100)
MFR-HDCA	18	Coil Assembly for MFR Desolder Hand-piece
MFR-PG		Replacement Pistol grip for MFR-H5-DS Hand-piece
AC-SK1		Seal Kit Collection Chamber (pack of 2)
AC-VP		Vacuum Port
AC-VL		ESD Air Hose
AC-VPF		Vacuum Port Filter (pack of 5)
LM-PS		Power supply for MFR-WSDSX with multi plug adapters
AC-TC		Desoldering Tip Cleaner Tool

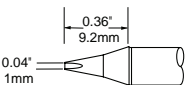
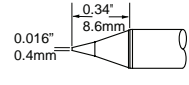
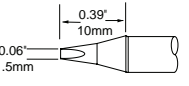
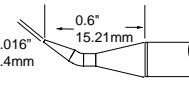
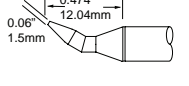
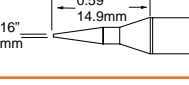
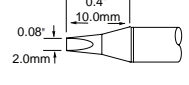

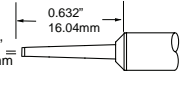
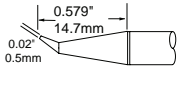
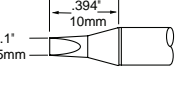

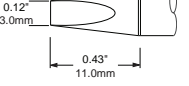
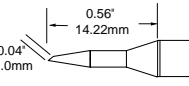
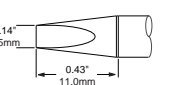
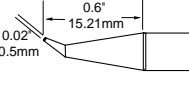
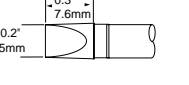


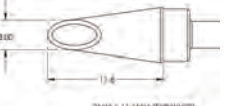
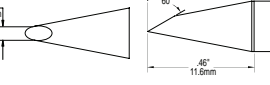
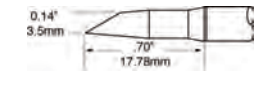
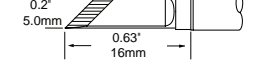


# Metcal MFR-1100 Series SxP Solder & Rework Cartridges



## SxP SOLDERING & REWORK CARTRIDGES

Compatible with: MFR-1110, MFR-1161, MFR-1351, MFR-2211, MFR-2241 Systems and MFR-H1-SC hand-piece

	<b>SxP SOLDERING &amp; REWORK CARTRIDGES</b>				
<b>CHISEL</b>		<b>SFP-CH10</b> <b>STP-CH10</b> <b>SCP-CH10</b>	<b>CONICAL</b>		<b>SFP-CN04</b> <b>STP-CN04</b> <b>SCP-CN04</b>
		<b>SFP-CH15</b> <b>STP-CH15</b> <b>SCP-CH15</b>			<b>SFP-CNB04</b> <b>STP-CNB04</b> <b>SCP-CNB04</b>
		<b>SFP-CHB15</b> <b>STP-CHB15</b> <b>SCP-CHB15</b>			<b>SFP-CNL04</b> <b>STP-CNL04</b> <b>SCP-CNL04</b>
		<b>SFP-CH20</b> <b>STP-CH20</b> <b>SCP-CH20</b>			<b>SFP-CN05</b> <b>STP-CN05</b> <b>SCP-CN05</b>
		<b>SFP-CHL20</b> <b>STP-CHL20</b> <b>SCP-CHL20</b>			<b>SFP-CNB05</b> <b>STP-CNB05</b> <b>SCP-CNB05</b>
		<b>SFP-CH25</b> <b>STP-CH25</b> <b>SCP-CH25</b>			<b>SFP-CNL06</b> <b>SCP-CNL06</b>
		<b>SFP-CH30</b> <b>STP-CH30</b> <b>SCP-CH30</b>			<b>SFP-BVL10</b> <b>STP-BVL10</b> <b>SCP-BVL10</b>
		<b>SFP-CH35</b> <b>STP-CH35</b> <b>SCP-CH35</b>			<b>SFP-DRH05</b> <b>STP-DRH05</b> <b>SCP-DRH05</b>
		<b>SFP-CH50</b> <b>STP-CH50</b> <b>SCP-CH50</b>			<b>SFP-DRH610</b> <b>STP-DRH610</b> <b>SCP-DRH610</b>
	<b>HOOF</b>			<b>STP-WV20</b> <b>SFP-WV20</b> <b>SCP-WV20</b>	<b>BEVEL</b>
		<b>STP-WV30</b> <b>SFP-WV30</b> <b>SCP-WV30</b>		<b>SFP-DRH615</b> <b>STP-DRH615</b> <b>SCP-DRH615</b>	
				<b>SFP-DRH35</b> <b>STP-DRH35</b> <b>SCP-DRH35</b>	
				<b>SFP-DRK50</b> <b>STP-DRK50</b> <b>SCP-DRK50</b>	

**F** = FR4 / Fiberglass, for most standard applications **T** = Temperature Sensitive **C** = Ceramic for high thermal demand applications.

# Metcal MFR-1100 Series RxP Rework Cartridges

Compatible with: MFR- 1110, MFR-1161, MFR-1351, MFR-2211, MFR-2241 Systems, MFR-H1-SC and MFR-H1-SC2 hand-pieces. All dimensions shown are in mm (inches)

RxP REWORK CARTRIDGES			A	B	D	SMT TYPE		
BLADE		RFP-BL1 RCP-BL1	10 (0.41)	-	-	-		
		RFP-BL2 RCP-BL2	15.6 (0.62)	-	-	-		
		RFP-BL3 RCP-BL3	22.1 (0.87)	-	-	-		
TUNNEL		RFP-DL1 RCP-DL1	5.18 (0.204)	10.16 (0.40)	3.22 (0.127)	Tunnel SOIC-14-16		
		RFP-DL2 RCP-DL2	5.18 (0.204)	4.32 (0.17)	2.29 (.09)	Tunnel SOIC-8		
		RFP-DL3 RCP-DL3	6.86 (.270)	11.15 (0.44)	2.29 (.09)	Tunnel SOIC-16		
SLOT		RFP-SL1 RCP-SL1	2.34 (.092)	1.37 (.054)	1.78 (.07)	0805 Chip Package		
		RFP-SL2 RCP-SL2	3.48 (.137)	1.63 (.064)	1.78 (.07)	1206 Chip Package		
QUAD		RFP-QD4 RCP-QD4	12.70 (.500)	11.43 (.450)	3.81 (.150)	15.24 (.600)	13.97 (.550)	PLCC 32
		RFP-QD6 RCP-QD6	17.78 (.700)	16.76 (.660)	3.81 (.150)	17.78 (.700)	16.76 (.660)	PLCC 44
		RFP-QD7 RCP-QD7	25.27 (.995)	24.38 (.960)	5.59 (.220)	25.27 (.995)	24.38 (.960)	PLCC 68
		RFP-QD10 RCP-QD10	20.32 (.800)	19.30 (.760)	3.81 (.150)	20.32 (.800)	19.30 (.760)	PLCC 52
		RFP-QD15 RCP-QD15	13.34 (.525)	12.32 (.485)	2.79 (.110)	13.34 (.525)	12.32 (.485)	TQFP 80
		RFP-QD19 RCP-QD19	16.13 (.635)	16.13 (.635)	3.30 (.130)	16.13 (.635)	16.13 (.635)	QFP 44
		RFP-QD20 RCP-QD20	16.51 (.650)	16.51 (.650)	3.30 (.130)	22.48 (.885)	22.48 (.885)	QFP 100

**E** = FR4 / Fiberglass, for most standard applications

**T** = Temperature Sensitive

**C** = Ceramic for high thermal demand applications.

# Metcal MFR-1100 Series SxV Solder Tips



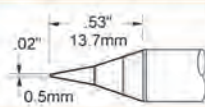

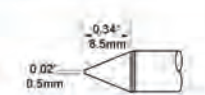


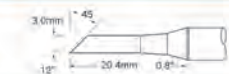













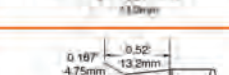
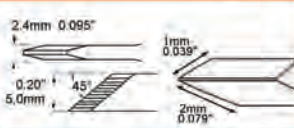



Compatible with: PS-900, MFR-1120, MFR-2220, MFR-2222 Systems,  
PS-HC3, MFR-H2-ST and MFR-H2-ST2 hand-pieces, PS-CA3, MFR-CA2 and MFR-CA3 Coil Assemblies

SxV SOLDERING TIPS	
CHISEL	<p>SFV-CH10A STV-CH10A SCV-CH10A</p>
	<p>SFV-CH10AR STV-CH10AR SCV-CH10AR</p>
	<p>SFV-CH10 STV-CH10 SCV-CH10</p>
	<p>SFV-CH15A STV-CH15A SCV-CH15A</p>
	<p>SFV-CH15AR STV-CH15AR SCV-CH15AR</p>
	<p>SFV-CHB15 STV-CHB15 SCV-CHB15</p>
CONICAL	<p>SFV-CH18AR STV-CH18AR SCV-CH18AR</p>
	<p>SFV-CH20 STV-CH20 SCV-CH20</p>
	<p>SFV-CH24A STV-CH24A SCV-CH24A</p>
	<p>SFV-CH25AR STV-CH25AR SCV-CH25AR</p>
	<p>SFV-CH25 STV-CH25 SCV-CH25</p>
	<p>SFV-CH30AR STV-CH30AR SCV-CH30AR</p>
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	<p>SFV-CNL03AR STV-CNL03AR SCV-CNL03AR</p>
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<p>SFV-CNB04AR STV-CNB04AR SCV-CNB04AR</p>	
<p>SFV-CNL04 STV-CNL04 SCV-CNL04</p>	

F = FR4 / Fiberglass, for most standard applications T = Temperature Sensitive C = Ceramic for high thermal demand applications.

# Metcal MFR-1100 Series SxV Solder Tips / CxV Blade Tips

Compatible with: PS-900, MFR-1120, MFR-2220, MFR-2222 Systems,  
PS-HC3, MFR-H2-ST and MFR-H2-ST2 hand-pieces, PS-CA3, MFR-CA2 and MFR-CA3 Coil Assemblies

SxV SOLDERING TIPS		CxV BLADE TIPS		A	
CONICAL		SFV-CN05AR STV-CN05AR SCV-CN05AR		SFV-DRH420AR STV-DRH420AR SCV-DRH420AR	
		SFV-CN05 STV-CN05 SCV-CN05			SFV-DRH20CP STV-DRH20CP SCV-DRH20CP
		SFV-CNB05 STV-CNB05 SCV-CNB05			SFV-DRH430AR STV-DRH430AR SCV-DRH430AR
		SFV-CNL10A STV-CNL10A SCV-CNL10A			STV-DRH630AR SCV-DRH630AR
		SFV-CNL10AR STV-CNL10AR SCV-CNL10AR			SFV-DRH420A STV-DRH420A SCV-DRH420A
		SFV-CNL10 STV-CNL10 SCV-CNL10			SFV-DRH30CP STV-DRH30CP SCV-DRH30CP
		SFV-CNL14 STV-CNL14 SCV-CNL14			SFV-DRH440R STV-DRH440R SCV-DRH440R
		SFV-DRH20 STV-DRH20 SCV-DRH20			SFV-DRH640AR STV-DRH640AR SCV-DRH640AR
		SFV-CNL20 STV-CNL20 SCV-CNL20			SFV-DRH40CP STV-DRH40CP SCV-DRH40CP
		SFV-WV20 STV-WV20 SCV-WV20			SFV-DRH440A STV-DRH440A SCV-DRH440A
KNIFE		SFV-DRK45A STV-DRK45A SCV-DRK45A		SFV-DRK30AR STV-DRK30AR SCV-DRK30AR	
		SFV-DRK50 STV-DRK50 SCV-DRK50		SFV-DRK45AR STV-DRK45AR SCV-DRK45AR	

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# Metcal MFR-1100 Series TxP Tweezer Cartridges

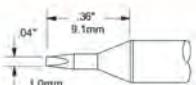
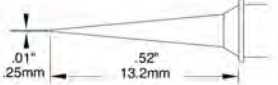
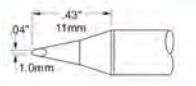
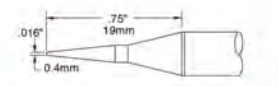
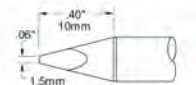
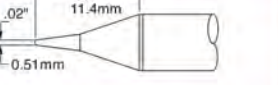

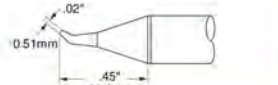
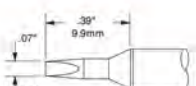

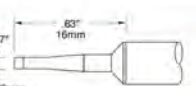
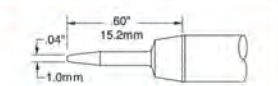
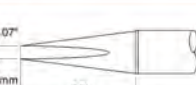

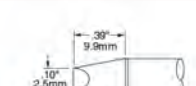
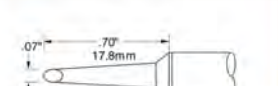

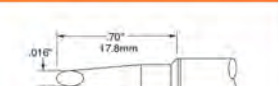



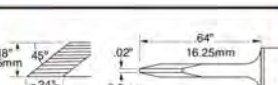

Compatible with: MFR-1140, MFR-2240, MFR2241 Systems and MFR-H4-TW hand-piece

TxP TWEEZER CARTRIDGES_			
BLADE		<b>T</b> FP-BLP1 <b>T</b> I <b>P</b> -BLP1 <b>T</b> C <b>P</b> -BLP1	1.0mm x 14mm (.04" x .55")
		<b>T</b> FP-BLP2 <b>T</b> I <b>P</b> -BLP2 <b>T</b> C <b>P</b> -BLP2	2.0mm x 14mm (.08" x .55")
		<b>T</b> FP-CNP1 <b>T</b> I <b>P</b> -CNP1 <b>T</b> C <b>P</b> -CNP1	Conical 0.4mm x 19.1mm (.015" x .75")
HEAVY DUTY			<b>A</b>
		<b>T</b> FP-BLH40 <b>T</b> I <b>P</b> -BLH40 <b>T</b> C <b>P</b> -BLH40	6.35mm (.25")
		<b>T</b> FP-BLH50 <b>T</b> I <b>P</b> -BLH50 <b>T</b> C <b>P</b> -BLH50	16mm (.62")
		<b>T</b> FP-BLH60 <b>T</b> I <b>P</b> -BLH60 <b>T</b> C <b>P</b> -BLH60	20.5mm (.81")
		<b>T</b> FP-BLH70 <b>T</b> I <b>P</b> -BLH70 <b>T</b> C <b>P</b> -BLH70	28mm (1.1")



# Metcal MFR-1100 Series SSC Soldering Cartridges

Compatible with: Previous SP200 System and new MFR-1160 & MFR-1161 Systems with MFR-H6-SSC Hand-piece

SSC SOLDERING CARTRIDGES					
CHISEL		SSC-671A SSC-771A	CONICAL		SSC-690A SSC-790A
		SSC-625A SSC-725A			SSC-645A SSC-745A
		SSC-638A SSC-738A			SSC-622A SSC-722A
		SSC-637A SSC-737A			SSC-626A SSC-726A
		SSC-672A SSC-772A			SSC-654A SSC-754A
		SSC-642A SSC-742A			SSC-601A SSC-701A
		SSC-670A SSC-770A			SSC-674A SSC-774A
HOOF		SSC-636A SSC-736A		SSC-667A SSC-767A	
		SSC-613A SSC-713A		SSC-639A SSC-739A	
		SSC-646A SSC-746A		SSC-661A SSC-761A	
KNIFE		SSC-617A SSC-717A		SSC-673A SSC-773A	
		SSC-647A SSC-747A			
BEVEL					

6 = 600 Series for temperature sensitive applications - 7 = 700 Series for most standard applications.