

# Metcal MFR-1160 System

## 60W Single Output Solder / Rework System

### For Use With SSC Cartridges



#### MFR-1160 Features and Benefits

- Hand-piece is compatible with SSC Cartridges from SP200
- 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-1160/1161: Replaces SP200 While Hand-piece Is Compatible With SSC Soldering Cartridges

Metcal's MFR-1160/1161 Soldering System is a powerful, cost-effective system that is compatible with the SSC Soldering Cartridges used with Metcal's discontinued SP200 System. The MFRH6-SSC Hand-piece is designed for use with SSC cartridges and comes standard with a MFR-1160 or MFR-1161 Single Output System. The hand-piece can also be used with Metcal's MFR-2200 Dual Output Systems. (The MFR-H6-SSC is not backward compatible with the SP200.)

The MFR-1160/1161 power supply has a powerful 60W output, and uses SmartHeat® Technology, a microprocessor controlled heating system which operates at lower temperatures and eliminates calibration time.

Metcal's MFR-1160/1161 System is a major upgrade in terms of power and ease of use over the discontinued SP200 System. Plus, you have the added bonus of continuing to use your SSC consumables without having to change tip geometry.

#### 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
<b>Output Power</b>	<b>60W @ 22°C/output*</b>
<b>Output Frequency</b>	<b>450 KHz</b>
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/smartheat](http://www.metcal.com/smartheat)

#### Standard Hand-piece With MFR-1160 and MFR-1161



SSC Cartridge Solder Hand-piece (MFR-H6-SSC)  
Works with all SSC Soldering Cartridges

#### Additional Standard Hand-piece With MFR-1161



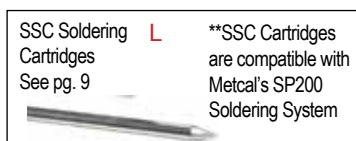
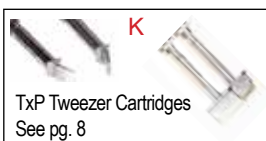
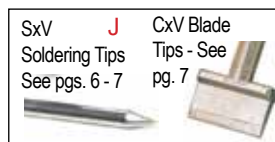
Solder/Blade Cartridge Hand-piece (MFR-H1-SC2).  
For use with all SxV Soldering Tips and CxV Blade Tips.



# Metcal MFR-1100 Series 60W Single Output Solder / Rework System

## MFR-1100 Series Systems

Part No.	Photo	Qty.	Description
<b>MFR-1110</b>	<b>1</b>		Solder System w/Solder Cartridge Hand-piece
Includes:			
MFR-PS1100	A	1	MFR-PS1100 Power Supply (60W)
MFR-H1-SC2	B	1	Soldering Cartridge Hand-piece
WS1	F	1	Universal Soldering Workstand
SxP & RxP Cart.	I		Soldering/Rework Cartridges (SOLD SEPARATELY)
<b>MFR-1120</b>	<b>2</b>		Solder System w/Solder/Blade Tip Hand-piece
Includes:			
MFR-PS1100	A	1	MFR-PS1100 Power Supply (60W)
MFR-H2-ST2	C	1	Soldering Tip Hand-piece
WS1	F	1	Universal Soldering Workstand
SxV & CxV Tips	J		Soldering/Blade Tips (SOLD SEPARATELY)
<b>MFR-1140</b>	<b>3</b>		Solder System w/Tweezer Cartridge Hand-piece
Includes:			
MFR-PS1100	A	1	MFR-PS1100 Power Supply (60W)
MFR-H4-TW	D	1	Tweezer Cartridges Hand-piece
MFR-WSPT	G	1	Tweezer Hand-piece Workstand
TxP Tips	K		Tweezer Cartridges (SOLD SEPARATELY)
<b>MFR-1160</b>	<b>4</b>		Solder System w/SSC Solder Cartridge Hand-piece (Replacement System for Metcal's SP200)
Includes:			
MFR-PS1100	A	1	MFR-PS1100 Power Supply (60W)
MFR-H6-SSC	E	1	SSC Soldering Cartridge Hand-piece
WS2	H	1	Soldering Workstand For H6-SSC
SSC Cartridges	L		SSC Soldering Cartridges** (SOLD SEPARATELY)
<b>MFR-1161</b>	<b>5</b>		Solder System w/Soldering & SSC Cart. Hand-pieces
Includes:			
MFR-PS1100	A	1	MFR-PS1100 Power Supply (60W)
MFR-H1-SC2	B	1	Soldering Cartridge Hand-piece
MFR-H6-SSC	E	1	SSC Soldering Cartridge Hand-piece
WS1	F	1	Universal Soldering Workstand
WS2	H	1	Soldering Workstand For H6-SSC
SxP & RxP Cart.	I		Soldering/Rework Cartridges (SOLD SEPARATELY)
SSC Cartridges	L		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	8	Cartridge Solder / Rework Hand-piece with long reach access



## Workstands

WS1		Universal Auto Sleep Workstand
WS2		Round Auto Sleep Workstand
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)



## Lead-Free Process Identification

WS1G	12	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	15	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
PS-PM900		Power Meter for PS-900
AC-YS4		Yellow Sponge Round for WS2 Workstand (Pack of 10)
AC-BP		Brass Pad (Pack of 10)

## 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

CHISEL			CONICAL	
	SFP-CH10 STP-CH10 SCP-CH10			SFP-CN04 STP-CN04 SCP-CN04
	SFP-CH15 STP-CH15 SCP-CH15			SFP-CNB04 STP-CNB04 SCP-CNB04
	SFP-CHB15 STP-CHB15 SCP-CHB15			SFP-CNL04 STP-CNL04 SCP-CNL04
	SFP-CH20 STP-CH20 SCP-CH20			SFP-CN05 STP-CN05 SCP-CN05
	SFP-CHL20 STP-CHL20 SCP-CHL20			SFP-CNB05 STP-CNB05 SCP-CNB05
	SFP-CH25 STP-CH25 SCP-CH25			SFP-CNL06 SCP-CNL06
	SFP-CH30 STP-CH30 SCP-CH30			SFP-BVL10 STP-BVL10 SCP-BVL10
	SFP-CH35 STP-CH35 SCP-CH35			SFP-DRH05 STP-DRH05 SCP-DRH05
	SFP-CH50 STP-CH50 SCP-CH50			SFP-DRH610 STP-DRH610 SCP-DRH610
	STP-WV20 SFP-WV20 SCP-WV20			SFP-DRH15 STP-DRH15 SCP-DRH15
	STP-WV30 SFP-WV30 SCP-WV30			SFP-DRH615 STP-DRH615 SCP-DRH615
				SFP-DRH35 STP-DRH35 SCP-DRH35
				SFP-DRK50 STP-DRK50 SCP-DRK50
HOOF			BEVEL	
			HOOF	
			KNIFE	

E = 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								
BLADE			<b>A</b>	<b>B</b>	<b>D</b>	<b>SMT TYPE</b>		
		RFP-BL1 RCP-BL1	10 (0.41)	-	-	-		
		RFP-BL2 RCP-BL2	15.6 (0.62)	-	-	-		
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		
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			<b>A</b>	<b>A2</b>	<b>D</b>	<b>B</b>	<b>B2</b>	<b>SMT TYPE</b>
		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		

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# 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>	CHISEL	<p>SFV-CH25 STV-CH25 SCV-CH25</p>	
	<p>SFV-CH10AR STV-CH10AR SCV-CH10AR</p>		<p>SFV-CH30AR STV-CH30AR SCV-CH30AR</p>	
	<p>SFV-CH10 STV-CH10 SCV-CH10</p>		<p>SFV-CH50A STV-CH50A SCV-CH50A</p>	
	<p>SFV-CH15A STV-CH15A SCV-CH15A</p>		<p>SFV-CH50AR STV-CH50AR SCV-CH50AR</p>	
	<p>SFV-CH15AR STV-CH15AR SCV-CH15AR</p>		<p>SFV-CH50 STV-CH50 SCV-CH50</p>	
	<p>SFV-CHB15 STV-CHB15 SCV-CHB15</p>		CONICAL	<p>SFV-CNL03AR STV-CNL03AR SCV-CNL03AR</p>
	<p>SFV-CH18AR STV-CH18AR SCV-CH18AR</p>			<p>SFV-CNB04A STV-CNB04A SCV-CNB04A</p>
	<p>SFV-CH20 STV-CH20 SCV-CH20</p>			<p>SFV-CN05A STV-CN05A SCV-CN05A</p>
	<p>SFV-CH24A STV-CH24A SCV-CH24A</p>			<p>SFV-CNB04AR STV-CNB04AR SCV-CNB04AR</p>
	<p>SFV-CH25AR STV-CH25AR SCV-CH25AR</p>			<p>SFV-CNL04 STV-CNL04 SCV-CNL04</p>

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

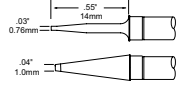
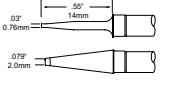
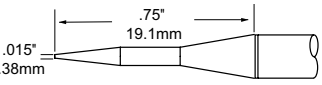
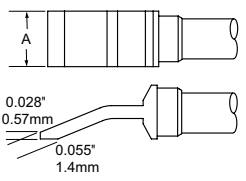


Compatible with: PS-900, MFR-1120, MFR-2220, MFR-2222 Systems,  
PS-HC3, MFR-H2-ST and MFR-H2-ST2 hand-pieces, PS-CA3, MFR-CA2 and MFR-CA3 Coil Assemblies

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-DRK50 STV-DRK50 SCV-DRK50		CFV-BL250    CCV-BL250    25mm (1")
				CFV-BL350    CCV-BL350    35mm (1.4")
				CFV-BL400    CCV-BL400    40mm (1.6")
				CFV-BL500    CCV-BL500    50mm (2")

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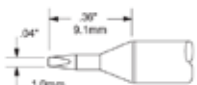
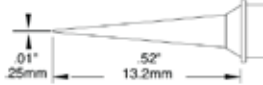
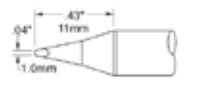
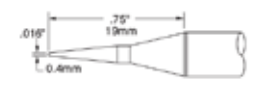
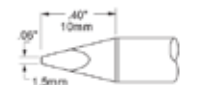
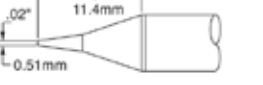

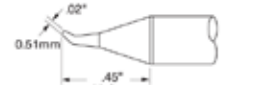



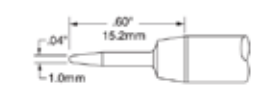







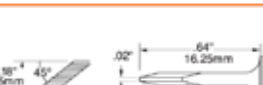



# Metcal MFR-1100 Series TxP Tweezer Cartridges

TxP TWEezer CARTRIDGES_		Compatible with: MFR-1140, MFR-2240, MFR2241 Systems and MFR-H4-TW hand-piece	
BLADE		<p>TFP-BLP1 TIP-BLP1 TCP-BLP1</p>	1.0mm x 14mm (.04" x .55")
		<p>TFP-BLP2 TIP-BLP2 TCP-BLP2</p>	2.0mm x 14mm (.08" x .55")
		<p>TFP-CNP1 TIP-CNP1 TCP-CNP1</p>	Conical 0.4mm x 19.1mm (.015" x .75")
HEAVY DUTY			<b>A</b>
		<p>TFP-BLH40 TIP-BLH40 TCP-BLH40</p>	6.35mm (.25")
		<p>TFP-BLH50 TIP-BLH50 TCP-BLH50</p>	16mm (.62")
		<p>TFP-BLH60 TIP-BLH60 TCP-BLH60</p>	20.5mm (.81")
		<p>TFP-BLH70 TIP-BLH70 TCP-BLH70</p>	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
HOOF		SSC-670A SSC-770A	KNIFE		SSC-674A SSC-774A
		SSC-636A SSC-736A			SSC-667A SSC-767A
		SSC-613A SSC-713A			SSC-639A SSC-739A
		SSC-646A SSC-746A			SSC-661A SSC-761A
		SSC-617A SSC-717A			SSC-673A SSC-773A
		SSC-647A SSC-747A			

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