

# Metcal MFR-1300 Series

## 60W Dual Output System w/ Internal Pump Data Sheet



### Technical Specifications

Part Number	MFR-1350 / MFR-1351
Input Line Voltage	100-240 VAC
Input Line Frequency	50/60Hz
Power Consumption	110W Max. (Power Supply MFR-PS1300)
<b>Output Power</b>	<b>60 Watts Max*</b>
<b>Output Frequency</b>	<b>450 KHz</b>
Idle Tip Temperature Stability	+/- 1.1°C (2°F) in Still Air
Ambient Operating Temperature	10 - 40°C (50 - 104°F)
Maximum Enclosure Temperature	55°C (131°F)
Noise level	< 55 dB
Vacuum Suction Force	0.7 bar (21" Hg at vacuum pump @ sea level)
Power Cord (3-wire)	183cm (72")
Desolder Hand-piece Cable Length	152cm (60"), burn proof, ESD safe
Solder Hand-piece Cable Length	122cm (48"), burn proof, ESD safe
Hand-piece Connector	8 pin power connector
Tip to Ground Potential	<2mV
Tip to Ground Resistance	<2 Ohms
Surface Resistivity	10 <sup>5</sup> - 10 <sup>8</sup> Ohms
Approvals	cTUVus, CE
Dimensions (approx.) W x D x H	170 x 200 x 152.5mm (7" x 8" x 6")
Workstand Dimensions	100 x 200 x 100mm (4" x 8" x 4")

\* RF SmartHeat Technology provides greater power. For more details, visit [www.metcal.com/smartheat](http://www.metcal.com/smartheat)

### MFR-1300 Series Features and Benefits

- Self-contained internal pump and large capacity collection chamber makes desoldering easy
- Pistol handpiece can easily be converted to a pencil grip
- SmartHeat® technology operates at lower and safer temperatures and eliminates overshoot.
- No calibration required which saves money and down-time.

### Makes Desoldering Clean and Easy

Metcal's MFR-1300 Desoldering System is a powerful, cost-effective system with a small footprint. With 0.7 bar of vacuum suction force, both the MR-1350 and MR-1351 have what it takes to make through-hole desoldering clean and easy.

Each system includes a Desoldering Pistol with a large capacity, easy to change solder collection chamber to ensure minimum downtime. The pistol can easily be converted to a pencil grip for additional control. Metcal offers a wide range of long life desoldering tips that will keep your equipment working efficientl .

The MFR-1351 unit has both desoldering and soldering capabilities, eliminating the need for two separate units. The MFR-1351 uses SmartHeat®, a microprocessor controlled system which operates at lower temperatures and eliminates calibration time.

The MFR-1300 series is the best choice for small or large production environments which need exceptional desoldering and soldering performance from a unit with a small footprint.



**Desoldering pistol can easily be changed to a pencil grip for additional control.**

**Large capacity desoldering collection chamber is easy to change, reducing downtime**



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Data Sheet



## MFR-1300 Series System and Accessories

Part No.	Photo	Description
<b>MFR-1350</b>	<b>1</b>	Desolder System with Internal Pump
<i>Includes:</i>		
<b>MFR-PS1300</b>	<b>A</b>	Dual Output Power Supply
<b>MFR-H5-DS</b>	<b>B</b>	Desolder Hand-piece
<b>MFR-WSDSU</b>	<b>C</b>	Workstand for Desolder Hand-piece
<b>DXP Tips</b>	<b>D</b>	Desoldering Tips (SOLD SEPARATELY)
<hr/>		
<b>MFR-1351</b>	<b>2</b>	Desolder / Solder System with Internal Pump
<i>Includes:</i>		
<b>MFR-PS1300</b>	<b>A</b>	Dual Output Power Supply
<b>MFR-H5-DS</b>	<b>B</b>	Desolder Hand-piece
<b>MFR-WSDSU</b>	<b>C</b>	Workstand for Desolder Hand-piece
<b>MFR-H1-SC2</b>	<b>E</b>	Solder Hand-piece
<b>WS1</b>	<b>F</b>	Workstand for Solder Hand-piece
<b>DxP Tips</b>	<b>D</b>	Desoldering Tips (SOLD SEPARATELY)
<b>SxP Cartridges</b>	<b>G</b>	Soldering Cartridges (SOLD SEPARATELY)
<b>RxP Cartridges</b>	<b>H</b>	Rework Cartridges (SOLD SEPARATELY)



See page 3 for additional accessories



## Also Available - MFR-1150 Desoldering / Soldering Unit



**MFR-1150 Desoldering System includes:**  
**MFR-PS-1100** - Power Supply  
**MFR-HS-DS** - Desolder Hand-piece  
**MFR-WSDSX** - Workstand with Venturi  
**MFR-FTKIT** - Air Hose and Fittings Kit (for shop air connections)  
**AC-TC** - Desolder Tip Cleaner Tool

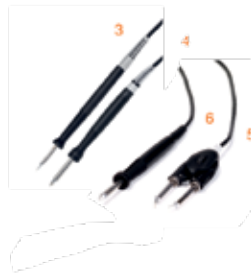
## Also Available From Metcal - MFR-1150 Desoldering System

Metcal also offers the MFR-1150 Desoldering System - a single output system and a workstand with a built in venturi helps to efficiently eliminate unwanted solder. The workstand uses your shop air system to create a **.85 bar vacuum**, which helps remove and collect nonessential solder.

The MFR-1150 includes a Desoldering Pistol with an easy to change, large capacity solder collection chamber to ensure minimum downtime. The pistol can easily be converted to a pencil grip for additional control. Metcal offers a wide range of long life desoldering tips that will keep your equipment working efficiently.

For more information about Metcal's MFR-1150 Desoldering System or any Metcal product, **visit [www.Metcal.com](http://www.Metcal.com) or contact your local Metcal representative.**

# Metcal MFR-1300 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



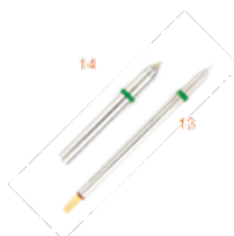
## Workstands

WS1		Universal Auto Sleep Workstand
WS2		Round Auto Sleep Workstand
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)



## 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
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)




## 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-1300 Series DxP Desoldering Tips

Compatible with: MFR-1150, MFR-1350, MFR-1351 systems with MFR-H5-DS hand-piece and previous MFR-DSX, -DSI, -SDX, -SDI Systems with MFR-HDS hand-piece.  
All dimensions shown are in mm (inches)

DxP DESOLDERING TIPS		A	B	TYPE
  <p>Standard</p>  <p>Long Reach</p>	DFP-CN2	0.64	1.78	Standard
	DCP-CN2	(.025)	(.070)	
	DFP-CN3	0.76	2.03	Standard
	DCP-CN3	(.030)	(.080)	
	DFP-CN4	1.02	2.28	Standard
	DCP-CN4	(.040)	(.090)	
	DFP-CN5	1.27	2.64	Standard
	DCP-CN5	(.050)	(.104)	
	DFP-CN6	1.52	2.84	Standard
	DCP-CN6	(.060)	(.112)	
	DFP-CN7	2.41	3.63	Standard
	DCP-CN7	(.095)	(.143)	
	DFP-CNL3	0.76	2.03	Long Reach
	DCP-CNL3	(.030)	(.080)	
	DFP-CNL4	1.02	2.28	Long Reach
DCP-CNL4	(.040)	(.090)		
DFP-CNL5	1.27	2.64	Long Reach	
DCP-CNL5	(.050)	(.104)		

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

See pages 5 - 6 for SxP Soldering Cartridges and  
page 6 for RxP Blade Rework Cartridges



# Metcal MFR-1300 Series RxP Blade 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			<b>A</b>	<b>B</b>	<b>D</b>	<b>SMT TYPE</b>		
<b>BLADE</b>		RFP-BL1 RCP-BL1	10 (0.41)	-	-	-		
		RFP-BL2 RCP-BL2	15.6 (0.62)	-	-	-		
		RFP-BL3 RCP-BL3	22.1 (0.87)	-	-	-		
<b>TUNNEL</b>		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		
		RFP-SL1 RCP-SL1	2.34 (.092)	1.37 (.054)	1.78 (.07)	0805 Chip Package		
<b>SLOT</b>		RFP-SL2 RCP-SL2	3.48 (.137)	1.63 (.064)	1.78 (.07)	1206 Chip Package		
		<b>QUAD</b>		RFP-QD4 RCP-QD4	12.70 (.500)	11.43 (.450)	3.81 (.150)	15.24 (.600)
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      **I** = Temperature Sensitive      **C** = Ceramic for high thermal demand applications.