Metcal MFR-1300 Series
Dual Output 60W Desolder / Solder System w/Internal Pump

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 efficiently.

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.

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)
Output Power	**60 Watts Max***
Output Frequency	**450 KHz**
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	$10^5 – 10^9$ 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

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

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

Powered by METCAL SmartHeat®

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Metcal MFR-1300 Series
60W Dual Output System w/Internal Pump

MFR-1300 Series System and Accessories

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

See page 3 for additional accessories

1

2

D DxP Desoldering Tips See pgs. 4

G SxP Soldering Cartridges See pgs. 5 - 6

H RxP Rework Cartridges See pg. 6

A MFR-PS1300 Power Supply - Dual output w/3 position switch (Left/Both/Right)

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 Desloldering 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 or contact your local Metcal representative.**

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Metcal MFR-1300 Series
Accessories and Replacement Parts
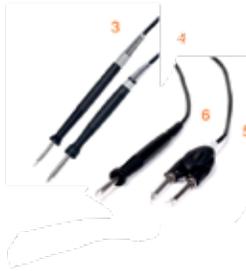
Hand-pieces and replacement coils

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
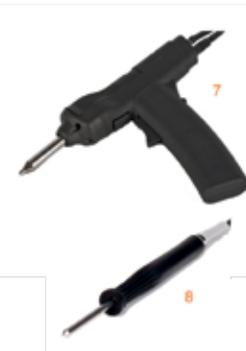
Workstands

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)
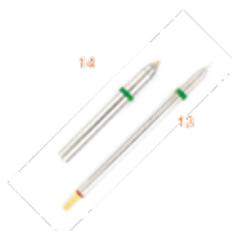
Lead-Free Process Identification

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

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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

Standard — 5.54mm 0.218"

Long Reach — 12.80mm 0.503"

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

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

PRODUCT UPDATE

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Metcal MFR-1300 Series
SxP Soldering Cartridges

S**x**P Soldering & Rework Cartridges	Compatible with: MFR-1110, MFR-1161, MFR-1351, MFR-2211, MFR-2241 Systems and MFR-H1-SC hand-piece		
CHISEL	0.36" 9.2mm / 0.04" 1mm	S**F**P-CH10 S**T**P-CH10 S**C**P-CH10	**CONICAL**	0.34" 8.6mm / 0.016" 0.4mm	S**F**P-CN04 S**T**P-CN04 S**C**P-CN04

	Chisel		Conical / Bevel / Hoof / Knife	
CHISEL	0.36" / 9.2mm, 0.04" / 1mm	S**F**P-CH10 / S**T**P-CH10 / S**C**P-CH10	0.34" / 8.6mm, 0.016" / 0.4mm	S**F**P-CN04 / S**T**P-CN04 / S**C**P-CN04
	0.39" / 10mm, 0.06" / 1.5mm	S**F**P-CH15 / S**T**P-CH15 / S**C**P-CH15	0.6" / 15.21mm, 0.016" / 0.4mm	S**F**P-CNB04 / S**T**P-CNB04 / S**C**P-CNB04
	0.474" / 12.04mm, 0.06" / 1.5mm	S**F**P-CHB15 / S**T**P-CHB15 / S**C**P-CHB15	0.59" / 14.9mm, 0.016" / 0.4mm	S**F**P-CNL04 / S**T**P-CNL04 / S**C**P-CNL04
	0.4" / 10.0mm, 0.08" / 2.0mm	S**F**P-CH20 / S**T**P-CH20 / S**C**P-CH20	0.2" / 4.95mm, 0.02" / 0.5mm	S**F**P-CN05 / S**T**P-CN05 / S**C**P-CN05
	0.632" / 16.04mm, 0.08" / 2.0mm	S**F**P-CHL20 / S**T**P-CHL20 / S**C**P-CHL20	0.579" / 14.7mm, 0.02" / 0.5mm	S**F**P-CNB05 / S**T**P-CNB05 / S**C**P-CNB05
	.394" / 10mm, 0.1" / 2.5mm	S**F**P-CH25 / S**T**P-CH25 / S**C**P-CH25	0.51" / 13.0mm, 0.02" / 0.5mm	S**F**P-CNL06 / S**C**P-CNL06
	0.12" / 3.0mm, 0.43" / 11.0mm	S**F**P-CH30 / S**T**P-CH30 / S**C**P-CH30	**BEVEL** 0.56" / 14.22mm, 0.04" / 1.0mm	S**F**P-BVL10 / S**T**P-BVL10 / S**C**P-BVL10
	0.14" / 3.5mm, 0.43" / 11.0mm	S**F**P-CH35 / S**T**P-CH35 / S**C**P-CH35	0.6" / 15.21mm, 0.02" / 0.5mm	S**F**P-DRH05 / S**T**P-DRH05 / S**C**P-DRH05
	0.3" / 7.6mm, 0.2" / 5mm	S**F**P-CH50 / S**T**P-CH50 / S**C**P-CH50	**HOOF** .039" / 1.0mm, .45" / 11.6mm	S**F**P-DRH610 / S**T**P-DRH610 / S**C**P-DRH610
HOOF		S**T**P-WV20 / S**F**P-WV20 / S**C**P-WV20	1.5mm / .05", 30°, 16.5mm / 0.65"	S**F**P-DRH15 / S**T**P-DRH15 / S**C**P-DRH15
		S**T**P-WV30 / S**F**P-WV30 / S**C**P-WV30	.06" / 1.5mm, 60°, .46" / 11.6mm	S**F**P-DRH615 / S**T**P-DRH615 / S**C**P-DRH615
			0.14" / 3.5mm, .70" / 17.78mm	S**F**P-DRH35 / S**T**P-DRH35 / S**C**P-DRH35
			KNIFE 0.2" / 5.0mm, 0.63" / 16mm	S**F**P-DRK50 / S**T**P-DRK50 / S**C**P-DRK50

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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)

Rx**P R**EWORK **C**ARTRIDGES

BLADE

.36" 9.14mm
.02" 0.5mm
A

	A	B	D	SMT TYPE
R**F**P-BL1 R**C**P-BL1	10 (0.41)	-	-	-
R**F**P-BL2 R**C**P-BL2	15.6 (0.62)	-	-	-
R**F**P-BL3 R**C**P-BL3	22.1 (0.87)	-	-	-

TUNNEL

D A B

	A	B	D	SMT TYPE
R**F**P-DL1 R**C**P-DL1	5.18 (0.204)	10.16 (0.40)	3.22 (0.127)	Tunnel SOIC-14-16
R**F**P-DL2 R**C**P-DL2	5.18 (0.204)	4.32 (0.17)	2.29 (.09)	Tunnel SOIC-8
R**F**P-DL3 R**C**P-DL3	6.86 (.270)	11.15 (0.44)	2.29 (.09)	Tunnel SOIC-16

SLOT

B D A

	A	B	D	SMT TYPE
R**F**P-SL1 R**C**P-SL1	2.34 (.092)	1.37 (.054)	1.78 (.07)	0805 Chip Package
R**F**P-SL2 R**C**P-SL2	3.48 (.137)	1.63 (.064)	1.78 (.07)	1206 Chip Package

QUAD

D A A2 B B2

	A	A2	D	B	B2	SMT TYPE
R**F**P-QD4 R**C**P-QD4	12.70 (.500)	11.43 (.450)	3.81 (.150)	15.24 (.600)	13.97 (.550)	PLCC 32
R**F**P-QD6 R**C**P-QD6	17.78 (.700)	16.76 (.660)	3.81 (.150)	17.78 (.700)	16.76 (.660)	PLCC 44
R**F**P-QD7 R**C**P-QD7	25.27 (.995)	24.38 (.960)	5.59 (.220)	25.27 (.995)	24.38 (.960)	PLCC 68
R**F**P-QD10 R**C**P-QD10	20.32 (.800)	19.30 (.760)	3.81 (.150)	20.32 (.800)	19.30 (.760)	PLCC 52
R**F**P-QD15 R**C**P-QD15	13.34 (.525)	12.32 (.485)	2.79 (.110)	13.34 (.525)	12.32 (.485)	TQFP 80
R**F**P-QD19 R**C**P-QD19	16.13 (.635)	16.13 (.635)	3.30 (.130)	16.13 (.635)	16.13 (.635)	QFP 44
R**F**P-QD20 R**C**P-QD20	16.51 (.650)	16.51 (.650)	3.30 (.130)	22.48 (.885)	22.48 (.885)	QFP 100

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