

MX-DS1

Desoldering Gun for the
MX-500P & MX-5200 Series



MX-DS1 User Guide

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METCAL

7000-0770_H



WARNING

With power applied, the tip temperature can be > 300°C. Failure to observe the following precautions may lead to injury to users or damage the equipment:

- Do not touch any metallic parts of the hand-piece
- Do not use near flammable items
- Do not use unit for any function other than described in this manual
- Use only genuine OK International replacement parts
- Use in a well ventilated area
- Do not use the equipment with wet hands
- Connect only to properly grounded outlets to prevent risk of electric shock.
- Always place hand-piece back into the work stand to prevent accidental burning of oneself or surrounding objects.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the appliance.

Although the systems offer superior EOS (Electrical Overstress) protection, periodic checks of the instrument cord should be incorporated into standard operator maintenance procedures.

Waste Electrical and Electronic Equipment Directive - WEEE (2002/96/EC).

When this product is no longer required, if it cannot be re-used, we ask our customers not to dispose of it as unsorted municipal waste but to appropriately recycle the product. In Europe, please contact your OK International distributor who can advise the recycling options available (www.metcal.com).



INTRODUCTION

The MX-DS1 is a hand-held desoldering tool which utilizes shop air to create a powerful Venturi vacuum to clean through-holes quickly and efficiently. Paper solder collection liners within the hand-piece barrel are easy to maintain and are an improvement upon traditional glass tubes. Shop air is required for operation.

ACCESSORIES & SPARES

MX-DCF1	DS1 Filter Pack; 15 Chamber Liners, 6 Fume Filters
MX-DCF1L	DS1 Chamber Liners (pack of 40)
MX-MCF1F	DS1 Fume Filters (pack of 20)
MX-DAR1	Air Regulator and Filter with Fittings
AC-TC-P	Desolder tip Cleaner (Pack of 12)
AC-CB1-P	Desolder Chamber Cleaning Brush (Pack of 25)
AC-CB2-P	Desolder Tube Cleaning Brush (Pack of 6)
MX-DVC-1	Venturi Cartridge for Desolder Gun
MX-DSL1	DS1 Chamber Seal
MX-DSL2	DS1 Cartridge Seal
MX-DSB	Desolder Gun Swivel Bushing
MX-DLA	Desolder Gun Latch Adjustment (Pack of 10)
MX-DMK1	DS1 Maintenance Kit

CHOOSING THE CORRECT GEOMETRY

Select a tip with an inside diameter larger than the lead diameter. Select a tip with an outside diameter that is approximately the same size as the pad.

A standard STDC cartridge can desolder a maximum lead length of 0.0170." For fast, safe removal of devices that are difficult to reach on densely populated boards, or to remove long pin connectors, try the STDC long reach cartridges. They are identical to standard STDC tip cartridges, but with a 0.46" long extension at the tip.

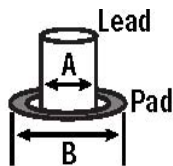


Correct

Too Small

Too Large

CHOOSING THE CORRECT TEMPERATURE (SERIES)



Start with a 600 Series cartridge, switching to a 700 Series only where absolutely necessary; for example, when working with ground planes or multi-layer boards. For long reach tips, start with a 700 Series cartridge. For extremely heavy loads tied to ground planes, or very thick multi-layer boards, 800 Series cartridges may be necessary.

		Part Number				
Inside Dia. (A)	Outside Dia. (B)	600 Series	700 Series	800 SERIES	LONG Reach*	long reach 800 series
0.025"	0.055"	STDC-002	STDC-102	STDC-802	N/A	N/A
0.030"	0.066"	STDC-003	STDC-103	STDC-803	STDC-703L	STDC-803L
0.040"	0.070"	STDC-004	STDC-104	STDC-804	STDC-704L	STDC-804L
0.050"	0.080"	STDC-005	STDC-105	STDC-805	STDC-705L	STDC-805L
0.060"	0.090"	STDC-006	STDC-106	STDC-806	N/A	N/A
0.095"	0.125"	STDC-007	STDC-107	STDC-807	N/A	N/A

** When using long reach cartridges, 600 series heat delivery is insufficient for fast, safe device removal. Therefore, long reach desolder tips are only available in 700 and 800 Series.

CHOOSING THE CORRECT DESOLDER CARTRIDGE

Proper tip cartridge selection is important for getting the best results from your Metcal System. Choosing the right tip cartridge will maximize your performance at the lowest possible temperature. Since changing the tip cartridge is so quick and easy, there is no need to compromise.

ATTACHING THE AIR HOSE TO THE DESOLDER HANDPIECE

1. Make sure the system is turned off.
2. Clamp the Desoldering Power Cord to the air line using the clamp, making sure that the end of the Power Cord is four inches beyond the end of the air line
3. Attach the desoldering air line to the DS1 hand-piece by using the swivel fitting. A wrench is not needed, but the connection should be as tight as your fingers can make it.
4. Attach the other end of the Air Line to your air supply, using a filter/regulator to maintain the proper psi. Operating the desoldering tool above 100 psi could cause the air line to rupture. The tool works best when the air supply is set at 80 psi.



PREPARING THE DESOLDER HAND-PIECE

1. Open the hand-piece by sliding the top grooved portion forward.
2. Pivot the top of the hand-piece open.
3. Apply a thin layer of silicone grease inside the top of the chamber. This will aid in keeping the roof of the chamber clear of incidental solder splatter.
4. Inspect the chamber seal to be sure it is clean and is not cut or damaged.



INSERTING FILTERS INTO THE DESOLDER HANDPIECE

1. Open the hand-piece. **CAUTION: THE TIP MAY BE HOT!**
2. Insert a new Chamber Liner in the rectangular cavity. Be sure to orient the tab toward the back of the hand-piece.

INSERTING/REPLACING TIP CARTRIDGES INTO THE DESOLDER HAND-PIECE

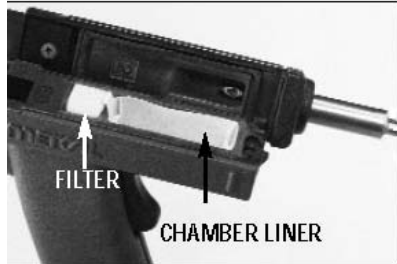
1. Make sure the system is turned off.
2. Pull out the cartridge using the Cartridge Removal Pad
3. Insert the tip cartridge into the desoldering hand-piece by pushing in the "back end" of the cartridge (the end without the tip) as far as it will go. Notice that the tailpipe must be oriented down.
4. Turn on the system. The new cartridge should heat up to temperature quickly.



MAINTENANCE: CLEANING THE COLLECTION CHAMBER

WARNING: ALTHOUGH THE DESOLDER TOOL CAN BE OPENED AND CLEANED WHILE THE SYSTEM IS ON, THE CARTRIDGE WILL BE HOT. USE EXTREME CAUTION WHEN OPENING THE TOOL SO AS TO AVOID BURNING YOUR FINGERS OR HAND ON THE EXPOSED CARTRIDGE

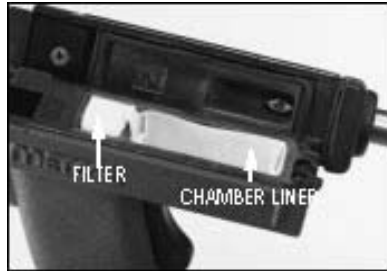
1. Open the Desoldering Handle and remove the Chamber Liner. The liner has a convenient lift-out tab to facilitate removal.
2. In addition to replacing the Chamber Liner when full, you should periodically scrape any solder or resin from the inside of the upper half of the handle in the area around the Cartridge tailpipe.
3. Apply a layer of silicone grease to the surface after it is scraped clean. Check that the chamber seal surface is clean before closing the handle.
4. Two cleaning brushes are included with your system. Use these with Isopropyl Alcohol or detergent to clean flux and solder residue from the chamber and cartridge seals.



NOTE: SILICONE GREASE WILL CONTAMINATE ELECTRONIC CONNECTIONS AND SHOULD BE USED WITH CARE AROUND ELECTRONIC PARTS.

The Venturi Filter will collect resins and will need to be replaced as often as use dictates. After time, the passageways below the filter will also clog with resin. When this happens, follow the procedure below.

1. Open the Desoldering Handle and remove the chamber filter.
2. Squirt flux cleaner in the passage, and then pull the trigger to suck the solvent through the Venturi. Repeat until Venturi is clear.



MAINTENANCE: REPLACING THE VENTURI

If vacuum is still low after checking and cleaning the Venturi, it will have to be replaced.

1. Open the Desoldering Handle.
2. Remove the Chamber filter.
3. Use an appropriate slotted screwdriver to remove the Venturi cartridge. The cartridge should screw out normally. Do not force.
4. Use a torque driver to install the Venturi Cartridge to a torque of 10 to 15 inch-pounds.



MAINTENANCE: CLEANING THE DESOLDERING HANDLE

1. Remove the Desoldering Cartridge from the handle.
2. Disconnect the power cord and air hose from the handle.
3. Remove the cartridge and chamber seals.
4. Clean the handle in a mild vapor degreaser or ultrasonic bath.
5. Allow time for the tool to dry, and then replace the seals.

MAINTENANCE: CLEANING THE WORKSTAND

The exterior of the workstand can be cleaned with a soft bristle brush and a mild detergent. The cradle can be cleaned separately by removing the attachment screw, located on the bottom of the workstand.

MAINTENANCE: REPLACING THE SWIVEL BUSHING

1. Turn off shop air.
2. Unscrew air hose from the desolder tool.
3. Using an adjustable wrench, unscrew the swivel bushing.
Note: the swivel bushing is secured in the tool with a sealant so it may be difficult to remove.
4. When you remove the swivel bushing, you will see a spring. Keep it in place.
5. Make sure the area where the swivel bushing screws in is clean of foreign materials (this may require removing the spring temporarily).
6. Wrap Teflon pipe sealant around the end of the swivel bushing and with the spring in place, screw the swivel bushing into the back of the desolder tool using a torque wrench to 30-50 in-lbs.
7. Screw in the air hose onto the swivel bushing.
8. Turn on shop air and check for leaks.

MAINTENANCE: REPLACING THE UPPER CHAMBER

For an illustration of many of the steps in this technique, see following page.

1. Remove the power cord from back of the upper chamber.
2. Open the upper chamber.
3. Insert a long, thin tool in the back hinge where the upper chamber hinges to the tool handle assembly.
4. Push tool inwards and pull the upper chamber away from the tool handle assembly.
5. Completely remove upper chamber.
6. Remove old pins and springs from the front and back pin bores.
7. Insert two new springs, and two new hinge pins, into the pin bores on either end of the tool handle assembly. Ensure that the smaller, tapered ends of the hinge pins, are pointing outward.
8. Install upper chamber assembly onto tool handle assembly by pushing the hinge pins into their bores until the arms of the upper chamber assembly will slide onto the handle assembly. The hinge pins should slide out into their pilot holes in the arms of the upper chamber.
9. Check the functioning of the slide latch and hinge by operating the latch, opening and closing the upper body a few times. The parting lines (gaps) between the rear of the chamber and the top rear of the right handle should be parallel.

MAINTENANCE: REPLACING CARTRIDGE SEALS

1. Turn off the system and remove the desolder cartridge.
2. Pry out the cartridge seal (at the front end of tool) by gently prying it out with a small screwdriver, paper clip, or other blunt instrument.
3. Replace the cartridge seal by pushing it in.

MAINTENANCE: REPLACING CHAMBER SEALS

1. Remove the air line and power cord from the desoldering handle.
2. Open the desoldering handle and lay it down with the hinge side facing up toward you
3. Before removing the hinge pins, cover the hinge area with your hand as you remove the top. They are spring loaded and might shoot out of the tool as the top is removed. Take the end of a paper clip and push it into the small hole at the front or rear of the hinge. This will push the hinge pin into the tool. You can then wiggle the top of the tool away from the hinge pin. Repeat this with the other hinge.
4. Remove the top half of the tool.
5. Remove the solder chamber seal using a knife.
6. To install the new chamber seal, start with a short side, and use a screwdriver or other blunt tip to tuck the seal lip into the retaining groove

7. Next, tuck the other short side.
8. Finish with the long sides.



TROUBLESHOOTING GUIDE: DESOLDERING TOOL DOES Not REMOVE SOLDER

1. Check if the tip is heating up by applying solder to the tip. If it does not heat, follow the steps under "Tip Will Not Heat" earlier in this manual.
2. Turn the power supply off.
3. Open the handle.
4. Replace the Chamber filter if it appears dirty and full of flux.
5. Replace the Chamber liner if it is full.
6. Lay the edge of your hand over the top of the collection chamber to provide a seal. Press the trigger of the tool and verify that you feel a strong suction against your hand.
7. If the suction is not strong, proceed to step 12. If the suction is strong and you replaced with the chamber filter or liner, close the tool, insert a cartridge, turn the system on and press the trigger while melting some solder with the tip.
8. If the solder is not sucked into the tool, clean the tip with a thin wire or Tip Cleaner.
9. If this does not help, turn the system off, remove the cartridge, and visually inspect the cartridge seal and chamber seal for leaks (tears, nicks, debris). Close the tool, remove the cartridge, and place your thumb over the front opening of the tool while pressing the trigger.
10. If you do not feel a strong suction, try replacing the chamber seal.
11. If you still do not feel a strong suction, adjust the set screw under the front lip of the top slide latch.
12. If the suction is weak, check the air pressure (80 psi is ideal).
13. If there is still no vacuum generated by the unit, check all the air lines to the handle for cuts, kinks or obstructions.
14. Clean the Venturi. Squirt flux cleaner in the passage (or on a fresh Venturi), the pull the trigger for a few seconds (with the handle open).
15. If this does not work, replace the Venturi cartridge as described in "Replacing the Venturi".

If the above steps do not result in proper performance, call your Metcal representative or contact us through our website www.metcal.com.

Warranty

OK International warrants the MX-DS1 against any defects in materials or workmanship for one (1) year from the date of purchase by the original owner. This Warranty excludes normal maintenance and shall not apply to any opened, misused, abused, altered or damaged items. If the product should become defective within the warranty period, OK International will repair or replace it free of charge at its sole option. The repaired or replacement item will be shipped, freight prepaid, to the original purchaser. The warranty period will start from the date of purchase. If the date of purchase cannot be substantiated the date of manufacture will be used as the start of the warranty period.

For contact details for Warranty and Support look for your local office details at: www.metcal.com