

Weller® Tech Sheet

MODEL DS600 PORTABLE DESOLDERING STATION

PRODUCT DESCRIPTION

The DS600 Portable Power Desoldering Station is a self contained system which requires only a 120 volt 60 Hz A. C. power source for operation. The station has been designed for use in industrial applications where portability or a lack of a suitable vacuum source requires a self contained unit. The station is supplied with a carrying handle, power storage cord, and a built in desoldering iron storage compartment to enhance portability. Other features include lighted on/off switch, quick connect/disconnect locking plug and receptacle, built in iron holder, and circuit breaker.

The desoldering operation is controlled with a push button to control the vacuum pulse. The push button is built into the handle of the desoldering iron in such a manner as to allow either left or right handed operation. The desoldering head design is provided with positive sealing to prevent vacuum loss. The desoldering head supplied with the unit is temperature controlled to 800°F by the reliable Weller "Magnastat" closed loop temperature control system. The desoldering iron heating element and push button control circuit are electrically isolated from the 120 VAC power supply through a 120/24 volt step-down transformer. A 24 volt signal from the push button activates a photo-isolator circuit which turns the 120 volt compressor motor on and off. This circuit was designed to prevent voltage spikes from the motor or push button reaching the desoldering iron tip. The desoldering iron tip is also grounded to prevent damage to voltage sensitive components.

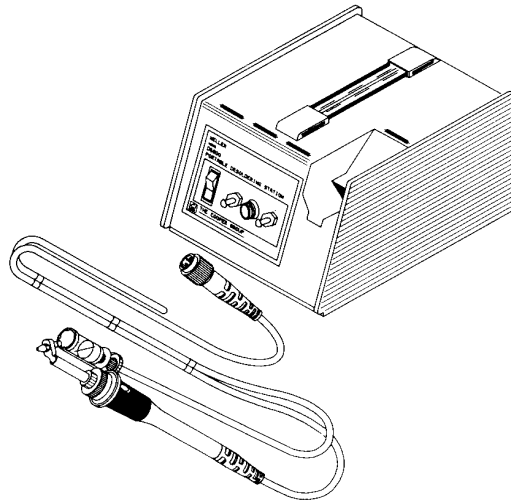
The DS600 is U. L. listed under file number E18708.

DS600 POWER VACUUM DESOLDERING SYSTEM

The vacuum compressor built into the cabinet is turned on and off by a push button conveniently located on the desoldering iron handle. The compressor motor circuit which operates on 120 volt A.C. power is electrically isolated from the push button through a 120/24 volt step-down transformer and a photo-isolator. Depressing the push button activates the photo-isolator which turns on a triac in the motor circuit. The vacuum created by the compressor is carried to the tiptlet by the vacuum hose. Releasing the push button turns off the motor and the vacuum immediately drops to zero.

POWER DESOLDERING METHOD

The recommended desoldering technique for P. C. boards is to heat the soldered connection with the component lead end inside the tiptlet until the solder is visually melted. This should take 1 to 5 seconds depending on the particular connection being desoldered. The tiptlet surface should be held flush with the P. C. board pad during heating and desoldering. Addition of a small amount of flux core solder will sometimes improve this process. As the solder melts, the tiptlet should be moved with a circular motion. This movement will cause the component lead to move around in the P. C. board hole. Depress the push button and hold it depressed while continuing to rotate the tiptlet for 1 - 2 seconds. Remove the tiptlet from the pad and then release the push button. The movement of the lead in the hole and subsequent cooling of pad and lead to below solder melt temperature will prevent the remaining solder on the pad and lead surfaces from solidifying together. This technique is definitely required when desoldering plated through holes on double or multi-layer P. C. boards.



USING DESOLDERING IRON FOR HOT AIR HEATING

WARNING: BE SURE TO REMOVE ALL THE SOLDER FROM THE TIPLET, GLASS TUBE, AND CONNECTOR TUBE BEFORE USING THE TOOL FOR HOT AIR APPLICATIONS. NEVER DIRECT HOT AIR TOWARD ANY PART OF YOUR BODY OR OTHER PEOPLE.

It is recommended that a separate desoldering head be used for hot air applications to eliminate the need for thorough cleaning before using, however, the following procedure will insure that no solder is left in the tool.

Procedure for connecting the tool for hot air use:

1. Turn the unit on and allow it to heat (3 minutes minimum).
2. With tube connected to vacuum, hold the tool vertical with the tiplet up and operate the push button for ten seconds.
3. Insert the tip cleaning tool (or a steel wire) in the tiplet and force it through into the solder collection chamber while operating the push button.
4. Hold the tool vertical and operate the push button for 5 seconds, then switch the unit off and continue to hold the tool vertical until the tiplet cools at least below solder melting temperature.
5. Remove the glass tube and clean all solder from it. Also remove the cotton filter. Replace glass tube. Make sure the gaskets are properly seated. Tighten sealing nut finger tight.
6. Connect the rubber tube connected to the vacuum fitting to the air fitting.
7. Turn the unit on and wait 3 minutes for heat up.

SPECIFICATIONS

Power Supply, DS602

Electrical

Power Input = 120 volts \pm 10%, 60 Hz, 110 watts

Transformer Output Voltage = 27 \pm 2 volts (No Load, Nominal Line Voltage)

Grounding Conductor Resistance = 0.3 ohms maximum

Vacuum

16 inches of mercury minimum

Physical

7½ W x 9½ D x 4½ H

8.4 lbs. net 9.0 lbs. gross

Desoldering Iron, DS601P

Electrical

Heater Element Resistance = 13.1 - 11.9 ohms

Grounding Conductor Resistance = 0.3 ohms maximum

Wattage = 42 watts

Physical

7½" Long x 1¼" Diameter

Weight (without cord) = 3 ounces

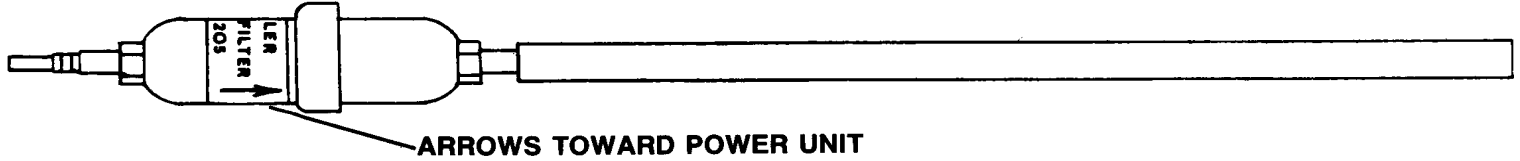
Cord Length = 4 feet

Standard Control Temperature = 700°F (800°F available)

MAINTENANCE AND REPAIR GUIDE

IN-LINE FILTER DS205

The DS205 In-Line Filter provides a second barrier to help prevent flux fumes from reaching the transducer and clogging it. The DS205 should always be used with the collector tube filter. At no time should the In-Line Filter be used alone. Solder may enter the vacuum line.



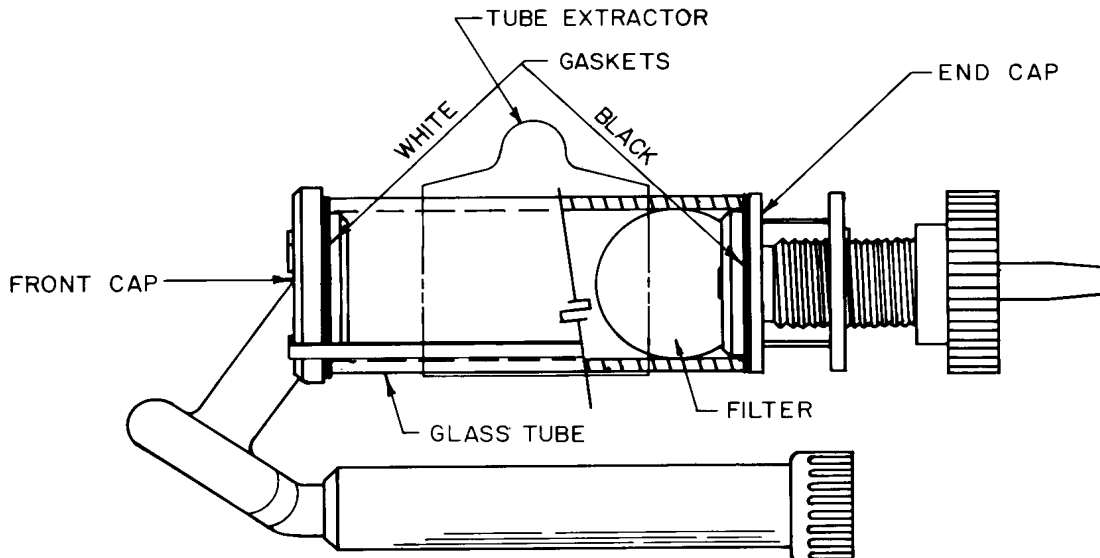
Each desoldering iron has been provided with a cotton filter in the collector tube. **Never** operate a desoldering iron without the filter in place. The purpose of the filter is to prevent solder from entering and clogging the vacuum tube or compressor. Cotton has proven to be the best material for this filter. See DS204 in parts list. Do not use spun synthetic materials, such as rayon, because they will not withstand the temperatures in the desoldering head.

Each desoldering head is provided with gaskets, one for each end of the collector tube. The gasket next to the collector head will require replacement, depending on use. Attempting to run the desoldering head without both gaskets in place will cause a vacuum leak and result in poor desoldering head performance.

The glass collector tube should be handled with care. Removing the tube with pliers may cause it to chip. Allow the tube to cool before attempting to clean and replace it into the head. Care should be taken to avoid dropping the tube onto the floor — it will break. Do not tap the tube with pliers or a screwdriver, this might cause the edge of the tube to break.

Tiplotets should be reamed out with the clean out tool (See DS104 in parts list) approximately once every 15 minutes of operation. Clogging may be experienced inside the stainless steel tiplotet liner due to solder cross sticking to the liner. Preventive maintenance with tiplotets is important for trouble free desoldering.

Some of the flux fumes from the desoldering operation may condense in the tubing and on the check valves inside the vacuum/air compressor. If allowed to accumulate these deposits can cause the check valves to stick and a loss of vacuum/air will occur. The flux deposits can be removed easily by pumping alcohol through the compressor. (See next page)

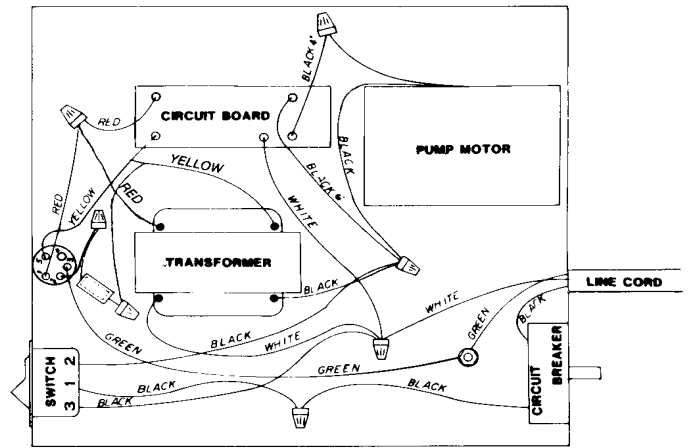
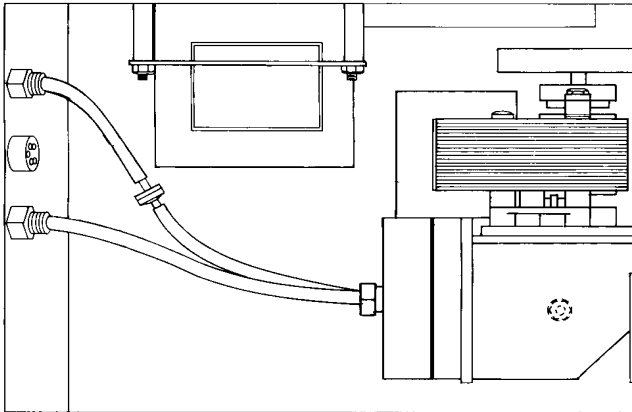


CUTAWAY VIEW OF DESOLDERING HEAD

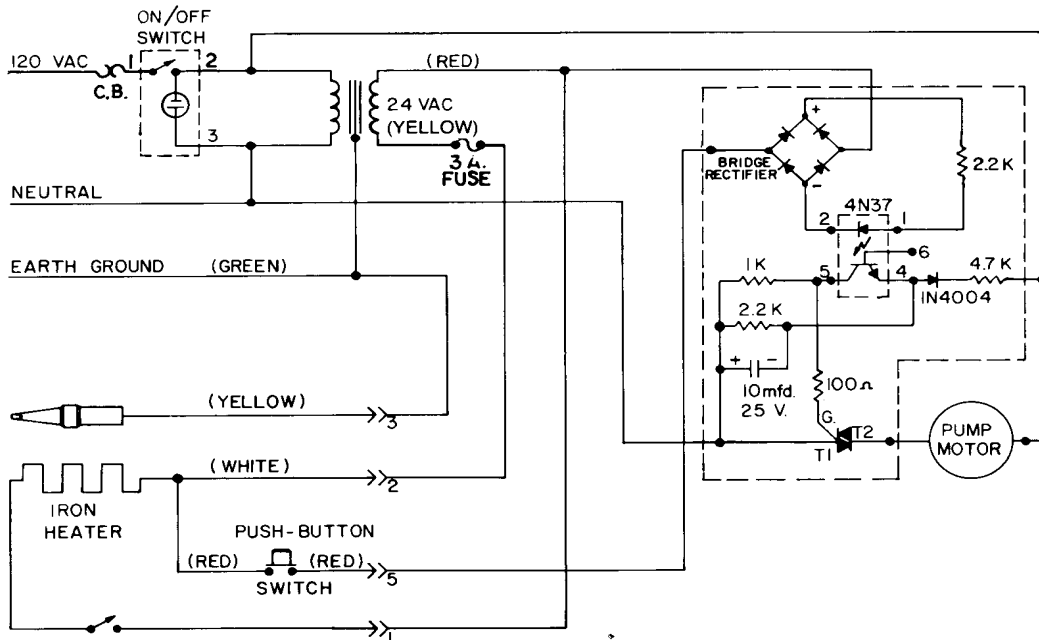
MAINTENANCE AND REPAIR GUIDE (Cont.)

WARNING: DO NOT PUMP ALCOHOL THROUGH DESOLDERING HEAD — A FLASH FIRE COULD OCCUR IF HEAD IS HOT.

Disconnect desoldering iron vacuum tube from vacuum or air fitting. Obtain an open jar or cup of wood alcohol, approx. 4 ounces of liquid. Attach the ¼" dia. PVC tubes provided with the unit to the vacuum and air fittings on the cabinet. Place the free end of the tube connected to the vacuum fitting into the alcohol, hold the other tube end connected to the air fitting in the alcohol container, but do not place the end in the liquid. Depress the push button on the desoldering iron handle to operate the pump. Allow the alcohol to circulate through the compressor for one minute. With the push button depressed, remove the tube end connected to the vacuum fitting from the alcohol and allow all the liquid to pump out of the compressor. Remove both tubes from the fittings and run the compressor for another 2 minutes to dry out the lines completely. Replace the desoldering vacuum tube. This procedure should be used as necessary to improve desoldering vacuum levels. For preventive maintenance this procedure should be performed once a month.



ELECTRICAL WIRING DIAGRAM



CHECKING AND REPAIRING

DS601 DESOLDERING IRON & DS602 POWER SUPPLY

WARNING: DISCONNECT POWER CORD BEFORE SERVICING POWER SUPPLY.

Pump Fails to Run, Iron Heats

Check continuity between pins #2 and #5 on iron plug. With push button depressed continuity should exist, it should not exist with button released. Check internal iron wiring for opens. Replacing push button is not practical. If push button is bad, a new handle assembly should be purchased. If push button is O. K., disconnect power supply cord, open cabinet, check wiring for loose connector. Check for continuity in pump motor. If motor and wire are O. K., the control board needs replacement.

Pump Fails to Run, Iron Fails to Heat, On/Off Switch Doesn't Light

Check for voltage at 120 volt receptacle.

Check and reset circuit breaker on back of cabinet.

DS600 TROUBLESHOOTING GUIDE

CAUTION: 120 VAC is present inside power unit whenever unit is connected to power line.

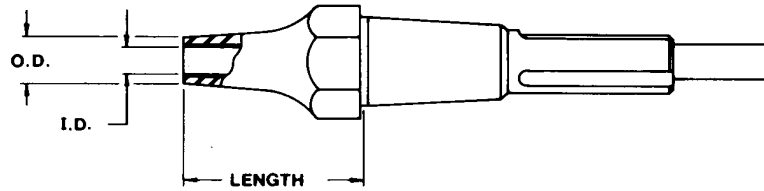
- I. DS601P hand tool will not heat.
 - A. Check at Pin 1 and Pin 2 of power unit tool receptacle for 24 VAC, (Refer to illustration for pin locations). If not found, proceed to step C. If power unit tests good, DS601P is defective.
 - B. DS601P Troubleshooting Guide* (Cold Tool).
 1. Desoldering Head Check — inspect for missing magnastat on end of head that fits into the iron. Replace head. Check spring action; there should be 1/16" minimum spring action.
 2. Heating Element Check — check resistance at Pin 1 and Pin 2 of tool plug, 12 to 14 ohms. If tool tests good, connector pins are worn or damaged and not making good contact. If tool tests bad, remove two screws from heating element flange. Grasp handle and black heat insulator in one hand and pull heater unit with other hand to unplug it from the handle assembly. Check resistance at two closely spaced pins on heating element (12 to 14 ohms).
 3. Magnastat Switch Check:
Place tool on workbench with flat at rear of handle up. Insert 3/16" flat blade screwdriver into slot at rear of handle. Compress cord by pushing downward and toward handle until cord is pushed into handle (do not pry on handle). This releases the strain relief catch. Slide handle down cord to expose switch terminals. Check for proper magnastat switch operation by testing for continuity across magnastat switch terminals with tip held against end of switch and loss of continuity when tip is removed. If magnastat switch checks good, check wiring for continuity. Refer to schematic.
 - C. Power Unit Troubleshooting Guide
(No 24 VAC at Pin 1 & Pin 2 of tool receptacle.)
CAUTION: 120 VAC is present inside the power unit case whenever the line cord is connected to a line receptacle.
 1. Check for on/off switch light when unit is turned on. If switch light is not on with unit turned on, on/off switch, circuit breaker, line cord, or associated wiring is defective.
 2. Unplug unit from A.C. line and disassemble by removing four screws from case bottom.
 3. Check circuit breaker, replace if defective.
 4. Check 3 amp fuse.
 5. Check for 24 V.A.C. between red and yellow wires at transformer with unit on and plugged into A.C. power. If transformer checks bad, replace.
- II. DS601P hand tool overheats or temperature control is erratic.
 - A. Check magnastat switch & heating element. For correct type & operation refer to steps I.B.2. & 3.
- III. High voltage on tip or indication of damage to circuit components.
 - A. Check tip ground for maximum 1 ohm resistance from heater barrel to line cord ground pin.
 - B. Check heater barrel to Pin 3 of tool plug for 1 ohm maximum.
If this shows good, go to step 3.C. Remove heating element as in step I.B.2. and check ground pin on heating element. Check from ground pin receptacle in heat insulator to tool receptacle pin. Replace iron cord.
 - C. Remove case bottom and check green wire from line cord to tool receptacle. Replace power unit line cord.

* For use with plug-in heating element tools only.

TIPLETS FOR DESOLDERING IRON

All parts that come in contact with solder are plated. All of our tiplets have a stainless steel liner that is brazed to the triplet for better heat transfer. The entire triplet is then iron and nickel plated. After nickel plating, they are chrome plated and tinned. Use only original Weller tiplets. Use of non-Weller components may void product warranty if the non-Weller component causes damage to the unit.

REPLACEMENT TIPLET SELECTION GUIDE



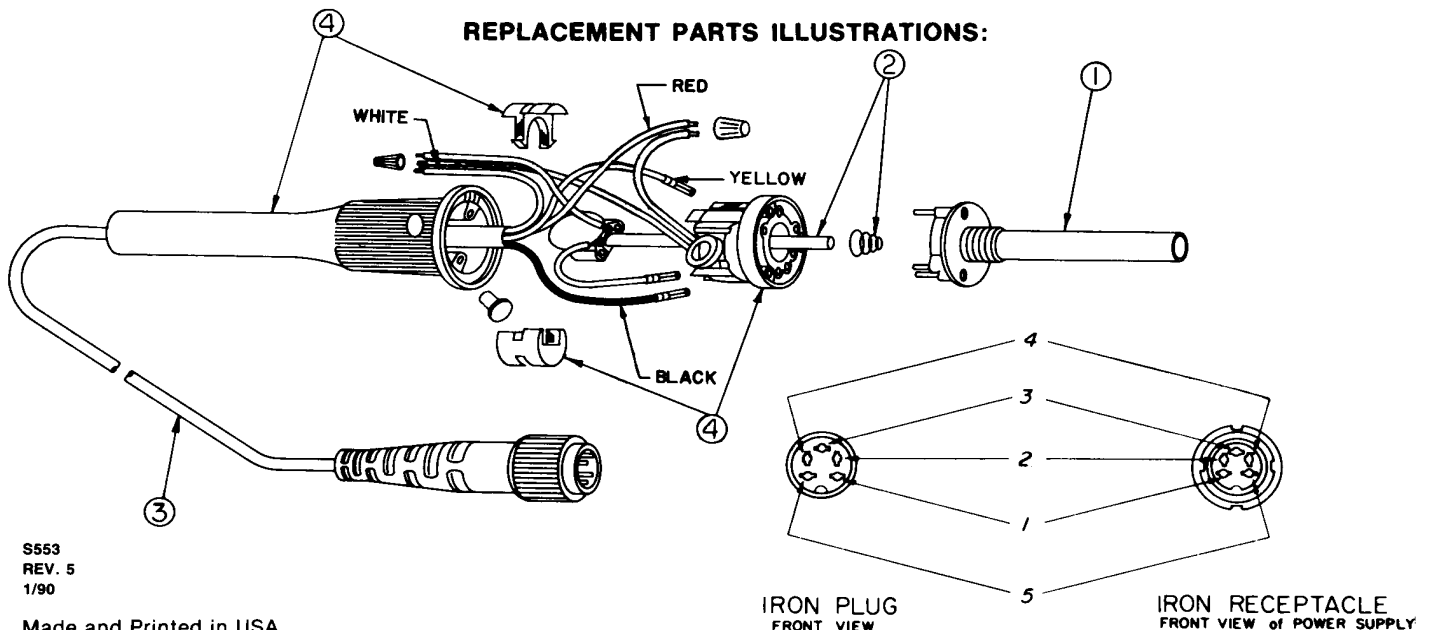
REPLACEMENT TIPLETS				REPLACEMENT TIPLETS			
	O.D.	I.D.	LENGTH		O.D.	I.D.	LENGTH
DS110T	.060	.025	.50	DS114T	.125	.071	.50
DS111T	.090	.025	.50	DS115T	.060	.025	.75
DS112T	.076	.036	.50	DS116T	.098	.045	.75
DS113T	.098	.045	.50	DS117T	.090	.025	.75

*U.S. Pat. 4,560,101
Patented Canada 1988 1,232,031

ACCESSORIES AND REPLACEMENT PARTS FOR DS600 (Please state product model number when ordering)

KEY NO.	PART NO.	DESCRIPTION	KEY NO.	PART NO.	DESCRIPTION
Not Shown	DS600	Complete Unit	Not Shown	DS606	Control Board
Not Shown	DS601P	Desoldering Iron 800°F	Not Shown	DS607	Check Valve
Not Shown	DS103	Collector Tube w/Gaskets	Not Shown	FP1	Fuse Assembly
Not Shown	DS104	Clean Out Tool	1.	EC234	Heater Assembly
Not Shown	DS204	Filter	2.	SW60	Switch Assy. w/Spring
Not Shown	DS205	In-Line Filter	4.	DS610	Handle Assembly
Not Shown	DS208	Gasket Kit			w/Pushbutton Switch
3.	DS611	Cord w/Plug	Not Shown	DS218T	Desoldering Head Tapered
Not Shown	DS209	Clean Out Tool	Not Shown	DS210	Pump Repair Kit
Not Shown	DS206	Glass Tube Extractor (10)			
Not Shown	SHA3	Cushion Grip Sleeve For Desoldering Iron Handle			
Not Shown	DS2010	Desoldering Tool			

REPLACEMENT PARTS ILLUSTRATIONS:



S553
REV. 5
1/90

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