

***Hypertherm***

**HyDefinition<sup>®</sup>**  
**HD-1070/2070/3070**  
**Start Circuit**  
**Field Upgrade**

**Field Installation Bulletin**  
**IM-294**  
**(P/N 802940)**

**Revision 3    March, 1998**

**Hypertherm, Inc.**  
**P.O. Box 5010**  
**Hanover, New Hampshire 03755-5010**  
**Tel.: (603) 643-3441**  
**Fax: (603) 643-5352**  
**<http://www.hypertherm.com>**

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## ***Hypertherm Offices Worldwide:***

### **Hypertherm, Inc.**

Etna Road, P.O. Box 5010  
Hanover, NH 03755 USA  
Tel.: (603) 643-3441 (Main Office)  
Fax: (603) 643-5352 (All Departments)  
Tel.: (800) 643-9878 (Technical Service – toll-free in USA and Canada)  
Tel.: (800) 737-2978 (Customer Service – toll-free in USA and Canada)  
email: info@hypertherm.com (General Information)  
email: service@hypertherm.com (Technical/Customer Services)

### **Hypertherm Plasmatechnik GmbH**

Technologiepark Hanau  
Rodenbacher Chaussee 6  
D-63457 Hanau-Wolfgang, Germany  
Tel.: 49 6181 58 2100  
Fax: 49 6181 58 2134

### **Hypertherm (S) Pte Ltd**

No. 19 Kaki Bukit Road 2  
K.B. Warehouse Complex  
Singapore 417847  
Tel.: 65 841 2489  
Fax: 65 841 2490

### **Hypertherm UK Ltd**

9 Berkeley Court, Manor Park  
Runcorn, Cheshire, England WA7 1TQ  
Tel.: 44 1928 579 074  
Fax: 44 1928 579 604

### **France**

15 Impasse des Rosiers  
95610 Eragny, France  
Tel.: 33 1 30 37 15 28  
Fax: 33 1 30 37 15 79

### **Hypertherm S.r.L.**

Via Torino 2  
20123 Milan, Italy  
Tel.: 39 02 725 46 312 (Customer Service)  
Tel.: 39 02 725 46 314 (Technical Service)  
Fax: 39 02 725 46 400 (All Departments)

### **Hypertherm B.V.**

Burg, Haverkampstraat 13  
7091 CN Dinxperlo, The Netherlands  
Tel.: 31 315 655 866 (Customer Service)  
Fax: 31 315 655 886

### **European Technical Support Organization (ETSO)**

Edisonstraat 12  
3281 NC Numansdorp, The Netherlands  
Tel.: 00 800 4973 7843 (00 800 Hypertherm) – (toll-free Technical Service)  
Tel.: 31 186 659494  
Fax: 31 186 659495

### **Japan**

Shinjuku Park Tower  
30th Floor  
3-7-1 Nishi-Shinjuku  
Shinjuku-ku, Tokyo  
163-1030, Japan  
Tel.: 81 03 5326 3142  
Fax: 81 03 5326 3001

## Purpose

This bulletin provides the information to upgrade the existing "start circuit" in a HyDefinition power supply. This upgrade involves removing and replacing the existing pilot arc circuit assembly, pilot arc relay, pilot arc fuse, and associated wiring.

## Required Tools

# 2 Phillips head screwdriver  
1/2-inch open-end wrench  
9/16-inch open-end wrench

## Installation Kit (128188)

<u>Part No.</u>	<u>Description</u>	<u>Quantity</u>
129264	Assembly, HyDefiniton Pilot Arc Circuit	1
003021	Relay, Pilot Arc	1
108049	Fuse, FLQ30 Time Delay, 30 Amp (Not required for HD-1070)	1
129279	Wire Group, Start Circuit Upgrade (4 Items, see Fig. 4)	1
343005	Tie Wrap, PLT2S-M	8
802940	Field Installation Bulletin, Start Circuit Field Upgrade	2

## Installation Procedure



### WARNING



Turn off all power to HyDefinition power supplies. Always press the power supply OFF (O) pushbutton switch and set the line voltage disconnect box to Off. Lock out and tag out switch. Electric shock can cause serious injury or death.

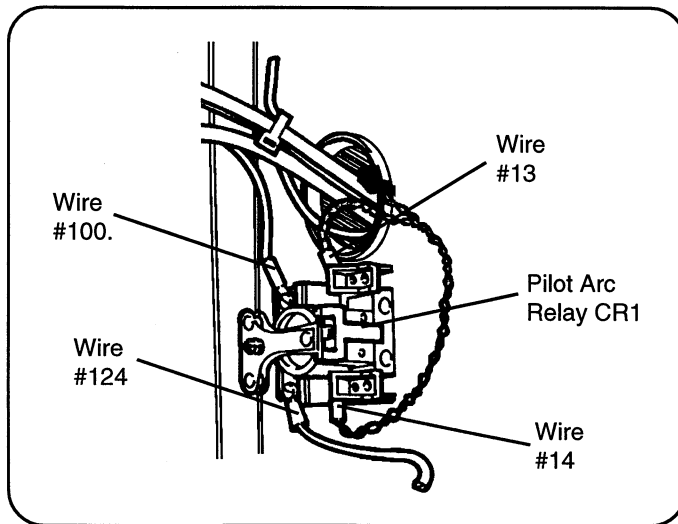
- Remove both side panels and the top cover of the power supply to allow easy removal and installation of components.

## Pilot Arc Relay Removal and Replacement

1. Disconnect the 4 wires (#100, #124, #13 and #14) from the relay (Fig.1).
2. Remove the 2 screws that hold the relay to the center panel. Save screws.
3. Install the replacement relay using the 2 screws.
4. Reconnect wires #100, #13 and #14 removed in step 1. Do not reconnect wire #124. It will be removed along with the old pilot arc circuit assembly. A new #124 wire, which is part of the new pilot arc circuit assembly, will be connected to the relay after the new circuit is installed.

## Start Circuit Upgrade

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**Figure 1 Pilot Arc Relay Removal and Replacement**

### Pilot Arc Circuit Assembly and Fuse Removal and Replacement

#### Removal

To remove the old pilot arc circuit assembly, **refer to the figures below in Section 6 of the appropriate HyDefinition manual.**

1. Remove #125 wire from the top of current shunt R3 (Fig. 6-6).
2. Cut the tie wraps away from the wire and pull wire through the hole in the center panel.
3. Remove the large black #126 wire from the I/O panel by removing nut (Figs 6-8 and 6-9). Cut away the tie wraps to free the wire.
4. Remove the smaller black #140 wire from the I/O panel by removing nut. (For reference, the other end is connected to the pilot arc circuit assembly.) Cut away the tie wraps to free the wire. Leave the other wires on the #140 terminal and reinstall nut and tighten.
5. Remove the hardware that secures the pilot arc circuit assembly to the mounting brackets (Fig. 6-8). Remove the pilot arc circuit assembly with the #124, #125, #126 and #140 wires attached.
6. Remove the hardware that secures the mounting brackets to the center panel.

#### Replacement

Refer to Figs. 2, 3 and 4 to install the new pilot arc circuit assembly and fuse.

1. Install one end of the new large # 126 wire to the top of current shunt R3 (Figs. 2 and 4).
2. Route the other end through the hole in the center panel. Snug this wire to the other large wire using the enclosed tie-wraps.
3. Locate power distribution board 1XPCB2. Remove plug PL2 from it's socket.

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4. Install the wires of the AC jumper (Fig. 4) into PL2 locations 13 (red wire) and 14 (red/black). Ensure you feel the click when the pin seats properly. Inspect PL2 to ensure the pins just installed are the same level as the other pins. Reinstall PL2.
5. Route the plug end through the hole in the center panel. Snug this twisted pair to the other wires using the enclosed tie-wraps.
6. Remove the mounting brackets from the new pilot arc circuit assembly and mount to the center panel. Use the hardware removed in step 6 of the Removal Procedure.
7. Mount the new pilot arc circuit assembly on to the mounting brackets. The 2 attached wires #H8 and #H9 should be on top. The PC board should face the front of the power supply (Fig. 3).
8. Connect the #126 wire from current shunt R3 (steps 1 and 2) and the #126 end of the 126/H8 wire to the **++ terminal** on the I/O Board. The #H8 end is connected to **H8 Work** on the pilot arc circuit assembly.
9. Connect the #124 end of the 124/H9 wire to the pilot arc relay (Fig.1). The #H9 end is connected to **H9 Nozzle** on the pilot arc circuit assembly.
10. Connect the brown plug on the AC jumper twisted pair to the pilot arc circuit assembly.
11. Remove 25 amp fuse F5 from holder and install new 30 amp time delay fuse. (**Not required for HD-1070.**)

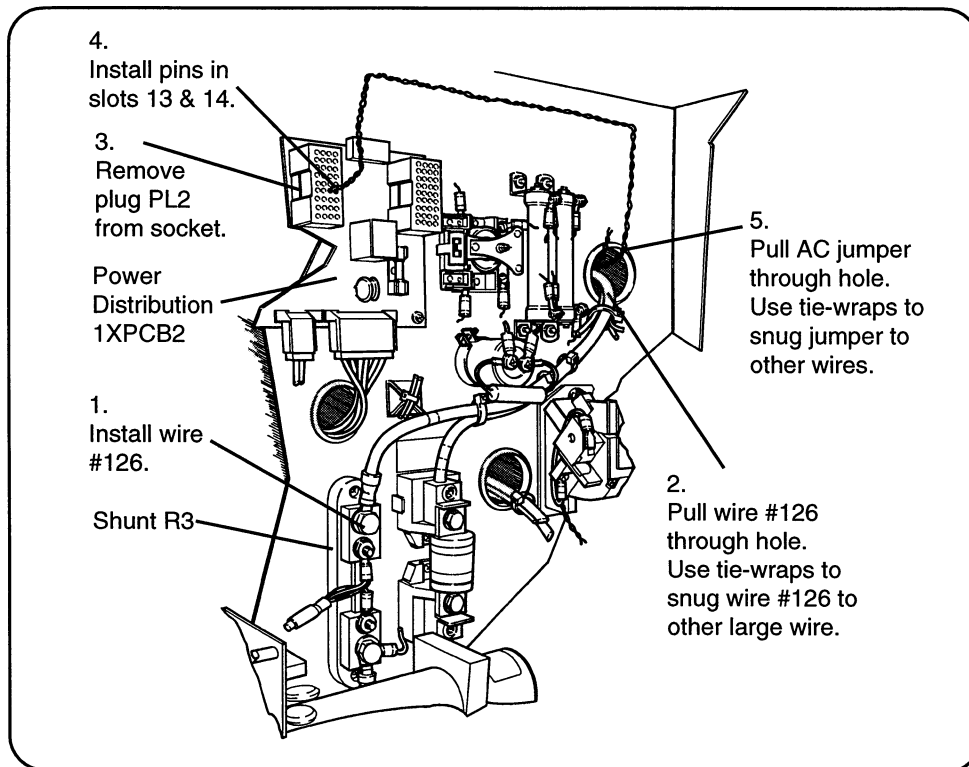


Figure 2 New Pilot Arc Circuit Assembly Installation (View 1)

## Start Circuit Upgrade

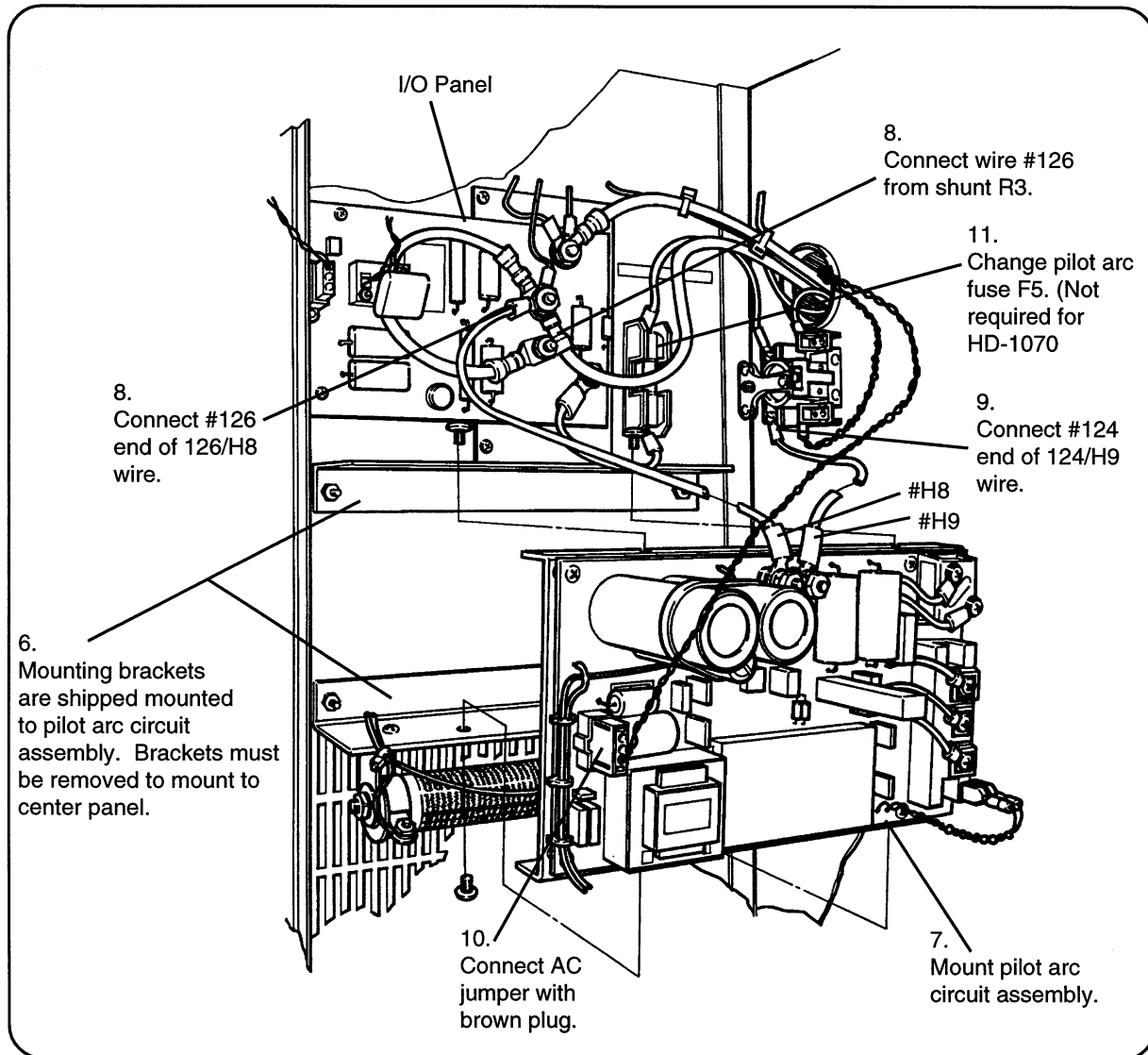
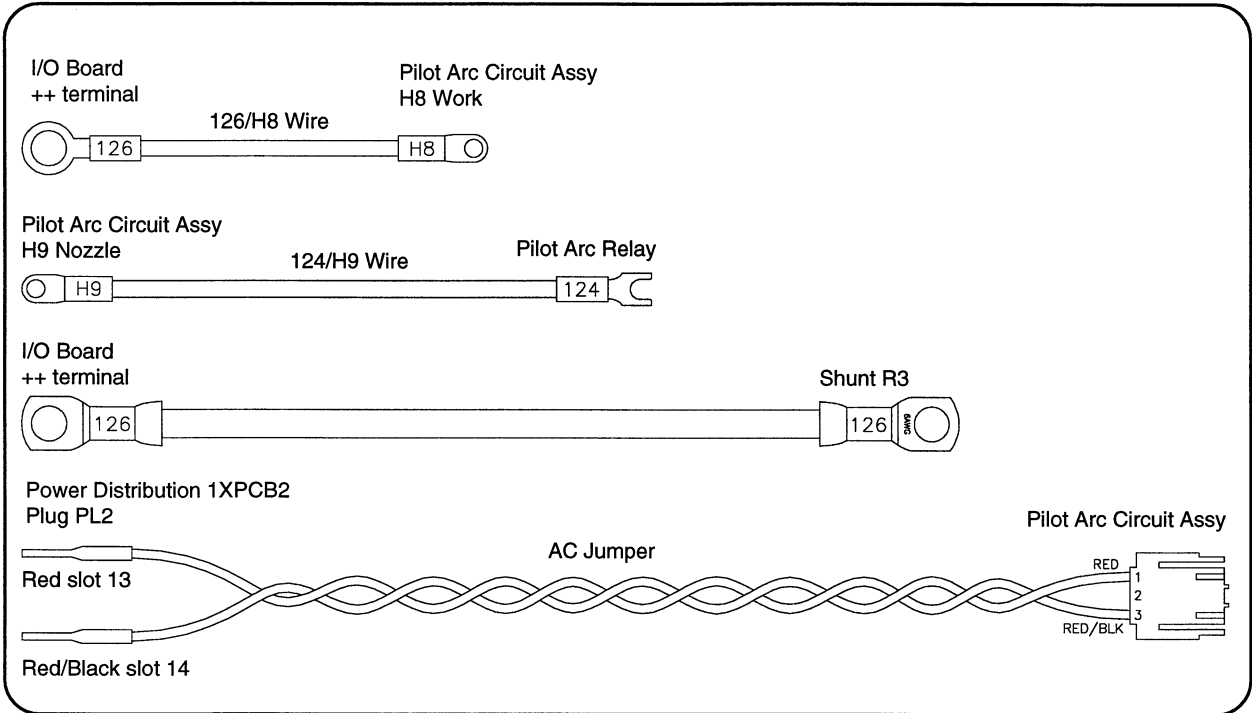


Figure 3 New Pilot Arc Circuit Assembly Installation (View 2)

# Start Circuit Upgrade



**Figure 4 Wire Group for Start Circuit Upgrade**