

HyDefinition

6kV Transformer Upgrade

**High Voltage Transformer Replacement for
HD-3070, HD-2070 and HD-1070**

**Field Service Bulletin
IM-277
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**HYPERTHERM, Inc.
P.O. Box 5010
Hanover, New Hampshire 03755-5010
Tel.: (603) 643-3441
Fax: (603) 643-5352
<http://www.hypertherm.com>
[email:info@hypertherm.com](mailto:info@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

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INTRODUCTION

Purpose

The purpose of this upgrade is to improve the start and transfer performance of the HyDefinition torches.

General

This field service bulletin will enable a skilled technician to upgrade the HD-3070, HD-2070 or HD-1070 RHF console with a new high voltage transformer. The upgrade also involves changing the two .002 μ F spark gap assembly capacitors with 1400pF capacitors.

This upgrade takes approximately 1.5 hours to complete.

Customer Required Tools

Phillips head screwdriver
Flat head screwdriver
Open end wrench set

6kV Transformer Upgrade Kit (128153):

Part No.	Description	Qty.
128153	6kV Transformer Upgrade Kit	
009975	Capacitor:1400pF 20kV	2
129199	Transformer assembly: HyDefinition 6kV	1
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INSTALLATION

There are 5 steps involved in the 6kV transformer upgrade:

- I Disconnecting the high frequency (HF) panel from the RHF console
- II Removing the HF panel from the RHF console
- III Replacing the transformer
- IV Replacing the spark gap assembly capacitors
- V Replacing and reconnecting the HF panel into the RHF console



WARNING



SHOCK HAZARD: Always turn off power and wait 5 minutes before removing opening any cover in the plasma system. If power unit is directly connected to a line disconnect box, place line disconnect switch to OFF position. Lock out and tag out switch before proceeding!



WARNING



EXPLOSION HAZARD: Turn off all supply gases before attempting this upgrade

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I DISCONNECTING HF PANEL FROM RHF CONSOLE

1. Using a flathead screwdriver, remove the AC filter and wires connected to the filter.
2. Remove door switch and wires connected to switch. **Note that red wire was attached to COM (common) and white wire was attached to NO (normally open).** When reassembling later, these wires must be attached to the correct points.
3. Using a 9/16" wrench, disconnect the pilot arc leads and remove the strain relief.
4. Using a 9/16" wrench, disconnect the power supply negative lead and coil wire from the HF panel. Remove the strain relief.
5. Using a flathead screwdriver, remove the 2X1 connector.
6. Using a 7/16" wrench, remove the PE connection.
7. Using the 1/2" wrench, remove transformer wire and coil wire from spark gap assembly.
8. Using a Phillips head screwdriver, remove 4 screws securing HF panel to RHF console.

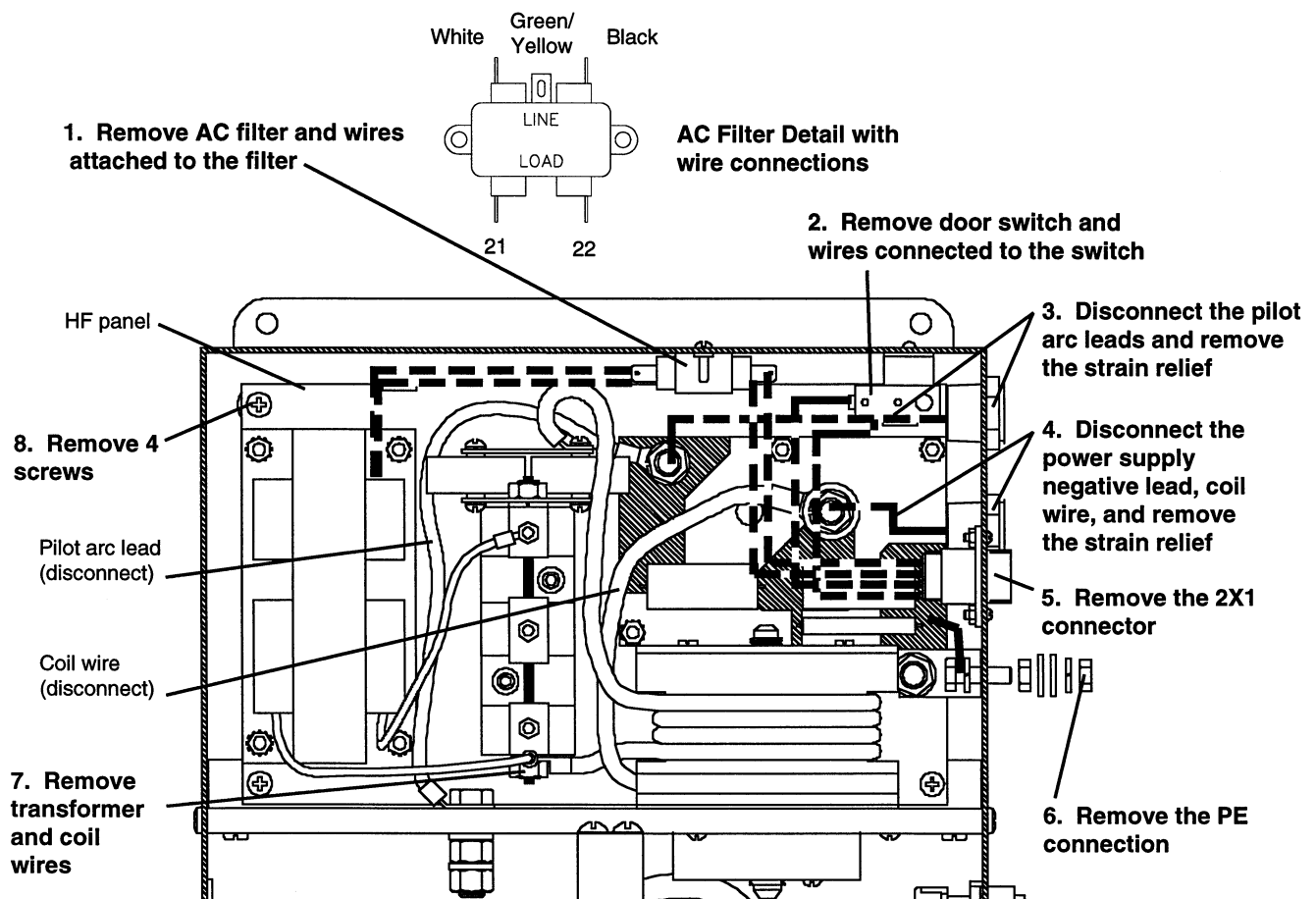


Figure 1 Disconnect the HF Panel from the RHF Console

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II REMOVING HF PANEL FROM RHF CONSOLE

1. Tilt the top of the HF panel towards you to access the coil wire still attached to the spark gap assembly.
2. Disconnect the coil wire (#47) from the spark gap assembly.
3. Remove HF panel from RHF console.

1. Tilt this end of HF panel towards you to access coil wire attached to spark gap assembly.

2. Disconnect coil wire (#47) from the spark gap assembly.

3. Remove HF panel from RHF console

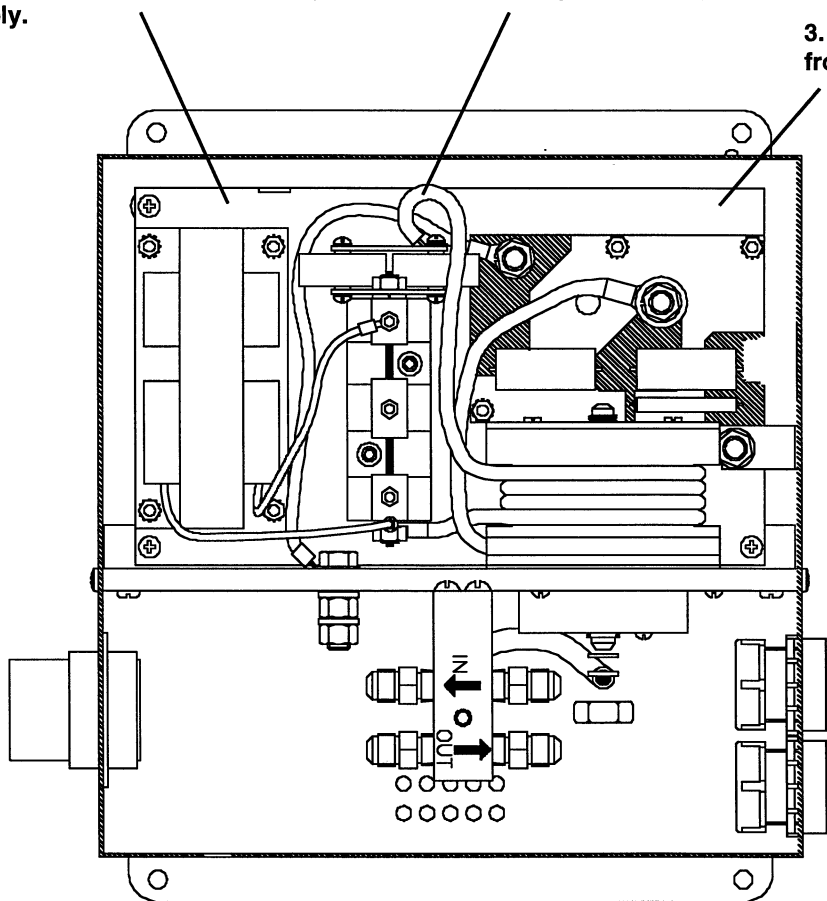


Figure 2 Removing HF Panel from RHF Console

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III REPLACING TRANSFORMER

1. Remove ground wire attached to transformer.
2. Using the 11/32" wrench, remove the remaining transformer wire from the spark gap assembly
3. Using a screwdriver from the far side of HF panel, remove the 4 screws that secure transformer to HF panel. Remove transformer from HF panel.

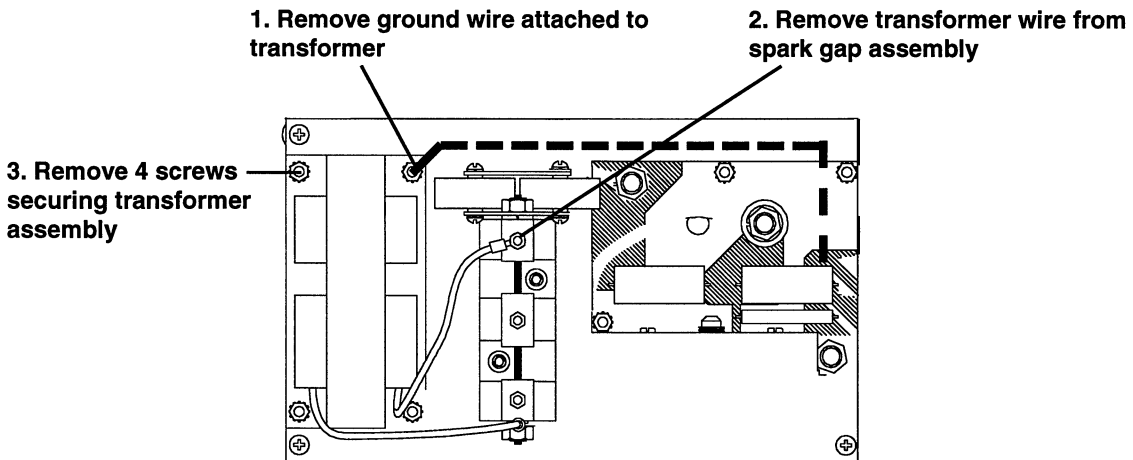


Figure 3 Removing Transformer From HF Panel

4. Twist wires on the 6kV transformer (129199) as indicated below and connect to HF panel by reversing above steps. Note: Attach transformer wire with resistor to upper spark gap assembly connection as shown.

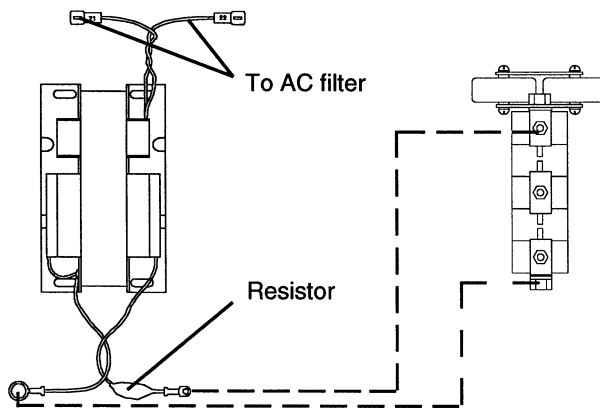


Figure 4 Twisting Wires on 6kV Transformer and Attaching to Spark Gap Assembly

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IV REPLACING SPARK GAP ASSEMBLY CAPACITORS

Note: If you have three 4000pF capacitors in your current spark gap assembly, skip these steps and go to *V Replacing and Reconnecting HF Panel into RHF Console.*

1. Using a 1/2" wrench, remove the capacitor assembly from the spark gap assembly.
2. Remove upper screw(s) from capacitor assembly and remove capacitor bracket.
3. Unscrew lower screws and remove the two .002 μ F spark gap capacitors.
4. Install the two 1400pF spark gap capacitors (009975).

Reverse these directions to reattach capacitor assembly to spark gap assembly.

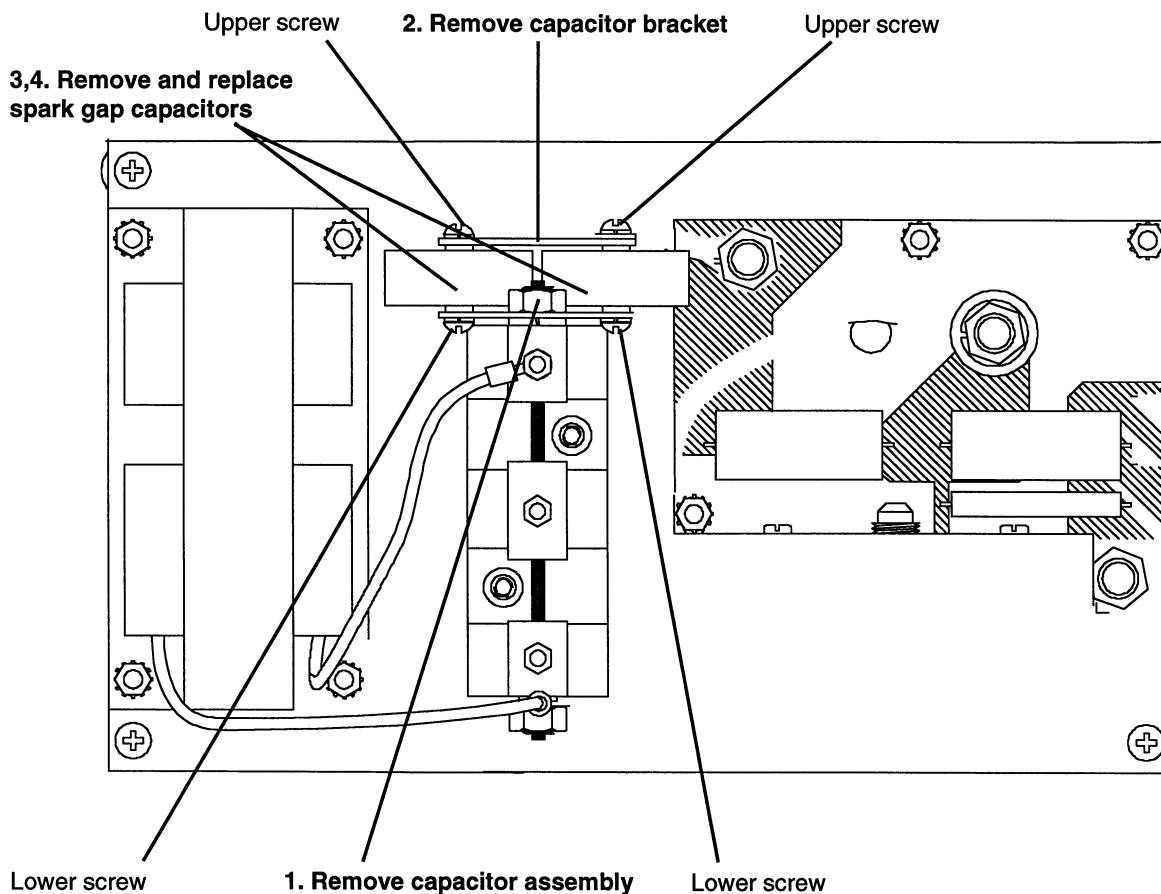


Figure 5 Replacing Spark Gap Assembly Capacitors

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V REPLACING AND RECONNECTING HF PANEL INTO RHF CONSOLE

1. Reverse directions starting at page 5 to replace and reconnect the HF panel to the RHF console. **Be certain that all wires are reconnected to the correct locations!** See Figures 1 and 2 to reattach leads and wires.
2. Verify that the spark gap remains set to .020" (0.5 mm).

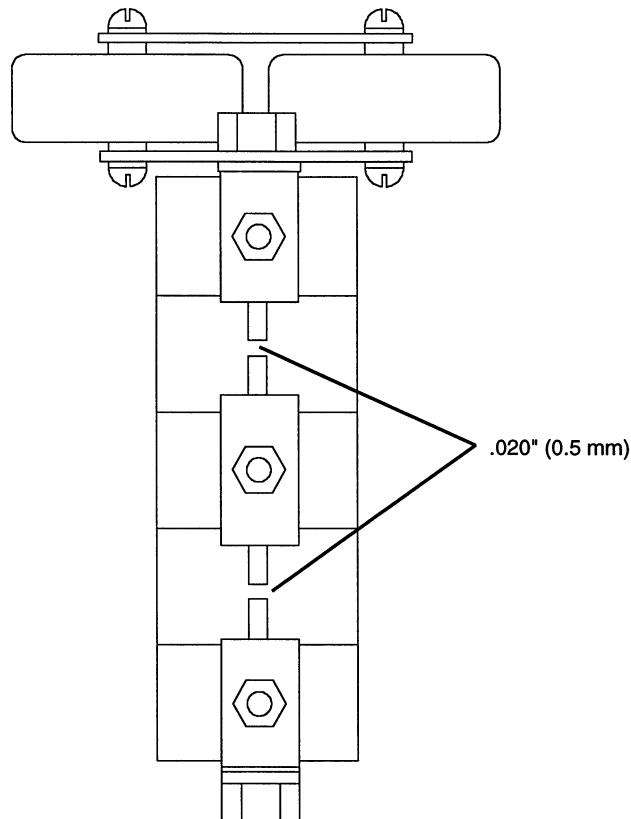


Figure 6 Setting the Spark Gap

Installation is complete. Refer to your plasma system's instruction manual to operate. If there are any problems with this installation or in your plasma system's performance, call the nearest Hypertherm technical service location listed at the front of this field service bulletin.