

HT4001[®]

Inrush Protection Upgrade

***Field Service Bulletin
802980 - Revision 1***

Hypertherm
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plasma cutting technology*

HT4001

Inrush Protection Upgrade

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HT4001 Inrush Protection Upgrade

INTRODUCTION

Purpose

This field service bulletin will enable a qualified electronics technician to upgrade an HT4001 power supply with an inrush protection circuit.

General

The HT4001 contactor (CON1) can become prematurely worn if exposed to high peaks of inrush current during the start command. This circuit will protect and significantly extend the life of the main contactor.

Customer Required Tools

Wire strippers
Pliers
13 mm deep socket
socket extension
ratchet wrench
13 mm wrench
Butt-splice crimping tool
#2 Phillips head screwdriver
#1 Flat blade screwdriver
3/8" nut driver
drill
#21 drill bit
#10-32 tap

128195 HT4001 Inrush Upgrade Kit

Part No.	Description	Qty.
074134	Terminal:16-14 Female Tee	1
075092	M/S:10-32 x 1/2 PH Pan	2
075160	Kepnut:10-32	2
129271	Chassis SA:HT4001 Inrush Upgrade	1
003139	Contactor:90A 3P 120VAC	1
009625	Resistor:2.0 Ohm 395W 10%	3
129272	Loose Wire Group:HT4001 Inrush	1
803000	Drill Template:HT4001 Inrush Upgrade	1
802980	Field Service Bulletin:HT4001 Inrush Protection Upgrade	1

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WARNING



SHOCK HAZARD: Always turn off the power, unplug the cord and wait 5 minutes before removing any power supply cover. If the power supply is directly connected to a line disconnect switch, place switch in the OFF position. In the U.S., use a "lock-out / tag-out" procedure until the service or maintenance work is complete. In other countries, follow appropriate local or national safety procedures.

PREPARATION

Remove the left, top and rear panels of the power supply. Find the inside rear wall of the power supply. Fig. 1.

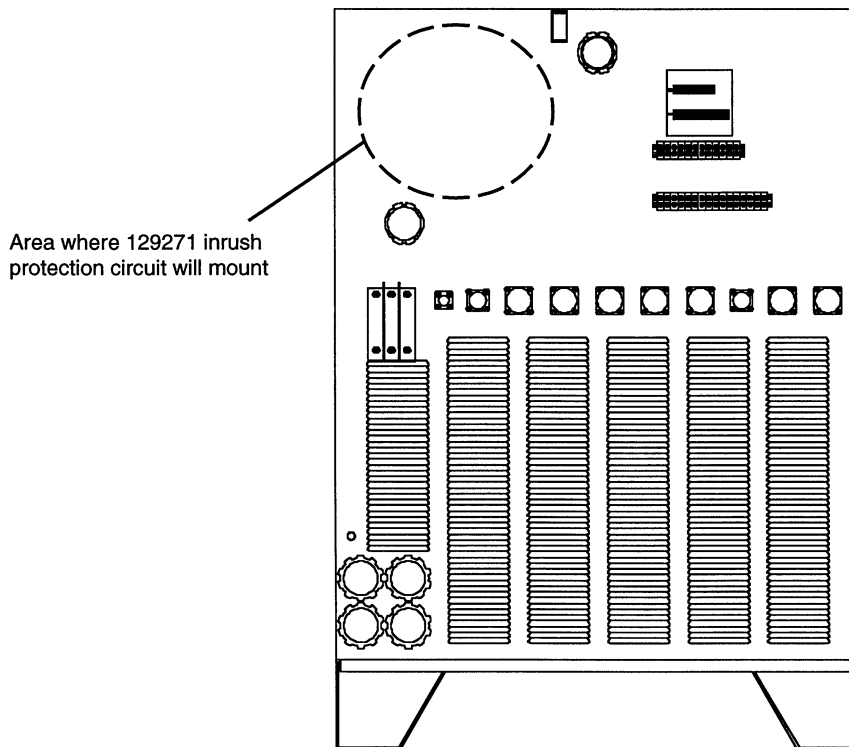




Figure 1 Inside Rear Wall of the HT4001 Power Supply

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MOUNTING THE 129271 ASSEMBLY

1. Follow the instructions on drill template 803000.
2. Install the two #10 screws into the two newly tapped holes from the outside rear wall of the power supply.
3. Hang the 129271 assembly on the two screws.
4. Secure the 129271 assembly in place with the two #10 kepnuts.

**WARNING**

BE CERTAIN TO DOUBLE-CHECK ALL WORK AFTER WIRING THE 129271 ASSEMBLY. SERIOUS INJURY OR SYSTEM DAMAGE CAN RESULT IF THE CONTACTOR IS MISWIRED!!

WIRING THE 129271 ASSEMBLY

1. To install the inrush protection upgrade to the 200V power supplies (077002 or 077016), remove the 3 wires labeled L1, L2 and L3 from the contactor of the inrush chassis assembly (Fig. 2) and replace with the loose wire group that came with the kit (Fig. 3).

On all other power supplies, no modification to the inrush chassis assembly is necessary.

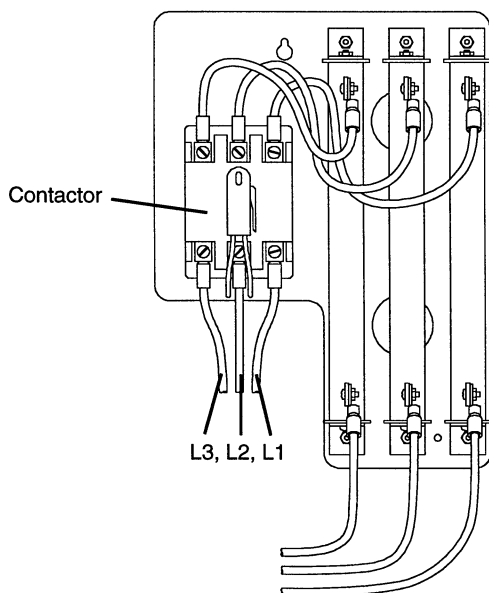


Figure 2 - Inrush Chassis Assembly 129271

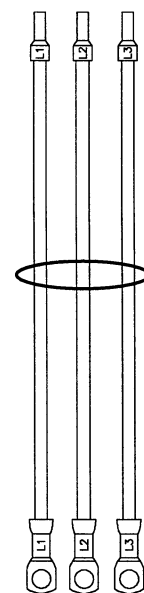


Figure 3 - Loose wire group

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2. Locate the main contactor CON1 at the rear of the HT4001 power supply. Fig. 4.
3. Push all wires from the 129271 assembly through the grommet located below CON1.

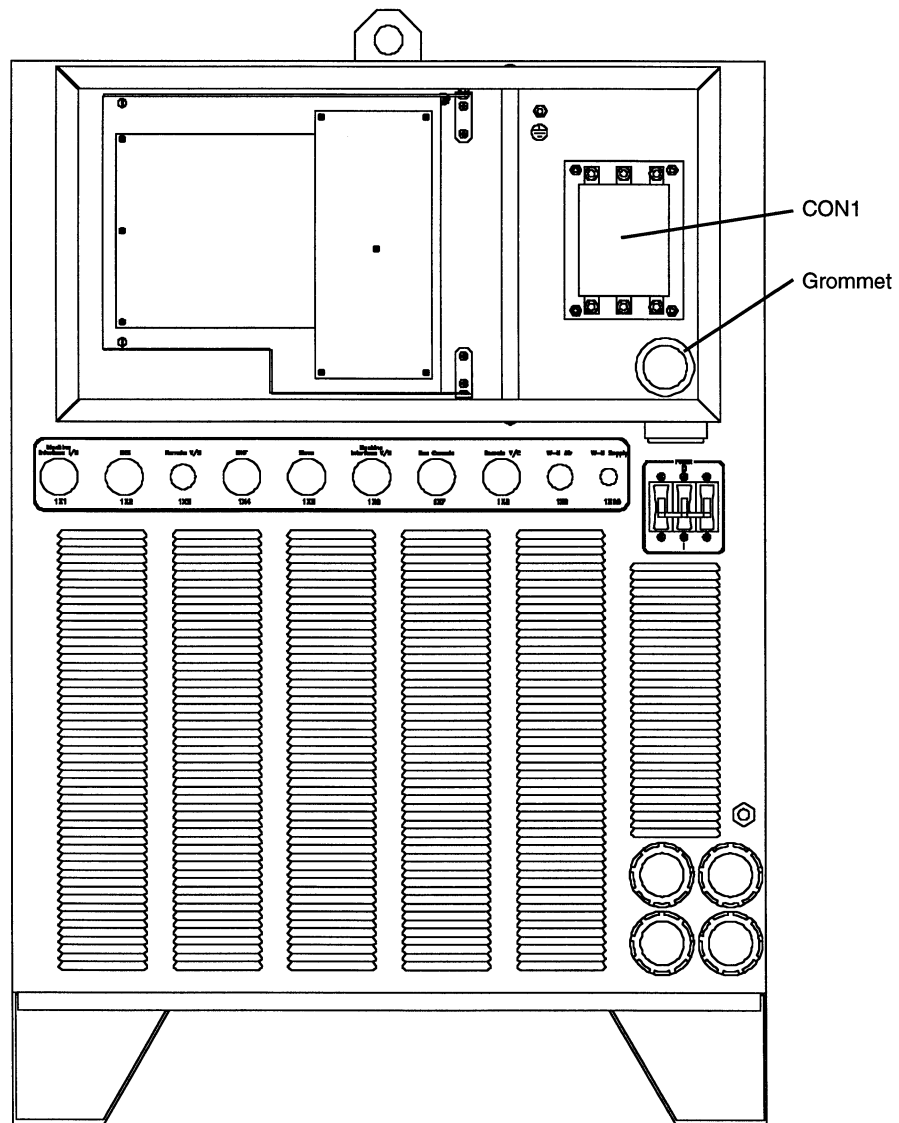


Figure 4 Main Contactor CON1 Location

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4. Crimp the 074134 terminal on control wire A2 approximately 3 inches from the A2 termination point on the CON1 contactor.
5. Insert the spade terminal on wire A2 from the 129271 assembly into the 074134 terminal.

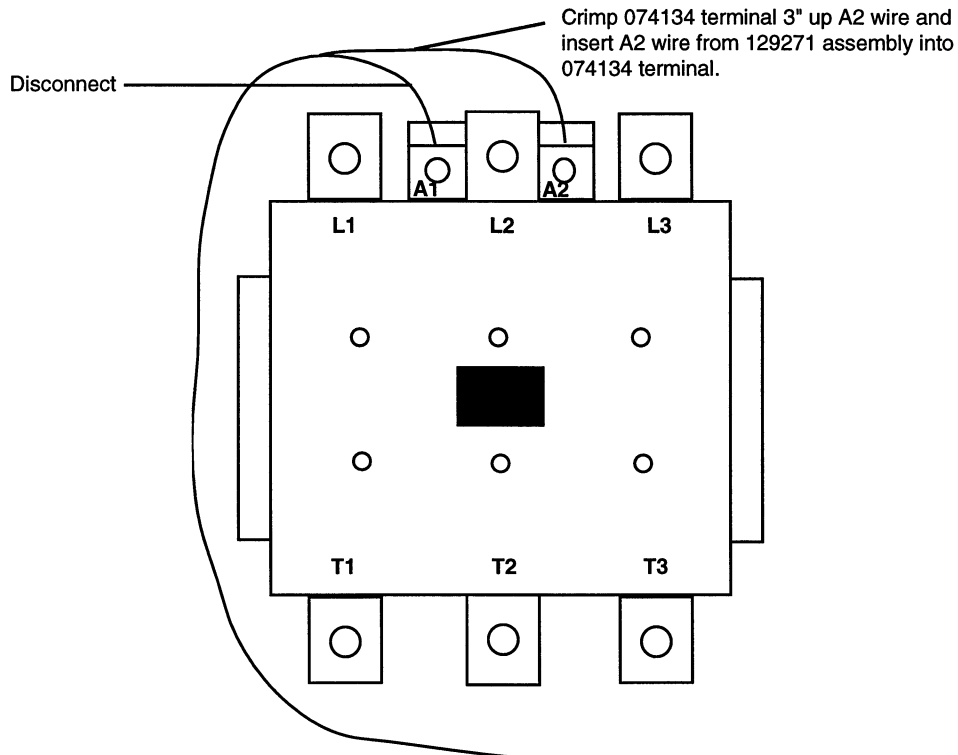


Figure 5 Main Contactor CON1

6. Disconnect control wire A1 from main contactor CON1. Fig. 5.
7. Cut off the fork terminal on this wire (A1) and strip the wire for a butt-splice connection.
8. Crimp this A1 wire to the butt splice on wire A1 from the 129271 assembly.
9. Find the other wire from the 129271 assembly labeled A1 that has a fork terminal, and connect it to the A1 location on main contactor CON1.
10. Connect the remaining cables from the 129271 assembly to the corresponding locations on main contactor CON1. Eg. Cable marked L1 connects at contactor location L1, etc.

DOUBLE-CHECK ALL WIRING BEFORE INITIALIZING SYSTEM!!

HT4001 Inrush Protection Upgrade

The following pages can be added to your HT4001 instruction manual.

PARTS LIST

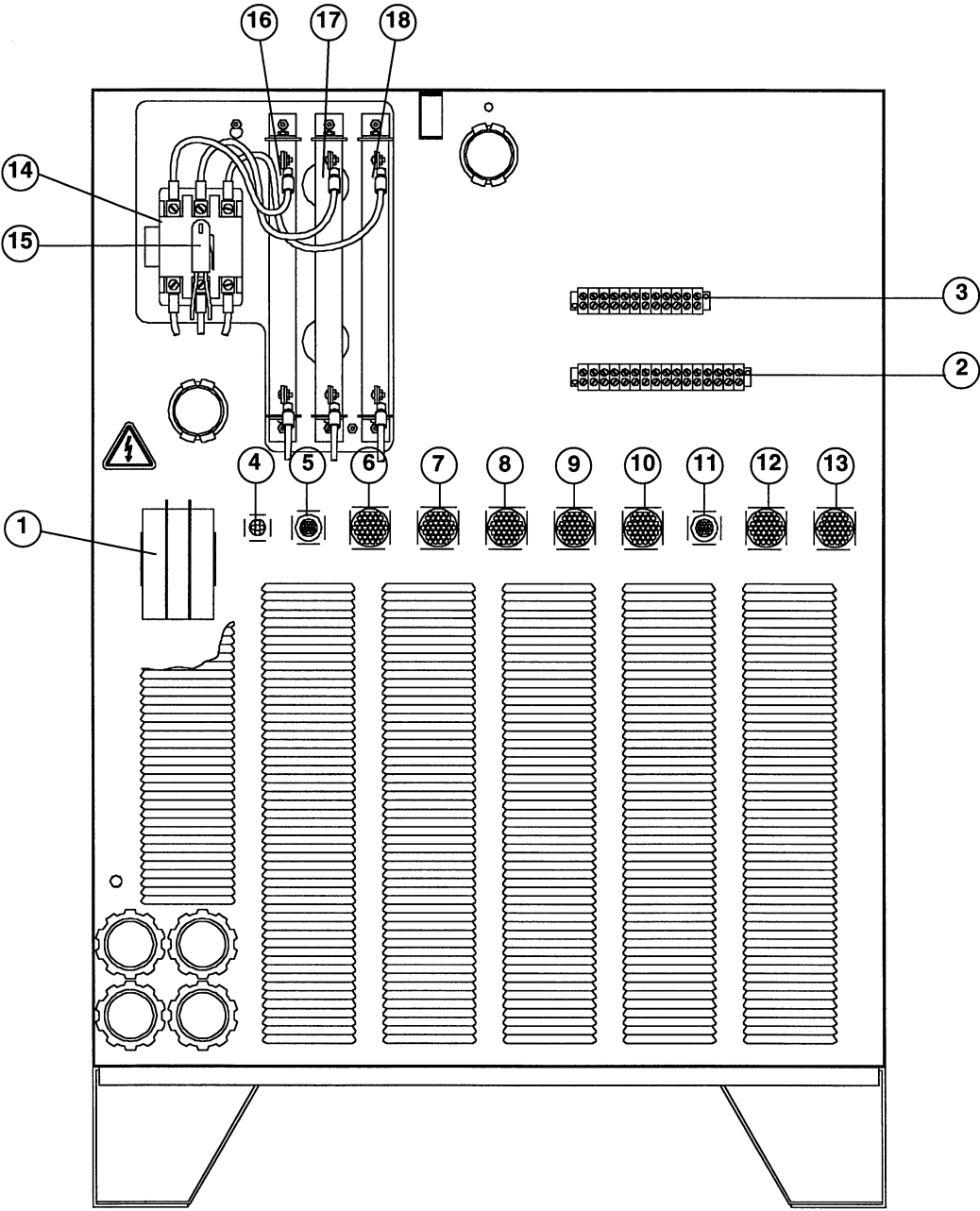


Figure 6-6 HT4001 Power Supply - Rear Wall Inside

PARTS LIST

HT4001 Power Supply (A) : Rear Wall Inside

<u>Item</u>	<u>Part Number</u>	<u>Description</u>	<u>Designator</u>	<u>Qty.</u>
1	003152	Circuit Breaker: 3 P, 5A 600V 24V-TC	CB1	1
	029887	Harness: HT4001 Power Supply		1
2	008073	Terminal Board: 16-Term	TB3	1
3	008079	Terminal Board: 12-Term	TB4	1
4	008210	Receptacle Shell: CPC 11-4 Rvs Sex	1X10	1
5	008201	Receptacle Shell: CPC 17-14 Rvs Sex	1X9	1
6	008447	Receptacle Shell: CPC 23-37 Std Sex	1X8	1
7	008208	Receptacle Shell: CPC 23-37 Rvs Sex	1X7	1
8	008208	Receptacle Shell: CPC 23-37 Rvs Sex	1X6	1
9	008208	Receptacle Shell: CPC 23-37 Rvs Sex	1X5	1
10	008208	Receptacle Shell: CPC 23-37 Rvs Sex	1X4	1
11	008201	Receptacle Shell: CPC 17-4 Rvs Sex	1X3	1
12	008208	Receptacle Shell: CPC 23-37 Rvs Sex	1X2	1
13	008447	Receptacle Shell: CPC 23-37 Std Sex	1X1	1
	008176	Pin:24-20 AWG Type III + CRP		126
	008186	Socket: 24-20 AWG Type III + CRP		136
	008203	Socket: 18-16 AWG Type III + CRP		10
	008205	Pin: 18-16 AWG Type III + CRP		4
	129350*	Chassis SA:HT4001 In Rush 200V		
	129328	Chassis SA:HT4001 In Rush		
14	003139	Contactora:90A 3P 120VAC	CON2	1
15	129270	Pilot Light SA:HT2000/4001 Contactor	LT4	1
16	009625	Resistor:2.0-Ohm 395W	R1	1
17	009625	Resistor:2.0-Ohm 395W	R2	1
18	009625	Resistor:2.0-Ohm 395W	R3	1

* Used only with 200V power supplies 077002 and 077016