

CH100

Cap Fastener Upgrade

***Field Service Bulletin
802240 - Revision 1***



CH100

Cap Fastener Upgrade

Field Service Bulletin

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CH100 - Cap Fastener Upgrade

INTRODUCTION

Purpose

This field service bulletin will enable a qualified electronic technician to modify the CH100 assembly by removing twelve internal star washers that help to support the large blue capacitors (009905) on the chopper assembly, and replacing them with six flat washers and six split lock washers.

General

This upgrade is an improvement to earlier capacitor fastening designs for the CH100 chopper. Under certain conditions, the internal star washers on earlier units can cause arcing and increase electrical resistance which could result in failure of the large capacitors.

This upgrade takes approximately two hours and should be performed during the next scheduled preventative maintenance check for the cutting system. Support is available through Hypertherm Technical Service (1-800-643-9878) and other Hypertherm offices worldwide. See listing in the front of this bulletin.

Customer Required Tools

Phillips head screwdriver
7/16" nut driver
11/32" nut driver

CH100 Cap Fastener Upgrade Kit (028858):

Part No.	Description	Qty.
028858	CH100 Fastener Upgrade Kit	
075086	M/S: 10-32 X 3/8 PH Pan S/Z	30
075202	Flat washer: #10	30
075450	Lock washer:#10 Split lock	30
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WARNING - HIGH VOLTAGE!



Power to the HT4001 system must be disconnected before modification!



WARNING



Work described in this manual must be performed only by qualified electrical or electronic technicians!



WARNING



SHOCK HAZARD: The large electrolytic capacitor(s) (blue-cased cylinder(s)) store large amounts of energy in the form of electric voltage. Even if the power is off, dangerous voltages exist at the capacitor terminals, on the chopper, and the diode heatsinks. Never discharge the capacitor(s) with a screwdriver or other implement...explosion, property damage and/or personal injury will result. Wait at least five minutes after turning the power supply off before touching the chopper or the capacitor(s).

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REMOVAL OF CH100 FROM HT4001 POWER SUPPLY

Each of the CH100s must be removed, modified and replaced.

1. Remove side and top panels from HT4001.

Looking at the inside front wall of the power supply, the choppers are designated CH1, CH2, CH3 and CH4 looking from left to right. Cables correspond to this arrangement by being labeled 1, 2, 3, 4 or A, B, C, D.

After modification, be certain to reconnect choppers exactly how they were disconnected!

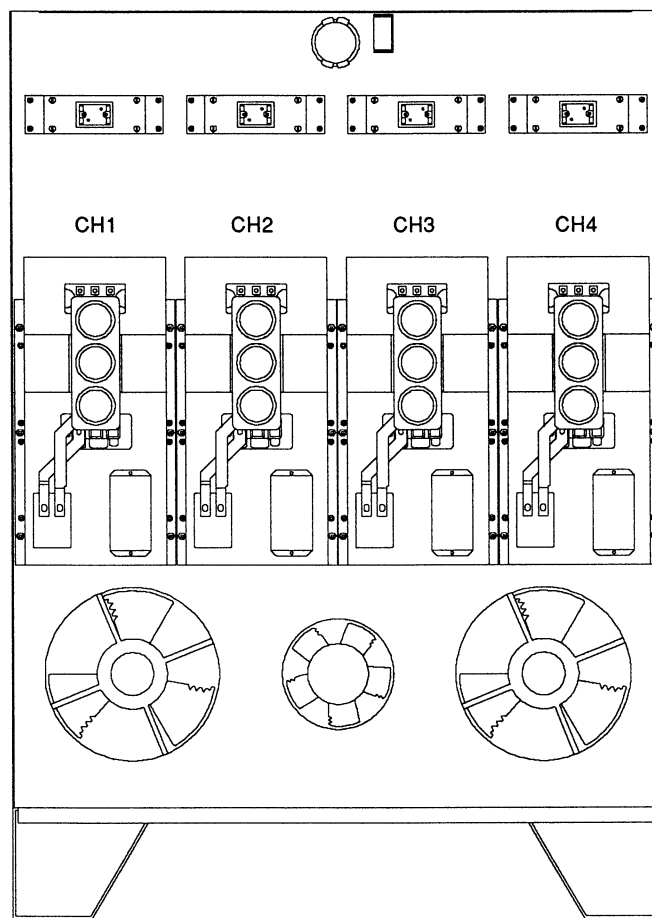


Figure 1 - HT4001 CH100 Choppers

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2. Remove cables 1A, 1B, and 1C from CH1. (Phillips head screwdriver)
3. Remove cables 39A and 48A from CH1. (7/16" nut driver)
4. Remove connectors from receptacles JP6 and JP9.
5. Remove six nuts that connect the chopper assembly to the power supply. (11/32" nut driver)
6. Remove chopper assembly.

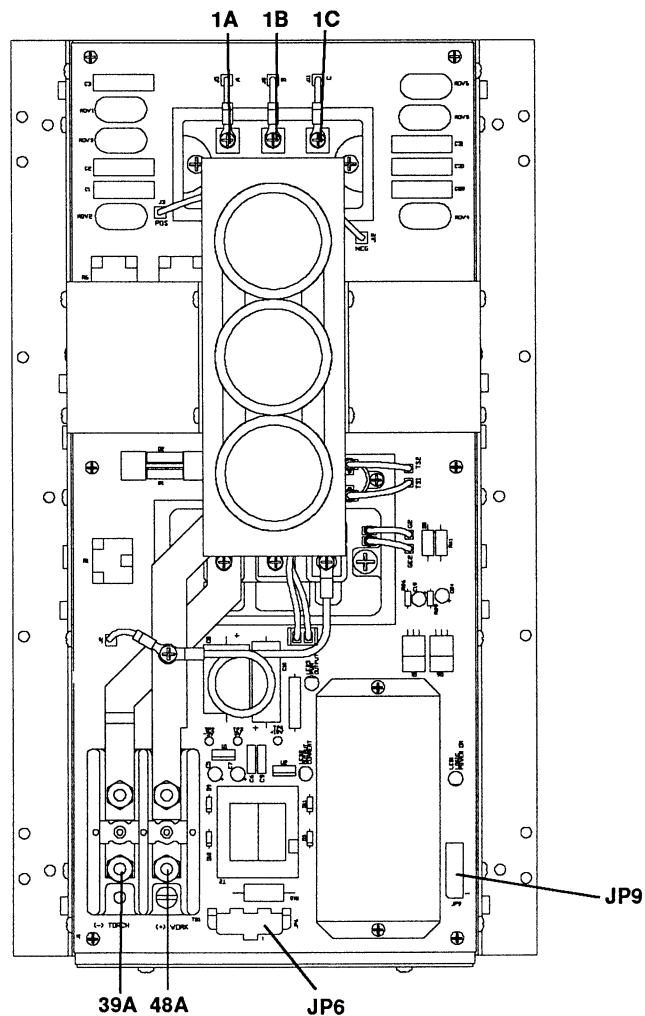


Figure 2 - CH100 Removal from HT4001 Power Supply

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CAPACITOR REMOVAL AND FASTENER UPGRADE

1. Remove two screws from bridge. Note that screws are hidden from view in Figure 3.
2. Remove screws from capacitor bracket.
3. Remove middle screw from IGBT.
4. Remove connector from REC1.
5. Remove screw from + bus bar.
6. Remove nut from + bus bar at terminal block. (7/16" nut driver)

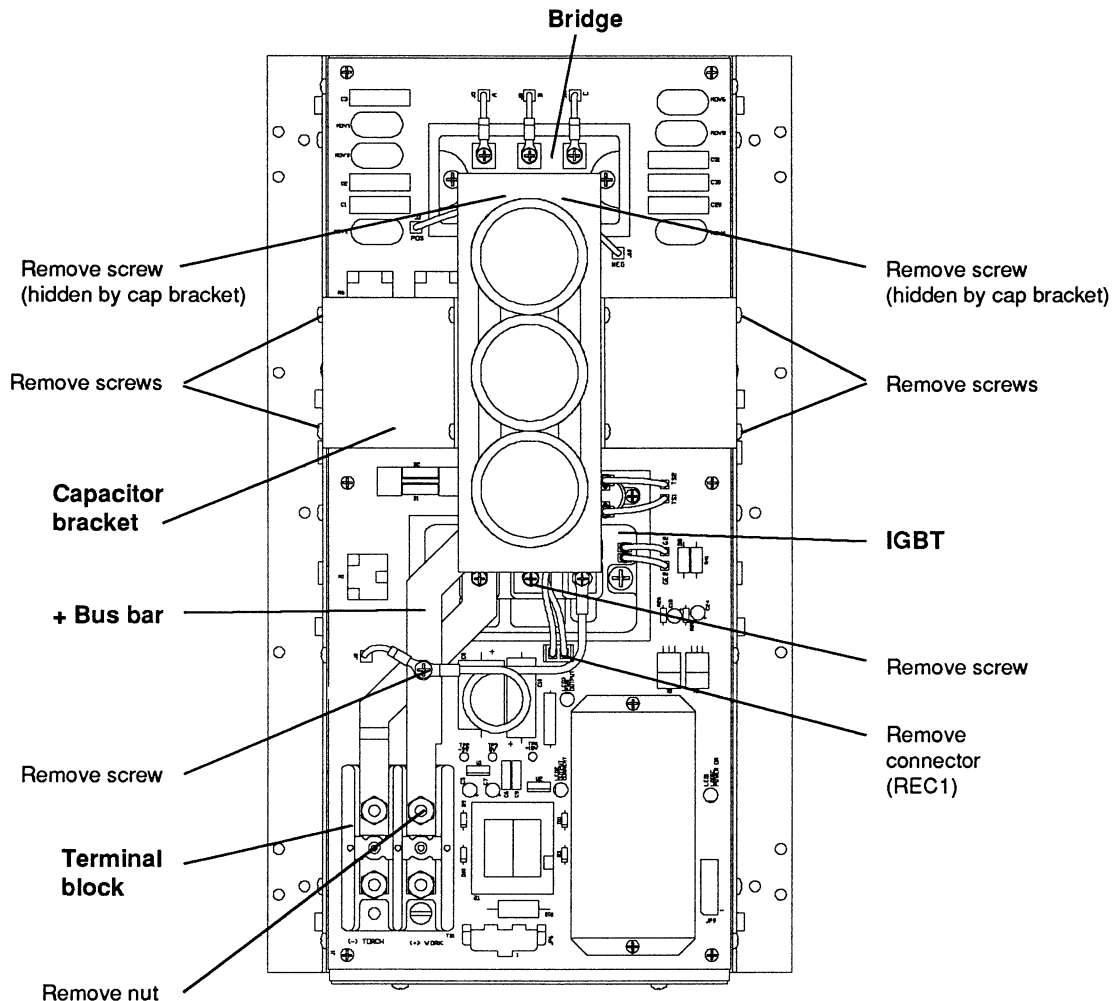


Figure 3 - CH100 Capacitor Removal

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7. Remove capacitors from bus bars and discard capacitor fastener hardware (six (6) screws and twelve (12) internal lock washers per chopper).

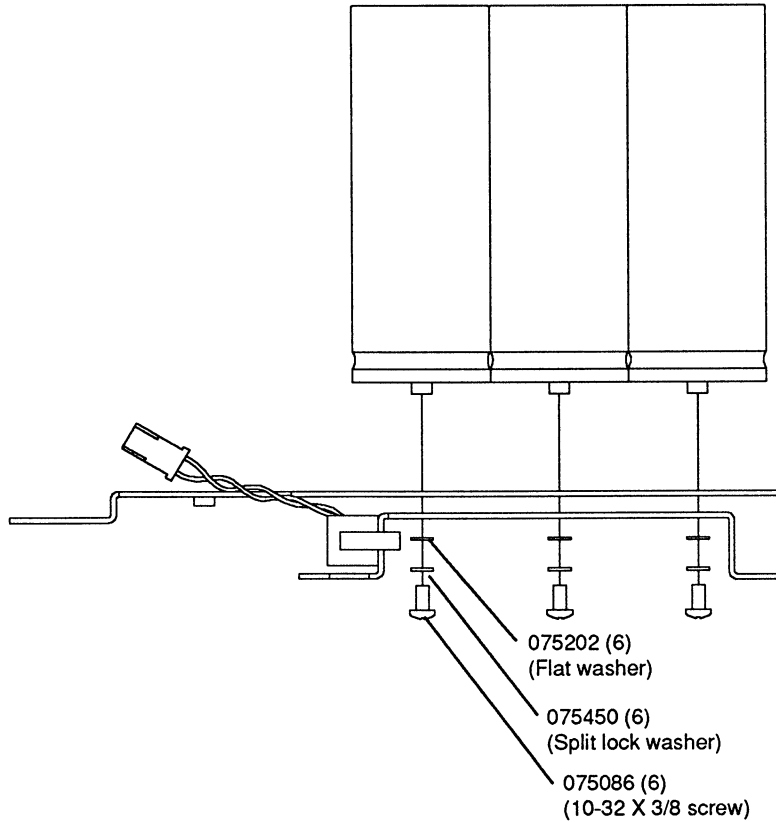


Figure 3 Capacitor Fastener Upgrade

8. Install new hardware from kit as shown in Figure 3. **Be certain that capacitor polarity is correct when fastening to bus bars!** See Figure 4.

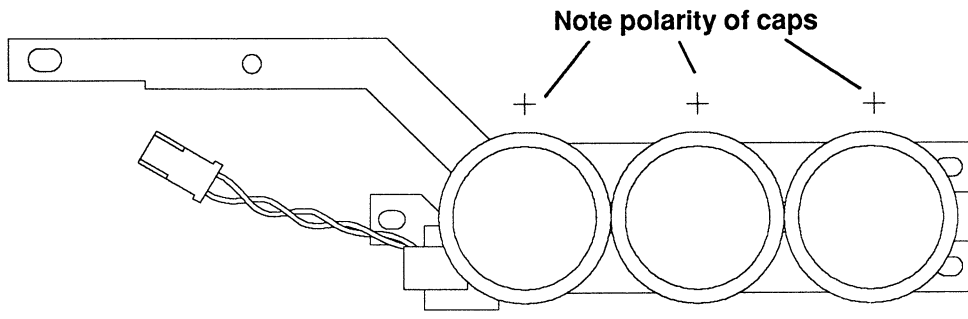


Figure 4 Capacitor Polarity Orientation (Top view)

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9. Reconnect caps with bus bars to CH100 assembly using existing hardware.
10. Repeat this procedure for changing capacitor fastener hardware on choppers CH2, CH3 and CH4.
11. Remount and reconnect CH100 choppers to HT4001 power supply.