

MAX40/40cs/ HT40C

***CH50 Chopper
Replacement***

***Field Installation Bulletin
801580 - Rev. 1***



CHOPPER INSTALLATION - MAX40/MAX40cs/HT40C

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CHOPPER INSTALLATION - MAX40/MAX40cs/HT40C

Objective

The objective of this field installation bulletin is to provide instruction for replacing the #041106 EWS chopper module with the #029631 CH50 chopper module. The procedures presented in this bulletin are applicable for the MAX40, MAX40cs, and the HT40C.

Customer Required Tools

- Regular and Phillips-head screwdrivers
- Vise grips
- Adjustable wrench

Hypertherm Parts

The format to list and call out Hypertherm parts is as follows:

Part No.	Description
XXXXXX	Bold heading indicates parent item or kit containing one or more items.
XXXXXX	Indented item in normal type indicates a part contained under the parent item or kit.
XXXXXX	Indented bold heading indicates a subassembly under the parent item or kit that also contains one or more items.

Single-Phase (1PH) Chopper SA - MAX40, MAX40cs, HT40C

Part No.	Description	Qty.
128087	CH SA 1PH MAX40 40CS HT40C	1
004554	CH50 Stand-off #10-32 X 3.625	4
023571	Jumper CH50 (HT40c & MAX40)	1
075094	M/S:10-32 X 5/8 PH Pan	4
029676	CHP SA:MAX40/CS/HT40C 1PH	1
801580	FSB:CH50 Replacement	

Three-Phase (3PH) Chopper SA - MAX40, MAX40cs, HT40C

Part No.	Description	Qty.
128100	CH SA 3PH MAX40 40CS HT40C	1
004554	CH50 Stand-off #10-32 X 3.625	4
023571	Jumper CH50 (HT40c & MAX40)	1
075094	M/S:10-32 X 5/8 PH Pan	4
029678	CHP SA:MAX40/CS/HT40C 3PH	1
801580	FSB:CH50 Replacement	

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WARNING!



Extremely dangerous voltages are present in the MAX40, MAX40cs, and HT40C power supplies. Be certain that all power to the power supply is disconnected before attempting any field installation work as described below.

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Single-Phase Chopper Removal Procedure

To remove the #041106 EWS chopper and install the #029676 CH50 chopper assembly, refer to Figures 1, 2 and 3 and proceed as follows:

1. Turn off main power to power supply.
2. Remove the seven screws from the front panel cover, and remove the front panel to expose the #041106 EWS chopper assembly.
3. Remove the cables marked **AD** and **BC** on the large transformer (T2) located on the base of the power supply. See Figure 1 below for location of terminal connections for **AD** and **BC** on the single-phase transformer.

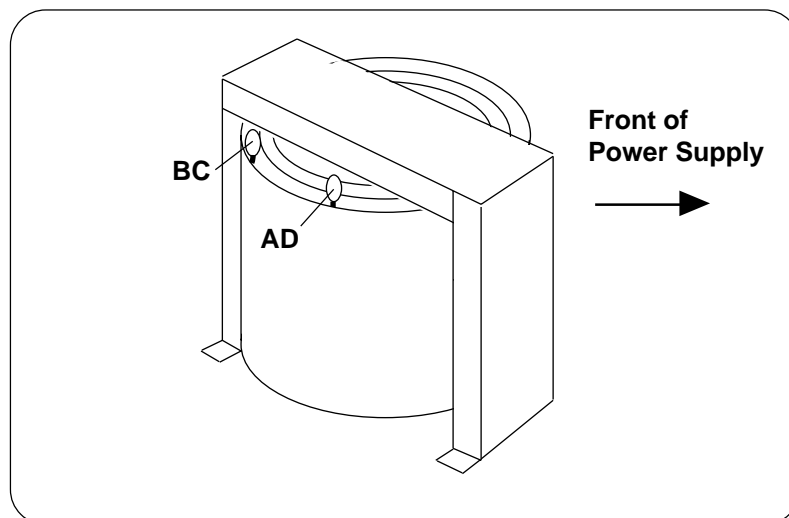


Figure 1 Single-phase transformer

4. Unplug the 12-pin connector from the top of the chopper module.
5. Unscrew and remove cables marked **48, 49, 39** from the chopper module.
6. From the three large capacitors, unscrew and remove the 1.5K Ω resistor and wires that are attached to the resistor.
7. Unscrew and remove the long bar labeled **+48** that attaches the chopper module to the top capacitor.
8. Unscrew and remove the short copper bar that attaches the chopper module to the top capacitor.

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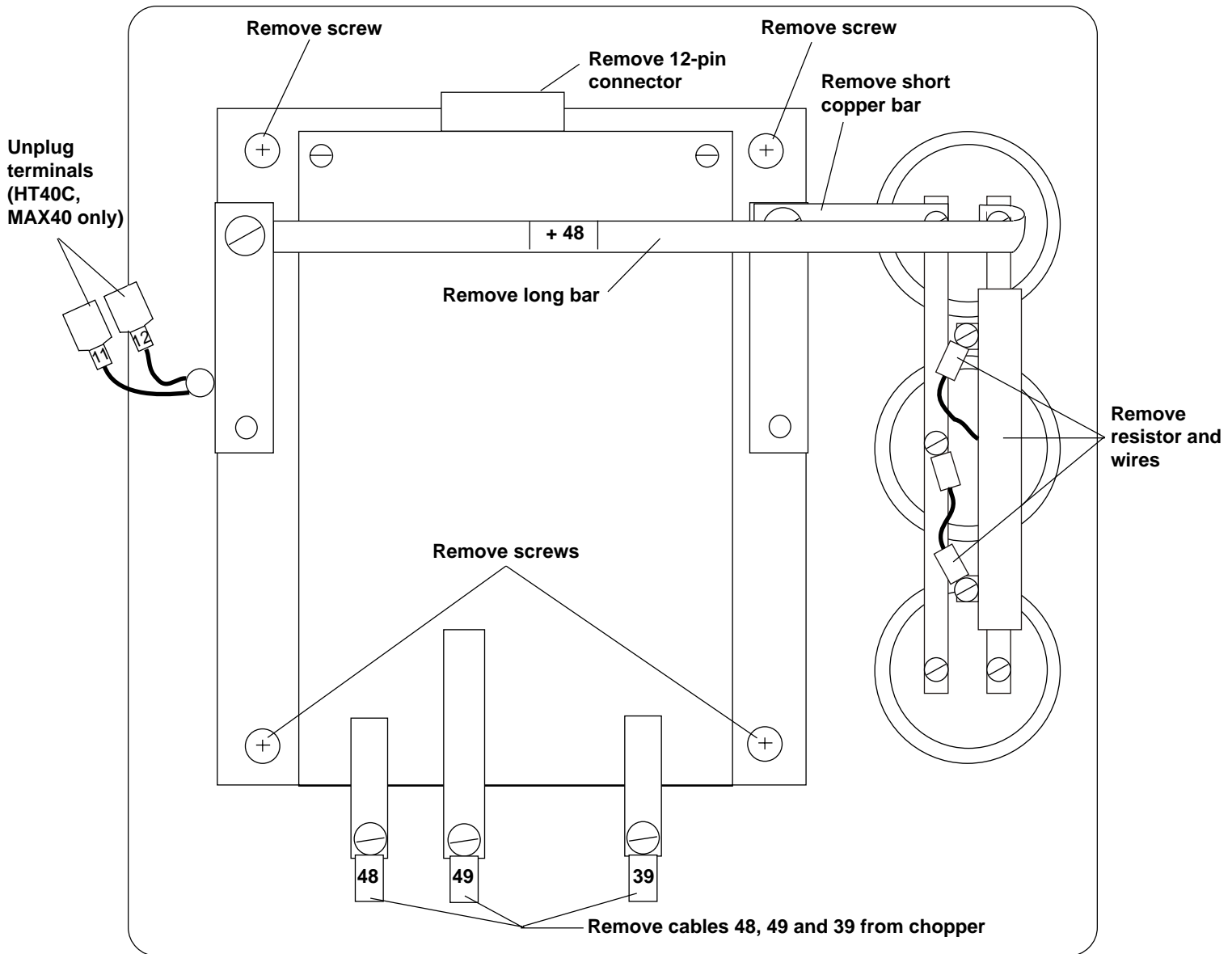


Figure 2 #041106 EWS Single-Phase Chopper to Remove

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9. On the HT40C and MAX40, unplug mating terminals marked **11** and **12** from the sensor that is attached to the chopper frame.
10. Remove the four screws (or nuts) that secure the chopper module to the power supply frame, and remove the chopper module.
11. Unscrew the four standoffs that held the chopper to the power supply frame.

Single-Phase Chopper Installation Procedure

1. Take the four 3 ⁵/₈" standoffs that came with the kit, and attach them to the power supply frame in the same locations where the original four standoffs were.
2. Mount and secure the #029676 CH50 chopper assembly to the standoffs using the four 10-32 machine screws that came with the kit.
3. Attach the 12-pin connector to the top of the chopper module. Be certain that the connector is properly mated with the pins on the module.
4. Attach the long wires from the chopper labeled **1** and **2** to the large transformer (T2) as follows (Refer to Figure 1):
 - Attach **1** to where **AD** was attached (terminal closest to front of power supply).
 - Attach **2** to where **BC** was attached (terminal farthest from front of power supply).
5. Attach the cables labeled **48**, **49**, and **39** to the chopper as follows (Refer to Figure 3):
 - **39** attaches to the screw terminal labeled **OUT**.
 - **49** attaches to the screw terminal labeled - **CAPS**.
 - **48** attaches to the screw terminal labeled + **CAPS**.
6. On the HT40C and the MAX40, jumper terminals **11** and **12** together with the supplied jumper wire (# 023571).
7. Replace and secure the power supply cover.

Installation of the single-phase chopper module is now complete.

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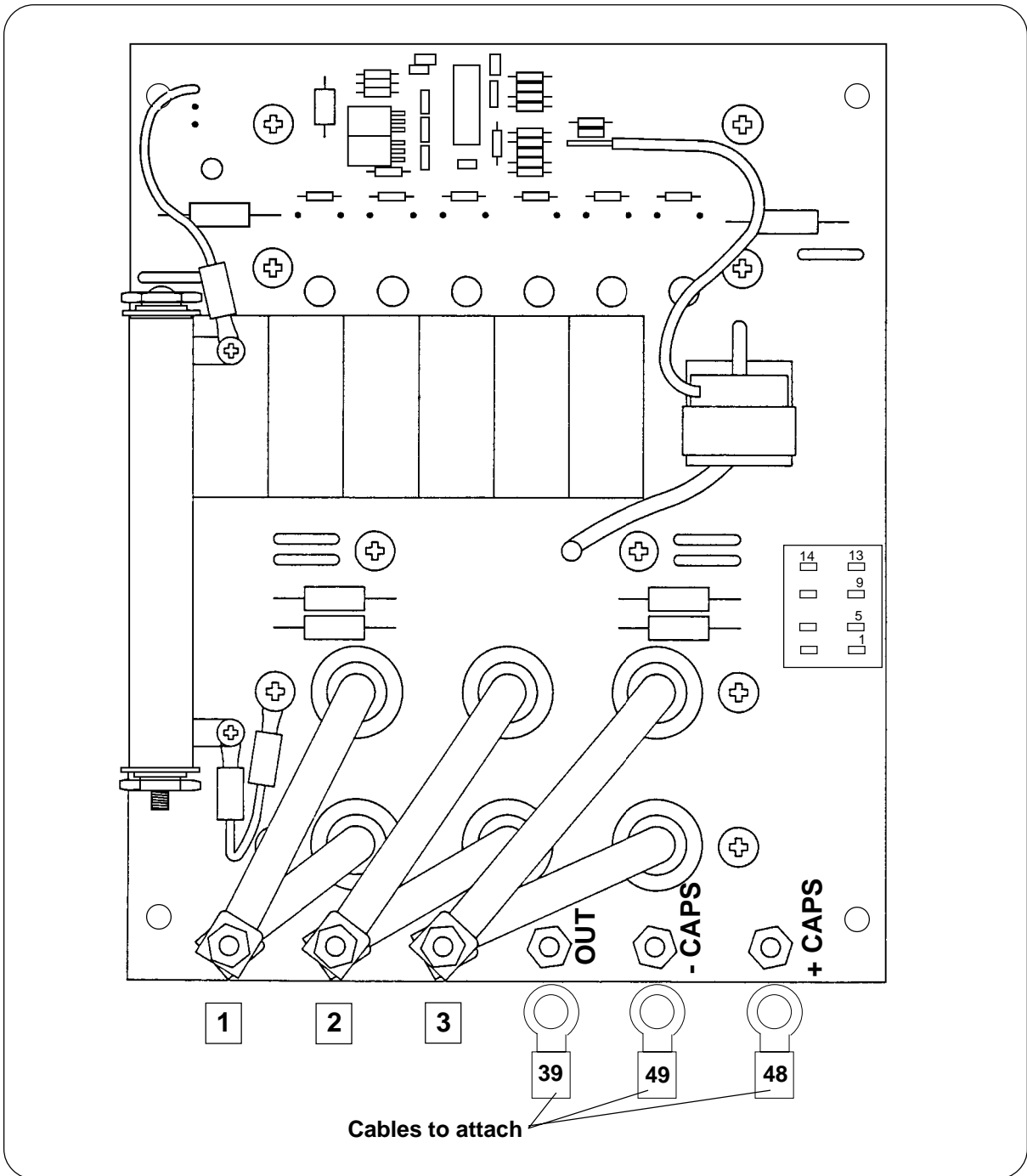


Figure 3 #029631 CH50 Chopper to Install

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Three-Phase Chopper Removal Procedure

To remove the #041106 EWS chopper and install the #029678 CH50 chopper assembly, refer to Figures 3, 4 and 5 and proceed as follows:

1. Turn off main power to power supply.
2. Remove the seven screws from the front panel cover, and remove the front panel to expose the #041106 EWS chopper assembly.
3. Remove the cables marked **1,2 3,4** and **5,6** on the large transformer (T2) located on the base of the power supply. See Figure 4 below for location of terminal connections for **1,2 3,4** and **5,6** on the three-phase transformer.

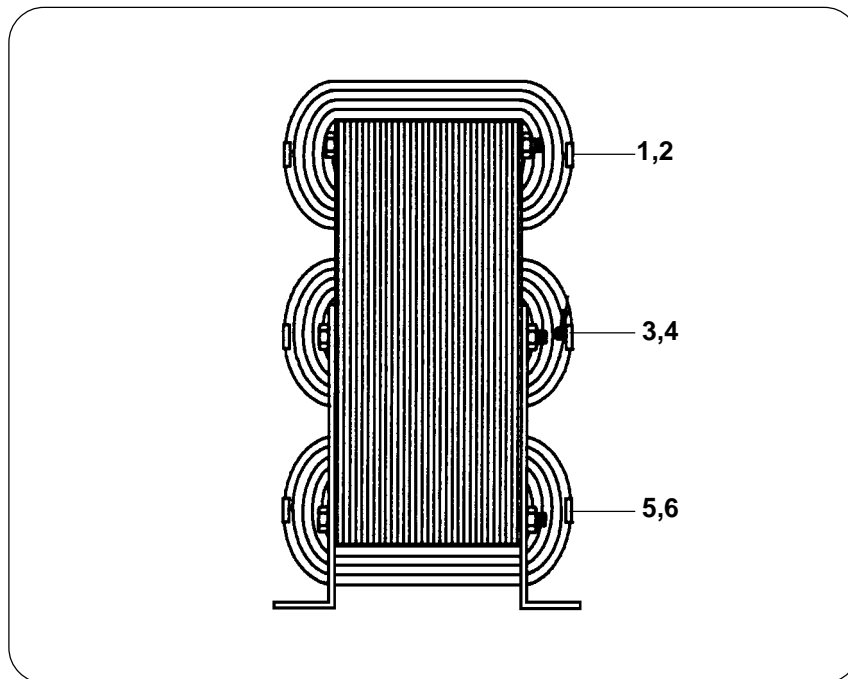


Figure 4 Front View of Three-Phase Transformer

4. Unplug the 12-pin connector from the top of the chopper module.
5. Unscrew and remove cables marked **48, 49, 39** from the chopper module.
6. Unscrew and remove the long bar labeled **+48** that attaches the chopper module to the large capacitor.

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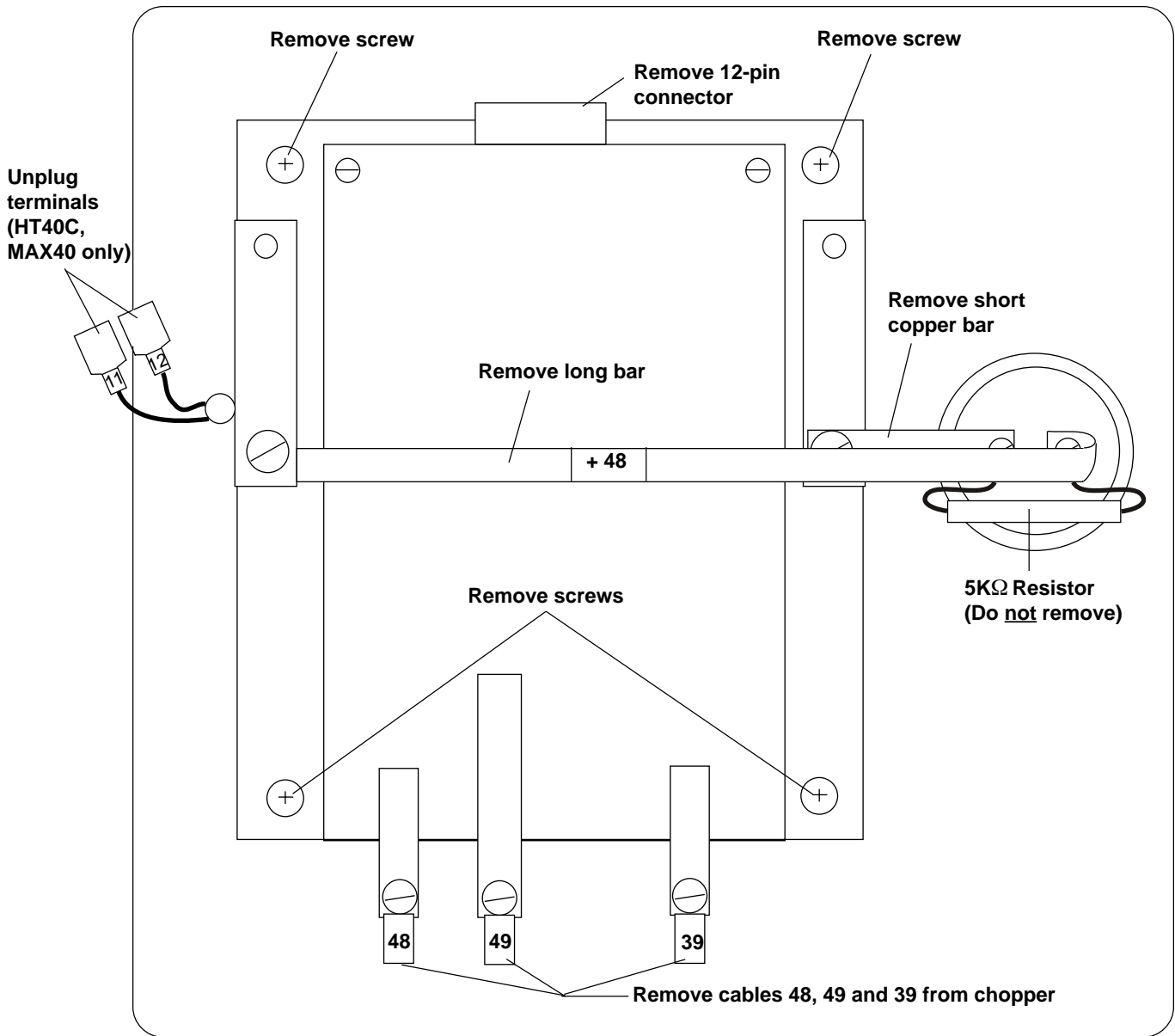


Figure 5 #041106 EWS Three-Phase Chopper to Remove

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7. Unscrew and remove the short copper bar that attaches the chopper module to the large capacitor.
8. On the HT40C and MAX40, unplug mating terminals marked **11** and **12** from the sensor that is attached to the chopper frame.
9. Remove the four screws (or nuts) that secure the chopper module to the power supply frame, and remove the chopper module.
10. Unscrew the four standoffs that held the chopper to the power supply frame.

Three-Phase Chopper Installation Procedure

1. Take the four 3 ⁵/₈" standoffs that came with the kit, and attach them to the power supply frame in the same locations where the original four standoffs were.
2. Mount and secure the #029676 CH50 chopper assembly to the standoffs using the four 10-32 machine screws that came with the kit.
3. Attach the 12-pin connector to the top of the chopper module. Be certain that the connector is properly mated with the pins on the module.
4. Attach the long wires from the chopper labeled **1**, **2**, and **3** to the large transformer (T2) as follows (Refer to Figure 4):
 - Attach **1** to where **1,2** was attached (top terminal point).
 - Attach **2** to where **3,4** was attached (middle terminal point).
 - Attach **3** to where **5,6** was attached (lower terminal point).
5. Attach the cables labeled **48**, **49**, and **39** to the chopper as follows (Refer to Figure 3):
 - **39** attaches to the screw terminal labeled **OUT**.
 - **49** attaches to the screw terminal labeled - **CAPS**.
 - **48** attaches to the screw terminal labeled + **CAPS**.
6. On the HT40C and the MAX40, jumper terminals **11** and **12** together with the supplied jumper wire (# 023571).
7. Replace and secure the power supply cover.

Installation of the three-phase chopper module is now complete.