

Hypertherm[®]

XPR[®]

Main Contactor and Inrush Contactor Installation Procedures

Field Service Bulletin

810750 | Revision 0 | January 2020

Hypertherm, Inc.

Etna Road, P.O. Box 5010
Hanover, NH 03755 USA
603-643-3441 Tel (Main Office)
603-643-5352 Fax (All Departments)
info@hypertherm.com (Main Office Email)
800-643-9878 Tel (Technical Service)
technical.service@hypertherm.com (Technical Service Email)
800-737-2978 Tel (Customer Service)
customer.service@hypertherm.com (Customer Service Email)
866-643-7711 Tel (Return Materials Authorization)
877-371-2876 Fax (Return Materials Authorization)
return.materials@hypertherm.com (RMA email)

Hypertherm México, S.A. de C.V.

Avenida Toluca No. 444, Anexo 1,
Colonia Olivar de los Padres
Delegación Álvaro Obregón
México, D.F. C.P. 01780
52 55 5681 8109 Tel
52 55 5683 2127 Fax
Soporte.Tecnico@hypertherm.com (Technical Service Email)

Hypertherm Plasmatechnik GmbH

Sophie-Scholl-Platz 5
63452 Hanau
Germany
00 800 33 24 97 37 Tel
00 800 49 73 73 29 Fax
31 (0) 165 596900 Tel (Technical Service)
00 800 4973 7843 Tel (Technical Service)
technicalservice.emea@hypertherm.com (Technical Service Email)

Hypertherm (Singapore) Pte Ltd.

82 Genting Lane
Media Centre
Annexe Block #A01-01
Singapore 349567, Republic of Singapore
65 6841 2489 Tel
65 6841 2490 Fax
Marketing.asia@hypertherm.com (Marketing Email)
TechSupportAPAC@hypertherm.com (Technical Service Email)

Hypertherm Japan Ltd.

Level 9, Edobori Center Building
2-1-1 Edobori, Nishi-ku
Osaka 550-0002 Japan
81 6 6225 1183 Tel
81 6 6225 1184 Fax
HTJapan.info@hypertherm.com (Main Office Email)
TechSupportAPAC@hypertherm.com (Technical Service Email)

Hypertherm Europe B.V.

Vaartveld 9, 4704 SE
Roosendaal, Nederland
31 165 596907 Tel
31 165 596901 Fax
31 165 596908 Tel (Marketing)
31 (0) 165 596900 Tel (Technical Service)
00 800 4973 7843 Tel (Technical Service)
technicalservice.emea@hypertherm.com
(Technical Service Email)

Hypertherm (Shanghai) Trading Co., Ltd.

B301, 495 ShangZhong Road
Shanghai, 200231
PR China
86-21-80231122 Tel
86-21-80231120 Fax
86-21-80231128 Tel (Technical Service)
techsupport.china@hypertherm.com
(Technical Service Email)

South America & Central America: Hypertherm Brasil Ltda.

Rua Bras Cubas, 231 – Jardim Maia
Guarulhos, SP – Brasil
CEP 07115-030
55 11 2409 2636 Tel
tecnico.sa@hypertherm.com (Technical Service Email)

Hypertherm Korea Branch

#3904. APEC-ro 17. Heaundae-gu. Busan.
Korea 48060
82 (0)51 747 0358 Tel
82 (0)51 701 0358 Fax
Marketing.korea@hypertherm.com (Marketing Email)
TechSupportAPAC@hypertherm.com
(Technical Service Email)

Hypertherm Pty Limited

GPO Box 4836
Sydney NSW 2001, Australia
61 (0) 437 606 995 Tel
61 7 3219 9010 Fax
au.sales@Hypertherm.com (Main Office Email)
TechSupportAPAC@hypertherm.com
(Technical Service Email)

Hypertherm (India) Thermal Cutting Pvt. Ltd

A-18 / B-1 Extension,
Mohan Co-Operative Industrial Estate,
Mathura Road, New Delhi 110044, India
91-11-40521201/ 2/ 3 Tel
91-11 40521204 Fax
HTIndia.info@hypertherm.com (Main Office Email)
TechSupportAPAC@hypertherm.com
(Technical Service Email)

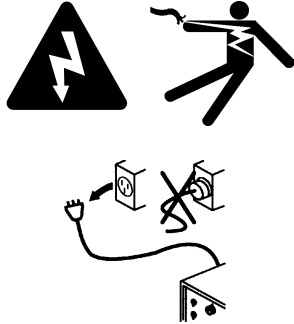
© 2020 Hypertherm, Inc. All rights reserved.

XPR, EasyConnect, OptiMix, VWI, and Hypertherm are trademarks of Hypertherm, Inc. and may be registered in the United States and/or other countries. All other trademarks are the property of their respective holders.

One of Hypertherm's long-standing core values is a focus on minimizing our impact on the environment. Doing so is critical to our, and our customers', success. We are always striving to become better environmental stewards; it is a process we care deeply about.

Introduction

WARNING



ELECTRIC SHOCK CAN KILL

Disconnect electrical power before doing any installation or maintenance.

All work requiring removal of the plasma power supply outer cover or panels must be done by a qualified technician.

See the *Safety and Compliance Manual (80669C)* for more safety precautions.

Purpose

This Field Service Bulletin (FSB) describes how to install the following components:

- The main contactor for XPR170 and XPR300 cutting systems
- The inrush contactor for XPR300 cutting systems

Tools and materials needed

- 10 mm, hexagonal socket wrench or nut driver
- #2 Phillips screwdriver
- 4 mm Allen wrench
- 3 mm flat jewelry screwdriver

Main Contactor Kit 429060 contents – for XPR170 and XPR300 (380 – 600 V)

Part number	Description	Quantity
003294	Main contactor	1
075600	Cap nuts	2
104962	Mounting bracket	1
075882	Mounting screws	1
141507	Contactor PCB	1

Inrush Contactor Kit 229697 contents – for XPR300 only (all voltages)

Part number	Description	Quantity
003297	Inrush contactor	1
003298	Relay, 24 VDC coil	1
104968	Mounting bracket	1
075525	Mounting screws, M4 X 12 mm	2
075567	Mounting screws, M6 X 16 mm	2

WARNING

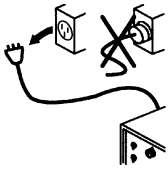


ELECTRIC SHOCK CAN KILL

Disconnect electrical power before doing any installation or maintenance.

The line-disconnect switch must **REMAIN** in the OFF position until all installation or maintenance steps are complete.

See the *Safety and Compliance Manual (80669C)* for more safety precautions.



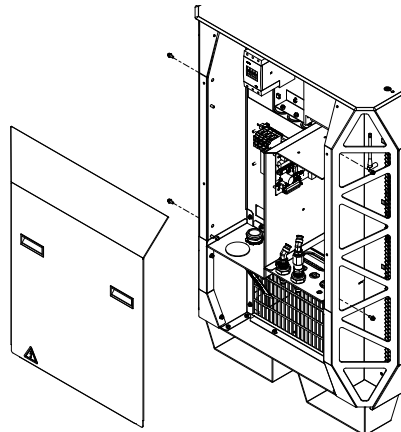
Remove the power and rear panel from the plasma power supply

1. Remove electrical power from the cutting system.
2. Use a 10 mm, hexagonal socket wrench or nut driver to remove the rear panel (*Figure 1*) to get access to the control side of the plasma power supply.



Keep all nuts and screws that you remove.

Figure 1



Install the main contactor – for XPR170 and XPR300

How to install a Siemens® main contactor

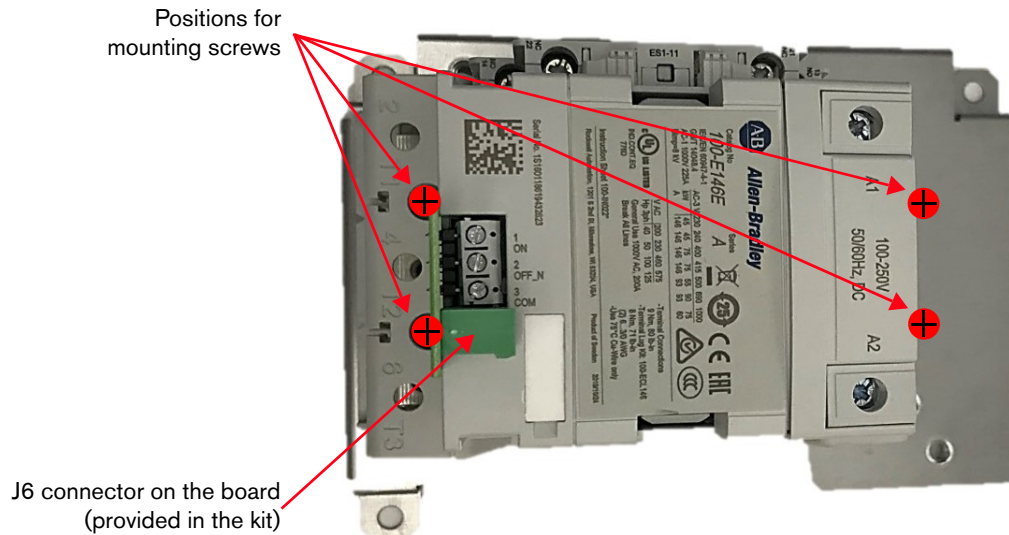
Figure 2



1. Remove all of the wires from T3, T2, T1, L3, L2 and L1.
2. Remove the wires from A1 and A2.
3. Disconnect J6.
4. Use a 10 mm, hexagonal-socket wrench to remove the nut and screw that attach the main contactor to the sheet metal. New hardware comes with the contactor kit.
5. Remove the old main contactor.
6. Make sure that the switch on the new main contactor is set to PLC mode (ON).
7. Use a 10 mm, hexagonal-socket wrench to install the nut on the upper left corner and the screw on the lower right corner of the new main contactor. Tighten the nut and screw to 9 N·m (80 in·lb).
8. Connect J6.
9. Install A1 and A2. Tighten the screws to 1 N·m (10 in·lb).
10. Use 2 wrenches to install the L1, L2, and L3 wires on the left and right side of the new main contactor. Tighten to 13 N·m (115 in·lb).
11. Make sure that the wires labeled L1, L2, and L3 on the right side of the new main contactor align with the wires labeled L1, L2, and L3 on the left side of the new main contactor.
12. Install the rear panel.

How to install an Allen-Bradley® or ABB® main contactor

Figure 3



1. Remove all of the wires from T3, T2, T1, L3, L2 and L1.
2. Remove the wires from A1 and A2.
3. Disconnect J6.
4. Use a 10 mm, hexagonal-socket wrench to remove the nut and screw that attach the main contactor to the sheet metal. Necessary hardware comes with the contactor kit.
5. Remove the old main contactor.
6. Put the new main contactor (003294) in a horizontal position into the provided mounting bracket (104962).



Only older XPR cutting systems, those without a mounting bracket already installed, need the provided mounting bracket.

7. Make sure that the new main contactor is in the correct, horizontal position within the mounting bracket, as shown in *Figure 3*.
8. Use the 4 provided Phillips mounting screws to attach the new main contactor to the provided mounting bracket (*Figure 3*). The mounting screws are inside the box with the new main contactor. Tighten the screws to 1.5 N·m (15 in·lb).
9. Use a 10 mm, hexagonal-socket wrench to install the nuts on the upper left and right corners and the screw on the lower left corner of the mounting bracket and install the new main contactor in the plasma power supply. Tighten the nuts and screw to 9 N·m (80 in·lb).
10. Insert the board into the terminal block at the top of the contactor, as shown in *Figure 3*. The board is provided in a bag that comes with the contactor kit.


- 11.** Use a small, flat screwdriver to tighten the 3 terminal block screws onto the 3 board pins.
- 12.** Connect J6 into the board connector.
- 13.** Install A1 and A2. Tighten the screws to 1 N·m (10 in·lb).
- 14.** Use a long, 5 mm hex wrench and the hardware that comes with the contactor kit to install the L1, L2, and L3 wires on the left and right side of the new main contactor. Tighten to 9 N·m (80 in·lb).
- 15.** Make sure that the wires labeled L1, L2, and L3 on the right side of the new main contactor align with the wires labeled L1, L2, and L3 on the left side of the new main contactor.
- 16.** Install the rear panel.

Install the inrush contactor – for XPR300 only

How to install a Siemens inrush contactor

Figure 4



1. Loosen the wire screws  and remove the wires from T3, T2, T1, L3, L2, L1, B1+, B2-, L1 and N.
2. Remove the 2 mounting screws and remove the old inrush contactor. Keep the old mounting screws for re-use.
3. Use the mounting screws to install the new inrush contactor. Tighten to 2.8 N·m (25 in·lb).
4. Install L1, B1+, B2-, and N on top of the new inrush contactor. Tighten the screws to 1 N·m (10 in·lb).
5. Install L1, L2, and L3 on the top and bottom of the new inrush contactor. Tighten the screws to 5 N·m (50 in·lb).
6. Make sure that the wires labeled L1, L2, and L3 on the top of the new inrush contactor align with the wires labeled L1, L2, and L3 on the bottom of the new inrush contactor.
7. Install the rear panel.

How to install an ABB® inrush contactor

Figure 5



1. Loosen the wire screws \oplus and remove the wires from T3, T2, T1, L3, L2, and L1. Also remove additional wires, if necessary:
 - If replacing a Siemens inrush contactor, also remove wires B1+, B2-, L1 and N.
 - If replacing an Allen-Bradley or ABB inrush contactor, also remove wires E1+, E2-, A0, and A2.
2. Remove the 2 mounting screws and remove the old inrush contactor.
3. Use the provided mounting screws (075525, 075567) to install the new inrush contactor (003297) with attached mounting bracket (104968) (*Figure 5*) in the plasma power supply. Tighten to 2.8 N·m (25 in·lb).
4. Make sure that the contactor position and installation is correct, as shown in *Figure 5*.
5. Install the contactor relay (003298) into the mounting rails at the end of the new inrush contactor, as shown in *Figure 6*. Slide the relay down until the bottom is flush with the bottom of the new inrush contactor and the locking tab snaps into position.
6. Install wires L1, B1+, B2-, and N, on the top of the new inrush contactor, into A0, E1+, E2-, and A2. Tighten the screws to 0.5 N·m (5 in·lb).
7. Install wires L1, L2, and L3 on the top and bottom of the new inrush contactor. Tighten the screws to 5 N·m (50 in·lb).
8. Make sure that the wires labeled L1, L2, and L3 on the top of the new inrush contactor align with the wires labeled L1, L2, and L3 on the bottom of the new inrush contactor.
9. Install the rear panel.

Figure 6

