Hypertherm®

XPR300™ VDC3 Board Installation

Field Service Bulletin

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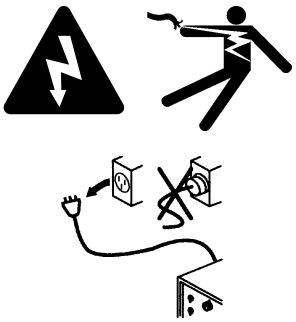
One of Hypertherm's long-standing core values is a focus on minimizing our impact on the environment. Doing so is critical to our, and our customers', success. We are always striving to become better environmental stewards; it is a process we care deeply about.

Introduction

⚠ WARNING



ELECTRIC SHOCK CAN KILL

Disconnect electrical power before performing any maintenance.

All work requiring removal of the plasma power supply cover must be performed by a qualified technician.

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

⚠ CAUTION

Static electricity can damage circuit boards. Use proper precautions when handling printed circuit boards.

Store PC boards in anti-static containers.

Wear a grounded wrist strap when handling PC boards.

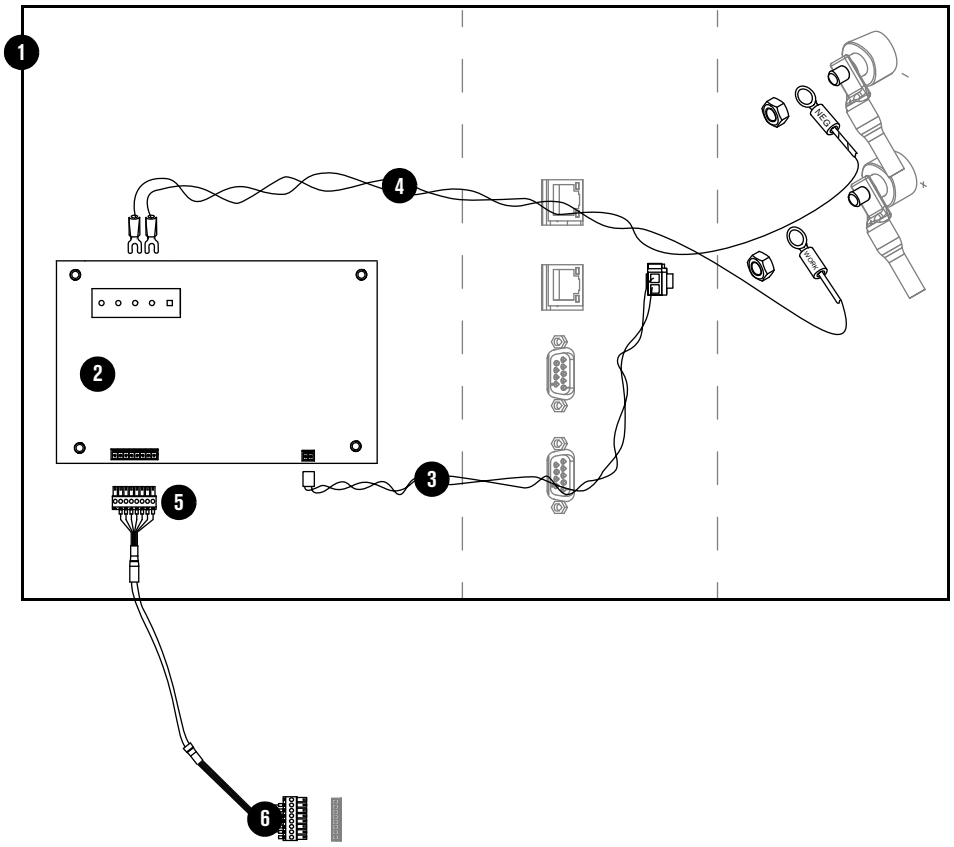
Purpose

This Field Service Bulletin describes how to install a voltage divider board/VDC3 board in an XPR300 plasma power supply, and how to make all of the necessary cable and wire connections.

Diagram of board, cable, and wire connections

See *Figure 1* for an overview of the board, cable, and wire connections inside the plasma power supply.

Figure 1 – Connections inside the plasma power supply



1 Plasma power supply

2 Board: VDC3 (141201)

Wire harness in the plasma power supply

3 Wires: VDC3 board 120 VAC

4 Wires: Arc voltage

5 Male connector to VDC3 board (pre-installed on the VDC3 board)

6 Cable and connector to the computer numerical controller (CNC) (customer supplied)

Part numbers are shown for parts included in the kit. For more information about parts included in the kit, see *Kit contents* on page 5.

Tools and materials needed

- #2 Phillips® screwdriver
- 10 mm hex socket wrench or nut driver

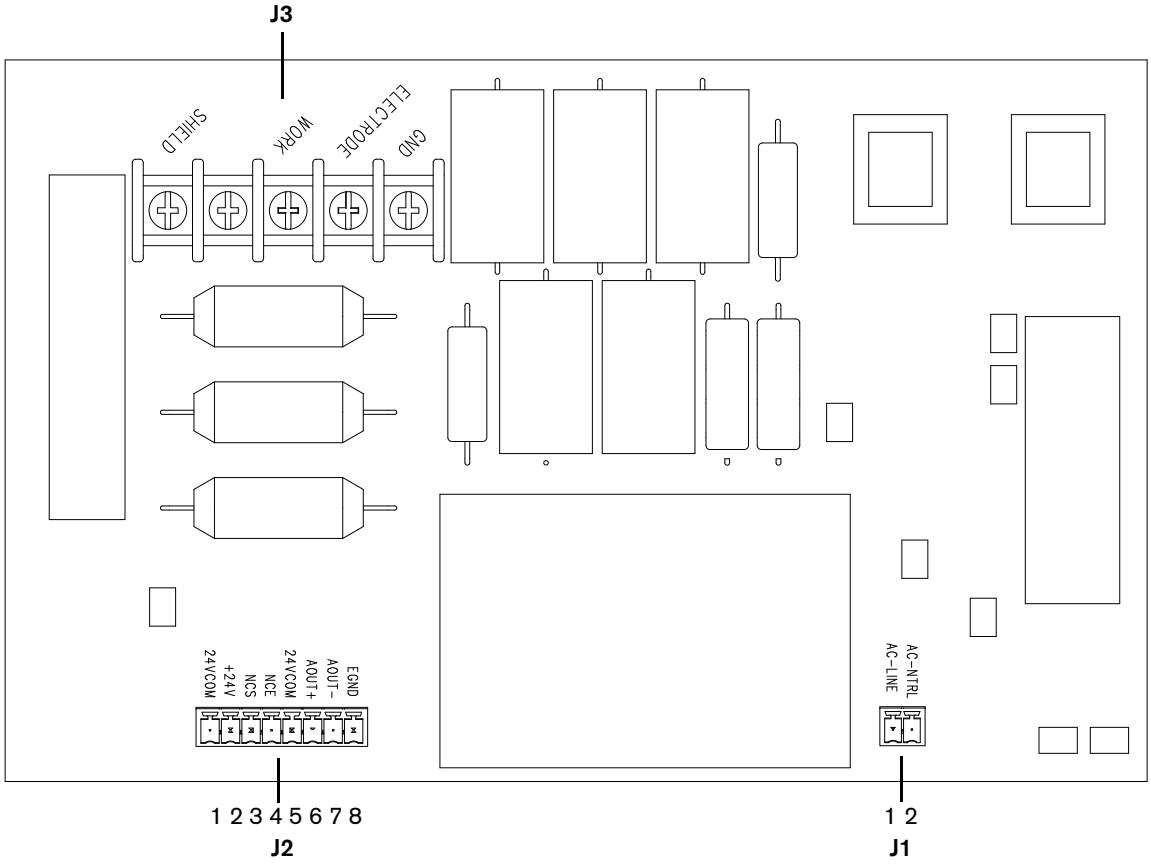
Kit contents

Part number	Description	Quantity
141201	Board: VDC3 (includes connector)	1
809700	FSB: XPR300 VDC3 Board Installation	1

The wire harness to connect the VDC3 board is located in a clip inside of the plasma power supply. The wiring harness includes the arc voltage wires and the power wires.

Install and connect the VDC3 board (141201)

Figure 2 – VDC3 board



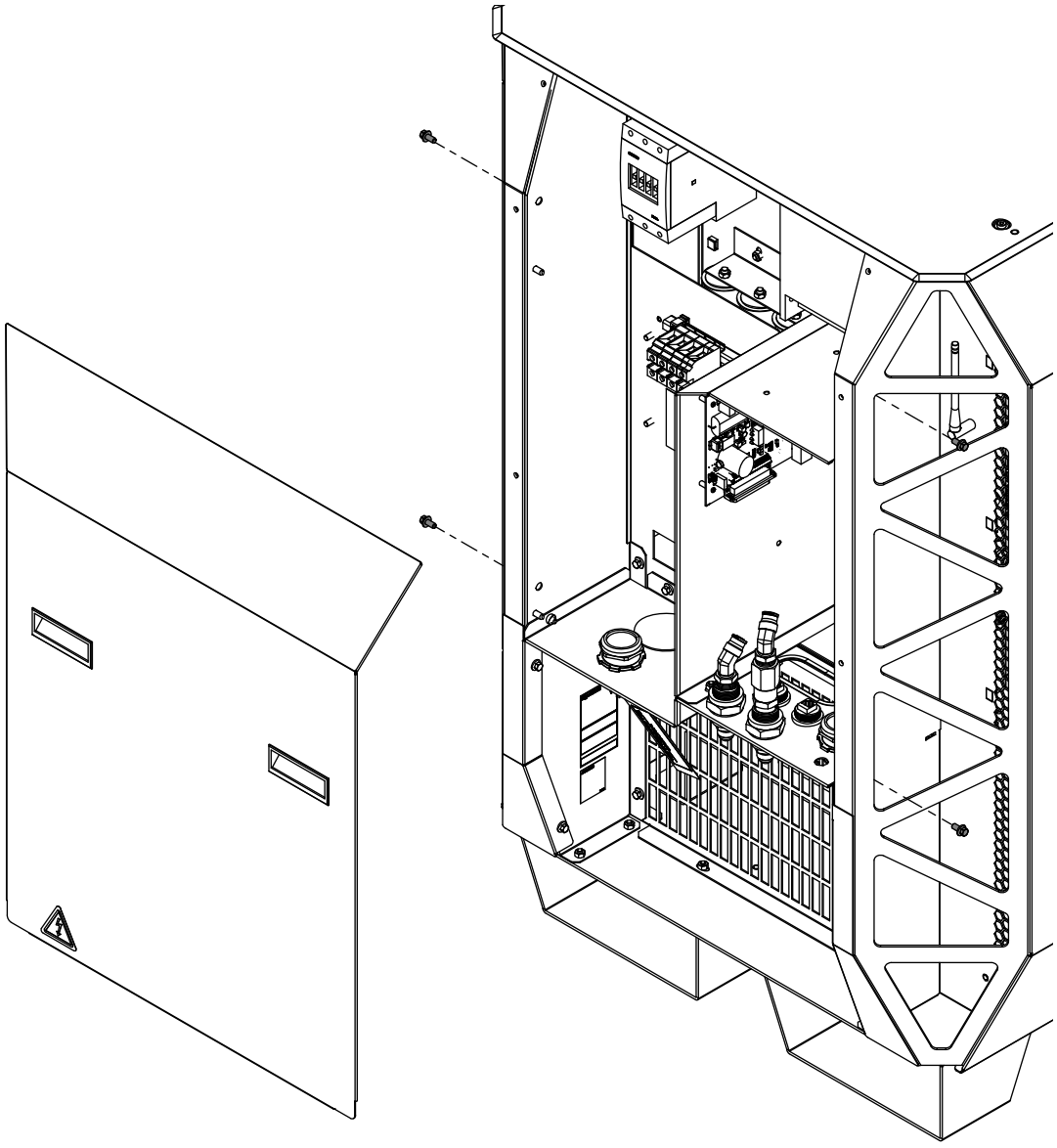
J1 120 VAC wires connector

J2 VDC3 board cable connector

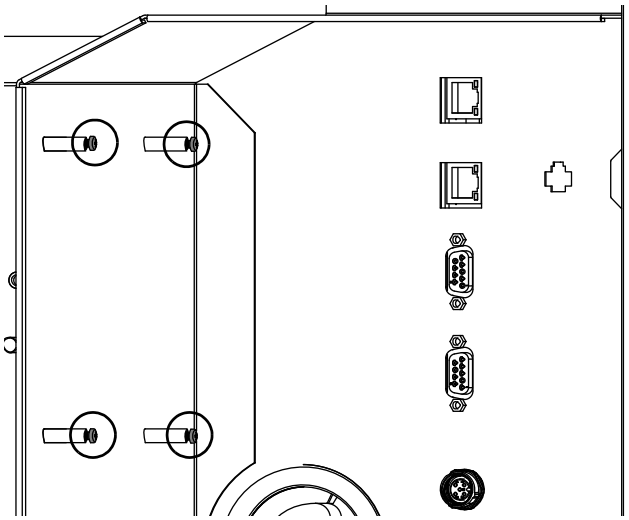
J3 Arc voltage wires connector

1. Use a 10 mm hex socket wrench or nut driver to remove the rear panel of the plasma power supply.

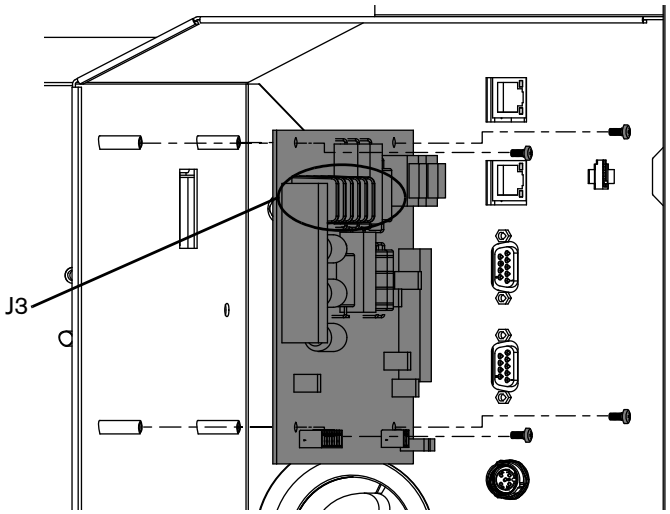
Figure 3



2. Use a #2 Phillips screwdriver to remove the 4 screws from the studs.

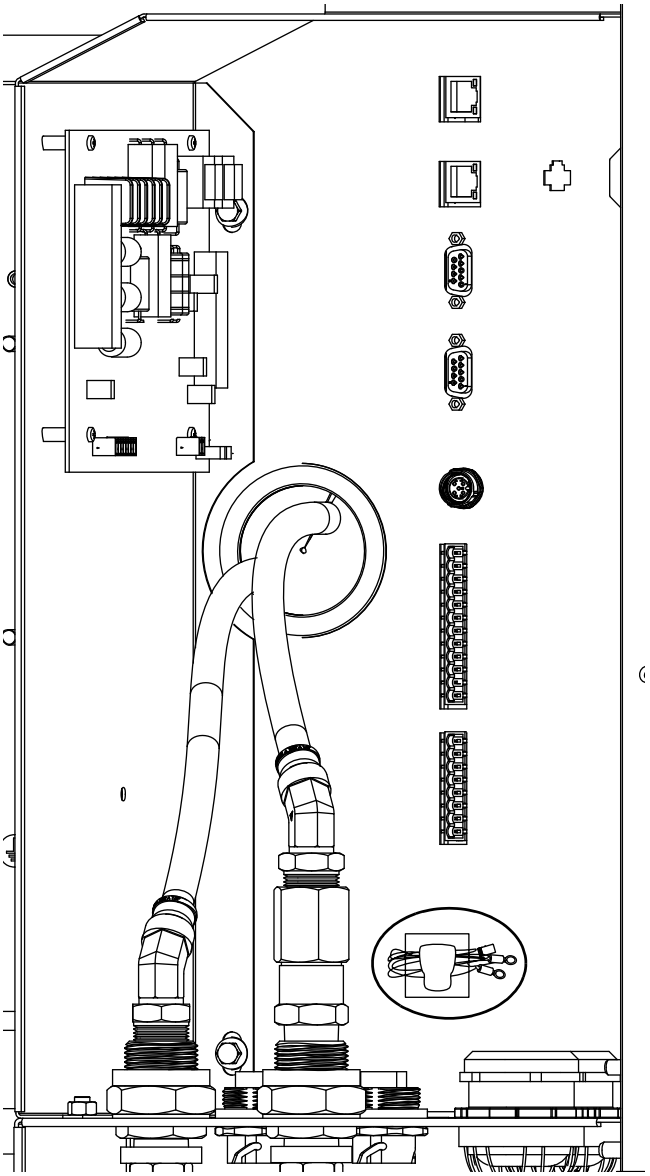


3. With J3 on top, use the 4 screws to install the board on the studs. Tighten the screws to 9.2 kg·cm (8.0 in·lb).



Connect the VDC3 board (141201)

1. Remove the wire bundle from the wire clip in the plasma power supply.

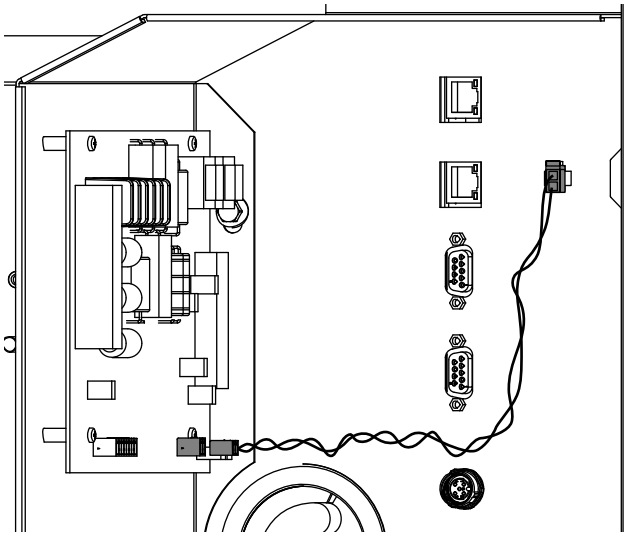


The wire bundle is included in the plasma power supply. The bundle includes the arc voltage wires and power wires.

2. Connect one end of the VDC3 120 VAC harness to J1 of the VDC3 board with the tab on top. See *Figure 4*.

3. Connect the other end of the VDC3 120 VAC harness to the 120 VAC connector.

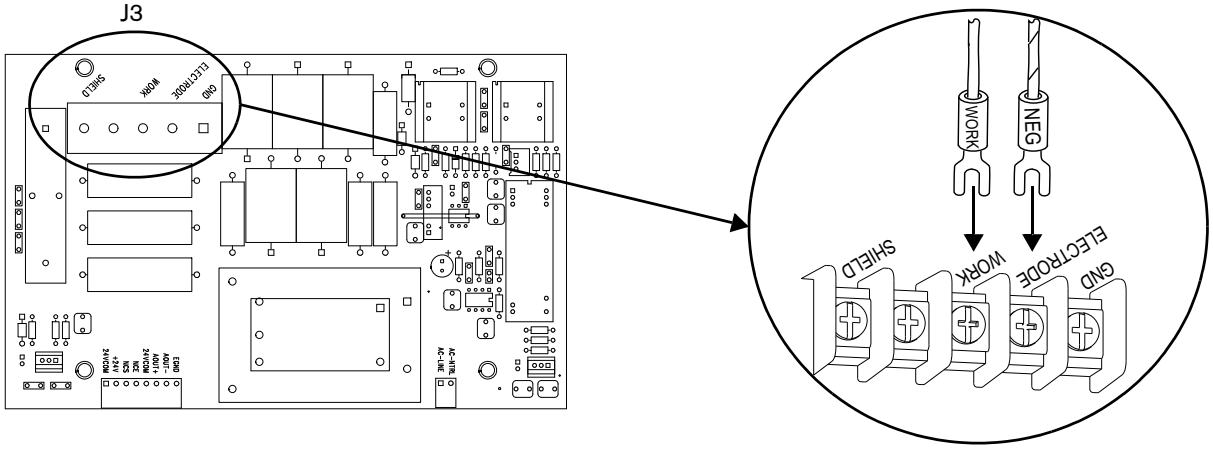
Figure 4



4. Attach the spade connector of the yellow wire (WORK) to the J3-WORK terminal. See *Figure 5*.

5. Attach the spade connector of the yellow/black wire (NEG) to the J3-ELECTRODE terminal.

Figure 5



6. Attach the ring connector on the yellow wire (WORK) to the work bolt in the plasma power supply.Tighten the nut to 20 N·m (15 ft·lb).

7. Attach the ring connector on the yellow/black wire (NEG) to the negative bolt in the plasma power supply. Tighten the nut to 20 N·m (15 ft·lb).

   Other wires are already attached to the bolts in the plasma power supply. Attach the arc voltage wires on top of the existing wires.

8. Use NCS (pin 3), NCE (pin 4), Aout+ (pin 6), and Aout- (pin 7) to connect to the CNC. See *Figure 2* on page 5 for the locations of the pins. See *Table 1* for the pinout.

   Use the interface requirements of your CNC for additional connection requirements.

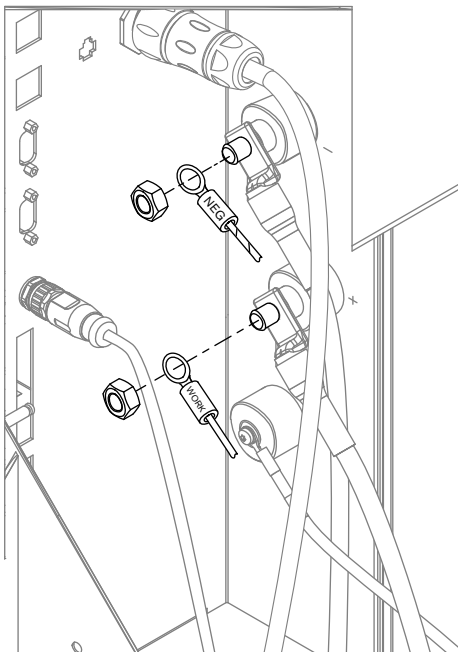


Table 1 – Pinout for J2 on the VDC3 board

J2 on the VDC3 board	
Pin number	**Signal**
1	Not connected
2	+24 VDC (out)
3	Nozzle contact sense (output)
4	Nozzle contact enable (input)
5	24 VDC common
6	+ Analog out (40:1)
7	- Analog out (analog common)
8	EMI chassis ground (cable shield)

9. Install the rear panel of the plasma power supply.