

# ***powermax1100***

## **Pilot Arc Control Installation**

Kit: 128143

### **Field Service Bulletin**

**IM-283**

**(P/N 802830)**

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# Installation of Pilot Arc Controller to **powermax1100** sheet 1 of 3

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## WARNING



**INSTALLATION MUST BE PERFORMED ONLY BY HYPERTHERM DISTRIBUTORS OR QUALIFIED ELECTRONICS TECHNICIANS!!**

**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.

Part No.	Description
128143	Kit: Pmx1100 PA Control
010980	Label: PMX1100 PA Control
041486	PCB Assy:Pmx1100 PA Control
075094	M/S:10-32 X 5/8 PH Pan
075202	Flat Washer: #10
075386	M/S 6-32 X 1/2 PH Pan
075450	Lock Washer: #10
129204	Harness:Pmx1100 PA Control
129233	Pilot Arc IGBT SA:Pmx1100 Pwr Unit

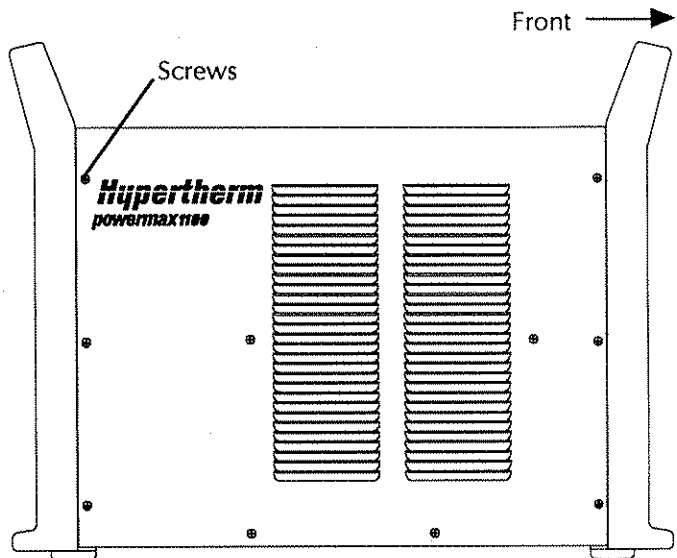


Figure 1 Cover Removal

1. Disconnect the power.
2. Remove the screws that secure the cover to the chassis - Fig. 1.
3. Remove the cover.
4. Locate the standoffs next to the Powermax1100 control board. The lower four standoffs will support the Pilot Arc (PA) control board - Fig. 2.

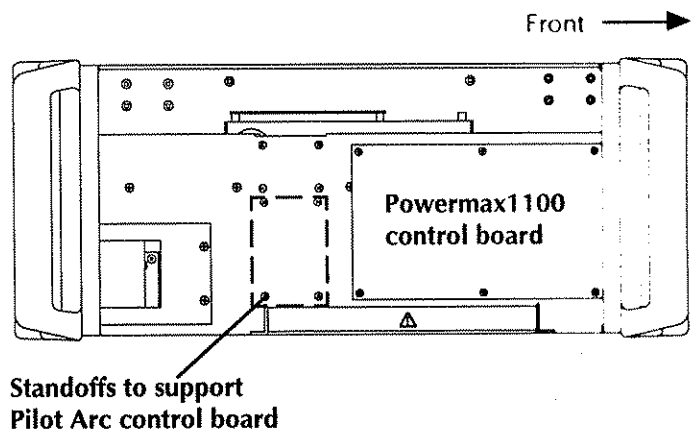


Figure 2 Top View Before PA Control Board Installation

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Front →

5. Mount the PA control board with the four 6-32 screws provided in the kit. Orient the board with the connector J1 facing the fan side of the power supply as shown in Figure 3.
6. Attach the harness from the PA control board connector J1 to the control board connector JP1 - Fig. 3.
7. Face the opposite side of the unit (fan on the far side) and locate the 2 empty screw holes on the left side of the heatsink assembly - Fig. 4.
8. Line up the thermal pad to the rear of the pilot arc IGBT.
9. Mount the pilot arc IGBT using the screws, lock washers and flat washers from the kit. Note: Be certain that the 2 small prongs (E1 and G1) on the IGBT are facing up - Fig. 5.
10. Attach the black wire from the PA control board to prong E1 (left) and the yellow wire to prong G1 (right) on the IGBT - Fig. 5.

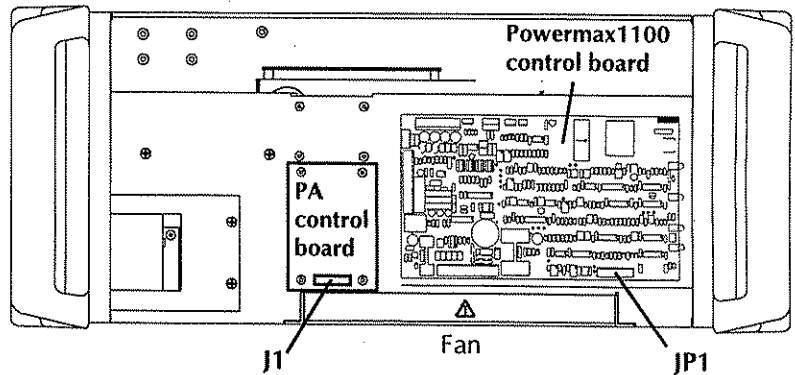


Figure 3 - PA Control Board and Harness Installation

8. Line up the thermal pad to the rear of the pilot arc IGBT.
9. Mount the pilot arc IGBT using the screws, lock washers and flat washers from the kit. Note: Be certain that the 2 small prongs (E1 and G1) on the IGBT are facing up - Fig. 5.
10. Attach the black wire from the PA control board to prong E1 (left) and the yellow wire to prong G1 (right) on the IGBT - Fig. 5.

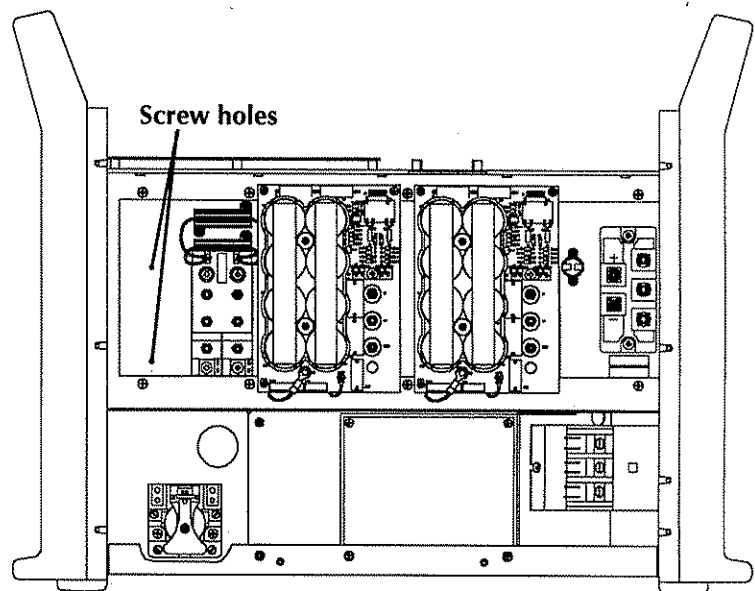


Figure 4 - Screw Hole Location for Pilot Arc IGBT

11. Attach the wire labeled #99 from the top terminal of the IGBT to the bottom right terminal of the PA relay - Fig. 5.
12. Attach the wire labeled #101 from the bottom terminal of the IGBT to the bottom left terminal of the PA relay - Fig. 5.

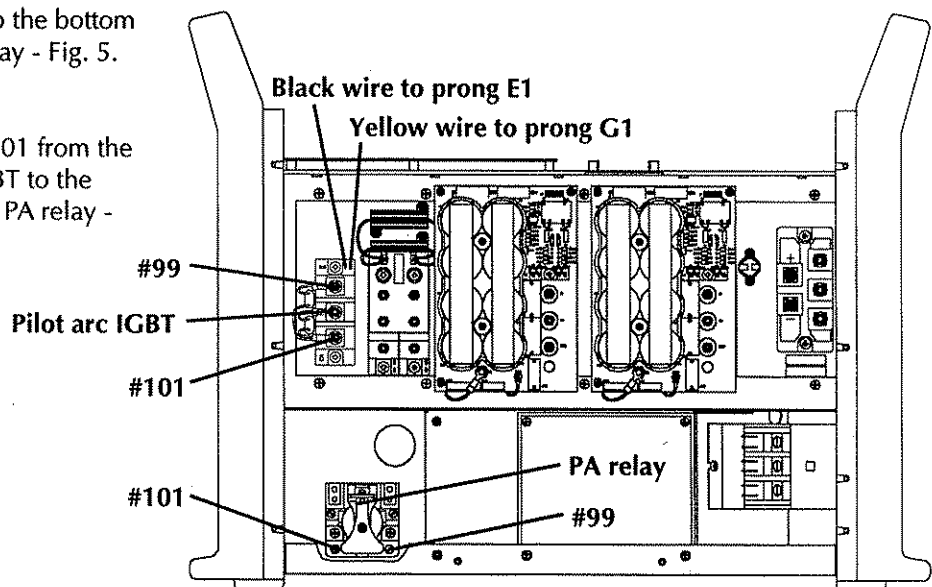


Figure 5 - Pilot Arc IGBT Connections - 1 of 3

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13. Attach the wire labeled #100 to the middle terminal of the IGBT. Feed the wire through the hole below the IGBT - Fig. 6.
14. Face the opposite side of the unit (fan on near side) and locate the inductor on the floor of the power supply - Fig. 7.
15. Attach wire #100 to the inductor terminal as shown in Fig. 7.
16. Replace the Powermax1100 cover. Secure the cover with screws.
17. Place the pilot arc label as shown in Fig. 8.

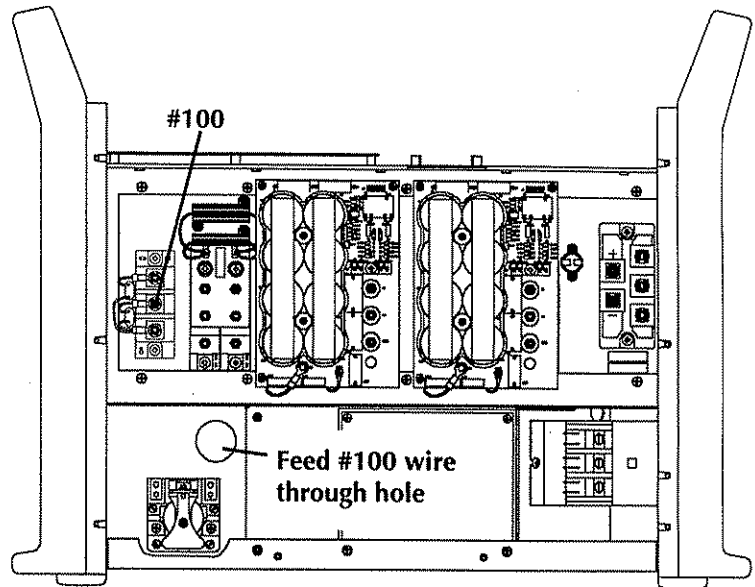


Figure 6 - Pilot Arc IGBT Connections - 2 of 3

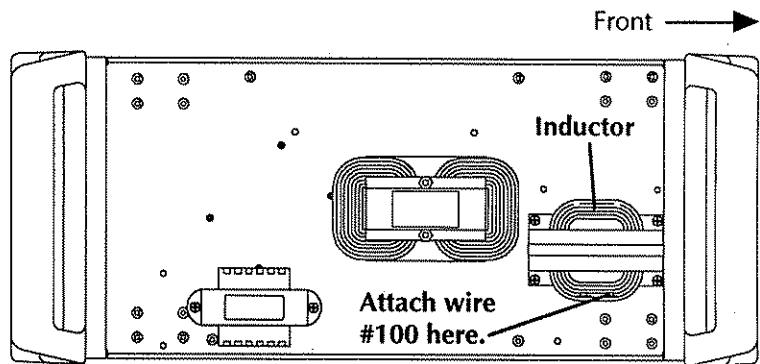


Figure 7 - Pilot Arc IGBT Connections - 3 of 3

Installation is complete.

Turn the power on and test for functionality.

- With the pilot arc option installed, the torch will return to a pilot arc after finishing a cut if the torch switch remains pressed.
- After 5 seconds, the pilot arc will then extinguish if no arc transfer is sensed.

If the pilot arc controller does not function properly, contact Hypertherm Technical Service at 1 800 643 9878.

Refer to the Powermax1100 operator manual #802730 for additional operation information.

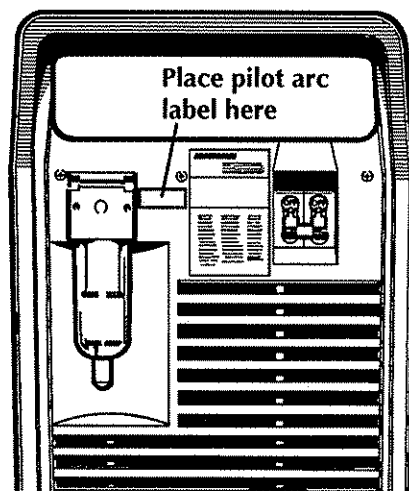


Figure 8 - Pilot Arc Label Placement