

# Installation of Machine Interface to powermax800™ – sheet 1 of 5

Kits: 028905, 128035, 128036



## WARNING

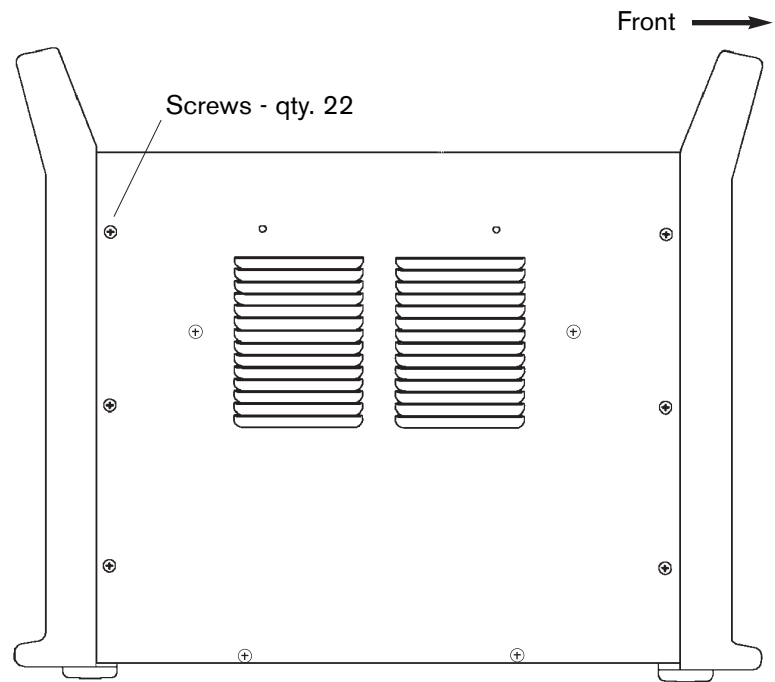


**INSTALLATION MUST BE PERFORMED ONLY BY HYPERTHERM DISTRIBUTORS OR QUALIFIED ELECTRONICS TECHNICIANS!!**

**Do not connect cutting machine interface start signal if using the machine torch ON/OFF pendant!**

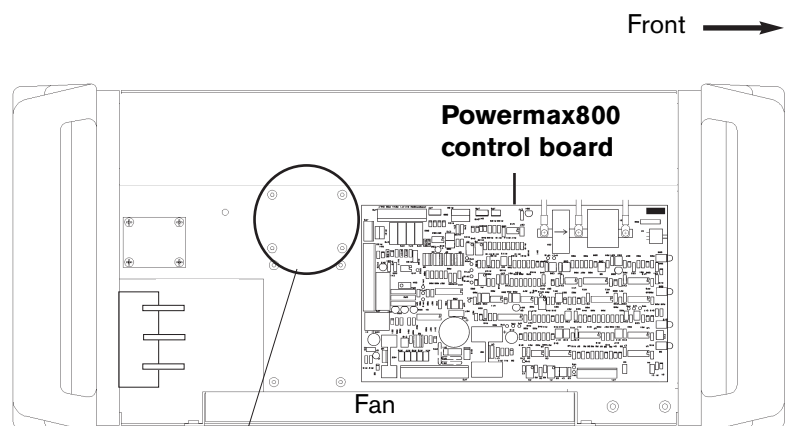
**SHOCK HAZARD: Always turn off power, unplug cord from wall and wait 5 minutes before removing cover of the power supply! If power unit is directly connected to a line disconnect box, place line disconnect switch to OFF position. Lock out and tag out switch before proceeding!**

1. Disconnect power from Powermax800 - see warning above.
2. Remove screws that secure cover to chassis – Fig. 1.
3. Remove the cover.



**Figure 1 Cover Removal**

4. Locate the standoffs next to the Powermax800 control board. The upper 4 standoffs will support the machine interface board (041494) – Fig. 2.



**Standoffs to support  
machine interface board**

**Figure 2 Top View Before Machine Interface Board Installation**

# Installation of Machine Interface to powermax800 – sheet 2 of 5

Kits: 028905, 128035, 128036

5. Orient machine interface board with the attached four-wire harness facing the Powermax800 control board connector JP3 as shown in Fig. 3.
6. Mount the machine interface board with the screws (075386) provided in the kit.
7. Attach the four-wire harness to the Powermax800 control board connector JP3 – Fig. 3.

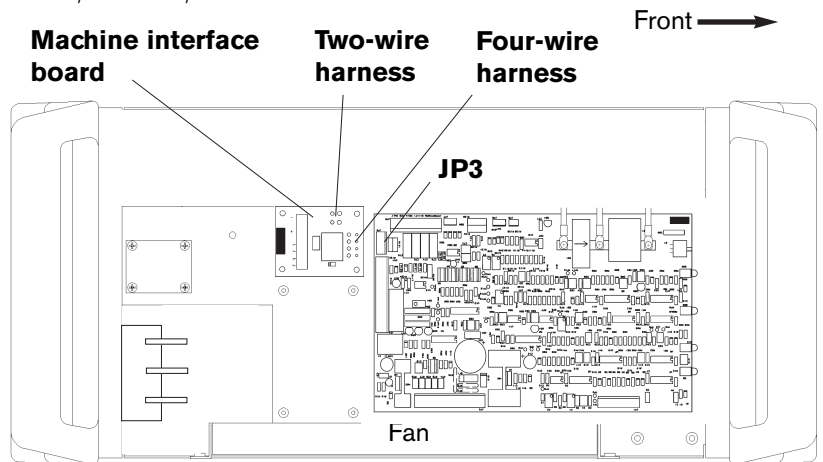


Figure 3 - Machine Interface Board Installation

8. Take the two-wire harness that is attached to the machine interface board, and route it to the power board by feeding it through the hole located above the relay – Fig. 4.

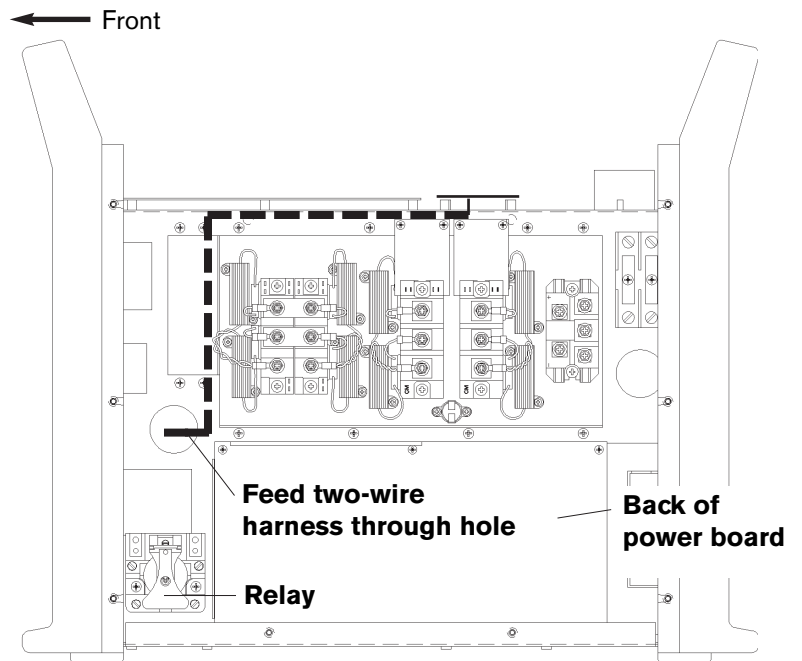


Figure 4 - Two-Wire Harness Feed

9. Attach the two-wire harness to J2 of the power board. J2 is the unused connection located on the upper-right corner of the power board. (Power board connection is hidden from view in Fig. 5.)

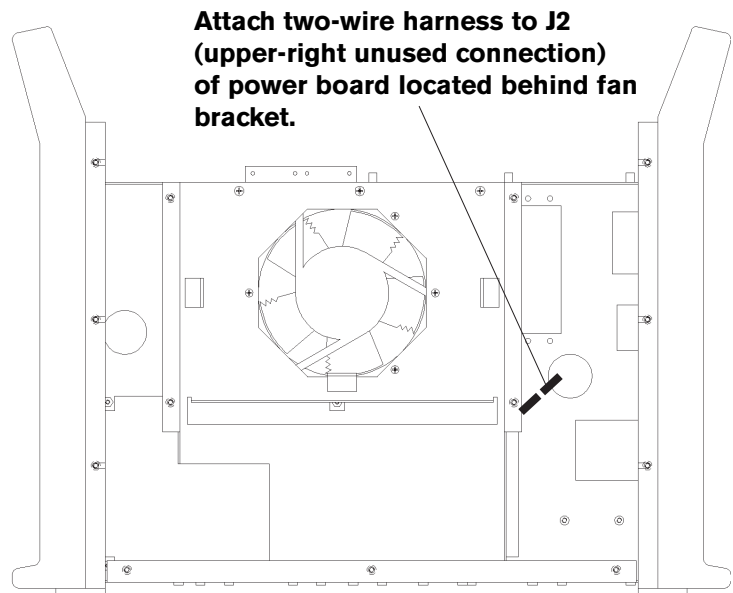


Figure 5 - Attach Harness to J2 of Power Board

# Installation of Machine Interface to powermax800 – sheet 3 of 5

Kits: 028905, 128035, 128036

10. Remove the hand torch power supply rear panel and disconnect the power cord. See Figs. 6 and 7A or 7B.

- Loosen the power cord strain relief (208/240/480 power supply rear panel shown in Fig. 6.)
- Remove 8 rear panel screws.
- Slide the rear panel back over the power cord to gain access to TB1 - Fig. 7A for 208/240/480V and 200/230/400V power supplies or Fig. 7B for 400V CE power supply.
- Remove the power cord wires from terminal TB1 and the ground stud.
- Slide the power cord through the strain relief and remove the hand torch power supply rear panel.
- Remove the strain relief from the hand torch power supply rear panel and attach it to the machine torch power supply rear panel.

11. Remove the internal machine interface cable (123099) from the kit and attach it to the machine torch rear panel – Fig. 8. (208/240/480 and 200/230/400V power supply rear panel shown in Fig. 8.)

12. Remove the small strain relief (008280) from the kit and attach it to the machine torch power supply rear panel – Fig. 8.

Note: If arc voltage signals will not be necessary for torch height control, insert plug (004726) into small strain relief. Tighten strain relief.

13. Feed the power cord through the large strain relief of the machine torch power supply rear panel – Fig. 8.

14. Attach the power cord wires to TB1 (Fig. 7A or Fig. 7B).

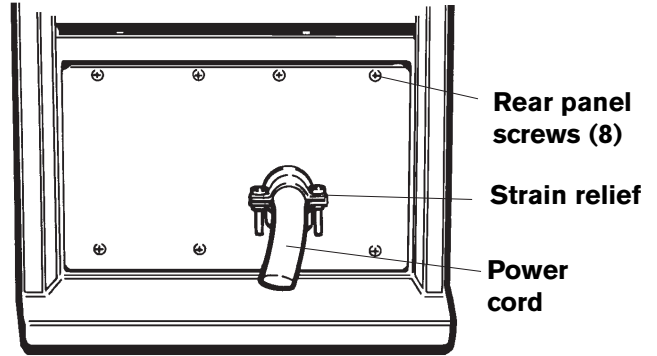


Figure 6 - Hand Torch Power Supply Rear Panel

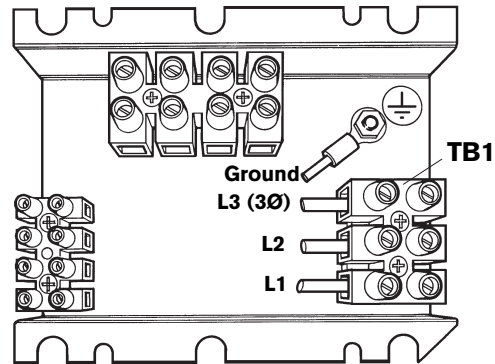


Figure 7A - TB1 Location, 208/240/480V or 200/230/400V Power Supplies

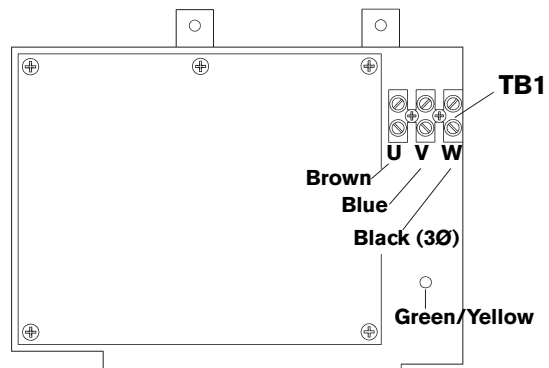


Figure 7B - TB1 Location, 400V CE Power Supply

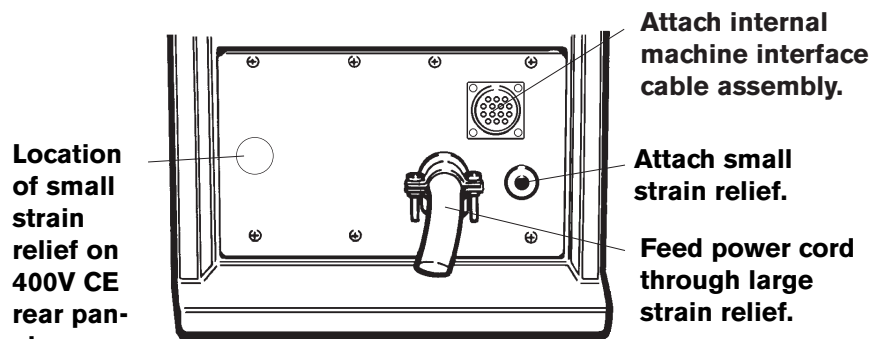
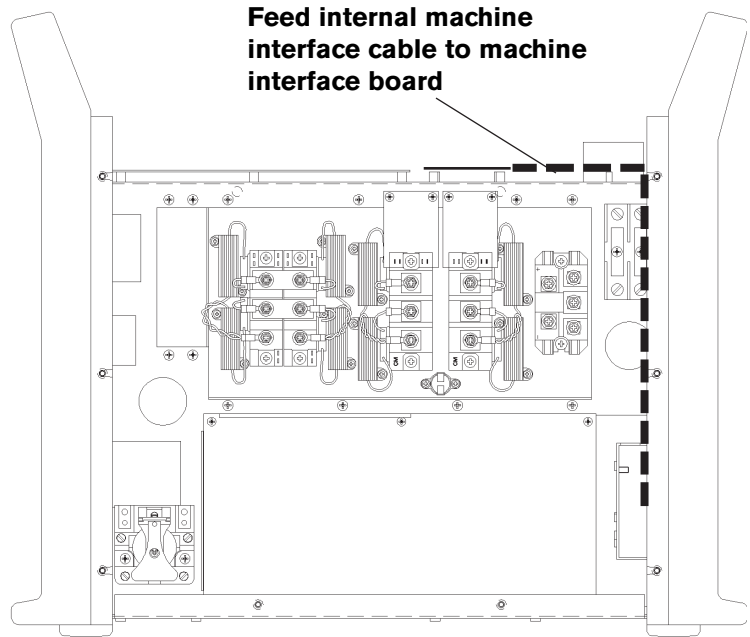


Figure 8 - Machine Torch Power Supply Rear Panel

# Installation of Machine Interface to powermax800 – sheet 4 of 5

Kits: 028905, 128035, 128036

15. Feed the internal machine interface cable from the rear panel up to the machine interface board – Fig. 9.

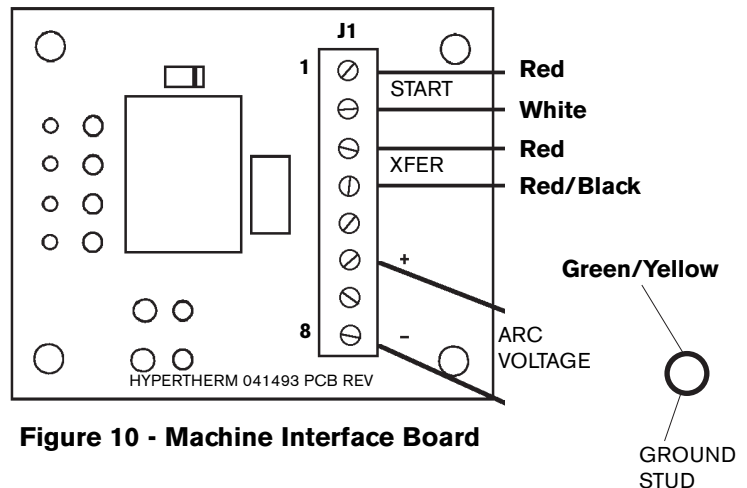


**Figure 9 - Feeding Internal Machine Interface Cable to Board**

16. Connect the green/yellow wire from the internal machine interface cable to the ground stud near the machine interface board – Fig. 10.
17. See Fig. 10 and connect the remaining internal machine interface cable wires to J1 terminal on the machine interface board.

Note: If arc voltage is necessary for activating a torch height control, the customer must supply an 18AWG, single pair, unshielded cable with a rating of 300V or greater. The arc voltage signal on the machine interface board can be accessed by feeding the arc voltage cable through the small strain relief and connecting the cable wires as shown in Fig. 10.

In the 128036 kit, a small bushing (008082) has been included to insert into the chassis hole directly behind the small strain relief. Pass the arc voltage cable through the bushing when routing to the machine interface board.



**Figure 10 - Machine Interface Board**

18. Attach the rear panel to the Powermax800 with the 8 rear panel screws.
19. Tighten large strain relief over the outer insulation of the power cord.
20. Tighten the small strain relief.
21. Replace the Powermax800 cover. Secure the cover with screws.

# Installation of Machine Interface to powermax800 – sheet 5 of 5

Kits: 028905, 128035, 128036

22. Connect the external machine interface cable (023206) to the connector on the rear panel.

23. Make connections to machine interface – Fig. 11.

Signal:	START (start plasma)	XFER (start machine motion)
Type:	Input	Output
Notes:	Normally open. 24VAC open circuit voltage at START terminals. Requires dry contact closure to activate.	Normally open. Dry contact closure when arc transfers. 120VAC maximum at machine interface relay or switching device.
Rear panel sockets	3, 4	12, 14
Cable wires	Green, Black	Red, Black

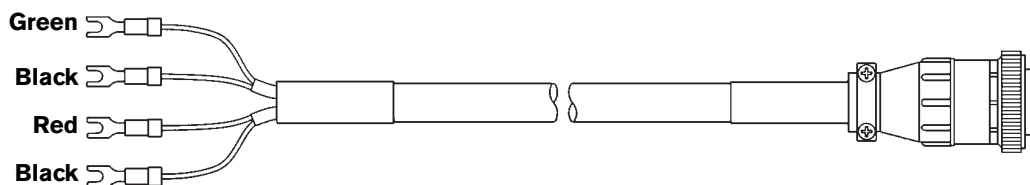


Figure 11 - External Machine Interface Cable (023206) and Signals

24. Make connections for torch height control, if necessary – Fig. 12.

Signal:	ARC VOLTAGE (torch height control)
Type:	Output
Notes:	Full arc voltage. No voltage divider. 300VDC maximum. (Signal not available on rear panel connector.)
J1-6	+VDC
J1-8	-VDC

Figure 12 - Torch Height Control Signals

25. Place Machine Interface label as shown in Fig. 13.

Installation complete.

If the machine interface does not function properly, contact Hypertherm Technical Service at 1-800-643-9878.

Refer to Powermax800 operator manual IM227 (802270) for additional operation information.

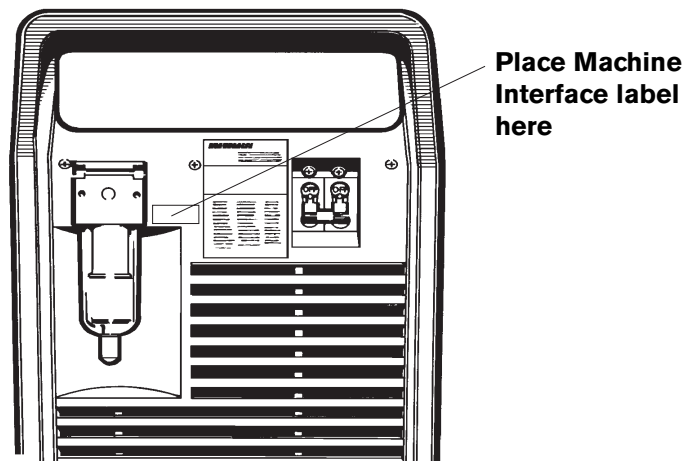


Figure 13 - Machine Interface Label Placement