HT4001

H401 and H601 Slave Calibration

Field Service Bulletin
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Hypertherm
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Slave Calibration

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HT4001 Slave Calibration

In this bulletin:

INTRODUCTION

Purpose

This field service bulletin will enable a qualified electronics technician to calibrate the H401 or H601 power supplies when used as a slave to the HT4001 plasma system.

General

Set up and operate the HT4001 power supply before installing the 077011 slave upgrade kit. See Appendix A of the HT4001 instruction manual to install the upgrade kit. After installation, follow the instructions in this bulletin to calibrate the H401 or H601 power supply.

WARNING

THIS CALIBRATION PROCEDURE EXPOSES TECHNICIANS TO EXTREMELY DANGEROUS VOLTAGES WITHIN THE H401 OR H601 POWER SUPPLY. SERVICE PERSONNEL MUST BE ALERT AND SAFETY CONSCIOUS WHEN PERFORMING THIS CALIBRATION.

Customer Required Tools

Phillips head screwdriver
Nonconductive jeweler's screwdriver
Multimeter
Jumper wire

PRE-CALIBRATION

Refer to the HT4001 instruction manual (802000) for the following pre-calibration procedures.

1. Place the HT4001 and the slave power supply line disconnect switches in the OFF position.

2. Install the H401/601 slave kit into the H401 or H601 power supplies. See *Appendix A* in the HT4001 instruction manual. Leave the power supply covers off.

3. Connect a jumper wire (if not installed) between pins 2 and 7 on PL2.5 of the microprocessor control board on the HT4001 power supply.

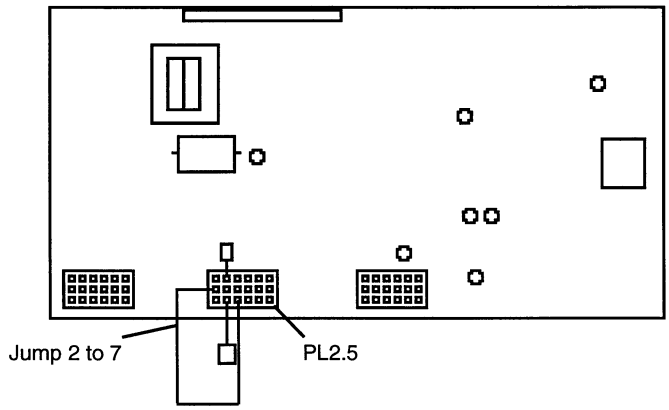

Figure 1 Jumping Pins 2 to 7 of PL2.5 on the Microprocessor Control Board

4. Place the multimeter leads across the slave power supply shunt to monitor voltage. Set the meter to read DC millivolts. See wiring diagrams in the H401 & H601 instruction manual (800410) to locate shunt.

   Note: On H601 power supplies with 2 shunts, monitor voltage across shunt 1 (SH 1).

5. Install 760-amp nitrogen consumables in the PAC620 torch. See *Cut Charts* in the HT4001 instruction manual.

6. Disable the auto height control.

7. Set a fixed torch height.

WARNING

SHOCK HAZARD: CALIBRATION MUST BE SET AND VOLTAGE READINGS MUST BE TAKEN WHILE THE POWER SUPPLY IS ON WITH THE TORCH FIRING A TRANSFERRED ARC! DANGEROUS VOLTAGES EXIST WITHIN THE POWER SUPPLY WHICH COULD CAUSE INJURY OR DEATH! USE EXTREME CARE WHEN SETTING THE POTENTIOMETER ON THE CURRENT SETPOINT PCB AND WHEN TAKING VOLTAGE READINGS. IF QUESTIONS OR PROBLEMS ARISE DURING SERVICING, CALL HYPERTHERM TECHNICAL SERVICES AT 1-800-647-9878.

CALIBRATION

1. Place the HT4001 and the slave power supply line disconnect switches in the ON position.

2. Switch the HT4001 power supply ON.

3. Set the gas console flow rates for 760-amp operation. See *Daily Start-Up* and *Cut Charts* in the HT4001 instruction manual.

4. Set the arc current to 500 amps.

Note: The DC voltage to DC current ratio across the shunt is 50 mV for 1000 amps on all power supplies except the 036035, 036036, 036037 and 036038 H401 power supplies. (The power supply part number is on the data tag attached to each machine.)

On the 036035, 036036, 036037 and 036038 H401 power supplies, the DC voltage to DC current ratio across the shunt is 50 mV for 600 amps .

5. Start the torch with transferred arc and adjust the **R5** potentiometer on the current setpoint PCB in the slave power supply for 200 amps output:

   200 amps will read as 10 mv across the shunt on all power supplies except the 036035, 036036, 036037 and 036038 H401 power supplies.

   On the 036035, 036036, 036037 and 036038 H401 power supplies, 200 amps will read as 16.66 mv.

6. Stop the torch arc.

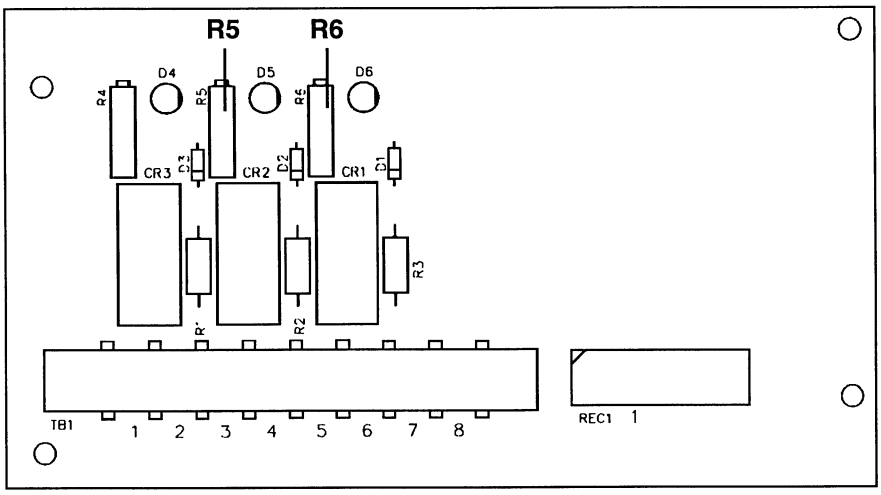

Figure 2 Setting R5 and R6 on Slave Current Setpoint PCB

7. Set the arc current to 700 amps.

8. Start the torch with transferred arc and adjust the **R6** potentiometer on the current setpoint PCB in the slave power supply for 400 amps output:

   400 amps will read as 20 mv across the shunt on all power supplies except the 036035, 036036, 036037 and 036038 H401 power supplies.

   On the 036035, 036036, 036037 and 036038 H401 power supplies, 400 amps will read as 33.33 mv.

9. Shut down the system.

10. Remove the jumper from pins 2 to 7 on the microprocessor control PCB connector PL2.5.

VERIFYING CALIBRATION

If a digital V/C remote or a programmable V/C remote is part of the HT4001 system:

1. Switch the HT4001 power supply ON.

2. Set the arc current to 600 amps.

3. Start the torch with transferred arc and observe reading on the remote V/C. The reading should be 600 amps +/- 5 amps. If the system is out of calibration, repeat steps starting at pre-calibration on page 2 and readjust R5 on the current setpoint PCB.

4. Stop the torch arc.

5. Set the arc current to 760 amps.

6. Start the torch with transferred arc and observe reading on the remote V/C. The reading should be 760 amps +/- 5 amps. If the system is out of calibration, repeat steps starting at pre-calibration on page 2 and readjust R6 on the current setpoint PCB.

Calibration procedure is complete.

- Be certain that the jumper from pins 2 to 7 on the microprocessor control PCB connector PL2.5 is disconnected before replacing the power supply panel.

- Replace all panels to HT4001 and slave power supplies before operating.