DRS24C & R Series

Temperature Controller Replacement

Section 6.0

Replacing your Athena or Cal 9300 temperature controller. Also, upgrading from Athena to Cal 9300

CONTENTS

BEFORE YOU START:

Read instructions thoroughly before beginning.

ELECTRICAL WARNING:

POWER DOWN DRS24 AND DISCONNECT FROM POWER SOURCE.

CHECKLIST:

The following items will be needed in this section.

- ☐ Athena temperature controller part no. 9002.11.000
- ☐ Cal 9300 temperature controller part no. 9002.11.015

For Upgrading only:

- ☐ Phillips screwdriver
- ☐ Small straight blade screwdriver
- ☐ Metric & American Allen wrenches
- ☐ Metal file

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6.01 Athena & Cal 9300 Replacement

IMPORTANT **VERIFY DRS24 IS DISCONNECTED FROM THE POWER SOURCE.**

NOTE **The temperature controllers are located in the DRS24 right box (A), (fig.1).**

STEPS:

1. Remove the 10/32" button head screw (B), (fig.1), and swing right box open.

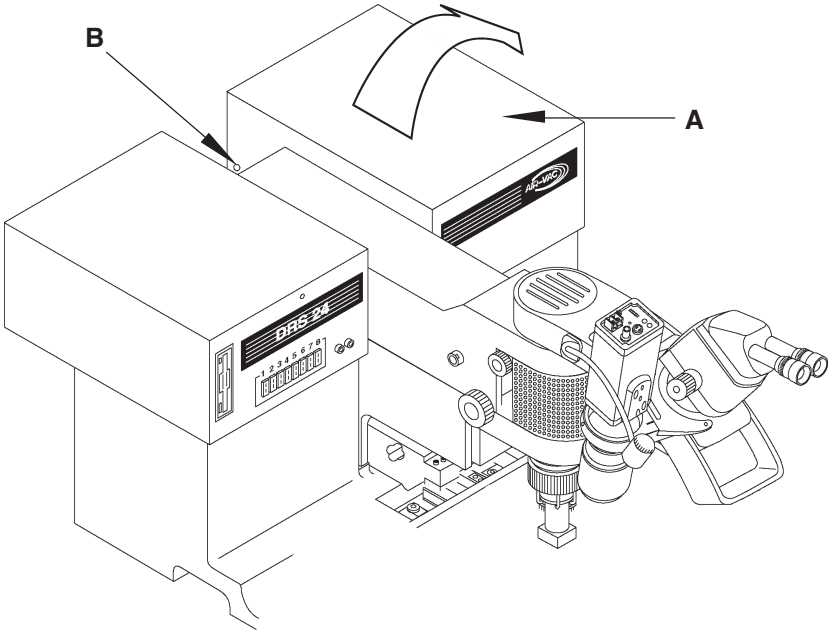


Fig. 1

NOTE **The remaining steps will be performed assuming you are located behind the DRS24.**

2. Determine if you have Athena controllers (C), (fig.2), or Cal 9300 controllers (D).

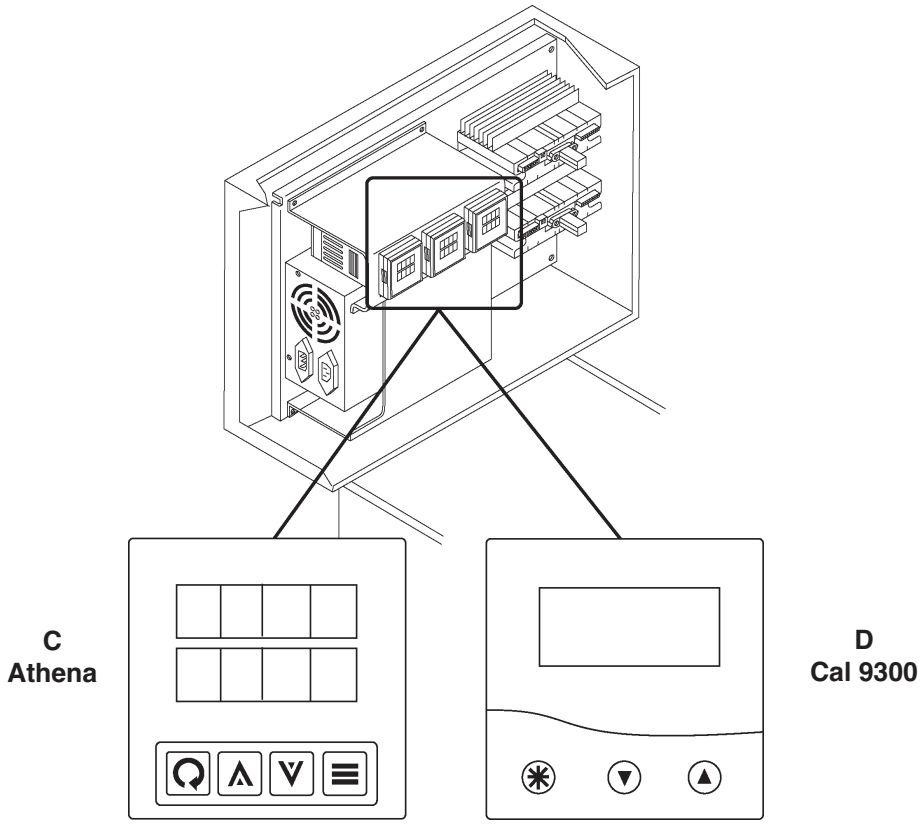


Fig. 2

NOTE **Each type of controller has a removable bezel and circuit board assembly (E), (fig.3). The controller sleeve (F) stays in the machine during controller removal.**

IMPORTANT **ELECTROSTATIC PRECAUTIONS SHOULD BE OBSERVED WHEN HANDLING THE CONTROLLER OUTSIDE OF THE SLEEVE.**

3 Grasp left and right side controller face grips (G), (fig.3), and firmly squeeze in and slide controller out of the sleeve.

TIP: **While pulling out the controller, a gentle, side to side rocking motion will make removal easier.**

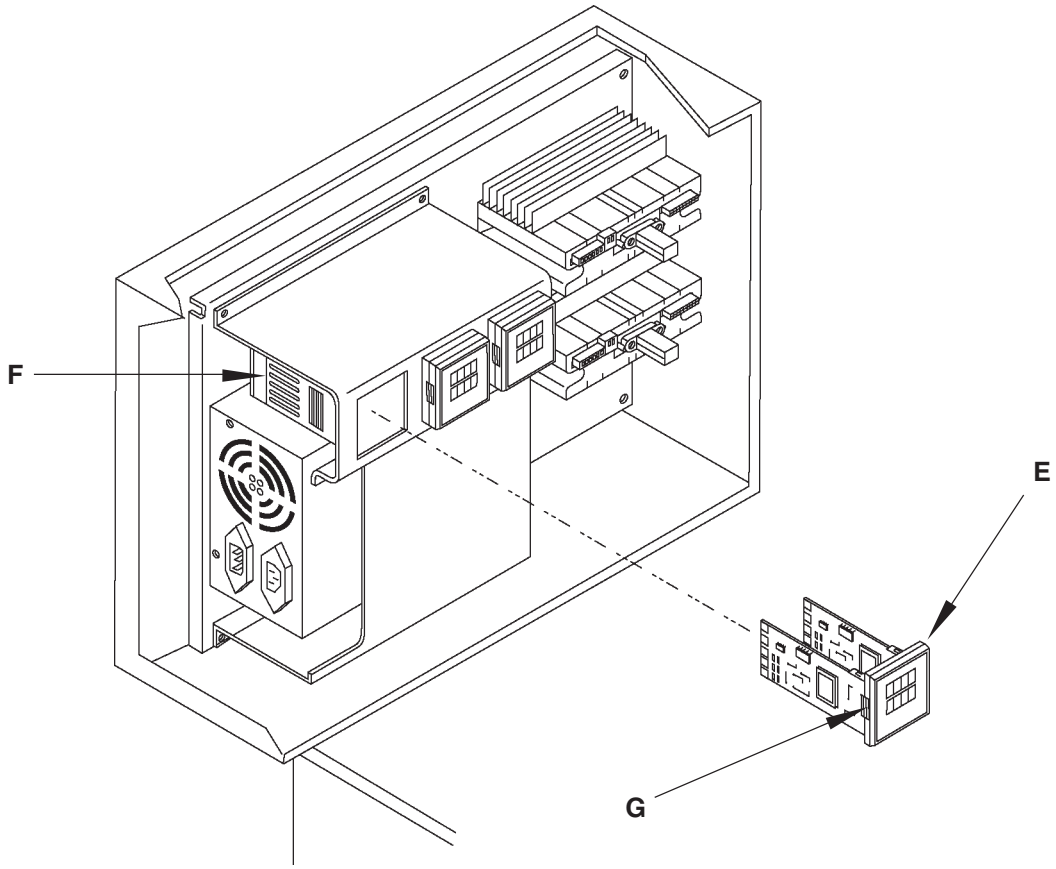


Fig. 3

4 Remove your new controller from its anti-static packaging and carefully install into the sleeve. It should snap in when fully seated.

5 Place old controller into anti-static packaging.

6 Please refer to the instructions included with your new temperature controller for programming details.

6.02 Cal 9300 Upgrade

IMPORTANT **VERIFY DRS24 IS DISCONNECTED FROM THE POWER SOURCE.**

NOTE **The temperature controllers are located in the DRS24 right box (A), (fig.1).**

STEPS:

1. Remove the 10/32" button head screw (B), (fig.1), and swing left box open.

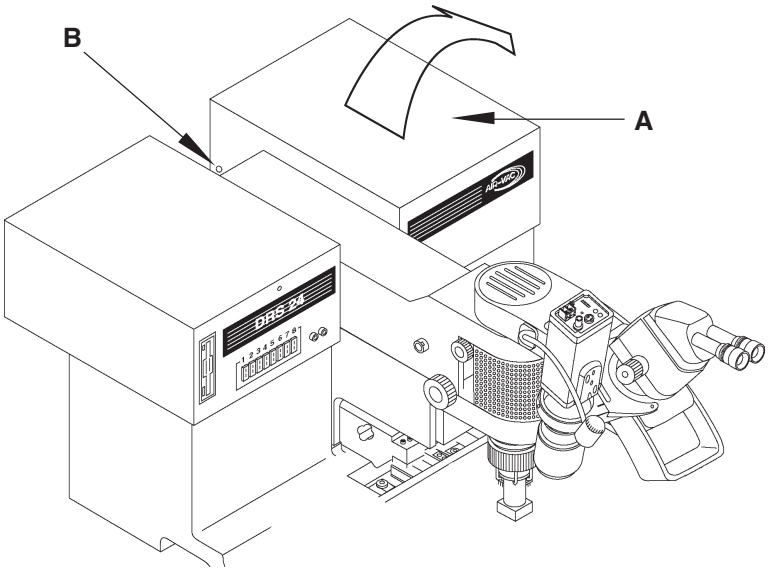


Fig. 1

NOTE **The remaining steps will be performed assuming you are located behind the DRS24.**

2. Remove the four 10-32 low head screws (C), (fig.2), with a 3/32" Allen wrench.
3. Carefully lift the sub plate assembly (D) out of the right box and rest on top of power panel.
4. Squeeze the hinge pins (E) together to release the left box and then lower box to bench. Remove lid support pin (F) to allow box to sit flat on bench.
5. With the left box cover sitting on the bench next to the machine, flip the entire sub-plate assembly (D) back over and rest on top of cover (fig. 3, page 5).

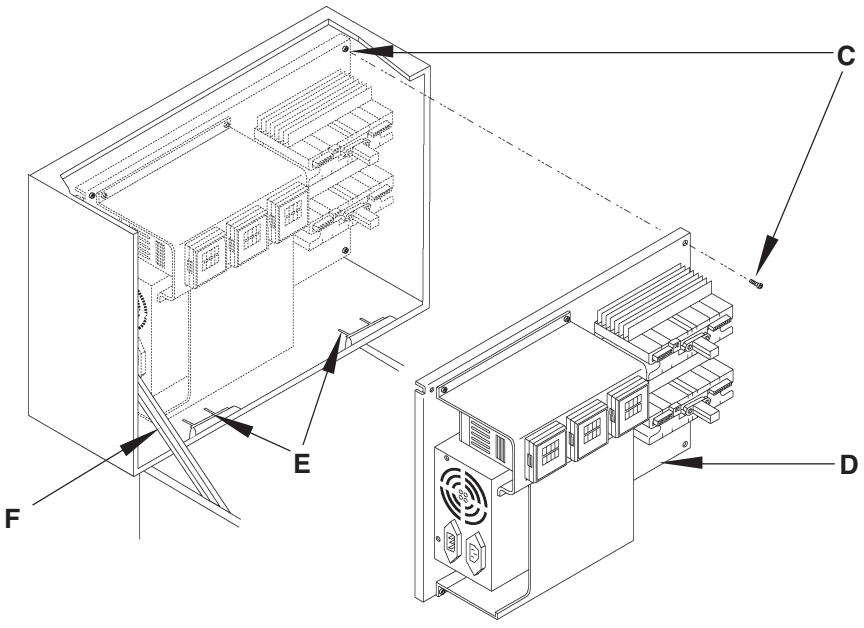


Fig. 2

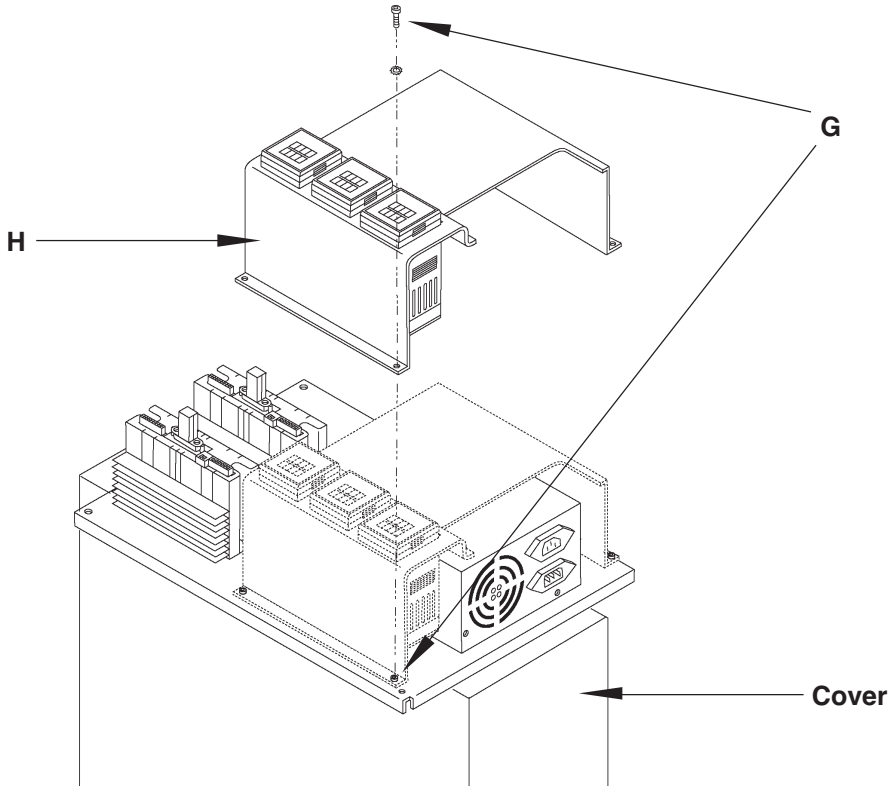
4 Remove the four M4 screws (G), (fig.3), with a 3mm Allen wrench and then remove the wire ties holding the harness.

5 Carefully lift the riser plate assembly (H) off of the sub plate assembly and flip over for access to the Athena controller rear wire connections.

NOTE ☛ **You can re-install two M4 screws (G) into the sub plate to hold the riser plate upside down in place.**

NOTE ☛ **Remove and replace one controller at a time so you do not get the wire connections mixed up.**

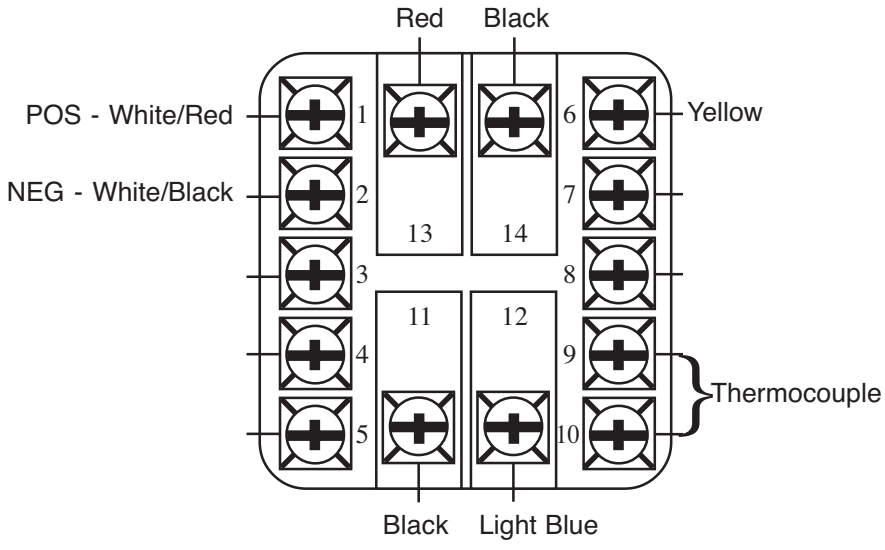
Fig. 3



6 Remove the wires from the Athena controller (figure 4) with a phillips head screwdriver.

NOTE ☛ **The wire colors on terminals 13, 14 & 6 may be different than indicated in figure 4 (make a note if they are different).**

Fig. 4



7 Gently slide a thin straight blade screwdriver behind the locking tabs of the Athena retaining ring (I), (fig.5), pry up and slide the ring down several “clicks”. Repeat, alternating sides, until the retaining ring slides off. Remove Athena (J) from cutout.

8 Insert the new Cal 9300 controller into the same cutout, making sure that the face is orientated properly (fig.6).

NOTE ☛ **You made need to use a file to make the cutout larger.**

9 Slip the retaining ring (I) back over the Cal 9300 sleeve and lock against the riser plate (K).

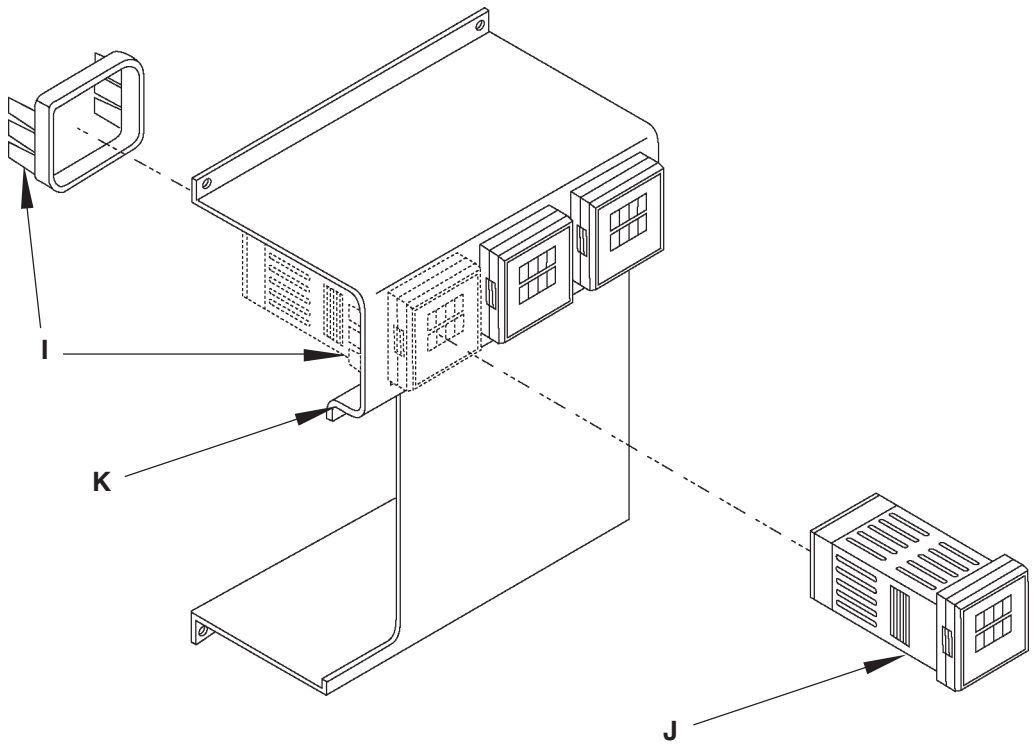


Fig. 5

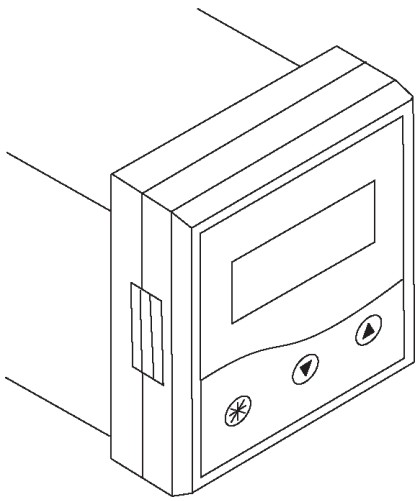


Fig. 6

NOTE ☛ **For wire connection steps 10-17, refer to figure 7 on page 8. If the wire lengths are too short, it may be necessary to splice on additional wire lengths by soldering and adding heat shrink tubing over the splice. Remove spade lugsfrom the end of wires and strip insulation back approximately 3/16".**

10 Connect white/red wire (Athena terminal 1) to Cal 9300 terminal 3.

11 Connect white/black wire (Athena terminal 2) to Cal 9300 terminal 4.

12 Connect yellow wire (Athena terminal 9) to Cal 9300 terminal 1.

13 Connect red wire (Athena terminal 10) to Cal 9300 terminal 2.

14 Connee6 thick black wire (Athena terminal 11) to Cal 9300 terminal 7.

15 Connect thick light blue wire (Athena terminal 12) to Cal 9300 terminal 8.

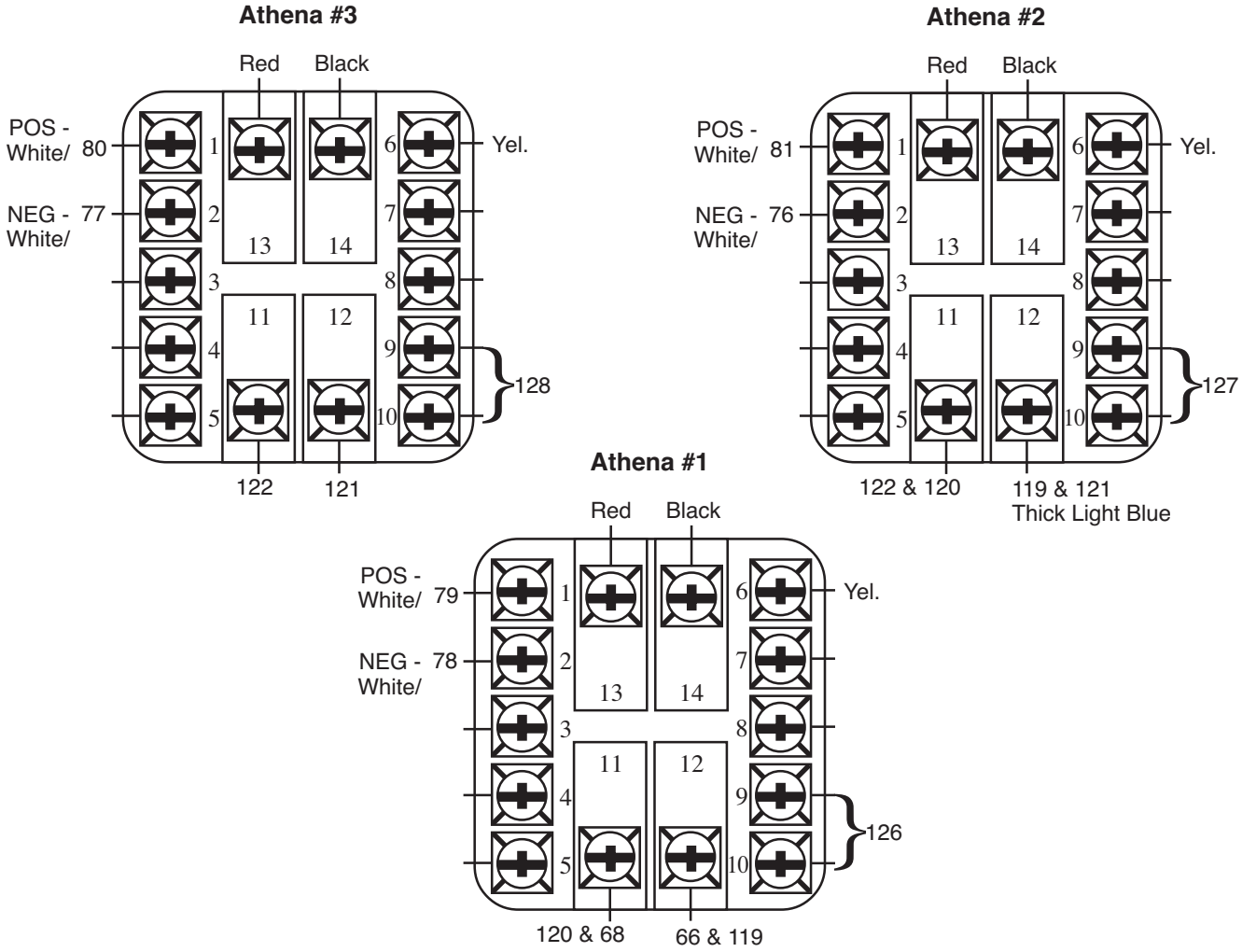
16 Connect red wire (Athena terminal 13) to Cal 9300 terminal 10.

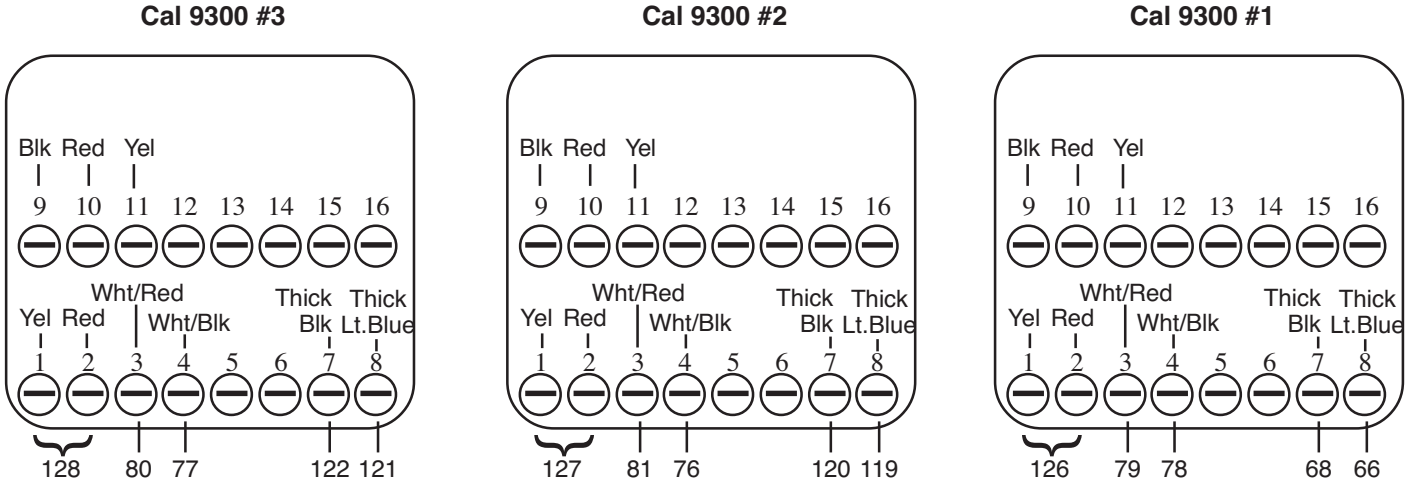
17 Connect black wire (Athena terminal 14) to Cal 9300 terminal 11.

18 Repeat steps 10-17 for the remaining Athena controller(s) to be upgraded. See complete diagram for all wire colors and numbers (fig. 7, page 8).

NOTE ☛ **If you have a single diffuser with only two controllers, make sure the wires for the center (left diffuser) Athena are secured and the ends are shrink wrapped to prevent grounding or shorting.**

Fig. 7 - Athena & Cal 9300 Temperature Controller Hookup (rear view)





19 After all wire connections have been made, reverse steps 1-5, earlier in this section, to re-install the riser plate and sub plate assemblies back into the DRS24 right box.

20 Reconnect power to the DRS24 and power up module. At DRS24 software, **DO NO LOG ON.**

21 Verify that your new Cal 9300 controllers have power (the front display should be green) and program them according to the instructions in section .....

IMPORTANT

PROGRAMMING IS VERY IMPORTANT. IF THE CONTROLLERS ARE NOT PROGRAMMED, THE DRS24 AND ITS SOFTWARE WILL NOT WORK.

22 Once the controllers are programmed, log into the DRS24 software with a “High” level operator password and then right mouse click the spinning chip in the bottom right corner to access the hidden menu.

23 Under “Options/Open”, run the “Heater Burn in Profile” (figure 8) to make sure the controllers reach their setpoint temperature and appear to be stable.

NOTE

If you get a “Temp Communication Link” error message, you will need to check the controller programming first. If that appears okay, you then need to check your communication wires on the Cal 9300 terminals 9, 10 and 11 to make sure they are wired correctly. (Usually terminals #10 & #11 (red & black) are reversed).

If your controller has difficulty reaching or stabilizing its setpoint, you will need to again check the controller programming.

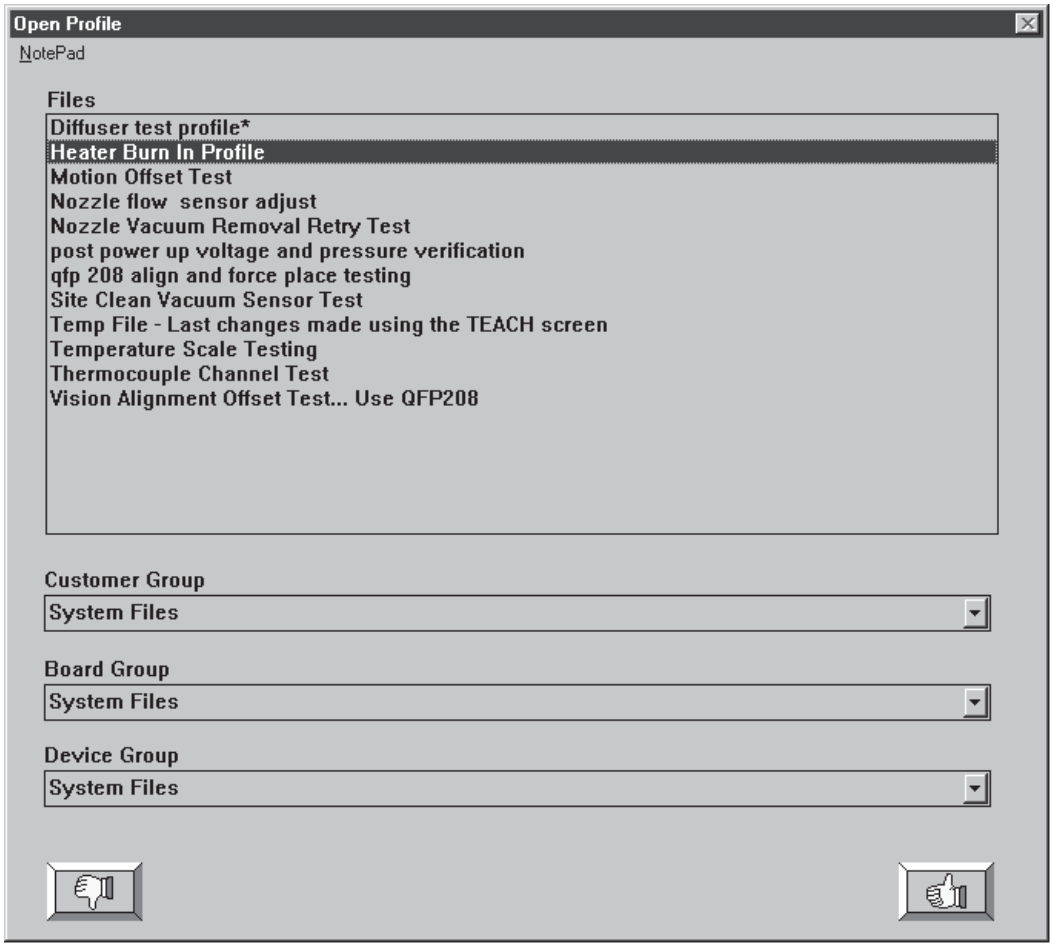


Fig. 8