P/N 241016 Rev.-1

ISO 9001
Registered Quality Management System

RAYPAK REPLACEMENT INSTRUCTIONS

HOT SURFACE IGNITION CONTROL REPLACEMENT P/N 007374F
ALL HI DELTA MODELS 302 - 2342

IMPORTANT NOTICE:

These instructions are primarily intended for the use by qualified personnel specifically trained and experienced in the installation of this type of heating equipment and related system components. Installation and service personnel may require licensing in some states. Persons not qualified shall not attempt to install this equipment nor attempt repairs according to these instructions.

DANGER - SHOCK HAZARD:

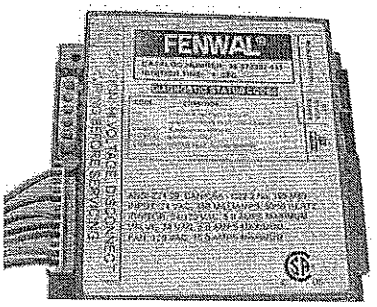
Make sure all electrical power to the heater is disconnected to avoid serious injury or damage to components.

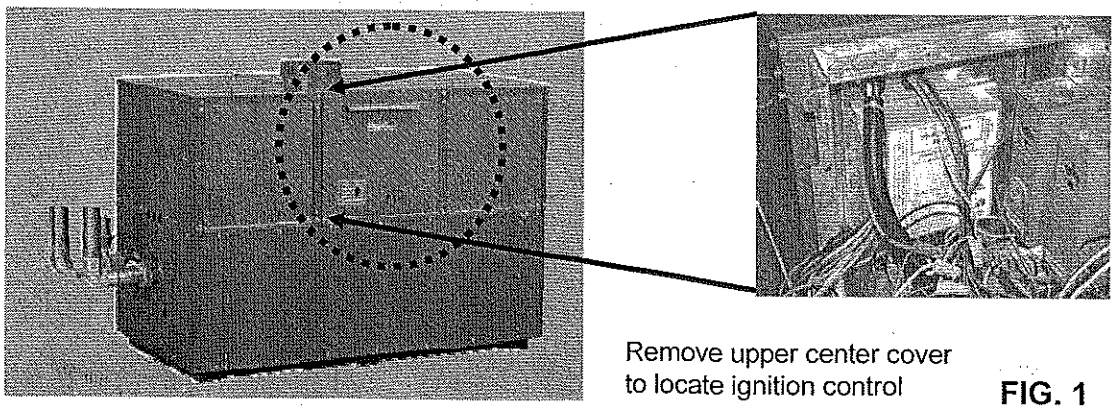
SCOPE:

The replacement of the Series 05-34 HSI Ignition Module with the new Fenwal 35-673356-561 unit will serve to enhance the reliability of the Hi Delta boilers with a high gain flame signal sensing amplifier. The digital microprocessor in this control has enhancements that help troubleshoot problems through a series of coded lights that indicate faults.

007374F KIT INCLUDES:

1 – Ignition control module, Fenwal HSI,	#601655
1 – Wire harness	#651333
4 – screws, Phillips head, 8-24, self tapping	#550515
9 – wire nuts	#650103
8 - wire tie wraps	#550577
2 – spade terminals	#650574





Remove upper center cover to locate ignition control

FIG. 1

Raypak
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Technical support is available M-F, 5:30AM to 5:00 PM, PST, at (800) 947-2975 or (800) 627-2975

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Replacement instructions:

1. Shut off the main electrical and close main gas valve to unit.
2. Remove the center upper control panel cover. See **FIG. 1.**
3. Turn both the power and auto shut down switch to the "OFF" position.
4. Locate the old Fenwal ignition control. Disconnect the four-wire white plastic AMP plug from the module.
5. Mark and tag each wire connected to the old module to identify the terminal connection designation. (I.e. GND for the green wire and so on)
6. Disconnect the wires from the old module and remove the old module.
7. Locate the new ignition control on the left side will of the control compartment as close to the front as possible. See **FIG. 1**. This will allow easier access to the F1 and F2 posts as well as the ability to view the LED status light. See **FIG. 2**.
8. Mark the spots (2) for the mounting holes.
9. Drill a pair of 7/64" pilot holes through the sheet metal for mounting holes.
10. Mount module using the 2 self tapping screws provided.

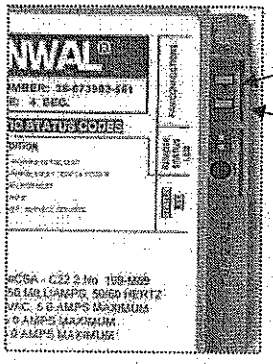

FIG. 2

The following steps require frequent references to the wiring diagram in FIG. 3 shown on page 4.

11. The new ignition module requires 120 volt power to be brought in to F1 post for the blower. See **FIG. 3** and refer to dotted area marked with (1). Run a black wire from power block 1to F1. Crimp on a female push-on connector to the other end of the black wire and attach to F1 pin.
12. The black/white wire that went to the IND post on the old module can be put directly onto the F2 post. The blower power circuit is now complete.
13. Plug the new wire harness (P/N 651333) into the new module.
14. Plug the AMP connector (with 4 wires) into the new module.
15. The red wire at the top of the wire harness (2) goes to the flame sensing connection. The blue/white wire located on the 4 wire AMP plug gets cut out. Cut the wire approximately 10" from the AMP plug. Wirenut the red wire to the portion of the blue/white wire which is the lead from the flame sensor.
16. Disconnect the orange/white neutral wire (3) from the 120 volt terminal block and connect it to the blue/white wire on the S2 lead.
17. The green wire from the (4) harness goes to ground. Wirenut this wire to the green wire that was on the old module.

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18. The blue/yellow wire ⑤ is the continuous 24 volt power. Wirenut this wire to the blue wire coming off the 24 volt terminal block.
19. The violet/black wire ⑥ is the power output to the gas valve. Wirenut this to the black wire that is coming off the gas valve from terminal block #2.
20. The violet/white wire ⑦ is the power in from the air pressure switch. Wirenut this to the violet wire that is coming off the air pressure switch from terminal block #2.
21. The orange wire ⑧ is the power input from the thermostat. Wirenut this to the red wire that is coming off the flow switch from terminal block #2.
22. The last wire, the green/yellow ⑨ is the output to the "lock out light". Wirenut this to the yellow/white wire going to the red ignition failure light on the front panel.
23. Double check steps 11 through 22 to insure accurate wiring.
24. Using the wire ties provided, neatly bundle the wiring.
25. Turn the gas to the unit back on.
26. Turn the power to the unit on. Turn the big blue Auto-Shutdown switch on. Turn the main switch on.
27. Set the thermostat to call for heat.
28. Check the sequence of operation:
    - ¤ First the blower will come on for a 15 second pre-purge cycle.
    - ¤ Then the hot surface igniter will heat up for 30 seconds, glowing a bright orange/red.
    - ¤ The main gas valve will open and if the flame is sensed in 4 seconds, the burners will stay lit.
    - ¤There will be a 10 second delay between each of the stages.
29. Perform a complete safety check on the unit by disconnecting the individual wires from the air pressures switches, the limits controls, and the flame sensing probe. The unit should shut down with two seconds when wires are unplugged.
30. Check to insure that the safeties have been reconnected.
31. Place the cover back on the junction box.

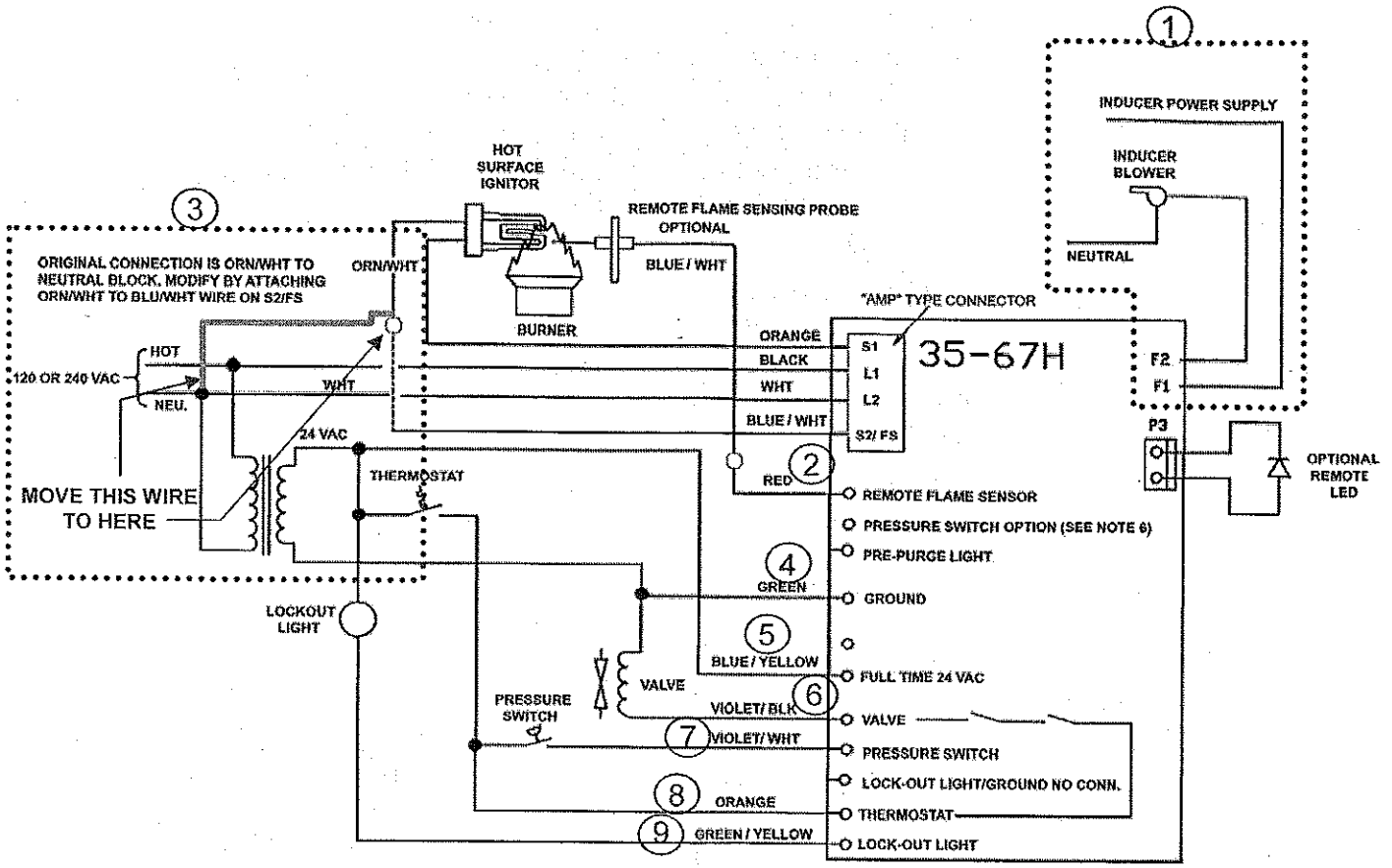

FIG. 3

If there is more than one ignition modules in the boiler that is being replaced, follow the steps on page 5.

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The following steps require frequent references to the wiring diagram in FIG. 4.

It is important to check the point to point wiring connections because of wire color changes.

A. **When replacing the second ignition module on Hi Delta models 1532 – 2342 follow steps B through P.**
B. Repeat steps 5 through 10 as described on page 2 of this document.
C. The new ignition module requires power to be brought in to the F1 post for the blower. See FIG. 3 and refer to the dotted area ①. Run a black wire from power block 1 to the F1 post. Crimp on a female push-on connector to the other end of the black wire and attach to F1 pin.
D. Run a black wire from F2 on the ignition module to blower #1 black wire.
E. Plug in the new wire harness (P/N 651333).
F. Connect the red/yellow wire from the old module to the orange wire ⑧ on the new harness.
G. Connect the violet/white wire from the old module to the violet/white wire ⑦ on the new harness.
H. Connect the black wire (MV1) from the old module to the violet/black ⑥ on the new harness.
I. Connect the green wire to the green wire ④ for ground.
J. Connect the blue/white wire from the old module to the blue/yellow wire ⑤ on the new harness.
K. Plug the "AMP" connector (4 wire harness) into the new module.
L. Cut the blue/white wire approximately 10" from the "AMP" plug. Connect the red wire ② to the blue/white wire from the sensor.
M. Remove the orange/white wire from the igniter and connect to the blue/white wire ③ on the "AMP" plug.
N. The lock out light terminal on the module does not get connected.
O. Double check the steps you have just completed, B through M, for accuracy.
P. Repeat steps 24 through 31 on page 3. These are the safety check steps and must be completed properly.