Introduction

Tools needed:
- Phillips head screw driver
- Small flat head screw driver
- Needle-nosed pliers

Note: Avoid touching printed circuit board as static discharge may damage circuitry.

Preparation

1. Push power button to "OFF" and unplug power cord.
2. Loosen two Phillips head screws on bottom rear of front cover. Pull cover bottom outwards then lift cover upwards to remove.

Removing control unit

1. Remove three Phillips screws on front of control unit. (Fig. 2, pos. 1)
2. Turn control unit to expose the rear. (Fig. 2, pos. 2) Remove hot water sensor from pipe to ease turning.
3. Locate and remove 6 Phillips head screws on back of control unit (Fig. 2, pos. 3).
4. Remove rear cover from control unit to expose circuit board electrical connections. Slide wire restraints out of control unit. (Fig. 3, pos. 1).
5. Remove two large electrical strip connectors by pulling them away from board. (Fig. 3, pos. 2).
6. Remove medium sized electrical strip connector by pulling it outwards. (Fig. 3, pos. 3).
7. Remove small electrical strip connector by pulling it outwards. (Fig. 3, pos. 4).
8. Remove two large yellow ignition wires by pulling them outwards. (Fig. 3, pos. 5).
9. Remove yellow/green striped ground wire spade connection by depressing tab on connector and pulling it gently off the board. (Fig. 3, pos. 6).
10. Loosen two small flat head screws on terminal block for power cord. Pull black and white wires free from terminal block and control unit. (Fig. 3, pos. 7).
11. Loosen Phillips head screw and remove green ground wire connection for power cord. (Fig. 3, pos. 8).

12. Remove control unit from the water heater.
13. **Natural Gas heaters only:** Remove jumper from JP6 connection on control board. This jumper must be installed on replacement control board. (Fig. 4).
Replacing control unit

1. Remove rear cover of replacement control unit.
2. Reinstall jumper on JP6 connection of replacement control board. (Natural Gas water heaters only). (Fig. 4).
3. The replacement control unit comes with an extra jumper supplied. Depending on the water heater’s serial number this jumper may need to be attached to the replacement control unit. Determine the heater’s serial number by locating the rating sticker on the right side of the front cover (Fig. 5).

   a) If serial number is FD 891 or less, the jumper needs to be applied to JP2 on the control unit. (Fig. 6)
   b) If serial number is FD 892 or greater, no jumper is needed on JP2.
4. Connect green ground wire from power cord to replacement control board with Phillips head screw. (Fig. 3, pos. 8).
5. Reconnect black and white power cord wires to terminal block on replacement control unit. Secure to terminal block by tightening flat head screws. (Fig. 3, pos. 7).
6. Reattach large yellow ignition wires to replacement control board (no polarity). (Fig. 3, pos. 5).
7. Reconnect small electrical strip connector to replacement control board. (Fig. 3, pos. 4).
8. Reconnect medium sized electrical strip connector to replacement control board. (Fig. 3, pos. 3).
9. Reconnect two large electrical strip connectors to replacement control board. (Fig. 3, pos. 2).
10. Reseat rubber wire restraints in control unit. (Fig. 3, pos. 1).
11. Replace rear cover on unit using 6 Phillips screws. (Fig. 2, pos. 3).
12. Place control unit back into water heater and secure with 3 Phillips head screws. (Fig. 2, pos. 1).
13. Plug water heater power cord back into electrical outlet and push On/Off button on water heater to “ON”.

Programming Condensing/Non-condensing mode

Note: The following does not apply for model GWH 2400 ES
GWH 715 ES and GWH 2700 ES water heaters must be programmed to the Non-condensing mode. The GWH C 800 ES water heater must be programmed to the Condensing mode.

1. Push On/Off button to the “OFF” position.
2. While depressing and holding the “P” program button, push the On/Off button to the “ON” position.
3. Release the “P” program button when 188 appears on the display.
4. P2 should now appear on the display. If not, repeat process.
5. Press the “+” button until P7 appears on the display.
6. Press the “P” program button again to display the appliance mode.
7. Either "NO" or "Cd" will appear on the display. Models GWH 715 ES and GWH 2700 ES must be set to "NO" and the GWH C 800 ES must be set to "Cd".
8. Use the “+” button to scroll between "NO" and "Cd" modes. To save the set mode, depress and hold the “P” program button until the display flashes. The mode is now saved.

Note: Refer to venting section of the installation manual supplied with the heater to determine if minimum power (P2) fan speed adjustment is necessary.

9. Press the On/Off button to "OFF" then again back to "ON" position to return heater to normal operation.

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