

TECHNICAL SERVICE DEPARTMENT
Technical Service Bulletin
1-800-432-8373



**Removal, Cleaning, & Reinstallation of the Burner Assembly
For models – 74 & GT199**

Required tools

- #2 Phillips screwdriver (At least 8" long and magnetic)
- Needle nose pliers
- Air compressor (If this is not available then a can of air like you would use to clean a computer keyboard).

Warning! During this procedure you may encounter some sharp edges. Please be careful. Wearing gloves may protect against injury.

NOTE: Read these entire instructions before starting this procedure.

A. Initial Disassembly

- 1) Turn off Remote
- 2) Disconnect electrical power
- 3) Turn off gas supply
- 4) Turn off water supply
- 5) Remove front door (4 screws).
- 6) Remove screw(s) holding PCB (1 to 3 screws depending on model). Allow PCB to hang by wires.



Fig.1



B. Burner Plate Cover

- 1) On the burner plate cover, remove the two retaining clips and screws from the manifold supply tubes. (Screws 19 thru 23)
See Figure 1.
- 2) At the gas valve, remove the three retaining clips and screws from each of the gas manifold tubes. Note the brass colored tube has a special clip; the silver colored tubes have a different clip.
See Figure 2.

Note: Each manifold tube has a rubber o-ring on each end to seal the tube. Ensure these are not lost or damaged. If o-rings are not on the end of the tube then verify they are in manifold fuel rail and gas valve (No need to move them just do not lose them).

- 3) Remove the two screws that hold the igniter mounting plate. (Screws 17 & 18) Allow to hang.
- 4) Remove the two screws that hold the door switch. (Screws 10 & 11) Allow to hang.
- 5) Remove the remaining 14 screws on the burner cover plate. Do not forget to re-connect the green and yellow striped ground wire when reassembling cover plate. (Screw 8)
- 6) Pull off burner cover.

Note: The burner cover has a gasket. The gasket will tear a little and this is OK. Do not scrap off or apply any type of sealant. During reassembly just straighten gasket and reinstall the cover.

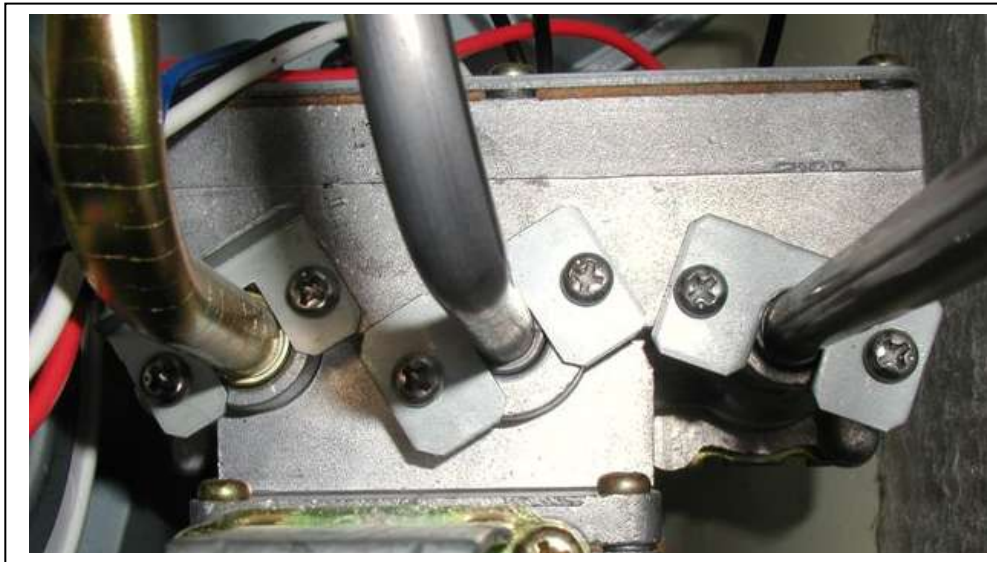


Fig.2

C. Burner Assembly

- 1) Pull black rubber grommets outward.
(The grommets can also be white)
See Figure 3.

Note positioning of the four black grommets.

- 2) Remove the three screws on the bottom back wall of the burner assembly.
See Figure 4.

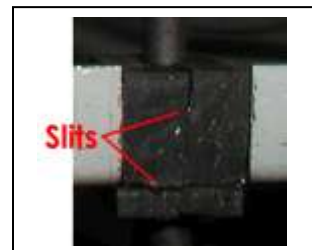


Fig. 3

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- 3) Slowly but firmly pull straight out on both sides of the burner assembly to slide it out of the chassis.

Note: Be careful as the Flame Rods can get caught by the top of the burner opening. This could damage or bend the flame rods.

See Figure 5.

- 4) Disconnect all igniter wires and flame probe wires (This can be done at the PCB or burner assembly).

Note the position of each wire.

- 5) Disconnect ODS Molex on PCB at connector Q (Red & White twisted wires).
- 6) Remove manifold fuel rails on both sides of the burner. Two screws on each rail.
- 7) Inspect the burner rail, closely inspect all orifices for any debris or clogging. Clean with compressed air by blowing back through the nozzle. A small needle or fine wire can be used to help clear the openings. Do not enlarge the openings.
- 8) On the right side of burner toward the front, remove the small rectangle plate and brass orifice.

Note position in which these items are installed.

See figure 9.

- 9) Inspect the igniters and flame rods for damage. Using steel wool, emery cloth, or fine sandpaper (no less than 100 grit), clean the ends of the igniter/flame rods (5 in all). Take care not to damage the ceramic base.
- 10) Using compressed air blow back down through all burner ribbons.

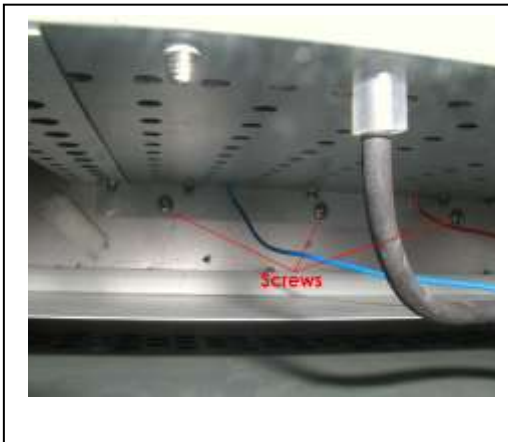


Fig. 4



Fig. 5

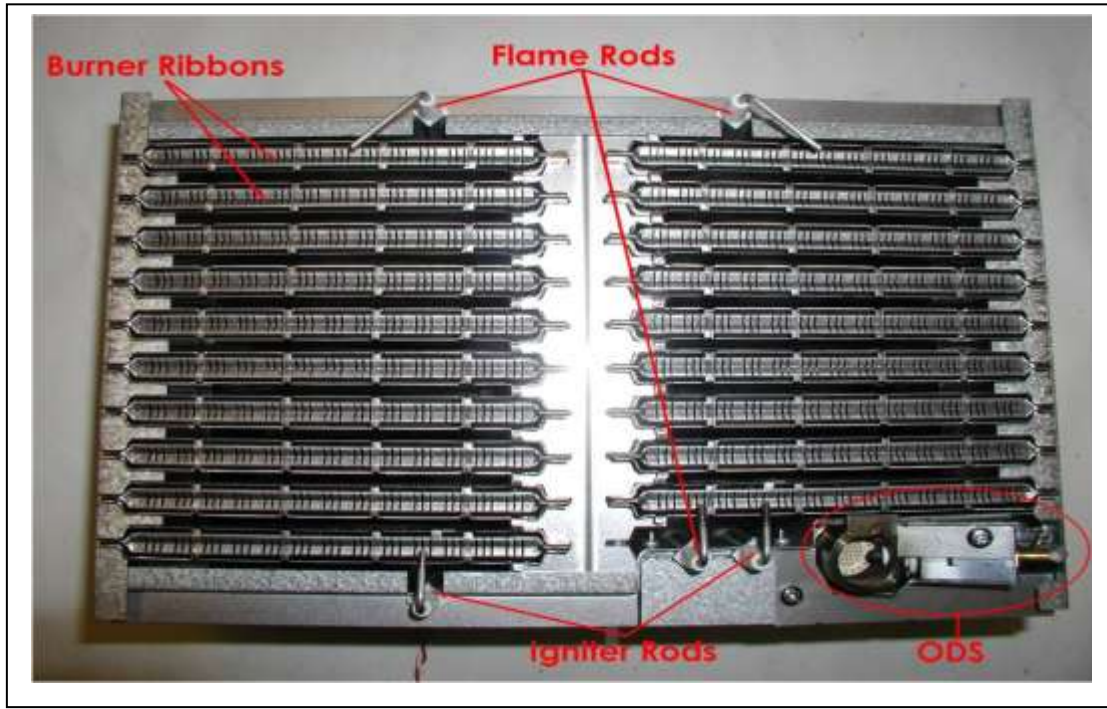


Fig. 6

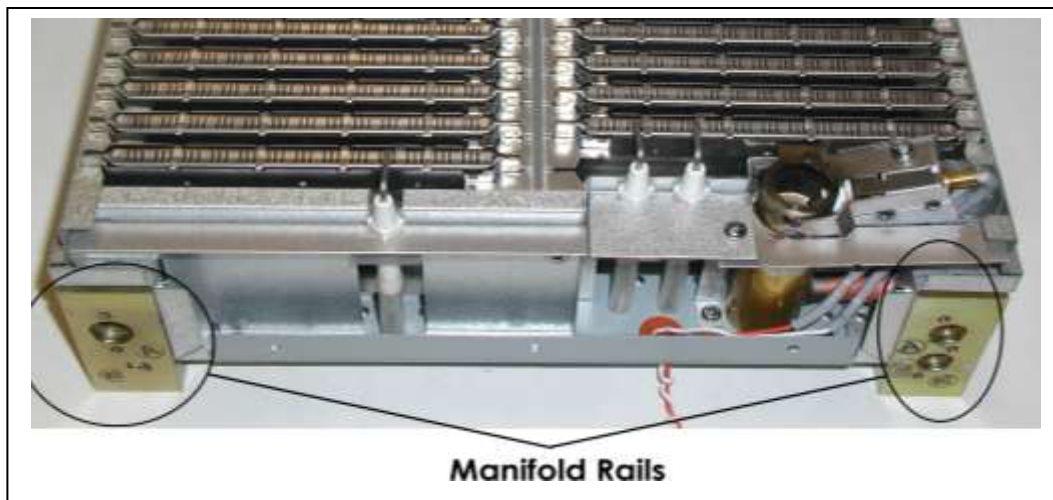


Fig. 7

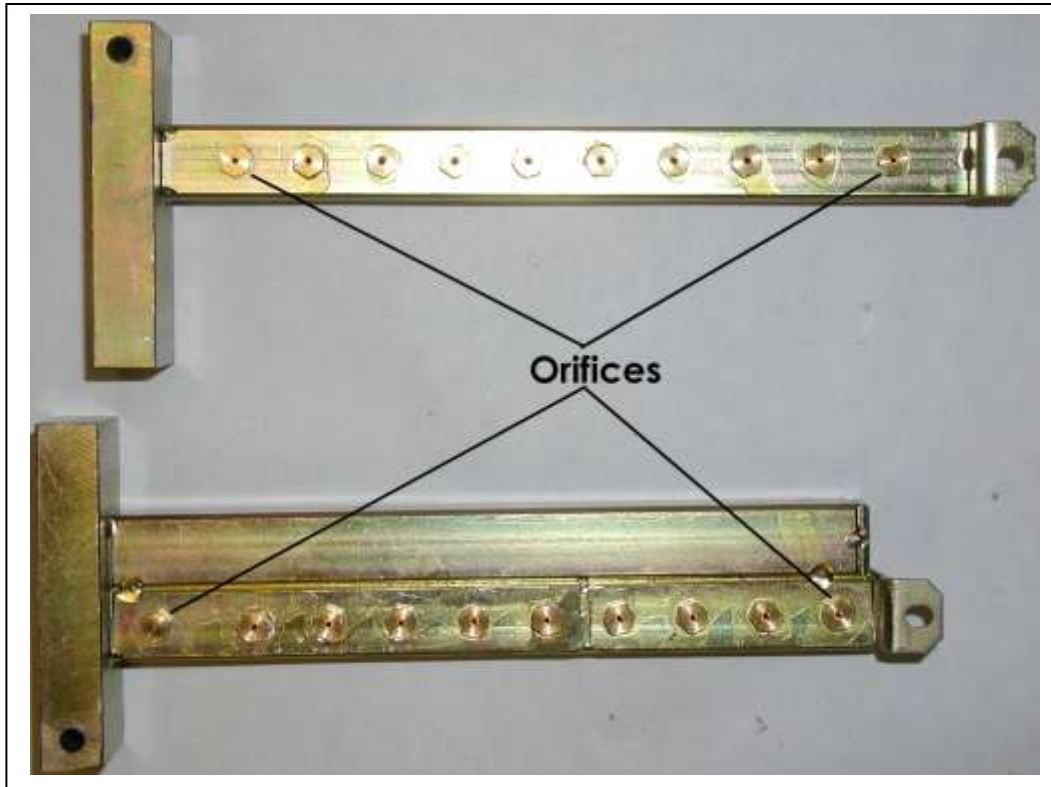


Fig. 8



Fig. 9



D. ODS Removal

- 1) On the bottom you will find a screw with a washer, remove this screw and washer.
See Figure 10.
- 2) Locate the ODS wire harness, Red and White wire that is twisted together. From the bottom of the burner assembly push the orange grommet with the red and white wires into the burner and out of the hole. Carefully pull the wires up through the hole and pass the white Molex connector through the hole.
See Figure 10.
- 3) Locate the burner shield plate, remove the screw holding the plate from the top of the burner, next remove the screw holding the plate from the side of the ODS assembly, remove the plate.
See Figure 11.
- 4) Locate the ODS mounting screw, remove the screw securing the ODS to the burner, the wire harness may have to be moved slightly out of the way. Do not excessively bend the grey wires connecting to the ODS sensor, damage could occur.
See Figure 11.
- 5) With a slight twisting motion, slide the ODS out from the mounting location away from the side of the burner assembly.

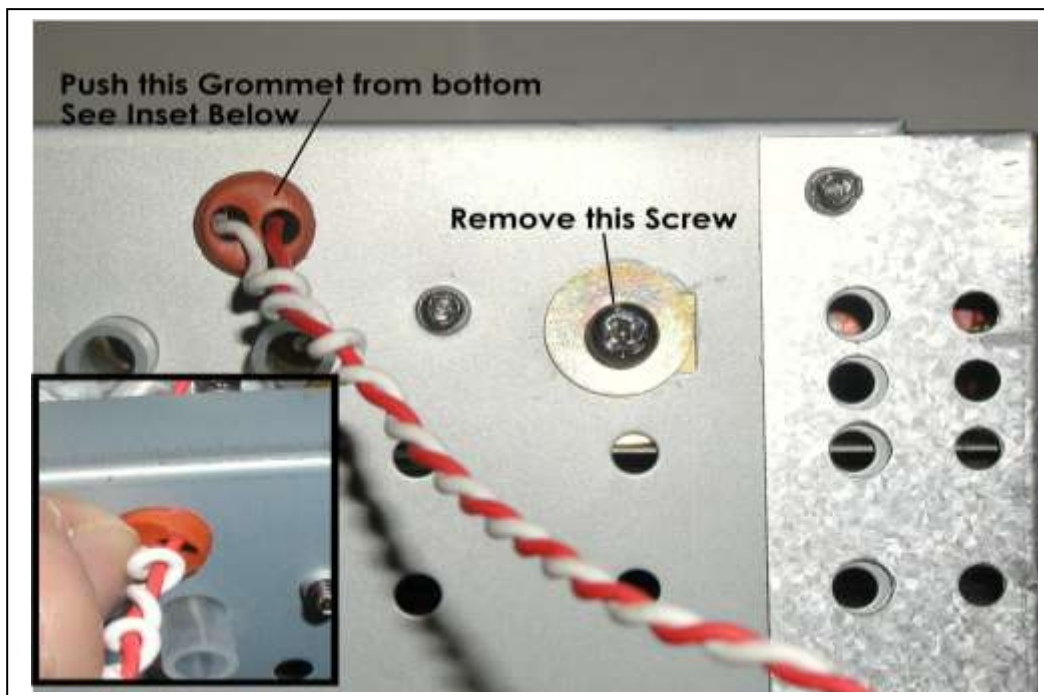


Fig. 10



Fig. 11

E. ODS Examination & Disassembly

- 1) Examine the opening to the ODS for any debris that might be clogging the intake port.
- 2) Locate the ODS case screw, and carefully remove this screw. Note: it is a stainless steel screw and can be easily dropped. **It is also very tight. Place ODS Assembly down on a hard surface to remove the screw.**

See Figure 12.

- 3) Slowly twist the upper section of the ODS while holding the brass base, slide the section off the base, this must be done straight up. Note: the ceramic element is loose inside the ODS and could fall out or be damaged if the section is not removed straight.
- 4) Remove the ceramic element and inspect the holes for any blockage or buildup, clean with compressed air.

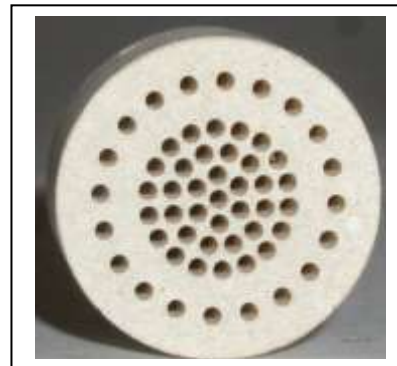


Fig. 13

- 5) Remove the brass ring and set aside.
Do Not Remove any other components such as the thermocouple and wires.
- 6) Inspect the base for any debris, and use compressed air to clean.



Fig. 12

F. ODS Reassembly

- 1) Set the Brass ring back into the brass base.
- 2) Set the ceramic element into the brass ring, this has to be set straight in, otherwise damage could occur.
- 3) Now, slowly slip the upper section down over the ceramic element and brass base, this has to be done straight on, otherwise damage could occur. **DO NOT FORCE.**
- 4) Using a twisting motion seat the upper section fully down on the brass base and align the screw hole. You may need to hold both pieces to get it to align properly.
- 5) Install the small stainless steel screw; be careful as to not cross thread the screw.

Note: Do not operate without this screw in place, do not substitute another screw.

- 6) Slip the ODS assembly into the side of the burner, align the rear mounting hole and secure with the short silver screw.

See Figure 14.

- 7) Press the bottom of the ODS assembly towards the fuel rail to ensure the seal is made with the side of the burner assembly, install the silver screw with the lock washer, and large brass washer on the bottom of the burner assembly to secure the ODS and make sure the ODS assembly is sitting straight and vertical.

See Figure 15.

- 8) Reattach the burner shield plate with the two silver screws.
- 9) Ensure all screws are tight.



- 10) Thread the ODS wires (red & white twisted wire pair) back through the hole in the bottom of the burner assembly and press the seal into the bottom.



Fig. 14



Fig. 15

G. Installation of Burner Assembly & PCB

- 1) Reattach the igniter and flame rod wires to each rod base as previously disconnected. Ensure rubber tubing covers the connection. (If you disconnected the flame rod wires from PCB then wires are still connected appropriately and proceed to next step.)

Note: Water heaters manufactured before October 2006 (0906 date code and earlier) will have flame rod 1 and the right igniter wire reversed.

See Figure 16.

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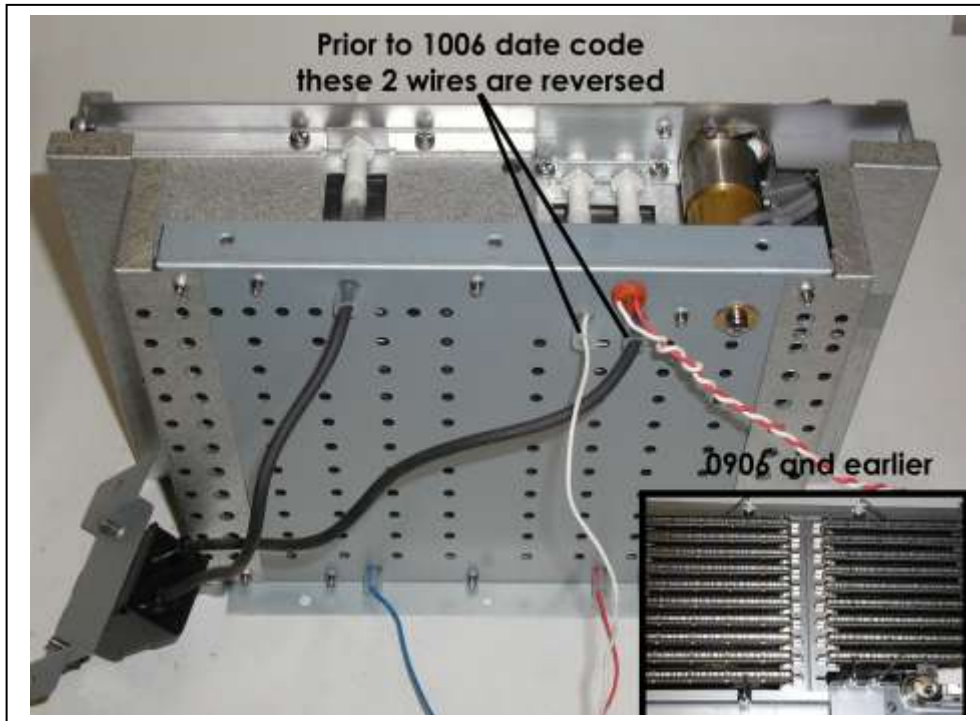


Fig. 16

2) Slide burner assembly back into place.

Note: Be careful not to damage the igniter and flame rods.

3) Ensure wires are in the appropriate grommets and slide grommets into bottom of burner assembly housing.

Note: Ensure grommets are in proper position.

4) Install the 3 screws into bottom of burner assembly and tighten.

5) Position burner plate cover and start installing screws (**Do not tighten the screws until all is installed**). Screws 1 thru 9 and 12 thru 16 (Figure 1).

Note: Ensure ground is attached (screw 8).

6) Position door switch and install screws 10 and 11 (Figure 1).

7) Position igniter coil and install screws 17 & 18 (Figure 1).

8) Reinstall burner manifold tubes. Ensure clips are in the correct location. Screws 19 to 23 (See figures 1 & 2).

Note: Each manifold tube has a rubber o-ring on each end to seal the tube. Ensure these are installed.

9) **Ensure all screws are tightened on the cover plate and the burner manifold tubes (Be careful not to strip the screws).**

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- 10) Reinstall PCB.
- 11) Reconnect ODS Molex on PCB at connector Q (Red & White twisted wires).
- 12) Ensure all other connectors are attached. **See Figure 17 for completely assembled unit.**
- 13) Replace front cover and install the 4 screws.
- 14) Reconnect power.
- 15) Turn on water supply.
- 16) Turn on Gas Supply
- 17) Turn on remote.
- 18) Turn on hot water faucet and ensure proper operation of heater.



Fig. 17