

# Outdoor Heat Exchanger REPLACEMENT INSTRUCTIONS

## For Use With Rinnai Tankless Water Heaters

### Fixed Bypass

- RE140e (REU-VE1720WD-US)
- RE160e (REU-VE2125WD-US)
- REP160e (REU-VEP2125WD-US)
- REP199e (REU-VEP2730WD-US)

### Variable Bypass

- RE180e (REU-VE2432WD-US)
- RE199e (REU-VE2737WD-US)

## WARNING

Failure to correctly assemble the components according to these instructions may result in electric shock, injury or death.

## CAUTION

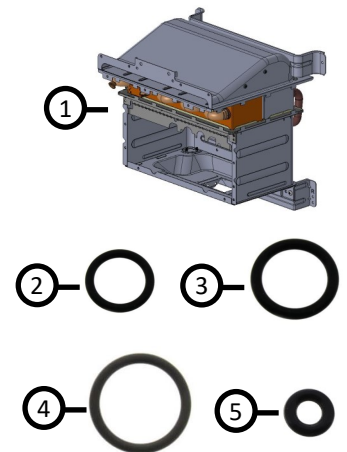
To protect yourself from harm, before performing maintenance:

- Turn off the electrical power supply by unplugging the power cord or by turning off the electricity at the circuit breaker. (The temperature controller does not control the electrical power.)
- Turn off the gas at the manual gas valve, usually located immediately below the water heater.
- Turn off the incoming water supply. This can be done at the isolation valve immediately below the water heater or by turning off the water supply to the building.

## Items Inside Product Box

Before installation, please ensure all parts are located inside the product box.

Item	Item Name	Qty	
		Fixed Bypass	Variable Bypass
1	Outdoor Heat Exchanger	1	1
2	Small O-Ring (M10B-2-14)	1	3
3	Medium O-Ring (M10B-2-16)	1	0
4	Large O-Ring (M10B-2-18K)	2	2
5	Thermistor O-Ring (M10B-2-4)	1	1
6	Manifold Packings (Refer Figure 16 for details)	N/A	



## Instructions

### TOOLS/MATERIALS REQUIRED

- Phillips head screwdriver

### Important

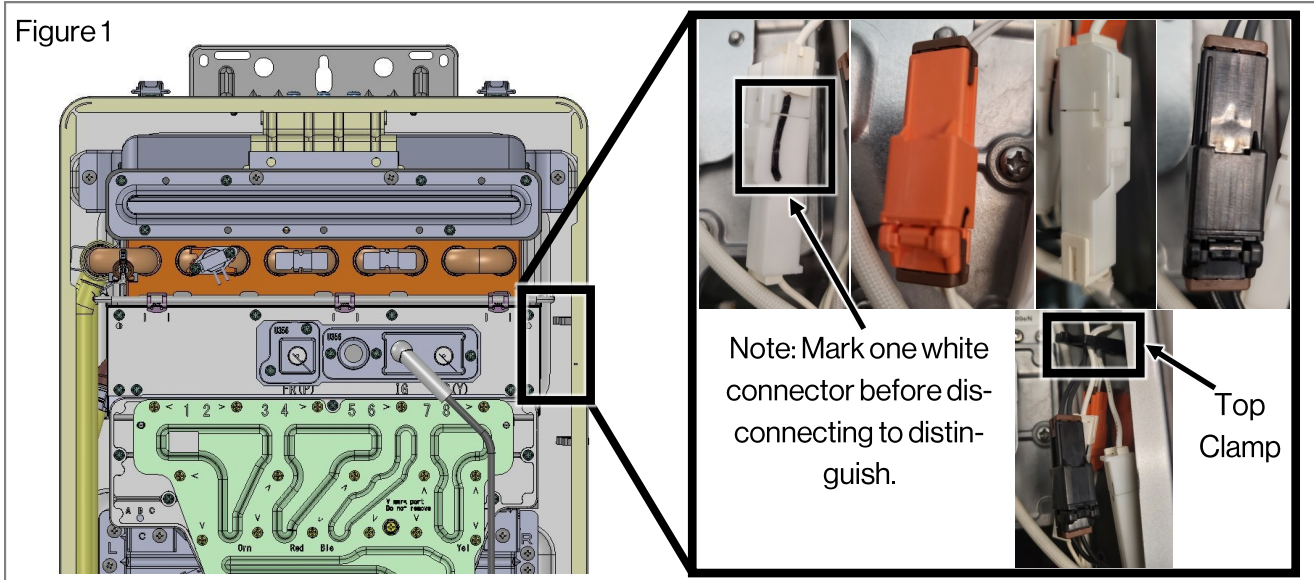
When following the instructions below, inspect any existing O-rings carefully, taking care not to scratch, damage, or misplace the O-rings. Water heater with large HEX, variable bypass and without pump is shown as representative for all illustrations and instructions unless otherwise specified.

1. Turn off and disconnect 120 V power supply.
2. Turn off water supply.
3. Turn off gas supply.
4. Release pressure and drain water from water heater.
5. Remove the bottom two screws securing front panel and open top two latches. Remove front panel.

# Rinnai

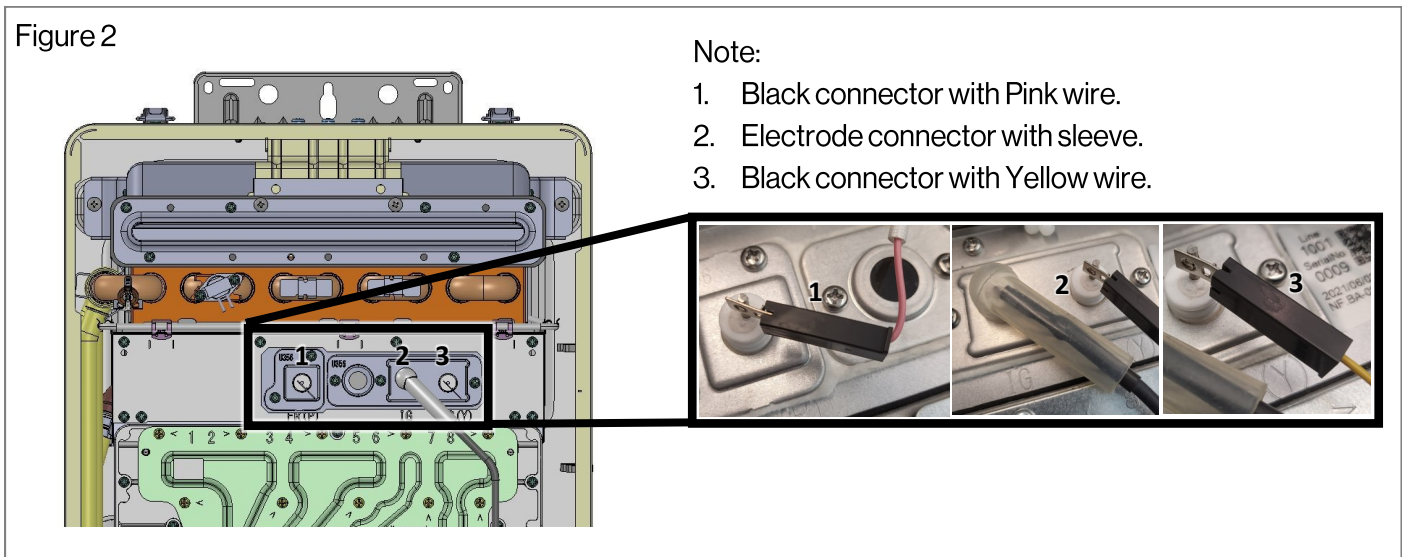
6. Remove all connector wires from top clamp. Disconnect two white connectors, an orange connector, and a black connector (Figure 1).

Figure 1



7. Disconnect two flame rod connectors (Black) and an electrode connector (high tension connector) (Figure 2).

Figure 2



8. Disconnect the main blue connector located under top clamp on the right side of water heater connecting solenoid harness to main PCB (Figure 3).
9. Remove one screw securing controller assembly to water heater (Figure 4). Position the controller to gain access to the ignitor assembly.

Figure 3

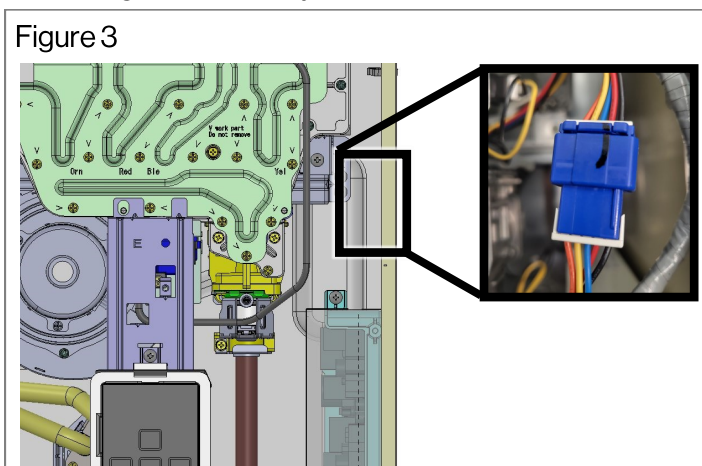
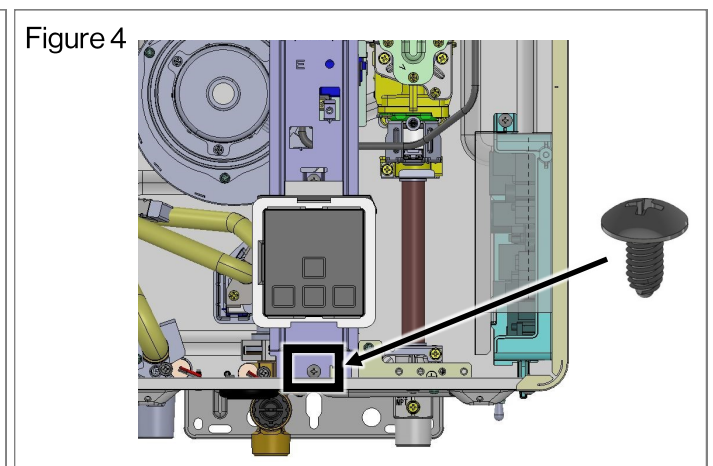
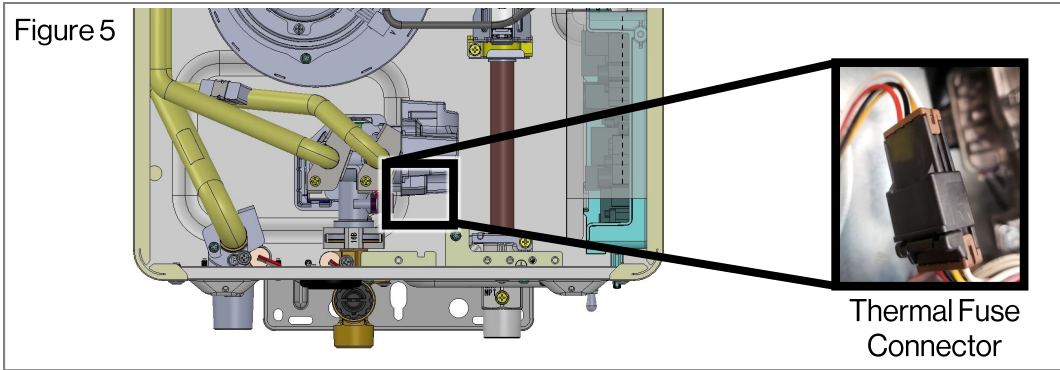


Figure 4



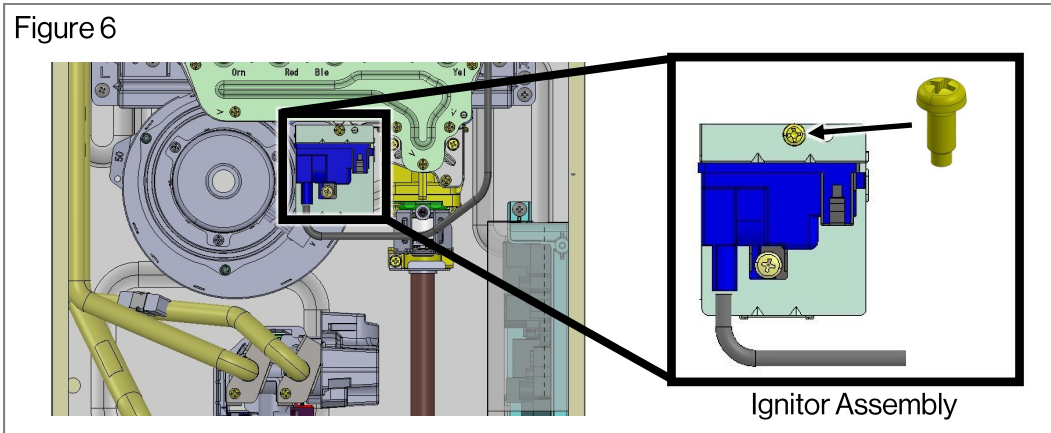
10. Disconnect the black thermal fuse connector located near waterflow servo assembly (Figure 5).

Figure 5



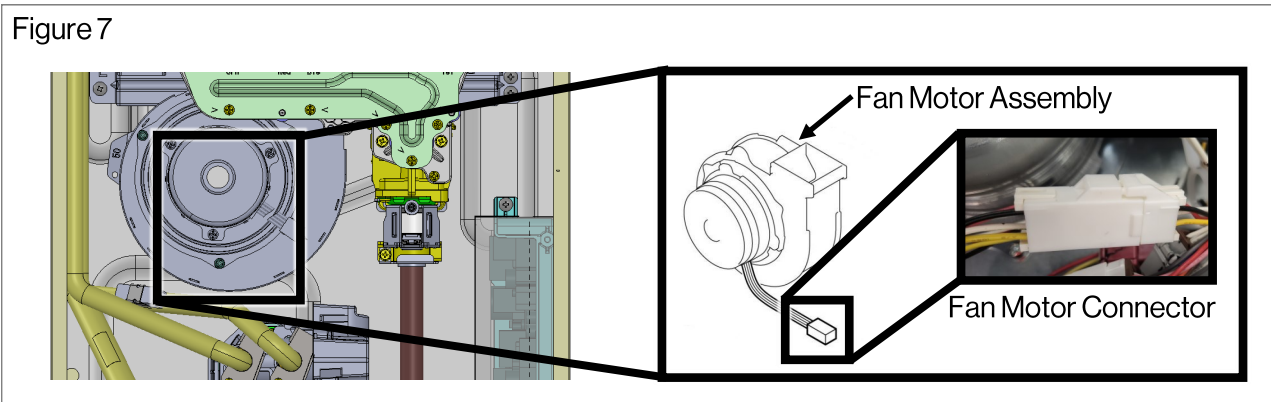
11. Remove one screw securing ignitor assembly to water heater. Position ignitor assembly (Figure 6).

Figure 6



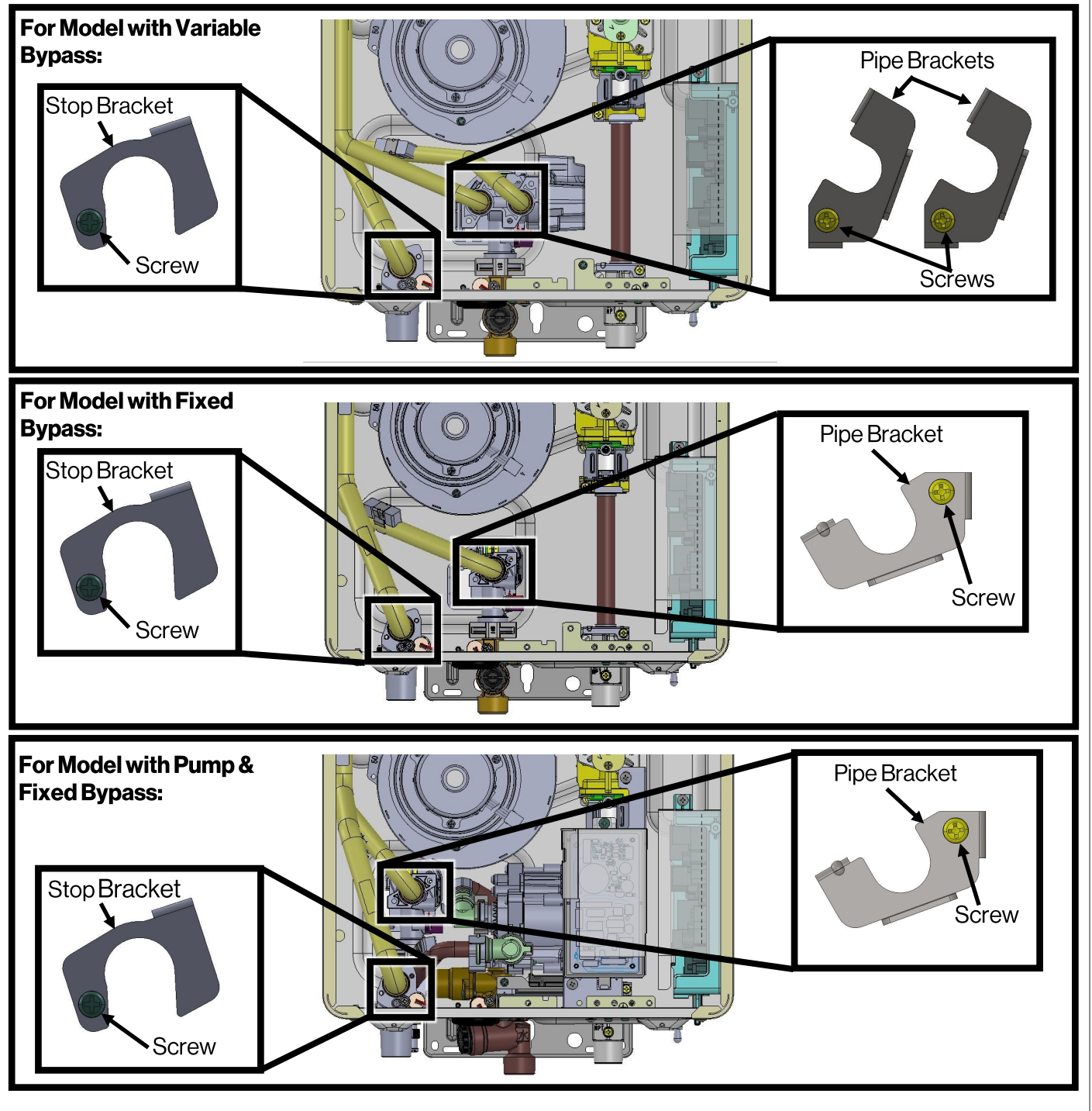
12. Disconnect white fan motor connector located near fan motor assembly (Figure 7).

Figure 7



13. Remove one screw and one stop bracket connecting to the outlet pipe. Remove two screws and two pipe brackets connecting to the two pipes on the bypass servo (**Note:** For models with fixed bypass, remove one screw and one pipe bracket connecting a pipe on the bypass servo) (Figure 8).

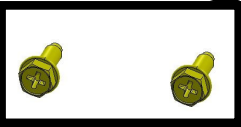
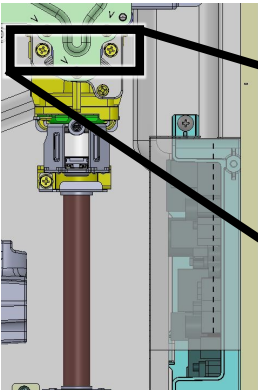
Figure 8



14. Remove two Hex/Phillips screws securing the gas valve assembly to gas manifold (**Note:** For models with pump, remove two Hex/Phillips screws securing the gas valve assembly and remove top screw securing pump circuit) (Figure 9).

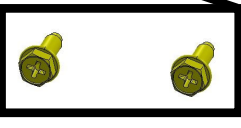
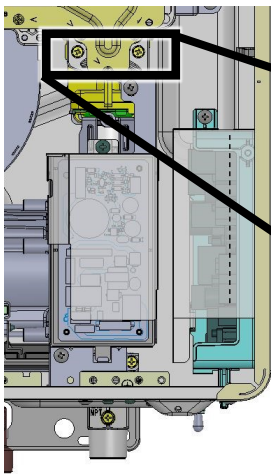
Figure 9

**For Model without Pump:**

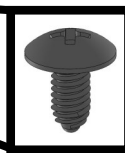
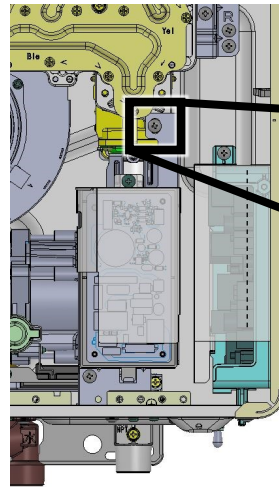


Hex/Phillips Screws

**For Model with Pump:**



Hex/Phillips Screws



Top Screw Securing Pump Circuit

- Slide the gas pipe down with the gas valve assembly (**Note:** For models with pump, position pump circuit to gain access and slide down the gas pipe valve assembly) (Figure 10).
- Remove one pipe from hot water outlet and two pipes from bypass servo (**Note:** For models with fixed bypass, remove one pipe from hot water outlet and one pipe from bypass servo) (Figure 11).

Figure 10

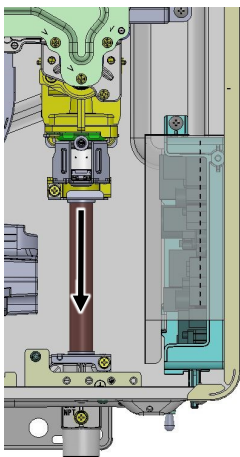
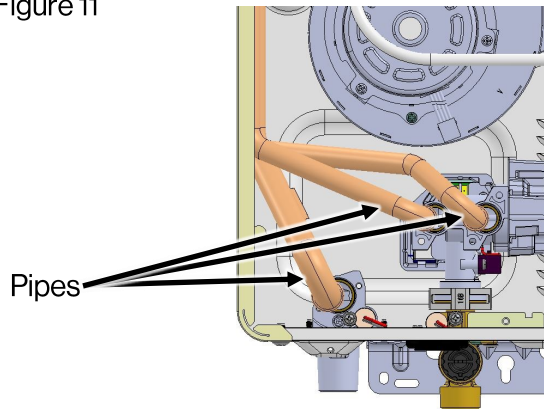
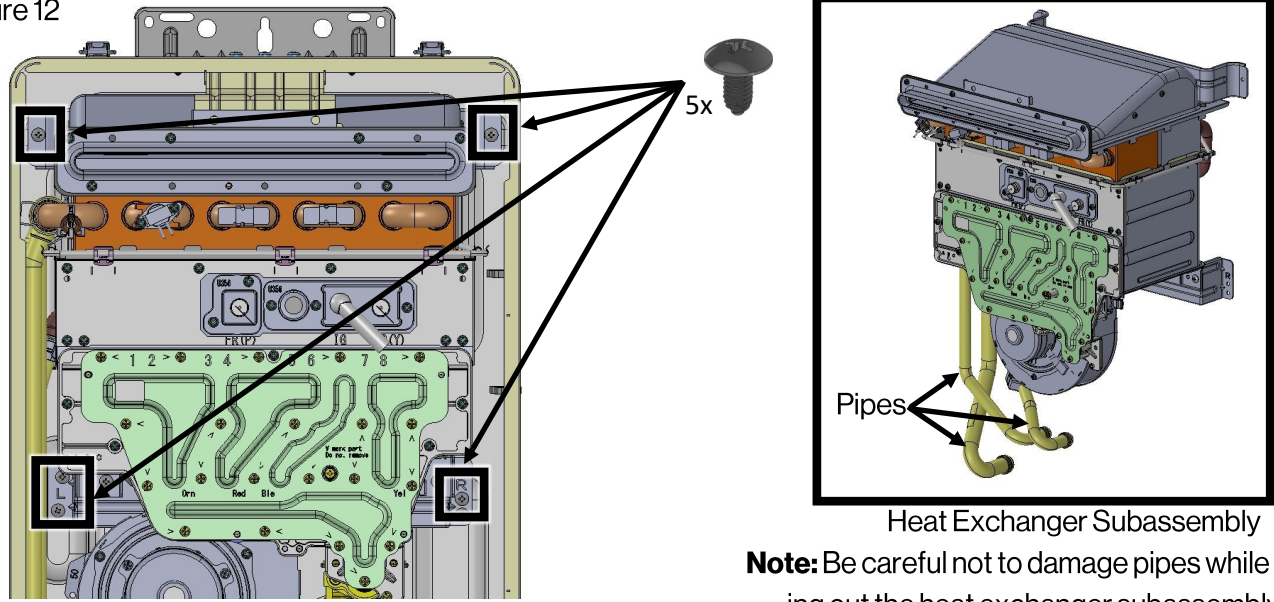


Figure 11



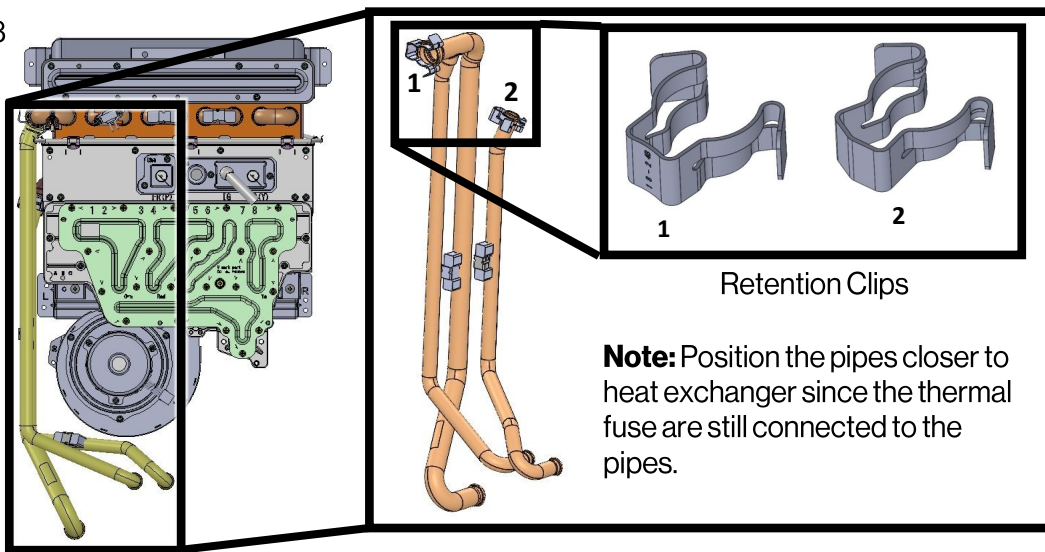
- Remove top two screws, two screws on bottom-left above fan, and one screw on bottom-right above PCB. Carefully pull out the Heat exchanger subassembly (includes heat exchanger, combustion fan assembly and burner unit assembly). (Figure 12).

Figure 12



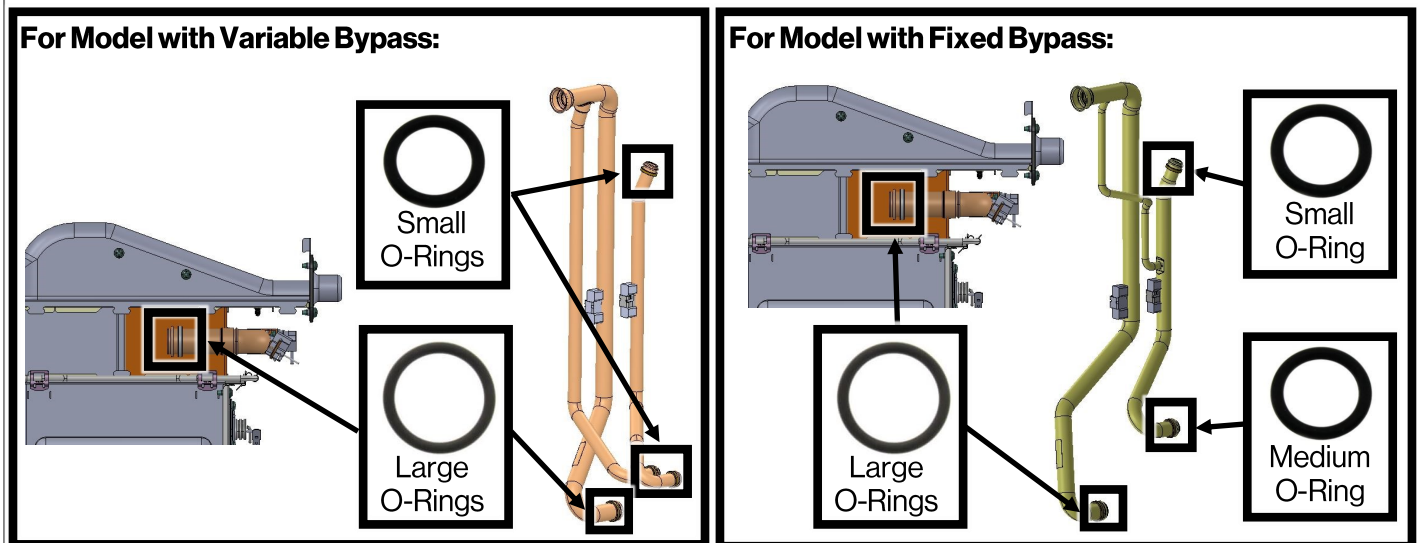
18. Remove the retention clips connecting pipes to heat exchanger and position pipes (Figure 13).

Figure 13



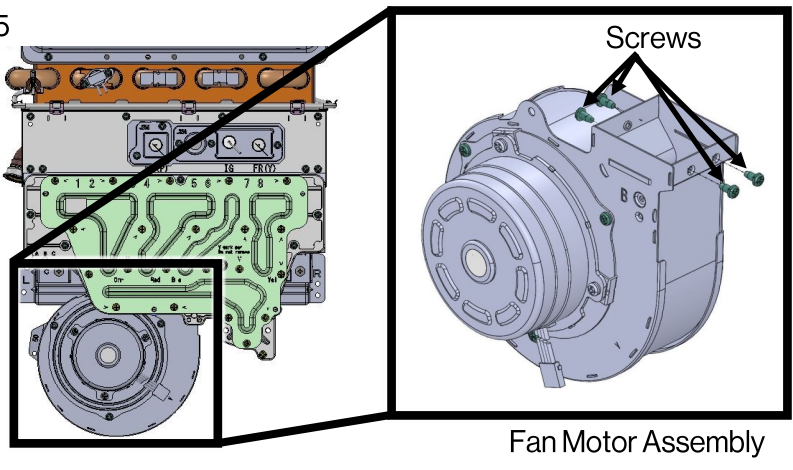
19. Remove existing O-rings and install new O-rings to the pipes. (Figure 14).

Figure 14



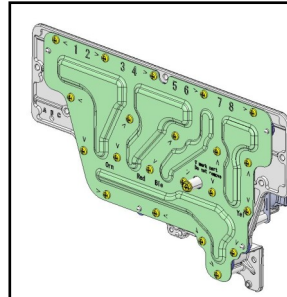
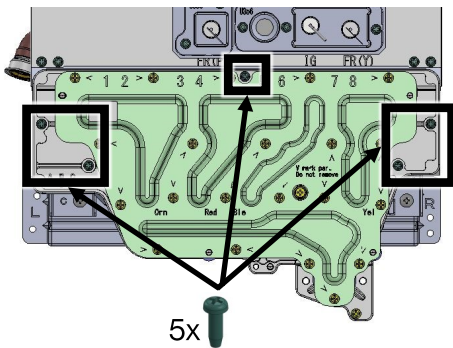
20. Remove four screws securing fan motor assembly to heat exchanger. (Figure 15).

Figure 15



21. Remove five screws securing manifold assembly to heat exchanger. (**Note:** If required after removing the manifold, replace the current manifold packings with new manifold packings) (Figure 16).

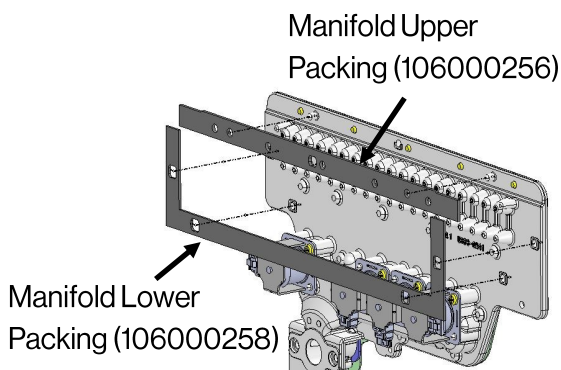
Figure 16



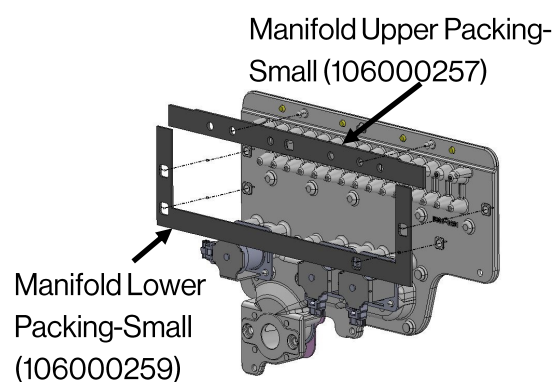
Note: Inspect Manifold Packings. If required, replace manifold packings as shown for large HEX or small HEX. Ensure that packings are aligned properly to prevent any leakage.

Manifold Assembly

**For Model with Large HEX:**

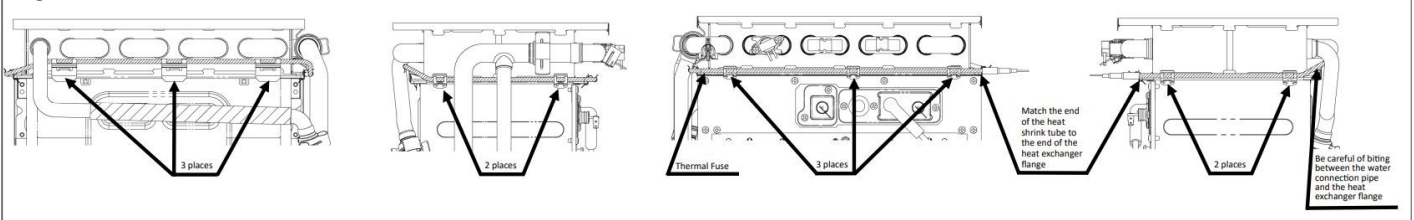


**For Model with Small HEX:**

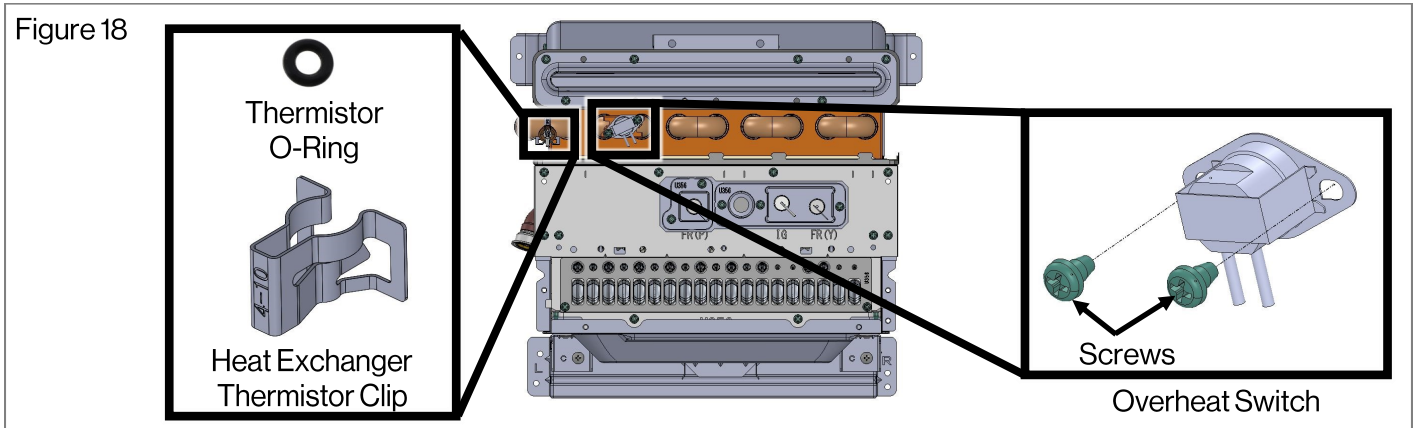


22. Remove thermal fuse with thermal holder from existing heat exchanger and reassemble on the new heat exchanger (Figure 17).

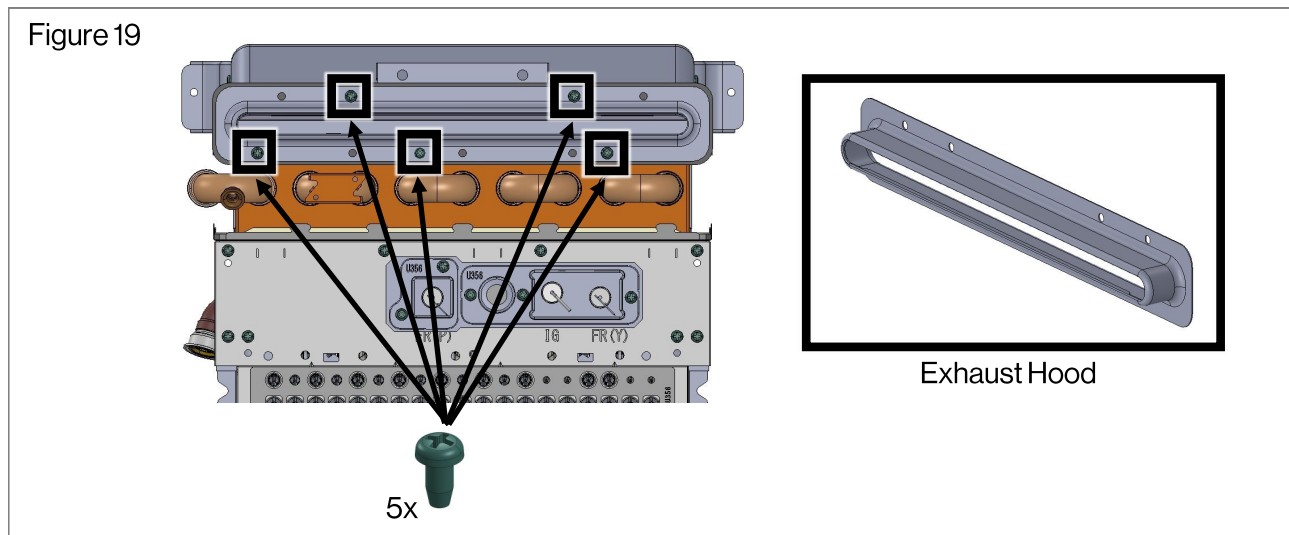
Figure 17



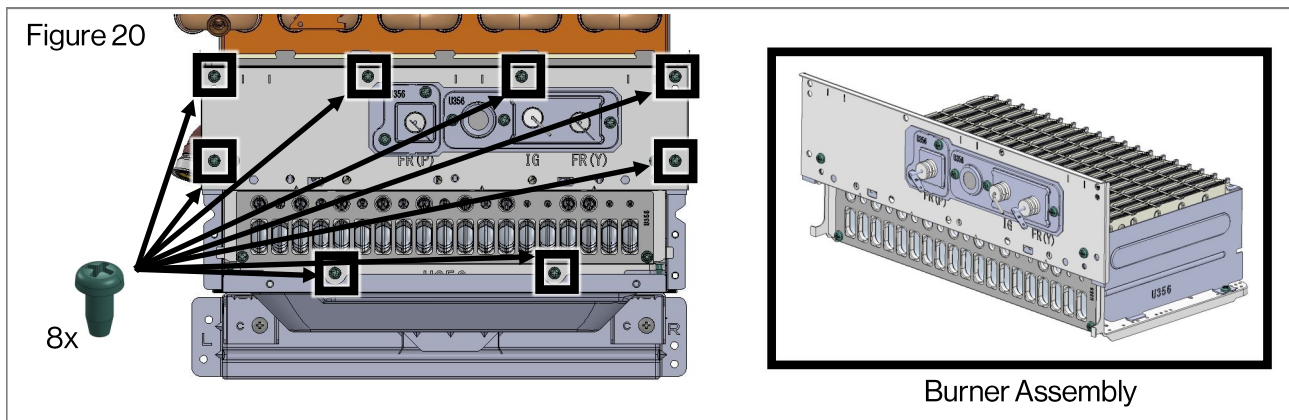
23. Remove heat exchanger thermistor clip to take out heat exchanger thermistor, replace the current thermistor O-ring with new one, and remove two screws to take out overheats switch (Figure 18).



24. Remove five screws securing exhaust hood on existing heat exchanger (Figure 19).



25. Remove eight screws securing burner assembly. Pull out burner assembly from existing heat exchanger and re-assemble on the new heat exchanger (Figure 20).



26. Reinstall exhaust hood using five screws on new heat exchanger (Figure 19).

27. Reinstall heat exchanger thermistor using thermistor clip to secure and remount overheats switch on new heat exchanger (Figure 18).

28. Reinstall manifold assembly using five screws on new heat exchanger (Figure 16).

29. Reinstall fan motor assembly using four screws on new heat exchanger (Figure 15).



30. Reinstall pipes with new O-rings using retention clips on new heat exchanger (Figure 13).
31. Carefully slide in heat exchanger subassembly (includes heat exchanger, combustion fan assembly and burner unit assembly) and secure using five screws (Figure 12).
32. Remount the hot water outlet pipe on hot water outlet and other two pipes on bypass servo (**Note:** For model with fixed bypass, remount the hot water outlet pipe on hot water outlet and other on bypass servo) (Figure 11).
33. Slide the gas pipe up to align with mounting holes and remount Hex/Phillips screws to secure gas valve on gas manifold (**Note:** For model with pump, slide the gas pipe up to align with mounting holes, remount Hex/Phillips screws to secure gas valve on gas manifold and re-mount a screw to pump circuit) (Figure 9) (Figure 10).
34. Reinstall a stop bracket and pipe brackets to secure pipes (**Note:** For model with fixed bypass, reinstall a stop bracket and a pipe bracket) (Figure 8).
35. Reconnect fan motor connector (Figure 7)
36. Position ignitor assembly to gas manifold and secure with one Phillips screw (Figure 6).
37. Reconnect black connector to thermal fuse harness (Figure 5).
38. Assemble controller assembly and secure assembly to water heater (Figure 4).
39. Reconnect main blue connector connecting solenoid harness to main PCB (Figure 3).
40. Reconnect two flame rod connectors and an electrode connector. Ensure to mount the sleeve on electrode connector properly (Figure 2).
41. Reconnect two white connectors, an orange connector and a black connector and remount connector wires on top clamp (Figure 1).
42. Reconnect and turn on 120 V power supply, water supply and gas supply.
43. Install front panel and secure using bottom two screws and top two latches.
44. Test fire unit.

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