

Replacement Tubular Heat Exchangers for Models RA and RAD, Sizes 150 and 250

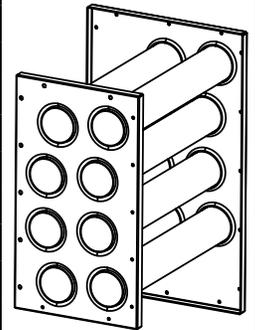
These replacement heat exchangers are designed to replace the tubular section of the combustion chamber/heat exchanger assembly of a suspended unit without having to lower the unit or disconnect the oil line. If the unit is on a fuel tank/heater stand, it will need to be removed from the stand.

A minimum of two persons and equipment originally required to install this heater are needed to complete this service.

Kit Components

Description	Model RA and RAD	
	150	250
Replacement Heat Exchanger Kit	255297	255298
Components:		
Replacement Heat Exchanger Assembly	221041	221042
Gasket Strip, 12.13" long x 1" wide	(2) 223668	
Gasket Strip, 23.75" long x 1" wide	(2) 223669	
Gasket Strip, 9.06" long x 1" wide	(2) 223670	
Gasket Strip, 19.75" long x 1" wide	(2) 223671	
Cap Screw (Bolt) 1/4-20 x 3/4"	(7) 16246	
Hex Nuts (Keps) 1/4-20	(7) 7328	
1/4-20 x 3/4" Hex Head Slot Screws	(23) 114687	

Replacement Heat Exchanger



CAUTION: Allow the heater to cool before beginning this installation.

Installation Instructions

1. Turn off power to the unit.

IF the heater is installed with less than four hangers or is a fan unit mounted on a heater stand, it must be lowered to the floor for this replacement procedure. Disconnect the electrical wires and the oil line connection at the heater and carefully lower the unit.

IF the heater is installed with four hangers and there is sufficient service area and equipment including a lift for support, the replacement may be accomplished without lowering the unit. At the rear corner of the heater above the vent pipe connection, remove the hanger rod from only that one hanger.

2. Remove the heat exchanger being replaced.

- a) Disconnect the vent pipe from the heater.
- b) In the main electrical box, disconnect the fan/blower motor wires. Remove the fan/blower wire and cable assembly from the electrical box.
- c) Remove both the turning box and the collection box access panels. Remove the flue pipe outer panel; save the screws to re-use.
- d) To gain access to the heat exchanger mounting bolts, the bottom pan and fan back or blower need to be removed.
- e) First, remove the fan or blower and motor assembly (**NOTE:** Because of the blower weight, a lift is required when removing a blower.).
- f) Second, remove the back panel; and third, remove the bottom panel. Save all hardware to re-use.
- e) If the unit is still suspended, a lift must be used to support the tubular heat exchanger before removing its mounting bolts. With the bottom of the heat exchanger supported, remove all of the bolts from the turning box end. Carefully lower and remove the heat exchanger through the open bottom.

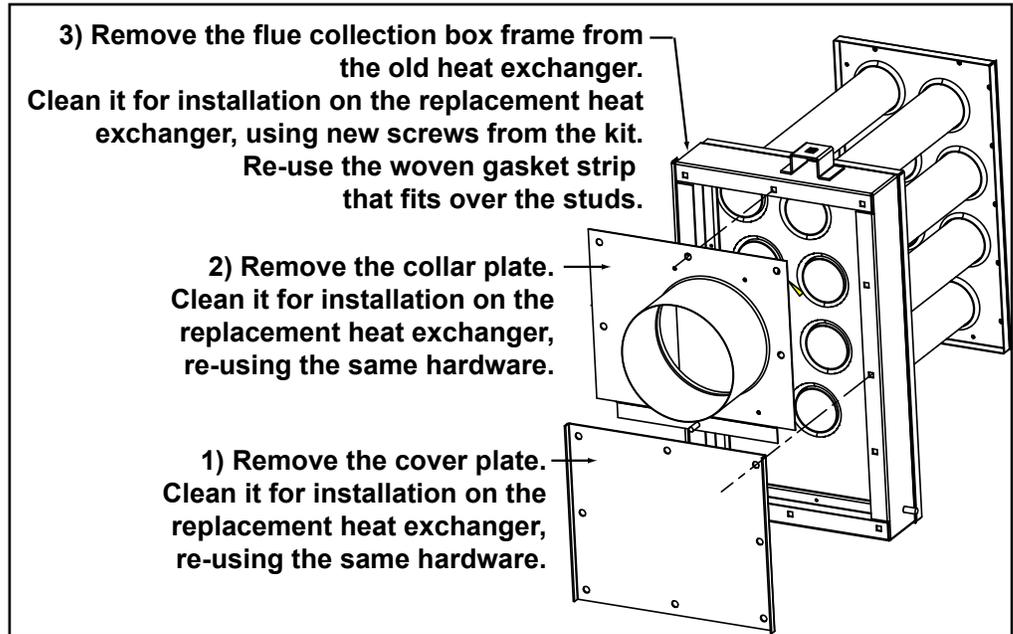
Installation Instructions (cont'd)

f) If working on a bench or floor, carefully tip the heater on its front. Provide support for the heat exchanger while removing the mounting bolts. With the bolts removed, carefully slide the heat exchanger out through the open bottom of the heater.

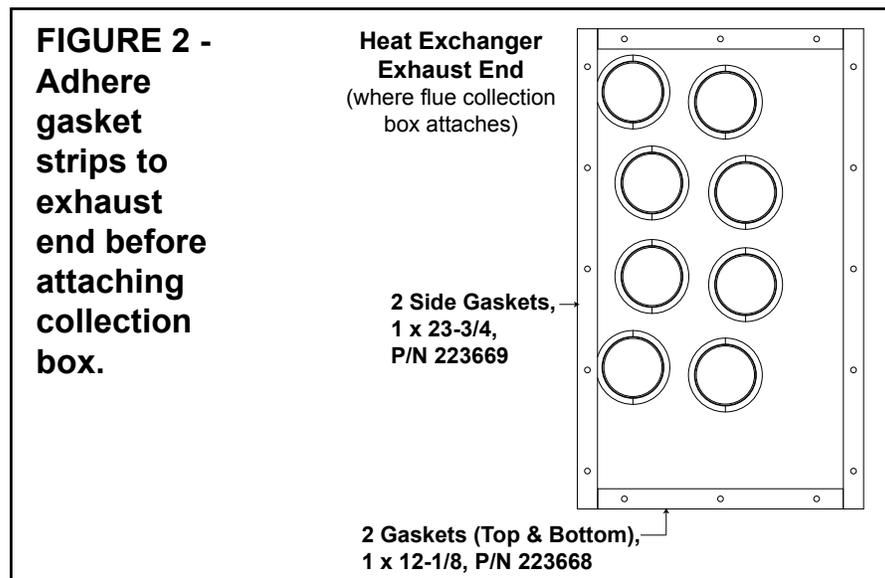
3. Prepare the replacement heat exchanger for installation.

a) Remove the collection box from the exhaust end of the old heat exchanger. Follow the procedures as shown in **FIGURE 1**. Clean and save the collection box and covers to be installed on the replacement heat exchanger. Save the gasket strip and the nuts for attaching the covers.

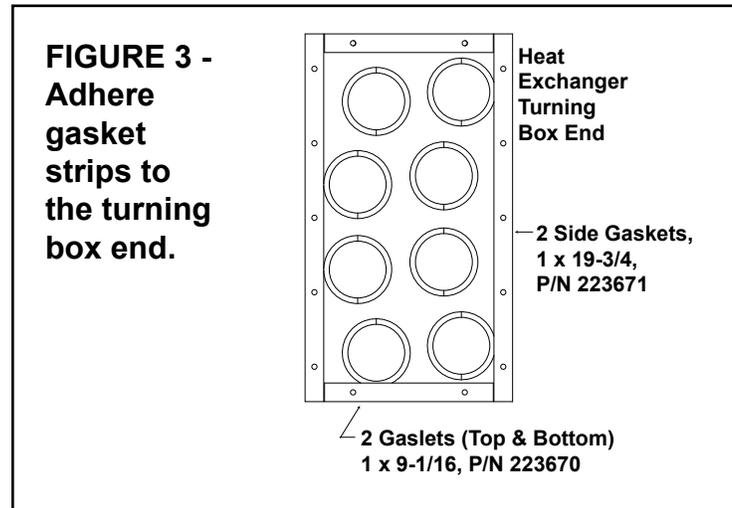
FIGURE 1 - Remove parts from the old heat exchanger that will be re-used.



b) Attach the new gasket strips and the flue collection box. From the gasket strips in the replacement kit, select the four strips that fit on the exhaust end of the new heat exchanger. Adhere the strips as shown in **FIGURE 2**. Position the collection box frame over the gasket strips and attach with new screws. (Reverse procedures in **FIGURE 1**.) Place the gasket strip over the studs. Re-attach the flue collar plate and the cover plate onto the collection box.



- c) Position and adhere the other four gasket strips to the turning box end of the heat exchanger. See **FIGURE 3**.



4. Install the heat exchanger.

- a) Before installing the new heat exchanger, check the surface area of the turning box where the heat exchanger will be attached. Clean as needed. Re-check to be sure that all gasket strips are in place.
- b) Position the heat exchanger (use the lift if heater is suspended) being careful not to damage the gaskets. Use new hardware from the kit and bolt the turning box end of the heat exchanger in place. Be careful not to strip the mounting bolts. NOTE: Bolt heads should be inside the turning box; nuts should be visible.

5. Re-assemble the heater.

- IF*** the heater was serviced while suspended, first re-attach the hanger rod. Reverse the procedures in Steps 2 a-d to re-assemble the heater.
- IF*** the heater was lowered, reverse the procedures in Steps 2 b-d to re-assemble the heater. Return it to its suspended or mounted location and connect the vent pipe.

6. Prepare heater for start-up.

Check the combustion chamber; remove any oil accumulation. Follow the start-up procedures in the heater installation manual. If the oil line was disconnected, prime and check the fuel line system.

NOTE: The heater requires about 10 minutes to warm the oil. The green light on the junction box will come on when the oil reaches the required temperature.

7. Check for normal operation. Check all safety features.

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