

Replacement Burner Tube Insulator and Combustion Chamber Liner Kit for Models RAB 140, 235, 350, and 500

Description/Application

This replacement packages contains a circular piece of formed insulation for the burner tube and a moldable “wet” ceramic fiber liner designed to replace the combustion chamber liner in a Model RAB boiler. When the liner in the combustion chamber is deteriorated, replace it with the liner kit designed for that model and size. Depending on the size of boiler, the liner kit has either two or three separate pieces. Do not open the plastic bag until ready to install the liner.

The package includes:

Model RAB	140/235	350/500
Burner Tube Insulator and Liner Kit	175994	175995
<i>Consisting of:</i>		
Combustion Chamber Back Plate Liner	174682	174682
Combustion Chamber Liner Sleeve	174701	174700
Combustion Opening Liner Sleeve	--	174702
Burner Tube Insulator	174703	174703

WARNING: Do not operate the boiler without a liner in the combustion chamber or a burner tube insulator. Inspect regularly and replace deteriorated liner and/or burner tube insulator.

Instructions

TOOLS: socket (Sizes 140 & 235, 16mm; Sizes 350 & 500, 18mm); 3 metal bands supplied with the boiler; latex gloves; extension tool to reach to the back of the combustion chamber

1. Turn off all the power to the boiler and disconnect the combustion air tubing from the compressor. Allow the boiler to cool.
2. Remove the outer cover on the front of the boiler. Slightly pick up the panel, tilt it toward you, and slide up to clear the burner. Remove the bolts that hold the combustion chamber door (2 on Sizes 140 & 235; 4 on Sizes 350 & 500). Open the combustion chamber door. Remove the old liner and vacuum the combustion chamber. See Figure 1.

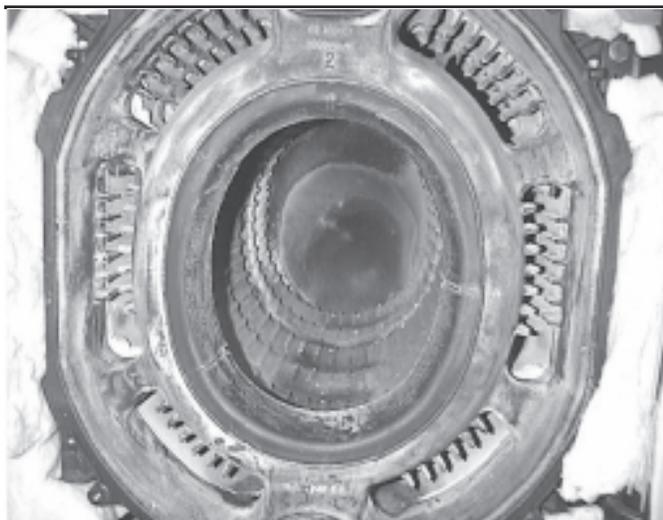
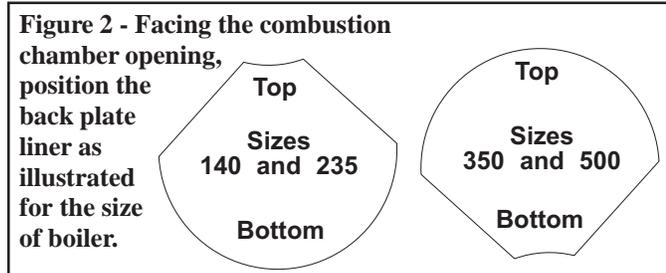


Figure 1 - Remove the old liner and vacuum the combustion chamber.

3. **Install the Back Plate** - Open the plastic bag and locate the liner section for the back plate (See Figure 2). Refer to the illustrations and position the back plate liner in the orientation that is required for the size of boiler.



Keeping that orientation, put the liner in the chamber covering the back of the combustion chamber. On Sizes 350 and 500 (and possibly on Sizes 140 and 235, depending on the installer), a tool is needed to reach the back of the chamber. Use any type of extension tool that does not have edges that could cut through or damage the liner (the illustration in Figure 3 shows the installer using a rag taped to a wooden pole). Starting at the bottom and working up, apply pressure to the liner to mold it to the back plate.

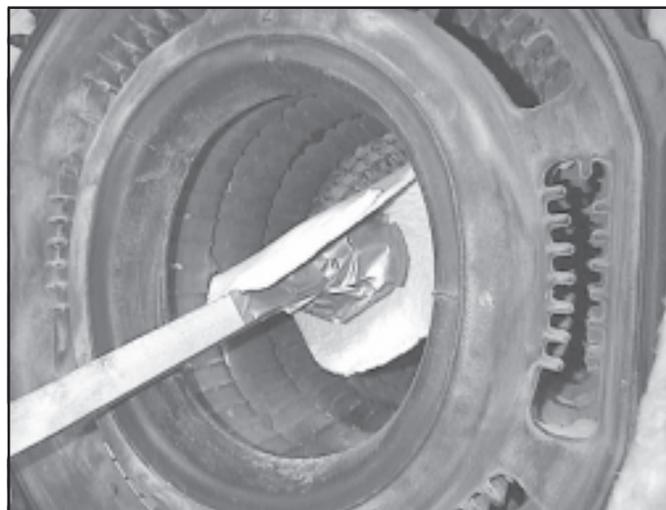


Figure 3 - Working from the bottom up, mold the liner to the back plate.

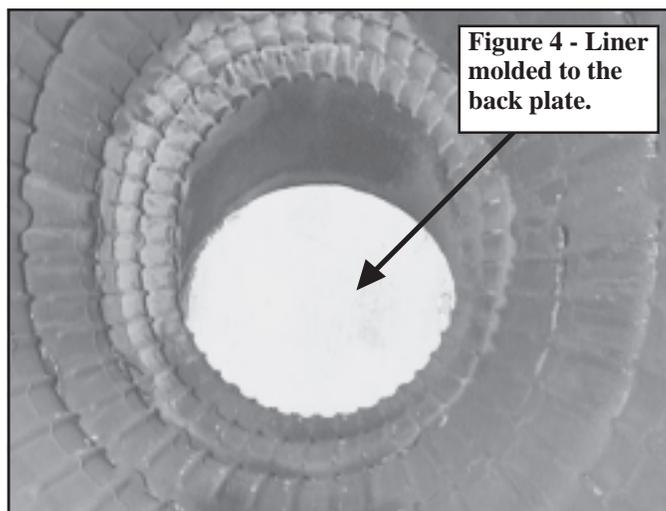


Figure 4 - Liner molded to the back plate.

Instructions for Installing Replacement Liner (cont'd)

4. **Install the Chamber Sleeve (Refer to Figures 5 and 6)** - Position the liner sleeve into the chamber with the front edge as close as possible to the front edge of the chamber. (NOTES: In Sizes 235 and 500 a portion of the rear section of the chamber is not covered. In Sizes 350 and 500, a second liner sleeve will fill in the "gap" between the chamber opening and the door.) Starting at the bottom and working up, mold the liner to the chamber. After the entire liner is molded to the chamber, work upwards again applying more pressure.



Figure 5 - Position the liner sleeve so that the front edge is as close as possible to the front edge of the chamber. Working from the bottom up, mold the liner to the combustion chamber.

When the liner is molded properly, the shape of each boiler section will be apparent through the liner. Use the narrow bands of steel supplied with the boiler to support the liner until it has been heated and dried. Being careful not to cut through, push the ends of the bands into the liner to keep them in place.

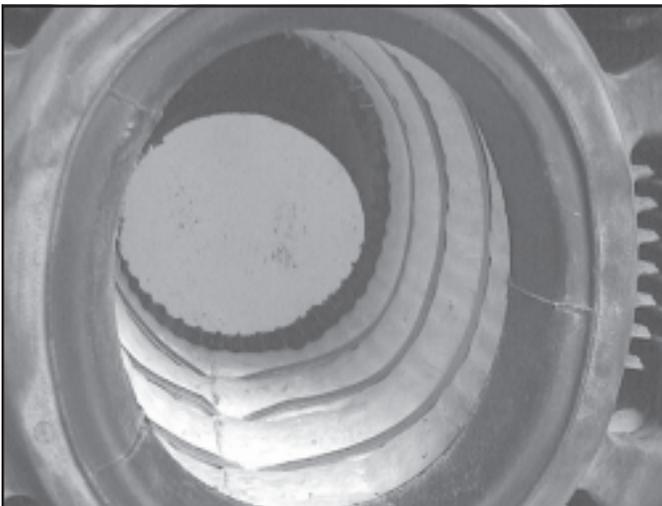


Figure 6 - The back plate liner and the chamber sleeve liner are installed. Use the metal bands supplied with the boiler to hold the liner sleeve in place.

If the unit is a Size 350 or 500, proceed to Step 5. If the unit is a Size 140 or 235, the liner is ready to dry; skip Step 5 and go directly to Step 6.

5. **Install the "Opening" Liner Sleeve - Sizes 350 and 500 only (See Figures 7 and 8)** - Position the liner so that it is flush with the front opening. Mold the liner starting at the bottom and working from front to back. Keep the outer edge even with the opening and mold any excess liner material toward the chamber liner.



Figure 7 - Position the "opening" liner sleeve with the outer edge even with the front opening.

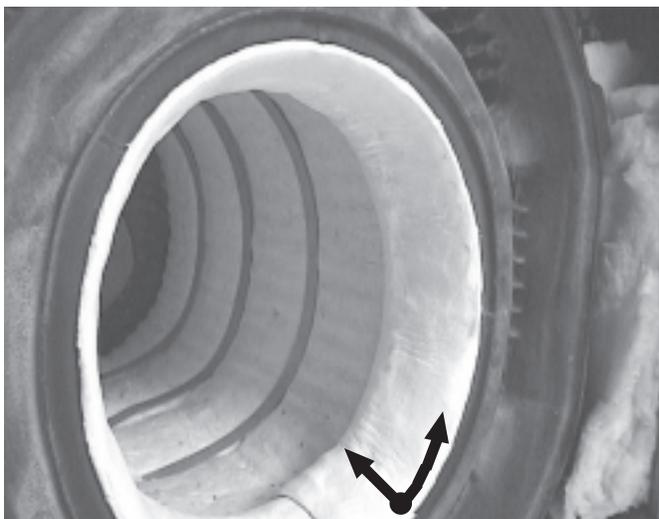
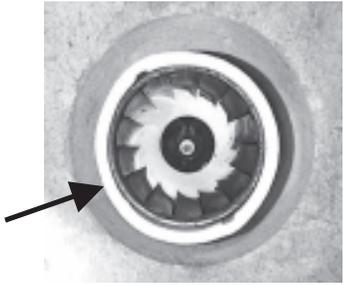


Figure 8 - Mold the liner starting at the bottom and working from the front toward the back. Keep the outer edge even with the opening; mold any "excess" over the edge of the chamber liner.

6. **Install the Burner Tube Insulator (See Figure 9)**
- Rotate the old burner tube insulator until the screws line up with the slots in the insulator. Slide the insulator off of the burner tube and discard.
 - Clean the end cone being careful not to move or damage the burner parts. Vacuum any particles.
 - Align the slots in the inside of the new insulator to the screw heads on the end cone. Slide the insulator over the end cone until it is flush with the opening. Rotate the insulator approximately 1" to lock it in place.

Figure 9 - Slide the burner insulator over the end cone until it is flush; rotate to lock.



7. Dry the Liner - Close the chamber access door and bolt it shut. Turn on the power and reconnect the compressed air. Start up the unit (NOTE: A ten-minute delay may occur before firing depending on the preheated oil temperature.) and fire it for at least ten minutes to completely dry the liner. Turn down the thermostat until the unit shuts down; turn off all power to the unit; disconnect the compressed air hose; allow the boiler to cool down; and open the access door.

Inspect the liner. The liner must be rigid. If the liner is not hardened, repeat the drying procedure.

When the combustion chamber replacement liner is rigid, remove the metal bands and save them for installing the next replacement liner.

Figure 10A - Replacement liner installed on a Model RAB 350 or 500

Remove the bands and save them for the next replacement liner installation.

Back Plate Liner
Chamber Liner
Opening Liner

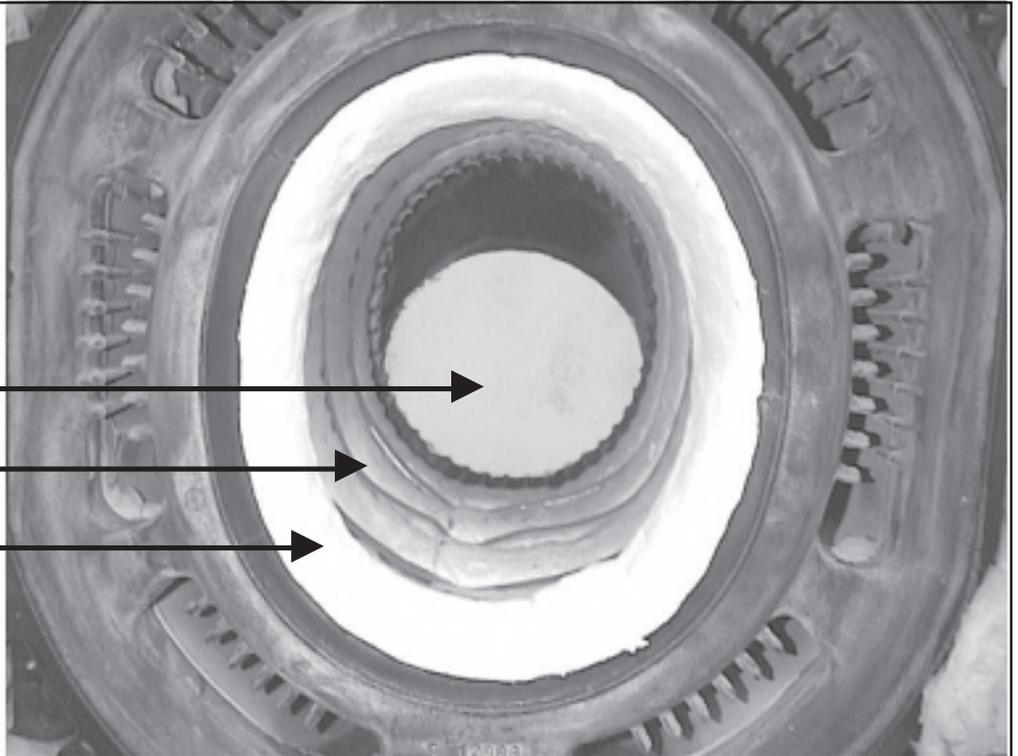
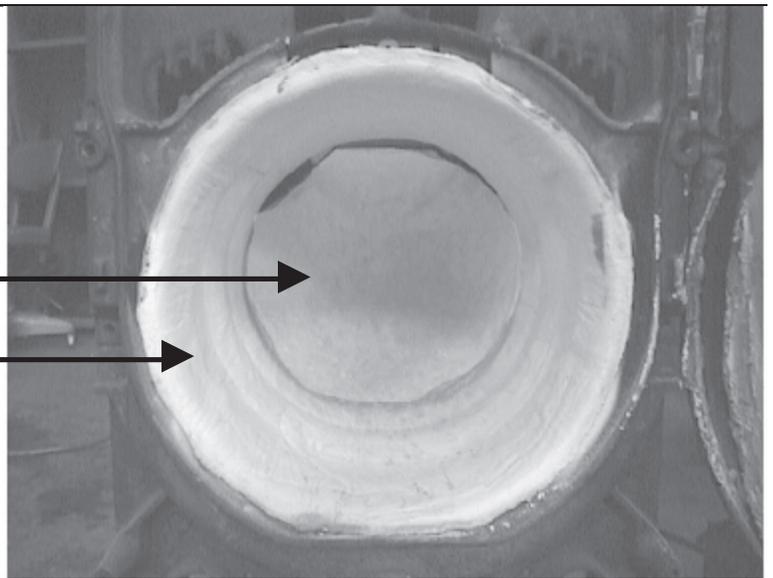


Figure 10B - Replacement liner installed on a Model RAB 140 or 235

Back Plate Liner
Chamber Liner



Installation of the replacement kit is complete.

- Close and bolt the door. Replace the outer cover.
- Reconnect the compressed air hose.
- Turn on the power.
- Turn the thermostat up to start the circulating pump.
- Check for proper operation.

Thomas & Betts
