



Inner Top Replacement Installation Instructions Kit #0016 for the Dutchwest Extra- Large Convection Heaters

General Information

The two-piece inner top kit for the Dutchwest Extra-Large convection Heater fits 1990-93 units (model 2184, with two front doors) and 1993-97 units (model 2460, with a single front door).

The sides, front and inner back of the stove trap the inner top. Replacing the original style inner top requires a complete rebuild of the stove. Once the new style inner top is in place, if you need to replace the insert you can do so by removing only the stove top.

Work in a clear, well-lighted area. If possible, work outdoors. If you must work indoors, use a drop cloth and protect the surrounding area. Wear gloves, a dust mask and protective eyewear.

Kit Contents:

- Inner top casting insert
- Inner top insert
- Refractory insulator
- 2 pieces of Interam gasket
- Refer to Figure 7 to identify parts.

Tools Required:

- Rubber mallet, or standard hammer and a block of wood
- 7/16" open-end wrench
- 3/8" cold chisel, or old screwdriver
- Needle-nose pliers (for later units only)
- Wire brush, hand-held or rotary
- Stove cement and putty knife. The easiest way to apply cement is from a tube in a caulking gun. Otherwise, use a putty knife to apply cement from tube.
- Penetrating oil. Use Marvel Mystery Oil, Liquid Wrench or similar; WD-40 is not strong enough for this work.
- Automotive anti-seize compound
- Shop Vac with very good filter. Do not use a regular household vacuum on soot - it is fine enough to pass right through most common filters.
- Drop cloth or tarp

Disassembly Procedure

1. Make sure the stove is completely cool before you begin. Remove ashes and dispose of them properly. An empty ashpan is a handy tray for hardware and small parts.
2. Remove the probe thermometer from the stove top. Some units have a small chrome sleeve on the probe shaft; be sure to keep track of this if it is loose.
3. Lift off the front door(s) and the side door. You can remove the doors by wiggling them back and forth, and lifting at the same time.
4. Unfasten and remove the top. (Fig. 1) A bolt at each corner holds the top to the rest of the stove body. There is a gasketed seal between the stove top and the rest of the body. Lift off the stove top and set it aside, upside down. Check the gasket for compression or wear; replace if necessary.

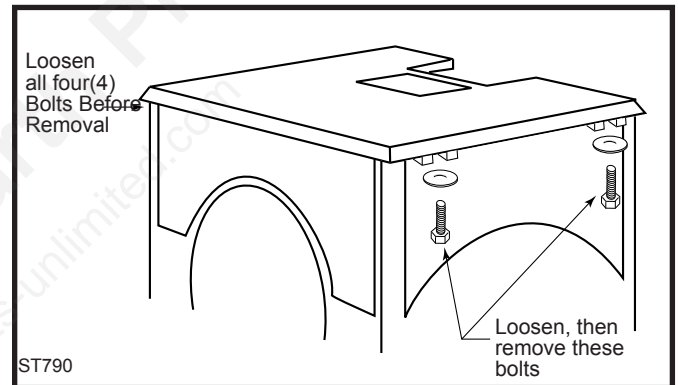


Fig. 1 Remove four (4) bolts to release the stove top.

5. Lift out the decorative front brass bar, the refractory insulator and the catalyst. (Figs. 2 and 3) Be careful with the catalyst, as it is fragile. Place the insulator in a sealed plastic bag pending disposal. Check the combustor for major cracking or crumbling. Refer to the stove manual for details on evaluating the catalyst.

From this point on, penetrating oil will help to release hardware. Use automotive anti-seize compound when you replace hardware, to ease future repairs.

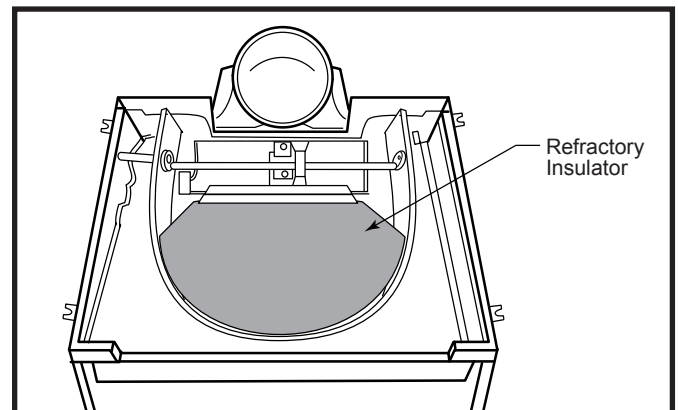


Fig. 2 Remove the refractory insulator.

Remove the anchor bolt and nut joining the damper to the damper adjuster; open the damper or reach through the firebox to get at the nut. The rearward bolt in the base of the adjuster is the adjusting bolt; leave it in place. (Fig. 3)

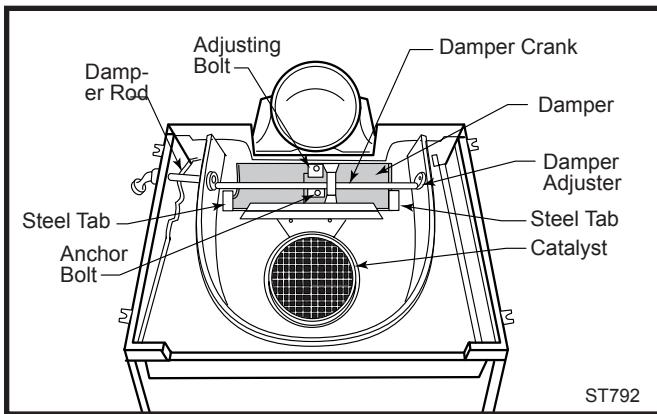


Fig. 3 Catalyst, damper and associated parts.

Remove the two bolts holding the steel tabs which capture the pivoting ends of the damper, and remove the damper. (Fig. 3)

Rotate the damper crank forward and flip the damper adjuster upside down. Slide the adjuster to the left end of the crank. (Figs. 4 and 5)

Check the steel damper rod where it passes through the left side of the stove. Early style rods have threads where they pass through the left inner side of the stove. Later units have a retaining clip in a groove on the rod, just inside the left outer side. (Fig. 5)

For early units: use the stove door handle to turn the damper rod and crank counterclockwise (as you face the left end of the stove), till the rod unthreads from its threaded hole. As you turn the rod and crank through the high point of the arc, you will need to maneuver the adjuster to clear the back plate of the stove. When the threads on the rod clear the threaded hole, remove the rod and lift out the damper and adjuster. Note that the illustrations show the later style of handle, with a permanently-mounted base. (Fig. 4 and 5)

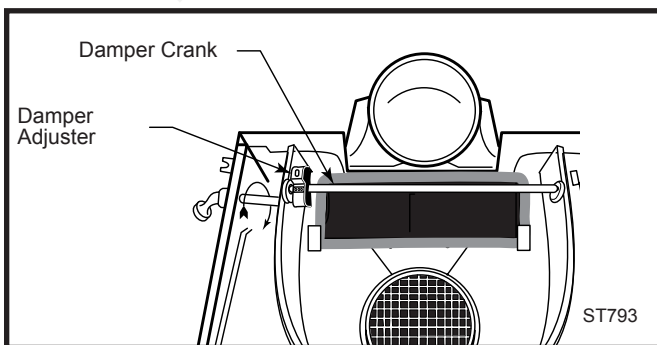


Fig. 4 For early units, unthread the damper rod from the damper crank and the inner top's inner wall.

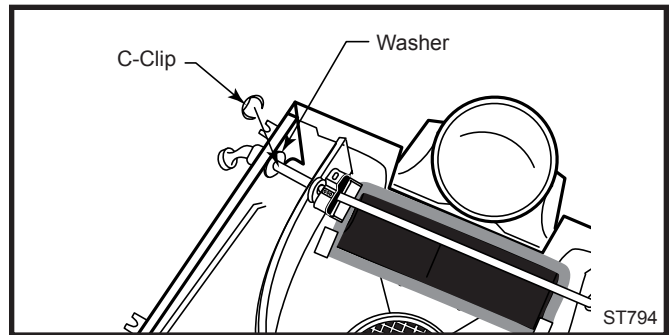


Fig. 5 On later units, remove C-clip from damper rod.

For later units: remove the retaining clip from the steel rod. Pull the rod out of the stove, then remove the damper crank and the damper adjuster (Fig. 5)

5. Unfasten the stove front. There are nuts and washers on threaded studs on the insides of the front/sides joints; sometimes these are above the inner top /front joints. Sometimes they are below this joint (inside the firebox). There are two studs on each side.
6. Break the cement seal around the stove front. From inside the stove, tap outward along the seams between the front and the stove sides, and between the front and the inner top. Use either a rubber mallet or a hammer and a wooden block to cushion the impact. Have a helper hold the top edge of the stove front to keep it from falling when the cement seal is completely broken. With the seal broken, lift the front panel off the stove, and set it down flat, with its outer side down; do not set it on its bottom edge, as this can damage the ash door hinges. On stoves with a single front door there is an air channel and primary air valve fastened to the inside of the stove's front panel. Leave these in place on the stove front, and be careful to avoid any impact on the air valve handle.
7. Remove the right-hand side of the stove (as you face the stove). Inside the firebox, use a wooden prop to support the inner top. There is a nut and washer on a threaded stud where the right side meets the stove back; remove the nut and washer and leave the stud in place. Tap outward, from inside the firebox, to break the cement seal. With the seal broken, pull the side away from the rest of the firebox, and set it down with its inner side up.
8. Now all that holds the inner top in place is the wooden prop, and cement along its left and rear edges. Grasp the inner top and wiggle it back and forth while pulling toward yourself at the same time. Watch that the supporting prop doesn't fall out of place. When the inner top comes loose, set it down on a protected spot on the floor.
9. Remove the inner top channel cap by unbolting it (from the underside of the inner top). You may need

to tap it gently to release it from the inner top. Remove the steel air distributor by wiggling it out of its socket in the inner top . (Fig. 7)

10. Use a cold chisel or old screwdriver to chip out the old cement from joints on the right side, the front, the top edge of the inner back and the inside of the left side (including around the hole where the catalyst air enters). Also remove cement from the upper edges of the inner top channel cap, and from the forward vertical edges of the panels that form the ashpit. You do not need to get down to bare metal, but you must clear a deep and continuous channel so there is room for the new cement and a good tongue-and-groove joint.

Cement is a clay-based material; it dries and becomes brittle. Pieces can have sharp edges, so be sure to wear goggles. It is also dusty, so wear a dust mask or respirator. If there was originally cement in the joint between the stove's right side and the outer back, you should remove it but you need not replace it.

Reassembly Procedure

1. Do a 'dry run' of Step 2 - 6 to familiarize yourself with them before applying cement.

2. You may notice a gap between the new inner top and the new insert. There is a piece of 'Interam' gasket in this gap. Interam is a thin material resembling felt; when it is first heated it expands greatly, to form a flexible seal between cast iron parts. Any apparent gaps will fill when the Interam expands under heat.

Apply cement to the upper edges of the inner top channel cap. From the top, slide the air distributor into its slot on the left side of the insert, and fasten the inner top channel cap to the underside of the new inner top with its original bolt. The channel cap must capture and hold the air distributor.

Apply stove cement to the grooves on the left side, where it supports the inner top, and on the top edge of the inner back. Apply cement to the inside of the left side, where the inner top channel cap abuts the left side. Slip the inner top into position, using a prop to support its right edge.

3. Apply cement to the grooves on the inside of the stove's right side, where it meets the inner top, inner back and inner bottom of the stove. You do not need to cement the joints between the right side and the back or bottom of the stove, since these are not a seal between the firebox and the room.
4. Put the right side into position, bottom edge first, and secure it with a nut and washer on a threaded stud where the side meets the outer back. Be sure the side engages the inner firebox parts. Gentle pressure from a bar clamp will help ensure the right side is fully mated against the inner parts.

5. Apply cement to the inside of the front panel, in the seams where the panel meets the inner top, where it meets the inner bottom, and where it meets the stove sides. Also apply cement to the forward edges of the two vertical walls around the ashpan.

6. Position the stove front on the stove. Lower the bottom edge of the panel into place first, in the channel on the stove bottom, then swing the panel toward the stove body. Be sure to avoid any pressure on the ashdoor. The threaded studs on the inside of the panel will pass through slots on the forward edges of the stove sides. Fasten the front into position with nuts and washers on the two threaded studs on each side.

7. Install the damper crank and adjuster. Pass the crank through the adjuster before you put its right end into a hole in the catalyst chamber wall (the inner wall of the inner top).

- 8a. For early units: pass the steel damper rod through the hole in the left side of the stove. Turn it clockwise (as seen facing the left side of the stove) until its square end engages the square socket in the left end of the iron damper crank. When the square end engages the crank, turn both parts together, until most of the threads on the rod engage the threads in the inner top. While you spin the crank, the adjuster should be upside down, and at the left end of the crank.

- 8b. For later units: pass the steel damper rod through the hole in the left side of the stove. Place the large washer on the rod, inside the stove. Then slide the square end of the rod through the catalyst chamber wall and into the square socket on the left end of the damper crank. When the parts are oriented properly, both the handle and the crank should point downward.

Push the washer against the inside of the stove's left side, and use needle-nose pliers to put the retaining clip into the groove in the rod, to lock the rod in place.

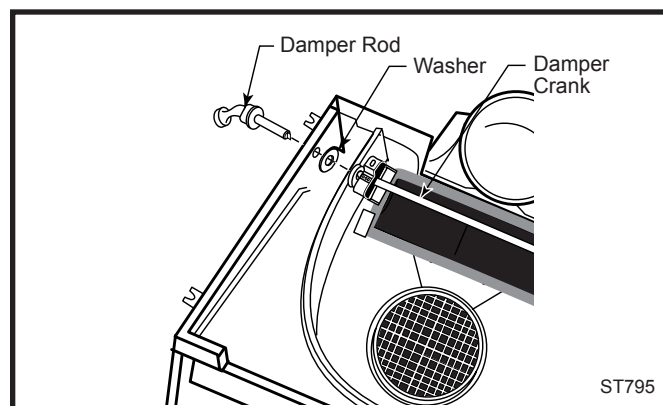


Fig. 6 Install the damper rod and washer (later units).

9. Turn the damper crank to its highest position and install the damper, secure it at each end with a steel tab held in place with a hex head bolt. (Fig. 3)
10. Join the damper adjuster to the damper with a hex head bolt and a nut. The bolt passes through the forward hole in the base of the adjuster; the nut attaches to the bolt on the underside of the damper. Open the damper or reach through the firebox to reach the nut. Use the damper handle to test the damper for smooth operation and adjust as needed; the rearward bolt in the base of the adjuster regulates the pressure on the damper. Loosen the forward (anchor) bolt on the damper. Turn the adjusting bolt clockwise to tighten the damper. However, do not overtighten; the metal parts will expand under heat. The damper should be snug, but not tight, when the stove is cold. Use a piece of paper between the damper and its gasket to gauge how tight the damper is. When the damper is adjusted properly, tighten the anchor bolt and its nut.
11. Put the catalytic combustor in place in the inner top insert, with a piece of 'Interam' gasket around its bottom edge. (Fig. 7) Put the new refractory insulator in place over the catalyst; note that its forward bottom edge is slightly relieved in the center, to accommodate the new style insert. The original insulator is not relieved.
12. Put the decorative brass bar in place in pockets at the sides of the slot across the top edge of the front panel.
13. Fasten the outer top into position with bolts and washers at the corners of the top. The bolts should be snug, but not tight; overtightening can bow the top, leading to smoke leakage, and it can also snap the extensions on the stove sides.
14. Remove any cement which has squeezed out from any joints onto the outside of the stove. You do not need to remove squeeze-out on the inside of the stove.
15. Hand-turn a 1/4" drill bit, through the hole in the outer top and through the new refractory insulator. Avoid hitting the catalyst. Replace the probe thermometer, and its chromed sleeve if you took it out. Do not simply punch the thermometer through the insulator, this can break off a piece on the underside of the insulator.
16. On Model 2184 (which has two front doors), make sure the rocker grates can rotate freely. If they are jammed, check the position of the loose grate frame over them. If you need to move this frame, remove the 'grate back' and the right inner half-wall (if so

equipped). Each of these panels mounts with two hex head bolts. You will probably need penetrating oil to loosen these bolts. With these two panels removed, prop the rear edge of the grate frame up out of the way so you can properly position the rocker grates. Be careful with your hands when you lower the grate frame into position over the rocker grates. Replace the grate back and right inner half-wall.

17. Replace the front door(s) and the side door; simply slide their hinge pins into place on stubs on the front and side panels. Do not strike them sharply with any object. You may need to wiggle the doors back and forth while pressing downward to seat the doors properly.
18. Let the cement dry for at least 24 hours. When you fire up the stove, treat it as a new one because of the new cast iron parts; 'cure' it with four to six small fires before you resume regular burning. Each fire should be about 100° hotter and an hour longer than the previous one. Use a surface thermometer on the side door as your guide to firebox temperatures. The probe thermometer in the stove top registers catalyst temperatures, which are much higher than firebox temperatures.
19. Discard the original inner top, baffle and refractory insulator.

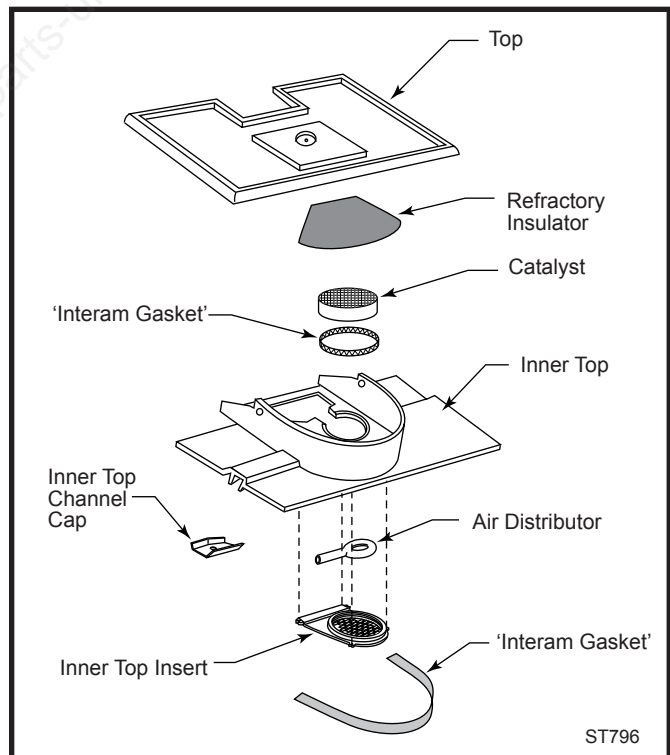


Fig. 7 Inner top and associated parts.

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