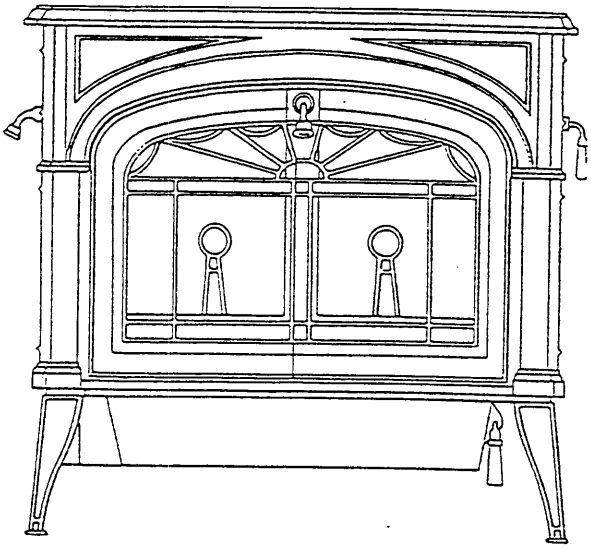
SERVICE MANUAL



for the
Vermont Castings

Defiant Encore
Models:

#0028
#2140

DEFIANT ENCORE DESIGN CHANGES

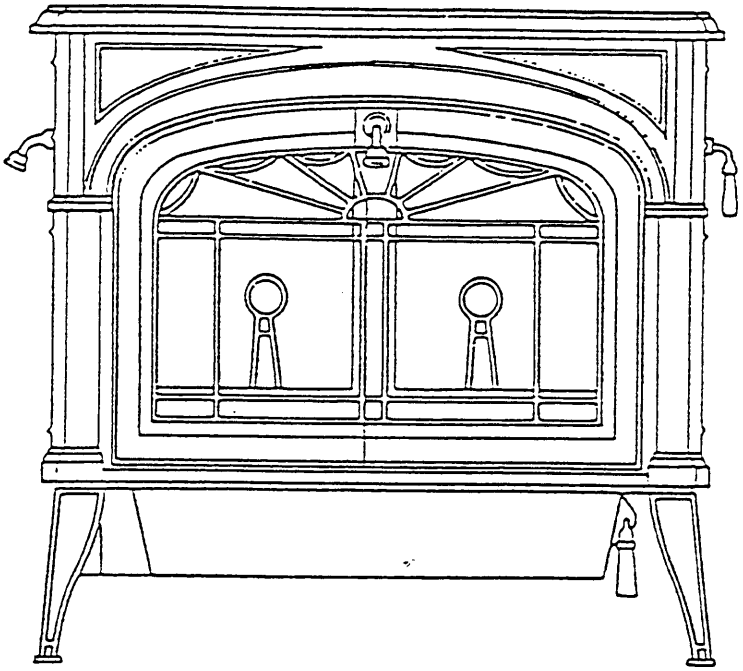
The Defiant Encore damper was modified in October 1986 to provide a cast wedge shaped stop to prevent the damper from striking or resting on the catalytic package when operating the stove in the updraft mode. The torsion bar slide area in the center of the damper was widened to preclude torsion bar binding when opening and closing the damper.

The ash drop assembly was modified in October 1986 to accept a split(two piece) half hinge which allows 3 dimensional adjustment of the ash door resulting in an improved ash door to ash drop and stove bottom seal.

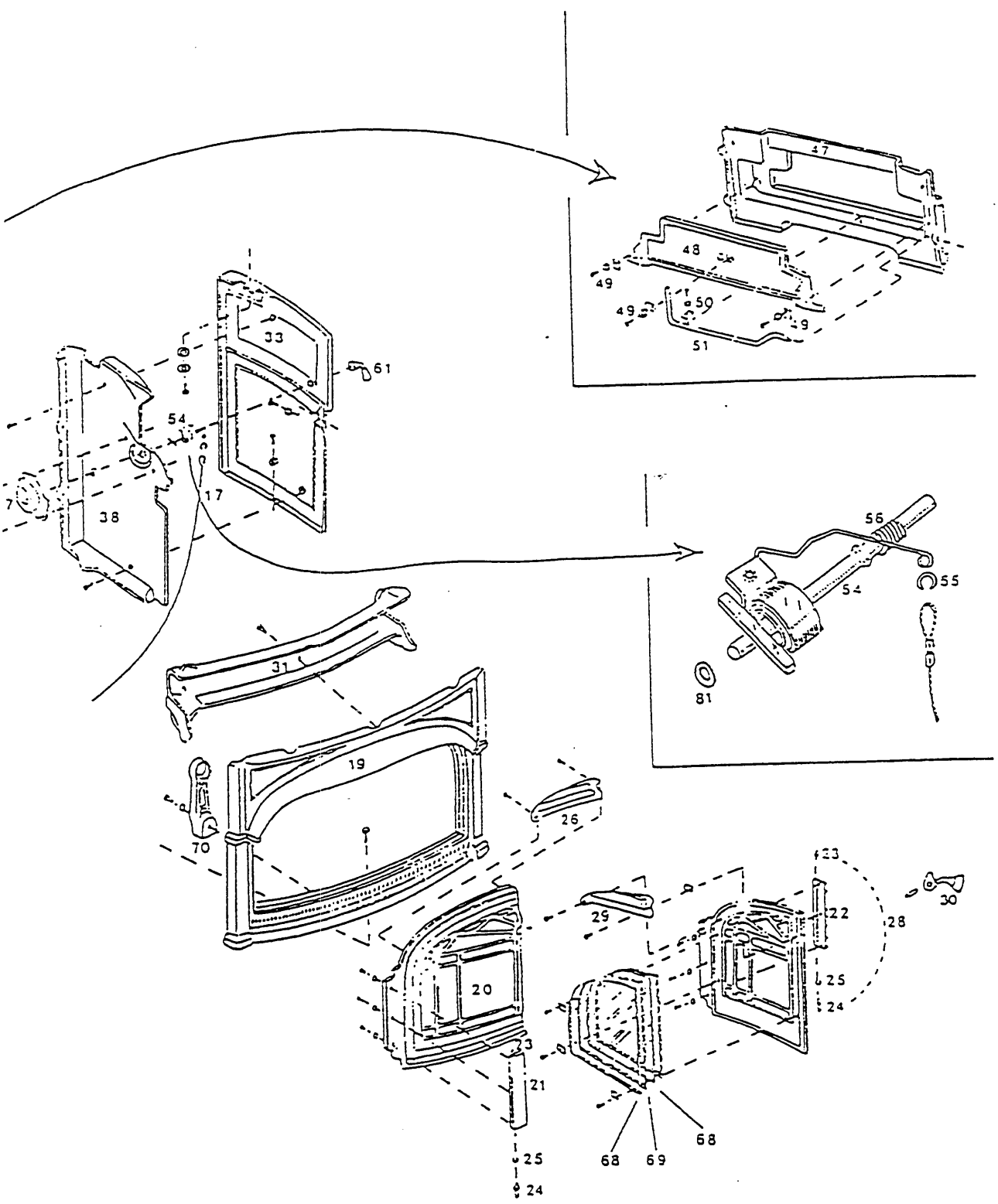
In November 1986 the ash door handle assembly was lengthened to accommodate the plinth configuration and to increase the safety factor by avoiding the possibility of scraping or burning the knuckles when opening or closing the ash door.

The secondary air valve(flap) was modified in December of 1986 to accept a pop rivet which acts as a valve stop or limiter to prevent the valve from hanging below its intended position and eliminate vibration of the air valve during catalytic burn periods.

DEFIANT ENCORE



1. Exploded View Parts Illustrations
2. Parts List
3. Drill and Tap Illustrations
4. Drill and Tap Guide
5. Individual Part Replacement/Repair Procedures
6. Complete Disassembly Procedure
7. Complete Gasketing Procedure
8. Complete Assembly Procedure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ENCORE REPAIR/REPLACEMENT PARTS LIST
(0007A)

Item #	Part #	Description
-1	130-7410	Bottom, Stove, Cast
-2	130-7411	Primary Air Frame, Cast
-3	130-7412	Primary Air Valve, Cast
-4	160-1493	Primary Air Rod #304 S.S. 1/8" Dia.
-5	120-4020	Primary Air Rod Clip .125 I.D.x210 O.D. S.S.
-6	130-7420	Ash Drop, Cast
-7	130-7435	Ash Drop Split Hinge, Cast
-8	130-7436	Ash Drop Split Hinge, Cast
-9	130-7443	Ash Door, Cast
-10	160-0663	Ash Door Handle
-11	130-0515	Pawl, Cast
-12	120-3005	Clevis Pin 1/4" Dia.x3-1/2" Long
-13	160-1039	Ash Pan Bracket
-14	130-7406	Ash Lip, Cast
-15	130-7427	Legs, Cast
-16	160-0600	Door Handle Insert Holder
-17	500-5471	Cable Assembly
-18	130-7418	Primary Air Tube Cover Plate, Cast
-19	130-7407	Front, Cast
-20	130-7400	Left Door, Cast
-21	500-0340	Left Door Hinge Assembly
-22	130-7402	Door Hinge Boss, Cast
-23	160-0416	Upper Door Pin

Encore Repair/Replacement Parts List

Item #	Part #	Description
-47	130-7417	Upper Fireback, Cast
-48	130-7421	Damper, Cast
-49	160-1488	Damper Tab .125 Thk
-50	160-1036	Torsion Bar Clip
-51	160-1035	Torsion Bar, 3/8" Dia.
-52	160-1034	Actuator Link 1/4" Thk.x3/4"W.
-53	160-1033	Damper Handle Rod, 3/8" Dia.
-54	500-5470	Thermostat Coil & Rod Assembly
-55	120-1985	Jump Ring
-56	120-1846	Friction Spring
-57	130-7415	Thermostat Access Cup, Cast
-58	160-0608	Damper handle STub, Nickel Plate
-59	130-7423	Damper Link access Panel, Cast
-60	130-7434	Flat Grate, Cast
-61	500-4224	Thermostat Handle Assembly
-62	130-7442	Catalyst Access Panel, Cast
-63	160-1489	Secondary Air Probe Assembly
-64	160-1490	Secondary Air Flap
-65	120-1986	Shim Ring, #18 Wire Nickel Plate
-66	160-1491	Secondary Air Link .089 Wire
-67	160-1492	Secondary Air Cover Plate
-68	140-1115	Glass Pane
-69	500-2798	Gasket Assembly, Preformed

ENCORE HARDWARE & BULK ITEMS

Part No.	Description
120-0644	Socket Head Cap Screw
120-0896	Phillips Round Hd. Mach. Scr. 1/4-20x5/8" Black Ox.
120-1374	Hex Head Cap Screw 1/4-20x3/4" Black Ox.
120-2474	Flat Washer 1/4" Std.
120-0417	Socket Set Screw 1/4-20x1/4" Knrl. Cup Pt.
120-0461	Socket Button Hd. Cap Screw 1/4-20x3/4"
120-3210	Hex Nut-Plain 1/4-20
120-3290	Hex Toplock Jam Nut 3/8-16 z.
120-3031	Hairpin Cotter .080x1-3/16" #13 Hitch Pin
120-1338	Hex Head Cap Screw 1/4-20x1/2" Blk. Ox.
120-0482	Socket Flat Hd. Mach. Screw 1/4-20x1/2" Blk. Ox.
120-1322	Hex Head Cap Screw 10-24x1/2" z.
120-2488	Flat Washer 3/8" Std.
120-1443	Hex Head Bolt 3/8-16x1-1/4" z.
120-1745	Hex Head Leveler Bolt 1/4-20x1" Nickel Plate
120-0848	Phillips Flat Hd. Mach. Screw 1/4-20x2" Black Ox.
120-1347	Hex Head Leveler Bolt 1/4-20x1/2" Type FH
120-0991	Phillips Pan Hd. Mach. Screw 10-24x3/4" z.

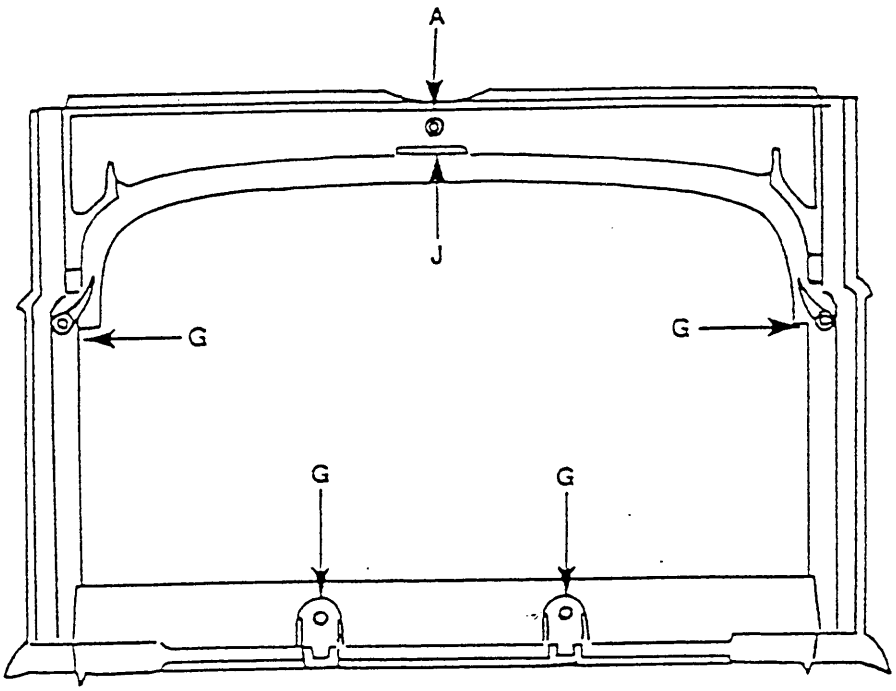
Part No.	Description
120-3251	Hex Nut 10-24 Plain
120-2423	Washer SAE #10
120-1310	Slot Pan Hd. Mach. Screw 1/4"-20x3" Black Ox.
120-1294	Slot. Oval Hd. Screw 1/4-20x3-3/8"
120-3588	Thermocord Gasket 5/16" 6 Needle
120-4470	Thermocement, 11 oz.
120-3589	Thermocord Gasket 3/8" 4 Needle Low Density
120-4867	Control Cable 1/32" S.S.
120-4874	Oval Copper Sleeve 1/32"
120-6151	Gasket Cement, 3 oz.
120-3556	Thermocord Gasket 1/8"
120-6104	Titebond Glue
120-3537	Interam Gasket 3M
160-1396	Glass Clip .049 S.S. 1/2"x 3/4"
160-1394	Glass Clip .049 S.S. 1/2"x 5/8"
120-3668	Armaseal Gasket 5/16" w/core
120-1899	Hole Plug, 5/16"

DEFIANT ENCORE DRILL AND TAP GUIDE

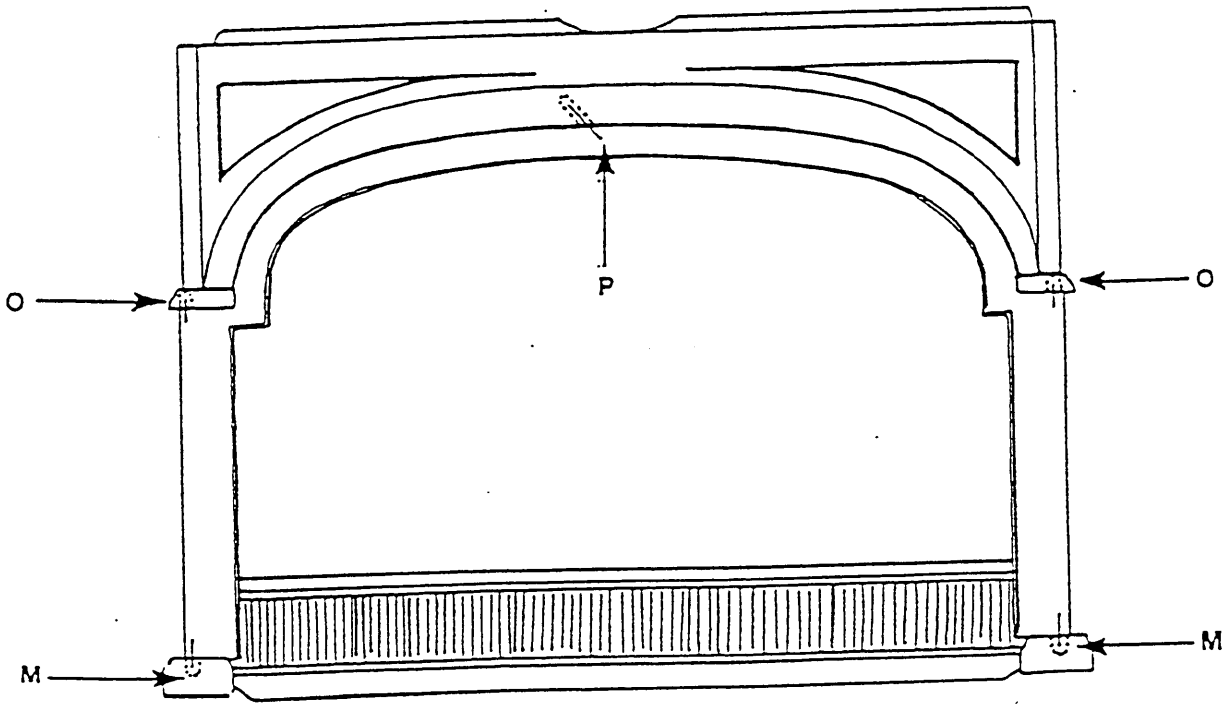
Key	Drill	Depth	Tap Size	Tap Type
A	13/64"	Thru	1/4"-20	Taper
B	#22	1/2"	10-24	Bottoming
C	#22	3/8"	10-24	Bottoming
D	#22	Thru	10-24	Taper
E	25/64"	Thru	7/16"-20	Taper
F	13/64"	1/2"	1/4-20	Bottoming
G	13/64"	5/8"	1/4-20	Bottoming
H	13/64"	3/8"	1/4-20	Bottoming
I	13/64"	7/16"	1/4-20	Bottoming
J	13/64"	11/16"	1/4-20	Bottoming
K	13/64"	27/32"	1/4-20	Bottoming
L	13/64"	3/4"	1/4-20	Bottoming
M	3/16"	Thru		
N	5/16"	Thru		
O	3/16"	11/16"		
P	1/8"	1/2"		
Q	5/16"	Thru	3/8-16	Taper
R	1/8"	Thru		
S	"W"	Thru		
T	"G"	Thru		
U	3/8"	Thru		
Y	1/4"	Thru		

Note: When threading to the bottom of a blind hole, always finish with a bottoming tap after cleaning the hole of all chips.

DEFIANT ENCORE DRILL & TAP ILLUSTRATIONS

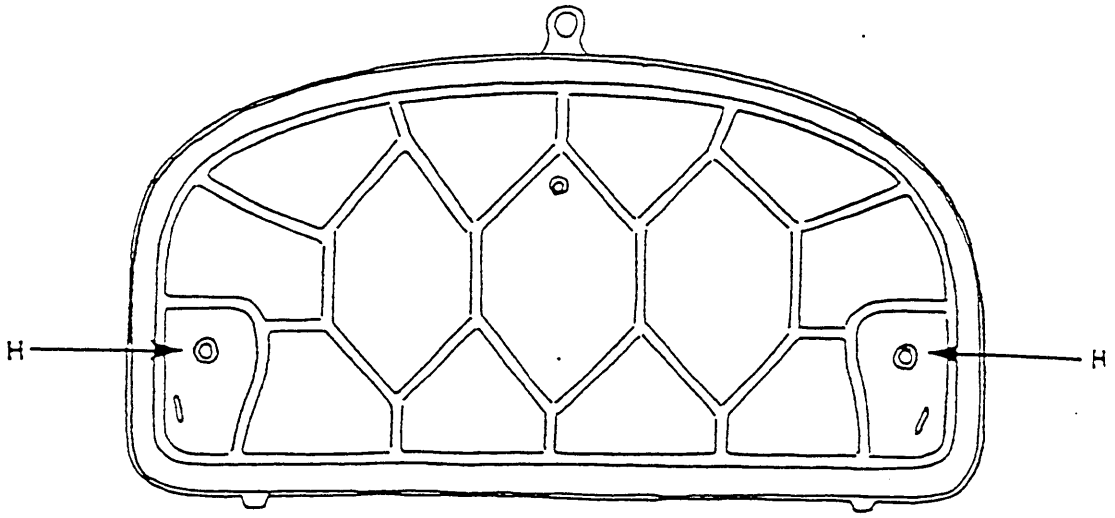


Front (inside view)

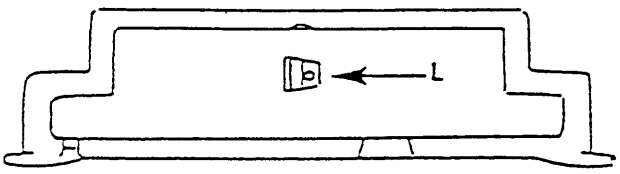


Stove Front (outside view)

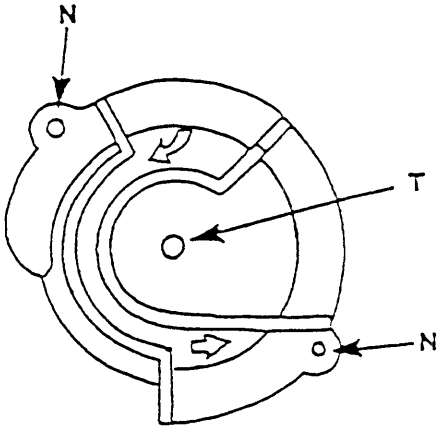
DEFIANT ENCORE DRILL & TAP ILLUSTRATIONS



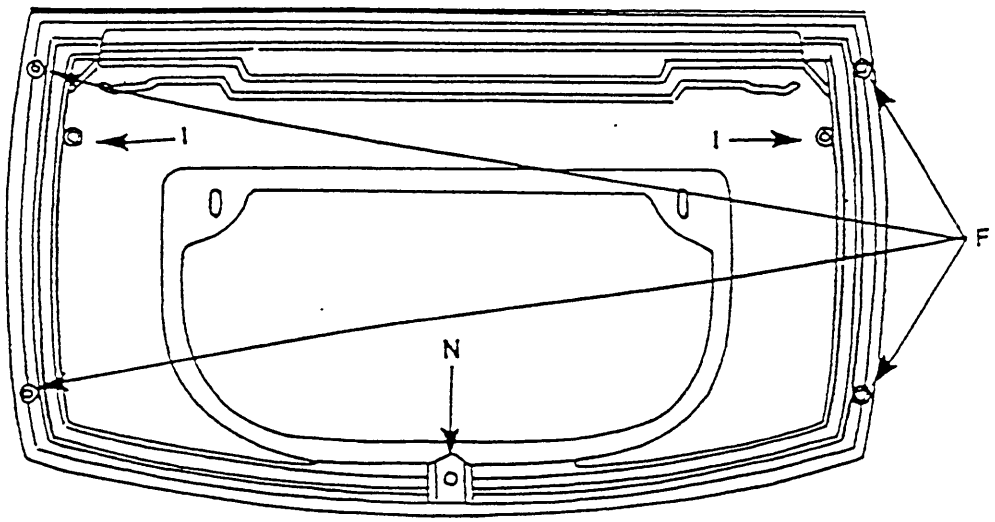
Griddle (bottom view)



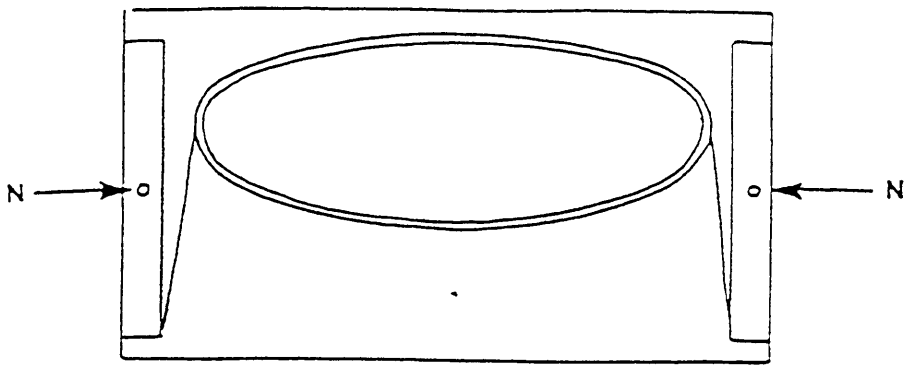
Damper



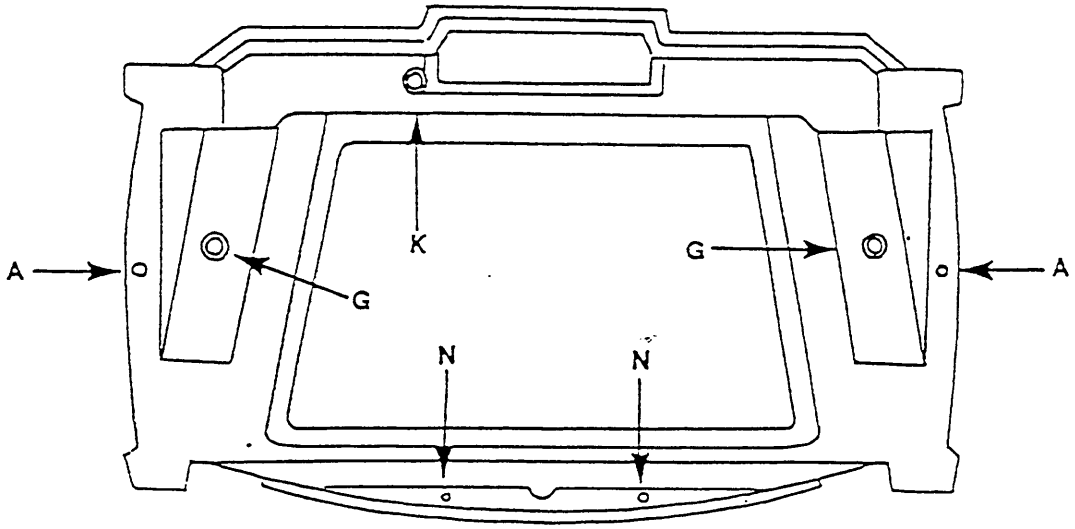
Thermostat Access Cup



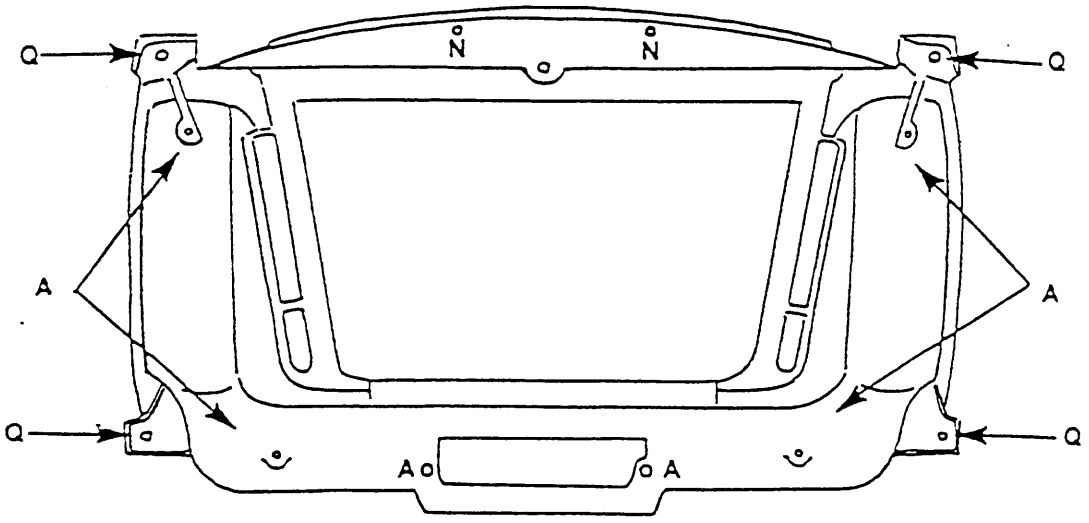
/e Top (bottom view)



Flue Collar (top view)

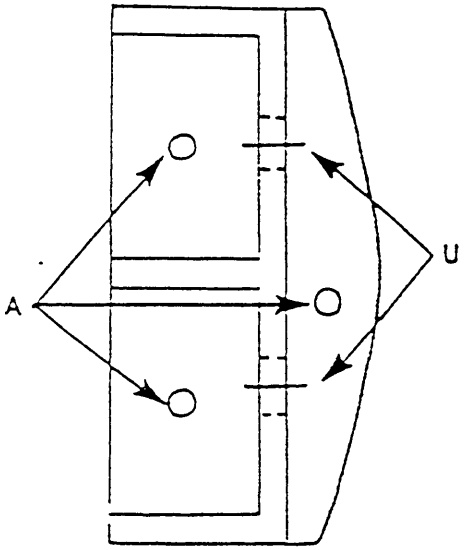


Stove Bottom (top view)

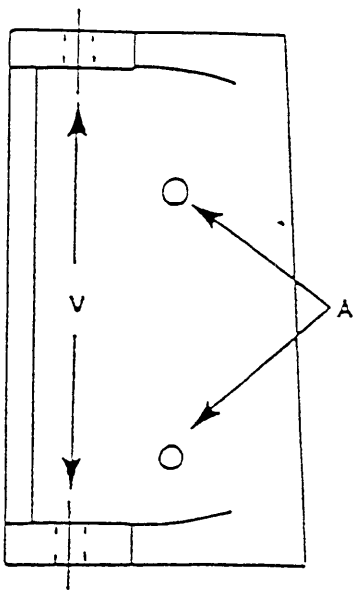


Stove Bottom (bottom view)

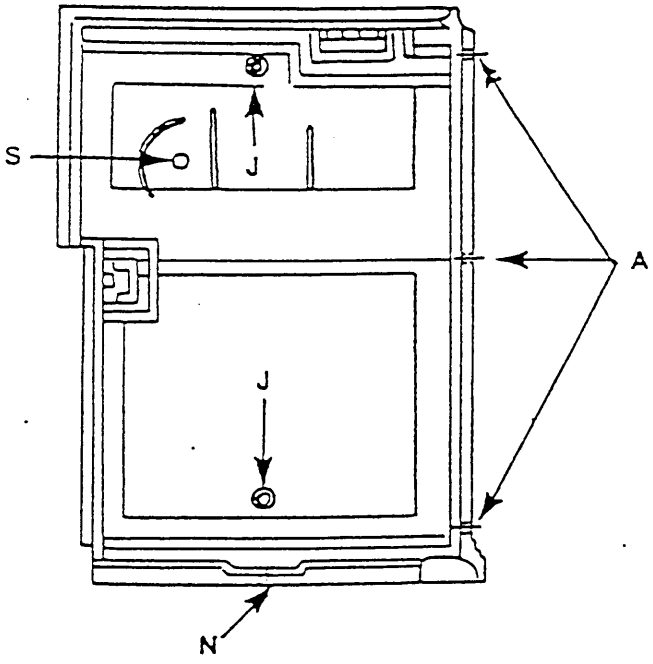
DEFIANT ENCORE DRILL & TAP ILLUSTRATIONS



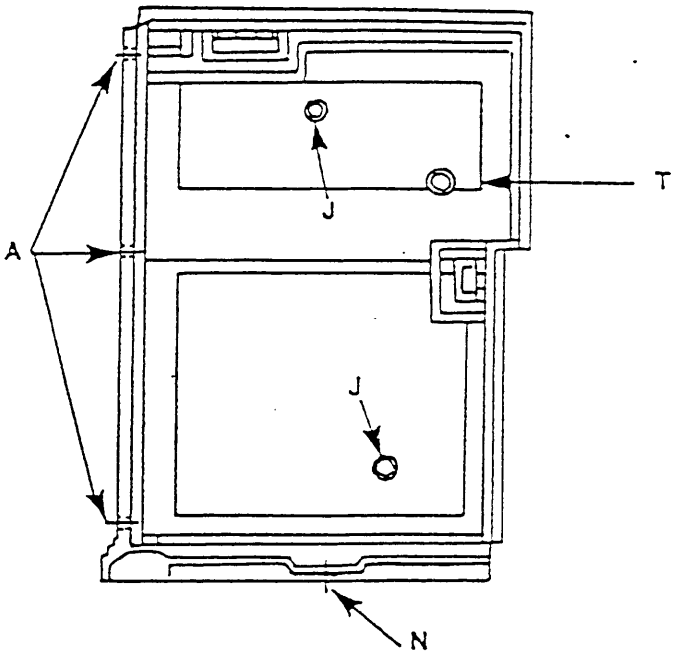
Split Half Hinge



Split Half Hinge
Clevis Half



Left End (inside view)



Right End (inside view)

Step# 2. Remove the thermostat access cup. It may be necessary to use the cold chisel and hammer at the mating seam to loosen.

Step# 3. Remove the thermostat, stainless steel washer and spring from the thermostat pocket by pulling straight out.

Step# 4. Remove the primary air frame and valve assembly. It may be necessary to use the cold chisel and hammer at the mating seam to loosen. Pull the frame away from the stove bottom and to the right gently, to protect the primary air rod.

Step# 5. Remove the old cable from either the air valve or thermostat jump ring.

Step# 6. Fabricate a cable fishing tool from the 1/16" diameter x 36" gas welding rod as shown in figure R-1. Make the 2" bend and the 1/4" loop on the opposite end of the rod on the same plane.

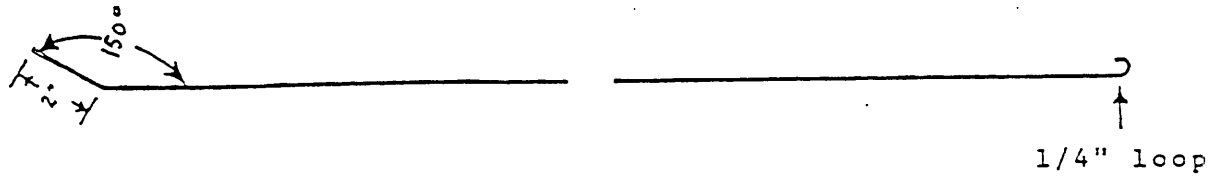


Fig. R-1 Cable fishing tool, 36" gas welding rod, 1/16" dia.

REPLACING OR SERVICING THE DAMPER LINKAGE

TOOLS REQUIRED:
- Allen Wrench, 5/32"
- Caulking Gun Frame
- Thermocement, 11 oz. tube
- Cold Chisel, 1/2"
- Hammer, Ball Peen, 12 oz.
- Safety Goggles

Step# 1. Place the damper in the open or updraft postiton and remove the damper handle stub.

Step# 2. Remove the damper link access panel. Use the cold chisel in the lower cement seam to loosen.

Step# 3. Reach inside the damper linkage opening and while holding the damper actuator link with one hand, pull the damper handle rod from its drilling in the left stove end and the forward drilling in the actuator link with the other hand. Do not drop the 3/8" flat washer between the stove end and the air/wear plate.

Step# 4. With the actuator link, rotate the damper towards the closed position and disengage the actuator link from the damper torsion bar.

REPLACING OR SERVICING DAMPER TABS AND TORSION BAR CLIP

TOOLS REQUIRED
- Ratchet Handle, 1/4" drive
- 7/16" Socket, 1/4" drive
- 2" Extension, 1/4" drive
- Screwdriver, Phillips, #2 Tip
- 7/16" Combination Wrench(box and open)

Step# 1. Remove the flue collar.

Step# 2. Replace and/or service the damper tabs and torsion bar clip. Reassemble and check damper operation for a good damper seal and ease of movement.

Step# 3. Replace the flue collar. If the flue collar gasket is dried out and/or compressed to the point where metal to metal contact is noted between the flue collar and the stove back, replace the flue collar gasket. Refer to the gasketing section of this manual for instructions.

TOOLS REQUIRED: 7/16" Combination Wrench(box & open)

Cold Chisel, 1/2"

Hammer, Ball Peen, 12 oz.

Caulking Gun Frame

Thermocement, 11 oz. tube

Masking Tape

Tape Measure, 6'

Shears, 10" - 12"

Safety Goggles

Step# 1. Remove the 6 cap screws that fasten the stove back to the right and left stove ends.

Step# 2. Tap the cold chisel into the seam where the bottom flange of the stove back joins the stove bottom to break the cement seal.

Step# 3. Lift the stove back up out of its cement groove in the stove bottom and pull the back from the stove, bottom first.

Step# 4. Replace and/or service the refractory package, catalyst block, heat exchanger, heat deflectors and refractory cover. Clean the catalyst block and refractory package with low pressure air.

Step# 5. Reassemble the refractory assembly. Tape the heat exchanger, catalyst block access panel and refractory cover in place with masking tape.

REPLACING THE SECONDARY AIR THERMOSTAT, FLAP AND LINKAGE

TOOLS REQUIRED: Screwdriver, Phillips, #2 tip.

Refer to step 30 of the disassembly section of this manual and steps 31 and 32 of the assembly section of this manual.

ELIMINATING AIR LEAKS AT THE ASH DOOR

TOOLS REQUIRED
- 7/16" combination wrench(box & open)
- Ratchet Handle, 3/8" drive
- Extension, 3" , 3/8" drive
- 7/16" Socket, 3/8" drive
- 9/16" Socket, 3/8" drive
- 1/8" Allen Wrench
- Rubber mallet, 4 lb. dead blow.
- Wire Brush

Refer to steps 33 thru 35 of the assembly section of this manual.

COMPLETE DISASSEMBLY

(0003A)

TOOL REQUIREMENTS:

1 Drop cloth, 8'x8' (minimum size)

1 Pair safety goggles

1 Respirator, Dust & Mist

1 Wire brush 1-1/2"x6", 13" overall

1 7/16" Combination wrench (box and open end)

1 9/16" Combination wrench (box and open end)

3/8" Drive ratchet handle

1 Wrench, socket, 7/16", deepwell, 3/8" drive

1 Wrench, socket, 9/16", deepwell, 3/8" drive

1 Common flat blade screwdriver 6" long

1 Common flat blade screwdriver 8" long

1 Phillips screwdriver #2 tip, 6" long

1 Phillips screwdriver #3 tip, 8" long

1 Hex key (Allen) wrench 1/8"

1 Hex key (Allen) wrench 5/32"

1 Hex key (Allen) wrench 3/16"

1 Hex key (Allen) wrench 7/32"

1 Drop light A.C. 40-60 watt, 15'-25' cord

1 Pail electricians side cutting pliers 6"

1 Putty knife

1 Shop type vacuum cleaner with attachments

1 Ball peen hammer, 12 oz. or 16 oz.

1 Hammer, brass face 12 oz.. or 16 oz.

Step #1. Lift out the griddle. Remove the ash pan and dump ashes in a safe container outdoors. Wash the ash pan and dry it. The ash pan will make a good container for screws, bolts, nuts, washers and small hardware items during the disassembly of the stove.

Step #2. Remove the right and left door assemblies. Raise the door until the lower hinge pin clears its drilling, angle the door bottom sightly outward and pull down, releasing the upper hinge pin from it's drilling.

Step #3. Remove the damper handle stub with the 5/32" Allen wrench.

Step #4. Remove the thermostat handle with the 1/8" Allen wrench.

Step #5. Remove the flue collar, 2 each, Phillips round head machine screws, 1/4"-20x1".

Step #6. Remove the top, 2 each, 1/4"-20x3/4" hex head cap screws and 4 each, 1/4" flat washers, right and left inside rear and 1 each, 1/4"-20x3/4" Phillips flat head machine screw, center front under the griddle handle indent. Strike the top upward with the rubber mallet to loosen the cement and remove.

Step #7. Remove the primary air thermostat access cup, 2 each, 1/4"-20x1/2" hex head cap screws. Use the cold chisel in the cement seam.

Step #14. Disconnect the thermostat cable at the primary air valve (outer rear of the stove bottom). Loosen the Allen set screw and snip off the cable loop. Gently pull the thermostat from its recess in the right air wear plate. Do not lose the washer, spring, jump ring and cable in the process.

Step #15. Remove the right air/wear plate. 2 each, 1/4"-20x1" hex head cap screws. Chip away the cement at the joints and mating surfaces with a cold chisel and ball peen hammer. Drive a 1/2" cold chisel between the rear flange (extreme top and bottom) of the wear plate and the stove end and gently pry loose (see Fig. D-1).

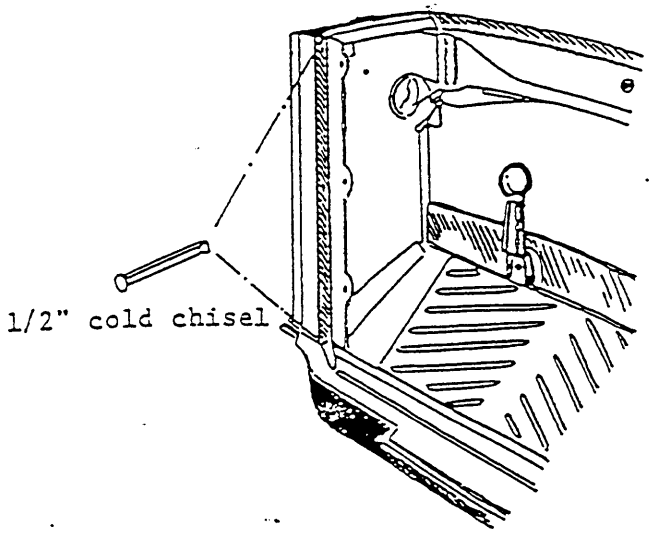


Fig. D-1 Separating Air/Wear Plate From Stove End

Step #16. Remove the left air wear plate. 2 each 1/4"-20x1" hex head cap screws. Chip away the cement at the joints and mating surfaces with a cold chisel and ball peen hammer. Drive the 1/2" cold chisel between the rear flange (extreme top and bottom) of the wear plate and the stove end and gently pry loose (see Fig. D-1).

Step #30. Remove the catalyst access plate from the stove back. 4 each, 1/4"-20x5/8" Phillips round head machine screws. Remove the secondary air cover plate from the stove back. 2 each, 1/4"-20x3/8" Phillips pan head machine screws. Remove the secondary air flap. 1 each, 10-24x1/4" Phillips pan head machine screw and 1 each, shim ring. Remove the secondary air link from the air flap. Remove the secondary air probe. 1 each, 10-24x1/4" Phillips pan head machine screw. Separate the air link from the secondary air probe. Check the air flap and air link for distortion. Check the air flap and air link for distortion. Check the air probe coil for breaks and/or heat damage. Replace any suspect parts.

Step #31. Examine all castings for cracks, chips, distortion, etc. Remove all old gasket material from the gasket channels and mating surfaces. Remove <u>all</u> gasket and furnace cement from channels and mating surfaces using the appropriate size punch/drive pin in the channels and cold chisels on the flanges and flat mating surfaces. clean all channels and mating surfaces with a wire brush (hand or power).

Step #32. Examine all mechanical linkage parts for distortion, worn or egg shaped drillings, unusual wear, burrs, etc. Repair or replace as necessary. Replace any bent tabs or clips.

GASKETING*

Step 1. Remove the old gasketing paying particular attention to the place where a continuous gasket meets itself.

Step 2. Clean all gasket channels and grooves with a wire brush (hand or power). Remove any stubborn deposits of gasket cement with the appropriate size punch/drive pin or cold chisel.

Step 3. Clean all parts to be gasketed with your shop vacuum. Place clean parts on a clean level surface.

Step 4. Select the appropriate type and size of gasket. Cut to the recommended length allowing yourself an inch or two excess.

Step 5. Using the 3 oz. tube of gasket cement (part number 120-6122), place an unbroken 1/8" bead of gasket cement in the channel or groove to be gasketed.

Step 6. Starting with one end, press the gasket into the cemented channel or groove. If the gasket meets itself, insure that you have a good joint before trimming excess gasket with shears or side cutters. Do not overlap gasket ends or leave ragged edges.

* NOTE: Gasketing is indicated by the cross hatch symbol in the illustrations. 

Gasketing

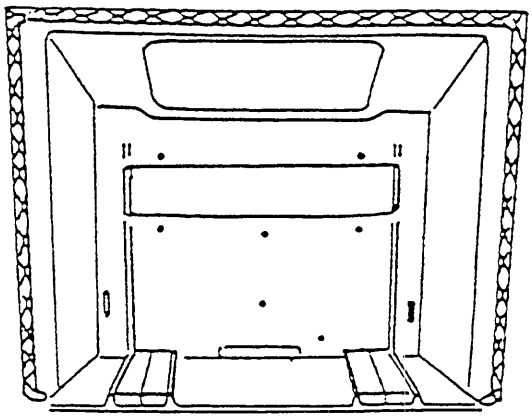


Fig. 7
Back

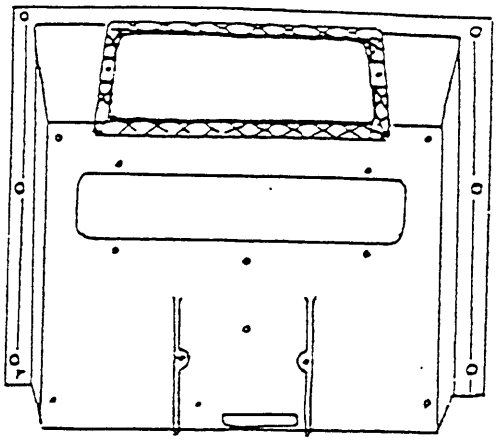


Fig. 8
Back (Flue Collar)

Back (Fig.8) Stove back to flue collar seal. 2 pieces, 19" each, thermocord, 5/16" diameter, 6 needle, part number 120-3588.

Catalyst Access Panel, (Fig.9) Catalyst access panel to stove back seal. 1 piece, 3'6", thermocord, 5/16" diameter, 6 needle, part number 120-3588.

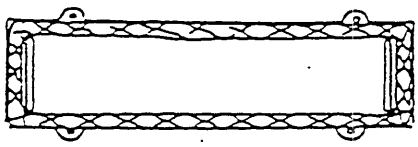


Fig. 9
Catalyst Access Panel

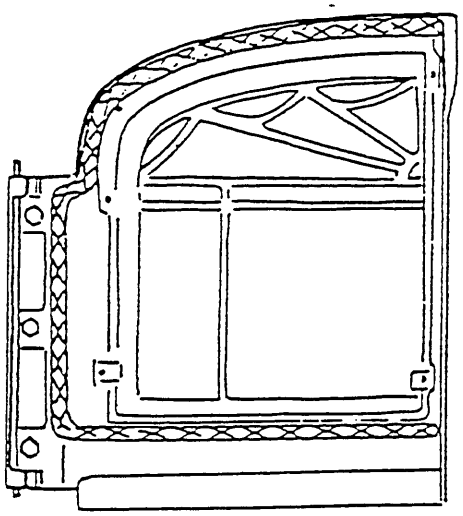


Fig. 10
Right Door

Step #22. Remove the ash drop assembly. Remove the hairpin cotter from the upper end of the ash door clevis pin. Pull the ash door clevis pin down, disengaging the hinge. Remove the ash door assembly. Remove the flat ash grate. Turn the stove bottom over and remove 4 each, 1/4"-20x3/4" hex head cap screws and 4 each, 1/4" flat washers holding the ash drop to the stove bottom. Gently tap and pry the ash drop loose.

Step #23. Remove the ash lip. 2 each, 1/4"-20x1/2" socket flat head machine screws. Remove the 4 stove legs and the handle holder. 4 each, 3/8"-16x1-1/4" hex head bolts an 4 each, 3/8" flat washers.

Step #24. Remove the primary air manifold from the stove front. 1 each, 1/4"-20x2" hex head cap screw at the center of the manifold. Chip cement at the joints with a cold chisel and ball peen hammer. Pry the manifold loose with a pinch bar. Remove the andirons. 1 each, 1/4"-20x1/2" hex head cap screw and 1 each, 1/4" flat washer per andiron.

Step #25. Remove the two piece half hinge from the ash drop. 3 each, 1/4"-20x3/4" hex head cap screws and 3 each, 1/4" flat washers. Take the split half hinge apart. 2 each, 1/4"-20x3/4" hex head cap screws and 2 each, 1/4" flat washers.

Gasketing

Right Door (Fig.10) Right door to stove front seal. 1 piece, 3', thermocord, 5/16" diameter, 6 needle, part number 120-3588.

Left Door (Fig.11) Left door to stove front and right door seal. 1 piece, 4', thermocord, 5/16" diameter, 6 needle, part number 120-3588.

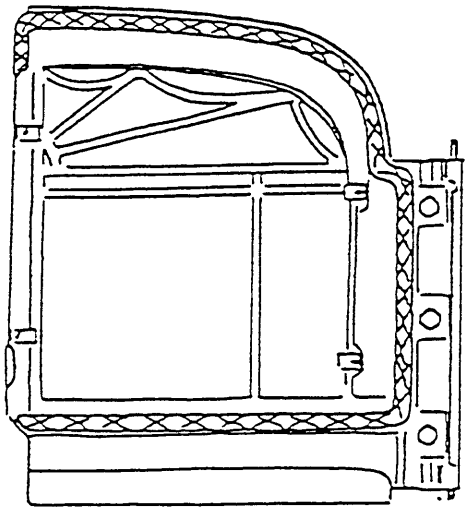


Fig 11
Left Door (inner)

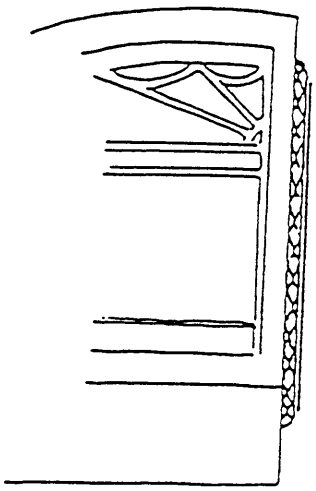


Fig. 11
Left Door (outer)

Door Glass (Fig.12) Gasket #1 provides cushioning between the casting and the bottom of the glass panes. 1 piece, 9", Interam 3M, flat, part number 120-3537. This gasket is applied with Tite Bond Glue, part number 120-6104.

Gasket #2 provides cushioning between the outer glass pane and the castings in addition to a seal. 1 piece, 3', 2" thermocord, 1/8" diameter, part number 120-3556.

General: All parts were carefully inspected and cleaned to bare metal or replaced during the disassembly process. Assembly may now begin. To achieve a properly functioning, air tight stove, 6 each, 11 oz. tubes of thermocement, part number 120-6125 are required. Cut the thermocement tube tips so that a 1/4"-3/8" unbroken bead of thermocement may be applied to the cement channels, flanges and/or flat mating surfaces.

* NOTE: Cement is indicated by the shaded areas in the "C"series illustrations. 

Caution. Pay strict attention to the type, size and number of fasteners called for in the exploded view drawing, parts list and text.

Step #1 Place the stove bottom upside down on a flat surface. Install 4 each, hex head leveler bolts (1/4"-20x1") in the 4 stove legs, finger tight. Install the 4 legs on the stove bottom using 4 each hex head bolts (3/8"-16x1-1/4") and 4 each, standard flat washers (3/8"). Place the stove handle holder between the flat washer and the bolt head on the left front leg(right front leg when the bottom is turned over to its normal position).

Step #2 Assemble the two piece half hinge using 2 each, hex head cap screws (1/4"-20x3/4") and 2 each, standard flat washers (1/4") finger tight. Install the two piece half hinge on the ash

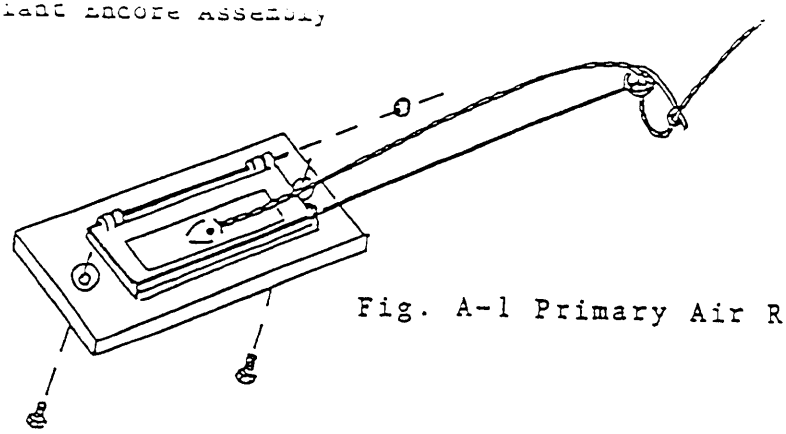
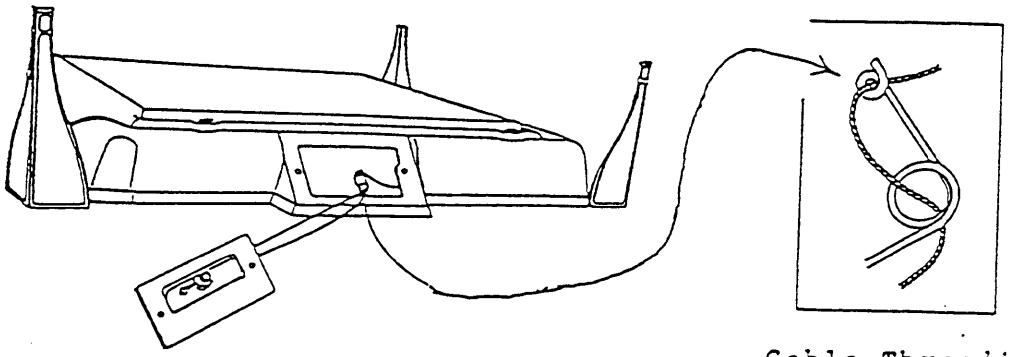


Fig. A-1 Primary Air Regulator System, Assembled

install the socket head cap (adjusting) screw (1/4"-20x3/8") in the center of the air valve, finger tight.

Step #6 Install the primary air regulator system on the cemented flange of the inverted stove bottom with the hinged side down Fig. A-2(protuding air rod left). Secure with 2 each, Phillips round head machine screws (1/4"-20 x 5/8"). Turn the stove bottom over onto its legs.



Cable Threading

Fig. A-2 Primary Air Regulator System Ready to be Installed

Step #7. Thread the running end of the primary air thermostat cable down through the small hole and up through the large hole in the air rod. Pull the running end of the cable over to the primary air valve and thread it through the small hole in the center of the air valve. Pull 6"-8" of cable outside the valve and tighten the set screw finger tight(see Figures A-1 & A-2).

Step #11. Cement mating grooves on both ends of the front air manifold as indicated in Figure C-7. Cement channels and mating surfaces on the left stove end as indicated in Figure C-5. Place the left

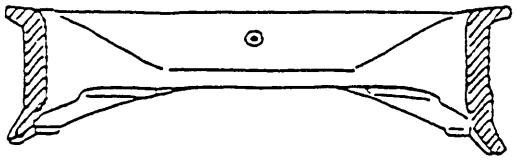


Fig. C-7
Front Air Manifold

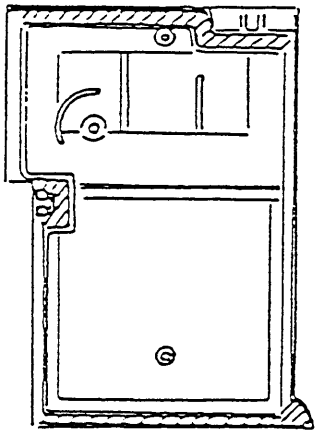


Fig. C-5
Left End

stove end firmly into its mating channel in the stove front, swing the back of the end onto the stove bottom so that the drilling in the inside bottom flange of the end aligns with the tapped hole in the stove bottom. Secure the end to the bottom and the end to the front with 2 each, hex head cap screws (1/4"-20x3/4") and 2 each, standard flat washers (1/4").

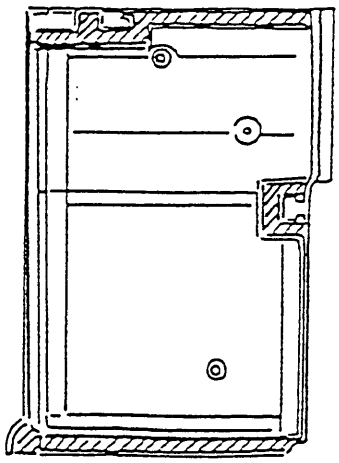


Fig. C-6
Right End

Step #12.
Cement channels and mating surfaces as indicated in Figure C-6. Place the right stove end firmly into its mating channel in the stove front, swing the back of the end onto the stove bottom so that the drilling in the inside bottom flange of the end aligns with the tapped hole in the stove bottom. Secure the end to the bottom and the end to the front with 2 each, hex head cap screws(1/4"-20x3/4") and 2 standard flat washers(1/4").

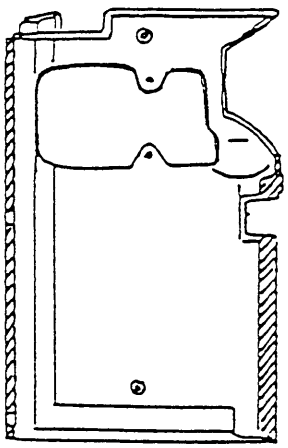


Fig. C-9
Left Air/Wear Plate

Step #15.

Cement the mating surfaces on the reverse side of the left air/wear plate as indicated in Figure C-9. Insert the front mating surface of the left air/wear plate against the left end of the front air manifold and the front of the left stove end at a 30 degree angle. Holding the wear plate as close to the stove top as possible, swing the back of the wear plate against its mating surface(back of the left stove end). Tap into proper position with the rubber mallet so that the top and bottom drillings in the wear plate align with the tapped holes in the stove end. Secure with 2 each, hex head cap screws (1/4"-20x1").

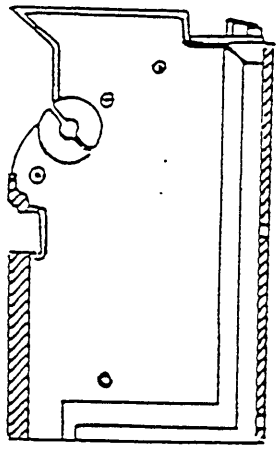


Fig. C-10
Right Air/Wear Plate

Step #16. Cement the mating surfaces on the reverse side of the right air/wear plate as indicated in Figure C-10. Place the right air/wear plate inside the stove in an upright position. Thread the primary air system cable

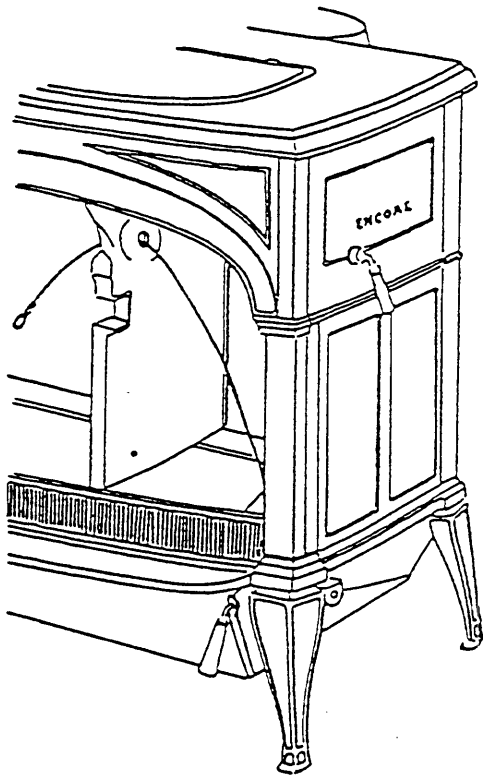


Fig. A-3 Right Air/Wear Plate Ready to be Installed

Step #18. Assemble the combustion package assembly. If the refractory package and/or the catalyst access panel (refractory) are being replaced, it may be necessary to cut and fit the access panel. Use the serrated edge kitchen knife and achieve a good tight all around fit. Place the heat exchanger into the front opening of the refractory assembly. Tape in place with masking tape. Insert the canned catalyst block into its opening in the rear of the refractory package (honeycombs vertical). Insure that the catalyst block slides over the lip of the heat exchanger and seats properly in its recess. Place the catalyst access panel (refractory) against the catalyst block and push in gently so that the access panel is flush with the edges of the refractory assembly.

Tape in place with masking tape. Place the stainless steel refractory cover on top of the combustion package assembly so that the cover edges are even with the front and back edges of the refractory assembly. Tape the cover in place with masking tape.

Step #19. Place the combustion package assembly into the stove back between the vertical ribs on the inside of the stove back. Make sure that the kaowool in the bottom of the stove back provides a good seal between the bottom of the stove back and the combustion package assembly, effectively isolating the secondary air passage from the right and left exhaust passages.

Step #20. Assemble the thermostat and cable. Open the jump ring and hook the loop on the end of the thermostat cable and the loop on the end of the thermostat actuator rod onto the jump ring. Squeeze

Step #20 (cont) Insert the thermostat access cup over the thermostat shaft, rotate the access cup to its proper position, aligning the drillings in the access cup with the tapped holes in the right air/wear plate. Secure with 2 each, hex head cap screws(1/4"-20x1/2").

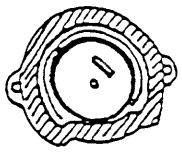


Fig. C-11 Thermostat Access Cup

Step #21. Adjust the primary air system. Loosen the set screw on the primary air valve. Holding the cable in one hand, move the thermostat handle through its full range of movement insuring that all slack is out of the cable and that the cable is responding to the movement of the thermostat handle without catching or binding. With the thermostat handle in the closed position (towards the rear of the stove) and the cable set screw loose, the primary air valve will fall freely to the closed position. Gently pull the cable until the primary air valve just begins to open. Pull the air valve closed by pulling the set screw in the center of the air valve until the valve seats in the air frame. Tighten the set screw. Move the thermostat handle to the full open position (towards the front of the stove). Check the air valve to be sure that it is in the open position.

Step #22. Sleeve and cut the excess from the primary air system cable. Thread the copper sleeve over the end of the cable. Loop the free end of the cable back through the copper sleeve and pull the sleeve and loop up to within 1" of the air valve set screw as shown in Fig.A-6. Insure that the sleeve and the cable loop

Step #24. Assemble the damper and the upper fireback. Place the regasketed damper into its mating recess in the upper fireback. Insure that the damper seats properly. Secure the damper shafts with 2 each, new damper tabs and 2 each, hex head cap screws (1/4"-20x1/2"). Insert the torsion bar through its drilling in the upper fireback and swing the opposite end of the torsion bar into its recess in the center of the damper. Secure the torsion bar to the damper center with 1 each, new damper tab and 1 each, hex head cap screw (1/4"-20x1/2").Secure the torsion bar to the upper fireback with 1 each, torsion bar clip and 1 each, hex head cap screw(1/4" - 20 x 1/2") and 1 each, standard flat washer (1/4"). Operate the damper through its full range of movement using the end of the torsion bar. If binding occurs, correct by filing or grinding. Do not bend the torsion bar, tabs, or clips.

Step #25. Install the upper fireback and damper assembly. Start the left end into position first, insuring that the torsion bar end is above the opening in the left air/wear plate. Push the entire assembly upward into its cement channel in the stove top. Align the drillings in the upper fireback with the tapped holes in the right and left air/wear plates. Secure with 4 each, hex head cap screws (1/4"-20x1") and 4 each, standard flat washers (1/4").

Step #26 Install the damper actuator link and the damper handle rod. Place the long end of the actuator link (with the short curved

Step #28. Install the damper link access panel. Cement the mating surfaces on the access panel as indicated in Fig. C-12. Place the access panel aganist its mating surface on the left air/wear plate and upper fireback, rear portion first. Secure with 2 each, socket, flat head machine screws (1/4"-20x1/2"). Check the damper operation, if binding or stoppage occurs, correct the problem. Do not force the linkage.

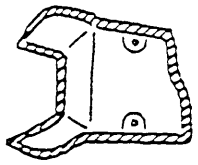


Fig. C-12
Damper Link
Access Panel

Step #29. Install the catalyst access panel. Secure with 4 each, Phillips round head machine screws (1/4"-20x5/8").

Step #30. Install the flue collar. Position the flue collar for either top or rear exit and secure with 2 each, Phillips round head machine screws(1/4"-20x1").

Step #31. Assemble and install the secondary air inlet assembly. Holding the secondary air probe and thermostat assembly with the probe facing away from you and the mounting tab at "12" o'clock, the tab on the end of the thermostat coil should be at "4" o'clock . If the thermostat tab is not in the "4" o'clock position, loosen the lock nuts on the probe shaft and adjust the coil tab and the mounting tab to the "4" o'clock and "12" o'clock positions respectively and retighten the lock nuts. Insert the double bent end of the secondary air link through the hole in the tab end of the thermostat coil. Insert the single bent end

Step #33. the ash door handle shaft through its drilling in the ash door.

(cont) Slide the pawl onto the ash door handle shaft so that the pawl offset is opposite the handle curve(see Fig. A-9).Insure that the pawl is against the ash door and that the handle turns without binding. Tighten the set screw in the pawl. Thread the hex toplock jam nut onto the handle shaft and tighten it against the pawl. With your 7/16" wrench, tighten the 3 cap screws attaching the split half hinge to the ash drop slightly (just past finger tight). Tighten the two cap screws holding the split half hinge together in the same manner. Install the ash door hinge drilling into the clevis of the split half hinge. Insert the clevis pin through the clevis from the bottom. Insert the hair pin cotter through the drilling in the top of the clevis pin.

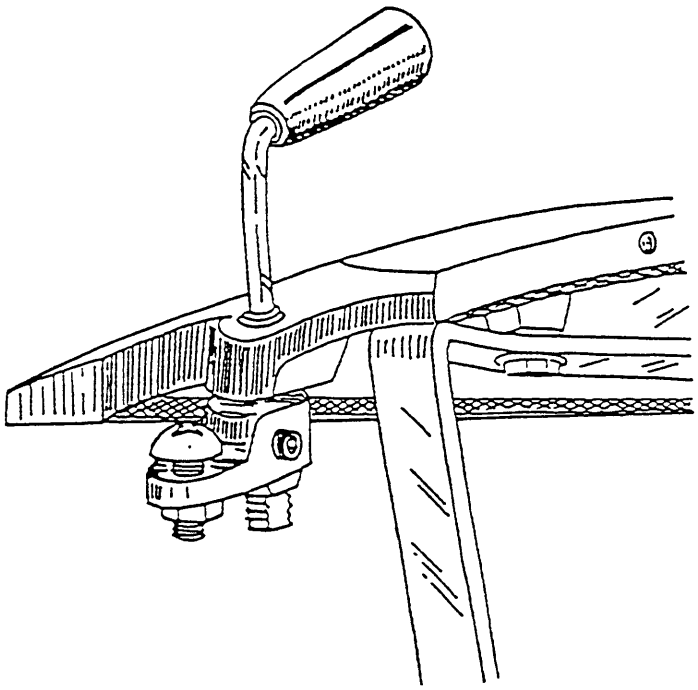


Fig. A-9 Ash Door Handle Assembly Installed

Step #41 (cont) the seal of both doors by applying "notepaper test" (see Fig.A-12). If the doors fail the test, readjust the hinge bosses, latch the doors and retest.

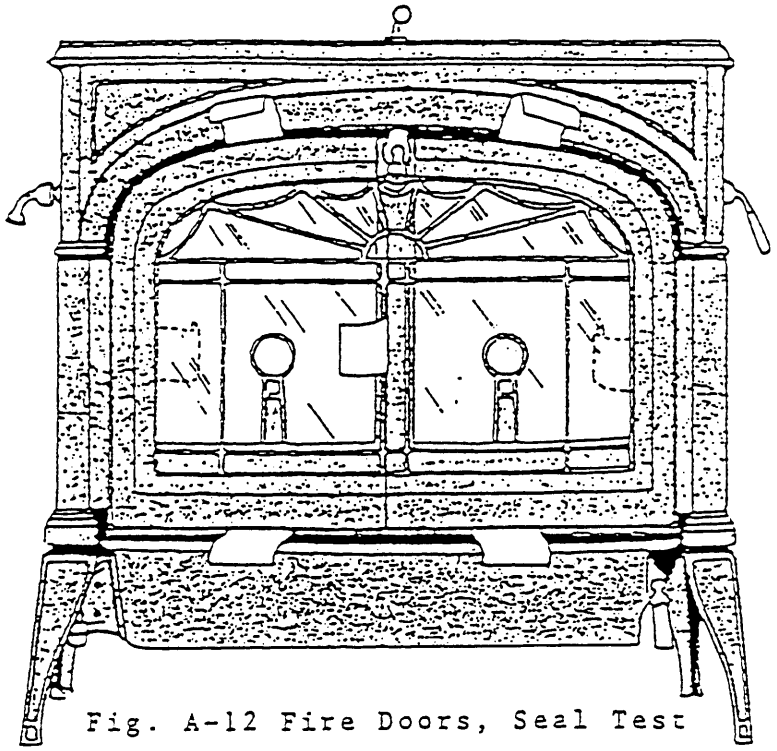


Fig. A-12 Fire Doors, Seal Test

Step #42 Assemble and install the griddle. Place the griddle quadrants on the underside of the griddle and secure with 2 each, hex head cap screws (1/4"x20x1/2"). Install the griddle handle assembly and secure with 1 each, hex nut (10-24) and 1 each #10 washer. Install the griddle on the stove and tap gently around its perimeter with a rubber mallet to seat the gasket.