

# 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 centre 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.

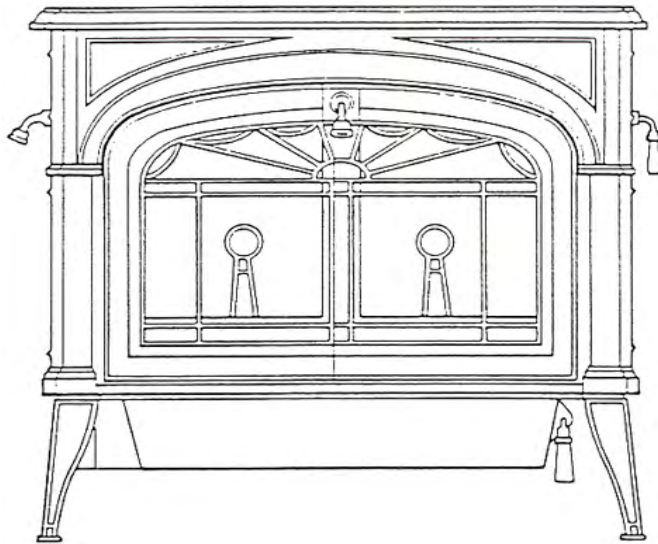
The stove back and catalyst access plate was redesigned in December 1986 to allow ease of servicing the catalyst block, reducing the risk of damaging the catalyst block and/or the refractory access panel when performing maintenance.

A new ash door and ash pan bracket was introduced in January 1987 to provide better operational tolerance and clearances and to accept heavier gasketing. A single ash door hinge in and a new ash pan and cover were also provided at this time.

In February of 1987, the damper torsion bar was changed from cold rolled steel to stainless steel to improve reliability of damper operation over wide ranges of temperature change.

The thickness of the 3 damper tabs was doubled in March of 1987 to prevent the possibility of bending during assembly and/or operation.

## 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
9. Appendix



# DEFIANT ENCORE

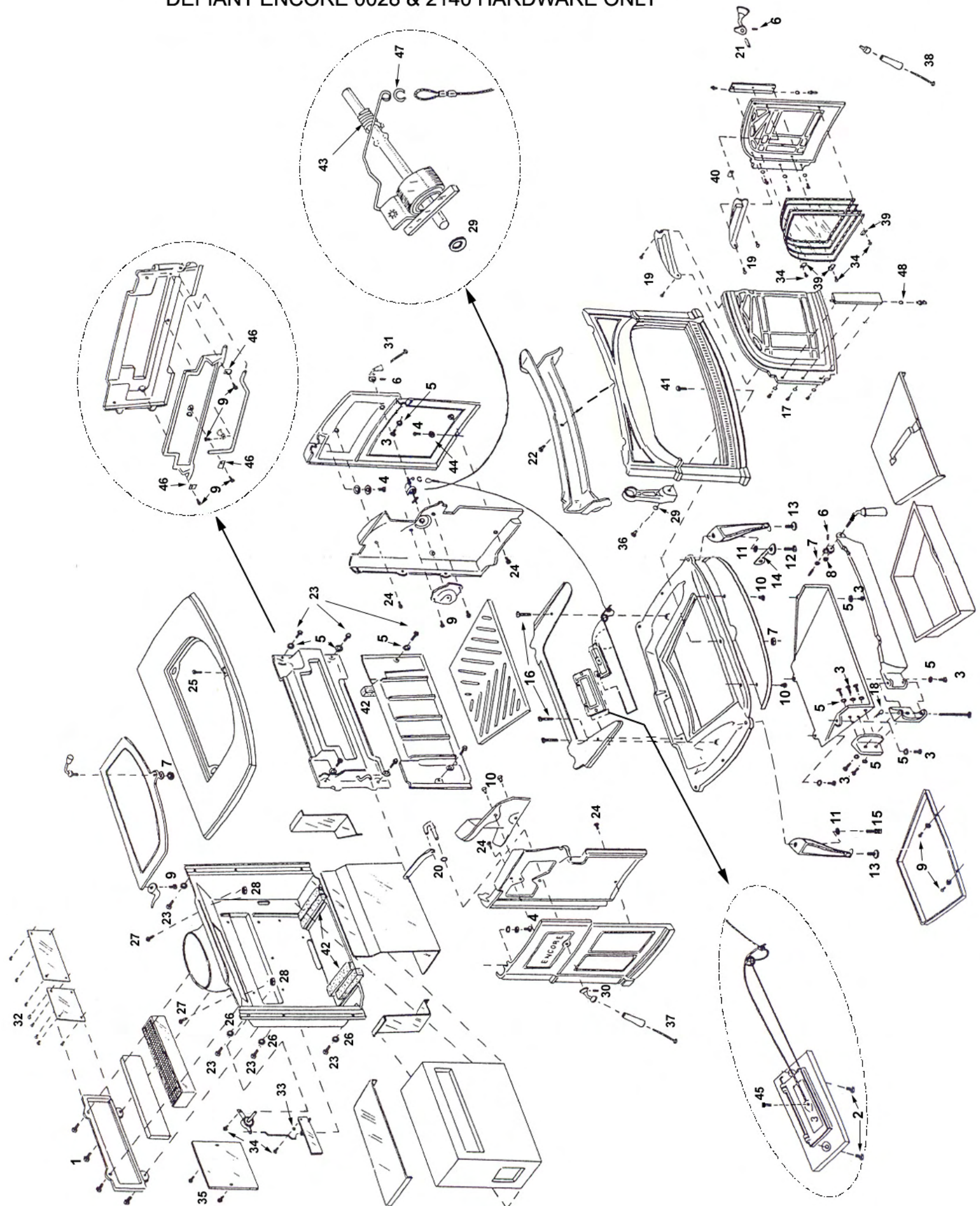
**MODEL #:** 0028 / 2140 DEFIANT ENCORE

**FEATURES:** MODEL #0028 MANUFACTURED 7/11/86 THRU 4/25/90 WITH A GEISSER TESTING LAB. LABEL  
 MODEL #2140 MAUNFACTURED 5/17/90 THRU 11/5/91 WITH A WARNOCK HERSEY TESTING LABEL  
 CATALYST ACCESS IN THE BACK OF THE STOVE / DOUBLE PANE OF GLASS IN EACH DOOR

\* denotes dead product - not available

ITEM #	PART #	DESCRIPTION	ITEM #	PART #	DESCRIPTION
1	130-7410*	Bottom (no substitute)	47	130-7417	Upper Fireback Only
2	130-7411	Primary Air Frame Only		500-0335	Upper Fireback Ass'y (#47 to #51)
	500-0337	Primary Air Regulatory System (Includes #2,3,4, 5, 17, & 120-3518 Gasket)	48	130-7421	Damper Only
3	130-7412	Primary Air Valve Only	49	160-1488	Damper Tabs
4	160-1493	Primary Air Rod Only	50	160-1036	Torsion Bar (Damper Rod) Clip
5	30001794	Socket Set Sc Cable Adjust (rep 120-0645)	51	160-1035	Torsion Bar (Damper Rod)
6	130-7420	Ash Drop	52	160-1034	Damper Actuator Linkage
7	130-7435	Ash Drop Split Hinge Upper	53	160-1033	Damper Actuator Rod
8	130-7436	Ash Drop Split Hinge Lower	54	500-5470	Thermostat Coil & Rod Assembly c/w #55
9	130-7443	Ash Door (obsolete)	55	120-1864	Thermostat Eyelet Only
10	160-0622	Ashdoor Handle - Shaft Only	56	120-1846	Friction Spring
	160-0663	Ashdoor Wood Handle Only	57	130-7415	Thermostat Access Cup
11	500-4024	Pawl Assembly	58	500-4265	Damper Handle Stub Nickel c/w Set Screw
11a	120-3290	Large Jam Nut for Pawl Assembly	59	130-7423	Damper Link Access Panel
12	120-3004	Cash Door Hinge Pin	60	130-7434	Bottom Grate
12a	120-3031	Cotter Pin #13	61	500-4224	Thermostat Handle Complete
13	160-1039	Ash Pan Bracket		160-0660	Thermostat Wooden Handle Only
14	See Chart	Ashlip		500-4264	Thermostat Handle Stub c/w Set Screw
15	See Chart	Leg		120-1243	Thermostat Handle Long Screw Only
16	160-0600	Handle Bracket	62	130-7442*	Catalyst Access Panel (no substitute)
17	500-5471	Primary Air Cable c/w 2 Sleeves	63	160-1489	Secondary Air Probe
18	130-8609	Primary Air Cover Plate (rep 130-7418)	64	160-1490	Secondary Air Flap
19	See Chart	Front	65	120-1986	Secondary Air Shim Ring
20	See Chart	Left Door Only	66	160-1486	Secondary Air Link
21	160-1396	Glass Clip Long .75"	67	160-1492	Secondary Air Cover Plate
22	130-7402	Door Hinge Plate	68	140-1115	Glass (1)
23	160-0416	Upper Door Hinge Pin	69	500-2789	Glass Gasket With Wire (Between Glass)
24	160-0417	Lower Door Hinge Pin		120-3537	Interam Gasket 9" Under the Glass
25	120-1985	Jump Ring	70	130-7419	Andiron
26	130-7403	Left Door Manifold	71	130-0797	Griddle (No Quads)
27	See Chart	Right Door Only	72	130-0809	Griddle Quad Straight (1)
28	160-1394	Glass Clip Short .62"		000-4444	Griddle Quad Straight (1) with Bolt
29	130-7404	Right Door Manifold	73	160-1025	Ash Pan Only
30	30001759	Handle Stub w/ Set Screw (repl 500-4225)	74	160-1027	Ash Pan Cover With Handle
31	130-7424	Front Air Manifold (obsolete)		500-5746	Ash Pan & Cover Assembly (#73 & # 74)
32	See Chart	Left End	75	500-4022	Griddle Handle Complete
33	See Chart	Right End		160-0658	Griddle Handle Stub Only
34	See Chart	Top		160-0661	Griddle Handle Wood Knob Only
35	See Chart	Back		120-1900	Griddle Handle Bushing Only (2 used)
36	See Chart	Flue Collar		120-1308	Griddle Handle Wood Handle Screw
37	130-7413	Left Air / Wear Plate		120-3210	Griddle Handle Wood Handle Nut Only
38	130-7414	Right Air / Wear Plate	76	000-4342	Fallaway Handle Complete (#85, #77, #78)
39	160-8629	Left Deflector	77	160-0620	Ceramic Handle - Ceramic Part Only
40	160-8630	Right Deflector	78	160-0650	Ceramic Handle Chrome Nub Only
41	500-4600	Refractory Assembly (w/ Access Panel)	79	120-1294	Ceramic Handle - Screw Only
42	160-2503	Access Panel Only	80	160-0664	Damper Handle Wood Handle Only
43	30001152	Catalyst Block	81	120-2471	1/4" SS Flat Washer
44	160-2506	Heat Exchanger	82	120-2560	3/8" Narrow Flat Washer
45	160-2507	Refractory Cover (SS Piece On Top)	83	120-6115	Kawool 3/4" x 7" (4 Used)
46	130-7416	Lower Fireback	84	120-1310	Damper Handle Screw Only

# DEFIANT ENCORE 0028 & 2140 HARDWARE ONLY



# DEFIANT ENCORE HARDWARE LIST

**MODEL #:** 0028 / 2140 DEFIANT ENCORE

**FEATURES:** MODEL #0028 MANUFACTURED 7/11/86 THRU 4/25/90 WITH A GEISSER TESTING LAB. LABEL  
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\* denotes dead product - not available

ITEM #	PART #	DESCRIPTION
1	120-0900	1/4 -20 x 3/4" Black Phillips Round Head Screw
2	120-0896	1/4 -20 x 5/8" Black Phillips Round Head Screw
3	120-1374	1/4 -20 X 3/4" Hex Head Cap Screw
4	120-1372	1/4 -20 X 5/8" Hex Head Cap Screw
5	120-2474	Washer, Zinc 1/4" Flat
6	120-0417	1/4 -20 x 1/4" Knl Cup Point Socket Set Screw
7	120-3210	1/4 -20 Hex Nut
8	120-3290	3/8-16 Toplock Z Hex Head Jam Nut
9	120-1338	1/4 -20 x 1/2" Hex Head Cap Screw
10	120-0482	1/4 -20 x 1/2" Socket Flat Head Screw
11	120-2488	Washer, Zinc 3/8" Flat
12	120-1443	3/8 -16 x 1 1/4" Zinc Hex Head Bolt
13	120-1745	1/4 -20 x 1" Zinc Hex Head Leveler Bolt
14	160-0600	Handle Holder
15	120-8610	3/8 -16 x 1 1/4" Socket Head Allen Bolt
16	120-0848	1/4 -20 x 2" Black Phillips Flat Head Screw
17	120-1347	1/4 -20 x 1/2" Hex Head Leveler Bolt
18	120-3029	Pin, Cotter .080 x 1 9/16"
19	120-0991	10-24 x 3/4" Zinc Phillips Pan Head Screw
20	120-2560	Washer, 3/8" Narrow
21	120-0334	7/16-20 x 1" Socket Set Screw
22	120-1392	1/4 -20 x 2" Zinc Hex Head Cap Screw Gr 2
23	120-1376	1/4 -20 x 1" Hex Head Cap Screw
24	120-1326	1/4 -20 x 1" Black Hex Head Cap Screw Gr 2 (or sub 120-1376)
25	120-0881	1/4 -20 x 3/4" Phillips Flat Head Screw
26	120-2473	Washer, Black 1/4" Narrow Flat
27	120-0907	1/4 -20 x 1" Black Phillips Round Head Screw
28	120-3329	Nut, 1/4 -20 Plain Square
29	120-2471	Washer, 1/4" Flat .294 id x .620 od Stainless Steel
30	120-0563	5/16-16 x 5/16" Socket Set Screw
31	120-1243	8-32 x 2" - Z Slot Round Head
32	120-2906	Rivet, Pop 1/8 dia x 1/8 Grip {or use #6 x 1/4" Round Head Screw}
33	120-1986	Shim Ring, 18 Ga Nickel
34	120-0980	10-24 x 1/4" Phillips Pan Head Screw
35	120-0993	1/4 -20 x 3/8" Phillips Pan Head Screw
36	120-1340	1/4 -20 x 1/2" Stainless Steel Hex Head Cap Screw {replaced 120-1373 - 5/8" May 03}
37	120-1310	1/4 -20 x 3" Zinc Slotted Pan Head Screw
38	120-1294	1/4 -20 x 3 3/8" Zinc Slotted Pan Head Screw
39	160-1396	Glass Clip, Long .75"
40	160-1394	Glass Clip, Short .62"
41	120-1378	1/4 -20 x 1 1/4" Hex Head Cap Screw
42	120-6115	Kawool 3/4" x 7"
43	120-1846	Friction Spring
44	120-2470	Washer, 1/4 Plain Flat
45	30001794	1/4 -20 x 3/8" Black Socket Head Cap Screw {replaces 120-0645}
46	160-1488	Tab, Damper
47	120-1864	Eyelet, Thermostat Wire
48	120-1985	Jump Ring

## Shell Parts - Defiant Encore Model #0028 / 2140

Part Name	Classic (130)	Red (131)	Sand (132)	Blue (133)	Midn't (134)	Ant Grn (138)	Ant Brn (139)	Gray (136)
Flue Collar	1304280	2324280*	1324280	1334280	1344280	N/A	N/A	N/A
Ash Lip	1307406	2327406*	1327406	1337406	1347406	N/A	N/A	N/A
Leg	1307427	1317427	1327427	1337427	1347427	N/A	N/A	N/A
Front	1308612*	1318612*	1328612*	1338612*	1348612*	N/A	N/A	N/A
Left Door	1308613*	N/A	1328613*	1338613*	1348613*	N/A	N/A	N/A
Right Door	1308614*	N/A	1328614*	1338614*	1348614*	N/A	N/A	N/A
Left End	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right End	1308619*	1318619*	1328619*	1338619*	1348619*	N/A	N/A	N/A
Top	1307405	1317405	1327405	1337405	1347405	N/A	N/A	N/A
Back	1307439	1317439	1307439*	1337439	1307439*	N/A	N/A	N/A

\*Substitute for original number

### **PACKED INSIDE THE STOVE**

- 500-7300** Parts Bag  
 500-4022 Griddle Handle Complete  
 160-0658 Griddle Handle Stub Only  
 160-0661 Griddle Handle Wooden Knob Only  
 120-1900 Griddle Bushing (2 Used)  
 120-1308 8-32 x 1" Phillips Pan Head Screw  
 120-3210 1/4-so Plain Hex Nut  
 160-0600 Holder, Door Fallaway Handle  
 120-5116 Allen Wrench, 1/8" Short Arm  
 120-5147 Allen Wrench, 5/32" Short Arm  
 120-2061 #10 x 3/4" Black Phillips Pan Head Sheet Metal Screw  
 000-4342 Complete Handle Package  
 160-0660 Thermostat Wooden Knob  
 120-1243 Thermostat Screw 8-32 x 2"  
 2000913 Encore 0028/2140 Manual

### **GASKETS**

- 120-3588 5/16" Medium Density 6ND Gasket 4' Left Door  
 3' Right Door  
 3.5' Damper Housing for Damper  
 3' Upper Fireback  
 1.4' Lower Fireback  
 4' Ashdrop  
 3.5' Catalytic Access Panel  
 5' Back  
 120-3668 5/16" Gasket Wire Fiberglass with Core 4' Top for Griddle  
 120-3537 Interam Gasket 9" Long 1 Bottom of Each Glass  
 120-6115 Kaowool 3/4" x 7" 6 Lwr Fireback, Ref Package  
 120-3591 5/16" Adhesive Backed Gasket 3.25' Flue Collar  
 120-3589 3/8" Low Density 6ND Fiberglass 3.5' Ashdoor  
 120-3518 Pre-formed Gasket 1 Primary Air Frame  
 120-3556\* 3/16" 4ND Black Fiberglass Gasket 3' Each Glass Panel

\*000-3427 kit contains enough gasket and cement to gasket all glass with rope gasket

### **ACCESSORIES**

#### **Heat Shields**

- 160-1755 1 1/4" Spacer Used On Bottom & Rear 140-2252 Ashdoor Heatshield  
 000-5834 Spacer Hardware Kit – Set of 4-160-1755 120-1780 Ashdoor Heatshield Spacer

#### **000-5925 Internal Rebuild Kit**

Complete interior rebuild comes with lower fireback, upper fireback assembly, kawool, refractory assembly, heat exchanger, cement, hardware, gaskets & instructions.

#### **Warming Shelf**

- 130-2221 Left Bracket 130-2222 Right Bracket  
 160-1705 Mittenrack 500-7234 Hardware Package

Part Name	Classic	Old Red	Sand	Blue	Midnt	Ant Grn	Ant Brn	Gray
Shelf	1302208	1312208	1322208	1332208	1342208	N/A	N/A	N/A
Dagon Bracket	1302220	1312220	1322220	1332220	1342220	N/A	N/A	N/A

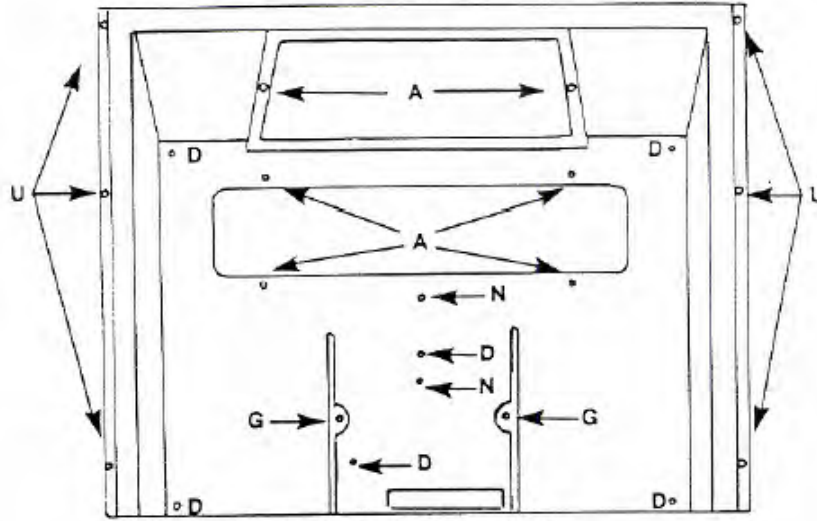


## Defiant Encore Drill and Tap Guide

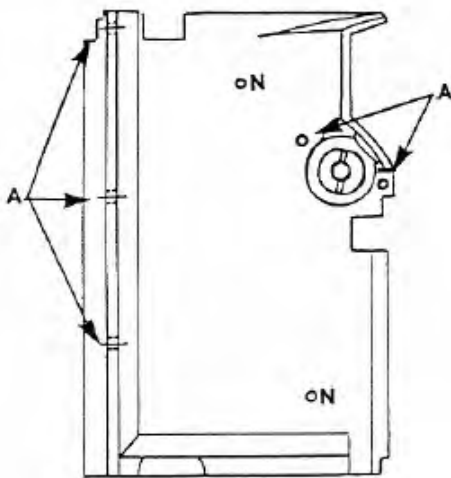
<u>Key</u>	<u>Drill</u>	<u>Depth</u>	<u>Tap Size</u>	<u>Tap Type</u>
A	13 / 64"	Thru	1 / 4" - 20	Taper
B	# 22	1 / 2"	10 - 24	Bottoming
C	# 22	3 / 8"	10 - 24	Bottoming
D	# 22	Thru	10 - 24	Taper
E	25 / 64"	Thru	7 / 16" - 20	Taper
F	13 / 64"	1 / 2"	1 / 4 - 20	Bottoming
G	13 / 64"	5 / 8"	1 / 4 - 20	Bottoming
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		
V	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.

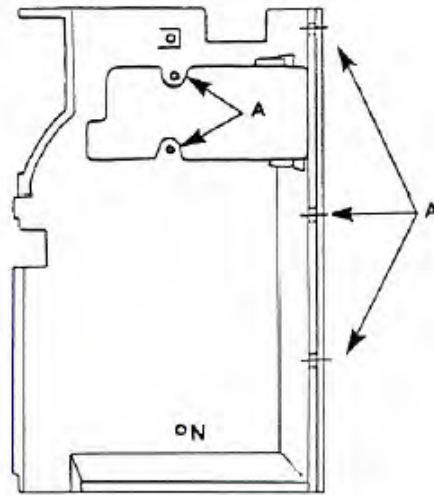
DEFIANT ENCORE DRILL & TAP ILLUSTRATIONS



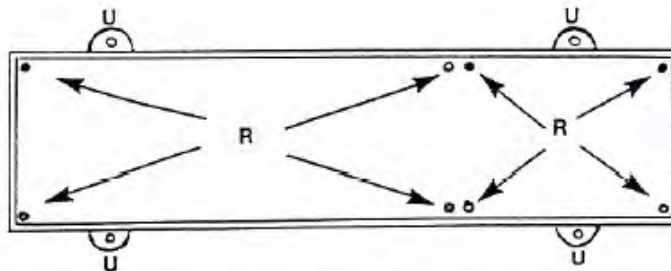
Stove Back (outside view)



Right Air/Wear Plate

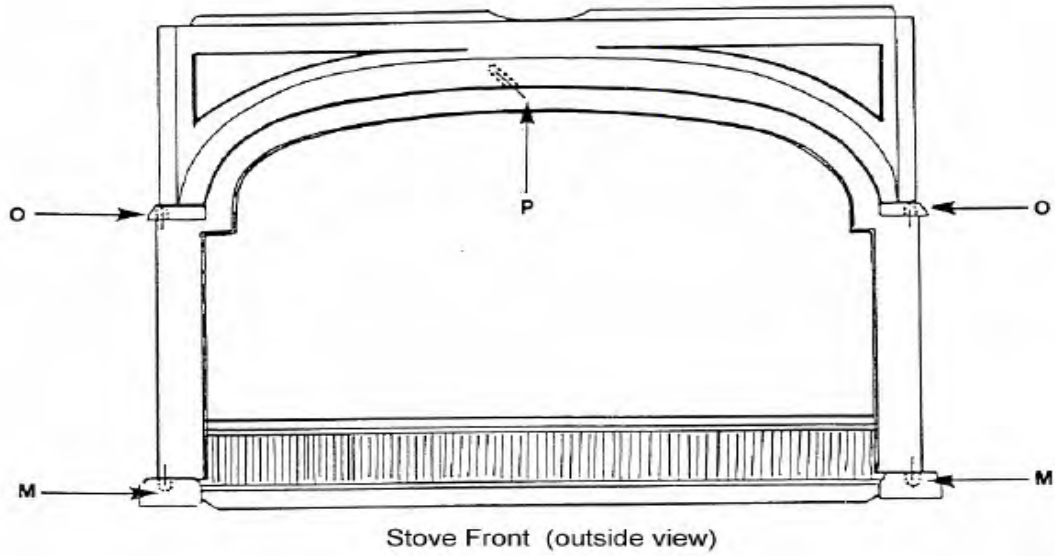
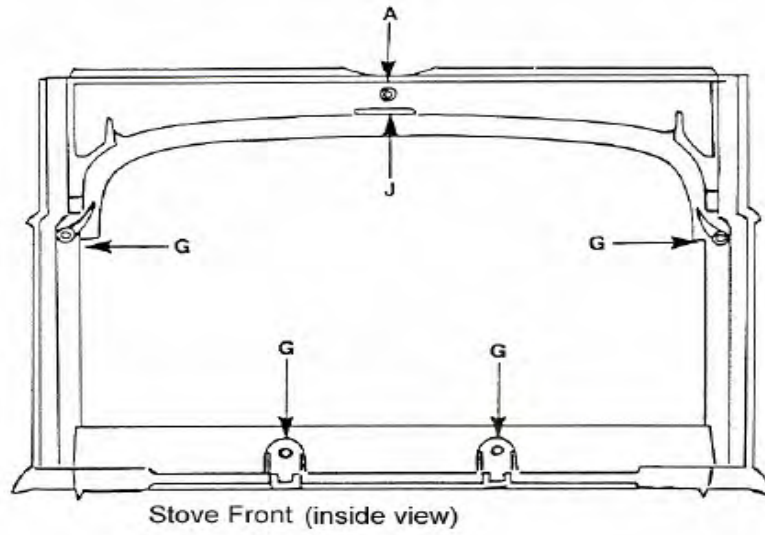


Left Air/Wear Plate

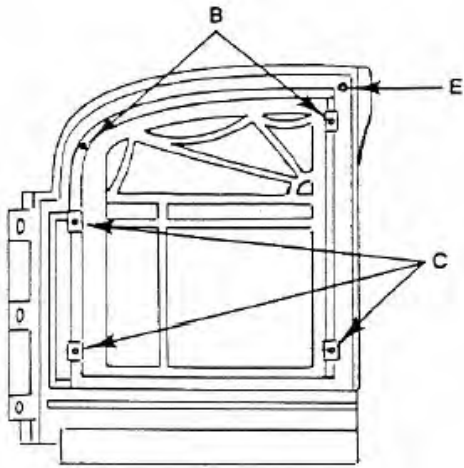


Catalyst Access Plate (outside view)

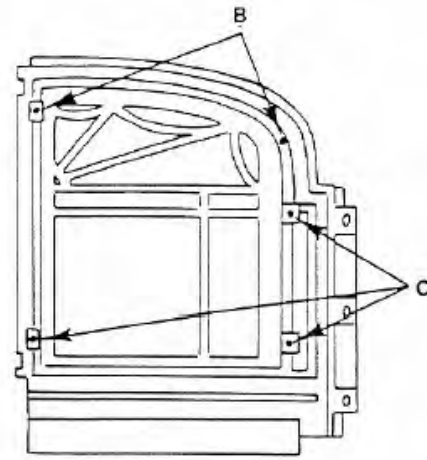
DEFIANT ENCORE DRILL & TAP ILLUSTRATION



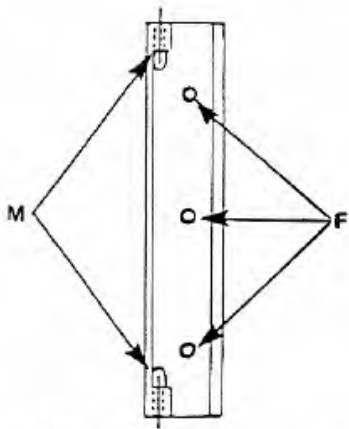
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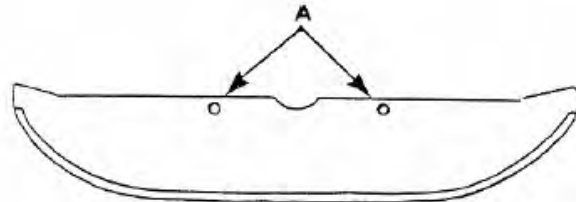
Right Door (inside view)



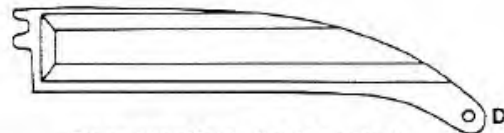
Left Door (inside view)



Hinge Boss (inside view)

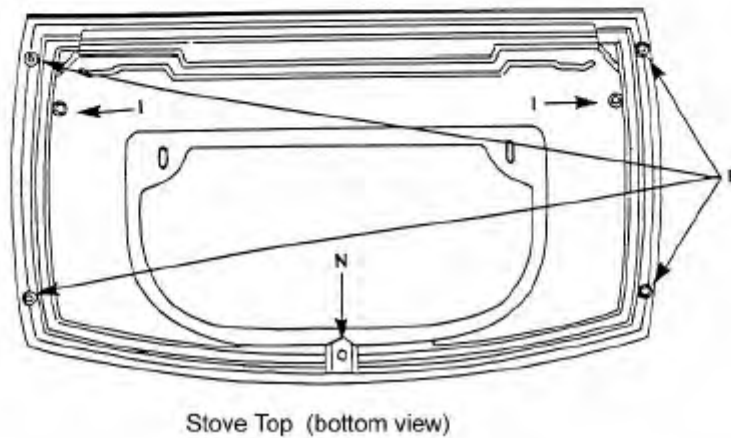
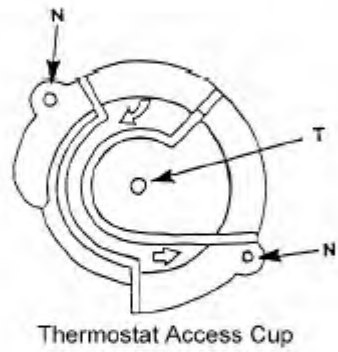
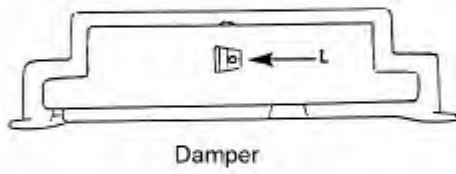
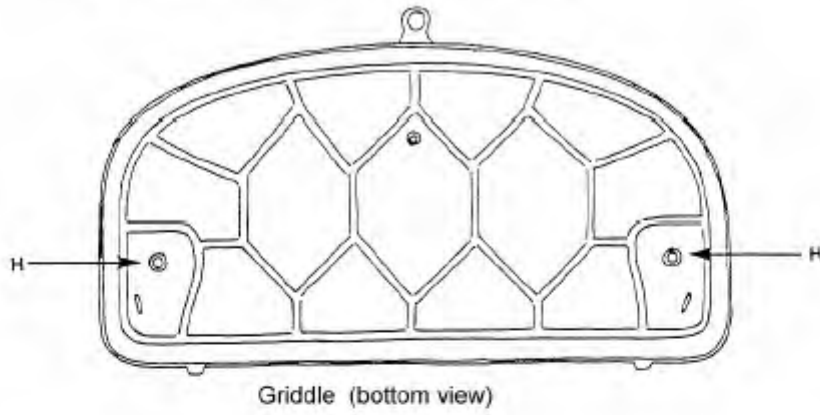


Ash Lip (bottom view)

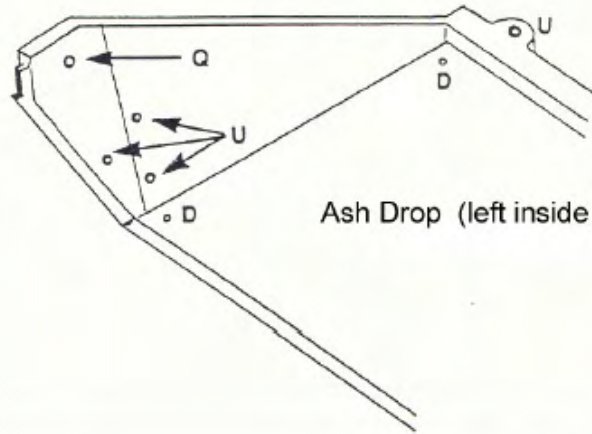


Door Manifold (inside view)

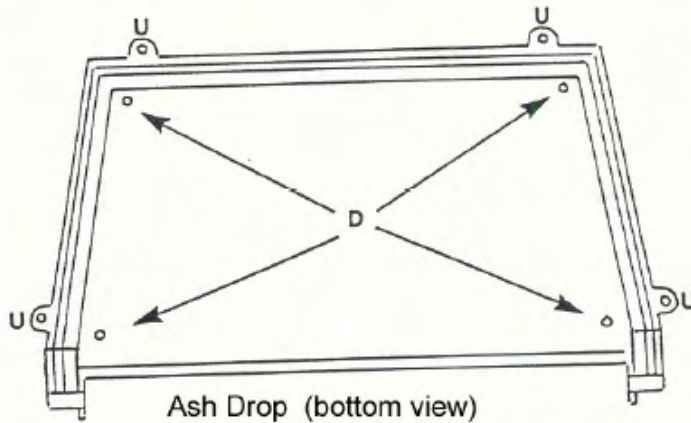
DEFIANT ENCORE DRILL & TAP ILLUSTRATIONS



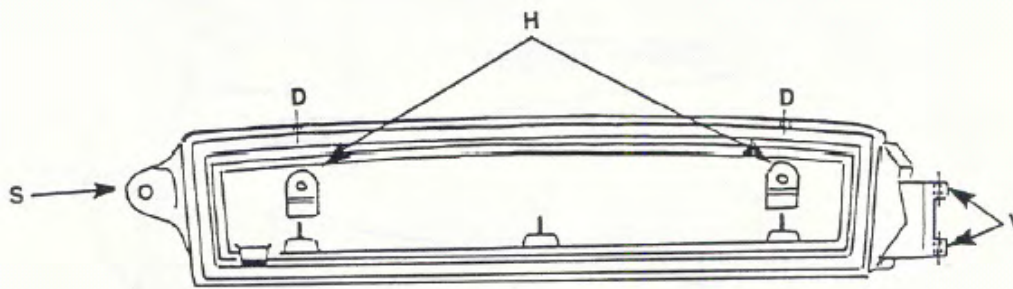
# DEFIANT ENCORE DRILL & TAP ILLUSTRATIONS



Ash Drop (left inside view)

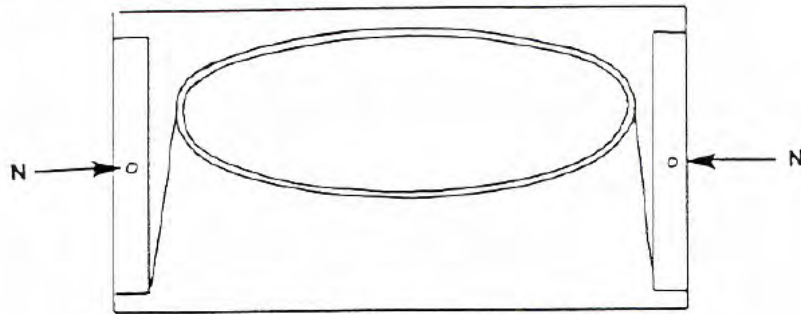


Ash Drop (bottom view)

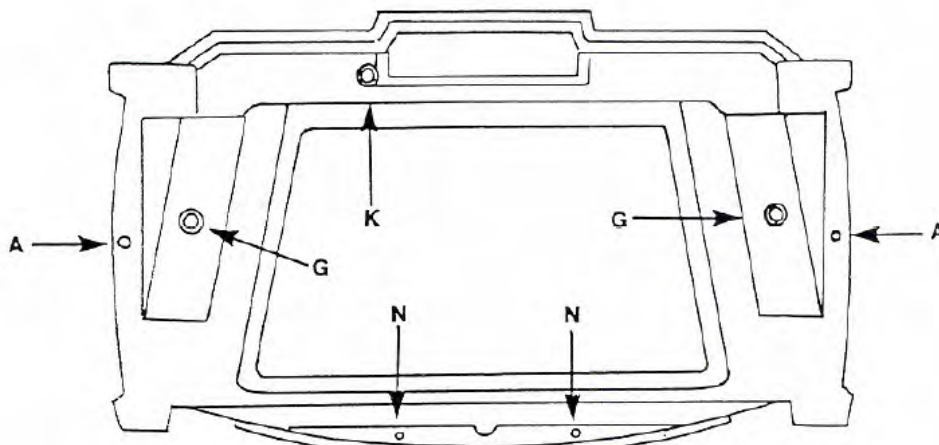


Ash Door (inside view)

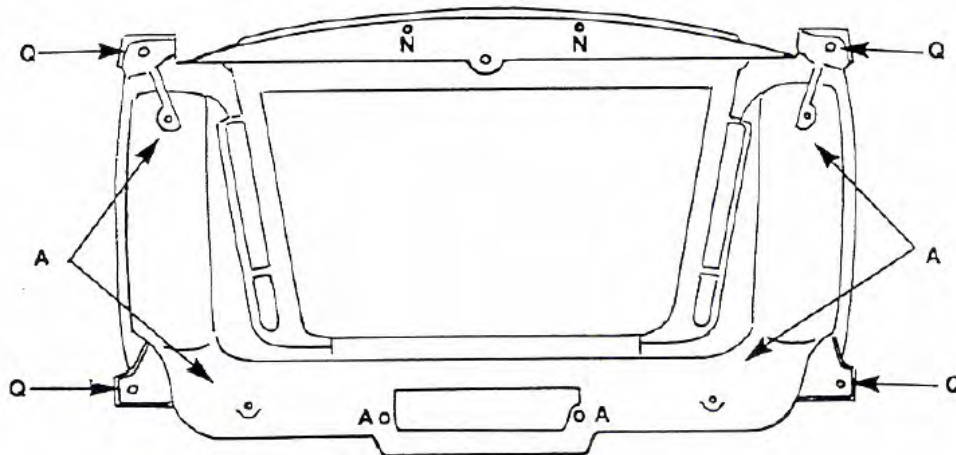
DEFIANT ENCORE DRILL & TAP ILLUSTRATIONS



Flue Collar (top view)

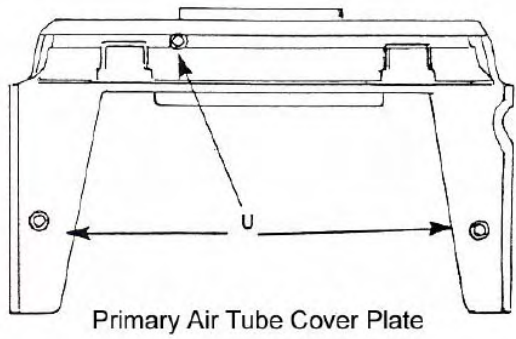


Stove Bottom (top view)

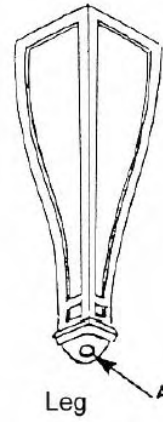


Stove Bottom (bottom view)

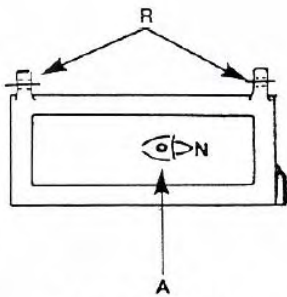
DEFIANT ENCORE DRILL & TAP ILLUSTRATIONS



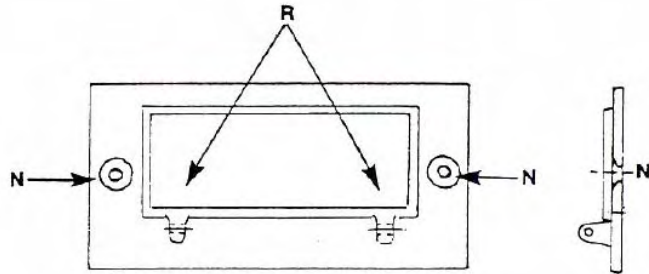
Primary Air Tube Cover Plate



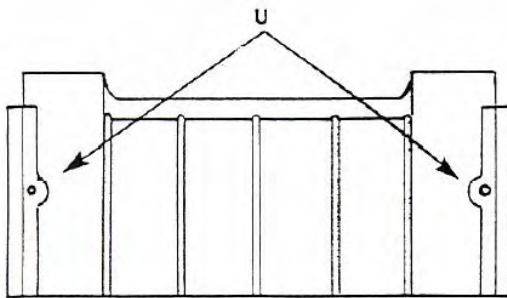
Leg



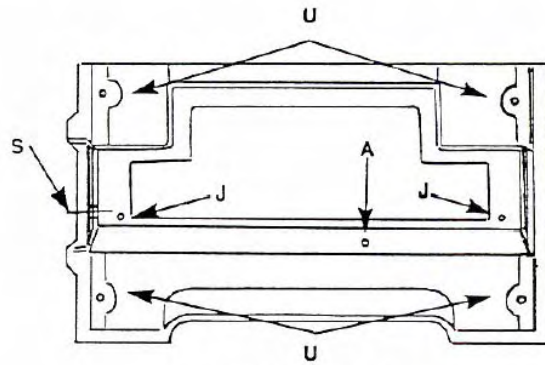
Primary Air Valve



Primary Air Frame



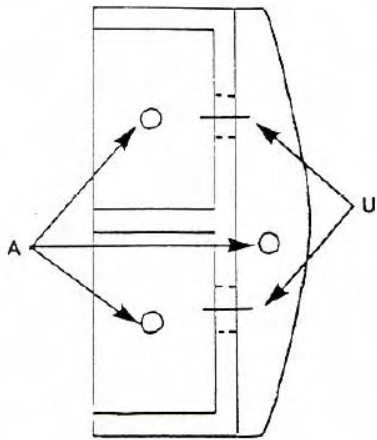
Lower Fireback



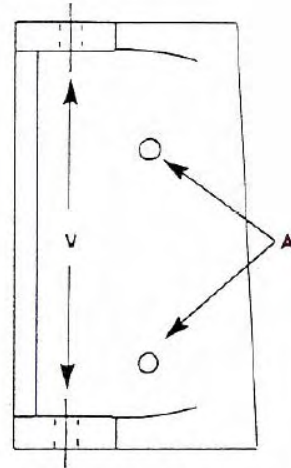
Upper Fireback



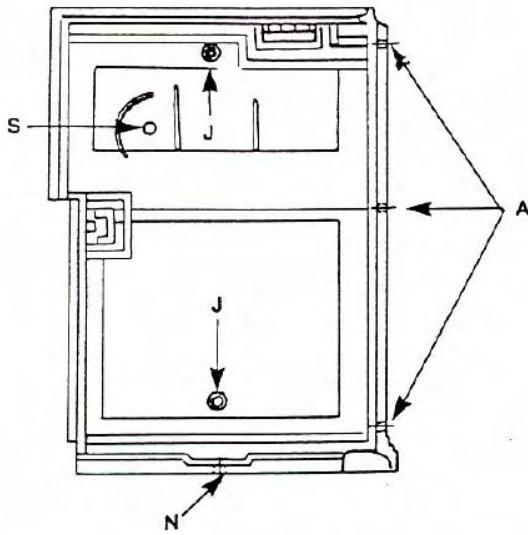
DEFIANT ENCORE DRILL & TAP ILLUSTRATIONS



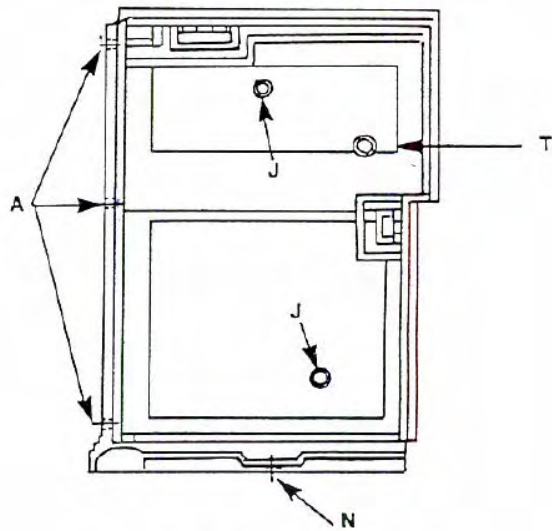
Split Half Hinge



Split Half Hinge  
Clevis Half



Left End (inside view)



Right End (inside view)

## **Defiant Encore – Individual Repair Section**

GENERAL: The manner in which to proceed with the most repairs to this stove will be obvious to the competent mechanic. Individual parts replacement and adjustment procedures are covered in the Disassembly and Assembly sections of this manual. Cleanings, re-gasketing and/or cementing procedures are covered in the Cementing and Re-Gasketing sections of this manual. There are, however, certain techniques and procedures outlined below and on the following pages which will save the mechanic both time and effort.

CAUTION: When reassembling a part requiring gasketing or cementing, both the part being replaced or reassembled and the entire mating surface to which it is attached must be thoroughly cleaned to bare metal of old furnace and/or gasket cement before re-cementing or re-gasketing. If the cleaning process is not thorough, proper alignment and a complete seal will be impossible to achieve.

### **Replacing the Primary Air Valve to Thermostat Cable**

#### **Tools Required**

- 7/16" Combination wrench (box & open end)
- Phillips Screw Driver, # 2 tip
- Needle Nose Pliers, 6"
- Cold Chisel, 1/2"
- Hammer, Ball Peen, 12 oz.
- Drop Light or Flash Light
- 1/16" diameter Gas Welding Rod, 36"
- Caulking Gun, Frame Type
- Allen Wrench, 1/8"
- Thermocement, 11 oz. tube
- Safety Goggles

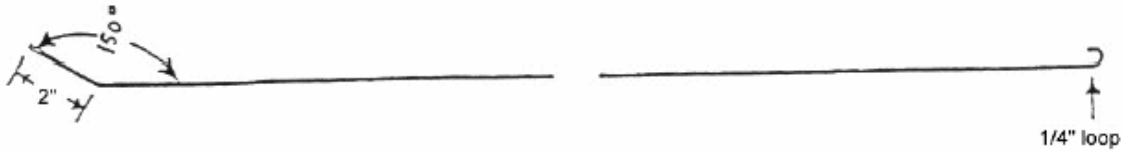
STEP 1: Remove the primary thermostat handle.

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.

- STEP 7: Remove the stove griddle and the first section of stove pipe above the flue collar.
- STEP 8: Insert the cable fishing tool into the primary air frame opening from right to left with the 2" bend at between 1 and 2 o' clock. Force the fishing tool by pushing and twisting it slightly around the inside of the primary air tube and up between the right stove end and the right air/wear plate. While pushing the fishing tool, look into the griddle opening and watch for the end of the fishing tool to pass the thermostat pocket. When the end of the cable fishing tool becomes visible, stop moving the tool and reach through the thermostat pocket with the needle nose pliers and pull about 2"- 4" of the fishing tool inside the firebox. If you do not succeed on the first attempt, remove the fishing tool from the stove, straighten it, maintaining the 2", 150 degree bend and try again.
- STEP 9: Slip the looped end of the new primary thermostat cable over the looped end of the fishing tool and close the loop with your pliers. Reach inside the stove and pull the fishing tool until the new cable comes through the thermostat pocket.
- STEP 10: Clean the primary air frame, thermostat access cup and their mating surface of all old furnace cement. Apply new furnace cement to the thermostat access cup and the primary air frame and proceed to steps 20 thru 22 of the assembly section of the manual.

# Replacing or Servicing the Damper Linkage

## Tools Required

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

- STEP 1: Place the damper in the open or updraft position 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.
- STEP 5: Service and/or replace the damper handle rod, actuator link and the 3/8" flat washer.
- STEP 6: Clean the cement groove of the damper linkage access panel and its mating surface on the left air/wear plate and upper fireback of all old furnace cement. Proceed to step 26 thru 28 of the assembly section of this manual.

## **Replacing or Servicing the Upper Fireback and Damper Assembly**

(Also see note in Appendix)

### Tools Required

- Ratchet Handle, 3/8" drive
- 7/16" Deepwell socket, 3/8" drive
- Rolling head pry bar, 6"- 10"
- Allen Wrench, 5/32"
- Caulking Gun Frame
- Thermocement, 11 oz. tube
- Cold Chisel, 1/2"
- Hammer, Ball Peen, 12 oz.
- Safety Goggles

Perform steps 1 thru 5 of the damper linkage repair section.

STEP 1: Remove the 4 cap screws that secure the upper fireback to the right and left air/wear plates.

STEP 2: Place the chisel end of the rolling head pry bar in the seam between the upper and lower fireback about 2" in from the right or left air/wear plate. Tap the chisel end of the pry bar with the ball peen hammer until fireback starts to separate from the lower fireback. Pull down on the pry bar until the cement holding the upper fireback to the stoves top loosens. Remove the upper fireback and damper assembly.

STEP 3: Service and/or replace the upper fireback, damper, torsion bar, damper tabs, and torsion bar clips.

STEP 4: Re-gasket the damper and the upper fireback. Refer to the gasketing section of this manual.

STEP 5: Clean the upper fireback of all old furnace cement. Clean the cement channel for the upper fireback in the underside of the stove top thoroughly, paying particular attention to the right and left corners.

STEP 6: Cement the upper fireback channel in the underside of the stove top and proceed to steps 24 thru 28 of the assembly section of this manual.

## **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.

## **Replacing or Servicing the Refractory Assembly**

### Tools Required

- 7/16" Combination Wrench (box & open)
- Cold Chisel, 1/2"
- Hammer, Ball Peen, 12 oz.
- Caulking Gun Frame
- Safety Goggles
- Thermocement, 11 oz. tube
- Masking Tape
- Tape Measure, 6"
- Shears, 10"- 12"

- STEP 1: Remove the 6 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.

- STEP 6: Inspect the kaowool strips in the lower fireback and the bottom of the stove back. If the kaowool strips are compressed below the top edge of the inside ribs of either the lower fireback or the stove back, replace them. The kaowool strips when in place must provide a complete seal as well as a cushion for the refractory package.
- STEP 7: Clean all old furnace cement from the bottom flange of the stove back and the stove back and the stove back cement channel in the stove bottom.
- STEP 8: Re-gasket the stove back. Refer to the gasketing section of this manual for instructions. Fill the stove back cement channel in the stove bottom with thermocement.
- STEP 9: Place the refractory package into the stove back. Place the right and left heat deflectors into their proper positions in the stove back.
- STEP 10: Install the stove back.

## **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 lbs. dead blow
- Wire Brush

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

## **Eliminating Air Leaks at the Fire Door**

### Tools required

- 7/16" Combination Wrench (box & open)
- 9/16" Combination Wrench (box & open)
- Flat file, medium cut
- Wire Brush
- Rubber Mallet, 4 lbs. dead blow
- 7/32" Allen Wrench
- Gasket Cement, 3 oz. tube

Refer to step 41 of the assembly section of this manual. If a good door seal cannot be achieved, remove the doors and re-gasket them following the instructions in the gasketing section of this manual. If the right fire door seals and the left does not, remove the left door. Strip the old gasket from its groove and clean the groove thoroughly with the wire brush. Apply an unbroken bead of gasket cement in the bottom of the groove. Cut a 4" length of 1/8" thermocord gasket and place it in the bottom of the groove. Press the gasket into the groove evenly and trim off the excess. Apply an unbroken bead of gasket cement onto the 1/8" thermocord gasket and the sides of the gasket groove. Cut a 4" length of 5/16" thermocord gasket and place it in the groove evenly all the way around and trim off the excess. Install the left door and proceed with the door adjustment outlined in step 41 of the assembly section of this manual.



## **Defiant Encore – Complete Disassembly**

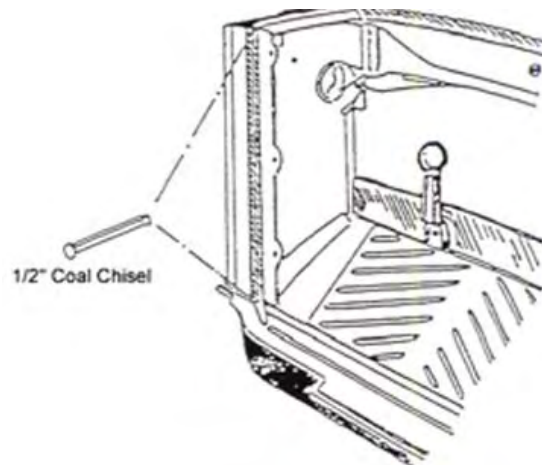
### **Tools Required**

- 1-Drop cloth, 8"x 8" (minimum size)
- 1-Pair of safety goggles
- 1-Respirator, dust & mist
- 1-Wire brush 1½" x 6", 13" overall
- 1-7/16" Combination wrench (box & open end)
- 1-9/16" Combination wrench (box & 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
- 1-Rubber mallet, 4 lbs. dead blow
- 1-Cold chisel, ½"
- 1-Cold chisel, 3/8"
- 1-Cold chisel, 5/8"
- 1-Punch/Drive pin, 1/8"
- 1-Punch/Drive pin, ¼"
- 1-Punch/Drive pin, 3/8"
- 1-Caulking gun frame
- 1-Rolling head pry bar, ½"x 15"
- 1-Pinch bar, ½" x 15"
- 1-Water pail, 2 gallon or larger
- 1-Sponger or water absorbent cloth
- 1-Tape measure, 6"
- 1-Machinists rule, 6"
- 1-Pair cutting shears, 6"- 8"
- Kitchen knife, serrated, 6"- 7" blade
- Clean rags

## **Disassembly**

- 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 slightly outward and pull down, releasing the upper hinge pin from its 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, 1/4-20 x 3/4" hex head cap screws and 4 each, 1/4" flat washers, right and left inside rear and 1 each, 1/4-20 x 3/4" Phillips flat head machine screw, centre 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 8: Remove the damper link access panel, 2 each, 1/4-20x1/2" socket flat head machine screws. Use the cold chisel in the cement seams and a ball peen hammer to loosen.
- STEP 9: Remove the damper handle rod from its drilling in the left stove end and the forward drilling in the damper actuator link to fall between the left stove end and the left air/wear plate.
- STEP 10: Remove the upper fireback and damper assembly, 4 each, 1/4-20 x 1" hex head cap screws and 4 each, 1/4" flat washers. Do not allow the damper actuator link to fall into the opening between the wear plate and the stove end.

- STEP 11: Remove the lower fireback, 2 each, ¼-20 x 1” hex head cap screws and 2 each, ¼” flat washers. Pry the fireback loose with a pinch bar from its bottom cement channel.
- STEP 12: Remove the stove back, 6 each, ¼-20 x 3/4” hex head cap screws and 6, each ¼” flat washers. Strike the stove back joint areas with a rubber mallet to loosen the cement.
- STEP 13: Remove the combustion package assembly and the right and left heat deflectors from the stove back. Handle the combustion package assembly gently and place it in a safe area until you are ready to examine and clean it.
- 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, ¼-20 x 1” hex head cap screws. Chip away the cement at the joints and mating surfaces with a cold chisel and ball peen hammer. Drive a ½” 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 17: Remove the stove front, 1 each, 1/4-20 x 3/4" hex head cap screw and 1 each 1/4" flat washer holding the front to the left end. 1 each, 1/4-20 x 3/4" hex head cap screw and 1 each, 1/4" flat washer holding the front to the right end, 1 each, 1/4-20 x 1" hex head cap screw and 1 each, 1/4-20 hex nut holding the front to the bottom. Strike the air manifold with a rubber mallet sharply at the right and left joints and remove the front with the air manifold and andirons attached.
- STEP 18: Remove the right end, 1 each, 1/4-20 x 3/4" hex head cap screw and 1 each, 1/4" flat washer located at the centre of the inside bottom flange. Rock the end loose and remove.
- STEP 19: Remove the left end, 1 each, 1/4-20 3/4" hex head cap screw and 1 each, 1/4" flat washer locate at the centre of the inside bottom flange. Rock the end loose and remove.
- STEP 20: Remove the primary air tube cover plate, 3 each, 1/4-20x2" Phillips flat head machine screws. To loosen the screws, place a # 3 Phillips screwdriver top into the screw and strike the screwdriver handle sharply with a ball peen hammer. Chip the furnace cement loose from the seams and gently pry the cover plate loose.
- STEP 21: Remove the primary air regulator system, 2 each, 1/4-20 x 5/8" Phillips round head machine screws. Tap the air frame gently at the seams and remove.

- 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, ¼-20 x ¾” hex head cap screws and 4 each, ¼” 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, ¼-20 x ½” socket flat head machine screws. Remove the 4 stove legs and handle holder, 4 each, 3/8”-16 x 1¼” hex head bolts and 4 each, 3/8” flat washers.
- STEP 24: Remove the primary air manifold from the stove front, 1 each, ¼-20 x 2” hex head cap screw at the centre 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, ¼-20 x ½” hex head cap screw and 1 each, ¼” flat washer per andiron.
- STEP 25: Remove the two piece half hinge from the ash drop, 3 each, ¼-20 x ¾” hex head cap screws and 3 each, ¼” flat washers. Take the split half hinge apart, 2 each, ¼-20 x ¾” hex head cap screws and 2 each, ¼” flat washers.
- STEP 26: Remove the ash pan bracket from the ash door, 2 each, ¼-20 x ½” hex head cap screws and 2 each, ¼” flat washers. Remove the handle from the ash door, 1 each, 3/8”-16 hex toplock jam nut on the pawl. Loosen the ¼-20x ¼” socket set screws on the pawl. Remove the pawl and pull the handle out.
- STEP 27: Remove the damper from the upper fireback, 3 each, ¼-20 x ½” hex head cap screws and 3 each, flat damper tabs. Lift out the damper. Remove the torsion bar, 1 each, ¼-20 x ½” hex head cap screws and 1 each, torsion bar clip. Pull the torsion bar from the upper fireback.
- STEP 28: Remove the primary air valve from the primary air frame. Pry the air rod clip from the end of the rod. Push the air rod through its drillings and remove the valve and rod from the frame.

- STEP 29: Examine the combustion package assembly. Check the heat exchanger for distortion, loose spot welds, etc. Check the right and left heat deflectors for distortion. Check the refractory stainless steel cover for distortion. Replace any defective parts. Check the catalyst block for general deterioration. Check the refractory chamber and the catalyst block access panel for breaks, chips, separations, etc. If the catalyst block, refractory chamber and refractory access panel are in good condition, clean them with low pressure air from your vacuum cleaner.
- STEP 30: Remove the catalyst access plate from the stove back, 4 each, 1/4-20 x 5/8" Phillips round head machine screws. Remove the secondary air cover plate from the stove back, 2 each, 1/4-20 x 3/8" Phillips pan head machine screws. Remove the secondary air flap, 1 each, 10-24 x 1/4" 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, 10-24 x 1/4" 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, distortions, etc. Remove all old gasket material from the gasket channels and mating surfaces. Remove all 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.

STEP 33: Place the doors with their outside faces down on a clean flat surface. Remove the door manifold, 2 each, 1/2" x 3/4" glass clip. Remove 3 each, 10-24 x 1/4" Phillips pan head machine screws and 3 each, glass clips. Reach underneath the door and push the glass and gaskets upward and out of the frame. Scrape the frame with a putty knife, removing all dry cement and old gasket material. Inspect and clean the glass. Replace any broken or cracked glass. Check the condition of the formed gasket which separates the glass panes. Replace it if it is broken, crushed or badly deformed. Remove the hinge boss from the door frame, 3 each, 1/4-20 x 1/2" hex head leveler bolts and 3 each, 1/4" flat washers. Inspect the hinge pins. If the pins are broken or severely bent, drive them out of the hinge boss with a 1/8" punch/drive pin and ball peen hammer. Remove the gasketing from around the door frame. Clean the gasket channels. Unscrew the door handle and tab assembly. Inspect the 7/16"-20 x 3/4" socket set screw for looseness in the door and/or damaged threads. If defective, remove with a 7/32" Allen wrench. After thorough cleaning, pain the outside surface of the doors and hinge bosses at this time. Use *Vermont Castings* High Temperature Aerosol Stove Paint (black), part number 000-0031 and follow directions on the can.

## 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 you 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 you an inch or two excess.
- STEP 5: Using the 3 oz. tube of gasket cement (part # 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.

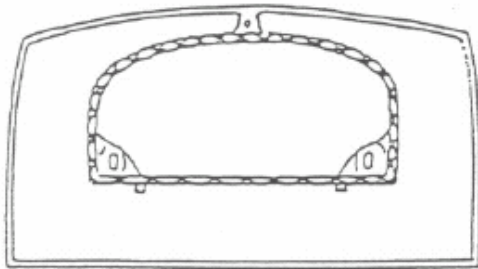
**\*NOTE:** Gasketing is indicated by the cross hatch symbol in the illustrations.

- STEP 7: If possible, place the gasketed part firmly against its normal mating surface in order to seat the gasket evenly in its cemented channel or groove. Use a 1 x 4, 18" long, wooden straight edge where required. Remove gasketed part and clean any excess gasket cement that has squeezed out around the gasket before placing aside to dry.

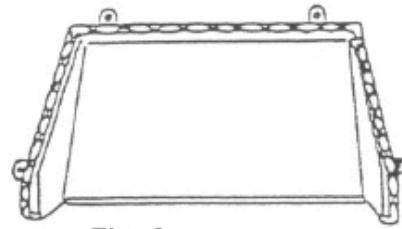


Defiant Encore Gasket Requirements. Refer to the Gasket Illustration figure numbers.

Top (Fig.1) Griddle opening, one place, 4"-Armaseal 5/16" diameter, cored, part # 120-3668.



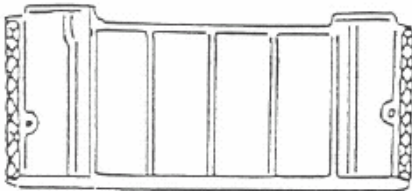
**Fig. 1**  
**Top (Griddle)**



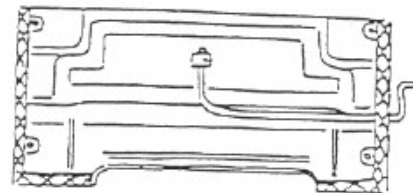
**Fig. 2**  
**Ash Drop**

Ash Drop (Fig.2) Ash drop to bottom seal, one piece, both sides and back. 4' Thermocord 5/16" diameter, 6 needle, part # 120-3588.

Lower Fireback (Fig.3) Both sides to wear plates seal, two pieces, 8" each, thermocord, 5/16" diameter, 6 needle, part # 120-3588.



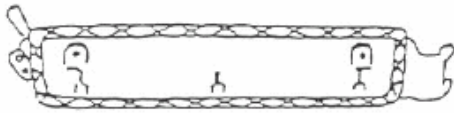
**Fig. 3**  
**Lower Fireback**



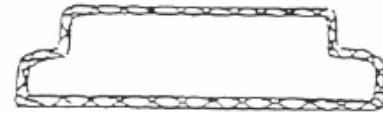
**Fig. 4**  
**Upper Fireback**

Upper Fireback (Fig.4) Both sides to wear plates and lower fireback seal, 2 pieces, 18" each, thermocord, 5/16" diameter, 6 needle, part # 120-3588.

Ash Door (Fig.5) Complete door to ash drop seal, 1 piece, 4' thermocord, 3/8" diameter, 4 needle, part # 120-3589.



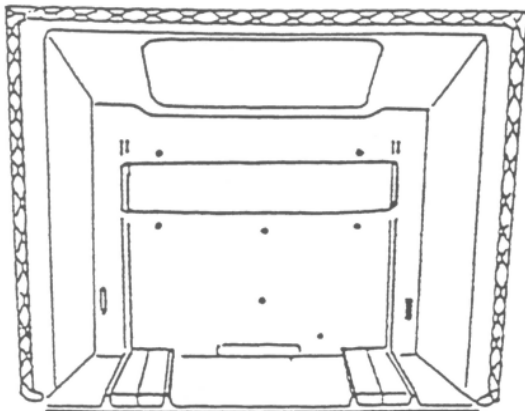
**Fig. 5  
Ash Door**



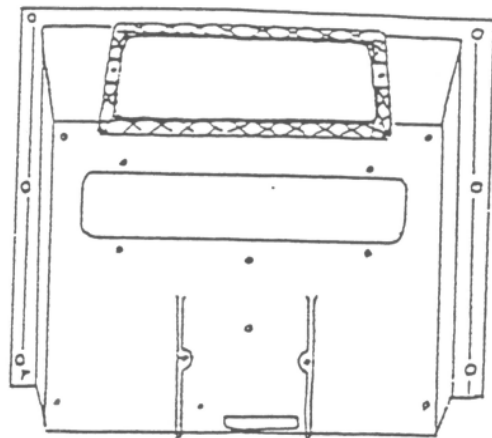
**Fig. 6  
Damper**

Damper (Fig.6) Complete damper to upper fireback seal, 1 piece, 3.5' thermocord, 5/16" diameter, 6 needle, part # 120-3588.

Back (Fig.7) Stove back to ends and top seal, 1 piece, 5' thermocord, 5/16" diameter, 6 needle, part # 120-3588.



**Fig. 7 Back (Inside)**

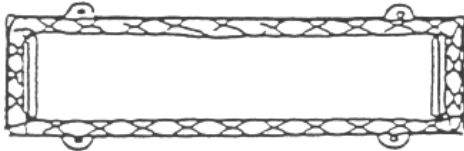


**Fig. 8 Back Outside (Flue Collar)**

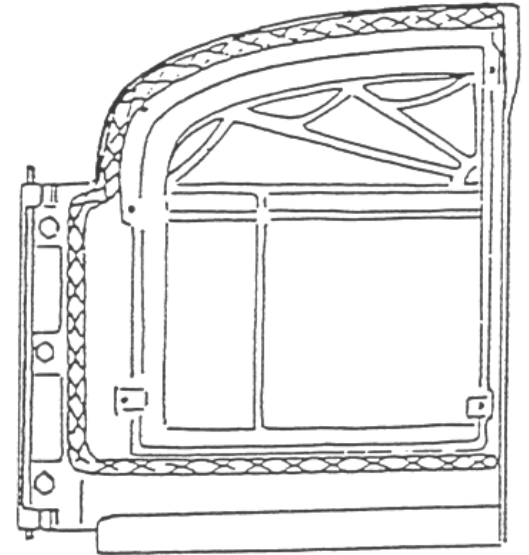
Back (Fig.8) Stove back flue collar seal, 1 piece, 3.25', 5/16" diameter, adhesive backed gasket, part # 120-3591.

Catalyst Access Panel (Fig.9)

Catalyst access panel to stove back seal, 1 piece, 3'6", thermocord, 5/16" diameter, 6 needle, part # 120-3588.



**Fig. 9**  
**Catalyst Access Panel**



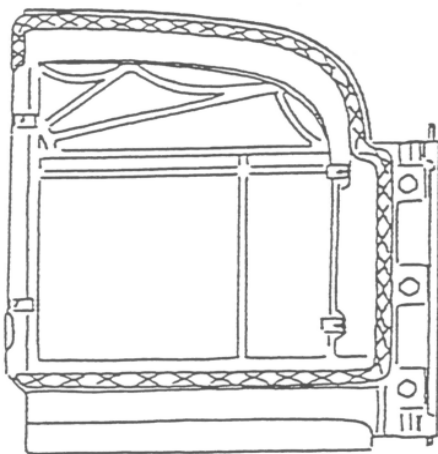
**Fig. 10 Right Door**

Right Door (Fig.10)

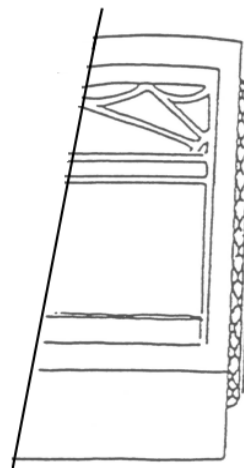
Right door to stove front seal, 1 piece, 3', thermocord, 5/16" diameter, 6 needle, part # 120-3588.

Left Door (Fig.11)

Left door to stove front and right door seal, 1 piece, 4', thermocord, 5/16" diameter, 6 needle, part # 120-3588.



**Fig. 11 Left Door (Inner)**

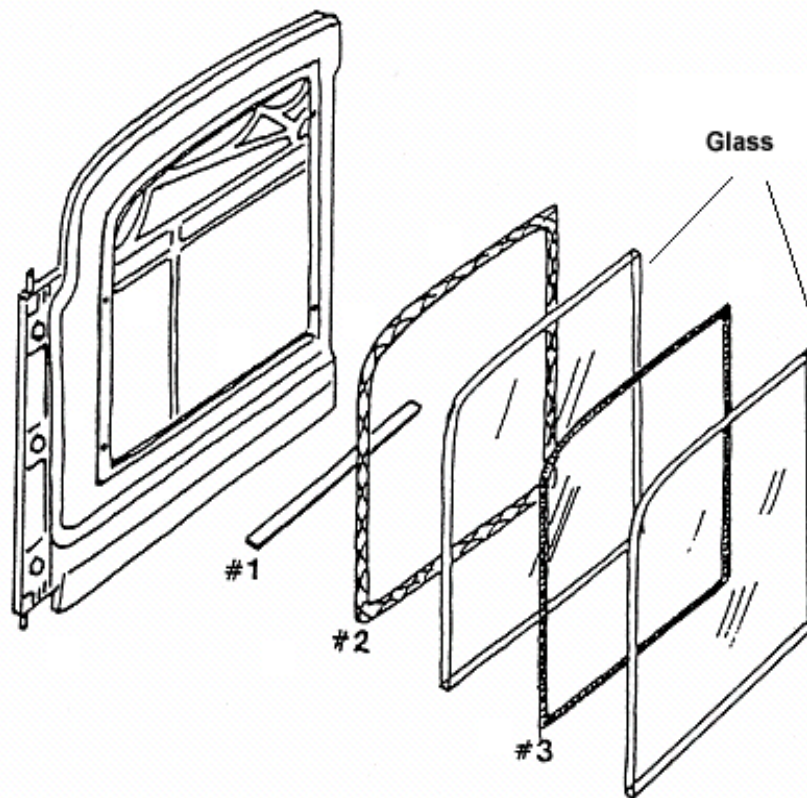


**Fig. 11 Left Door (Outer)**

### 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 # 120-3537. This gasket is applied with Tite Bond Glue or gasket adhesive.

Gasket #2 provides cushioning between the outer glass pane and the castings in addition to a seal, 1 piece, 3', 2" thermocord, 3/16" diameter, part # 120-3556 (part of Gasket Kit 000-3427)



Gasket #3 provides cushioning and separates the inner and outer glass panes. This gasket is pre-formed and comes ready-made, part # 500-2798. This gasket does not require glue or cement.

**NOTE** – Both doors require the same door glass gasketing.

## Defiant Encore 0028/2140 Assembly Service Manual

**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 area in the "C" series illustrations.

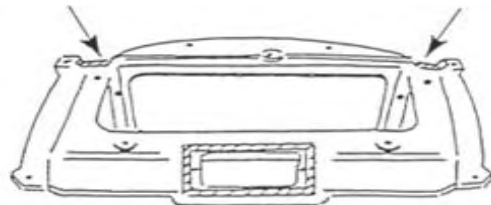
**\*\*Caution** Pay strict attention to the type, size and number of fasteners called for in the exploded view drawings, parts list and text.

**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 (1/4-20 3/4") and 2 each, standard flat washers (1/4") finger tight. Install the two piece half hinge on the ash drop, clevis facing the door opening with 3 each, hex head cap screws (1/4-20x 3/4") and 3 each, standard flat washers (1/4") finger tight.

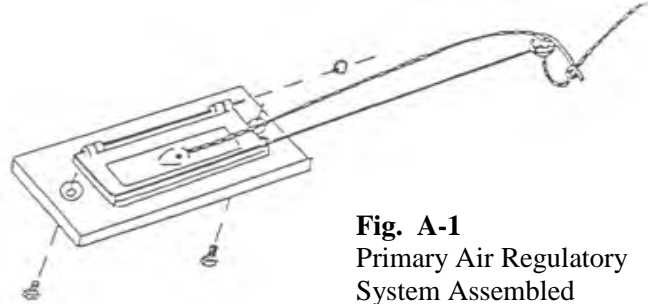
**STEP 3:** Cement the stove bottom at points indicated in Figure C-1. Place the ash drop on the stove bottom and secure with 4 hex head cap screws (1/4-20 x 3/4") and 4 each, standard flat washers (1/4").

**Fig. C-1**  
Bottom (bottom view)



STEP 4: Place the ash lip on the stove bottom and secure with 2 each, socket flat head machine screws (1/4-20x 1/2").

STEP 5: Assemble the primary air regulator system. Place the primary air frame face down on a flat surface (drilled bosses up). Thread the primary air rod through the drilling in the bottom of the air valve and just start it into the left top (hinge) drilling of the frame. Place the air valve and rod in the frame so that the air rod hinge drillings are in alignment. Push the air rod from left to right through the aligned drillings and secure the air rod in the air frame with the 1/8" friction clip (see Fig. A-1). Turn the assembly over and install the socket head cap (adjusting) screw (1/4-20 x 3/8") in the centre of the air valve, finger tight.



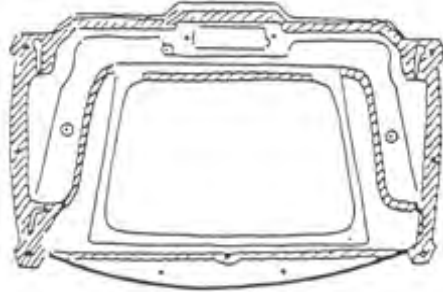
STEP 6: Install the primary air regulator system on the cemented flange of the inverted stove bottom with the hinged side down Fig. A-2 (protruding air rod left). Secure with 2 each, Phillips round head machine screws (1/4-20 x 5/8). Turn the stove bottom over onto its legs.



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

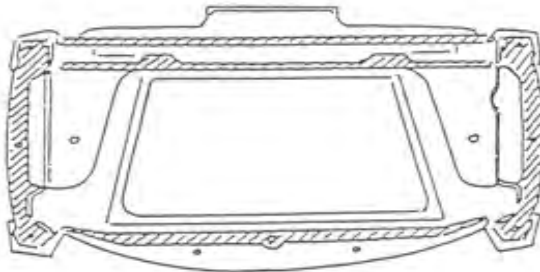
STEP 7: Thread the running end of the primary air thermostat cable down through the small hole and up through the large hole in the air valve and thread it through the small hole in the centre of the air valve. Pull 6"-8" of cable outside the valve and tighten the set screw finger tight (see Figures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

**STEP 8:** Cement all channels, flanges and mating surfaces indicated in Figure C-2. Do not allow any cement to contact the thermostat cable. Place the primary air tube cover plate in position on the stove bottom and secure with 3 each, Phillips flat head machine screws ( $\frac{1}{4}$ -20 x 2").

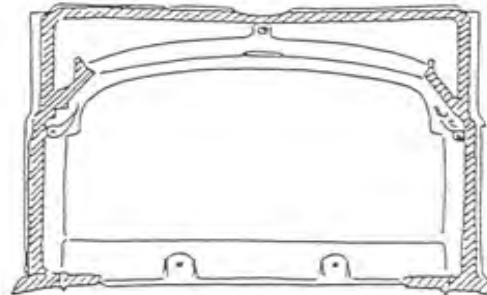


**Fig. C-2**  
Bottom (top view)

**STEP 9:** Place the stove front in its cemented channel on the stove bottom (Figure C-3) and secure with 1 each, hex head cap screw ( $\frac{1}{4}$ "-20 x 1") and 1 each, hex lock nut ( $\frac{1}{4}$ -20) centre bottom of the stove front.



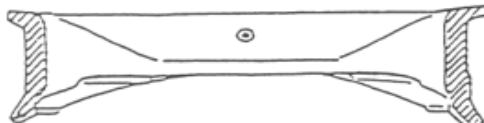
**Fig. C-3** Bottom with Air Tube Cover Plate in Place



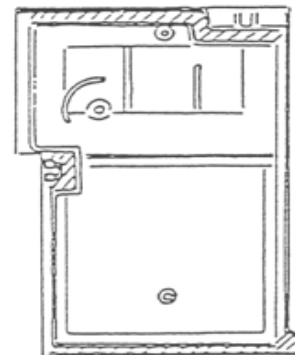
**Fig. C-4** Front

**STEP 10:** Cement all mating surfaces on the stove front as indicated in Figure C-4. Place the front air manifold in position on the inside of the stove front and secure with 1 each, hex head cap screw ( $\frac{1}{4}$ -20 x 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.

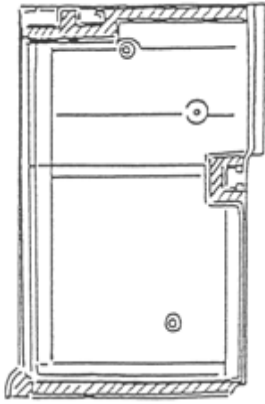


**Fig. C-7**  
Front Air Manifold



**Fig. C-5**  
Left End

STEP 11 Cont.: Place the left 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 ( $\frac{1}{4}$ -20 x  $\frac{3}{4}$ "') and 2 each, standard flat washers ( $\frac{1}{4}$ "').



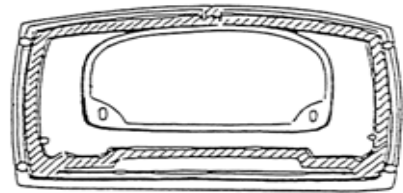
**Fig. C-6** Right End

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 ( $\frac{1}{4}$ -20 x  $\frac{3}{4}$ "') and 2 standard flat washers ( $\frac{1}{4}$ "').

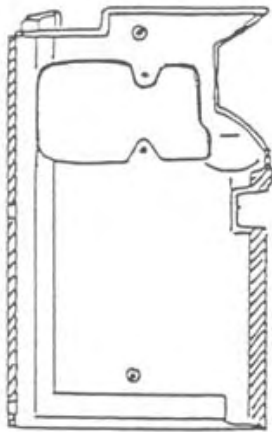
STEP 13: Place the stove back onto its cemented channel in the stove bottom, push the back against its mating surfaces on the right and left stove ends aligning drillings in the stove back with their corresponding tapped holes in the stove ends. If alignment cannot be achieved, loosen the cap screws securing the stove ends to the bottom and the ends to the front and tap the entire assembly into proper alignment with the rubber mallet. When alignment is achieved, secure the back to the stove ends with 6 each, hex head cap screws ( $\frac{1}{4}$ -20 x  $\frac{3}{4}$ "') and 6 each, standard flat washers ( $\frac{1}{4}$ "'). Retighten the cap screws securing the ends to the bottom and the ends to the stove front.

STEP 14: Cement channels and mating surfaces on the underside of the stove top as indicated in Figure C-8. Place the top in position on the stove front, ends, and back insuring that a good all around seal is achieved. Use the rubber mallet as necessary. Secure the top to the stove front with 1 each, Phillips flat head machine screw ( $\frac{1}{4}$ "-20 x  $\frac{3}{4}$ "'). Secure the top to the rear of the stove ends with 2 each, hex head cap screws ( $\frac{1}{4}$ "-20 x  $\frac{3}{4}$ "') and 4 each, standard flat washers ( $\frac{1}{4}$ "') 2 per cap screw.



**Fig. C-8** Top (bottom view)

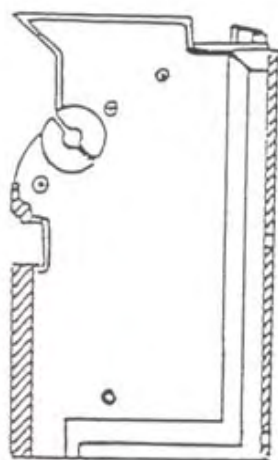




**Fig. C-9** Left Air/Wear Plate

**STEP 15:**

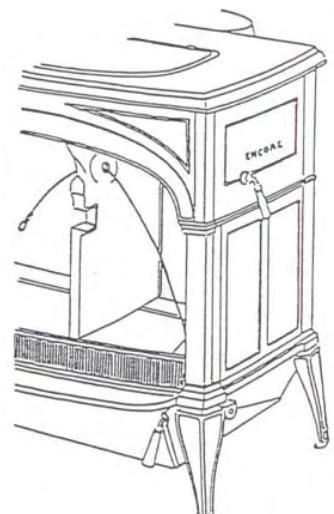
Cement the mating surfaces on the reverse side of the left air/wear plate as indicated in Figure C-9. Insert the front mating surface of the left air/wear plate against the left end of the front air manifold and the front of the left stove end at a 30 degree angle. Holding the wear plate as close to 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 (1/4-20 x 1”).



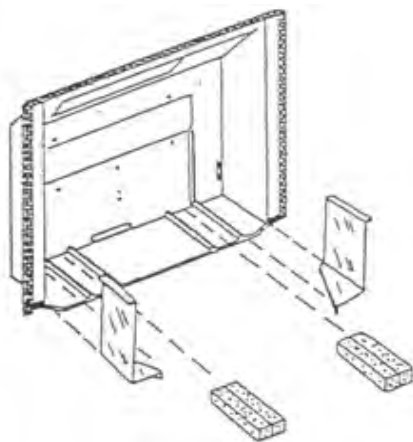
**Fig. C-10** Right Air/Wear Plate

**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 through the hole in the centre of the thermostat pocket of the wear plate (see Figure A-3). Insert the front mating surface of the right air/wear plate against the right 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 right 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 right stove end. Secure with 2 each, hex head cap screws (1/4-20x1”).



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



**Fig. A-4** Kaowool & Heat Deflector Placement

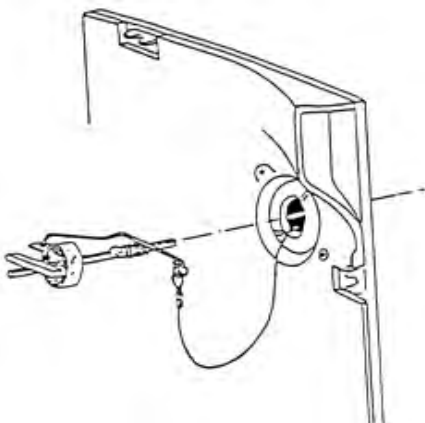
**STEP 17:**

Insert the right and left heat deflectors in the right and left bottom corners of the stove back. Cut 4 each, 5” strips of 3/4” square kaowool. Place 2 each kaowool strips side by side between the left and right pair of ribs in the bottom of the stove back (see Fig.A-4).

**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 the jump ring completely closed with pliers. Holding the thermostat assembly so that the limiter bar is on top of the rod, swing the cable actuator rod over the top of the thermostat shaft as shown in Figure A-5. Place the friction spring on the thermostat shaft and slide the spring up to the shaft stops. Holding the thermostat assembly in the left hand and insuring that the limiter bar is on top of the shaft and parallel with the stove top, insert the end of the shaft, cable and actuator rod through the hole in the centre of the thermostat pocket of the right air/wear plate. Loosen the set screw on the primary air valve and gently pull the slack out of the cable while maintaining your grip on the thermostat shaft protruding out of the right stove end.



**Fig. A-5** Assembled Thermostat

STEP 20 Cont: When the slack is out of the cable, tighten the set screw on the air valve.

Push the thermostat shaft from inside the stove until stiff resistance is felt from the friction spring, slip the thermostat handle stub on the end of the shaft and push the handle stub tight against the outside of the right stove end. Tighten the set screw in the handle stub against the flat side of the shaft.

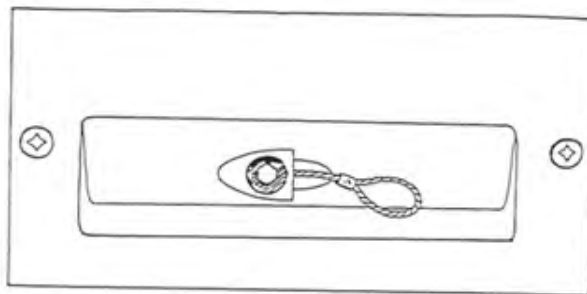


**Fig. C-11**  
Thermostat  
Access Cup

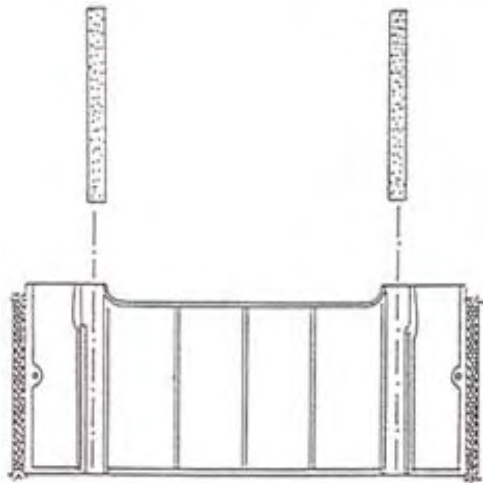
Cement the mating surface of the thermostat access cup (Fig. C-11). Place the 1/4" stainless steel flat washer on the thermostat shaft and slide it against the limiter bar. Insert the thermostat access cup over the thermostat shaft; rotate the access cup to its proper position, aligning the drillings in the access cup with the tapped holes in the right air/wear plate. Secure with 2 each, hex head cap screws (1/4-20 x 1/2").

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 the 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 centre 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 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 within 1" of the air valve set screw as shown in Fig.A-6. Insure that the sleeve and the cable loop will not interfere with the closing of the primary air valve. Crimp the copper sleeve with pliers and cut off the excess cable.



**Fig. A-6** Adjusting and Sleeving the Primary Air System Cable



STEP 23: Install the lower fireback. Cut 2 each, 7" strips of  $\frac{3}{4}$ " square kaowool. Place the kaowool strips between the outer ribs of the reverse side of the fireback (left and right) as shown in Fig.A-7. Place the lower fireback into position against the combustion package assembly, aligning the drillings in the lower fireback with the tapped holes in the right and left air/wear plates. Secure with 2 each, hex head cap screw ( $\frac{1}{4}$ -20x1") and 2 each, standard flat washers ( $\frac{1}{4}$ ").

**Fig. A-7** Kaowool Placement Lower Fireback

STEP 24: Assemble the damper and the upper fireback. Place the re-gasketed 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 screw ( $\frac{1}{4}$ -20x  $\frac{1}{2}$ "). 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 centre of the damper. Secure the torsion bar to the damper centre with 1 each, new damper tab and 1 each, hex head cap screw ( $\frac{1}{4}$ -20x  $\frac{1}{2}$ "). Secure the torsion bar to the upper fireback with 1 each, torsion bar clip and 1 each, hex head cap screw ( $\frac{1}{4}$ "-20x  $\frac{1}{2}$ ") and 1 each, standard flat washer ( $\frac{1}{4}$ "). 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 ( $\frac{1}{4}$ -20x1") and 4 each, standard flat washers ( $\frac{1}{4}$ ").

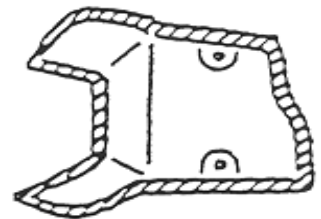
STEP 26: Install the damper actuator link and the damper handle rod. Place the long end of the actuator link (with the short curved end pointing towards the stove front and down) onto the end of the damper torsion bar. Move the bar behind the ear of the damper linkage access opening in the left air/wear plate. Place 1 each, narrow flat washer ( $\frac{3}{8}$ ") on the long end of

**STEP 26 Cont:** the damper handle rod. Insert the long end of the damper handle rod through its drilling in the left stove end. Insert the shot end of the damper actuator link. Align the linkage properly and check operation for binding and/or stoppage.

**STEP 27:** Install the damper handle stub. Place the damper in the updraft position. While maintaining pressure on the damper handle rod from inside the stove, slide the damper handle stub onto the opposite end of the handle rod and align the damper stub with the open or updraft mark on the stove end. Tighten the set screw in the handle stub with the 5/32" Allen wrench. Move the damper handle from the full open (updraft) position to the full closed and locked (catalytic burn) position. Linkage should move freely until approaching the locked position. The damper should seat fully into the fireback when locked.

If the damper does not move freely, correct by filing or grinding the suspect parts. Do not bend or force any damper linkage parts. If the damper does not lock, correct this deficiency by first insuring tight and proper assembly. If the deficiency persists, consider replacement of the tabs, clip, torsion bar, actuator link and/or the damper handle rod.

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



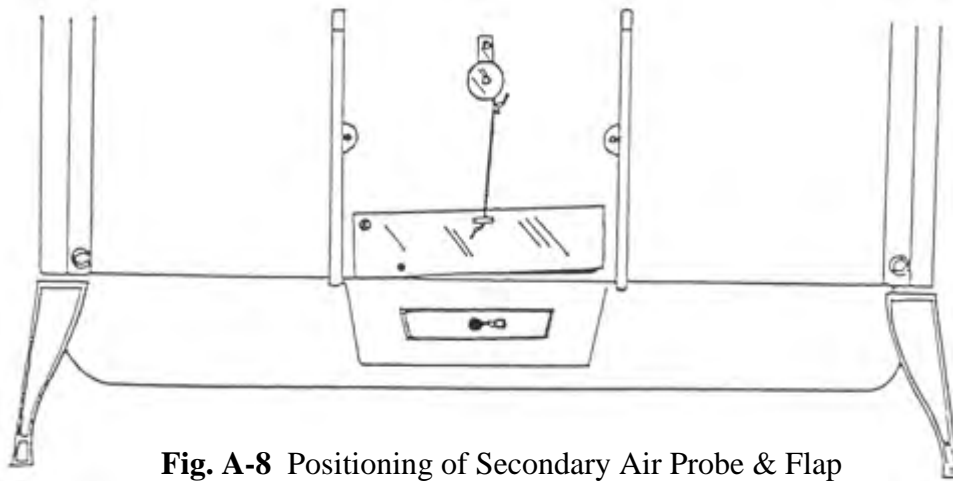
**Fig. C-12** Damper Link Access Panel

**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 secure with 2 each, Phillips round head machine screws (1/4-20x1").

**STEP 31:** Assemble and install the secondary 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 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

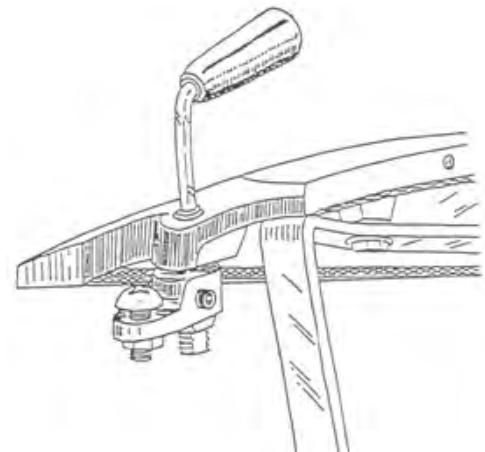
STEP 31 Cont: o'clock positions respectively and re-tighten the lock nuts. Insert the double bent end of the secondary air link through the hole in the tab end of the thermostat coil. Insert the single bent end of the secondary air link through the hole in the tab on the secondary air flap. Insert the secondary air probe through the drilling in the stove back and secure with 1 each, Phillips pan head machine screw (10-20x 1/4"). Secure the secondary air flap to the stove back with 1 each, Phillips pan head machine screw (10-24x 1/4") and 1 each, shim ring. Tighten the screw securing the air flap until snug and back off 1/4 turn. Insure that the secondary air flap moves up and down freely and that the flap rests at or near the closed position. See figure A-8.



**Fig. A-8** Positioning of Secondary Air Probe & Flap

STEP 32: Install the secondary air cover plate. Secure with 2 each, Phillips pan head machine head screws (1/4-20x3/8").

STEP 33: Assemble and install the ash door. Screw the socket, button head cap screw into the stepped side of the pawl (see Fig.A-9). Thread the hex nut onto the end of the socket, button head cap screw and tighten finger tight against the flat side of the pawl. Screw the socket set screw into the handle shaft drilling of the pawl. Slide the ash door handle shaft through its drilling in the ash door. 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



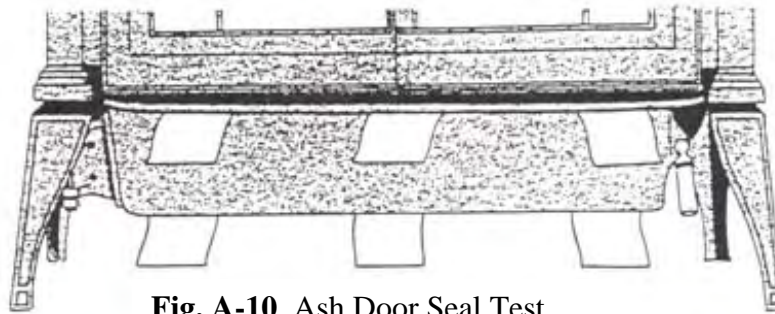
**Fig. A-9** Ash Door Handle Assembly

STEP 33 Cont.: 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.

STEP 34: Adjust the ash door. The design of the ash door split half hinge allows three dimensional adjustment of the ash door. The 3 drillings in the ash drop through which the 1/4-20x 3/4" cap screws pass before threading into the rear half of the split half hinge are drilled oversized, allowing vertical (up and down) and depth (in or out) adjustment. The 2 drillings in the rear half of the split half hinge through which the 1/4-20 3/4" cap screws pass before threading into the front (clevis) half of the split half hinge are also drilled oversized, allowing vertical (up and down) and horizontal (side to side) adjustment.

Close the ash door tightly and re-open it. Check the gasket area of the door to insure that the gasket mates evenly all the way around the door with the front edge of the ash drop and front lip of the stove bottom. Adjust the door by tapping side to side and up and down with the rubber mallet. When the door is properly centered, tighten the two 1/4-20x 3/4" cap screws that fasten the split half hinge together. Close and latch the ash door. Starting at the handle (right) side of the ash door face, rap the door face sharply from right to left across the lower face of the door with the rubber mallet at approximately a 45 degree angle. Tighten the three 1/4-20x 3/4" cap screws that fasten the split half hinge to the ash drop. Adjust the ash door pawl assembly for a good firm latch by turning the socket button head cap screw in or out and locking it with the lock nut.

Test the door seal by placing 6 pieces of note paper evenly spaced, 3 pieces along the top and 3 pieces along the bottom of the door between the door and the ash drop edge and closing and latching the door (see Fig.A-10). Attempt to move the pieces of note paper from side to side. Attempt to pull the note paper out of the joints. The note paper should not move at all from side to side and should rest being pulled out of the joints almost to the point of tearing. If the note paper moves from side to side or can easily be pulled out of the joints, the door is not properly sealed. Re-adjust the ash door following the above procedure.



**Fig. A-10** Ash Door Seal Test

- STEP 35: Install the ash pan bracket on the ash door. Secure with 2 each, hex head cap screws ( $\frac{1}{4}$ -20x  $\frac{1}{2}$ " ) and 4 each, (2 per cap screw) standard flat washers ( $\frac{1}{4}$ " ). Tighten the cap screws finger tight. Close and open the ash door. If the bracket contacts the ash drop, adjust the bracket by tapping it left or right as required so that no metal to metal contact occurs when opening and closing the ash door. Tighten the cap screws. Insert the ash pan into the bracket and close and open the ash door. If the ash pan contacts the bottom of the ash drop or the underside of the stove bottom, gently bend the ash pan bracket up or down as required.
- STEP 36: Install the flat grate. Narrow dimension toward the rear of the stove, flat side up.
- STEP 37: install the andirons. Secure with 2 each, hex head cap screws ( $\frac{1}{4}$ -20x $\frac{1}{2}$ " ) stainless steel and 2 each, stainless steel flat washers ( $\frac{1}{4}$ " ).
- STEP 38: Assemble the doors. At this point in time, the doors should have been completely disassembled, stripped of old gasketing, cleaned, re-painted and completely re-gasketed. Place the doors face down on a clean, flat surface with a clean rag protecting the painted door faces. Insert the outer glass panes. Insert the Encore Gasket with wire insert (pre-formed) spreading the gasket against the cast frame all the way around. Insert the inner glass panes. Secure the glass with glass retainer clips (4 per door) and 4 each, Phillips pan head machine screws (10-24x  $\frac{1}{4}$ " ). The short glass retainer clip goes on the lower centre of each door. The upper centre glass retainer on the right door is secured by the right door manifold. Install the right and left door manifolds. Screw the Phillips pan head machine screw (10-20  $\frac{3}{4}$ " ) all the way into the narrow end of each manifold until it seats.



STEP 38 Cont: Back each screw out of its manifold 4 complete turns. Screw the manifold to the door until snug. Secure the wide end of each manifold to the inside door face with 2 each, Phillips pan head machine screws (10-20x 3/4"). Remember to place the upper centre glass retainer clip under the wide end of the right door manifold. Install the right and left door hinge bosses.

Centre the bosses and secure with 3 each, hex head leveler bolts – (1/4-20x 1/2" flat head) and 3 each, 3/4" o.d. flat washers (1/4"). Tighten just past finger tight. Install the upper (long) hinge pins in the right and left hinge bosses by tapping them into their drillings with a brass faced hammer. Install the jump rings on the upper shoulder of the lower (short) door pins and tap the pins into their drillings in the bottom of the right and left hinge bosses with a brass faced hammer. Insert the socket set screw (7/16-20x1") into its tapped hole in the top centre of the right door. Screw the set screw through the door (from inside) until the socket end is flush with the bottom of the gasket channel. Re-cement the gasket.

STEP 39: Cleaning, washing and taping the stove. With the putty knife, clean all outside stove seams and joints of any thermocement leakage or spillage. Draw a bucket or pail of hot water and with a sponge or soft rag; wash the stove down, especially the outside seams and joints. Remove all visible dirt and thermocement. Mask the damper handle stub and thermostat handle with masking tape. Cover the secondary air system cover plate and the printed plates on the catalyst access panel with masking tape.

STEP 40: Paint the stove. Use *Vermont Castings* High Temperature Stove Paint (black), part # 000-0031. Follow directions printed on the can and paint the entire outside of the stove.

STEP 41: Install and adjust the doors. Locate the hinge pin drillings in the upper sides of the stove front. Insert the upper hinge pins of each door into its drillings, swing the bottom of each door against the stove front and drop the lower hinge pins into their drillings. Close the doors and check the gasket seating between the doors and the stove front mating surface. Both door bottoms should be level and even with each other. There should be no metal to metal contact between the doors and the stove front or between the right and left doors. The vertical seam between the doors should be even from top to bottom. Adjust the doors by gently tapping left or right and up and down. When a good gasket seal is achieved and doors are even and level, tighten the leveling bolts (3 per door). Install the door handle by screwing it onto the socket set screw protruding from the top centre of the right door. With the door handle flush against the door face, the handle tab should enter its slot in the top centre of the stove front

STEP 41 Cont: and when turned counter clockwise against its stop, should pull both doors snugly against the stove front and each other.

If the doors are loose when the handle tab is fully engaged, open the right door and turn the door handle 360 degrees (one full turn) counterclockwise. Close the door and attempt to latch. If the tab will not enter its opening in the stove front, remove the handle from the door and either file or grind the handle face of the tab at an angle (see Fig.A-11) a little at a time until a tight latch is obtained.

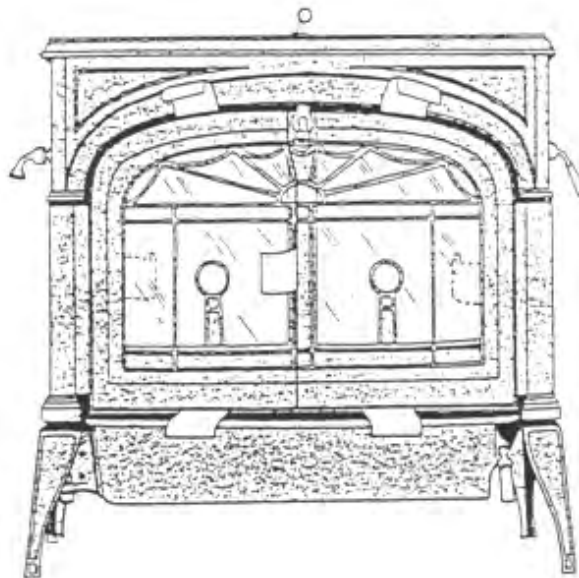


**Fig. A-11** Door Handle  
W/Tab Before Grinding



**Fig. A-11** Door Handle  
W/Tab After Grinding

If, when latched, the door handle is not in the vertical position, remove and replace the split roll pin (3/16"x1") in the handle tab opening of the stove front. After leveling and plumbing the doors and adjusting the latching mechanism, check the seal of both doors by applying the "notepaper test" (see Fig.A-12). If the doors fail the test, re-adjust the hinge bosses, latch the doors and re-test.

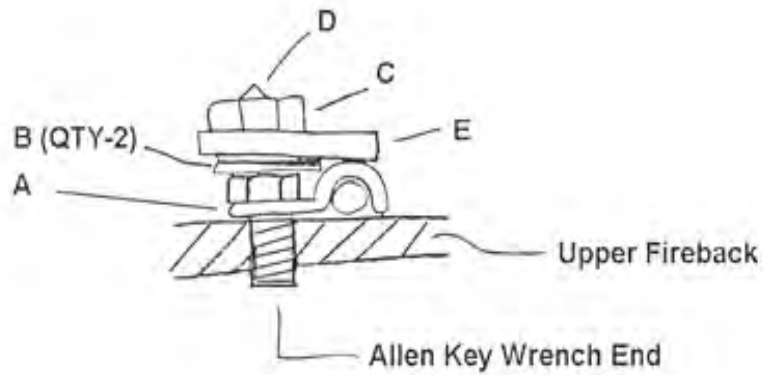


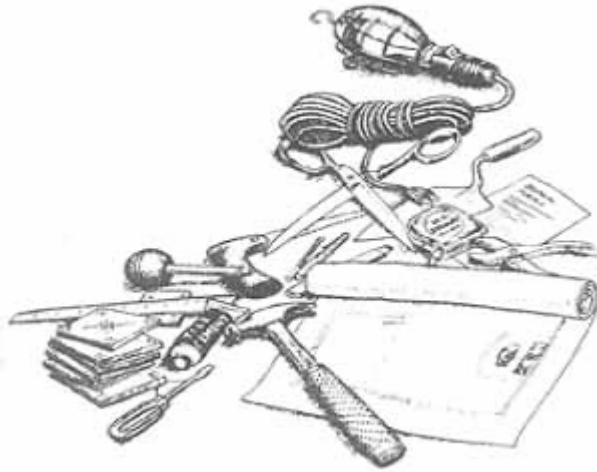
**STEP 42:** Assemble and install the griddle. Place the griddle quadrants on the underside of the griddle and secure with 2 each, hex head cap screws (1/4-20x1/2"). Install the griddle handle assembly and secure with 1 each, hex nut (10-24) and 1 each #10 washer. Install the griddle on the stove and tap gently around its perimeter with a rubber mallet to seat the gasket.

## **APPENDIX #1**

### **SUGGESTED FIX FOR BENT DAMPER CLIPS ENCORE 0028/2140**

DIAGRAM KEY	PART NUMBER	QUANTITY	DESCRIPTION
A	160-1036	1	Torsion Bar Clip
B	120-2474	2	¼" Flat Washer
C	120-1310	2	¼-20 Plain Nut
D	120-0446	1	¼-20 x 1¼" Socket SS





## **APPENDIX #2**

### **YEARLY MAINTENANCE SUGGESTIONS**

The 0028 and 2140 Defiant Encore is a sophisticated combustion machine, and regular “fine tuning” will give you the full benefits of its operating potential.

#### *GENERAL CHECKLIST*

- Inspect the chimney for blockage such as squirrels, nests, branches, etc.
- Have a chimney sweep inspect and clean the chimney if necessary.
- Inspect the connector pipe for wear and replace if necessary.
- Make sure each length of connector pipe, if single wall, is joined by three screws.
- Inspect the stove gaskets for wear using the “Dollar Bill Test” and replace as necessary.
- Remove any surface rust and repaint any heat shields or chimney connectors.

#### *INSPECT THE CATALYTIC COMBUSTOR*

Fly ash can accumulate on top of the combustor. If sufficient quantity accumulates, it can block the flow of gases through it and cause restriction and back-puffing.

- Remove the four Philips head fasteners which secure the cast iron panel to the rear of the stove. Remove the panel..
- Gently pry off the refractory catalyst cover with a flat blade screwdriver.
- Visually inspect the catalyst for fly ash using a small mirror. It is not necessary to remove the catalyst for this purpose.
- If the catalyst appears coated with fly ash, carefully remove the catalytic combustor. The catalyst element is contained within a stainless steel jacket (can). You may have to grasp the element with two flat bladed screwdrivers at the

element ends to draw the element from the stove. If the honeycomb is clogged, take the element outside for cleaning. Blow gently through the honeycomb. Inspect the element. Although small hairline cracks will not affect performance, the element should essentially be intact. If elements are broken or missing, the catalyst should be replaced. If the catalyst is in good shape and all the fly ash has been removed, re-install the combustor in the stove by sliding it into the the opening, making sure that it is resting on the stainless steel support ledge which is visible before installation of the catalyst. Gently reinstall the catalyst cover. The “U” shaped ridge should be toward the stove with the open end down. The refractory cover should be flush with the other refractory surfaces. Replace the access panel and securely tighten the fasteners.

#### *CLEAN THE SECONDARY AIR PASSAGE*

Fly ash can also accumulate in the secondary air passageway. Once a year it is a good idea to vacuum out this opening.

- The secondary air cover is located immediately below the catalyst access panel. Remove the two Phillips pan head screws holding the secondary air cover to the back of the stove.
- Push the secondary air flap up to the open position with your finger and place a vacuum nozzle at the opening.
- Replace the cover.

#### *CHECK THE GASKET SEALS ON THE DAMPER AND ASH PAN DOOR*

In addition to the gaskets on the front doors and griddle, the Encore has seals on the damper and the ash pan door that are important for proper stove performance.

- Test the ash pan door seal by placing by placing pieces of note paper or dollar bills at three locations across both the bottom and top of the door. Close and latch the door. If the paper is easily moved or pulled out, the door is not properly sealed and the gasket should be replaced using 3/8” fiberglass gasket.
- To replace the gasket, first pull out the old gasket. Clean the channel with a wire brush. Next, lay the new gasket in place and trim to the correct length. Place a 1/8” bead of gasket cement in the channels and press the trimmed gasket into place. Close the door. Seat the gasket in the door by pushing in hard against the door (a rubber mallet may be used). Open the door and remove any excess cement that has squeezed out around the gasket.
- The door gasketing will compress within the first few weeks, so you will need to readjust the latch. To do this, loosen the hex lock nut with an open end wrench and back off the striker screw. Tighten the screw until the door seals securely and the latch still operates. Then tighten the hex lock nut.

### *CHECK THE DAMPER*

The Encore's damper is designed to snap into a locked position. When closing the damper, push the handle past the point at which you feel resistance until it snaps into the locked position.

- Place several pieces of note paper along the top and bottom of the damper and lock the damper.
- As with the ash pan door, if the pieces can be easily pulled out (very little resistance), replace the 5/16" gasket.
- This is most easily done through the flue collar opening (the flue collar may also be removed). Pull out the old gasket and clean the channel.
- Place a thin bead of gasket cement in the channel.
- Cut a length of gasket to size and press it into the channel.
- Allow the cement to harden for 24 hours before firing the stove.

### *CLEAN THE GLASS*

The Encore's glass is designed to stay free of carbon deposits, even under low fire conditions. However, periodic cleaning is necessary to prevent permanent etching of the glass with fly ash or carbon. Use a commercial wood stove glass cleaner supplied by your dealer or you may wish to make your own cleaning paste. Take a damp cloth and dip it into the fine grey ash in the ash pan. Wipe the glass with this and a paste will form and continue until the glass is cleaned. Buff with a clean cloth.