

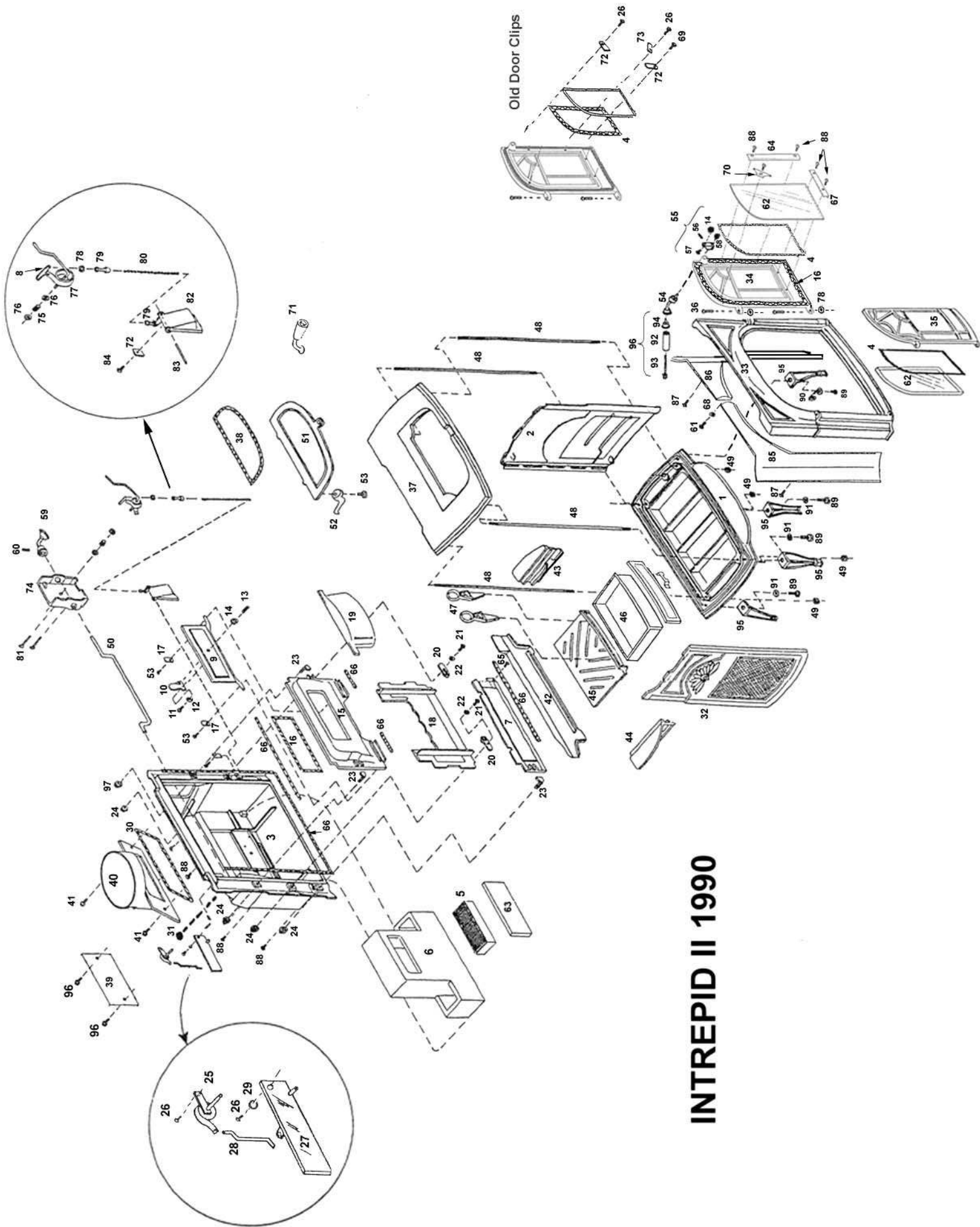


# **INTREPID II – 1990**

## **Service Manual**



1. Exploded View Parts Illustration
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



# INTREPID II 1990

# INTREPID II

MODEL #: 1990 INTREPID II 97

FEATURES: **MANUFACTURED 7/97 TO PRESENT  
FRONT CATALYST ACCESS  
ENLARGED SINGLE PANE GLASS**

\* denotes dead product - not available

ITEM #	PART #	DESCRIPTION
1	See Chart	Bottom
2	See Chart	Right End
3	130-8662	Back
4	120-3556	<sup>3</sup> / <sub>16</sub> " Black Fiberglass Gasket
5	30004590	Steel Catalytic Converter (replaces 30001153)
6	160-2527	Refractory Assembly (c/w Access Panel, Item #63)
7	130-6704	Lower Fireback
8	160-1408	Clip, Thermostat
9	130-6701	Damper
	K500-4609	Damper Housing Assembly (# 9 to 17, 66 & 53)
10	130-6725	Damper "D" Plate
11	120-1529	¼ - 20 x 5/8" Socket Butt Head Screw
12	120-2475	¼" Flat Washer
13	120-0436	¼ - 20 x 1" Knurl Cup Socket Screw
14	120-3210	¼ - 20 Hex Nut
15	130-6702	Damper Housing
16	120-3588	5/16" 6 Needle Medium Density Gasket
17	160-1488	Damper Tab
18	130-6703	Upper Fireback
19	130-6763	Throat Hood (Replaces 30001649)
20	130-6724	Lower Fireback Clamp
21	120-1456	<sup>3</sup> / <sub>8</sub> -16 x 1½" Hex Head Cap Screw
22	120-2560	<sup>3</sup> / <sub>8</sub> " Narrow Washer
23	120-1583	<sup>3</sup> / <sub>8</sub> -16 x 1" Weld Stud
24	120-3130	<sup>3</sup> / <sub>8</sub> -16 Acorn Nut
25	160-1489	Secondary Air Probe Assembly
26	120-0980	10-24 x ¼" Phillips Pan Head Screw
27	160-1490	Secondary Air Flap
28	160-1486	Secondary Air Linkage
29	120-1986	Shim Ring
30	120-3591	<sup>5</sup> / <sub>16</sub> " Adhesive Backed Fiberglass Gasket
31	120-1899	<sup>5</sup> / <sub>16</sub> " Hole Plug
32	See Chart	Left End
33	See Chart	Front Only
34	See Chart	Right Door Only - No Glass
35	See Chart	Left Door Only - No Glass
36	160-0535	Door Hinge Pin
37	See Chart	Top
38	120-3668	<sup>5</sup> / <sub>16</sub> " Armaseal Gasket ( 3.6' )
39	130-6762	Secondary Air Cover
40	See Chart	Flue Collar
41	120-0901	¼ - 20 x ¾" Ph Pan Hd Screw
42	130-8658	Rear Air Tube
43	130-8650	Right Air Tube
44	130-8651	Left Air Tube
45	130-8652	Bottom Grate
46	500-3522	Ash Pan Assembly Complete
	30004793	Notched Handle
	130-6493	Cast Front Cover
	140-0951	Metal Pre-Formed Pan

ITEM #	PART #	DESCRIPTION
47	130-6717	Andiron
48	500-7499	Tie Rod Set c/w Nuts (4 of 160-1640)
49	120-3210	Tie Rod Nut Only
50	160-2523	Damper Actuator Rod
51	130-6356	Griddle
52	130-1832	Right Griddle Quadrant
	130-1807	Left Griddle Quadrant
53	120-1338	¼ - 20 x ½" Hex Head Cap Screw
54	30002719	Front Handle Stub w/ Shaft Horizontal
55	30002362	Pawl (Latch) Assembly Complete (no jam nut item #14)
56	120-0417	Set Screw
57	120-0436	Striker Bolt
58	120-3290	Large Pawl Jam Nut
59	30002720	Brushed Nickel Damper Handle Stub c/w #60 Set Screw
60	120-0563	Set Screw
61	120-0900	¼ - 20 x ¾" Phillips Round Head Screw Black
62	140-1156	Right Glass IR Coated
	140-1157	Left Glass IR Coated
63	160-2516	Refractory Access Panel Only
64	30000833	Glass Clip Side
65	120-0895	¼ - 20 x ½" Zinc Phillips Round Head Screw
66	120-3560	¼" Three Needle Black Fiberglass Gasket
67	30000832	Bottom Glass Clip
68	120-2474	Washer, ¼" Flat
69	120-0986	⅝" Phillips Pan Hd Machine Screw
70	30000834	Corner Glass Clip
71	30002775	Brushed Nickel Griddle Handle Complete (repl 500-4022)
	30002715	Brushed Nickel Griddle Handle Stub Only
	160-0661	Griddle Handle Wood Knob Only
	120-1900	Griddle Handle Bushing Only (2 Used)
	120-1308	Wood Handle Screw Only
	120-3210	¼ - 20 Hex Nut for Handle Stub
72	160-1396	Glass Clip Flat (Older 1990)
73	160-1393	Stepped Glass Clip (Older 1990)
74	130-6711	Thermostat Cover
75	120-1846	Tension Spring
76	120-2423	#10 Flat Washer
77	500-5506	Thermostat Assembly With Handle (Coil, 80, 78, 79, 8)
78	120-1985	Jump Ring
79	120-1972	Ball Chain Fitting (2 used)
80	120-1960	Ball Chain (per foot) 1 foot used
81	120-0995	¼ - 20 x 2" Phillips Pan Head Screw
82	130-6710	Primary air Flap
	000-5896	Air Flap Assembly (Items 82, 79, 83, 72, 84)
83	160-1551	Primary Air Flap Pin (stove wire may be used)
84	120-0983	10-24 x ⅜" Phillips Pan Head Screw
85	130-8653	Left Air Manifold
86	130-8654	Right Air Manifold
87	120-0815	¼ - 20 x 1½" Phillips Pan Head Screw Black
88	120-0998	10-24 x ½" Phillips Truss Head Screw
89	120-1432	⅜ -16 x 1" Hex Head Cap Screw, Leg Bolt
	000-5807	Leg Bolt Package
90	160-0600	Handle Holder
91	120-2488	⅜" Washer
92	160-0664	Wooden Handle
93	120-1310	¼ - 20 x 3" Slot Oval Head Handle Screw
94	30002714	Brushed Nickel Nub Only
95	See Chart	Leg, One only
96	30004175	Brushed Nickel Handle Assembly (92, 93, 94)
97	120-3161	Nut, Hex Head ⅜ -16 Standard
98	120-0896	Nut, Hex Head ⅜ -16 Standard

## **PACKED INSIDE THE STOVE (Stove Bag –V5008667)**

30002775      Brushed Nickel Griddle Handle Complete  
 30002715      Griddle Stub Brushed Nickel  
 160-0661 - Griddle Handle Wood Knob  
 120-1900 - Griddle Bushing  
 120-1308 - Griddle Handle Wood Handle Screw  
 120-3210 - Griddle Handle Wood Handle Nut  
 160-0664      Wooden Damper Handle  
 120-3210      Damper Handle Screw  
 120-1432      3/8-16 x 1" Zinc Hex Head Cap Screw  
 120-2488      Washer, Flat 3/8 Zinc .442 id x 1 od  
 160-0600      Holder, Door Fallaway Handle  
 120-5116      Allen Wrench, 1/8" Short Arm  
 120-5147      Allen Wrench, 5/32" Short Arm  
 30004175      Complete Handle Package  
 30001632      Washer, Plain 1/4" id x 1" od  
 120-2061      #10 x 3/4" Black Phillips Pan Head Sheet Metal Screw  
 2000966      Intrepid II Manual

## **GASKETS**

120-3588	5/16" Medium Density 6ND Gasket	5'	Doors
		2.25'	Damper Housing for Damper
120-3560	1/4" Low Density 3ND Gasket	2'	Damper Housing
		1.5'	Lower Fireback
		4'	Back (inner) for Firebacks
120-3668	5/16" Gasket Wire Fiberglass with Core	3.6'	Top for Griddle
120-3591	5/16" Adhesive Backed Gasket	2.5'	Flue Collar
120-3556	3/16" 4 ND Black Fiber Glass Gasket	2.5'	Each Glass
		1'	Thermostat Cover

## **ACCESSORIES**

### **Heat Shields**

160-1755      1 1/4" Spacer Used on Rear  
 000-5834      Spacer Hardware Kit – Set of 4-160-1755  
 120-1621      Wing Screw for Bottom HS  
 120-4015      C-Clip for Bottom HS  
 000-5802      Hardware Kit for Bottom HS Includes 4-120-4015 & 4-120-1621

### **Warming Shelf**

160-1705      Mittenrack  
 30000967      Hardware Package

<b>Color</b>	<b>Shelf</b>	<b>Shelf Bracket</b>
<b>Classic</b>	1302254	1302272
<b>Biscuit</b>	30003214	30003215
<b>Bordeaux</b>	2322254	2322272
<b>Brown Majolica</b>	30004831	30004832
<b>Chestnut Brown</b>	30003216	30003217
<b>Ebony</b>	30003218	30003219
<b>Forest Green</b>	2312254	2312272
<b>Midnight Blue</b>	2372254	2372272
<b>Sand</b>	1322254	1322272
<b>Suede Brown</b>	30002535	30002536
<b>VT Classic Green</b>	30003220	30003221
<b>Blue</b>	1332254	1332272







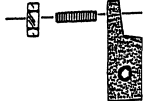


**Shell Enamel Parts - Intrepid II Model 1990**

<b>Enamel Color</b>	<b>Top</b>	<b>Bottom</b>	<b>Left Side</b>	<b>Right Side</b>	<b>Flue Collar</b>	<b>Front</b>	<b>Left Door Only</b>	<b>Right Door Only</b>	<b>Single Leg</b>
Classic	1308657	1306764	1308656	1308655	1306561	1308647	1308649	1308648	1306333
Biscuit	30003180	30003174	30003176	30003175	30003181	30003177	30003179	30003178	30003182
Bordeaux	2328657	2326764	2328656	2328655	2326561	2328647	2328649	2328648	2326333
Brown Majolica	30004824	30004820	30004822	30004821	30004825	30004823	30004829	30004828	30004830
Chestnut Brown	30003190	30003184	30003186	30003185	30003191	30003187	30003189	30001888	30003192
Ebony	30003200	30003194	30003196	30003195	30003201	30003197	30003199	30003198	30003202
Forest Green	2318657	2316764	2318656	2318655	2316561	2318647	2318649	2318648	2316333
Midnight Blue	2378657	2376764	2378656	2378655	2376561	2378647	2378649	2378648	2376333
Sand	1328657	1326764	1328656	1328655	1326561	1328647	1328649	1328648	1326333
Suede Brown	30002571	30002567	30002569	30002568	30002508	30002570	30002506	30002505	30002509
Vt Classic Green	30003210	30003204	30003206	30003205	30003211	30003207	30003209	30003208	30003212

## 1990 INTREPID II HARDWARE

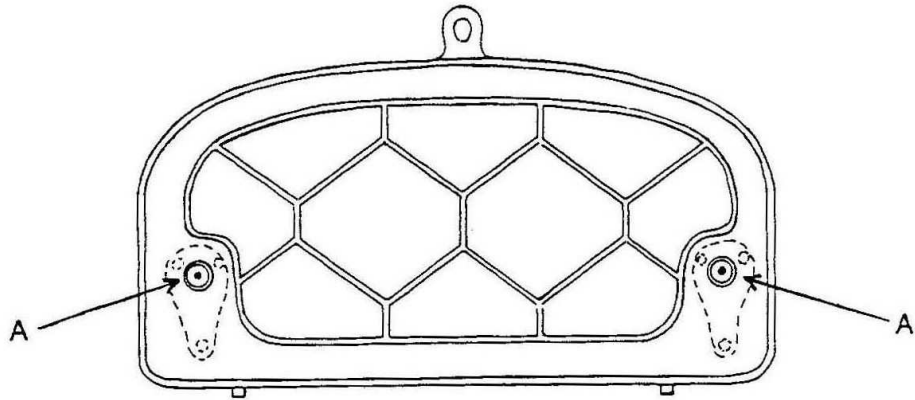
- 120-0563 5/16-18 x 5/16 Socket Set Screw  
**( 1-damper handle )**
- 120-0436 ¼ -20 x 1" SS Oval Point Socket Screw Blk  
**( 1-damper adjuster )**
- 120-3210 Nut, Hex ¼-20 Plain  
**( 1-damper ramp )**
- 120-0815 ¼ -20 x 1½" Phillips Flat Head Screw  
**( 2-front air manifolds )**
- 120-0896 ¼ -20 x 5/8" Phillips Round Head Screw  
**( 2-secondary air cover, 1-lower fireback to back )**
- 120-0900 ¼ -20 x ¾" Black Phillips Round Head Screw  
**( 1-holds both manifolds to front )**
- 120-0901 ¼ -20 x ¾" Nickel Phillips Round Head Screw  
**( 2-flue collar to back )**
- 120-0980 10-24 x ¼ " Phillips Pan Head Screw  
**( 2-secondary air probe, 4-old glass clips )**
- 120-0983 10-24 x 3/8" Zinc Phillips Pan Head Screw  
**( 1-primary air flap clip to back )**
- 120-0986 10-24 x 5/8" Zinc Phillips Pan Head Screw  
**( 2-old glass clips )**
- 120-0993 ¼ -20 x 3/8" Black Phillips Pan Head Screw  
**( 2-ashpan handle to ashpan assembly )**
- 120-0995 ¼ -20 x 2" Zinc Phillips Pan Head Screw  
**( 2-thermostat cover to back )**
- 120-0998 10-24 x ½ " Phillips Truss Head Screw  
**( 4-heat shield holes in back, 5-glass clips to right door, 5-glass clips to left door )**
- 120-1152 3/8-16 x ½" Zinc Slotted Round Head Screw  
**( 4- leg bolt hole fillers )**
- 120-1338 ¼ -20 x ½ " Black Hex Head Cap Screw Gr 5  
**( 1-each griddle quadrant, 2-damper tabs to upper fireback )**
- 120-1432 3/8-16 x 1" Zinc Hex Head Cap Screw  
**( 4-legs )**
- 120-1456 3/8-16 x 1 ½ " Zinc Hex Head Cap Screw  
**( 2-lower fireback clamp )**
- 120-1846 Spring, Friction  
**( 1-thermostat assembly to stove back )**
- 120-1960 Ball Chain, #6 Nickel  
**( 1' -primary air thermostat assembly )**
- 120-2560 Washer, 3/8 Narrow  
**( 2-lower fireback clamp )**
- 120-3130 3/8-16 Acorn Nut  
**( On stove back -1-damper housing, 1-lower fireback, 2-upper fireback )**
- 120-3161 Nut, Hex Head 3/8-16 Standard  
**( 1-damper housing handle side )**
- 120-1529 ¼-20 x 5/8" Socket But Head Cap Screw  
**( 1- damper ramp )**
- 120-1583 3/8-16 x 1" Black Weld Screw  
**( 2-damper housing, 1-lower fireback )**
- 120-1899 Hole Plug, 5/16" TRW#51034  
**( 1-thermometer hole in back )**
- 120-1972 Fitting, Ball Chain  
**(1-ball chain to jump ring on thermostat, 1-ball chain to air flap )**
- 120-1985 Ring, Jump Small Plated  
**( 1-ball chain fitting primary air thermostat, 2-door pins on porcelain units )**
- 120-1986 Ring, Shim – 18 Ga Nickel  
**( 1-secondary air flap )**
- 120-2423 Washer, Zinc Flat #10 SAE .218 id x .5 od  
**( 1-thermostat )**
- 120-2474 Washer, Zinc ¼ Flat .131 id x .742 od  
**( 1-holds both manifolds to front )**
- 120-2475 Washer, ¼ Narrow Flat .275 id x .5 od  
**( 1-damper ramp )**
- 120-2906 Rivet, Pop 1/8 Dia x 1/8" Grip Zinc  
**( 4-safety label )**
- 120-2907 Rivet, Pop 1/8 Dia x 5/16" Grip  
**( 4-ashpan front to pan, 1-primary air ball chain fitting to air flap )**
- 120-3210 Nut, Hex Head ¼-20  
**( 4-tie rods )**
- 120-3290 Nut, Jam Large Hex  
**( 1- door shaft for pawl assembly )**
- 160-0535 Pin, Door Hinge 3/16 x ¾" Nickel  
**( 2-right door, 2-left door )**
- 160-1551 Pin, 1/8 x 1 ½" Stainless Steel  
**( 1-air flap to back )**
- 160-1693 Clip  
**( 1-air flap pin to back )**
- 120-1294 ¼-20 x 3 3/8" Slot Oval Head Handle Screw  
**( 1-fallaway handle )**
- 120-2461 Star Washer  
**( 4-tie rods )**

## INTREPID II HANDLES

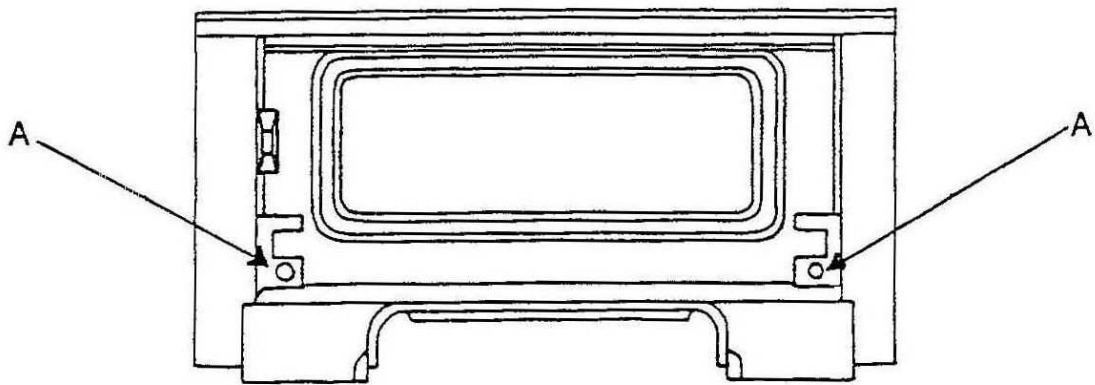
<p>000-4342 (Discontinued)            160-0620            160-0650</p>	<p>Beige Ceramic Fallaway Handle Complete Nickel Nub            Beige Ceramic Fallaway Handle Ceramic Part Only            Ceramic Fallaway Handle Nickel Nub Only</p>	
<p>000-4345 (Discontinued 07/07)            120-1294            20006381            30002714</p>	<p>Black Ceramic Fallaway Handle Brushed Nickel Nub            Ceramic Fallaway Handle Screw Only            Black Ceramic Fallaway Handle Ceramic Part Only            Black Fallaway Handle Brushed Nickel Nub Only</p>	
<p>30004175 (As of 07/07)            30002714            160-0664            120-1310</p>	<p>Wooden Fallaway Handle Complete Brushed Nickel Nub            Black Fallaway Handle Brushed Nickel Nub Only            Wooden Handle Black            Damper Handle Wood Screw Only</p>	
<p>500-4245 (Discontinued)            30002719 (Rep 500-4245)</p>	<p>Front Door Faucet Nickel with Shaft (Horizontal for 1990 Series Only)            Front Door Faucet Brushed Nickel with Shaft</p>	
<p>500-4237 (000-4370)</p>	<p>Front Door Faucet Nickel with Shaft            (Vertical for 1303, 1308 and 2070 Series)</p>	
<p>500-4265 (000-4356) (Disc)            30002720 (Rep 500-4265)            120-0563</p>	<p>Damper Handle Stub Nickel c/w Set Screw            Damper Handle Stub Brushed Nickel c/w Set Screw            Damper Handle Set Screw Only</p>	
<p>500-4025  <b>(replaced by 30002362 with 3/4" striker bolt Sept 04)</b>            120-0417            120-0907            120-3210</p>	<p>Pawl Assembly Ash Door Complete Long Adjustment            Pawl Set Screw Only            Striker Bolt Only 1" (replaces 120-0461)            Striker Bolt Nut Only</p>	
		<p>500-4024 Pawl Assembly c/w jarr nut may be substituted for 500-4025. It is identical to parts to the left but has a socket set screw striker plate.</p>
<p>30002362</p>	<p>Pawl Assembly Complete Short Adjustment            Pawl Set Screw Only            Striker Bolt Only 3/4"            Striker Bolt Nut Only</p>	
<p>120-3290</p>	<p>Large Pawl Jam Nut Only</p>	
<p>500-4022 (000-4357) (Disc)            160-0658            30002775 (Rep 500-4022)            30002715            160-0661            120-1900            120-1308            120-3210</p>	<p>Griddle Handle Nickel Complete            Griddle Handle Nickel Stub Only            Griddle Handle Brushed Nickel Complete            Griddle Stub Brushed Nickel            Griddle Handle Wood Knob Only            Griddle Handle Bushing Only (2 used)            Griddle Handle Wood Handle Screw Only            Griddle Handle Wood Handle Nut Only</p>	



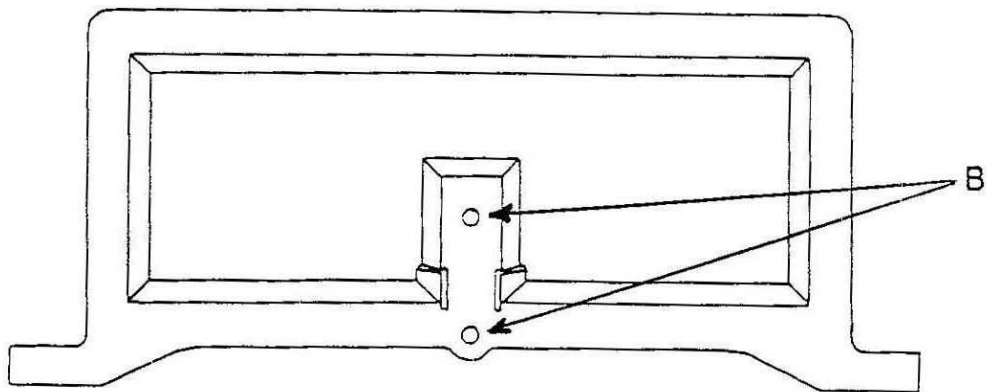
# INTREPID II DRILL and TAP ILLUSTRATIONS



**GRIDDLE (UNDERSIDE)**

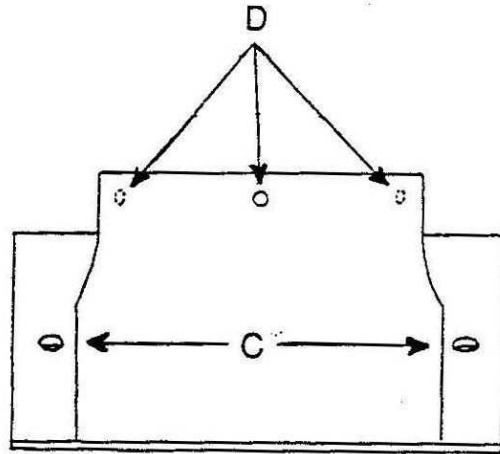


**DAMPER HOUSING (inside View)**

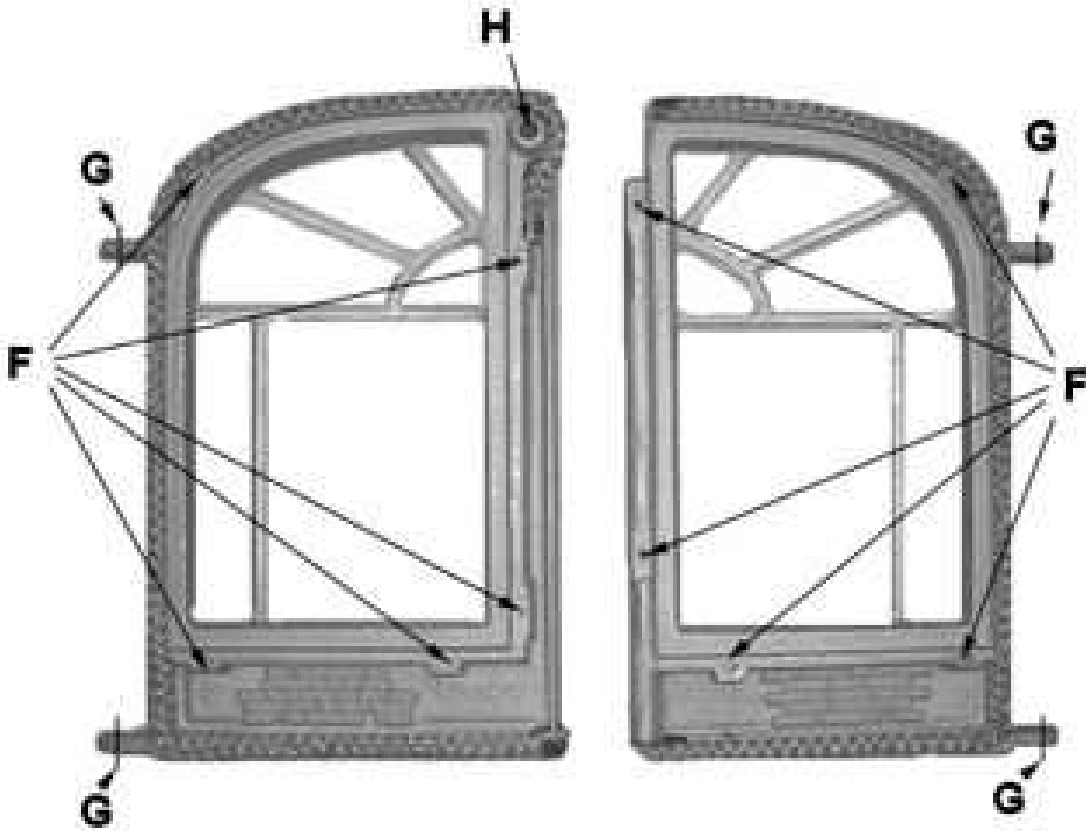


**DAMPER (inside view)**

# INTREPID II DRILL and TAP ILLUSTRATIONS



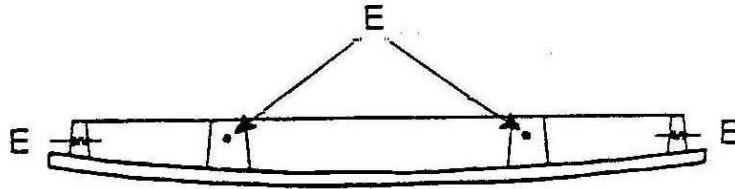
FLUE COLLAR



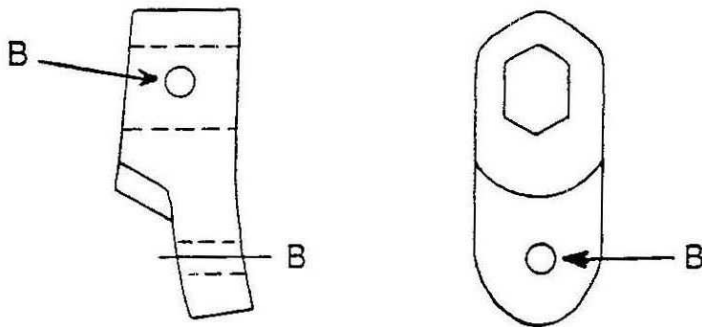
RIGHT DOOR (inside view)

LEFT DOOR (inside view)

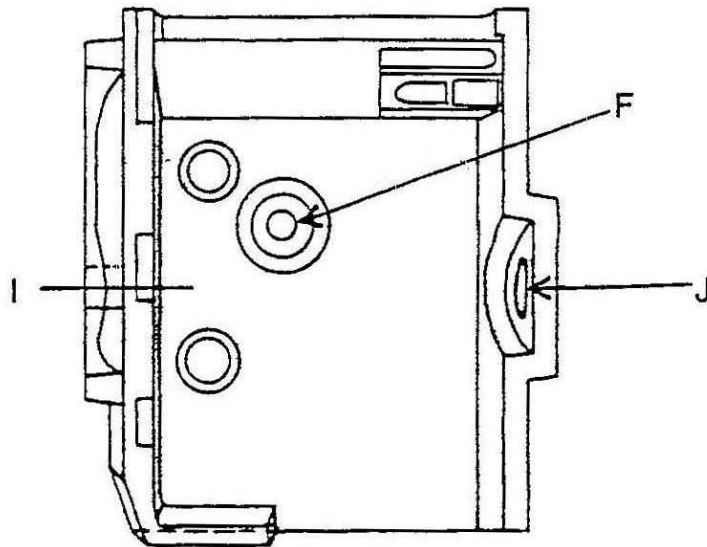
# INTREPID II DRILL and TAP ILLUSTRATIONS



ASHPAN FRONT

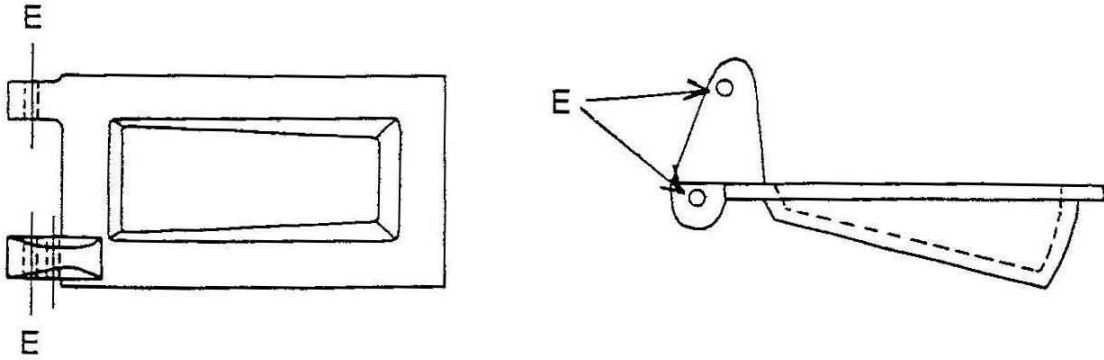


PAWL

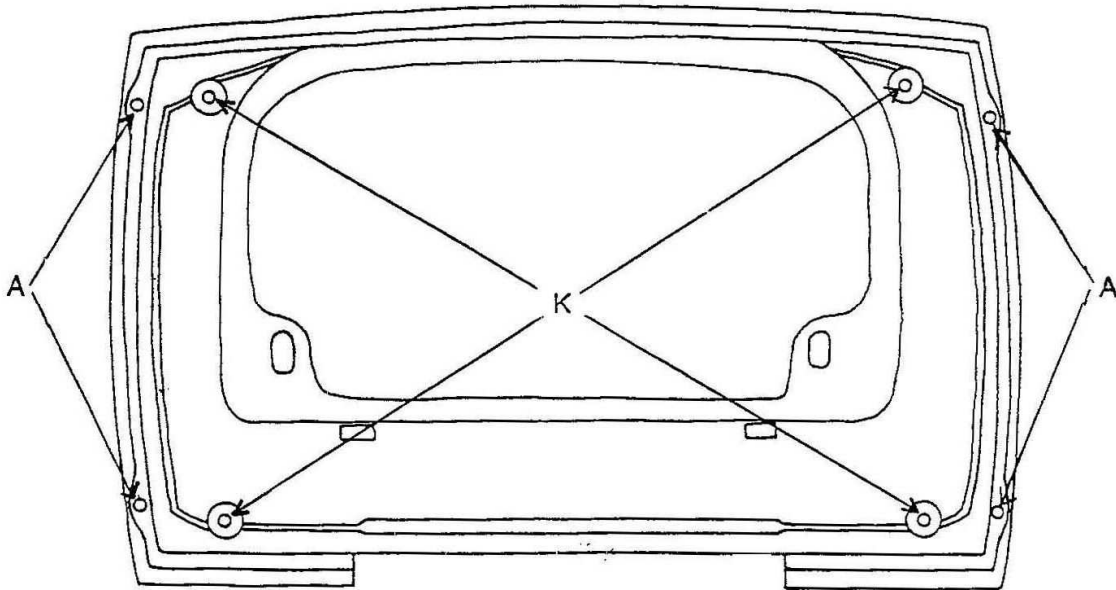


PRIMARY THERMOSTAT HOUSING

# INTREPID II DRILL and TAP ILLUSTRATIONS

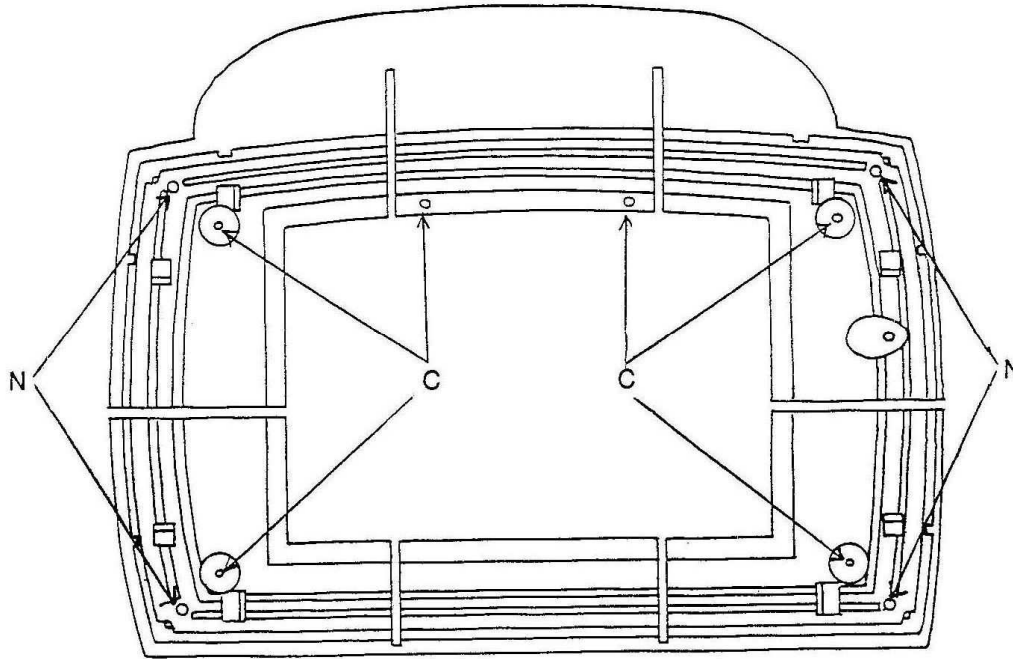


**PRIMARY AIR VALVE (flap)**

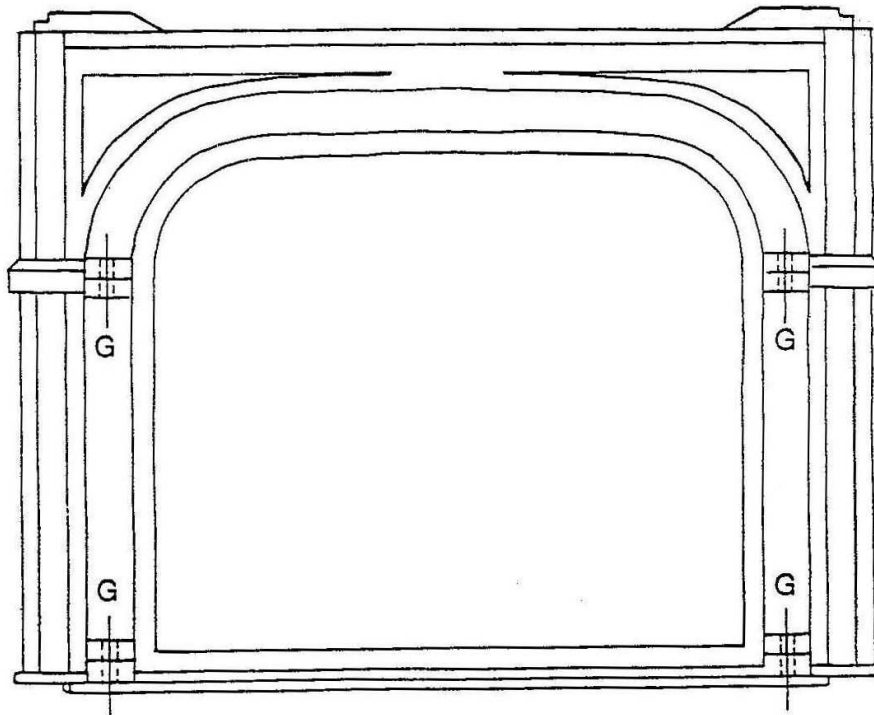


**TOP (underside)**

# INTREPID II DRILL and TAP ILLUSTRATIONS



**BOTTOM (underside)**

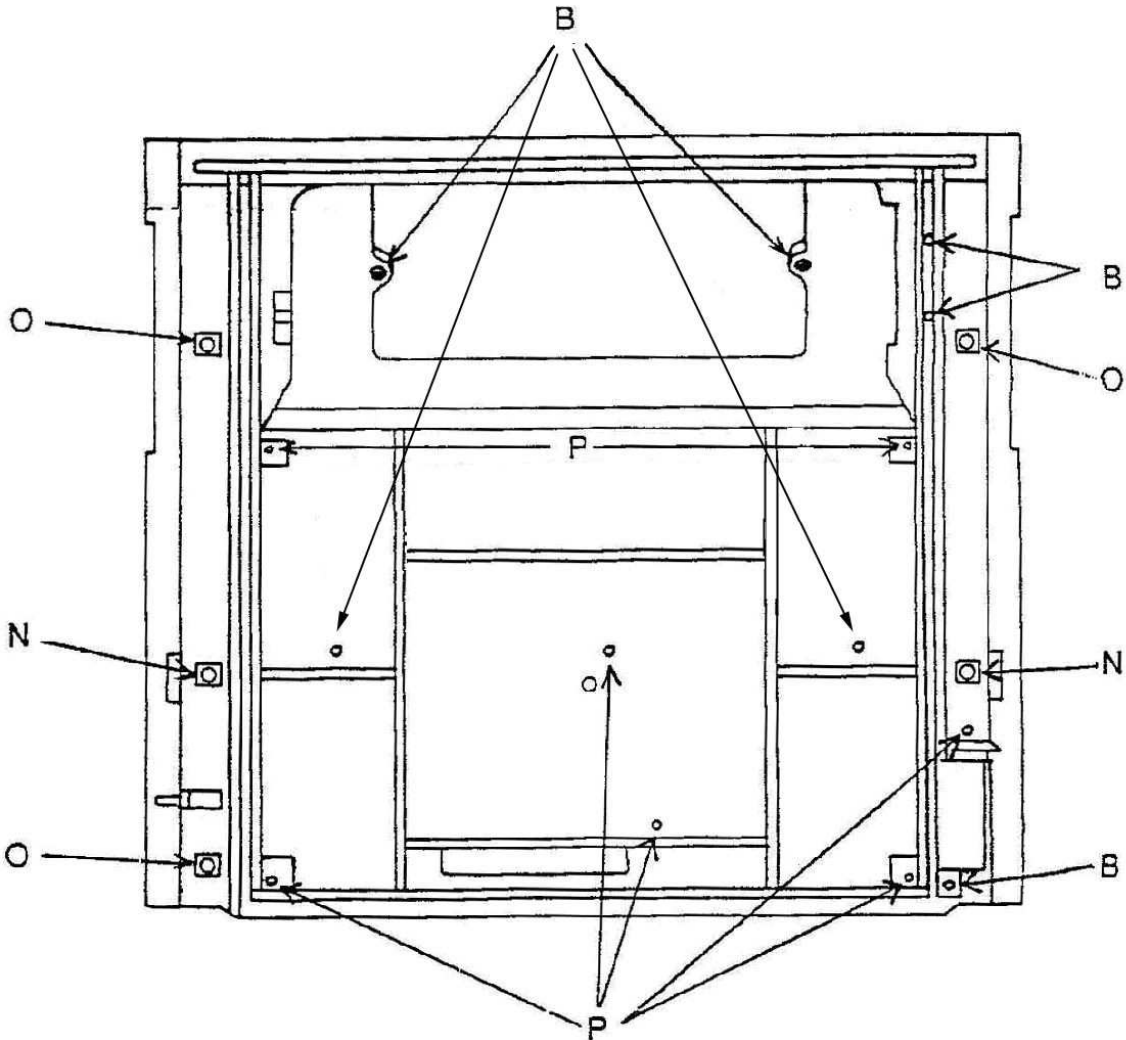


**FRONT (outside view)**

**INTREPID II DRILL and TAP ILLUSTRATIONS**

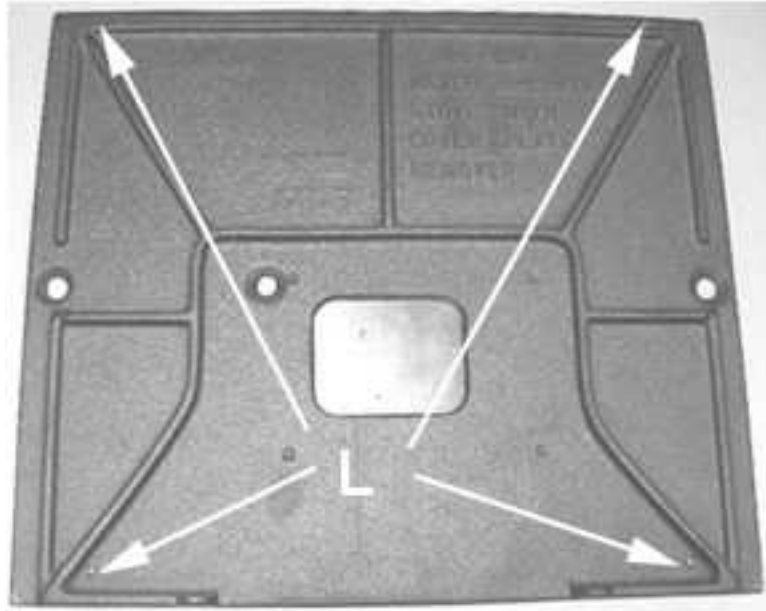


**FRONT (inside view)**



**BACK (inside view)**

## **INTREPID II DRILL and TAP ILLUSTRATIONS**



**SECONDARY AIR COVER (inside view)**



## *Intrepid II 1990 Service Procedure*

### **INTREPID II DRILL AND TAP GUIDE WITH ILLUSTRATIONS**

<u>KEY</u>	<u>BIT SIZE</u>	<u>DEPTH</u>	<u>TAP SIZE</u>	<u>TAP TYPE</u>
A	13/64"	3/8"	1/4" – 20	Bottoming
B	13/64"	THRU	1/4" – 20	Taper
C	5/16"	THRU		
D	1/4"	THRU		
E	#29 (9/32")	THRU		
F	#22 (5/32")	5/16"	10 – 24	Bottoming
G	3/16"	THRU		
H	V	THRU		
I	W	THRU		
J	7/16"	THRU		
K	13/64"	1/2"	1/4" – 20	Bottoming
L	1/8"	THRU		
M	1/8"	3/8"		
N	5/16"	THRU	3/8" – 16	Taper
O	3/8"	THRU		
P	#22 (5/32")	THRU	10 – 24	Taper

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



## **INTREPID II – INDIVIDUAL REPAIR SECTION**

**GENERAL:** The manner in which to proceed with most repairs to this stove will be obvious to a competent mechanic. Individual parts replacement and adjustment are covered in the Disassembly and Assembly sections of this manual. Cleaning, 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. The order of the procedures is suggested only. You may find disassembly and assembly order that you find better suited for your purposes.

**CAUTION:** When re-assembling a part requiring gasketing or cementing, both the part being replaced or re-assembled 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.

**TIP:** When working on the Intrepid, removing the legs and raising the stove to sit on a low, narrow work surface will make the job go easier. Cement blocks placed close together and short lengths of 2 x 6 or 2 x 8 lumber arranged so the tie rods are exposed make a convenient and secure work surface.

**TIP:** When doing a total rebuild or replacing a main cast panel, it is highly recommended to do a complete dry fit before applying cement to the components. This will provide an opportunity to familiarize yourself with the procedure and correct any small assembly issues before using cement.

## **Replacing the Damper, Damper Tabs and/or Damper “D” Plate**

### TOOLS REQUIRED

- Phillips Screwdriver, #2 Tip, ¼” drive
- Ratchet Handle, ¼” drive
- Hex Key Wrench (Allen) 5/32”
- Hex Key Wrench (Allen) ⅛”
- Wrench, combination, 7/16”

The damper, the damper tabs and/or damper “D” plate may be repaired or replaced by working through the flue collar opening. The damper “D” plate and the damper tabs may be accessed by merely removing the flue collar. To replace the damper, proceed as follows:

1. Lock the damper in the closed (Catalytic burn) position.
2. Remove the flue collar.
3. Remove the damper tabs.
4. Unlock the damper and maneuver it out of the flue collar opening, right end first as you face the rear of the stove.

When work is completed, re-assemble in reverse order.

## **Replacing or Re-Gasketing the Damper Housing Assembly**

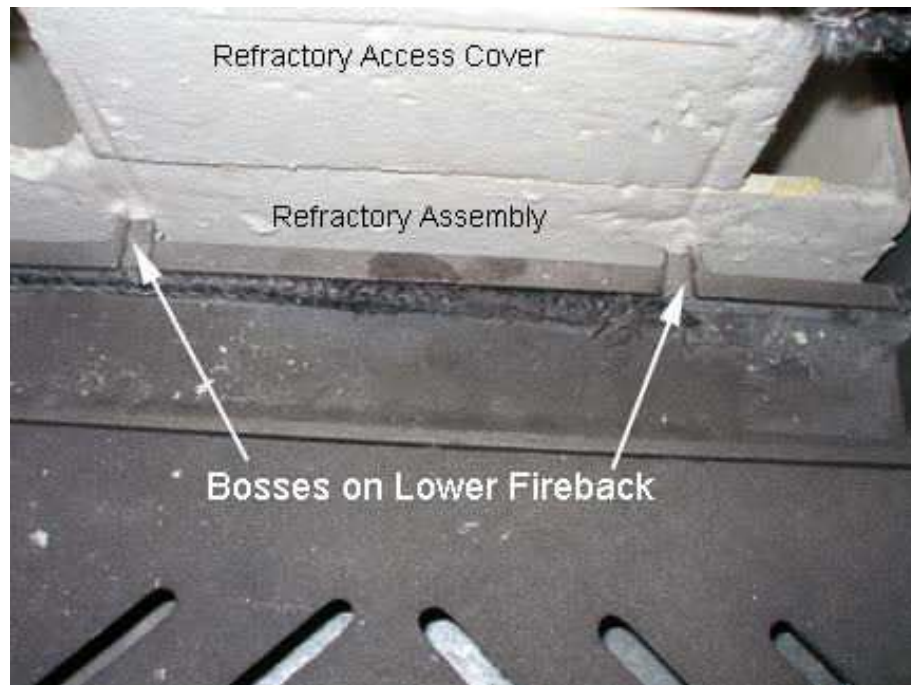
### TOOLS REQUIRED

- Hammer, 8 oz. soft face
- Hex Key Wrench (Allen), 5/32"
- Phillips Screwdriver, #2 Tip
- Wrench, combination, 5/8"
- Gasketing tools and materials

1. Place the damper in the open (updraft) position.
2. Remove the damper handle stub.
3. Tap upward on the outer ends of the two rotating clamps securing the upper fire back.
4. Remove the upper fire back/throat assembly
5. Remove the primary thermostat housing held on with 2 slotted bolts. Carefully rest the assembly on the floor with the ball chain still hooked up to the air flapper.
6. Maneuver the damper actuator rod out of the opening in the side of the stove back.
7. Remove the two uppermost acorn nuts from the back of the stove and tap the threaded ends of the exposed weld screws into the stove back that hold the damper housing assembly in place.
8. Reach inside the stove and remove the damper housing assembly.
9. Remove the damper tabs and damper from the housing.
10. Re-gasket and/or replace the damper housing following the directions in the gasketing section of this manual.
11. When work is completed, re-assemble in reverse order. When installing the damper housing assembly, push it as far as possible toward the top of the stove prior to final tightening.

## **Replacing the Refractory Assembly**

1. Follow steps 1 through 8 in the procedure above.
2. Remove the refractory cover and catalyst from the old refractory assembly.
3. Remove the old refractory assembly by pulling up. The old assembly will likely break apart.
4. Clean out the space behind the lower fireback of all debris and ashes.
5. Carefully slide the new refractory assembly in the space behind the lower fireback. There are two bosses or nubs on the back of the lower fireback designed to hold the refractory in the proper position. See photo below. These tabs may interfere with the refractory assembly sliding smoothly down to the bottom of the stove. A small groove may be etched into the front of the refractory assembly by the two protruding bosses as the refractory assembly is carefully pushed to the bottom of the stove. If deemed necessary, file a little bit off the tips of the bosses to make the refractory assembly install easier. Ensure it goes all the way to the bottom of the stove. Reassemble in reverse order.



**Replacing the Primary Air Thermostat, Ball Chain, Ball Chain Fitting (Upper),  
Jump Ring and/or Damper Actuator Rod**

TOOLS REQUIRED

- Hex Key Wrench (Allen) 5/32”
- Phillips Screwdriver, #2 Tip
- Needle Nose Pliers

1. Place the damper in the open (updraft) position.
2. Disconnect the ball chain at the lower ball chain fitting which is riveted to the primary air valve (flap).
3. Remove the primary air thermostat housing. Once the two bolts are removed, slide the housing from right to left off of the damper actuator rod.
4. Remove the jump ring, ball chain fitting, and ball chain from the thermostat clip by opening the jump ring with needle nose pliers.
5. Remove the thermostat from the housing by unscrewing it. You will have to bend the thermostat lever slightly in order to unscrew it. Save the two #10 washers and the compression spring.
6. Pull the damper actuator rod out through the thermostat housing pocket.

After making the required repairs and/or replacements, re-assemble in reverse order. Be sure to bend the thermostat lever to its original position before re-installing the re-assembled thermostat housing. See Fig. R-1 and Fig. R-2.

Fig. R-1 Primary air thermostat and housing showing proper positioning of the thermostat tab, jump ring, ball chain fitting and ball chain. Detail in lower left corner shows assembly sequence.

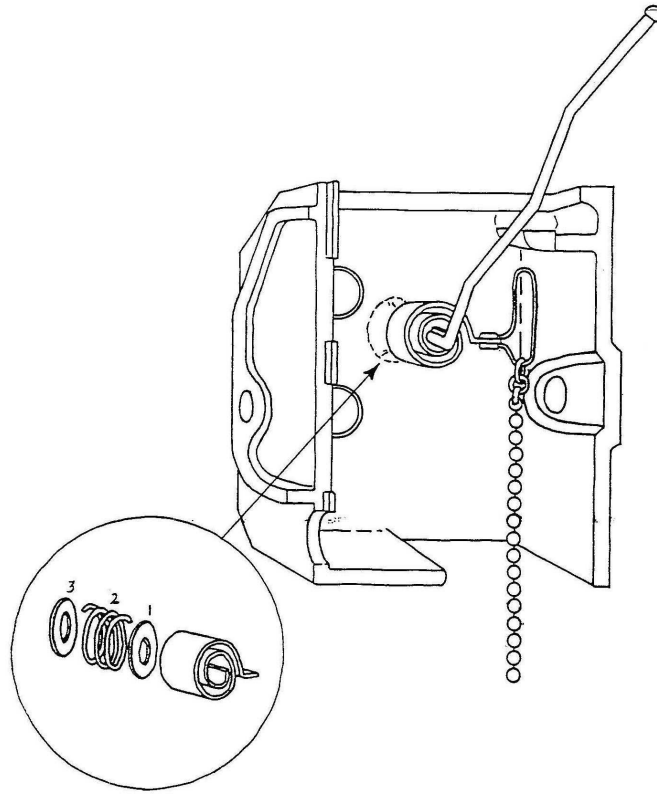
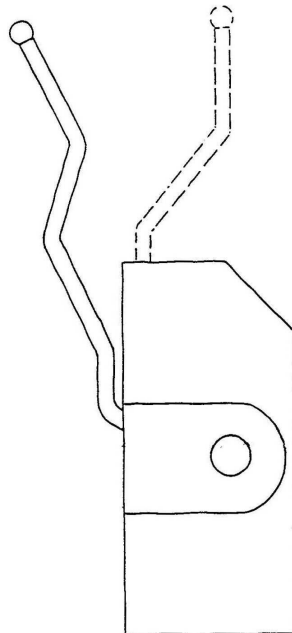


Fig. R-2 Primary air thermostat housing assembled. The bold line (1) shows the lever in its proper position for assembly. The dot-dash line (2) shows the lever in its proper position for installation on the stove back.



## **Replacing the Lower Ball Chain Fitting on the Primary Air Valve (Flap)**

### TOOLS REQUIRED

- Phillips Screwdriver, #1 Tip
- Punch, Drive Pin, 1/8"
- Ball Peen Hammer, 8 oz.
- Pop River Tool
- Pop Rivet, Steel, 1/8" x 1/8"
- New Ball Chain Fitting

1. Remove the primary air valve (flap).
2. Drive the rivet and the broken half of the ball chain fitting out of the air valve with your punch and hammer.
3. Install a new ball chain fitting and rivet.
4. Re-install the air valve.
5. Remove the broken half of the ball chain fitting from the end of the ball chain.
6. Adjust the ball chain and connect it to the new ball chain fitting.

Test the thermostat lever and air valve operation and re-adjust as necessary.

## **Replacing the Secondary Air Probe/Thermostat, Wire Link and/or Air Valve with Shim**

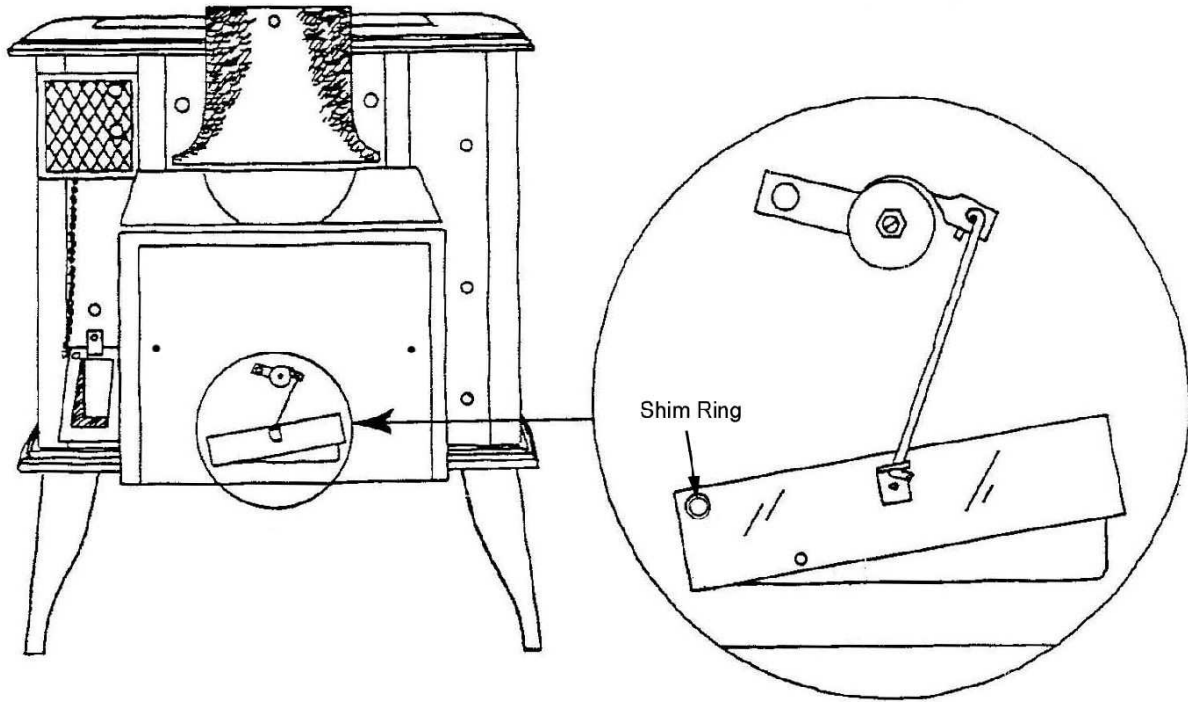
### TOOLS REQUIRED

- Screwdriver, Phillips, #2 Tip
- Propane Torch
- Screwdriver, Phillips, #1 Tip

1. Remove the catalyst block access cover.
2. Remove the air valve, shim and wire link.
3. Remove the thermostat/probe assembly.
4. Test the thermostat/probe assembly by holding it with a pair of pliers and directing the flame of your propane torch at the end of the probe portion of the assembly. If the thermostat/probe assembly is in satisfactory condition, the tab end of the thermostat coil will start to wind in a clockwise rotation. If the tab end of the thermostat coil remains stationary after applying heat to the probe, replace the thermostat/probe assembly.
5. Re-install the thermostat/probe assembly, wire link and air valve with shim. Make sure that the shim does not pinch the air valve.

The re-installed secondary air control system should appear exactly as depicted in Fig. R-3.

Fig. R-3 Secondary Air Control System.





## INTREPID II SERVICE MANUAL

### TOOL REQUIREMENTS

- 1-Drop cloth, 8' x 8' (Minimum size)
- 1-Pair safety goggles
- 1-Respirator, dust & mist
- 1-Wire brush, 1½" x 6", 13" overall
- 1-Combination wrench, 7/16" (Box & Open End)
- 1-Combination wrench, 9/16" (Box & Open End)
- 1-Combination wrench, 5/8" (Box & Open End)
- 1-Ratchet handle, 3/8" drive
- 1-Wrench, socket, 7/16" Deep well, 3/8" drive
- 1-Wrench, socket, 9/16" Deep well, 3/8" drive
- 1-Wrench, socket, 5/8" Deep well, 3/8" drive
- 1-Common flat blade screwdriver 6" long with rounded corners
- 1-Phillips screwdriver, #2 Tip
- 1-Phillips screwdriver, #3 Tip
- 1-Phillips screwdriver, #1 Tip
- 1-Shop type vacuum cleaner with attachments
- 1-Ball peen hammer, 12 oz. or 16 oz.
- 1-Rubber mallet
- 1-Trouble light
- 1-Pair diagonal cutting pliers
- 1-Pair long nose electricians pliers
- 1-Allen key wrench, 1/8"
- 1-Allen key wrench, 5/32"
- 1-Cold chisel, 1/2"
- 1-Cold chisel, 3/8"
- 1-Pair vice grips, 7" – 10"
- 1-Punch, Drive pin, 1/8"
- 1-Punch, Drive pin, 1/4"
- 1-Punch, Drive pin, 3/8"
- 1-Caulking gun
- 1-Water pail, 2 gallon or larger.
- 1-Sponge or water absorbent cloth
- 1-Tape measure, 6"
- Clean rags
- 1-Kitchen knife, serrated, 6"-7" blade
- 1-Putty knife

### NOT MANDATORY BUT A GOOD IDEA

- Portable air compressor used for cleaning cast panels
- Sand blaster gun used on portable air compressor

## INTREPID II – Disassembly

1. Raise the griddle and lift it out.
2. Open the doors so the door hinge drillings clear the front hinge drillings and lift the right and left doors assemblies up and off of the front hinge drillings.
3. Remove the andirons and grate by lifting them out.
4. Remove the ash pan, clean it out, and set aside to store small hardware, nuts, screws, etc. Clean out the stove thoroughly with a vacuum and brush.

***If performing a complete tear down, steps 5 to 13 can be omitted and the entire stove back assembly may be removed along with the left and right sides and front. The back assembly may be taken apart after removing.***

5. Remove the flue collar, 2 each Phillips round head machine screws,  $\frac{1}{4}$  - 20 x  $\frac{3}{4}$ ".
6. Disconnect primary thermostat ball chain from the ball chain keeper on the primary air valve (flap). See Fig. D-1.



Fig. D-1 Primary Air Valve side view

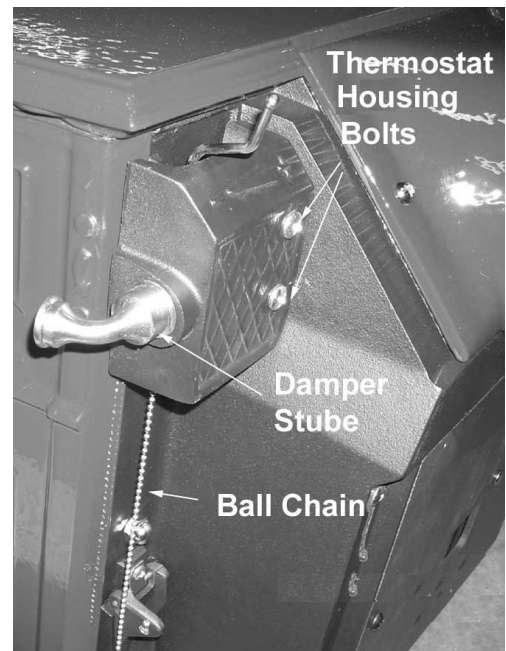


Fig. D-2 Remove Thermostat Housing

7. Remove the thermostat housing. Remove the damper handle stub with the  $\frac{5}{32}$ " Allen wrench; remove 2 each Phillips pan head machine screws,  $\frac{1}{4}$  - 20 x 2". Remove the thermostat housing toward the left, sliding it off of the damper actuator rod. See Fig. D-2.
8. Remove the damper torsion bar from the stove. Pull it out through the thermostat cavity opening.

9. Loosen the two cast clamps holding the upper fire back to the stove back - turn the left clamp 90 degrees clockwise, turn the right clamp 90 degrees counter-clockwise.

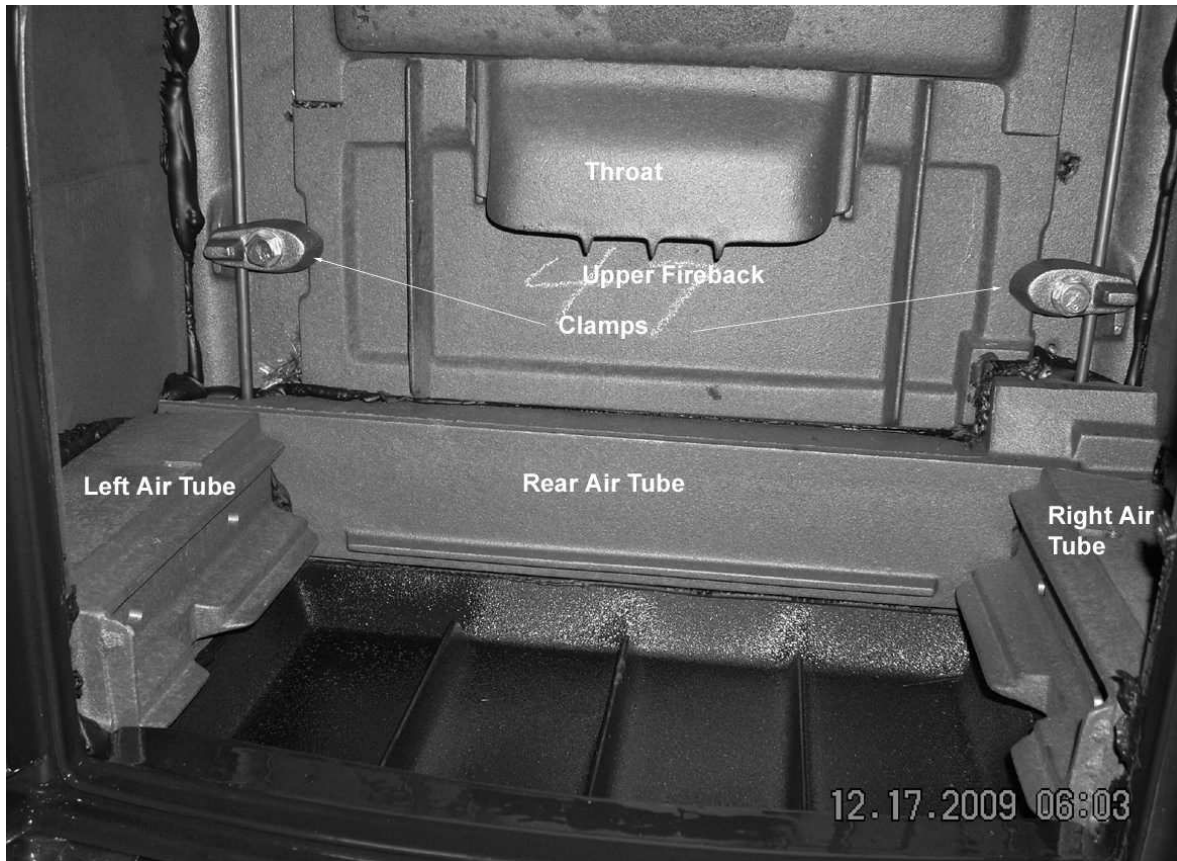


Fig. D-3 Interior Rear Components

10. Remove the upper fire back and throat. Grasp the throat and pull toward you. Lift the throat and upper fire back out of the stove.
11. Remove the five  $\frac{3}{8}$ -16 acorn nuts from the stove back with the  $\frac{5}{8}$ " wrench. See Fig. D-4.



Fig. D-4 Location of Acorn Nuts

12. To remove the damper housing and damper, remove the two upper “L” shaped weld screws ( $\frac{3}{8}$  – 16) that penetrate the back by tapping gently from the stove back. Reach inside of the stove and tilt the damper housing 45 degrees from the top and lift the housing up and out of the stove.
13. If necessary, separate the throat from the upper fire back and remove the damper plate from the damper housing, 2 each Phillips round head machine screws,  $\frac{1}{4}$  - 20 x  $\frac{1}{2}$ ’ and 2 each damper tabs,  $\frac{1}{2}$ ” x 1”’. See Fig. D-5



Fig. D-5 Rear View of Damper Housing

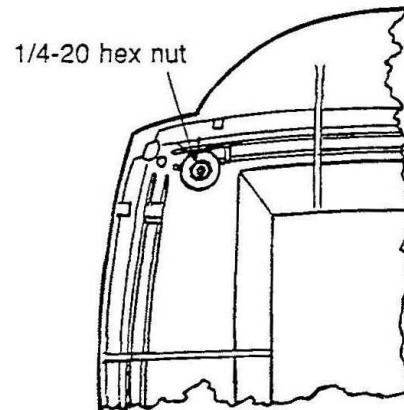


Fig. D-6 Tie Rod Nut on Stove Bottom

14. Remove the two air wash manifolds attached to the stove inside front. One bolt in the center top and one on each side hold them in.
15. Remove the left and right air tubes and then the rear air tube (remove the side air tubes first). If necessary, tap them gently up with your rubber covered dead-blow mallet. See Fig. D-3 for identification.
16. Tilt the stove over on its back and remove the 4 stove legs, 4 each hex head cap screws ( $\frac{3}{8}$  – 16 x 1”), 3 each flat washers (std.  $\frac{3}{8}$ ”) and 1 handle holder.
17. Under the stove legs, find 4 each  $\frac{1}{4}$  - 20 hex head nuts (recessed). See Fig. D-6. Remove these 4 nuts with a  $\frac{7}{16}$ ” socket wrench and lift the stove up and onto its base.
18. Remove the stove top with tie rods attached. Using a rubber covered dead-blow mallet, strike the stove top upward around its entire perimeter until you are able to lift off the stove top with the tie rods attached. The tie rods are part of the main structure holding the main components together. The stove body will be unstable with the top removed. Take care to use an extra set of hands or strap the stove body during this step.

19. Remove the stove front, (see Fig. D-7), strike the stove front across its top edge from the inside out using the rubber covered dead-blow mallet.

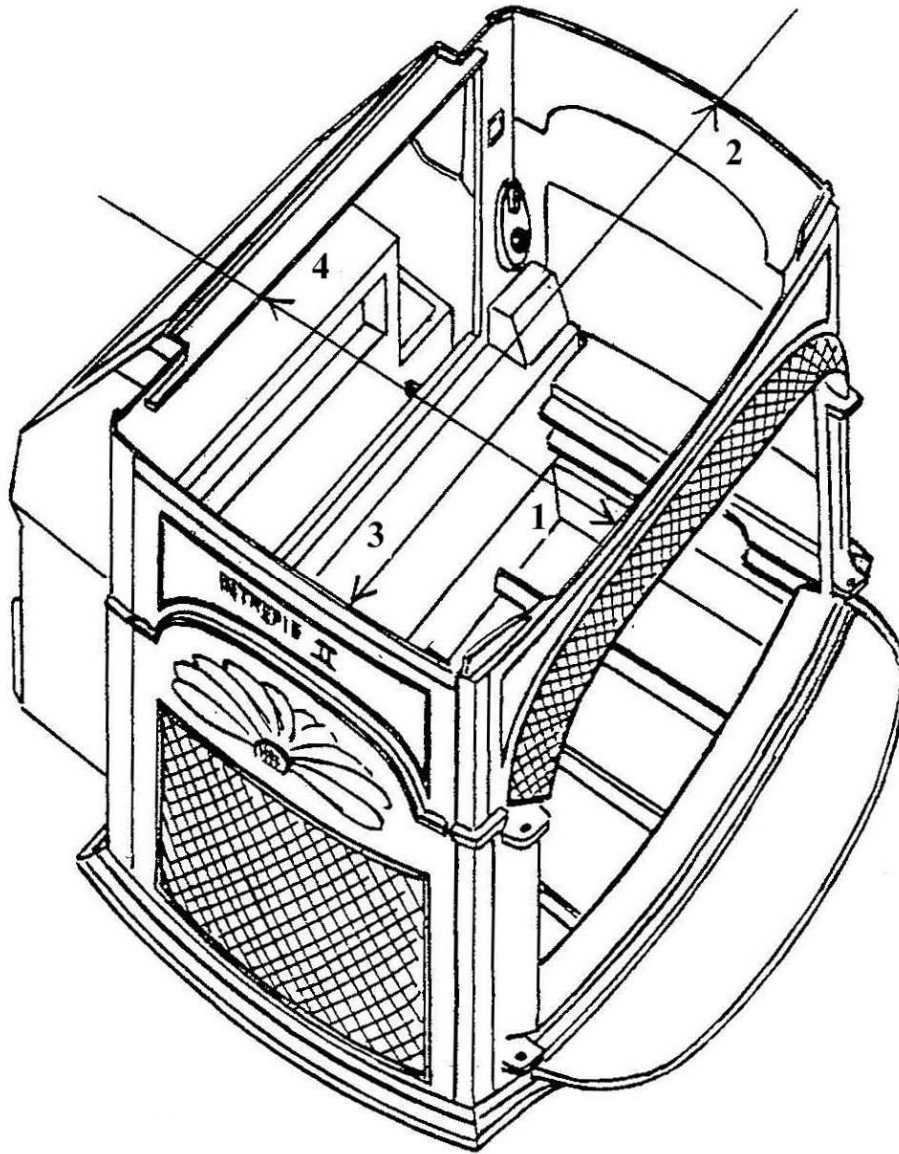


Fig. D-7 Disassembly Sequence of Major Plates

20. Remove the right and left stove sides; strike the stove sides along their top edges from the inside out with the rubber covered dead-blow mallet.
21. Remove the stove back assembly. Rock it back and forth and lift the assembly off of the stove bottom.

22. Remove the lower fire back from the stove back assembly. Remove the “L” shaped  $\frac{3}{8}$  – 16 weld tab from the left corner of the fire back. Remove the Phillips round head machine screw ( $\frac{1}{4}$  - 20 x  $\frac{1}{2}$ ”) from the right corner of the lower fire back. See Fig D- 8.

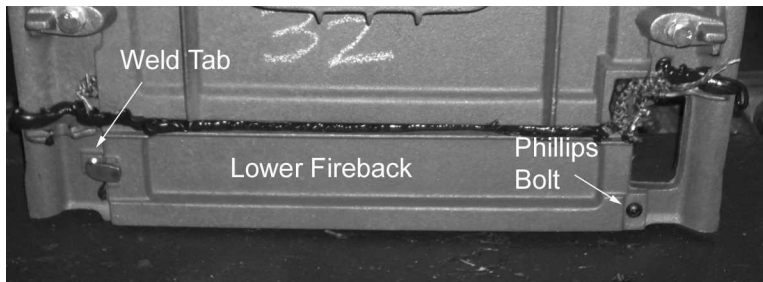


Fig. D-8 Remove Lower Fireback from Back Assembly

23. Carefully remove the catalytic package from the stove back and place it in an area where it will be safe from damage.
24. Remove the primary air valve (flap). Remove 1 each Phillips pan head machine screw, 10 – 24 x  $\frac{3}{8}$ ” and retainer clip.
25. Remove the secondary air cover, 2 each Phillips round head machine screws,  $\frac{1}{4}$  - 20 x  $\frac{1}{2}$ ”. Remove the secondary air flap, 1 Phillips pan head machine screw, 10 – 24 x  $\frac{1}{4}$ ” and 1 shim ring. Remove the secondary air link from the air flap and the end of the thermostat tab.
26. Remove the secondary air probe/thermostat, 1 Phillips pan head machine screw, 10 – 24 x  $\frac{1}{4}$ ”. Check the air flap and air link for distortion. Check the air probe and thermostat coil for breaks and/or heat damage. Replace any suspect parts.
27. Examine and clean the combustion package assembly. Check the catalyst stainless can for heat distortion. Check the ceramic catalyst block for cracks, broken or missing pieces and/or general deterioration. Check the refractory chamber and the refractory catalyst block plug for breaks, chips, separations, etc. If the canned catalyst block, refractory chamber and refractory plug are all in good overall condition, clean them with a soft bristle brush and low pressure air from your vacuum cleaner.
28. Examine all castings for cracks, chips, heat distortion, 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 to bare metal with a wire brush (hand or power).
29. Examine all mechanical linkage parts for distortion, worn or egg-shaped drillings, unusual wear, burns, etc. Repair or replace as necessary. Replace any bent tabs or clips.

30. Disassemble the loading doors. Place the doors with their outside faces down on a clean flat surface. Remove the small corner glass clip and the 2 long glass clips from each door, all held on the cast door with Phillips pan head machine screws, 10 -24 x 1/4". Remove the glass panes and set them aside in a safe location. Remove the door handle assembly from the right loading door: loosen and remove the hex top lock jam nut, 3/8 - 16 and loosen the set screw in the cast pawl. Slide the pawl off the handle shaft and remove the handle and shaft. Examine the four hinge pins: if they are bent, distorted or loose replace them. Scrape the glass frame with a putty knife, removing all dry cement and old gasket material. Inspect and clean the glass panes. Replace any broken or cracked glass. Remove the large gasketing from the edges of the doors and thoroughly clean the gasket channels. After thoroughly cleaning the doors with a wire brush, mask the areas to be re-gasketed. Paint the outside surface, top and side edges of the doors at this time. Use *Vermont Castings* High Temperature Stove Paint (classic black), part number 000-0035 and follow directions on the can.

## **INTREPID II – 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 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, ensure that you have a good joint before trimming excess gasket with shears or side cutters. Do not overlap gasket ends or leave ragged edges.
- 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” x 18” long, wooden straight edge where required. Remove gasketed part and clean off any excess gasket cement that has squeezed out around the gasket before placing aside to dry.

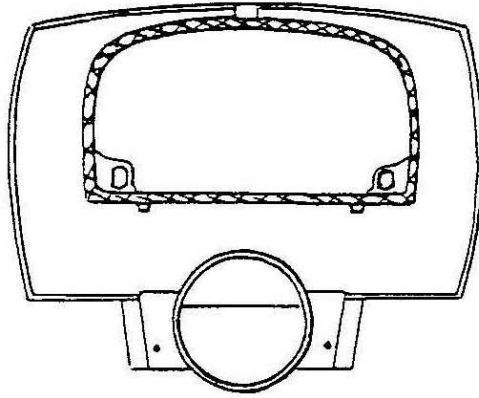


## INTREPID II – GASKET REQUIREMENTS

Refer to the gasket illustration figure numbers.

Top (top side)  
Fig. G-1

Top plate to griddle seal. One piece 44" wire wound fiberglass core, 5/16" diameter part no.1203668.



Back (outside)  
Fig. G-2

Upper stove back to flue collar seal. One piece 32" fiberglass, adhesive backed, 5/16" diameter, part no. 1203591.



## INTREPID II – GASKET REQUIREMENTS

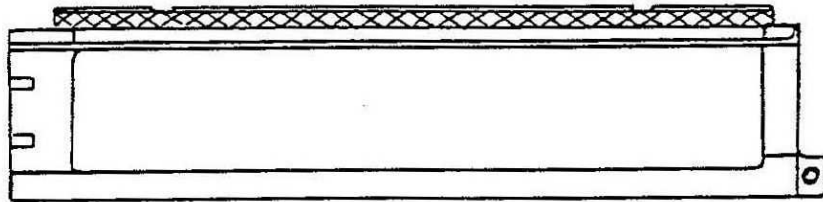
Back (inside)  
Fig. G-3

Vertical edges of upper and lower fire backs, damper frame and bottom horizontal edge of lower fire back to back seal. One piece 46” fiberglass, 1/4” diameter, low density, 3 needle, part no. 1203560.



Lower fireback  
Fig. G-4

Upper horizontal edge of lower fire back to lower horizontal edge of upper fire back seal. One piece 13” fiberglass, 1/4” diameter, low density, 3 needle, part no. 120-3560.

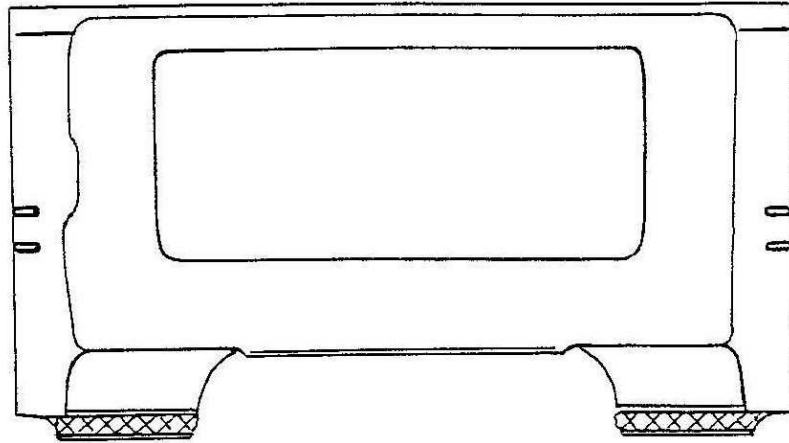


## INTREPID II – GASKET REQUIREMENTS

Damper frame (front)

Fig. G-5

Lower horizontal inside edges of damper frame to upper horizontal inside edges of upper fire back seal. Two pieces 4" each fiberglass, 1/4" diameter, low density, 3 needle, part no. 1203560.



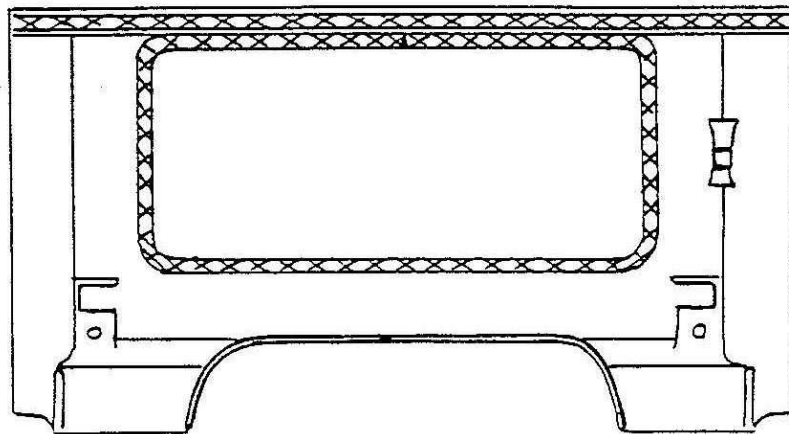
Damper frame (rear)

Fig. G-6

Two gaskets:

Gasket #1: Upper horizontal edge of damper frame to stove top (underside) seal. One piece 14" fiberglass, 1/4" diameter, low density, 3 needle, part no. 1203560.

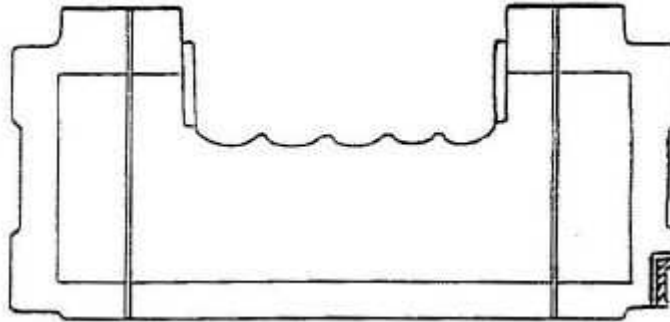
Gasket #2: Damper plate to damper frame seal. One piece 30" fiberglass, 5/16" diameter, medium density, 6 needle, part no. 1203588.



## INTREPID II – GASKET REQUIREMENTS

Upper Fireback  
Fig. G-7

Upper Fireback to rear air tube. One Piece 4” fiberglass, 1/4” diameter, low density, 3 needle, part no. 1203560.



Left Door  
Fig. G-8 & 8a

Two gaskets:

Gasket #1: Left door to left arch opening of stove front and right door seal. One piece 34” fiberglass, 5/16” diameter, medium density, 6 needle, part no. 1203588. Gasket wraps around to the front channel from the bottom.

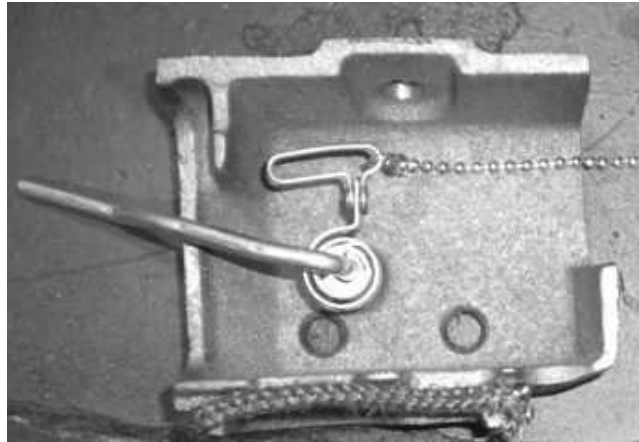
Gasket #2: Glass to door frame seal. One piece 30” fiberglass, 3/16” diameter, medium density, 4 needle, part no. 1203556.



## INTREPID II – GASKET REQUIREMENTS

Thermostat Cover  
Fig. G-9

Thermostat Cover to stove rear. One piece 9” fiberglass, 3/16” diameter, medium density, 4 needle, part no. 1203556.



Right door  
Fig. G-10

Two gaskets:

Gasket #1: Right door to let arch opening of stove front.. One piece 26” fiberglass, 5/16” diameter, medium density, 6 needle, part no. 1203588.

Gasket #2: Glass to door frame seal. One piece 30” fiberglass, 3/16” diameter, medium density, 4 needle, part no. 1203556.



## INTREPID II – ASSEMBLY

**General** All parts were carefully inspected and cleaned to bare metal or replaced during the disassembly process. Parts and/or assemblies requiring gaskets have been re-gasketed. Assembly may now begin. To achieve a properly functioning, air tight stove, 3 each, 11 oz. tubes of thermocement, part no. 120-6125 are required. Cut the thermocement tube tips so that a  $\frac{1}{4}$ " –  $\frac{3}{8}$ " 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 "A" and "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** Attach the damper plate to the re-gasketed damper housing. Place the damper housing flat side down (gasketed damper opening uppermost) on your workbench. Place the damper plate against the gasketed damper opening in the housing (indented edges of the damper plate against the gasketing). Secure the two shafts of the damper plate to the damper housing with 2 each,  $\frac{1}{2}$ " x 1" damper tabs and 2 each, Phillips round head machine screws,  $\frac{1}{4}$  - 20 x  $\frac{1}{2}$ ". Place the damper "D" plate flat side down, into position on the damper plate as shown in Fig.A-1.

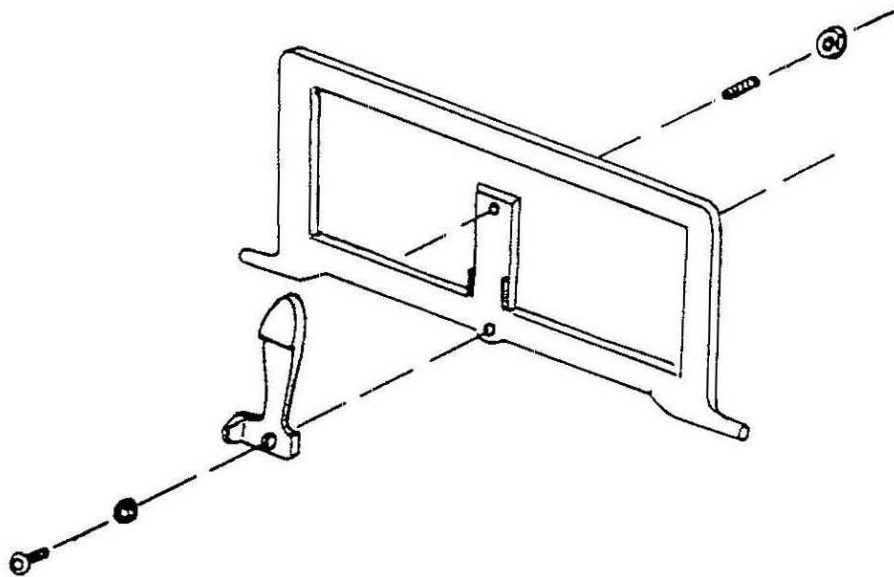


Fig. A-1 Secure damper "D" plate

Secure the "D" plate to the damper with 1 each socket button head cap screw  $\frac{1}{4}$  - 20 x  $\frac{5}{8}$ " and 1 each, narrow flat washer,  $\frac{1}{4}$ " x  $\frac{1}{2}$ " o.d. Turn the damper housing over and install the "D" plate adjusting screw and lock nut, 1 each socket set screw,  $\frac{1}{4}$  - 20 x  $\frac{3}{4}$ " and 1 each hex nut,  $\frac{1}{4}$  - 20. Thread the adjusting screw through the damper until it contacts the back of the "D" plate, give the screw  $\frac{1}{4}$  -  $\frac{1}{2}$  turn with your  $\frac{1}{8}$ " socket key wrench and lock it into position with the lock nut. The final adjustment of the "D" must be made after the stove is assembled.

**Step 2** Assemble the stove back. Place the stove back on your workbench gasketed side up. Place the refractory combustion chamber with catalyst and cover installed into its position in the stove back, plug side down. Centre the combustion chamber in the stove back and install the lower fire back (the tab with the small hole goes toward the right side). Secure the right side of the lower fire back with 1 each Phillips round head machine screw,  $\frac{1}{4}$  - 20 x  $\frac{1}{2}$ ". Secure the left side of the lower fire back to the stove back with 1 each "L" shaped weld screw,  $\frac{3}{8}$  - 16 and 1 each acorn nut,  $\frac{3}{8}$  - 16. Tighten these fasteners finger tight.

Install the canned catalytic combustor and the refractory plug. Place the catalyst in its recess in the refractory assembly. Gently push it all the way in making sure the front edge of the catalyst clears the lip in the front of the refractory assembly. Install the refractory plug. The catalyst and the refractory plug are properly fitted when the refractory plug outside surface is flush with the outside surface of the refractory assembly. Some trimming and fitting with a serrated knife may be necessary.

Place the damper housing assembly into its position on the stove back with the swinging damper down. Secure the damper housing assembly to the stove back with 2 each "L" shaped weld screws,  $\frac{3}{8}$  - 16 and 2 each acorn nuts,  $\frac{3}{8}$  - 16 finger tight. Slide the throat into position on the upper fire back as shown in Fig.A-2.

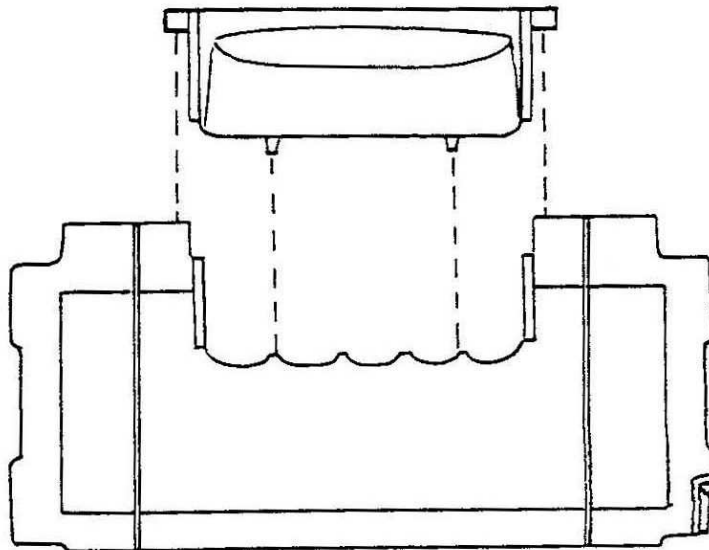


Fig. A-2 Upper Fireback & Throat

Place the upper fireback between the damper housing and the lower fire back. Adjust the positions of the damper housing, upper and lower fire backs on the stove back gently tapping them with your rubber covered dead-blow mallet until a good gasket seal is achieved between the stove back and the damper housing upper and lower fire backs and between the damper housing and upper fire back and between the lower fire back and the upper fire back. When the proper seals and alignment are achieved, secure the upper fire back to the stove back with 2 each rotating cast clamps, 2 each hex head cap screws,  $\frac{3}{8}$  - 16 x  $1\frac{1}{2}$ " and 2 each narrow flat washers,  $\frac{3}{8}$ ". Position the clamp as shown in Fig.A-3, and tighten the cap screws securely but do not over-tighten. Stand the assembled stove back on its bottom and install 2 each acorn nuts,  $\frac{3}{8}$ " on the protruding threads of the cap screws. Tighten all 5 acorn nuts on the stove back as well as the Phillips round head machine screw at the right tab of the lower fire back.

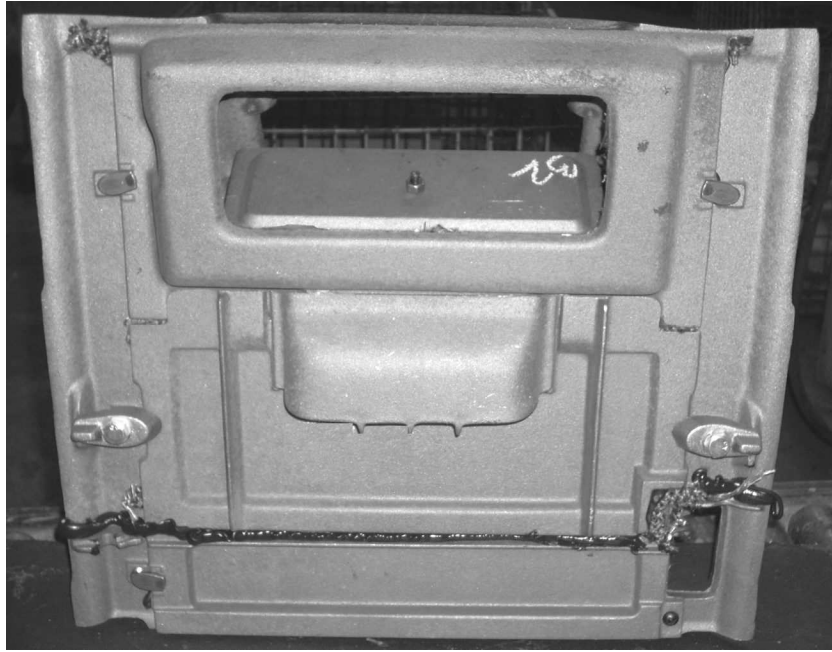


Fig. A-3 Back Inside View with Firebacks & Damper Frame Assembled Ready For Assembly

- Step 3** Cement the major stove components (bottom, front, two sides, back assembly and top). Place the stove bottom on your stove stand, bottom side up. Install 4 each slotted round head machine screws,  $\frac{3}{8}$  - 16 x  $\frac{1}{2}$ " in the 4 leg bolts holes finger tight so cement does not fowl the threads. Turn the bottom over and apply a  $\frac{3}{8}$ " diameter unbroken bead of the thermocement to the areas indicated in Fig.C-1.  
*Apply thermocement in the areas indicated in Fig.C-2 thru C-7 to the 2 sides, front, top, assembled back and the rear air tube as illustrated in the following pages.*

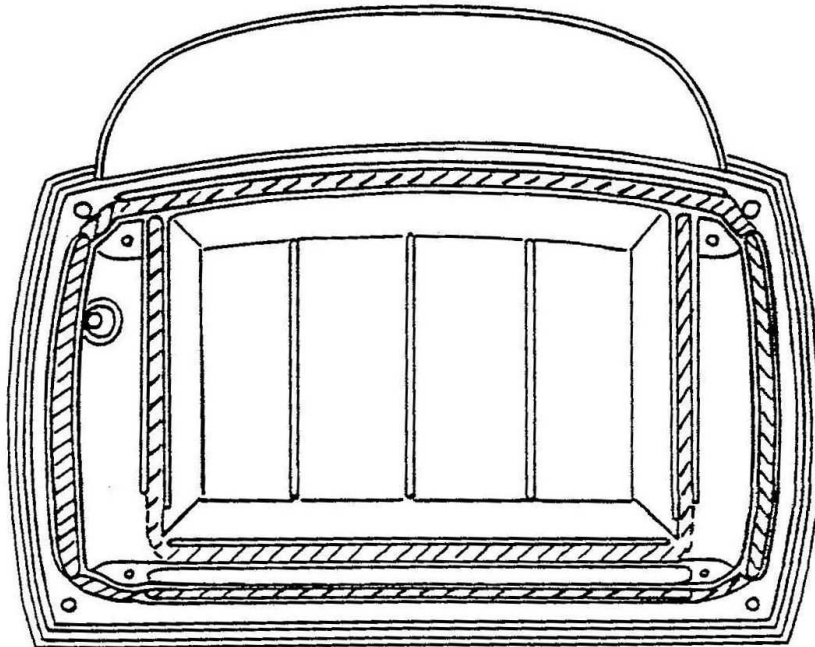


Fig. C-1 Bottom - Top View



## CEMENT ILLUSTRATIONS



Fig. C-2 Left Side - Inside View



Fig. C-3 Right Side - Inside View



Fig. C-4 Front - Inside View

## CEMENT ILLUSTRATIONS

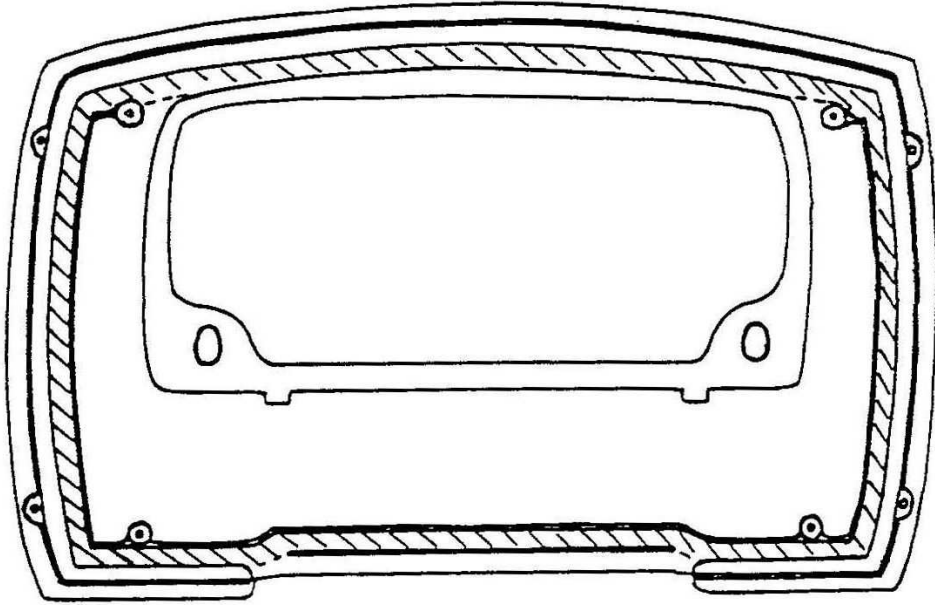


Fig. C-5 Top - Bottom View

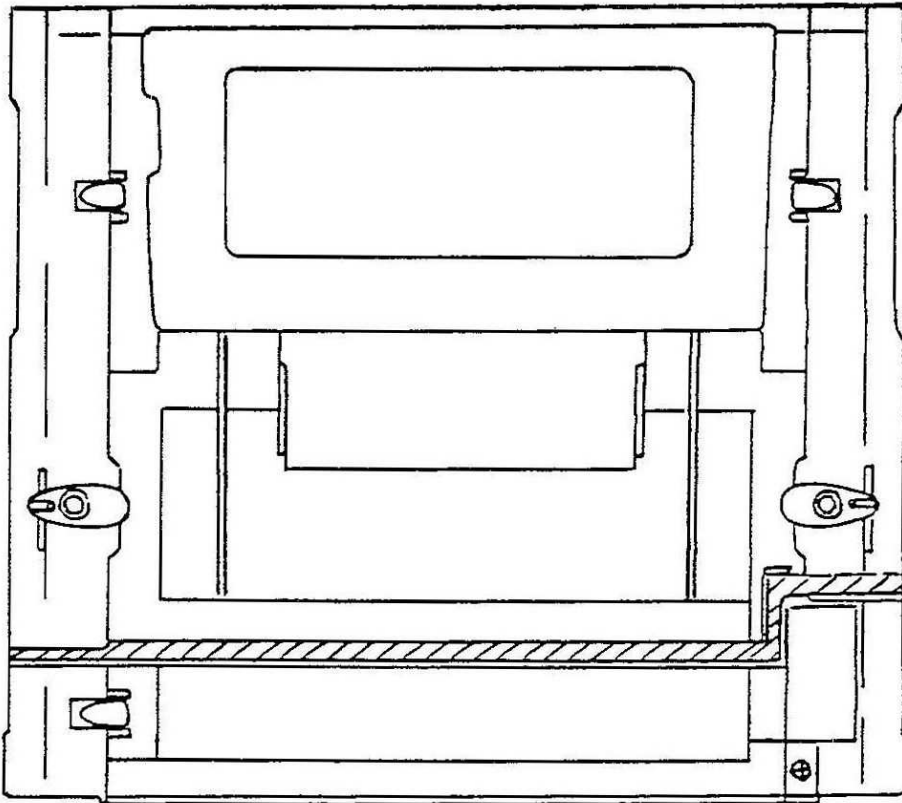


Fig. C-6 Back - Inside View with Lower Fireback and Damper Frame Assembled

## CEMENT ILLUSTRATIONS

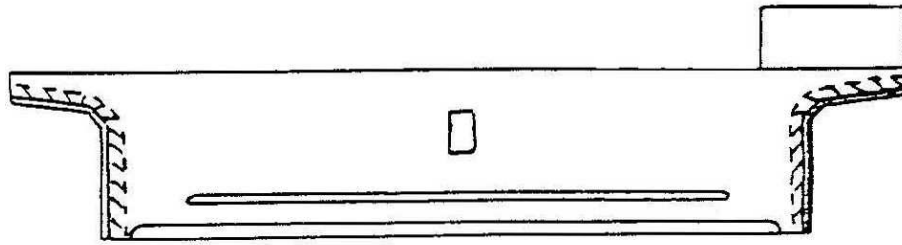


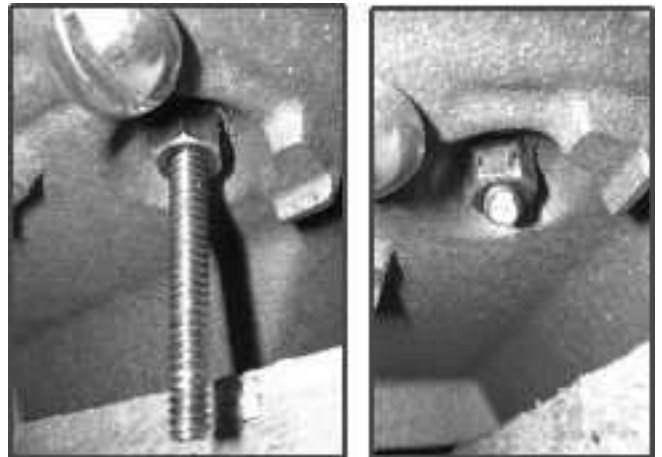
Fig. C-7 Rear Air Tube – Front View



Fig. C-8 Air Wash Manifolds

**Step 4** Assemble the stove. Place the assembled stove back into its cement channel in the stove bottom. Place the right and left sides in their cement channels in the stove bottom and into their sealing positions against the stove back. Place the stove front into its cement channel in the stove bottom and press it into its sealing position against the front edges of the front, 2 sides and back enter their respective cement channels in the underside of the stove top.

**Step 5** Fasten the stove together. Use 4 new tie rods,  $\frac{1}{4}$  - 20 x  $17\frac{1}{2}$ " with  $\frac{1}{2}$ " of thread at one end and  $2\frac{1}{4}$ " of thread at the opposite end. Insert the 4 tie rods from underneath the 4 corners of the stove bottom, short threaded ( $\frac{1}{2}$ " ) end toward the stove top. Thread the tie rods into the stove top until the bottom (at least 5 complete revolutions). Thread a hex top lock nut,  $\frac{1}{4}$  - 20 on the lower end of each tie rod and tighten securely with your  $7/16$ " wrench in diagonal sequence. Grasp the protruding threaded end of each tie rod with your locking pliers, the nose of the pliers against the nuts and the excess tie rod parallel with the jaws of the pliers. Rock the excess portion of the tie rod back and forth until it breaks off. See photo above showing before and after snapping off the tie rod.



*See photos on next page of main stove body assembly*

**PHOTOGRAPHS OF MAIN BODY ASSEMBLY**



**Step 6** Install the air tubes. The upper fireback will interfere with the installation of the rear air tube so it should be removed. Reach inside the stove and turn the rotating clamps that secure the upper fireback releasing the fireback and throat hood and remove them. Apply cement to the rear air tube and stove back as shown in Figures A-4 and C-7.

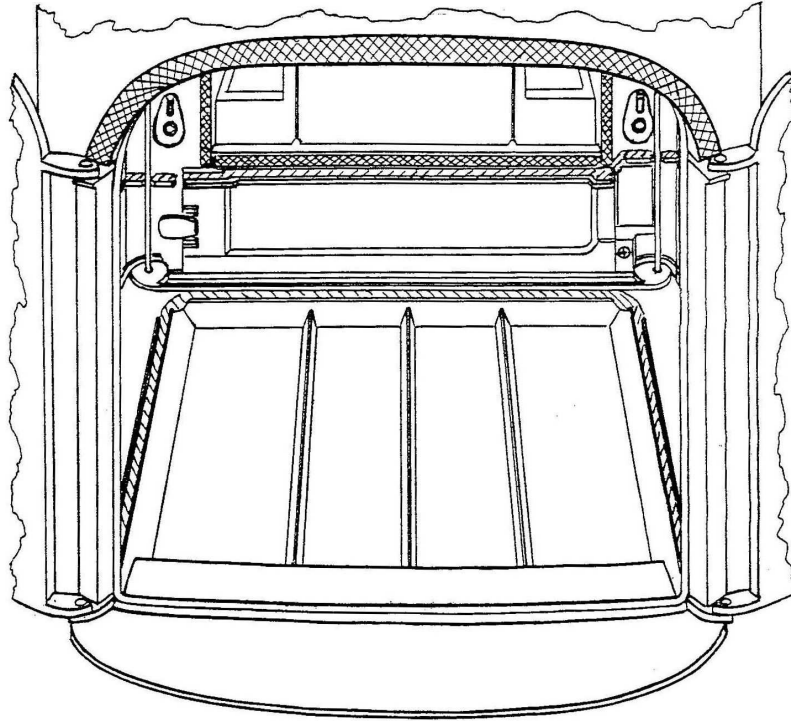


Fig. A-4 Partially Assembled Stove, Cemented and Ready to Accept the Rear Air Tube

**Step 6 Cont.** With the cemented side of the rear air tube facing you, place it in the bottom rear of the stove ensuring that the bottom edge of the tube enters the cement channel in the stove bottom and the upper edge of the air tube comes to rest below the gasket of the lower fireback. See Fig. A-5. Clean off any gasket cement that may have oozed onto the lower fireback gasket.

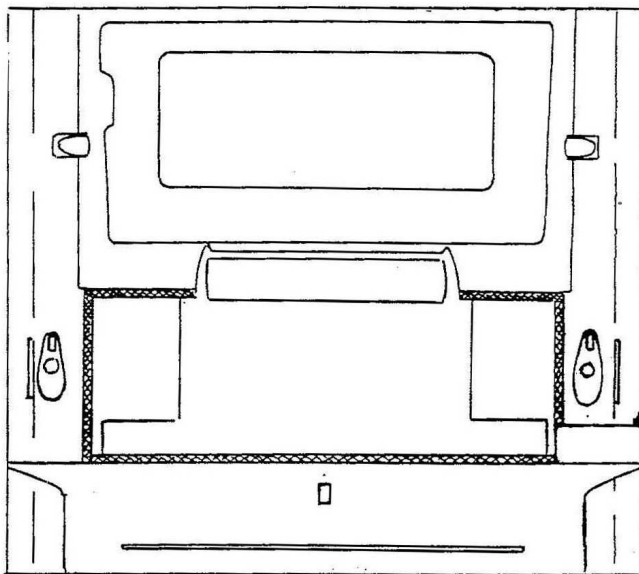


Fig. A-5 Inside View of Stove Back, Damper Frame, Rear Air Tube and Rotating Clamp Installed with Lower Fireback and Throat Clamp Removed

**Step 6 Cont.** Install the right and left air tubes. Place each air tube (projecting ears toward the front of the stove) against each side of the stove about 1" above the cemented flange of the stove side (see Fig. A-6), and push them down ensuring the bottom edge of each air tube enters its cement channel in the stove bottom and the projecting ear of each air tube slides into the locking cast slot in the rear of the stove front.

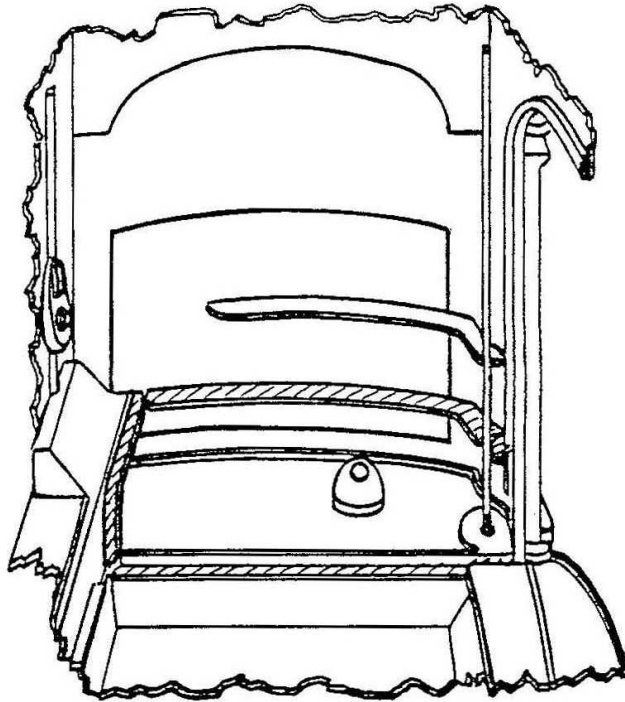


Fig. A-6 Partially Assembled Stove with Lower Fireback Cemented In and Ready to Accept the Right Air Tube

**Step 7** Install the left and right air wash manifolds. Put on cement as per Fig. C-8. Make Sure cement is installed on the front of the left and right air tubes to seal the bottom of the manifolds as per Fig. A-7. Bolt on with one 1/4-20 by 3/4" Phillips round head bolt and washer in the center and a 1/4-20 by 1 1/2" Ph. flat head screw on each side. See Fig. A-8 for center bolt photo.



Fig. A-7 Cement on left air tube for left air wash manifold



Fig. A-8 Center bolt on air wash manifolds

**Step 8** Install the upper fireback/throat assembly *removed in Step 6*. Ensure the gasket is installed on the upper fireback as shown in Fig. G-7. Assemble the throat to the upper fireback as shown in Fig. A-2. Place the upper fireback/throat assembly in position against the gasketed portion of the stove back sliding the right side into position first ensuring the lower right corner of the fireback slides behind the right upper corner of the rear air tube. Center the fireback and lock it into position between the shoulders of the right and left air tubes. Using your fingers, seal the areas where the tie rods pierce the rear air tube and the area where the lower right corner of the upper fireback joins the rear air tube. See Fig. A-9 for the finished look.

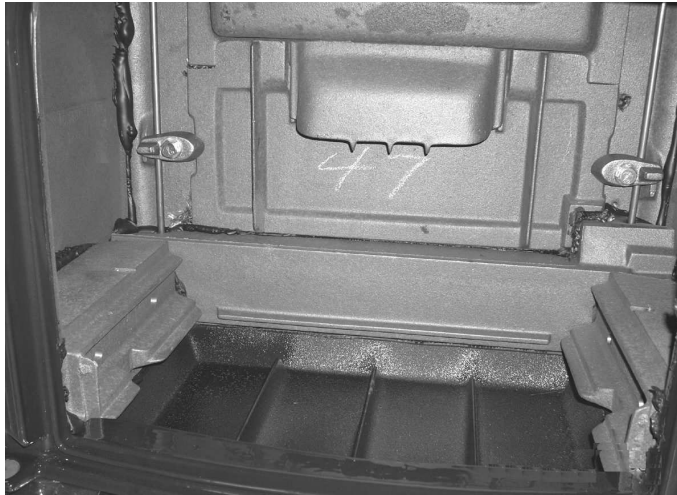
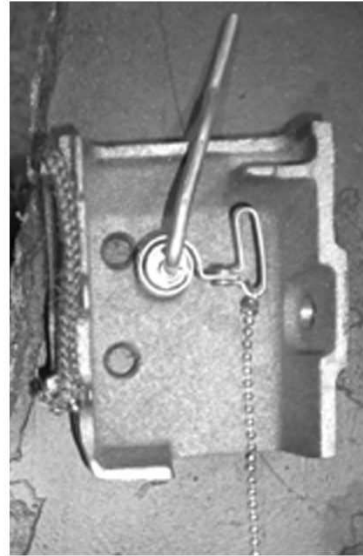
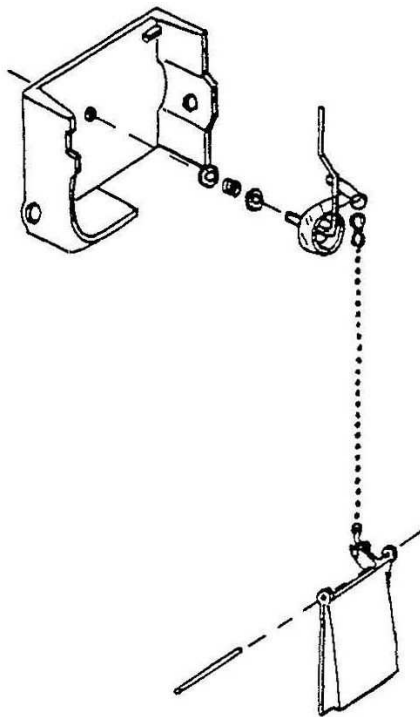


Fig. A-9 Partially Assembled Stove Cemented and with Air Tubes and Lower Fireback Installed

**Step 9** Assemble and install the primary air flap. Insert the 1½" x ⅛" pin into the two drillings in the upper end of the air flap. Place the air flap in its opening in the lower left rear of the stove so that the ⅛" diameter hinge pin falls into the cast groove above the air valve opening. Secure it to the stove with one retaining clip, ½" x ⅝" and one Phillips pan head machine screw, 10-24 x ⅜". Make sure the flap moves freely from the open to closed position.

**Step 10** Assemble the primary air thermostat assembly. See Fig. A-10. Place a #10 washer, a compression spring and another #10 washer on the threaded shaft of the thermostat assembly. Thread the thermostat shaft into the tapped drilling in the inside of the cast thermostat cover. It may be necessary to bend the thermostat handle to thread the shaft to the point where the friction spring is compressed. When the spring is almost fully compressed, bend the thermostat handle into the recess in the top of the thermostat cover. Attach 9" to 12" of #6 ball chain to a #6 ball chain fitting. Attach the ball chain fitting to the wire form clip on the thermostat assembly with a ¼" diameter jump ring. Close the jump ring so the ball chain fitting is securely attached.



**Rear of Thermostat Cover  
Showing Chain Connection**

**Fig. A-10  
Primary Air  
Control  
System**

- Step 11** Install the damper actuator rod and primary air thermostat assembly. Insert the damper actuator rod short, straight end first into the large opening in the upper left corner of the stove back until the small end of the rod seats into the drilling (hole) in the right inside of the stove back projection. Rest the shaft of the actuator rod on the protruding tab of the damper “D” plate (damper is in the closed position). Slide the primary air thermostat cover onto the protruding, long straight end of the damper actuator rod from left to right with gasket facing the stove back projection until the cover seals to the recess in the left side of the stove back. Secure the cover to the stove using two Phillips (or slotted) pan head machine screws  $\frac{1}{4}$  - 20 x 2” long. Install the damper handle stub. Make sure the set screw in the damper handle stub seats against the flat portion of the damper actuator rod end. Operate the damper to ensure the actuator rod moves freely and the damper opens, closes and locks properly. Move the primary air thermostat handle back and forth checking for free movement of the handle lever itself and the ball chain goes up and down. If the handle does not move freely, bend it until it frees up. If the ball chain does not move, check to see if it is caught on something behind the thermostat cover and free it. See Fig. A-11.



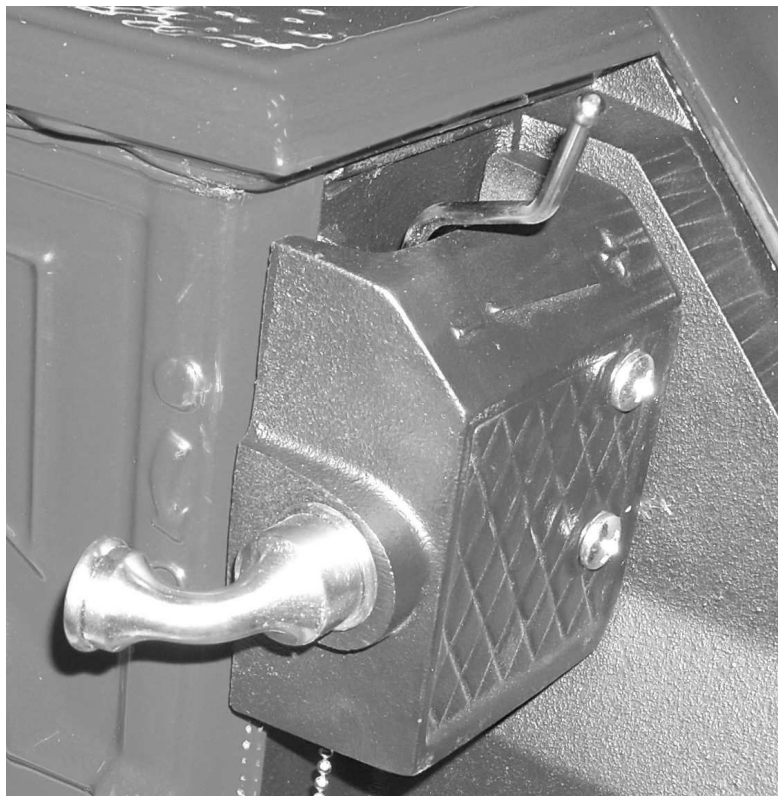


Fig. A-11 Properly Installed and Adjusted Thermostat Assembly with Cover and Damper Stub. Handle Lever Clears Thermostat Cover and Bends Up Above Top.

- Step 12** Attach the ball chain to the cast thermostat flap (see Fig. A-10) and adjust the chain so that the flap is fully closed when the primary air lever is against the minus (-) side of its stop in the cost cover and open when the handle is against the plus (+) side of the stop.
- Step 13** Adjust the damper mechanism. Open the damper. Loosen the adjusting screw lock nut in the inside face of the damper plate with a 7/16" wrench. Turn the adjusting screw in a clockwise direction with a 1/8 Allen socket key wrench checking the tightness of the mechanism periodically. It is properly adjusted when there is decided resistance when closing the damper and there is a definite "click" when the "lock" position is reached. When you reach this point in your adjustment, hold the adjusting socket screw in position with the Allen key wrench while tightening the hex lock nut with the 7/16" wrench.
- Step 14** Install the flue collar. Select the vertical or horizontal flue exit position and secure the flue collar with two Phillips round head machine screws, 1/4 - 20 x 3/4". Make sure the flue collar gasket on the back makes a good seal (see Fig. G-2).
- Step 15** Install the secondary air thermostat probe and air flap (valve). Looking at the back side of the stove you will see two small holes – an untapped hole in the center, a tapped hole at 10:00 and a tapped hole at 5:00. The untapped hole in the center receives the probe end of the secondary air thermostat. If you have replaced the refractory assembly, you must drill a hole through the end of it for the secondary air probe. Using a 3/16" drill bit between your thumb and forefinger, gently spin the drill bit through the refractory material in a clockwise direction.

**Step 15 Cont.** Install the thermostat probe in the hole and secure the large tab on the probe assembly to the stove back with one Phillips pan head machine screw – 10-24 x ¼”. Install the secondary air wire link onto the small tab on the end of the thermostat coil with the short end of the “U” facing the stove back. Hook the short “L” end of the wire link through the small hole in the projecting tab of the air flap (valve) and secure the air flap to the back of the stove with one Phillips pan head machine screw, 10-24 x ¼” and one shim ring. Make sure the shim ring centers in the hole in the air flap and does not pinch or restrict free movement of the air flap. Test to ensure the flap moves freely. When properly installed, the secondary air thermostat and the air flap assembly should appear as depicted in Fig. A-12.

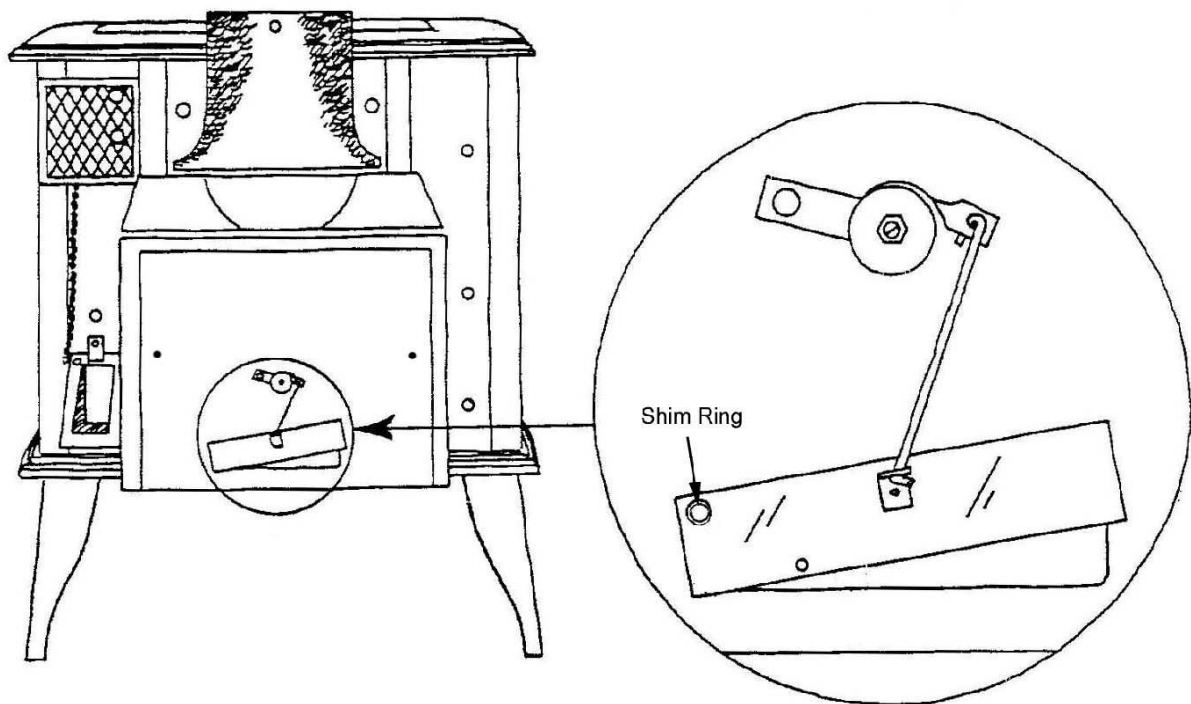


Fig. A-12 Secondary Air Control System

**Step 16** Install the catalyst block access cover. Secure with two Phillips round head machine screws, ¼ -20 x ½”.

**Step 17** Remove the four slotted round head machine screws, ⅜ -16 x ½” from the stove bottom. Install the four stove legs and the handle holder. Secure the two rear legs and left front leg with three hex head cap screws, ⅜ -16 x 1” and three flat washers, ⅜”. Secure the right leg with one hex head cap screw ⅜ -16 x 1” and one fallaway handle holder in place of a washer. Position the handle holder so that the hole that accepts the handle faces out from the right side of the stove.

- Step 18** Install the drop-in andirons and the ash pan. Drop the andirons into their respective slots in the front edge of the grate with the cast design on the andirons facing outward.
- Step 10** Clean and prepare the stove for painting. With a putty knife and/or a damp cloth, clean all the outside panel seams of any excess cement. It is critical to do this cleaning before the stove is burned and the material cures. With a bucket of hot water and a sponge or soft rag, wash the stove down paying particular attention to the seams or joints. Mask the rating plate and the handle stubs with masking tape before starting.
- Step 20** Paint the stove. Use Vermont Castings High Temperature Stove Paint Classic Black part number 0000035 or any High temperature stove paint from suppliers such as Stove Bright (Forrest Paint). Stove Bright Satin Black is a close match. Follow the instructions on the can. Do not spray on too thick.
- Step 21** Assemble the doors. See Fig. A-13. The load doors at this point should have been disassembled, cleaned, repainted and then re-gasketed with glass and door seal gaskets. Carefully tap in the four hinge pins until fully seated if removed for cleaning. Place each piece of glass in its gasketed frame. Secure the glass with angled corner clips and the short bottom and long side glass brackets. Use 10-24 x 1/2" Phillips pan head machine screws.

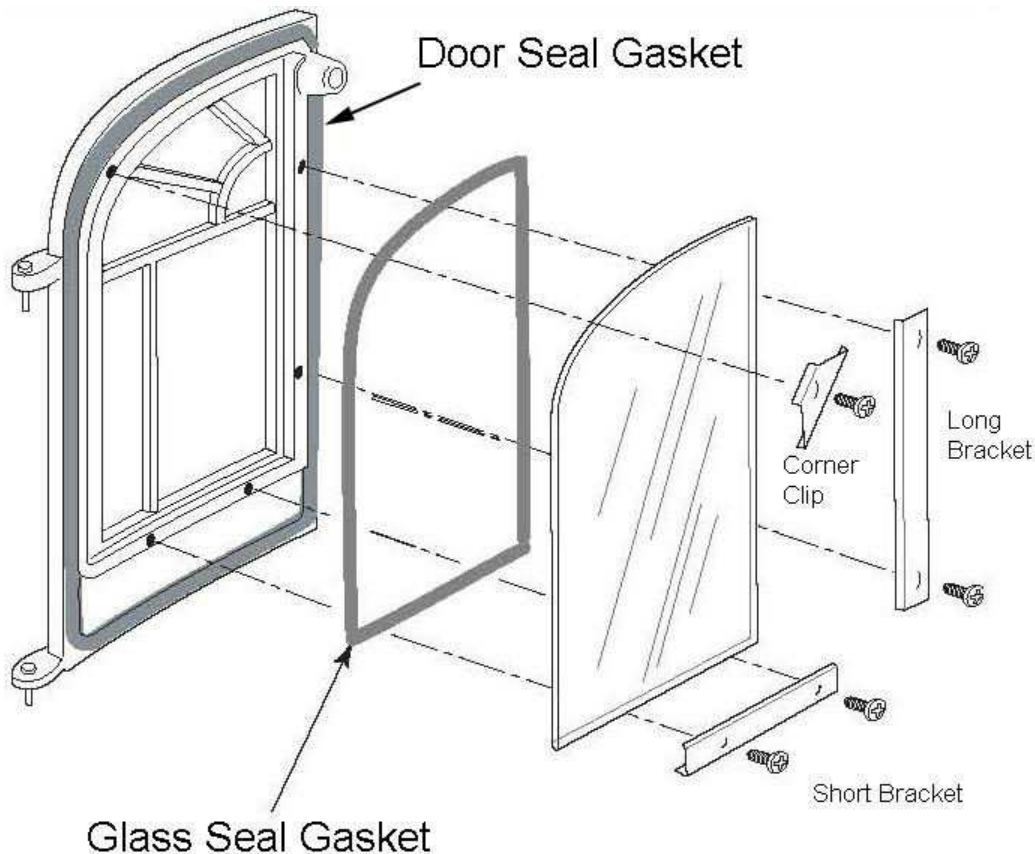


Fig. A-13 Glass Assembly Parts

**Step 22** Mount the doors on the stove by aligning the hinge pins with the drilled bosses on the stove's front plate. Insert the shaft of the handle stub through the drilling in the upper left edge of the right door. See Fig. A-14. Place the cast pawl on the handle shaft, stepped side of the pawl towards the inside of the door. Push the pawl against the inside of the door and secure it in position with the  $\frac{1}{4}$ -20 x  $\frac{1}{4}$ " socket set screw cupped point. Turn the handle 360° and ensure that the handle and pawl are tight but free moving. Once the pawl is adjusted properly on the shaft, secure it in position with one  $\frac{3}{8}$ -16 hex head jam nut. Thread one  $\frac{1}{4}$ -20 x 1" socket set screw oval point into the tapped drilling in the pawl so that  $\frac{1}{4}$ " -  $\frac{3}{8}$ " of the screw protrudes through the stepped side of the pawl. This screw may also have a pan head on it. If so, ensure the pan head faces the inner part of the door providing the striking surface. Thread a  $\frac{1}{4}$ -20 hex nut onto the screw but do not tighten at this time. Close and latch the door. If the door does not latch properly, providing a good tight all around seal, adjust the set (striker) screw. Turning it clockwise will tighten the door seal. When the door is properly adjusted, tighten the  $\frac{1}{4}$ -20 hex nut with a  $\frac{7}{16}$ " wrench.

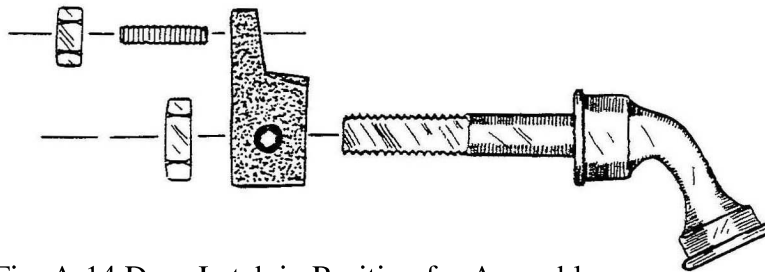


Fig. A-14 Door Latch in Position for Assembly

**Step 23** Install the griddle quads on the griddle. Place the griddle flat side down on a flat surface. Place the griddle quadrants on the drilled and tapped bosses so that the three protrusions on each quadrant fall into the three dimples in the griddle. Secure the quadrants with two  $\frac{1}{4}$ -20 x  $\frac{1}{2}$ " hex head cap screws. Install the griddle in its proper position in the stove top.

**Step 24** Assemble the griddle handle. Place the griddle upside down on a flat surface. With the handle 45° from its final position, tighten the nut as far as possible with pliers. Move the handle to the final position while holding the nut with the pliers. Be careful not to over tighten as the tab may snap. See Fig. A-15.

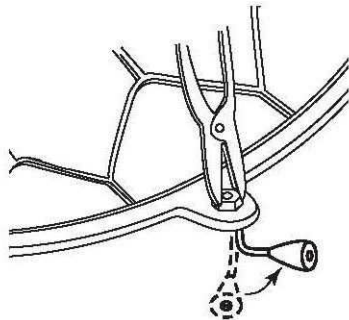


Fig. A-15 Install Griddle Handle