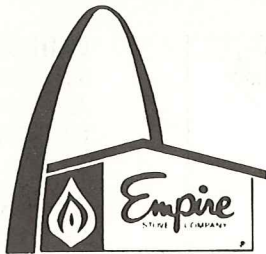


MODEL WCC65
(65,000 B.T.U.)



MODEL WCC50
(50,000 B.T.U.)

BELLEVILLE, ILLINOIS 62222
AREA 618-233-7420

COUNTERFLOW WALL FURNACE INSTALLATION AND HOMEOWNER INSTRUCTIONS

WCC-65	Specifications and Dimensions - Natural & L.P. Gases	WCC-50
65,000	INPUT—B.T.U./HR.	50,000
48,750	OUTPUT—B.T.U./HR.	37,500
45,000	BYPASS—B.T.U./HR.	35,000
14-1/8	WIDTH	14-1/8
10"	DEPTH	10"
87"	HEIGHT	81"
1/2"	GAS CONNECTION	1/2"
4"	VENT - OVAL	4"
440	C.F.M. @ 115V.	350
1/20	H.P. (APPROX.)	1/20
TWO	BLOWER SPEED	TWO
Electrical 115V. - 60 Cyc. 100 Watts - less than 3 amp.		

PACKAGING

One carton containing complete furnace assembly (no vent equipment supplied).

OPTIONAL EQUIPMENT

One carton containing 7A25A Rear Outlet Grille (two-way) inner boot and outer boot for 10" maximum extension.

One carton containing 7A25B Rear Outlet Grille (one-way), inner boot and outer boot for 10" maximum extension.

One carton containing 7A25A-1 Rear Outlet Grille (two-way), inner boot and outer boot for 7/8" extension through plaster or wall board only.

One carton containing 7A33A Rear Casing Grille (two-way), and boot for attachment directly to furnace casing.

One carton containing 7A26A Side Outlet Grille, Inner Boot & Outer Boot for 10" Maximum extension, and metal filler strips for side of casing.

One carton containing 7A34A Side Outlet Grille and Boot for attachment directly to furnace casing.

One carton containing 7A23A metal trim strips for side of casing.

One carton containing 7A24A-1 Vent Enclosure for "Free-Standing" installation - 12" to 30" length as ordered.

One carton containing 7B39 adjustable damper for rear outlet only.

One carton containing 7C29A-1 Snap-On (one-way) Directional Grille for front outlet.

One carton containing 7C29A Snap On (two-way) Directional Grille for front outlet.

1. LOCATION

Locate furnace as near the center of space to be heated as possible. Furnace may be installed flush against a wall or recessed up to 9 1/4" maximum. You may install to within 3/4" to intersecting wall with use of optional one-way directional grille. See (Fig. B)

With standard furnace discharge outlet, do not install closer than 4" to intersecting wall. See (Fig. C). Do not install in closet. Use only optional outlets and grilles supplied by manufacturer. (See Fig's. B-D-E-F & G). Minimum clearance from top of furnace to ceiling 4", Floor 0".

FOR YOUR SAFETY

If you smell gas:

- 1. Open windows**
- 2. Don't touch electrical switches**
- 3. Extinguish any open flame**
- 4. Immediately call your gas supplier.**

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.



2. ROUGH-IN

Recessed in Wall - Furnace installed on **finished floor** - Figure "H" (see instructions covering optional outlets).

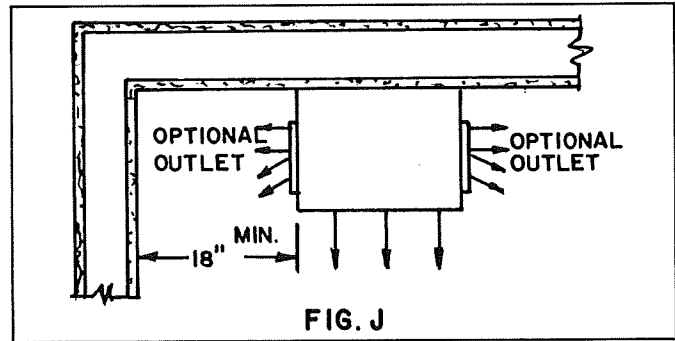
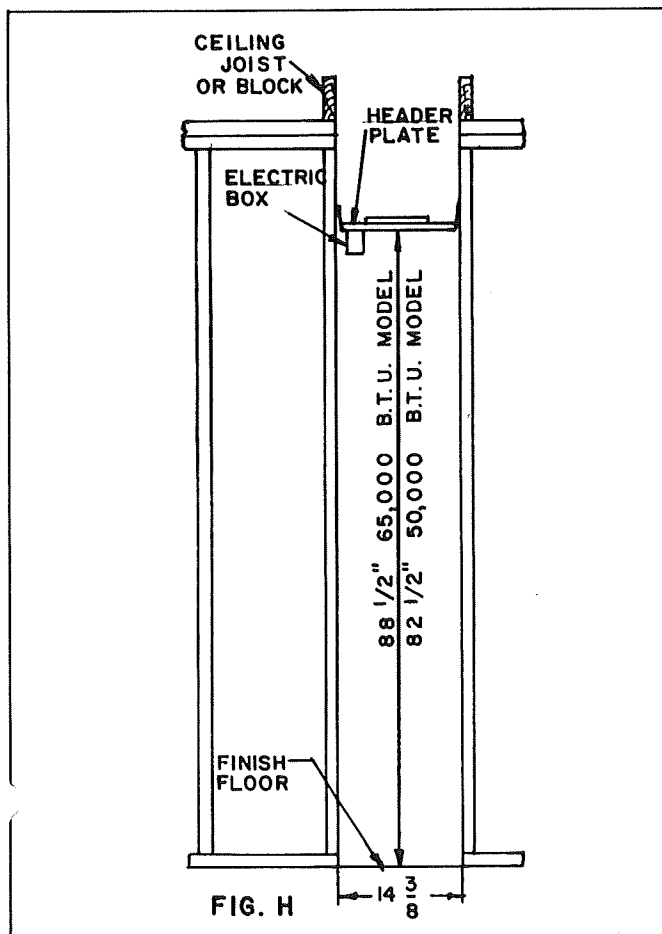
IMPORTANT - Remove 4" x 14" fiberglass gasket from bottom of Header Plate and discard. This gasket is not used when the furnace is recessed in the wall.

Installed Header Plate (with electric junction box front left corner as shown), nailing securely to studs at the dimension shown - Figure "H" - measured from the finished floor to bottom flat surface of Header Plate. Tighten nails carefully on each side so Header will be exactly centered between the studs.

Install "B-W" type vent pipe from header plate through the roof in accordance with local codes. **NOTE:** Starter or hold down plate must be attached to top of header before B/W vent can be installed. B/W vent should terminate not less than 12 feet above the floor on which furnace stands. (See Fig. H). Run 24 volt wiring from thermostat location to recess under header plate.

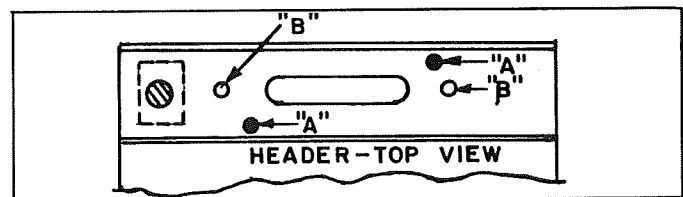
Electrician connects 115V wiring to electric junction box and convenience outlet.

Plumber installs $\frac{1}{2}$ " gas connection in location shown - Figure "A".



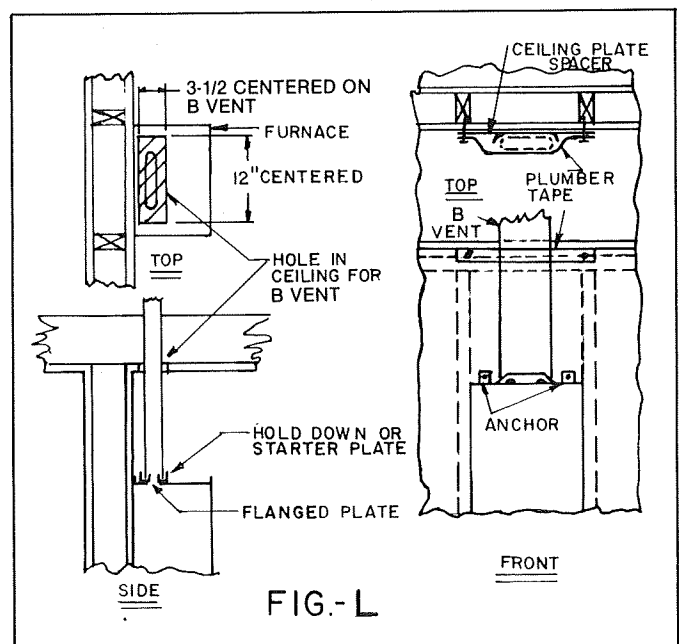
Furnace "Free Standing" Flush to wall - on finished floor - Figure "L" (See also figures E-F-G-J-K). See instructions covering Optional outlets.

Make sure the 4" x 14" gasket is in position on the bottom of Header Plate. Remove and discard 2" high fiberglass collar around the flue extension at top of furnace and, place Header over flue extension with electrical junction box extending through opening in top corner of furnace. Fasten to matching holes in furnace top through holes "A" in Header, using 2-#8 x $\frac{3}{4}$ " metal screws provided.



Install vent pipe in accordance with previous instructions, cutting out as required by Code to maintain 1" clearance from combustibles.

Follow electric and gas connection previously given.

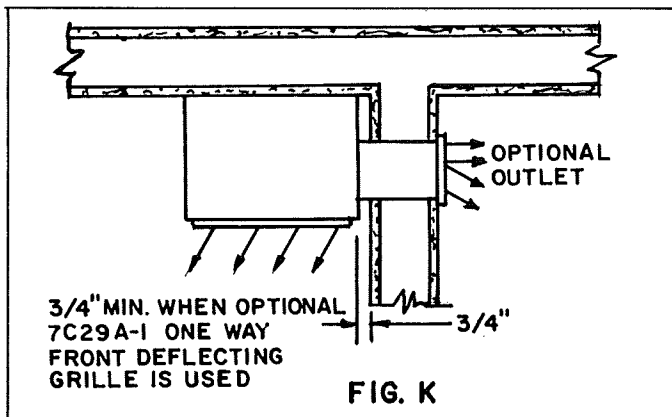


3. PLASTERING INSTRUCTIONS

Instruct contractor to use only plain lath (unperforated) behind the furnace to avoid plaster keys extending into recess.

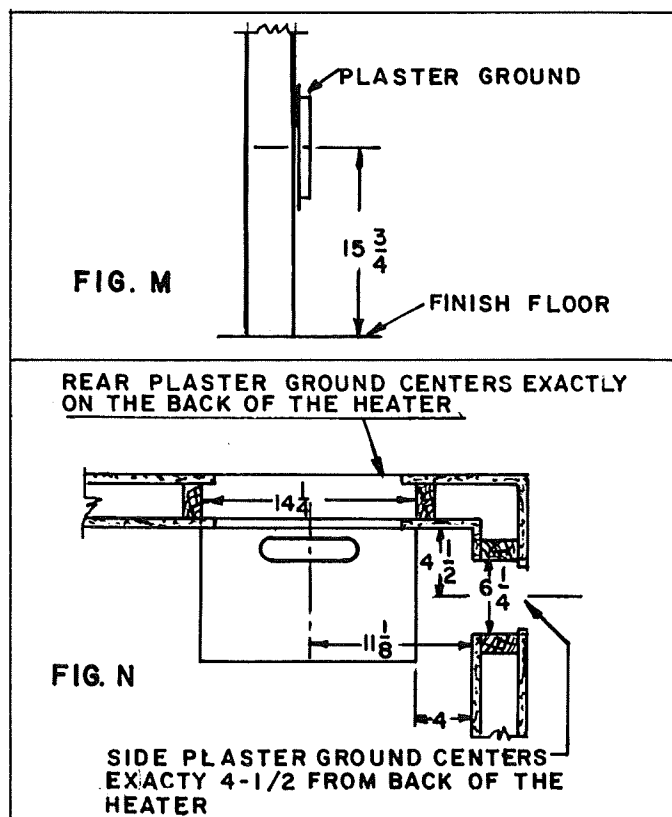
4. ROUGH-IN OPTIONAL OUTLETS - FIGURES M-N

Install plastergrounds as shown in Figures "M-N". In "dry-wall" construction, the flange



faces inside the stud line and the gypsum board is trimmed flush with the opening.

Follow measurements given carefully, and note that when a side outlet is used, the furnace casing must be exactly 4" from surface of finished wall.



GAS SUPPLY

Rough-in 1/2" gas connection - see dimensional drawing (Fig. A). This inlet must be equipped with a shut-off valve. Do not use aluminum pipe or tubing where its in contact with concrete, masonry, plaster or earth. If in doubt, check with local plumbing inspector. Do not install flexible tubing in a concealed location.

Gas Supply Pressure

For Natural gas - Minimum	5" W.C.
- Maximum	7" W.C.
For L.P.G. - Minimum	11" W.C.
- Maximum	13" W.C.

5. FINISH INSTRUCTIONS - GENERAL

Caution: Make sure Header Plate is correct distance above finish floor or block on which furnace rests.

Remove gas stub, if necessary. Remove grille over blower compartment by removing thumb screw and raising 1/2" to disengage bottom edge. Remove burner compartment door by pulling out at top. Remove burner and control assembly by (1) remove 1/4" Nut on bolt protruding through front of each (two) burner hanger bracket, (2) push burner assembly toward back to disengage front end of bolts, (3) move assembly forward to disengage back end of bolts.

Install heavy fiber glass gasket (Packed in envelope with thermostat) placing it over the electrical junction box on bottom of Header Plate. NOTE: When the furnace is installed with the Header Plate fastened directly to the top of the furnace, discard the gasket packed with the thermostat as the air seal is accomplished with the 4" x 14" gasket between the top of furnace and Header Plate. Make sure the flue pipe gasket is in position on top of the furnace.

Two anchors packed in parts package may be slipped into position, (Fig. L) between back of cabinet and Header, and fastened to the wall surface to secure furnace in position. Fasteners are not furnished because of different requirements of various types of wall construction.

Tip top of furnace into position under Header Plate. Raise bottom of furnace and swing back into position through holes provided in bottom.

IMPORTANT:

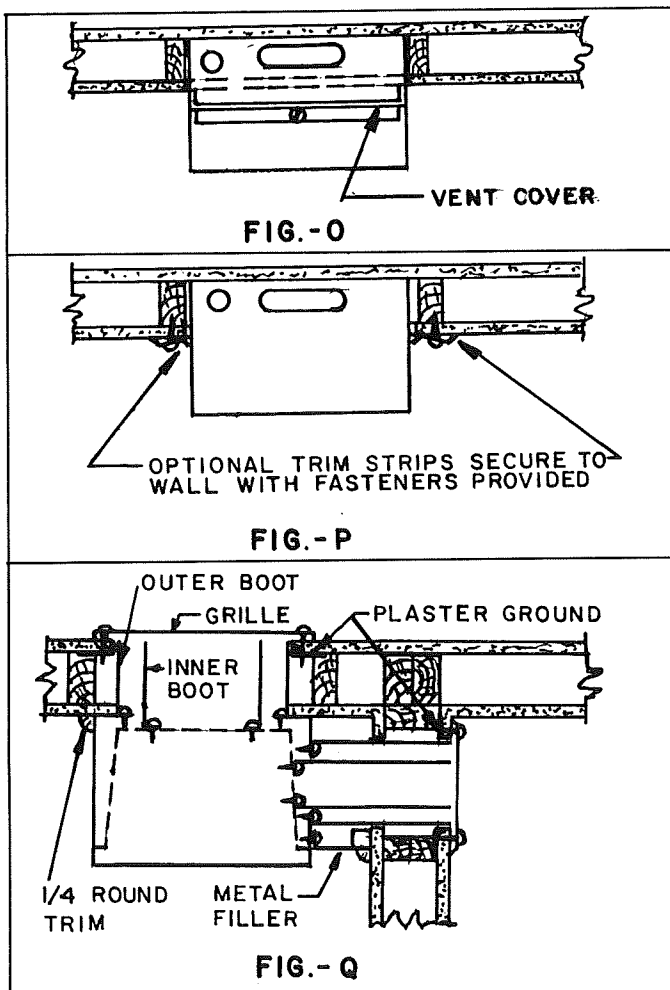
After furnace has been placed in position make sure the gaskets are pressing against the furnace top to eliminate air leaks at these points.

Replace burner assembly, tightening nuts on front end of bolts securely. Replace gas stub and install a gas cock. Connect to gas valve with approved fittings in accordance with local Code. Tighten joints securely and after gas supply is turned on check for leaks by brushing each joint with soap-suds and watching for bubbles which indicate escaping gas.

Remove plate over blower by taking out 4 screws in side flanges of frame. Plug cord into convenience outlet in the Header Plate junction box. Replace, making sure inside collar is spaced from blower blades. Orifice plate may be adjusted vertically in frame if necessary. Tighten all screws securely.

Connect thermostat to two wires extending from top of furnace immediately in front of the Header Plate junction box, using 2 wire nuts provided. See wiring diagram.

Place vent Cover Plate on top of furnace (Fig. O). Press snug against wall and secure through bottom flange to top of furnace with screw provided. This cover is used on recessed installation only.



When furnace is recessed, the crack between plaster and cabinet may be concealed by the use of optional metal trim strips. (7A23A). See Fig. P.

6. FINISH INSTRUCTIONS - OPTIONAL OUTLETS

Side or rear extended boot - Figure "Q". See also Figures E-F-G-K.

Before setting furnace into position, cut rectangular opening in outer casing where marked. Place Outer Boot against casing with inner flanges exactly on edges of cut hole, mark screw location, remove boot and drill #33 holes for sheet metal screws. Remove knockout plate and knockouts for screws from inner liner. Secure 1X1 wood strip to wall surface next to side outlet as a back-up for metal filler strips (included in Side Outlet Kit). Fasten Metal Filler Strips to side of furnace casing with front surface exactly opposite front of wood back-up strip.

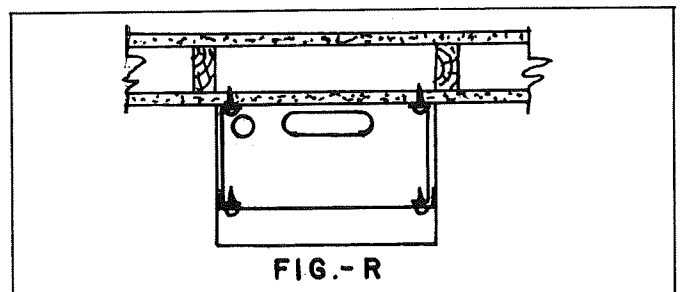
After furnace is placed in position, pass Outer Boot through plasterground tight against furnace casing, mark and cut off outer end flush with wall surface. Press Inner Boot against liner, mark and cut off flush with wall surface. Install Outer Boot first, then Inner Boot, fastening through all screw holes securely with screws provided.

SIDE OR REAR GRILLES ON CASING - FIG J.

When Grille is fastened on outer casing, cut rectangular opening in outer casing in location marked **except** cut 1" wider ($\frac{1}{2}$ " on each side) than marking on casing. Remove knockout plate and knockout for screws from inner liner.

Fasten boot to inner liner with screws provided. Fasten grille to outer casing with screws provided.

CAUTION: Use only Boots and Grilles provided by the manufacturer.

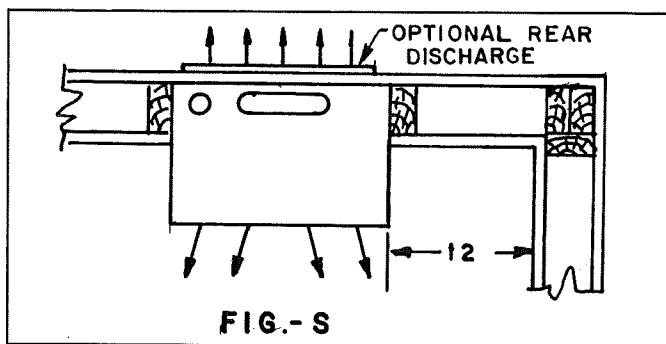


7. OPTIONAL VENT ENCLOSURE - Free Standing

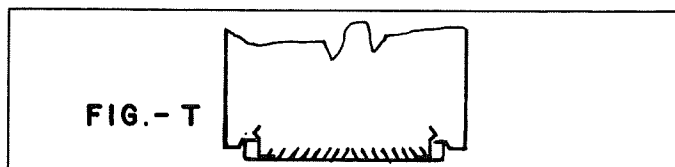
Install Optional Vent Enclosure (Fig. R). Cut side panels to fit between top of casing and ceiling. Fasten side members to wall flush with sides of casing. Cut front panel to fit and fasten to side panels. Note that bottom edge of front panel is notched to fit into recess of casing top to hold front of assembly in position.

8. OPTIONAL DIFFUSING GRILLE — See Fig. S-T

CAUTION: For use only in conjunction with a front Outlet or Front and Rear Outlets, when the furnace is spaced at least 12" from an intersecting wall. For other clearances see Fig. B-C-F-G-K.



To Install - Metal clips on back of grille snap into side louvers of front warm air outlet. Adjust clips with pliers if necessary. Grille may also be attached with sheet metal screws.

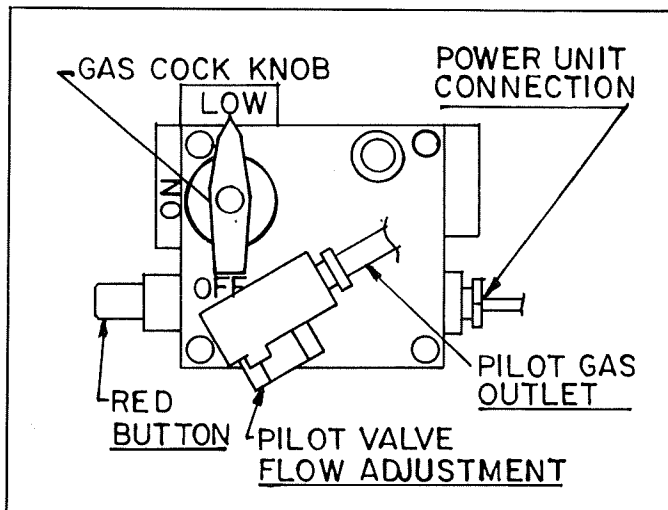


9. LIGHTING AND OPERATING INSTRUCTIONS

- a. If pilot goes out: Turn off pilot and burner, wait five minutes before relighting, open pilot observation door by rotating door to right.
- b. **Essex TF-50 Valve** - open valve on pilot line, depress red button and hold firmly depressed while lighting pilot and hold for 30 seconds after pilot is burning, replace door after lighting pilot to operate burner. Turn knob to "On" position, set wall thermostat to desired room temperature. To shutdown, turn valve knob to "Off" position and turn off pilot line valve. Your furnace is equipped with a two-rate control system. The valve knob will show an "On" and a "Low" position. Operate at the "Low" position, turning to the "On" only as necessary for rapid response in cold weather.
- c. Refer to manufacturer's instructions accompanying automatic controls.
- d. Important: Keep burner and control compartment clean, see maintenance instructions.

10. HOME OWNERS OPERATING INSTRUCTIONS

OPERATION: The operation of this furnace is automatic after the pilot is lit, main gas valve turned "on", and the thermostat is set to the desired room temperature.



When the room temperature falls below the thermostat setting, the main burner ignites. After a short period to warm up the heating element, a fan switch turns on the blower motor and warm air is discharged from the outlet grille near the floor.

When the room temperature has been raised nearly to the thermostat setting, the main burner shuts off automatically but the blower continues to run for a few minutes to cool the inside of the furnace.

Your furnace is equipped with a two speed control system, you will notice that the dial on the gas valve is marked "Low" and "On". Turn the dial to the low position and the room thermostat will operate the main burner at about $\frac{3}{4}$ of maximum capacity and the blower will run at "low" speed during most of the heating cycle. Turn the dial to "on" only when a fast heat-up is desired during extremely cold weather. High operation develops maximum capacity of the furnace and top speed of the blower.

SAFETY CONTROL: Your furnace is protected against unsafe operation by three automatic safety controls — (1) A safety pilot acts to shut off the gas supply in case of pilot failure — (2) A Thermal Overload protects the motor against burn-out caused by current surges or impaired air circulation. (3) The lower limit switch shuts down the main burner to prevent overheating the furnace cabinet. This limit switch will reset itself when heater cools down.

LIGHTING INSTRUCTIONS: Are located on a plate inside the burner compartment.

MAINTENANCE

Weekly — Important — Using a vacuum nozzle, carefully clean the burner compartment and remove any dust accumulation. Make sure the thermostat or main gas valve is "Off" before cleaning and after cleaning check to see that the pilot is burning.

WEEKLY — Visual check of burner and pilot flame — see pictorial sketches (Fig. U).

EACH SEASON — It is recommended that a competent serviceman completely checks the venting system, the furnace, motor, and all controls at the start of each heating season. Phone your authorized installing dealer.

MOTOR — For access to motor: (1st) Disconnect 115V circuit at fuse or breaker. (2nd) Take off top door and remove 4 screws holding blower inlet plate. (3rd) Slide blower plate forward to remove. (4th) Remove blower wheel by loosening an "Allen Head" set screw which locks wheel to shaft. Replace wheel with face of hub flush with shaft and replace inlet plate exactly centered vertically on the blower wheel. Tighten screws securely.

The motor will operate under normal service for many years without additional lubrication. However, for maximum life the manufacturer recommends the motor be inspected yearly, dust blown out of the ventilating holes, and a few drops of #20 oil added to each bearing cavity - more motors are ruined by over-oiling than from lack of lubrication - Do not over-oil.

WARNING — The appliance area must be kept clear and free from combustible materials, gasoline and other flammable vapors and liquids.

SUGGESTIONS — Clean cabinet with a damp rag - never use abrasive cleaners. Warm air outlet grilles are finished in heat resistant baked enamel - do not refinish with wall paint.

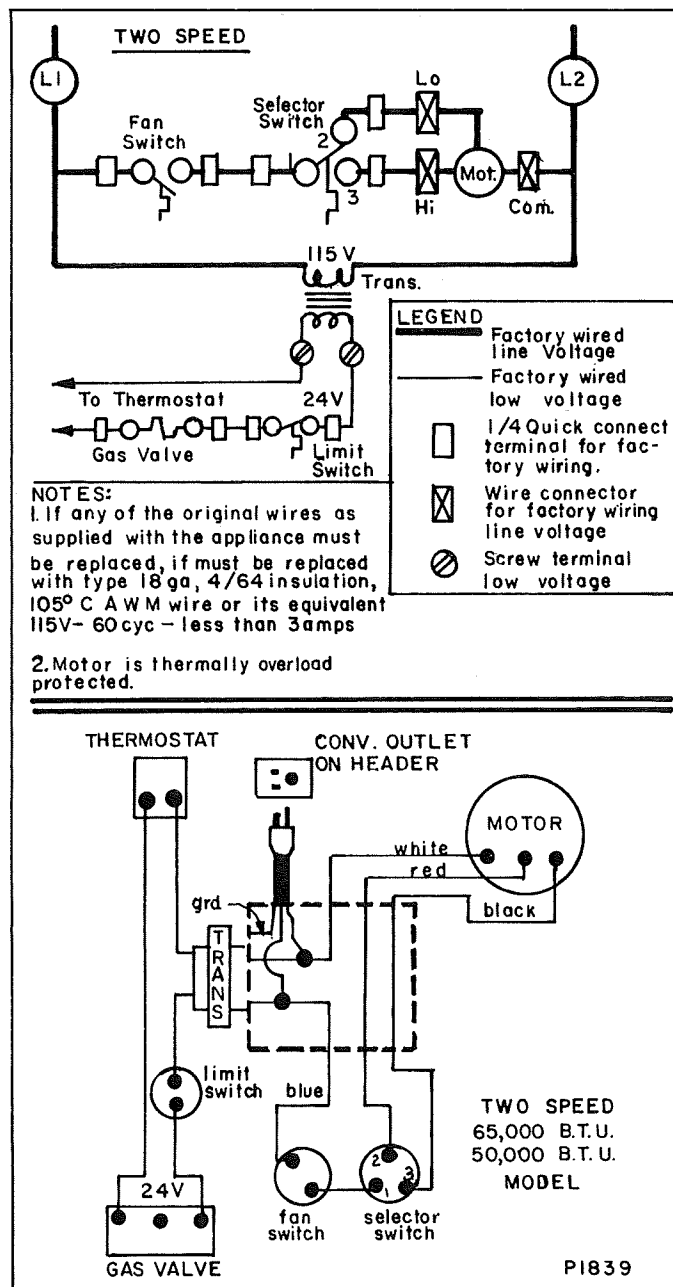
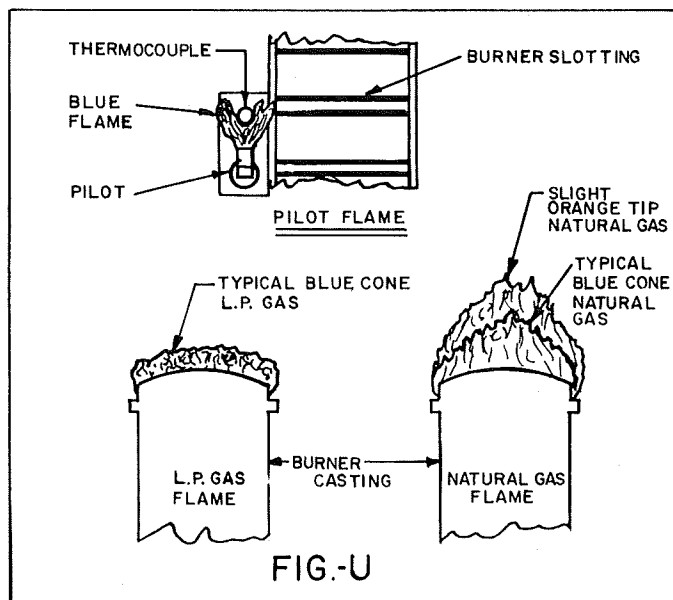
For better circulation and more effective heating do not place obstructing furniture closer than 4 feet to the front of the outlet grille or 2 ft. to the side of the cabinet.

TROUBLE SHOOTING

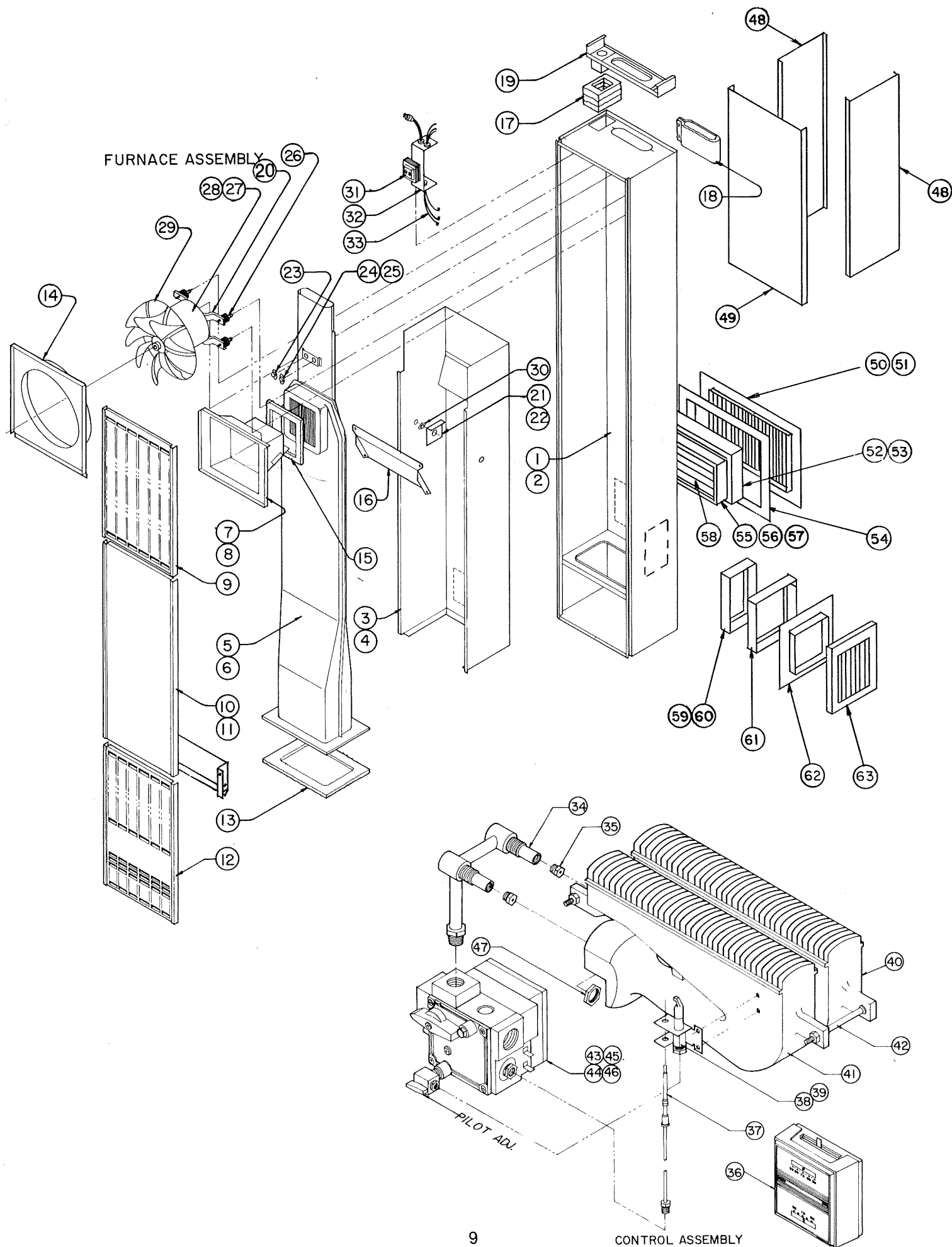
FAN TYPE VENTED WALL FURNACE

1. Pilot will not stay lit after carefully following lighting instructions.

- a. Thermocouple producing insufficient millivoltage
 1. Check pilot flame - must impinge on thermocouple.



2. Be sure thermocouple is fully inserted in bracket.
 3. Loose or dirty thermocouple connection at valve.
 4. Check thermocouple with millivolt meter. Should generate approximately 30 millivolts when not connected to load. When connected to load, should generate approximately 14 millivolts; if below 7 millivolts, replace.
 - b. Defective thermomagnet safety - replace after above is checked out.
- 2. No gas to burner - thermostat set for heat - pilot burning.**
- a. Manual valve cock not turned to "On" position.
 - b. No low voltage to valve terminals.
 1. Power off - check house circuit.
 2. Plug not plugged into receptacle in header.
 3. Defective thermostat - check by jumpering thermostat terminals - check thermostat contact points for closure and/or dust.
 4. Defective transformer - check by using test lite.
 5. Defective limit switch - check by jumpering terminals - replace if necessary.
 6. Loose wire connection - check all connections.
 - c. Low voltage to valve terminals - no gas to burner -
 1. Plugged burner orifice - check.
 2. Defective valve - Note: It takes up to 30 seconds for valve to open after low voltage is applied to terminals - replace if necessary.
- 3. Burner comes "On" but goes "Off" before blower turns "On".**
- a. Defective limit switch - if burner goes off in less than 5 min. from room temperature start - check limit switch, replace if necessary. Note: Blower should turn "On" within 3 minutes after burner is "On" from a room temperature start. If not, check following:
 - b. Defective wiring - remove blower wheel and check all wire connections. Check with wiring diagram - correct if necessary.
 - c. Defective motor, jumper across fan switch, motor should rotate.
 - d. Defective fan switch. If after checking above possibilities problem still exists, replace fan switch.
- 4. Burner comes "On", blower comes "On", but cycles "On" and "Off" while burner remains "On".**
- a. Furnace not burning at full rate - check for low gas pressure at valve (should be 4" w.c. for natural gas; 10" w.c. for L.P.G.). Check burner orifice.
- 5. Burner comes "On", blower comes "On" but burner cycles "Off" and "On" with blower "On".**
- a. Furnace operating over-rate see 4(a) above. Correct as necessary.
 - b. Line voltage to motor below 115v. Causing blower to run slow.
 - c. Heated air discharging against an object causing recirculation. Such as a hall installation or a large piece of furniture within 4' of discharge.
 - d. Header not properly installed with gaskets provided, causing loss of circulating air.
- 6. Furnace operates but turns "Off" before room temperature is attained.**
- a. Check thermostat location - should not be in path of warm air discharge from furnace, near a lamp, or above a T.V. set or stereo.
 - b. Check thermostat calibration.
- 7. Furnace operates but will not shut "Off" when room temperature is attained.**
- a. Thermostat lead wires may be shorted together caused by a nail or staple.
 - b. Valve may have dirt under valve seat or be stuck open. Remove low voltage leads from valve, if gas still flows, replace valve as necessary.
 - c. Thermostat on outside wall or hole in wall behind thermostat causing cold air to contact thermostat.
- 8. Other abnormal operation.**
- a. **Delayed ignition or excessive flame roll-out** - pilot flame may be too low, adjust. Valve slow opening bleed orifice plugged, clean or replace valve.
 - b. **Blower noise** - motor mounts may be loose, blower wheel out of balance, set screw loose on motor shaft. Blower may be rubbing on shroud. Adjust shroud or motor mounts as necessary. Motor may need oiling.
 - c. **Expansion noise, ticking** - casing twisted or not level at time of installation causing combustion chamber to bind on its locating pins. Remove lower door, slide a hacksaw blade under fiberglass gasket and cut off one pin located on either side about half-way back.
 - d. **Burner resonance** - usually associated with L.P. gas operation. Adjust primary air screw in throat of each burner. Adjustment should only be made after about 10 minutes of operation. Should be a soft blue flame without streaming yellow tips.



COUNTERFLOW VENTED WALL FURNACES

Replacement Parts List			Furnace Model No.				Quan. Required
Item	Mfrs. Part No.	Description	WCC50 Nat.	WCC50 L.P.G.	WCC65 Nat.	WCC65 L.P.G.	
1	7C31-2	Outer Casing Assembly - Less Front Panel	X	X			1
2	7C31-1	Outer Casing Assembly - Less Front Panel			X	X	1
3	7B41	Inner Liner Assembly	X	X			1
4	7B28	Inner Liner Assembly			X	X	1
5	7C33-2	Element Assembly	X	X			1
6	7C33-1	Element Assembly			X	X	1
7	7C42	Relief Opening Pan	X	X			1
8	7B32	Relief Opening Pan			X	X	1
9	7A70	Top Front Panel Assembly	X	X	X	X	1
10	11B26-2	Center Front Panel Assembly	X	X			1
11	11B26-1	Center Front Panel Assembly			X	X	1
12	7B67	Bottom Front Panel	X	X	X	X	1
13	P0265	Gasket - Element Base	X	X	X	X	1
14	7B35	Fan Shroud	X	X	X	X	1
15	P0283	Gasket - Relief Pan	X	X	X	X	1
16	7B30	Front Air Deflector			X	X	1
17	7A68	Gasket - Header	X	X	X	X	3
18	7A22	Gasket - Flue Collar	X	X	X	X	1
19	7B57	Header	X	X	X	X	1
20	7B46	Motor Support	X	X	X	X	2
21	7A66-1	Shield - Limit	X	X			1
22	7A66	Shield - Limit			X	X	1
23	P0448	Fan Switch	X	X	X	X	1
24	P1143	Selector Switch	X	X			1
25	P0447	Selector Switch			X	X	1
26	P0228	Vibration Isolator	X	X	X	X	4
27	P1192	Motor	X	X			1
28	P0621	Motor			X	X	1
29	P0143	Blower Wheel	X	X	X	X	1
30	P0226	Limit Switch	X	X	X	X	1
31	P0242	Transformer 115V/24V	X	X	X	X	1
32	7B29	Junction Box	X	X	X	X	1
33	450W	Internal Wires - All	X	X			1
33	465W	Internal Wires - All			X	X	1
34	P1121	Manifold	X	X	X	X	1
35	P0905	Orifice Fitting - specify gas & input	X	X	X	X	2
36	P1064	Thermostat	X	X	X	X	1
37	P0285	Thermocouple	X	X	X	X	1
38	P0454	Pilot - 26T Nat.	X		X		1
39	P0455	Pilot - 26T LPG		X		X	1
40	7C03-2	Burner - Back	X	X	X	X	1
41	7C03-1	Burner - Front	X	X	X	X	1
42	P0181	Spacer - Burner	X	X	X	X	2
43	P1194	Control Valve 2 Rate Nat.	X				1
44	P1195	Control Valve 2 Rate LPG		X			1
45	P1026	Control Valve 2 Rate Nat.			X		1
46	P1028	Control Valve 2 Rate LPG				X	1
47	P0262	Lock Nut	X	X	X	X	2

Optional Accessories

48	7B16-18	Vent Enclosure Side	X	X	X	X	2
49	7B15-18	Vent Enclosure Front	X	X	X	X	1
50	7A102	Rear Grille Assembly	X	X	X	X	1
51	7A124	Rear Grille Assembly (one way)	X	X	X	X	1
52	7C23	Outer Boot	X	X	X	X	1
53	7C23-2	Outer Boot	X	X	X	X	1
54	7C24-1	Plaster Ground	X	X	X	X	1
55	7C21-2	Inner Boot	X	X	X	X	1
56	7C21-3	Inner Boot	X	X	X	X	1
57	7C21-1	Inner Boot	X	X	X	X	1
58	7B39	Damper Assembly	X	X	X	X	1
59	7C20-2	Inner Boot (Side)	X	X	X	X	1
60	7C20-1	Inner Boot (Side)	X	X	X	X	1
61	7C22	Outer Boot (Side)	X	X	X	X	1
62	7C24-2	Plaster Ground (Side)	X	X	X	X	1
63	7A123	Side Grille Assembly (Side)	X	X	X	X	1

