

Sears

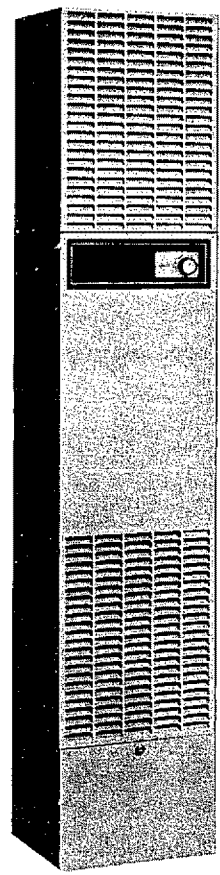
owners
manual

MODEL NOS.
867.736349
867.736389

CAUTION:
Read All Instructions
Carefully Before
Starting The
Installation.

Do not install this
furnace in mobile
homes, trailers or
recreational vehi-
cles.

Save This Manual For
Future Reference.



GAS-FIRED FORCED AIR WALL FURNACE



- Installation
- Operation
- Repair Parts

FOR YOUR SAFETY	FOR YOUR SAFETY
Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.	If you smell gas: 1. Open windows. 2. Don't touch electrical switches. 3. Extinguish any open flame. 4. Immediately call your gas supplier.

Sears, Roebuck and Co., Chicago, Il. 60684 U.S.A.

Contents

Introduction	2	Installation	
Sears Warranty	2	Surface Mount Installation	6-9
Sears Installation Policy	2	Recessed Installation	9-13
Sears Installation Warranty	2	Connecting Gas Line	13
Safety Rules	2-3	Electrical Wiring	14
Basic Tools Needed	3	Thermostat Installation	14
Basic Materials	3	Checks and Adjustments	14,15
Optional Accessories	4	Lighting	16
Furnace Data	4	How To Use Your Furnace	16
Unpack Your Furnace	4	How To Care For Your Furnace	17
Installation Steps	5	SERVICE HINTS	17
Locating Furnace	5	Wiring Diagram	18
Combustion Air	5	Repair Parts	19-27

Introduction

Please read our instructions before you install and use your furnace. This will help you obtain the full value from this furnace. It will also help you avoid any needless service costs, if the problem is something we cannot control and cannot cover in our Warranty.

FULL ONE YEAR WARRANTY ON SEARS WALL FURNACE

For one year from the date of purchase, when this furnace is installed and maintained in accordance with our instructions, Sears will repair defects in material or workmanship in the furnace, free of charge.

LIMITED WARRANTY ON HEAT EXCHANGER

After one year and through ten years from the date of purchase, Sears will furnish a replacement Heat Exchanger, if the Heat Exchanger in the furnace is defective. You pay for labor.

TO OBTAIN WARRANTY SERVICE, SIMPLY CONTACT THE NEAREST SEARS STORE OR SERVICE-CENTER THROUGHOUT THE UNITED STATES.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Sears, Roebuck and Co.
BSC 41-3, Sears Tower
Chicago, Illinois 60684

To function properly, your furnace must be installed correctly. You must know how to use the tools and equipment and understand electrical wiring and potential hazards. If there is any doubt we ask that you contact your Sears Salesman. He will arrange for professional installation.

SEARS INSTALLATION POLICY

All installation labor arranged by Sears shall be performed in a neat, workmanlike manner in accordance with generally accepted trade practices. Further, all installations shall comply with all local laws, codes, regulations, and ordinances. The customer shall also be protected during installation, by insurance relating to Property Damage, Workmen's Compensation and Public Liability.

SEARS INSTALLATION WARRANTY

In addition to any warranty extended to you on the Sears merchandise involved, which warranty becomes effective the date the merchandise is installed, should the workmanship of any Sears arranged installation prove faulty within one year, Sears will, upon notice from you, cause such faults to be corrected at no additional cost to you.

Safety Rules

1. Read these rules and the instructions carefully. Failure to follow these rules and instructions could cause a malfunction of the furnace. This could result in death, serious bodily injury, and/or property damage.
2. This furnace must be installed in accordance with local codes and ordinances or, in their absence with the National Fuel Gas Code, ANSI Z223.1-1974.
3. Do not install this furnace in an alcove.
4. Do not install this furnace in a mobile home, trailer or recreational vehicle.

5. Maintain all clearances specified on page 5, Locating The Furnace.
6. Be sure furnace is equipped for type of gas (Natural or LP) to be used. Check the rating plate.
7. Gas supply pressure to the furnace control valve must be at least 5 inches water column for Natural gas and 11 inches water column for LP gas. It must not be more than 14 inches.
8. The furnace must be vented to the outdoors so that harmful gases will not collect inside the building. Follow the venting instructions for your type installation exactly. Use only the type and size of vent pipe and fittings specified.
9. Be sure to provide enough combustion and ventilation air. See page 5. The flow of this air to the furnace must not be blocked.
10. Never test for gas leaks with an open flame. Use soap suds to check all gas connections. This will avoid the possibility of fire or explosion.
11. Before servicing, allow furnace to cool. Always shut off electricity and gas to furnace when working on it. This will prevent any electrical shocks or burns.
12. Due to high temperatures, the furnace should be located out of traffic and away from furniture and draperies.
13. Children and adults should be alerted to the hazards of high surface temperature and should be kept away to avoid burns or clothing ignition.
14. Young children should be carefully supervised when they are in the same room with the furnace.
15. Do not place clothing or other flammable material on or near furnace.
16. Installation and repair should be done by a qualified service person. The furnace should be inspected before use and at least annually by a professional service person. More frequent cleaning may be required due to excessive lint from carpeting, bedding material, etc. It is imperative that control compartments, burners, and circulating air passage ways of the furnace be kept clean.

Basic Tools Needed

Hand drill or properly grounded electric drill
 Expansion bit 7/8" to 1-5/8"
 3/32" drill bit (metal)
 6 ft. folding rule or tape
 Screwdrivers
 Pliers (wire cutting)
 Hammer

Tin Snips
 8" adjustable wrench
 12" adjustable wrench
 Key hole saw
 Hack saw
 2 - 10" or 12" pipe wrenches
 Gloves

Basic Materials

Black iron or steel pipe and fittings to make connections from gas meter to furnace.

Pipe joint compound

Electrical wiring supplies as needed (See page 14).

Vent Shield Kit, Sears Stock No. 42-7311, if furnace is to be mounted on a wall surface (not recessed in wall).

Sears Stock No. 42-99767 gas vent kit for vertical venting or Sears Horizontal Vent Kit, Stock No. 42-7369 for Horizontal venting.

Extra lengths of round, double wall vent pipe may be needed. You must use 4 inch pipe for vertical venting and 5 inch pipe for horizontal venting. It must be Type B-1 vent (listed by Underwriters Laboratories for Type B installation at 1 inch clearance to combustible materials).

Helpful Information

The following booklets will help you in making the installation.

Available at Sears from the Plumbing, Heating or Electrical Departments at nominal cost:

Do It Yourself Plumbing Handbook
 Basic Wiring

American National Standard Z223.1-1974 "National Fuel Gas Code".

Obtain from — American National Standards Institute, Inc., 1430 Broadway, New York, N.Y. 10018.

Optional Accessories

1. Tall Register Kit, Sears Stock No. 42-7312. For use when replacing a "Dual Wall" furnace. Tall register covers existing wall opening.
2. Short Rear Wall Register Kit, Sears Stock No. 42-7313. For use when installing two-room heating but not replacing "Dual Wall" furnace.
3. Vent Shield Kit, Sears Stock No. 42-7311, is required when mounting the furnace on the surface of the wall.
4. Horizontal Vent Kit, Sears stock No. 42-7369 is required if furnace is to be vented horizontally into an existing chimney.

Furnace Data

MODEL NUMBER	TYPE GAS	INPUT** RATING Btuh***	MAIN BURNER ORIFICE 2 REQUIRED		PILOT ORIFICE DECIMAL
			DRILL	DEC.	
867.736349	Nat.	65,000	36	.1065"	.018"
867.736389	L.P.*	65,000	52	.0635"	.010"

*Liquefied Petroleum.

**For elevations above 2000 ft. reduce ratings 4% for each 1000 ft. above sea level.

***Btuh = British Thermal Units per hour.

BE SURE YOUR FURNACE IS EQUIPPED FOR THE TYPE OF GAS TO BE USED, EITHER NATURAL OR L.P. GAS. THE CONNECTIONS FROM THE L.P. BULK STORAGE TANK TO THE FURNACE CAN ONLY BE MADE BY A LICENSED L.P. DEALER.

Unpack Your Furnace

The shipping carton contains the furnace and the following items needed to install it.

1. Thermostat and wire — packed inside lower cabinet door (Fig. 1).
2. Top trim piece and small parts bag — taped to inside end of carton.
3. Vent support assembly — in package taped to end of furnace.

Store these items where they cannot be lost or damaged.

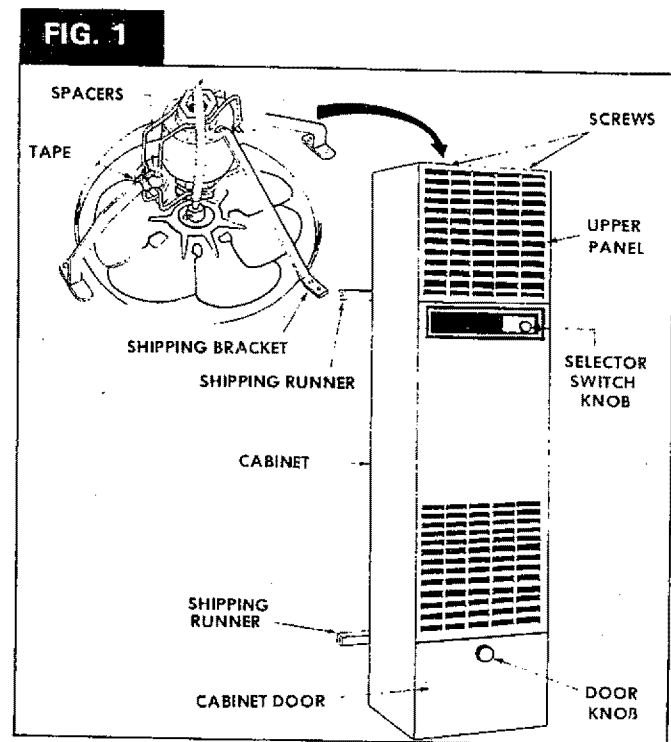
Grasp each side of the cabinet door. Pull forward and upward to remove (Fig. 1).

BE SURE YOUR FURNACE IS EQUIPPED FOR THE TYPE OF GAS TO BE USED, EITHER NATURAL OR L.P. CHECK THE RATING PLATE. IT IS ON THE PANEL JUST ABOVE THE GAS VALVE.

Remove the cabinet door knob screw. Reinstall the knob on the outside.

Remove the two (2) screws holding the upper panel (Fig. 1). Remove the panel for access to fan.

Remove the shipping bracket and tape from the fan motor. Untape and remove the spacers between the motor mount wires (Fig. 1).



Reinstall the upper front panel. Stand the furnace upright. Remove the runners (Fig. 1).

Place the selector switch knob (shipped in parts bag) on the shaft sticking through the front panel (Fig. 1).

Installation Steps

The following steps are all needed for proper installation and safe operation of your wall furnace. If you have any doubts as to any requirements, check with local authorities.

Obtain professional help where needed. The Checks and Adjustments on page 14 are vital to proper and safe furnace operation. Be sure they are done.

Locating the Furnace

This furnace can be:

1. Installed between (Recessed Mount) 2"x4" wall studs spaced on 16 inch centers, or Attached to (Surface Mount) an inside or outside wall.
 - A. You need Vent Shield Kit, Stock No. 42-7311 (sold separately) for surface mounting.
2. Installed to vent vertically, or horizontally into an existing chimney.
 - A. To vent horizontally, use Horizontal Vent Kit Stock No. 42-7369 (sold separately). This kit will require five inch type B-1 (round double wall) vent pipe (sold separately) leading from it to the chimney.
 - B. To vent vertically, use type BW (oval double wall) gas vent pipe and fittings. Sears gas vent kit, Stock No. 42-99767, may be used.
3. Installed with a rear wall register (optional accessory kit). If it is to be used, follow instructions with the kit. Cut opening in rear wall for register before mounting furnace in front wall.

Consider the following points before attempting to install the furnace.

1. Check the minimum spacing needs as shown in Fig. 2. Do not place furnace closer than 7/8 inch to floor or floor covering.
2. Place the furnace near the center of the space to be heated for good air circulation. Do not put it behind a door or draperies. Do not install it in a closet, alcove, hallway or other confined space.
3. After picking a location, inspect the wall, floor, attic and roof areas. Make sure there are no

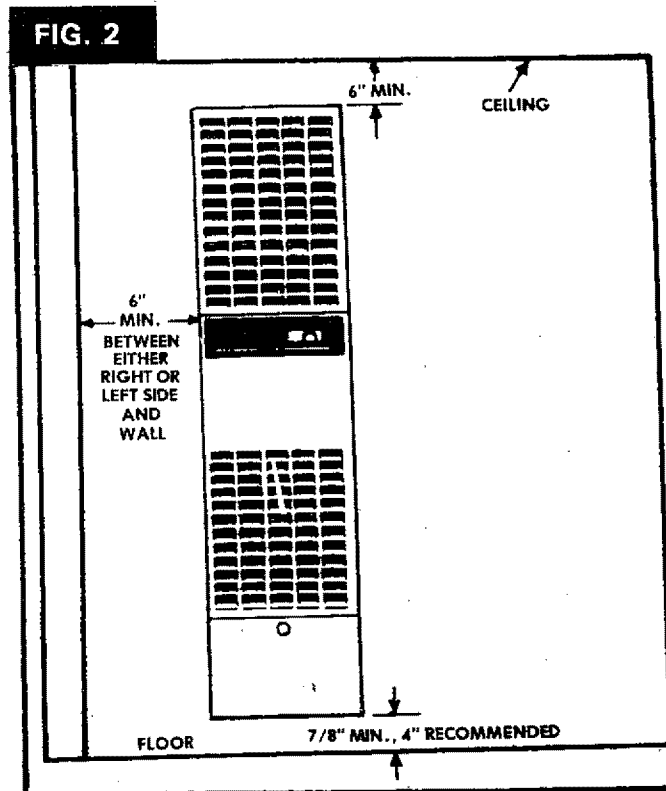


FIG. 2

pipes, wiring, bracing, etc., that would interfere with furnace or vent installation. Move them or pick a new location.

4. Be sure that gas piping and electrical wiring can be brought to the location. See sections on gas piping and electrical wiring for your type of furnace mounting.

Combustion Air

WARNING

BE SURE TO PROVIDE ENOUGH FRESH AIR FOR COMBUSTION AND VENTILATION.

Outside air must enter the house to replace that used by the burner.

Homes usually have enough leakage around doors and windows to provide all the air needed.

If the furnace is installed in an unusually tight home (with well fitting storm windows and doors, weather stripping, cracks caulked, etc.) fresh air must be brought in from the outside through a permanent opening at least 13 square inches in free area.

Comply with ANSI standard Z223.1-1974 "The National Fuel Gas Code", and with your local codes and ordinances.

Surface Mount Installation

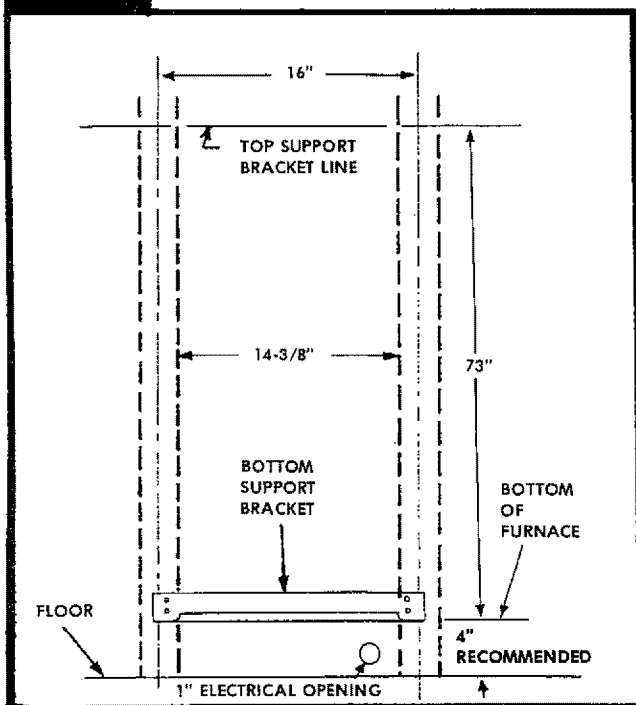
(FOR RECESSED MOUNT INSTALLATION, TURN TO PAGE 9)

For ease of installation, servicing and cleaning, install the furnace at least four (4) inches above the floor (Fig. 2).

FIND THE STUDS

Use a stud locator or four 8 penny finishing nails. Repeatedly drive and remove a nail into the wall in the area of the stud until it is located. Then find one side. Leave the nail at this location. Drive another nail just on the other side of the same stud. The other stud should be about 16 inches from the one found. Drive finishing nails on both sides of this stud. Draw centerline on wall for each stud (Fig. 3).

FIG. 3 WALL LAYOUT



GAS AND ELECTRICAL SUPPLY OPENINGS

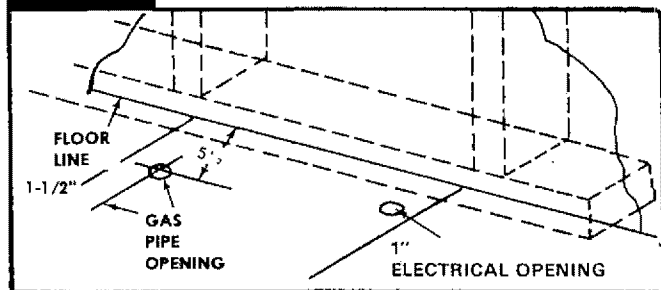
Drill a 1 1/2" hole in floor for gas line (Fig. 4).

The electrical supply opening must be at the lower right of the furnace, either in the floor or wall beneath the furnace bottom (Fig. 3 or 4).

Decide which location to use and drill a 1 inch hole.

Run the electrical supply and ground wires to the opening. Leave enough length to connect in the junction box after the furnace is installed. See section "Electrical Wiring", page 14.

FIG. 4 FLOOR LAYOUT



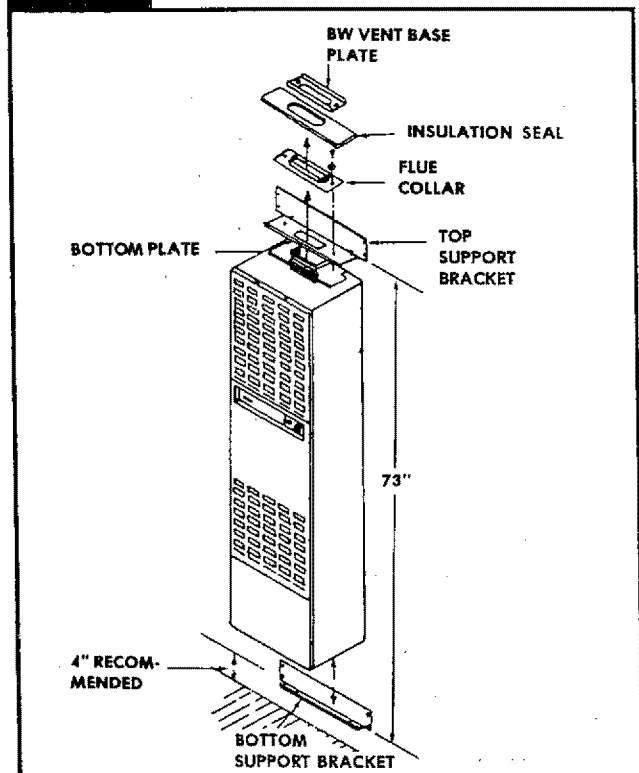
INSTALL FURNACE SUPPORTS

Use a surface mount vent shield kit, Sears Stock No. 42-7311. Obtain from your local Sears store.

Remove the support brackets from the kit. Center and fasten the small support bracket to the wall four inches from the floor (Fig. 3). Use four #10x1 1/2 flat head wood screws furnished.

For vertical venting, center and fasten the top support bracket to wall with the flange turned up 73 inches above the bottom bracket as shown in Fig. 5. For horizontal venting fasten the bracket with the flange turned down. See page 8. Use four 8x1 1/2" round head wood screws furnished.

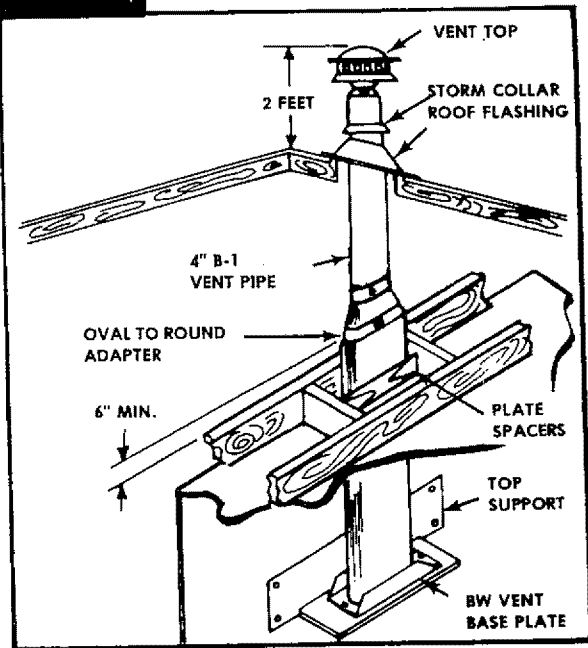
FIG. 5 SURFACE MOUNT



VERTICAL VENT INSTALLATION

Use a Type B-W gas vent installation kit, Sears Stock No. 42-99767 (Fig. 6).

FIG. 6 VENT INSTALLATION

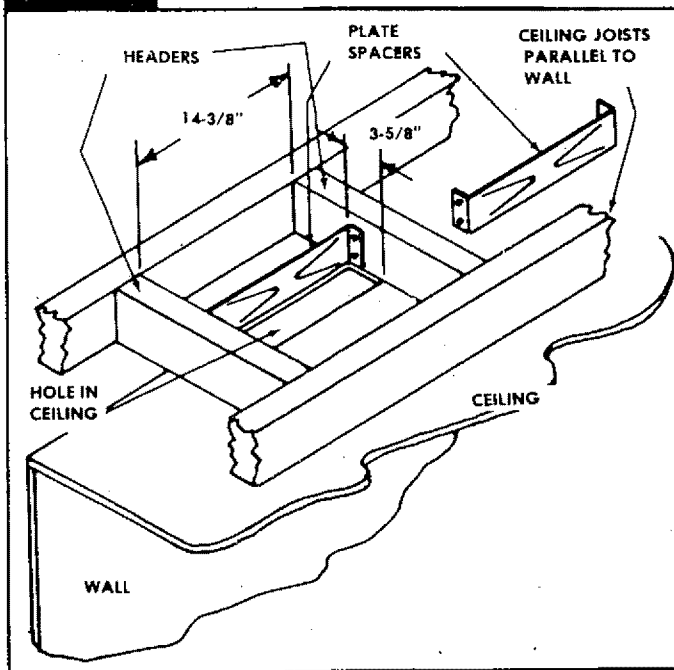


CUT CEILING OPENING

Cut a ceiling opening 14-3/8" wide by 3-5/8" deep. This must be directly above support brackets. The back edge of the opening must be flush with the wall (Fig. 7).

INSTALL CEILING PLATE SPACERS

FIG. 7 CEILING PLATE SPACERS



Two ceiling plate spacers are in the B-W vent kit. They must be fastened along each long edge of the ceiling hole to hold the oval vent pipe in the center of the hole (Fig. 7).

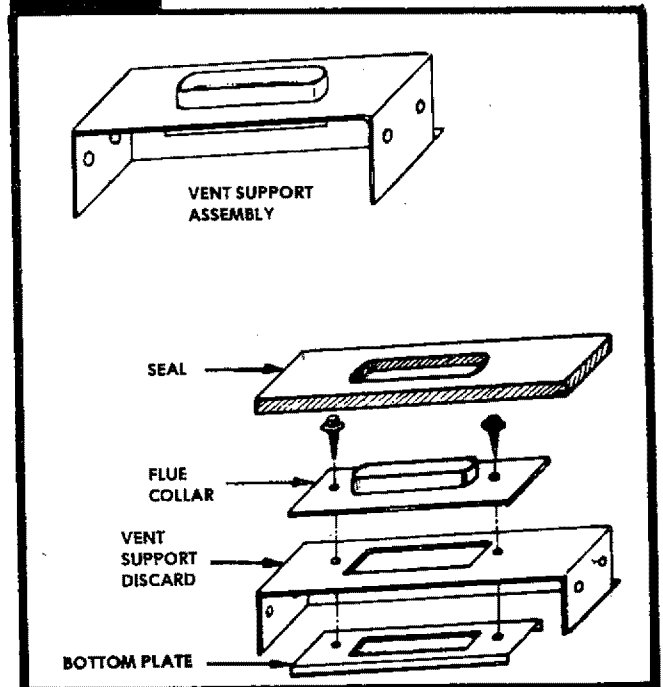
If your ceiling joists run at right angles to the wall and are in line with the studs, nail the plate spacers to the joists. Be sure they line up with the long edges of the holes.

If the joists run parallel to the wall, install 2"x6" headers between two joists as shown in Fig. 7. If the joists and studs do not line up, install headers as required to support the plate spacers.

INSTALL FURNACE VENT

Remove two screws in vent support assembly (Fig. 8). Discard the vent support. Attach the bottom plate, flue collar, seal, and base plate from B-W gas vent kit to the top support on wall (Fig. 5).

FIG. 8 VENT SUPPORT



Lower a 4 foot length of oval, double wall vent pipe through the ceiling hole to the base plate. The first length of pipe must reach from the base plate to at least 6 inches above the ceiling (Fig. 6). If it does not, you must use a longer length. Force the vent pipe into the base plate. Be sure the seal is in place. Lock the pipe to the base plate with screws furnished in the B-W gas vent kit.

SURFACE MOUNT INSTALLATION (CONTINUED)

Install oval to round adapter. Complete the piping, extending it through the roof. Use 4" round, double wall (Type B-1) vent pipe, roof flashing, storm collar, and vent top as shown in Fig. 6. The vent top must be at least 2 feet above the highest point of the roof within 10 feet. There must be at least 1 inch clearance between the vent pipe and any combustible material.

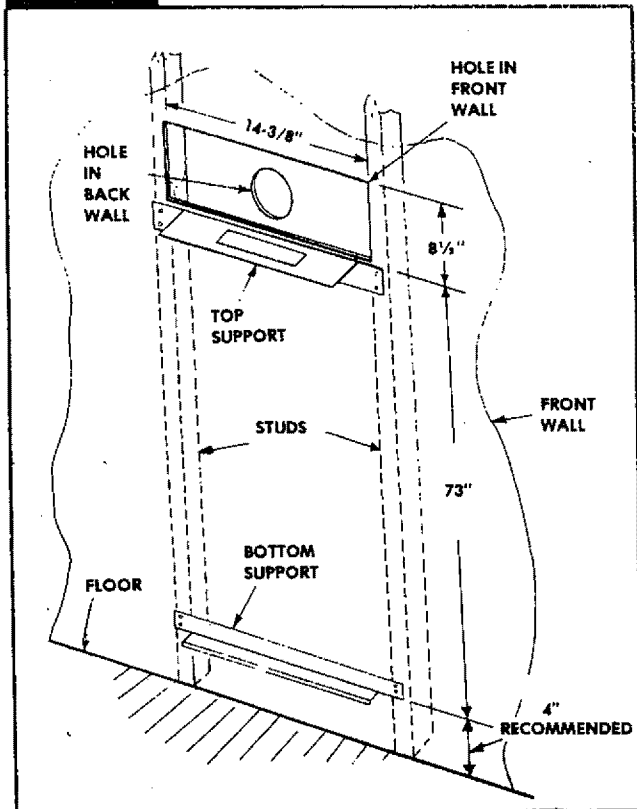
If an existing brick chimney is used, follow the directions above for the section from the base plate through the ceiling. Then you may adapt to a Type B-1, 4" round, double wall pipe for the horizontal run to the chimney. Connect into a chimney only in accordance with local codes and ordinances.

HORIZONTAL VENT INSTALLATION

The furnace can be vented horizontally only by using the horizontal vent kit, Stock No. 42-7369.

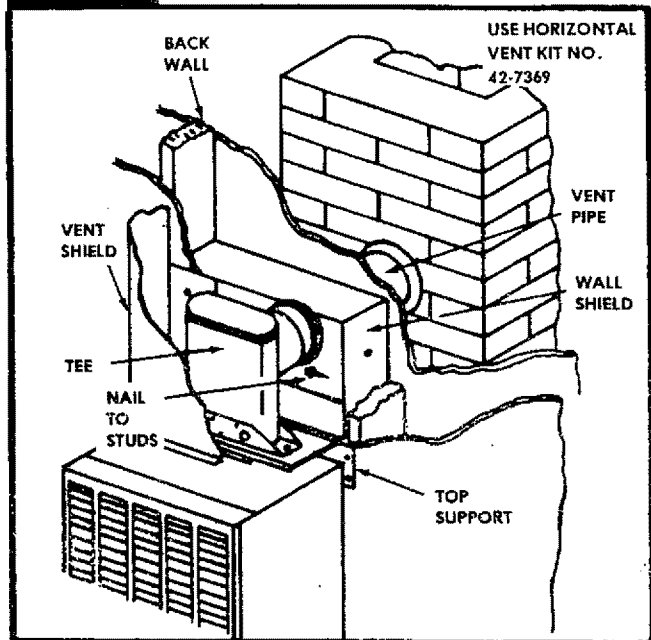
Install top support with flange facing down as shown in Fig. 9. Cut a 14-3/8 inch wide by 8 1/2 inch hole in front wall above top support. Make bottom edge of hole even with top edge of top support.

FIG 9 WALL OPENINGS



Remove the round knockout from wall shield in the horizontal vent kit. Insert the wall shield into the 8 1/2"x14-3/8" opening so that round hole faces chimney. Use hole in wall shield to mark opening to be cut in back wall for vent pipe. If wall is less than 3-7/8 inches, trim shield so front edge is flush with wall covering. Cut round hole. Nail wall shield to studs (Fig. 10).

FIG. 10 HORIZONTAL VENTING



Remove the plate, flue collar and insulation seal from the vent support assembly furnished with the furnace (Fig. 8). Install these with the Tee to the top support as shown in Fig. 10. Discard vent support.

Complete the vent from the Tee to the chimney, using 5" Type B-1 vent pipe. The horizontal run should slope upward 1/4" per foot of run. Keep at least one inch clearance between the vent pipe and any combustible material.

Make sure that the end of the vent pipe does not go into the chimney further than the inner surface. Seal it in place with furnace cement.

MOUNT FURNACE ON SUPPORTS

Hold the furnace at a slight angle with top toward wall. Insert the flue in the openings in the top support and flue collar. Straighten the furnace by bringing it to rest on the bottom support.

Install cabinet door and front panel.

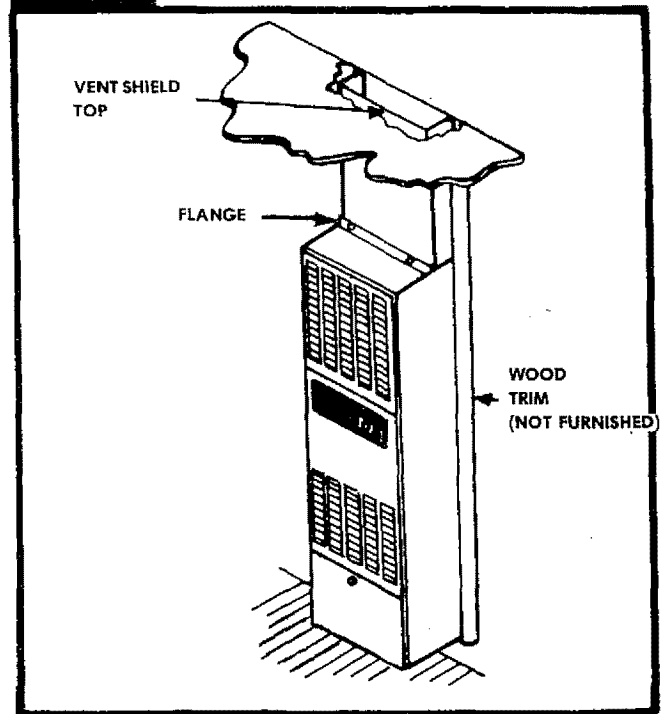
INSTALL VENT SHIELD

The vent shield is 35-1/8 inches long. Measure from top of furnace to ceiling. Cut the vent shield to this dimension less 1/8 inch. Be sure to cut from the top (end opposite flange) (Fig. 11).

Place vent shield on top of furnace and against the wall. Drill holes in the furnace top through holes in vent shield. Fasten to furnace with sheet metal screws. Screw sides to wall.

Install wood trim moulding if desired. If 3/4 inch quarter round trim is used, trim 1/8 inch from both side flanges before installing vent shield.

FIG. 11



Recessed Mount Installation

For ease of installation, servicing and cleaning, install the furnace at least four (4) inches above the floor (Fig. 12).

FIND THE STUDS

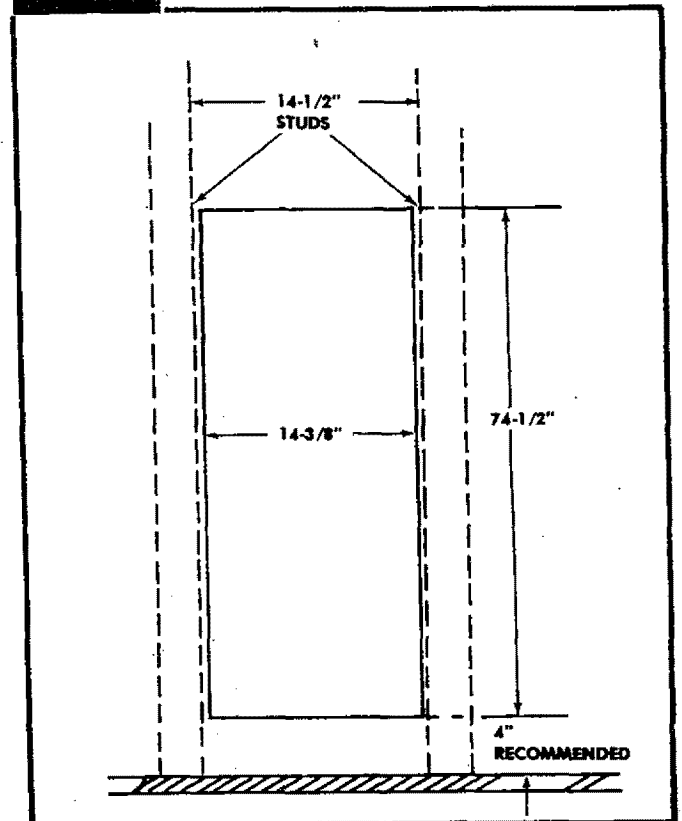
Use a stud locator or four 8 penny finishing nails. Repeatedly drive and remove a nail into the wall in the area of the stud until it is located. Then find one side. Leave the nail at this location. Drive another nail just on the other side of the same stud.

Inside edge of the other stud should be about 14-1/2 inches from the one found. Drive finishing nail on inside edge of this stud.

CUT WALL OPENING

Lay out and cut a 14-3/8" by 74-1/2" opening as shown in Fig. 12.

FIG. 12 WALL LAYOUT

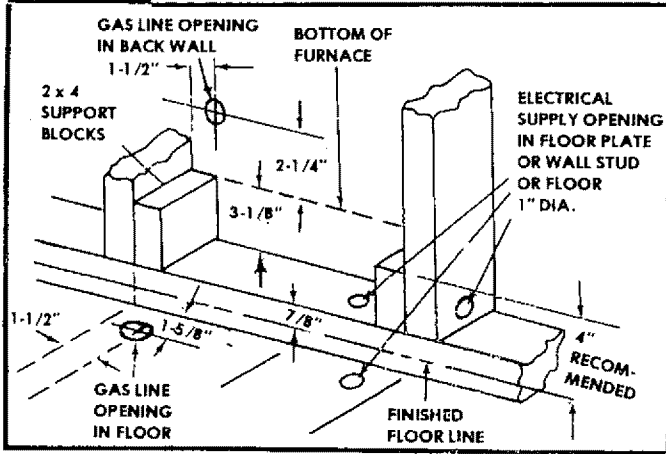


RECESSED MOUNT INSTALLATION (CONTINUED)

FURNACE SUPPORT BLOCKS

Cut two (2) 3-1/8" high, 2 x 4 blocks, and nail to floor plate and studs (Fig. 13).

FIG. 13 GAS AND ELECTRIC SUPPLY OPENINGS



GAS AND ELECTRICAL SUPPLY OPENINGS

Decide whether the gas line will come through the floor or back wall.

Drill a 1 1/2" hole in wall or floor (Fig. 13).

The electrical supply opening must be at the lower right of the furnace, either in the floor or stud beneath the furnace bottom (Fig. 13).

Decide which location to use and drill a 1 inch hole.

Run the electrical supply and ground wires to the opening. Leave enough length to connect in the junction box after the furnace is installed. See section "Electrical Wiring", page 14.

VERTICAL VENT INSTALLATION

Use a Type B-W gas vent installation kit, Sears Stock No. 42-99767 (Fig. 17).

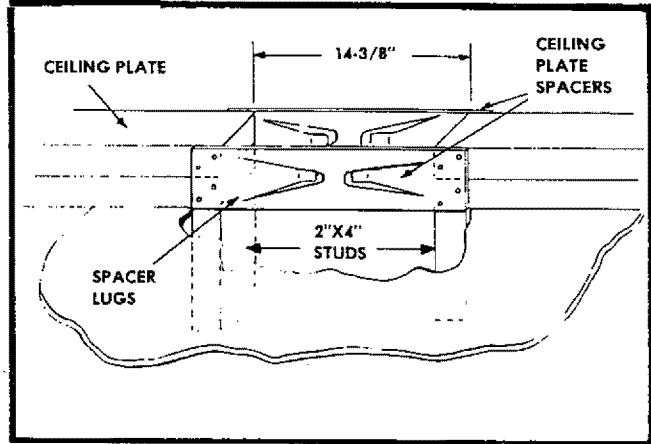
INSTALL CEILING PLATE SPACERS

Cut away the ceiling plate between the studs where the furnace is to be installed. Work from the top in the attic.

If there is no access to the top, remove the wall covering between the two wall studs, all the way to the ceiling. Work through this opening.

Cut out the entire ceiling plate so the plate edges will be even with the inner face of the 2" x 4" studs (Fig. 14).

FIG. 14 CEILING PLATE SPACERS

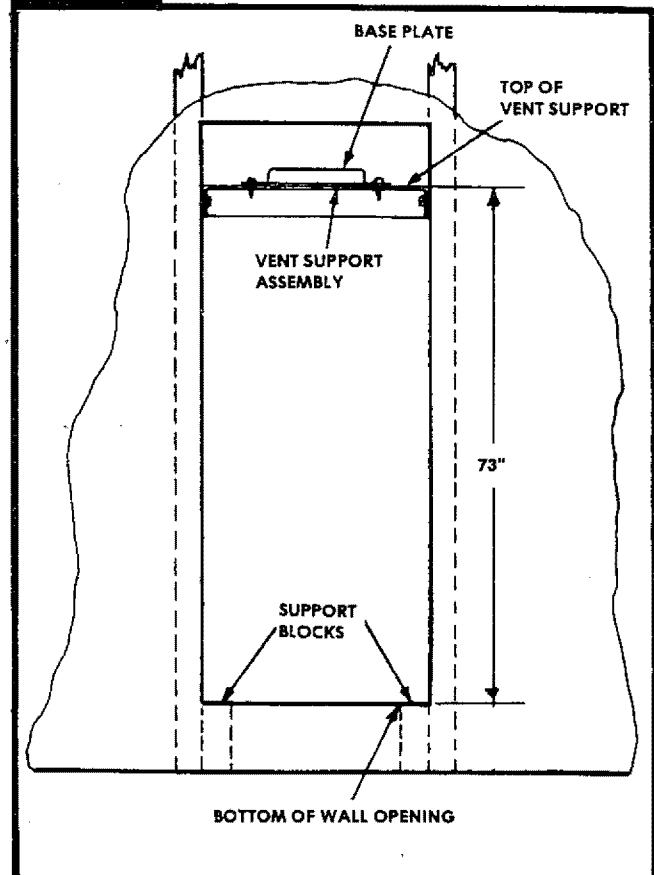


Nail the ceiling plate spacers (furnished with gas vent kit) across the cut out section of ceiling plate (Fig. 14). The spacer lugs are to center the oval vent pipe in the stud space.

INSTALL VENT SUPPORT

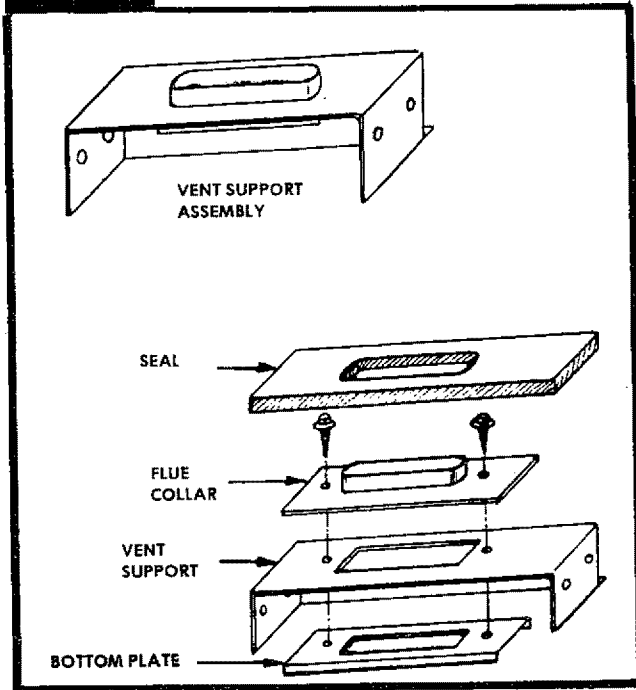
Measure up 73 inches from the top of the support block. Place a mark on each stud at this distance (Fig. 15).

FIG. 15 VENT SUPPORT INSTALLATION



Remove two screws from vent support assembly (Fig. 16). Place base plate (furnished with gas vent kit) on top of seal. Fasten base plate, seal, flue collar, vent support and bottom plate together with screws (Fig. 15).

FIG. 16 VENT SUPPORT



Place the vent support between the studs with the top even with marks on the studs (Fig. 15).

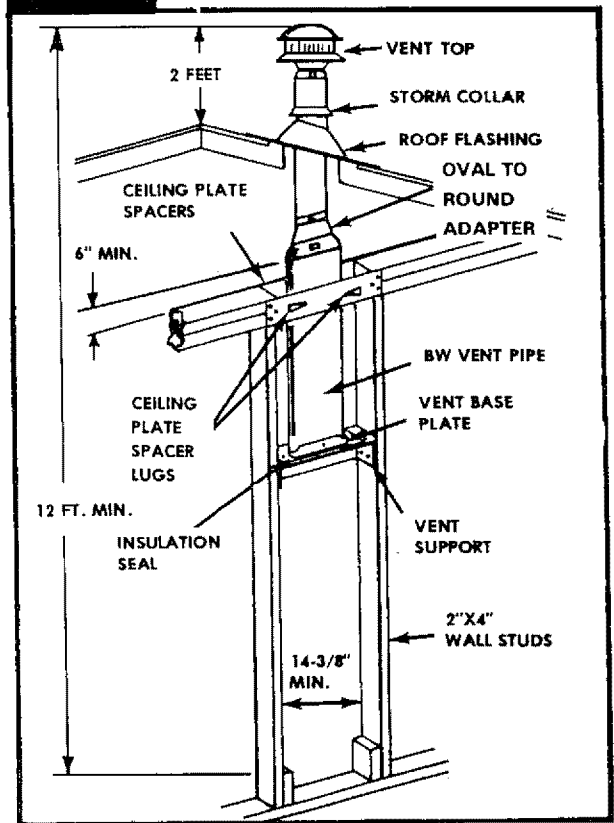
Drill pilot holes in the studs through the two holes in each side of vent support.

Fasten vent support to the studs. Use four (4) #10 x 1/2" wood screws (furnished).

INSTALL FURNACE VENT

Lower a 4 foot length of oval, double wall vent pipe through the ceiling hole to the base plate. The first length of pipe must reach from the base plate to at least 6 inches above the ceiling (Fig. 17). If it does not, you must use a longer length. Force the vent pipe into the base plate. Be sure the seal is in place. Lock the pipe to the base plate with screws furnished in the B-W gas vent kit.

FIG. 17 VENT INSTALLATION



Install oval to round adapter. Complete the piping, extending it through the roof. Use 4" round, double wall (Type B-1 vent pipe, roof flashing, storm collar and vent top as shown in Fig. 17). The vent top must be at least 2 feet above the highest point of the roof within 10 feet. There must be at least 1 inch clearance between the vent pipe and any combustible material.

If an existing brick chimney is used, follow the directions above for the section from the base plate through the ceiling. Then you may adapt to a Type B-1, 4" round, double wall pipe for the horizontal run to the chimney. Connect into a chimney only in accordance with local codes and ordinances.

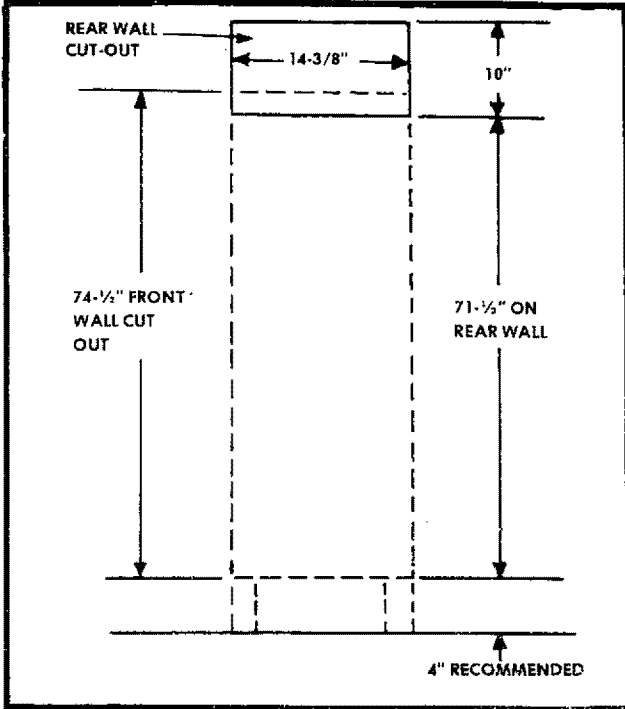
HORIZONTAL VENT INSTALLATION

The furnace can be vented horizontally only by using the horizontal vent kit, Stock No. 42-7369.

On the back wall behind recess location, measure up 71-1/2 inches above the bottom of furnace location (Fig. 18). Cut an opening between the studs 14-3/8 inches by 10 inches in back wall.

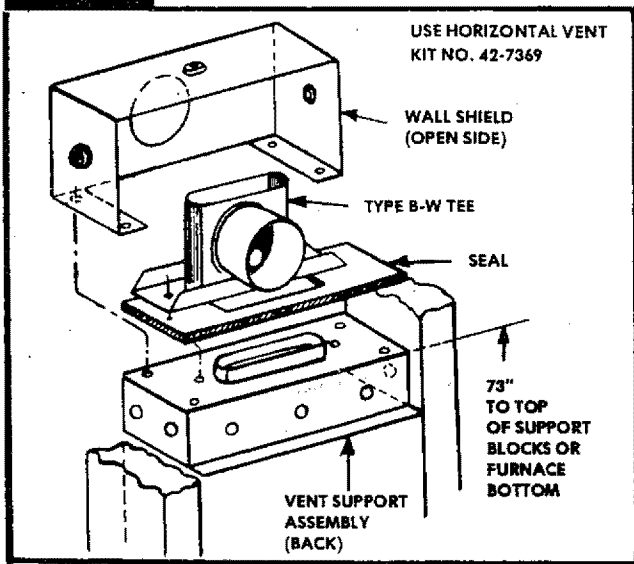
Sum of fcsiprc procline	month												Grand Total
	01	02	03	04	05	06	07	08	09	10	11	12	
005	1922	2013	1812	1825	1857	1874	1813	1826	1897	1947	2063	1872	22721
006	367	103	159	521	521	526	539	542	574	633	619	600	5703
007	494	504	462	584	586	559	512	526	510	595	543	544	6419
008	881	891	941	1013	1008	1018	1030	1045	1035	1060	1032	1036	11988
009	631	624	634	658	657	661	670	669	668	679	682	670	7904
066	1059	1395	980	1481	1453	1451	1445	1447	1472	1465	1403	1407	16459
067	1863	1600	1623	1668	1695	1711	1694	1677	1686	1680	1852	1842	20590
101	325	328	324	323	297	304	301	304	325	314	304	302	3751
109	195	195	209	221	223	224	227	227	227	229	229	229	2635
115	3164	3348	3009	3200	3243	3206	3221	3187	3151	3300	3243	3169	38442
116	6575	7138	6821	6664	7038	6618	6226	6918	6768	6544	6616	5860	79784
117	3131	3425	2992	3137	3264	3164	3214	3243	3165	3311	2957	2768	37770
125	722	753	796	796	799	784	797	791	795	810	794	792	9428
127	0	0	0	559	559	551	549	553	553	551	553	538	4966
128	0	0	0	301	301	302	301	301	301	301	301	301	2711
129	394	398	404	408	423	409	424	430	421	438	413	413	4975
164	434	448	435	475	477	478	487	486	490	502	502	502	5715
199	124	80	135	193	195	196	196	196	196	198	197	197	2103
681	2211	2175	2069	2255	2184	2145	2109	2248	2168	2144	2297	2318	26322
691	3501	3718	3506	3624	3570	3545	3477	3594	3591	3612	3602	3555	42893
708	1021	441	700	1418	1479	1494	1514	1478	1435	1495	1441	1459	15373
800	842	831	818	839	833	831	845	832	840	831	842	832	10014
801	1902	1697	1967	2083	2008	1748	1698	1673	1595	1619	1589	1585	21167
802			1997	1901	1949	1967	1934	1941	1936	1956	2008	1994	19583
815	170	153	192	174	170	180	168	170	172	168	168	164	2049
820	63	58	55	59	58	59	57	57	58	58	60	60	702
830	1610	1486	1422	1326	1423	1425	1326	1386	1465	1326	1326	1326	16846
855	292	234	192	365	364	365	365	365	364	374	316	367	3964
909	218	230	208	217	218	211	215	231	212	237	235	220	2653
Grand Total	34110	34265	34862	38287	38852	38005	37354	38343	38069	38376	38186	36920	445631

FIG. 18 REAR WALL CUT-OUT



Measure up 73 inches from top of the support block. Place a mark on each stud at this distance (Fig. 19).

FIG. 19 VENT TEE AND SHIELD



Screw the BW type Tee from the vent kit to the vent support assembly provided with the furnace. Put the round opening in Tee toward back of vent support (Fig. 19). Use 5 screws in vent support (Fig. 16).

Fasten the wall shield to the vent support with four #10x1/2" screws as shown in Fig. 19. The open side of wall shield must face chimney. Screws are in parts bag in vent kit.

Place the assembled vent support, Tee and wall shield through the 10" x 14-3/8" opening in back wall (Fig. 20).

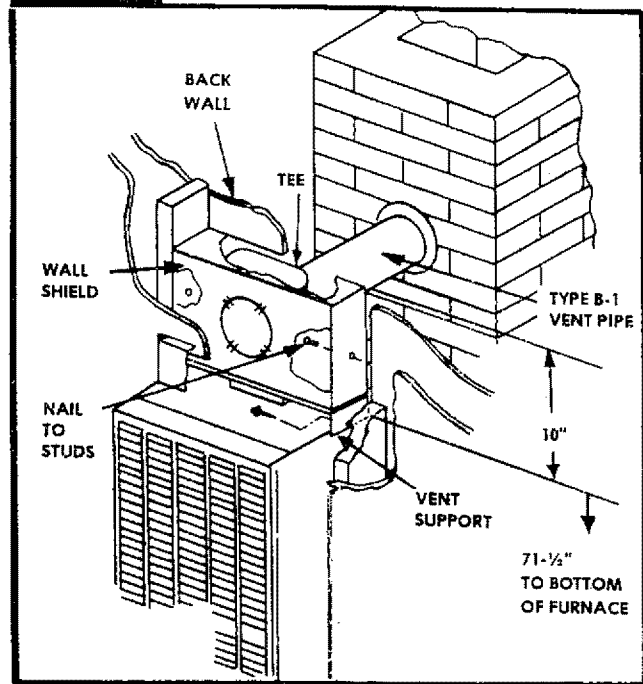
Be sure the top of the vent support is even with the marks on the 2 x 4 studs (Fig. 19).

Drill pilot holes in the studs through the two holes in each side of vent support.

Fasten vent support to the studs. Use four (4) #10 x 1/2" wood screws (furnished).

Nail wall shield to studs (Fig. 20).

FIG. 20 HORIZONTAL VENTING



Complete the vent from the Tee to the chimney. Use 5" Type B-1 vent pipe. Keep at least one inch clearance between the vent pipe and any combustible material.

The horizontal run should be as short as possible and should slope upward 1/4" per foot of run.

Make sure that the end of the vent pipe does not go into the chimney further than the inner surface. Seal it in place with furnace cement.

MOUNT THE FURNACE

Hold the furnace at a slight angle with top toward wall opening. Enter the flue into the vent support. Straighten the furnace by bringing it in to rest on the support blocks or floor plate (Fig. 21).

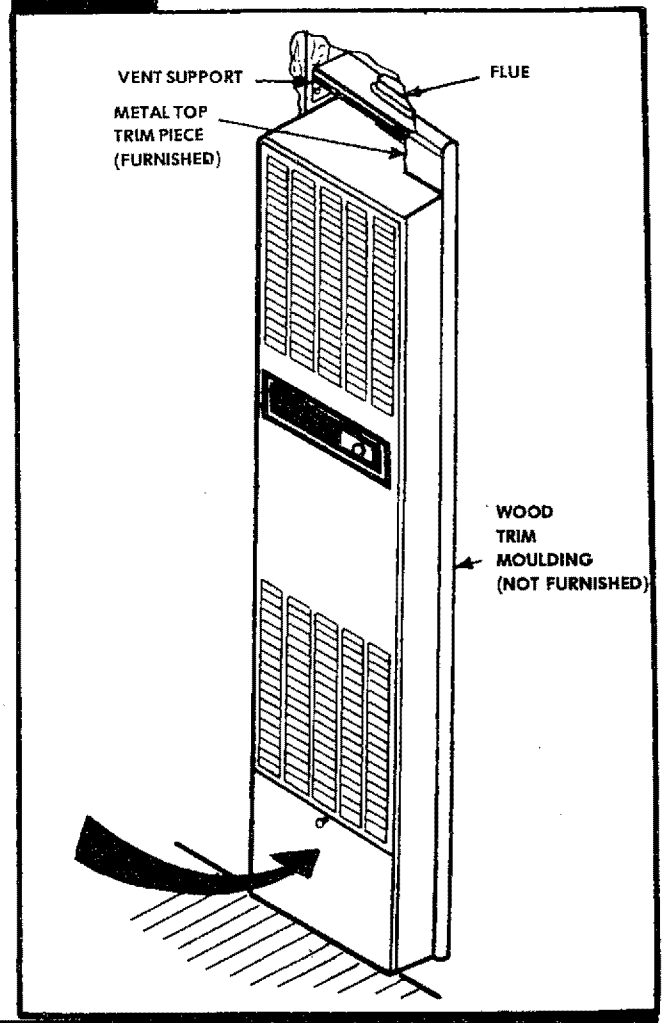
TRIM

Place the top metal trim on top of the furnace and flush with sides. Fasten to wall with bronze screws furnished (Fig. 21).

If the interior wall material was removed to install ceiling plate spacers, replace it and refinish to match the rest of wall.

Install wood trim moulding around sides and top of furnace.

FIG. 21

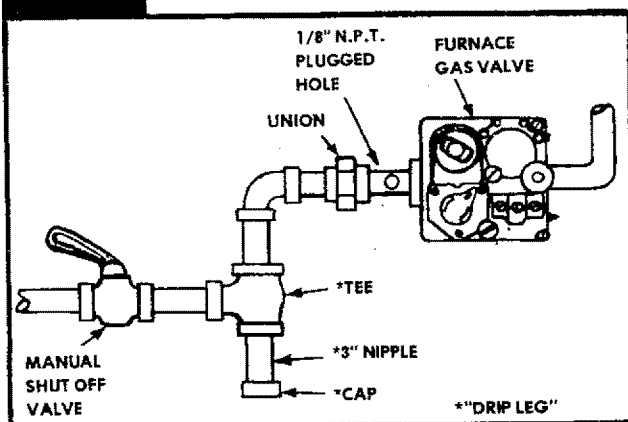


Connecting Gas Line

Observe local codes and ordinances. If there are none, comply with the National Fuel Gas Code. If installation is for L.P. Gas, you must have a licensed L.P. installer make all connections between storage tank and furnace.

Fig. 22 shows basic piping needed. It is difficult to use rigid pipe to connect to gas valve. Check with your local building inspector and use a flexible

FIG. 22 GAS SUPPLY



connector if permitted. If not, use 1/2 inch steel or wrought iron pipe and fittings.

1. Turn off all gas appliances in the house. Shut off the gas supply at the main meter.
2. Use pipe joint compound on male threads only. Pipe joint compound must be resistant to the action of LP gases.
3. Use ground joint unions.
4. Install a drip leg to trap dirt and moisture.
5. Provide a 1/8 NPT (National Pipe Thread) plugged hole for test gauge connection immediately upstream of the gas supply connection to the furnace.
6. Install a manual shut-off valve.
7. Tighten all joints securely.

TEST FOR GAS LEAKS

Open the manual shut-off valves in gas supply lines. Relight pilots to any other appliance. Test for leaks.

Never use a lighted match or other open flame. Apply a creamy solution of soap suds to each joint. If there is a leak, bubbles will form and burst. Correct even the smallest leak at once.

Electrical Wiring

WARNING

For your personal safety, turn off electric power at service entrance panel before making any electrical connections.

All electrical work must conform to your local codes and ordinances or in their absence, with National Electrical Code, ANSI-C1-1978. If you are not familiar with wiring and codes in general, have a competent electrician do this job.

GROUNDING

To avoid possible electrical shock hazard, permanently ground your furnace according to local codes and the National Electrical Code. A grounding terminal is on back of the furnace junction box in lower cabinet. Run a No. 14 copper wire from the terminal to a grounded connection in electrical service panel or a properly driven and electrically grounded ground rod (Fig. 23).

CAUTION

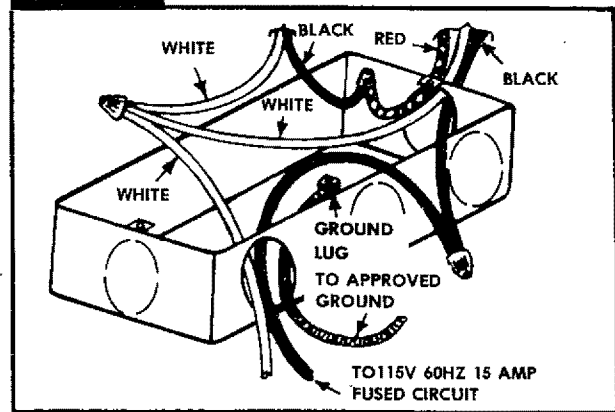
Do not ground to a gas supply pipe. Do not connect to electric power supply until furnace is permanently grounded.

ELECTRIC POWER SUPPLY

Run a separate 115V., 60 Hz., 15 Ampere circuit from a separate circuit breaker or fuse in your service entrance panel to the furnace junction box. Do not run these supply wires inside the furnace cabinet (Fig. 23).

COMPLETE WIRING DIAGRAM IS ON PAGE 18.

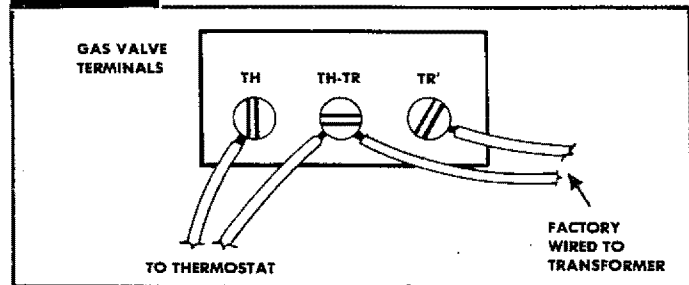
FIG. 23 CONNECTING SUPPLY WIRING



WALL THERMOSTAT INSTALLATION

Follow the instructions included in the thermostat box. Run thermostat wire to the right end of the furnace and connect to gas valve. Connect one wire to terminal marked "TH" and other wire to terminal marked "TH-TR" (Fig. 24).

FIG. 24 LOW VOLTAGE CONNECTIONS



Checks and Adjustments

If you have installed your own furnace, we ask that you call Sears Service for an inspection by a service technician. The peace of mind and assured performance are well worth the cost involved. He is equipped to make the following necessary checks and adjustments.

ADJUST THERMOSTAT ANTICIPATOR

Set the thermostat heat anticipator at .60. Instructions are with the thermostat.

LIGHT PILOT BURNER

Light the pilot. Follow the Lighting instructions on page 16.

ADJUST PILOT BURNER

The pilot flame should surround 3/8" to 1/2" of the thermocouple tip (Fig. 25). If the flame needs adjusting:

FIG. 25 PILOT FLAME

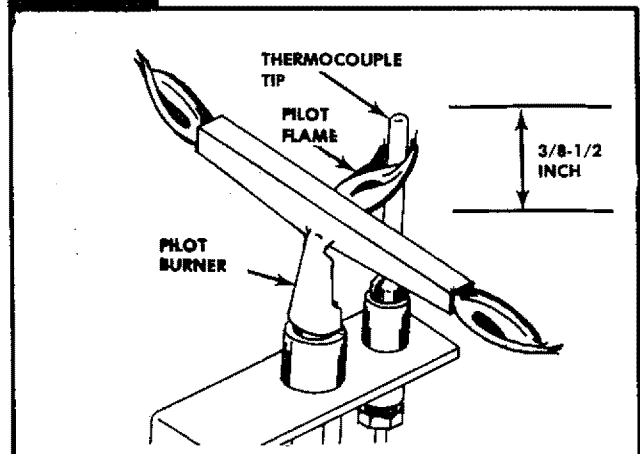
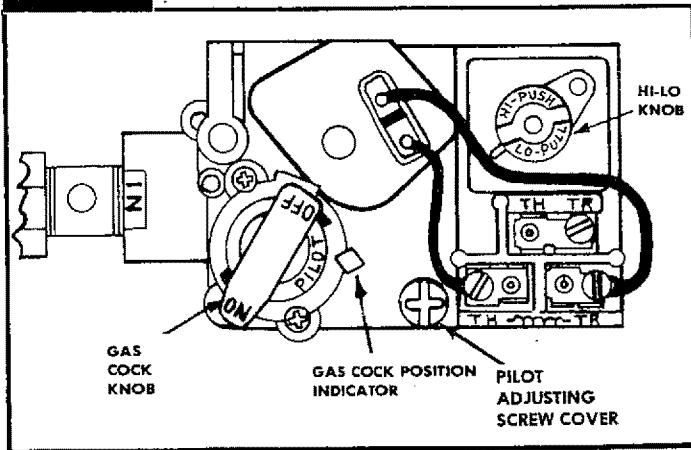


FIG. 26 GAS CONTROL



1. Remove the screw cover over the pilot adjusting screw (Fig. 26).
2. Insert a small screwdriver and adjust flame as needed. Turn screw clockwise (↻) to decrease flame. Turn counterclockwise (↺) to increase flame.
3. Turn the thermostat to its highest setting. The main burner should light quickly and smoothly. Turn the thermostat to its lowest setting. Main burner should go out. Pilot should remain lit.
4. Replace the pilot adjusting screw cover.

CHECK GAS INPUT AND PRESSURES

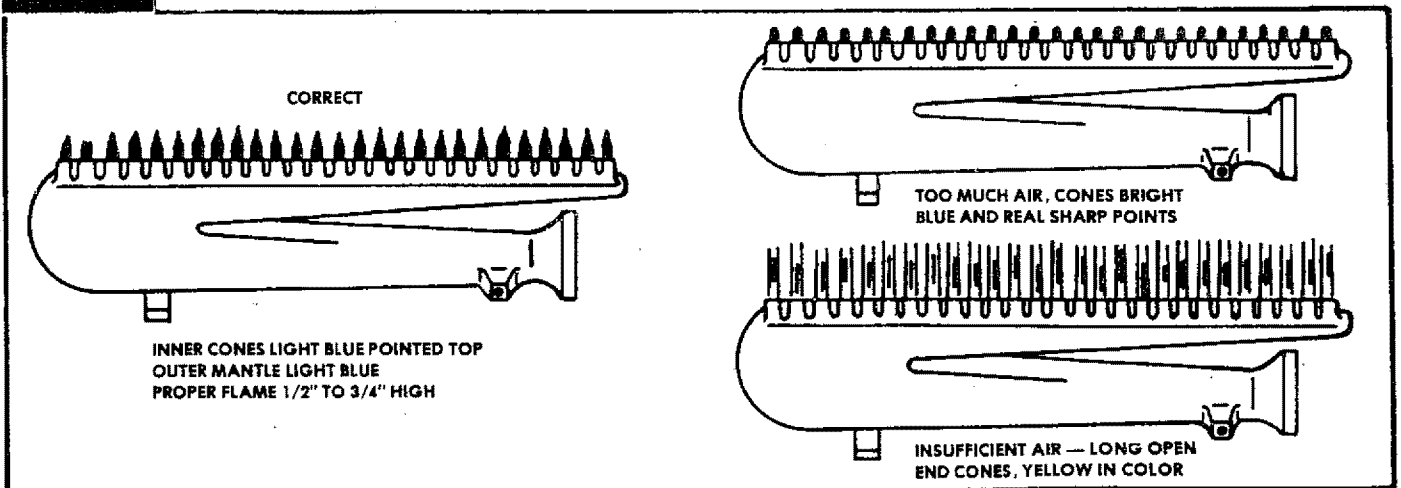
Push Hi-Lo knob on gas valve down (Fig. 26). This sets pressure for highest firing rate.

Gas input to the burners must not exceed the rated input shown on the rating plate below the burner.

Gas manifold pressure with the burner on high fire must be as shown on the rating plate.

Gas supply pressure must be at least 5" water column for Natural gas and 11" water column for L.P. gas. It must not be more than 14" water column for Natural gas or LP gas.

FIG. 27 MAIN BURNER ADJUSTMENT



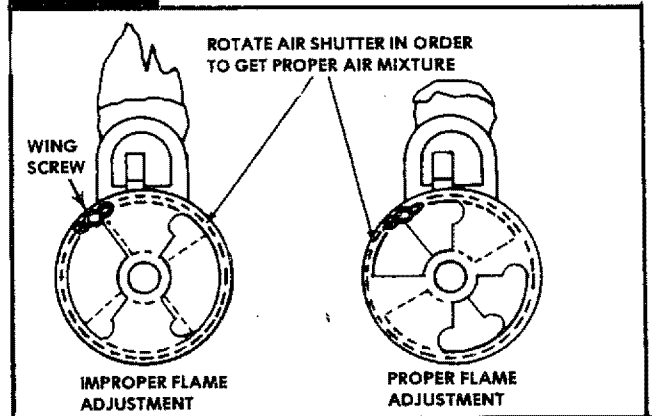
These points must be checked by a qualified service technician. He should make any changes or adjustments necessary. Failure to have this done could result in premature furnace failure, or unsatisfactory or possibly hazardous furnace operation.

ADJUST AIR FOR BURNERS

When the furnace is lighted the first time, the air to each burner will have to be adjusted. A proper setting of the air shutter (Fig. 28) gives a soft, blue flame with no yellow tips.

1. Set thermostat to highest setting.
2. Loosen the wing screw that holds the air shutter (Fig. 28).
3. Turn the air shutter counterclockwise (↺) until the flame has yellow tips. Turn clockwise (↻) until the yellow tips just disappear (Fig. 27).
4. Tighten wing screw to hold the shutter in place.

FIG. 28 AIR SHUTTER



CHECK THERMOSTAT

Check the thermostat. When it is set above temperature shown on the thermometer, furnace burner should light. Be sure the thermostat turns off the furnace when room temperature reaches the selected setting and starts the furnace when room temperature falls a few degrees.

Set the thermostat for the desired temperature.

How To Use Your Furnace

LIGHTING THE FURNACE

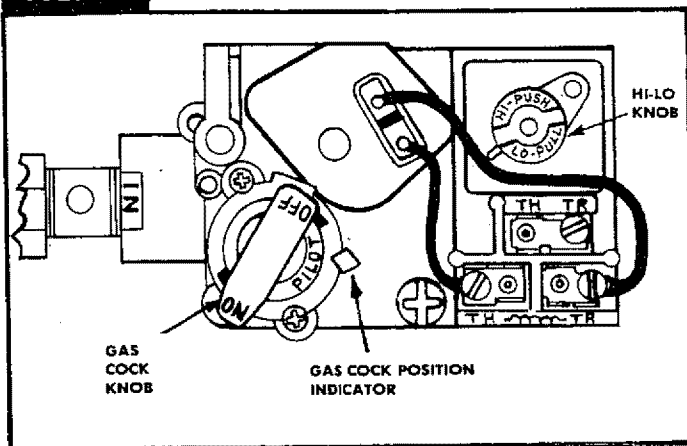
1. Set selector switch knob on front panel to Automatic.
2. Turn on the electric power. Set thermostat to lowest setting. Remove lower door.
3. Turn gas cock knob OFF (Fig. 29). Wait 5 minutes for any unburned gas to vent.
4. Turn on manual gas shutoff valve(s).
5. Turn gas cock knob to PILOT.
6. Apply a lighted match to the pilot burner.
7. Push gas cock knob in as far as it will go. Hold it for 30 seconds after pilot lights.
8. Release gas cock knob. The pilot should stay lit. Proceed to Step 9. If pilot flame goes out, repeat Steps 3, 5, 6 and 7.

NOTE

It may take several tries to purge the air out of the piping in a new installation.

9. Turn gas cock knob to ON.
10. Set the thermostat to the desired temperature.
11. Replace cabinet door.

FIG. 29 GAS CONTROLS



TURNING OFF THE FURNACE

1. Set the thermostat to the lowest setting.
2. Turn the gas cock knob to "OFF".
3. Turn electrical power off.

After the furnace has been lit and adjusted, you need only to set the thermostat to the temperature you want. The thermostat will turn the furnace on and off as needed to keep that temperature.

The furnace works like this:

1. Thermostat turns on the main burners.
2. Heat builds up in the furnace and starts the fan. The heated air comes out the front panel louvers at floor level.
3. When the thermostat setting is reached, it shuts off the main burners.
4. The fan runs until the heat is removed from furnace, then turns off.

The fan has two speeds. It will start on low speed. It may switch to high speed as the air temperature increases. This is automatic. No manual switching is needed.

LIMIT CONTROL

The furnace has a limit switch which will prevent overheating. If anything should back the flow of air through the furnace, the switch will turn the main burners off. This switch cannot be adjusted.

MANUAL SELECTOR SWITCH

The furnace has a manual fan switch on the control panel. This switch must be set at "AUTOMATIC" for heating. If not, the furnace will not work.

Set the fan switch at the "SUMMER" position if you want only the fan to run.

HI-LO SETTING

The Hi-Lo knob on the gas control valve (Fig. 29) lets you set the burners for high or medium heat output.

Push the knob in for Hi. Pull it out for Lo.

On LO, the burners will work at medium firing rate. The fan will run at low speed. This is the best setting for all normal winter weather.

If more heat is needed, push the knob to HI. The burners will work at high firing rate. The fan will start on low speed then shift to high.

How To Care For Your Furnace

DANGER: PERSONAL INJURY HAZARD. DISCONNECT ELECTRIC POWER BEFORE SERVICING.

ANNUAL UPKEEP NEEDED

CLEANING AND OILING

Remove cabinet door and front panel. Clean any lint or dirt from fan blades, fan motor, air shutters and exposed air passages. Use a brush.

Put 5 drops of SAE 20 non-detergent oil in each of the two oil cups on fan motor. Replace front panel and cabinet door (Fig. 1).

VENTING SYSTEM

Make sure that no parts of the venting system are blocked or rusted. Clean or replace before using furnace.

BURNER AND PILOT FLAME

Look at the burner flame. See "Checks and Adjustments". Contact Sears Service Department at once if an abnormal flame appearance should develop (Fig. 27).

If you wish, call for a Sears service technician to perform this maintenance for you. The peace of mind and assured performance are well worth the cost involved.

Service Hints

If your furnace fails to work right, you may avoid a service call by checking the following points before you call for service.

No Heat or Not Enough Heat....

POSSIBLE CAUSE

Thermostat not set right.

No electric power to furnace.

Gas is shut off.

Pilot is out.

Selector switch set on Summer.

Gas control valve set on Lo.

CABINET FINISH

Apply a small amount of furniture wax to a soft cloth and wipe cabinet. Never use abrasives or clean when furniture is hot.

FURNACE AREA

The area near the furnace must be kept clear and free from combustible materials, gasoline, and other flammable liquids and vapors.

COMBUSTION AND VENTILATION AIR

The combustion and ventilation air supply must not be blocked. See page 5.

Do not put anything in, on or under the furnace cabinet.

WHAT TO DO

Set above room temperature.

Check fuse or circuit breaker. Replace blown fuse. Reset breaker. Turn switch on.

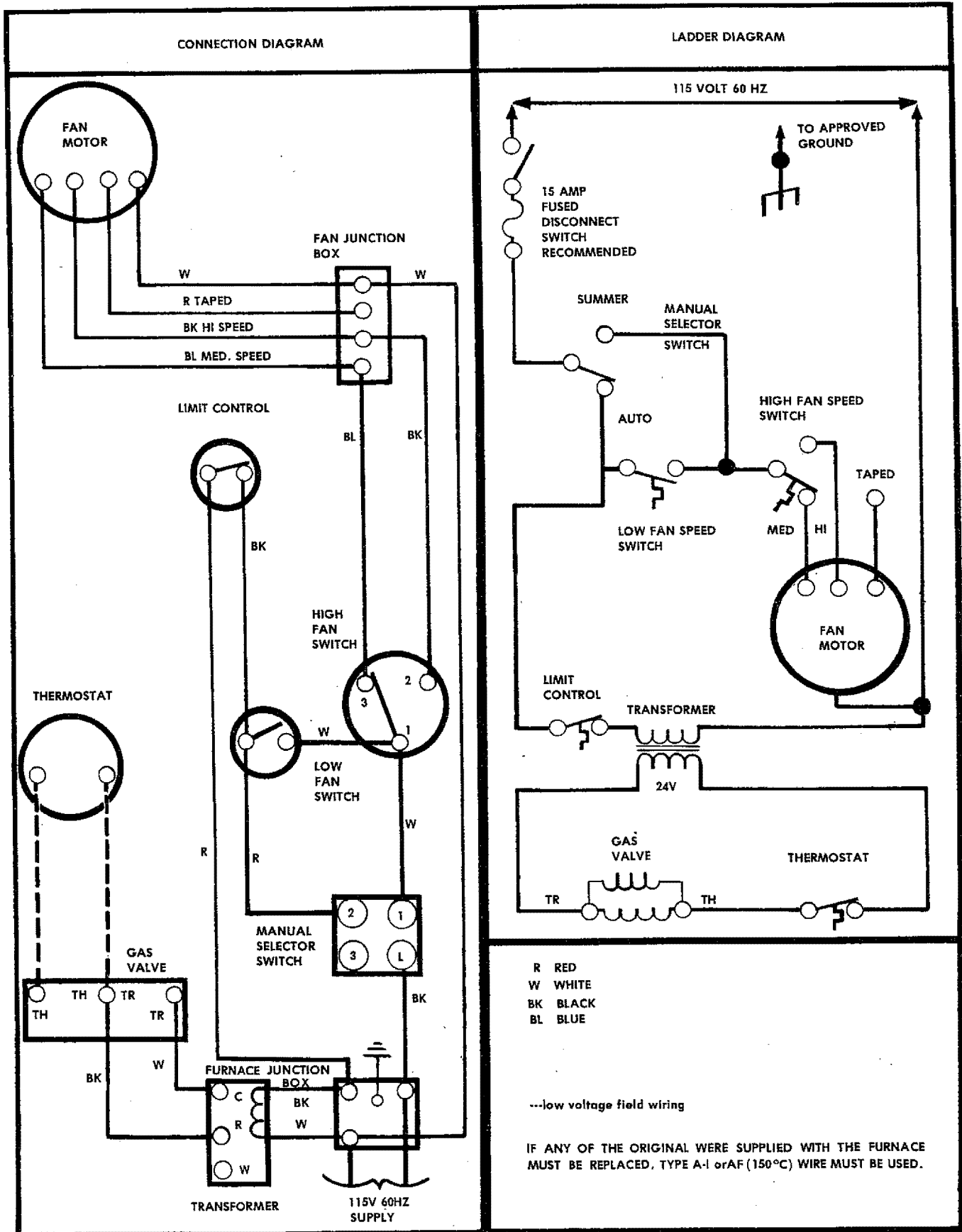
Turn gas valve on. See page 16.

Light pilot. See page 16.

Turn knob to Automatic. See page 16.

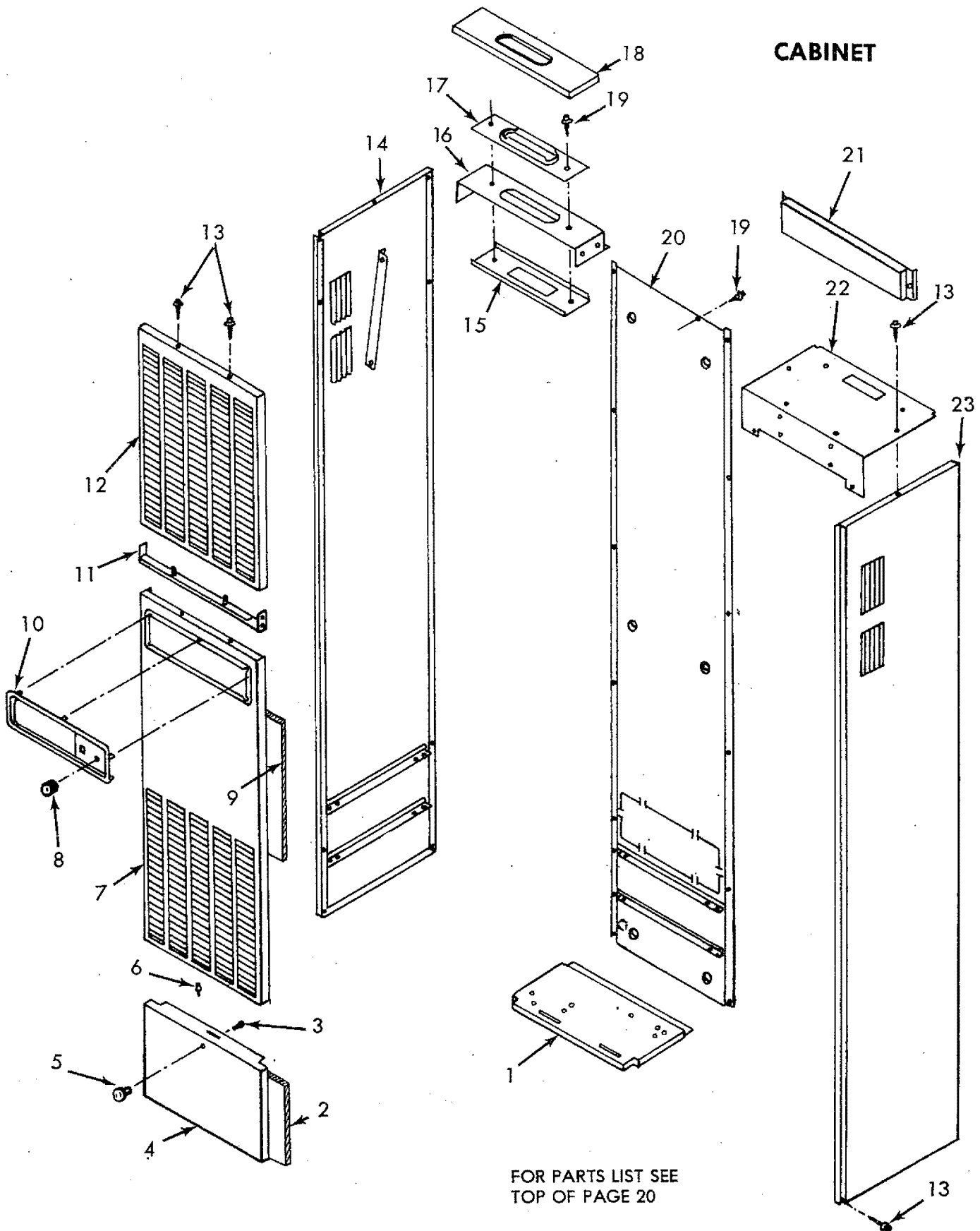
Turn to HI. See page 16.

WIRING DIAGRAM MODELS 867.736349 AND 867.736389



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SEARS GAS-FIRED FORCED AIR WALL FURNACE MODELS 867.736349 AND 867.736389



FOR PARTS LIST SEE
TOP OF PAGE 20

repair parts

SEARS GAS-FIRED FORCED AIR WALL FURNACE MODELS 867.736349 AND 867.736389 CABINET

KEY NO.	PART NUMBERS	DESCRIPTION
1	503898	Rail, Bottom
2	507245	Insulation, Cabinet Door
3	STD510602	*Screw, 6-32 x 1/4" Machine
4	503941	Door, Cabinet
5	39238	Knob, Door
6	502787	Catch, Bullet
7	505155	Panel, Front
8	501812	Knob, Selector Switch
9	505228	Insulation, Front Panel
10	507453	Panel, Control
11	504447	Support, Panel
12	505158	Panel, Upper Louver
13	STD610803	*Screw, 8 x 3/8" Sheet Metal (30 Req.)
14	507126	Panel, Left Side
15	503906	Plate
16	503908	Support, Vent
17	503911	Collar, Flue
18	88868	Seal
19	STD611005	*Screw, 10 x 1/2" Sheet Metal (8 Req.)
20	504114	Panel, Back
21	504239	Trim, Top
22	504106	Top, Body
23	507128	Panel, Right Side
↓	507674	Manual, Owners (F642-18880)

* Standard Hardware Item. Purchase Locally. FOR PARTS ILLUSTRATION
↓ Part Not Illustrated. SEE PAGE 19

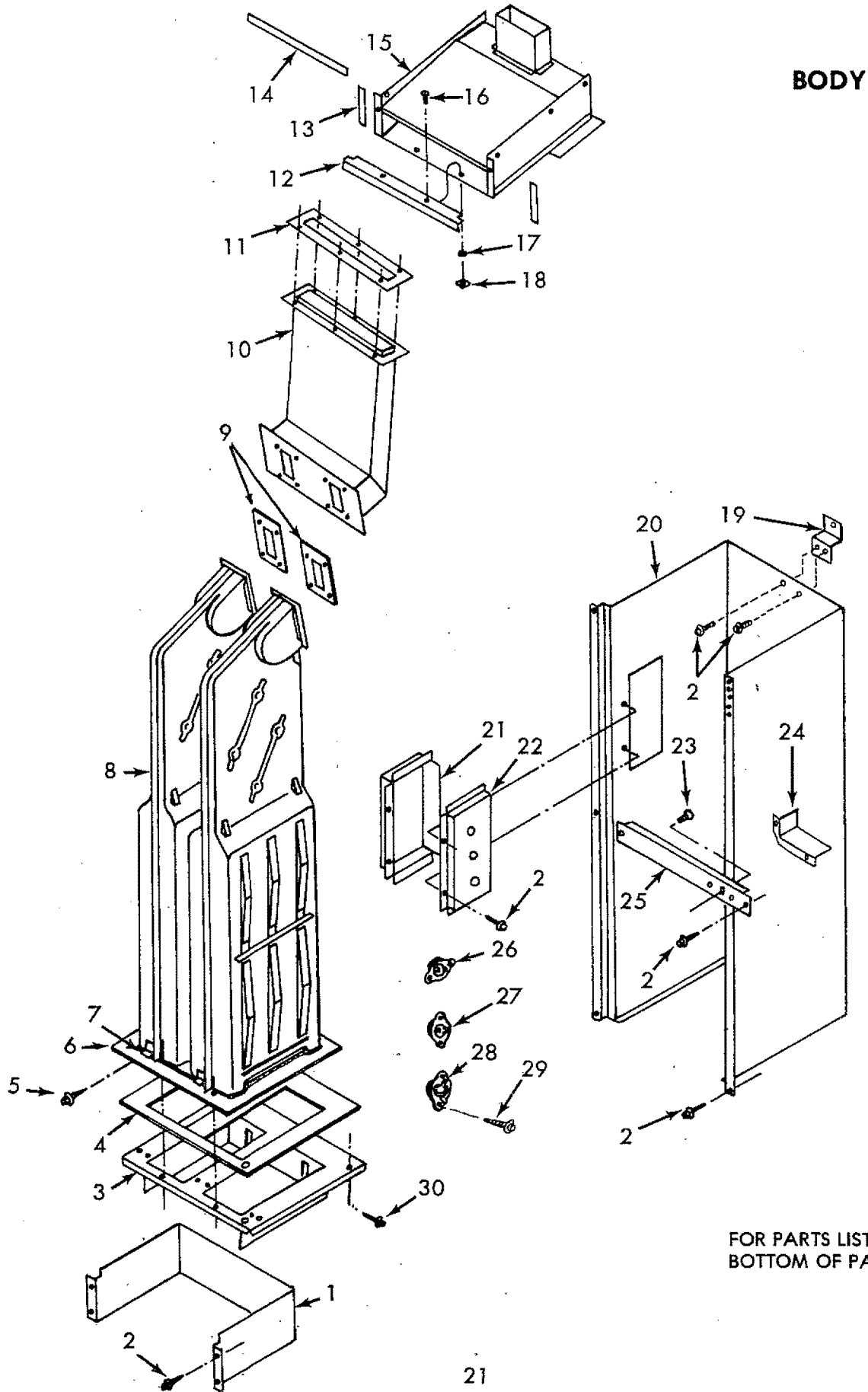
BODY

KEY NO.	PART NUMBERS	DESCRIPTION
1	503989	Shield, Burner Box
2	STD610803	*Screw, 8 x 3/8" Sheet Metal (20 Req.)
3	503928	Plate, Bottom
4	504016	Gasket, Bottom Plate
5	STD611007	*Screw, 10 x 1" Sheet Metal (4 Req.)
6	504336	Plate, Combustion Chamber Bottom
7	504337	Gasket, Combustion Chamber Bottom Plate
8	504751	Chamber, Combustion (2 Req.) (Includes 7 & 9)
9	503884	Gasket, Combustion Chamber to Radiator (2 Req.)
10	503971	Radiator
11	503883	Gasket (Radiator to Diverter)
12	504264	Extension, Diverter
13	504247	Gasket (2 Req.)
14	504059	Gasket
15	503977	Diverter
16	STD511005	*Screw, 10-24 x 1/2" Machine (2 Req.)
17	STD551110	*Lockwasher, No. 10 Split (2 Req.)
18	STD541010	*Nut, 10-24 Hex (2 Req.)
19	504828	Support, Shield
20	503987	Shield, Body
21	503986	Cover, Switch
22	507129	Support, Switch
23	502043	Switch, Selector
24	504522	Baffle, Switch
25	504521	Support, Switch (Selector Switch)
26	507133	Switch, High Temperature Fan
27	507131	Switch, Low Temperature Fan
28	507132	Switch, Limit
29	STD610805	*Screw, 7 x 3/8" Sheet Metal (6 Req.)
30	STD611005	*Screw, 10 x 1/2" Sheet Metal (6 Req.)

* Standard Hardware Item. Purchase Locally. FOR PARTS ILLUSTRATION
↓ Part Not Illustrated. SEE PAGE 21

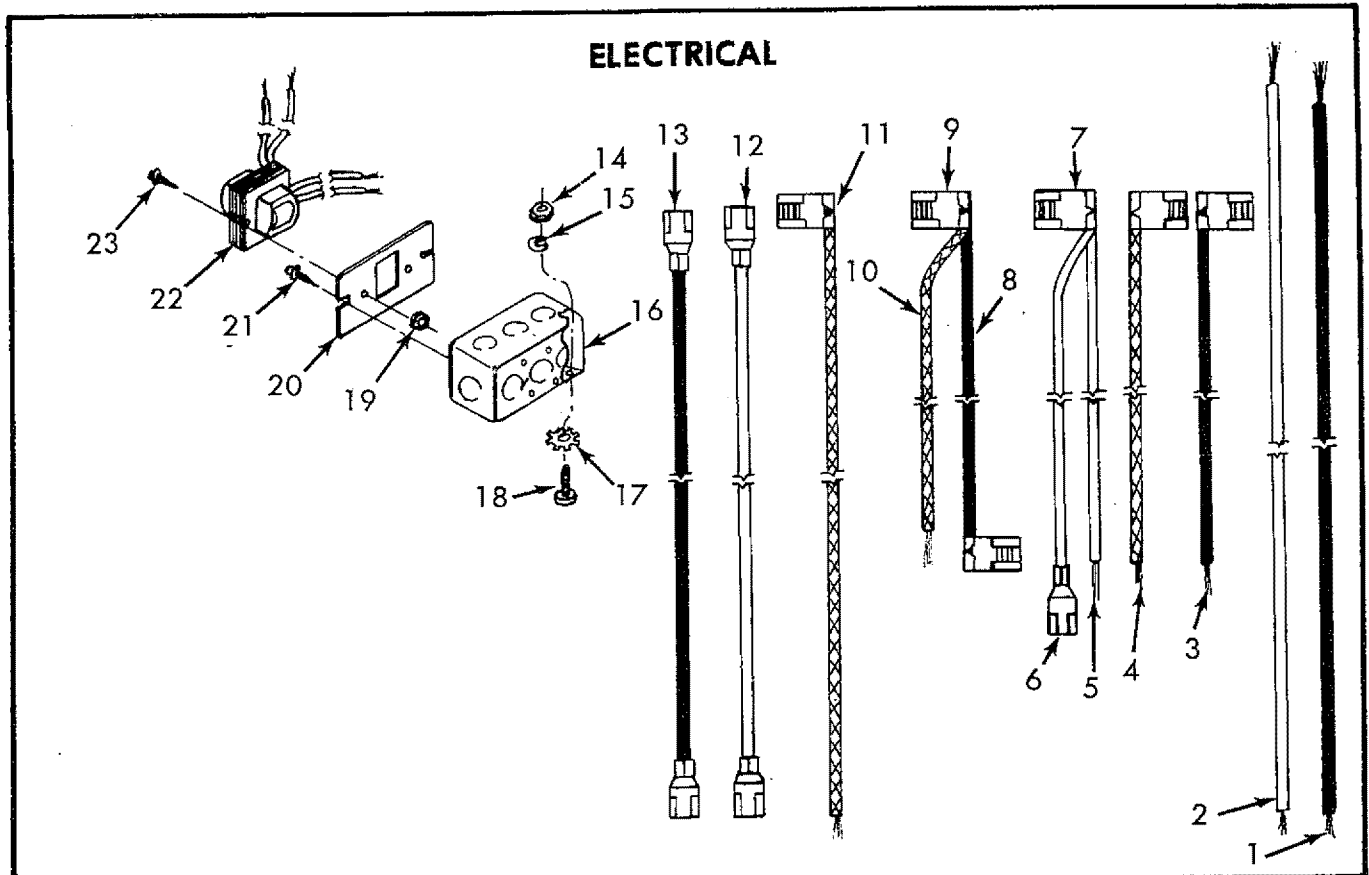
repair parts

SEARS GAS-FIRED AIR WALL FURNACE MODELS 867.736349 AND 867.736389



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SEARS GAS-FIRED AIR WALL FURNACE MODELS 867.736349 AND 867.736389

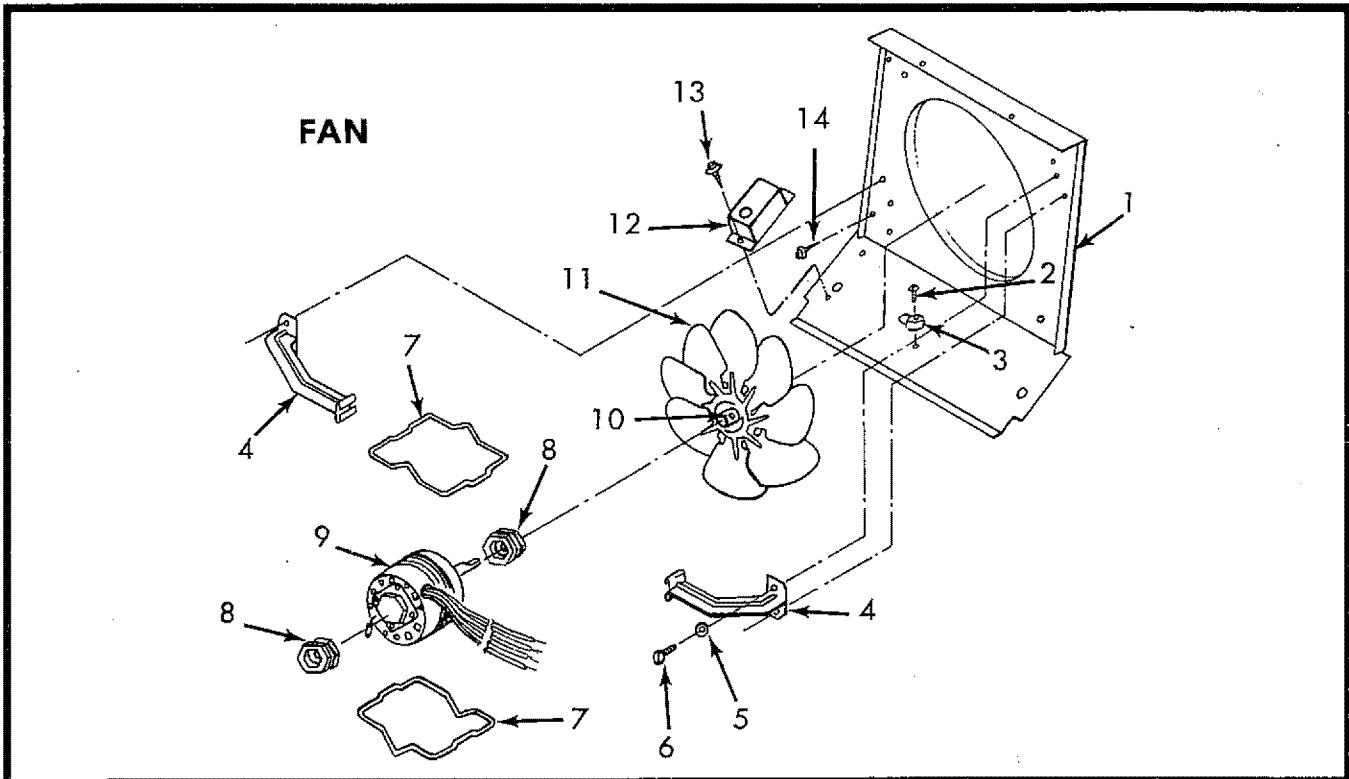


KEY NO.	PART NUMBERS	DESCRIPTION
1	507467	Wire, (Black) Selector Switch to Junction Box (57" Long)
2	507466	Wire, (White) From Junction Box to Junction Box (77" Long)
3	504517	Wire, (Black) From High Fan Switch to Junction Box (22" Long)
4	504516	Wire, (Red) From High Fan Switch to Junction Box (24" Long)
5	507462	Wire, (White) From Selector Switch to High Fan Switch (40" Long)
6	502191	Wire, (White) From High Fan Switch to Fan Switch (4" Long)
7	502287	Wire, (White and White) (Includes No. 5 and 6)
8	500757	Wire, (Black) Fan Switch to Limit Switch (4" Long)
9	503873	Wire, (Red and Black) (Includes Nos. 8 and 10)
10	507461	Wire, (Red) From Selector Switch to Fan Switch (40" Long)
11	504027	Wire, (Red) From Limit Switch to Junction Box (92" Long)
12	507683	Wire, (White) "C" on Transformer to "TR" on Gas Valve (7" Long)
13	507684	Wire, (Black) "R" on Transformer to "TH-TR" on Gas Valve (7" Long)
14	STD541010	*Nut, 10-24 Square
15	STD551110	*Lockwasher, No. 10 Split
16	504449	Box, Junction
17	STD551210	*Lockwasher, No. 10 External Tooth
18	STD511005	*Screw, 10-24 x 1/2" Machine
19	STD541006	*Nut, 6-32 Hex (2 Req.)
20	504507	Cover, Junction Box
21	STD510603	*Screw, 6-32 x 5/16" Machine (2 Req.)
22	606234	Transformer, 24V./20VA.
23	27207	*Screw, 6-32 x 1-1/4" Machine (2 Req.)
	500370	Wire, 25 Feet, 2-Wire Thermostat
	504871	Thermostat, Wall

* Standard Hardware Item. Purchase Locally.
 † Part Not Illustrated.

repair parts

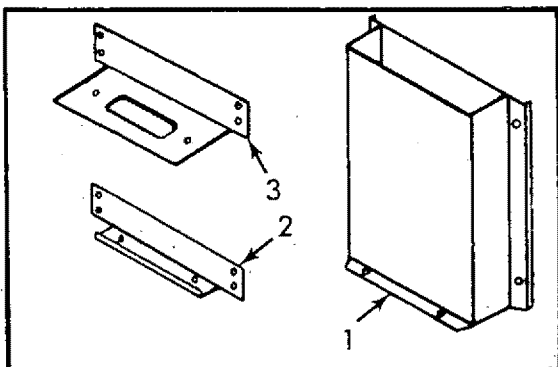
SEARS GAS-FIRED AIR WALL FURNACE MODELS 867.736349 AND 867.736389



KEY NO.	PART NUMBERS	DESCRIPTION
1	507121	Orifice, Fan
2	STD610805	*Screw, 7 x 3/8" Sheet Metal (2 Req.)
3	501503	Clamp, Wire (2 Req.)
4	506299	Support, Motor (2 Req.)
5	STD551110	*Lockwasher, No. 10 Split (4 Req.)
6	STD511103	*Screw, 10-32 x 3/8" Machine (4 Req.)
7	505764	Mount, Motor (2 Req.)
8	505433	Ring, Support (2 Req.)
9	505760	Motor, Fan 120V., 60 Hz.
10	STD622503	*Screw, 1/4-28 x 3/8" Set
11	504073	Blade, Fan (Includes No. 10)
12	502519	Box, Junction
13	STD610803	*Screw, 8 x 3/8" Sheet Metal (2 Req.)
14	STD611005	*Screw, 10 x 1/2" Sheet Metal (4 Req.)

* Standard Hardware Item. Purchase Locally.

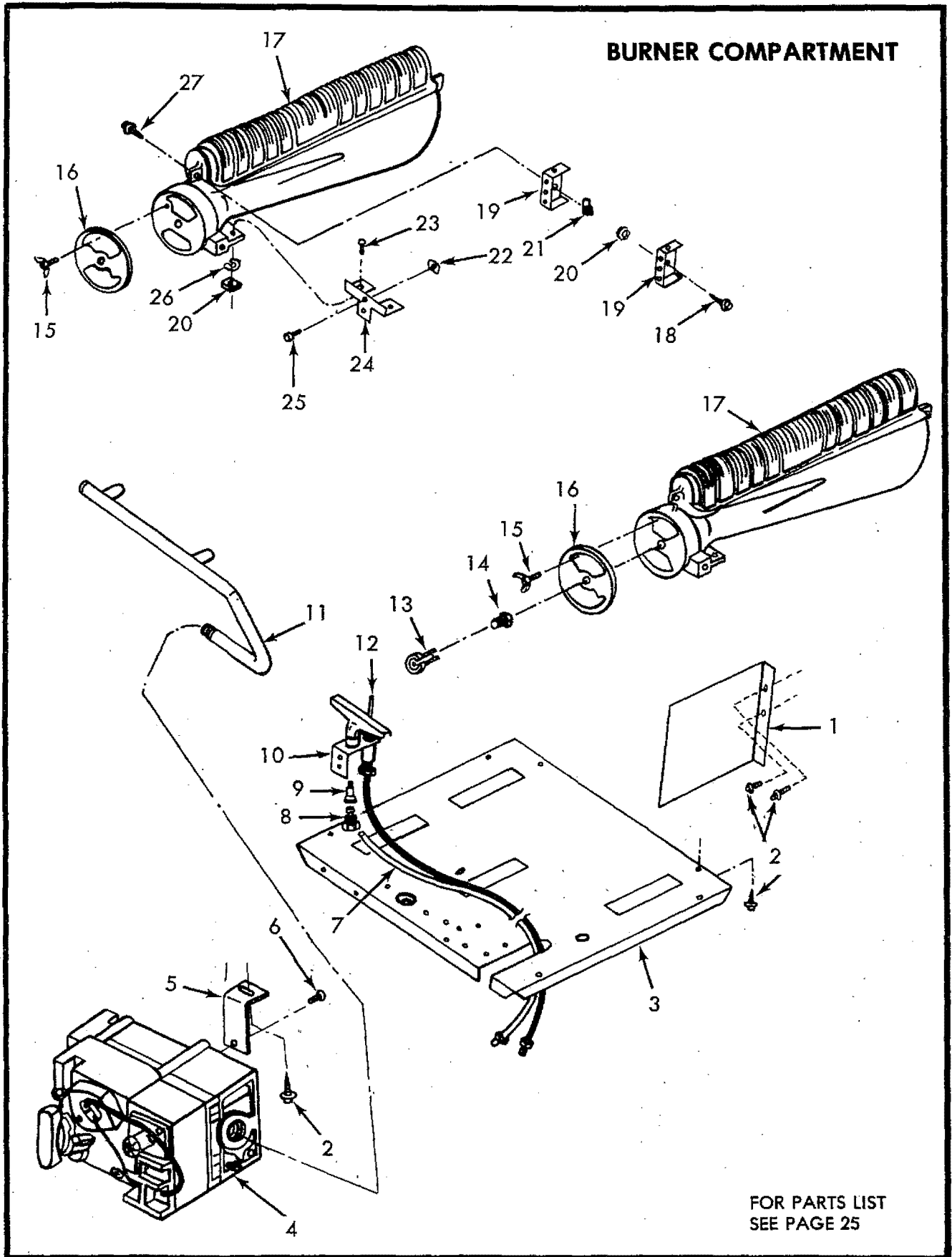
SEARS VENT SHIELD KIT NO. 42-7311 (OPTIONAL ACCESSORY)



KEY NO.	PART NUMBER	DESCRIPTION
-	504386	Kit, 42-7311 Vent Shield (Optional Accessory)
1	504375	Cover, Vent
2	504241	Support, Bottom
3	504398	Support, Top
1	504393	Sheet, Instruction

repair parts

SEARS GAS-FIRED FORCED AIR WALL FURNACE MODELS 867.736349 AND 867.736389



repair parts

SEARS GAS-FIRED FORCED AIR WALL FURNACE MODELS 867.736349 AND 867.736389

BURNER COMPARTMENT

KEY NO.	PART NUMBERS FOR MODELS		DESCRIPTION
	867.736349	867.736389	
1	504826	504826	Shield, Burner Heat
2	STD611005	STD611005	*Screw, 10 x 1/2" Sheet Metal (7 Req.)
3	504072	504072	Plate, Division
4	507677	---	#Valve, Gas (Nat.)
4	---	507678	#Valve, Gas (L.P.)
5	505118	505118	Support, Valve
6	STD511107	STD511107	*Screw, 10-32 x 3/4" Machine
7	89030	89030	Tubing, Pilot
8	29441	29441	Ferrule and Nut
9	503036	---	#Orifice, Pilot (Nat. Gas)
9	---	503037	#Orifice, Pilot (L.P. Gas)
10	504455	---	#Pilot, Burner (Nat. Gas) (Includes No. 9)
10	---	504456	#Pilot, Burner (L.P. Gas) (Includes No. 9)
11	507552	507552	Manifold
12	503758	503758	Thermocouple
13	46958	46958	Sleeve, Manifold (2 Req.)
14	30368	---	#Orifice, Burner (Nat. Gas) (No. 36 Drill Size) (2 Req.)
14	---	46852	#Orifice, Burner (L.P. Gas) (No. 52 Drill Size) (2 Req.)
15	STD511003	STD511003	*Screw, 10-24 x 5/16" Wing (2 Req.)
16	22000	22000	Shutter, Air (2 Req.)
17	505757	505757	Burner (2 Req.)
18	STD511005	STD511005	*Screw, 10-24 x 1/2" Machine (2 Req.)
19	503961	503961	Bracket, Burner (2 Req.)
20	STD541010	STD541010	*Nut, 10-24 Square (4 Req.)
21	64479	64479	*Nut, "J" Speed (2 Req.)
22	505755	505755	*Nut, 8-32 "U" Speed
23	STD511007	STD511007	*Screw, 10-24 x 5/8" Machine (2 Req.)
24	505756	505756	Support, Pilot
25	STD510803	STD510803	*Screw, 8-32 x 3/8" Machine
26	STD551110	STD551110	*Lockwasher, No. 10 Split (2 Req.)
27	STD611007	STD611007	*Screw, 10 x 1" Sheet Metal (2 Req.)
↓	506537	506537	Plate, Lighting Instruction

* Standard Hardware Item. Purchase Locally.

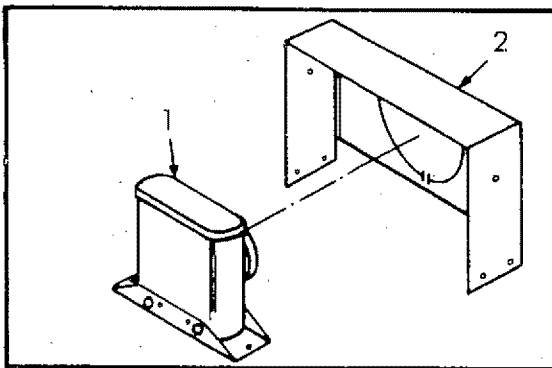
↓ Part Not Illustrated.

Be Sure Parts Being Ordered Are For Type of Gas Being Used.

FOR PARTS ILLUSTRATION

SEE PAGE 24

SEARS HORIZONTAL VENT KIT NO. 42-7369 (OPTIONAL ACCESSORY)

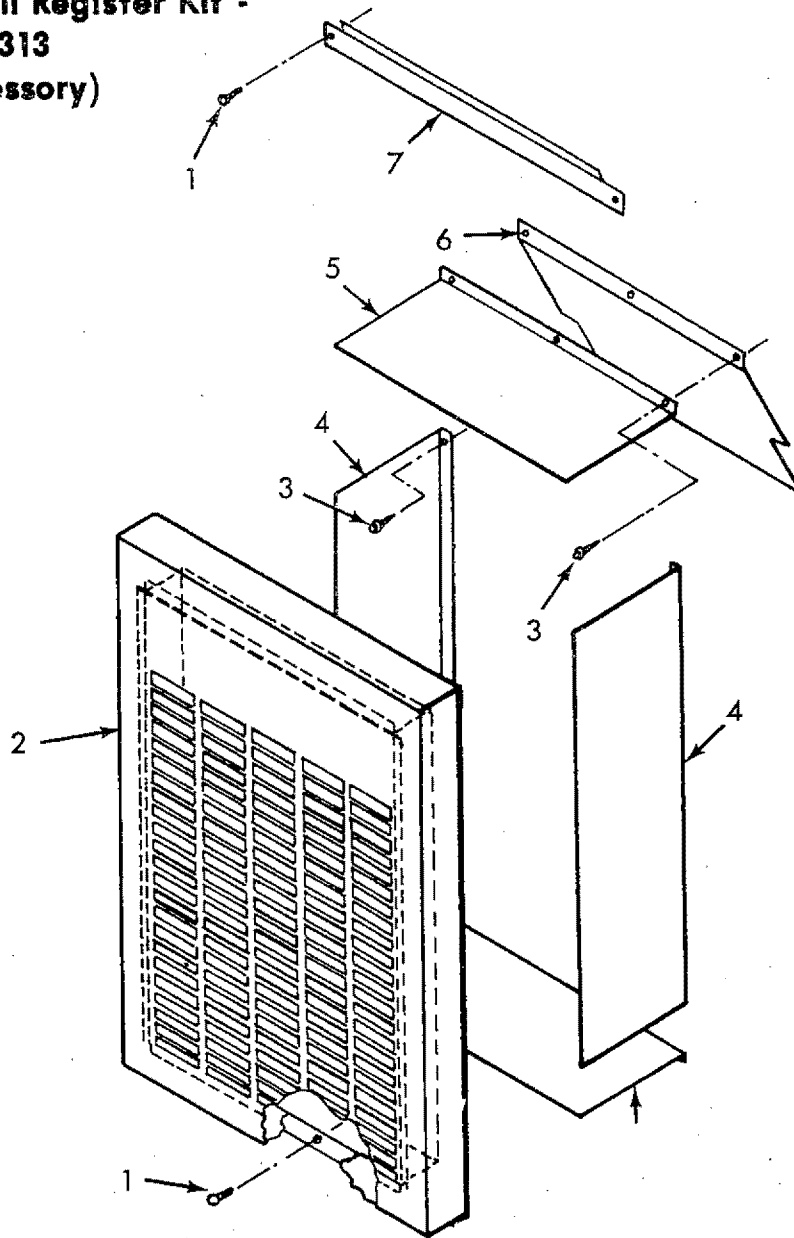


KEY NO.	PART NUMBER	DESCRIPTION
-	506591	Kit, 42-7369 Horizontal Vent (Optional Accessory)
1	506590	Tee, Horizontal Flue
2	506588	Shield, Wall
↓	506592	Sheet, Instruction

repair parts

SEARS GAS-FIRED FORCED AIR WALL FURNACE MODELS 867.736349 AND 867.736389

Sears Rear Wall Register Kit - Stock No. 42-7313 (Optional Accessory)

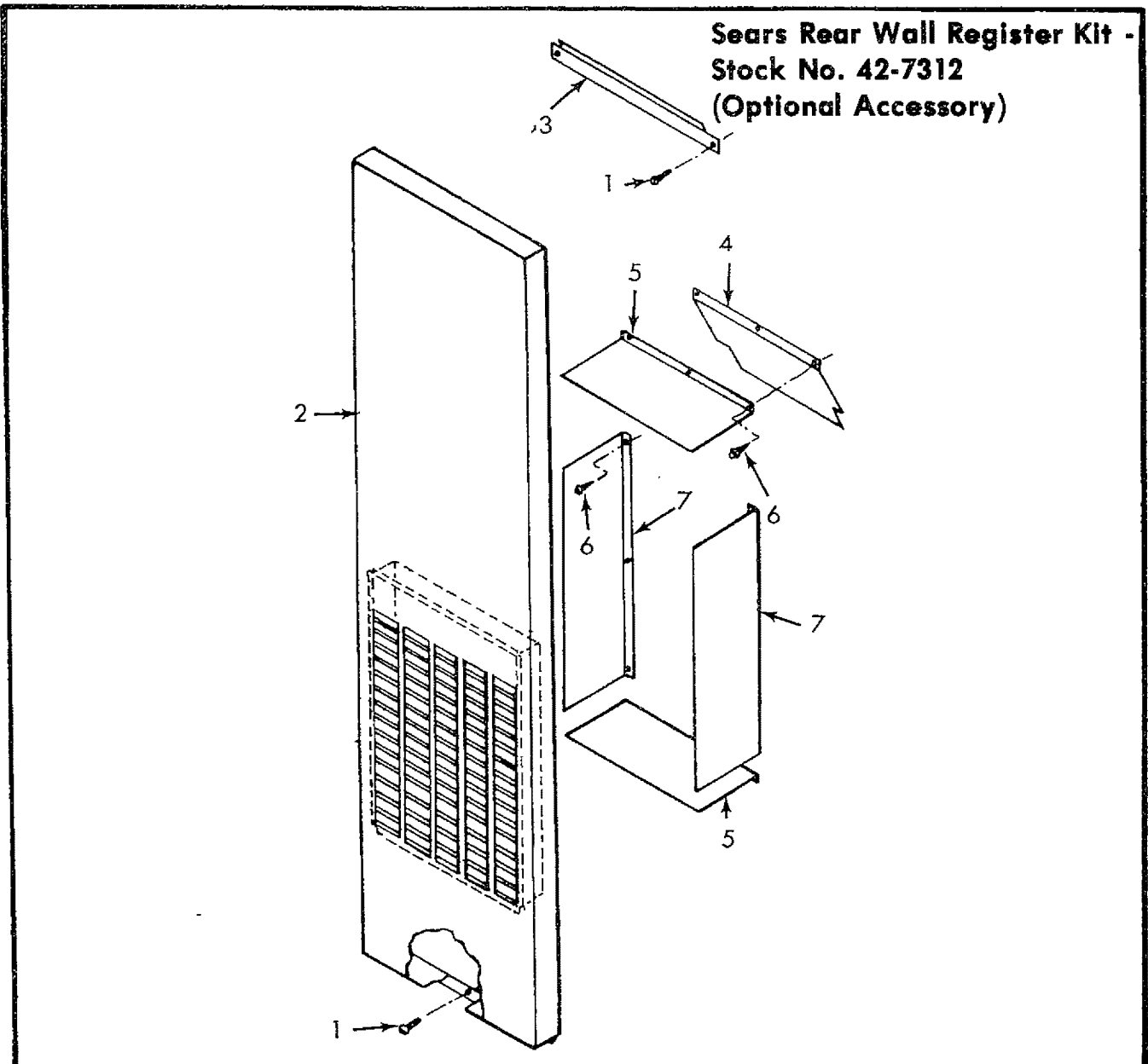


KEY NO.	PART NUMBER	DESCRIPTION
1	130358	*Screw, 10 x 1" Round Head Wood (3 Req.)
2	506953	Panel, Rear Register
3	STD610805	*Screw, 7 x 3/8" Sheet Metal (12 Req.)
4	506942	Panel, Side Collar (2 Req.)
5	506943	Panel, Top and Bottom Collar (2 Req.)
6	506957	Deflector, Air
7	506939	Bracket, Hanger
1	506951	Manual, Installation (F642-12176)

Standard Hardware Items.
Purchase Locally.
Part Not Illustrated.

repair parts

SEARS GAS-FIRED FORCED AIR WALL FURNACE MODELS 867.736349 AND 867.736389



KEY NO.	PART NUMBER	DESCRIPTION
1	130358	*Screw, 10 x 1" Round Head Wood (3 Req.)
2	506946	Panel, Rear Register
3	506939	Bracket, Hanger
4	506957	Deflector, Air
5	506943	Panel, Top and Bottom Collar (2 Req.)
6	STD610805	*Screw, 7 x 3/8" Sheet Metal (12 Req.)
7	506942	Panel, Side Collar (2 Req.)
†	506947	Manual, Installation (F642-12276)

* Standard Hardware Items.
Purchase Locally.

† Part Not Illustrated.

Sears

**owners
manual**

SERVICE

**MODEL NOS.
867.736349
867.736389**

**HOW TO ORDER
REPAIR PARTS**

**TELL SEARS YOU
WANT IT INSTALLED
THEN RELAX**

GAS-FIRED FORCED AIR WALL FURNACE

Now that you have purchased your wall furnace, should a need ever exist for repair parts or service, simply contact any Sears Service Center and most Sears, Roebuck and Co. stores. Be sure to provide all pertinent facts when you call or visit.

The model number of your Wall Furnace will be found on the Rating Plate located on the Panel directly above the Gas Valve.

When ordering repair parts always give the following information:

- PART NUMBER
- PART DESCRIPTION
- MODEL NUMBER
- NAME OF ITEM

All parts listed may be ordered from any Sears Service Center and most Sears stores.

If the parts you need are not stocked locally, your order will be electronically transmitted to a Sears Repair Parts Distribution Center for handling.

When Sears arranges the installation, you can be sure the job is done right. We will arrange for professional workmanship and we'll take care of the entire project. What's more, during installation you get insured protection against property damage and also against accidents to workmen. All you have to do is talk to your Sears salesperson or call your nearest Sears store today for detailed information.

Sears, Roebuck and Co., Chicago, Il. 60684 U.S.A.