



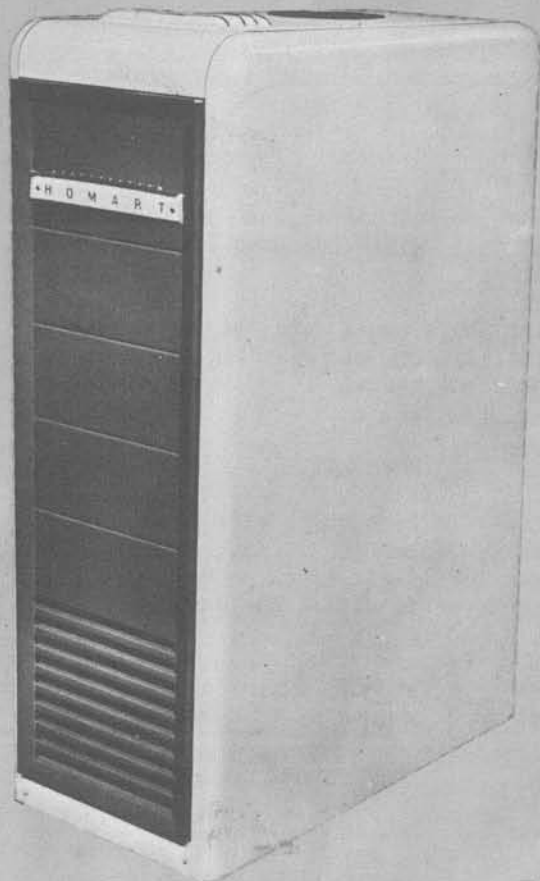
SEARS
ROEBUCK AND CO.

beat the cold



beat the heat

Comfort by HOMART



GAS-FIRED BOILER

INSTRUCTIONS for INSTALLING OPERATING PARTS ORDERING MODEL NUMBERS

NATURAL	MFG.	L. P.
867.6097	867.59991	867.60001
867.6098	867.60021	867.60031
867.6099	867.60051	867.60061
867.6100	867.60081	867.60091
867.6101	867.60111	867.60121
867.6102	867.60141	867.60151
867.59982		
867.60012		
867.60042		
867.60072		
867.60102		
867.60132		

**SEARS, ROEBUCK AND CO. - U.S.A.
SIMPSONS-SEARS LIMITED - CANADA**

Mr. and Mrs. Homeowner:

You are now the owners of as fine a heating unit as latest engineering knowledge and modern production techniques can bring forth. Your new unit has been designed to utilize all available heat in the fuel to give you top economy. Finest materials and careful construction have been combined to make it a quiet, smooth-running unit, and one that will continue to function as well as it does now. Your new Sears unit will give your family completely automatic heating, and will do it safely and economically. With reasonable care, you can expect years of carefree comfort from your Homart unit.

Very truly yours,

Sears, Roebuck and Co.
Simpsons-Sears Limited

HOW TO ORDER REPAIR PARTS

All parts shown on the following list and illustrated in the parts diagram may be ordered through any Sears retail or mail order store. (In Canada order from Simpsons-Sears, Ltd.) In ordering parts by mail from the mail order store which serves the territory in which you live, selling prices will be furnished on request or parts will be shipped at prevailing prices and billed accordingly.

*When ordering repair parts,
always give the following information:*

1. The Part Number in this list.
2. The Part Name in this list.

The model and serial number of your boiler will be found on a plate fastened to the front panel of the unit.

Always mention this model and serial number when communicating with us regarding this boiler or when ordering parts.

IMPORTANT

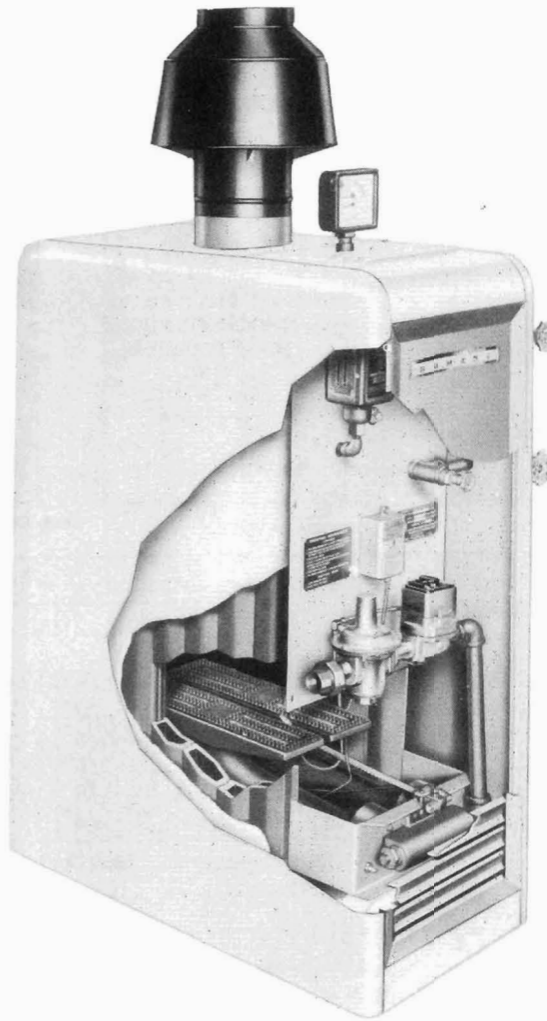
This list is valuable. It will assure your being able to obtain proper parts service at all times. We suggest you keep it with other valuable papers.

IMPORTANT - Have your boiler checked at least once a year by a competent boiler serviceman.

INSTALLATION

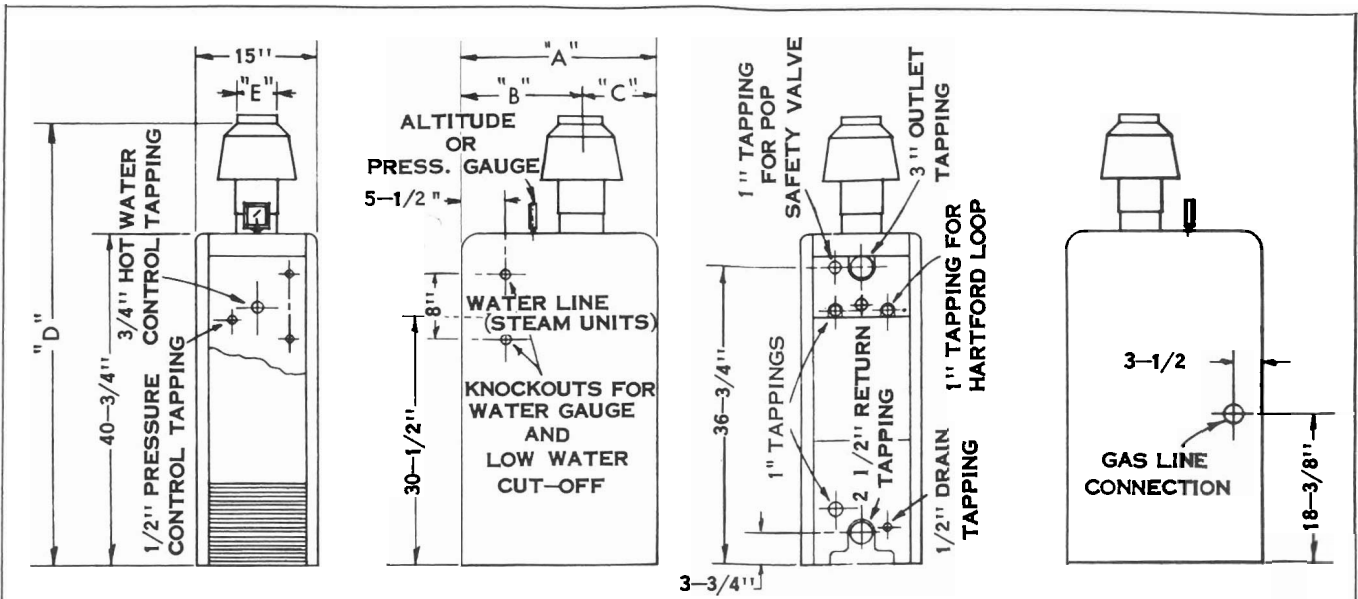
MODELS

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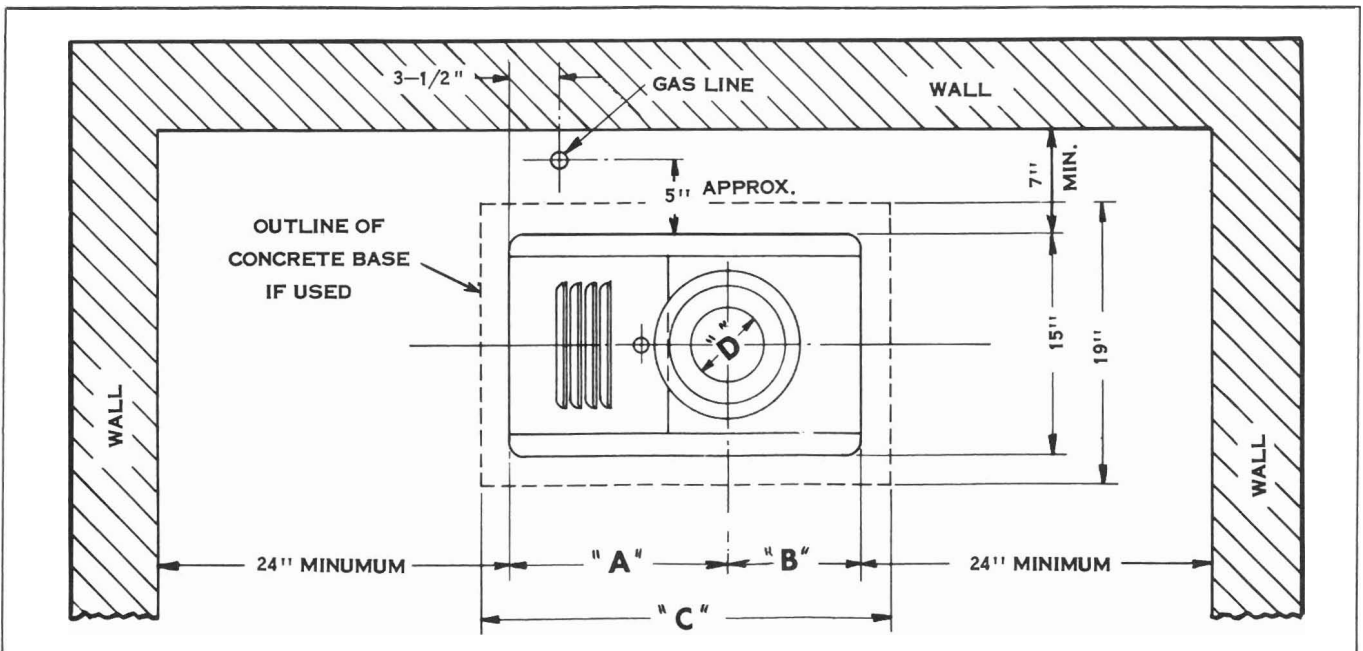
RATINGS

MODEL NO.	TYPE GAS	AGA INPUT BTU/HR.	AGA OUTPUT BTU/HR.	AGA RATING, SQ. FT.		NET RATING, SQ. FT.	
				STEAM	WATER	STEAM	WATER
867.6097	NAT.	75,000	60,000	250	400	160	300
867.59982	S.U.R. NAT.	75,000	60,000	250	400	160	300
867.59991	MFG.	75,000	60,000	250	400	160	300
867.60001	LPG.	70,000	56,000	235	375	150	275
867.6098	NAT.	95,000	76,000	315	500	200	375
867.60012	S.U.R. NAT.	95,000	76,000	315	500	200	375
867.60021	MFG.	95,000	76,000	315	500	200	375
867.60031	LPG.	95,000	76,000	315	500	200	375
867.6099	NAT.	120,000	96,000	400	640	260	480
867.60042	S.U.R. NAT.	120,000	96,000	400	640	260	480
867.60051	MFG.	120,000	96,000	400	640	260	480
867.60061	LPG.	120,000	96,000	400	640	260	480
867.6100	NAT.	140,000	112,000	465	750	305	560
867.60072	S.U.R. NAT.	140,000	112,000	465	750	305	560
867.60081	MFG.	140,000	112,000	465	750	305	560
867.60091	LPG.	140,000	112,000	465	750	305	560
867.6101	NAT.	160,000	128,000	535	855	350	645
867.60102	S.U.R. NAT.	160,000	128,000	535	855	350	645
867.60111	MFG.	160,000	128,000	535	855	350	645
867.60121	LPG.	160,000	128,000	535	855	350	645
867.6102	NAT.	200,000	160,000	665	1070	440	805
867.60132	S.U.R. NAT.	200,000	160,000	665	1070	440	805
867.60141	MFG.	200,000	160,000	665	1070	440	805
867.60151	LPG.	200,000	160,000	665	1070	440	805



Boiler Model	Dimensions				Gas Connections			
	A	C	D	EG	Nat.	Mfg. & Mixed	LP	
867.6097, 867.59982, 867.59991, 867.60001	21-1/8"	13-1/2"	7-5/8"	54-9/16"	5"	3/4"	3/4"	1/2"
867.6098, 867.60012, 867.60021, 867.60031	24-1/8"	15"	9-1/8"	54-9/16"	5"	3/4"	3/4"	1/2"
867.6099, 867.60042, 867.60051, 867.60061	27-1/8"	16-1/2"	10-5/8"	56-1/4"	6"	3/4"	1"	1/2"
867.6100, 867.60072, 867.60081, 867.60091	30-1/8"	18"	12-1/8"	56-1/4"	6"	3/4"	1"	1/2"
867.6101, 867.60102, 867.60111, 867.60121	33-1/8"	19-1/2"	13-5/8"	59-7/16"	7"	1"	1"	1/2"
867.6102, 867.60132, 867.60141, 867.60151	39-1/8"	22-1/2"	16-5/8"	59-7/16"	7"	1"	1-1/4"	1/2"

Figure 1 Boiler Dimensions



Boiler Model	Dimensions				Gas Connections		
	A	B	C	D	Nat.	Mfg. & Mixed	LP
867.6097, 867.59982, 867.59991, 867.60001	13-1/2"	7-5/8"	25-1/8"	5"	3/4"	3/4"	1/2"
867.6098, 867.60012, 867.60021, 867.60031	15"	9-1/8"	28-1/8"	5"	3/4"	3/4"	1/2"
867.6099, 867.60042, 867.60051, 867.60061	16-1/2"	10-5/8"	31-1/8"	6"	3/4"	1"	1/2"
867.6100, 867.60072, 867.60081, 867.60091	18"	12-1/8"	34-1/8"	6"	3/4"	1"	1/2"
867.6101, 867.60102, 867.60111, 867.60121	19-1/2"	13-5/8"	37-1/8"	7"	1"	1"	1/2"
867.6102, 867.60132, 867.60141, 867.60151	22-1/2"	16-5/8"	43-1/8"	7"	1"	1-1/4"	1/2"

Figure 2. Floor Plan Dimensions

A. APPLICATION

This series of cast iron gas fired boilers are listed by the American Gas Association for use with manufactured, natural, S.U.R. natural, and liquified petroleum gases. Therefore, before proceeding with the installation, check the rating plate of the boiler to make certain that the unit is equipped for use with the type of gas available.

The boilers can be used for either steam or hot water heating systems. Therefore, make certain the correct accessories (whether for steam or hot water) are available before proceeding with the installation.

It is recommended that a separate automatic water heater be used for domestic hot water heater.

B. UNCRATING THE UNIT

Careful attention is given to packing and shipping of all equipment. All claims for possible packing shortages must be made at once.

When unpacking jacket panels, be careful not to scratch or mar the finish. Reasonable care will result in a much better appearing installation.

C. LOCATING THE UNIT

The boiler must be installed in a location in which the facilities for ventilation permit the satisfactory combustion of gas and proper venting. In buildings of conventional construction, infiltration is normally adequate to provide air for combustion and draft hood dilution.

Where the boiler is installed in a confined space within a building having adequate air infiltration, provisions shall be made for supplying this space with air for combustion and ventilation. This may be accomplished by the use of two permanent openings (each having 1 square inch free area for each 1000 BTU per hour input) freely communicating with the interior area having adequate air infiltration. One opening is to be located high on the wall, at least above the relief opening of the draft hood. The other opening is to be located near the floor at the same level as the combustion air inlet louvres on the front of the boiler.

Where the boiler is installed in a confined space within a building of unusually tight construction, air for combustion and ventilation must be obtained from outdoors or from spaces freely communicating with the outdoors. Under these conditions, two openings must be used as above, except that only the combined area must be not less than 1 square inch per BTU per hour input. The openings shall be of equal area, one near the bottom. These openings shall communicate with the selected source or sources of air supply by continuous ducts.

Where the boiler is installed in an unconfined space, such as a full basement, but within a building of unusually tight construction, air for combustion and ventilation must be obtained from outdoors or from spaces freely communicating with the outdoors. Under these conditions one or more openings having a total free area of not less than 1 square inch per

1000 BTU per hour of input rating must be provided. Where ducts are required, they must be of the same cross-sectional areas as the openings to which they connect.

The boiler should be located near the chimney or flue and as well centralized with respect to the steam or hot water distribution system as practical. Horizontal smoke pipe connections longer than 15 feet should be avoided where possible.

The boiler should be installed on a firm level base. In basements subject to wet floors or extreme dampness we recommend that the unit be set on a concrete base. See Figure 2 for recommended dimensions for concrete base. Ample clearance as called for in Figure 2 should be provided to allow ready access for cleaning and for servicing of burner parts, controls and vent connection.

D. ASSEMBLING UNIT: (see figures 3 through 9).

1. Place boiler casting assembly in position on the basement floor or special concrete base if used. The boiler should be on a level floor to avoid trouble when assembling the jacket to the boiler. Loosen nuts on tie rods at least one full turn to allow for expansion.

2. Fill the groove on the top of each of the intermediate sections with furnace cement. Also apply cement to the lip on the top inner face of the end sections (see figure 3). Place flue outlet cover in place and tighten down with 1/4" x 3/4" brass round head screws into the cast lugs on the end sections.

3. Symmetrically place insulation blanket over boiler casting. Make cut-out in insulation for flue outlet collar and gauge tapping on the top of the front section (see figure 4).

4. Hold front insulation in place and make cut-outs for all tapped openings on front of boiler. Then cover insulation with front sheet metal division panel and screw in necessary nipples or plugs and controls (see figure 5).

5. Place side panels in position and fasten front division panel to side panels by means of sheet metal screws. Mount top panel in position and fasten to side panels with sheet metal screws (see figure 5).

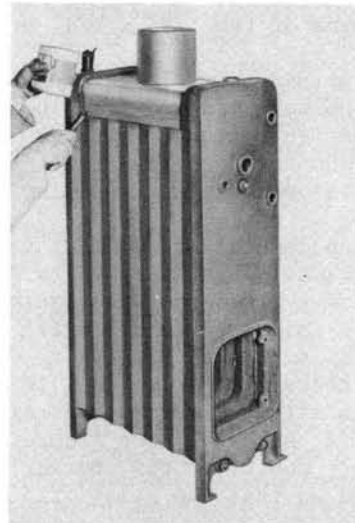


Figure 3. Cementing Flue Header Cover to Heat Exchanger



Figure 4. Installing Wrap-Around Insulation

6. Hold rear insulation in place against rear boiler casting and install rear panels with sheet metal screws to side panels. With a knife make cut-outs in insulation for all tapings on rear of boiler. Also cut insulation, if necessary, to conform to notch in bottom rear panel. This notch in the bottom rear panel constitutes an opening for secondary air for combustion and, therefore, the insulation must not block this opening.

7. Check orifice spuds for proper drill size (see Section E). Then screw orifice spuds into brass adaptors extending from manifold casting.

8. Fasten manifold casting to steel burner bracket by means of two 1/4" x 3/4" brass round head screws.

9. Slip primary air sleeve bands over bell end of gas burner venturi castings. Clamp shutter bands to venturi castings with No. 10-24 screws and nuts provided leaving at least one-half of the primary air opening uncovered (see figure 6).

10. Attach gas burner venturi castings to the burner bracket with four 1/4" x 3/8" steel round head screws provided (see figure 6).

11. Check pilot orifice drill size (see Section E), Attach pilot bracket to one of the gas burner heads with two No. 10-32 x 1/4" screws. Then attach pilot to bracket with two No. 10-32 x 1/4" screws. (See figure 6.)

12. Next, position gas burner head with pilot attached so that the pilot will be between the two burners.

13. Next install the thermocouple into the pilot burner. Be sure that the thermocouple

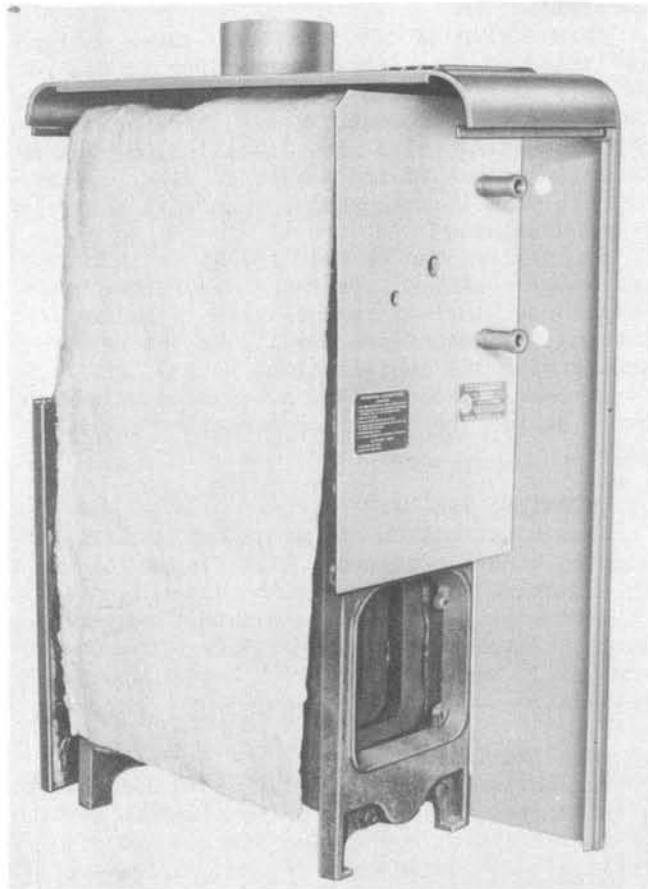


Figure 5. Insulation, Division Panel
Right Side Panel and Top Panels Installed

connecting nut at the pilot is turned all the way in; if nut is loose, the position of the thermocouple in the pilot flame, will not be correct and the proper voltage will not be generated.

14. Next attach one end of a length of 1/4" aluminum tubing to the bottom of the pilot burner by means of compression nut and sleeve. Then attach end of another length of 1/4" aluminum tubing to the bleed burner tip by means of compression nut and sleeve. Bend both tubes into proper position along venturi casting as shown by Figure 6. Bleed tip not used on L.P. Gas.

15. Then position left-hand burner head on left burner venturi. The lug extending from the side of this burner head should be on the inside so that this lug together with pilot burner lug on the other burner maintains the two burners parallel.

16. Next turn nuts on the ends of the two 1/4" x 6" long studs. Then insert the studs into the holes in the cast lugs on the front section and fasten in place with additional nuts (see figure 5).

17. Then mount complete burner assembly into boiler, sliding burner bracket over the 6" studs. Fasten in place with 1/4"-20 nuts making certain that burners are level and in alignment (see figure 7).

NOTE - PARAGRAPHS 18, 19, 20, 21, 22 and 23 AS FOLLOWS APPLY ONLY TO MANUFACTURED AND S.U.R. NATURAL GAS UNITS

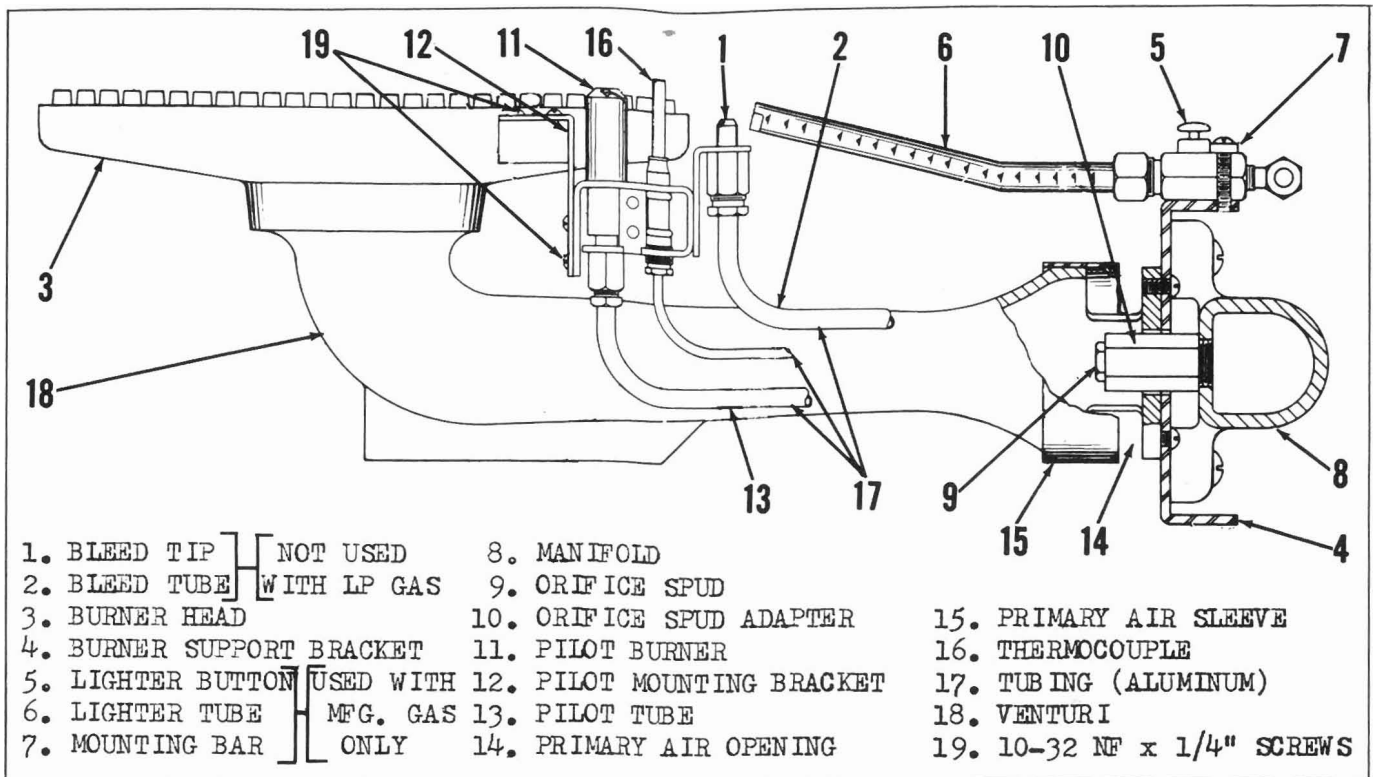


Figure 6. Gas Burner Assembly - Side View

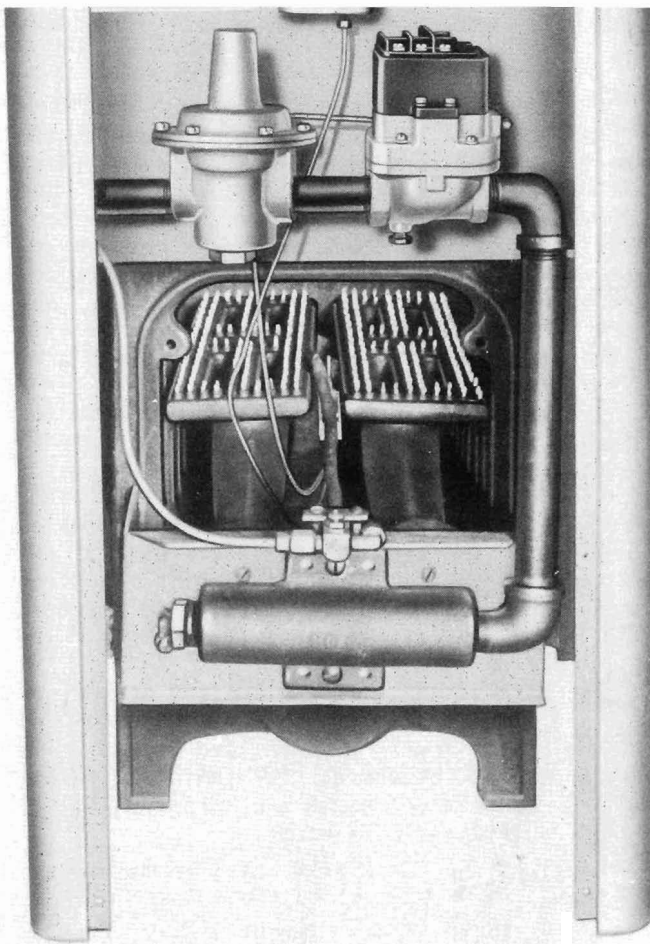


Figure 7. Burner Assembly Installed

18. Clamp lighter tube to burner bracket by means of small steel strap and two 10-24 x 7/8" steel screws. Push button should be on top (see figure 6).

19. Attach pilot burner tube to right hand leg of tee on push button lighter valve.

20. Connect tubing from bleed tip on pilot to vent fitting on gas pressure regulator.

21. Remove cover from Pilotstat switch and attach to front division panel with sheet metal screws. Then connect thermocouple lead to bottom of Pilotstat switch (see Figure 8). Remember that this is an electrical connection and a dirty or loose connection will prevent operation. Do not bend thermocouple lead within 1/2" of brazed joint at connector end.

22. Assemble manual shutoff valve and pilot valve assembly to piping forming a drip leg as shown in figure 8. This drip leg catches dirt and moisture and must be furnished by installer as it is not furnished with boiler.

23. Connect remainder of pilot tubing from pilot valve to left hand leg of tee located at push button lighter valve.

NOTE - PARAGRAPHS 24, 25, 26 and 27 AS FOLLOWS APPLY ONLY TO NATURAL GAS UNITS

24. Attach thermopilot relay to front division panel with sheet metal screws. Connect pilot tubing to right hand fitting of thermopilot relay. Then connect thermocouple lead to bottom of thermopilot relay.

25. Connect tubing from bleed tip on pilot to vent fitting on gas pressure regulator.

26. Assemble compression fitting to shut-off valve and fasten to piping to form a drip leg as shown in figure 8. This drip leg must

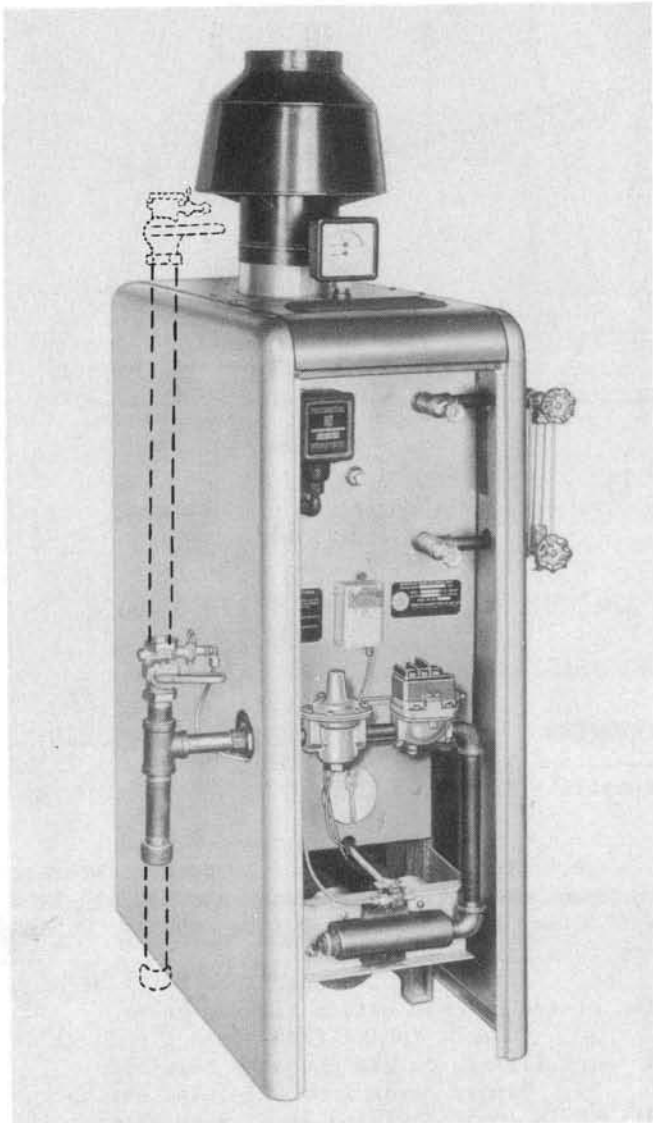


Figure 8. Controls Installed

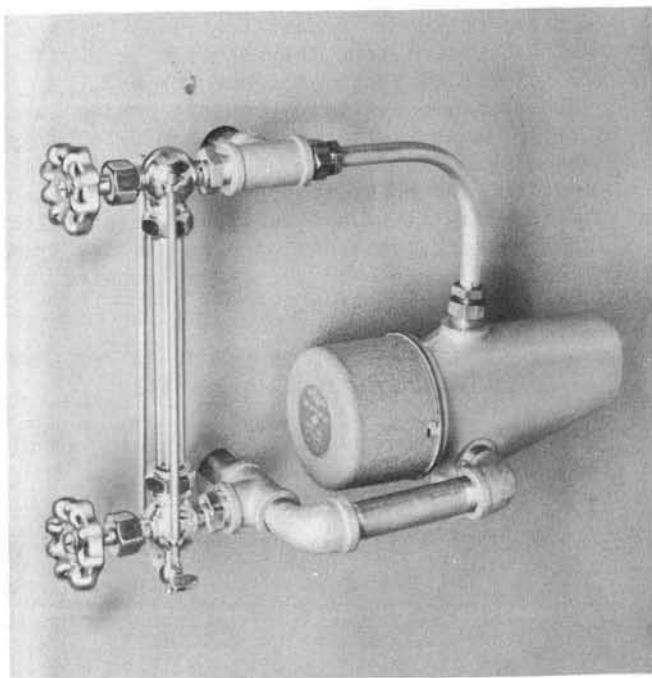


Figure 9. Low Water Cut-Off

be furnished by the installer as it is not furnished with the boiler.

27. Connect remainder of aluminum tubing from compression fitting to left hand fitting of thermopilot relay.

NOTE - PARAGRAPHS 28 AND 29 AS FOLLOWS APPLY ONLY TO LIQUEFIED PETROLEUM GAS.

28. Next attach Pilotstat valve to manifold assembly by means of union provided. Then run the pilot tubing from the Pilotstat valve through the hole in left side panel and into left hand leg of tee on push button lighter valve.

29. Connect the thermocouple lead to side of Pilotstat valve (see figure 25). Remember that this is an electrical connection and a dirty or loose connection will prevent operation. Do not bend the thermocouple lead within one-half inch of the brazed joint at connector end.

30. Next mount the burner inspection cover in the same manner as the burner bracket using the 1/4" x 2-1/2" stud provided.

31. Then attach the lighting instruction plate and rating plate to the front division panel with the sheet metal screws provided.

32. Finish mounting all controls required for hot water or steam boiler (see figure 9) and connect up to distribution system. Fill system with water, drain, and refill. See Section "J".

E. CHECKING UNIT FOR PROPER GAS

Make certain the unit is equipped with the proper orifice spuds and the correct pilot orifice for the type of gas to be used. Two burners are used in each boiler and, therefore, it is necessary to check and make certain the same and the correct orifice spuds are used for each burner. The orifice spud drill size depends on the BTU content and specific gravity of the gas. The following orifice spuds are standard for the various gases.

The proper orifice spuds are shipped in accordance with the order, and the nameplate is stamped with the type of gas corresponding.

A single pilot is used to ignite both burners. The orifice in the pilot burner also varies with the type of gas. For natural gas the pilot orifice is stamped .025N and for manufactured gas the pilot orifice is stamped .034M. For LPG (liquified petroleum gas) the pilot orifice is stamped .012.

The burners used in the boilers are of the multiple drilled port type. For manufactured gas the burner ports are drilled No. 40 Drill Manufacturer's Standard. For natural gases, and LPG the burner ports are drilled No. 31 Drill Manufacturer's Standard.

F. INSTALLATION OF STACK ORIFICE AND DRAFT HOOD

Figure 10 shows the correct installation of the stack orifice and draft hood; and shows the flue connector sizes and stack orifice sizes for the various boilers. The stack orifice controls the amount of secondary air used for combustion and, therefore, it is extremely im-

BOILER INPUT BTU/HR.	SPUD DRILL SIZES				
	1050BTU NATURAL GAS	800BTU 0.58 SP. GR.	700BTU 0.615 SP. GR.	604BTU 0.65 SP. GR.	LP GAS
75,000	# 31	# 30	# 25	# 25	# 49
95,000	# 29	# 26	# 18	# 18	# 46
120,000	# 23	# 19	# 11	# 11	# 43
140,000	# 19	# 16	# 15	# 15	# 41
160,000	# 16	# 12	# 2	# 2	# 37
200,000	# 8	# 4	"D"	"D"	# 3

NOTE - Extra Spuds are Furnished for Other BTU Values and Specific Gravity.

portant that the proper stack orifice be used. Check dimension "B" as shown in the table of figure 10 for the particular model of boiler being installed. Note that the stack orifice is held in place in the flue outlet collar by means of two sheet metal screws. Also note that the draft hood is attached to the flue outlet collar by means of sheet metal screws.

G. INSTALLATION OF SMOKE PIPE TO CHIMNEY

Before connecting the smoke pipe to the chimney, the chimney flue should be examined to ascertain that it is properly constructed, clear, and will freely conduct the products of combustion to the outer air. The chimney must extend high enough above the building or other neighboring obstructions so that wind from any direction will not strike the top of the chimney from an angle above horizontal. Where an existing chimney is unlined or where local experience indicates that flue gas condensate might be a problem, consult the local gas company for information about liners that are suitable for the locality.

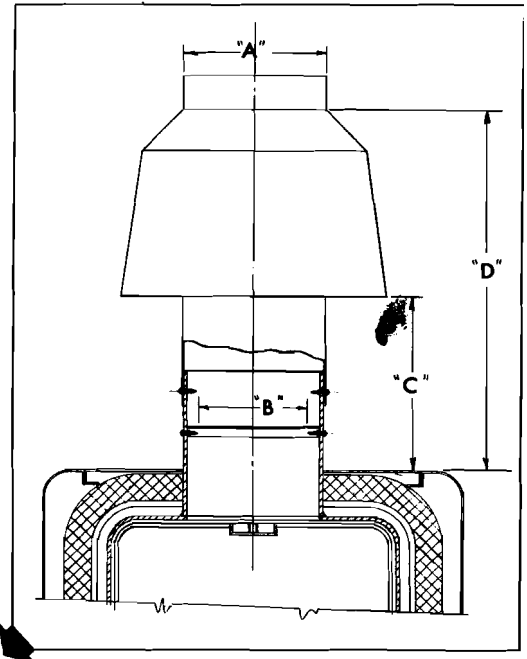
The smoke pipe should be installed so as to avoid sharp turns which would create excessive resistance to the flow of flue gases. The smoke pipe should maintain a pitch or rise from the appliance to the chimney. A rise as great as possible, at least 1/4" inch to the foot, should be maintained. Where the smoke pipe enters the chimney, make certain that it does not project beyond the inner surface. It is advisable to use a thimble in the chimney to facilitate removal of the smoke pipe for cleaning. Use plenty of sheet metal screws in the assembly of the smoke pipe so that the draft hood and pipe are sufficiently rigid and so that the horizontal run will be free from any dips or sags. A damper should never be installed in the smoke pipe. If the smoke pipe passes through a partition of combustible construction, a ventilated

thimble at least 4 inches larger in diameter than the flue must be used unless there is a run of at least 6 feet of smoke pipe in the open between the draft hood outlet and the thimble. In the latter case the thimble may be 2 inches larger in diameter than the flue connector pipe. The smoke pipe must be kept 6 inches away from any combustible construction unless special protective shields are used between the pipe and the combustible construction. Consult your gas company or city building inspector for information on clearances required with various types of protection.

H. HOW TO INSTALL GAS PIPING TO UNIT:

The gas line to the boiler should be an independent line direct from the meter. The gas line enters the boiler from the left side when facing the front of the unit. The line should drop down vertically from the ceiling to the manual shut-off valve. The exact location for the gas line can be determined from figure 1 and figure 2. Some utilities require that drip leg mentioned in paragraph D-22 be extended to the floor. Some local regulations required that the manual shut-off valve be located 4 feet or more above the floor. In these instances it will be necessary for the installer to furnish the required length of pipe between the manual shutoff valve and the drip leg tee.

Wrought iron or steel pipe should be used for all gas lines. Pipe dope should be applied sparingly and only to male threads of the joints.



MODEL	A	B	C	D
867.6097, 867.59982, 867.59991, 867.60001	5"	3-3/8"	7"	13-13/16"
867.6098, 867.60012, 867.60021, 867.60031	5"	3-7/8"	7"	13-13/16"
867.6099, 867.60042, 867.60051, 867.60061	6"	4-1/2"	8"	15-1/2"
867.6100, 867.60072, 867.60081, 867.60091	6"	5"	8"	15-1/2"
867.6101, 867.60102, 867.60111, 867.60121	7"	5-13/32"	10"	18-11/16"
867.6102, 867.60132, 867.60141, 867.60151	7"	6-1/4"	10"	18-11/16"

Figure 10. Draft Diverter Dimensions

WARNING

Butane and Propane are both excellent solvents and special pipe dope must be used when assembling gas piping for these gases as they will quickly dissolve white lead or most standard commercial compounds. Shellac base compounds such as Gaskolac or Stalastic or compounds such as Clyde's or John Crane can be used.

Size of pipe to be run from gas meter to unit depends upon: Allowable pressure drop, maximum gas consumption, length of pipe number of fittings, and specific gravity of gas. For ordinary applications the following tables can be used.

NATURAL GAS

Capacity of Pipe for Various BTU/Hr. Inputs				
Lgth. of Pipe	Size of Pipe			
	1/2	3/4	1	1-1/4
15 ft.	73000	163000	330000	720000
30 ft.	50000	115000	230000	515000
45 ft.	41000	95000	190000	415000
60 ft.	36500	82500	166000	365000

MANUFACTURED GAS

Capacity of Pipe for Various BTU/Hr. Inputs				
Lgth. of Pipe	Size of Pipe			
	1/2	3/4	1	1-1/4
15 ft.	42500	93000	186000	405000
30 ft.	29000	67500	130000	300000
45 ft.	24500	55500	112000	243000
60 ft.	21500	48500	97000	205000

I. WIRING THE UNIT (see figures 11 through 21).

1. All electrical work shall conform with requirements of local ordinances and the National Electrical Code ASA C1-1946 and Supplement C1A-1949, or the Canadian Electrical Code, whichever shall apply.

2. Electrical connections should be made directly from the unit (figures 18, 19, 20 and 21), or outside junction boxes (figures 11 thru 17) to the main fuse or circuit breaker panel

or to a separate fuse box directly connected to the main supply line. A line voltage switch should be provided to shut off electricity to the unit. All line voltage wiring should be at least 14AWG and carried in BX cable, conduit, or meet local requirements if different. Low voltage wiring should be standard thermostat wire and shall not run in same conduit with line voltage wiring.

3. All junction boxes (not furnished) should be 4"x4" with three knockouts per side and five knockouts in back. Wire colors as shown in the wiring diagrams are not necessarily required, however, different color combinations are desirable to simplify wiring and avoid confusion in making connections or tracing circuits.

4. Instructions packed with your thermostat tell you how to install it. Locate thermostat on an inside wall of a room that is responsive to changes in outdoor temperatures, so that it is not affected by heat sources other than room temperature. Direct flow of warm air from hot water pipes, radio, television and light bulbs are often responsible for improper operation of thermostat.

5. On forced hot water systems (figures 11, 12, 13, 14, 15, 16 and 17) where it is necessary to install relays and junction boxes outside of the unit, they should be installed on a wall or post in a convenient location as close as possible to the unit.

6. On all units (figures 11 thru 21) mount a junction box on inside of right side panel (facing unit). Drill or cut a 7/8" hole through panel to center knockout on back of junction box. Bring line voltage (figures 18, 19, 20 and 21), or wires from relay junction box (figures 11 thru 17) through this hole.

7. On steam units (figures 20 and 21) it is necessary to cut or drill an additional 7/8" hole through panel to another knockout on back of junction box in order to bring wires out to the low water cutoff.

8. Install controls on unit as per tappings and knockouts as shown in figure 2, then complete wiring as per wiring diagram that applies to your particular system.

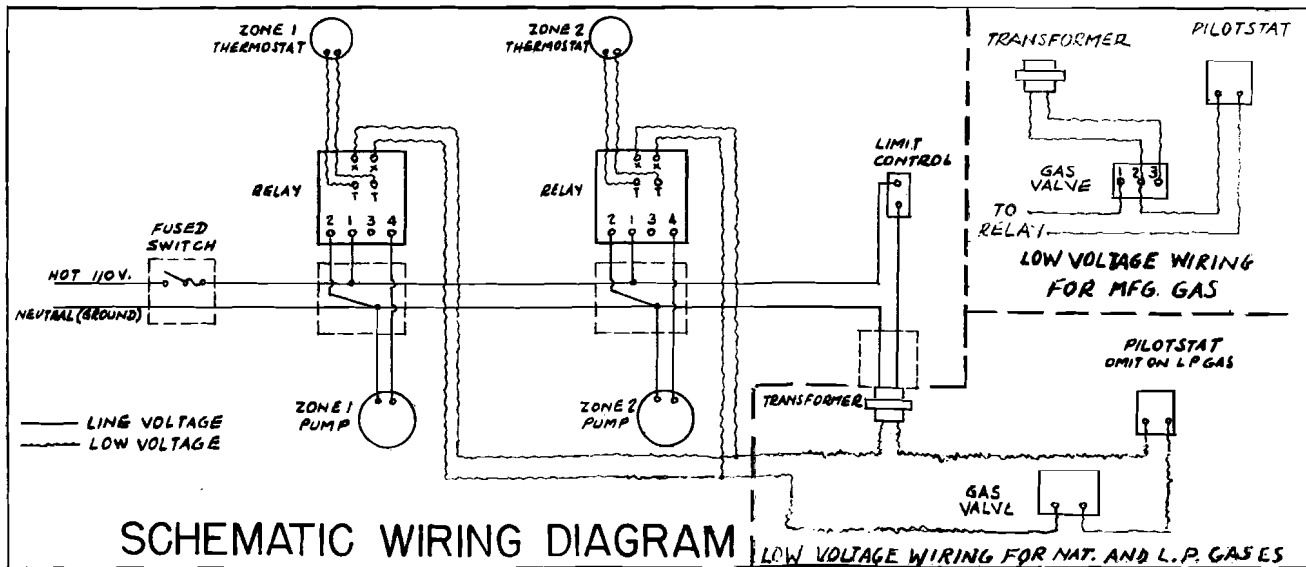


Figure 11. Schematic Wiring Diagram for Two-Zone Gas-Fired Forced Hot Water System.

PHYSICAL WIRING DIAGRAM

LEGEND

- LOW VOLTAGE WIRE - NOT FURNISHED
- LINE VOLTAGE WIRE - NOT FURNISHED
- LINE VOLTAGE WIRE - FURNISHED

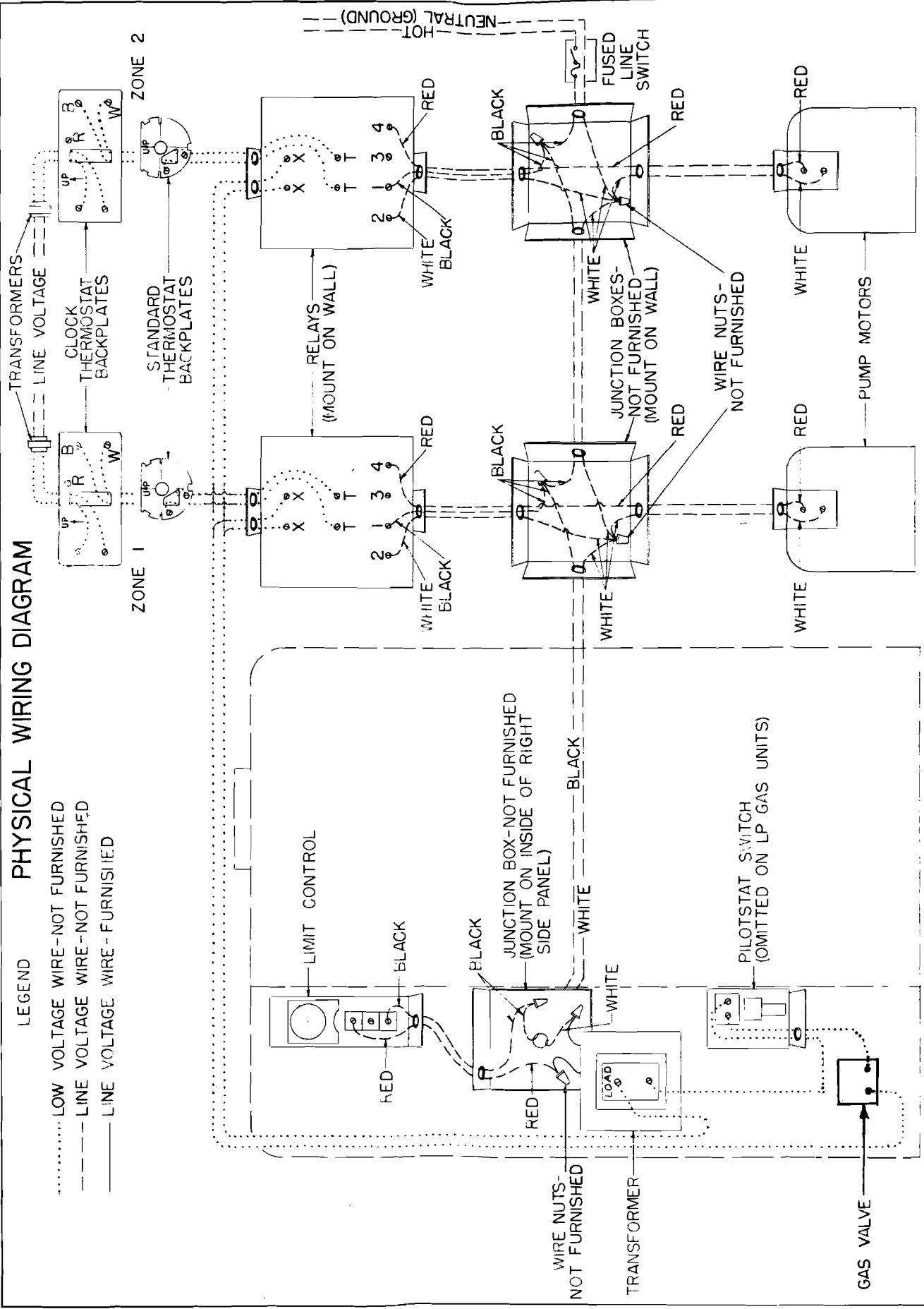


Figure 12. Physical Wiring Diagram for Two-Zone Natural and L.P. Gas-Fired Forced Hot Water Systems.

PHYSICAL WIRING DIAGRAM

LEGEND

- LOW VOLTAGE WIRE-NOT FURNISHED
- LINE VOLTAGE WIRE-NOT FURNISHED
- _____ LINE VOLTAGE WIRE-FURNISHED

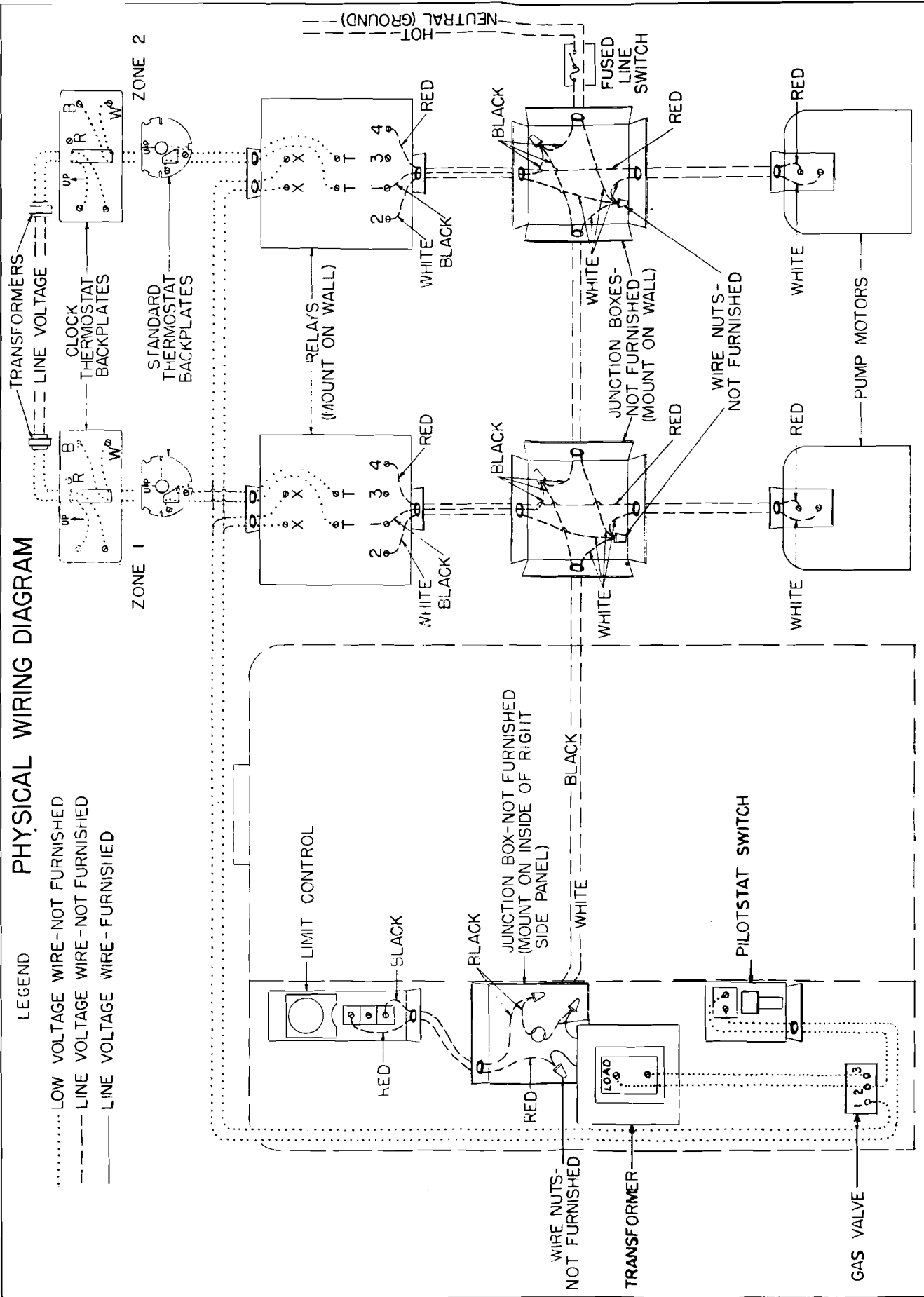


Figure 13. Physical Wiring Diagram for Two-Zone Manufactured and S.U.R. Natural Gas-Fired Forced Hot Water Systems.

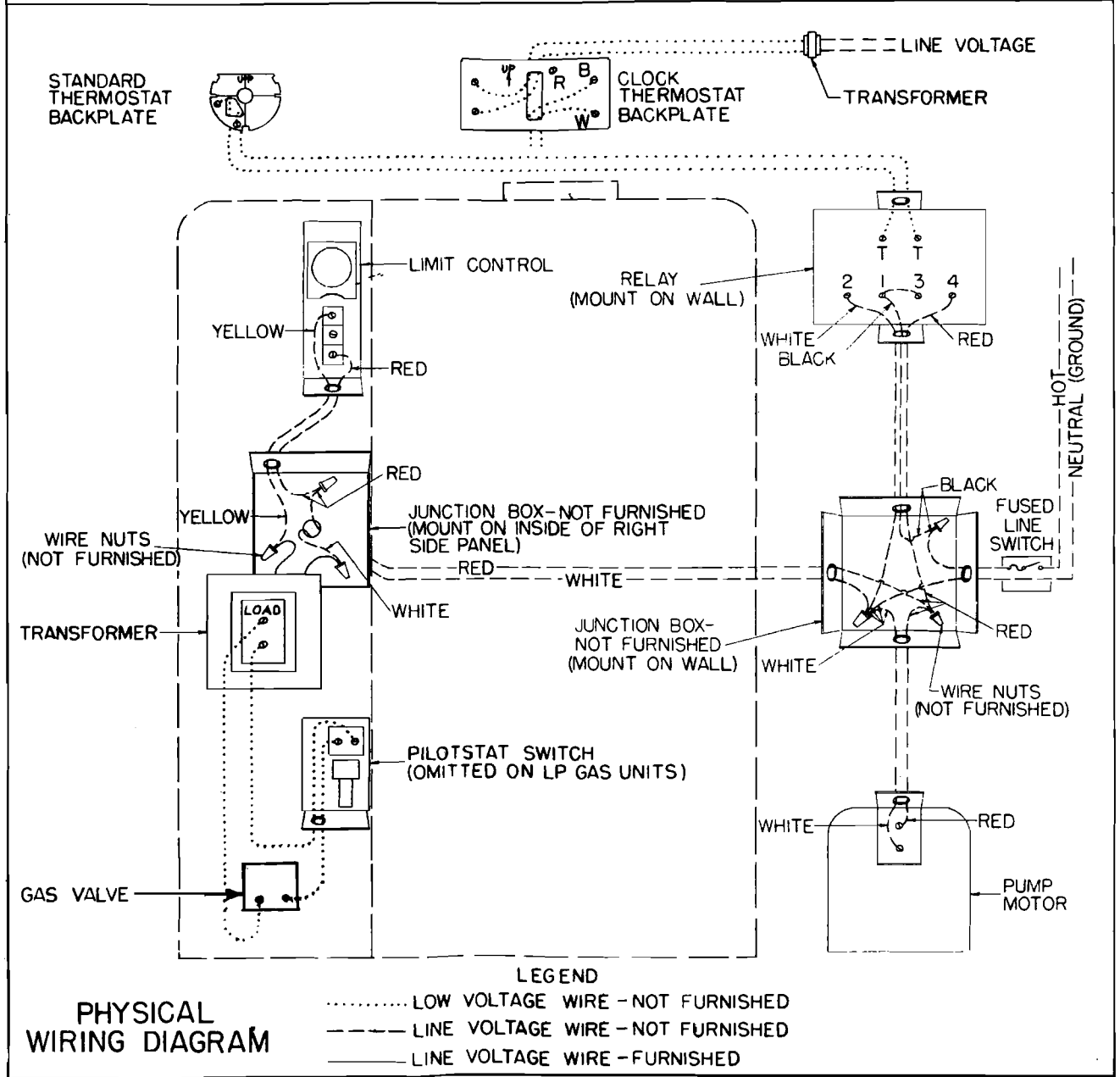
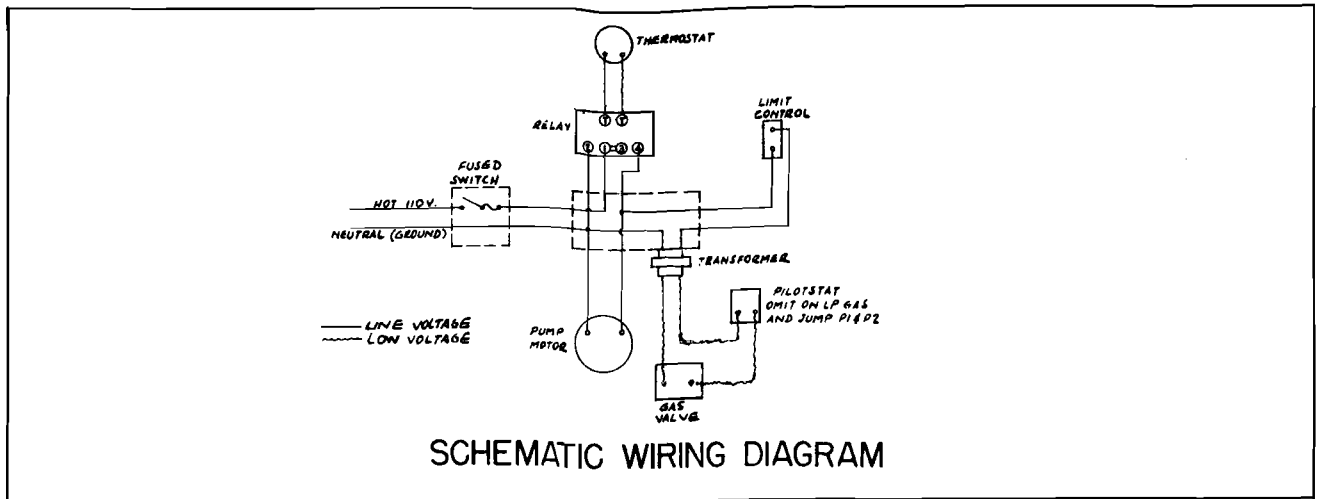


Figure 14. Wiring Diagram for Natural and L.P. Gas-Fired Forced Hot Water Systems using separate Limit Control and Relay Transformer.

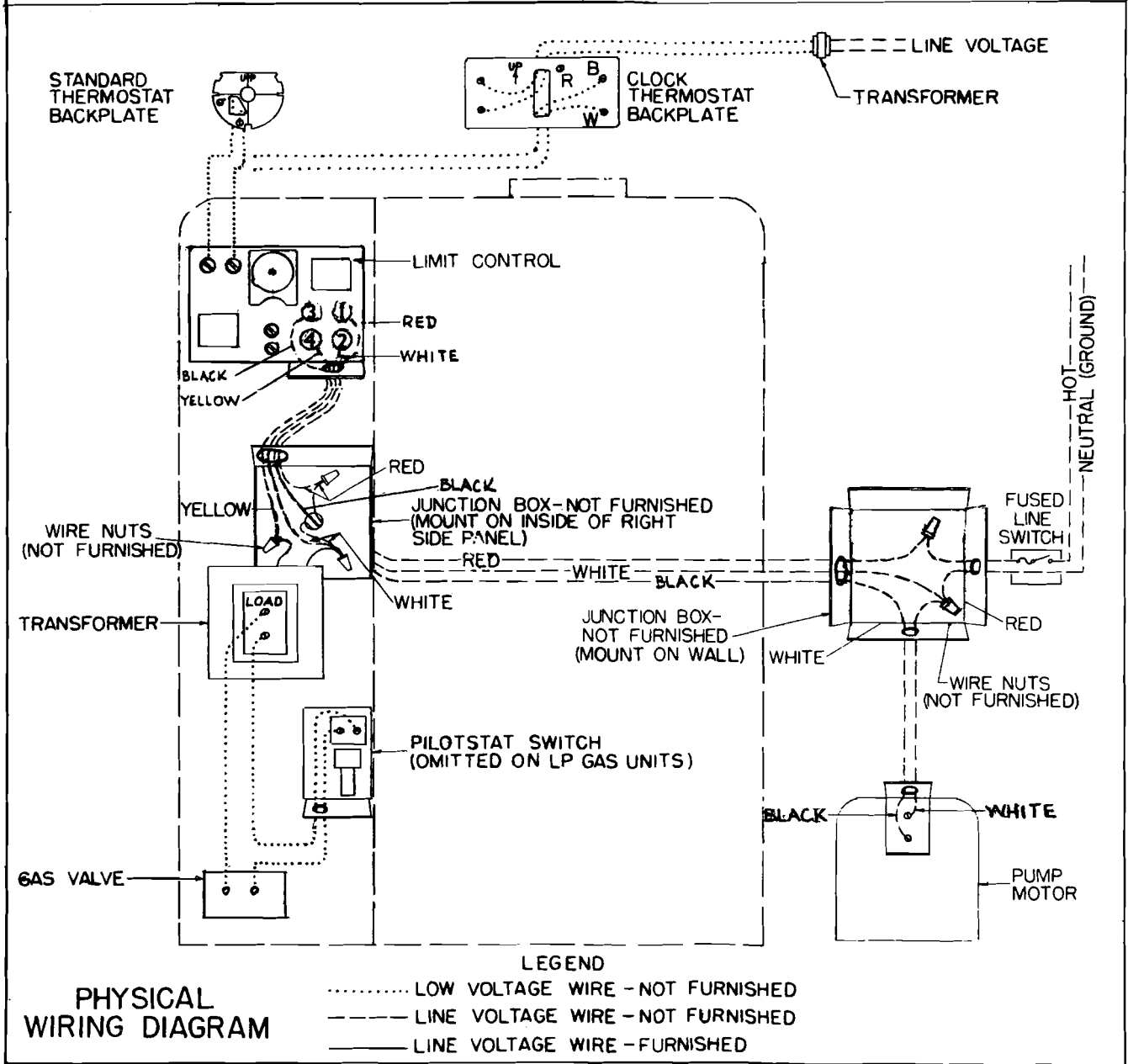
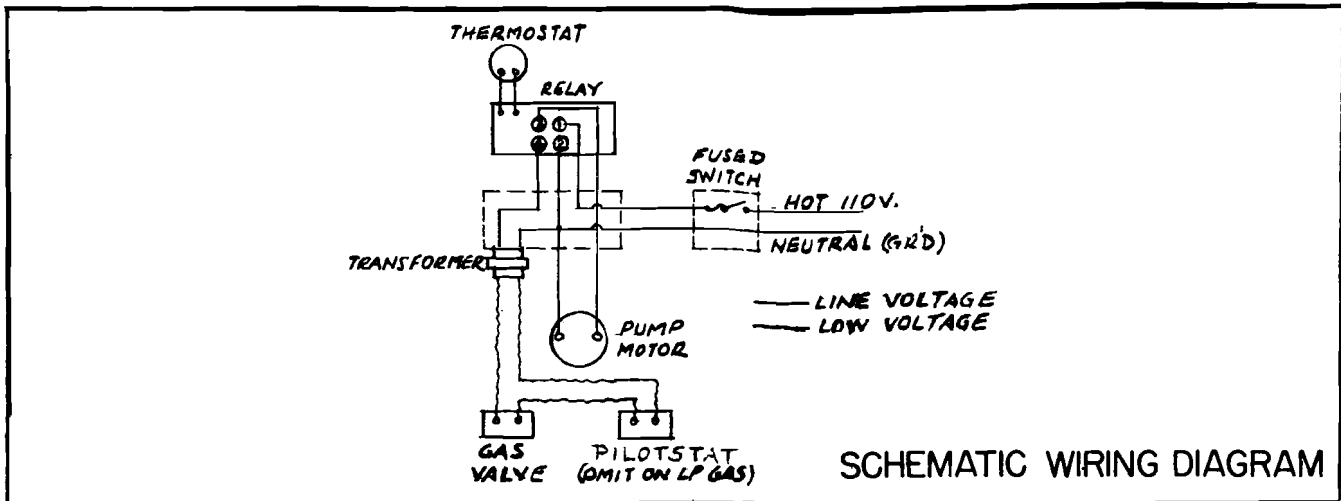


Figure 15. Wiring Diagram for Natural and L.P. Gas-Fired Forced Hot Water Systems using Combination Limit Control and Relay Transformer.

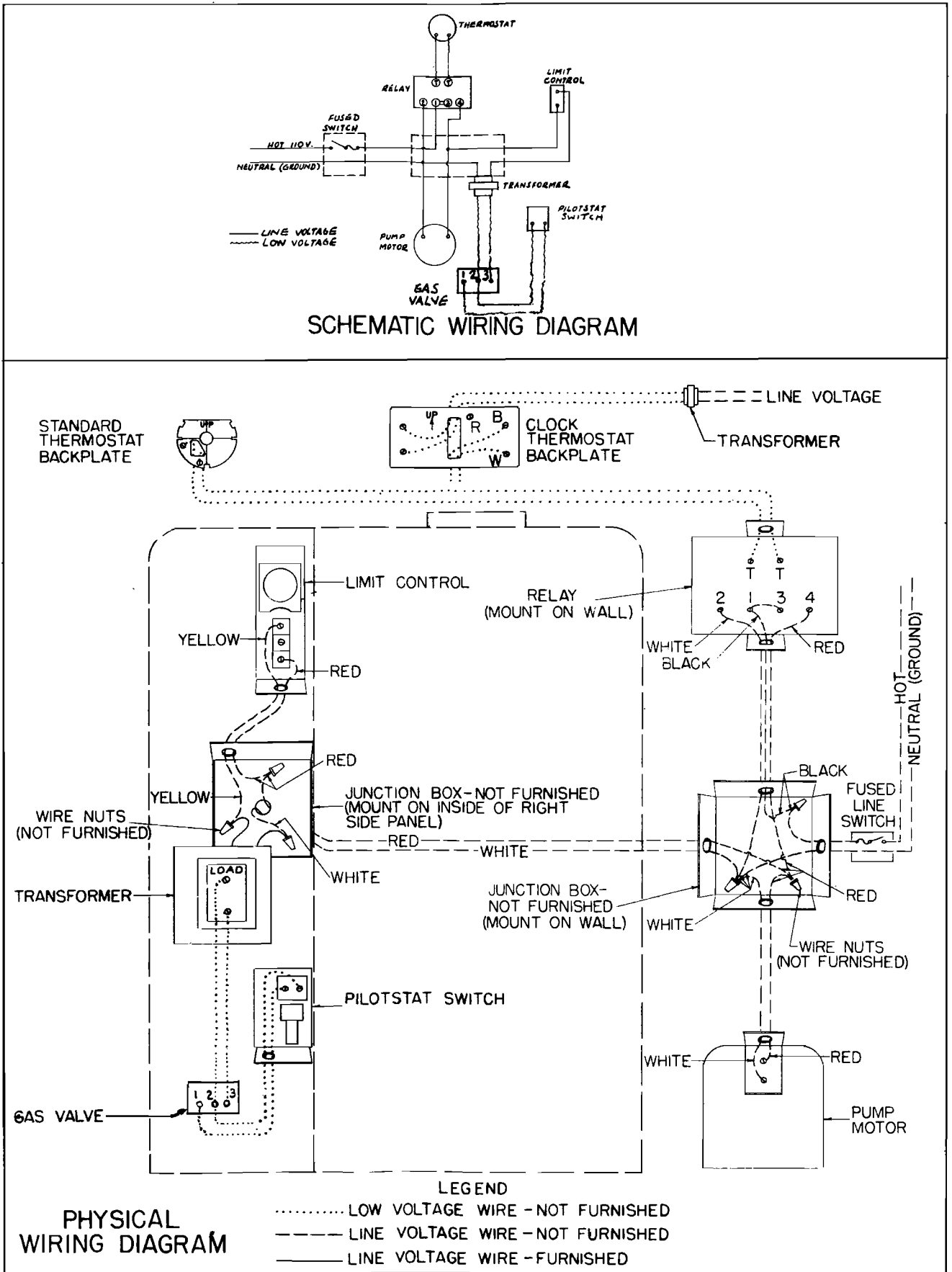


Figure 16. Wiring Diagram for Manufactured and S.U.R. Natural Gas-Fired Forced Hot Water Systems using Separate Limit Control and Relay Transformer.

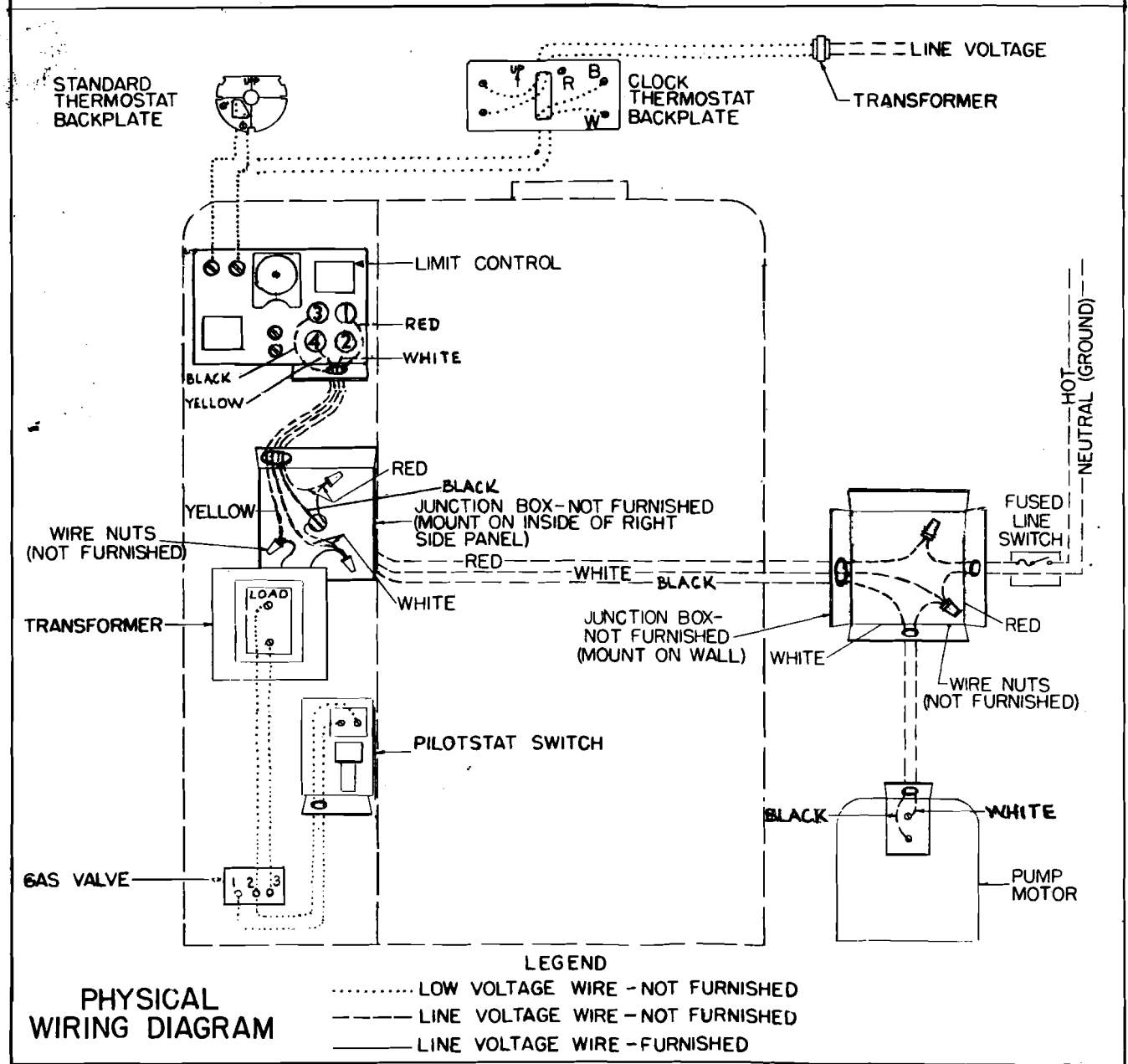
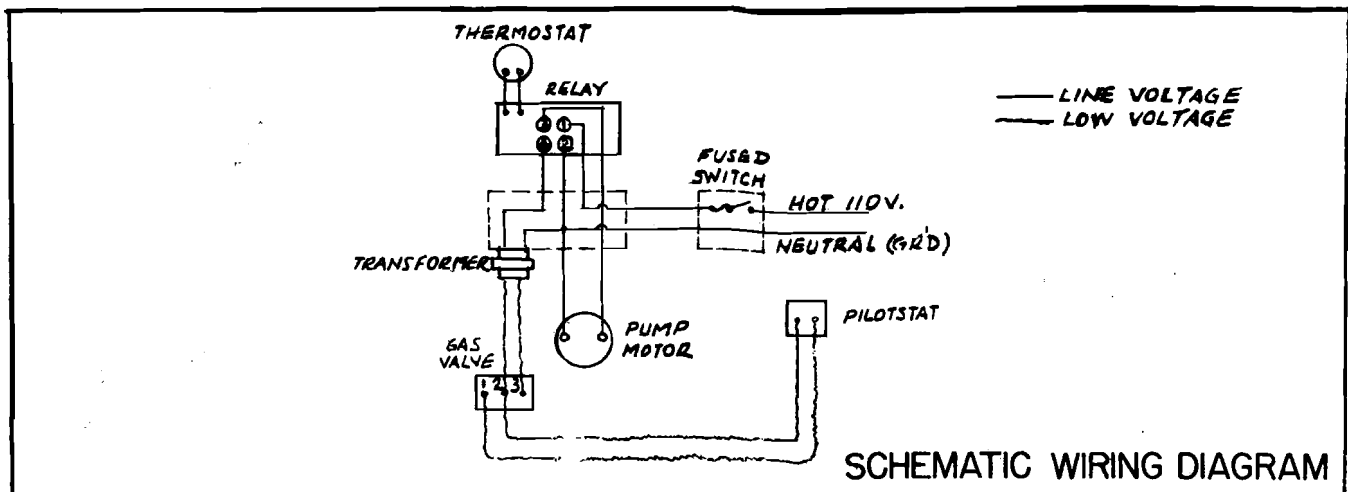


Figure 17. Wiring Diagram for Manufactured and S.U.R. Natural Gas-Fired Forced Hot Water Systems using Combination Limit Control and Relay Transformer

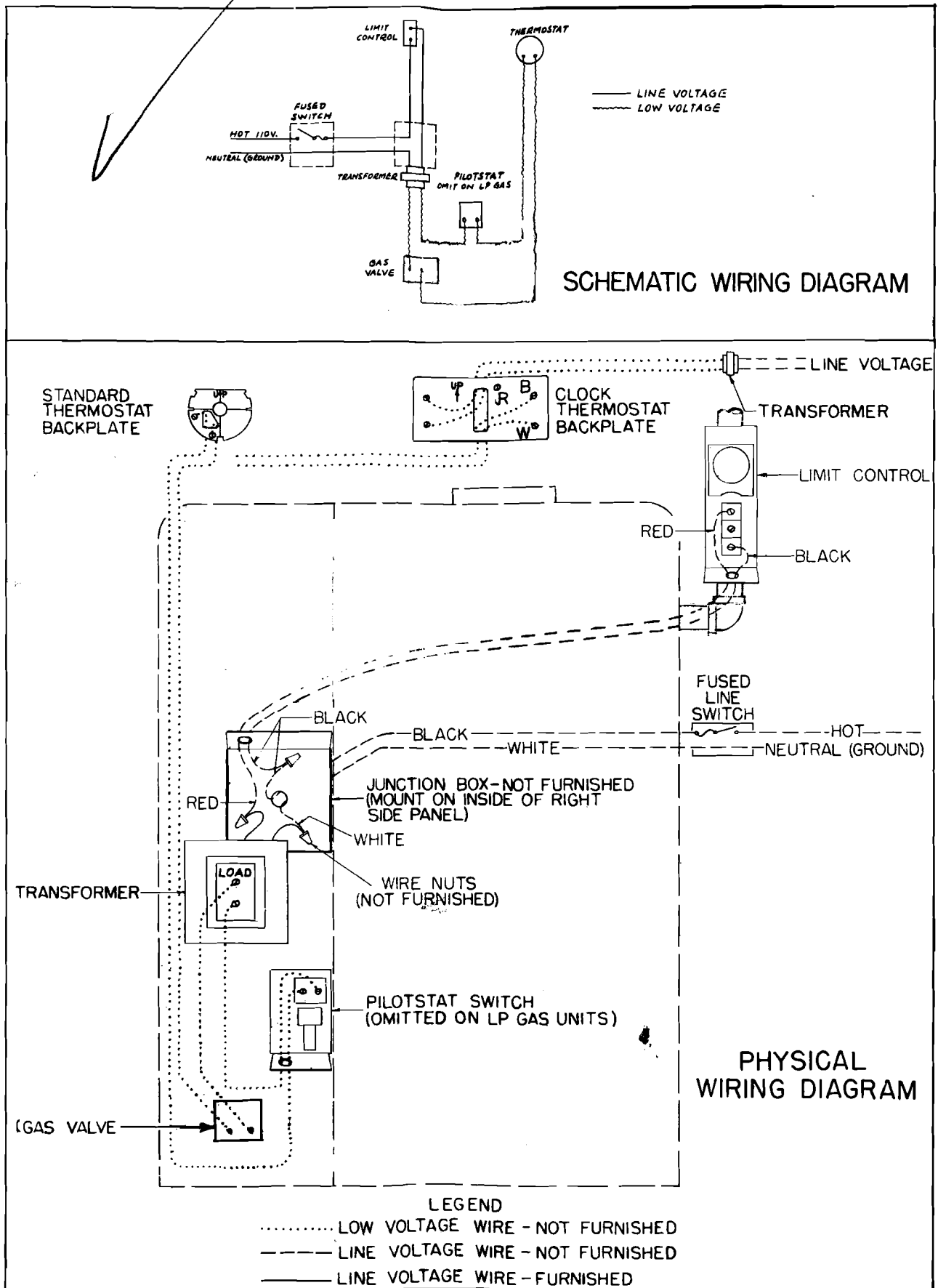


Figure 18. Wiring Diagram for Natural and L.P. Gas-Fired Gravity Hot Water Systems

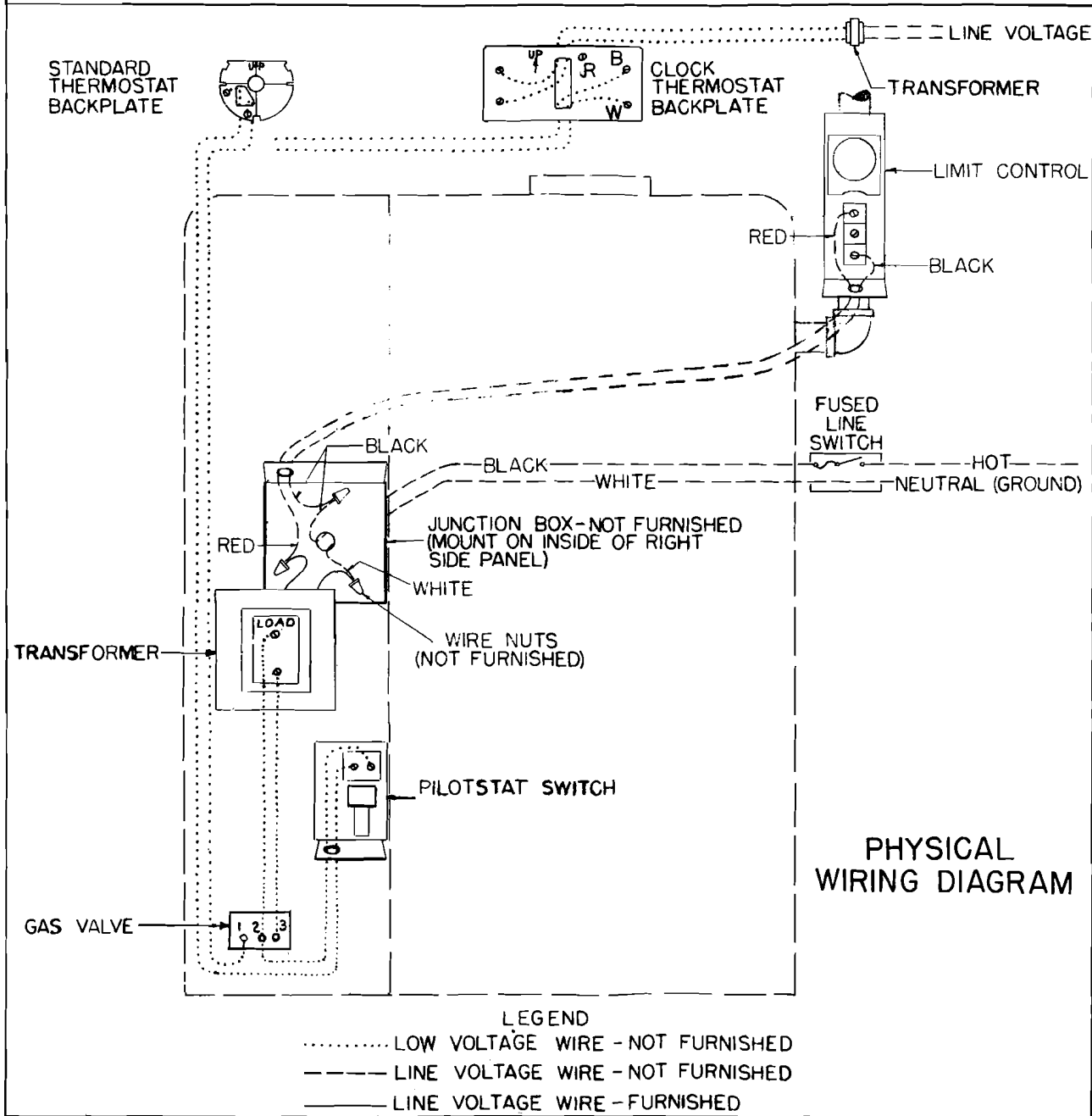
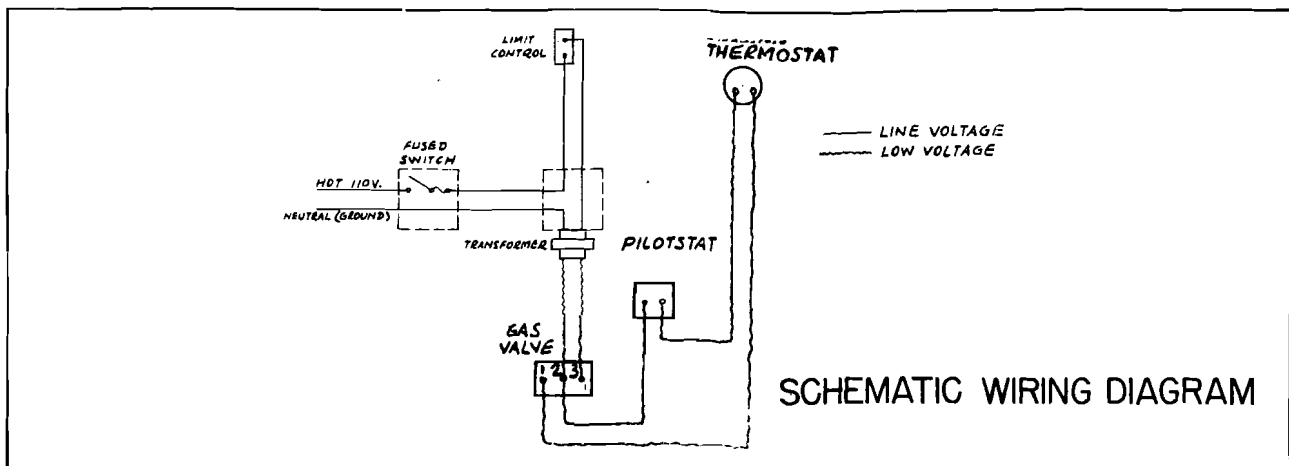


Figure 19. Wiring Diagram for Manufactured and S.U.R. Natural Gas-Fired Gravity Hot Water Systems.

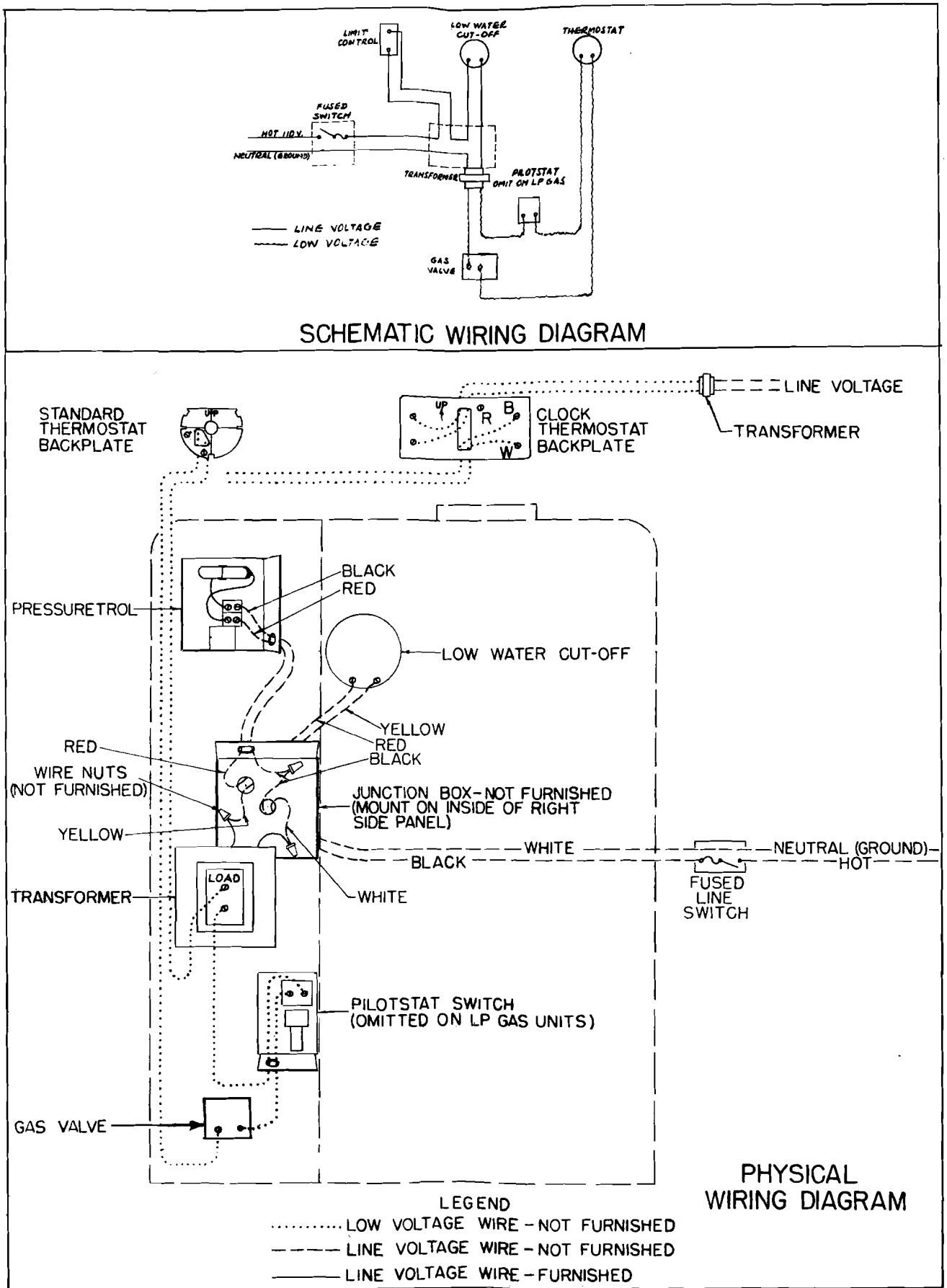


Figure 20. Wiring Diagram for Natural and L.P. Gas-Fired Steam Systems.

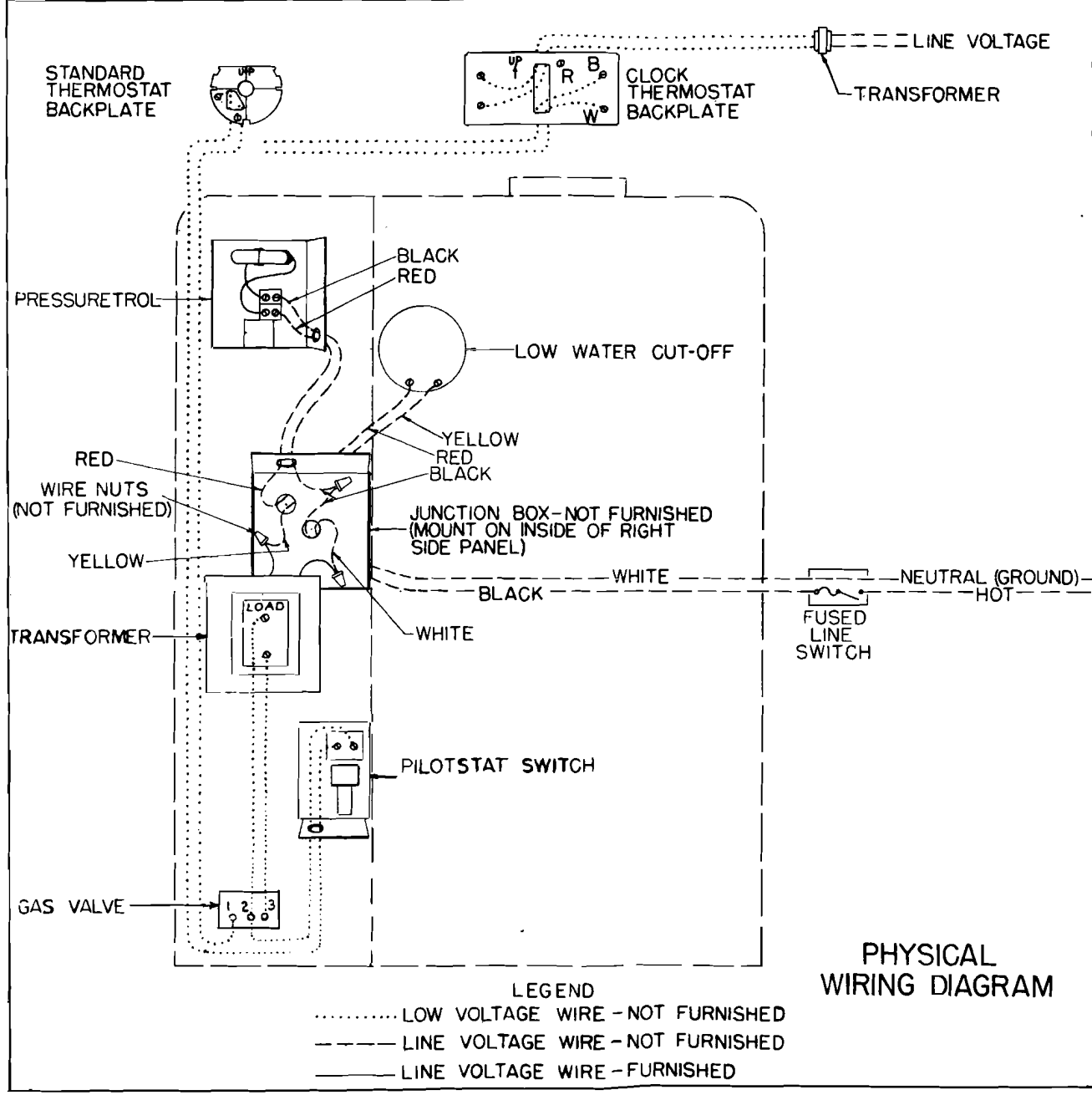
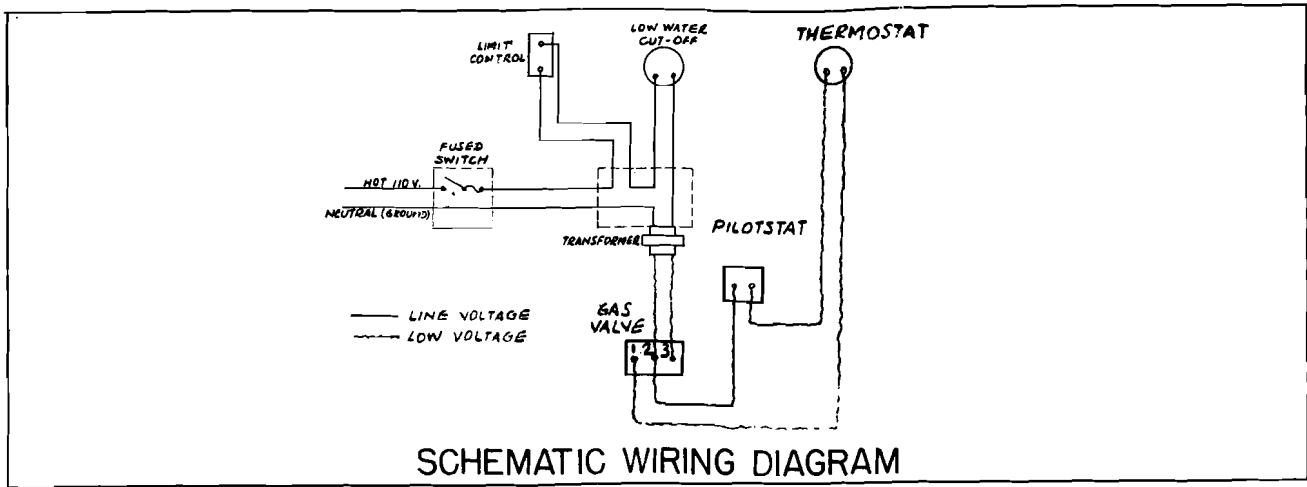


Figure 21. Wiring Diagram for Manufactured and S.U.R. Natural Gas-fired Steam Systems.

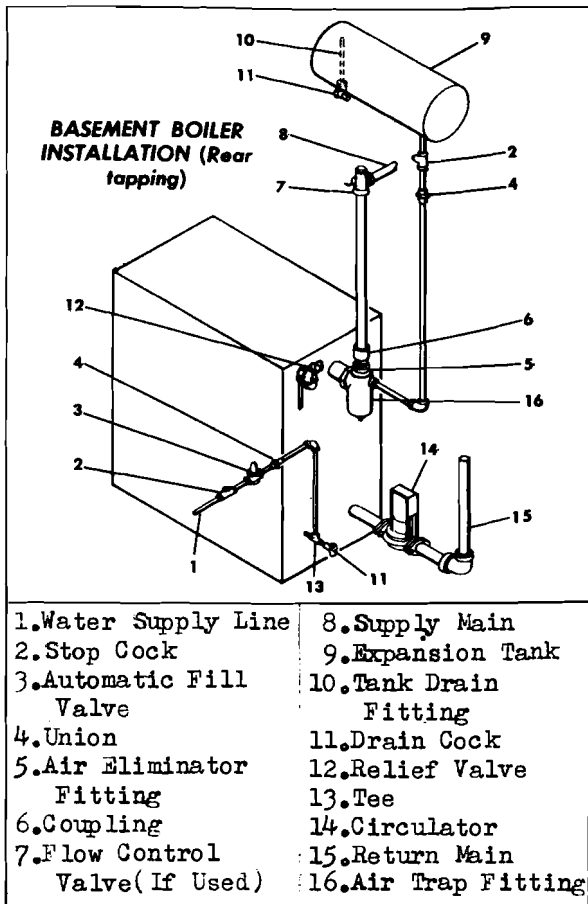


Figure 22. Typical Piping Layout for Forced Hot Water System

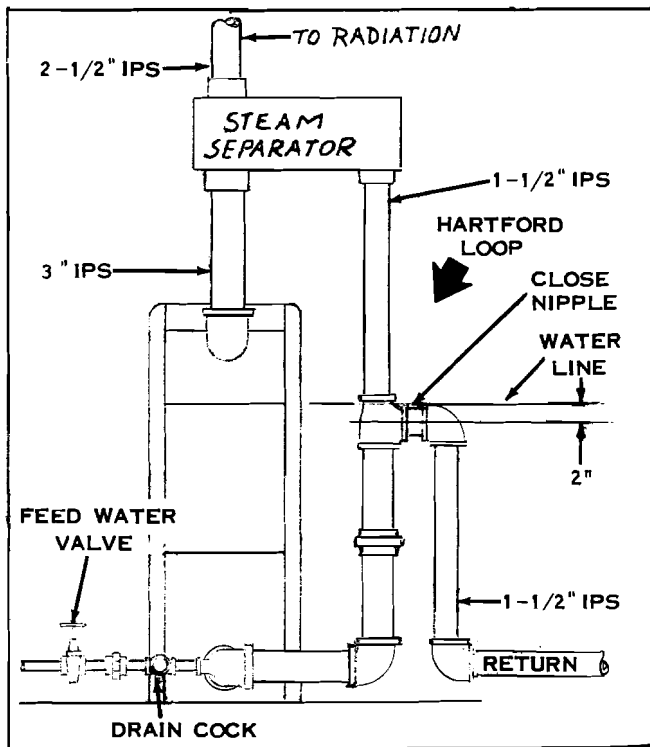


Figure 23. Typical Piping Layout for Steam System

J. PIPING TO DISTRIBUTION SYSTEM

See figures 22 and 23 for suggested piping at unit for various types of heating systems. A proper BTU rated relief valve should be installed on closed hot water systems. A steam separator (Part No. A252-1672) must be used on steam heating systems as shown in figure 23. The installation should be installed in conformance with the methods recommended by The American Society of Heating and Ventilating Engineers' Guide or other recognized authority. **CAUTION** - Make certain the boiler is filled with water to the proper level before lighting and starting the gas burner.

K. CONTROL SETTINGS

1. **THERMOSTAT.** Set dial at desired room temperature.

2. **LIMIT CONTROL.** Prevents overheating and protects boiler. While the temperature settings of this control will vary depending on the time of the year and needs on each installation. The following settings prove to be satisfactory for most applications: (Lower settings may be made during mild weather).

Gravity Hot Water Boiler Forced Hot Water Boiler

180° F.

High 215° F.

3. **LOW WATER CUTOFF (STEAM ONLY).** Prevents operation of burner when boiler water level is low.

4. **PRESSURE TROL (STEAM ONLY).** Prevents excessive pressure and protects boiler. If your control permits adjustable settings, the following pressure setting have proven satisfactory for most applications.

Steam Boiler

Off 4 psi

On 2 psi

5. **SAFETY PILOT.** Will not allow gas to flow into burner if pilot light is not burning.

6. **GAS VALVE.** Automatically opens, when control calls for heat, allowing gas to flow into burner.

7. **FUSED SWITCH.** We recommend that a fused safety switch be used in connection with the wiring (Not furnished with Controls).

L. STARTING UNIT

Figures 24, 25 and 26 shows views of the control and burner assemblies. Before proceeding make certain all joints are tight. To start the unit into operation, proceed as follows:

1. **MANUFACTURED AND S.U.R. NATURAL GASES.**

a. Set the room thermostat to the lowest possible setting.

b. Make certain that the main gas valve and pilot gas valve are closed. Then open gas cock at meter.

c. Open pilot gas valve.

d. Depress lighter button and hold a lighted match to holes in lighter tube. Because of air in the pipes, a few seconds will elapse before gas can be ignited. As soon as all air has been eliminated the flame will travel along the lighter tube and ignite the pilot burner. Then release the lighter button.

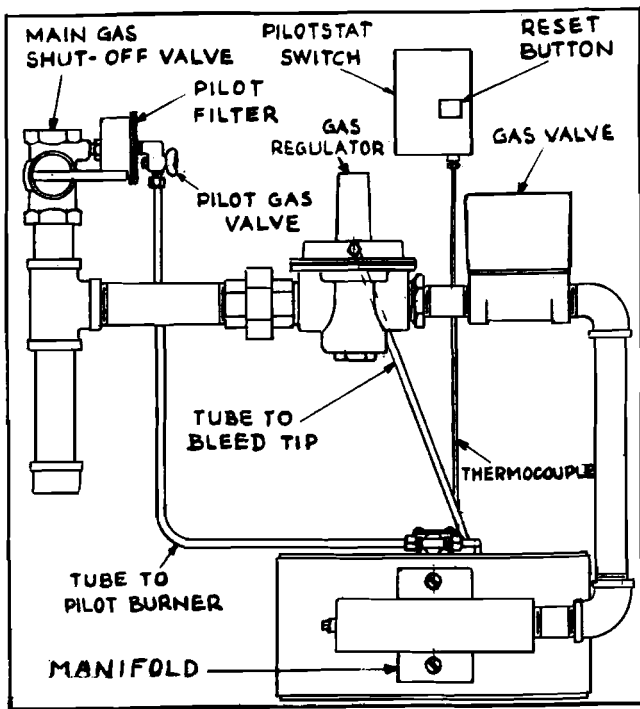


Figure 24. Manufactured and S.U.R. Natural Gas Burner

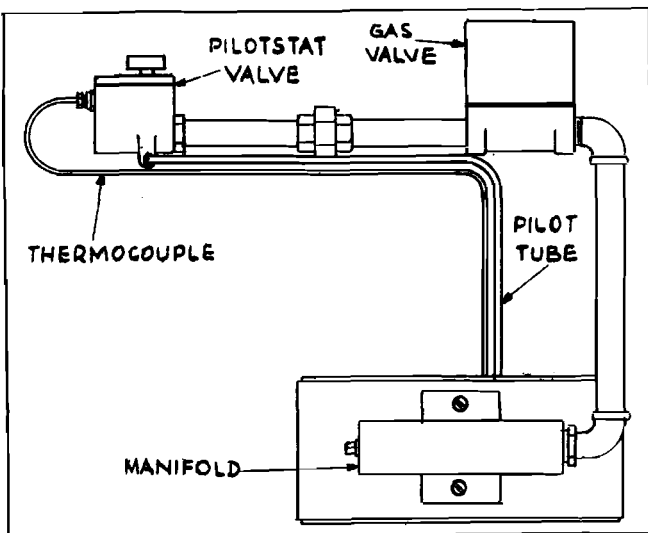


Figure 25. Liquefied Petroleum Gas Burner.

e. Wait 30 seconds and depress reset button on Pilotstat switch. Safety pilot should stay in "ON" position.

f. Open main gas valve.

g. Set room thermostat to desired temperature. Operate main gas burners with thermostat a few times and determine that pilot burner readily ignites main burners.

h. If for any reason pilot has to be relighted, shut off all valves as in Step b and wait at least 5 minutes for any accumulated gas to purge. Then proceed as in Step c.

2. LIQUEFIED PETROLEUM GASES

a. Set the room thermostat to the lowest possible setting.

b. Make certain the Basis valve is closed. Then open the gas cock on the tank.

c. Turn the Pilotstat valve to the "Pilot" position.

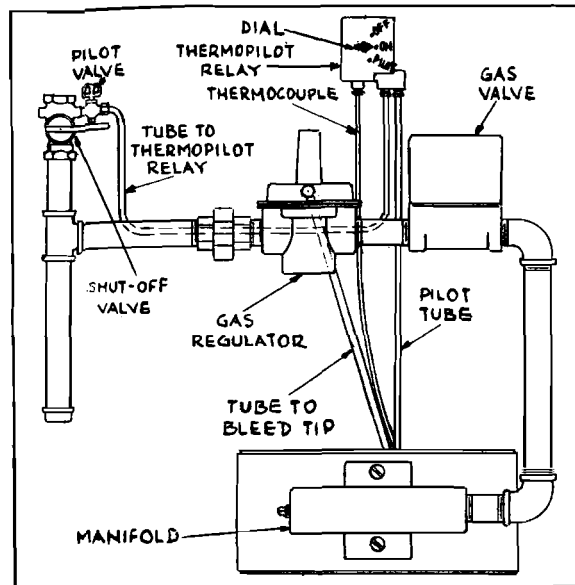


Figure 26. Natural Gas Burner.

d. Push down the lighter button and light the pilot burner with a match or taper. Because of air in the gas line, there may be a delay before the pilot ignites. Continue to hold down the reset button for 30 seconds.

e. Turn the Pilotstat valve handle to the "ON" position. The main burners will now operate.

3. NATURAL GAS

a. Make sure that main gas valve has been closed for at least five minutes before proceeding.

b. Set thermostat to lowest possible temperature.

c. Open pilot valve only.

d. Turn thermopilot relay dial to pilot reset, light pilot and hold firmly for one minute while pilot burns.

e. Gently allow dial to return to "ON" position.

f. Turn on main gas valve and electric switch.

g. Set thermostat to desired temperature.

M. ADJUSTMENT OF GAS PRESSURE REGULATOR

A tapped opening is provided in the manifold to facilitate measuring the manifold gas pressure. A "U Tube" manometer having a scale range from 0 to 7 inches of water should be used for this measurement. The manifold pressure must be measured with the burner and pilot operating. The manifold pressure should be set in accordance with the following list for various type of gases:

Type Gas	Manifold Pressure, In. H ₂ O
Natural	3-1/4 to 3-1/2
Mixed	3
Manufactured	2-1/2
Liquefied Petroleum	10-1/2

To adjust pressure regulator, remove cap on top of regulator. Turn adjusting screw out (counter-clockwise) to decrease pressure, turn in (clockwise) to increase pressure.

Only small variations in gas flow should be made by means of the gas pressure regulator adjustment. In no case should the final manifold pressure vary more than plus or minus 0.3 inches water column from the above specified pres-

tures. Any major changes in the flow should be made by changing the size of the burner orifice. Check with local gas company for proper orifice size.

N. CHECKING GAS INPUT - CITY GASES ONLY

Now check the BTU input of the boiler to make sure it is operating within the BTU rating. **THIS IS IMPORTANT.** This checking will take only a few minutes and is necessary because the boiler is designed to produce a certain amount of heat and must not be over-fired. The first step taken is to turn off all other gas appliances connected to the meter. Now, with the main burner on, use the second hand on a watch or clock to measure the time it takes for one revolution of the hand on the smallest dial on the meter. The typical domestic gas meter dial shown (figure 27) has 1/4 cubic feet and 1 cubic foot test dials.

The dial is marked as to how much gas is measured for each revolution. Using the number of seconds for one revolution, and the size of the test dial, find the cubic feet of gas consumed per hour from the following table:

GAS RATE - CUBIC FEET PER HOUR					
Seconds for one Revolution	SIZE OF TEST DIAL				
	1/4 cu.ft.	1/2 cu.ft.	1 cu.ft.	2 cu.ft.	5 cu.ft.
18	50	100	200	400	1000
19	47	95	189	279	947
20	45	90	180	360	900
21	43	86	171	343	857
22	41	82	164	327	818
23	39	78	157	313	783
24	37	75	150	300	750
25	36	72	144	288	720
26	34	69	138	277	692
27	33	67	133	267	667
28	32	64	129	257	643
29	31	62	124	248	621
30	30	60	120	240	600
31	-	-	116	232	581
32	28	56	113	225	563
33	-	-	109	218	545
34	26	53	106	212	529
35	-	-	103	206	514
36	25	50	100	200	500
37	-	-	97	195	486
38	23	47	95	189	474
39	-	-	92	185	462
40	22	45	90	180	450
41	-	-	-	176	439
42	21	43	86	172	429
43	-	-	-	167	419
44	-	41	82	164	409
45	20	40	80	160	400
46	-	-	78	157	391
47	19	38	76	153	383
48	-	-	75	150	375

To find the BTU input, multiply number of cubic feet of gas consumed per hour by BTU content of gas in your particular locality. (Contact your gas company for this information as it varies widely).

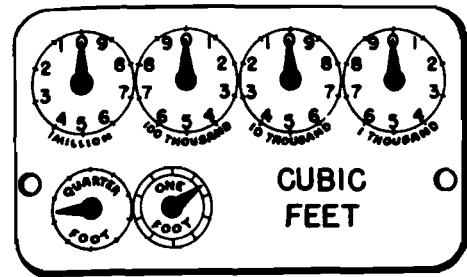


Figure 27

EXAMPLE

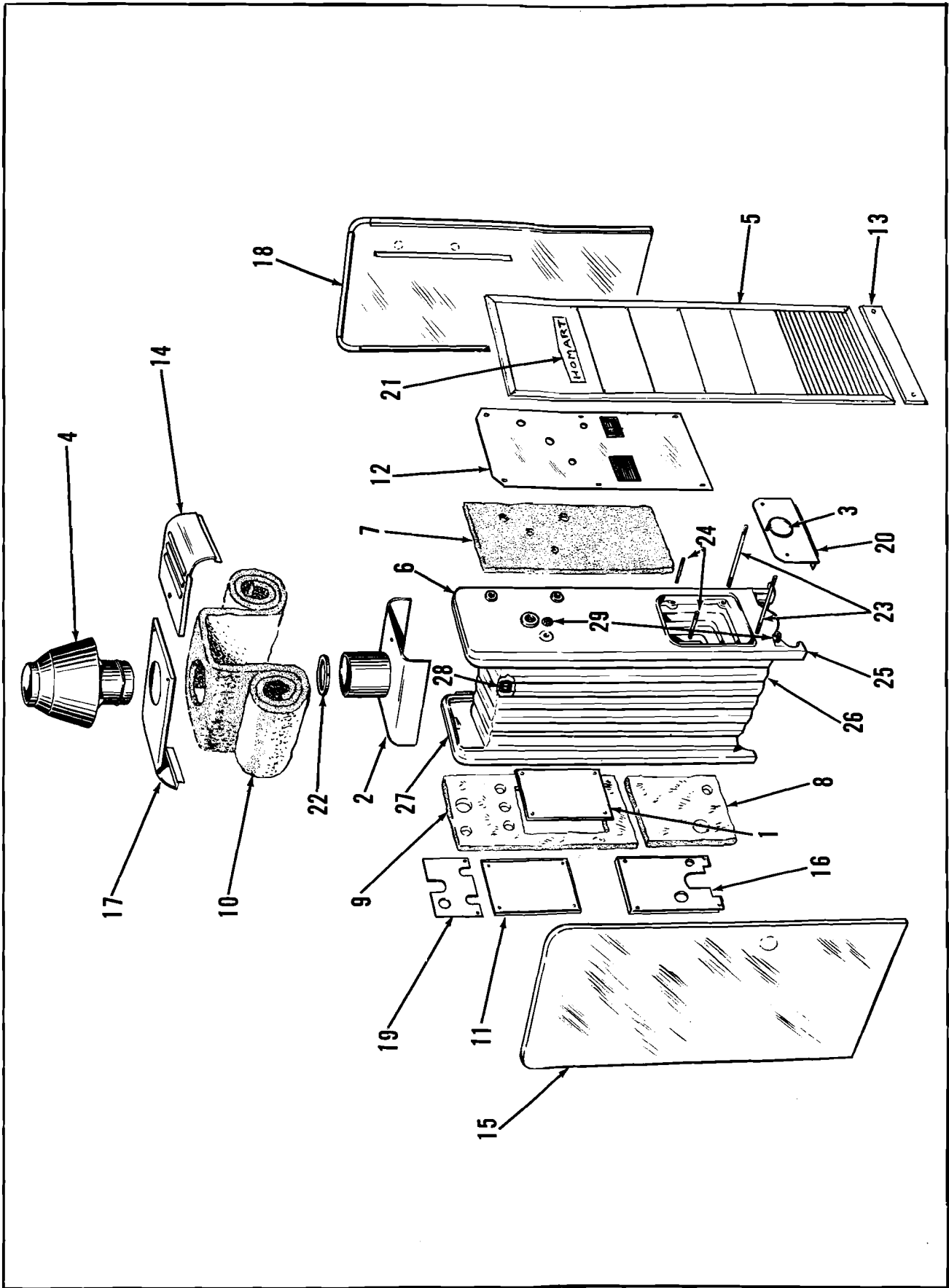
It is found by measurement that it takes 21 seconds for the hand on the 1-cubic-foot dial to make one revolution with all gas equipment turned off except the 140,000 BTU size furnace. Using this information, we locate 21 seconds in the first column, and in the column headed "1 cubic foot" we find that 171 cubic feet of gas per hour are consumed. We now multiply 171 by 800 (the BTU rating of the gas obtained from the gas company) and get a figure of 136,800 BTU's per hour. This is very close to 140,000 BTU's, the rating of the furnace. If the figure you calculate for the BTU input of the boiler is NOT between 130,000 and 140,000, you should write or call the Sears Store where the furnace was purchased and request them to send a service man to correct the rating.

O. CHECKING GAS INPUT - LIQUEFIED PETROLEUM GAS ONLY

On Liquefied Petroleum Gas installations the pressure regulator at the storage tank is considered adequate to maintain a standard operating pressure of 11" water column at the furnace burner. Consequently a pressure regulator is not furnished with the furnace, and no adjustment of fuel input need be made. To adjust the burner on Liquefied Petroleum Gas therefore it is only necessary to adjust the primary air shutter as directed below.

P. ADJUSTING THE PRIMARY AIR SLEEVE - ALL MODELS

When you are sure that the proper amount of gas is being fed to the burner, then observe the quality of the gas flame. This is entirely governed by the amount of primary air allowed to mix with the gas before burning. Too much air permits the flame to burn with an entirely blue, almost invisible flame, somewhat noisy and when burner is turned off there may be a decided noise of extinction. Also flames may lift off burner ports. Too little primary air produces a flame that is yellowish-orange in color, and burns very lazily with no noise. Such a flame will have tips reaching nearly to the top of the combustion chamber, and may deposit carbon. Neither extreme is correct and the most efficient gas flame is that which is blue in color but which has distinct sharp inner cones. Adjustment of the primary air is accomplished by means of the air adjustment sleeve on the burner venturi tube. See figure 6 which shows the location of the primary air adjustment sleeve. When adjustments are completed, tighten screw which locks sleeve in place.



Panels, Heat Exchanger and Insulation Parts for Models 867.6097, 867.6098, 867.6099, 867.6100, 867.6101, 867.6102 and 867.59981 through 867.60151

HOW TO ORDER REPAIR PARTS

All parts shown in the following lists and illustrated in the parts diagram may be ordered through your nearest Sears retail or mail order store (in Canada order from Simpsons - Sears, Limited). Selling prices will be furnished on request or parts will be shipped at prevailing prices and billed accordingly.

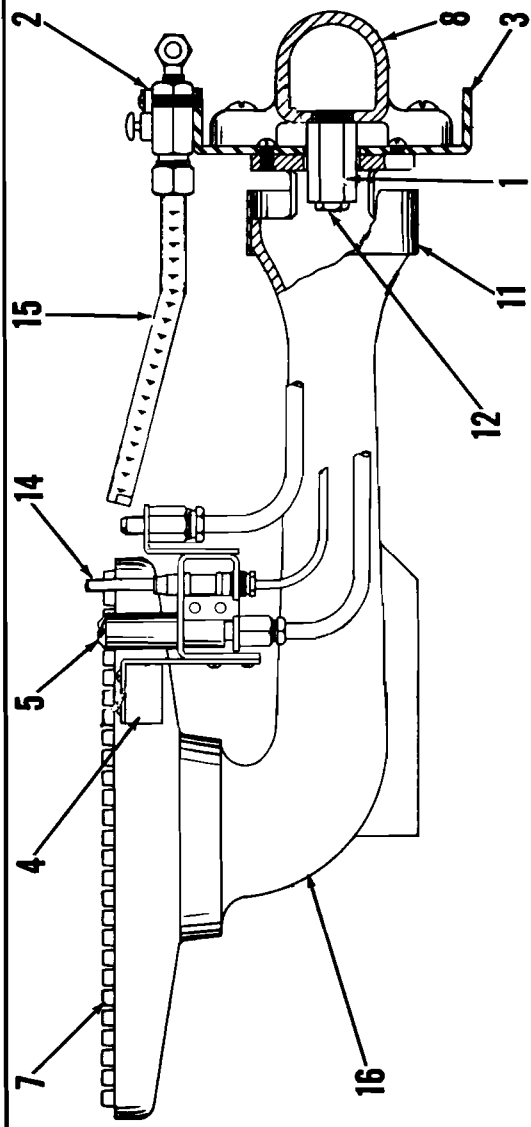
WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION: 1. Part Number; 2. Part Name; 3. Model Number which will be found on a plate fastened to the front panel of the unit.

REPAIR PARTS LIST - PANELS, HEAT EXCHANGER AND INSULATION

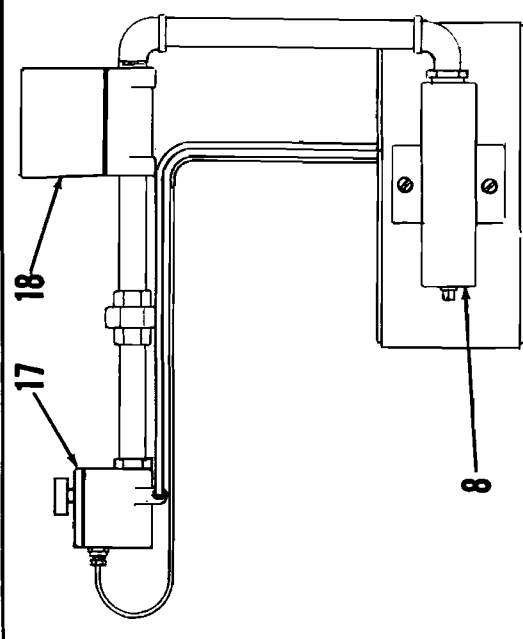
Type of Gas		Model	Model	Model	Model	Model	Model	Model
Item No.	Description of Part	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
	Natural	867.6097	867.6098	867.6099	867.6100	867.6101	867.6102	
	S.U.R. Natural	867.59982	867.60012	867.60042	867.60072	867.60102	867.60132	
	Manufactured	867.59991	867.60021	867.60051	867.60081	867.60111	867.60141	
	Liquefied Petroleum	867.60001	867.60031	867.60061	867.60091	867.60121	867.60151	
		Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
1	Cover - Cleanout.	12B2749	12B2749	12B2749	12B2749	12B2749	12B2749	12B2749
2	Cover - Flue Header	A12A3764	A12B2836	A12B2737	A12B3071	A12B3067	A12B2847	
3	Cover - Peep Hole	12A1695	12A1695	12A1695	12A1695	12A1695	12A1695	
4	Diverter - Draft.	203A126	203A126	203A36	203A36	203A127	203A127	
5	Door - Front.	A12C4701	A12C4701	A12C4701	A12C4701	A12C4701	A12C4701	
6	Heat Exchanger Assembly	A2B776	A2C736	A2C737	A2C738	A2C739	A2C740	
7	Insulation - Front.	206A139	206A139	206A139	206A139	206A139	206A139	
8	Insulation - Lower Rear	206A136	206A136	206A136	206A136	206A136	206A136	
9	Insulation - Upper Rear	206A138	206A138	206A138	206A138	206A138	206A138	
10	Insulation - Wrap Around.	206A214	206A140	206A168	206A169	206A170	206A171	
11	Panel - Center Rear	12A2731	12A2731	12A2731	12A2731	12A2731	12A2731	
12	Panel - Division.	34A7081	34A7081	34A7081	34A7081	34A7081	34A7081	
13	Panel - Front Base.	12B4608	12B4608	12B4608	12B4608	12B4608	12B4608	
14	Panel - Front Top	12A3056	12A3056	12A3056	12A3056	12A3056	12A3056	
15	Panel - Left Side	A12B3768	A12B2837	A12B2840	A12B3072	A12B3069	A12B2846	
16	Panel - Lower Rear.	12A2730	12A2730	12A2730	12A2730	12A2730	12A2730	
17	Panel - Rear Top.	12A3762	12A2834	12A2735	12B3061	12B3057	12B3059	
18	Panel - Right Side.	A12B3766	A12B2838	A12B2839	A12B3073	A12B3068	A12B2845	
19	Panel - Upper Rear.	12A2732	12A2732	12A2732	12A2732	12A2732	12A2732	
20	Plate - Burner.	A34A7070	A34A7070	A34A7070	A34A7070	A34A7070	A34A7070	
21	Plate - Name.	212B295	212B295	212B295	212B295	212B295	212B295	
22	Ring - Restrictor	26A1625	26A1507	26A1511	26A1512	26A1513	26A1528	
23	Rod - Burner Bracket Support.	27A2474	27A2474	27A2474	27A2474	27A2474	27A2474	
24	Rod - Burner Cover Support.	27A2473	27A2473	27A2473	27A2473	27A2473	27A2473	
25	Section - Front	6D1260	6D1260	6D1260	6D1260	6D1260	6D1260	
26	Section - Intermediate.	6D1259	6D1259	6D1259	6D1259	6D1259	6D1259	
27	Section - Rear.	6D1258	6D1258	6D1258	6D1258	6D1258	6D1258	
i	Manual - Instruction and Parts	F642-338	F642-338	F642-338	F642-338	F642-338	F642-338	
i	Pushnipple - Bottom	3A2225	3A2225	3A2225	3A2225	3A2225	3A2225	
28	Pushnipple - Top.	3A2226	3A2226	3A2226	3A2226	3A2226	3A2226	
29	Rod - Tie	27A2743-1	27A2743-2	27A2743-3	27A2743-4	27A2743-5	27A2743-6	
i	Rod - Pilot Lighter, for Nat. and L.P. Gas Units.	27A2611	27A2611	27A2611	27A2611	27A2611	27A2611	

† Not Illustrated.

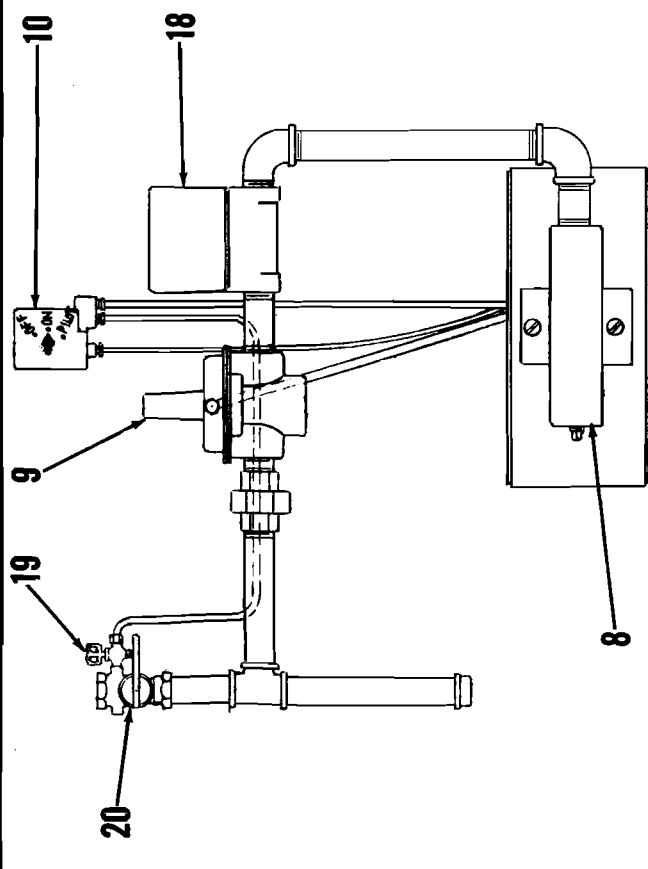
THIS IS A REPAIR PARTS LIST, NOT A PACKING LIST
ORDER BY PART NUMBER, NOT BY ITEM NUMBER



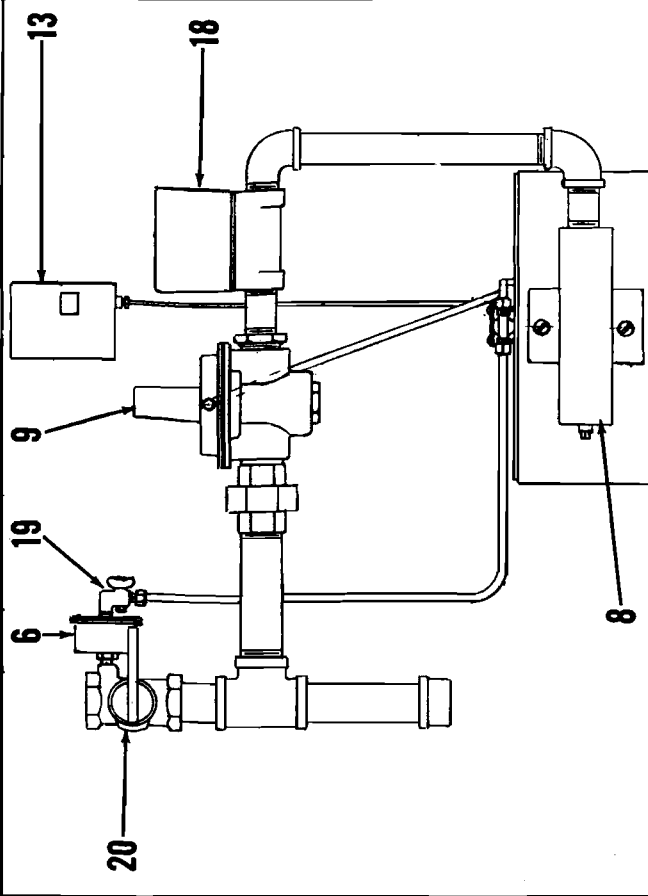
GAS BURNER SIDE VIEW



LIQUEFIED PETROLEUM GAS BURNER



NATURAL GAS BURNER



MANUFACTURED & S.U.R. NATURAL GAS BURNER

Gas Burner Assemblies for Models 867.6097, 867.6098, 867.6099, 867.6100, 867.6101, 867.6102 and 867.59981 through 867.60151.

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WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION: 1. Part Number; 2. Part Name; 3. Model Number which will be found on a plate fastened to the front panel of the unit.

REPAIR PARTS LIST - GAS BURNER ASSEMBLIES

Item No.	Type of Gas	Description of Part	Models	Models	Models	Models	Models	Models	Models	Models	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Models	Models	
	Natural		867.6097	867.6098	867.6099	867.6100	867.6101	867.6102											
	Mixed		867.59982	867.60012	867.60042	867.60072	867.60102	867.60132											
	Manufactured		867.59991	867.60021	867.60051	867.60081	867.60111	867.60141											
	Liquefied Petroleum		867.60001	867.60031	867.60061	867.60091	867.60121	867.60151											
			Part No.	Part No.	Part No.	Part No.	Part No.	Part No.											
1	Natural	Adapter - Orifice Spud.	74A1853	74A1853	74A1853	74A1853	74A1853	74A1853											
2	Natural	Bar - Lighter Tube Mounting, Mfg. & S.U.R. Natural Gases.	21A2039	21A2039	21A2039	21A2039	21A2039	21A2039											
3	Natural	Bracket - Burner Support.	11B5660	11B5660	11B5660	11B5660	11B5660	11B5660											
4	Natural	Bracket - Pilot	11A5977	11A5977	11A5977	11A5977	11A5977	11A5977											
5	Natural	Burner - Pilot, LP Gas.	642B55	642B55	642B55	642B55	642B55	642B55											
5	Natural	Burner - Pilot, Manufactured Gas.	642B54	642B54	642B54	642B54	642B54	642B54											
5	Natural	Burner - Pilot, Natural and S.U.R. Natural Gas.	642B53	642B53	642B53	642B53	642B53	642B53											
1*	Natural	Cement - Furnace.	8986	8986	8986	8986	8986	8986											
6	Natural	Filter - Pilot, Manufactured and S.U.R. Natural Gas	138A10	138A10	138A10	138A10	138A10	138A10											
	Natural	Patrol Valve Co. #50.	10B1328	10C1070	10C1073	10C1072	10D1084	10B1171											
7	Natural	Head - Burner, LP, Natural and S.U.R. Natural Gas	10B1329	10C1071	10C1074	10C1075	10D1077	A10B1172											
7	Natural	Head - Burner, Manufactured Gas	2B706	2B706	2B706	2B706	2B706	2B706											
8	Natural	Manifold - LP Gas	2B706	2B706	2B706	2B706	2B706	2B706											
8	Natural	Manifold - Manufactured, Natural and S.U.R. Natural Gas	2B706	2B706	2B706	2B706	2B706	2B741											
9	Natural	Regulator - Manufactured and S.U.R. Natural Gas	254A42	254A191	254A191	254A191	254A191	254A191											
	Natural	Detroit Regulator Co. RV-42-1/2"	254A42	254A42	254A42	254A42	254A42	254A42											
	Natural	Detroit Regulator Co. RV-50-3/4"	254A42	254A42	254A42	254A42	254A42	254A42											
	Natural	Detroit Regulator Co. RV-51-1"	254A42	254A42	254A42	254A42	254A42	254A42											
	Natural	Detroit Regulator Co. RV-51-1"	254A42	254A42	254A42	254A42	254A42	254A42											
	Natural	Detroit Regulator Co. RV-60-1-1/4"	254A42	254A42	254A42	254A42	254A42	254A42											
9	Natural	Regulator - Natural Gas	254A42	254A42	254A42	254A42	254A42	254A42											
	Natural	Detroit Regulator Co. RV-42-1/2"	254A42	254A42	254A42	254A42	254A42	254A42											
	Natural	Detroit Regulator Co. RV-50-3/4"	254A42	254A42	254A42	254A42	254A42	254A42											
	Natural	Detroit Regulator Co. RV-51-1"	254A42	254A42	254A42	254A42	254A42	254A42											
10	Natural	Relay - Thermopilot (General Controls A100G541) Nat. Gas.	254A511	254A511	254A511	254A511	254A511	254A511											
11	Natural	Sleeve - Air.	18A218	18A218	18A218	18A218	18A218	18A218											
12	Natural	Spud - Orifice, LP Gas, 2500 BTU.	58A2049	58A1554	58A1556	58A1559	58A1562	58A1568											
12	Natural	Spud - Orifice, Manufactured Gas, 604 BTU, 0.65 Sp. Gr.	58A2048	58A1552	58A1557	58A1560	58A1563	58A1569											
12	Natural	Spud - Orifice, Manufactured Gas, 800 BTU, 0.58 Sp. Gr.	58A1973	189A69	58A1900	58A1901	58A1730	58A1999											
12	Natural	Spud - Orifice, Manufactured Gas, 700 BTU, 0.615 Sp. Gr.	189A22	189A20	58A1560	58A1563	58A1726	189A21											
12	Natural	Spud - Orifice, Natural and S.U.R. Natural Gas, 1050 BTU.	58A2048	58A1552	58A1557	58A1560	58A1563	58A1599											

(Continued on Next Page)

† Not Illustrated.

* This cement is available through Sears Retail or Mail Order Stores.

THIS IS A REPAIR PARTS LIST, NOT A PACKING LIST
ORDER BY PART NUMBER, NOT BY ITEM NUMBER

HOW TO ORDER REPAIR PARTS

All parts shown in the following lists and illustrated in the parts diagram may be ordered through your nearest Sears retail or mail order store (in Canada order from Simpsons - Sears, Limited). Selling prices will be furnished on request or parts will be shipped at prevailing prices and billed accordingly.

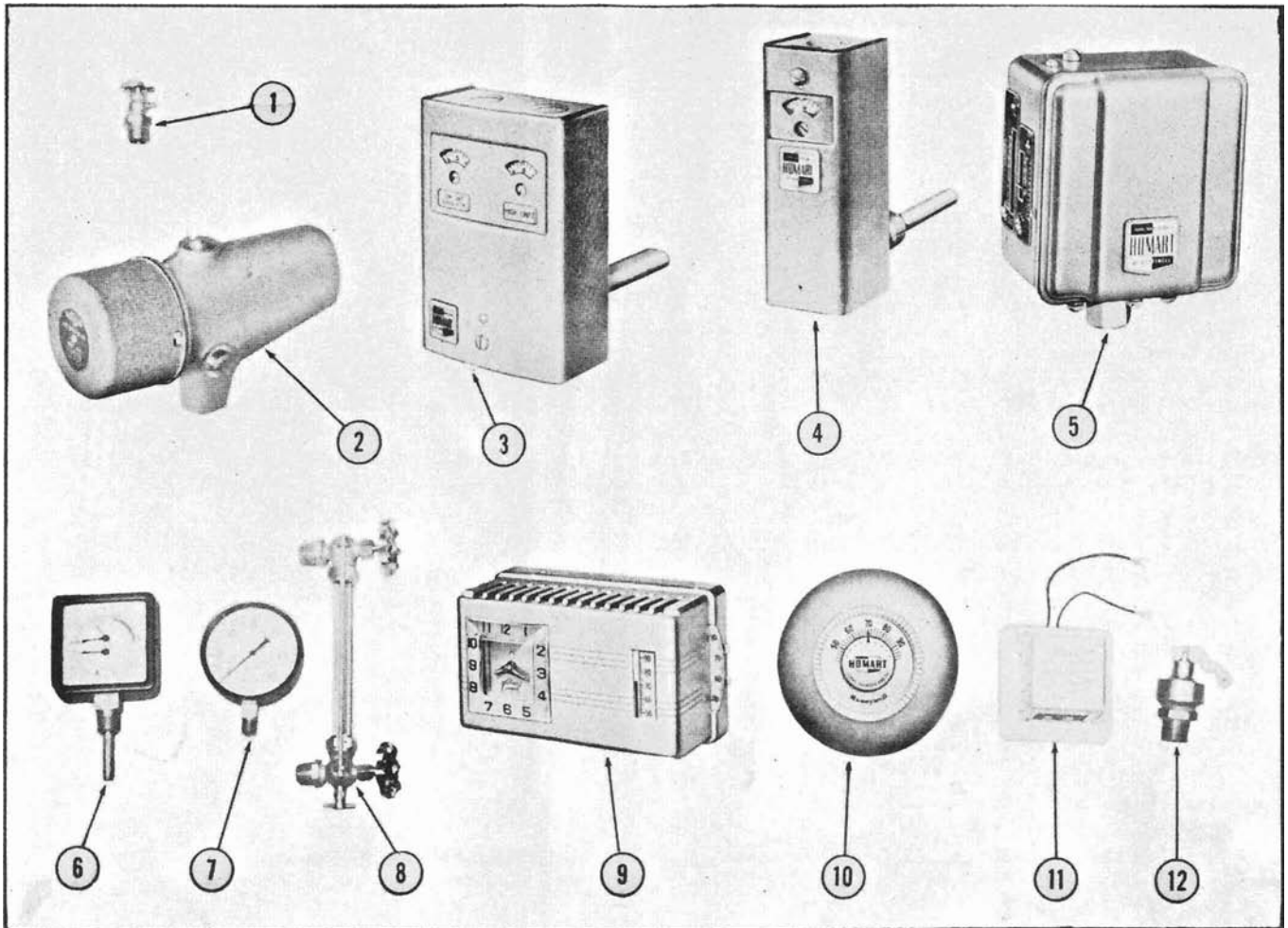
WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION: 1. Part Number; 2. Part Name; 3. Model Number which will be found on a plate fastened to the front panel of the unit.

REPAIR PARTS LIST - GAS BURNER ASSEMBLIES (Continued)

Item No.	Description of Part	Type of Gas				Models				Part No.			
		Models	Models	Models	Models	Models	Models	Models	Models	Models	Models	Models	Models
13	Switch - Pilotstat, Mfg. and S.U.R. Natural Gas (M-H #C434)	867.6097	867.6098	867.6099	867.6100	867.6101	867.6102	867.6102	867.6102	867.6102	867.6102	867.6102	867.6102
14	Thermocouple - LP Gas	867.59982	867.60012	867.60042	806.60072	867.60102	867.60132	867.60132	867.60132	867.60132	867.60132	867.60132	867.60132
14	Thermocouple - Mfg., Nat. and S.U.R. Nat. Gas	867.59991	867.60021	867.60051	867.60081	867.60111	867.60141	867.60141	867.60141	867.60141	867.60141	867.60141	867.60141
15	Tube - Lighter, Mfg. and S.U.R. Natural Gas	867.60001	867.60031	867.60061	867.60091	867.60121	867.60151	867.60151	867.60151	867.60151	867.60151	867.60151	867.60151
16	Tube - Venturi												
17	Valve - Pilotstat, Liquefied Petroleum Gas	254A434	254A434	254A434	254A434	254A434	254A434	254A434	254A434	254A434	254A434	254A434	254A434
	M-H #C586A - 1/2" Large	108A277	108A277	108A277	108A277	108A277	108A277	108A277	108A277	108A277	108A277	108A277	108A277
	M-H #C586A - 3/4"	108A24	108A24	108A24	108A24	108A24	108A24	108A24	108A24	108A24	108A24	108A24	108A24
18	Valve - Liquefied Petroleum Gas	54A1595	54A1595	54A1597	54A1597	54A1598	54A1589	54A1589	54A1589	54A1589	54A1589	54A1589	54A1589
	M-H #V80B - 1", 24 Volt	54B1769	54C1523	54C1524	54C1525	54D1543	54D1542	54D1542	54D1542	54D1542	54D1542	54D1542	54D1542
	M-H #V80B - 1/2" Small, 24 Volt	254A435	254A435	254A437	254A437	254A437	254A437	254A437	254A437	254A437	254A437	254A437	254A437
	M-H #V80B - 3/4" Small, 24 Volt												
18	Valve - Manufactured and S.U.R. Natural Gas	254A486	254A486	254A487	254A487	254A487	254A487	254A487	254A487	254A487	254A487	254A487	254A487
	M-H #V80C - 1/2" Small, 24 Volt												
	M-H #V80C - 3/4" Small, 24 Volt												
	M-H #V80C - 1" 24 Volt.												
18	Valve - Natural Gas	254A486	254A486	254A486	254A486	254A486	254A486	254A486	254A486	254A486	254A486	254A486	254A486
	M-H #V80B - 1/2" Small, 24 Volt												
	M-H #V80B - 3/4" Small, 24 Volt												
	M-H #V80B - 1", 24 Volt												
19	Valve - Pilot, S.U.R. Natural Gas	31A798	31A798	31A798	31A798	31A798	31A798	31A798	31A798	31A798	31A798	31A798	31A798
19	Valve - Pilot, Manufactured Gas	31A794	31A794	31A794	31A794	31A794	31A794	31A794	31A794	31A794	31A794	31A794	31A794
19	Valve - Pilot, Natural and S.U.R. Natural Gas	31A742	31A742	31A742	31A742	31A742	31A742	31A742	31A742	31A742	31A742	31A742	31A742
20	Valve - Shut-Off, Manufactured and S.U.R. Natural Gas	31A468	31A468	31A468	31A468	31A468	31A468	31A468	31A468	31A468	31A468	31A468	31A468
20	Valve - Shut-Off, Natural Gas	31A468	31A468	31A468	31A468	31A468	31A468	31A468	31A468	31A468	31A468	31A468	31A468

† Not Illustrated

THIS IS A REPAIR PARTS LIST, NOT A PACKING LIST
ORDER BY PART NUMBER, NOT BY ITEM NUMBER



**REPAIR PARTS LIST - BOILER EQUIPMENT FOR MODELS
867.6097, 867.6098, 867.6099, 867.6100, 867.6101, 867.6102 AND
867.59981 THROUGH 867.60151 INCLUSIVE**

NOTE: The following repair parts may be ordered through your nearest Sears retail or mail order store (in Canada order from Simpsons-Sears, Limited). Selling prices will be furnished on request or parts will be shipped at prevailing prices and billed accordingly.

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION: 1. Part Number. 2. Part Name. 3. Model Number which will be found on a plate fastened to the front panel of the unit.

Item No.	Description of Part	Part No.
1	Cock - Try.	31A358
*2	Control - Low Water Cut-Off, Steam.	9185
*3	Control - Forced Hot Water.	541.9166
*4	Control - Hot Water Limit.	541.9153
*5	Control - Steam Pressure.	541.9168
*6	Gauge - Altitude and Thermometer.	8854
*7	Gauge - Steam Pressure.	8882
*8	Gauge - Water Level (for 8" Valve Body Centers).	67A137
*8	Gauge - Water Level (for 11" Valve Body Centers).	67A294
*9	Thermostat - Day and Night.	541.9145
*10	Thermostat - Plain.	541.9128
*11	Transformer - M-H #AT72DICG, 115 Volt, 50-60 Cycle Primary, 24V-40VA Secondary.	211A14
*12	Valve - Safety, Steam, 3/4"	8834-3/4
‡	Separator - Steam	A252-1672

* NOTE: These controls are available through Sears Retail or Mail Order Stores.

‡ Not Illustrated.

THIS IS A REPAIR PARTS LIST, NOT A PACKING LIST
ORDER BY PART NUMBER, NOT BY ITEM NUMBER

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FOR A REPAIRMAN

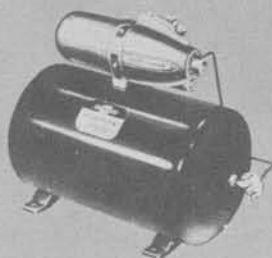
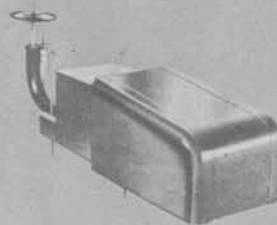
When you own a Sears appliance or mechanical item, a Sears trained repair specialist is just as near as your telephone . . . no matter where you live within the continental United States or Canada. Located in over a thousand cities, you'll find a headquarters for expert service on Sears mechanical merchandise and other major appliances. In communities distant from these headquarters, Sears has made special arrangements with local contractors to provide competent servicing whenever it is necessary. Sears guarantees satisfactory service.

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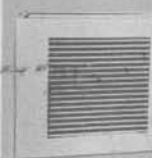


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