

IMPORTANT!

To Installer

INSTRUCTIONS CONTAINED IN THIS ENVELOPE ARE
TO BE USED BY INSTALLER AND MUST BE POSTED
ADJACENT TO BOILER TO CONFORM TO
ANSI-AMERICAN NATIONAL STANDARDS
AND APPLICABLE FEDERAL REGULATIONS

**BEFORE PROCEEDING
WITH INSTALLATION
CAREFULLY READ INSTRUCTIONS**

WEIL-McLAIN Michigan City
Indiana 46360

A Division of Wylain, Inc.



NOTICE TO INSTALLER

ONE LIMIT CONTROL IS SUPPLIED WITH THIS BOILER. A SECOND LIMIT CONTROL MUST BE FIELD INSTALLED IN ORDER FOR THE INSTALLATION TO COMPLY WITH THE CURRENT ASME BOILER AND PRESSURE VESSEL CODE, SECTION IV.

Possible Replacement Parts: Honeywell R8285A-G, J, K Control Centers;
and Honeywell S8610U Universal Intermittent Pilot Module.

MC-3240-476WM

GENERAL INSTRUCTIONS AND REQUIREMENTS

All instructions shipped with this boiler are to be returned to their envelope and given to owner or displayed adjacent to the boiler.

Attached to the boiler crate and certain other control boxes is a Consumer Protection (CP) tag stamped with that item's CP number. Be sure to put these self adhesive tags on the item in that crate or box. For the boiler, the CP tag should be placed next to the boiler ratings plate.

The side of the boiler to your left as you face the front of the boiler will be referred to in these instructions as the Left End (LE); the side to your right will be referred to as the Right End (RE).

NOTE: Installations must conform with the requirements of local utilities, or any local, state, or insurance requirements or codes having jurisdiction and with the National Fuel Gas Code, ANSI Z223.1-1974. Boilers must be installed in accordance with our instructions so as not to void our warranty.

**CHIMNEY OR VENT REQUIREMENTS
(also refer to Breaching Erection)**

The chimney or vent should not be smaller than the size recommended on the last page of these instructions under Ratings—Dimensions—Engineering Data. The chimney or vent should extend high enough above the building or any other obstruction so that wind from any direction will not strike from an angle above horizontal and thus produce down drafts. In most cases a chimney or vent extended at least 2 feet above the highest part of the roof or other structure within 30 feet will be sufficient.

A lined chimney is preferred and must be used when required by federal, state, or local building codes. Vitreous tile linings with joints which prevent the retention of moisture and linings made of noncorrosive materials are advantageous. Advice regarding recommended practice and material for flue connections and chimney linings can usually be obtained from the local gas utility and should be given careful consideration. If a Type B or Type C vent is acceptable and is used, the instructions relative to the size and height contained in the American National Standard National Fuel Gas Code Z223.1-1974 in the United States and CGAB149 Installation Code for Gas Burning Appliances and Equipment in Canada should be followed. The chimney should be examined before the gas boiler is installed to be certain that it is properly constructed, clear, and will freely conduct the products of combustion to the atmosphere.

The breaching connection must be above the extreme bottom of the chimney to avoid stoppage. The breaching must not enter the chimney so far as to obstruct the chimney. A thimble or slip joint should be used where the breaching enters the chimney to allow removal for cleaning. Do not place a damper or any other obstruction in the breaching.

Where two or more gas appliances vent into a common chimney or vent, the equivalent area of the common chimney or vent should be at least equal to the area of the vent outlet on the largest appliance plus 50 percent of the area of the vent outlet on the additional appliance.

CAUTION AIR SUPPLY FOR BOILER ROOM

Provisions must be made to supply sufficient clean air to the boiler room at all times. In buildings of conventional frame, brick, or stone construction without enclosed utility rooms, basement storm windows, or tight stair doors, infiltration is normally adequate to provide air for combustion and dilution of combustion gases at the draft hood.

For installation in an enclosed utility or boiler room without an outside wall, two fresh air openings are required (one near the top and one near the bottom of the room). When all the air comes from inside of the building, each opening should have a minimum free cross sectional area of at least 1 square inch for each 1,000 BTU per hour of boiler input. When all the air comes from outside and is directly connected to the boiler room or is connected to the boiler room with vertical ducts of equal area, each opening should have a minimum free cross sectional area of at least 1 square inch for each 4,000 BTU per hour of boiler input. When all the air comes from outside and is connected to the boiler room with horizontal ducts of equal area, each opening should have a minimum free cross sectional area of at least 1 square inch for each 2,000 BTU per hour of boiler input. *10x10 (105)*

CAUTION IMPORTANT PRECAUTIONS

Follow the wiring diagram furnished with the boiler or the wiring diagram label located on the inside of the jacket door. The operating instruction plate is located on the jacket interior panel and should be carefully followed.

The Types P-CG and CGM boilers are A.G.A. design certified and C.G.A. approved for natural and propane gases. For natural gas, the inlet gas pressure to the boiler should be 5 inches to 14 inches water column. If the inlet gas pressure exceeds 14 inches water column, a pressure regulator should be installed upstream of the boiler hand valve; the pressure regulator should be of the 100 percent lock-up type and should not permit gas pressures in excess of 14 inches water column. For propane, the inlet gas pressure to the boiler gas valve should be 11 inches to 13 inches water column; the pressure regulator (furnished by the gas-supplier) must provide lock-up pressures not exceeding 14 inches water column.

The gas orifices assembled on the gas manifold at the factory are for the type of gas specified on the boiler order. See the chart below.

Type Gas	Heating Valve BTU/cu. ft.	Standard Orifice Size
Natural	1,000	46
Propane	2,500	56

BOILER FOUNDATION

If a boiler foundation is desired, it should be constructed according to the dimensions shown in the chart on the next page, these dimensions allow about 1 inch

clearance all around the boiler. If the boiler is to be located in a confined space, refer to Figures 1a and 1b for minimum clearances.

BOILER FOUNDATION SIZES		
Number of Boiler Sections	Foundation Width	Foundation Length
3	12"	25¼"
4	15"	25¼"
5	18"	25¼"
6	21"	25¼"
7	24"	25¼"
8	27"	25¼"

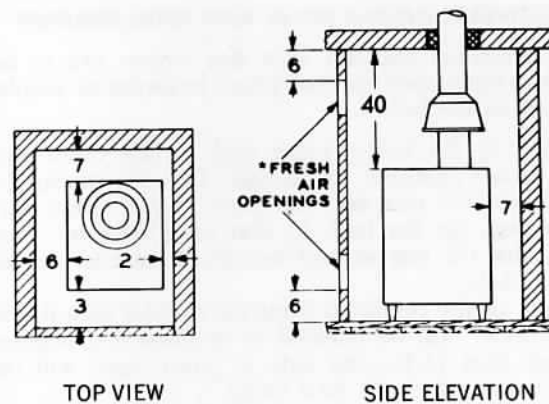


FIGURE 1a

CAUTION EXPANSION TANK SIZING

The most common cause of lime deposits in boilers is caused by inadequate expansion tank volume. Too small an expansion tank causes repeated loss of system water from the relief valve and the subsequent addition of makeup water thru the fill valve with eventual boiler failure. Follow the sizing table below and obtain additional sizing assistance for old gravity water systems or radiant panel systems. **NOTE:** When additional expansion tank capacity is required, do not replace the tank furnished with the boiler. Instead, an additional tank(s) should be connected to a tee(s) in the system piping adjacent to the boiler.

*Refer to Column Heading Air Supply For Boiler Room For Sizing Required Fresh Air Openings.

EXPANSION TANK SIZING*

Number of Boiler Sections	Standard Fill-Trol Tank—Adequate for Series Loop Piping Systems with Convactor Baseboard	Additional Ex-Trol Tank Required for One Pipe Systems with Convactor Baseboard	Additional Ex-Trol Tank(s) Required for Cast-Iron Radiators	Additional Ex-Trol Tank(s) Required for Cast-Iron Baseboard
3	No. 109	—	No. 15	No. 15
4	No. 109	No. 15	No. 15	No. 30
5	No. 109	No. 15	No. 15	No. 30
6	No. 110	—	No. 15	No. 30
7	No. 110	—	No. 30	No. 30
8	No. 110	No. 15	No. 30	No. 15 & 30

* Tank selection based on 220°F. average system water temperature.

RECOMMENDED INSTALLATION CLEARANCES (Applicable to U.S.A. Installations Only)

Where the boiler is to be located in a closet or confined space, minimum clearances must be provided all around the boiler as illustrated in Figure 1a. The vent pipe must be at least 6 inches from combustible material.

RECOMMENDED INSTALLATION CLEARANCES (Applicable to Canadian Installations Only)

Where the boiler is to be located in a confined space, minimum clearances must be provided all around the boiler as illustrated in Figure 1b. The vent pipe must be at least 6 inches from combustible material.

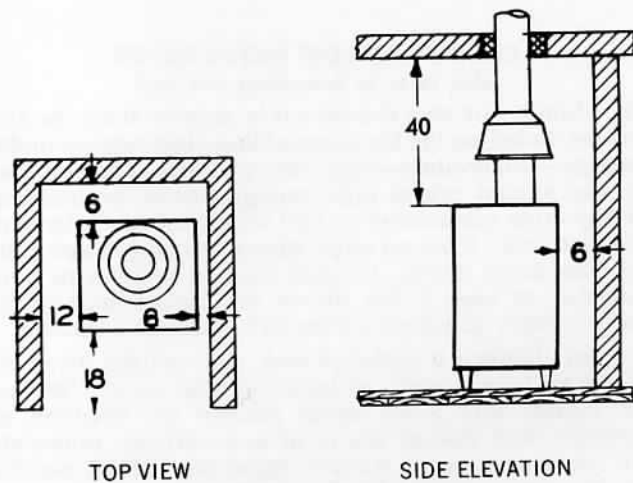


FIGURE 1b

CAUTION LOCATING THE BOILER

The boiler is A.G.A. design certified and C.G.A. approved for installation on a combustible floor. Be sure to remove the boiler from the shipping pallet. Do not alter or remove legs from the boiler. Be sure the unit is level so that air can be separated from the circulating water. Place shims under the boiler legs where necessary. Remove the access panel and discard the washers which held the access panel in place during shipment. Level and straighten the burners, with equal space between each burner and make sure the gas orifices will inject gas down the centerline of the burner mixer tubes. Reinstall the access panel by slipping the holes in the access panel over the screw heads which secured the panel during shipment.

HYDROSTATIC PRESSURE TEST OF BOILER

The individual sections and the complete boiler have been pressure tested at the factory; however, the boiler

should be tested at the job to insure that the water-tight seal was maintained during shipment.

1. Remove and discard the shipping nipple from the top of the boiler and plug all tappings.
2. Fill the boiler with water. Completely purge all air. Test the boiler with water pressure not exceeding 30 psi.
3. Inspect the boiler for leaks.
4. Drain the boiler and remove plugs from tappings that will be used for controls and accessories.

**SUGGESTED BOILER PIPING CONNECTIONS
TO THE HEATING SYSTEM**

The boiler is provided with a built-in air elimination system.

For P-CG boilers, install the Float Type Automatic Air Vent. No additional boiler air eliminating device will be required. For proper operation and venting of the float type automatic air vent, unscrew the vent cap at least two full turns.

1. For CGM boilers used with a closed type expansion tank, connect from the compression tank tapping on the left end section (located just behind the supply outlet tapping) to the compression tank using 1/2" N.P.T. piping. Any horizontal compression tank piping must pitch upward at least 1 inch for each 5 feet of piping toward the tank. For CGM boilers used with a closed diaphragm pre-pressurized type compression tank, install a manual or automatic type air vent in the 1/2" N.P.T. tapping.

2. Pipe from the relief valve outlet to a floor drain or near the floor. Do not pipe the relief valve discharge to any area where freezing temperatures could occur.

3. Connect the system supply piping to the supply outlet tapping at the left end of the boiler.

4. For Type P-CG and CGM boilers, connect the system return piping to the circulator counter flange (see Figure 3). Be sure not to overheat the gasket between the flanges when soldering fittings.

- 5a. For Type CGM boilers, connect the cold water fill supply piping close to the boiler in the compression tank piping.

- 5b. For Type P-CG boilers, connect the cold water fill supply piping to the union on the combination automatic fill valve and manual shut-off valve. Before making this connection, refer to the separate instructions on the tag attached to the handle of the valve.

6. For type P-CG boilers, attach the No. 110 Fill-Trol Tank to the Combination Fill Valve and Manual Shut-Off Valve.

Where the boiler is to be used with low water temperature applications (i.e. converted gravity systems, etc.) a boiler bypass piping arrangement should be used to assure higher boiler water temperature for optimum boiler operation. Locate a tee in the return piping between the circulator and the boiler and another tee in the supply piping as illustrated in Figure 2. Use the same size bypass piping as the supply and return piping. Locate a valve in the bypass piping and in the supply piping between the supply outlet tapping and the tee as illustrated in Figure 2 so the water flow through the boiler and through the bypass can be regulated to maintain a higher boiler water temperature. Adjust the

valves to provide 200 degree to 200 degree F. boiler water temperature when the system water temperature is at the maximum desired.

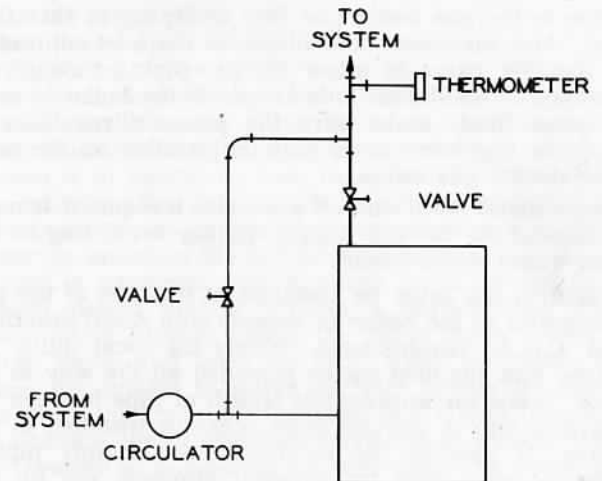


FIGURE 2

CAUTION DRAFT HOOD INSTALLATION

Secure the draft hood to the outlet of the flue collector hood at the top of the boiler with sheet metal screws. For proper combustion the bottom of the draft hood "skirt" must have the clearance dimension above the jacket top panel as indicated on the draft hood. If the draft hood is altered, the A.G.A. design certification and CGA approval become void.

**CAUTION BREECHING ERECTION
(Also Refer to Chimney or Flue)**

Connect from the draft hood outlet to the chimney or vent with full-sized (same diameter as draft hood outlet) breeching. Where the installation permits, vertical venting of the combustion gases to the outside from the draft hood outlet will afford best performance at lowest total cost. Where the boiler must be connected to a chimney or remote vent the horizontal breeching should slope upward at least 1/4 inch per lineal foot toward the chimney or vent. A vertical height of 3 feet to 5 feet of breeching before any elbow or horizontal breeching is recommended to reduce chances of flue gas spillage at the draft hood. Long horizontal breechings, excessive numbers of elbows or tees, or other obstructions which restrict the flow of combustion gases should be avoided.

CONNECT THE BOILER TO THE GAS SUPPLY

If the gas supply piping is to be located at the right side of the boiler, remove the knockout disc from the Jacket Right Side Panel; if the gas supply piping is to be located at the left side of the boiler, remove the knockout disc from the Jacket Left Side Panel.

The gas supply piping should be installed in accordance with the American National Standard National Fuel Gas Code Z223.1 in the U.S.A. or CGAB149 Installation Code for Gas Burning Appliances and Equipment in Canada. The pipe joint compound (pipe dope) employed should be resistant to the corrosive action of liquefied petroleum gases and should be applied sparingly only to the male threads of the pipe joints. The boiler must be disconnected from the gas supply piping

TYPES P-CG AND CGM GAS-FIRED BOILERS (Series 7)

system during any pressure test of the gas supply piping system.

1. Remove the Jacket Door and Connect from the gas valve to the gas meter (see Size of Piping to Gas Boilers). Use an elbow and nipple at the inlet connection of the gas valve to allow the gas piping through the opening in the Jacket Side Panel. If the boiler is to be propane fired, make sure the pressure regulator or pressure regulator cover plate is installed on the main (automatic) gas valve.

If the manual main shut-off gas valve is required it must be located in the gas supply piping according to the local utility requirements.

2. A drip leg must be installed at the inlet of the gas connection to the boiler to comply with ANSI Standard and C.G.A. requirements. Where the local utility requires that the drip leg be extended all the way to the floor, place an appropriate length of pipe between the cap and tee. A ground joint must be installed in the piping to provide for servicing. Gas supply piping must be supported by external hangers, not by the boiler or its accessories.

3. Purge all air from the gas supply piping.

4. Check all gas connections for leaks using a soapy solution. Liability for damage done through the use of a flame can not be assumed by the manufacturer.

SIZE OF PIPING TO GAS BOILER

In sizing the gas piping, the following factors should be considered:

- Diameter and length of the gas supply piping and number of fittings.
- Maximum gas consumption (including any possible future expansion)
- Allowable loss in gas pressure from the gas meter outlet to the boiler. This is specified as three-tenths on an inch water column.

The volume of gas (in cubic feet per hour) should be determined, whenever possible, directly from the input rating (in BTU per hour) of the boiler and the heating value of the gas. To obtain the cubic feet per hour, divide the input (in BTU per hour) by the BTU heating value per cubic foot of gas.

PIPE DELIVERY SCHEDULE

Length of Pipe In Feet	*CAPACITY OF PIPE IN CUBIC FEET OF GAS PER HOUR				
	1/2"	3/4"	1"	1 1/4"	1 1/2"
10	132	278	520	1050	1600
20	92	190	350	730	1100
30	73	152	285	590	890
40	63	130	245	500	760
50	56	115	215	440	670
75	45	93	175	360	545
100	38	79	150	305	460
150	31	64	120	250	380

*Flow determined by Dr. Pole's Formula-Specific Gravity: .60 Pressure Loss: 3/10" water.

1 cu ft gas = 1031 Btu

ADDITIONAL LENGTH OF PIPE TO BE ADDED FOR EACH
ELBOW OR TEE BEND IN THE LINE

Pipe Size, Inches	Additional Length, Feet
1/2	1.3
3/4	1.7
1	2.2

CAUTION WIRING THE BOILER

Pages 9 and 10 contain standard wiring diagrams for 24 volt and millivolt applications. The boiler is shipped with the combination relay-transformer, limit control, circulator and main (automatic) gas valve completely wired. Bring the electrical supply through the proper opening in the jacket left side panel (see Figure 4 item 16) and into the junction box; wire the electrical supply as shown on the appropriate wiring diagram. Bring the thermostat wiring through the opening in the jacket left side panel and wire the thermostat across the terminals on the combination relay-transformer as shown on the wiring diagram label. All safety circuit wiring should be N.E.C. Class-1 for installations in the United States and must conform to the Canadian Electrical Code for Canadian installations. All wiring should also be installed in compliance with any local or state codes or requirements having jurisdiction. The boiler must be electrically grounded in accordance with the National Electrical Code, ANSI CI-1975.

When using multiple zone valves with the boiler, follow the separate wiring diagram packaged with the control.

CAUTION OPERATING AND SAFETY CHECK OUT SEQUENCE

- Be sure the boiler and the heat distributing units are filled with water (see Filling Water Boilers in these instructions). For P-CG boilers, open the vent cap on the Float Type Automatic Air Vent two full turns.
- Be sure the air is purged from the gas supply piping and the piping has been checked for gas leaks.
- Caution:** Make sure that the manual main shut-off gas valve and/or the manual gas cock knob on the main (automatic) gas valve have been closed for at least five minutes before attempting to light the safety pilot burner.
- Follow "Lighting The Boiler" as given further on in these instructions.
- Set the adjustable heat anticipator on the room thermostat according to the appropriate wiring diagram notes.

BURNERS

No primary air adjustment is required on burners for natural or propane gases.

MEASURE GAS INPUT TO BOILER

Measure the gas input to the boiler by reading the gas meter. Be sure all other appliances connected to the same meter are shut-off. Rate of gas flow (cubic feet per hour) multiplied by the BTU value (per cubic foot) of the gas used should check with the A.G.A. design

certified or C.G.A. input shown on the rating plate of the boiler. If the actual input is within 5 per cent of the rated input, adjust the gas pressure regulator to obtain the required gas flow. For boilers equipped with the combination type gas control valve, the gas pressure regulator is located on the main gas valve body. To adjust the gas input, remove the regulator adjustment screw cap and turn the adjustment screw clockwise to increase or counter-clockwise to decrease the gas flow. If the actual input is more than 5 per cent off the rated boiler input, change orifice sizes.

NOTE: For proper aspiration, the Manifold Gas Pressure should be at least 3½ inches water column for natural gas and 10 inches water column for propane gas.

CAUTION ADDITIONAL INSTRUCTIONS

Before leaving the job, make sure the unit checks electrically. Be sure the room thermostat is set to the desired room temperature and that the limit control is set according to the requirements of the heating system. For additional information on controls, refer to the manufacturer's instructions supplied with the controls.

WHEN BOILER IS USED WITH REFRIGERATION SYSTEM

If the boiler is used in connection with a refrigeration system, the chilled medium shall be piped in parallel with the boiler and with valves to prevent the chilled medium from entering the boiler; see figure 3.

If the boiler is connected to heating coils located in air handling units where they may be exposed to refrigerated air circulation, the boiler piping system shall be equipped with flow control valves or other automatic means to prevent gravity circulation of the boiler water during the cooling cycle.

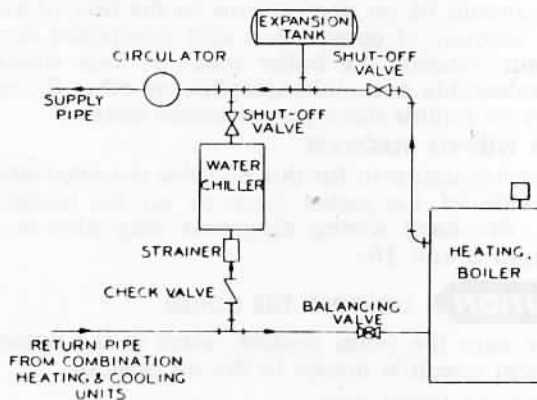


FIGURE 3

BOILER SERVICE AND MAINTENANCE

Review this information and the Homeowners Information manual with the owner and be sure he receives all instructions.

CAUTION FILLING WATER BOILERS

In hard water areas we recommend filling the boiler and heating system with softened water.

The boiler and the entire system should be filled and heated to approximately 210 Deg. F for about 15 minutes to drive off dissolved gases. Before filling the system, make sure all the system air vents are closed. Open the hand water feed valve and beginning on the lower floor, open the air vents (one at a time) until water starts to flow; then, close the vent. Repeat this throughout the building until all heat distributing units are filled with water. Close the hand water feed valve when the correct boiler pressure is reached. After the system is in operation, keep the system filled with water by occasionally opening the air vents allowing any entrapped air to escape and adding enough make up water to maintain the correct system pressure. If your system is provided with a purge valve located in the system return piping, connect a garden hose to the drain valve located above the purge valve. Close the purge valve and open the hand water feed valve and allow the system to purge all air. Where the system has more than one circuit, purge each circuit separately by opening each balancing valve one at a time. When the system is purged of all air, close the drain cock located above the purge valve and open the purge valve. Fill the boiler and the entire system to the correct pressure. Air in the system can interfere with circulation of water and prevent the heat distributing units from properly heating.

Leaks in the boiler and piping system must be repaired at once. The use of makeup water in large quantities is undesirable and may damage the boiler after an extended period of time. If serious leaks occur, stop the burners and gradually reduce boiler temperature. Do not attempt to make repairs while hot water boiler temperatures are above 130 Deg. F.

Any problem in regard to large amounts of makeup water, scale in the boiler, or internal corrosion or pitting, should be referred to a company specializing in boiler water chemistry.

Periodically, check the seal afforded by any gasket installed on the boiler or heating system. If necessary, thoroughly tighten all bolts to restore the watertight seal.

DO NOT DRAIN BOILER during periods of shutdown unless heating system is exposed to freezing temperatures. Open boiler drain cock to remove impurities that have settled to the bottom of the boiler. Refill as required to the correct pressure for water boilers. Turn off all electrical power connections to the boiler and its auxiliaries. Clean all carbon, rust, and other deposits from the fire-side of the boiler heating surfaces in order to protect the boiler from the corrosive action of combustion deposits (see Cleaning Boiler Heating Surfaces). If the water side of the boiler must be cleaned or inspected, open the boiler drain valve and drain the boiler. Hose the inside of the boiler with high pressure water to remove sludge and sediment, flush again. Replace plugs and jacket panels when all traces of sludge and sediment have been removed. Dry insides of boiler thoroughly, or refill with fresh water and heat to release dissolved gases (see Filling Water Boilers). Repeated draining and filling of the boiler and/or the heating system can lead to the same consequences as adding too much makeup water — this is mainly true where the makeup water is "hard" and the same

precautions must be used as indicated in an earlier paragraph.

CAUTION CLEANING BOILER HEATING (fire-side) SURFACES

At the end of every heating season, it is advisable to inspect and if necessary clean the flues in the boiler. Soot is an effective insulator and prevents the hot gases from heating the boiler water as efficiently as possible. Normally this boiler will be cleaned from the top as described below.

1. Remove the top jacket panel of the boiler.
2. Remove the flue opening cover at the top of the boiler sections and take out the baffle plates from between the boiler sections.
3. Remove the burners, if not already removed for cleaning, to avoid brushing soot and dirt into the burner openings, or extinguish the pilot and cover all the main burners with heavy papers.
4. Insert a wire flue brush vertically through openings between sections and scrub all flue surfaces vigorously.
5. Replace the clean burners or remove papers which covered the main burners.
6. Replace the cleaned baffle plates and flue opening cover making sure the original gas-tight seal is maintained between the cover and the boiler sections.
7. Replace jacket top panel.
8. Start the boiler according to the procedures outlined in these instructions.

WATER BOILER CONTROLS

CIRCULATOR CARE

Never operate the circulator without water

- A. Follow lubricating instructions on circulators that are provided with oil cups or oil holes.
- B. Follow venting instruction on circulators with water lubricated bearings which require no oil.

BOILER PRESSURE

The initial fill pressure of the boiler and entire system should be according to the design requirements of the heating system (in general, the fill pressure for most heating systems would be to 12 pounds per square inch). Normal system pressure will fluctuate between the fill pressure, when the system is cold; and rise to maximum pressure (just below the relief valve opening pressure), when the system is hot.

BOILER WATER TEMPERATURE

Modern hot water heating systems with "closed" type expansion tanks may operate at water temperatures up to 250 Deg. F. The high limit control must be set according to the design requirements of the heating system during severe winter weather, you may find that this temperature setting needs to be raised or lowered depending upon characteristics of your system.

EXPANSION TANK

An expansion tank is employed with hot water heating systems to accept the increased water volume which results from heating the system water. The expansion tank on a closed hot water heating system should provide adequate pressurization under all system operating

conditions. Frequent opening of the pressure relief valve can be the result of an undersized expansion tank because provisions for the necessary expanded water volume has not been provided, or the tank has become "waterlogged" and must be charged with air or drained of water, or the tank has developed a leak.

PRESSURE-TEMPERATURE GAUGE

This gauge indicates the boiler pressure in pounds-per-square-inch by the upper hand. The lower hand indicates the boiler water temperature in degrees fahrenheit.

CAUTION WATER RELIEF VALVE

Check the relief valve at least once a year by pulling the handle and allowing a small quantity of water to flow. Be sure the relief valve reseats properly and is entirely free from seepage. If the relief valve sticks or appears to be clogged, it should be replaced immediately. The relief valve outlet should be piped to a floor drain or near the floor. The relief valve discharge must not be piped to any area where freezing temperatures could occur.

CAUTION BURNER FLAMES

Periodically inspect main burner and pilot flames visually for proper appearance. The tips of the flames should not be yellow in color; orange color in the flames is acceptable.

CAUTION VENTING SYSTEM

Periodically inspect the boiler venting system in accordance with the procedure in the Homeowners Information Manual.

BOILER ROOM HOUSEKEEPING

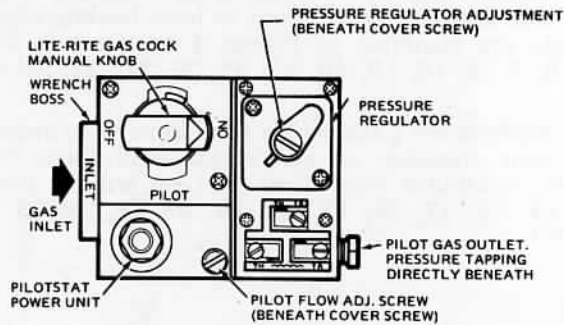
There should be no obstructions to the flow of an adequate amount of combustion and ventilation air. The area surrounding the boiler must be kept clean, and no combustible materials, gasoline or other flammable vapors or liquids should be permitted nearby.

BOILER WIRING DIAGRAM

The wiring diagram for this boiler is mounted either on the inside of the jacket door or on the jacket inner panel. Standard wiring diagrams may also be found on pages 9 and 10.

CAUTION LIGHTING THE BOILER

1. Be sure the main electric switch in the boiler electrical circuit is turned to the off position.
2. Remove jacket door.
3. Remove access panel.
4. Locate pilot burner and gas valve.
5. Locate gas valve knob and make sure it has been OFF for at least 5 minutes (see illustration of gas Valve on following page).
6. Turn valve knob to PILOT and push in completely. While holding knob all the way in, light pilot burner with a match.
7. With pilot burning, hold valve knob all the way in for about one minute, then release knob. Pilot flame should remain lighted.



TOP VIEW OF TYPICAL GAS VALVE

SHUT DOWN OF BOILER

1. Turn off main electric switch in the boiler electrical circuit.
2. Depress gas valve knob slightly and turn to OFF position.
3. Open the boiler drain cock to remove impurities that may have settled to the bottom of the boiler. Close boiler drain cock. Refill the boiler to the proper water pressure.

8. Turn valve knob counterclockwise to ON.
9. Replace access panel.
10. Replace jacket door.
11. Turn main boiler electric switch ON.
12. Set thermostat to desired room temperature.

TYPES P-CG AND CGM GAS-FIRED BOILERS (Series 7)

PARTS LIST

Weil McLain will endeavor to stock major boiler replacement parts for at least 20 years; items manufactured by others will normally have an equivalent part available for at least the same time period. Do not order replacement parts directly from Weil-McLain; your serviceman must provide our distributor with the type of fuel, boiler size, type and series for proper parts replacement.

Those replacement parts likely to be available locally from your installer, serviceman or local heating supply or store are identified in Figure 4 as items: 1, 2, 3, 4, 5, 6, 7, 8, 10, 19, 20, 21, 25, 26, 30, 31, 32 and 33.

Those replacement parts which may have to be ordered from your installer or serviceman and their Weil McLain distributor from Weil McLain will be items: 4, 9, 12, 13, 17, 18, 22, 23, 24, 27, 28, 29, 33, 34 and 35.

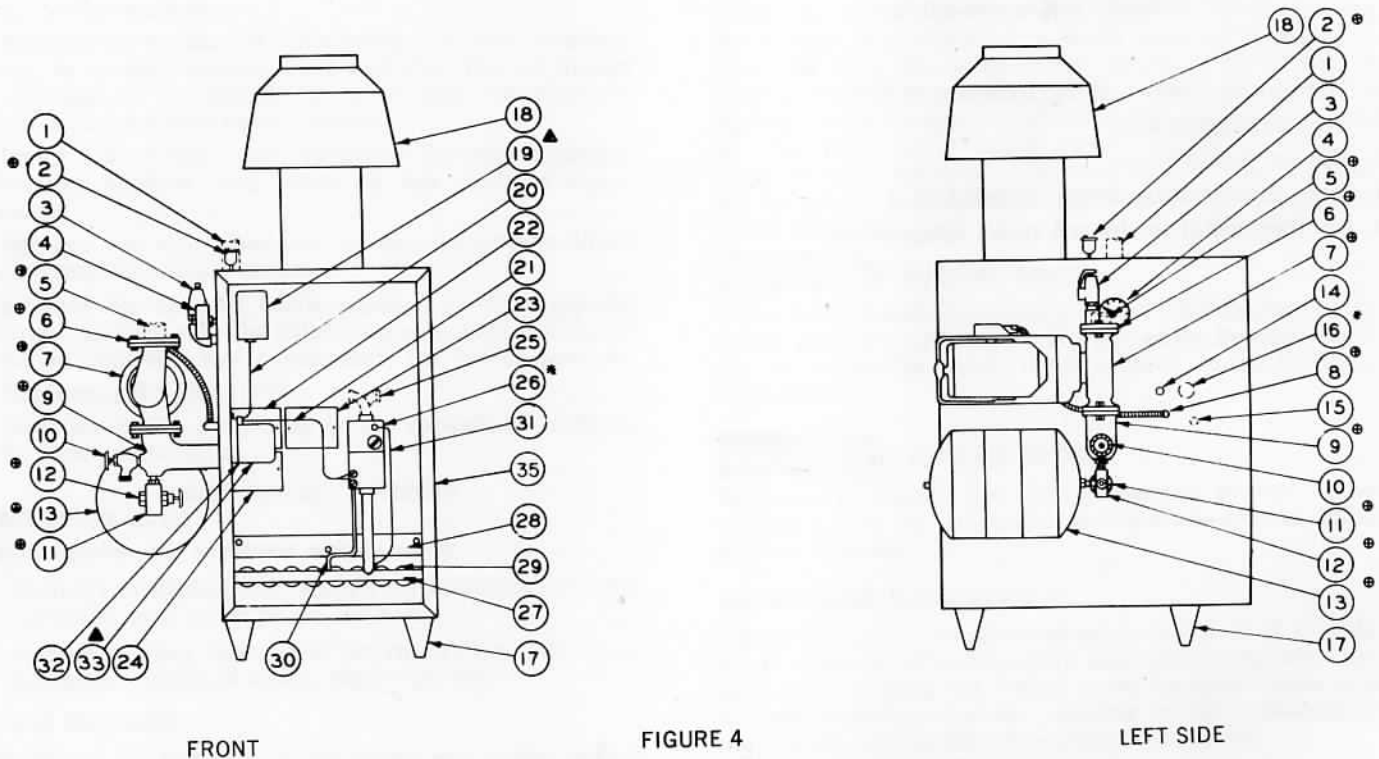


FIGURE 4

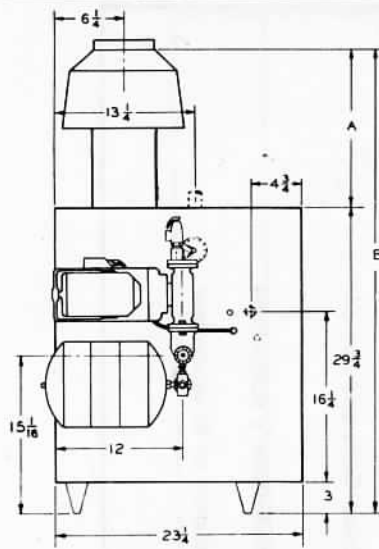
- | | | |
|---|---|--|
| <ul style="list-style-type: none"> 1. Supply Outlet ⊕ 2. Float Type Automatic Air Vent 3. ASME Pressure Relief Valve 4. Combination Pressure-Temperature-Altitude Gauge 5. Return Inlet (for P-CG and CGM boilers) 6. Circulator Counter Flange 7. Circulator 8. Circulator Wiring Harness 9. Angle Circulator Flange 10. Drain Cock ⊕ 11. Combination Automatic Fill Valve and Manual Shut-off Valve ⊕ 12. Cold Water Fill Connection ⊕ 13. Air Cushion Tank (closed diaphragm type) 14. Thermostat Wiring Inlet | <ul style="list-style-type: none"> 15. Electrical Supply Inlet *16. Knockout for Gas Supply Piping (jacket right end and left end panels) 17. Boiler Leg (four used) 18. Draft Hood ▲ 19. High Limit Control 20. Safety Circuit Wiring 21. Gas Valve Wiring 22. AGA Rating Plate 23. Operating Instruction Plate 24. Closet Clearance Plate 25. Street Elbow, or Elbow and Close Nipple (not furnished) *26. Combination Manual Main Shut-Off Gas Valve, Main Automatic Gas Valve, and Pressure Regulator | <ul style="list-style-type: none"> 27. Gas Manifold 28. Access Panel 29. Main Burners 30. Safety Pilot Burner Gas Supply Tubing 31. Thermocouple 32. Wiring Junction Box (not furnished with boilers equipped with self generating controls) ▲ 33. Combination Relay with 40VA Transformer (for boilers equipped with 24 volt controls, not furnished when boiler is equipped with self generating controls) 34. Boiler Section Assembly (not shown); varies by boiler size. 35. Boiler Jacket Assembly; varies by boiler size. |
|---|---|--|

⊕ Not furnished with Model CGM boilers.

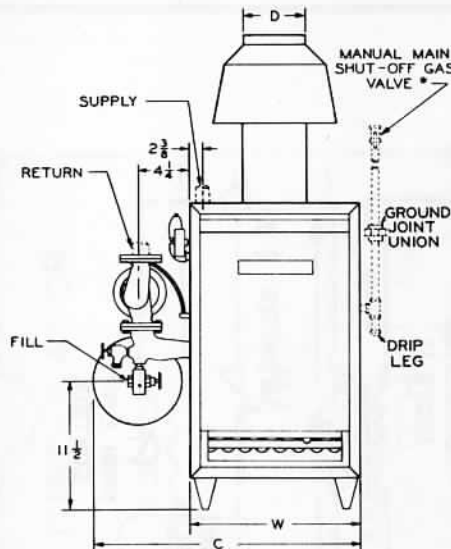
* The gas supply piping may be located at the left side or right side of the boiler. If an additional manual main shut-off gas valve is required, it should be located in the gas supply piping according to the local utility requirements.

▲ For boiler ordered with self generating controls, the combination high limit control, relay and 40VA transformer (with manual switch to permit gas valve operation with limit protection in the event of power failure) will be furnished in place of the separate high limit control and combination relay with 40VA transformer.

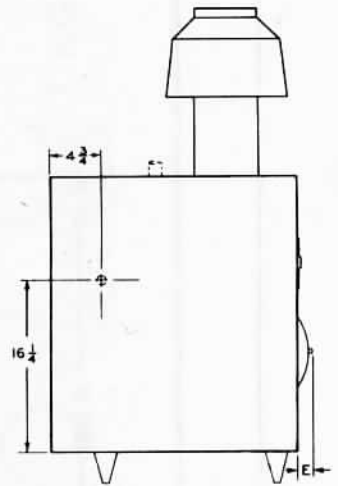
TYPES P-CG AND CGM GAS-FIRED BOILERS (Series 7)



LEFT SIDE



FRONT



RIGHT SIDE

* Locate manual main Shut-Off Gas Valve (where required) according to utility requirements. Gas Supply Piping may be located at the left side or right side of the boiler.



Design
Certified by
American Gas
Association



Approved by
Canadian Gas
Association



Net ratings approved by
Institute of Boiler and
Radiator Mfrs.



Built to
ASME
specifications

RATINGS — DIMENSIONS

Boiler Number	Input BTU/Hr.	D.O.E. Heating Capacity	Net I-B-R Ratings BTU/Hr.*	Dimensions					
				A	B	C	D	E	W
◆ P-CG-3	70,000	55,000	47,800	15"	44 3/4"	18 1/4"	4"	1 1/2"	10"
◆ P-CG-4	105,000	83,000	72,200	17 7/8"	47 5/8"	21 1/4"	5"	1 1/2"	13"
◆ P-CG-5	140,000	110,000	95,700	21 1/4"	51"	24 1/4"	6"	1 1/2"	16"
◆ P-CG-6	175,000	138,000	120,000	25 1/4"	55"	30 7/8"	6"	4"	19"
◀ CGM-7	210,000	165,000	143,500	25 1/4"	55"	33 7/8"	7"	4"	22"
◀ CGM-8	245,000	192,000	167,000	30 1/4"	60"	36 7/8"	7"	4"	25"

ENGINEERING DATA

Boiler Number	Supply Outlet		Return Inlet		Boiler Water Content Gallons	Maximum Allowable System Water Content in Gallons with Standard Fill-Trol ▲	Gas Connection Pipe Size		Gas Manifold Pipe Size All Gases	Chimney and Breeching Size *
	No.	Pipe Size	No.	Pipe Size			Natural Gas	Propane Gas		
◆ P-CG-3	1	1 1/4"	1	1"	1.54	18	1/2"	1/2"	1/2"	4" I.D.
◆ P-CG-4	1	1 1/4"	1	1"	2.11	18	1/2"	1/2"	1/2"	5" I.D.
◆ P-CG-5	1	1 1/4"	1	1"	2.69	18	1/2"	1/2"	1/2"	6" I.D.
◆ P-CG-6	1	1 1/4"	1	1 1/4"	3.26	44	1/2"	1/2"	1/2"	6" I.D.
CGM-7	1	1 1/4"	1	1 1/4"	3.84	44	1/2"	1/2"	3/4"	7" I.D.
CGM-8	1	1 1/2"	1	1 1/4"	4.42	44	3/4"	3/4"	3/4"	7" I.D.

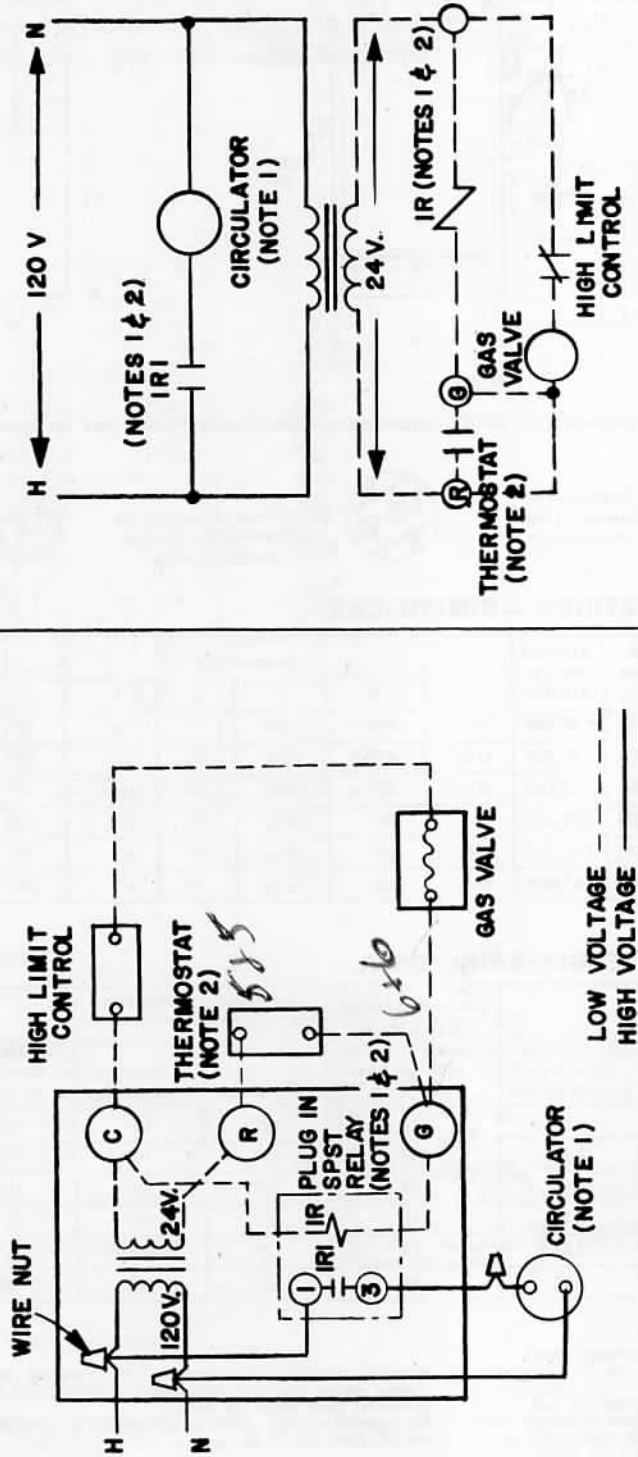
◆ Delete "P" and add suffix "M" to designator for package unit without Fill-Trol (example CGM-3).

* Net I-B-R Water Ratings are based on net installed radiation of sufficient quantity for the requirements of the building and nothing need be added for normal piping and pick-up. Ratings are computed on an allowance factor of 1.15. For usual piping and pick-up loads, consult Weil-McLain Customer Services Department.

▲ Includes boiler water volume. For piping systems which have a higher water content, additional compression tank capacity must be provided (see table in text).
• In special cases where surrounding conditions permit, chimney height may be 10 ft.

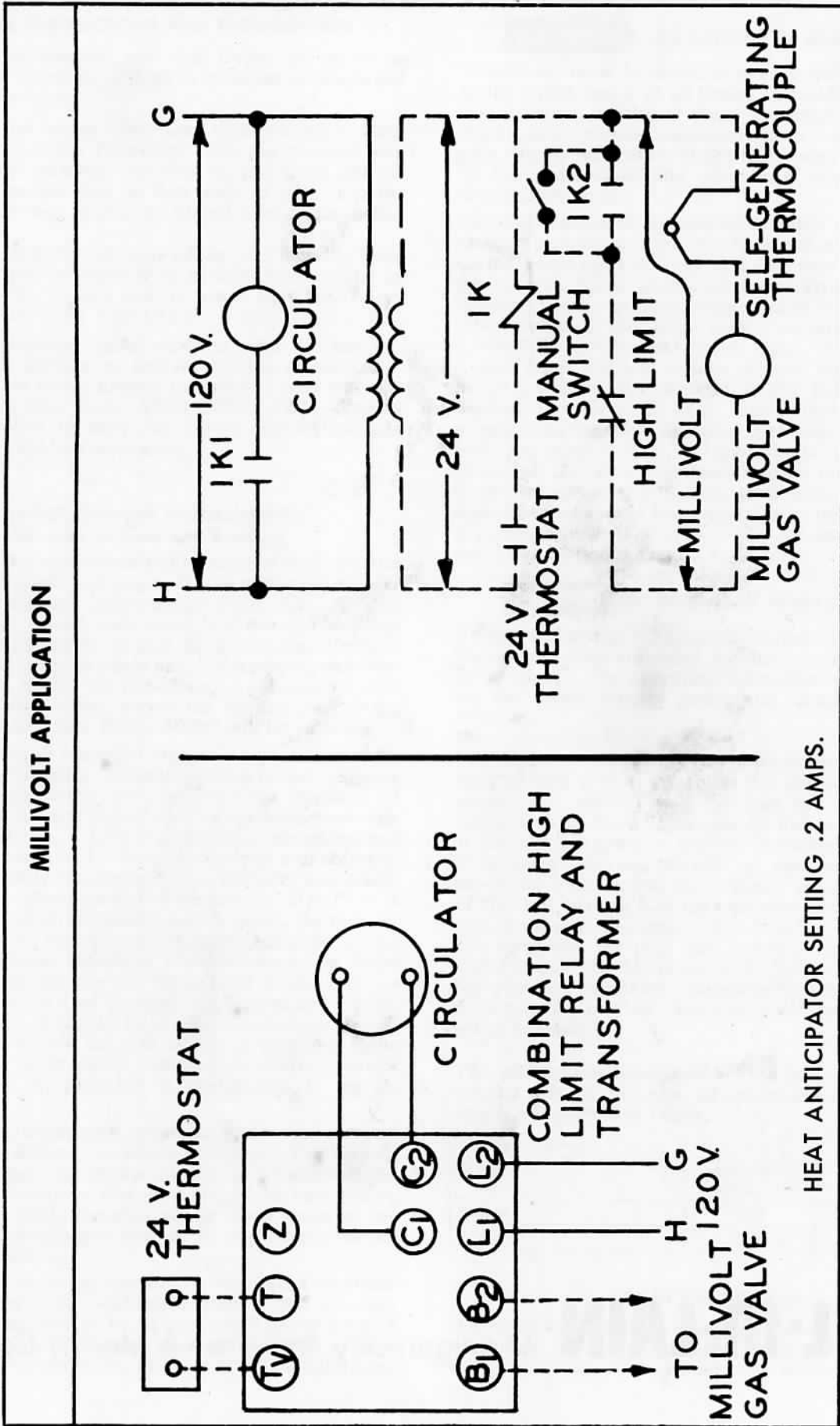
TYPES P-CG AND CGM GAS-FIRED BOILERS (Series 7)

24 VOLT APPLICATION

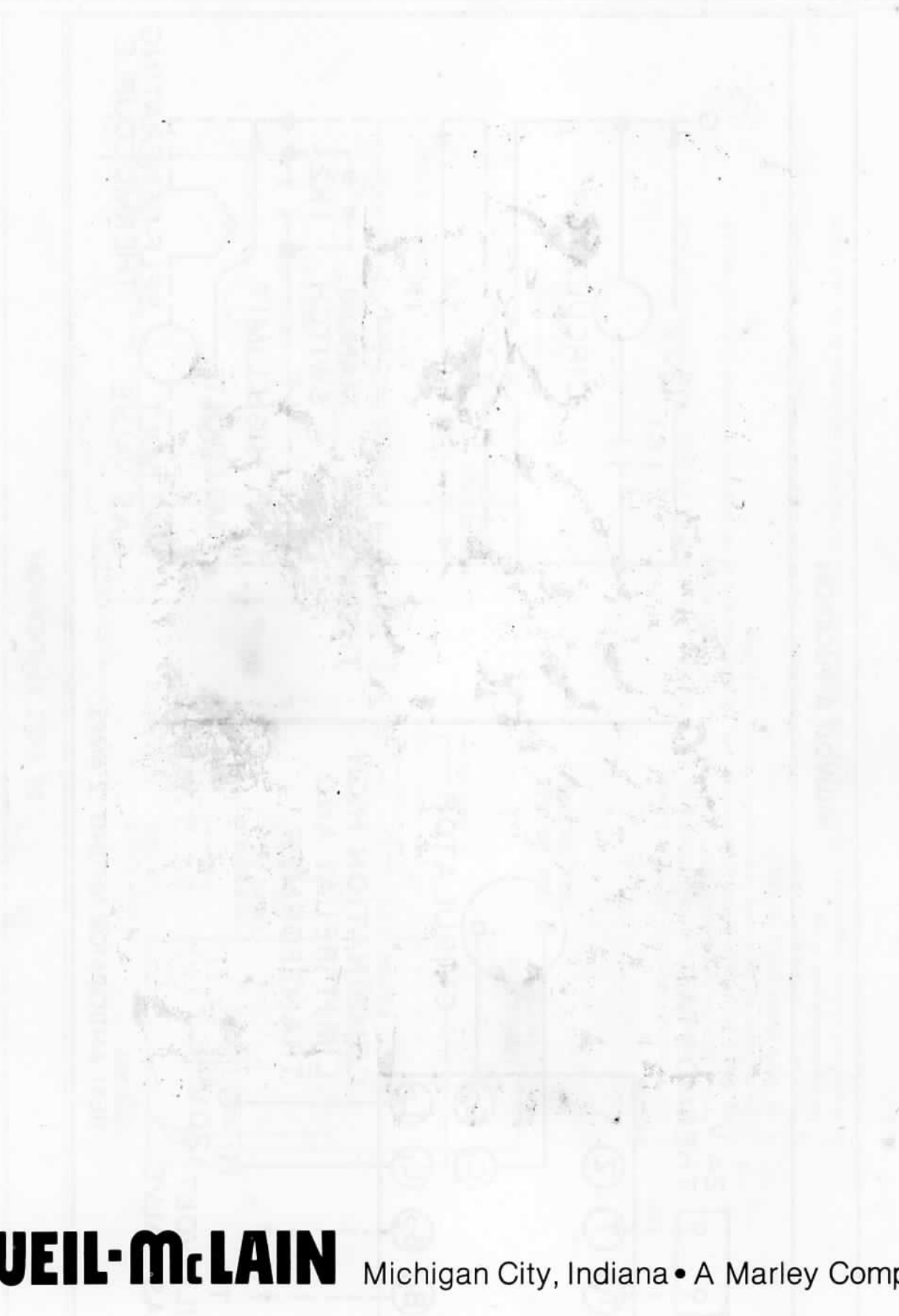


NOTES:

1. Not required for gravity hot water boilers.
2. Where plug-in relay is used, thermostat heat anticipator setting must be .65 amps. When relay is not used, heat anticipator setting must equal amperage indicated on gas valve.
3. All wiring must be installed in accordance with the requirements of the National Electrical Code and any additional state or local code requirements having jurisdiction.
4. All safety circuit wiring must be N.E.C. Class 1.
5. For multiple zoning using either zone valves or circulators, refer to the component manufacturer's instructions for applications and wiring.
6. Should any standard equipment wiring necessitate replacement, 90°C thermoplastic conductors or its equivalent must be employed.



HEAT ANTICIPATOR SETTING .2 AMPS.



WEIL-McLAIN

Michigan City, Indiana • A Marley Company

This boiler installation is not complete until these instructions are attached to the boiler near the automatic control valve.

FOR YOUR SAFETY

IF YOU SMELL GAS:

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

FOR YOUR SAFETY

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

CAUTION

Keep the boiler and vicinity clear of combustible materials and do not block the flow of combustion and ventilating air to the boiler.

FOR LONG BOILER LIFE

Do not add fresh makeup water to your boiler unless absolutely necessary. Minerals and oxygen possibly in the fresh water may seriously reduce boiler service life.

All mechanical equipment needs occasional attention. Your boiler should be inspected, cleaned and if necessary adjusted once a year. We recommend that your serviceman be called as he has been trained for the job and will have the necessary instruments to check your boiler. This will insure that the operation of your heating system will remain highly efficient. Your Weil-McLain boiler will give you a lifetime of heating comfort if you follow the few simple suggestions listed on this card.

FILLING STEAM AND WATER BOILERS

Do not fill the boiler (except for leakage tests) until the boiler is ready to be fired. **CAUTION: Do not add large quantities of cold feed water to any hot boiler!**

Steam Systems: The boiler should be filled to the normal water line and fired for about 15 minutes at a low rate to keep the boiler at steaming temperature with the steam vented to drive off dissolved gases (also see Skimming Steam Boilers).

Water Systems: Before filling the system, make sure all the system air vents are closed. The boiler and the entire system should be filled and heated to approximately 210°F for about 15 minutes to drive off dissolved gases. Open the hand water feed valve and beginning on the lower floor, open the air vents (one at a time) until water starts to flow through them; then, close the vent. Repeat this throughout the building until all heat distributing units are filled with water. Close the hand water feed valve when the correct boiler pressure is reached. After the system is in operation, keep the system filled with water by occasionally opening the air vents allowing any entrapped air to escape and adding enough make up water to maintain system pressure. If your system is provided with a purge valve located in the return piping, connect a garden hose to the drain valve located above the purge valve. Close the purge valve and open the hand water feed valve and allow the system to purge all air. Where the system has more than one circuit, purge each circuit separately by opening each balancing valve one at a time. When the system is purged of all air, close the drain cock and open the purge valve. Fill the boiler and the entire system to the correct pressure. **Air in the system can interfere with circulation of water and prevent the heat distributing units from properly heating.**

OPERATING INSTRUCTIONS

(See Figures 2, 3 and 4)

TO SHUT OFF

For MGB BOILERS close manual main and pilot shut-off valve(s) and turn off main electrical switch. ALL OTHER BOILERS may be shut off either temporarily or completely:

1. FOR TEMPORARY SITUATIONS the main burner can be shut off by turning gas cock dial to pilot position. Pilot

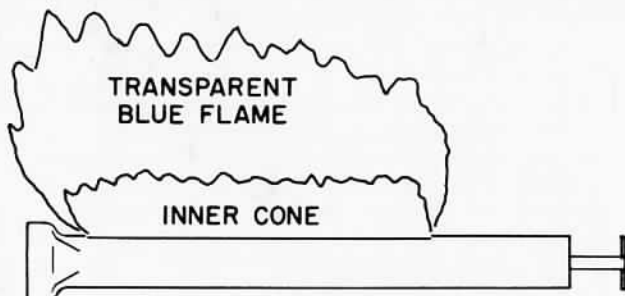


FIGURE 1
MAIN BURNER FLAME

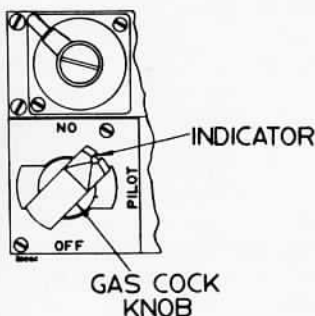


FIGURE 2
TYPICAL GAS COCK DIAL

will remain lit ready for return to normal service without relighting.

2. FOR COMPLETE SHUT DOWN depress gas cock dial and turn clockwise to the "off" position. Both pilot and main burner will shut off.

CAUTION TO PLACE IN OPERATION

FOR TYPE MGB BOILERS make sure that both the manual main shut-off gas valve(s) and the pilot gas valve(s) have been closed for at least five minutes before lighting. FOR ALL OTHER BOILERS depress and turn gas cock dial to "off" position and wait at least five minutes before lighting. This will allow gas which may have accumulated in the main burner compartment to escape.

1. Turn thermostat to "off" position or lowest position on the dial.
2. FOR MGB BOILERS open pilot gas valve(s), remove front access panel(s) and place a lighted match or paper to the left of the pilot. Press the red button on the pilot switch box flush to collar and hold for 60 seconds before releasing. Light remaining pilot(s) in the same manner and replace access panels. FOR ALL OTHER BOILERS depress gas cock dial and light pilot. With pilot burning, hold gas cock dial depressed for approximately 60 seconds before releasing.

NOTE: If pilot does not remain lighted, repeat step two allowing a longer period of time before releasing the red button (for MGB) or gas cock dial (adjust pilot flame if necessary).

3. FOR MGB BOILERS turn on main electric switch. FOR ALL OTHER BOILERS turn gas cock dial to "on" position.
4. FOR MGB BOILERS open manual main shut-off gas valve(s).
5. Move indicator on room thermostat to desired temperature.

Figure 1 below shows a proper main burner flame. The upper cone of the flame should be of a transparent blue color. Yellow-orange streaks are usually caused by burning dust and should not be confused with the pale yellow tipping usually caused by the lack of primary air. The proper amount of primary air for combustion has been built into your burners to eliminate the need for air adjustments. If yellow tipping occurs, contact your serviceman to determine its cause and make necessary adjustments.

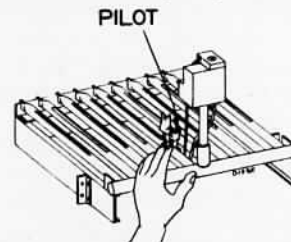


FIGURE 3

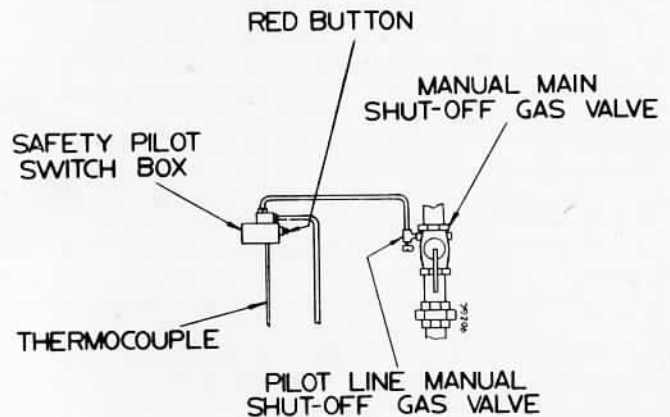


FIGURE 4
MGB BOILER

IF BOILER FAILS TO START, CHECK THE FOLLOWING

1. Check for loose connections and blown fuses.
2. Be sure the high limit control setting is above the boiler temperature or pressure.
3. Be sure thermostat is set above room temperature.
4. Make sure that gas is turned on at meter.
5. Be sure pilot is burning.
6. Make sure manual main shut-off valve is open.
7. If the above checks do not eliminate the trouble, call in your serviceman.

MEASURE GAS INPUT TO BOILER

For proper aspiration, the gas pressure at the burner manifold should be 3.5 inches water column for natural gases and 10.0 inches water column for propane gases.

Measure the gas input to the boiler by reading the rate of flow at the gas meter. Be sure other appliances connected to the same meter are shut off. The measured rate of flow in cubic feet per hour multiplied by the heating value in B.T.U. per cubic foot of the gas employed should check with the A.G.A. design certified input shown on the boiler rating plate. If the actual input is within 5 percent of the rated input, adjust the gas pressure regulator to obtain the required gas flow. To adjust the gas input, remove the cap on the pressure regulator and turn the adjusting screw clockwise to increase the gas flow or counter-clockwise to decrease the gas flow. If the actual input is more than 5 percent off the rated boiler input, change orifice sizes and again measure the gas input to the boiler.

CAUTION

SKIMMING STEAM BOILERS

Never use petroleum based chemical compounds in your boiler. It is essential to clean new steam heating boilers to remove oil, grease, chips and other foreign material in order to avoid overheating of boiler metal, foaming and priming, and high maintenance costs on strainers, traps, and vents. The boiler installer should use the following procedure:

1. Close the valve in the building steam supply main(s).
2. Provide a full sized skim line, with valve, from the boiler skim tapping and run this line to a convenient floor drain.
3. Fire the boiler at a low rate sufficient to keep the boiler at steaming temperature allowing the steam, along with entrained water and impurities, to discharge through the skim piping to the drain.
4. Feed the water to the boiler as required to maintain proper water level in the gauge glass. It may be necessary to cycle the burners to prevent a rise in steam pressure above several pounds.
5. Continue the boiling and skimming process until the water leaving the skim line is clear of all grease, oil and impurities. It is not unusual for this process to take 1, 2 or more hours. On unusual jobs, the skimming procedure may require repeating one or more times. **DO NOT USE CHEMICAL CLEANERS.**
6. Drain boiler and, while boiler is warm but NOT HOT and without steam pressure, remove safety valve and insert a hose nozzle into the opening. Flush all interior surfaces of the boiler with water under full pressure until all traces of dirt and impurities are removed and the drain water runs clear.
7. Replace safety valve; close drain cock, fill with fresh water to the water line. Start burners and steam for 15 minutes to remove all dissolved gases; stop burners.
8. Drain boiler sufficiently to remove skim piping; plug skim tapping; refill boiler to waterline.
9. To prevent the return of impurities to the boiler from piping systems, waste all condensate for several days or

until no impurities are contained in the condensate. **NOTE — FEEDWATER MUST BE SUPPLIED TO MAINTAIN THE CORRECT WATER LEVEL. A LOW WATER CUTOFF MUST BE OPERATIVE!**

CAUTION

BOILER SERVICE AND MAINTENANCE

Leaks in the boiler and piping system must be repaired at once. Makeup water in large quantities may damage the boiler after an extended period of time. If leaks occur, stop the burners and gradually reduce steam boiler pressure or water boiler temperature.

Foaming or priming may occur in a steam boiler and cause large quantities of water to pass out into the steam main. It can be observed by violent fluctuations of water level, in the gauge glass. This trouble may be caused by dirt, oil, or sediment in the water, too high a water level, a high overload (i.e., the sudden release of boiler steam pressure into the mains by action of fast operating valves), or the addition of too much water treatment. With serious foaming or priming, stop the burners and decrease boiler load. Then alternately blow down and slowly feed fresh water several times. If trouble persists, it may be necessary to skim the boiler one or more additional times.

Any problem in regard to large amounts of makeup water, extreme foaming or priming, scale in the boiler, or internal corrosion or pitting, should be referred to a company specializing in boiler water chemistry. **DO NOT** try "Homemade cures" or boiler "patent medicines" on the market under various trade names, or serious damage to the boiler, personnel, and property may result.

Frequently check the water level in the gauge glass of steam boilers, and check the operating pressure of steam or water boilers. On steam boilers, test the low water cut-off by opening its blowdown valve to remove dirt, rust, and sediment, and observe that burners stop as the water level approaches the bottom of the water gauge glass. If water gauge glass leaks or breaks, close both gauge glass cocks and replace with heavy pyrex glass. **DO NOT USE THIN-WALLED GLASS TUBING;** open gauge cocks after repairing. On steam boilers, open the water gauge glass blowdown valve and blow clear; close blowdown valve.

Periodically, check the seal afforded by any gasket installed on the boiler or heating system (i.e., heater, heater opening cover plate, circulator, etc.). If necessary, tighten all bolts sufficiently to stop leaking.

Periodically test boiler safety or relief valve to make sure it opens at the proper pressure. Make sure the valve reseats and does not leak. Replace any defective or leaking valve. **DO NOT DRAIN BOILER** during periods of shutdown unless heating system is exposed to freezing temperatures. On steam boilers, open boiler blowdown valve and flush till clear while under steam pressure. On water boilers open boiler drain cock to remove impurities that have settled to the bottom of the boiler. Refill as required to correct water line for steam boilers or the correct pressure for water boilers. Turn off all electrical power connections to the boiler and its auxiliaries. Clean all carbon, rust, and other deposits from the fire-side of the boiler heating surfaces (see Cleaning Boiler Heating Surfaces). If the water side of the boiler must be cleaned or inspected, open the blowdown valve and drain the boiler. Hose the inside of the boiler with high pressure water to remove sludge and sediment, flush again. Replace plugs and jacket panels when all traces of sludge and sediment have been removed. Dry insides of boiler thoroughly, or refill with fresh water and heat to release dissolved gases (see Filling Steam and Water Boilers). Repeated draining and filling can lead to the same consequences as adding too much makeup water — this is mainly true in areas where water is

"hard" and the same precautions must be used as indicated earlier in this section.

SHUT DOWN OF BOILER

1. Turn off main electric switch in the boiler electrical circuit.
2. Close manual main shut-off gas valve.
3. Close pilot valve.
4. Open the boiler drain cock to remove impurities; it may be necessary to drain one or two gallons of water to remove all sediment. Refill the boiler to the proper water level or pressure (see Filling Steam and Water Boilers). Boiler water does not have to be crystal clear for proper operation, but be free of sludge or sediment.
5. During severe winter weather have heating system operation checked periodically, or thoroughly drain heating and plumbing systems to avoid freezing.

CLEANING THE MAIN BURNERS

At the start of every heating season, inspect and, if necessary, remove and clean the main burners of any dust or lint or any other foreign particles that may have accumulated in the burners. To clean the burners, attach a piece of metal tubing to the hose end of a hand air pump (or tire pump). Bend one end of the metal tubing to form a 90 degree angle and pump air through the openings at the top of each main burner.

VENTING SYSTEM

The complete boiler venting system, from draft hood to the top of vent or chimney, must be inspected for proper function and for any deterioration of materials.

- a. With the boiler firing, hold a small flame (ie, candle) below the lower edge of the draft hood "skirt"; if the flame does not blow out, but burns undisturbed, the vent system is functioning properly. If the flame blows out or flickers drastically, the vent system must be checked from top-to-bottom for obstructions or other causes of improper venting.
- b. Inspect all portions of the venting systems for deterioration from corrosion, physical damage, sagging, etc. Correct all conditions found.

CLEANING THE BOILER HEATING SURFACES

At the end of each heating season, inspect the boiler flueways; if soot is found contact your serviceman to determine the cause and make the appropriate adjustments. Use the following procedure for cleaning the flueways:

1. Close all main and pilot gas valves.
2. Remove the top jacket panel (for MGB boilers, remove the front and interior jacket panels).
3. Remove the flue collector (for MGB boilers, remove the front cleanout cover(s). For PCG and CGM series 7 boilers, remove the baffle plates from between the boiler sections).
4. Cover all burners with heavy paper or cardboard or remove the burners.
5. Thoroughly clean all heating surfaces with a flue brush.
6. Remove all soot from the Boiler.
7. Replace the burners or remove the paper or cardboard.
8. Replace the cleaned baffle plates and/or flue collector or cleanout cover(s).
9. Replace the jacket panel(s).
10. Start the boiler following the start-up procedures outlined earlier.

WATER BOILER CONTROLS

CIRCULATOR CARE:

Never operate the circulator without water.

- A. Follow lubricating instructions on circulators that are provided with oil cups or oil holes.
- B. Follow venting instructions on circulators with water lubricated bearings which require no oil.

BOILER PRESSURE: The initial fill pressure of the entire system should be according to the design requirements of the heating system (in general, the fill pressure for most heating systems would be to 12 pounds per square inch). The water, as it is heated, will expand, possibly to the relief valve pressure. This can be considered normal when initially filling the boiler. Normal system pressure will fluctuate when the system is cold, and rise to maximum pressure (somewhat below the relief valve opening pressure) when the system is hot.

BOILER WATER TEMPERATURE: Modern hot water heating systems with "closed" type expansion tanks may operate at water temperatures up to 250°F. The high limit control must be set according to the design requirements on the heating system, during severe winter weather, this temperature setting may be raised or lowered depending upon characteristics of your system.

COMPRESSION TANK: Compression tanks are employed with hot water heating systems to accept the increased water volume which results from heating the system water. The compression tank on a closed hot water system should provide adequate pressurization under all system operating conditions. Frequent opening of the pressure relief valve can be the result of an undersized compression tank because provisions for the necessary expanded water volume has not been provided. The open type expansion tank and drain piping should not be located in any area where freezing temperatures could occur. Compression tanks may be of the open, closed, or closed diaphragm type.

Open Type Expansion Tanks: are located above the highest heat distributing unit in the system usually in a closet or attic space and equipped with a gauge glass and an overflow pipe to a drain.

Closed Type Expansion Tanks: are welded gas-tight and are usually located just above the boiler but may be located at any point in the heating system. To utilize the built-in air elimination system on the boiler, this type of tank must be piped to the air elimination tapping on the boiler. When the system is initially filled with water, a cushion of air is trapped within the tank and this air cushion is compressed to the initial fill pressure. When the system is heated, the expansion of water further compresses the air cushion and provides the space required for the additional water volume. A rapid increase in boiler pressure with frequent opening of the pressure relief valve during warm-up of the system usually indicates a "waterlogged" compression tank. To correct this condition, partially drain the compression tank to re-establish the air cushion.

Closed Diaphragm Type Compression Tanks: are welded gas-tight and a rubber diaphragm is employed to separate air from water. This type of tank may be located at any point within the heating system but is usually located as close to the boiler as possible. Where this type tank is employed, an automatic air eliminating device should be installed in the air elimination tapping on the boiler to provide system air control. Before the initial fill of the heating system, the tank should be charged with air (by means of a tire pump) to a pressure equal to the initial fill pressure; tank pressure may be checked by means of an air pressure gauge. As the system is filled, water will not enter the tank until the system pressure exceeds the tank charge. When the system is heated, the expansion of water causes the diaphragm to further compress the air cushion and space is provided for the additional water volume. Since the water is separated from the air cushion by means of a diaphragm, air loss (waterlogging) is eliminated.

ATTENTION HEATING CONTRACTOR: This warranty is for the building owner and should be given to him or placed in sight near the boiler.

Weil-McLain Limited Warranty for Residential Cast Iron Water Boilers

First Year — Limited Warranty for Residential Water Boilers:

Weil-McLain warrants that its residential water boilers are free from defects in material and workmanship for one year from the date of installation. If any parts are found to be defective in manufacture, Weil-McLain will repair or replace the defective parts.

Second Through Tenth Years — Limited Warranty for the Cast Iron Sections of its Residential Water Boilers:

Weil-McLain warrants that the cast iron sections of its residential water boilers are free from defects in material and workmanship for the second through the tenth years following the date of installation. If any sections are then found to be defective, Weil-McLain will repair or replace the original cast iron sections.

Eleventh Through Twentieth Years — Limited Warranty for the Cast Iron Sections of its Residential Water Boilers:

Weil-McLain warrants that the cast iron sections of its residential water boilers are free from defects in material and workmanship for the eleventh through twentieth years following the date of installation. If any sections are then found to be defective, Weil-McLain will repair or replace the original cast iron sections upon the payment of a proportionate charge based upon the time the defective sections have been in service. The proportionate charge will be equal to the appropriate percentage of the list price of such sections at the time the warranty claim is made, determined as follows: 11th year — 5%; 12th year — 10%; 13th year — 15%; 14th year — 20%; 15th year — 25%; 16th year — 30%; 17th year — 35%; 18th year — 40%; 19th year — 45%; 20th year — 50%.

This warranty is subject to the condition that the residential water boiler must have been installed by a heating contractor whose principal occupation is the sale and installation of plumbing, heating and/or air conditioning equipment.

This warranty does not cover:

1. Boilers installed in buildings other than one or two family dwelling units.
2. Components that are part of the heating system but were not furnished by Weil-McLain as a part of the residential water boiler.

3. The workmanship of any installer of Weil-McLain's residential water boilers. In addition, this warranty does not assume any liability of any nature for unsatisfactory performance caused by improper installation.
4. Any costs for labor for removal and reinstallation of the alleged defective part, transportation to Weil-McLain if necessary, and any other materials necessary to perform the exchange.
5. Improper burner adjustments, control settings, care or maintenance. Information is included in the Installation Instructions, Start-Up, Service and Maintenance Instructions, and other printed technical material furnished by Weil-McLain with the boiler.

This warranty does not extend to anyone except the first purchaser at retail and only when the boiler is in the original installation site.

IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY SHALL BE LIMITED TO THE DURATION OF THE EXPRESS WARRANTY. WEIL-McLAIN EXPRESSLY DISCLAIMS AND EXCLUDES ANY LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above limitations and exclusions may not apply to you.

For prompt warranty service, notify the installer who, in turn, will notify the Weil-McLain distributor from whom he purchased the boiler. If this action does not result in warranty service, contact Weil-McLain Customer Services Department, Blaine Street, Michigan City, Indiana 46360, with details in support of the warranty claim. Alleged defective part or parts must be returned through trade channels in accordance with the Weil-McLain procedure currently in force for handling returned goods for the purpose of inspection to determine cause of failure. Weil-McLain will furnish the new part(s) to an authorized Weil-McLain distributor who, in turn, will furnish the part(s) to the heating contractor who installed the boiler. If you have any questions about the coverage of this warranty, contact Weil-McLain at the address below.

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

WEIL-McLAIN

A Division of Wylain, Inc.
Customer Services Department
Blaine Street
Michigan City, Indiana 46360

