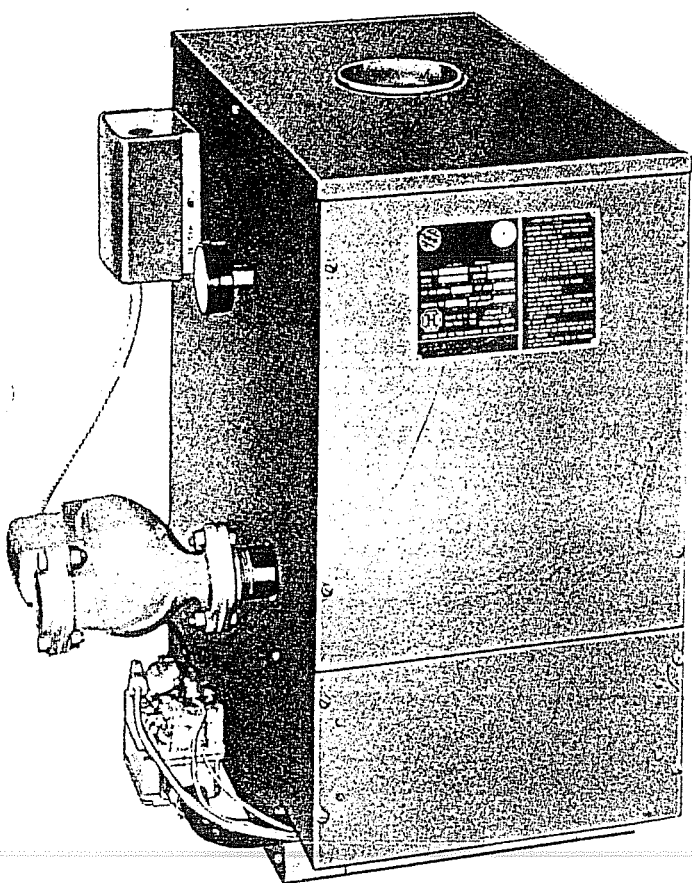


KEEP THIS MANUAL NEAR BOILER

INSTALLATION MANUAL AND OPERATING INSTRUCTIONS



SERIES B CAST IRON GAS FIRED BOILERS

For Forced Hot Water



A. G. A. Certified for natural and propane gases — meets National Safety Requirements.



Tested and capacity rated in accordance with the Code of The Institute of Boiler and Radiator Manufacturers.



Constructed and hydrostatically tested in accordance with ASME Boiler Code.

READ THESE INSTRUCTIONS CAREFULLY BEFORE STARTING INSTALLATION



UTICA RADIATOR CORPORATION
UTICA, NEW YORK



SERIES B GAS FIRED BOILER For Forced Hot Water

RATINGS, DATA AND DIMENSIONS NATURAL GAS and PROPANE GAS

Boiler No.	*A.G.A. Rating		I=B=R Net Output BTU Per Hr.	†Net Rating Sq. Ft. HW.	Pump Size	*Flue Size	Gas Inlet	Dimensions (Inches)						Size of Tapping		Number of Burners	Main Orifice		▲Air Cush. Tank
	Input BTU Per Hr.	Gross Output BTU Per Hr.						A	B	C	D	E	F	Flow	Ret.		Nat.	Prop.	
P-GB-75	75,000	60,000	52,200	350	1½"	5"	½"	14¾"	29¾"	12¾"	45¾"	7½"	23¾"	1½"	1½"	2	#36	#50	15
P-GB-100	100,000	80,000	69,600	465	1½"	5"	½"	14¾"	31¾"	15	48¾"	7½"	26¾"	1½"	1½"	2	⅝"	#46	15
P-GBT-100	100,000	80,000	69,600	465	1½"	5"	½"	18¾"	31¾"	15	48¾"	7½"	26¾"	1½"	1½"	2	⅝"	#46	15
P-GB-125	125,000	100,000	87,000	580	1½"	6"	½"	18¾"	29¾"	12¾"	49¾"	9½"	23¾"	1½"	1½"	3	#33	#50	15
P-GBT-125	125,000	100,000	87,000	580	1½"	6"	½"	22¾"	29¾"	12¾"	49¾"	9½"	23¾"	1½"	1½"	3	#33	#50	15
P-GB-150	150,000	120,000	104,300	695	1½"	6"	½"	18¾"	31¾"	15	52¾"	9½"	26¾"	1½"	1½"	3	⅝"	#46	15
P-GBT-150	150,000	120,000	104,300	695	1½"	6"	½"	22¾"	31¾"	15	52¾"	9½"	26¾"	1½"	1½"	3	⅝"	#46	15
P-GB-175	175,000	140,000	121,700	810	1½"	7"	½"	22¾"	29¾"	12¾"	53¾"	11½"	23¾"	1½"	1½"	4	#32	#50	30
P-GBT-175	175,000	140,000	121,700	810	1½"	7"	½"	26¾"	29¾"	12¾"	53¾"	11½"	23¾"	1½"	1½"	4	#32	#50	15
P-GB-200	200,000	160,000	139,100	925	1½"	7"	½"	22¾"	31¾"	15	56¾"	11½"	26¾"	1½"	1½"	4	⅝"	#46	30
P-GBT-200	200,000	160,000	139,100	925	1½"	7"	½"	26¾"	31¾"	15	56¾"	11½"	26¾"	1½"	1½"	4	⅝"	#46	15
P-GB-225	225,000	180,000	156,500	1,045	1½"	8"	¾"	26¾"	29¾"	12¾"	58¾"	13½"	23¾"	1½"	1½"	5	#31	#50	30
P-GBT-225	225,000	180,000	156,500	1,045	1½"	8"	¾"	30¾"	29¾"	12¾"	58¾"	13½"	23¾"	1½"	1½"	5	#31	#50	15
P-GB-250	250,000	200,000	173,900	1,160	1½"	8"	¾"	26¾"	31¾"	15	61¾"	13½"	26¾"	1½"	1½"	5	⅝"	#46	30
P-GBT-250	250,000	200,000	173,900	1,160	1½"	8"	¾"	30¾"	31¾"	15	61¾"	13½"	26¾"	1½"	1½"	5	⅝"	#46	30
P-GB-275	275,000	220,000	191,300	1,275	1½"	8"	¾"	30¾"	29¾"	12¾"	58¾"	15½"	23¾"	1½"	1½"	6	#31	#50	60
P-GB-300	300,000	240,000	208,700	1,390	1½"	8"	¾"	30¾"	31¾"	15	61¾"	15½"	26¾"	1½"	1½"	6	⅝"	#46	60

STANDARD EQUIPMENT (numbers correspond to circled numbers on dimensional drawing): 1. Draft Hood. 2. Boiler Jacket. 4. High Limit Control. (M-H L-4080B). 5. Theraltimeter Gauge. 6. Wiring Harness & Low Voltage Thermostat. 7. Package Boiler. 8. Circulator with return piping to boiler. 9. Thermopile. 10. Non-linting Safety Pilot. 11. Main Gas Burner (cast iron drilled port). 12. Combination Gas Unit (includes automatic gas valve, manual shut-off valve, gas pressure regulator (except on propane) and adjustable pilot cock and filter). 13. A.S.M.E. Relief Valve. 17. Drain Cock. 18. Combustible Floor Shield.

OPTIONAL EQUIPMENT: 3. Jacket Extension, Tankless Heater (add prefix T before number), including special tankless heater section. 4. Triple Aquastat instead of High Limit Control, Flow Regulator. 4. Aquastat Relay instead of High Limit Control. Air Elimination System (add suffix L) consisting of: 14. Air Vent. 15. Air Purger. 16. Air Cushion Tank. Zone Valve Package, which includes choice of 2 or more zone valve headers, mounted and wired. Transformer furnished to operate up to 6 valves.

NOTE: When 24 volt system is used, the following are furnished: 4. High Limit Controls (Triple Aquastat or Aquastat Relay optional). 9. Thermocouple. 12. Combination Gas Control.

EXPLANATORY NOTES

All boilers approved for installation on combustible floors.

*Recommended chimney height 20 feet. In special cases where conditions permit, chimney height may be reduced to 10 feet.

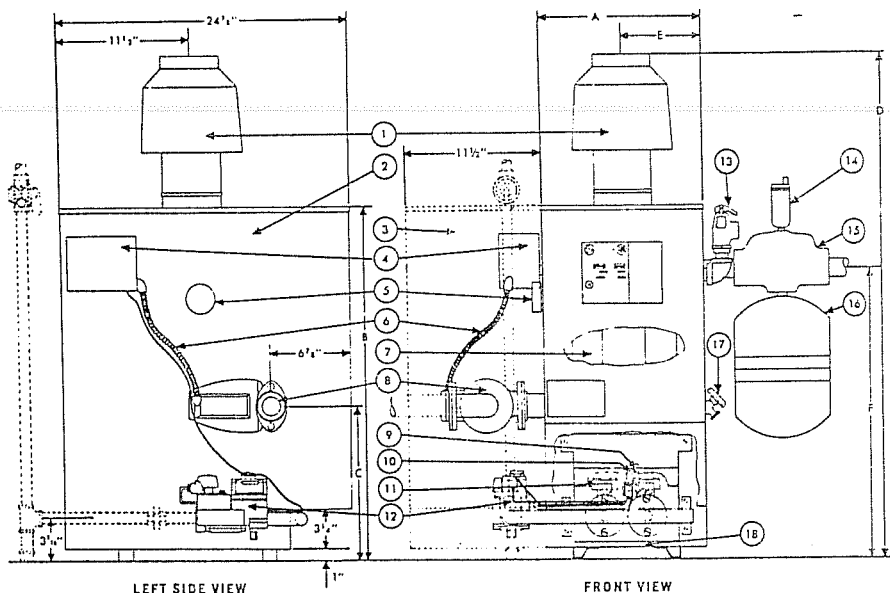
*For elevations above 2000 feet, ratings should be reduced at a rate of 4% for each 1000 feet above sea level.

▲Tank sized for non-ferrous baseboard or radiant panel systems. Increase size for cast iron baseboard and radiation.

†Based on 170° temperature in radiators.

‡For sea level to 2000 feet altitude.

Net I=B=R ratings include 25% allowance for normal piping and pick-up load. Manufacturer should be consulted on installations having other than normal piping and pick-up requirements.



1. Draft Hood	19. Theraltimeter Gauge
5" GB- 75, GB-100, 6" GB-125, GB-150	20. Cable Clamp
7" GB-175, GB-200, 8" GB-225-GB-300	21. Circulator
2. Jacket Top (1" Glass Wool Insulation)	22. Return Piping
3. Aquastat Relay L-8048, L-8024	23. Removable Burner Access Panel
Dual Aquastat L-4062	24. Pilot Armored Cable
High Limit Control L-4080	25. Bleed Tubing
4. Heyco Adaptor and Clamps	26. Combination Gas Controls† (See Table Below)
5. Shut Off Valve (Locate per local code by installer)	27. L. H. End Section (Less tankless)
6. Boiler Tie Rod	28. Intermediate Section
7. Low Voltage Cable (Safety Circuit)	29. R. H. End Section
PWC Low Energy 18 Ga.	30. ¾" A.S.M.E. Relief Valve
8. Gas Piping (furnished by installer)	31. Flow Pipe
9. Boiler Section Hold Down Bolts	32. ¾" Drain Cock
10. Base	33. Heat Reflector
11. Pilot Gas Tubing	34. Gas Pilot (Q314A)
12. Sediment Trap (By installer)	35. Thermopile (Q313A) M. V. Thermocouple (Q309A)
13. Flue Collector	24 V.
14. Jacket Outlined in Phantom	36. Gas Burner (Cast Iron — Drilled Port)
15. Red Devil Insulators	37. Gas Manifold Pipe
16. Flue Collector Hold Down Bolts	38. Air Shutter
17. Wiring Harness	39. Combustible Floor Shield - - -
18. Jacket Extension with Removable Panel (Optional)	

M. V. Gas Valves			24 Volt Gas Valves			
	Nat. Gas	Propane Gas	Control	Nat. Gas	Propane Gas	Control
GB-75	VS8138A-1016 ¾ x ½ Inlet	VS8138B-1015 ¾ x ½ Inlet	L4080B-1006 L8048B-1099*	V8146A-1017 ¾ x ½ Inlet	V8139B-1014 ¾ x ½ Inlet V8146B-1015 ¾ x ½ Inlet	L8048E-1001 L8048E-1076±
GB-75				V8139A-1016 ¾ x ½ Inlet		L8048E-1001 L8048E-1076±
GB-100 GB-125 GB-150	VS8138A-1016 ¾ x ½ Inlet		L4080B-1006 L8048B-1099*	V8139A-1016 ¾ x ½ Inlet V8146A-1017 ¾ x ½ Inlet		L8048E-1001 L8048E-1076±
GB-175 GB-200				V8146A-1017 ¾ x ½ Inlet V8139A-1016 ¾ x ½ Inlet		
GBT-100 GBT-125 GBT-150 GBT-175 GBT-200			L8024B-1048	V8146A-1017 ¾ x ½ Inlet		L8024E-1033
GB-225 GB-250	VS8138A-1024 ¾"		L4080B-1006 L8048B-1099*	V8146A-1025 ¾"		L8048E-1001 L8048E-1076±
GBT-225 GBT-250			L8024B-1048	V8139A-1024 ¾"		L8024E-1033
GB-275 GB-300			L4080B-1006 L8048B-1099*			L8048E-1001 L8048E-1076±

†Optional for use on Radiant Panel Systems

Check Shipment

Unpack shipment carefully and inspect for damage. All goods are carefully manufactured, inspected, checked and packed by experienced workmen. Our responsibility ceases upon delivery of goods to the carrier in good condition. Any claims for damage, shortages in shipment, or non-delivery must be filed immediately against carrier by the consignee. Claims for errors or shortages in packing must be noted on packing list which must accompany claim. Report shortages at once.

Boiler Location

Locate boiler on level floor as close to flue as possible. The CB series boiler is approved for installation on combustible floors. Install gas boiler in accordance with requirements of local gas company and building, plumbing or other effective codes.

Allow adequate space for cleaning the boiler from the top and for service and adjustment of burners and controls. Allow the following minimum clearances from adjacent building structures—6" from rear, 18" from left side, and 18" from right side. On boilers without tankless heaters 18" clearance is required on front but on boilers with tankless heaters 24" clearance is necessary. There should also be a clearance of 6" from the flue pipe to any combustible surface.

Install flue pipe full size from draft hood to chimney. Slope pipe upward at least $\frac{1}{4}$ " per foot. The flue pipe must not extend beyond the inside of the chimney. When two or more flue pipes from gas appliances connect to a common flue, the area of the common flue should be based on the area of the largest vent connector plus 50% of the areas of the additional vent connections.

If the flue pipe passes through a combustible wall, a vented metal thimble at least 4" larger in diameter than the flue pipe must be installed.

Boiler Room Ventilation

Provision must be made for an adequate supply of air for combustion and ventilation. Special provisions are not necessary when installation is made in a full basement where infiltration will provide sufficient air for these purposes.

When boiler is installed in a tightly enclosed room, provisions for two openings must be made, one near the floor and the other near the ceiling. These openings are to be sized as follows:

A. Openings to adjacent interior space, provide minimum free area of one square inch per 1000 Btuh input, but in no case, less than 100 sq. in.

B. Openings to outdoors, provide minimum free area of one square inch per 2500 Btuh input. Air openings in boiler jacket must not be obstructed.

Erecting Packaged Unit

1. Remove crate sides and top.
2. Remove polyethylene cover from boiler.
3. Lift boiler from skid and place in position.
4. Test for leaks.
5. Connect Flow and Return piping from heating system and gas line from meter according to local gas company rules.
6. Install proper sized expansion tank. Install feed line and pressure reducing valve in accordance with approved method.

7. Keep piping and valves high enough above boiler so that jacket top can be removed for cleaning of flueways.
8. Install Draft hood without alterations on flue outlet. Connect to chimney.
9. Snip and remove wires holding burners in place. Check burners to make sure they are positioned correctly.
10. Refer to instructions on this page and next for additional instructions. See page 6 for "Field Assembly of Boiler."

Detailed adjusting and service instructions for valves, controls and thermostat are shown on the "Specification Data Sheets" packed with this boiler.

Gas Supply Line

Piping for gas supply shall be a separate line from the meter sized as recommended in "Rating Data and Dimensions" on page 2. Long supply lines may require larger pipe size. The union shown in Fig. 1 must be a ground joint or flanged union having packing resistant to the action of liquified petroleum gases.

Pipe dope, used sparingly on male threads only, should be resistant to the action of Liquified Petroleum Gases.

Some local utility companies or codes require the installation of a manual main shut-off five feet above the floor. Such piping is furnished by installer. The installation of a trap at the bottom of a vertical section of piping at the inlet to the boiler is required. (See Fig. 1) Pilot filter is incorporated in combination gas unit.

Electrical Connections

All wiring must comply with the National Electrical Code and local electrical ordinances. If controls are not installed and wired when boiler is shipped connect as shown on page 8 in applicable wiring diagram. A fused disconnect switch is required between boiler and meter.

Line voltage wiring to limit control or relay shall be done with No. 14 Type R wire enclosed in approved conduit or with approved armored cable. If not wired at factory, connect BX harness attached to control to circulator leads with approved connectors. When constant circulation is used see wiring diagram on page 8.

For low voltage wiring to thermostat use approved No. 18 A.W.G. insulated wire. Low voltage wire from limit control is N.E.C. class plastic cable. Connect to gas valve as shown on wiring diagrams on page 8. Wiring diagrams for zone valve installations are furnished with zone valve packages.

Thermostat

Install thermostat on an inside wall where it will not be influenced by drafts, concealed pipes, radiators or other heat sources.

Gas Burners

A cast iron drilled port burner is placed under each flueway for most efficient heating.

The non-linting pilot is so placed between first and second burners from left so that it may easily be lighted through the peep hole in the heat reflector.

The gas valve and controls regularly furnished with this boiler are of the self energized or millivolt type. Twenty four volt controls can be furnished on special order. See table on page 3. Refer to operating instructions before lighting burners. To adjust primary air supply to burner, close air shutter until yellow tip appears on flame. Then open shutter until yellow tip disappears. (Refer to Servicing Burners, Pilots and Gas Valve page 6.)

Adjustment of Gas Input

Refer to "Rating Data and Dimensions" page 2 for the number of burners and orifice size used on each burner. The orifices supplied with the boiler are drilled for the type and heat value of the gas specified to deliver the correct quantity of gas to each burner. The manifold pressure of natural gas should be 3.5" (water gauge) and of propane should be 11" (water gauge).

To check for proper flow of gas to boiler divide the input rate of boiler (see data plate) by the heating value of gas (obtainable from local gas company). This gives the number of cubic feet of gas per hour. With all other gas appliances shut off, determine the flow of gas through the meter for two minutes and multiply by 30 to get hourly flow. Limited adjustment of gas input can be made by removing protective cap on the pressure regulator and turning screw clockwise to increase pressure and input. To decrease pressure and input turn screw counter clockwise. Burner orifices should be changed if the final manifold pressure varies more than plus or minus 0.3 inch water column from the specified manifold pressure. See "Servicing Burners, Pilot and Gas Valve" page 6.

Cleaning Flueways

To clean boiler flueways, remove draft hood, top jacket panel and flue collector cover. Remove or cover burners before cleaning flueways with bristle or wire brush.

Operating Instructions

Before starting boiler, cut wire holding main burners. Check burners to see that they are level, in place on burner support and on orifice holders in front.

Initial Start:

Fill entire system with water and vent air from system. For series loop systems, see page 7.

To Light:

1. Turn room thermostat to lowest setting.
2. Turn electric switch off.
3. CAUTION*: Be sure that gas to pilot and main burners has been off for at least 5 minutes.

4. Open valve on gas line at meter.

5. Purge air from gas piping by disconnecting Pilot Tubing from Pilot Elbow on Combination Gas Unit. Depress Gas Control Knob slightly and turn to pilot position. Keep knob depressed until gas comes from Pilot Elbow. Turn knob to OFF position and reconnect tubing.

6. Test gas line from meter to Combination Gas Unit for leaks at all piping connections and valves. Use soap suds or other approved method.

7. Wait 5 minutes.

8. To light pilot, open peep door in heat reflector, depress Gas Control Knob on Combination Gas Unit and turn to "Pilot" position. Light match, depress knob fully and light pilot through peep hole. Continue to hold knob in for one minute or until pilot stays lighted.

9. Release knob and turn to "ON" position.

10. Turn on electric switch. Turn on circulator if operating on constant circulation.

11. Set thermostat at higher temperature until burners ignite.

12. Test gas manifold and pilot lines for leaks. Use soap suds or other approved method.

13. Adjust manifold pressure, input and primary air supply. (Refer to "Gas Burners" and "Adjustment of Gas Input.")

14. Close "Peep Hole."

15. Reset thermostat for desired temperature and boiler will operate automatically.

16. Set boiler controls as shown under "Sequence of Control Operation" (Page 8).

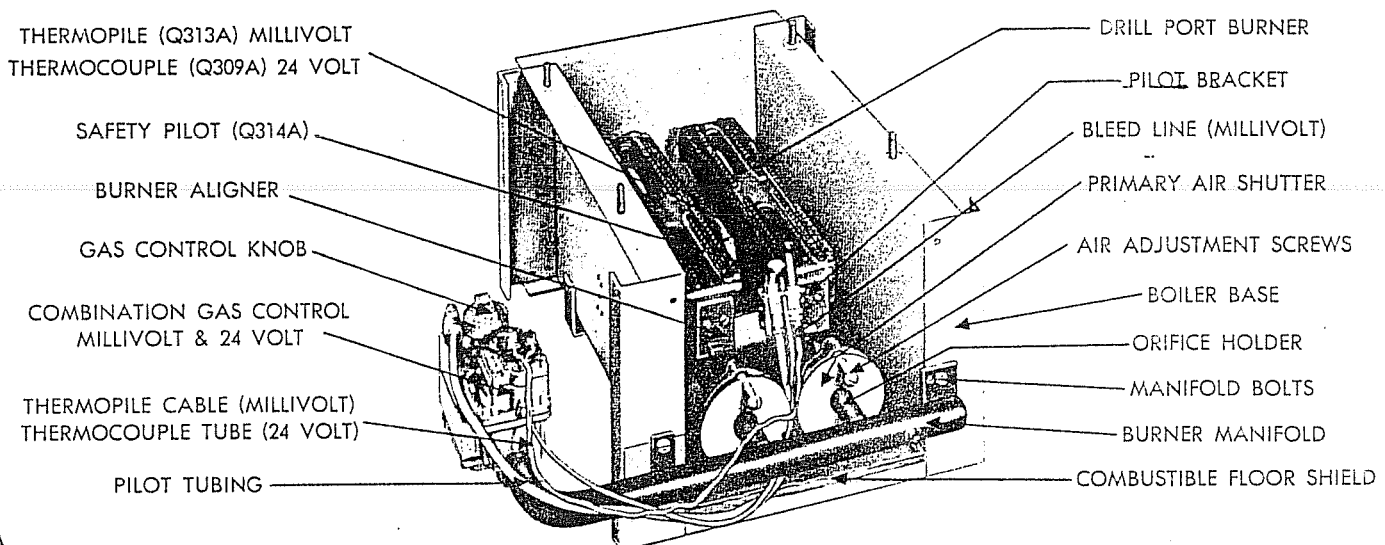
17. Emergency Operation During Power Failure: Refer to instructions attached to jacket.

*Propane gas which is heavier than air does not vent upward naturally. Forced ventilation may be necessary.

To Shut Off:

To shut off gas to main burners, depress Gas Control Knob and turn to pilot position. To shut off pilot, depress knob and turn to OFF position.

Turn off electric switch. Turn off circulator if operated on constant circulation. Set thermostat at low setting.



Series B Boiler Burner-Base Assembly

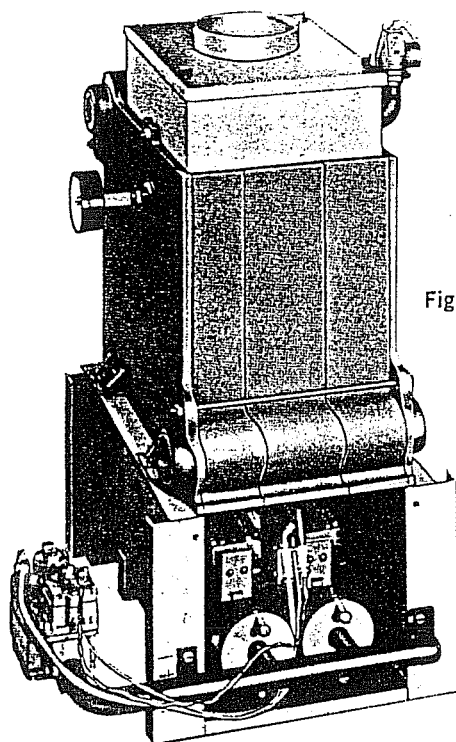


Figure 3

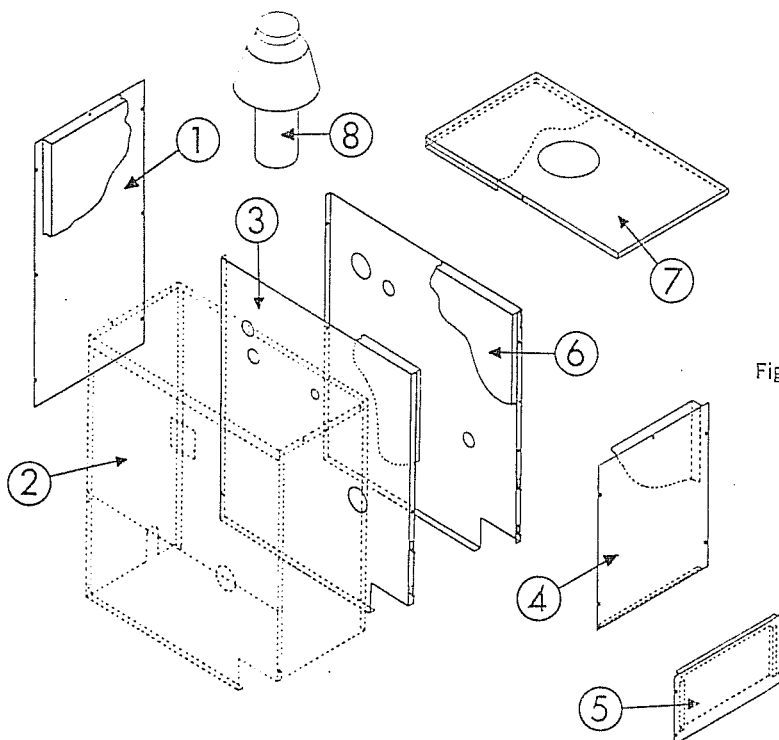


Figure 4

FIELD ASSEMBLY OF BOILER EQUIPPED FOR FORCED CIRCULATION GB-75 to GB-300

1. Install gas manifold pipe and combination gas unit to base using 4— $\frac{1}{4}$ " x $\frac{1}{2}$ " plated self tapping screws. See Fig. 2.
2. Place venturi with air shutters attached in base on burner support.
3. Attach pilot bracket to end of one burner using 2—No. 10-24 R. H. plated slotted machine screws.
4. Attach pilot to pilot bracket using 2—No. 10-32 plated sems.
5. Attach burner aligners to other burners with 2—No. 10-24 R. H. plated slotted machine screws.
6. Place burner without pilot on venturi on left end of base carefully fitting slot of burner aligners on lug of venturi.
7. Place burner with pilot on second venturi from left end of base carefully fitting slot of burner aligner on lug of venturi.
8. Place rest of burners on venturi.
9. Attach pilot tubing to pilot and to combination gas unit. (millivolt and 24 volt)
10. Attach bleed line to combination gas unit (millivolt) and to pilot with bleed tube holder.
11. Connect armored cable of thermopile (millivolt) or thermocouple (24 volt) to combination gas unit.
12. Attach Boiler Section Assembly to base using 4— $\frac{1}{4}$ " nuts and flat washers. See Fig. 3.
13. Attach flue collector to top of section assembly using 2— $\frac{1}{4}$ " flat washers and nuts. Seal to boiler with furnace cement. Fig. 3.
14. Install flow pipe in $\frac{1}{2}$ " pipe tapping in upper right hand corner of R. H. Section. Fig. 1.
15. Install control well in upper left hand corner of L. H. Section.
16. Install insulation for combustible floor shield. Fig. 2.
17. Install heat reflector on base.
18. Fasten L. H. side panel (3) to base using 2— $\frac{1}{4}$ " x $\frac{3}{4}$ " self tapping screws in bottom of panel.
19. Fasten R. H. side panel (6) to base using 2— $\frac{1}{4}$ " x $\frac{3}{4}$ " self tapping screws in bottom angle of panel.
20. Fasten rear panel (1) to rear edges of R. H. and L. H. side panels with sheet metal screws.
21. Fasten top part of front panel (4) to front edges of R. H. and L. H. side panels with sheet metal screws.
22. Place jacket top (7) on jacket and fasten to sides, front and back with sheet metal screws.
23. Install return pipe in $\frac{1}{2}$ " pipe tapping in lower right hand corner of L. H. Section.
24. Install circulator flange and circulator on return line.
25. Install control in control well.
26. Install thermostat gauge in center of L. H. section.
27. Install $\frac{3}{4}$ " nipple, street elbow and $\frac{3}{4}$ " A.S.M.E. relief valve in R. H. section to left of flow line.
28. Install $\frac{3}{4}$ " drain cock in lower left hand corner of R. H. section.
29. Lower front panel of jacket (5) will be installed with 4 wing nuts after pilot is lighted.
30. Install draft hood (8) over flue outlet of boiler and connect pipe full size to chimney.
31. Jacket Extension (2) when used covers circulator, gas valve and controls. (See instructions packed with Jacket Extension.)

Servicing Burners, Pilot and Gas Valve

To gain access to burners, remove lower front panel by removing 4 wing nuts from jacket and lifting panel, then remove 2 small sheet metal screws and remove heat reflector.

Each burner and venturi may be removed by lifting rear of the venturi to clear the burner support and pushing back to clear air shutter from manifold spud.

Disconnect pilot line, thermocouple (24V) or thermopile (millivolt) and bleed line before removing burner with pilot attached.

Orifice spuds may now be removed for replacement.

Combination gas unit and manifold can be removed by disconnecting union on gas line and removing 4— $\frac{1}{4}$ "-20 selftapping screws. (See Fig. 2, Burner base assy.)

FILLING SERIES LOOP BASEBOARD SYSTEM

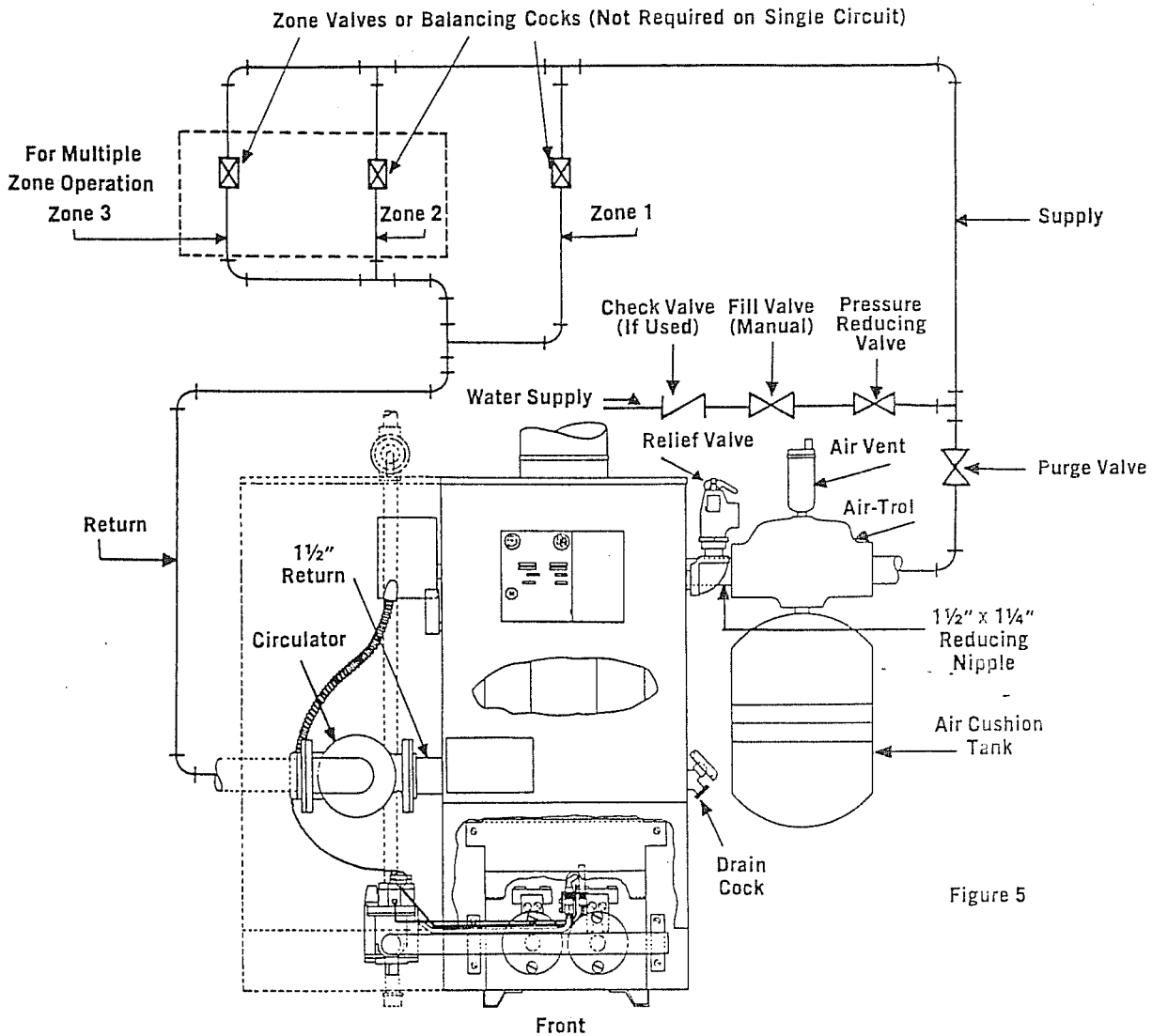


Figure 5

P-GB-75L to P-GB-300L Connections to Series Loop Baseboard Installation

1. Close all zone valves or square head cocks except one to zone being purged.
2. Open drain cock on boiler.
3. Open fill valve.
4. Close purge valve.
5. Hold relief valve open.
6. Allow water to run out of drain cock until zone has been purged of air and filled with water.
7. Open zone valve to second zone, then close first zone valve. Repeat steps 6 and 7 until all zones are purged but have at least one zone valve open at all times. At completion open all zone valves.
8. Close drain cock.
9. When water discharges from relief valve, release lever to allow valve to close.
10. Continue filling system until pressure gauge reads 12 P.S.I.
11. Close fill valve.
12. Open purge valve.

For Use with Cooling Units

When boiler is used in connection with refrigeration systems, it shall be installed so that the chilled medium is piped in parallel with the heating boiler with appropriate valves to prevent the chilled medium from entering the heating boiler. Fig. 6 shows a suggested hook-up. Heating Cycle—Open Valves "A" and "B." Close "C" and "D." Cooling Cycle—Open Valves "C" and "D." Close "A" and "B."

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

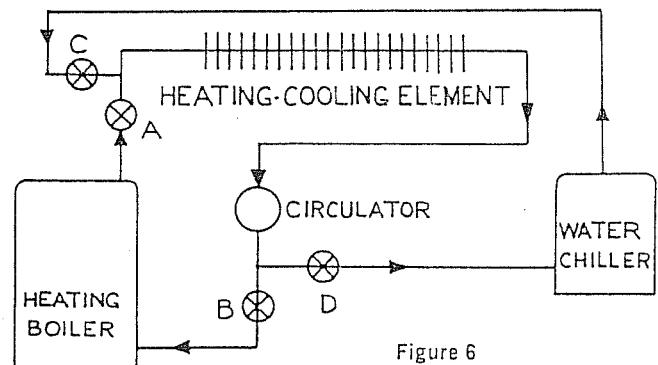
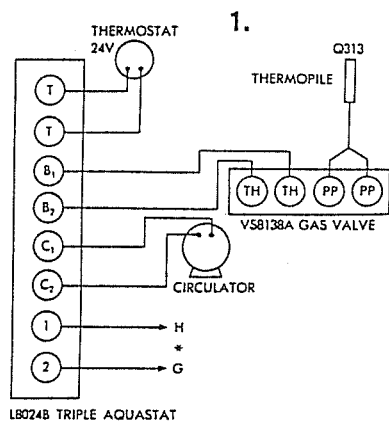


Figure 6

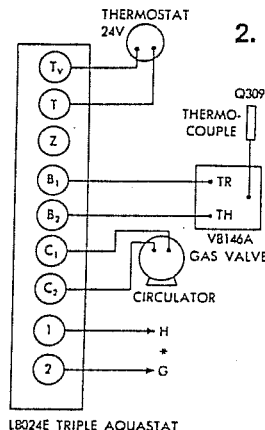


SERIES B GAS FIRED BOILERS WIRING DIAGRAMS

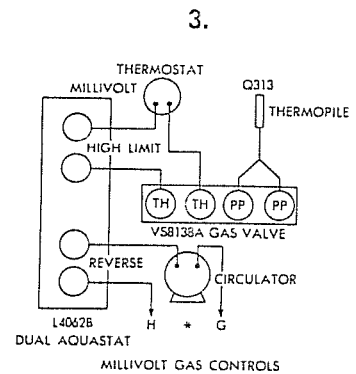
*SINGLE ZONE
WATER SYSTEMS
USING
MINNEAPOLIS-HONEYWELL
CONTROLS



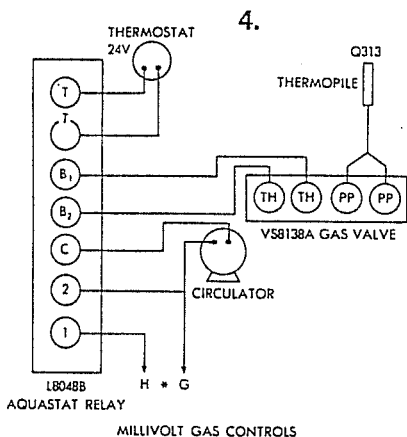
MILLIVOLT GAS CONTROLS



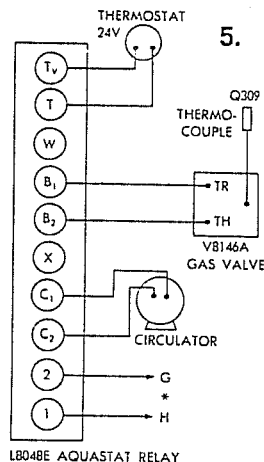
24 VOLT GAS CONTROLS



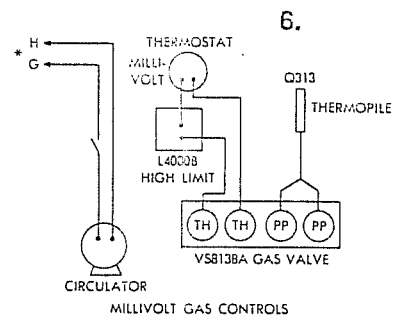
FORCED CIRCULATION ABOVE
MINIMUM BOILER TEMPERATURE



MILLIVOLT GAS CONTROLS



24 VOLT GAS CONTROLS



CONSTANT CIRCULATION

FORCED CIRCULATION WITHOUT TANKLESS HEATER

SEQUENCE OF CONTROL OPERATIONS

1 & 2. When there is a call for heat from the thermostat, the circulator is started through the relay in the Triple Aquastat Relay L8024B (millivolt) or L8024E (24 volt). At the same time the combination gas unit VS8138A (millivolt) or V8146A (24 volt) is energized to bring on the burners. The low limit circulator switch maintains minimum boiler water temperature for domestic hot water service and prevents circulation of heating system water when the boiler water is not hot enough to accommodate both the heating system and the domestic water service. The burner and circulator will operate until the thermostat is satisfied. The high limit switch in the control will stop the burner when the boiler water temperature reaches the high limit setting. When there is no call for heat, the low limit switch in the control will operate the burner to maintain boiler water temperature for the tankless heater.

3. When there is a call for heat from the thermostat, the combination gas unit (VS8138A) is energized to start the burners which will operate until the thermostat is satisfied or until circuit is interrupted by high limit switch. Circulator will operate when boiler temperature is above setting of reverse acting switch in control.

4 & 5. When there is a call for heat from the thermostat, the circulator is started through the relay in the Aquastat Relay L8048B (millivolt) or L8048E (24 volt). At the same time the combination gas unit VS8138A (millivolt) or V8146A (24 volt) is energized to light the burners. The burners and circulator will operate until the thermostat is satisfied. The high limit switch in the control will stop the burners only when the boiler temperature reaches the high limit setting.

6. When there is a call for heat from the thermostat, the combination gas unit VS8138A (millivolt) is energized to light the burners. The burners will operate until the thermostat is satisfied unless the circuit is interrupted by the High Limit Aquastat (L4080B). The circulator operates continuously during the heating season.

*DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

CAUTION: No outside sources of electric power shall be connected to the millivolt circuits.

On larger size boilers use gas valves shown on page 3.

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