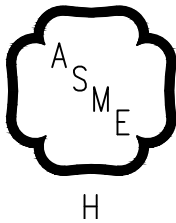


INSTALLATION, OPERATING AND SERVICE INSTRUCTIONS CG-E™ SERIES GAS BOILER



BEFORE INSTALLATION: READ THIS MANUAL

SAVE THESE INSTRUCTIONS

Installing contractor and homeowner should read and be informed as to the proper installation and operation of this boiler. The manufacturer will not be responsible for improper installation or operation. This manual and all associated instruction material should be conspicuously posted near the boiler.

For service or repairs to boiler, call your heating contractor. When seeking information on boiler, provide Boiler Model Number and Serial Number as shown on Rating Label.

Boiler Model Number CG __ E	Boiler Serial Number	Installation Date
Heating Contractor		Phone Number
Address		



New Yorker®
RESIDENTIAL HEATING BOILERS

The City of New York requires a Licensed Master Plumber supervise the installation of this product.

The Massachusetts Board of Plumbers and Gas Fitters has approved the CG-E™ Series Boiler. See the Massachusetts Board of Plumbers and Gas Fitters website, http://license.reg.state.ma.us/pubLic/pl_products/pb_pre_form.asp for the latest Approval Code or ask your local Sales Representative.

The Commonwealth of Massachusetts requires this product to be installed by a licensed Plumber or Gas fitter.

The following terms are used throughout this manual to bring attention to the presence of hazards of various risk levels, or to important information concerning product life.

DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death, serious injury or substantial property damage.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor injury or property damage.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death, serious injury or substantial property damage.

NOTICE

Indicates special instructions on installation, operation, or maintenance which are important but not related to personal injury hazards.

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Table 1A: Dimensions and Connections

Boiler Model	Depth	Width	Height	Supply NPT (inch)	Return NPT (inch)	Vent (inch)	Gas NPT (inch)	Relief Valve NPT (inch)	Drain NPT (inch)
CG30E	32	14	40	1¼	1¼	4	½	¾	¾
CG40E	32	16	40	1¼	1¼	5	½	¾	¾
CG50E	32	19	40	1¼	1¼	6	½	¾	¾
CG60E	32	22	40	1¼	1¼	6	½	¾	¾
CG70E	32	25	40	1¼	1¼	7	¾	¾	¾
CG80E	32	28	40	1¼	1¼	7	¾	¾	¾
CG90E	32	31	40	1¼	1¼	8	¾	¾	¾

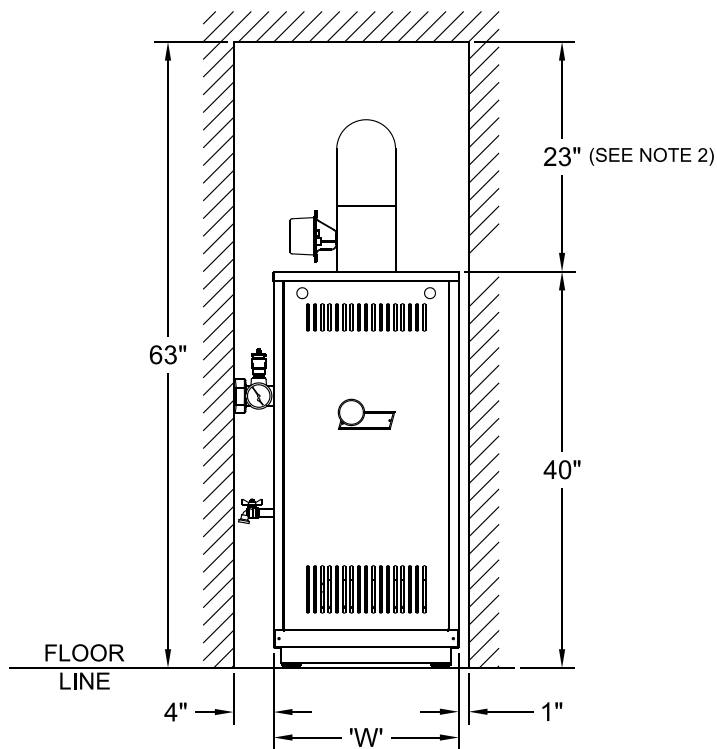
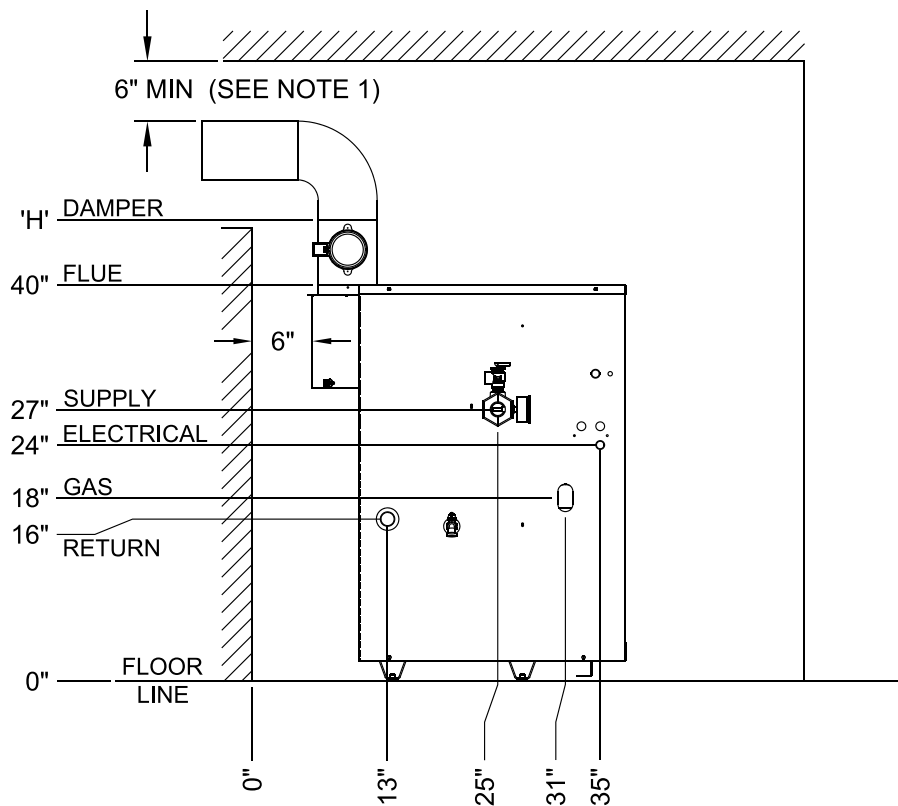
Table 1B: Inputs, Weights and Volumes

Boiler Model	Input (MBH) ⁽¹⁾	Shipping Weight (lbs)	Empty Weight (lbs)	Water Content (gal)
CG30E	70	254	180	2
CG40E	105	304	231	3
CG50E	140	357	284	4
CG60E	175	405	332	5
CG70E	210	462	382	6
CG80E	245	518	438	7
CG90E	280	564	484	8

⁽¹⁾ Input ratings can be used for elevations up to 2000 ft. Refer to System Start-up and Checkout Sections for elevations 2000 ft. or higher.

Electrical Requirements: 120VAC, 60 Hz, 1-ph, Less than 12A

Maximum Allowable Working Pressure - 50 psi. Boiler shipped from factory with a 30 psi relief valve.



MODEL	'W'	'H'
CG30E	14"	45"
CG40E	16"	45"
CG50E	19"	45-1/2"
CG60E	22"	45-1/2"
CG70E	25"	46"
CG80E	28"	46"
CG90E	31"	47"

NOTES:

1. MINIMAL RADIAL DISTANCE AROUND VENT PIPE AND BREECHING FOR SINGLE-WALL METAL PIPE VENT CONNECTOR. OTHERWISE, FOLLOW VENT CONNECTOR MANUFACTURER'S RECOMMENDED CLEARANCES.
2. ADD HEIGHT REQUIRED TO MAINTAIN 6" CLEARANCE FROM ALL BREECHING COMPONENTS.

Figure 1: Minimum Clearance to Combustible Materials and Alcove Dimensions

I. Pre-Installation

WARNING

Carefully read all instructions before installing boiler. Failure to follow all instructions in proper order can cause personal injury or death.

- A. Inspect shipment** carefully for any signs of damage. All equipment is carefully manufactured, inspected and packed. Our responsibility ceases upon delivery of boiler to carrier in good condition. Any claim for damage or shortage in shipment must be filed immediately against carrier by consignee. No claims for variances or shortages will be allowed by Boiler Manufacturer, unless presented within sixty (60) days after receipt of equipment.
- B. Installation must conform** to the requirements of the authority having jurisdiction. In the absence of such requirements, installation must conform to *National Fuel Gas Code*, ANSI Z223.1/NFPA 54.
- C. Appliance is design certified for installation on combustible flooring.** The boiler must not be installed on carpeting.
- D. Provide clearance between boiler jacket and combustible material** in accordance with local fire ordinance. Refer to Figure 1 for minimum clearance from combustible material for alcove installation. Provide 1/2" clearance from water piping to combustible materials.
- E. Provide practical service clearances.** A minimum of 24" from the left side and front jacket panels is recommended for servicing but may be reduced to minimums shown in Figure 1.

- F. Install on level floor.** For basement installation provide concrete base if floor is not level or if water may be encountered on floor around boiler.

CAUTION

ASSURE THAT THE FRONT AIR DAM is in place and undamaged. A damaged front air dam will negatively affect the performance of this boiler, which can cause serious property damage, personal injury or death.

- G. Protect gas ignition system components** from water (dripping, spraying, rain, etc.) during boiler operation and service (circulator replacement, condensate trap, control replacement, etc.).
- H. Provide combustion and ventilation air** in accordance with the section "Air for Combustion and Ventilation," of the *National Fuel Gas Code*, ANSI Z223.1/NFPA 54, or applicable provisions of local building codes.

WARNING

Adequate combustion and ventilation air must be provided to assure proper combustion.

- I. Do not install boiler where gasoline** or other flammable vapors or liquids, or sources of hydrocarbons (i.e. bleaches, cleaners, chemicals, sprays, paint removers, fabric softeners, etc.) are used or stored.

II. Unpack Boiler

CAUTION

Do not drop boiler. Do not bump boiler jacket against floor.

- A.** Move boiler to approximate installed position.
- B.** Remove all crate fasteners.
- C.** Lift outside container and remove with all other inside protective spacers and bracing. Save two of the wooden slats from the container sleeve for use in Steps E and F.
- D.** Remove all boiler hold-down fasteners.
- E.** Tilt the boiler to one side and slide a wooden slat under the two raised feet.
- F.** Tilt the boiler to the other side and slide another wooden slat under the two raised feet.
- G.** Slide the boiler forward or backward off the skid using the two wooden slats as runners.
- H.** Move boiler to its permanent location.

III. Water Piping and Trim

WARNING

Failure to properly pipe boiler may result in improper operation and damage to boiler or building.

- A. Design and install boiler and system piping** to prevent oxygen contamination of boiler water. Oxygen contamination sources are system leaks requiring addition of makeup water, fittings, and oxygen permeable materials in distribution system. Eliminate oxygen contamination by repairing system leaks, repairing fittings, and using non-permeable materials in distribution system.
- B. Install circulator** with flanges, gaskets and bolts provided.
- C. Install Safety Relief Valve.** See Figure 2. Safety Relief Valve must be installed with spindle in vertical position.

WARNING

Safety relief valve discharge piping must be piped near floor to eliminate potential of severe burns. Do not pipe in any area where freezing could occur. Do not install any shut-off valves.

- D. Connect system supply and return piping** to boiler. Refer to Figures 2, 5 and 6. Also consult Residential Hydronic Heating Installation and Design I=B=R Guide. Maintain minimum ½ inch clearance from hot water piping to combustible materials.

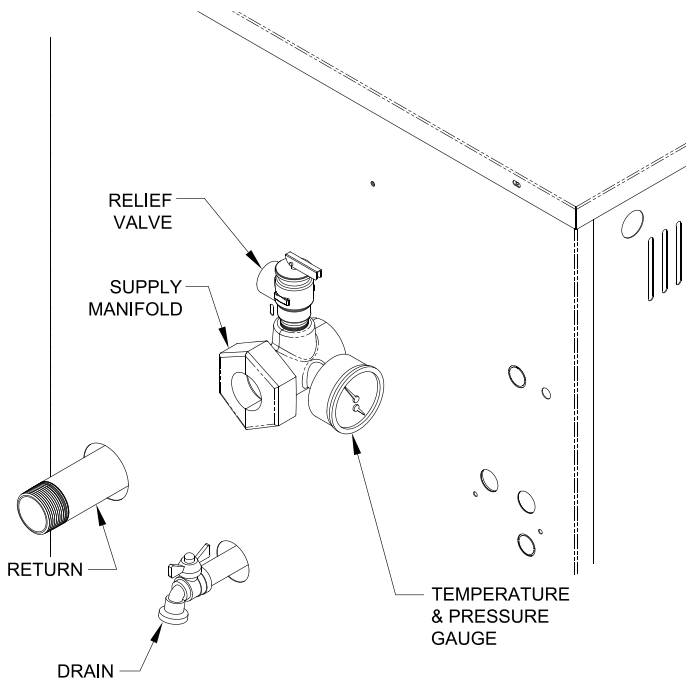


Figure 2: Near Boiler Piping

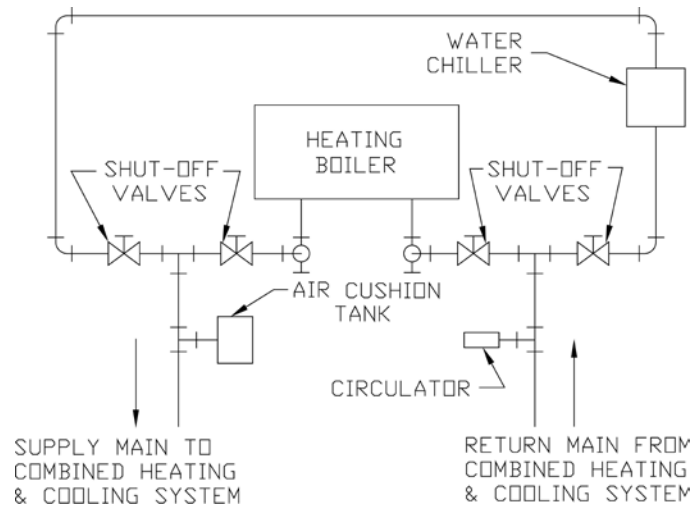


Figure 3: Recommended Piping for Combination Heating & Cooling (Refrigeration) Systems

- E. If boiler is used in connection with refrigeration systems,** boiler must be installed with chilled medium piped in parallel with the heating boiler using appropriate valves to prevent chilled medium from entering boiler. See Figure 3. Also consult Residential Hydronic Heating Installation and Design I=B=R Guide.
- F. If boiler is connected to heating coils** located in air handling units where they may be exposed to refrigerated air, boiler piping must be equipped with flow control valves or other automatic means to prevent gravity circulation of boiler water during operation of cooling system.
- G. Use a boiler bypass** if the boiler is to be operated in a system which has a large volume or excessive radiation where low boiler water temperatures may be encountered (i.e. converted gravity circulation system, etc.).

CAUTION

Boiler return water cannot be lower than 130°F for proper function.

Install bypass between boiler supply and return in near boiler piping as shown in Figures 5 and 6. Bypass should be same size as the supply and return lines with valves located in bypass and supply outlet as illustrated in Figures 5 and 6 in order to regulate water flow to maintain higher boiler water temperatures. Set by-pass and boiler supply valves to half throttle position to start. Operate boiler until system water temperature reaches normal operating range.

Adjust valves to provide 180° to 200°F supply water temperature. Opening the boiler supply valve will raise system temperature, while opening by-pass valve will lower system supply temperature.

H. If it is required to perform a long term pressure test of the hydronic system, the boiler should first be isolated to avoid a pressure loss due to the escape of air trapped in the boiler.

To perform a long term pressure test including the boiler, ALL trapped air must first be removed from the boiler.

A loss of pressure during such a test, with no visible water leakage, is an indication that the boiler contained trapped air.

I. Optional LWCO Installation

WARNING

DO NOT ATTEMPT to cut factory wires to install an aftermarket Low Water Cut Off (LWCO). Only use connections specifically identified for Low Water Cut Off.

In all cases, follow the Low Water Cut Off (LWCO) manufacturer's instructions.

1. A low water cutoff is required to protect a gas-fired hot water boiler when any connected heat distributor (radiation) is installed below the top of the hot water boiler (i.e. baseboard on the same floor level as the boiler). In addition, some jurisdictions require the use of a LWCO with a hot water boiler as a redundant safety control.

It is recommended that the LWCO control is installed above the boiler to provide the highest level of protection. However, where the LWCO control is approved by the LWCO control manufacturer for installation in a high boiler tapping of a water boiler, the use of the listed LWCO control is permitted when it is installed according to the LWCO manufacturer's instructions.

2. The recommended location for a LWCO on gas hot water boilers is above the boiler, in the supply piping. The minimum safe water level of a water boiler is at the uppermost top of the boiler; that is, it must be full of water to operate safely.
3. Typically, in residential applications, a probe type LWCO is used instead of a float type, due to their relative costs and the simplicity of piping for a probe LWCO.
4. Piping and fittings required to install LWCO are **field supplied**.

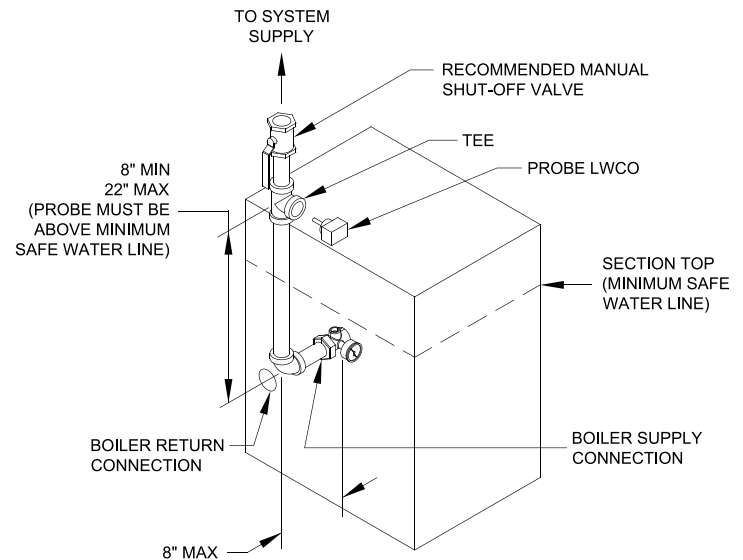


Figure 4: Recommended Probe LWCO Location

5. When constructing a piping tree to install LWCO select fittings (tees, elbows etc) and nipples to have the same size (NPT) as boiler supply connection. At minimum, 1-1/4" tee with 3/4" branch outlet is required to connect the probe LWCO to the supply piping. See Figure 4. **DO NOT REDUCE THE SIZE OF NEAR BOILER SUPPLY FITTINGS AND NIPPLES.**
6. Installation of manual shutoff valve located above the LWCO and the boiler is recommended to allow servicing. Thus LWCO probe can be removed for inspection without draining the heating system. An annual inspection of the probe is recommended.
7. The presence of water covering properly installed LWCO probe will cause the normally open contact of the LWCO to close, thus providing continuity of the 24 VAC service to the boiler gas valve. When water level drops below probe, LWCO contact opens up breaking 24V supply to gas valve and preventing the boiler to fire.
8. CG-E Series gas hot water boilers have a "plug-in" provision in factory wiring that will accept optional 24VAC probe LWCO harness connector. The optional LWCO kit (P/N 104083-01) includes 24VAC probe LWCO, Harness and Instructions addressing piping, wiring and testing after installation.

Figure 5: Recommended Water Piping for Zone Valve Zoned Heating Systems

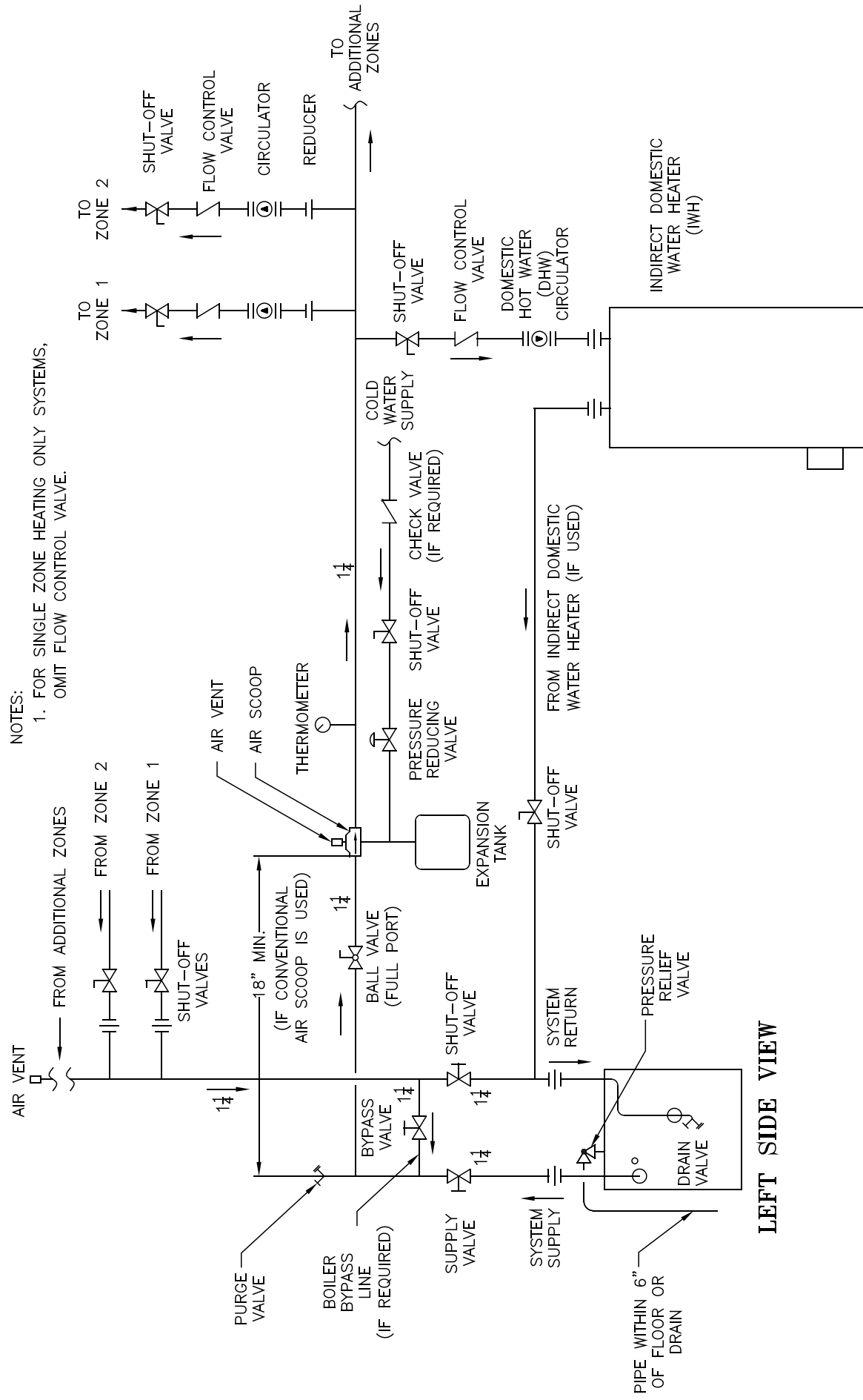


Figure 6: Recommended Water Piping for Circulator Zoned Heating Systems

IV. Venting

A. Install Vent Damper

OPEN THE VENT DAMPER CARTON and remove the Installation Instructions. READ THE INSTALLATION INSTRUCTIONS THOROUGHLY before proceeding.

The automatic gas control valve supplied on each CG-E Series boiler provides the redundancy referenced in the vent damper Installation Instructions.

CAUTION

Do not use one vent damper to control two heating appliances.

1. The vent damper must be the same size as the outlet of the Draft Hood supplied with the boiler (see Table 1A). Unpack the damper carefully - DO NOT FORCE IT CLOSED! Forcing the damper may damage the gear train and void the warranty.
2. Mount the vent damper assembly onto the canopy/diverter. (Refer to Figure 7 and to instructions packed with the vent damper for specific instructions). Do not modify either the draft hood or vent damper.

NOTICE

Provide adequate clearance for servicing.

3. Locate vent damper position indicating means to be visible following installation.

WARNING

Provide 6" minimum clearance between damper and combustible construction.

4. Plug the factory harness vent damper connector into damper motor polarized receptacle.

DANGER

Inspect existing chimney before installing boiler. Failure to clean or replace perforated pipe or tile lining will cause severe injury or death.

B. Inspect chimney and remove any obstructions or restrictions. Clean chimney if previously used for solid or liquid fuel-burning appliances or fireplaces.

C. Install vent system in accordance with "Venting of Equipment" of the *National Fuel Gas Code*, ANSI Z223.1/NFPA 54, or applicable provisions of local building codes. The CG-E Series boiler is a Category I, draft hood equipped appliance.

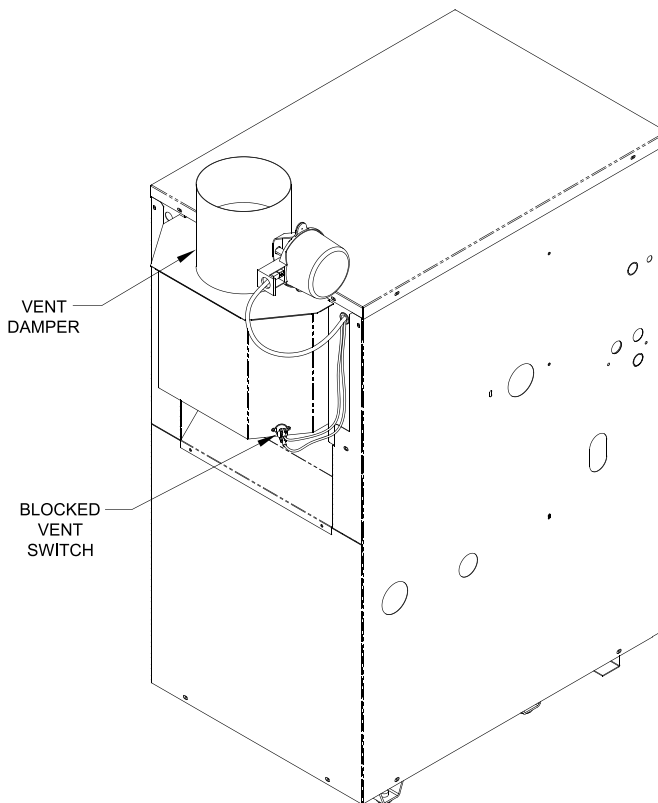


Figure 7: Vent Damper Installation

WARNING

D. If an Existing Boiler is Removed:

When an existing boiler is removed from a common venting system, the common venting system is likely to be too large for proper venting of the appliances remaining connected to it.

At the time of removal of an existing boiler, the following steps shall be followed with each appliance remaining connected to the common venting system placed in operation, while the other appliances remaining connected to the common venting system are not in operation:

- a. Seal any unused openings in the common venting system.
- b. Visually inspect the venting system for proper size and horizontal pitch and determine there is no blockage or restriction, leakage, corrosion, and other deficiencies which could cause an unsafe condition.
- c. Insofar as is practical, close all building doors and windows and all doors between the space in which the appliances remaining connected to the common venting system are located and other spaces of the

building. Turn on clothes dryers and any appliance not connected to the common venting system. Turn on any exhaust fans, such as range hoods and bathroom exhausts, so they will operate at maximum speed. Do not operate a summer exhaust fan. Close fireplace dampers.

- d. Place in operation the appliance being inspected. Follow the Lighting (or Operating) Instructions. Adjust thermostat so appliance will operate continuously.
- e. Test for spillage at the draft hood relief opening after 5 minutes of main burner operation. Use the flame of a match or candle, or smoke from a cigarette, cigar or pipe.

- f. After it has been determined that each appliance remaining connected to the common venting system properly vents when tested as outlined above, return doors, windows, exhaust fans, fireplace dampers and any other gas-burning appliance to their previous condition of use.
- g. Any improper operation of the common venting system should be corrected so the installation conforms with the *National Fuel Gas Code*, ANSI Z223.1/NFPA 54. When resizing any portion of the common venting system, the common venting system should be resized to approach the minimum size as determined using the appropriate tables in Chapter 13 of the *National Fuel Gas Code*, ANSI Z223.1/NFPA 54.

V. Gas Piping

A. Size gas piping. Design system to provide adequate gas supply to boiler. Consider these factors:

1. Allowable pressure drop from point of delivery to boiler. Maximum allowable system pressure is $\frac{1}{2}$ psig. Actual point of delivery pressure may be less; contact gas supplier for additional information. Minimum gas valve inlet pressure is listed on rating label.
2. Maximum gas demand. Consider existing and expected future gas utilization equipment (i.e. water heater, cooking equipment).
3. See Table 1B for boiler inputs.

B. Connect boiler gas valve to gas supply system.

1. Use methods and materials in accordance with local plumbing codes and requirements of gas supplier. In absence of such requirements, follow *National Fuel Gas Code*, ANSI Z223.1/NFPA 54.
2. Use thread (joint) compounds (pipe dope) resistant to action of liquefied petroleum gas.

3. Install sediment trap, ground-joint union and manual shut-off valve upstream of boiler gas control valve. See Figure 8.

4. All above ground gas piping upstream from manual shut-off valve must be electrically continuous and bonded to a grounding electrode. Do not use gas piping as grounding electrode. Refer to *National Electrical Code*, ANSI/NFPA 70.

C. Pressure test. The boiler and its gas connection must be leak tested before placing boiler in operation.

1. Protect boiler gas control valve. For all testing over $\frac{1}{2}$ psig, boiler and its individual shutoff valve must be disconnected from gas supply piping. For testing at $\frac{1}{2}$ psig or less, isolate boiler from gas supply piping by closing boiler's individual manual shutoff valve.
2. Locate leaks using approved combustible gas detector, soap and water, or similar nonflammable solution. Do not use matches, candles, open flames, or other ignition source.

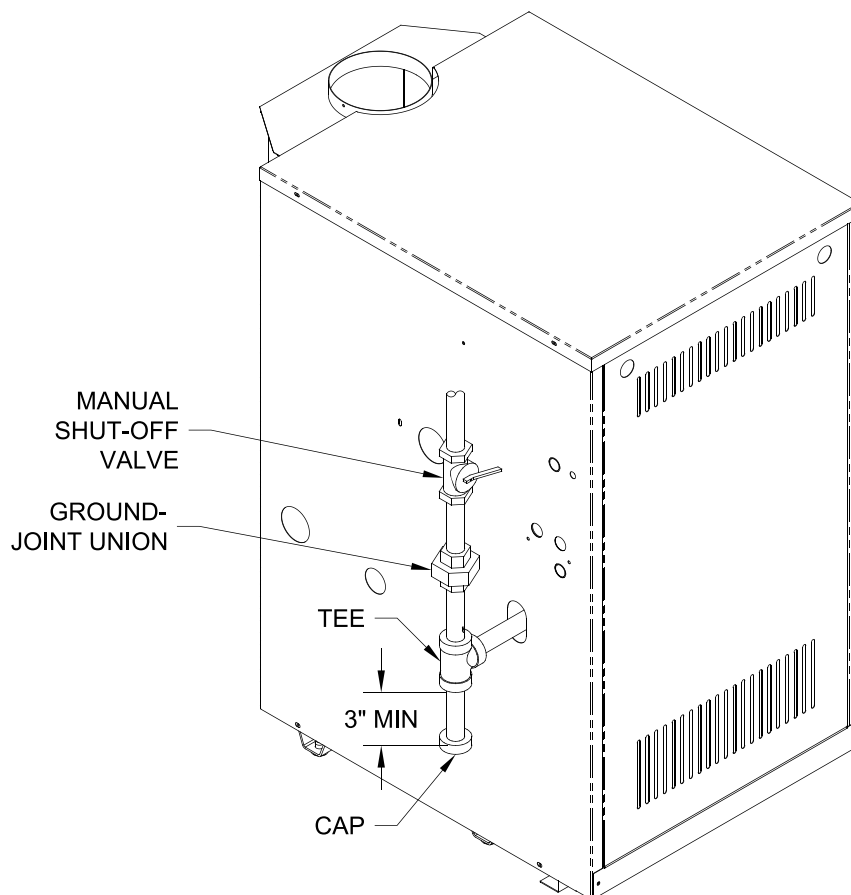


Figure 8: Pilot and Gas Piping

VI. Electrical

- A. General.** Install wiring and electrically bond boiler to ground in accordance with requirements of authority having jurisdiction, or in absence of such requirements, with the *National Electrical Code*, ANSI/NFPA 70.
- B. Install thermostat.** Locate on inside wall approximately 4 feet above floor. Do not install on outside wall, near fireplace, or where influenced by drafts or restricted air flow, hot or cold water pipes, lighting fixtures, television, or sunlight. Allow free air movement by avoiding placement of furniture near thermostat.
- C. Wire boiler.** Boiler is rated for 120 VAC, 60 hertz, less than 12 amperes. A separate electrical circuit must be run from the main electrical service with an over-current device/disconnect in the circuit. A service switch is recommended and may be required by some local jurisdictions. Connect to black and white wires and green ground screw. See Figures 9 and 10.

- D. For installations using zone valves** provide separate transformer for zone valve wiring. Consult zone valve manufacturer for assistance. See Figure 11.

CAUTION

This boiler contains controls which may cause the boiler to shut down and not restart without service. If damage due to frozen pipes is a possibility, the heating system should not be left unattended in cold weather; or appropriate safeguards and alarms should be installed on the heating system to prevent damage if the boiler is inoperative.

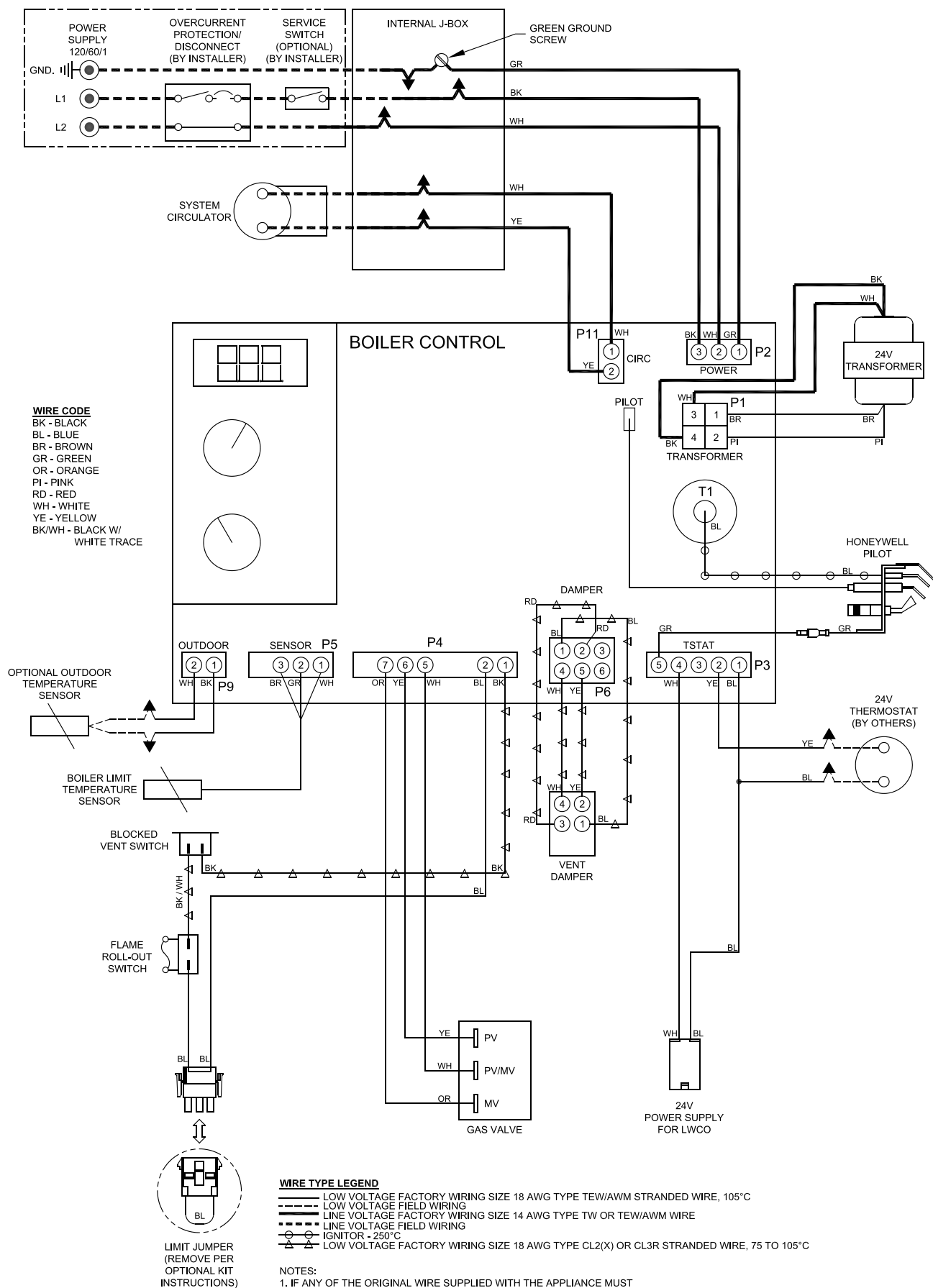


Figure 9: Wiring Connection Diagram

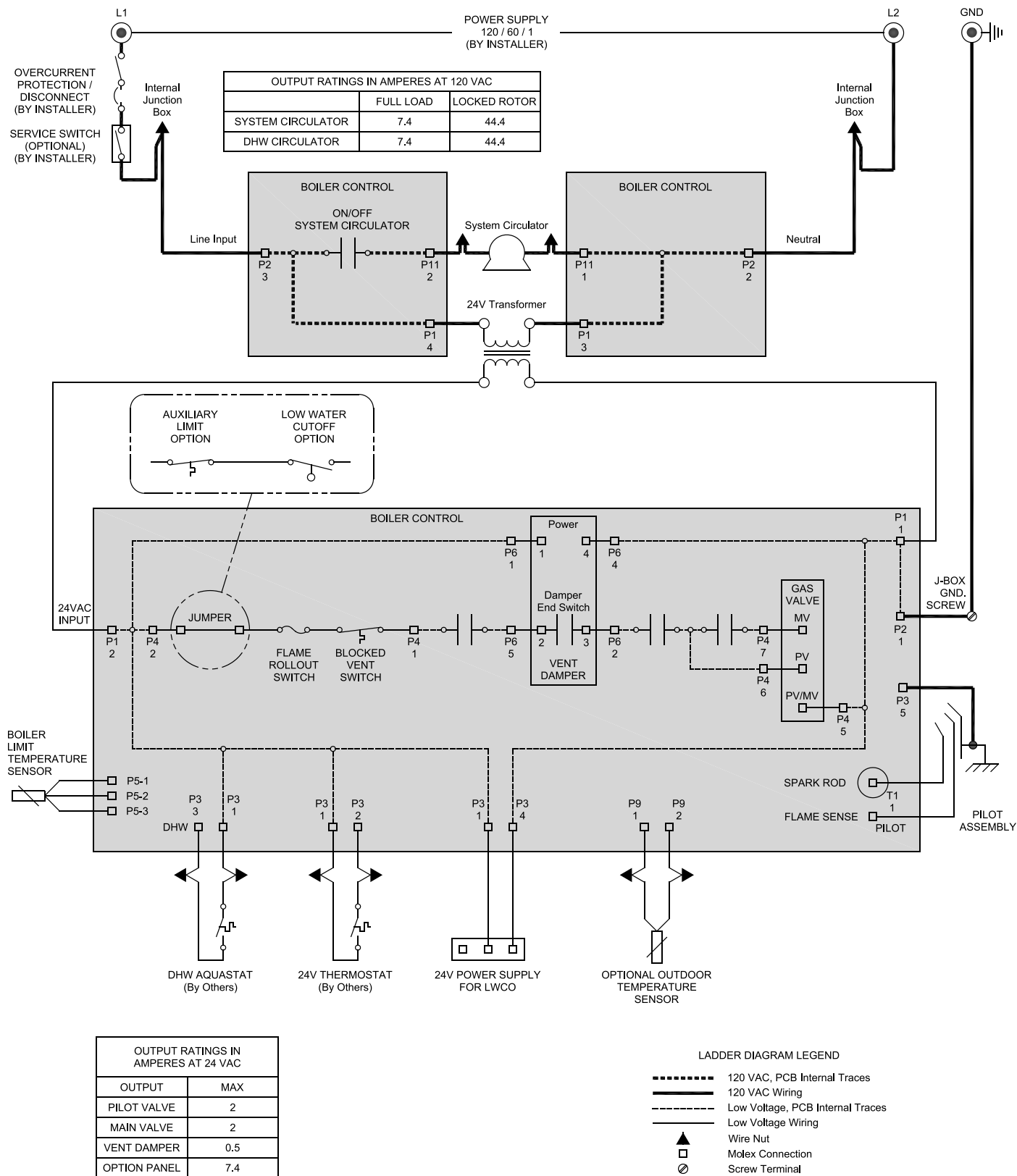


Figure 10: Schematic Ladder Diagram

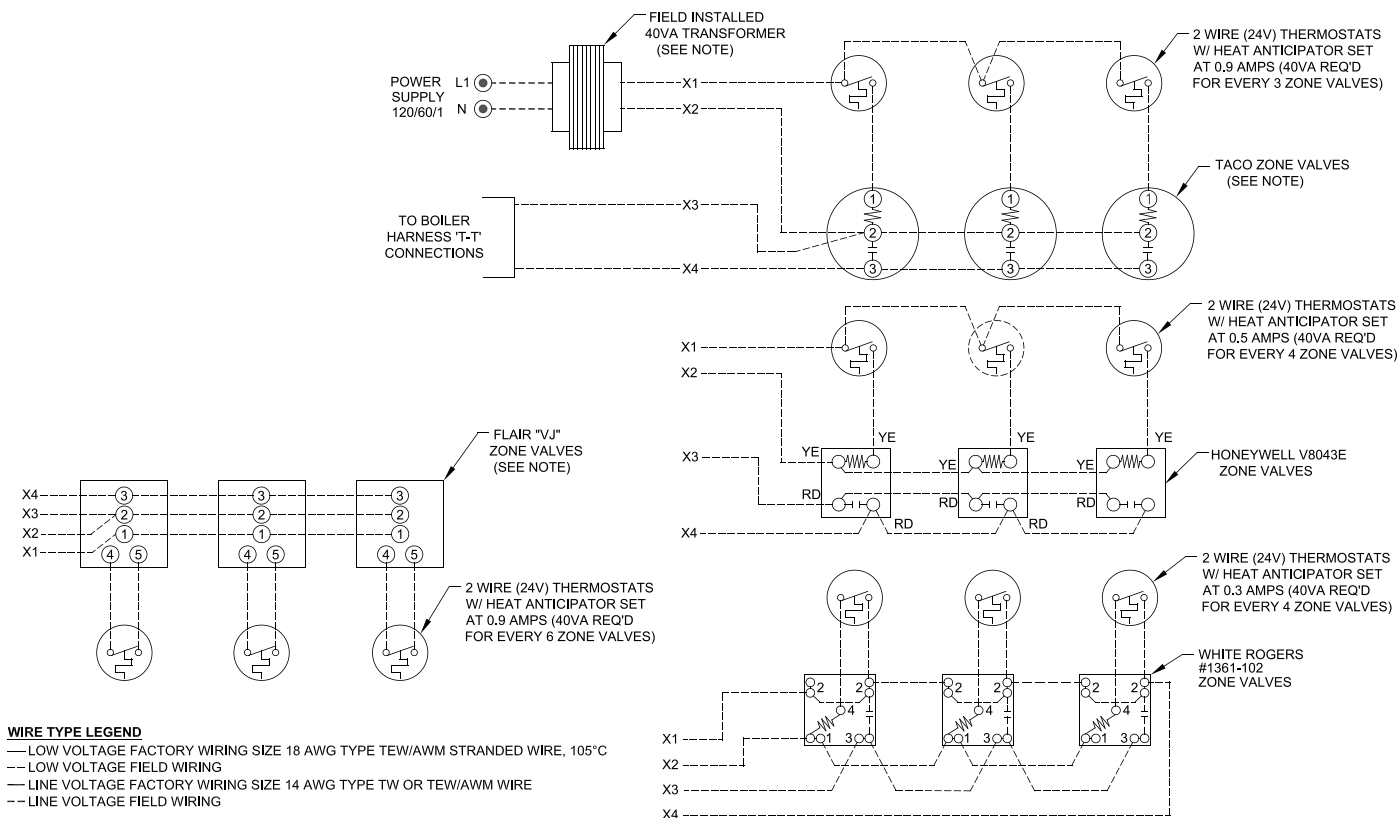


Figure 11: Wiring Schematic, Zone Valves

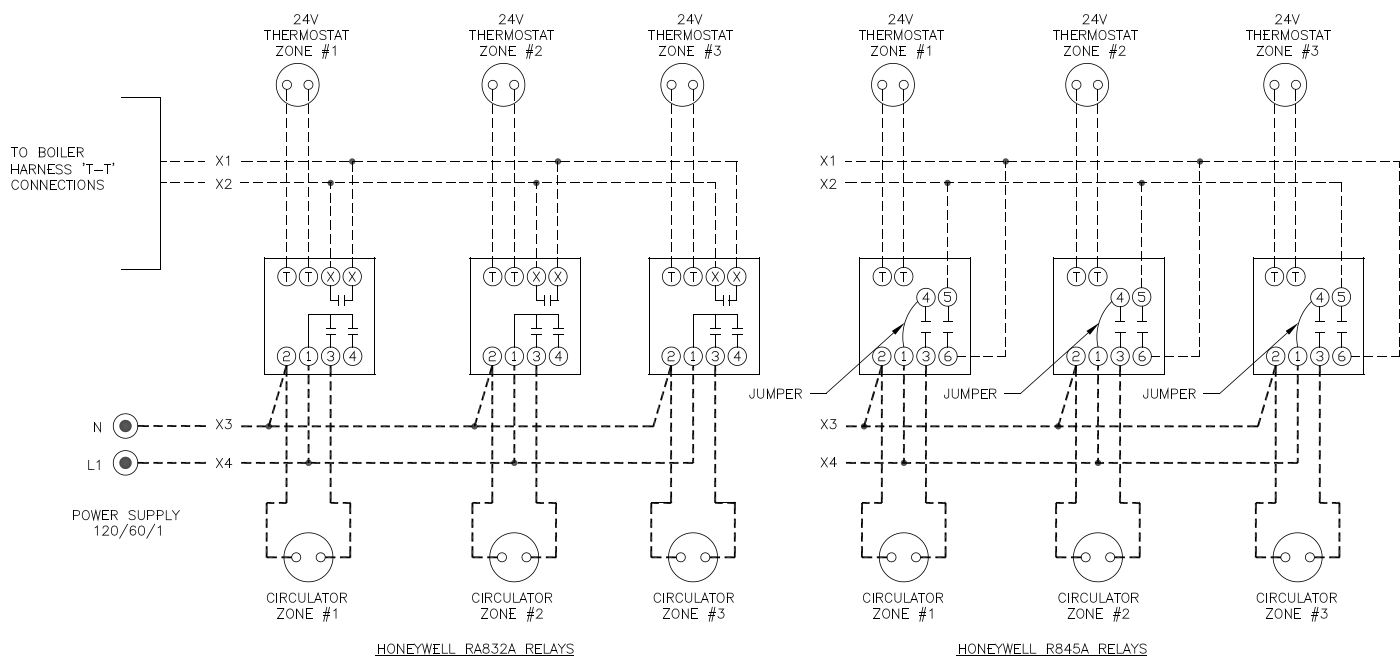


Figure 12: Wiring Schematic, Zone Circulators

VII. System Start-up and Checkout

A. Main Burner Check - Check main burners to see that they were not dislodged during shipment. Rear of burners should be in the vertical slots in the rear of burner tray and the front of the burners should be seated completely on the orifices.

B. Initial start -

1. **Fill entire heating system with water** and vent air from system. Use the following procedure on a System equipped with zone valves.
 - a. Close isolation valve in boiler supply piping.
 - b. Isolate all circuits by closing zone valves or balancing valves.
 - c. Attach a hose to hose bib located just below isolation valve in boiler supply piping. (Note - Terminate hose in five gallon bucket, at a suitable floor drain, or outdoor area).
 - d. Starting with one circuit, open zone valve.
 - e. Open hose bib.
 - f. Open fill valve (Make-up water line should be located directly above isolation valve in boiler supply piping).
 - g. Allow water to overflow from bucket until discharge from hose is bubble free for 30 seconds.
 - h. Open zone valve to the second zone to be purged, then close the first. Repeat this step until all zones have been purged, but always have one zone open. At completion, open all zone valves.
 - i. Close hose bib, continue filling the system until the pressure gauge reads 12 psi. Close fill valve. (Note - If make-up water line is equipped with pressure reducing valve, system will automatically fill to 12 psi. Leave globe valve open).
 - j. Open isolation valve in boiler supply piping.
 - k. Remove hose from hose bib.
2. Turn ROOM THERMOSTAT to lowest setting.
3. Be sure that gas to pilot and main burners has been off for at least five minutes and vent damper has been in the open position.
4. Turn "OFF" the electric switch serving boiler.
5. Open valve on main gas line at meter.
6. **PURGE AIR FROM GAS PIPING. Adequate ventilation must be provided and no smoking or open flame permitted.**
7. Turn "ON" electric switch serving boiler.
8. Open Manual Shut-off Valve upstream of Combination Gas Valve.

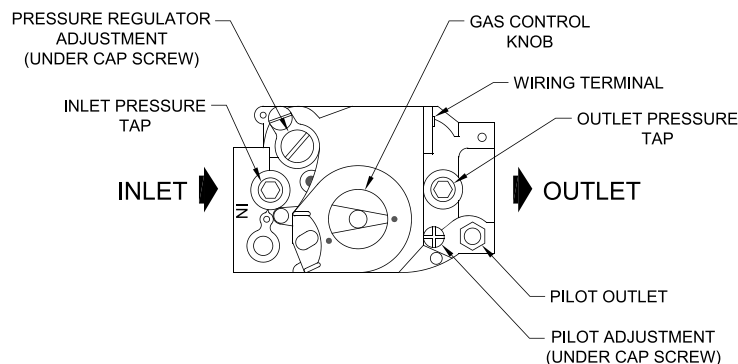


Figure 13: Top View of Honeywell Gas Valves

9. Loosen or remove Inlet Pressure Tap Plug in Combination Gas Valve and when purging is complete, tighten or replace plug. (See Figure 13).
10. Check pipe and fittings from meter to Combination Gas Valve using soap solution or other approved methods.

CAUTION

11. Test gas piping and connections between Combination Gas Valve and manifold, orifices, and pilot piping for leaks after boiler is operating. Use soap solution or other approved method.

C. Check Gas Input to Boiler

1. Input Rate and Maximum Inlet Pressure shown on Rating Label must not be exceeded. Inlet pressure must not be lower than minimum inlet pressure shown on Rating Label.
2. Input ratings shown on boiler rating label can be used for elevations up to 2000 ft. For elevations 2000 ft or higher, reduce input rate 4 percent per 1000 ft above sea level. Do not install at elevations above 12,000 ft. See Table below.

Boiler Model	Input [Mbh]			
	Rating Label	5000 ft. (1525 m)	7,000 ft. (2130 m)	10,000 ft. (3050 m)
CG30E	70.0	56.0	49.0	42.0
CG40E	105.0	84.0	73.5	63.0
CG50E	140.0	112.0	98.0	84.0
CG60E	175.0	140.0	122.5	105.0
CG70E	210.0	168.0	147.0	126.0
CG80E	245.0	196.0	171.5	147.0
CG90E	280.0	224.0	196.0	168.0

3. All Rate checks and all adjustments are to be made while boiler is firing - all other appliances connected to the same meter as the boiler must be off.

FOR YOUR SAFETY READ BEFORE OPERATING

WARNING: If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury, or loss of life.

A. This appliance is equipped with an ignition device which automatically lights the pilot. Do not try to light the pilot by hand.

B. **BEFORE OPERATING** smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
- Do not touch any electric switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.

➤ If you cannot reach your gas supplier, call the fire department.

C. Use only your hand to push in or turn the gas control knob. Never use tools. If the knob will not push in or turn by hand, don't try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.

D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

OPERATING INSTRUCTIONS

1. **STOP!** Read the safety information above on this label.

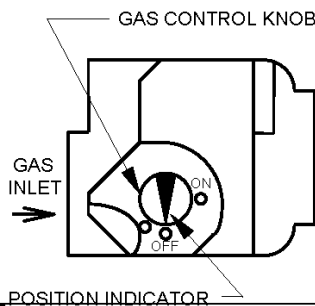
2. Set the thermostat to lowest setting.

3. Turn off all electric power to the appliance.

4. This appliance is equipped with an ignition device which automatically lights the pilot. Do not try to light the pilot by hand.

5. Remove front door.

6. Locate the gas control valve at the end of the gas supply pipe going into the boiler. The gas control knob is the brown or blue plastic knob located on top of the gas control valve.



7. Rotate gas control knob clockwise from "ON" position to "OFF". Make sure knob rests against stop.

8. Wait five (5) minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, **STOP!** Follow "B" in the safety information above on this label. If you do not smell gas, go to the next step.

9. Rotate gas control knob counterclockwise from "OFF" to "ON". Make sure knob rest against stop. Do not force.

10. Replace front door.

11. Turn on all electric power to the appliance.

12. Set thermostat to desired setting.

13. If the appliance will not operate, follow the instructions "TO TURN OFF GAS TO APPLIANCE" and call your service technician or gas supplier.

TO TURN OFF GAS TO APPLIANCE

1. Set the thermostat to lowest setting.

2. Turn off all electric power to the appliance if service is to be performed.

3. Remove front door.

4. Rotate gas control knob clockwise from "ON" position to "OFF". Make sure knob rests against stop.

5. Replace front door.

31480-47

Figure 14: Operating Instructions

4. With boiler off, water Manometer or water column gauge should be connected to a shut-off valve installed in the 1/8" outlet pressure tap in the gas valve (see Figure 13). By installing gas valve upstream of manometer, gas pressure can be introduced gradually - without shut-off valve; surge of pressure when boiler is turned on, could blow liquid out of manometer. Replace plug in gas valve when rate check is finished.

5. Lp Gas Input:

Adjust Regulator on Gas Valve so that manifold pressure is 10 inches water column. Turning Regulator Adjusting Screw Clockwise increases pressure. Counterclockwise rotation decreases pressure.

6. Natural Gas Input:

Adjust Regulator on Gas Valve so that manifold pressure is 3½ inches water column. Turning Regulator Adjusting Screw Clockwise increases pressure. Counter-clockwise rotation decreases pressure.

- D. Check Main Burner Flame.** See Figure 15. Flame should have a clearly defined inner cone with no yellow tipping. Orange-yellow streaks caused by dust should not be confused with true yellow tipping.

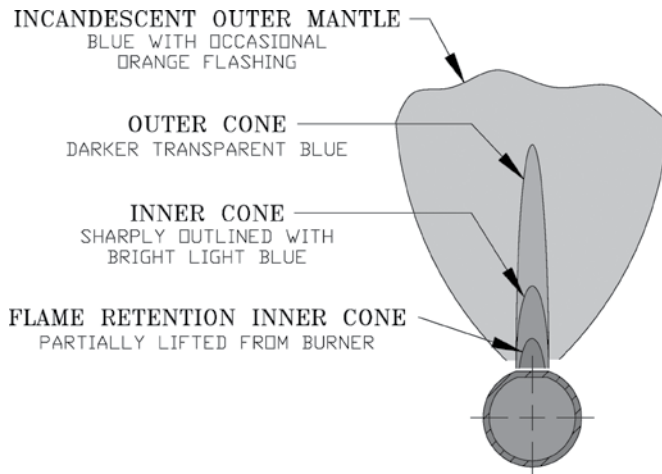


Figure 15: Main Burner Flame

CAUTION

Avoid operating this boiler in an environment where saw dust, loose insulation fibers, dry wall dust, etc. are present. If boiler is operated under these conditions, the burner interior and ports must be cleaned and inspected daily to insure proper operation.

E. Check Pilot Burner Flame.

1. See Figure 16. The pilot burner should be lit only if thermostat is calling for heat. The pilot burner produces three (3) flames. The center flame should be steady, medium hard blue enveloping 3/8 to 1/2 inch of sensing probe.

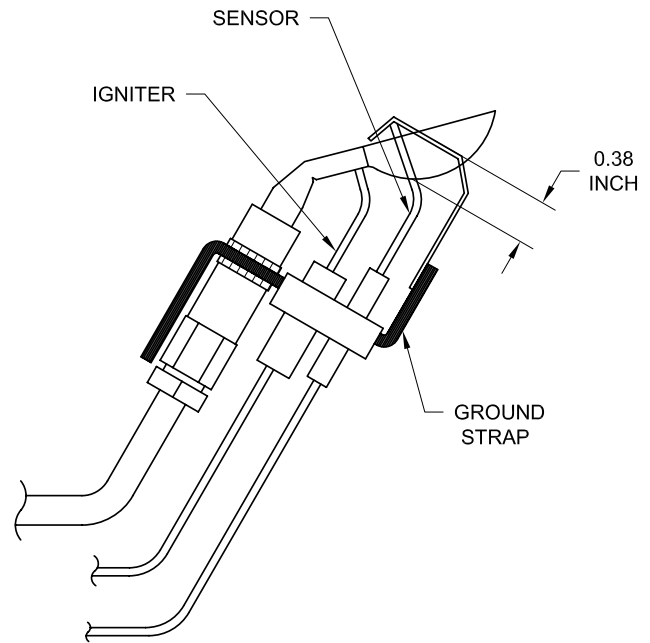


Figure 16: Pilot Burner Flame

- F. Check Ignition System Safety Shut-off Device.** Remove 3-wire plug from gas valve.

If burners do not shut down determine cause of malfunction. Replace necessary items and check operation.

- G. Check Vent Damper Operation.** Vent Damper must be in open position when main burners are operating.

H. Check High Limit Control.

Jumper Thermostat connections in boiler wiring harness. Allow burners to operate until shutdown by limit. REMOVE JUMPER.

- I. Check Thermostat Operation.** Raise and lower temperature setting to start and stop boiler operation. Adjust thermostat to normal setting.

J. Combustion Chamber Burn-off

1. The mineral wool combustion chamber panels may contain a cornstarch based binder that must be burned out at installation to prevent odors during subsequent boiler operation.
2. Ventilate the boiler room, set the high limit to its maximum setting, set the thermostat to call for heat. Allow the boiler to fire for at least an hour or until the odor from the cornstarch has dissipated.
3. Return the high limit and thermostat to their desired settings.

- K. Review User's Information Manual** and system operation with owner or operator.

- L. Post instructions** near boiler for reference by owner and service personnel.

VIII. Operation

A. BOILER SEQUENCE OF OPERATION

NORMAL OPERATION

1. The CG-E Series Boilers are equipped with an Integrated Boiler Control (IBC). This IBC replaces the traditional separate ignition control, high limit switch and circulator relay and adds energy saving thermal purge features. Energy is saved by starting the circulator and delaying the burner start when there is residual heat available in the boiler.
 2. The boiler's sequence of operation is shown in Table 2.
 3. When the thermostat calls for central heat (CH) the IBC starts the system circulator and the thermal purge begins. If the boiler temperature is less than 140°F, the start sequence continues by energizing the vent damper. Once the vent damper is fully open the ignition sequence is started allowing gas flow and ignition of the burners. Damper must be in open position when appliance main burners are operating.
 4. If the call for CH is not satisfied and the operating setpoint is reached the system circulator will continue to operate and the burners will stop. When the boiler water temperature drops below the setpoint less the differential setting the burners will restart.
 5. After the call for CH is satisfied the burners and circulator are stopped and vent damper is closed.
 6. When an indirect water heater aquastat call for heat is wired to the DHW input, the control starts the circulator and, if the boiler temperature is less than the operating setpoint less differential, the vent damper is energized without delay. Once the vent damper is fully open, the ignition sequence is started allowing gas flow and ignition of the burners.
- The default DHW high limit is 200°F. The DHW high limit will match CH set point if CH set point is below 200°F.

NOTICE

DHW Thermostat should only be used for systems with zone valves, see Figure 5.

B. BOILER FAULT

In the event the boiler fails to start, the control provides status information to help determine the cause of the problem. Table 3 from Section X: Troubleshooting (page 24) provides a list of boiler flash codes indicating the source of the lockout. Refer to the Troubleshooting Section for more information.

C. USING DISPLAY AND ADJUSTMENT KNOBS

The control is located inside the boiler. (Figure 17).

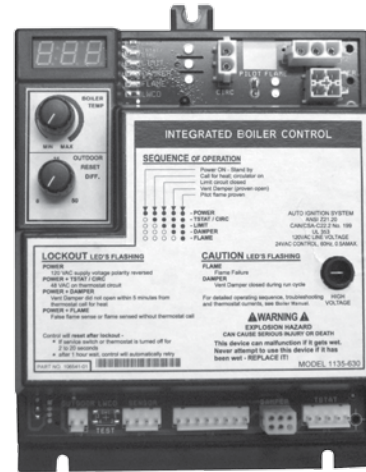


Figure 17: Integrated Boiler Control

The IBC display, along with two adjustment knobs may be used to change two parameters. The status LEDs are located to the right of the display. When powered the POWER LED is green and the remaining LEDs will light up red depending on the state of the control (see Figure 18).



Figure 18: Boiler Display

Table 2: Sequence of Operation Using the Controls LEDs

	Status	POWER	TSTAT/CIRC	LIMIT	DAMPER	FLAME
1	Standby	●	○	○	○	○
2	Call for heat - Circulator on	●	●	○	○	○
3	Limit circuit closed	●	●	●	○	○
4	Vent Damper - Proven open	●	●	●	●	○
5	Pilot flame proven	●	●	●	●	●

● - LED illuminated

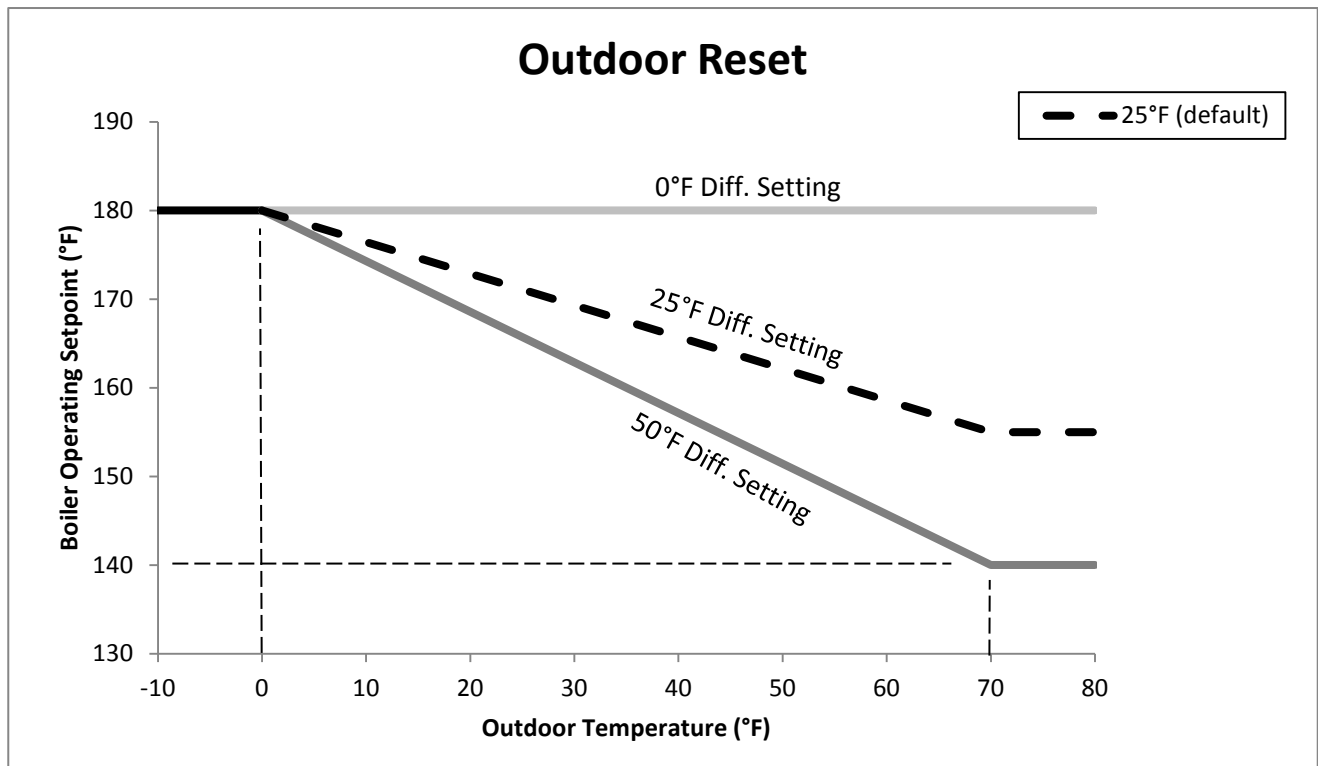
○ - LED off

1. High limit setpoint

The High Limit Setpoint is user adjustable by turning the top knob labeled “BOILER TEMP”. Adjustment range is 140°F to 220°F. During normal operation the LED display will show boiler temperature. When a change is made to the setpoint knob the display will brighten and show the setpoint. Factory programmed with High Limit Setpoint of 140°F.

2. Outdoor Reset Differential Setpoint (when outdoor sensor installed)

The Outdoor Reset Differential Setpoint is user adjustable by turning the bottom knob labeled “OUTDOOR RESET DIFF”. Adjustment range is 0°F to 50°F. When no outdoor sensor is present, the IBC uses the user setpoint as the operating setpoint. When an outdoor temperature sensor is attached, the IBC adjusts the Conditioned space demand operating setpoint based on outdoor temperature. See graph below.



Important Product Safety Information **Refractory Ceramic Fiber Product**

Warning:

The Repair Parts list designates parts that contain refractory ceramic fibers (RCF). RCF has been classified as a possible human carcinogen. When exposed to temperatures above 1805°F, such as during direct flame contact, RCF changes into crystalline silica, a known carcinogen. When disturbed as a result of servicing or repair, these substances become airborne and, if inhaled, may be hazardous to your health.

AVOID Breathing Fiber Particulates and Dust

Precautionary Measures:

Do not remove or replace RCF parts or attempt any service or repair work involving RCF without wearing the following protective gear:

1. A National Institute for Occupational Safety and Health (NIOSH) approved respirator
 2. Long sleeved, loose fitting clothing
 3. Gloves
 4. Eye Protection
- Take steps to assure adequate ventilation.
 - Wash all exposed body areas gently with soap and water after contact.
 - Wash work clothes separately from other laundry and rinse washing machine after use to avoid contaminating other clothes.
 - Discard used RCF components by sealing in an airtight plastic bag. RCF and crystalline silica are not classified as hazardous wastes in the United States and Canada.

First Aid Procedures:

- If contact with eyes: Flush with water for at least 15 minutes. Seek immediate medical attention if irritation persists.
- If contact with skin: Wash affected area gently with soap and water. Seek immediate medical attention if irritation persists.
- If breathing difficulty develops: Leave the area and move to a location with clean fresh air. Seek immediate medical attention if breathing difficulties persist.
- Ingestion: Do not induce vomiting. Drink plenty of water. Seek immediate medical attention.

WARNING

Service on this boiler should be undertaken only by trained and skilled personnel from a qualified service agency. Inspections should be performed at intervals specified in this manual. Maintain manual in a legible condition.

Keep boiler area clear and free of combustible materials, gasoline and other flammable vapors and liquids.

Do not place any obstructions in boiler room that will hinder flow of combustion and ventilation air.

- A. General.** Inspection and service should be conducted annually. Turn off electrical power and gas supply while conducting service or maintenance. Follow instructions TO TURN OFF GAS TO APPLIANCE. See Figure 14.

CAUTION

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

B. Inspect Vent System.

1. Remove obstructions in vent pipe and chimney.
2. Remove soot accumulations with wire brush and vacuum.
3. Repair or replace deteriorated vent pipe and vent accessories.
4. Provide proper support. Repair sags, particularly in horizontal sections.
5. Repair leaking joints.

C. Inspect Boiler Flue Passages for blockage or soot accumulation.

1. Remove vent pipe, vent damper and blocked vent switch.
2. Remove sheet metal screws securing Jacket Top Panel. Remove Top Panel.
3. Remove screws securing Canopy to Section Assembly. Remove Canopy.
4. Using flashlight, examine all flue passageways.
 - a. If passageways are free of soot and obstruction, replace canopy, secure and seal.
 - b. If passageways need cleaning, remove burners as described in Paragraph D. Using long handle wire or bristle flue brush and vacuum, brush flueways thoroughly from top of boiler.
5. Install new gasket material (See Section XI: Repair Parts). Install canopy.
6. Install Jacket Top Panel, Blocked Vent Switch, Vent Damper, and vent pipe.

D. Clean Main Burners and Firebox.

1. To remove burners for cleaning, changing orifices, or repairs:
 - a. Remove Jacket Front Panel.
 - b. Disconnect pilot tubing at gas valve.
 - c. Disconnect 3-wire plug at the gas valve.
 - d. Remove wires to flame roll-out switch.
 - e. Remove the burner access panel.
 - f. Mark the location of the pilot main burner on the manifold if the marking on manifold is missing or obliterated.
 - g. Hold burner at throat. Lift front of burner to clear orifice. Burner which holds pilot can only be removed by lifting the burner adjacent to its right first.
2. Brush top of burners with a soft bristle brush. Vacuum burners.
3. Check orifices. Drilled passageways must be free of lint or dirt.
4. Vacuum tip of Pilot Burner.
5. Clean firebox by vacuuming. Exercise care not to damage base insulation.
6. Install burners by reversing procedure used to remove burners. Make sure burner with pilot assembly is in same location as original installation. Check burners to see that they are located properly in slot at rear of burner tray. Reinstall burner access panel. Reconnect flame roll-out switch wires, pilot gas supply, thermocouple lead or pilot lead.
7. Connect pilot gas supply, igniter/sensor wire, and ground wire at Boiler Control.
8. Install Burner Access Panel. Connect Flame Rollout Switch wires.

E. Check Operation. Follow steps C through J from Section VII: System Start-up and Checkout.

F. Lubrication. There are no parts requiring lubrication by service technician or owner. Circulator bearings are water lubricated.

X. Troubleshooting

A. BEFORE TROUBLESHOOTING

The following pages contain troubleshooting tables for use in diagnosing control problems. When using these tables the following should be kept in mind:

1. This information is only meant to be used by a professional heating technician as an aid in diagnosing boiler problems.
2. In general, these tables assume that there are no loose or miswired electrical connections. Before using these tables inspect all electrical connections on the boiler to make sure that they are tight. Also, check the wiring on the boiler against the wiring diagram in Figures 9 and 10. Ensure that incoming 120 Vac power polarity is correct and that the boiler is properly grounded. Further, ensure that the control power supply is 24 VAC (minimum 18 VAC to maximum 30 VAC) and polarity is correct.
4. All controls on the CG-E Series are tested at least once in the manufacturing process and a defective control or component is generally the least likely cause. Before replacing a component, try to rule out all other possible causes.
5. When checking voltage across wiring harness pins be careful not to insert the meter probes into the pins. Doing so may damage the pin, resulting in a loose connection when the harness is reconnected.

Table 3: Troubleshooting Using the Control's LED

<u>Flashing LED</u>	<u>Fault Condition</u>
POWER Steady 1 Hz flash Flash code 2 Flash code 3 Flash code 4 Flash code 5 Flash code 6	Reverse polarity of 115 VAC supply voltage Faults internal to microprocessor (RAM, ROM, etc.) Unused Unused Water thermistors disagree Gas valve outputs in improper state
POWER + TSTAT/CIRC	48 volts on Thermostat circuit
DAMPER	Damper switch opened after it had been proved closed. Continues flashing until demand for heat removed or Damper switch proven closed in ignition sequence.
POWER + DAMPER	Damper switch stuck open or closed (control in damper switch lockout)
LIMIT	Fault detected in temperature sensing hardware
FLAME	Flame loss, or flame not sensed during trial for ignition. Continues flashing until either flame is established or demand for heat is removed.
POWER + FLAME	Flame sensed without call for heat or out of sequence during ignition trial.

Lockouts

1. Lockout from internal hardware faults (listed above under POWER) automatically resets after the hardware fault has not been present for 60 minutes. Lockouts from internal hardware faults may not be manually reset except by removing power from the control.
2. Lockout from damper switch failing to close within 45 seconds automatically resets after 60 minutes. Lockout may be manually reset by opening the thermostat for more than 2 but less than 20 seconds.

B. USE CONTROL LEDS TO DIRECT TROUBLESHOOTING EFFORTS

If the control detects an error, the LEDs will flash. Use the LEDs to identify the boiler problem and corrective action in the table below. If LEDs are not flashing, proceed to Paragraph C:

Flashing LEDs	Status	Recommended Corrective Action
Blank	Boiler or Control is not powered	No 120 Vac Power at boiler, check breaker and wiring between breaker panel and boiler
POWER Steady 1 Hz flash	Line Voltage Reversed	Reverse polarity of 115 VAC supply voltage.
POWER Flash Code 2	Microprocessor Failure	Cycle power to control. Replace control if problem persists.
POWER Flash Code 5	Water thermistors disagree	Confirm sensor is fully in well. If secure and good condition, replace sensor.
POWER Flash Code 6	Gas Valve Outputs in improper state	Flame sensed during pre-purge (before gas valve signaled open). Check the gas valve for proper operation. Replace gas valve if problem persists.
POWER + TSTAT/CIRC	Thermostat Input Higher than Threshold	Check thermostat wiring.
DAMPER	Damper Switch opened after proven closed	LEDs continue flashing until demand for heat is removed or damper switch proven closed in ignition sequence.
POWER + DAMPER	Damper Failed to Open	Atmospheric Damper End Switch failed to close (end switch contacts stuck open). Refer to Troubleshooting Section, C4.
POWER + DAMPER	Damper Failed to Close	Damper open. Voltage should not be present on P6-5. Control, vent damper or wire harness is defective. While the POWER + DAMPER LEDs flash on the control, perform the following tasks: • Remove the call for heat (adjust thermostat or remove wire from TT terminals). • Check for 24Vac between P6-5 and ground. • If voltage not present, attempt to start boiler again. • If 24Vac is present, unplug the vent damper harness from control. • With wire harness unplugged, check for 24Vac between P6-5 (on Control) and ground. • If voltage present, replace the control. • If voltage not present, failed vent damper or wiring harness. • Check wiring harness for shorts or mis-wiring. Replace if defective. • If harness not defective, replace vent damper.
LIMIT	Temperature Sensor Failure	Temperature sensor or interface failure (open or short connection, increased connection resistance, dual sensor mismatch) or control hardware failure. - Check sensor is securely attached to control P7 connector. - Check sensor wire is not damaged. - If secure and in good condition, replace sensor. - If problem persists, replace control.
FLAME	Flame Current Lower than Threshold	Flame loss, or flame not sensed during trial for ignition. Continues flashing until either flame is established or demand for heat is removed. Check pilot assembly. Refer to Troubleshooting Section, C5.
POWER + FLAME	Flame Sensed Out of Normal Sequence	Flame sensed out of normal sequence (before opening gas valve or after closing gas valve). Check the gas valve for proper operation.

C. USE STATUS LEDS TO GUIDE TROUBLESHOOTING

The control LEDs will light to indicate status. Use these LEDs to identify the boiler problem in the table below:

1. Boiler and Circulator Off

LED / Status	Recommended Corrective Action
- POWER Standby Burner off Circulator off	The boiler has not detected a call for heat Check that the thermostat: - When a thermostat call for heat is detected control TSTAT/CIRC LED will be lit. - Make sure thermostat is calling for heat and contacts (including appropriate zone controls) are closed. Check for loose connection. Check the DHW demand: - When a domestic call for heat is detected control TSTAT/CIRC LED will be lit. - Make sure the DHW aquastat contact is closed. Check for loose connection.

2. Circulator is On, But Boiler is Off

LED / Status	Recommended Corrective Action
- POWER - TSTAT/CIRC Circulator Pre-purge Burner off Circulator on	The boiler is warm and circulator is providing residual boiler heat to building: Check boiler temperature - The boiler will not start until boiler water temperature is 15°F less than the Setpoint - If boiler water temperature is higher than 140° F, boiler start will be delayed until water temperature drops below 140°F.

3. Circulator is On But Damper is Not Open

LED / Status	Recommended Corrective Action
- POWER - TSTAT/CIRC Limit Open	Waiting for Limit to Open. - Check Blocked Vent Switch, in the event of a blocked vent or poor draft condition, the blocked vent switch will open interrupting power to control P4-1. The main burners will be extinguished immediately and the circulator will remain on until the thermostat is turned off. The source of blockage must be corrected by trained and skilled personnel from a qualified service agency before resetting switch. Blocked Vents are caused by a collapsed chimney resulting in full or partial blockage, chimney cross sectional area too small, height insufficient or cold chimney causing sustained poor draft. Always follow the recommendations in Section I, Figure 1 and Section IV: Venting. - Check Flame Rollout Switch, in the event of excessive blockage of the boiler section flue passageways is developed the flame rollout switch will open interrupting power to control P4-1. The main burners will be extinguished immediately and the circulator will remain on until the thermostat is turned off. If the flame rollout switch is activated, do not attempt to place the boiler in operation. The source of the blockage must be corrected and the identical flame rollout switch replaced by trained and skilled personnel from a qualified service agency. - Check External Limit.

4. Circulator is On But Damper is Not Open

LED / Status	Recommended Corrective Action
- POWER - TSTAT/CIRC - LIMIT Damper Failed to Open	The control is waiting for the damper to open. Damper end switch has failed to close (end switch contact is stuck open). Combustion can never take place unless the damper blade is in the fully open position. Check the following: - Confirm if control terminal "P6 - 5" (yellow wire) is energized. - Check for loose connection between control and vent damper, check damper harness. - Check for obstruction in path of damper - When damper is open (end switch closed) control terminal "P6 – 2" should receive power from the vent damper. - Place jumper between control terminal P6-5 and P6-2. If DAMPER LED does not light, replace control. - Defective harness or vent damper.

5. Circulator is On, Damper is Open But Boiler Fails to Start

LED / Status	Description
- POWER - TSTAT/CIRC - LIMIT - DAMPER Retry / Recycle Delay	The Boiler is in "Retry Delay": - The burner failed to light (no flame signal). After a 5 minute delay, Control will attempt to light the burner again. There is no limit to the number of retries. Recycle Delay - The burner loses flame during running mode. Immediately, Control will attempt to light the burner again. If flame is lost 5 times within the same call for heat, the control locks out for one hour before retrying ignition.

5. Circulator is On, Damper is Open But Boiler Fails to Start (continued)

LED / Status	Recommended Corrective Action
- POWER - TSTAT/CIRC - LIMIT - DAMPER Retry / Recycle Delay	1. No Spark a. Can you hear sparking? - If there is no spark noise replace the control. b. If you can hear spark noise check the following: - Loose connection in ignition cable or ground wire - Continuity of ignition cable - Break in ignition cable insulation - Loose ground connection - Break in pilot ceramic insulator - Incorrect pilot spark gap
	2. No Pilot Flame a. If pilot does not light check the following: - All manual gas valves are open - Supply tubing is not plugged, kinked or leaking - Gas line pressures are good - Gas line is purged of air - Pilot orifice is not plugged (pilot gas is flowing) - Condensate quenching pilot Note: It may be necessary to recycle the "call for heat" more than once to clear the pilot supply tubes of air. b. If no gas flow check the following: - 24 volts across PV and MV/PV at gas valve, if voltage ok replace defective gas valve - Check for break in wiring harness to gas valve - 24 volts across control connector P4-6 and P4-7, if no voltage at control replace defective control
	3. Spark does Not Stop When Pilot Lights If the spark does not stop when the pilot lights check the following: - Loose connection in ignition cable or ground wire - Continuity of ignition cable - Clean flame rod - Pilot electrode porcelain cracked - Pilot flame covers flame rod and is steady and blue, if not adjust pilot flame - Low gas pressure at gas valve inlet - Defective control
	4. Main Flame Does Not Light If the main burners do not light check the following: - Check orifice size and/or blockage - 24 volts across control terminals P4-5 and P4-7? If no voltage while in defective control. - 24 volts across MV and MV/PV at gas valve? Check for break in wiring harness to gas valve - Defective gas valve

XI. Repair Parts

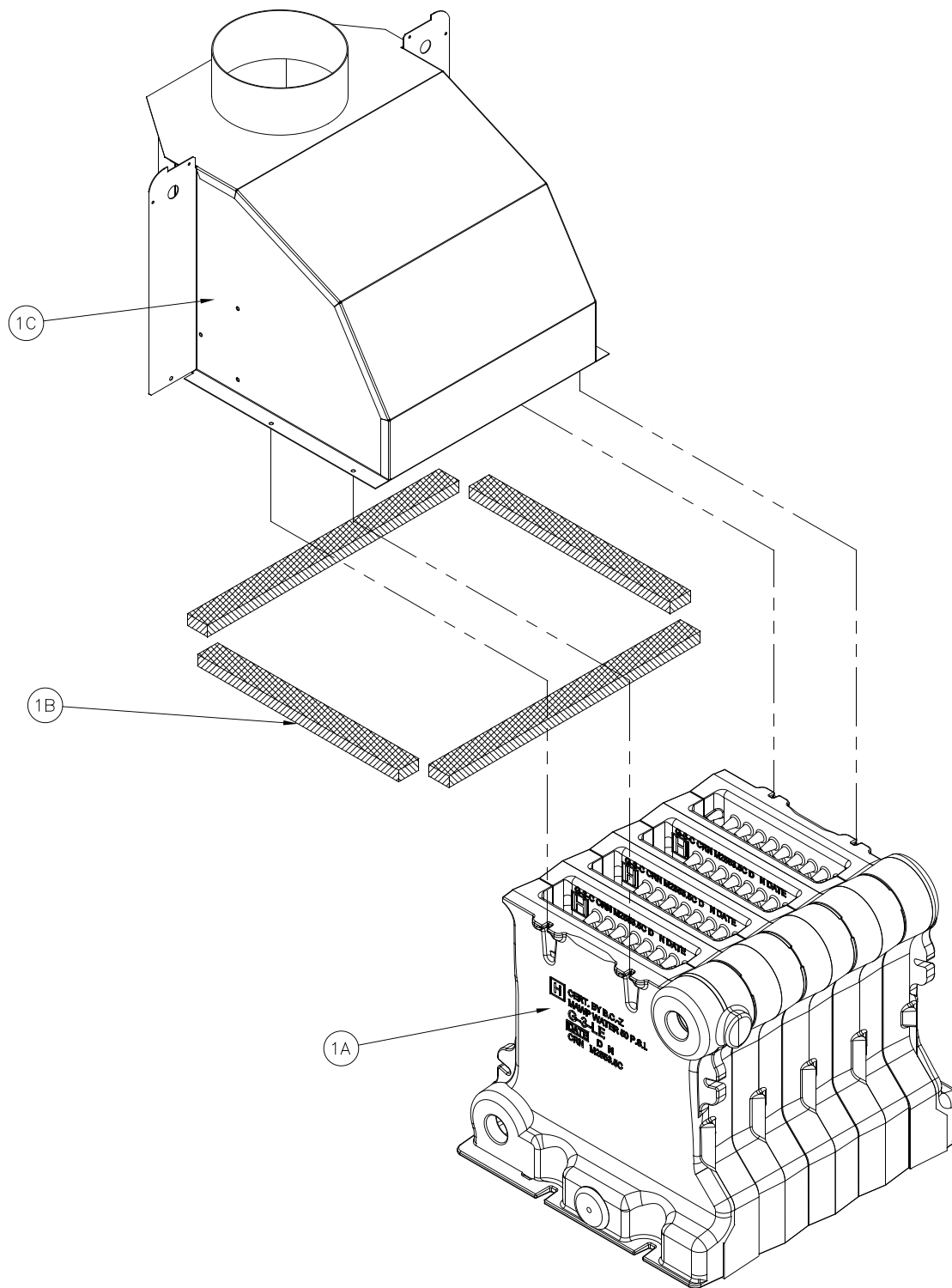
All CG-E™ Series repair parts may be ordered through New Yorker Boiler Company, Inc. or its authorized distributors.

Should you require assistance in locating a New Yorker Distributor in your area, or have questions regarding the availability of New Yorker products or repair parts, please contact:

New Yorker Boiler Company, Inc.
P.O. Box 10
Hatfield, Pennsylvania 19440-0010
Attn: Customer Service Department
www.newyorkerboiler.com

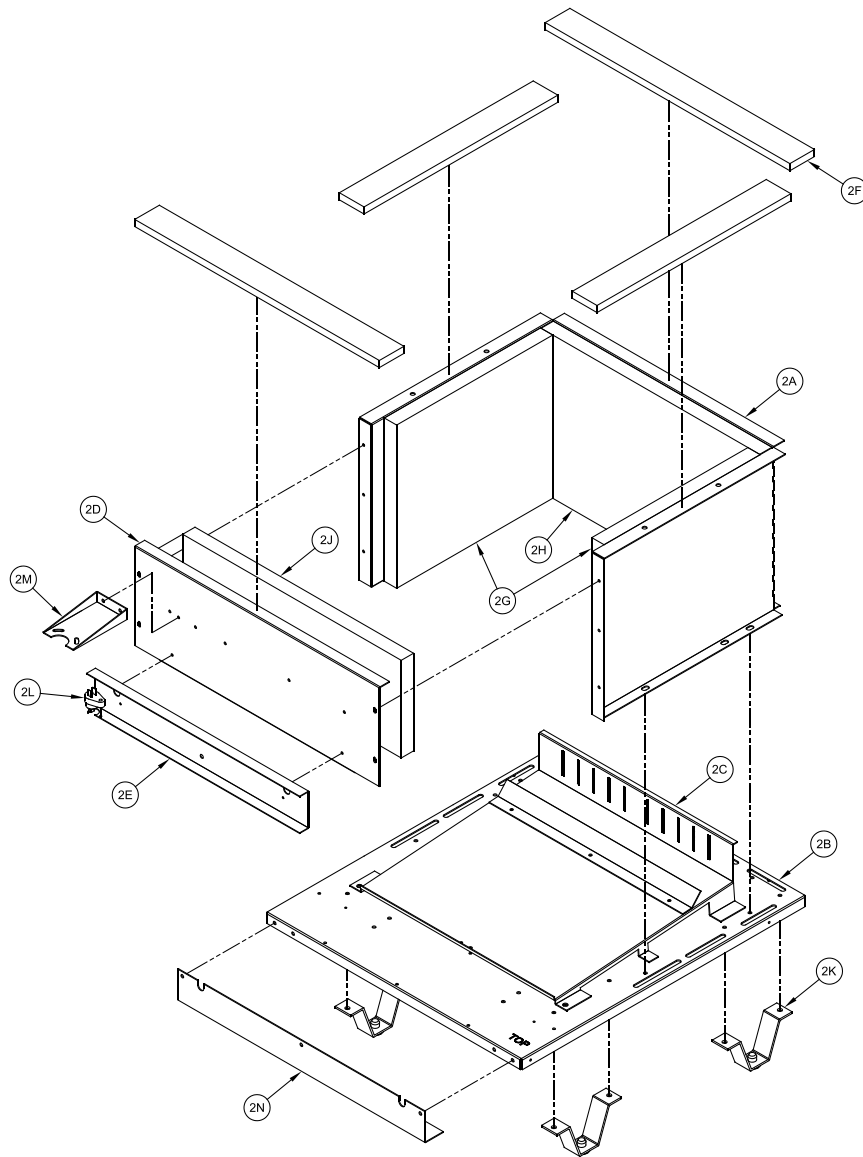
Section Assembly and Canopy Assembly	30
Base Assembly	32
Burners, Manifold and Gas Valve (Natural and LP Gas).....	34
Controls.....	35
Jacket Assembly, Complete.....	36
Trim and Vent Damper	37

Key No.	Description	Part Number	CG-E MODEL						
			30	40	50	60	70	80	90
1A	Cast Iron Section Assembly (Complete)	102287-03	1	---	---	---	---	---	---
		102287-04	---	1	---	---	---	---	---
		102287-05	---	---	1	---	---	---	---
		102287-06	---	---	---	1	---	---	---
		102287-07	---	---	---	---	1	---	---
		102287-08	---	---	---	---	---	1	---
		102287-09	---	---	---	---	---	---	1
1B	Canopy Gasket Kit	6201001	1	1	1	1	1	1	1
1C	Canopy Assembly	102254-03	1	---	---	---	---	---	---
		102254-04	---	1	---	---	---	---	---
		102254-05	---	---	1	---	---	---	---
		102254-06	---	---	---	1	---	---	---
		102254-07	---	---	---	---	1	---	---
		102254-08	---	---	---	---	---	1	---
		102254-09	---	---	---	---	---	---	1
	Blocked Vent Switch (not shown)	80160157	1	1	1	1	1	1	1



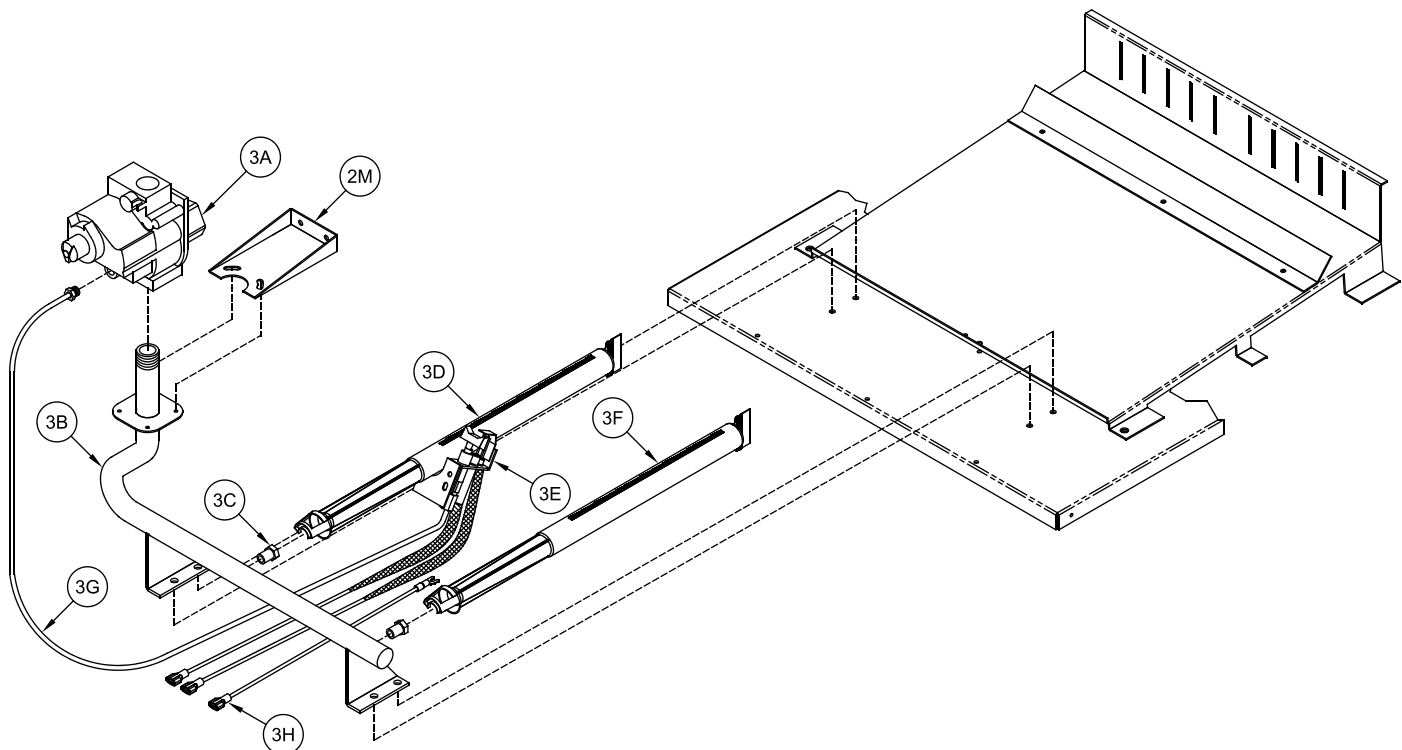
Section Assembly and Canopy Group

Key No.	Description	Part Number	CG-E MODEL						
			30	40	50	60	70	80	90
2A	Base Wrapper	71807031	1	---	---	---	---	---	---
		71807041	---	1	---	---	---	---	---
		71807051	---	---	1	---	---	---	---
		71807061	---	---	---	1	---	---	---
		71807071	---	---	---	---	1	---	---
		71807081	---	---	---	---	---	1	---
		71807091	---	---	---	---	---	---	1
2B	Base Tray	102543-03	1	---	---	---	---	---	---
		102543-04	---	1	---	---	---	---	---
		102543-05	---	---	1	---	---	---	---
		102543-06	---	---	---	1	---	---	---
		102543-07	---	---	---	---	1	---	---
		102543-08	---	---	---	---	---	1	---
		102543-09	---	---	---	---	---	---	1
2C	Burner Tray/Burner Tray Assembly	61807031	1	---	---	---	---	---	---
		61807041	---	1	---	---	---	---	---
		61807051	---	---	1	---	---	---	---
		61807061	---	---	---	1	---	---	---
		61807071	---	---	---	---	1	---	---
		61807081	---	---	---	---	---	1	---
		61807091	---	---	---	---	---	---	1
2D	Base Front Panel	102705-03	1	---	---	---	---	---	---
		102705-04	---	1	---	---	---	---	---
		102705-05	---	---	1	---	---	---	---
		102705-06	---	---	---	1	---	---	---
		102705-07	---	---	---	---	1	---	---
		102705-08	---	---	---	---	---	1	---
		102705-09	---	---	---	---	---	---	1
2E	Burner Access Panel	102707-03	1	---	---	---	---	---	---
		102707-04	---	1	---	---	---	---	---
		102707-05	---	---	1	---	---	---	---
		102707-06	---	---	---	1	---	---	---
		102707-07	---	---	---	---	1	---	---
		102707-08	---	---	---	---	---	1	---
		102707-09	---	---	---	---	---	---	1
2F	Base Gasket Kit	6206002	1	1	1	1	1	1	1
2G	Base Side Insulation	72007001	2	2	2	2	2	2	2
2H	Base Rear Insulation	72007031	1	---	---	---	---	---	---
		72007041	---	1	---	---	---	---	---
		72007051	---	---	1	---	---	---	---
		72007061	---	---	---	1	---	---	---
		72007071	---	---	---	---	1	---	---
		72007081	---	---	---	---	---	1	---
		72007091	---	---	---	---	---	---	1

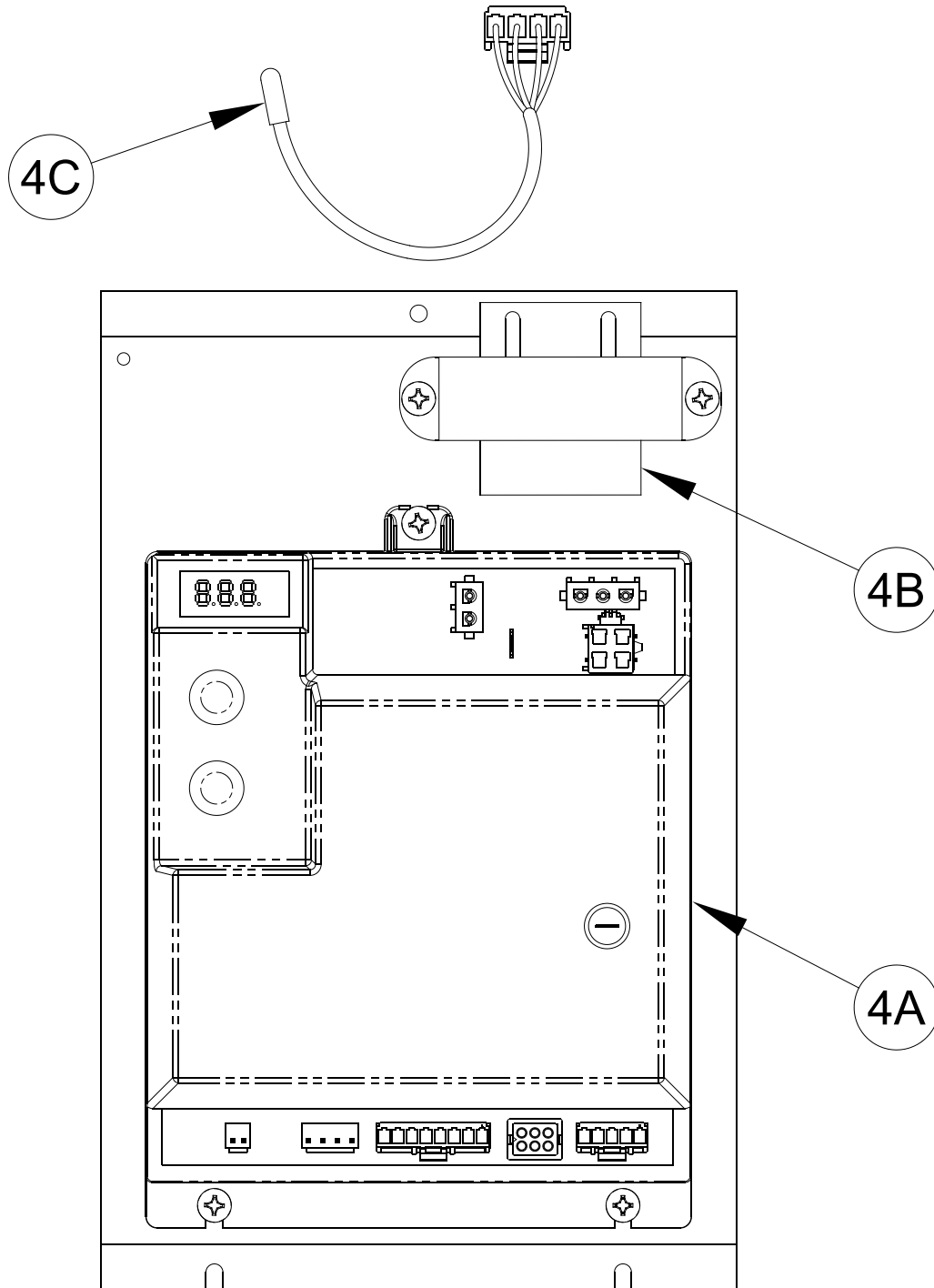


Key No.	Description	Part Number	CG-E MODEL						
			30	40	50	60	70	80	90
2J	Base Front Insulation	72007032	1	---	---	---	---	---	---
		72007042	---	1	---	---	---	---	---
		72007052	---	---	1	---	---	---	---
		72007062	---	---	---	1	---	---	---
		72007072	---	---	---	---	1	---	---
		72007082	---	---	---	---	---	1	---
		72007092	---	---	---	---	---	---	1
2K	Base Leg Assembly	6186001	4	4	4	4	4	4	4
2L	Flame Roll-out Switch	80160044	1	1	1	1	1	1	1
2M	Manifold Support Bracket	718070001	1	1	1	1	1	1	1
2N	Front Air Dam	103718-03	1	---	---	---	---	---	---
		103718-04	---	1	---	---	---	---	---
		103718-05	---	---	1	---	---	---	---
		103718-06	---	---	---	1	---	---	---
		103718-07	---	---	---	---	1	---	---
		103718-08	---	---	---	---	---	1	---
		103718-09	---	---	---	---	---	---	1

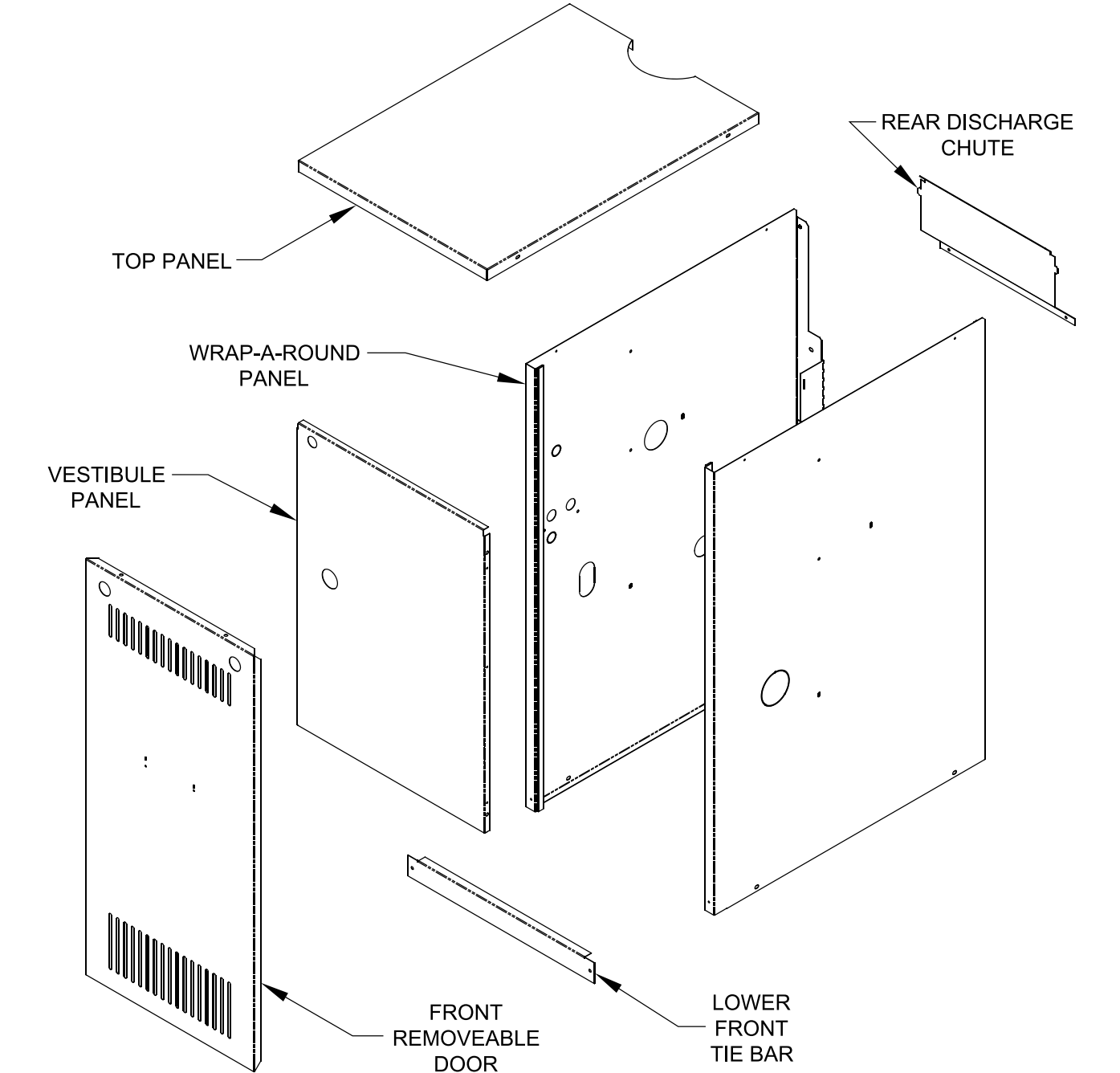
Key No.	Description	Part Number	CG-E MODEL						
			30	40	50	60	70	80	90
Burners, Manifold and Gas Valve (Natural & LP Gas)									
3A	Gas Valve, Honeywell VR8204P1171 (Nat. Gas)	81660282	1	1	1	1	---	---	---
	Gas Valve, Honeywell VR8304P4496 (Nat. Gas)	81660283	---	---	---	---	1	1	1
	Gas Valve, Honeywell VR8204C3015 (LP)	81660146	1	1	1	1	---	---	---
	Gas Valve, Honeywell VR8304P4314 (LP)	81660160	---	---	---	---	1	1	1
3B	Manifold	82207031	1	---	---	---	---	---	---
		82207041	---	1	---	---	---	---	---
		82207051	---	---	1	---	---	---	---
		82207061	---	---	---	1	---	---	---
		82207071	---	---	---	---	1	---	---
		82207081	---	---	---	---	---	1	---
		82207091	---	---	---	---	---	---	1
3C	Main Burner Orifice #47 (White) (Nat. Gas)	822710	4	6	8	10	12	14	16
3C	Main Burner Orifice 1.20 mm (LP)	822792	4	6	8	10	12	14	16
3D	Main Burner w/60° Pilot Bracket - EI, Natural & LP Gas	100147-01	1	1	1	1	1	1	1
2E	Pilot Assy, Honeywell Q3452B2100 (Nat. Gas)	102592-01	1	1	1	1	1	1	1
	Pilot Assy, Honeywell Q3452B2118 (LP)	102593-01	1	1	1	1	1	1	1
3F	Main Burner w/Slotted Orifice Bracket	100146-01	3	5	7	9	11	13	15
3G	Pilot Tubing 1/4" OD x 30" Lg. Aluminum	8236122	1	1	1	1	1	1	1
3H	Ground Wire Assembly	103776-01	1	1	1	1	1	1	1



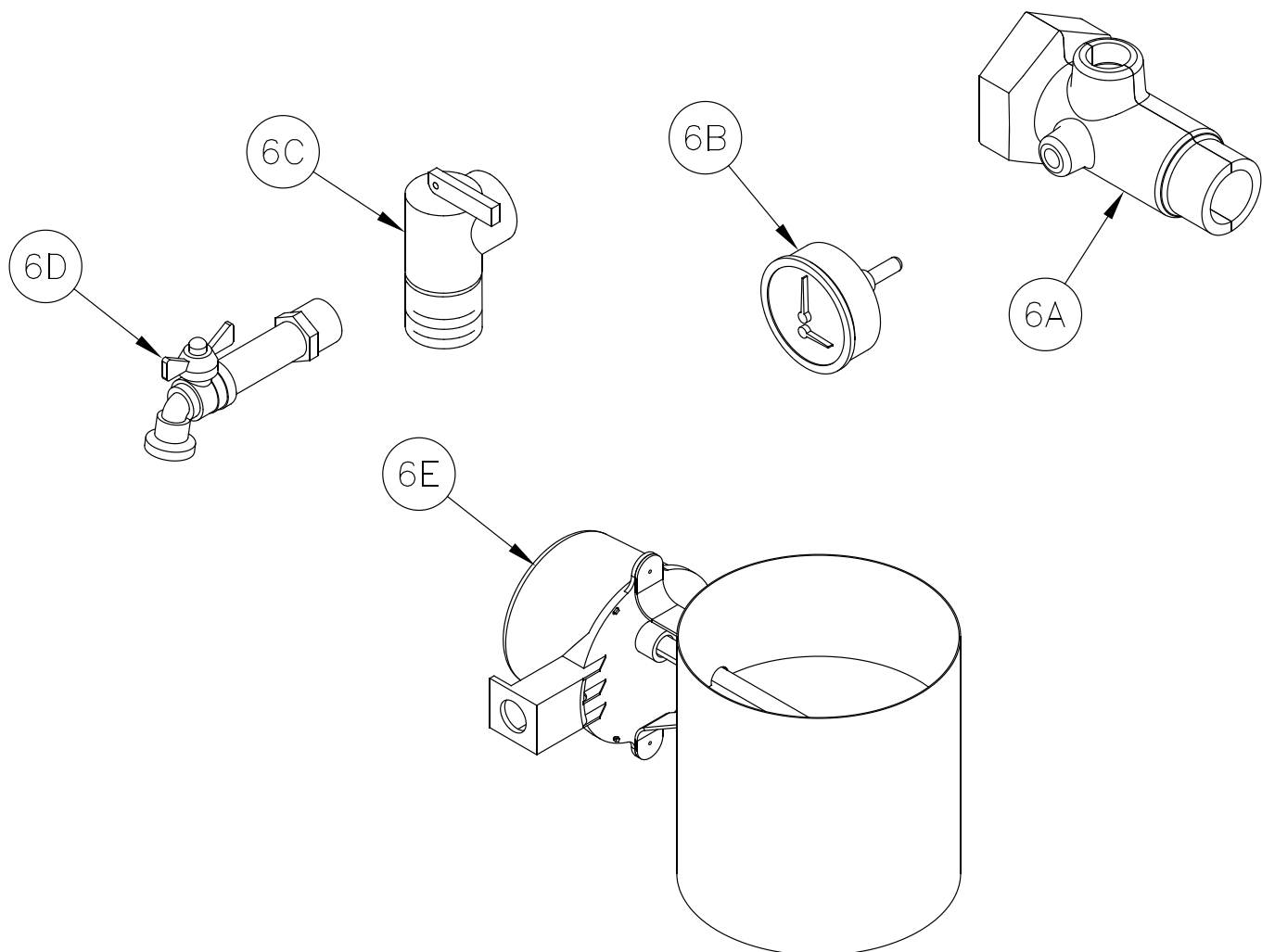
Key No.	Description	Part Number	CG-E MODEL						
			30	40	50	60	70	80	90
Controls									
4A	Boiler Control, Atmospheric Draft, UTEC 1135-630	106541-01	1	1	1	1	1	1	1
4B	Transformer, 40 VA, modified Honeywell AT140B1297	106529-01	1	1	1	1	1	1	1
4C	Limit Rated Temperature Sensor, 12" Lg., Tasseron	106643-01	1	1	1	1	1	1	1
	Temperature Sensor Clip, Honeywell 32002656-001 (not shown)	102422-01	1	1	1	1	1	1	1



Key No.	Description	Part Number	CG-E MODEL						
			30	40	50	60	70	80	90
Jacket Assembly, Complete									
5	Jacket Assembly, Complete	106707-03	1	---	---	---	---	---	---
		106707-04	---	1	---	---	---	---	---
		106707-05	---	---	1	---	---	---	---
		106707-06	---	---	---	1	---	---	---
		106707-07	---	---	---	---	1	---	---
		106707-08	---	---	---	---	---	1	---
		106707-09	---	---	---	---	---	---	1



Key No.	Description	Part Number	CG-E MODEL						
			30	40	50	60	70	80	90
Trim and Vent Damper									
6A	Supply Water Manifold	8060700	1	1	1	1	1	1	1
6B	Temperature / Pressure Gauge	100282-01	1	1	1	1	1	1	1
6C	Safety Relief Valve, 30 psi	81660363	1	1	1	1	1	1	1
6D	Drain Valve	102802-01	1	1	1	1	1	1	1
6E	Vent Damper - 4" Dia.	102284-01	1	---	---	---	---	---	---
	Vent Damper - 5" Dia.	102284-02	---	1	---	---	---	---	---
	Vent Damper - 6" Dia.	102284-03	---	---	1	1	---	---	---
	Vent Damper - 7" Dia.	102284-04	---	---	---	---	1	1	---
	Vent Damper - 8" Dia.	102284-05	---	---	---	---	---	---	1
	Circulator, Taco 007 (not shown)	8056170	1	1	1	1	1	1	1
	Circulator, Grundfos UP-15 (not shown)	105654-01	1	1	1	1	1	1	1



SERVICE RECORD

DATE _____

SERVICE PERFORMED

SERVICE PERFORMED

NEW YORKER BOILER CO., INC.

Limited Warranties

For Residential Cast Iron and Steel Boilers

By this Warranty Statement New Yorker Boiler Co., Inc. ("New Yorker"), issues limited warranties subject to the terms and conditions stated below. These limited warranties apply to residential cast iron and steel water boilers labeled with the New Yorker® brand which are sold on or after March 1, 2004.

ONE YEAR LIMITED WARRANTY

One Year Limited Warranty for Residential Water Boilers New Yorker warrants to the original consumer purchaser at the original installation address that its residential cast iron and steel water boilers will be free from defects in material and workmanship under normal usage for a period of one year from the date of original installation. In the event that any defect in material or workmanship is found during the one year period following the date of installation, New Yorker will, at its option, repair the defective part or provide a replacement free of charge, F.O.B. its factory.

WC BOILER FIVE YEAR LIMITED WARRANTY

Five Year Pressure Vessel Limited Warranty for WC™ Residential Water Boilers New Yorker warrants to the original consumer purchaser at the original installation address that the pressure vessel of the boiler will be free of defects in material and workmanship under normal usage for a period of five years following the date of installation. In the event that any defect in material or workmanship is found during the five year period following the date of installation, New Yorker will, at its option, repair the defective pressure vessel or provide a replacement free of charge, F.O.B. its factory.

LIFETIME LIMITED WARRANTY

For all gas/oil-fired residential boilers, New Yorker warrants to the original consumer purchaser at the original installation address that the heat exchanger of the boiler will be free of defects in material and workmanship under normal usage for the lifetime of the original consumer purchaser. In the event that any defect in material or workmanship is found during the ten year period following the date of installation, New Yorker will, at its option, repair the defective pressure vessel or provide a replacement free of charge, F.O.B. its factory. In the event that any defect in material or workmanship is found after the tenth year following the date of installation, New Yorker will provide a replacement pressure vessel upon payment by the original consumer purchaser of an amount equal to a percentage of the then current retail price of the model boiler involved (or, in the event that such model is not then in production, the most comparable model then in production), as follows:

	Service Charge as a % of Retail Price																												
Years in Service	1-5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25+								
WC Boilers	N/C	100																											
Water Boilers	No Charge					5	10	15	20	25	30	35	40	45	50	55	60	65	70	75									
Steam Boilers	No Charge					100																							

EXCEPTIONS AND EXCLUSIONS

- Components Manufactured by Others** - following the expiration of the foregoing one year limited warranty, all component parts of a boiler which are manufactured by others (such as burners, burner controls, circulator, tankless water heater, and New Yorker Link) shall be subject only to the manufacturer's warranty, if any.
- Removal and Replacement Costs** - these warranties do not cover expenses of removal or reinstallation. The consumer purchaser will be responsible for the cost of removing and replacing any defective part and all labor and related materials connected therewith. Replacement parts will be invoiced to the distributor in the usual manner and will be subject to adjustment upon proof of defect.
- Proper Installation** - these warranties are conditioned upon the installation of the boiler in strict compliance with New Yorker's Installation, Operating and Service Instructions. New Yorker specifically disclaims any liability of any kind which arises from or relates to improper installation.
- Improper Use or Maintenance** - these warranties will not be applicable if the boiler is used or operated over its rated capacity, is installed for uses other than home heating, or is not maintained in accordance with New Yorker's Installation, Operating and Service Instructions and hydronics industry standards.
- Improper Operation** - these warranties will not be applicable if the boiler has been damaged as a result of being improperly

operated with insufficient water; allowed to freeze; subjected to flood conditions; or operated with water conditions and/or fuels or additives which cause unusual deposits or corrosion or on the pressure vessel or associated controls.

- Geographic Limitations** - these warranties apply only to boilers installed within the 48 contiguous United States.
- Installation Requirements** - in order for these warranties to be effective:
 - The boiler must be installed in a single or two-family residential dwelling. This warranty does not apply to boilers installed in apartments for commercial or industrial applications.
 - The boiler must be installed in strict compliance with New Yorker's Installation, Operating and Service Instructions by an installer regularly engaged in boiler installations.
 - Boiler sections must not have been damaged during shipment or installation.
 - The boiler must be vented in accordance with chimney recommendations set forth in New Yorker's Installation, Operating and Service Instructions.
- Exclusive Remedy** - New Yorker's obligation in the event of any breach of these warranties is expressly limited to the repair or replacement of any part found to be defective under conditions of normal use.
- Limitation of Damages** Under no circumstances will New Yorker be liable for incidental, indirect, special or consequential damages of any kind under these warranties, including, without limitation, injury or damage to persons or property and damages for loss of use, inconvenience or loss of time. New Yorker's liability under these warranties shall under no circumstances exceed the purchase price paid for the boiler involved. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.
- Limitation of Warranty** - these limited warranties are given in lieu of all other express warranties and set forth the entire obligation of New Yorker with respect to any defect in a residential water boiler. New Yorker shall have no express obligations, responsibilities or liabilities of any kind, other than those set forth herein.

ALL APPLICABLE IMPLIED WARRANTIES, IF ANY, INCLUDING ANY WARRANTY OF MERCHANT ABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY LIMITED DURATION TO A PERIOD OF ONE YEAR, EXCEPT THAT IMPLIED WARRANTIES, IF ANY, APPLICABLE TO THE PRESSURE VESSEL OF A RESIDENTIAL WATER BOILER SHALL BE LIMITED IN DURATION TO THE LESSER OF THE DURATION OF SUCH IMPLIED WARRANTY OR A PERIOD EQUAL TO THE TERM OF THE APPLICABLE EXPRESS WARRANTY

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

PROCEDURE FOR OBTAINING WARRANTY SERVICE

Upon discovery of a condition believed to be related to a defect in material or workmanship covered by these warranties, the original consumer purchaser should notify the installer, who will in turn notify the distributor. If this action is not possible or does not produce a prompt response, the original consumer purchaser should write to New Yorker Boiler Co., Inc. at P.O. Box 10, Hatfield, PA 19440-0010, giving full particulars in support of the claim.

The original consumer purchaser is required to make available for inspection by New Yorker or its representatives the parts claimed to be defective and, if requested by New Yorker, to ship those parts prepaid to New Yorker at the above address for inspection or repair. In addition, the original consumer purchaser agrees to make all reasonable efforts to settle any disagreement arising in connection with any warranty claim before resorting to legal remedies in the courts.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.



New Yorker®
RESIDENTIAL HEATING BOILERS