

City of Portland, Maine - Building or Use Permit Application

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

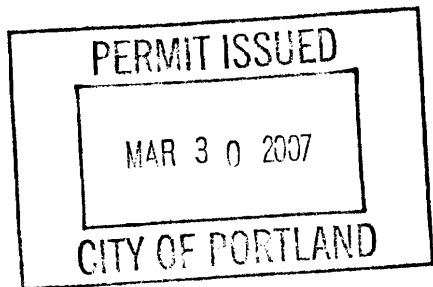
Permit No: 07-0330	Issue Date: 03/30/2007	CBL: 056 B024001
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Location of Construction: 82 PINE ST	Owner Name: LAMBERT KENNETH & DEBOR	Owner Address: 82 PINE ST	Phone:
Business Name:	Contractor Name: Haleys Metal Shop	Contractor Address: 539 Elm Street Biddeford	Phone: 2072848571
Lessee/Buyer's Name	Phone:	Permit Type: HVAC	Zone:

Past Use: Single Family Home	Proposed Use: Single Family Home - Install a new Natural Gas PFG Weil-McLain Boiler in basement	Permit Fee: \$130.00	Cost of Work: \$10,500.00	CEO District: 2
Proposed Project Description: Install a new Natural Gas PFG Weil-McLain Boiler in basement		FIRE DEPT: <input type="checkbox"/> Approved <input type="checkbox"/> Denied	INSPECTION: Use Group: F-3 Type: HUAZ <i>Gas Rules</i> Signature: <i>3/30/07</i>	
		PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.) Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Signature: Date:		

Permit Taken By: Idobson	Date Applied For: 03/30/2007	Zoning Approval	
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- This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.
- Building permits do not include plumbing, septic or electrical work.
- Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..



Special Zone or Reviews	Zoning Appeal	Historic Preservation
<input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> Date: <i>3/30/07</i>	<input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date:	<input checked="" type="checkbox"/> Not in District or Landmark <input checked="" type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date:

CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT ADDRESS DATE PHONE

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE DATE PHONE

City of Portland, Maine - Building or Use Permit

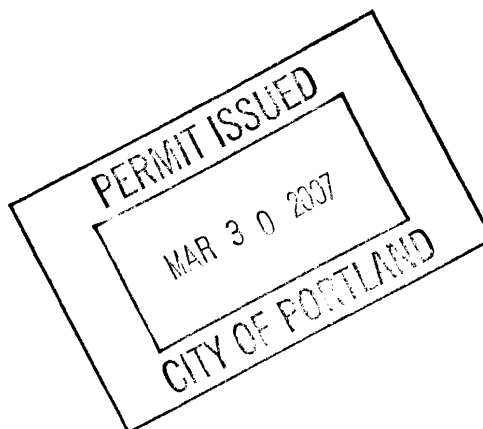
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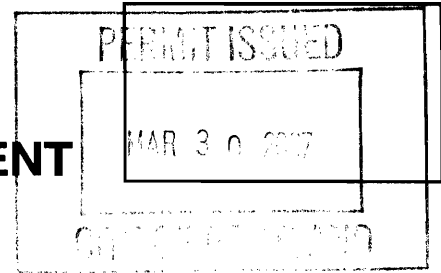
Dept: Zoning	Status: Pending	Reviewer:	Approval Date:	Ok to Issue: <input type="checkbox"/>
Note:				
Dept: Building	Status: Approved with Conditions	Reviewer: Jeanine Bourke	Approval Date: 03/30/2007	Ok to Issue: <input checked="" type="checkbox"/>
Note:	1) Must provide Chimney Disclosure form Included w/ permit 2) The installation must comply with the State of Maine Gas Regulations.			





FILL IN AND SIGN WITH INK

APPLICATION FOR PERMIT HEATING OR POWER EQUIPMENT



To the INSPECTOR OF BUILDINGS, PORTLAND, ME.

The undersigned hereby applies for a permit to install the following heating, cooking or power equipment in accordance with the Laws of Maine, the Building Code of the City of Portland, and the following specifications:

Location / CBL 82 Pine Street Use of Building Residential Date 3-30-07
 Name and address of owner of appliance Kevin Lambert 50 Locke Street Saco ME 04072
 Installer's name and address Haley's Metal Shop 539 Elm Street Biddeford Telephone 284-8171

Location of appliance:

- Basement
- Attic
- Floor
- Roof

Type of Fuel:

- Gas
- Oil
- Solid

Appliance Name: Weil-McLain PFG-5

U.L. Approved Yes No

Will appliance be installed in accordance with the manufacture's installation instructions? Yes No

IF NO Explain: _____

The Type of License of Installer:

- Master Plumber # _____
- Solid Fuel # _____
- Oil # _____
- Gas # PNT 3451
- Other _____

Type of Chimney:

Masonry Lined
Factory built Metal Lined

Metal
Factory Built U.L. Listing # _____

Direct Vent
Type _____ UL# _____

Type of Fuel Tank

- Oil
- Gas

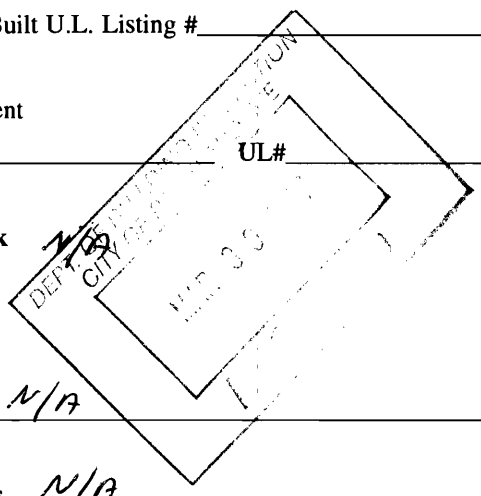
Size of Tank N/A

Number of Tanks N/A

Distance from Tank to Center of Flame _____ feet.

Cost of Work: \$ 10,500

Permit Fee: \$ 130



Approved

Fire: _____
 Ele.: _____
 Bldg.: JMB

Approved with Conditions

- See attached letter or requirement

Inspector's Signature _____

Date Approved _____

Signature of Installer [Signature]

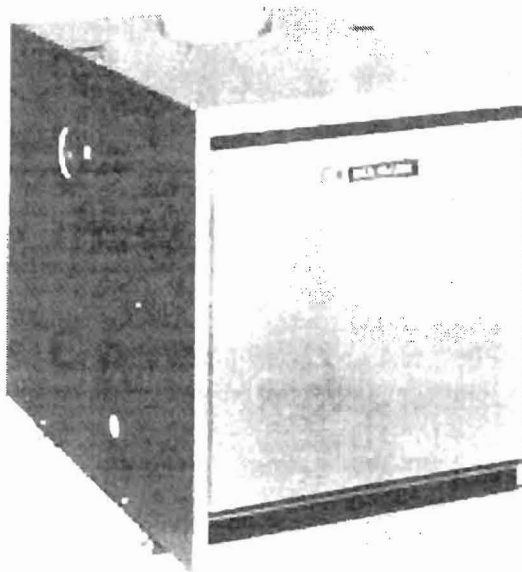


PFG

Gas-fired
Water boiler
Series 6

Boiler Manual

- **Installation**
- **Service**
- **Operation**
- **Boiler Parts**



*For additional information,
refer to . . .*

Control Supplement

Read all instructions before installing

- Installer** Leave all instructions with boiler for future reference.
Any claims for damage or shortage in shipment must be filed immediately against the transportation company by the consignee.
- Owner** Installation and service must be performed by qualified contractor.
-

Section I: Installation

Codes

Installation must comply with all local codes, laws, regulations and ordinances. Also United States National Fuel Gas Code ANSI Z223.1-latest edition. When required, the installation must conform to Standard for Controls and Safety Devices for Automatically Fired Boilers, ANSI/ASME CSD-1. Safe lighting and other performance criteria were met with the gas manifold and control assembly provided on the boiler when the boiler underwent tests specified in ANSI Z21.13-latest edition.

Canadian installations must comply with CAN/CSA B149.1 or .2 Installation Codes. The equipment shall be installed in accordance with those installation regulations in force in the local area where the installation is to be made. These shall be carefully followed in all cases. Authorities having jurisdiction shall be consulted before installations are made.

Combustion air and ventilation openings

Combustion air and ventilation openings must comply with Section 5.3, Air for Combustion and Ventilation, of National Fuel Gas Code ANSI Z223.1-latest edition, or applicable local building codes. Canadian installations must comply with CAN/CSA B149.1 or .2 Installation Codes.

WARNING Provide adequate combustion and ventilation air to:

- Assure proper combustion
- Reduce risk or severe personal injury or death from flue gas spillage and carbon monoxide emissions.

WARNING Do not install an exhaust fan in the boiler room.

Boiler installation must assure sufficient openings in building and boiler room to provide adequate combustion air and ventilation. Consider construction tightness of building when deciding whether additional outside openings may be needed.

Older buildings with single-pane windows, minimal weather-stripping and no vapor barrier often provide enough natural infiltration and ventilation without dedicated openings.

New construction or remodeled buildings are most often built tighter. Windows and doors are weather stripped, vapor barriers are used and openings in walls are caulked. As a result, such tight construction is unlikely to allow proper natural air infiltration and ventilation.

Air from inside building (boiler in interior room):

- Tightly constructed buildings must be provided with openings to outside for combustion and ventilation air. These openings must be sized to handle all fuel burning appliances, exhaust and ventilation fans and fireplaces.
- When openings to boiler room are taken to interior spaces, provide two permanent openings: a combustion air opening within 12 inches of floor and a ventilation opening within 12 inches of ceiling. Each opening must provide a minimum free area of one square inch per 1,000 Btuh input of all appliances in room plus requirements for any exhaust fans in room. The interior space supplying combustion and ventilation air must have adequate infiltration from outside.

Air directly from outside to boiler room:

- Tightly constructed buildings must be provided with combustion air and ventilation openings to boiler room which are adequate to handle the boiler needs plus the needs of all other fuel-burning appliances, fireplaces and exhaust or ventilation fans.
- Combustion and ventilation openings connecting directly or by ducting to outside, or to attic or crawl spaces that freely connect with outside, must be sized as follows:
 1. Outside wall or vertical ducting - one square inch per 4,000 Btuh input of all appliances in room plus requirements for any exhaust fans or other appliances in room.
 2. Horizontal ducting - one square inch per 2,000 Btuh of all appliances in room plus requirements for any exhaust fans or other appliances in room.
 3. All ducting must be same size as permanent openings. Minimum area dimensions of ducting must be no less than 9 square inches.
 4. Other size ducting must comply with local codes.

Select the boiler location

- Consider all connections to boiler before selecting a location.
- Boiler must be installed so gas control system components are protected from dripping or spraying water or rain during operation or service.
- Non-combustible floor ONLY. See "Boiler foundation", Page 4.

WARNING To avoid personal injury, death or property damage, keep boiler area clear and free from combustible materials, gasoline and other flammable vapors and liquids.

Installation clearances

Suggested minimum clearances for servicing

- 24 inches for cleaning and servicing, left side.
- 18 inches for access to controls and components, front.
- 48 inches from top for cleaning flueways.
- 6 inches on remaining sides.

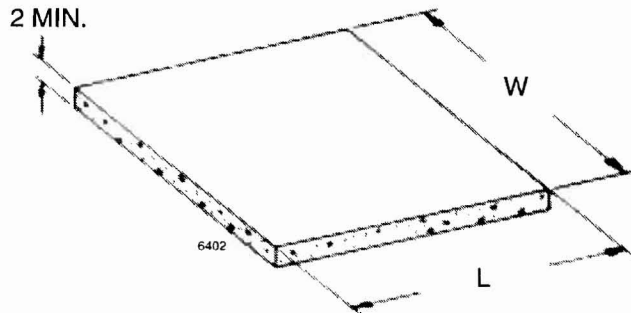
Required minimum clearances to combustible material in alcove installations

PFG 5 thru 8: Top 42" R. Side 5" Front: Alcove
 Rear 5" L. Side 5"

PFG 8: Provide service clearances listed above and minimum 24" between jacket and any combustible wall(s) and ceiling. Install in space large in comparison to size of boiler.

- Single wall vent pipe must be at least 6 inches from combustible material.
- Type "B" double wall metal vent pipe - refer to vent manufacturer's recommendation for clearances to combustible material.
- Hot water pipes must be at least ½" from combustible material.

Figure 1 Boiler foundation



2. An aerated boiler foundation is recommended if any of the following conditions exist:
 - a) Electrical wiring or telephone cables buried in the concrete floor of the boiler room.
 - b) Concrete floor is "green."
 - c) There is a history of the floor becoming flooded.
 - d) Water is channeled under the concrete.

Placing the boiler

1. Remove boiler from shipping pallet. Do not drop boiler or bump jacket on floor or pallet.
2. Level boiler so that air can be separated from the circulating water. Shim legs if necessary. Do not alter legs.
3. Remove front jacket door and burner access panel. Unscrew access panel screws, remove and discard shipping washers, and reinstall screws.
4. Check for proper orifice sizing from charts below.

DANGER Proper orifices must be used. Failure to do so will cause severe personal injury, death or substantial property damage.

ORIFICE SIZES		
Type of Gas	Heating Value, BTU/cu. ft.	Orifice Size
Natural	1000	#37 drill
Propane	2500	1.65 mm

ORIFICE SIZE — CANADA ONLY		
Elevation	Natural	Propane
0 — 2000 ft.	#37 drill	1.65 mm
2000 — 4500 ft.	#38 drill	#52 drill

5. Level and straighten the burners.

DANGER Burners must be seated properly in locating slots with their openings facing up. Gas orifices must inject down the center of the burner. Failure to properly seat burners will result in severe personal injury, death or substantial property damage.

6. Reinstall access panel.

Residential garage installation

Install boiler so burners are at least 18 inches above the floor.

Hydrostatic pressure test

Pressure test before attaching gas piping or electrical supply.

1. Plug any necessary boiler tappings or openings.
2. Connect water supply. Fill boiler and purge all air. Test at 45 psi for more than 10 minutes.

WARNING Do not leave boiler unattended. A cold water fill could expand and cause excessive pressure, resulting in severe personal injury, death or substantial property damage.

3. Check for maintained gauge pressure and leaks. Repair if found.

WARNING Leaks must be repaired at once. Failure to do so can cause boiler damage, resulting in substantial property damage.

DANGER Do not use petroleum-based sealing compounds in boiler system. Severe damage to boiler will result, causing substantial property damage.

4. Drain boiler and remove testing plugs.

Boiler piping connections to the heating system (refer to piping diagrams, Page 7)

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

These boilers are provided with built-in air elimination systems.

1. Install relief valve vertically in top 3/4" tapping in right end section.

WARNING Relief valve discharge piping must be piped near to the floor or to a floor drain to eliminate potential of severe burns. Do not pipe the relief valve discharge to any area where freezing could occur.

2. Install pressure-temperature gauge in tapping provided in left end section.
3. This boiler is for forced hot water circulation only. The circulator and expansion tank must be selected and sized according to the design requirements of the system.
 - a) Size and install circulator. Can be installed on supply or return piping
 - b) Size expansion tank to handle the volume of water in the system.
4. Expansion tank installations.
 - a) Closed type expansion tanks - connect from the 3/4" N.P.T. expansion tank tapping on the left end section (located just behind the supply outlet tapping) to the expansion tank using 3/4" N.P.T. piping. Any horizontal expansion tank piping must pitch upward toward the tank at least 1 inch for each 5 feet of piping.
 - b) Diaphragm type expansion tank - may be located anywhere in the system, preferably near the boiler.

PFG SERIES 6 GAS-FIRED WATER BOILER — BOILER MANUAL

Recommended boiler and system piping (forced hot water)

Figure 2a Minimum recommended pipe sizes

Boiler Size	Min. Pipe Size	
	Supply (A)	Return (B)
PFG-5	1½"	1½"
PFG-6	2"	2"
PFG-7	2"	2"
PFG-8	2"	2"

Supply and return sizes refer to minimum size of pipe connected to the boiler for 20°F temperature drop between supply and return.

Figure 2b Piping – Closed type expansion tank

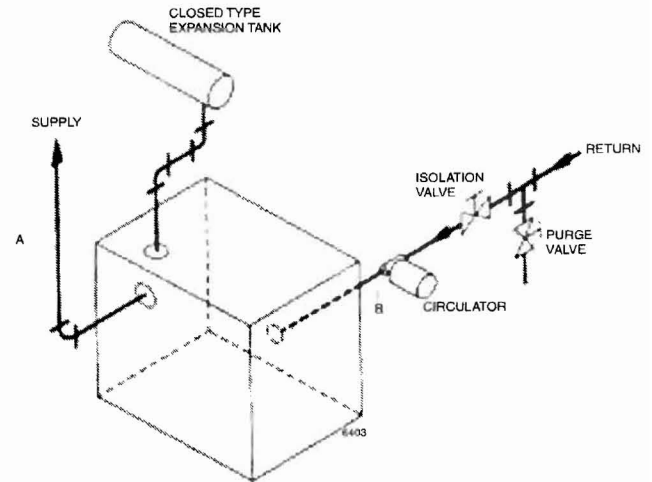
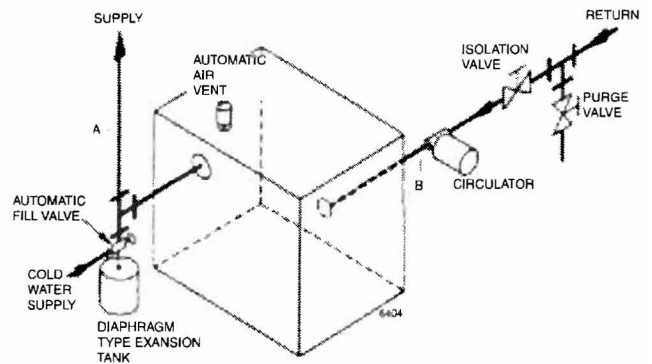


Figure 2c Piping – Closed diaphragm type expansion tank



Note: Use circulators or zone valves in each circuit for multiple circuit applications.

Pipe delivery schedule

Length of Pipe In Feet	*CAPACITY OF PIPE IN CUBIC FEET OF GAS PER HOUR				
	½"	¾"	1"	1¼"	1½"
10	132	278	520	1050	1600
20	92	190	350	730	1100
30	73	152	285	590	890
40	63	130	245	500	760
50	56	115	215	440	670
75	45	93	175	360	545
100	38	79	150	305	460
150	31	64	120	250	380

*0.60 Specific Gravity, 0.30 inches water column pressure drop. For additional schedules, see ANSI Z223.1. Canadian installations must comply with CAN/CSA B149.1 or .2 Installation Codes.

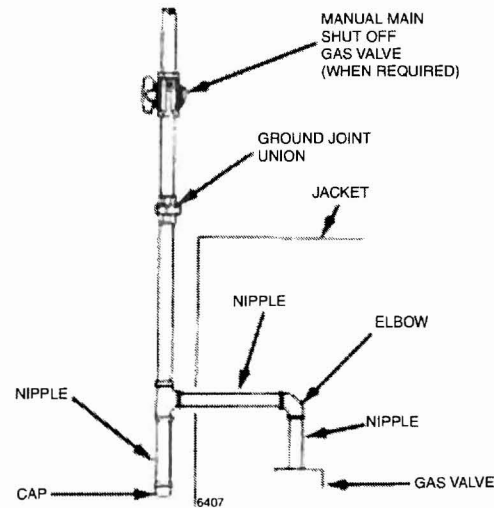
- PFG 6 thru 8 only (and no damper on PI boilers) - for propane gas, inlet gas pressure to gas valve should be 11 to 13 inches water column. The gas pressure regulator (furnished by the gas supplier) must be adjusted to provide lock-up pressures not exceeding 13 inches water column. Select the pipe size, tanks and regulators as required.

DANGER

If boiler is to be propane fired, a conversion kit must be used. Failure to use kit, properly install kit or use kit on boiler with damper will result in severe personal injury, death or substantial property damage.

- Remove jacket door and connect from gas valve to gas meter. Use a street elbow or an elbow and close nipple at the inlet connection of the gas valve to run gas piping through opening in jacket side panel.
- Follow good piping practices.
- Pipe joint compound (pipe dope) must be resistant to corrosive action of liquefied petroleum gases and applied sparingly only to male threads of pipe joints.
- A drip leg must be installed at inlet of gas connection to boiler. Where local utility requires drip leg be extended to the floor, use an appropriate length of pipe between the cap and tee.
- A ground joint union must be installed in the piping to provide for servicing (see Figure 5).
- Install manual shut-off valve outside boiler jacket as shown in Figure 5 when required by local codes.
- Piping must be supported by hangers, not by the boiler or its accessories.
- In Canada only - when manual main shut off valve is used, it must be identified by installer.
- Purge all air from the supply piping.

Figure 5 Gas supply piping



- Before placing boiler in operation, check boiler and its gas connection for leaks.

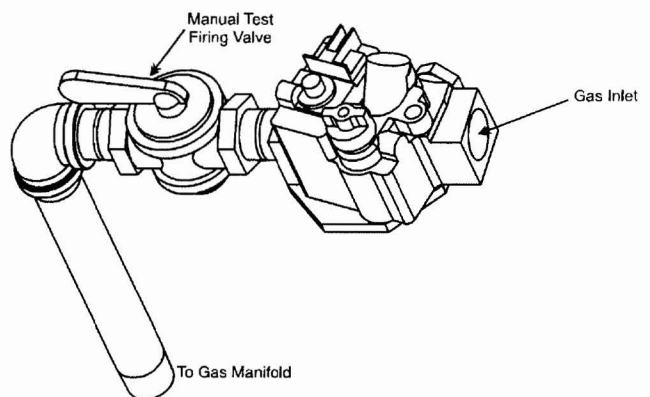
WARNING

Do not check for gas leaks with an open flame - use bubble test. Failure to do so can cause severe personal injury, death or substantial property damage.

- If test pressure is less than 13.0 inches water column then close manual main shut-off valve.
- If test pressure is greater than 13.0 inches water column then boiler and gas valve must be disconnected from gas supply piping.

PFG-8, as required by ANSI Z21.13/CSA 4.9, is equipped with a manual test valve as shown in Figure 5a. Close this valve to test boiler gas valve without supplying gas to the manifold.

Figure 5a Leak test valve (model PFG-8 ONLY)



Check-out procedure

Check off steps as completed.

- 1. Check to make sure base insulation is secure. See "Inspect Base Insulation," page 15.
- 2. Boiler and heat distribution units filled with water?
- 3. Automatic air vent, if used, open one turn?
- 4. Air purged from system?
- 5. Air purged from gas piping? Piping checked for leaks?
- 6. Follow operating/lighting instruction label on boiler for proper start-up. Also refer to "To Place in Operation," page 13.
- 7. Are proper orifices installed? See page 5 for proper orifice size.

DANGER Proper orifices must be used. Failure to do so will cause severe personal injury, death or substantial property damage.

- 8. Proper burner flame? Refer to "Check Main Burner Flames" and "Check Pilot Burner Flame," page 13.
- 9. Test limit control: While burners are operating, move the indicator of the high limit control below actual boiler water temperature. The burners should go off while the circulator continues to operate. Raise the limit control above the boiler water temperature and the burners should reignite.
- 10. Test any additional field-installed controls: If boiler has low water cut-off, additional high limit or other controls, test for operation as outlined by manufacturer. Burners should be operating and should go off when controls are tested. When controls are restored, burners should reignite.
- 11. To test ignition system shut-off device:
 - a. For PI systems: Connect a manometer to outlet side of gas valve. Start boiler, allowing for normal start-up cycle to occur and main burners to ignite. With main burners on, manually shut off gas supply at manual main shut-off gas valve. Burners should go off. Open manual main shut-off gas valve. The manometer should confirm there is no gas flow. Pilot will

relight. flame sensing element will sense pilot flame and the main burners reignite.

- b. For standing pilot systems: Turn gas knob to PILOT position and extinguish pilot flame - Pilot gas flow should stop in less than 3 minutes. Put system back into operation, see page 13.
- 12. High limit control set to design temperature requirements of the system? Maximum high limit setting - 240 °F.
- 13. For multiple zones, flow adjusted so it is about the same in each zone?
- 14. Thermostat heat anticipator is set properly? Refer to "Install Room Thermostat," page 10, and wiring diagram on jacket door.
- 15. Boiler cycled with the thermostat? Raise to highest setting. Boiler should go through normal start-up cycle. Lower to lowest setting. Boiler should go off.
- 16. Measure gas input (natural gas only):
 - a. Operate boiler 10 minutes.
 - b. Turn off all other appliances served by the gas meter, including gas stove, pilot lights and gas yard lights.
 - c. At natural gas meter measure time (in seconds) required to use one cubic foot of gas.
 - d. Calculate gas input:

$$\frac{3600 \times 1000}{\text{number of seconds from step C}} = \text{Btuh}$$
 - e. Btuh calculated should approximate input rating on rating label.
- 17. Check manifold gas pressure by connecting manometer to downstream test tapping on main gas valve. Manifold gas pressure for natural gas should be 3 1/2 inches water column and for propane gas should be 10 inches water column.
- 18. Several operating cycles observed for proper operation? If damper is provided, see Control Supplement for check-out procedure.
- 19. Room thermostat set to desired temperature?
- 20. Installation and Service Certificate on this page completed?
- 21. All instructions shipped with this boiler reviewed with owner or maintenance person, returned to envelope and given to owner or displayed near boiler?

Installation and Service Certificate

Boiler model _____ Series _____ CP number _____ Date installed _____

Measured Btuh input _____

- Installation instructions have been followed.
- Check-out sequence has been performed.
- Above information is certified to be correct.
- Information received and left with owner/maintenance
-

Installer _____ (company) _____ (address) _____ (phone)

_____ (installer's signature)

Handling ceramic fiber and fiberglass materials

WARNING This product contains fiberglass jacket insulation and ceramic fiber materials in combustion chamber lining or base panels in gas fired products. Airborne fibers from these materials have been listed by the State of California as a possible cause of cancer through inhalation. The combustion chamber lining or base insulation panels in this product contain ceramic fiber materials. Ceramic fibers can be converted to cristobalite in very high temperature applications. The International Agency for Research on Cancer (IARC) has concluded, "Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1).":

Suppliers of fiberglass wool products recommend the following precautions be taken when handling these materials:

Precautionary measures

- Avoid breathing fiberglass dust and contact with skin or eyes.
- Use NIOSH certified dust respirator (N95). This type of respirator is based on the OSHA requirements for fiberglass wool at the time this document was written. Other types of

respirators may be needed depending on the job site conditions. Current NIOSH recommendations can be found on the NIOSH web site at <http://www.cdc.gov/niosh/homepage.html>. NIOSH approved respirators, manufacturers, and phone numbers are also listed on this web site.

- Wear long-sleeved, loose fitting clothing, gloves, and eye protection.
- Apply enough water to the combustion chamber lining or base insulation to prevent airborne dust.
- Remove combustion chamber lining or base insulation from the boiler and place it in a plastic bag for disposal.
- Operations such as sawing, blowing, tear out and spraying may generate airborne fiber concentration requiring additional protection. Bag for disposal.
- Wash potentially contaminated clothes separately from other clothing. Rinse clothes washer thoroughly.

NIOSH stated First Aid.

- Eye: Irrigate immediately
- Breathing: Fresh air.

Inspect base insulation:

WARNING The boiler contains ceramic fiber and fiberglass materials. Use care when handling these materials. See WARNING above. Failure to comply could result in severe personal injury.

Make sure base insulation is secure against base front and back panels. If base insulation is damaged or displaced, do not operate boiler. Replace or reposition insulation.

WARNING Failure to replace damaged insulation or reposition insulation can result in a fire hazard, causing severe personal injury, death or substantial property damage.

4. If boiler fails to start, check for following conditions:
 - a) Loose connection or blown fuse?
 - b) High limit setting below boiler water temperature?
 - c) Thermostat setting below room temperature?
 - d) Gas not turned on at meter?
 - e) Gas not turned on at boiler?
 - f) If above fails to eliminate the trouble, refer to Control Supplement.
5. Make sure boiler goes through several normal operating cycles.
6. Turn thermostat or operating control to desired setting.

To place in operation:

1. Make sure boiler is filled with water.
2. Follow lighting/operating instructions on boiler.

For propane boilers only:

WARNING Your propane supplier mixes an odorant with the propane to make its presence detectable. In some instances, the odorant can fade, and the gas may no longer have an odor.

Propane gas can accumulate at floor level. Smell near the floor for the gas odorant or any unusual odor. If you suspect a leak, do not attempt to light the pilot.

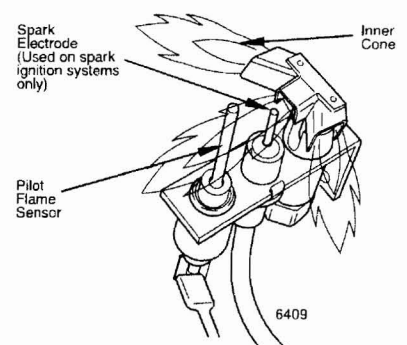
- Use caution when attempting to light a propane pilot. This should be done by a qualified service technician, particularly if pilot outages are common.
- Periodically check the odorant level of your gas.
- Inspect boiler and system at least yearly to make sure all gas piping is leak-tight.
- Consult your propane supplier regarding installation of a gas leak detector. There are some products on the market intended for this purpose. Your supplier may be able to suggest an appropriate device.

3. If boiler starts, go to Step 5. If boiler fails to start, go to Step 4.

Check pilot burner flame:

1. Proper pilot flame
 - a) Blue flame.
 - b) Inner cone engulfing pilot flame sensor.
 - c) Pilot flame sensor glows cherry red.
2. Improper pilot flame
 - a) Overfired - flames large and lifting or blowing past pilot flame sensor.
 - b) Underfired - flame small; pilot flame sensor not engulfed by inner cone.
 - c) Lack of primary air - flame tip yellow.
 - d) Pilot flame sensor not heated properly.

Figure 7 Typical pilot burner flame

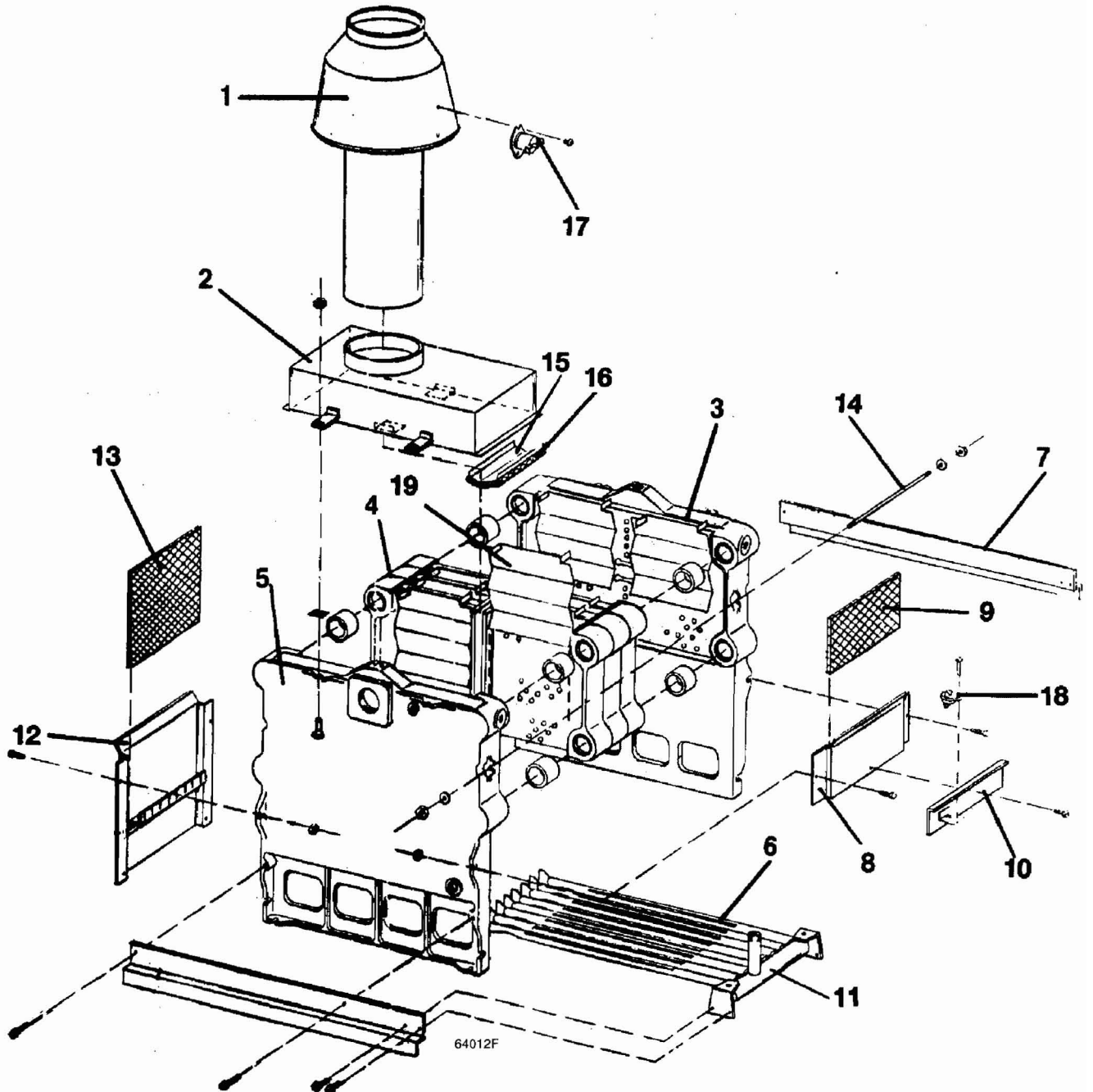


PFG SERIES 6 GAS-FIRED WATER BOILER — BOILER MANUAL

Common problems and possible solutions

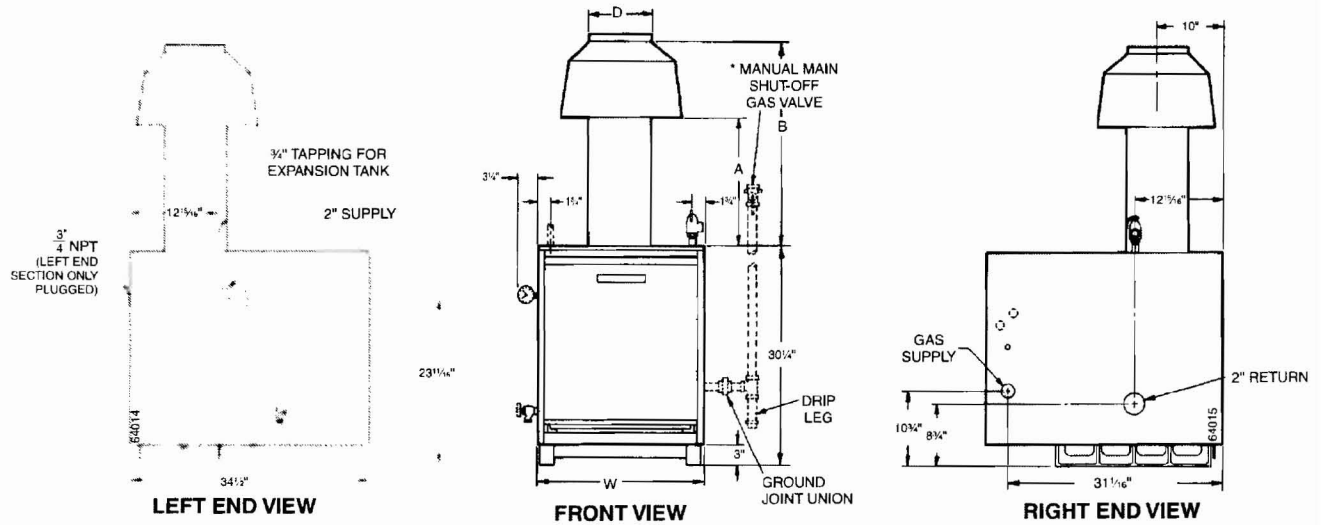
COMMON SYMPTOMS	COMMON CAUSES	POSSIBLE CORRECTIONS
Rapid cycling – burners turn on and off frequently.	Thermostat installed where drafts or heat affect reading.	Locate thermostat on inner wall away from heat sources or cool drafts.
	Heat anticipator in thermostat adjusted incorrectly.	Adjust heat anticipator to match current draw. Refer to boiler wiring diagram.
	Incorrect limit setting.	Set limit according to system design. Maximum setting is 240°F. for water boilers. Increase limit setting to decrease cycling.
Frequent release of water through the relief valve.	Insufficient expansion tank size.	Call installer to check expansion tank operation.
	Flooded expansion tank.	Call installer to check expansion tank operation.
Need to frequently add make-up water.	Leaks in boiler or piping.	Have installer repair leaks at once to avoid constant use of make-up water. Make-up water can cause mineral deposits which, in turn, can cause boiler section failure. Do not use petroleum based stop-leak chemicals.
Popping or percolating noise heard in boiler.	Mineral deposits in the sections due to the constant use of make-up water.	Call installer to delime the boiler, if necessary. In some cases the deposits will be too heavy to remove with deliming.
		Have installer repair leaks to eliminate the need for constant make-up water.
	Incorrect pH of boiler water.	pH should be maintained at 7.0 to 8.5.
Metal flakes found in boiler base – flueway corrosion.	Halogenated hydrocarbons from environment contaminating the combustion air.	Locate and remove sources of hydrocarbons (i.e., bleaches, cleaners, chemicals, sprays, fabric softeners, paint remover, etc.).
	Condensation of combustion gases.	Raise high limit setting. If problem continues, call installer for assistance.
Isolated radiation does not heat.	Air in system.	Bleed air from system through vents in radiation.
	Low system pressure.	Fill to correct pressure.
		Check for leaks in boiler or piping. Have installer repair at once.
High limit set to low.	Adjust high limit to a higher setting.	
Black Water Condition.	Oxygen corrosion due to leaks in piping.	Check for leaks in piping. Have installer repair at once. Maintain pH between 7.0 – 8.5.

Replacement Parts



PFG SERIES 6 GAS-FIRED WATER BOILER — BOILER MANUAL

Dimensions



* Locate manual main Shut-Off Gas Valve (where required) according to local utility requirements.

Water Boiler Number	No. & Size of		Gas Connection Size Natural and Propane	Draft Hood Outlet Size	Dimensions of Crate (Outside Dimensions)			Approximate Shipping Weight (lbs.)	Boiler Water Content (gal.)
	Supply	Return			Length	Width	Height		
PFG-5	1 - 2"	1 - 2"	3/4"	7"	38 3/8"	25"	33 1/2"	507	8.76
PFG-6	1 - 2"	1 - 2"	3/4"	8"	38 3/8"	25"	33 1/2"	575	9.60
PFG-7	1 - 2"	1 - 2"	3/4"	9"	38 3/8"	31"	33 1/2"	635	10.44
PFG-8	1 - 2"	1 - 2"	3/4"	9"	38 3/8"	31"	33 1/2"	695	11.28



State of Maine

DEPARTMENT OF PROFESSIONAL & FINANCIAL REGULATION

PROPANE AND NATURAL GAS BOARD

License # PNT3451

Be it known that: **RAYMOND BENNETT**
has qualified as required by Title 32 MRSA Chapter 130 and is
licensed as a
PROPANE/NATURAL GAS TECH
Authorized to perform job functions as:
APPL. CONN. & SERV. TECH.

ISSUE DATE
Jul 01, 2006

Anne L. Head

EXPIRATION DATE
Jun 30, 2008

Director, Office of Licensing & Registration
Authorizing signature

ME 285514