

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK



# CITY OF PORTLAND

# BUILDING PERMIT

This is to certify that Mike & Sarah Delehanty

Located At 86 BALLPARK DR

Job ID: 2012-04-3809-SF

CBL: 371- A-039-001

has permission to Install Peerless WB boiler

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.

A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be

**Fire Prevention Officer**

**Code Enforcement Officer / Plan Reviewer**

THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY  
PENALTY FOR REMOVING THIS CARD

## BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: [buildinginspections@portlandmaine.gov](mailto:buildinginspections@portlandmaine.gov)

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.

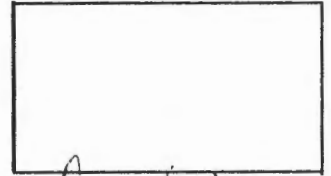




Mailed 8/1/12  
2012-46767

FILL IN AND Sign WITH INK

# APPLICATION FOR PERMIT HEATING OR POWER EQUIPMENT



# 2012-04-38 09-5F R-2 Entail 8/6/12

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 86 Ballpark Drive Use of Building 371-A039 Date 7-25-12  
Name and address of owner of appliance Mike Delebarry - 544 Walnut Hill Rd, North York  
86 Ballpark Drive Portland 04097  
Installer's name and address Pete the Plumber 8 Tidwell Rd  
Turner Me 04282 Telephone 207-225-3737

Location of appliance:  
 Basement       Floor  
 Attic             Roof

Type of Fuel:  
 Gas       Oil       Solid

Appliance Name: Peerless

U.L. Approved  Yes  No

Will appliance be installed in accordance with the manufacturer's installation instructions?  Yes

IF NO Explain: \_\_\_\_\_

Type of Chimney:  
 Masonry Lined  
Factory built

Metal  
Factory Built U.L. Listing #, \_\_\_\_\_

Direct Vent  
Type \_\_\_\_\_ UL# 01 DTL TERM 404  
as part of burner on boiler

Type of Fuel Tank  
 Oil  
 Gas

Mike Smith      working for Pete the Plumber

The Type of License of Installer:  
 Master Plumber # \_\_\_\_\_  
 Solid Fuel # \_\_\_\_\_  
 Oil # MS20007190  
 Gas # \_\_\_\_\_  
 Other- \_\_\_\_\_

SeofTank \_\_\_\_\_

Number of Tanks 1 275 gallon tank

Distance from Tank to Center of Flame 12 feet.

Cost of Work: \$ 8500<sup>00</sup>

Permit Fee: \$ 110<sup>00</sup>

Approved

Approved with Conditions

Fire: \_\_\_\_\_

See attached letter or requirement

Ele.: \_\_\_\_\_

Bldg.: \_\_\_\_\_

Inspector's Signature

Date Approved

Signature of Installer Pete the Plumber

Pete Angell owner

White - Inspection    Yellow - Efile    Pink - Applicant's    Gold - Assessor's Copy



# PORTLAND MAINE

*Strengthening a Remarkable City, Building a Community for Life • [www.portlandmaine.gov](http://www.portlandmaine.gov)*

## Receipts Details:

**Tender Information:** Check , Check Number: 7656

**Tender Amount:** 110.00

## Receipt Header:

**Cashier Id:** bsaucier

**Receipt Date:** 8/6/2012

**Receipt Number:** 46768

## Receipt Details:

Referance ID:	7525	Fee Type:	BP-HVAC
Receipt Number:	0	Payment Date:	
Transaction Amount:	110.00	Charge Amount:	110.00
Job ID: Job ID: 2012-04-3809-SF - New 3 bed/2.5 bath, 2 story Colonial w/garage			
Additional Comments: 86 Ballpark			

**Thank You for your Payment!**



Mailed

8-1-12

ck# 7656  
was include

with original Applicant

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 86 Ballpark Drive Use of Building \_\_\_\_\_ Date 7-25-12  
 Name and address of owner of appliance Mike Delebraty  
86 Ballpark Drive Portland  
 Installer's name and address Pete the Plumber 8 Tidwell Rd  
Twin Falls ME 04282 Telephone 207-225-3737

Location of appliance:

- Basement       Floor  
 Attic             Roof

Type of Fuel:

- Gas       Oil       Solid

Appliance Name: Perless WB 3

U.L. Approved  Yes  No

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

IF NO Explain: \_\_\_\_\_

Mike Smith works for Pete the Plumber

The Type of License of Installer:

- Master Plumber # \_\_\_\_\_  
 Solid Fuel # \_\_\_\_\_  
 Oil # MS 20007190  
 Gas # \_\_\_\_\_  
 Other- \_\_\_\_\_

Type of Chimney:

- Masonry Lined  
 Factory built

- Metal  
 Factory Built U.L. Listing #: \_\_\_\_\_

Direct Vent  
 Type \_\_\_\_\_ U.L.#. OL DTL TERM 404  
as part of burner on boiler

Type of Fuel Tank

- Oil  
 Gas

Size of Tank \_\_\_\_\_

Number of Tanks 1 275 gallon tank

Distance from Tank to Center of Flame 12 feet.

Cost of Work: \$ 8500<sup>00</sup>

Permit Fee: \$ 110<sup>00</sup>

Approved

Approved with Conditions

Fire: \_\_\_\_\_

See attached letter or requirement

Ele.: \_\_\_\_\_

Bldg.: \_\_\_\_\_

Inspector's Signature

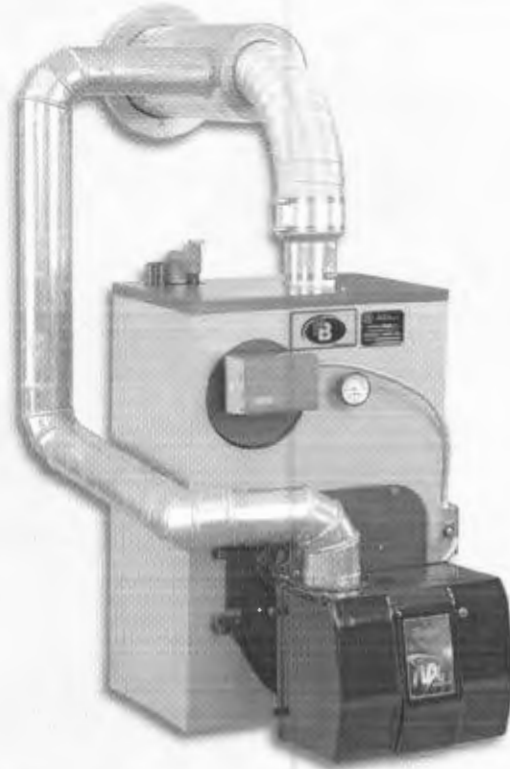
Date Approved

Signature of Installer [Signature] Pete the Plumber [Signature]

White - Inspection    Yellow - File    Pink - Applicant's    Gold - Assessor's Copy

# Series **WV-DV**

## *Oil Boilers*



CHANGE FOR THE  
BETTER WITH  
ENERGY STAR

As an ENERGY STAR® Partner, PB Heat, LLC has determined that certain firing rates of this product meet the ENERGY STAR® guidelines for energy efficiency.

## **Installation, Operation & Maintenance Manual**



PeerlessBoilers.com

# Series WV-DV

## Oil Boilers

### Installation, Operation & Maintenance Manual

**TO THE INSTALLER:**

*This manual is the property of the owner and must be affixed near the boiler for future reference.*

**TO THE OWNER:**

*This boiler should be inspected annually by a Qualified Service Agency.*

#### Service Information

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_



PeerlessBoilers.com

**PB HEAT, LLC**

131 S. CHURCH STREET • BALLY, PA 19503



**Mixed Sources**

Product group from well-managed forests, controlled sources and recycled wood or fibre  
www.fsc.org Cert no. SCS-COC-001361  
© 1996 Forest Stewardship Council





 **NOTICE**

**Sidewall Venting**

The Peerless WV-DV is designed and built to be vented through a side wall of a building using a stainless steel concentric vent terminal (4 inch diameter tube inside an 8 inch diameter tube). Exhaust gases from combustion contain water vapor. During the cooler months of the year, this water vapor will condense into a visible vapor plume. This water vapor may condense on any surface near the vent terminal. Care must be taken not to locate the vent terminal where the exhaust gas, vapor plume and condensation could cause a hazard or a nuisance. Do not locate terminal under a deck, for instance, as it may create a coating of ice on the deck during the winter months, as well as shorten the life of the deck materials. Refer to Chapter 4 in this manual for specific terminal location requirements. Condensate from a side wall vent terminal may also cause paint on surrounding surfaces to crack and peel. If the boiler is used to heat potable (tap) water, the boiler will cycle year round. The effects of hot exhaust gases and odors must be taken into consideration during summer months.

Side wall vented, oil fired appliances may cause soot staining on wall surfaces surrounding their terminals. To reduce the potential for staining, the boiler must be serviced annually. Soot and scale must be completely removed from the combustion chamber and cast iron heat exchanger flueways. See Chapter 7 in this manual. The oil burner must be completely serviced and set up according to the specifications shown in Chapter 5 of this manual.

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# USING THIS MANUAL

## A. INSTALLATION SEQUENCE

Follow the installation instructions provided in this manual in the order shown. The order of these instructions has been set in order to provide the installer with a logical sequence of steps that will minimize potential interferences and maximize safety during boiler installation.

## B. SPECIAL ATTENTION BOXES

Throughout this manual you will see special attention boxes intended to supplement the instructions and make special notice of potential hazards. These categories mean, in the judgment of PB Heat, LLC:

### DANGER

Indicates a condition or hazard which will cause severe personal injury, death or major property damage.

### WARNING

Indicates a condition or hazard which may cause severe personal injury, death or major property damage.

### CAUTION

Indicates a condition or hazard which will or can cause minor personal injury or property damage.

### NOTICE

Indicates special attention is needed, but not directly related to potential personal injury or property damage.

# 1. PREINSTALLATION

Read carefully, study these instructions before beginning work. It will save time. Study the included drawings. Save these instructions for reference.

This boiler must be installed by a qualified contractor.

The boiler warranty can be voided if the boiler is not installed, maintained and serviced correctly.

## ⚠ NOTICE

The equipment shall be installed in accordance with those installation regulations in force in the local area where the installation is to be made, including the current edition of NFPA-31. These shall be carefully followed in all cases. Authorities having jurisdiction shall be consulted before installations are made.

## ⚠ CAUTION

NEVER BURN GARBAGE OR PAPER IN THE UNIT, AND NEVER LEAVE COMBUSTIBLE MATERIAL AROUND IT.

## ⚠ CAUTION

Do not tamper with boiler or controls.

## ⚠ WARNING

Do not use this appliance if any part has been under water. Improper or dangerous operation may result. Immediately call a qualified service technician to inspect the boiler and to replace any part of the control system and any control which has been under water.

### A. ACCESSIBILITY CLEARANCES

To provide for reasonable conditions of accessibility, the following minimum clearances are recommended:  
Alcove Installation.

1. 12" from left side
2. 24" from top
3. 24" from front
4. 9" from right side and rear

### B. CLEARANCES FROM COMBUSTIBLE CONSTRUCTION

The design of this boiler is certified for the following clearances from combustible construction:

1. 0" from rear
2. 0" from right and left sides
3. 0" from top
4. 0" from vent pipe
5. 0" from vent connector
6. 0" from vent terminal
7. 24" from front

## 2. BOILER SET-UP

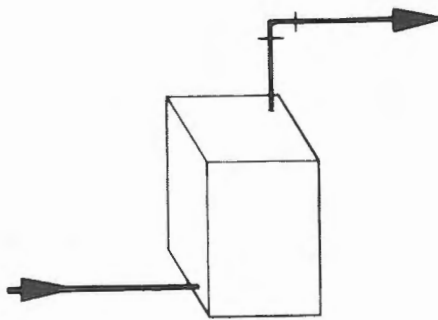
### A. SETTING THE BOILER

1. Prepare sketches and notes of the layout of the installation. Include boiler location, venting system, existing piping and wiring. Show existing equipment that may interfere with installation of new equipment. See Section 4-A. "Vent System Installation," Page 7, and Figure 4.1.
2. Provide a level foundation, located as close as possible to the center of the heating system.
3. This boiler is suitable for use on combustible flooring, provided the boiler is not set on carpet and a metal drip pan is placed under the appliance.
4. See exploded view (Figure 9.1). After uncrating boiler and setting it on foundation, open burner mounting plate (Item 5) and make certain the target wall (Item 2) is seated in the back of the combustion chamber. (WV-DV-04) Ceramic fiber blanket base liner (Item 3) should be lying flat on bottom of combustion chamber between target wall and burner mounting plate. Close burner mounting plate.

# 3. PIPING AND CONTROLS

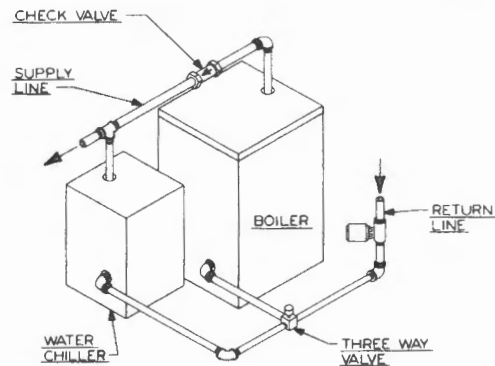
## A. BOILER SUPPLY AND RETURN

1. See Figure 3.1 for suggested piping to the boiler.
2. Make up cold water supply connection to the boiler.
3. Plug all open tappings in the boiler and fill with water. Apply approximately thirty (30) psi pressure. Check to make certain that all joints and fittings are water tight.
4. After all joints and connections have been proven water tight, remove cold water supply and plugs from all tappings that are to be used. See Figure 8.1 for tapping locations.
5. Return water piping must be done in such a manner to allow clearance from the burner mounting plate to other piping when opening and closing the burner mounting plate.



**Figure 3.1**

6. The supply and return connections should be sized to suit the system. A 1-1/2" to 1-1/4" reducing coupling may be used on the return where the system piping is 1-1/2". The supply should be out of the top of the back section and return to the bottom of the front section. There is a 3/4" tapping in the top of the back section for air elimination.

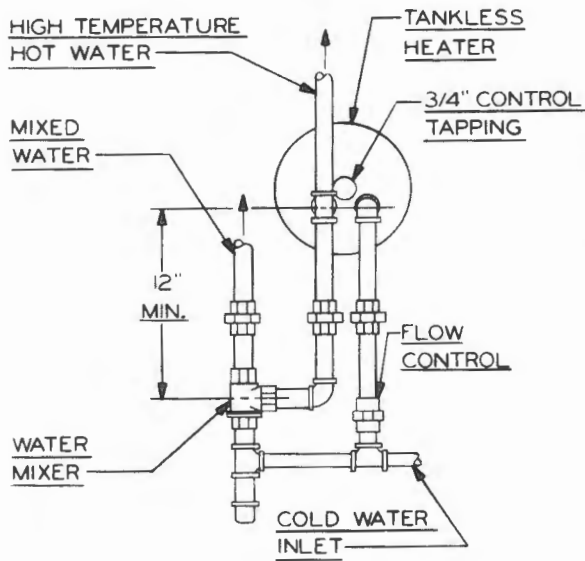


**Figure 3.2**

**Note:** If boiler is to be used in conjunction with a refrigeration system, the chilled medium shall be piped in parallel with boiler and proper valves applied to prevent the chilled medium from entering the boiler. Refer to Figure 3.2.

When the boiler is connected to heating coils located in air handling units, the boiler piping system must be equipped with flow control valves or other automatic devices to prevent gravity circulation of the boiler water during the cooling cycle.

**B. TANKLESS WATER HEATER**

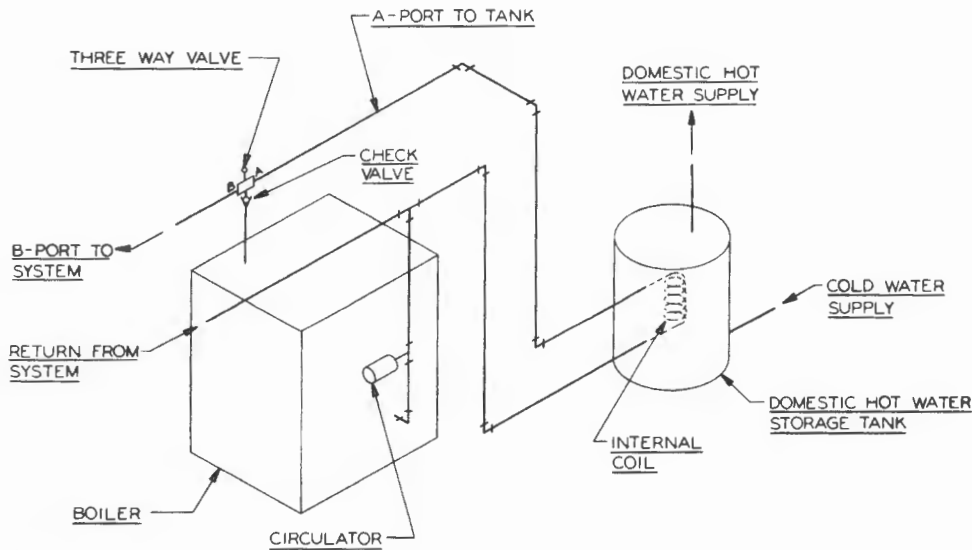


**Figure 3.3**

Note: X-1019R, X-1020R and PP-1011R Coils installed in WV-DV boilers have internal flow controls installed. Do not use external flow controls with these coils.

**C. INDIRECT-FIRED WATER HEATER**

1. If a water boiler is to be used in conjunction with an indirect-fired water heater refer to Figure 3.4 for typical piping. Also refer to additional instructions supplied with tank.



**Figure 3.4**

**⚠ DANGER**

Install mixing valve in hot water supply piping. Water temperature above 125°F can cause severe burns instantly or death from scalds.

**⚠ CAUTION**

Pipe the discharge of the safety relief valve to prevent injury in the event of pressure relief. Pipe the discharge to a drain. Provide piping that is the same size as the relief valve.

**D. SAFETY RELIEF VALVE**

1. Remove safety relief valve and 3/4" x 3" nipple from parts bag. Install nipple and safety relief valve in top or rear tapping. See Figure 8.1. If rear tapping is used, installer must supply an elbow so that safety relief valve is installed in vertical position.

**E. CONTROLS**

1. For complete information on servicing and adjustment of controls, refer to the attached control specification sheets.

# 4. VENTING

## NOTICE

This boiler is shipped with a Z-Flex Vent Terminal carton, and a Z-Flex Venting Components Kit. The following components from these two cartons must be used in the installation of this boiler:

- Z-Flex Oil Vent Terminal
- Z-Flex Vent Pipe
- Z-Flex Appliance Adapter
- Z-Flex Terminal Adapter
- Z-Flex Sealant

## CAUTION

This Oil-Fired Unit Shall be Connected to a Direct Vent System, to Assure Safe Proper Operation of the Unit.

### A. VENT SYSTEM INSTALLATION

1. Determine vent terminal location:
  - a. Vent length must be between 3' and 20' long. See paragraph 4.A.3 and Figure 4.1 for air intake requirements.
  - b. No clearance is required between vent terminal and combustible construction.
  - c. Vent terminal extends 12" beyond outside wall surface and at least 16" beyond inside wall surface. See Figure 4.1.
  - d. Sidewall vented products are susceptible to wind conditions that can effect combustion. To minimize the effects of wind, the exhaust and air inlet terminations must penetrate the same wall or vertical surface. In addition, the length of the exhaust and air inlet pipes must be roughly equivalent.
  - e. Condensation from a sidewall vented appliance may cause paint and other surface coatings to deteriorate. In addition, soot stains may appear on surrounding surfaces if the boiler is not properly maintained.
  - f. If the boiler is used to heat potable (tap) water, the boiler will operate year round. The effects of hot gases and odors must be taken into consideration during the summer months.
  - g. See Figure 4.2 for an illustration of clearances for location of exit terminals for direct-vent, sidewall venting systems.
  - h. The boiler vent system shall terminate at least 3 feet (0.9 m) above any forced air inlet located within 10 feet (3 m). Note: This does not apply to the combustion air inlet of a direct-vent appliance.
  - i. Provide a minimum of 1 foot (300 mm) distance from any door, operable window, or gravity air inlet into any building.
  - j. Do not locate the exhaust termination directly under an operable window.

Table 4.1

WALL THICKNESS	DIM. A
1"	21"
2"	20"
3"	19"
4"	18"
5"	17"
6" TO 14"	16"

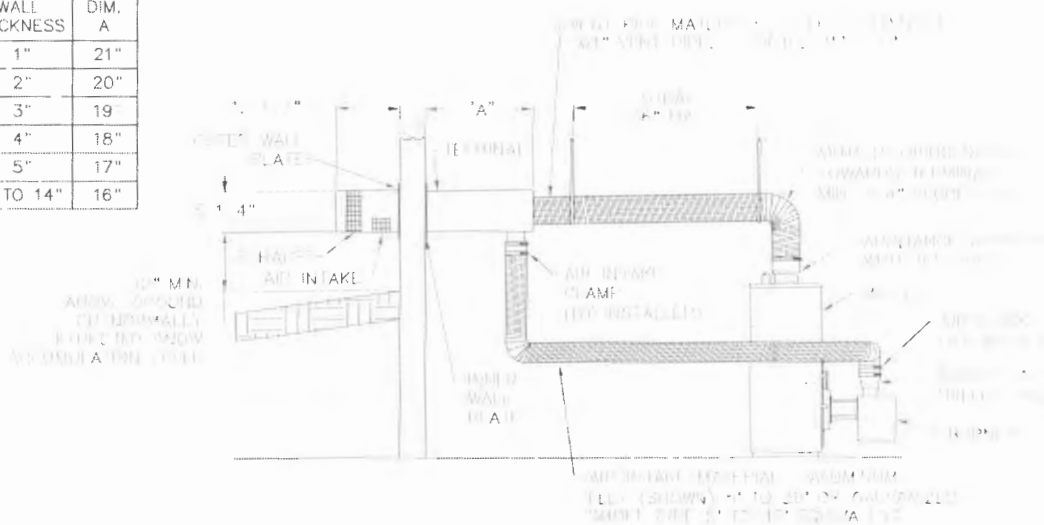


Figure 4.1: Venting

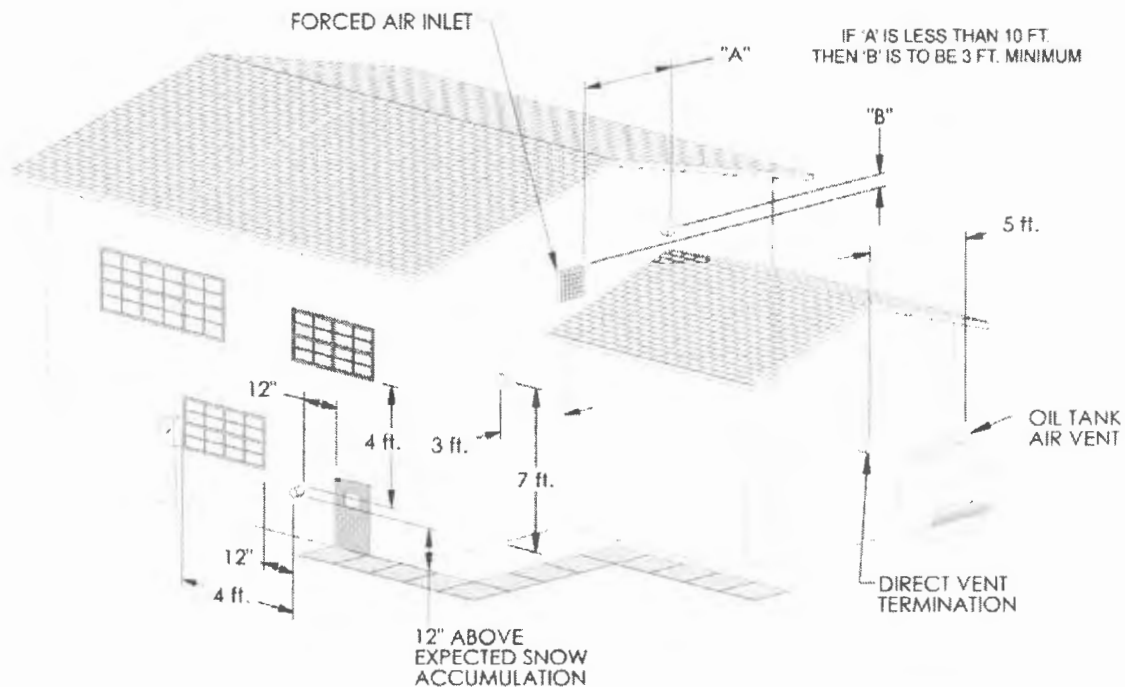


## VENTING

- k. Provide a minimum of 1 foot (300 mm) clearance from the bottom of the exhaust termination above the expected snow accumulation level. Snow removal may be necessary to maintain clearance.
  - l. Provide 4 feet horizontal clearance from electrical meters, gas meters, air conditioning condensers or other external equipment. In no case shall the exit terminal be above or below the aforementioned equipment unless a 4 foot horizontal distance is maintained.
  - m. Do not locate the exit termination over public walkways where condensate could drip or freeze, causing a hazard or nuisance.
  - n. When the exhaust termination is adjacent to a public walkway, it is to be located at least 7 feet (2100 mm) above grade.
  - o. Do not locate exhaust termination directly under roof overhangs to prevent icicles from forming.
  - p. Provide 3 feet (0.9 m) clearance from the inside
2. Use Z-Flex 4" diameter Vent Pipe.
    3. For air intake, use 4" diameter galvanized smoke pipe or 4" diameter flexible corrugated aluminum pipe. Maximum equivalent length of galvanized smoke pipe is 40'. Allow 5 equivalent feet for each 90° elbow used. (Example: No more than 20' straight smoke pipe can be used with four 90° elbows.) To connect air intake to Riello BF5 burner, use burner air adapter from trim bag to connect 4" air intake to 3" opening on top of burner. See Figure 4.1.
    4. For specific installation and maintenance instructions for the Z-Flex Vent Terminal, Appliance Adapter, Terminal Adapter, Burner Air Adapter (Riello only), and Sealant that are included with the boiler, as well as instructions for installation of flexible vent pipe and air intake pipe, refer to Z-Flex Manual included in vent kit.

### NOTICE

**PB Heat, LLC requires that the vent slopes down 1/4" per foot towards the vent terminal. This takes precedence over the requirements shown in the Z-Flex manual.**



**Figure 4.2: Location of Exit Terminals of Mechanical Draft and Direct-Venting Systems**

## 5. OIL BURNER

### CAUTION

**BURN ONLY #2 FUEL OIL IN THIS APPLIANCE. DO NOT USE GASOLINE, CRANKCASE DRAININGS OR ANY OIL CONTAINING GASOLINE.**

### A. BURNER INSTALLATION

- 1 The oil burner is supplied with a mounting flange fixed in position.
2. BE SURE HI TEMP GASKET IS BETWEEN THE BURNER MOUNTING FLANGE AND THE COMBUSTION CHAMBER COVER PLATE.
3. Care must be taken when routing the oil lines so not to interfere with the opening and closing of the burner mounting plate. Flexible oil lines or flared copper disconnects with valves (when copper lines are used) may be installed to assure full opening of the burner mounting plate when servicing.

**Note:** Two-pipe oil supply for Riello burner requires a separate kit. Order part #C7001026 from Riello dealer.

4. Oil Burner Specifications:  
For information pertinent to the oil burner such as nozzle sizing, fuel supply piping, adjusting or servicing, refer to the charts below and the burner installation manual.
5. Sampling tapping in CeraFlex Appliance Adapter must be used for CO<sub>2</sub>, smoke and flue pressure readings.

6. Burner should start automatically when thermostat is turned up and main boiler service switch is turned on. If burner does not start, check to be sure there is oil in the tank and push reset button on burner control: (Beckett) square red button; (Carlin) round red button; (Riello) round red button inside clear flexible cover on back of burner cover. If burner still does not start, contact serviceman.

### CAUTION

**Do not attempt to start the burner when excess oil has accumulated, when the unit is full of vapor, or when the combustion chamber is very hot.**

7. Burner and boiler can be shut down by turning down the thermostat and moving the main boiler service switch to the "off" position.

### CAUTION

**Always keep the manual fuel supply valve shut off if the burner is shut down for an extended period of time.**

8. Post-purge timing on Riello BF5 burner is controlled by 3/8" diameter dial near top right corner of AL1009 circuit board inside burner cover. Post-purge duration must be a minimum of one minute. Adjust dial so arrow is pointing directly to the right (toward mounting screw for AL1009 bracket). Check post-purge timing to confirm it is at least one minute long.

## OIL BURNER

**Table 5.1**

Beckett NX Burner Specifications					
Boiler Model No.	Burner Model	Nozzle Manufacturer, Size	Pump Pressure (psig)	Head/Air Setting	Low Fire Baffle
WV-DV-03-075	NX70LB	Delavan 0.60 60° W <sup>1</sup>	175	2.25	Yes
WV-DV-03-085	NX70LB	<b>Delavan 0.65 60° W</b>	175	3.00	Yes
WV-DV-03-110	NX70LB	Hago 0.85 60° B <sup>1</sup>	175	3.75	No
WV-DV-04-115	NX70LD	<b>Hago 0.85 60° B</b>	170	1.50	Yes
WV-DV-04-130	NX70LD	Hago 1.00 60° B <sup>1</sup>	170	1.50	No

**Table 5.2**

Carlin EZ1-HP Burner Specifications				
Boiler Model No.	Delavan Nozzle Size	Pump Pressure (psig)	Air Boot Setting	Head Bar
WV-DV-03-075	.60 70° A <sup>1</sup>	150	0.5	0.75
WV-DV-03-085	.65 70° A <sup>1</sup>	150	0.6	0.75
WV-DV-03-110	<b>.85 70° A</b>	150	0.85	1.10 - 1.25
WV-DV-04-115	Hago 1.00 60° B <sup>1</sup>	140	1.00	1.10 - 1.25
WV-DV-04-130	<b>Hago 1.10 60° B</b>	140	1.25	1.10 - 1.25

**Table 5.3**

Riello BF5 Burner Specifications				
Boiler Model No.	Nozzle Size	Pump Pressure (psig)	Turbulator Setting	Air Damper Setting
WV-DV-03-075	Delavan .60 80° B <sup>1</sup>	165	1	3.3
WV-DV-03-085	Delavan .65 80° B <sup>1</sup>	165	1	3.8
WV-DV-03-110	<b>Delavan .90 80° B</b>	165	2	5.0
WV-DV-04-115	Hago .85 60° B <sup>1</sup> or Delavan .85 60° W <sup>1</sup>	180	2	5.0
WV-DV-04-130	<b>Hago 1.10 60° B or Delavan 1.10 60° W</b>	140	4	5.0

Start-up and adjustment recommendations: Above Turbulator, Pin, Air Damper, and Air Dial settings are start-up settings only. Adjust burner for highest CO<sub>2</sub> (no more than 13%) while maintaining a 0 smoke spot. Pressure or draft over fire and in flue cannot be adjusted. However, draft and/or pressure measurements must be taken in these two locations and recorded for reference. All adjustments and measurements must be made using suitable instruments such as those found in a Bacharach Combustion Test Kit.

Factory Installed Nozzles are indicated in **Boldface**.

1. Shipped Loose

## 6. ELECTRICAL

### A. WIRING

1. All electrical wiring shall be done in accordance with the National Electrical Code and Local Requirements. Single Pole Switches including those of Safety Controls or Protective Devices shall not be wired in a grounded line.

### CAUTION

Do not connect power supply to Aquastat. To assure service switch interrupts power to all boiler controls, power supply must be connected to junction box as shown below.

### B. ZONED SYSTEM WIRING

1. Wire zone circulators as shown in Figure 6.4. Wire zone valves as shown in Figure 6.5.

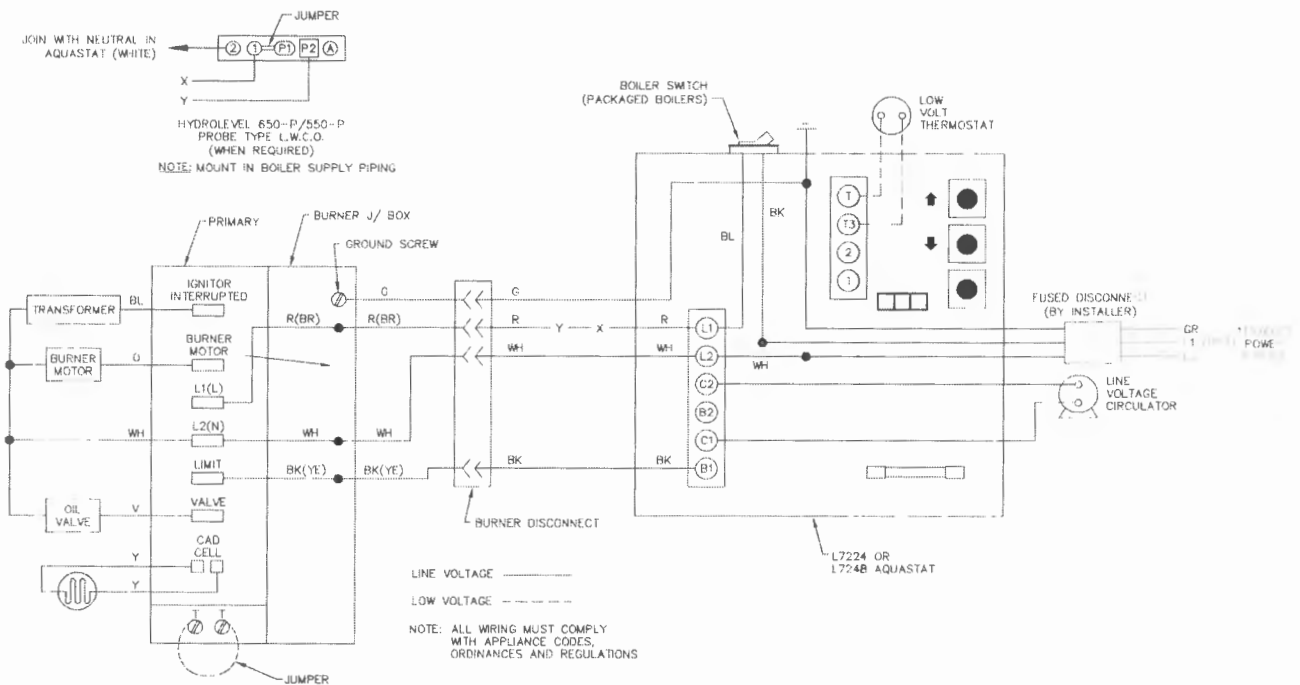
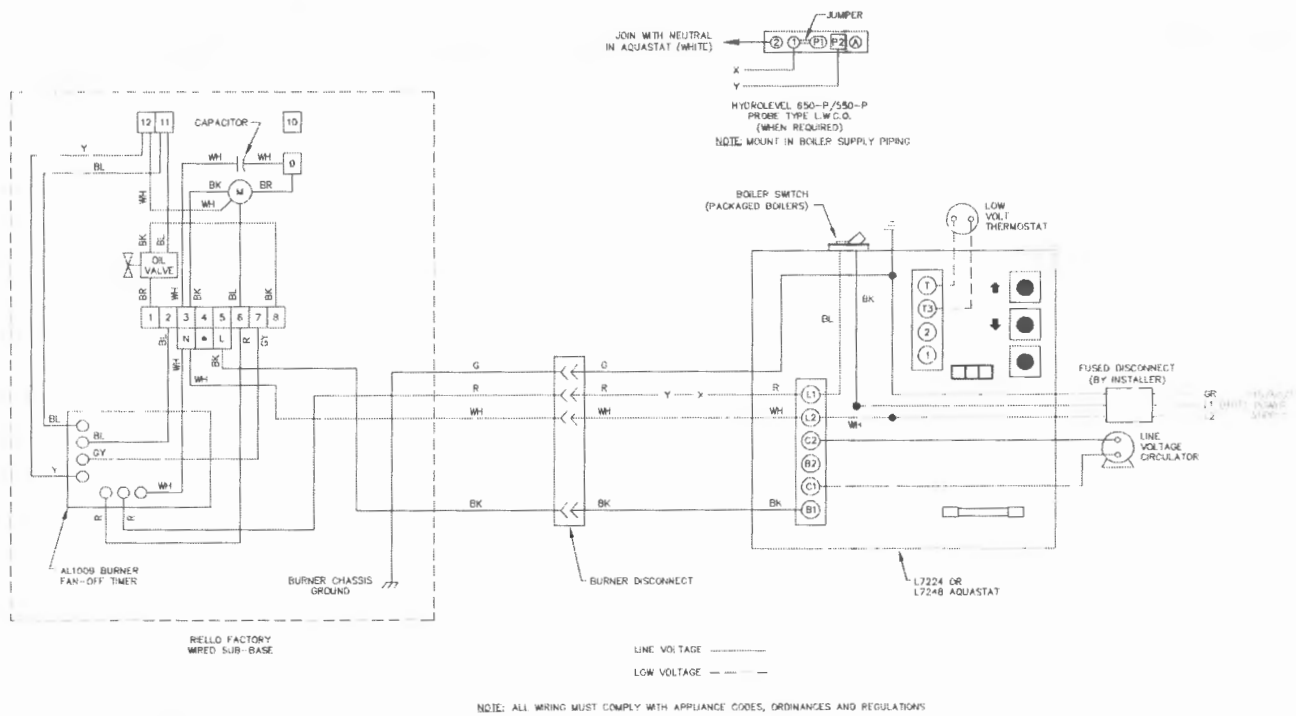
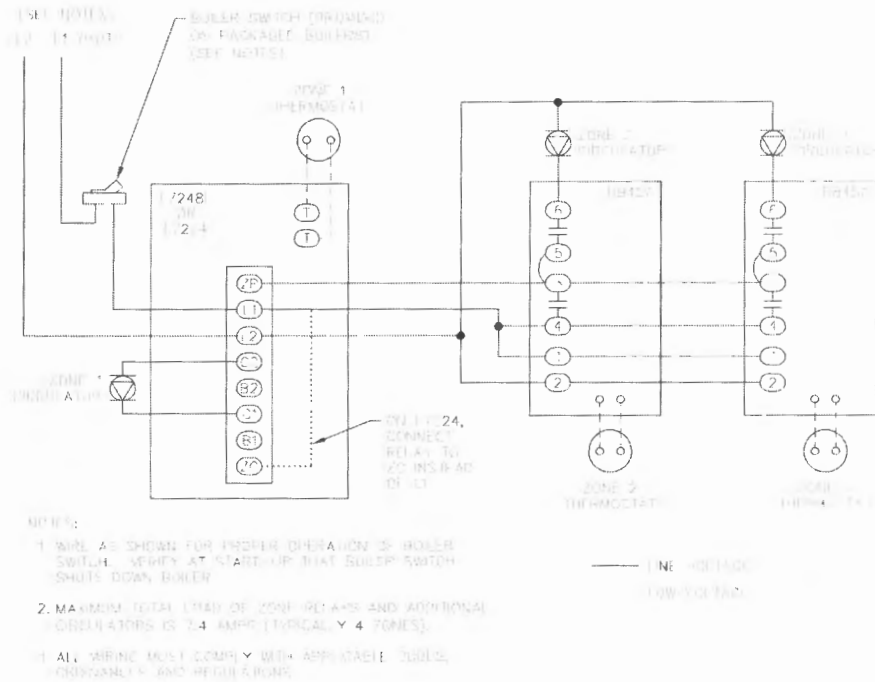


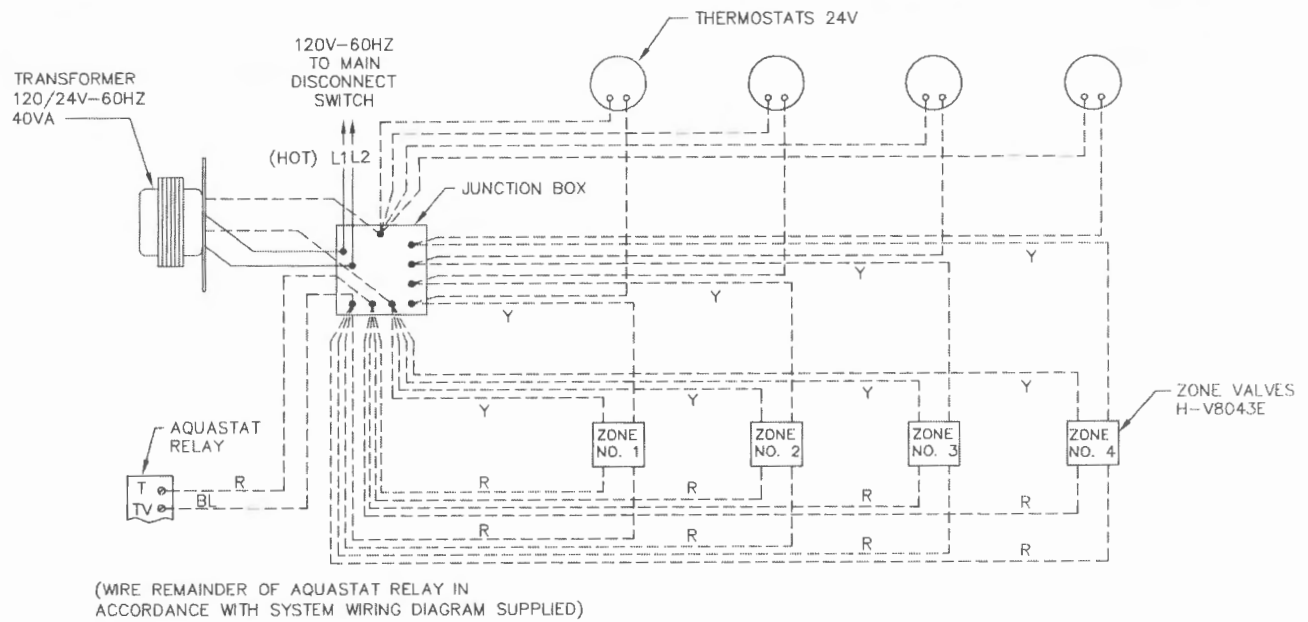
Figure 6.1: Beckett/Carlin Burner



**Figure 6.2: Riello Burner**



**Figure 6.3: Zoning With Circulators**



**NOTE:**

ALL WIRING MUST COMPLY WITH APPLICABLE  
CODES, ORDINANCES, AND REGULATIONS.

LINE VOLTAGE ————

LOW VOLTAGE - - - - -

**Figure 6.4: Zoning With Zone Valves**

## 7. MAINTENANCE

### WARNING

#### Product Safety Information Refractory Ceramic Fiber Product

This appliance contains materials made from refractory ceramic fibers (RCF). Airborne RCF fibers, when inhaled, have been classified by the International Agency for Research on Cancer (IARC), as a possible carcinogen to humans. After the RCF materials have been exposed to temperatures above 1800°F, they can change into crystalline silica, which has been classified by the IARC as carcinogenic to humans. If particles become airborne during service or repair, inhalation of these particles may be hazardous to your health.

#### Avoid Breathing Fiber Particulates and Dust

Suppliers of RCF recommend the following precautions be taken when handling these materials:

#### Precautionary Measures:

Provide adequate ventilation.

Wear a NIOSH/MSHA approved respirator.

Wear long sleeved, loose fitting clothing and gloves to prevent skin contact.

Wear eye goggles.

Minimize airborne dust prior to handling and removal by water misting the material and avoiding unnecessary disturbance of materials.

Wash work clothes separately from others. Rinse washer thoroughly after use.

Discard RCF materials by sealing in an airtight plastic bag.

#### First Aid Procedures:

**Inhalation:** If breathing difficulty or irritation occurs, move to a location with fresh clean air. Seek immediate medical attention if symptoms persist.

**Skin Contact:** Wash affected area gently with a mild soap and warm water. Seek immediate medical attention if irritation persists.

**Eye Contact:** Flush eyes with water for 15 minutes while holding eyelids apart. Do not rub eyes. Seek immediate medical attention if irritation persists.

**Ingestion:** Drink 1 to 2 glasses of water. Do not induce vomiting. Seek immediate medical attention.

**A. CLEANING HEATING SURFACES**

**⚠ NOTICE**

Entire heating system, including boiler, burner and venting system, must be inspected at least once a year by a qualified heating professional. Boiler is to be cleaned at least once a year. To thoroughly clean the boiler it must be brushed down from the top. Alternately, for limited space or minimum clearance to combustible installations, cleaning the heat exchanger from the combustion chamber side is acceptable.

**TO CLEAN:**

1. Turn off all electrical power to the boiler before beginning cleaning operation.
2. Remove top jacket panel and flue collector cover plate, Item 11.
3. Brush the flue passages thoroughly from the top with a wire brush. If unit is extremely dirty, brushing up from the combustion chamber area also may be necessary. The target wall is made of a soft ceramic fiber. Care must be taken not to damage this material during cleaning.
4. Remove any scale or soot from the combustion chamber area by vacuum cleaning or any other available means.

**⚠ NOTICE**

Combustion chamber cover plate must be opened to facilitate this operation.

5. Replace oil burner and flue collector cover plate making sure all gaskets are in place.

**⚠ CAUTION**

Combustion chamber and flue collector may be under pressure when burner is running. Flue collector cover plate and combustion chamber must be completely sealed before boiler is returned to operation.

6. Replace jacket top panel.

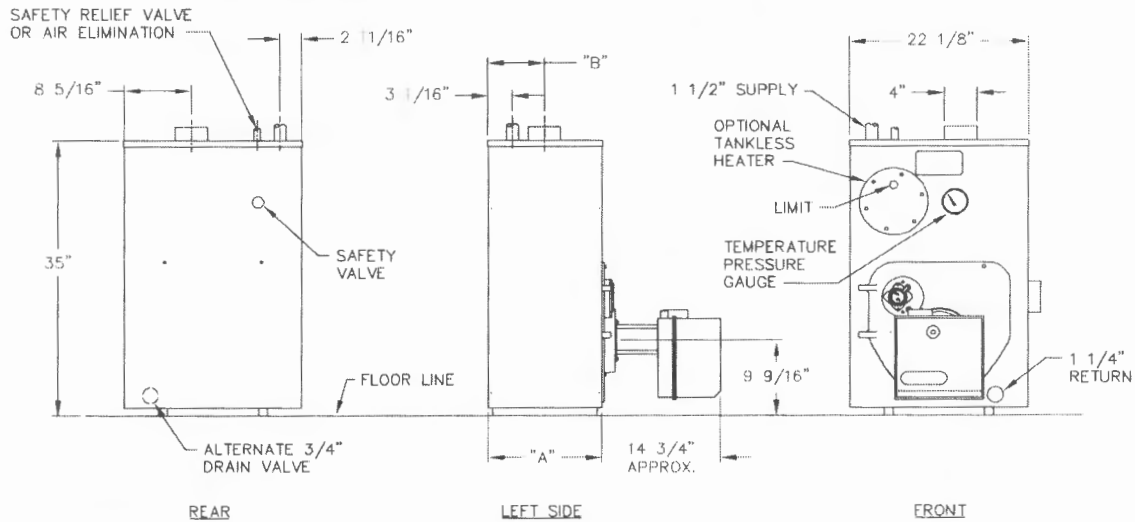
**⚠ NOTICE**

All Cover Plates, Enclosures, and Guards must be maintained in place at all times, except during maintenance and servicing.

7. Inspect venting system.




# 8. BOILER DIMENSIONS & RATINGS



**Figure 8.1: WV-DV Boiler Views**

Model	A	B
WV-DV-03	14 1/8"	7 1/16"
WV-DV-04	18 1/8"	9 1/16"

**Table 7.1: Boiler Ratings**

 <b>Series WV-DV</b>						
Model Number <sup>1</sup>	Input <sup>2</sup>		Heating Capacity <sup>3</sup> , MBH	Net I=B=R Ratings Water <sup>4</sup> , MBH	AFUE <sup>5</sup> , %	Water Content, gal
	GPH	MBH				
WV-DV-03*	0.75	105	92	80	86.7*	11.75
WV-DV-03*	0.85	119	103	90	85.9*	11.75
WV-DV-03	1.10	154	131	114	84.1	11.75
WV-DV-04*	1.15	161	141	122	86.7*	14.75
WV-DV-04*	1.30	182	158	137	86.0*	14.75

- \* As an ENERGY STAR® Partner, PB Heat has determined that these firing rates meet the ENERGY STAR guidelines for energy efficiency.
- 1 Boiler Model No. may have the following suffix letters: WPC = Water Package w/Burner & Circulator; WPCT = Water Package w/Burner, Circulator & Tankless Coil.
- 2 Firing rate is based on a fuel oil with a heating value of 140,000 BTU per gallon. Burner input based on maximum altitude of 2,000 ft. – for other altitudes consult factory.
- 3 Heating capacity based on D.O.E. Testing procedure with 13.0% CO<sub>2</sub> and -0.02 in. water column draft in firebox.
- 4 The Net I=B=R Ratings shown include allowance for normal piping pick-up load.
- 5 Heating Capacity and Annual Fuel Utilization Efficiency (AFUE) ratings are based on U.S. Government test. Before purchasing this appliance, read important information about its estimated annual energy consumption or energy efficiency rating that is available from your retailer.
- 6 Must be used with factory supplied 4" flexible insulated venting system.

## 9. REPAIR PARTS

Repair parts are available from your installer or by contacting PB Heat, LLC, New Berlinville, PA 19545-0447.

Note: Remember to include boiler model number and serial number when ordering parts.

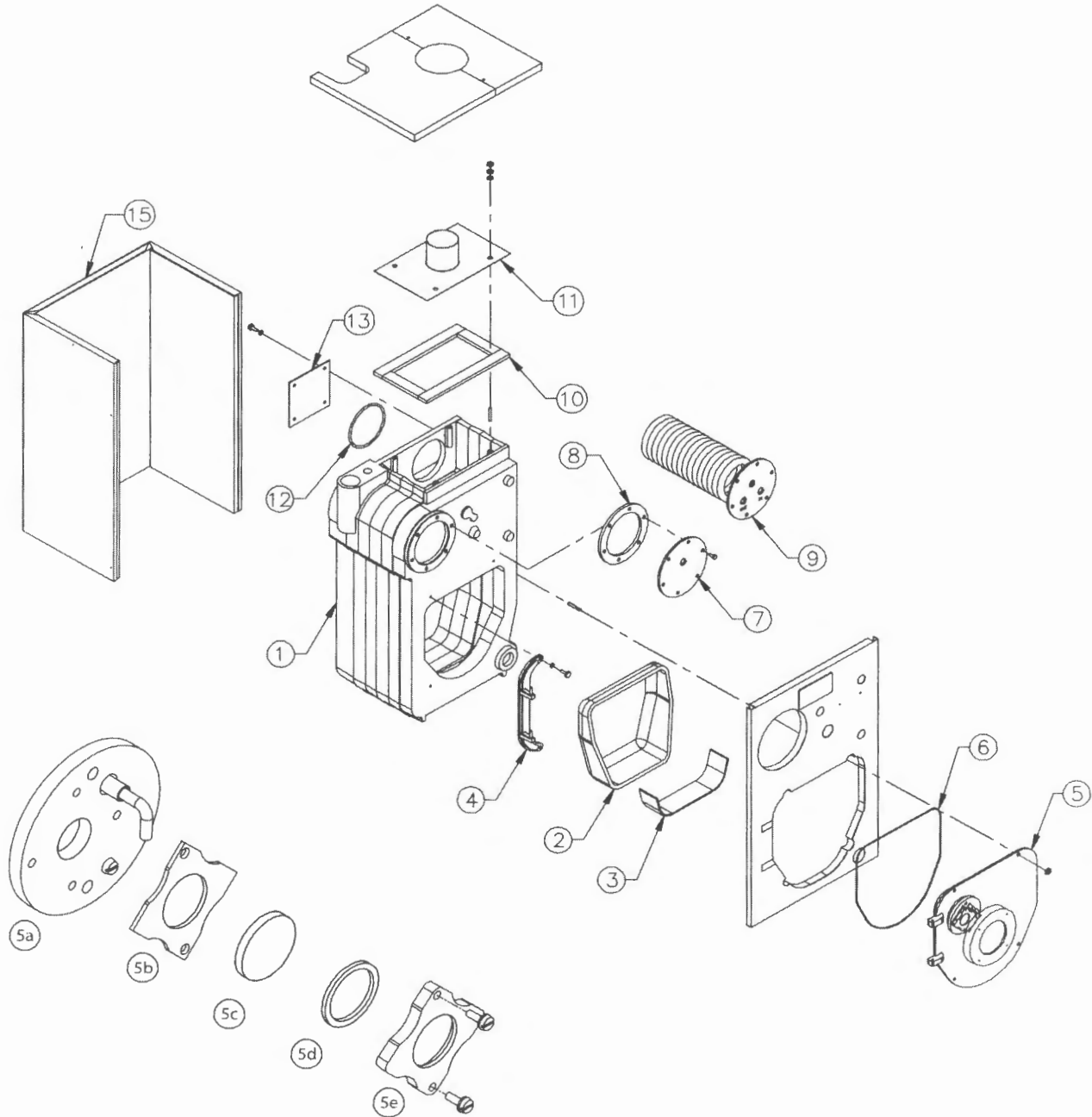


Figure 9.1: Repair Parts

# REPAIR PARTS

**Table 9.1: Repair Parts\*\***

Item No.	Description	Additional Information	Stock Code WV-DV-03	Stock Code WV-DV-04
1	Block Assembly Water WPCT	—	90183	90184
	Block Assembly Water WPC	—	90186	90187
2	Target Wall	—	50795	50795
3	Base Liner	—	—	50857
4	Swing Door Hinge	—	3903	3903
5	Burner Mounting Plate Assembly	—	PP1051	PP1051
	Burner Mounting Plate Insulation	—	50794	50794
	Flame Observation Assembly	—	90754	90754
5a	Flame Observation Cover Plate	—	SC1007P	SC1007P
5b	Face Gasket	—	50230	50230
5c	Pyrex Observation Window	—	51681	51681
5d	Ring Gasket	—	50229	50229
5e	Observation Glass Holder	—	X1138P	X1138P
6	Burner Mounting Plate Rope Seal	—	51210	51210
7	Steel Cover Plate (Front) Water	—	99812	99812
8	Rubber Gasket (Front Plate)	—	51800	51800
9	Tankless Coil	—	90637	90534
10	Flue Collector Plate Blanket Seal	—	90999	90999
11	Flue Collector Cover Plate	—	50245	50253
12	Rope Seal	—	51209	51209
13	Rear Outlet Cover Plate	—	90563	90563
15	Jacket Assembly	—	90098	90418
	Oil Burner	Specify Brand Name and Boiler Size	—	—
	Temperature-Pressure Gauge	—	—	—
	Aquastat	—	—	—
	Drain Valve	—	—	—
	Relief Valve	—	—	—
	Boiler Vent Adapter	CFAA44P	7612	7612
	Flexible Pipe Termination Adapter	CFAT44	7613	7613
	Riello Burner Adapter	CFBA34-RL	7615	7615
	Tube of Sealant	XMMSC5	7616	7616
	Concentric Vent Termination Kit	CFT4	91776	91776

\*\*See Figure 9.1