

**City of Portland, Maine - Building or Use Permit Application**

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

Permit No: 04-061	Issue Date: MAY 27 2004	CBL: 217 A037001
----------------------	----------------------------	---------------------

Location of Construction: 50 Rivers Edge Dr (Lot #7)	Owner Name: Walsh & Kennedy	Owner Address: 91 Johnson Rd	Phone:
Business Name:	Contractor Name: Jiminos Plumbing & Heating	Contractor Address: 1407 Riverside Street Portland	Phone: 2077973174
Lessee/Buyer's Name			

Past Use: Single Family	Single Family w/ FHW-oil boiler in basement w/275 gal. Tank	\$66.00	\$0.00	3
Proposed Project Description: FHW-oil boiler in basement w/275 gal. Tank		<b>FIRE DEPT:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Denied		<b>INSPECTION:</b> Use Group: R3 Type: HVAC 1993 Signature: JMB 5/26/04
		<b>PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)</b> Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Signature: _____ Date: _____		

Permit Taken By: kwd	Date Applied For: 05/14/2004	<b>Zoning Approval</b>	
-------------------------	---------------------------------	------------------------	--

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules. 2. Building permits do not include plumbing, septic or electrical work. 3. 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..	<b>Special Zone or Reviews</b> <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: 5/17/04	<b>Zoning Appeal</b> <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:	<b>Historic Preservation</b> <input checked="" type="checkbox"/> Not in District or Landmark <input 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:
	house permit # 03-1952		

**CERTIFICATION**

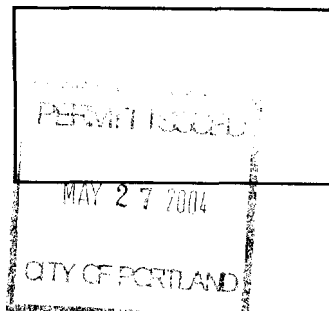
I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, 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



FILL IN AND SIGN WITH INK

# APPLICATION FOR PERMIT HEATING OR POWER EQUIPMENT



217A37

2004-0611

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 50 Riverside Dr LOT #7 Use of Building Resd Date 5/14/04  
Name and address of owner of appliance WALSH & Kennedy 50 Riverside Drive

Installer's name and address Jimino's Plumbing & Heating  
1407 Riverside St Telephone 797-3174

### Location of appliance:

- Basement
- Attic
- Floor
- Roof

### Type of Fuel:

- Gas
- Oil
- Solid

Appliance Name: HB Smith

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 # 05683
- Solid Fuel # 3510
- Oil # \_\_\_\_\_
- Gas # \_\_\_\_\_
- Other \_\_\_\_\_

### Type of Chimney:

- Masonry Lined  
Factory built \_\_\_\_\_
- Metal  
Factory Built U.L. Listing # \_\_\_\_\_
- Direct Vent  
Type \_\_\_\_\_

### Type of Fuel Tank

- Oil
- Gas

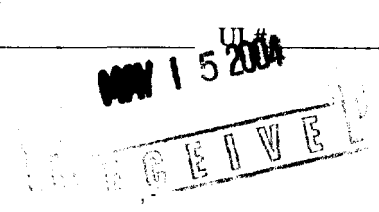
Size of Tank 275 gal

Number of Tanks 1

Distance from Tank to Center of Flame 20 feet.

Cost of Work: \$ 4800.00

Permit Fee: \$ 66.00



### Approved

Fire: \_\_\_\_\_  
Ele.: \_\_\_\_\_  
Bldg.: JMB

### Approved with Conditions

- See attached letter or requirement

Inspector's Signature

Date Approved

Signature of Installer \_\_\_\_\_

# 8 SERIES

## BOILER-BURNER UNIT

STEAM OR HOT WATER

### INSTALLATION AND OPERATING INSTRUCTIONS

DESIGNED AND TESTED ACCORDING TO THE A.S.M.E. BOILER AND PRESSURE VESSEL CODE, SECTION IV  
FOR MAXIMUM ALLOWABLE WORKING PRESSURE STEAM 15 LBS - WATER 40 LBS



Boiler Model Number	DOE Heating Capacity MBH	I=B=R Burner Capacity Oil Input		I=B=R Net Ratings			Natural Draft Chimney	Relief Valve Capacity Lbs/Hr
				Steam		Water MBH		
				GPH	MBH			
8-*-3L	91	.75	105	283	68	79	8" x 8" x 18'	122
8-*-3H	113	.95	133	350	84	98		
8-*-4L			154	414	99	116	8" x 8" x 17'	176
8-*-4H			175	466	112	130		
8-*-5L			203	1.70	196	525	126	147
8-*-5H	238	632			152	177		
8-*-6L	211	1.75	245	654	157	183	8" x 8" x 15'	283
8-*-6H	249	2.10	294	776	186	217		

\* Insert 'S' for Steam or 'W' for Water. The ratings are based on a allowance of 1.333 for steam or 1.15 for water. The manufacturer should be consulted before selecting a boiler for installations having unusual piping and pickup requirements, such as, intermittent system operation, extensive piping systems, etc.

**CAUTION - DO NOT USE AUTOMOTIVE ANTI-FREEZE IN BOILER WATERWAYS. IF NECESSARY TO USE ANTI-FREEZE, BE SURE TO EMPLOY A PREPARATION DESIGNED FOR HYDRONIC HEATING SYSTEMS SUCH AS ETHYLENE OR PROPYLENE GLYCOL.**

THESE INSTRUCTIONS TO BE KEPT WITH THE BOILER FOR REFERENCE PURPOSES.

**Smith** WESTCAST, INC.  
260 NORTH ELM STREET WESTFIELD, MA 01085  
CAST IRON BOILERS TEL. (413) 562-9631 FAX (413) 562-3799



# 8 SERIES BOILER INSTALLATION AND OPERATING INSTRUCTIONS

## 1. GENERAL

The 8 Series boiler-burner unit is a wet-base, vertical flue, low pressure, sectional, cast iron steam or hot water heating boiler. It is rated for natural draft firing with 0.02 ins. water column over-fire draft. Boilers are available as either factory assembled in blocks from three to six sections in length with burner and controls supplied for field assembly or as a completely packaged boiler.

The ports between sections are provided with a special hydronic seal which is resistant to petroleum products. The flue gas seal between sections is accomplished by the use of fiberglass rope rated at 1000° F.

Both packaged units and assembled blocks of sections are hydrostatically tested for the maximum working pressures. The assembled blocks also include the special hydronic seals, the glass fiber rope joint seal, a precast fiber target wall, the insulated burner mounting plate and cleanout covers.

An insulated metal jacket is furnished to both enhance the units looks and to minimize any heat loss. A full access cleanout cover for cleaning vertical flue passages is on the left hand side of the boiler and is accessible by removing the left hand cleanout access jacket panel.

**IMPORTANT - Sufficient clearance between the left side of the boiler and adjacent construction must be provided to ensure proper access when cleaning is required!**

## 2. CODES, RULES AND REGULATIONS

The installation of the boiler, the burner, wiring, controls and fuel piping must be done in accordance with the requirements of the local authorities having jurisdiction. In the absence of local requirements, the following codes apply:

ANSI/NFPA31 - "Installation of Oil Burning Equipment"  
ANSI/NFPA70 - "National Electrical Code"

In Canada the following codes apply:

CSA STD. B139 - Latest Edition.  
"Installation Code For Oil Burning Equipment."  
CSA STD. C22.2 No. 0 - Latest Edition.  
"General Requirements- Canadian Electrical Code Part II."

All completed boilers shall satisfactorily pass the hydrostatic tests as prescribed by A.S.M.E., Code Section IV.

1. Steam Boilers - The assembled boiler shall be subjected to a hydrostatic test of not less than 45 psig.
2. Water Boilers - The assembled boiler shall be subjected to a hydrostatic test pressure not less than 1-1/2 times the maximum allowable working pressure.
3. The required test shall not exceed the test pressure by more than 10 psi.

## 3. BOILER LOCATION

Boiler should be located on a smooth level concrete floor or pad close to the chimney to minimize breeching length. Allow access for boiler cleaning and burner maintenance.

**CAUTION - Boiler shall be installed on non-combustible floor only.**

## 4. CHIMNEY AND BREECHING

Attach the smoke hood to the back of the boiler using the 4 brass machine screws making sure to install the gasket between the smoke hood and boiler. The 3 and 4 section models are equipped with a 6" smoke hood, the 5 and 6 section models with a 7" smoke hood. The boiler must be vented with vent pipe having the same diameter as the smoke hood collar. Place the flue pipe over the smoke hood collar and secure it to the collar with a sheet metal screw.

The boiler must be vented to the outdoors by means of a tile lined masonry chimney of the size listed on the front page or by another approved method.

The flue pipe should be run to the chimney by the most direct route, with the minimum number of elbows and with a slight upward pitch. The pipe should terminate flush with the inside face of the chimney and should be sealed in place with insulating cement.

For energy conservation, the boiler should be vented directly to the chimney without using a barometric draft control. The burner operation does not require draft control for stability with varying draft values.

## 5. COMBUSTION AND VENTILATION

Normal residential construction usually allows sufficient air infiltration for combustion. If construction is tight, consideration should be given for air louvers to the outside. Local codes or NFPA 31, "Installation of Oil Burning Equipment", should be referred to for proper sizing and design and air supply. In Canada refer to CSA STD. B139 - latest edition.

**WARNING: This boiler must be connected to a properly sized and constructed chimney or vent system! Failure to comply with this warning can result in a fire which could cause extensive property damage, severe personal injury or death!**

## 6. PACKAGED BOILERS

Packaged boilers are shipped on a wood skid with tie down bands and a wooden crate enclosing the boiler and burner.

Remove the protective crate and skid. Set the boiler in its final location and shim under the feet to make it level and secure. Adjust the jacket for proper alignment and support. Refer to Carlin or Beckett Series 8 Burner Installation Manual for appropriate wiring diagrams.

## 8 SERIES BOILER INSTALLATION AND OPERATING INSTRUCTIONS

### 7. BLOCKS OF SECTIONS

Blocks of sections are arranged for use either as steam or water boilers. All back sections have a flanged opening in the left side, below the water line. A tankless heater may be installed in this location.

**NOTE: A cover plate is supplied as part of either the steam trim or water trim cartons.**

Unlike the packaged units, blocks of sections require that the smokehood, controls, burner, steam or water trim, circulators (water boilers), and jackets must be installed in the field.

The smokehood is sized for a 7 inch diameter flue pipe placed over the cast iron collar and secured to the collar with a sheet metal screw. Place the furnished smokehood gasket in place between the smokehood and the back section, and assemble with hardware furnished.

### 8. PACKAGED BOILERS AND BLOCKS OF SECTIONS

Careful inspection should be made of all assemblies to detect possible damage during shipment. Factory assembled blocks of sections and package boilers are hydrostatically tested at the factory to insure pressure tightness. Before piping connections are made to the boiler, hydrostatically retest boiler sections to detect leaks that may have developed from rough handling during shipment, see Section 2.

### 9. BURNER INSTALLATION

Instructions regarding both assembly and operation of the burner is covered in a separate catalog.

**WARNING: Never attempt to operate the boiler with the cleanout cover plates removed! Failure to comply with this warning can result in a fire which could cause extensive property damage, severe personal injury or death!**

### 10. CLEANOUT COVER PLATES

It is important to maintain the integrity of the gas seal by careful installation of the cleanout cover plate. Be sure there is no opening to allow gases to escape.

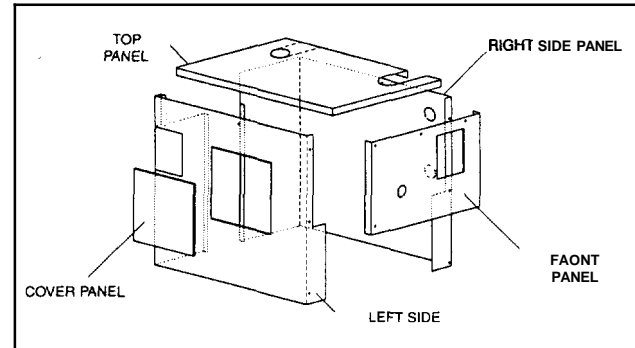
### 11. JACKET ASSEMBLY

Remove all knockouts that are going to interfere with your specific installation arrangement. Install the front panel over the two upper burning mounting plate studs prior to the installation of the burner mounting plate. Fold the right side panel at both the front and rear perforated seams 90° back against the insulation. Slide the front fold under the front panel and secure with philip head screw. Lift side panel up slightly to align the slots in jacket with the bracket holes. Secure with the screws supplied.

Repeat same procedure for the left side panel.  
Screw the two folds together at the back of the boiler

Attach the top panel over the edges of all panels and secure. The cleanout cover door attaches to the left side panel by sliding the lower left corner into the slot provided and up over the fold at the top of the opening in the side panel. Slide the cover back toward the rear of the boiler until it makes contact with the back of the slot.

**Figure No. 2 – Jacket Assembly**



### 12. BOILER TRIM

#### Steam

The steam trim furnished with the boiler consists of a 2-1/2" round steam pressure gauge, McDonnell Miller #67 Quick Hook-Up Low Water Cutoff, water gauge glass set with gauge cocks, side outlet steam safety valve, and high pressure limit control with siphon. Refer to Figure No. 3 for correct control and trim locations. Pipe fittings required to install trim and controls as shown are furnished.

#### Water

The water trim furnished with the boiler consists of a 2-1/2" round temperature altitude gauge and a 30 psi pressure relief valve. A circulator relay is furnished for installation in the upper port cover plate or the tankless heater cover plate as indicated in Figure No. 3. The installer must furnish and install air removal devices, expansion tank, automatic air vents, make-up water pressure reducing valve, isolating valves and other pipe fittings and equipment necessary for proper operating system.

Install safety or relief valve in top 3/4" tapping of back section.

**WARNING: Never install any type of valve between the pressure relief or safety valves and the boiler! Failure to comply with this warning can result in a boiler explosion causing extensive property damage, severe personal injury or death!**

**WARNING: The pressure relief or safety valve discharge piping must direct all water and vapor away from personnel. Failure to comply with this warning could result in severe personal injury!**

# 8 SERIES BOILER INSTALLATION AND OPERATING INSTRUCTIONS

## 18. BOILER MAINTENANCE

**IMPORTANT - These suggestions cover the boiler maintenance work which will result in the most efficient operation, the longest useful life of the boiler and the highest return on any investment necessary to carry out the maintenance work.**

### Steam

1. **WATER LEVEL:** Check regularly to be sure the boiler water level stays at the marked water line during operation under steam pressure. **DO NOT ADD WATER TO A HOT BOILER.** If water level is not visible in the gauge glass, allow the boiler to cool before adding makeup water. Locate the cause of low water and correct before starting operation.
2. **LOW WATER CUTOFF:** Check the burner cutoff switch to be certain the switch opens on water level drop below cutoff level.
3. **PRESSURE CONTROLS:** Check regularly to be certain the pressure limit controls are functioning.
4. **SAFETY VALVES:** Conduct regular visual inspection of safety valve to detect signs of corrosive deposits, rust build-up or signs of weeping. If there are signs of deposits around the disc and the seat of the valve, replace the valve with a new valve of proper capacity and pressure setting.
5. **GAUGE GLASS:** When rust, suspended solids, etc. appear in the gauge glass, blowdown may be necessary. Blowdown should be limited only as necessary to remove sediment from the boiler waterways. Foaming, fluctuating water line, steam hammer are signs pointing to the need for blowdown.

### Water

1. **WATER PRESSURE:** The boiler water pressure must be sufficient to maintain a full system and to prevent boiling of the system water. An initial fill pressure of 12 psi provides for 18-1/2 feet of system height. Each additional 2.3 feet of height requires an additional one pound pressure. Be sure no air is trapped in the boiler, system piping or heating units to impede circulation of the heated boiler water.
2. **LOW WATER CUTOFF:** Check the cutoff switch to be certain the switch opens on water level drop below cutoff point.
3. **TEMPERATURE CONTROLS:** Check regularly to be sure the controls are functioning to prevent excessive high boiler water temperature.
4. **RELIEF VALVES:** Conduct regular visual inspection of relief valves to detect signs of corrosive deposits, rust buildup or signs of weeping. If there are signs of deposits around the disc and seat of the valve, replace the valve with a new valve of proper capacity and pressure setting.

## HEATING SURFACE CLEANING

**WARNING: Failure to disconnect all electrical power to the boiler before cleaning it could result in a fire or severe personal burn injuries!**

Disconnect all electrical power to the boiler before proceeding. Remove the cleanout cover access panel from the left side of the boiler. Remove the cleanout cover(s) taking care not to damage the insulation between the cover(s) and the boiler. Use a wire brush to thoroughly clean the fireside surfaces. For the best results, start brushing from the top and work down toward the combustion chamber. Disconnect the flue pipe and inspect it and the smoke hood for soot build up. Clean them thoroughly before reconnecting them. Open the cleanout door on the right side of the burner mounting plate. Carefully vacuum any soot or scale from the bottom of the combustion chamber. Do not contact the ceramic blanket in the bottom of the combustion chamber or will be damaged.

**IMPORTANT - If the ceramic blanket is damaged it must be replaced! Failure to replace a damaged ceramic blanket can result in the failure of the cast iron sections!**

Inspect the cleanout door gasket and insulation and replace them if damaged. Close the cleanout door and tighten it into place. Inspect the cleanout cover insulation and replace it if damaged. Install the cleanout cover(s) and tighten into place. Install the cleanout cover access panel. Restore electrical power to the boiler and ensure that it operates properly.

## CHIMNEY AND SMOKE PIPE

Be sure that the chimney and smoke pipe do not become obstructed by birds nests, squirrels, soot, chimney liner deterioration, or other happenings. Keep chimney cleanout doors closed and seal tight around the frames. Be sure the smoke pipe is inserted only at the nearest chimney liner surface and seal around the pipe with insulating cement.

## COMBUSTIBLES

Be sure that no combustible materials are stored close to the boiler or smoke pipe. Fires can cause personal injury and property damage.

## 19. STEAM BOILER CABLE INSTALLATION

Refer to Figure No. 14 when installing wiring cable on Series 8 Steam Boilers.