City of Portland, Maine - Building or Use Permit Application
389 Congress Street, 04101 Tel: (207) 874-8703, FAX: (207) 8716

Job No:	Date Applied:	CBL:	
2011-01-264-HVAC	**1/14/2011**	**062 - - C - 025 - 001 - - - - -**	
Location of Construction: **106 EMERY**	Owner Name: **GLADYS P GARCIA**	Owner Address: **106 EMERY ST PORTLAND, ME - MAINE 04102**	Phone:
Business Name:	Contractor Name: **Hart, William**	Contractor Address: **72 Gateway Commons DR GORHAMMAINE04038**	Phone: **5963**
Lessee/Buyer's Name:	Phone:	Permit Type: **HVAC - HVAC**	Zone: **R-6**
Past Use: **Three Family**	Proposed Use: **Three Family** Legal use - three family	Cost of Work: **10000.000000**	CEO District:
		Fire Dept: ✓ Approved w/ conditions ___ Denied ___ N/A Signature: KG	Inspection: Use Group: R-2 Type: HVAC Signature:
Proposed Project Description: **106 Emery St HVAC**		Pedestrian Activities District (P.A.D.)	
Permit Taken By: ldobson			

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 electrial 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.

PERMIT ISSUED

FEB - 8 201

City of Portland

Zoning Approval

Special Zone or Reviews	Zoning Appeal	Historic Preservation
___ Shoreland	___ Variance	___ Not in Dist or Landmark
___ Wetlands	___ Miscellaneous	___ Does not Require Review
___ Flood Zone	___ Conditional Use	___ Requires Review
___ Subdivision	___ Interpretation	___ Approved
___ Site Plan	___ Approved	___ Approved w/Conditions
___ Maj ___ Min ___ MM	___ Denied	___ Denied
Date: Ok w/ condition 1/18/11 ABG	Date:	Date: Any exterior work requires a separate review / approval thru historic preservation.

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 appication 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 | PHON

FILL IN AND SIGN WITH INK

APPLICATION FOR PERMIT
HEATING OR POWER EQUIPMENT

PERMIT ISSUED
FEB - 8 2011
City of Portland

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 106 Emery St 062-C025001 Use of Building Multi Date 1/14/11

Name and address of owner of appliance Gladys Garcia 13 Carroll St

Installer's name and address Bill Hart P&H 72 Gateway Commons dr Gorham ME 04038 Telephone 252-5963

Location of appliance:

☒ Basement ☐ Floor
☐ Attic ☐ Roof

Type of Fuel:

☒ Gas ☐ Oil ☐ Solid

Appliance Name: Weil McLain Ultra 90S

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 2270
☐ Other _____

Type of Chimney:

☐ Masonry Lined
Factory built _____

☐ Metal
Factory Built U.L. Listing # _____

☒ Direct Vent
Type PVC 40 UL# _____

Type of Fuel Tank

☐ Oil
☐ Gas

Size of Tank _____

Number of Tanks _____

Distance from Tank to Center of Flame _____ **feet.**

Cost of Work: $ 10,000.00

Permit Fee: $ _____

Approved

Fire: _____
Ele.: _____
Bldg.: _____

Approved with Conditions

☐ See attached letter or requirement

_____ _____
Inspector's Signature Date Approved

Signature of Installer _____

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

Fire Conditions

1. Installation shall comply with City Code Chapter 10.
2. Installation shall comply with NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel–Burning Appliances*;
3. NFPA 31, *Standard for the Installation of Oil-Burning Equipment*;
4. NFPA 54, *National Fuel Gas Code*,
5. and the manufacturer's published instructions.

BUILDING PERMIT INSPECTION PROCEDURES

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

or email: 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.**

1. Final Inspection at completion of work

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 OCCU0PIED.

PERMIT ISSUED

FEB - 8 201

City of Portland

PORTLAND MAINE

Strengthening a Remarkable City, Building a Community for Life • *www.portlandmaine.gov*

Director of Planning and Urban Development
Penny St. Louis Littell

Job ID: 2011-01-264-HVAC **Located At:** 106 EMERY **CBL**062 - - C - 025 - 001 - - - - -

Conditions of Approval:

Zoning

1. ANY exterior work requires a separate review and approval thru Historic Preservation. This property is located within an Historic District.
2. This property shall remain a three family dwelling. Any change of use shall require a separate permit application for review and approval.

Fire

1. Install shall comply with NFPA 54. A compliance letter is required.
2. Any cutting or welding and hot work taking place in a commercial building requires a separate "Hot Work Permit" from the Fire Department.
3. Install shall comply with all manufacture's specifications.

Building

1. The installation must comply with the State of Maine Gas Regulations.
2. Equipment and venting to be installed per the manufacturers specifications.

PERMIT ISSUED

FEB - 8 2011

City of Portland

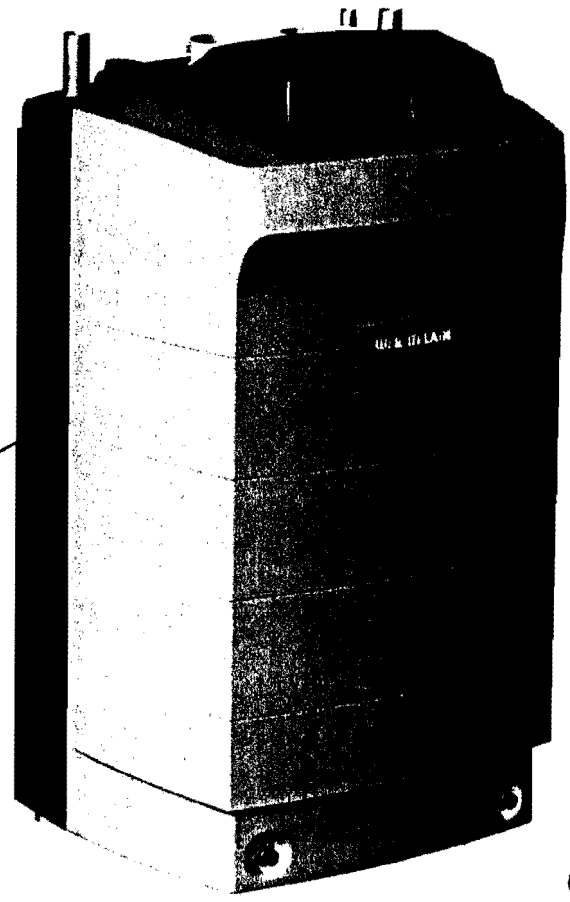
WEIL-McLAIN

Ultra

Gas-fired Water boiler Series 2

Vent Supplement

Termination Method used @ 106 Emory
SF Approved by Weil McClain Ten Series 3 Boilers



Installation of:

- **Vent piping**
- **Air piping**

Ultra with PhD Precision Hydronic Data technology

WARNING This document must only be used by a qualified heating installer/service technician. Read all instructions, including this Supplement and the Boiler Manual, before installing. Perform steps in the order given. Failure to comply could result in severe personal injury, death or substantial property damage.

NOTICE Installation must comply with local requirements and with the National Fuel Gas Code, ANSI Z223.1 for U.S. installations or CSA B149.1 or B149.2 for Canadian installations.

Part No. 550-100-028/0404

Contents

Please read before proceeding

Installer

WARNING Read all instructions before installing. Follow all instructions in proper order to prevent personal injury or death.

- This document is intended only as a supplement to the Ultra Boiler Manual. It's purpose is for the installation of vent and air piping for the boiler.

User

- This document is for use only by your qualified heating installer/service technician.
- Please refer to the User's Information Manual for your reference.
- Keep this supplement near the boiler for use by your installer or technician.

WARNING All Ultra boilers must be installed as direct vent. This requires piping installation for both flue products (vent) and combustion air (air piping). All vent and air piping must be installed, terminated and sealed as described in this supplement. Failure to adhere to the guidelines in this supplement can result in severe personal injury, death or substantial property damage.

Hazard definitions

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

DANGER Indicates presence of hazards that will cause severe personal injury, death or substantial property damage.

WARNING Indicates presence of hazards that can cause severe personal injury, death or substantial property damage.

CAUTION Indicates presence of hazards that will or can cause minor personal injury or property damage.

NOTICE Indicates special instructions on installation, operation or maintenance that are important but not related to personal injury or property damage.

Part number 550-100-028/0404

1 Vent and air piping materials

WARNING Use only the materials listed in the table below for vent and air pipe and fittings. Failure to comply could result in severe personal injury, death or substantial property damage.

NOTICE Installation must comply with local requirements and with the National Fuel Gas Code, ANSI Z223.1 for U.S. installations or CSA B149.1 or B149.2 for Canadian installations.

All combustion air and vent pipe materials and fittings must comply with the following:			
Item	**Material**	**Standards for Installations in:**	
		United States	**Canada**
Vent or air pipe and fittings	PVC schedule 40	ANSI/ASTM D1785	CSA or ULC certified only
	PVC-DWV	ANSI/ASTM D2665	
	CPVC schedule 40	ANSI/ASTM F441	
	ABS-DWV schedule 40	ANSI/ASTM D2661	
Pipe cement/primer	PVC	ANSI/ASTM D2564	
	CPVC	ANSI/ASTM F493	
	ABS	ANSI/ASTM D2235	
NOTICE: DO NOT USE CELLULAR CORE PIPE			

2 Prepare boiler location

Removing from existing vent

DANGER Do not install the Ultra into a common vent with any other appliance. This will cause flue gas spillage or appliance malfunction, resulting in possible severe personal injury, death or substantial property damage.

WARNING Failure to follow all instructions can result in flue gas spillage and carbon monoxide emissions, causing severe personal injury or death.

When removing existing boiler from existing common vent system:

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 or other deficiencies which could cause an unsafe condition.

c. Test vent system — 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 instructions. Adjust thermostat so appliance will operate continuously.

e. Test for spillage at 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 herein, return doors, windows, exhaust fans, fireplace dampers, and any other gas-burning appliance to their previous conditions of use.

Any improper operation of common venting system should be corrected so the installation conforms with the National Fuel Gas Code, ANSI Z223.1 — latest edition. Correct by resizing to approach the minimum size as determined using the appropriate tables in Part 11 of that code. Canadian installations must comply with B149.1 or B149.2 Installation Code.

Vent and air piping

Vent and air system

NOTICE Installation must comply with local requirements and with the National Fuel Gas Code, ANSI Z223.1 for U.S. installations or CSA B149.1 or B149.2 for Canadian installations.

The Ultra boiler requires a special vent system, designed for pressurized venting. Ultra boilers are rated ANSI Z21.13 Category IV (pressurized vent, likely to condense in the vent).

You must also install air piping from outside to the boiler air intake adapter. The resultant installation is categorized as direct vent (sealed combustion).

You may use any of the vent/air piping methods covered in this supplement. Do not attempt to install the Ultra boiler using any other means.

WARNING DO NOT mix components from different systems. The vent system could fail, causing leakage of flue products into the living space. Use only PVC, CPVC or ABS pipe and fittings, with primer and cement specifically designed for the material used.

Vent and air piping and termination

The Ultra boiler vent and air piping can be installed through the roof or through a side wall. Follow the procedures in this document for the method chosen. The maximum vent length depends on boiler size. Refer to the information in this supplement to determine acceptable vent and air piping length.

Combustion air for the Ultra boiler must be ducted directly to the boiler from outside (direct vent installation).

Follow all instructions in this document and the Ultra Boiler Manual to install vent and air piping.

2 Prepare boiler location *(continued)*

Air contamination

Pool and laundry products and common household and hobby products often contain fluorine or chlorine compounds. When these chemicals pass through the boiler, they can form strong acids. The acid can eat through the boiler wall, causing serious damage and presenting a possible threat of flue gas spillage or boiler water leakage into the building.

Please read the information given in Table 1, listing contaminants and areas likely to contain them. If contaminating chemicals will be present near the location of the boiler combustion air inlet, have your installer pipe the boiler combustion air and vent to another location, per the Boiler Manual and Vent Supplement.

WARNING If the boiler combustion air inlet is located in any area likely to cause air contamination, or if products which would contaminate the air cannot be removed, you must have the combustion air and vent repiped and terminated to another location. Contaminated combustion air will damage the boiler heat exchanger, resulting in possible severe personal injury, death or substantial property damage.

Do not operate an Ultra boiler if the boiler combustion air inlet is located in a laundry room or pool facility, for example. These areas will always contain hazardous contaminants.

WARNING To prevent the potential of severe personal injury or death, check for areas and products listed in Table 1 before installing the boiler or air inlet piping.

If contaminants are found, you MUST:

- Remove products permanently. — OR —
- Relocate air inlet and vent terminations to other areas.

Table 1 Corrosive contaminants

Products to avoid
Spray cans containing chloro/fluorocarbons
Permanent wave solutions
Chlorinated waxes/cleaners
Chlorine-based swimming pool chemicals
Calcium chloride used for thawing
Sodium chloride used for water softening
Refrigerant leaks
Paint or varnish removers
Hydrochloric acid/muriatic acid
Cements and glues
Antistatic fabric softeners used in clothes dryers
Chlorine-type bleaches, detergents, and cleaning solvents found in household laundry rooms
Adhesives used to fasten building products and other similar products
Areas likely to have contaminants
Dry cleaning/laundry areas and establishments
Swimming pools
Metal fabrication plants
Beauty shops
Refrigeration repair shops
Photo processing plants
Auto body shops
Plastic manufacturing plants
Furniture refinishing areas and establishments
New building construction
Remodeling areas
Garages with workshops

3 Vent/air termination — through roof

WARNING Follow instructions below when determining vent location to avoid possibility of severe personal injury, death or substantial property damage.

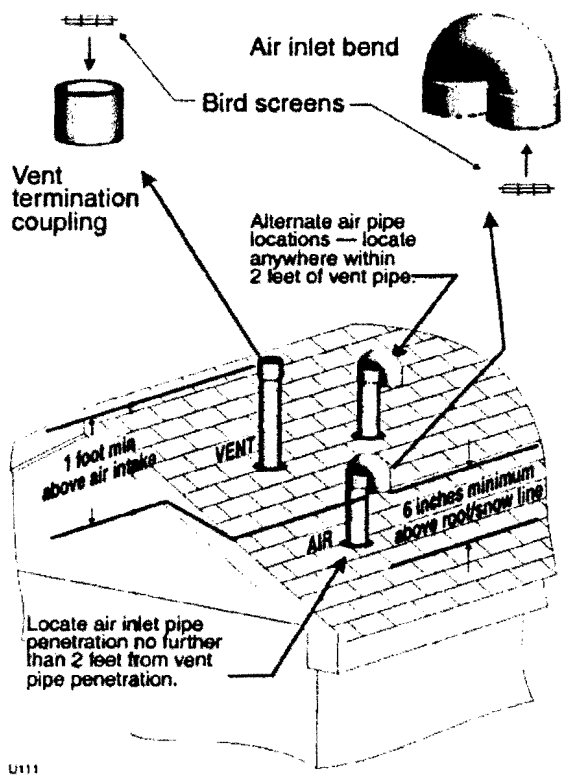
NOTICE Installation must comply with local requirements and with the National Fuel Gas Code, ANSI Z223.1 for U.S. installations or CSA B149.1 or B149.2 for Canadian installations.

Determine location

Locate the vent/air terminations using the following guidelines:

1. The total length of piping for vent or air must not exceed the limits given in Table 2, page 12.
2. The air piping must terminate in a down-turned 180-degree return bend as shown in Figure 1. Locate the air inlet pipe no further than 2 feet from the center of the vent pipe. This placement avoids recirculation of flue products into the combustion air stream.
3. The vent piping must terminate in an up-turned coupling as shown in Figure 1. The top of the coupling must be at least 1 foot above the air intake. The air inlet pipe and vent pipe can be located in any desired position on the roof, but must always be no further than 2 feet apart and with the vent termination at least 1 foot above the air intake.
4. You must consider the surroundings when terminating the vent and air:
   a. Position the vent termination where vapors will not damage nearby shrubs, plants or air conditioning equipment or be objectionable.
   b. The flue products will form a noticeable plume as they condense in cold air. Avoid areas where the plume could obstruct window views.
   c. Prevailing winds could cause freezing of condensate and water/ice buildup where flue products impinge on building surfaces or plants.
   d. Avoid possibility of accidental contact of flue products with people or pets.
   e. Do not locate the terminations where wind eddies could affect performance or cause recirculation, such as inside building corners, near adjacent buildings or surfaces, window wells, stairwells, alcoves, courtyards or other recessed areas.
   f. Do not terminate above any door or window. Condensate can freeze, causing ice formations.
   g. Locate or guard vent to prevent condensate damage to exterior finishes.
5. Maintain clearances to vent termination as given below:

Figure 1 Vertical termination of air & vent



   a. Vent must terminate:
      - At least 6 feet from adjacent walls.
      - No closer than 5 feet below roof overhang.
      - At least 7 feet above any public walkway.
      - At least 3 feet above any forced air intake within 10 feet.
      - No closer than 12 inches below or horizontally from any door or window or any other gravity air inlet.
   b. Air inlet must terminate at least 6" above the roof or snow line and at least 12" below the vent termination as shown in Figure 1.
   c. Do not terminate closer to 4 feet horizontally from any electric meter, gas meter, regulator, relief valve or other equipment. Never terminate above or below any of these within 4 feet horizontally.
6. Locate terminations so they are not likely to be damaged by foreign objects, such as stones or balls, or subject to buildup of leaves or sediment.
7. Do not connect any other appliance to the vent pipe or multiple boilers to a common vent pipe.

3 Vent/air termination — through roof *(continued)*

Prepare roof penetrations

1. Air pipe penetration:
   a. Cut a hole for the air pipe. Size the air pipe hole as close as desired to the air pipe outside diameter.
2. Vent pipe penetration:
   a. Cut a hole for the vent pipe. For either combustible or noncombustible construction, size the vent pipe hole at least 0.4" larger than the vent pipe diameter:
      • 4" hole for 3" PVC
      • 5" hole for 4" PVC
   b. Insert a galvanized metal thimble in the vent pipe hole.
3. Space the air and vent holes to provide the minimum spacings shown in Figure 1, page 6.
4. Follow all local codes for isolation of vent pipe when passing through floors, ceilings and roofs.
5. Provide flashing and sealing boots sized for the vent pipe and air pipe.

Termination and fittings

1. Prepare the vent termination coupling and the air termination elbow (Figure 1, page 6) by inserting the bird screens provided with the boiler.
   a. You must obtain the bird screen from your supplier (optional kit):
      For Ultra-80, -105 and -155: Part number 383-500-105, 3-inch screen.
      For Ultra-230 and -310: Part number 383-500-110, 4-inch screen.
   b. If using 3-inch piping for an Ultra-230, cut the 4-inch bird screen by placing 3-inch fitting on screen and cutting around it as a template (or use kit 383-500-105, 3-inch screen).

WARNING You must install bird screens in both the vent and air piping terminations to prevent debris or animals from entering the piping. Failure to install the stainless steel screens could result in boiler failure, with potential for severe personal injury, death or substantial property damage.

2. The air piping must terminate in a down-turned 180-degree return bend as shown in Figure 1, page 6. Locate the air inlet pipe no further than 2 feet from the center of the vent pipe. This placement avoids recirculation of flue products into the combustion air stream.
3. The vent piping must terminate in an up-turned coupling as shown in Figure 1, page 6. The top of the coupling must be at least 1 foot above the air intake. The air inlet pipe and vent pipe can be located in any desired position on the roof, but must always be no further than 2 feet apart and with the vent termination at least 1 foot above the air intake.
4. Maintain the required dimensions of the finished termination piping as shown in Figure 1, page 6.
5. Do not extend exposed vent pipe outside of building more than shown in this document. Condensate could freeze and block vent pipe.

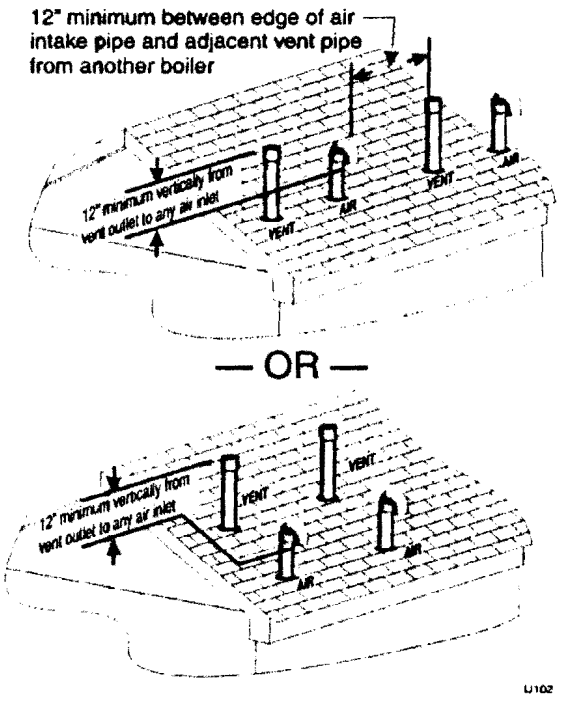
Multiple vent/air terminations

1. When terminating multiple Ultra boilers, terminate each vent/air connection as described in this supplement.

WARNING Terminate all vent pipes at the same height and all air pipes at the same height to avoid possibility of severe personal injury, death or substantial property damage.

2. Place roof penetrations to obtain minimum clearance of 12 inches between edge of air intake elbow and adjacent vent pipe of another boiler for U. S. installations (see Figure 2). For Canadian installations, provide clearances required by CSA B149.1 or B149.2 Installation Code.
3. The air inlet of an Ultra boiler is part of a direct vent connection. It is not classified as a forced air intake with regard to spacing from adjacent boiler vents.

Figure 2 Through roof terminations with multiple boilers



4 Vent/air termination — sidewall

WARNING Follow all instructions in this supplement when determining vent location to avoid possibility of severe personal injury, death or substantial property damage.

WARNING A gas vent extending through an exterior wall shall not terminate adjacent to the wall or below building extensions such as eaves, parapets, balconies or decks. Failure to comply could result in severe personal injury, death or substantial property damage.

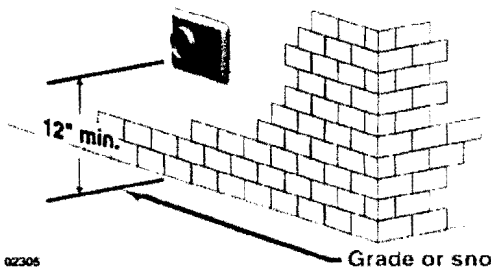
NOTICE Installation must comply with local requirements and with the National Fuel Gas Code, ANSI Z223.1 for U.S. installations or CSA B149.1 or B149.2 for Canadian installations.

Determine location

Locate the vent/air terminations using the following guidelines:

1. The total length of piping for vent or air must not exceed the limits given in Table 2, page 12.
2. You must consider the surroundings when terminating the vent and air:
   a. Position the vent termination where vapors will not damage nearby shrubs, plants or air conditioning equipment or be objectionable.
   b. The flue products will form a noticeable plume as they condense in cold air. Avoid areas where the plume could obstruct window views.
   c. Prevailing winds could cause freezing of condensate and water/ice buildup where flue products impinge on building surfaces or plants.
   d. Avoid possibility of accidental contact of flue products with people or pets.
   e. Do not locate the terminations where wind eddies could affect performance or cause recirculation, such as inside building corners, near adjacent buildings or surfaces, window wells, stairwells, alcoves, courtyards or other recessed areas.
   f. Do not terminate above any door or window. Condensate can freeze, causing ice formations.
   g. Locate or guard vent to prevent condensate damage to exterior finishes.
3. Maintain clearances as shown in Figures 3, 4, 5 and 6 (pages 8, 9 and 10). Also maintain the following:
   a. Vent must terminate:
      - At least 6 feet from adjacent walls.
      - No closer than 5 feet below roof overhang.
      - At least 7 feet above any public walkway.
      - At least 3 feet above any forced air intake within 10 feet.
      - No closer than 12 inches below or horizontally from any door or window or any other gravity air inlet.
   b. Air inlet must terminate at least 12" above grade or snow line
   c. Do not terminate closer to 4 feet horizontally (above or below) from any electric meter, gas meter, regulator, relief valve or other equipment.
4. Locate terminations so they are not likely to be damaged by foreign objects, such as stones or balls, or subject to buildup of leaves or sediment.
5. Do not connect any other appliance to the vent pipe or multiple boilers to a common vent pipe.

Figure 3 Sidewall termination location — at least 12 inches above grade or snow line



Prepare wall penetrations

NOTICE The inside and outside plates are stamped to identify the exhaust (vent) and intake (air) openings. Make sure to orient the plates correctly.

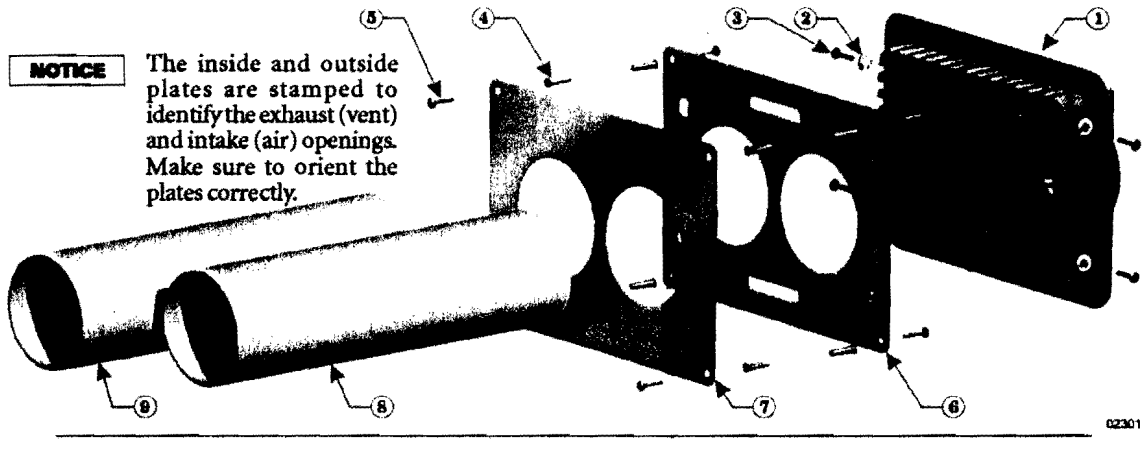
1. Locate termination opening and AVOID OBSTRUCTIONS:
   a. Use the template supplied with the termination kit.
   b. Locate the template on the outside building surface where the penetration is to be made.
   c. Make sure there will be no obstructions that might prevent proper placement of the termination.
   d. Use the template to mark the locations for the four mounting holes, flue pipe and air pipe. Level the template with a spirit level.

WARNING The template must be level to ensure the flue and air pipe will be side-to-side, as shown in Figure 5. Failure to comply could result in severe personal injury, death or substantial property damage.

   e. Cut holes in the wall as shown in Figure 3, using the location marks made with the template. For best results, use a small-diameter, long drill bit to drill centering holes for the flue and air pipe openings. Then drill the large openings from both the inside and outside.

4 Vent/air termination — sidewall *(continued)*

Figure 4 Sidewall termination assembly



NOTICE The inside and outside plates are stamped to identify the exhaust (vent) and intake (air) openings. Make sure to orient the plates correctly.

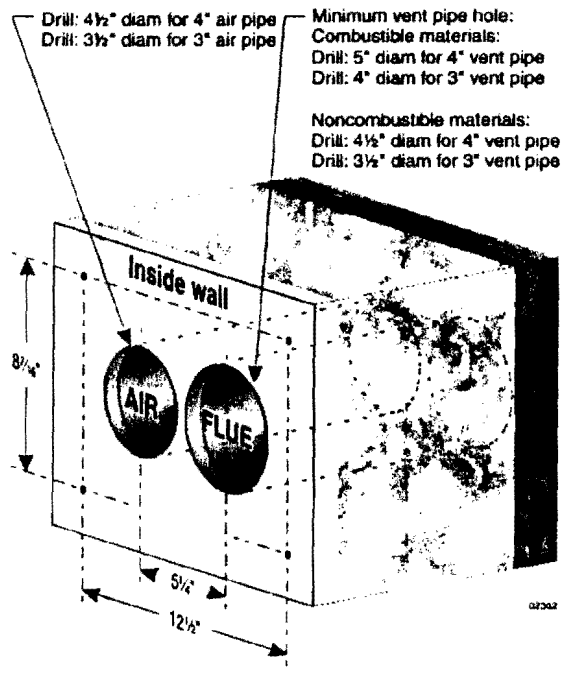
① Vent termination (3" or 4")
② Lock washer, #10 (4)
③ Sheet metal screw, #10 x ½" (4)
④ Plastic wall anchor (8)
⑤ Sht metal screw, #10 x 1¼" (8)
⑥ Outer mounting plate
⑦ Inner mounting plate
⑧ Vent pipe (butt to screen in termination)
⑨ Air pipe (butt to stops in termination)

Prepare wall penetrations *(continued)*

f. The flue pipe and air pipe may be run through a rectangular cutout (as marked on the template) in lieu of two separate holes if desired.

2. Drill holes for the screws or plastic anchors to secure the outside plate. Install the outside plate and mount the termination on the plate (temporarily).
3. Cut the flue pipe so the extension through the wall will cause the vent pipe to fully extend into the termination socket.
4. Cut the air pipe so the extension through the wall will butt the air pipe against the stops inside the termination.
5. When using 3-inch vent piping with a 4-inch termination (Ultra-230 applications), increase the flue pipe size to 4 inch ***before*** the pipe passes through the wall. This is required to obtain a seal between the flue pipe and the termination.
6. Temporarily slide the flue and air pipes through the opening(s). Slide the inside wall plate over the two pipes and into position on the inside wall.
7. Position the inside plate so the flue pipe and air pipe slope downward slightly toward the boiler (½" per foot).
8. Mark the four (4) mounting holes for the plate.
9. Remove the vent and air pipe, drill the four mounting holes, and mount the inside plate.

Figure 5 Hole preparation in walls



Dimension shown for reference only. Use template supplied with vent kit to locate holes.

4 Vent/air termination — sidewall *(continued)*

Termination and fittings

1. Test fit the vent/air termination on the vent pipe. Make sure the vent pipe fully penetrates the termination socket and the air pipe butts against the interior stops.
2. Apply silicon RTV sealant to the interior of the vent termination and slide onto vent pipe. Rotate slightly to spread the silicon to ensure a tight seal around the vent pipe.
3. Secure the termination in place using the four #10 x ½" sheet metal screws and lock washers (see Figure 4, page 9).

Figure 6 Clearance to gravity air inlets

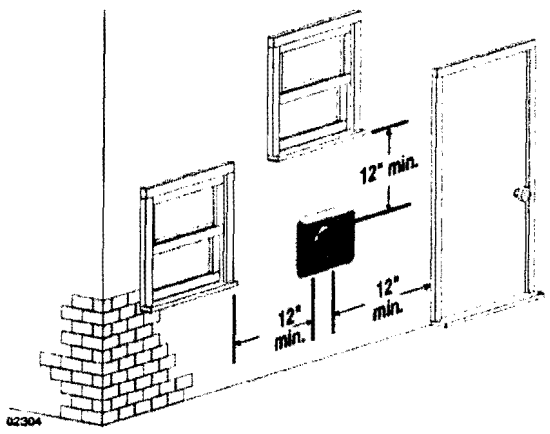
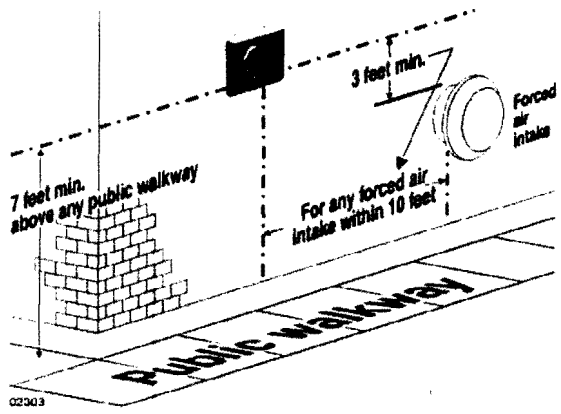


Figure 7 Clearance to forced air inlets



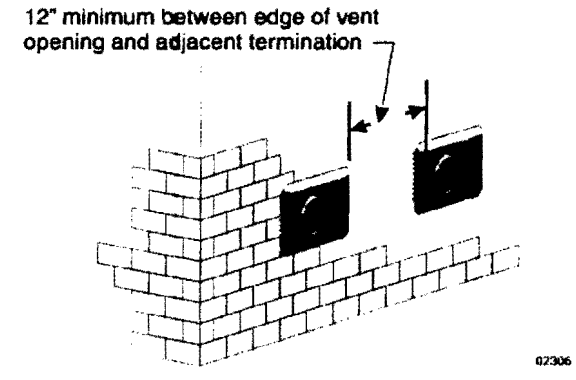
Multiple vent/air terminations

1. When terminating multiple Ultra boilers, terminate each vent/air connection as described in this supplement.

WARNING All vent pipes and air inlets must terminate at the same height to avoid possibility of severe personal injury, death or substantial property damage.

2. Place wall penetrations to obtain minimum clearance as shown in Figure 8 for U. S, installations. For Canadian installations, provide clearances required by CSA B149.1 or B149.2 Installation Code.
3. The air inlet of an Ultra boiler is part of a direct vent connection. It is not classified as a forced air intake with regard to spacing from adjacent boiler vents.

Figure 8 Multiple vent/air terminations (must also comply with other clearances for individual terminations)



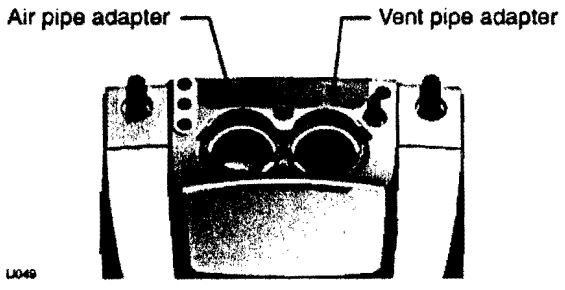
5 Installing vent & air piping

NOTICE Installation must comply with local requirements and with the National Fuel Gas Code, ANSI Z223.1 for U.S. installations or CSA B149.1 or B149.2 for Canadian installations.

Inserting/securing vent or air pipe into boiler adapters

1. Clean and chamfer insertion end of pipe. Deburr inside of insertion end. Clean and deburr inside and outside of other end of pipe.

WARNING The pipe end must be smooth and chamfered to prevent possible damage to sealing gasket in vent or air pipe adapter. Failure to comply could result in leakage, causing possible severe personal injury or death.



2. Inspect vent or air adapter (above) — verify no obstructions or foreign objects inside.
3. Loosen clamp screw.
4. Measure 3½ inches from end of pipe and make a mark with felt-tip pen.
5. Loosen adapter clamp screw.
6. Apply small amount of silicon grease to end of pipe to ease insertion.
7. Insert pipe into adapter.
8. Slide pipe down until the 3½-inch mark is reached.

WARNING Do not apply excessive force or bend the adapter or flue/air pipe when inserting. The adapter or seal could be damaged.

9. Secure vent or air pipe by tightening the adapter clamp securely. Do not overtighten. The seal is accomplished with the internal gasket. The clamp is only to hold the pipe in place.

Installing vent or air piping

For reference in following see:

- Sidewall termination — Figure 9, page 12.
- Through-roof termination — Figure 10, page 12.

1. Work from the boiler to vent or air termination. Do not exceed the lengths given in Table 2 for either the air or vent piping.
   a. Note that the Ultra-230 may be installed with either 3-inch or 4-inch vent and air piping. Table 2 provides shorter allowable piping lengths when using 3-inch piping.
2. Cut pipe to required lengths.
3. Deburr inside and outside of pipe ends.
4. Chamfer outside of each pipe end to ensure even cement distribution when joining.
5. Clean all pipe ends and fittings. Dry thoroughly.
6. Dry assemble entire vent or air piping to ensure proper fit before assembling any joint.
7. For each joint:
   a. Handle fittings and pipes carefully to prevent contamination of surfaces.
   b. Apply primer liberally to both joint surfaces — pipe end and fitting socket.
   c. While primer is still damp, lightly apply approved cement to both surfaces in a uniform coating.
   d. Apply a second coat to both surfaces. Avoid using too much cement on sockets to prevent cement buildup inside.
   e. With cement still wet, insert pipe into fitting, twisting ¼ turn. Make sure pipe is fully inserted.
   f. Wipe excess cement from joint. Check joint to be sure a smooth bead of cement shows around the entire joint.
8. Install perforated metal pipe supports or equivalent as shown in Figures 9 and 10, page 12.
9. Slope vent and air piping continuously toward boiler, with at least ¼ inch drop per foot of run. Do not allow sags at any point.
10. Maintain minimum clearance of 0.2 inch between vent pipe and any combustible wall or material. Seal wall or floor penetration openings following local code requirements.
11. Use exhaust terminal plates on inside and outside walls at sidewall terminations.

5 Installing vent & air piping *(continued)*

Table 2 Min/max lengths of either air piping or vent piping

Vent & air piping limits						
Boiler Ultra –	Minimum Piping		Maximum Piping, 3"		Maximum Piping, 4"	
	Feet	Elbows	Feet	Elbows	Feet	Elbows
80	2	2	100	2	NOT APPLICABLE	
105	2	2	100	2		
155	2	2	100	2		
230	2	2	30	2	100	2
310	2	2	NOT APPLICABLE		100	2

For piping using more than 2 elbows, reduce maximum allowable length:
- 7 feet for each additional 4-inch elbow
- 7 feet for each additional 3-inch long radius elbow
- 16 feet for each 3-inch short radius elbow

Figure 9 Piping to sidewall terminations

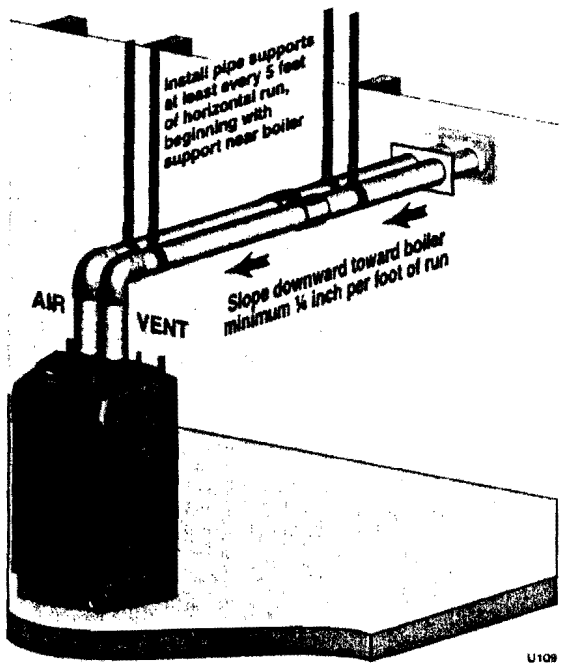
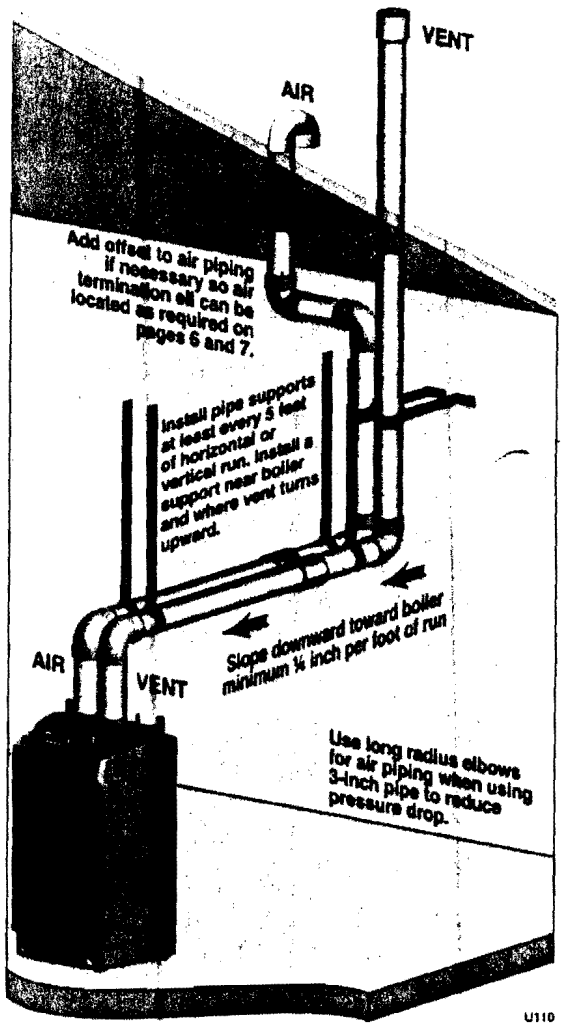


Figure 10 Piping to through-roof terminations



NOTICE When a large number of elbows is needed with 3-inch piping, use long radius elbows to reduce pressure drop. This allows a longer run of piping. See Table 2 notes for details.

WARNING Do not insulate vent piping. Exception: Where vent pipes pass through unheated spaces, such as crawl spaces or unheated garages, apply ½ inch fiberglass insulation to the portion of the vent pipe in the unheated space only.

WEIL-McLAIN

Weil-McLain
500 Blaine Street
Michigan City, IN 46360-2388
http://www.weil-mclain.com

CITY OF PORTLAND, MAINE
Department of Building Inspections

Original Receipt

Jan 14 2011

Received from Bill Hart Plumbing

Location of Work 106 Emery Street

HVAC

Cost of ~~Construction~~ $ 10,000 Building Fee: _____

Permit Fee $ _____ Site Fee: _____

Certificate of Occupancy Fee: _____

Total: 10,000

Building (IL) ___ Plumbing (I5) ___ Electrical (I2) ___ Site Plan (U2) ___

Other HVAC

CBL: 062-C025 001

Check #: _____ **Total Collected $** $120.

No work is to be started until permit issued.
Please keep original receipt for your records.

Taken by: SMH

WHITE - Applicant's Copy
YELLOW - Office Copy
PINK - Permit Copy