

City of Portland, Maine - Building or Use Permit Application

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

Permit No: 06-0803	Issue Date: PERMIT ISSUED JUN 6 2006	CBL: 032 R001001
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Location of Construction: 428 FORE ST	Owner Name: NICHOLAS BRENDA S	Owner Address: 42 CHAMBERLAIN AVE	Phone:
Business Name:	Contractor Name: W H Demmons	Contractor Address: 93 Warren Ave Portland	Phone: 2077977468
Tenant/Buyer's Name	Phone:	Permit Type: HVAC	Zone: CITY OF PORTLAND
Past Use: Commercial	Proposed Use: Commercial/ install a Evecon GB90 Hanging gas direct vent furnace	Permit Fee: \$66.00	Cost of Work: \$4,790.00
Proposed Project Description: install a Evecon GB90 Hanging gas direct vent furnace		FIRE DEPT: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied TO NFPA 54	INSPECTION: Use Group: HVAC Type: 6/8/06 <i>[Signature]</i>
		Signature: <i>[Signature]</i>	
		PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)	
		Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied	
		Signature: _____ Date: _____	

Permit Taken By: Idobson	Date Applied For: 05/26/2006	Zoning Approval	
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<ol style="list-style-type: none"> This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules. Building permits do not include plumbing, septic or electrical work. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work.. 	Special Zone or Reviews <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: _____	Zoning Appeal <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: _____	Historic Preservation <input 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: _____
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CERTIFICATION

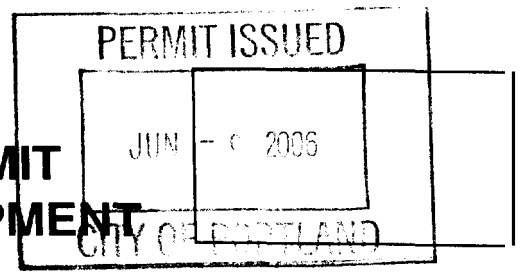
I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition,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



32R1

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 37B Wharf St 428 Forest St Use of Building Retail Date 5/25/06

Name and address of owner of appliance Ren Nichols, 428 Forest St, Portland, 04101

Installer's name and address W H Demmons, 93 Warran Ave, Portland, 04103 Telephone 797-7466

Location of appliance:

- Basement
- Floor
- Attic
- Roof

Type of Fuel:

- Gas
- Oil
- Solid

Appliance Name: Eveready GB91

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 4876
- Other _____

Type of Chimney:

Masonry Lined
Factory built _____

Metal
Factory Built U.L. Listing # _____

Direct Vent
Type PVC U.L.# _____

Type of Fuel Tank

- Oil
- Gas

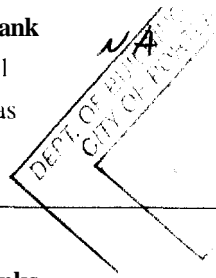
Size of Tank _____

Number of Tanks _____

Distance from Tank to Center of Flame _____ feet.

Cost of Work: \$ 4790

Permit Fee: \$ 150.66



Approved

Fire: _____

Ele.: _____

Bldg.: W H Demmons 6/8/06

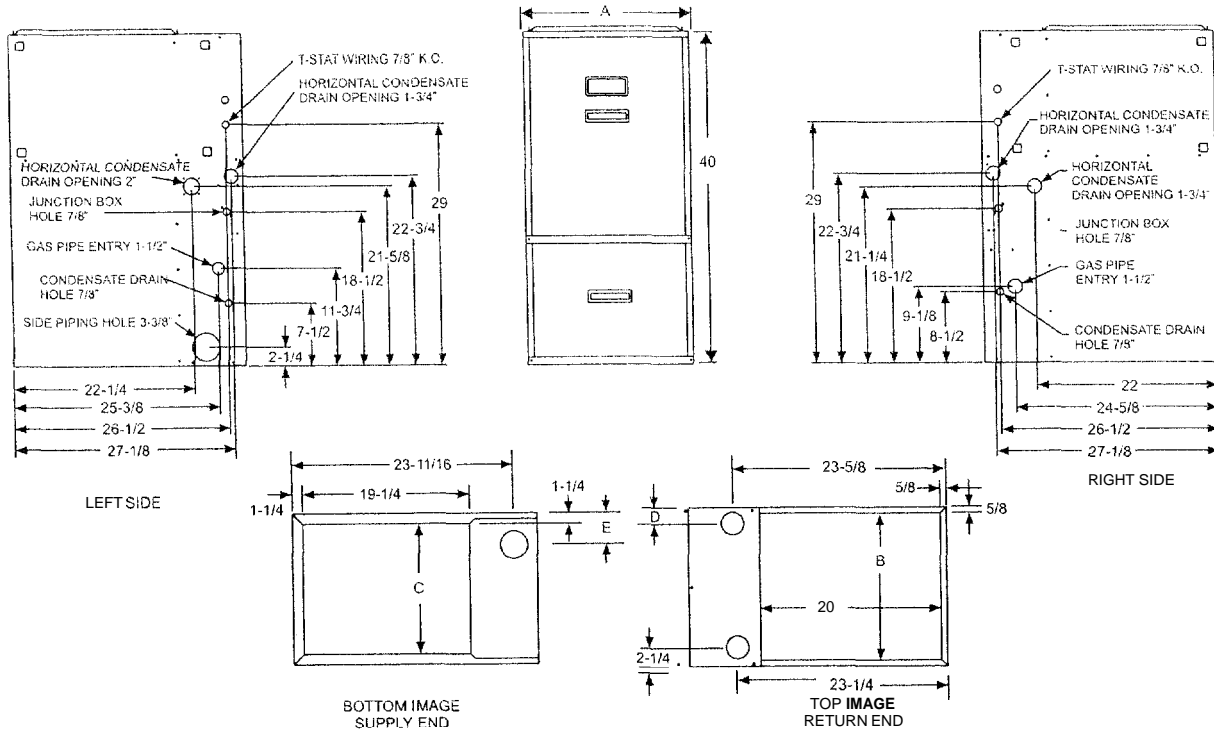
Signature of Installer _____

Approved with Conditions

See attached letter or requirement

Inspector's Signature _____

Date Approved _____



Models	CFM	Cabinet Size	Cabinet Dimension				
			A (in.)	B (in.)	C (in.)	D (in.)	E (in.)
GM9S040A12DH11	1200 (33 98)	A	14-1/2	13-1/4	12	1-3/4	2-3/8
GM9S060B12DH11	1200 (34 0)	B	17-1/2	16-1/4	15	1-3/4	2-3/8
GM9S080B12DH11	1200 (34 0)	B	17-1/2	16-1/4	15	1-3/4	2-3/8
GM9S080C16DH11	1600 (45 3)	C	21	19-3/4	18-1/2	2-1/8	2-3/4
GM9S100C16DH11	1600 (45 31)	C	21	19-3/4	18-1/2	2-1/8	2-3/4
GM9S100C20DH11	2000 (56 6)	C	21	19-3/4	18-1/2	2-1/8	2-3/4
GM9S120D20DH11	2000 (56 6)	D	24-1/2	23-1/4	22	2-1/2	3

Models Input BTUH	Pipe Size Inches	Maximum Number of Elbows*								Minimum Length
		1	2	3	4	5	6	7	8	
40,000	1-1/2	25	20	15	10	N/A	N/A	N/A	N/A	5
40,000	2	60	55	50	45	40	30	20	N/A	5
40,000	3	85	80	75	70	65	60	50	40	20
60,000	1-1/2	15	10	N/A	N/A	N/A	N/A	N/A	N/A	5
60,000	2	60	55	50	45	40	35	25	15	5
60,000	3	85	80	75	70	65	60	50	40	20
80,000/1200	2	60	55	50	45	40	35	25	15	5
80,000/1200	3	85	80	75	70	65	60	50	40	20
80,000/1600	2	60	55	50	45	40	35	25	15	5
80,000/1600	3	85	80	75	70	65	60	50	40	20
100,000	2	25	20	15	10	N/A	N/A	N/A	N/A	5
100,000	3	80	75	70	65	60	55	45	35	5
120,000	3	55	50	45	40	35	25	15	N/A	5

* Three elbows (two in vent pipe and one in the air intake pipe) are already accounted for and need not be included in the elbow count from the Table above.

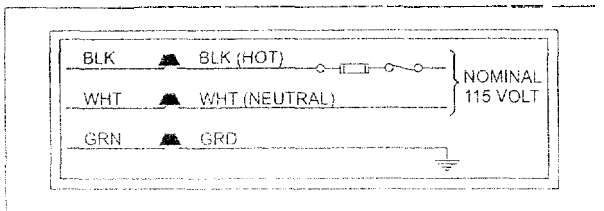
	MBH	MBH	Nominal CFM	Cabinet Width In.	AFUE %	Air Temp. Rise °F	Approx. Oper. Weight
				14-1/2	94	35 - 65	120
					92	35 - 65	130
					92		
GM9S080C16DH11	80/C	74				35 - 65	
	100/C	93	1600	21	92	35 - 65	170
		93			92		
GM9S120D20DH11	120/D	112	2000	24-1/2	92	35 - 65	180

	Max. Outlet Air Temp °F	Blower				Max. Over-current Protect	(avg) @ 75 ft.
	165					20	
GM9S080C16DH11	165	3/4	102	11 x 10	12	20	14
GM9S100C16DH11	165	3/4	102	11 x 10	12	20	14
GM9S100C20DH11	165	1	127	11 x 11	14	20	12
GM9S120D20DH11	165	1	127	11 x 11	14	20	12

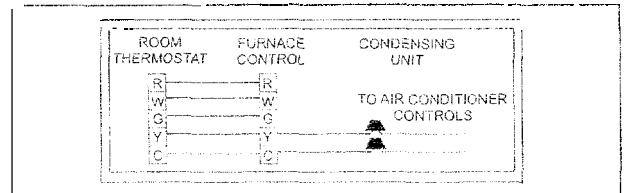
FILTER SIZES

Input / Output BTU/H (kW)	CFM (m ³ /min)	Cabinet Size	Top Return Filter in(cm)
40/37 (11.72/110.84)	1200 (34)	A	(2) 14 x 20 (36 x 51)
60/55 (17.57/16.10)	1200 (34)	B	(2) 14 x 20 (36 x 51)
80/75 (23.42/21.96)	1200 (34)	B	(2) 14 x 20 (36 x 51)
80/75 (23.42/21.96)	1600 (45)	C	(2) 14 x 20 (36 x 51)
100/95 (29.28/27.82)	1600 (45)	C	(2) 14 x 20 (36 x 51)
100/95 (29.28/27.82)	2000 (57)	C	(2) 14 x 20 (36 x 51)
120/112 (35.14/32.80)	2000 (57)	D	(2) 14 x 20 (36 x 51)

FIELD WIRING DIAGRAMS



POWER WIRING



particulate between lines are formed by the intersection of the top and two sides of the furnace and the building joists, attic or rafter. This line may be in contact with combustible material.

IMPORTANT: In either a horizontal left or right installation, a minimum of 3" (20.3 cm) clearance is required beneath the furnace to allow for the installation of the condensate trap and drain pipe. Refer to "CONDENSATE PIPING" section of this manual for more information.

WARNING

When a furnace is installed in an attic or other insulated space, keep all insulating materials at least 12 inches (30.5 cm) away from furnace and burner combustion air openings.

CAUTION

If this furnace is installed over a finished space, a condensate safety pan must be installed.

SUSPENDED FURNACE / CRAWL SPACE INSTALLATION

The furnace can be hung from floor joists or installed on suitable blocks or pad. Blocks or pad installations shall provide adequate height to ensure the unit will not be subject to water damage. Units may also be suspended from rafters or floor joists using rods, pipe angle supports or straps. Angle supports should be placed at the supply air end and near the blower deck. Do not support at return air end of unit. All four suspension points must be level to ensure quiet furnace operation. When suspending the furnace use a secure a platform constructed of plywood or other building material secured to the floor joists. Refer to Figure 6 for typical crawl space installation.

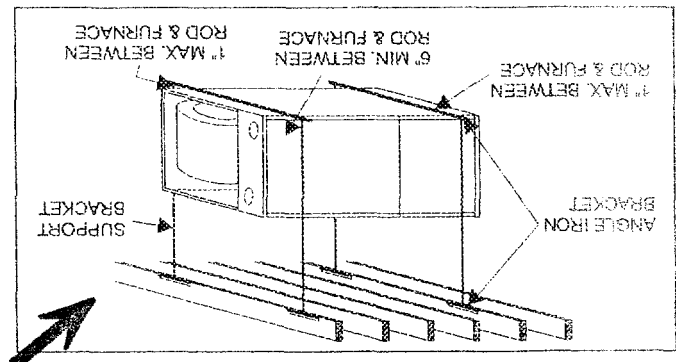


FIGURE 6: Typical Suspended Furnace / Crawl Space Installation

CAUTION

In any application where temperatures below freezing are possible, see "BELOW FREEZING LOCATIONS".

SECTION IV: GAS PIPING

GAS SAFETY

ADANGER

An overpressure protection device, such as a pressure regulator, must be installed in the gas piping system upstream of the furnace and must act to limit the downstream pressure to the gas valve so it does not exceed 0.5 PSI (14" w.c. (3.48 kPa)). Pressures exceeding 0.5 PSI (14" w.c. (3.48 kPa)) at the gas valve will cause damage to the gas valve, resulting in a fire or explosion or cause damage to the furnace or some of its components that will result in property damage and loss of life.

IMPORTANT: Plan your gas supply before determining the correct gas pipe entry. Use 90-degree service elbow(s), or short nipples and conventional 90-degree elbow(s) to enter through the cabinet access holes.

GAS PIPING INSTALLATION

Properly sized wrought iron, approved flexible or steel pipe must be used when making gas connections to the unit. If local codes allow the use of a flexible gas appliance connection, always use a new listed connector. Do not use a connector that has previously serviced another gas appliance.

Some utility companies or local codes require pipe sizes larger than the minimum sizes listed in these instructions and in the codes. The furnace rating plate and the instructions in this section specify the type of gas approved for this furnace - only use those approved gases. The installation of a drip leg and ground union is required. Refer to Figure 8.

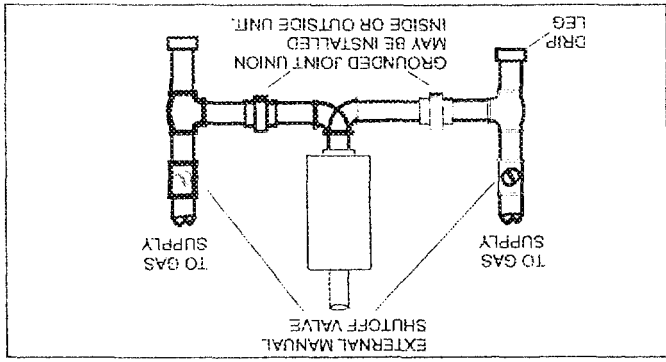


FIGURE 8: Downflow Gas Piping

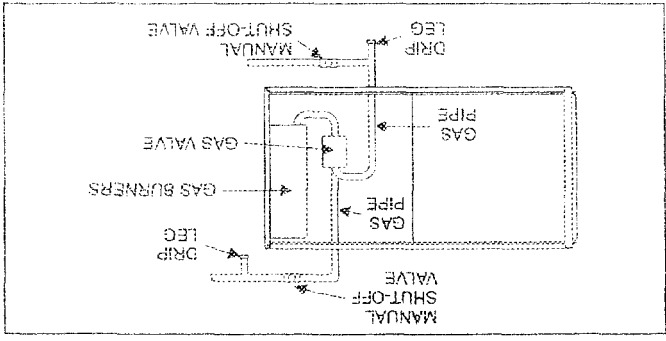


FIGURE 9: Horizontal Gas Piping

IMPORTANT: An accessible manual shutoff valve must be installed upstream of the furnace gas controls and within 6 feet (1.8 m) of the furnace.

The furnace must be isolated from the gas supply piping system by closing its individual external manual shutoff valve during any pressure testing of the gas supply piping system at pressures equal to or less than 1/2 psig (3.5 kPa).

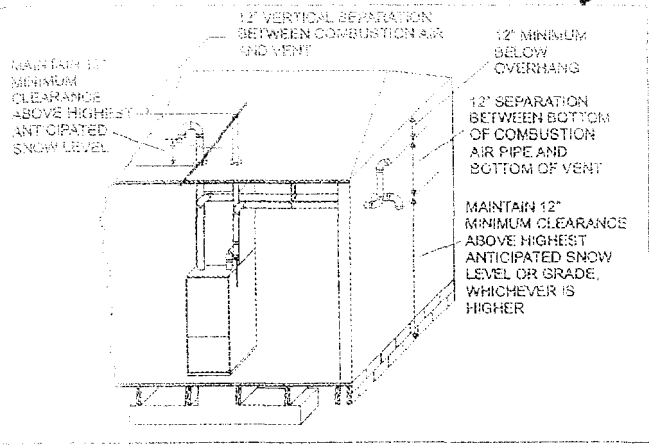


FIGURE 20: Termination Configuration - 2 Pipe

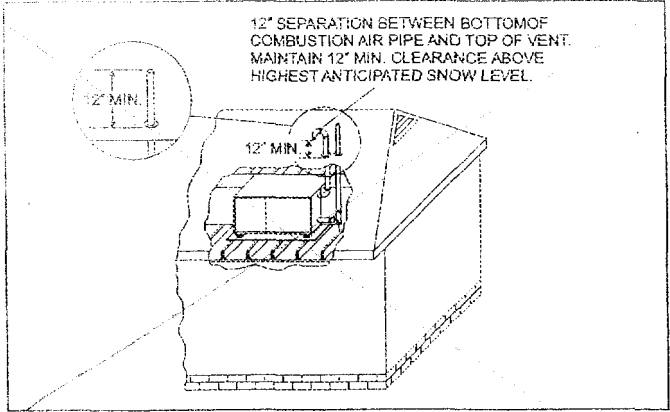


FIGURE 21: Termination Configuration - 2 Pipe Horizontal

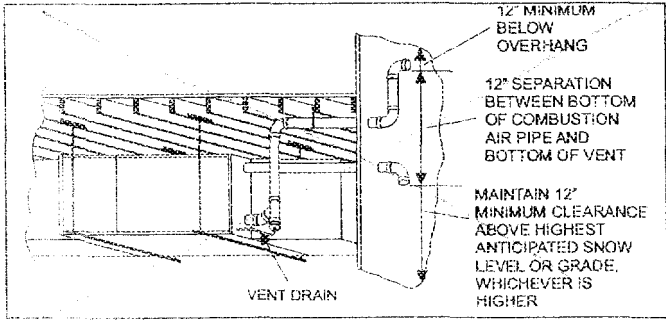


FIGURE 22: Crawl Space Termination Configuration - 2Pipe

VERTICAL VENT APPLICATIONS AND TERMINATION

Roof mounted vertical terminals may be field fabricated. Standard PVC/SRD fittings may be used. If installing a vertical venting system through any unconditioned space such as an attic or crawl space it must be insulated.

1. Observe all clearances listed in vent clearances in these instructions.
2. Termination should be positioned where vent vapors are not objectionable.
3. Termination should be located where it will not be affected by wind gusts, light snow, or allow recirculation of flue gases.
4. Termination should be located where it cannot be damaged, plugged or restricted by tree limbs, leaves and branches.
5. Horizontal portions of the vent system must slope upwards and be supported to prevent sagging. The vent system may be supported by a set of straps or hangers secured to a permanent part of the structure with straps 1/2" x 1/2" in.

A vent drain is required when vent passes through any unconditioned space such as an attic or crawl space in order to prevent the accumulation of excess condensate in the inducer motor during operational cycles. See Figure 18.

VENTING MULTIPLE UNITS

Only the sealed combustion system can be used for installations requiring more than one furnace in a structure. A separate sealed combustion air pipe and a separate vent pipe must be installed for each furnace. Do not connect more than one furnace to a combustion air pipe or a vent pipe. The combustion air and vent termination must be located as shown in Figures 23 or 24.

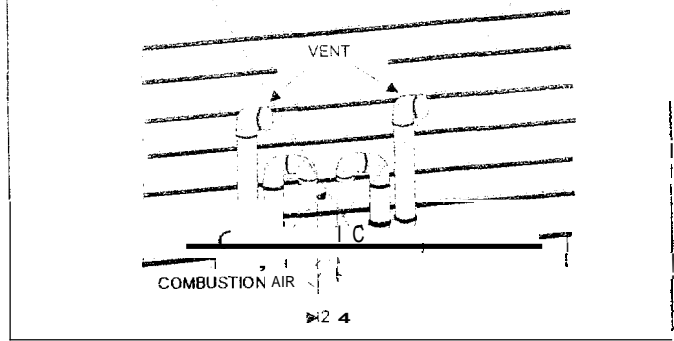


FIGURE 23: Double Horizontal Sealed Combustion Air and Vent Termination

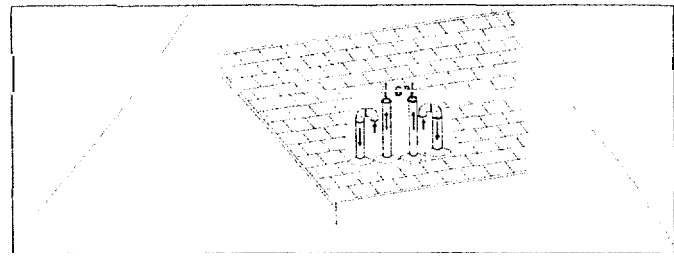


FIGURE 24: Double Vertical Sealed Combustion Air and Vent Termination

COMBUSTION AIR SUPPLY

All installations must comply with Section 5.3 Air for Combustion and Ventilation of the National Fuel Gas Code ANSI Z223.1 or Sections 7.2, 7.3 or 7.4 of CAN/CGA 8149.1 or 2 Installation Code - latest editions

This furnace is certified to be installed with one of three possible combustion air intake configurations

1. **OUTDOOR COMBUSTION AIR.** This is a sealed combustion air configuration where the combustion air is supplied through a PVC or ABS pipe that is connected to the PVC coupling attached to the burner box and is terminated in the same atmospheric zone as the vent. This type of installation is approved on all models. Refer to Figures 25 & 27.
2. **AMBIENT COMBUSTION AIR.** Combustion air is supplied from the area surrounding the furnace through the combustion air pipe in the furnace casing. The combustion air and the vent pipes are not terminated in the same atmospheric zone. Refer to Figures 19 & 26 for vent terminations. Refer to "AMBIENT COMBUSTION AIR SUPPLY" and "VENT AND SUPPLY OUTSIDE AIR SAFETY CHECK PROCEDURE" for proper installation.

VENTILATED COMBUSTION AIR: Combustion air is supplied through a PVC or ABS pipe that is connected to the PVC coupling attached to the burner box and is terminated in a ventilated attic or crawl space. The combustion air and the vent pipes are not terminated in the same atmospheric zone. Refer to Figure 28 for crawl space and attic termination. Only the combustion air intake may terminate in the attic. The vent must terminate outside.

NOTE: 1. Elbow count does not include the elbows required for the termination. See Step 4 under Combustion Air/Vent Pipe Sizing. 2. Installing furnace at altitudes between 2000 - 4500 ft. (1609.6 - 1371.6 m) intake and vent pipe length must be converted for high altitude operation. Intake and vent pipe length, the furnace must be converted for high altitude operation.

Models Input BTUH (kW)	Pipe Size Inches (mm)	Maximum Number of Elbows*								Minimum Length
		1	2	3	4	5	6	7	8	
40,000 (11.7)	1-1/2 (38)	25	20	15	10	N/A	N/A	N/A	N/A	8
40,000 (11.7)	2 (51)	60	55	50	45	40	30	20	N/A	5
40,000 (11.7)	3 (76)	85	80	75	70	65	60	50	40	20
80,000 (23.4)	1-1/2 (38)	15	10	N/A	N/A	N/A	N/A	N/A	N/A	5
80,000 (23.4)	2 (51)	60	55	50	45	40	35	25	15	5
80,000 (23.4)	3 (76)	85	80	75	70	65	60	50	40	20
80,000 (23.4)	2 (51)	60	55	50	45	40	35	25	15	5
80,000 (23.4)	3 (76)	85	80	75	70	65	60	50	40	20
100,000 (29.3)	2 (51)	25	20	15	10	N/A	N/A	N/A	N/A	5
100,000 (29.3)	3 (76)	80	75	70	65	60	55	45	35	5
120,000 (35.1)	3 (76)	55	50	45	40	35	25	15	N/A	5

MAXIMUM ELBOWS AND VENT LENGTHS

TABLE 9: Combustion Air Supply and Vent Piping

IMPORTANT: Furnace vent pipe connections are sized for 2" (5.08 cm). Any pipe size change must be made outside the furnace casing in a vertical pipe section to allow proper drainage of condensate. An offset pipe. Combustion air and vent piping must be of the same diameter. when the vent is increased to 3" (7.62 cm).

FURNACE VENT CONNECTION SIZES	
Furnace Input 40 - 120 MBH (11.72-35.17 kW)	Vent Pipe Size 2" (5.08 cm)
Furnace Input 40 - 120 MBH (11.72-35.17 kW)	Vent Pipe Size 2" (5.08 cm)

TABLE 8: Combustion Air Intake and Vent Connection Size at Furnace (All Models)

IMPORTANT: For the minimum vent length see Table 9. For the maximum vent length see Table 9. IMPORTANT: Accessory concentric vent / intake termination kits 1CT0302, 1CT0303 and 1HT0901 are available and approved for use with these furnaces. IMPORTANT: The use of flexible connectors or no hub connectors in the vent system is not allowed. This type connection is allowed in the combustion air pipe near the furnace for air conditioning coil accessibility. Sidewall horizontal vent terminals and roof mounted vertical terminals may be field fabricated. Standard PVC/SRD fittings may be used. Terminal configuration must comply as detailed in this section. IMPORTANT: National Standards Institute (ANSI) standards and American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) standards apply for testing and materials (ASTM standards D1785, D2241, D2665, D2241 (SDR-21 and SDR-26 PVC), D2261 (ABS-DWV), or FRP (Schedule 40 ABS, Pipe cement and primer must conform to ASTM Standards D2564 (PVC) or D2235 (ABS).

1. Long radius (sweep) elbows are required for all units.
2. Elbows are assumed to be 90 degrees. Two 45-degree elbows count as one 90-degree elbow.
3. Elbow count refers to combustion air piping and vent piping separately. For example, if the table allows for 5 elbows, this will allow a maximum of 5 elbows in the combustion air piping and a maximum of 5 elbows in the vent piping.
4. Three vent terminal elbows (two for vent pipe and one for air intake pipe) are already accounted for as vent termination.
5. Combustion air and vent piping must be of the same diameter.

COMBUSTION AIR/VENT PIPE SIZING

WARNING

This furnace may not be common vented with any other appliance. Since it requires separate, properly sized air intake and vent lines, the furnace shall not be connected to any type of B, BW or L vent or vent connector, and not connected to any portion of a factory-built or masonry chimney.

The furnace shall not be connected to a chimney flue serving a separate appliance designed to burn solid fuel.

CAUTION

When combustion air pipe is installed above a suspended ceiling or when it passes through a warm and humid space, the pipe must be insulated with 1/2" Armaflex or other heat resistant type insulation. Vent piping must be insulated with 1/2" insulation if it will be subjected to freezing temperatures such as routing through unheated areas or through an unused chimney.

City of Portland, Maine - Building or Use Permit

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

Permit No: 06-0803	Date Applied For: 05/26/2006	CBL: 032 R001001
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Location of Construction: 428 FORE ST	Owner Name: NICHOLAS BRENDA S	Owner Address: 42 CHAMBERLAIN AVE	Phone:
Business Name:	Contractor Name: W H Demmons	Contractor Address: 93 Warren Ave Portland	Phone (207) 797-7468
Lessee/Buyer's Name	Phone:	Permit Type: HVAC	

Proposed Use: Commercial/ install a Evecon GB90 Hanging gas direct vent furnace	Proposed Project Description: install a Evecon GB90 Hanging gas direct vent furnace
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Dept: Building **Status:** Approved with Conditions **Reviewer:** Mike Nugent **Approval Date:** 06/08/2006
Note: **Ok to Issue:**
1) Must be installed in compliance with the Manufacturer's listed installation instructions, NFPA regs and 2003 IMC regs

Dept: Fire **Status:** Approved with Conditions **Reviewer:** Cptn Greg Cass **Approval Date:** 06/05/2006
Note: **Ok to Issue:**
1) Install shall comply with NFPA 54

Comments: