

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

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

Permit No: 04-1710	Issue Date:	CBL: 177 C001001
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Location of Construction: 431 Brighton Ave	Owner Name: Paulus Joseph	Owner Address: 431 Brighton Ave # 2	Phone:
Business Name:	Contractor Name: Union Oil Company	Contractor Address: So Portland	Phone: 2077991521
Lessee/Buyer's Name	Phone:	Permit Type: HVAC	Zone: RS

Proposed Use: commercial	Proposed Use: commercial install Mopine HD-30 heating system	Permit Fee: \$39.00	Cost of Work: \$1,100.00	CEO District: 3
Proposed Project Description: Install Mopine HD-30 heating system in garage w/ ceiling mount		FIRE DEPT: <input type="checkbox"/> Approved <input checked="" type="checkbox"/> Denied		INSPECTION: Use Group: U Type: Heating
		Signature: <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 checked="" type="checkbox"/> Denied	Signature: _____ Date: _____

Permit Taken By: dmartin	Date Applied For: 11/17/2004	<b>Zoning Approval</b>	
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<p>1.</p> <p>2. Building permits do not include plumbing, septic or electrical work.</p> <p>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..</p>	<p><b>Special Zone or Reviews</b></p> <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: _____	<p><b>Zoning Appeal</b></p> <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: _____	<p><b>Historic Preservation</b></p> <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: 12/8/04
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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

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<b>Permit No:</b> 04-1710	<b>Date Applied For:</b> 11/17/2004	<b>CBL:</b> 177 C001001
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<b>Location of Construction:</b> 431 Brighton Ave	<b>Owner Name:</b> Paulus Joseph	<b>Owner Address:</b> 431 Brighton Ave # 2	<b>Phone:</b>
<b>Business Name:</b>	<b>Contractor Name:</b> Union Oil Company	<b>Contractor Address:</b> So Portland	<b>Phone</b> (207) 799-1521
<b>Lessee/Buyer's Name</b>	<b>Phone:</b>	<b>Permit Type:</b> HVAC	
<b>Proposed Use:</b> commercial install Mopine HD-30 heating system		<b>Proposed Project Description:</b> Install Mopine HD-30 heating system in garage w/ ceiling mount	

**Note:** **Ok to Issue:**

**Dept:** Building      **Status:** Approved with Conditions      **Reviewer:** Tammy Munson      **Approval Date:** 12/08/2004  
**Note:** **Ok to Issue:**

- 1) The installation must comply with the State of Maine Gas Regulations.

**Comments:**  
11/24/04-mjn: need structurals.....advised installer

J. Paulus  
431 Brighton Ave#2  
Portland, ME 04102

HVAC permit for garage/shop (not connected to residence)

Calculations for ceiling-mounted HD30 using **2x6** ceiling joists.

**Drywall load**

$$\rho_{\text{drywall}} := 55 \frac{\text{lb}}{\text{ft}^3} \quad t_{\text{drywall}} := 0.5 \text{ in}$$

$$f_{\text{wt}} t_{\text{drywall}} := \rho_{\text{drywall}} \cdot t_{\text{drywall}} \quad W_{\text{sheet}} := [(4 \text{ ft} \cdot 8 \text{ ft}) \cdot 0.5 \text{ in}] \cdot \rho_{\text{drywall}}$$

$$f_{\text{wt}} t_{\text{drywall}} = 2.292 \frac{\text{lb}}{\text{ft}^2} \quad W_{\text{sheet}} = 73.333 \text{ lb}$$

HD30 specifications:  $w_{\text{HD30}} := 55 \text{ lb}$

$$A_{\text{mount}} := 18.5 \text{ in} \cdot 16 \text{ in} \quad A_{\text{mount}} = 2.056 \text{ ft}^2$$

$$f_{\text{wt}} t_{\text{HD30}} := \frac{w_{\text{HD30}}}{A_{\text{mount}}} \quad f_{\text{wt}} t_{\text{HD30}} = 26.757 \frac{\text{lb}}{\text{ft}^2}$$

Total load (drywall+HD30):  $f_{\text{wt}} t_{\text{HD30}} + f_{\text{wt}} t_{\text{drywall}} = 29.048 \frac{\text{lb}}{\text{ft}^2}$

**Ceiling joist loading: 10psf L.L + 5psf D.L (USC-1997) .17' 8" span, grade#2 Douglas fir  
need to increase width of mounting brackets on HD30 to decrease psf load to < 15psf**

**Adjusting span of mounting brackets, 16" increments:**

$$f_{\text{wt}} t_{\text{total}}(\text{spancount}) := \frac{w_{\text{HD30}}}{18.5 \text{ in} \cdot [(\text{spancount} - 1) \cdot 16 \text{ in}]} + f_{\text{wt}} t_{\text{drywall}}$$

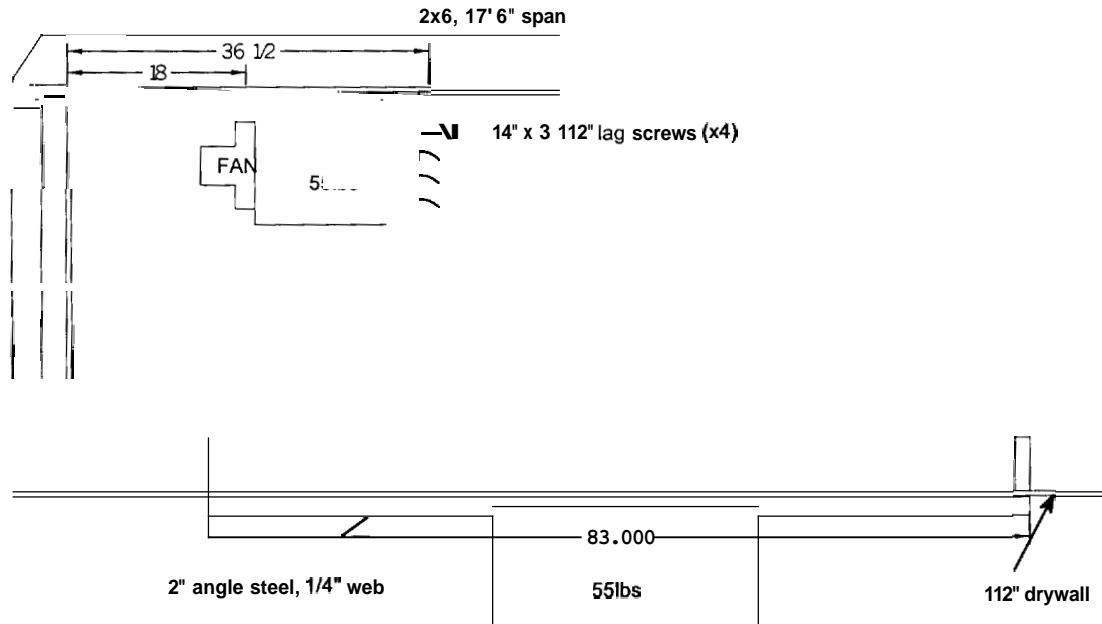
$$f_{\text{wt}} t_{\text{total}}(4) = 11.211 \frac{\text{lb}}{\text{ft}^2}$$

$$f_{\text{wt}} t_{\text{total}}(5) = 8.981 \frac{\text{lb}}{\text{ft}^2} \quad \text{Increase mounting bracket length to at least five spans (64")}$$

$$f_{\text{wt}} t_{\text{total}}(6) = 7.643 \frac{\text{lb}}{\text{ft}^2} \quad \text{Increase mounting bracket length to 6 spans (96") and maintain load symmetry}$$

J. Paulus  
43 1 Brighton Ave#2  
Portland, ME 04102  
HVAC permit for garage/shop (not connected to residence)

Furnace mounting diagram, partial view



J. Paulus  
431 Brighton Ave#2  
Portland, ME 04102

HVAC permit for garage/shop (not connected to residence)

Calculations for ceiling-mounted HD30 using 2x6 ceiling joists.



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 431 BRIGHTON AVE Use of Building GARAGE/SHOP Date 11/9/04

Name and address of owner of appliance JOSEPH W. PAULUS  
431 BRIGHTON AVE #2 PORTLAND, ME 04102

Installer's name and address JOSEPH W. PAULUS (UNIT & VENT) / BRYAN LEONE (ELECTRICAL) / UNION OIL (GAS)  
Telephone 776-1437 (PAULUS)

### Location of appliance:

- Basement
- Attic
- Floor
- Roof
- GARAGE
- CEILING MOUNT

### Type of Fuel:

- Gas
- Oil
- Solid

Appliance Name: MOPINE HD-30

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 4475
- Other ELEC MS 60010180

### Type of Chimney:

- Masonry Lined
- Factory built \_\_\_\_\_

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

- Direct Vent
- Type HORIZONTAL uL# \_\_\_\_\_
- PT 3 4650100

### Type of Fuel Tank

- Oil
- Gas

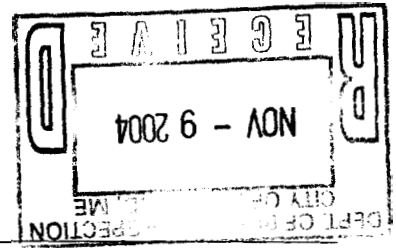
Size of Tank 120

Number of Tanks 1

Distance from Tank to Center of Flame 18 feet.

Cost of Work: ~~\$1000.00~~ 1100.00

Permit Fee: \$ 39.00



### Approved

### Approved with Conditions

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

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

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

- See attached letter or requirement

Inspector's Signature

Date Approved

Signature of Installer J.W. Paulus

(207) 776-1437

# VENTING SYSTEM

