COMBUSTION AIR SYSTEM
MODEL: CAS-2WM
WEIL-MCLAIN OUTSIDE AIR KIT
FOR USE WITH OIL BURNER MODELS QB-180 & QB-300

The Air Boot™ model CAS-2WM is for use only on the designated burner(s) as described in these instructions only when the specific burner includes this Air Boot™ when shipped from the burner manufacturer or where the burner instructions specifically reference the model CAS-2WM Air Boot™ as an optional air intake system.

ITEMS INCLUDED IN KIT:
1 - Air Boot™
1 - 4" VRV (Vacuum Relief Valve)
1 - 4" IAH Hood
1 - Set of Gaskets
1 - Burner Coupling Set
2 - Mounting Bolts

INSTALLER SUPPLIED ITEMS:
Air Duct Pipe and Elbows as needed - use 4" Dryer Venter, Aluminum or Galvanized Steel
¼" NPT 90° street ell for oil line, if needed
Exterior rated caulk, silicone sealant, or equivalent

READ THESE INSTRUCTIONS CAREFULLY AND COMPLETELY BEFORE PROCEEDING WITH THE INSTALLATION.

This device MUST be installed by a qualified agency in accordance with the manufacturer's installation instructions. The definition of a qualified agency is: any individual, firm, corporation or company which either in person or through a representative is engaged in, and is responsible for, the installation and operation of HVAC appliances, who is experienced in such work, familiar with all the precautions required, and has complied with all the requirements of the authority having jurisdiction.

Please retain these instructions after installation.

Installed By: ___________________________ Phone: ____________________ Installation Date: ________________
THE PURPOSE OF THE VACUUM RELIEF VALVE (VRV)
The vacuum relief valve provides combustion air to the
burner if the outside air supply is interrupted for any
reason. Typical situations would be blockage of the air
intake or duct, or wind effect which cause a negative
pressure at the air intake hood.

VRV OPERATION
With normal air flow through the air intake hood and
duct, the VRV stays closed. All combustion air comes
in through the air duct. If the pressure in the Air Boot™
drops, the valve door opens. Room air flows in through
the VRV to provide the air needed for combustion.
When the Air Boot™ pressure returns to normal, the
VRV closes.

⚠️ WARNING: Failure to perform the following can
cause severe personal injury, death, or substantial
property damage:
• Read all instructions before starting.
• Follow all instructions in proper order.
• Turn off service switch on boiler and any other
electrical disconnect switches.
• Turn off the fuel supply valve(s) and disconnect
fuel lines from the burner.

INSTALLATION
1. Rotate the burner oil solenoid valve as shown in
Figure 1, steps A-D. Do not reconnect the oil line
(per E-F). The solenoid valve must be aligned as
shown to prevent interference with the Air Boot™.

2. Remove the two ¼” bolts holding the oil pump to
the burner housing. Remove the oil pump.

3. Remove the screw which holds the air band to the
housing. Remove the air band.

4. Install the sealing gaskets onto the burner housing.
(See Figure 2)

5. Install mounting spacer onto Air Boot™.
(See Figure 3)

6. Place the Air Boot™ on the housing, through the
large opening in the back side of the Air Boot™
(See Figure 3). Press the AirBoot™ into position
and align roughly plumb with the burner. Align
the Air Boot™ mounting holes with the burner oil
pump mounting holes.

NOTE: Replace pump coupling with the coupling supplied with kit.
7. Now put the oil pump and the AirBoot™ kit coupling back into place. Replace the two \( \frac{1}{4} '' \) oil pump mounting screws. Tighten the screws.

8. Reconnect the burner oil line to the ell fitting on the oil pump per Figure 1, drawings E and F.

9. Mount the VRV tee assembly or 90° elbow onto the Air Boot™ intake. Fasten using three (3) sheet metal screws on all joints. (See Figure 5)
10. Assemble the VRV balance weight onto the gate. Screw the weight all the way in. Then attach lock nut and knurl nut. (See Figure 6)

11. Mount the VRV assembly onto the tee and fasten with the supplied screw and nut in collar tabs. To ensure proper operation, check the gate for being level across the pivot points and plumb. (See Figure 7)
12. Refer to Figure 8 for general installation layout.

AIR DUCT AND AIR INTAKE HOOD (See Figure 8)
1. Mount the air intake hood through an outside wall. It must be at least 12" ABOVE grade or snow line.

2. Locate the air intake hood at least 3' BELOW or 6' horizontally from any appliance VENT termination.

3. When the appliance is sidewall vented, locate the air intake hood on the same side of the building as the appliance vent outlet.

4. Always mount the air hood with the intake pointed down.

5. To install the air intake hood, cut a 4 ¼" hole through the side of the building. Slide the hood through the wall and fasten with appropriate screws.

6. Seal around the exterior plate with an exterior rated caulk, silicone sealant, or equivalent.

Figure 8
7. Locate the air hood so the air piping length doesn't exceed the limits below:

<table>
<thead>
<tr>
<th>NUMBER OF ELBOWS</th>
<th>MAXIMUM LENGTH OF AIR PIPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 to 4</td>
<td>35'</td>
</tr>
<tr>
<td>5</td>
<td>28'</td>
</tr>
<tr>
<td>6</td>
<td>21'</td>
</tr>
<tr>
<td>7</td>
<td>14'</td>
</tr>
</tbody>
</table>

8. Construct the air duct piping with 4" diameter dryer vent or aluminum or galvanized steel pipe, using as few elbows as possible.

9. Fasten and support the air duct piping to prevent damage and separation of joints.
ADJUSTMENTS
AIR INTAKE BOOT AIR SETTING

1. Follow the instructions in the Boiler and Burner Installation Manuals for adjusting and setting the burner.

WARNING: Failure to properly adjust the burner after installing this kit can result in severe personal injury, death or substantial property damage.

2. Loosen the air band screw on the Air Boot™. Position the screw at the initial setting on the following chart. Use this setting only as a starting point. Do not leave the burner with this setting unless your testing proves it to be acceptable.

3. Start the burner and adjust the air control as needed to achieve the required CO₂ and smoke levels. Set over fire draft to appliance manufacturer's specifications (typically -.02" of water). Secure air control knob with indicator bracket. If draft levels are not obtainable or controllable, use standard industry methods to control the draft or call the Field Controls Tech Line at 1-800-742-8368 for more information.

4. Adjust the counterweight on the vacuum relief valve so the gate remains closed during the burner setup and testing.

VACUUM RELIEF VALVE COUNTERWEIGHT

1. After you have completed adjusting the burner, adjust the VRV counterweight.

2. With the burner running normally, rotate the counterweight screw counterclockwise until the gate just begins to open.

3. Check the combustion again to verify no changes have occurred. If OK, hold the counterweight screw in position and tighten the hex nut against the gate to lock the screw permanently in position.
Warranty
For warranty information about this or any Field Controls product, visit:
www.fieldcontrols.com/warranty