INSTALLATION AND MAINTENANCE INSTRUCTIONS FOR MODELS M & MO GAS VENTS (B-VENT)

GENERAL:
The Model M and MO Gas Vents (B-Vent) have been designed for use with gas burning Category I appliances. A Category I appliance operates with a non-positive vent static pressure and with a vent temperature that avoids excessive condensate production in the vent. B-Vent is of double wall construction, with the inner flue of aluminum alloy (allowing rapid warm-up and better draft) and the outer casing of galvanized steel or galvalume steel. Model M B-Vent is compatible with listed masonry relining systems, single wall connectors and other listed gas vents. Model M B-Vent may be used to reline masonry chimneys (Separate instructions are available from Metal-Fab). Model MO, Oval Gas Vent is designed for installation within 2" x 4" or 2" x 6" wall studs and for venting of wall mounted furnaces. Transition from oval to round for lowest cost installation is easily obtained.

SAFETY:
CAUTION: UL listing is based on using B-Vent components supplied by Metal-Fab, Inc. Performance may be affected and a safety hazard created if parts/components supplied by Metal-Fab, Inc. are not used. Performance within 2" x 4" or 2" x 6" wall studs and for venting of wall mounted furnaces. Transition from oval to round for lowest cost installation is easily obtained.

1. Metal-Fab B-Vent pipe and fittings were designed and are listed to form a continuous passageway from the gas burning appliance to the vent termination above the roof, including the vent cap. The B-Vent components are to be installed with minimum one inch clearance to combustible material. Strap vent in place, especially on lateral or horizontal runs, to maintain proper clearances to combustibles. Do not nail insulation or other materials around the B-Vent.
2. When installing B-Vent always align “Up” arrow away from appliance.
3. Locate vent as close as possible to appliance to obtain maximum draft and minimize connector pipe length.
4. For horizontal runs, maintain a pitch or rise from the appliance of 1/4 inch (6.4 mm) per foot (305 mm).
5. A B-Vent Cap should be used on all installations to prevent back drafts and to keep out rain and debris. The vent must extend through a flashing, and should terminate with the lowest discharge opening no closer to the roof than the minimum height shown in the table below. These minimum heights may be used provided the vent is not less than 8' from any vertical wall. For installations not covered in TABLE 1, including sizes larger than 12”, the lowest discharge opening of the vent cap should be at least 2' above the highest point where it passes through the roof, and at least 2' higher than any portion of a building within 10’ horizontally. All gas vents extending above the roof more than 5 feet must be securely guyed or braced.

TABLE 1

<table>
<thead>
<tr>
<th>Roof Pitch</th>
<th>Minimum Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat to 7/12</td>
<td>305 mm</td>
</tr>
<tr>
<td>Over 7/12 to 8/12</td>
<td>451 mm</td>
</tr>
<tr>
<td>Over 8/12 to 9/12</td>
<td>610 mm</td>
</tr>
<tr>
<td>Over 9/12 to 10/12</td>
<td>762 mm</td>
</tr>
<tr>
<td>Over 10/12 to 11/12</td>
<td>991 mm</td>
</tr>
<tr>
<td>Over 11/12 to 12/12</td>
<td>1216 mm</td>
</tr>
<tr>
<td>Over 12/12 to 14/12</td>
<td>1524 mm</td>
</tr>
<tr>
<td>Over 14/12 to 16/12</td>
<td>1829 mm</td>
</tr>
<tr>
<td>Over 16/12 to 18/12</td>
<td>2134 mm</td>
</tr>
<tr>
<td>Over 18/12 to 20/12</td>
<td>2286 mm</td>
</tr>
<tr>
<td>Over 20/12 to 21/2</td>
<td>2438 mm</td>
</tr>
</tbody>
</table>

7. Vent sizing is defined by tables in NFPA54 (ANSI Z223.1-2015), or contact your Metal-Fab supplier. Install in accordance with these instructions and local code requirements.

8. If a power vent fan is used, make sure it is located at the terminus (exhaust end) of vent system, so as to maintain negative pressure within the vent.
9. When installing exterior vent, not enclosed by the structure or a chase, consult local gas utility, appliance manufacturer, and/or authority having jurisdiction.

INSTALLATION:
Round B-Vent
The Type M B-Vent sections and components 3”-14” diameter use the Metal-Fab positive twist lock for interconnections. Align the ends of the vent, push together then twist section to lock in place. See DETAIL 1.

TABLE 2

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Minimum Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>3” (76 mm)</td>
<td>305 mm</td>
</tr>
<tr>
<td>4” (102 mm)</td>
<td>305 mm</td>
</tr>
<tr>
<td>5” (127 mm)</td>
<td>305 mm</td>
</tr>
<tr>
<td>6” (152 mm)</td>
<td>305 mm</td>
</tr>
</tbody>
</table>

Round Sizes 3” (76 mm) - 14” (355 mm) Oval Sizes 4” (102 mm) - 6” (152 mm)

2. When a combustible floor is penetrating by B-Vent, a MPS firestop or MSP support plate is used to close the opening. If the area above the ceiling is an attic, the firestop or support plate is mounted above the joist to assure that insulation does not drop into the joist area.
3. Install the B-Vent cap (MC) onto the B-Vent.
4. Continue with B-Vent penetrating the roof.

DETAIL 1 - INSTALLATION INTERCONNECTIONS
No additional fasteners are required to assure a safe installation. It is acceptable to use screws to attach the B-Vent to the appliance outlet. If the appliance has a draft hood, the MDC draft hood connector is attached to the top of the draft hood and the first B-Vent section is twist-locked to the MDC.

NOTE: With an oval vent, the B-Vent must be inserted directly into the inlet end of a UL Listed gas vent other than Metal-Fab, secure by using three (3) 1/4 inch (6.4 mm) sheet metal screws. Do not penetrate the flue.

Figure 1

Figure 2a

Figure 2b
7. Although it is not a preferred practice, there may be installations where B-Vent must run vertically-exterior to the building-and wall support is needed. A wall band (MH) or (MWB) is used by placing around the B-Vent, then fastening to the wall. Using a wall band assures that the clearance to combustibles is maintained (See FIGURE 3).
   a. Cut a hole in the outside wall 1 1/4" larger than the diameter of the sleeve on wall thimble (MPT).
   b. Install the wall thimble by inserting the larger of the two parts on the appliance side and the other half through the outside wall.
   c. Install chimney sections vertically, starting at the tee. Attach a wall bracket every six feet to secure the vent to the wall.
   NOTE: A minimum clearance of 1" (25.4 mm) to combustibles is required.
   d. Make remainder of vent installation per B-Vent installation instructions.

8. When the connector from the appliance is single wall, it must terminate into B-Vent. At this termination, it is acceptable to secure the joint with sheet metal screws. NOTE: Single wall connector, either rigid or flexible, cannot be enclosed within combustible materials.

9. If the installation requires two appliances to terminate into a common B-Vent, a B-Vent wye or tee is used. It is recommended that the higher output appliance, normally the furnace, insert into the bottom of the wye and the other appliance attach to the tap. To minimize the length of run and to provide maximum flexibility in these installations, a swivel tee (MST) or swivel wye (MSV) is used. These components provide 360 degrees of rotation to position the tap in the proper orientation (See FIGURE 4).
   NOTE: Consult the Metal-Fab catalog for the many variations of wyes and tees available.

Oval Vents
The 4MO and 5MO oval vents are listed for use in either 2" x 4" or 2" x 6" stud walls, with firestop/spacer to maintain proper clearance to combustibles. The 6MO is listed for use in 2" x 6" stud wall. The firestop/spacer is to be located centrally between studs spaced not less than 16" on centers. The oval vent is interlocked by pushing together. See DETAIL 2.

FIGURE 3

FIGURE 4

FIGURE 5

FIGURE 6

FIGURE 7

10. It is a common practice to utilize the 90 degree adjustable elbow (M88) in the appliance area to minimize vent run. Use of the M88 or M8580 elbow is acceptable and not limited to the appliance area.

11. For horizontal and lateral runs, it is recommended that support be used every 5 feet (1524 mm). Plumber’s straps are commonly used. They should be positioned to maintain 1 inch (25.4 mm) clearance to combustibles.

12. If your installation requires a change in diameter due to vent capacity, a B-Vent increaser (M) is available. Installation is the same as standard B-Vent Sections.

3. Normally, in the attic area, the oval vent transitions back to the round using the Oval to Round Adapter (MOR). The installation is then terminated as a round B-Vent, as previously explained.

4. If your installation terminates as oval, the Oval Flashing (MOF) and Oval Storm Collar (MOSC) are shown in FIGURE 6. An Oval Vent Cap (MOC) completes the installation.

NOTE: A yearly inspection of the system, and replace any damaged parts.

MAINTENANCE: Gas vent systems normally operate trouble free. Conduct a yearly inspection of the system, and replace any damaged parts.