BIG BOOT®
COMBUSTION AIR KIT

Model: CAS-2BB, CAS-2CB, CAS-2B375

ITEMS INCLUDED IN KIT:

1 - CAS-2BB or
CAS-2CB or
CAS-2B375
1 - 5" to 6" Increaser
1 - 6" VRV
1 - 6" IAH
1 - Burner Coupling Set
2 - Mounting Bolts

INSTALLER SUPPLIED ITEMS:

Duct Piping and Elbows
90° Elbows;
¼" NPT Female x ¼" NPT
Male for routing oil line

CAS-2BB

This product is designed for use on the Beckett SF, SMG, CF500 and CF800 burners, for the purpose of routing combustion air directly to the burner, with the added safety feature of the vacuum relief valve. (**NOTE**: For burner inputs up to 4-½ GPH input on pressured-fired systems and 5-½ GPH input on negative draft systems.)

CAS-2CB

This product is designed for use on the Carlin 99FRD, 100CRD and 102CRD burners, for the purpose of routing combustion air directly to the burner, with the added safety feature of the vacuum relief valve. (**NOTE**: For burner inputs up to 4-½ GPH.)

CAS-2B375

This product is designed for use on the Beckett CF-375 burners, for the purpose of routing combustion air directly to the burner, with the added safety feature of the vacuum relief valve. (**NOTE:** For burner inputs up to 3-½ GPH input.)

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: _____

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THE PURPOSE OF THE VACUUM RELIEF VALVE (VRV)

The Vacuum Relief Valve is a safety device to guard against combustion problems associated with directly connecting oil burners to the outside. Typical problems can be caused by blockage of the intake termination, icing up of the ductwork, and effects of leeward side wind effects on a building.

VRV OPERATION

The VRV gate operates on changes in the vacuum pressure generated by the inlet to the oil burner. The VRV gate will remain closed during normal burner operation. During an abnormal operation (i.e., blockage of the intake or change in external building pressures) an increased negative pressure on the intake of the burner causes a reduction in burner airflow. Under this condition, the VRV gate opens, stabilizing and maintaining proper airflow to the burner. The VRV gate closes again once the abnormal condition is corrected.

INSTALLATION
NOTE: REPLACE THE BURNER COUPLING WHEN INSTALLING BOOT

1. Remove the oil pump and air bands from the burner housing. Install mounting spacer onto Big Boot®. (See Figure 1) Position the Big Boot® over the burner housing on the intake. The Big Boot® can be mounted onto the burner in a horizontal or vertical position. (See Figure 3) Align the holes in the Big Boot® with the holes in the housing and re-attach the oil pump. (See Figure 2) Note that the Big Boot® may be oriented either vertically or horizontally as space allows.

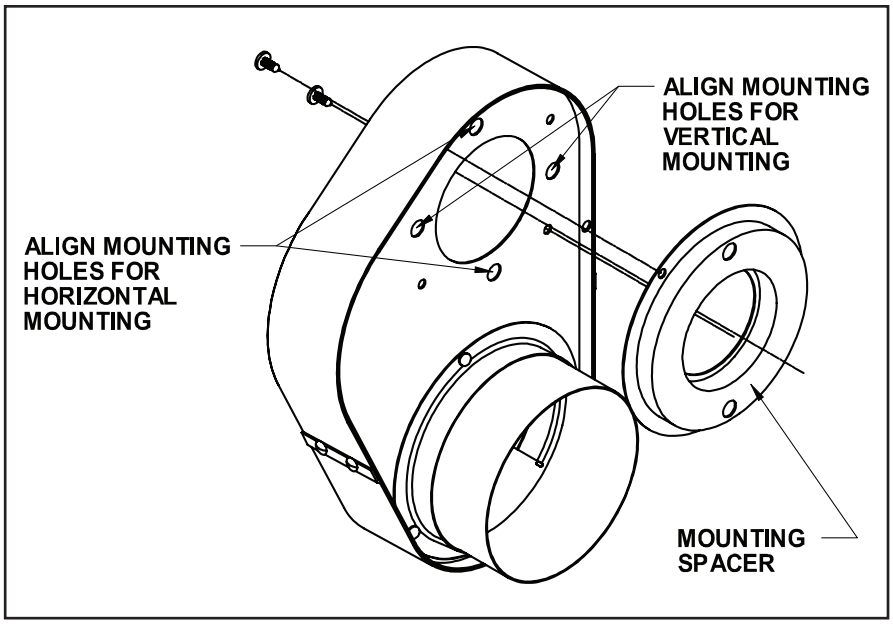

Figure 1

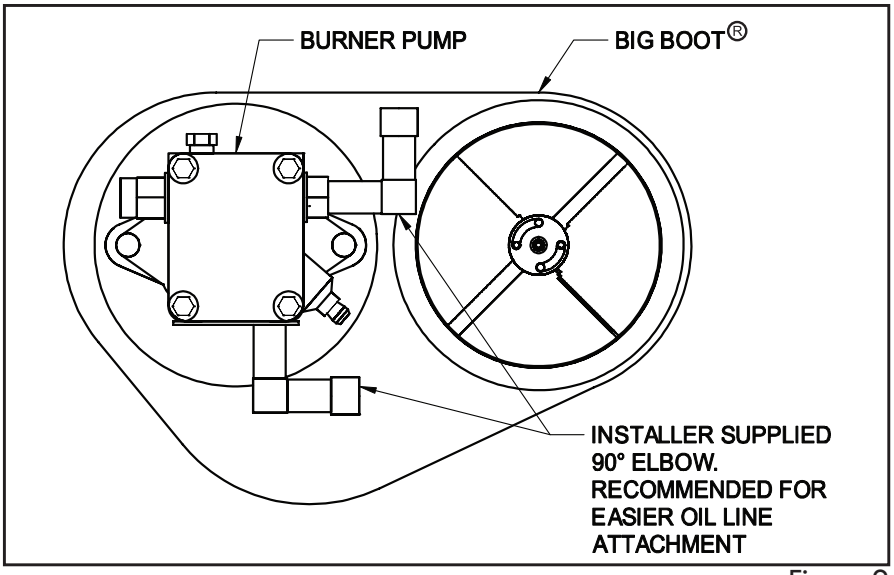

Figure 2

2. Mount the 5" to 6" increaser onto the Big Boot® then mount the VRV tee assembly or 90° elbow. Fasten using three (3) sheet metal screws on all joints. (See Figure 3)
3. Assemble VRV balance weight onto the gate. Screw the weight all the way in. Then attach lock nut and knurl nut. (See Figure 4)
4. Mount the VRV assembly onto the tee and fasten with a screw and nut in collar tabs. To ensure proper operation, check the gate for being level across the pivot points and plumb. (See Figure 5)
5. Refer to Figure 6 for general installation layout.

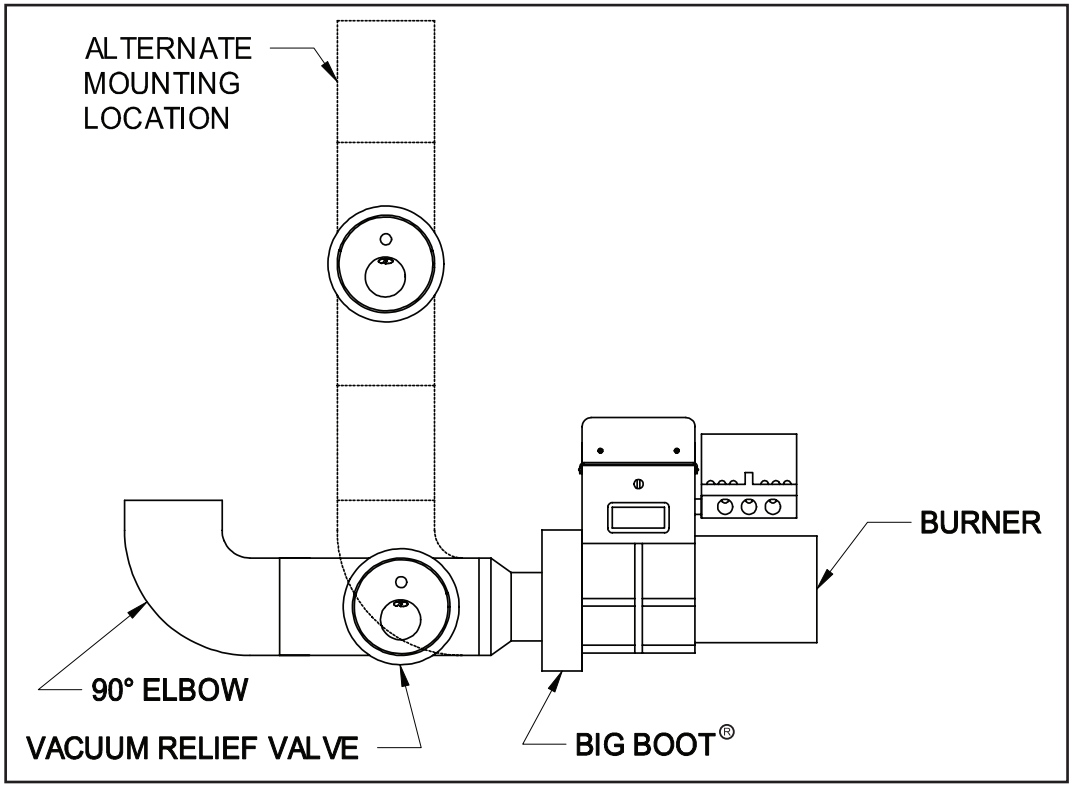

Figure 3

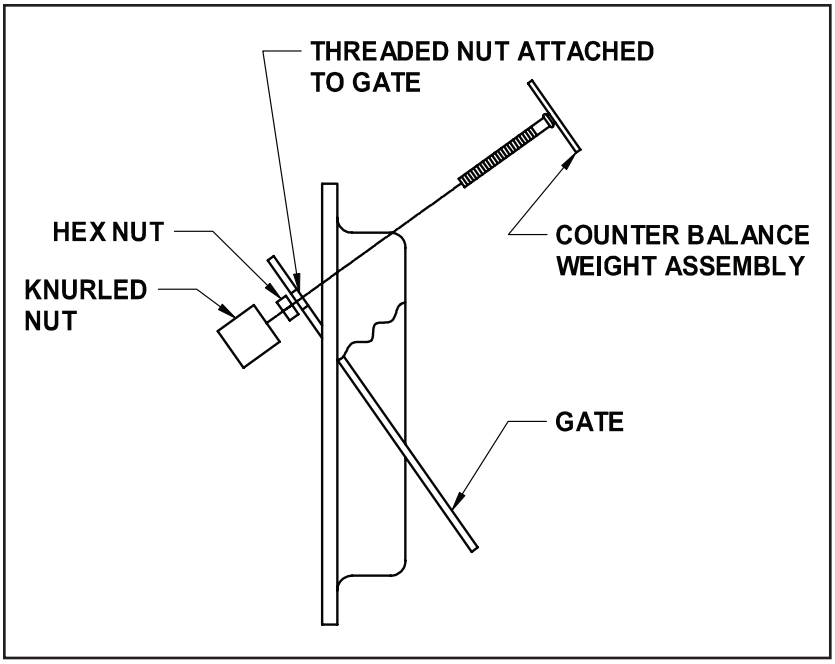

Figure 4

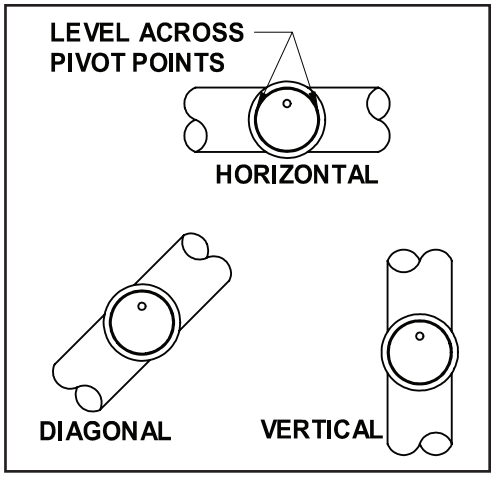

Figure 5

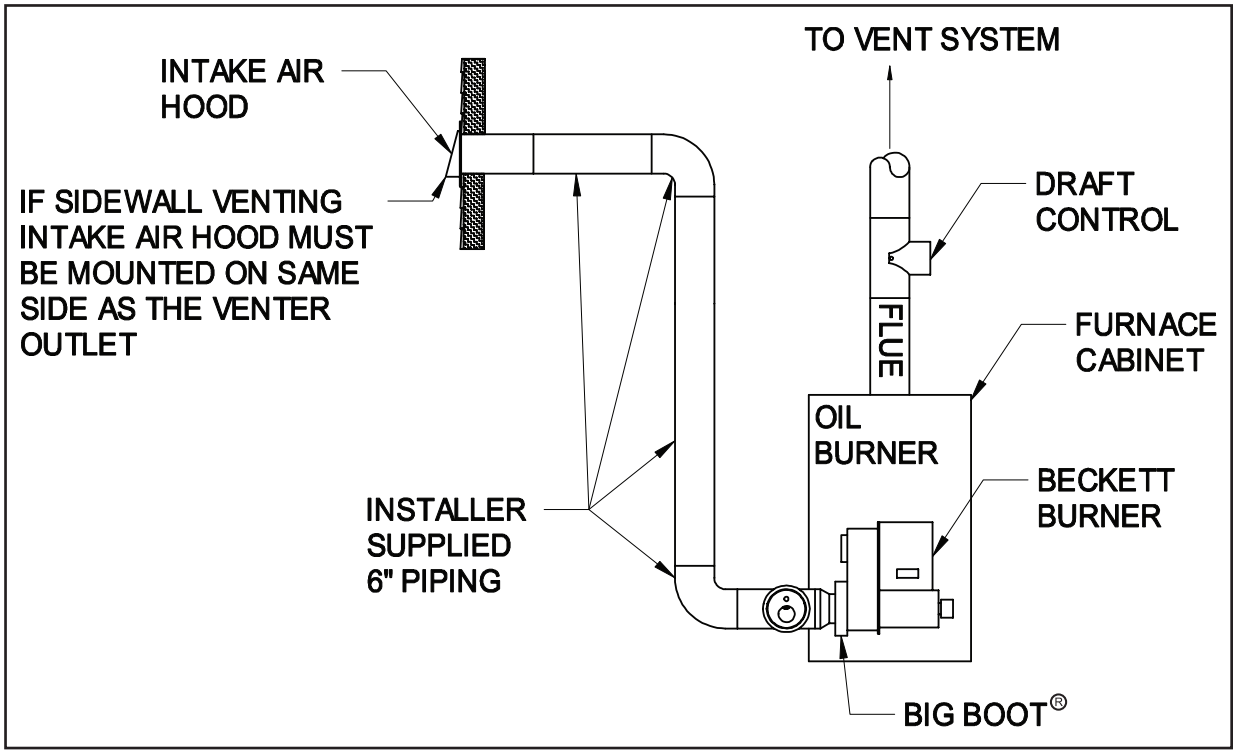

Figure 6

TERMINATION LOCATION GUIDELINES

1. Mount intake hood 12" above finished grade. If mounting on the side of a building prone to drifting snow, mount 12" above the snow line.
2. Mount at least 12" from either side of the vent termination and on the same wall if sidewall venting.
3. Always mount with the inlet vent termination opening pointing down.

INSTALLATION OF INLET VENT TERMINATION

1. Cut a 6-¼" diameter hole through the sidewall of the building.
2. Slide the inlet vent pipe through the hole and fasten to the wall with appropriate fasteners. Seal the edges of the mounting plate with a silicone sealant or equivalent.

INSTALLATION OF DUCTWORK

1. Duct length distance, a maximum of 30 linear feet of standard duct pipe and two (2) 90° elbows. Subtract 10 feet from the maximum linear feet for every 90° elbow added. Maximum linear footage will be less for flex duct. Consult flex duct manufacturer for equivalent lengths. Longer pipe lengths require the use of a larger pipe between the VRV and the intake hood. It also requires the use of a vent pipe increaser at the VRV and a reducer at the intake hood.

PIPE DIAMETER	MAXIMUM LINEAR FEET	FEET/ELBOW*
7"	60'	12'
8"	100'	14'

*Subtract footage from the maximum linear feet for every 90° elbow

2. Route the ductwork from the VRV tee to the inlet vent termination with as few elbows as possible.
3. Secure and support the ductwork for the design and weight of the material used, to prevent physical damage and separation of joints. For guidelines, refer to recognized national building codes or any local codes.
4. To reduce uncontrolled air leakage into the duct, tape all joints and seams using standard duct tape.

NOTE: To prevent sweating on the outside of the duct when operating in areas that have -10°F or below design temperatures, insulate the ductwork at least 10 feet from the inlet vent termination.

OPERATION: AIR ADJUSTMENT

1. Adjust the air adjustment knob on the side of the Big Boot® to rough air setting. (see Table 1)

Table 1

ROUGH AIR SETTING			
GPH			KNOB SETTING
BECKETT SF, SMG, CF500, CF800, CARLIN CRD102	BECKETT CF375	CARLIN FRD99, CRD100	
1.50	1.0	.75	60°
3.50	2.0	1.0	135°
4.5 to 5.50	3.5	2.5	150°

2. Start the burner and adjust the air control as needed to achieve the required CO_2 and smoke levels. Set over fire draft to appliance manufacturers' 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.
3. Next, adjust the VRV gate by screwing the adjustment weight in until the VRV gate is just closed.
4. Re-check the burner operation and adjust accordingly.
5. Lock the adjustment weight in position by tightening the hex nut on the VRV gate.

LIMITED WARRANTY

Field Controls, LLC ("Company") warrants that its products shall be free from defects in material and workmanship under normal use for the limited period indicated, **from the date of manufacture, subject to the provisions 1-8 below.**

Eighteen (18) months
All Field Controls Products (except for those listed below as 5 years or 90 days).

Five (5) years
Field Controls Direct Vent Systems (FDVS), Field Oil Vent Kits (FOVP), and ComboVents (CV).

Field Controls warrants that the products listed below shall be free from defects in material and workmanship under normal use for the limited period indicated, **from the date of purchase by the consumer, subject to the provisions 1-8 below.**

Ninety (90) days
UV lamps/bulbs

Provisions:

1. During the limited warranty period, Company, or its authorized service representative, will repair or replace, at Company's option, without charge, a defective Product. Product that is repaired may be repaired with new or refurbished replacement parts. Product that is replaced may be replaced with a new or refurbished product of the same or similar design. Company will return repaired or replacement Product to customer in working condition. Labor charges are not covered as part of the limited warranty.
2. With regard to UV lamps/bulbs, customer shall be required to include a "valid proof of purchase" (sales receipt) identifying the Product purchased (Product model or accurate date code information) and the date the Product(s) was purchased.
3. Product whose warranty/quality stickers, Product serial number plates or electronic serial numbers have been removed, altered or rendered illegible shall not be covered under the limited warranty.
4. Defective Product must be returned to Company, postage prepaid.
5. IN NO EVENT SHALL COMPANY BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR SIMILAR DAMAGES (INCLUDING, BUT NOT LIMITED TO, LOST PROFITS OR REVENUE, INABILITY TO USE PRODUCT, OR OTHER ASSOCIATED EQUIPMENT, THE COST OF SUBSTITUTE EQUIPMENT, AND CLAIMS BY THIRD PARTIES) RESULTING FROM THE USE OF PRODUCT. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.
6. THIS WARRANTY AND REMEDIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL, WRITTEN, EXPRESS, STATUTORY OR IMPLIED. TO THE EXTENT PERMITTED BY LAW, COMPANY DISCLAIMS ALL IMPLIED AND STATUTORY WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
7. Company makes no warranty of any kind in regard to other manufacturer's products distributed by Company. Company will pass on all warranties made by the manufacturer and where possible, will expedite the claim on behalf of the customer, but ultimately, responsibility for disposition of the warranty claim lies with the manufacturer.
8. Product that has been subjected to misuse, accident, shipping or other physical damage, improper installation or application, abnormal operation or handling, neglect, fire, water or other liquid intrusion are not covered by the warranty.

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