



# INSTALLATION MANUAL



## COMBUSTION AIR SYSTEM

Models: CAS-1

### 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.

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The Combustion Air System you have purchased has been designed to be simple to install, operate, and maintain. Read this manual before you install the CAS-1.

This product should be installed according to local and national codes and standards.



### Parts included in Thermal Safety Switch package:



1. 4" VRV (Vacuum Relief Valve)
2. 4" IAH Vent Hood
3. Installation Manual

### Replacement Parts



1. 4" VRV (Vacuum Relief Valve)  
(46257100)
2. 4" IAH Vent Hood  
(46293000)

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## PRODUCT OVERVIEW

This product is designed for use on the Beckett AFII Series oil burners and AF/AFG Series oil burner with a combustion air intake. For the purpose of routing combustion air directly to the burner, with the added safety feature of the vacuum relief valve.

## PRODUCT SPECIFICATIONS

PART NUMBER	MODEL	FUEL	BURNER	APPLIANCE INPUT	COMPONENTS
46252502	CAS-1	Oil	Beckett AFII, NX Riello 40BF	Up to 2 gph	4" Intake Air Hood & 4" Vacuum Relief Valve

## THE PURPOSE OF THE VACUUM RELIEF VALVE

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 duct works and effects of leeward side wind on a building. The VRV gate operates on changes in the vacuum pressure generated by the inlet burner.

## VRV OPERATION

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 air flow. Under this condition the VRV gate opens, stabilizing and maintaining proper air flow to the burner. The VRV gate closes again once the abnormal condition is corrected.

# INSTALLATION - MOUNTING ON BECKETT AFII SERIES BURNER



1. Remove burner inlet cover. (See Figure 1)
2. Mount VRV tee assembly or 90° elbow onto the burner inlet. Fasten using three (3) sheet metal screws on all joints. (See Figure 2)
3. Assemble VRV balance weight onto the gate. Screw the weight all the way in. Then attach lock nut and knurl nut. (See Figure 3)
4. Mount the VRV assembly into the tee and fasten with a screw and nut in collar tabs. (See Figure 4) To ensure proper operation, check the gate for being level across the pivot point and plumb.

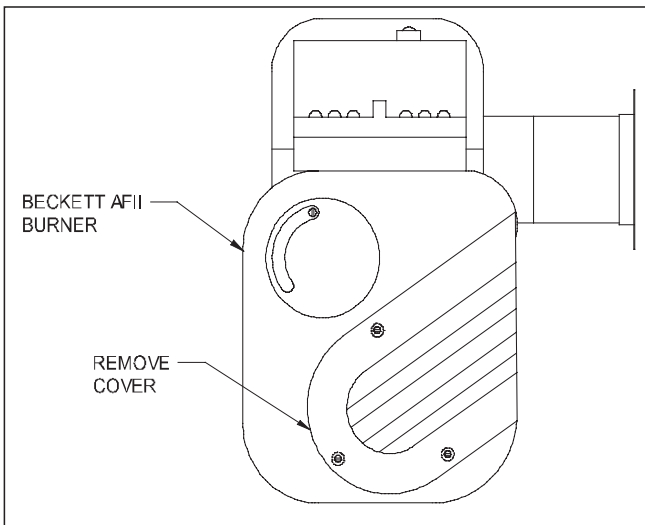


Figure 1

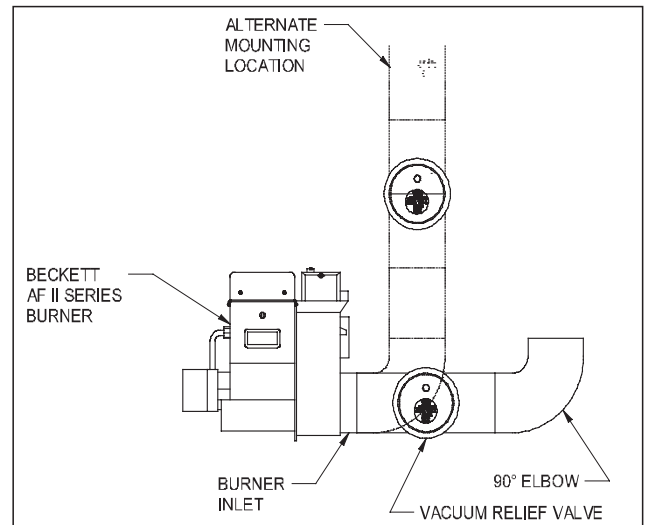


Figure 2

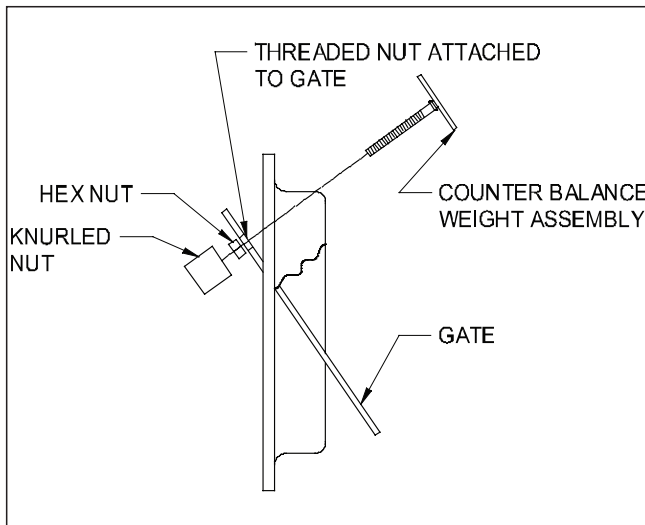


Figure 3

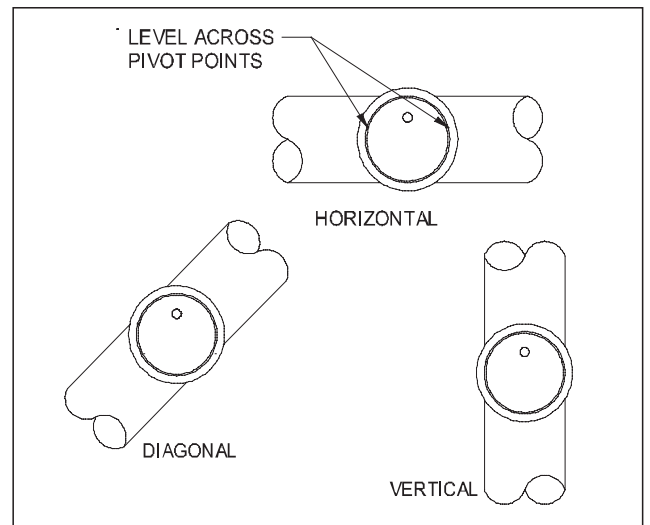


Figure 4



## MOUNTING

1. Mount VRV tee assembly or 90° elbow onto the combustion air intake inlet. Fasten using three (3) sheet metal screws on all joints. (See Figure 5)
2. Assemble VRV balance weight onto the gate. Screw the weight all the way in. Then attach lock nut and knurl nut. (See Figure 3)
3. Mount VRV assembly onto the tee and fasten with a screw and nut in collar tabs. (See Figure 4) To ensure proper operation, check the gate for being level across the pivot points and plumb.

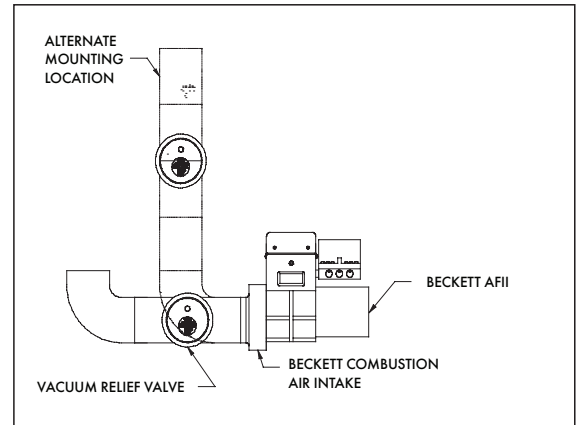


Figure 5

## 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 snow line.
2. Mount at least 12" away and on the same wall if sidewall venting.
3. Always mount with the inlet vent termination opening pointing down.

## INLET VENT TERMINATION INSTALLATION

1. Cut a 4 1/4" 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.



## DUCTWORK INSTALLATION

1. Duct Length distance, a maximum of 30 linear feet of standard duct pipe and two (2) 90° elbows. Subtract 7' from the maximum linear feet for every 90° elbow added. Maximum linear footage will be less for flex duct. Consult manufacturer for equivalent lengths.
2. Route 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.

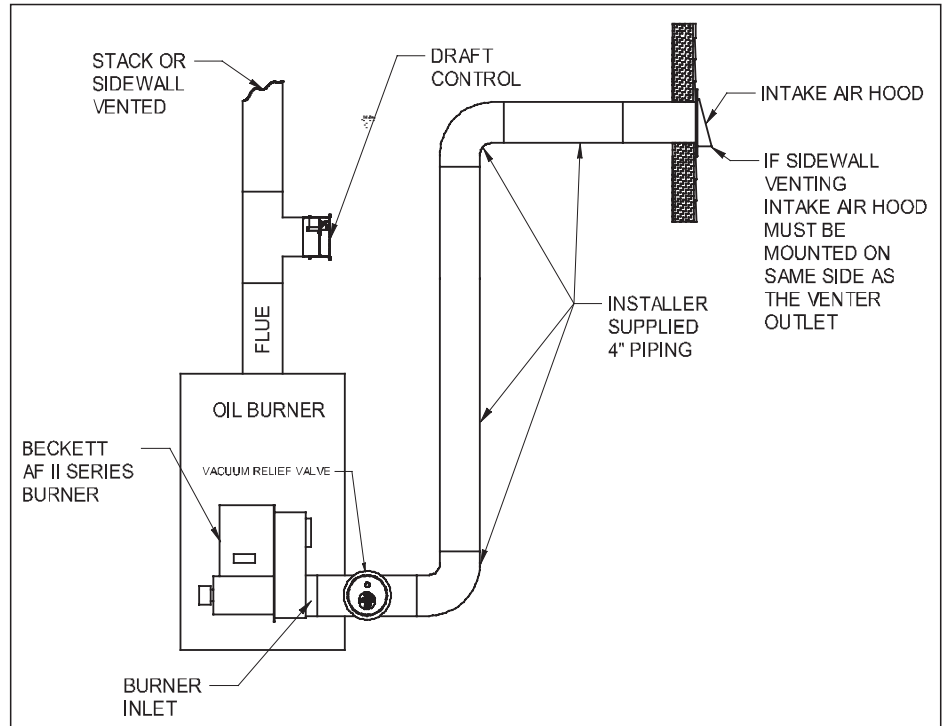


Figure 6

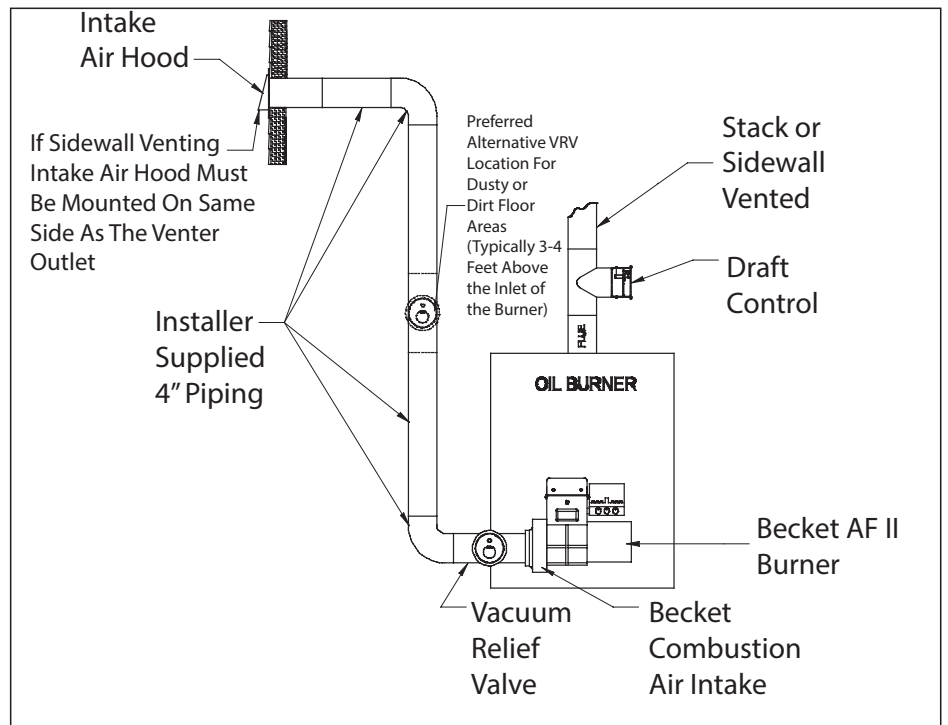


Figure 7

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This manual may be downloaded and printed from the Field Controls website ([www.fieldcontrols.com](http://www.fieldcontrols.com))

**WARRANTY**

For warranty information about this or any Field Controls product, visit:  
[www.fieldcontrols.com/ventCool](http://www.fieldcontrols.com/ventCool)

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