

Installation Instructions and Operation & Maintenance Manual

Double Wall Metallic Fuel-Oil Piping Enclosure
2-Hour Zero Clearance for NYC Fuel-Oil Enclosure Requirements

Do not install this system without completely reading the installation instructions. All details as noted in this document must be followed. For further information please contact VaughanAir .

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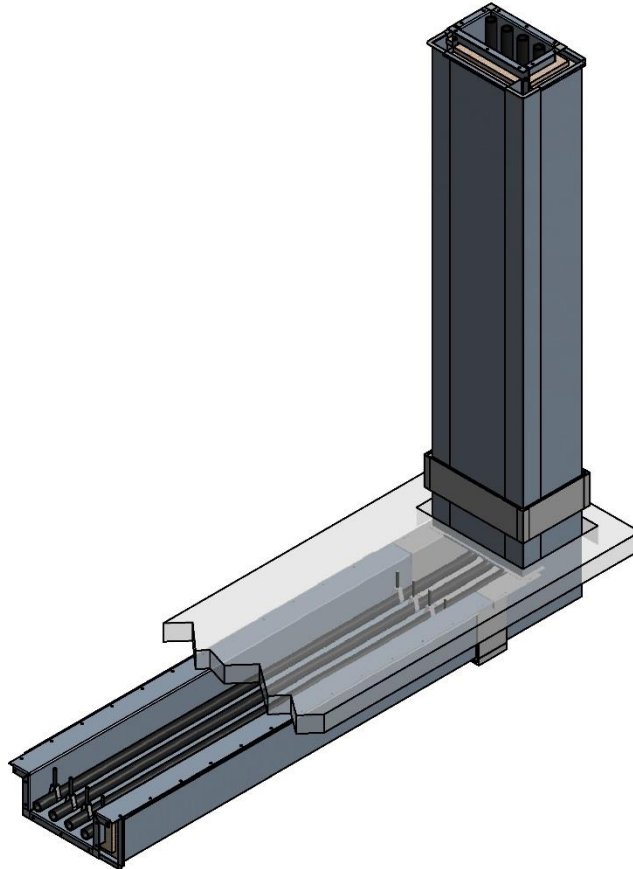


CONTENTS

GENERAL INFORMATION	2
Product Features:	2
Tests Performed:	3
Design Listing Information:	3
CONSTRUCTION DETAILS	3
Code Compliance:	4
Handling Instructions:	4
Connection Details:	4
Flange Assembly Instructions:	5
SUPPORT METHODS AND DETAILS	8
Horizontal Supports:	8
Drain Section Detail:	10
WARRANTY	10

GENERAL INFORMATION

VaughanAir XXX is a segmented, pre-manufactured and non-combustible double wall Fuel-Oil enclosure system. XXX is a zero-clearance system to all combustible and non-combustible materials in accordance with OTCR XXX requirements.



General Layout Detail

PRODUCT FEATURES:

- Zero Clearance to combustibles at any location
- No weld system; flange to flange connections
- Thin footprint; 3-1/4" double wall design
- Mechanical protection/impact resistance inherent in the design
- All materials are inorganic and non-combustible
- Steel welded inner liner
- Specialized fittings available
- Drain sections built-in

TESTS PERFORMED:

ASTM E 119	Standard Test Methods for Fire Tests of Building Construction and Materials
ASTM E 814	Standard Test Method for Fire Tests of Through-Penetration Fire Stops
ASTM E 136	Standard Test Method for Behavior of Material in a Vertical Tube Furnace at 750°C (1382°F)
ASTM C 518	Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
ASTM E 84	Standard Test Method for Surface Burning Characteristics of Building Materials

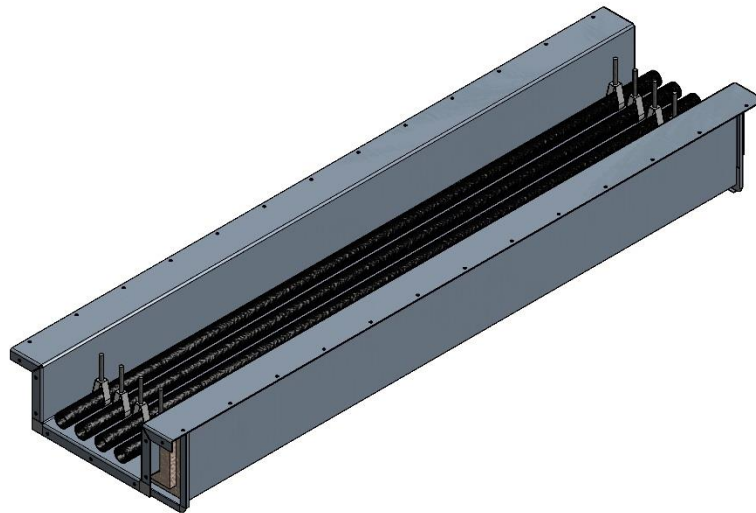
DESIGN LISTING INFORMATION:

VaughanAir XXX is listed in accordance with ASTM E119 by Intertek. Listing number XXX.

VaughanAir XXX is also certified in accordance with OTCR XXX requirements.

CONSTRUCTION DETAILS

VaughanAir XXX has a 3-1/4" annular space between the inner liner and outer casing. It is constructed with a 16gauge steel inner liner for vertical risers / 10-gauge steel liner for horizontal applications and 20 gauge galvanized outer casing construction. It is supplied with flange-to-flange connections and a field applied metal flange cover assembly.



Sample of 3-sided enclosure to be mounted tight to slab.

CODE COMPLIANCE:

The VaughanAir XXX system, installed as per the ASTM E119 design listing, meets the requirements of the following codes: New York City Mechanical Code and OTCR XXX.

HANDLING INSTRUCTIONS:

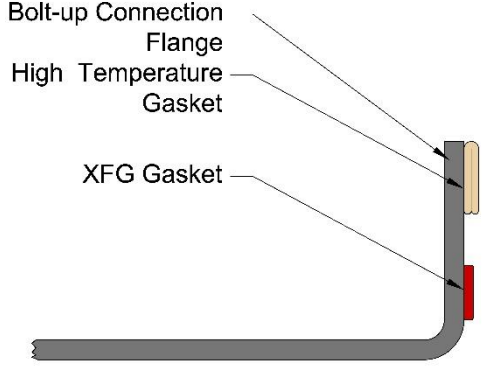
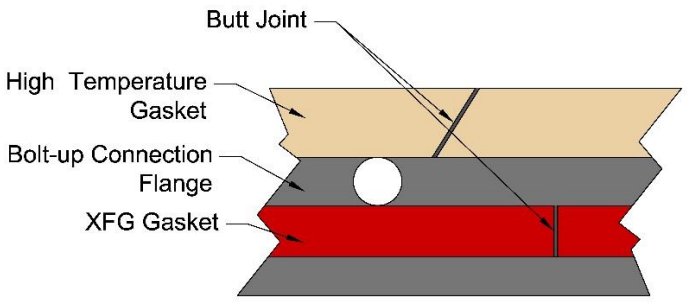
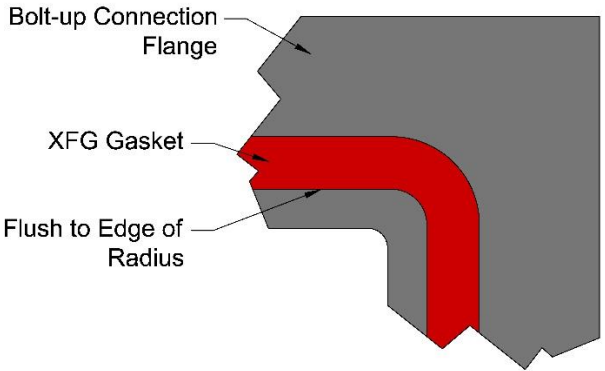
VaughanAir XXX is a robust system, however, care should be taken in handling the enclosure. All fittings are shipped skidded and shrink wrapped. Each component should be inspected for damage. If damage has occurred:

- 1) Notify VaughanAir and the freight company upon receipt of the goods.
- 2) Record damaged items on the bill of lading.
- 3) Send pictures of damaged items to VaughanAir.

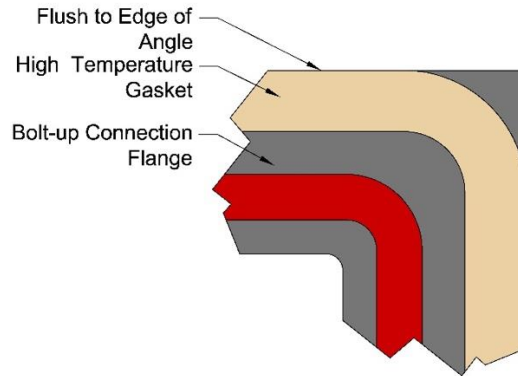
CONNECTION DETAILS:

All components are supplied with flanged connections. All flanged connections are designed alike providing a quick and trouble-free installation. All flange gasket, insulation, sealant, nuts, bolts, washers and screws are provided to complete the single-source design. Assembly details follow:

FLANGE ASSEMBLY INSTRUCTIONS:

 <p>Bolt-up Connection Flange High Temperature Gasket XFG Gasket</p> <p>Gasket Location Detail</p>	 <p>Butt Joint High Temperature Gasket Bolt-up Connection Flange XFG Gasket</p> <p>"Butt" Joint Detail</p>
<p>Step 1:</p> <ol style="list-style-type: none"> a) Thoroughly clean the connection flange of any oil or debris (a solvent based degreaser may be used) to ensure a positive bond between the gasket and steel flange. b) Install the liquid tight seal gasket by removing the paper backing and applying the gasket flush to the outer edge of the inner liner flange. Be sure not to stretch the gasket while you apply it to the steel flange. c) Joints and splices should be a butt joint configuration as shown in the "Butt Joint" detail above. <p>**Locate splices and joints on the top of the enclosure in horizontal applications. Do not locate joints or splices in the corners**</p>	 <p>Bolt-up Connection Flange XFG Gasket Flush to Edge of Radius</p>

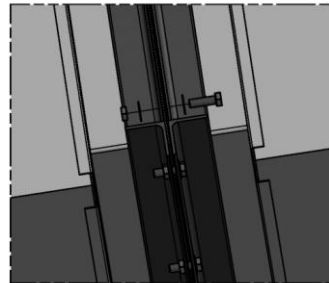
d) Install the high temperature gasket by removing the paper backing and applying the gasket flush to the outer edge of the angle frame.



Step 2:

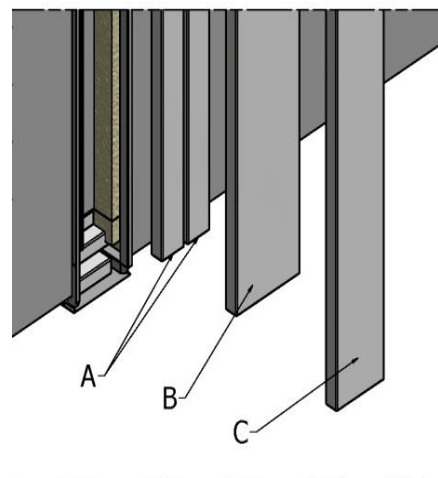
a) Connect each section using the supplied 5/16" bolt assembly. A nut, bolt and two flat washers are provided for each bolt hole. Tighten each bolt assembly making sure to check each fastener prior to moving on to step 3. Bolt assembly to be torqued to 75 to 95 In-lb.

Tip: A drift pin is helpful to align the bolt holes.



Step: 3

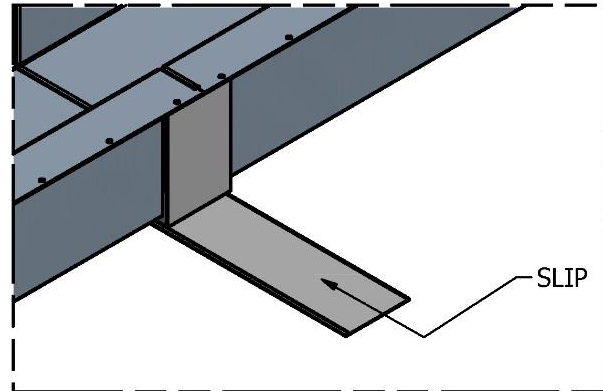
- a) Install the first layer (A), Nominal 4" wide insulation between the internal enclosure insulation and the inner enclosure flange. Be sure all voids are filled with insulation. Overlap the vertical and horizontal insulation with a 1/2" compression on each end and stagger to the outside length of the inner flanges.
- b) Install the second layer (B), Nominal 8" wide insulation tucked under the enclosure edges (work the insulation well into the joint and pack down to the flange. Be sure all voids are filled with insulation. Overlap the vertical and horizontal insulation with a 1/2" compression on each end and stagger to the outside length of the inner flanges. This insulation layer should overlap the seam in step A.
- c) Install the third layer (C), Nominal 6" wide insulation between the duct edges and into the hat channel. Be sure all voids are filled with insulation. Overlap the vertical and horizontal insulation with a 1/2" compression on each end and stagger to the outer edge of the outer casing.



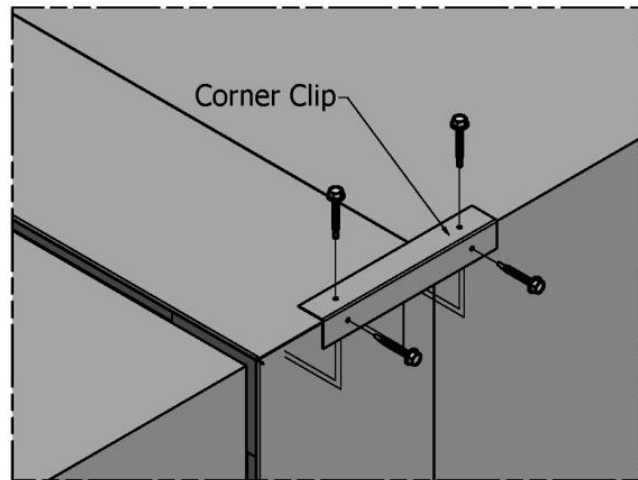
Step: 4

- a) Install the joint cover by sliding the joint cover on to the standing T.

Note: If there is not enough space in the area to slide the joint cover on you may open the hem on one side in order to be able to place the joint cover directly on standing T. Secure the joint cover using #10 x 1/2" long hex head tek screws at max 10" centers.



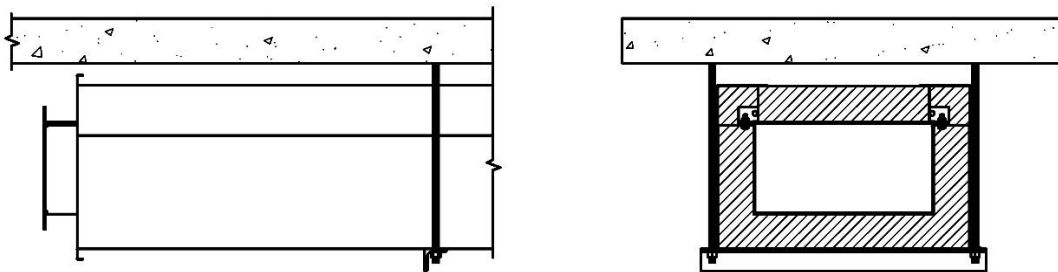
- b) On 4-sided enclosures install corner clips using 4, #10 x 1/2" long hex head tek screws as.



SUPPORT METHODS AND DETAILS\

HORIZONTAL SUPPORTS:

The horizontal supports will provide for joint alignment and support for the enclosure horizontal applications. Spacing as noted in the chart is required. The horizontal supports shall be secured to structural members of the building, which can adequately support the weight of the system. The enclosure cradles are based on support rods being a maximum of 1" from the side of the enclosure. Consult VaughanAir if the support rods are to be installed further from the enclosure than noted prior to installation.

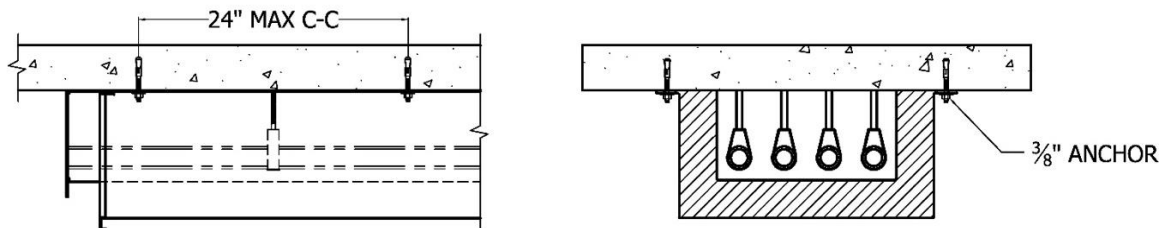


Four-Sided Enclosure Support Detail

Enclosure Size (Inside Dimension)	Threaded Rod Diameter	Anchor Embedment Depth	Enclosure Hanger Size	Hanger Spacing
12" x 12"	3/8"	1-5/8"	2" x 2" x 1/4"	59"
18" x 12"	1/2"	2-1/4"	2" x 2" x 3/8"	59"
24" x 12"	1/2"	2-1/4"	2-1/2" x 2-1/2" x 3/8"	59"

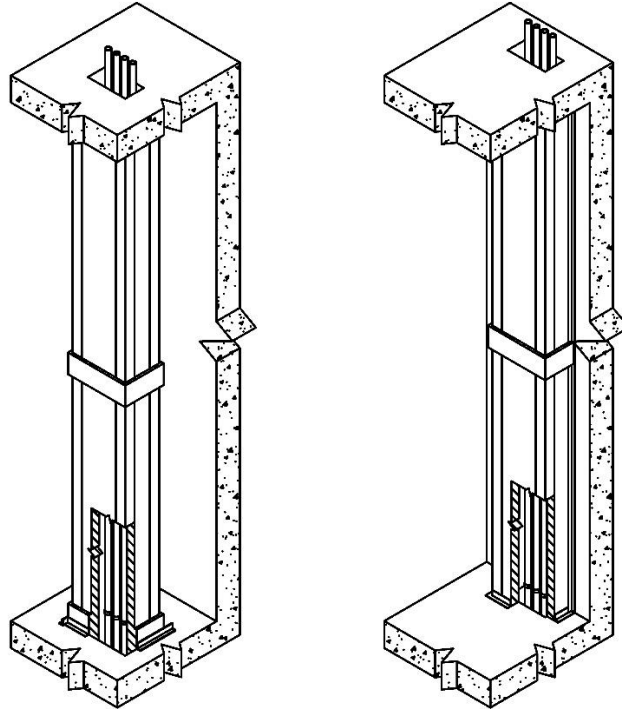
Notes:

- 1) Vertical rods are based on 36 ksi (250 MPa) yield strength.
- 2) Vertical rod location shall be maximum 1" from the outer side wall of the enclosure.
- 3) Enclosure hangers are based on 44 ksi (300 MPa) yield strength.
- 4) Enclosure hanger length shall extend minimum 1" beyond outer edge of threaded rod.
- 5) Please contact VaughanAir if the supports are to deviate from the guidelines listed above for review prior to installation.



Three-Sided Enclosure Support Detail

Floor Supports - Floor support channels must overlap the edge of the opening by a minimum of 3" (75mm). The floor support channel should be shimmed (steel shims) as necessary to ensure that the channel is supporting the load of the duct. The floor supports shall sit on a structural slab or member of the building, which can adequately support the weight of the enclosure system.



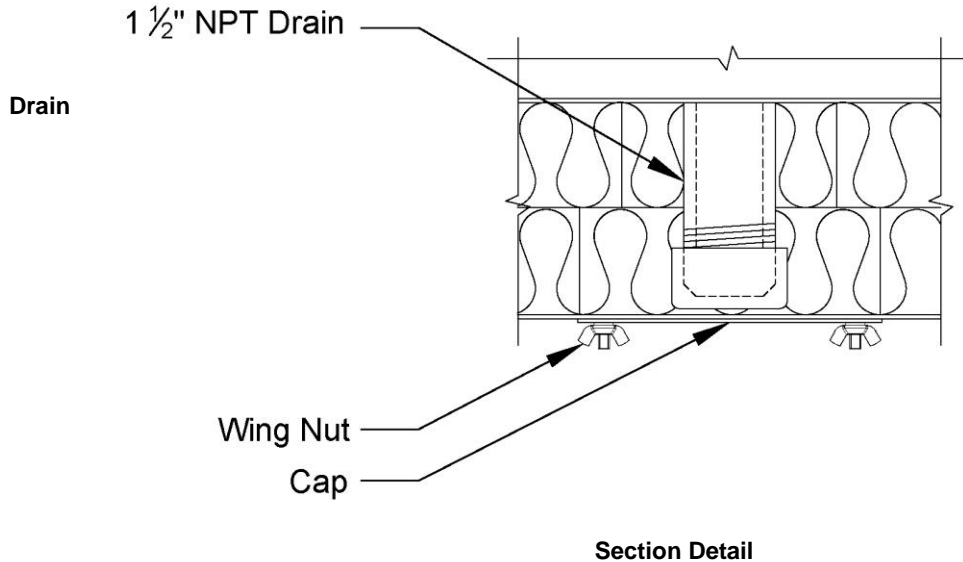
Typical Floor Support – Vertical Support

Enclosure Size (Inside Dimension)	Support Limit
12" x 12"	30 ft
18" x 12"	25 ft
24" x 12"	20 ft

Notes: Please contact VaughanAir if the supports are to deviate from the guidelines listed above for review prior to installation.

DRAIN SECTION DETAIL:

Drain section adaptors are intended for use as a drain for all low points and at the base of an enclosure riser. The drain nipple must be attached to a New York City Code approved container (supplied by others). Each component comes standard with a pre-installed, minimum, 1-1/2" NPT nipple to allow for easy connections.



Note: When connecting to the internal drain nipple, all piping, approved containers must be installed in compliance with local codes and standards.

WARRANTY

These products have a limited lifetime warranty. Damage to your DuraSystems Model XXX that results from accidents such as fire, flood, high winds, "acts of God", or any other contingency beyond our control is not covered. Please contact DuraSystems or your local representative for further information.



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