

MODEL GZ

Double Wall Zero Clearance Grease Duct Systems

Installation Guidelines

Tested to: UL 1978 / ULC S662

UL 2221 / ULC S144

ULC S115 & ASTM E814

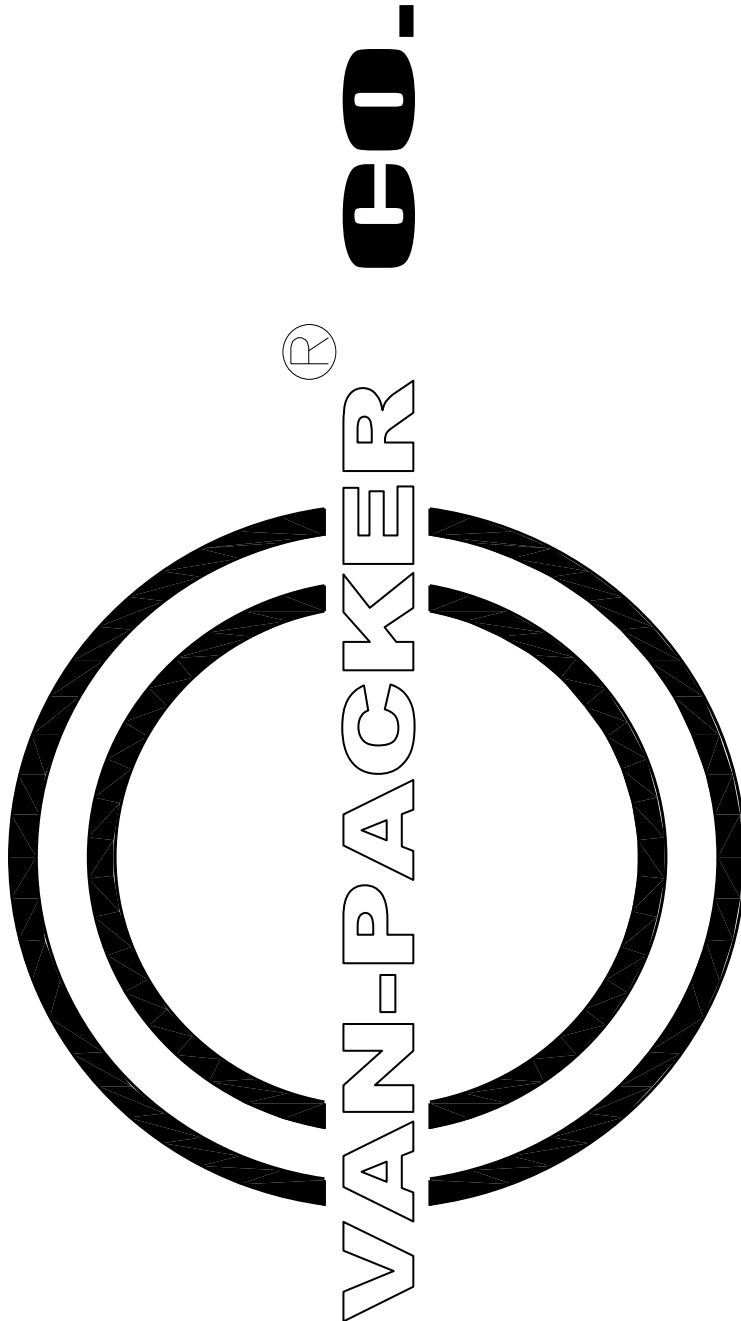


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WARNING

Major causes of grease duct fires are failure to maintain required clearance to combustibles and failure to clean and remove grease build-up from the duct system. It is important to read and understand these instructions fully before installing this grease duct system. Failure to comply with these instructions will result in a hazardous installation and will void the warranty.

STANDARD WARRANTY

When this system, provided by the Van-Packer Company, is installed per these instructions, we warrant the parts be free from defects in material and workmanship for a period of 12 months from the date of shipment. For warranty questions please contact the technical service department for further details and stipulations.

LISTING & CODE COMPLIANCE

Van-Packer's Model GZ grease ducts are listed by Intertek as a "two hour fire rated, zero clearance grease duct enclosure assembly" and as "Grease Ducts for Restaurant Cooking Appliances" when installed in accordance with its Intertek listings, these instructions, and the National Fire Protection Association's standard NFPA 96 "*Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*," International Mechanical Code, Uniform Mechanical Code, or other local codes.

TESTING, CLASSIFICATION, & APPLICATIONS

Model GZ has been tested in accordance with the procedures and methods set forth by UL 2221 /ULC S144 (*Tests of Fire Resistive Grease Duct Enclosure Assemblies/Standard Method of Fire Resistance Test-Grease Duct Assemblies*) and UL 1978/ULC S662 (*Standard for Grease Ducts/Standard for Factory-Built Grease Ducts*). Model GZ is qualified as an alternate to a 2 hour rated fire resistive shaft enclosure; eliminating, in most applications, the requirement for a separate fire resistive enclosure. Model GZ grease ducts are suitable for the removal of smoke and grease laden vapors from commercial, industrial, institutional, and similar cooking applications where continuous operating temperatures are 500° F (260° C) or less and for intermittent temperatures not exceeding 2000° F (1093° C). Model GZ grease ducts are intended to be part of a complete grease duct system which connects the hood or grease extractor with the outdoors by means of an exhaustor or blower system.

GENERAL INFORMATION

CLEARANCES & ADDITIONAL ENCLOSURES

The clearance to non-combustible materials is zero inches. Where components are insulated and enclosed by their respective shell, cover, or draw band for all installations, including within a completely enclosed non-ventilated combustible enclosure.

WARNING: Code compliant clearances must be followed where any uninsulated components that are in direct contact with the liner and the component penetrates through the insulation and exits past (or through) the duct shell or draw band. Examples of this would be support assemblies, drain pipes, or any other similar items. Do not install these items near combustible material.

When installed in accordance with these instructions and codes, Model GZ grease ducts are equivalent to field fabricated two hour fire rated grease duct enclosure systems. Do not apply wraps or enclosure materials in direct contact with Van-Packer's products in a manner that adds additional weight to our duct. Model GZ has not been tested, listed, designed, etc. to carry additional weight from such materials.

CODES & AUTHORITIES

Installation must be made in accordance with local and national code requirements. Follow these instructions carefully and contact local building and fire officials about restrictions and installation inspection in your area. Refer to NFPA 96 (*Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*) and additional NFPA standards as required.

INSTALLATION CONSIDERATIONS

Follow Van-Packer's written installation instructions carefully. Each part of the grease duct system must be installed correctly. Improper or lack of installation of required parts may result in the improper function of the grease duct system. Always contact the technical service department with any questions.

The grease duct layout should be carefully planned to allow adequate space for assembly, installation of supports, connection of support framing, access for cleanouts, accommodate standard fitting dimensions, rough openings for penetrations, etc. Do not assume all equipment producing smoke or grease laden vapors within a facility can be exhausted with a single grease duct system. Consult a grease duct design professional as required.

One prime coat and finish coat of appropriate heat resistant paint is recommended on any non-stainless steel accessories that are in areas subject to cleaning or exposed to the weather. Stainless steel accessories are available upon special request.

Sealing of draw bands, overlapped or butted seams, etc. with an appropriate sealant is recommended on exposed installations which are subject to routine cleaning (*e.g. kitchen area*) and wherever exposed to the weather in order to avoid moisture from entering the space between the grease duct shell and liner.

GENERAL INFORMATION - CONTINUED

MIXING SYSTEMS & PARTS

Do not connect a grease duct system with any other building ventilation or exhaust system. Do not connect parts from other grease duct manufacturers with Model GZ components without the expressed consent of Van-Packer.

Components from other Van-Packer product lines, (for example Model GA, GRZ, GS or GRS), may be mixed with Model GZ components to complete a grease duct system as long as: clearances, limitations, codes, etc. are followed. Contact Van-Packer for more information concerning product lines which are listed for use as grease ducts.

Van-Packer grease duct components are designed to complete the entire system. However, we realize conditions occur where systems must be mixed. In these cases, in accordance with *good construction methods and codes* it is permissible to transition to/from a code compliant grease duct system (by others) to/from Van-Packer grease duct components. Connection must be an approved joint assembly method as described within installation instructions, and/or applicable codes. Transition (by others) cannot connect in a manner that adds additional weight/stress to our duct. Van-Packer's products have not been tested, listed, designed, etc. to carry additional weight from such transitions. **WARNING:** Listings / warranties may be affected when transitioning to / from grease ducts by others; consult Van-Packer technical service department for additional information.

DUCT SLOPE

Model GZ grease ducts must be installed accordingly to comply with the requirements as described in order to maintain a listed installation. UL states that these grease ducts must comply with requirements as set forth by UL 1978 (*Standard for Grease Ducts*), NFPA 96 (*Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*), and the International Mechanical Code. Model GZ grease ducts should be installed at a slope not less than 1/4 unit vertical in 12 units horizontal toward the hood or toward a grease reservoir. Where horizontal ducts exceed 75 feet in length, the slope shall be not less than one unit vertical in 12 units horizontal. Most Model GZ components will permit a small amount of slope as the system is being installed. However, some installations may require elbow / transition type pieces to allow for proper orientation of fittings at the vertical risers prior to and after long horizontal runs. Contact Van-Packer for additional information.

REDUCED DUCT SLOPE

Round profile Van-Packer grease ducts listed to UL 1978 may be installed at a slope not less than 1/16 unit vertical in 12 units horizontal toward a hood or grease reservoir. This slope may also be used for horizontal grease ducts where the duct length exceeds 75 feet (22.86m) under two conditions: (1) For ducts sloped continually in the same direction (e.g., all uphill from a hood or reservoir), additional grease drainage points not exceeding 75 feet spacing are required, or (2) For ducts that are stagger sloped (e.g., uphill to a peak point, then downhill to a valley point), the distance between a valley point and peak point shall not exceed 75 feet and every valley must allow for grease drainage (i.e., a hood or reservoir). When grease ducts are not going to be sloped in the previously described methods and the duct exceeds 75 feet in horizontal length, round profile Van-Packer grease ducts listed to UL 1978 may be installed at a slope of not less than 3/16 unit vertical in 12 units horizontal toward a hood or grease reservoir.

CLEANOUTS, DRAINS, & GREASE TRAPS

Many Model GZ sections, accessories, and combinations can be used for cleanout and inspection access of the grease duct system. Access panel sections, 90° tee sections with end caps, and many other combinations of components can serve as cleanout doors or openings as described by NFPA 96. Grease ducts must be provided with adequate cleanout doors or openings to allow for the inspection and cleaning of the entire grease duct system. Refer to NFPA 96 for specific requirements.

Cleanout, drain, and grease trap requirements may change when grease duct systems are equipped with automatic cleaning and / or some types of fire suppression equipment. Refer to NFPA 96 and additional codes / authorities having jurisdiction for specific duct system requirements.

GENERAL INFORMATION - CONTINUED

WASH DOWN & FIRE SUPPRESSION

Automatic hot water / detergent wash down and fire suppression systems can be integrated into a Model GZ grease duct system by using various components which are readily available (or by request sections can be factory fit) with threaded pipe nipples, couplings, etc.

Van-Packer does not provide, design, specify, etc. wash down and fire suppression equipment or systems. Refer to NFPA 96 and additional codes / authorities having jurisdiction for specific fire suppression system requirements. Some of the various types of fire extinguishing equipment / systems are: Carbon Dioxide (NFPA 12), Sprinkler (NFPA 13), Foam-Water (NFPA 16), and Dry Chemical (NFPA 17).

RECEIVING INSPECTION

Compare the packing list items and quantities with the contents of the containers to ensure completeness of the shipment. If the shipment is missing components, please contact Van-Packer's order entry department at 888-877-8225.

TYPICAL COMPONENT LOCATIONS

Straight sections, fittings, etc. will be positioned and stacked accordingly to fill the shipping container. Sections of smaller dimensions may be slipped into sections of larger dimensions. Bags of fasteners, sealant, etc. may also be located inside the liner of the various pieces.

FREIGHT DAMAGE

Inspect each box as it is unloaded from the carrier for damage which may have occurred during transit. Should there be any damaged components, the delivery receipt must be signed damaged in order for Van-Packer to file a claim with the carrier. If the delivery receipt is signed damaged, contact Van-Packer immediately. If there are damaged parts and the delivery receipt is not signed damaged, Van-Packer or the carrier will not be liable, and damaged parts will be replaced at the customer's expense. Do not return any parts to the factory without prior authorization from Van-Packer Company

PART IDENTIFICATION & MATERIAL CODES

Model GZ part numbers will typically have the letters "GZ" prefix, followed by the duct size inside dimension (I.D.), then the part description code, next a special qualifier code(s) and last the liner/shell designation. Part description codes are generally three characters and are either alpha or alpha numeric. Qualifier codes are most often used to designate section lengths, tee projection I.D., and the large I.D. end of increasers. The following are a couple examples of part numbers with their associated description and part number breakdown.

GZ12STR30AL

Refers to a Model GZ 12" I.D., 30" long straight section constructed with a 304 S.S. liner and an aluminized steel shell.

| | | |
|------------|---|---------------------------------|
| GZ | = | Model GZ |
| 12 | = | Section I.D. |
| STR | = | Part Code, Straight Section |
| 30 | = | Section length, 30" long |
| A | = | Liner Material Code, 304 S.S. |
| L | = | Shell Material Code, ALZD Steel |

LINER MATERIAL CODES

| | | |
|----------|---|----------|
| A | = | 304 S.S. |
| B | = | 316 S.S. |

GZ1290T08BC

Refers to a Model GZ 12" I.D. 90 degree tee section with an 08" I.D. projection constructed with a 316 S.S. liner and a 430 S.S. shell.

| | | |
|------------|---|----------------------------------|
| GZ | = | Model GZ |
| 12 | = | Tee Body, 12" I.D. |
| 90T | = | Part Code, 90 Degree Tee Section |
| 08 | = | Tee Projection, 08" I.D. |
| B | = | Liner Material Code, 316 S.S. |
| C | = | Shell Material Code, 430 S.S. |

SHELL MATERIAL CODES

| | | |
|----------|---|------------------|
| A | = | 304 S.S. |
| B | = | 316 S.S. |
| C | = | 430 S.S. |
| L | = | Aluminized Steel |

JOINT ASSEMBLY

The following steps are to be used to ensure this system has liquid tight joints.

Use high temperature silicone sealant, Van-Packer part number 101087A. **Warning:** allow sealant to cure 72 hours before use. Sealant will not bond to flanges if moisture is introduced into system before sealant has cured.

STEP 1

Inspect all liner flanges and straighten any mild deformations that may have occurred during shipping.

STEP 2

To ensure sealant adhesion, degrease and remove any dirt and debris from the liner flanges. Use an acetone based cleaner applied to a rag.

STEP 3

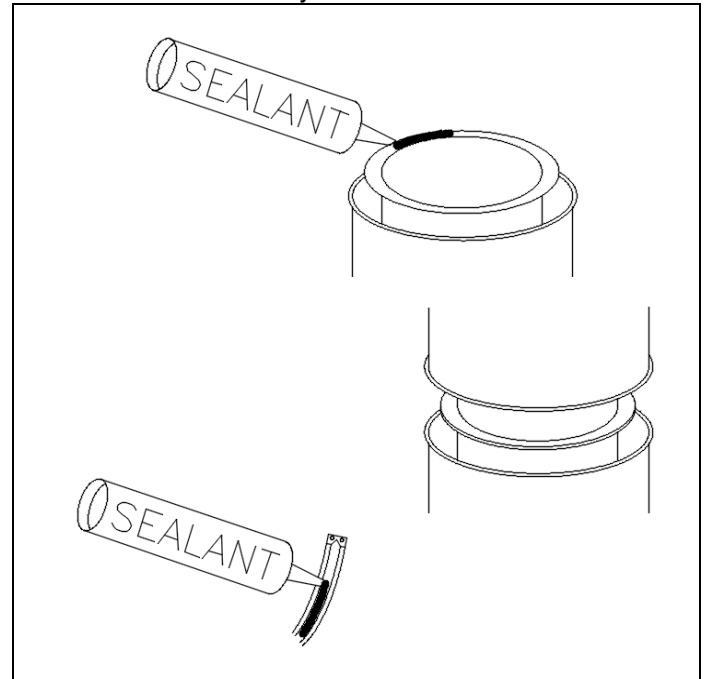
Apply a continuous bead of sealant (1/8" to 1/4") to one or both of the liner flanges to be joined.

STEP 4

Butt the flanged ends of the sections being joined, being careful not to smear off the sealant. Re-apply if this happens.

STEP 5

Apply a bead of sealant into the groove of the vee band.



STEP 6

Install the vee band making sure that vee band overlap tabs slides under mating end and tighten up. Overlap tabs should be located on the sides of the horizontal duct. It is **necessary** to lightly tap the vee band while tightening to ensure a snug fit.

Wipe smooth any excess sealant on the inside of the assembled duct to prevent sealant dams.

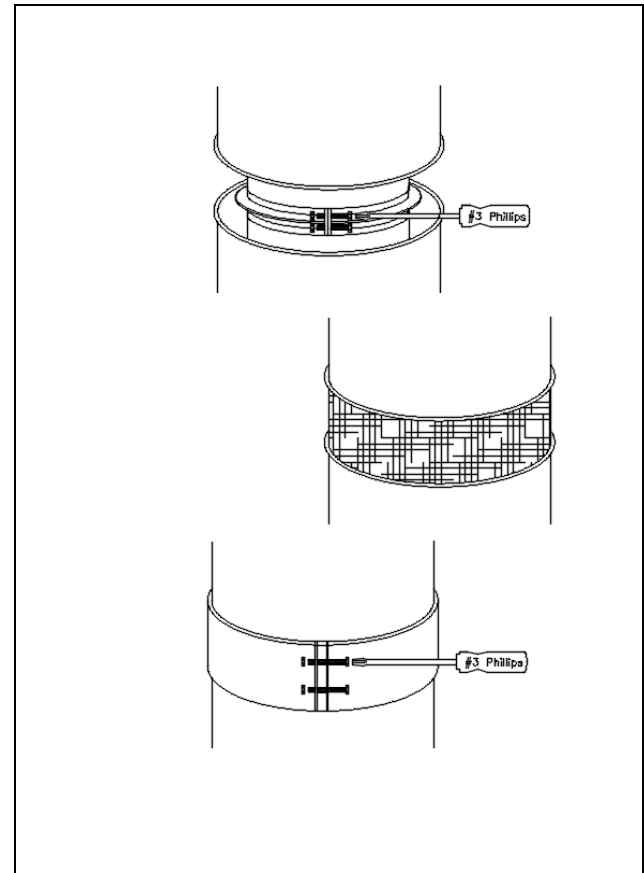
STEP 7

With the provided insulation strip, wrap the assembled vee band joint (3) times completely with a 2" overlap at the end of the last wrap. The insulation should fit snug in the space between the liner & shell. *(This method applies wherever a joint requires to be wrapped prior to installing a draw band or cover.)*

STEP 8

Secure the outer shell with the draw band. It is recommended that silicone sealant be applied around the top of the draw band to prevent moisture from entering between the duct walls. This should be done on all components exposed to the atmosphere.

Failure to follow our instructions could lead to leaking joints.



JOINT ASSEMBLY- CONTINUED

VEE BAND / DRAW BAND AND HALF DRAW BAND FASTENERS

Duct sections come standard with ¼" – 20 philips pan head screws with square nuts both for the vee band and draw band. The fasteners provided for the vee band will be plated steel. The fasteners provided for the draw band will be plated steel (where the shell is aluminized steel) or stainless steel (where the shell is stainless steel).

INSULATION – STRIP WIDTHS & FIRE STOP PACKING

Where the finished duct assembly uses a draw band (GZ**DRW* or GZ**HDB*), a 4" wide roll of strip insulation is provided.

Insulation rolls are also provided in 6" and 24" widths for use with wide cover bands and variable / adjustable covers accordingly

Where the duct penetrates a wall or floor, fire stops may be used. The insulation for packing the opening can be rolls, sheets or loose fill. Will be packaged in a box marked as "Fire Stop Packing Material" or "Fire Stop Insulation".

APPROXIMATE SEALANT USAGE

| Section I.D. | 6" | 7" | 8" | 9" | 10" | 12" | 14-16" | 18-20" | 22"-30" | 32"-36" |
|-----------------|----|----|----|----|-----|-----|--------|--------|---------|---------|
| Joints per Tube | 12 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 |

APPROXIMATE INSTALLED WEIGHT per foot in pounds

| I.D. | O.D. | LBS/FT |
|------|------|--------|
| 06" | 12" | 13 |
| 07" | 13" | 15 |
| 08" | 14" | 16 |
| 09" | 15" | 18 |
| 10" | 16" | 19 |
| 12" | 18" | 22 |
| 14" | 20" | 25 |
| 16" | 22" | 27 |
| 18" | 24" | 30 |

| I.D. | O.D. | LBS/FT |
|------|------|--------|
| 20" | 26" | 33 |
| 22" | 28" | 39 |
| 24" | 30" | 42 |
| 26" | 32" | 46 |
| 28" | 34" | 49 |
| 30" | 36" | 52 |
| 32" | 38" | 55 |
| 34" | 40" | 58 |
| 36" | 42" | 61 |

APPROXIMATE HEIGHT LIMITATION in feet

| I.D. | O.D. | STR | TEE | PLS | WSA |
|------|------|-----|-----|-----|-----|
| 06" | 12" | 132 | 44 | 167 | 103 |
| 07" | 13" | 123 | 44 | 155 | 93 |
| 08" | 14" | 115 | 43 | 144 | 84 |
| 09" | 15" | 108 | 43 | 136 | 77 |
| 10" | 16" | 103 | 43 | 129 | 71 |
| 12" | 18" | 94 | 43 | 118 | 62 |
| 14" | 20" | 88 | 43 | 105 | 55 |
| 16" | 22" | 83 | 42 | 96 | 49 |
| 18" | 24" | 78 | 37 | 87 | 45 |
| 20" | 26" | 75 | 33 | 81 | 41 |
| 22" | 28" | 65 | 27 | 68 | 34 |
| 24" | 30" | 63 | 25 | 64 | 32 |
| 26" | 32" | 61 | 21 | 60 | 30 |
| 28" | 34" | 59 | 18 | 57 | 28 |
| 30" | 36" | 58 | 14 | 54 | 26 |
| 32" | 38" | 56 | 12 | 51 | 25 |
| 34" | 40" | 55 | 9 | 49 | 22 |
| 36" | 42" | 54 | 7 | 47 | 20 |

SECTIONS & FITTINGS

Van-Packer makes a wide range of prefabricated adapters, fittings, elbows, wyes, tees, transitions, increasers, terminations, etc. Refer to the Model GZ brochure for additional information on part number designations and the wide range of parts and fittings we offer to complete a system from start to finish. In general, all sections are assembled with a standard flange connection; however, below are a few examples of parts that may require special attention.

ADAPTERS

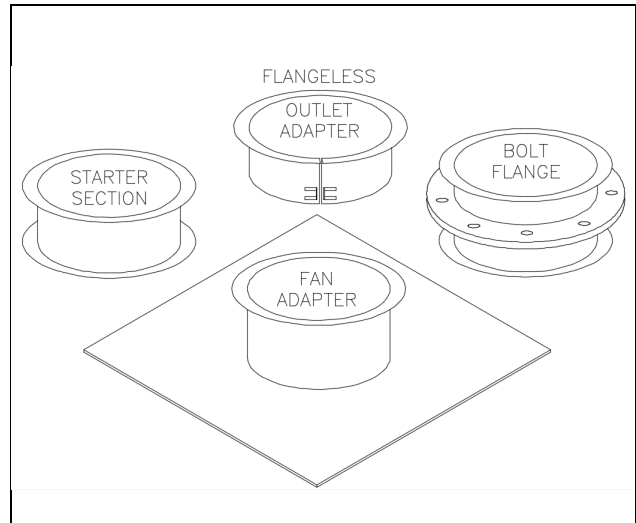
Adapters connect to the liner flange per the joint assembly instructions.

FAN/HOOD ADAPTER- PART FAS is intended to be used with a roof curb (provided by others) connection to a hood or an exhaust fan. Field connect the plate to the hood, curb or fan (drilling / fasteners & sealant by others as required). Refer to the hood, fan unit or the roof curb manufacturer's installation requirements.

STARTER SECTION - PART S/S is a short liner piece flanged on each end. This part is intended to have one end connected to a hood, duct/transition, fan unit, etc.

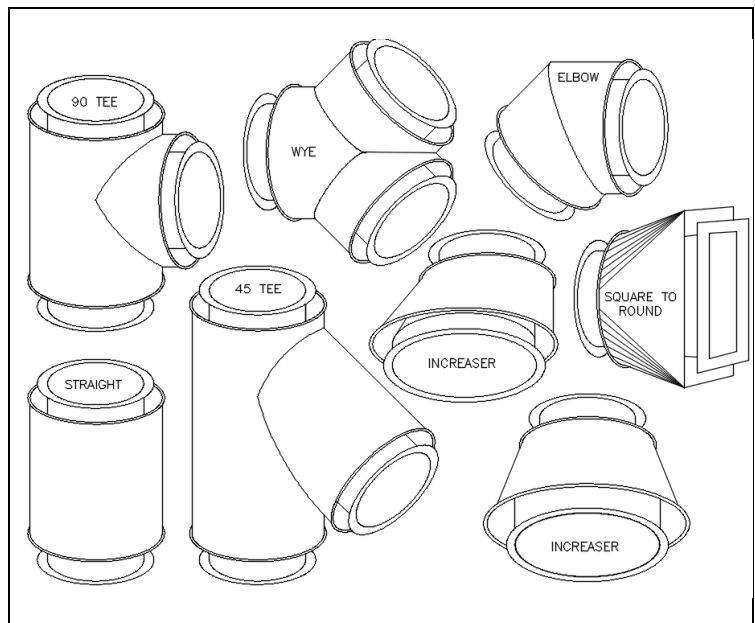
FLANGELESS OUTLET ADAPTER - PART FOA is a split liner piece with draw-up tabs. This adapter is intended to be slipped over a smooth collar, then drawn tight with the included fasteners. Apply sealant to the outside of the smooth collar then slightly rotate the FOA as it is slipped over the collar prior to draw-up.

BOLT FLANGE - PART BFA is a short liner piece flanged on each end with a preassembled 1/4" thick van-stone (free floating) type bolt flange. This adapter is intended to be connected to a companion flange with appropriate fasteners (fasteners by others). Place a bead of sealant around flanged outlet about 1/8 inch from inside diameter



FITTINGS & STRAIGHT SECTIONS

These fitting connect per the joint assembly instructions (page 6). Fittings and Straight sections are fixed degrees, lengths, etc., joined together to complete desired duct runs. These sections may also be equipped (must be factory installed) with nipples or couplings to accommodate test probes, drainage, etc. Refer to the Model GZ brochure for designation of part lengths and options for adding pipe nipples / couplings.



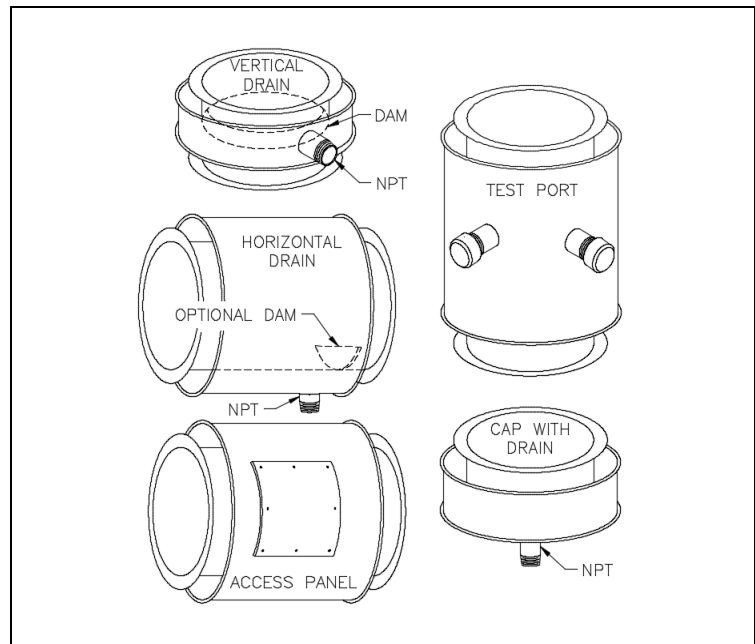
SECTIONS & FITTINGS CONTINUED

ACCESS PANEL & GREASE DRAINS

These fittings connect per the joint assembly instructions (page 6). Some uses for these fitting are: duct accessing, duct cleaning, grease drainage, test probes, sprinkler heads, fire suppression nozzles, etc. Please refer to the Model GZ brochure for additional information and part number designation.

PLEASE NOTE:

1. Never allow grease to puddle or accumulate in the system.
2. Drain piping cannot connect in a manner that adds additional weight/stress to our system.

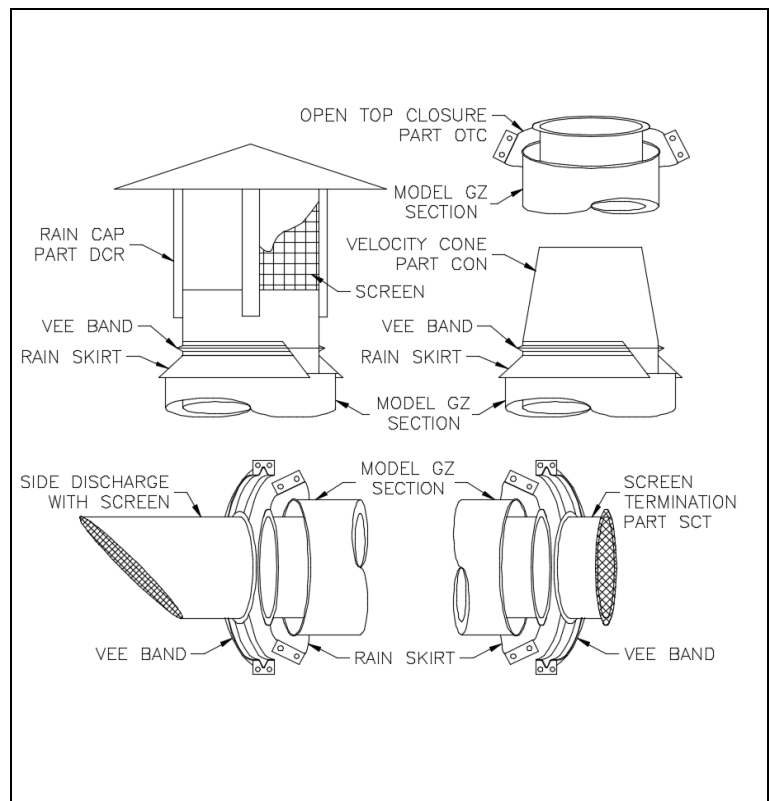


TERMINATIONS

Terminations connect per the joint assembly instructions (page 6). See below for weatherproofing instructions. Van-Packer makes several terminations. Refer to the Model GZ brochure for additional information on part number designations and the wide range of parts we offer to complete a system.

PLEASE NOTE: When using a termination with a **RAIN SKIRT - PART RSK**. Bolt in place right below the vee band and put a bead of sealant at the seam and around the upper portion between the rain skirt and vee band for weatherproofing.

When using an **OPEN TOP CLOSURE – PART OTC** Bolt in place right below the flange and put a bead of sealant at the seam and around the upper portion between the OTC and flange for weatherproofing.



SECTIONS & FITTINGS - CONTINUED

ADJUSTABLE EXPANSION AND VARIABLE LENGTH SECTIONS

These components cannot be installed in series and are non-load bearing. For some installations, I.E. between two fittings, field cutting of the slip liner may be required. The raw end of the slip liner must slide into the mating section a minimum of 2", more is better. The raw end must always be down-hill from the rolled flange end. Do not cut slip liners to the exact "flange to flange" distance of the components being joined. Carefully cut and position slip liners accordingly when installed near tee sections, elbows, etc. as to not restrict/obstruct the flow of the duct system.

NOTES:

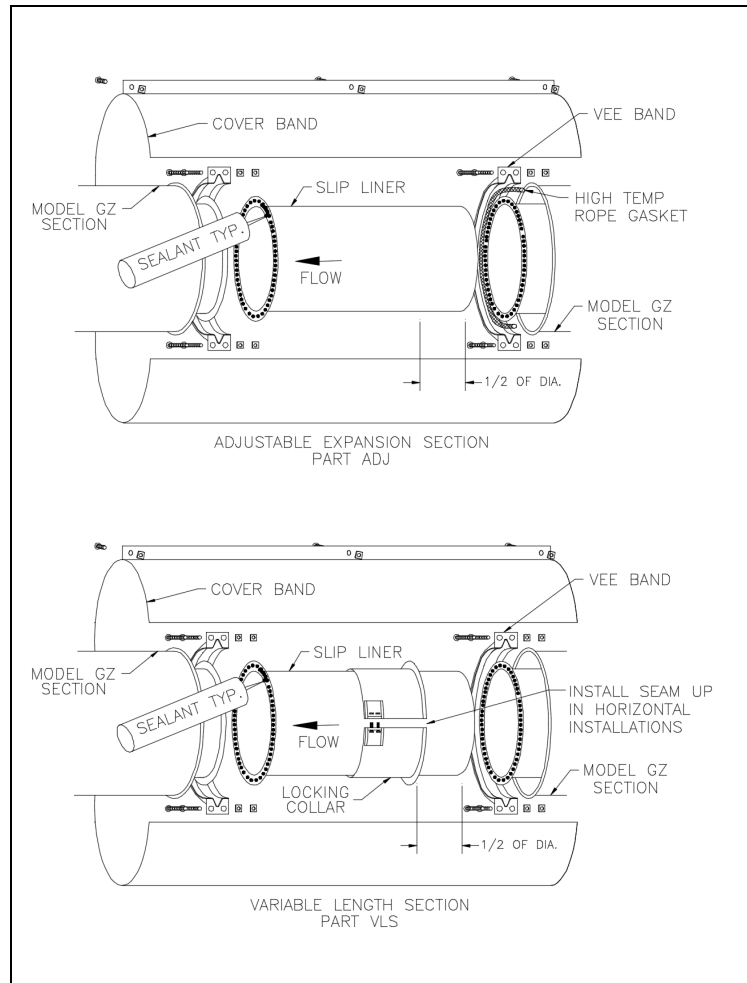
1. Apply sealant per the pictures to the right and the joint assembly instructions.
2. On the variable length section remember to slide the locking collar on the slip liner before step 3.
3. Slide the slip liner into the previous installed section before installing the following sections.
4. Wrap the assembly with the provided insulation.
5. Complete the duct enclosure by positioning the cover so that it overlaps the shells of the adjoining components and draw-up with the provided fasteners.

PART – ADJ

Adjustable expansion section is intended to be used to span distances between 1-1/2" to 19-1/2" and compensates for thermal expansion. These components are comprised of a slip liner and rope gasket.

PART – VLS

Variable length sections are intended to be used to span distances between 4-1/2" to 19-1/2". These components are comprised of a slip liner and locking collar. This part simulates a custom length straight section.



COVER PLATE – PART CVR

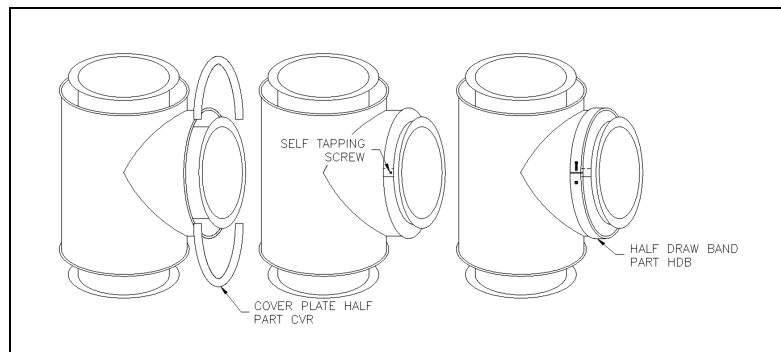
Van-Packer offers cover plates to close off the space between the liner and the shell. Use this to hide the liner and/or insulation from sight. Example shown below is installing the cover plate on a 90 tee projection.

STEP 1

Install the cover plates per the picture to the right. Self-tapping screw can be used to hold the two halves into place.

STEP 2

Fasten the half draw bands in place like the joint assembly instructions page 6 STEP 8



SUPPORTS & GUIDES

NOTES: The structural engineer for the project should select support member channels, beams, rods, wires/cables, etc. and joining methods in accordance with *Good Engineering Practices* to suite each specific application. Rods, wires/cables should only be used for hangers, NOT structural supports. Van-Packer accepts no responsibility for the design and/or modification of buildings or structures to accept the given load. All support framing, anchoring methods, etc. are by others.

STRUCTURAL SUPPORTS

PLATE SUPPORT ASSEMBLY – PART PLS

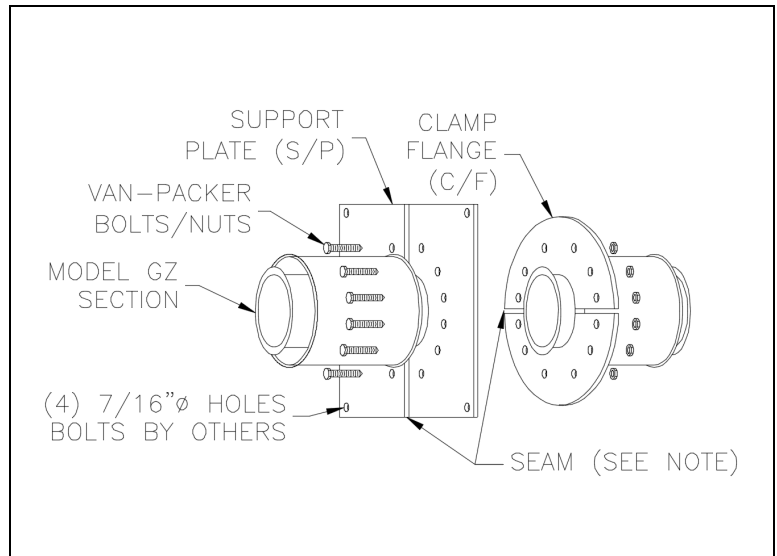
Plate support assemblies are used for vertical & horizontal structural anchor points. The PLS is to be used with structural support members, which are designed by the building structural engineer, not Van-Packer. Refer to page 7 for structural support limitations.

NOTE

The PLS consists of 6 pieces, 2 rectangular support plates, 2 round clamp flange halves and 2 half draw bands. The PLS, in conjunction with field fabricated support members, provides support for the duct (The seam in the S/P must be rotated 90 degrees from the C/F seam)

STEP 1

Apply sealant on the liner flange. Join the two liners together (no Vee Band is required) to capture the flanges between the support plate and the clamp flange. Bolt together the S/P and the C/F with the 3/8" bolts provided. Fully tighten the bolts.



STEP 2

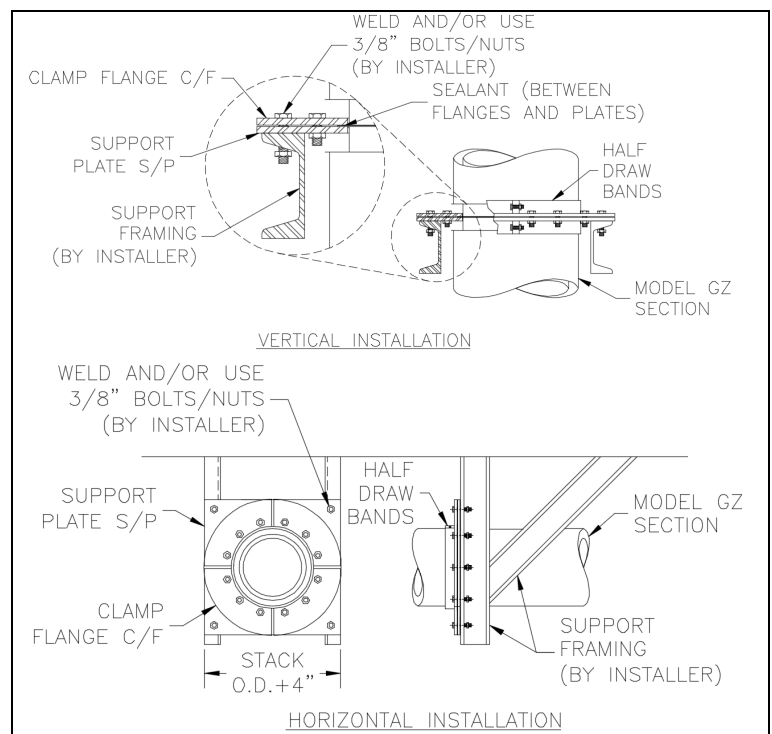
Refer to joint assembly instructions page 6 STEP 7

STEP 3

Fasten the half draw bands in place like the joint assembly instructions page 6 STEP 8

STEP 4

Support all four sides of the support plate. Design support member and fasteners in accordance with good engineering practices to suit each specific application. Van-Packer assumes no responsibility for the design and/or modification of buildings or structures to accept the given loads



SUPPORTS & GUIDES - CONTINUED

WALL SUPPORT – PART WSA

The wall support (WSA) is intended to provide a rigid support location. In some instances, additional field fabricated support members from the building wall structure to the wall bracket may be required. Anchor bolts and design by others. This rigid support location is intended to withstand the weight of duct components, forces from thermal expansion & exhaust velocities, etc. Design support member and fasteners in accordance with good engineering practices to suit each specific application. Van-Packer assumes no responsibility for the design and/or modification of buildings or structures to accept the given loads. Do not install near combustible material. Refer to chart on page 7 for support limitations.

NOTE:

The WSA consists of 6 pieces, 2 wall brackets, (left and right), 2 bottom plates, 2 top plates and 2 half draw bands.

STEP 1

Apply sealant on the liner flange. Join the two liners together (no Vee Band is required) to capture the flanges between the top and bottom plates. Bolt together the top and bottom plates with the 3/8" bolts provided. Fully tighten the bolts. These plates install just like the plate support assembly (page 11)

STEP 2

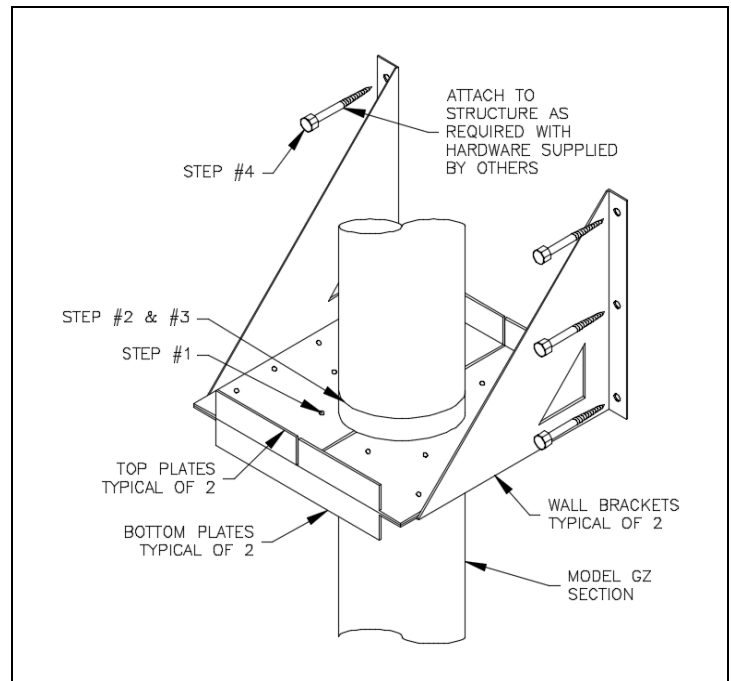
Refer to joint assembly instructions page 6
STEP 7

STEP 3

Fasten the half draw bands in place like the joint assembly instructions page 6
STEP 8

STEP 4

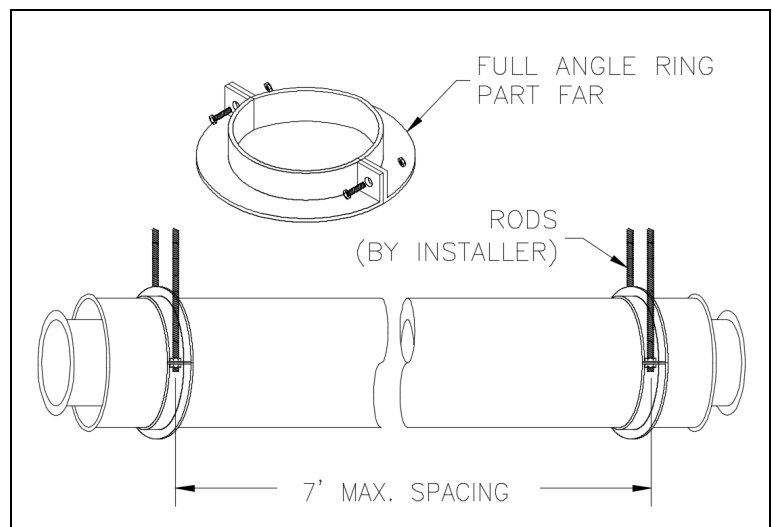
Anchor the wall brackets to the wall or additional field fabricated support members accordingly.



HORIZONTAL SUPPORT HANGER

Horizontal Hanger Supports, support the weight of horizontal assembled duct lengths while also maintaining alignment as the duct expands and contracts. Use hangers in conjunction with support rods or other field fabricated support members that attach to the building or structure. Position hanger away from joint to allow for unrestricted expansion and contraction of the duct system.

PART FAR supports horizontal and vertical length of duct in all diameters and models.

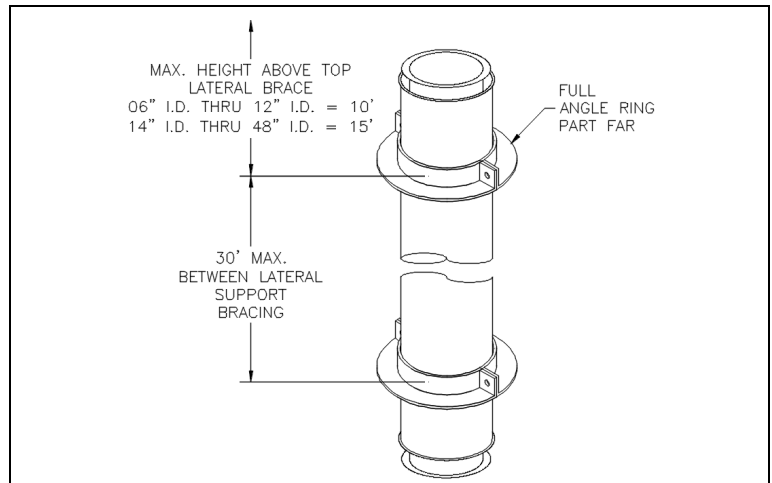


SUPPORTS & GUIDES - CONTINUED

LATERAL BRACES

FULL ANGLE RING – PART FAR

Full angle ring, in conjunction with field fabricated support members from the FAR attached to the building or structure, are intended to laterally brace the vertical assembled duct lengths from wind loads and to also maintain alignment. The FAR is comprised of (2) halves when bolted together fit loose around the duct to allow for expansion and contractions. Position the FAR away from the joint to allow for unrestricted expansion and contraction of the duct system.



GUY ATTACHMENT RING – PART GAR

Guy attachment ring, in conjunction with cables, tensioners, anchors, and other miscellaneous hardware from the GAR attached to the building structure, are intended to laterally brace the vertical assembled duct lengths from wind loads and to also maintain alignment as the duct expands and contracts.

NOTE

The GAR consists of 4 clamp flanges and 2 half draw bands. (Do NOT line up seams of the clamp flanges. They should be rotated by 90 deg). Minimum of three cables spaced at 120 deg apart is required for one GAR. Cables, anchors and all other miscellaneous hardware is by installing contractor. Please note the cables must have tension on them at all times. (Do not over tension the wires) Some type of a tensioner must be used to keep the cables tight while still allowing for expansion and contraction

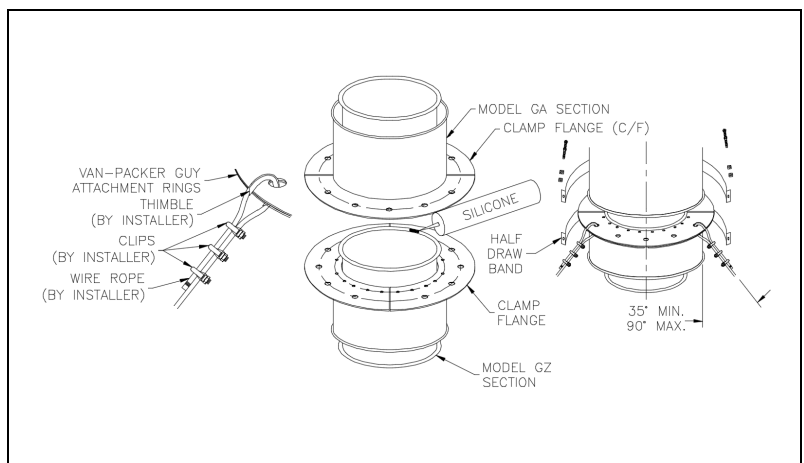
STEP 1

Apply sealant on the liner flange. Join the two liners together (no Vee Band is required) to capture the flanges between the clamp flanges. Bolt together the flanges with the 3/8" bolts provided. Fully tighten the bolts

STEP 2 Refer to joint assembly instructions page 6 **STEP 7**

STEP 3

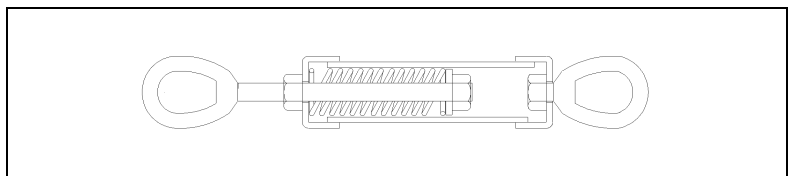
Fasten the half draw bands in place like the joint assembly instructions page 6 **STEP 8**



GUY TENSIONER – PART 1500GUY

Van-Packer offers a 1500 pound Guy Tensioner that is good for up to 3" of expansion. Use the guy tensioner in conjunction with the guy attachment ring. The guy tensioner allows you to keep tension on the guy cables while still allowing for expansion and contraction. Cables, anchors, and other miscellaneous hardware is to be by the installing contractor. (Do not over tension the wires.)

NOTE: Van-Packer accepts no responsibility for the design and/or modification of buildings or structures to accept the given load.



PENETRATIONS & FIRESTOPS

FLOOR THROUGH PENETRATION FIRESTOP - PART FPA

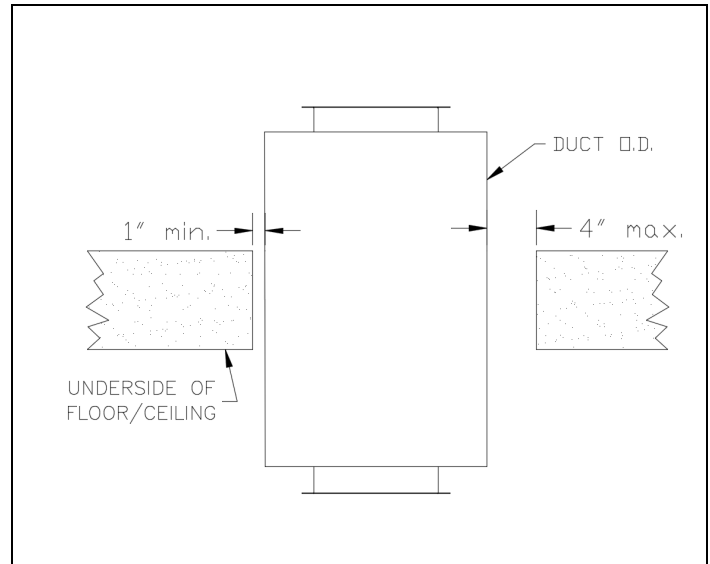
This type of penetration assembly must be used when the duct passes through a fire resistant floor. The duct section passing through the floor must be isolated from the effects of thermal expansion. Therefore proper support & expansion joint locations must be considered in the duct layout. **NOTE:** Draw bands & variable / adjustable section covers of adjoining sections cannot fall into the penetration area. The FPA is comprised of (1) Firestop Plate FSP, (1) Collared Fire Stop Plate CFP [each FSP & CFP is comprised of (2) halves], (1) Cover Plate CVR, (1) Firestop Band FSB, and insulation.

STEP 1

Cut the rough floor opening. The rough opening (square or round opening allowed) can vary between duct O.D. +2" and duct O.D. +4". Assemble the duct through the rough opening such that there is a 1" minimum clearance between any single edge of the opening and the O.D. of the duct.

STEP 2

First, position the halves of the CFP around the duct and against the **underside** of the floor. With the provided fasteners, draw up the CFP. Anchor the CFP to the floor with appropriate fasteners (by others) at all hole locations.



STEP 3

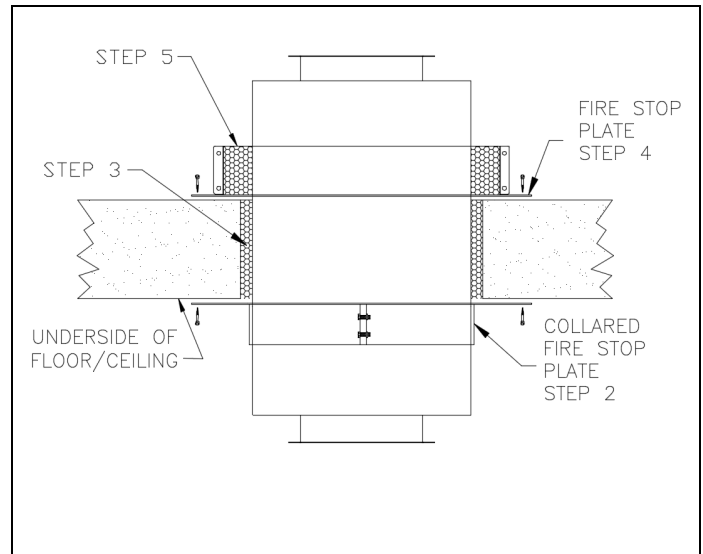
With the provided insulation, pack the cavity around the duct. Continue pressing insulation into the cavity until the insulated area is very firm & densely packed.

STEP 4

Install the FSP similar to the STEP 2 instructions except this part does not have a draw up collar.

STEP 5

With the provided insulation strips, wrap the duct twice. Next, position the cover plate (CVR) on the top of the wrapped insulation. Last, position the fire stop band (FSB) such that the rolled flange overlaps the cover plate and seats against the FPL, and draw up the FSB with the provided fasteners.



PENETRATIONS & FIRESTOPS- CONTINUED

WALL THROUGH PENETRATION FIRESTOP - PART WPA

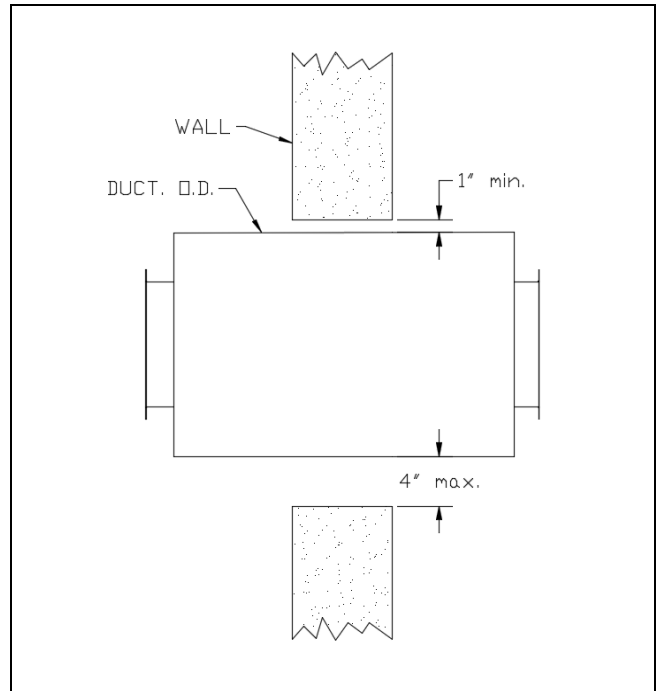
This type of penetration assembly must be used when the duct passes through an interior fire resistant wall. The duct section passing through the wall must be isolated from the effects of thermal expansion. Therefore proper support & expansion joint locations must be considered in the duct layout. If the duct is passing through a gypsum board wall of appropriate construction, the rough opening between the gypsum boards must be completely closed off and reinforced with metal studs. A CMU (hollow block) wall may also be penetrated. The rough opening should be done in a fashion such that the precast edges of the blocks form a continuous solid edge. **NOTE:** Draw bands & variable / adjustable section covers of adjoining sections cannot fall into the penetration area. The WPA is comprised of (2) Collard Firestop plates CFP [each CFP is comprised of (2) halves], (2) Cover Plates CVR, (2) Firestop bands FSB, insulation sheet(s), and insulation strips.

STEP 1

Cut the rough wall opening. The rough opening (square or round opening allowed) can vary between duct O.D. +2" and duct O.D. +4". Assemble the duct through the rough opening such that there is a 1" minimum clearance between any single edge of the opening and the O.D. of the duct.

STEP 2

First, position the halves of the CFP around the duct and against either side of the wall. With the provided fasteners, draw up the CFP. Anchor the CFP to the floor with appropriate fasteners (by others) at all hole locations.



STEP 3

With the provided insulation, pack the cavity around the duct. Continue pressing insulation into the cavity until the insulated area is very firm & densely packed.

STEP 4

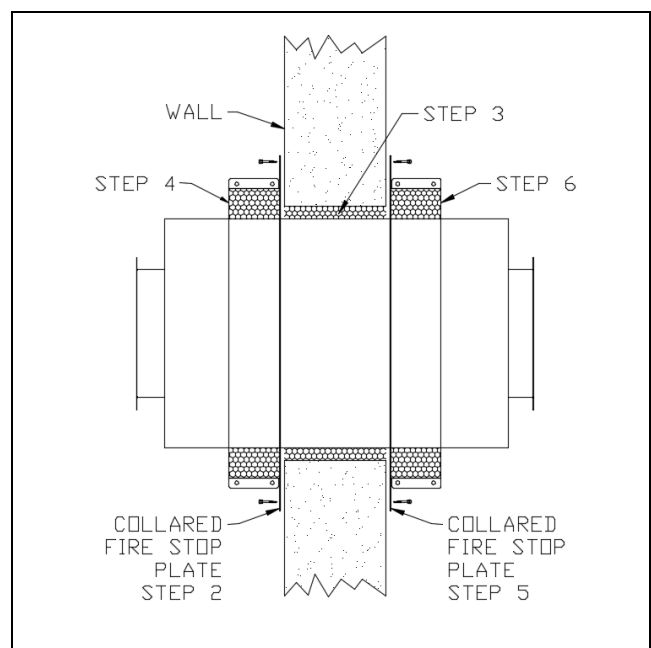
With the provided insulation strips, wrap the duct twice. Next, position the cover plate (CVR) on the top of the wrapped insulation. Last, position the fire stop band (FSB) such that the rolled flange overlaps the cover plate and seats against the FPL, and draw up the FSB with the provided fasteners.

STEP 5

Install the second CFP per STEP 2.

STEP 6

Wrap the duct with insulation and install the second CVR, and FSB in accordance with STEP 4



PENETRATIONS & FIRESTOPS- CONTINUED

FLASHING, & COUNTER FLASHING - PARTS FLS, & CFL

Flashings are available for flat and many pitched roofs. The roof pitch must be specified at the time of purchase as these components are NOT adjustable. The required roof opening (square or round opening allowed) for a flat roof is duct O.D. +8 1/2".

STEP 1

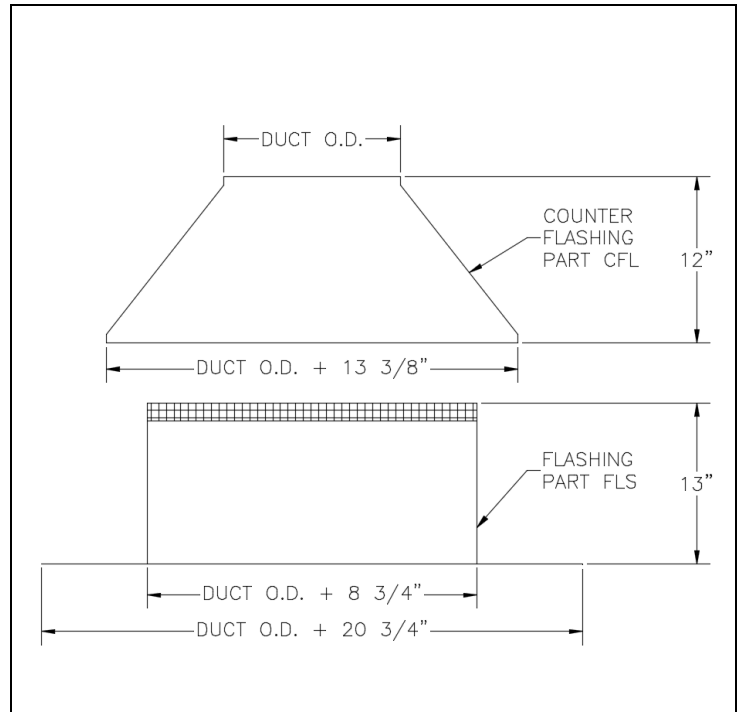
Cut the roof opening.

STEP 2

Center the flashing on the roof opening, attach and weatherproof it to the roof/curb with appropriate fasteners and weatherproofing material (by others). **NOTE:** Consult the roofing contractor.

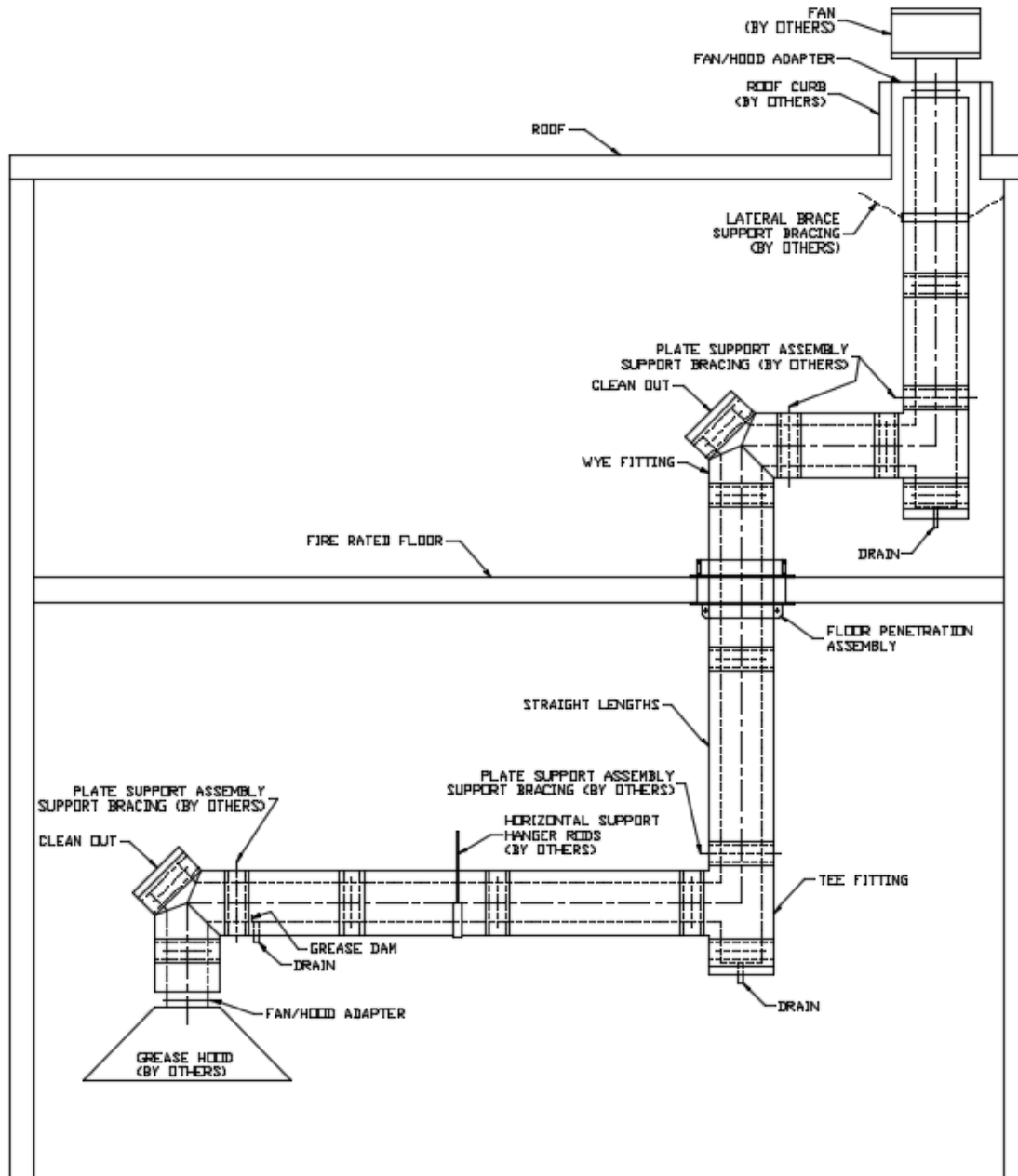
STEP 3

Assemble the duct through the flashing accordingly. **NOTE:** do not block the airflow between the flashing and the venting system. Next, install the counter flashing by positioning it around the duct and against the screen at the top of the flashing. Then, with the provided fasteners draw up the counter flashing. Last, apply a bead of sealant at the top of the counter flashing. **NOTE:** roofing materials must not fill the entire space between the roof and the bottom of the counter flashing.



SYSTEM INSTALLATION EXAMPLE

Below shows an installation example. This example is intended to reflect general requirements for support locations, with respect to fittings and to also show standard support locations for an installation in accordance with its design listing. This example may not reflect all necessary supports, drains, etc. which may be required to meet applicable codes and to help ensure a well functioning duct system (refer to applicable codes as required).



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