

# New England Tech Air/Maine Steel

## SUBMITTAL

DATE: 7/30/16

PROJECT NAME & ADDRESS:
CASCO BAY FERRY TERMINAL
56 COMMERCIAL STREET
PORTLAND, MAINE

ENGINEER
ALLIED ENGINEERING
160 VERANDA STREET
PORTLAND MAINE

MECHANICAL CONTRACTOR
RIVERSIDE MECHANICAL
27 REBECCA WAY
FALMOUTH, MAINE

MATERIALS:	BOILER FLUE
SECTION:	

SUBMITTED FOR: ( XXXX ) APPROVAL (     ) RECORD

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# SUBMITTAL



**PROJECT: CASCO BAY FERRY TERMINAL**

**LOCATION: PORTLAND, MAINE**

**ENGINEER: ALLIED ENGINEERING**

**CONTRACTOR: NEW ENGLAND TECH AIR**

**MANUFACTURER: VAN - PACKER**

**PRODUCT: MODEL: CS**

**DATE: Friday, July 26, 2013**

**WITH 24 GAUGE CORROSION RESISTANT STAINLESS STEEL INNER  
AND 430 STAINLESS STEEL OUTER SHELL**

**SUBMITTED BY:**

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# MODEL CS

**UL 1738 VENTING SYSTEMS  
FOR GAS-BURNING APPLIANCES,  
CATEGORIES II, III, and IV**



**VAN-PACKER CO., INC.**

## Versatility in Applications

Van-Packer worked with metallurgists and steel manufacturers to find a material with better workability and weldability than type AL29-4C and yet still having the extreme corrosion resistance properties which are required for near condensing and fully condensing venting applications. Van-Packer's Model CS has been UL/ULC tested and listed in accordance with UL 1738/ULC S636-95 and is listed as a "Special Gas Vent" in the United States and as a "Type BH Vent" in Canada.

For over 60 years Van-Packer has been supplying the commercial and industrial markets with venting products. From our Model CS (*Special Gas Vent*), to Model DW (*Double Wall Stainless Steel*), to Model SW (*Single Wall Stainless Steel*), to Refractory Lined, and to Free Standing Engineered Chimneys, Van-Packer is a "One Stop Shopping Company" that offers a product to fit your requirements.

## Model CS

Model CS is one of the most versatile products offered in the industry, complete with tees, elbows, supports, guying, and transitions.

Model CS may be used for Category II, III, and IV applications where the appliance is natural gas or propane fired, flue temperatures are 550° F or less, and the vent pressure will not exceed 5 inches of water column.

Model CS is a double wall type construction with 01" of insulating air space between the liner and shell. Components having inside diameters of 04" through 24" come standard with 24 gauge type VP1738 stainless steel and 24 gauge aluminized steel shells. Type 430 stainless steel shell material is available upon request.

One call to 1-888-VPSTACK (1-888-877-8225) is the only call you need to make. Information on all of the Van-Packer products and capabilities is just a phone call away!

## Chimneys and Exhaust Systems

**Model HT and Model ES** refractory lined

**Model DW and DWplus** double wall positive pressure, non-condensing

**Model SW** single wall construction

**Model CS** double wall positive pressure, condensing

**Model EC** engineered chimney designs

*Let our Technical Service Staff assist you in:*



*Complete system design*

*Chimney sizing*

*Thermal analysis*

*Corrosion analysis*

*Freestanding stack designs*

*Custom components*

Buda, IL 61314

Website [www.vpstack.com](http://www.vpstack.com)

Email: [vptech@vpstack.com](mailto:vptech@vpstack.com)

## Model CS Part Identification

For Model CS, all part numbers have a "C" prefix, followed by the section inside diameter (I.D.), then by the part description code, next by the shell/liner designation, and last by a special qualifier code. Part description codes are typically three characters and are either alpha or alpha numeric. Qualifier codes are most often used to denote section lengths, tee projection diameters, and the larger I.D. of increasers. The part number for a Model CS 08" I.D. straight section with type VP1738 stainless steel liner/aluminized steel shell and has a 12" length would be C08STRL12.

C = Model CS Code  
08 = Section I.D.  
STR = Part Code  
L = Shell/Liner Code  
12 = Qualifier Code

Shell/Liner Code "L" = VP1738 Stainless Steel with Aluminized Steel Shell

Shell/Liner Code "M" = VP1738 Stainless Steel with type 430 Stainless Steel Shell



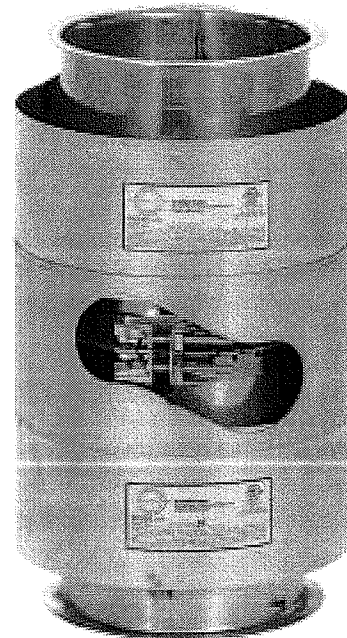
## Installation Recommendations

Refer to the appliance's instructions to determine limitations with respect to the installation and use, such as maximum horizontal length from the appliance, maximum height, joining of two or more parts to constitute the intended assembly, maximum number of joints or sections of pipe for use in the assembly, and the required clearances (air spaces).

Refer to the appliance's instructions to determine proper sizing and connection of the venting system to the appliance.

Exterior mounted vents should be enclosed below the roof line to reduce condensation and protect against mechanical damage.

One prime coat and one finish coat of paint is recommended on exterior installations when the outer shells are constructed of aluminized steel.



**Need Assistance?**

**Call**

**Van-Packer Company**

**at 1-888-877-8225**

**and ask for a FREE**

**consultation**

**with one of our**

**factory-trained**

**representatives.**

**We stand ready**

**to assist you.**

**Visit our web site**

**at [www.vpstack.com](http://www.vpstack.com)**

## Installation Requirements

Installation must be made in accordance with local and national code requirements. Contact local building or fire officials about restrictions and installation inspection in your area. Consult the authority having jurisdiction to determine the need to obtain a permit.

The venting system must be installed and terminate in accordance with the requirements of CAN/CGA-B149.1, *Natural Gas Installation Code* or CAN/CGA-B149.2, *Propane Installation Code*, as applicable.

Each part of a venting system must be installed correctly. Assemble the individual venting components, accessories, and supports in strict accordance with the Model CS Installation Instructions. Improper or lack of installation of any required part may result in improper operation of the appliance being vented or the performance of the venting system.

A venting system that extends through any zone above where the connected appliance is located shall be provided with an enclosure having a fire resistance rating equal to or greater than that of the floor or roof assemblies through which it passes.

Due to ice build up and blockage, it is required that the proper sloping be employed when the vent is installed in a horizontal installation. Any horizontally installed portion of a venting system shall have a slope (*upward for Category II, III and IV appliances or downward for Category III or IV appliances*) not less than 1/4 inch every 12 inches to prevent collection of condensate at any location in the assembly. Provision shall be made to collect and dispose of condensate. Refer to appliance manufacturer's installation instructions for further details regarding condensate collection, neutralization, and disposal.

The venting system shall not be routed into, through, or within any other vent, such as an existing masonry or factory-built chimney flue. **Exception:** An abandoned masonry chimney may be used as a chase to route a venting system.

Any penetration of ceilings, floors, or walls must be properly fire-stopped.

The venting system must be free to expand and contract.

When passing through a roof, the vent must extend a minimum of 3 feet above the roof penetration and also be at least a minimum of 2 feet higher than the highest portion of the building within a 10 foot horizontal radius.

The venting system must extend a minimum of 5 feet above the highest connected appliance draft hood outlet.

The venting system must extend a minimum of 3 feet above any forced air inlet within a 10 foot horizontal radius.

*Continued on next page...*



## Installation Requirements *Continued*

The venting system must not terminate within 4 foot below or 4 foot horizontally from any door, operable window, or gravity air inlet into any building. If the venting system is terminating above any door, operable window, or gravity air inlet into any building it must be at a minimum of 1 foot.

Venting systems which are terminating horizontally must be at least 1 foot above grade, above the anticipated snow line where accumulation is expected, and at least 7 feet above grade when adjacent to a public walkway.

Clearance to combustibles is 2 inches. Do not insulate the space surrounding the venting system. A minimum of 2 inches of air space must be maintained throughout the entire length of the venting system to allow for proper air flow and circulation. Clearance to non-combustible rated materials is 0 inches.

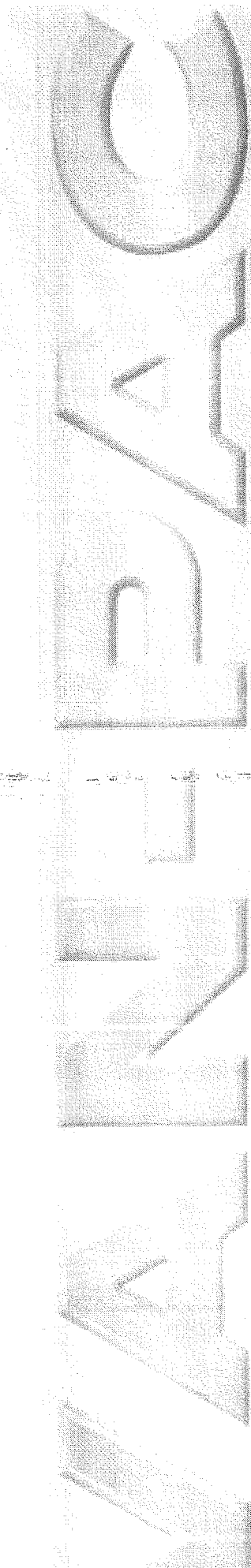
Stacks must be laterally braced not more than 10 feet below the termination and at maximum intervals of 20 feet thereafter. Horizontal supports may be spaced apart 10 feet maximum. Vertical supports are required after every transition from horizontal to vertical. Offsets may require additional supports. In order to avoid damaging the vent during installation, additional supports or temporary supports may be required.

Variable length sections (*Part VLS*) are non-load bearing and may require field cutting for proper fit.

The weights shown are approximate installed weights per linear foot.

**Approximate Weight Per Foot (lbs.)**

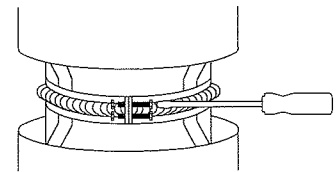
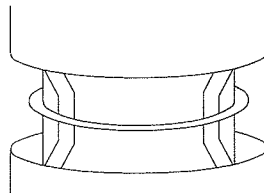
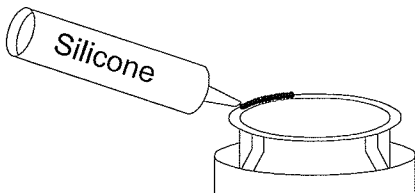
I.D.	CS
4"	2.9
5"	3.5
6"	4.1
7"	4.6
8"	5.2
9"	5.8
10"	6.4
12"	7.5
14"	8.7
16"	9.9
18"	11.0
20"	12.2
22"	13.4
24"	14.5



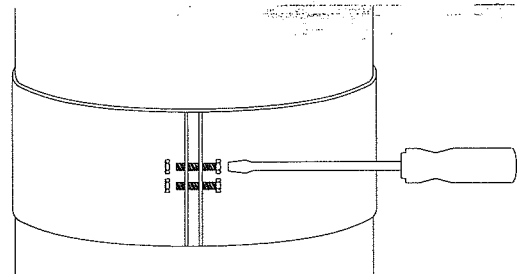
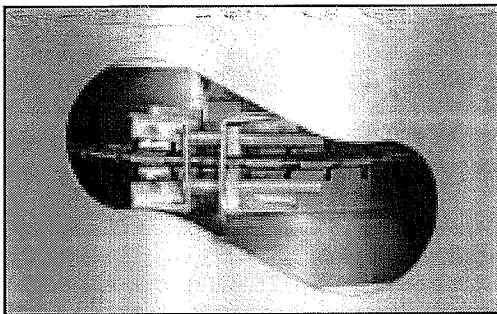
## Vee Band and Draw Band Assembly

The Model CS is a double wall constructed venting system. The inner liner and outer shell have a one-inch air gap. The inner liner has a 7/16" rolled flange. The inner liners connect with a Vee Band. The outer shell connects with a Draw Band. Use a 1/4" bead of silicone sealant at all Vee Band connections on the 7/16" flange. Apply silicone sealant on exterior Draw Bands to prevent rain from entry. The installer shall supply silicone for Draw Bands on exterior portions of venting system.

1. Apply a continuous bead of sealant to one of the flanges to be joined.
2. Join the two flanged ends of the pipe sections together.
3. Install vee band around flanges.



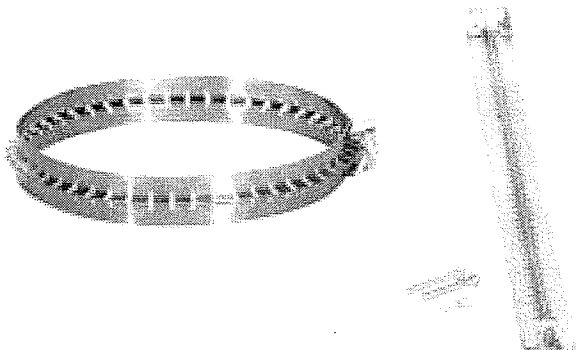
4. Secure the outer shell with the Draw Band. It is recommended that silicone sealant be applied around the top of the Draw Band to prevent moisture from entering between the chimney walls. This should be done on all components exposed to the atmosphere.



## Vee Band

### Part VEE

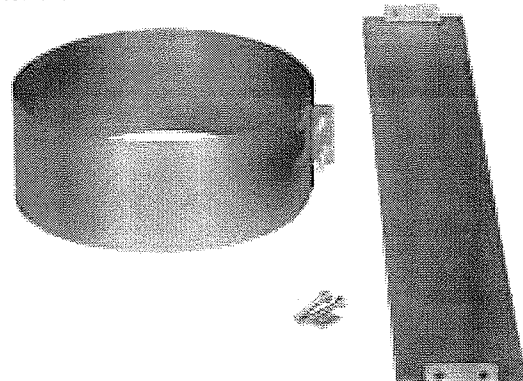
This part is used to connect Van-Packer components together. Part VEE consists of (1) single-piece vee band and fasteners.



## Draw Band

### Part DRW

This part is used to seal off the gap between mated components and provide a uniform appearance. Part DRW consists of (1) single-piece draw band and fasteners.





## Silicone Sealant

### Part 101087A

Van-Packer's part number 101087A shall be used on all joints. Proper joint assembly is essential. Follow the assembly instructions exactly as written. It is required to check the joints and seams for gas tightness when using the venting system with a Category *III* or *IV* appliance.

### Silicone Sealant Chart (Estimated)

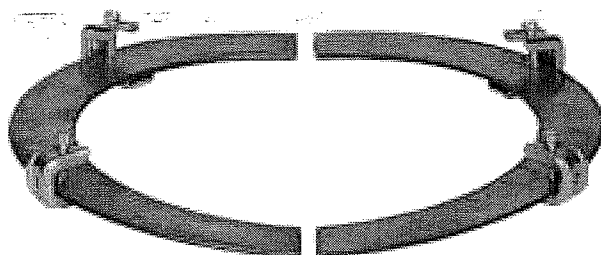
Inside Diameter	4"	5"	6"	7"	8"	9"	10"	12"	14"	16"	18"	20"	22"	24"
	[100]	[125]	[150]	[175]	[200]	[225]	[250]	[300]	[350]	[400]	[450]	[500]	[550]	[600]
Joints per Tube	32	27	23	20	18	16	14	12	10	9	8	7	6	6

\*Shown in millimeters [mm]

### Boiler Adapter Flange

#### Part BAF

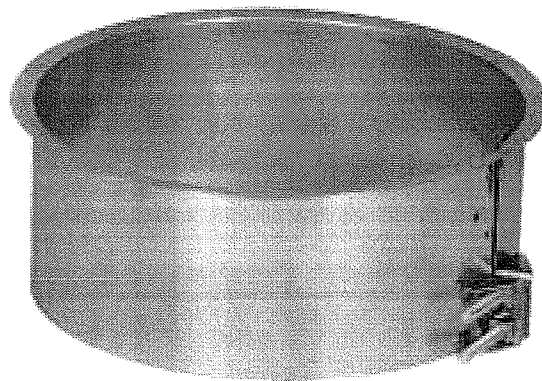
This part is used when the appliance has a blank flanged outlet. The BAF consists of (1) 2-piece ring and "C" clamps.



### Flangeless Outlet Adapter

#### Part FOA

This part is used when the appliance has a smooth collar outlet. The FOA consists of (1) flangeless outlet adapter, (1) vee band, and (1) draw band.



## Straight Section

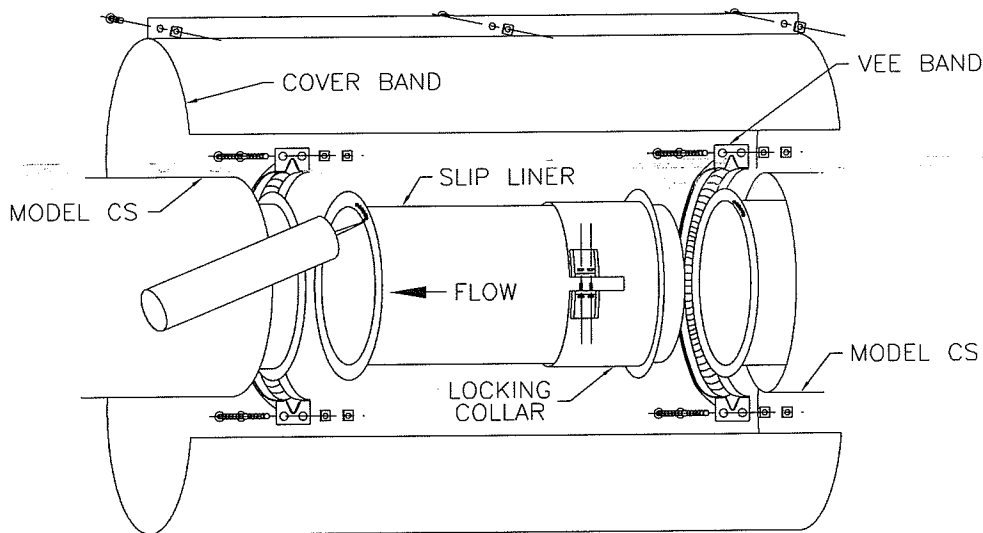
### Part STR

Straight section features flanges for ease of installation in both vertical and horizontal runs. Part includes: (1) 12", 24", or 36" length section, (1) vee band, and (1) draw band. Available in sizes 4" through 24" I.D. Contact Van-Packer Tech Services for larger size availability.

Flow resistance factor:

$ID \leq 18" K = .40 L/D$

$ID \geq 18" K = .30 L/D$



## Variable Length Section

### Part VLS

The VLS is used for custom length sections. Lengths range from 5-1/2" to 18". Part includes: (1) locking collar, (1) vee band, (1) slip liner, and (1) cover band.

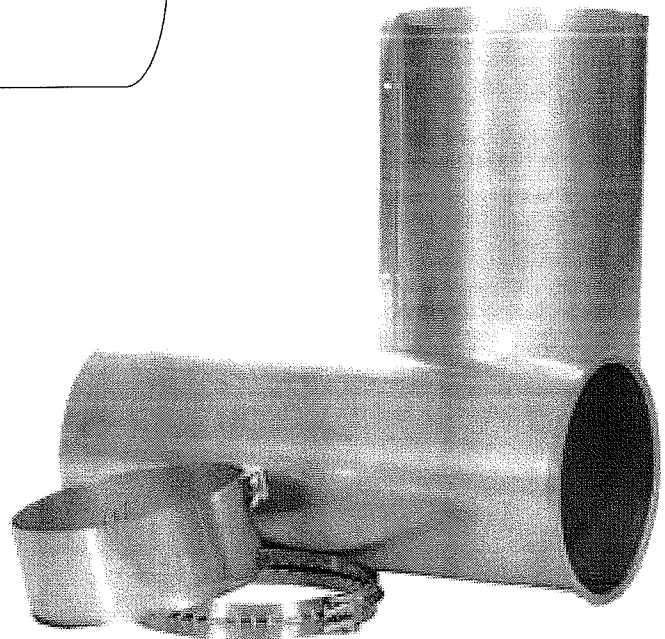
Flow resistance factor:

$ID \leq 18" K = .40 L/D$

$ID \geq 18" K = .30 L/D$

$L = \text{pipe length in feet}$

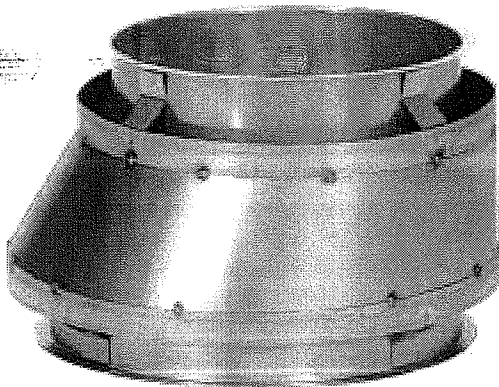
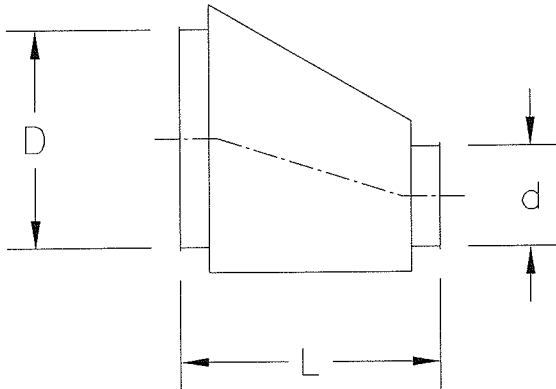
$D = \text{pipe diameter in inches}$



## Eccentric Increaser Section

### Part ECC

This part is used to provide an increase on one side of the pipe while the opposite side remains the same. The ECC consists of (1) eccentric increaser section, (1) smaller diameter vee band, and (1) smaller diameter draw band. Use the chart to determine the section length. Subtract the smaller  $\text{\O} (d)$  from the larger  $\text{\O} (D)$ , and then match the  $(D-d)$  value with its corresponding length  $(L)$ .



Eccentric Increaser Lengths	
D - d	L
1	6-7/8"
2	8-3/4"
3	10-5/8"
4	12-1/2"
5	14-15/16"
6	16-3/16"
7	18-1/16"
8	19-15/16"
9	21-13/16"
10	23-11/16"
11	25-1/2"
12	27-3/8"
13	29-1/4"
14	31-1/8"
15	33"
16	34-7/8"
17	36-3/4"
18	38-5/8"
19	40-7/16"
20	42-5/16"

## Butterfly Damper Section

### Part DPR

This 12" long manual controlled in-line type damper section is used to restrict the flow of effluent (*Not a 100% shut off damper*). This is a non-UL listed component. The DPR section consists of (1) butterfly damper section, (1) vee band, and (1) draw band.

Flow resistance factor:  $K = 0.08$



## Test Port Section

### Part TPS

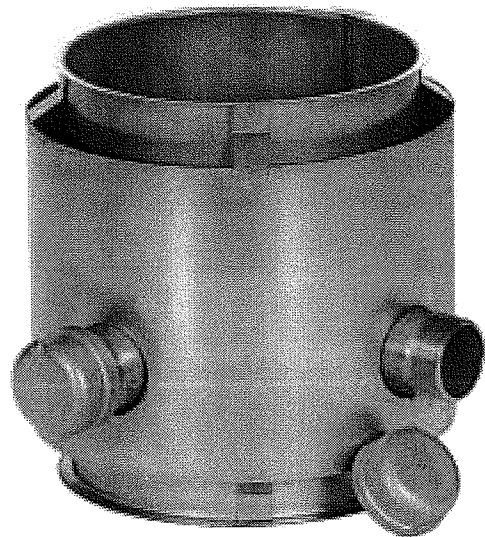
This component is intended to be used to provide access to the effluent for the insertion of a thermometer or other test equipment sensors. The TPS section is 12" long with (2) 2" threaded schedule 40 pipes 90° apart located 4-1/2" from one end. The TPS consists of (1) test port section, (1) vee band, (1) draw band, and (2) threaded caps.

*Note: The test port section is not intended to support the weight of test equipment; all testing equipment must be independently supported by others.*

Flow resistance factor:

ID ≤ 18" K = 0.40 L/D

ID ≥ 18" K = 0.30 L/D



## Horizontal In-Line Drain Section

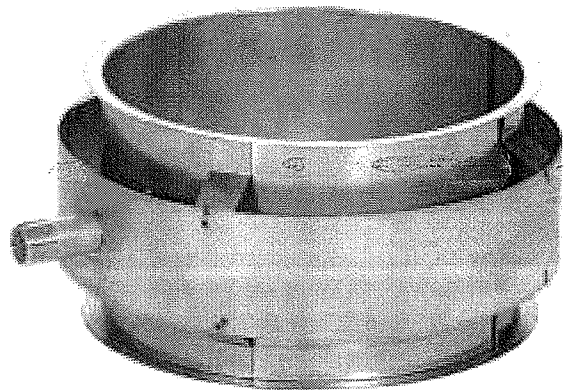
### Part HDS

Use this component to drain condensate from horizontal breaching runs. The HDS section is 6" long and has (1) 3/4" threaded drain nipple. The HDS section consists of (1) horizontal in-line drain section, (1) vee band, and (1) draw band.

Flow resistance factor:

ID ≤ 18" K = 0.40 L/D

ID ≥ 18" K = 0.30 L/D



## Vertical In-Line Drain Section

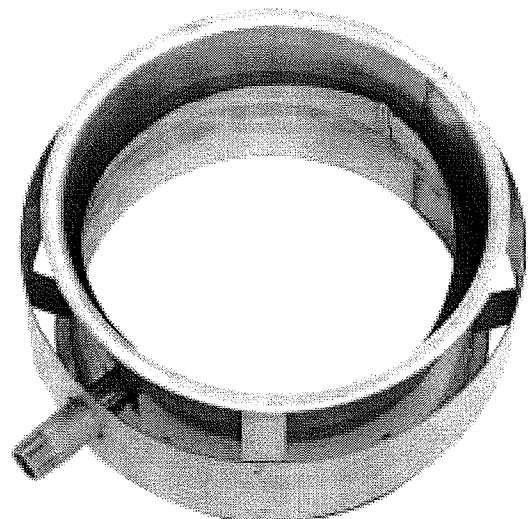
### Part D/S

Use this component to drain condensate from vertical vent runs. The D/S section is 6" long and has (1) 3/4" threaded drain nipple. The D/S section consists of (1) vertical in-line drain section, (1) vee band, and (1) draw band.

Flow resistance factor:  $K=0.25$

$L$  = pipe length in feet

$D$  = pipe diameter in inches



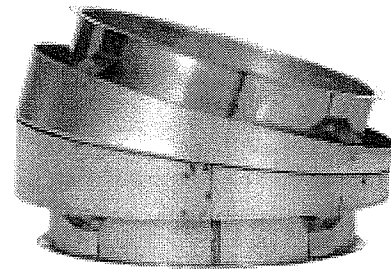
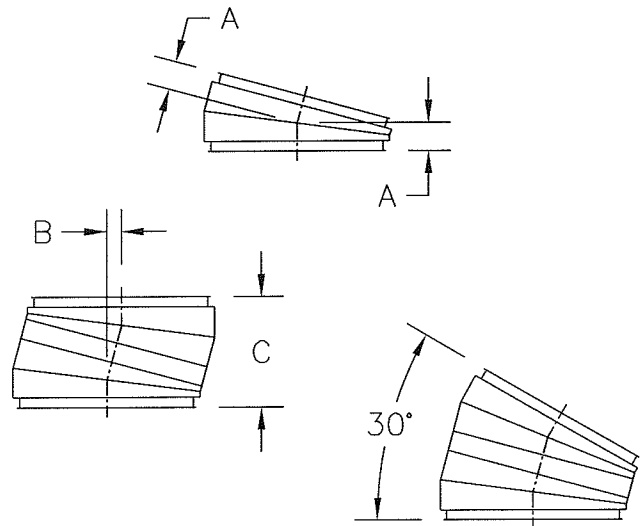
## 15° Elbow

### Part 15E

The 15E consists of (1) 15 degree elbow, (1) vee band, and (1) draw band.

Flow resistance factor:  $K = 0.06$

15° Elbow & Offsets			
I.D.	A	B	C
4"	2-3/4"	1-7/16"	10-7/8"
5"	2-13/16"	1-15/32"	11-5/32"
6"	2-7/8"	1-1/2"	11-7/16"
7"	2-15/16"	1-17/32"	11-21/32"
8"	3-1/16"	1-9/16"	11-15/16"
9"	3-1/8"	1-19/32"	12-3/16"
10"	3-3/16"	1-5/8"	12-7/16"
12"	3-5/16"	1-11/16"	12-15/16"
14"	3-7/16"	1-3/4"	13-1/2"
16"	3-9/16"	1-13/16"	14"
18"	3-11/16"	1-15/16"	14-1/2"
20"	3-13/16"	2"	15-1/16"
22"	3-15/16"	2-1/16"	15-9/16"
24"	4-1/16"	2-1/8"	16-1/16"



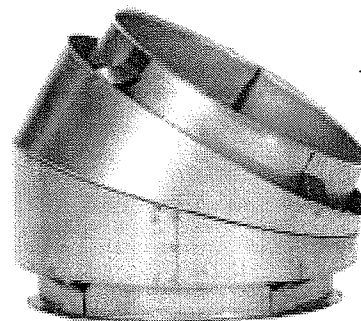
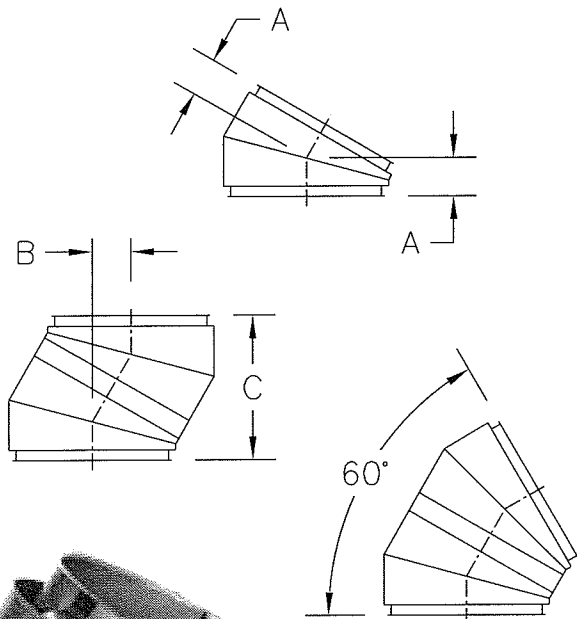
## 30° Elbow

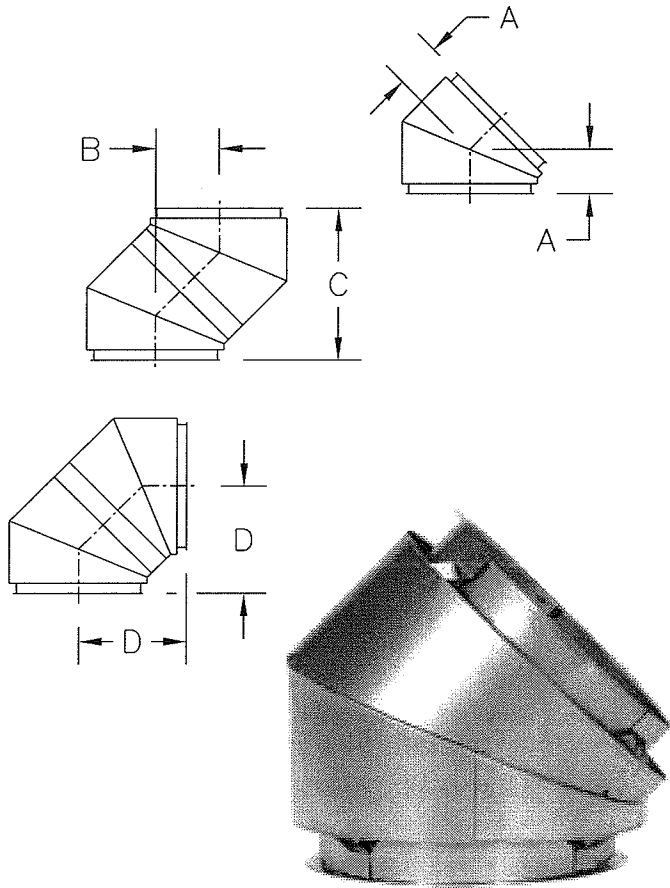
### Part 30E

The 30E consists of (1) 30 degree elbow, (1) vee band, and (1) draw band.

Flow resistance factor:  $K = 0.12$

30° Elbow & Offsets			
I.D.	A	B	C
4"	3-3/16"	3-3/16"	11-7/8"
5"	3-5/16"	3-5/16"	12-3/8"
6"	3-7/16"	3-7/16"	12-7/8"
7"	3-9/16"	3-9/16"	13-3/8"
8"	3-11/16"	3-11/16"	13-7/8"
9"	3-7/8"	3-7/8"	14-3/8"
10"	4"	4"	14-7/8"
12"	4-1/4"	4-1/4"	15-7/8"
14"	4-1/2"	4-1/2"	16-7/8"
16"	4-13/16"	4-13/16"	17-7/8"
18"	5-1/16"	5-1/16"	18-7/8"
20"	5-5/16"	5-5/16"	19-7/8"
22"	5-9/16"	5-9/16"	20-7/8"
24"	5-7/8"	5-7/8"	21-7/8"





### 45° Elbow

#### Part 45E

The 45E consists of (1) 45 degree elbow, (1) vee band, and (1) draw band.

Flow resistance factor:  $K = 0.15$

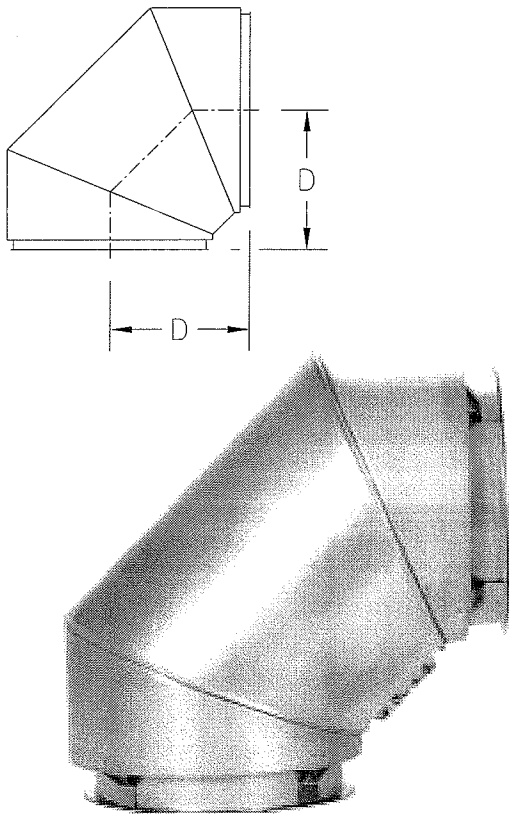
45° Elbow & Offsets				
I.D.	A	B	C	D
4"	3-5/8"	5-1/8"	12-3/8"	8-3/4"
5"	3-13/16"	5-7/16"	13-1/16"	9-1/4"
6"	4-1/16"	5-11/16"	13-3/4"	9-3/4"
7"	4-1/4"	6"	14-1/2"	10-1/4"
8"	4-7/16"	6-5/16"	15-13/16"	10-3/4"
9"	4-5/8"	6-9/16"	15-7/8"	11-1/4"
10"	4-7/8"	6-7/8"	16-5/8"	11-3/4"
12"	5-1/4"	7-7/16"	18"	12-3/4"
14"	5-11/16"	8-1/16"	19-7/16"	13-3/4"
16"	6-1/8"	8-5/8"	20-13/16"	14-3/4"
18"	6-1/2"	9-3/16"	22-1/4"	15-3/4"
20"	6-15/16"	9-13/16"	23-11/16"	16-3/4"
22"	7-3/8"	10-3/8"	25-1/16"	17-3/4"
24"	7-3/4"	11"	26-1/2"	18-3/4"

### 90° Elbow

#### Part 90E

The 90E consists of (1) 90 degree elbow, (1) vee band, and (1) draw band.

Flow resistance factor:  $K = 0.40$



90° Elbow	
I.D.	D
4"	8-3/4"
5"	9-1/4"
6"	9-3/4"
7"	10-1/4"
8"	10-3/4"
9"	11-1/4"
10"	11-3/4"
12"	12-3/4"
14"	13-3/4"
16"	14-3/4"
18"	15-3/4"
20"	16-3/4"
22"	17-3/4"
24"	18-3/4"



## 90° Boot Tee

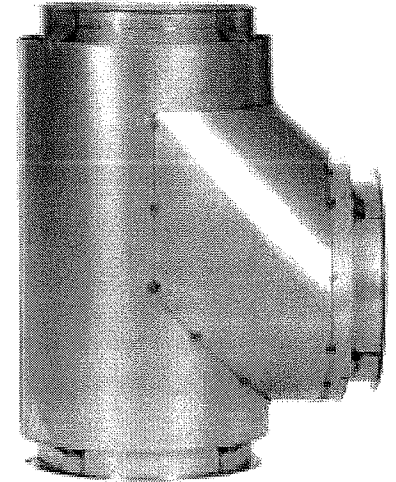
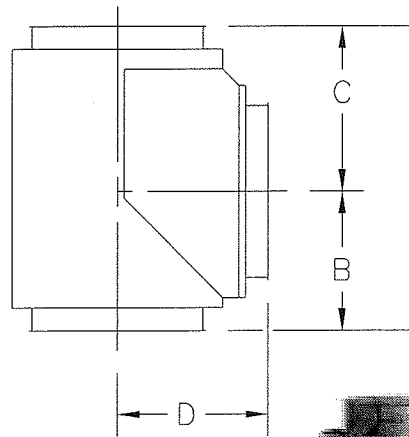
### Part BTT

This component is used to make low resistance 90° turns. Please specify projection diameter. The BTT consists of (1) 90° boot tee, (1) vee band and draw band for the tee body, and (1) vee band and draw band for the tee projection.

Flow resistance factor:  $K = 0.65$

90° Boot Tee				
I.D.	A	B	C	D
4"	16"	6"	10"	8"
5"	17"	6-1/2"	10-1/2"	8-1/2"
6"	18"	7"	11"	9"
7"	19"	7-1/2"	11-1/2"	9-1/2"
8"	20"	8"	12"	10"
9"	21"	8-1/2"	12-1/2"	10-1/2"
10"	22"	9"	13"	11"
12"	24"	10"	14"	12"
14"	26"	11"	15"	13"
16"	28"	12"	16"	14"
18"	30"	13"	17"	15"
20"	32"	14"	18"	16"
22"	34"	15"	19"	17"
24"	36"	16"	20"	18"

Chart is based on tees with full size projections



$$A = \text{Projection I.D.} + 12''$$

$$B = \frac{1}{2} \text{ Projection I.D.} + 4''$$

$$C = B + 4''$$

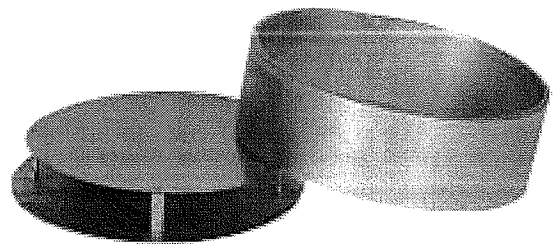
$$D = \frac{1}{2} \text{ Body I.D.} + 6''$$

These formulas may be used to determine boot tee dimensions with reduced projections.

## End Cap

### Part CAP

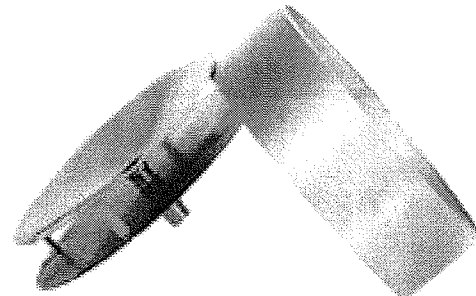
Used on a closed end to provide clean out and inspection access port. The CAP is 2" long. The CAP consists of (1) end cap, (1) vee band, and (1) end cap cover band.



## End Cap with Drain

### Part C/D

Use this component as a drain at the base of vertical tee sections. The C/D is 2" long and has (1) 3/4" threaded drain nipple. The C/D consists of (1) end cap with drain, (1) vee band, and (1) end cap cover band.





## 90° Centered Tee

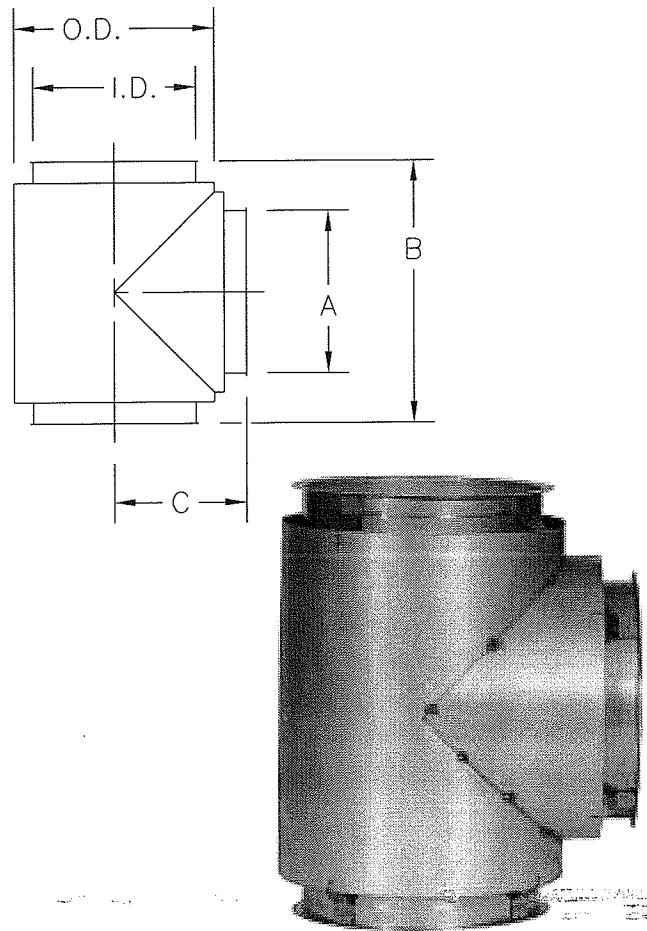
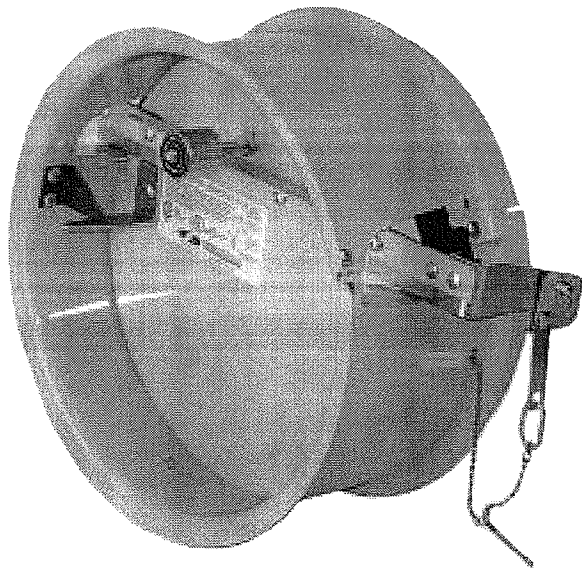
### Part 90T

This component is intended for use for the installation of barometric dampers. This tee is not recommended for 90° turns. Please specify projection diameter. The 90T consists of (1) 90° tee, (1) vee band and draw band for the tee body, and (1) vee band and draw band for the tee projection.

Flow resistance factor:  $K = 1.25$

90° Centered Tee			
I.D.	A	B	C
4"	4"	12"	6"
5"	5"	13"	6-1/2"
6"	6"	14"	7"
7"	7"	15"	7-1/2"
8"	8"	16"	8"
9"	9"	17"	8-1/2"
10"	10"	18"	9"
12"	12"	20"	10"
14"	14"	22"	11"
16"	16"	24"	12"
18"	18"	26"	13"
20"	20"	28"	14"
22"	22"	30"	15"
24"	24"	32"	16"

Chart is based on tees with full size projections.



A = Projection I.D.

B = Projection I.D. + 8"

C = 1/2 Body I.D. + 4"

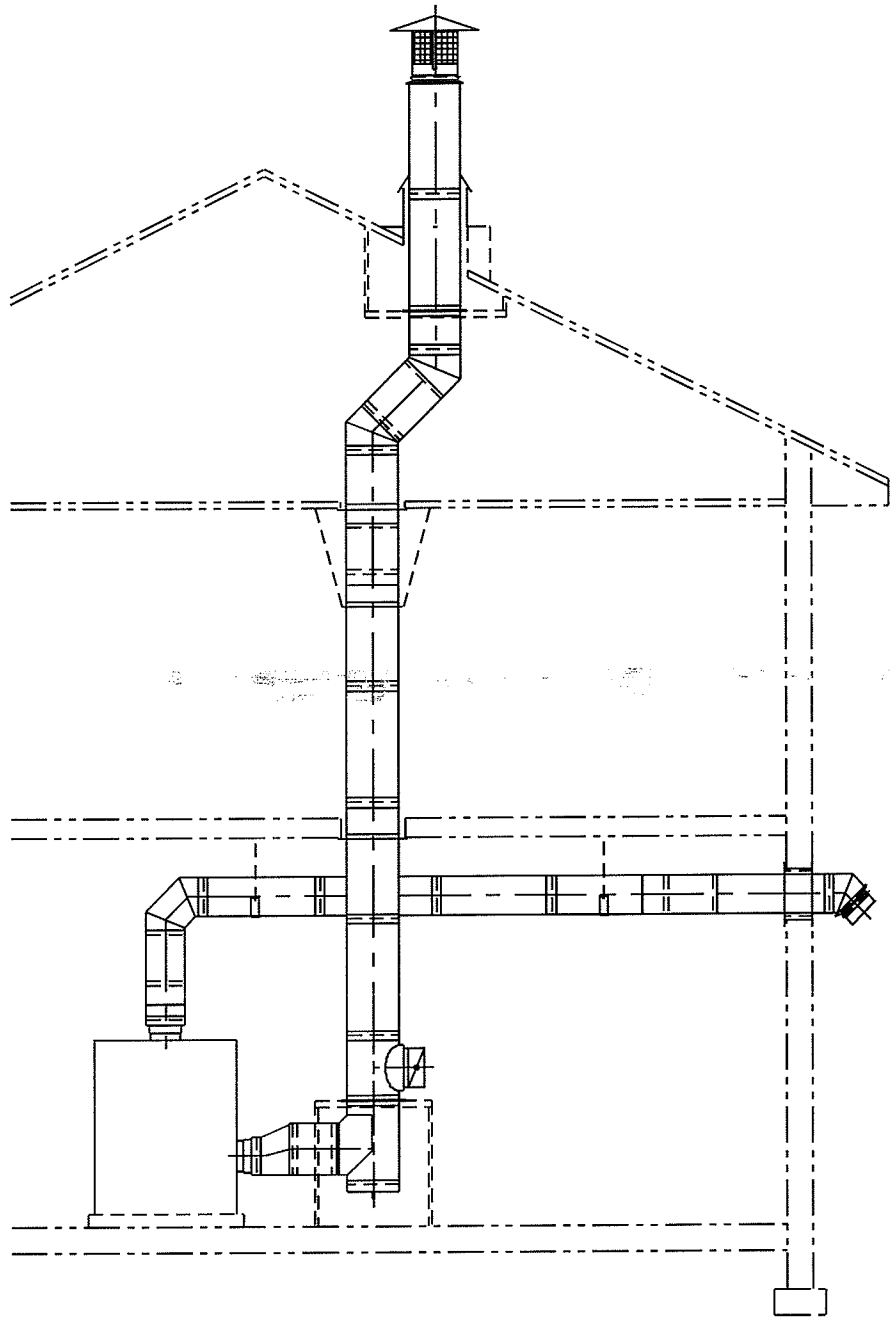
These formulas may be used to determine 90° tee dimensions with reduced projections.

## Barometric Damper

### Part BMD

Atmospheric type draft regulator used to relieve excess draft. The BMD consists of (1) barometric damper.

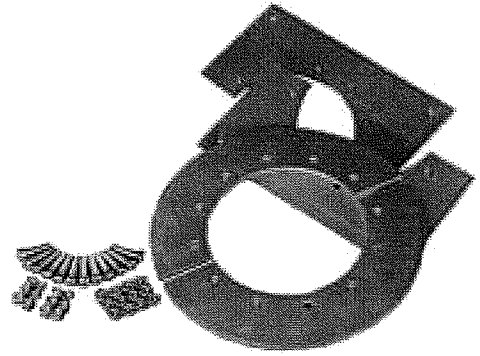
Flow resistance factor:  $K = 0.50$



## Plate Support Assembly

### Part PLS

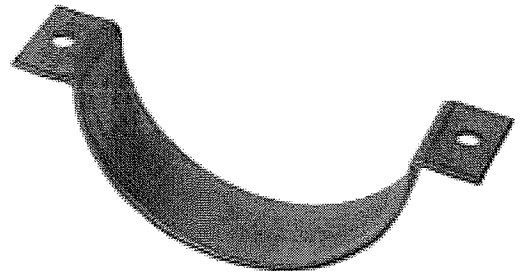
The PLS consists of (1) two piece square support plate, (1) two piece round clamp flange, (2) half draw bands, and 3/8" bolts and nuts. The PLS in conjunction with field fabricated support members provides structural support for the chimney.



## Breeching Hanger Band

### Part BHB

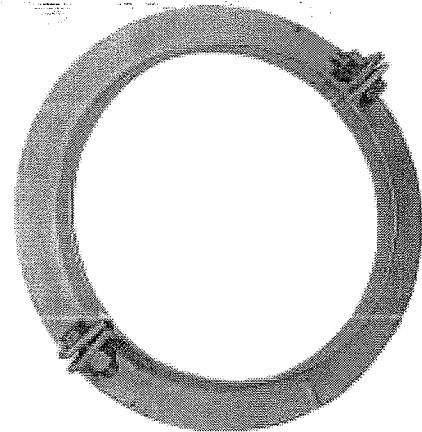
The BHB supports horizontal lengths of pipe. Part includes: (1) hanger band.



## Full Angle Ring

### Part FAR

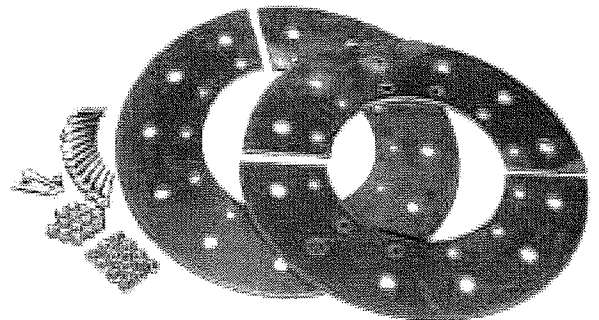
The FAR supports horizontal and lateral lengths of pipe. Part includes: (1) two piece angle ring, 1/2" nuts and bolts.



## Guy Attachment Rings

### Part GAR

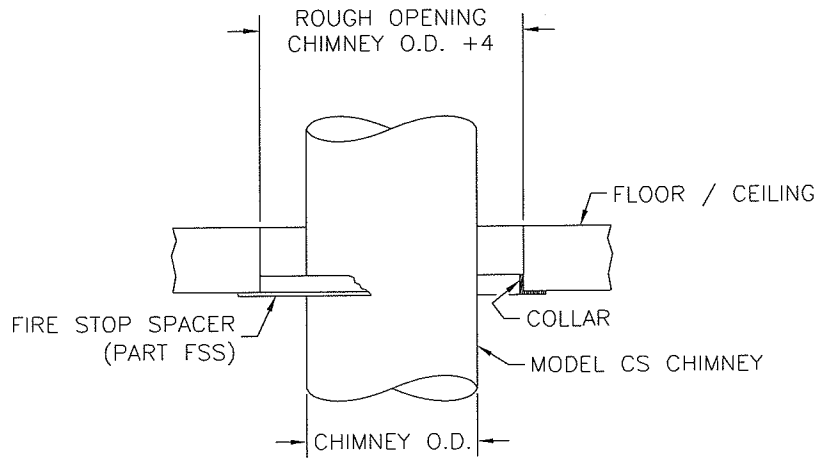
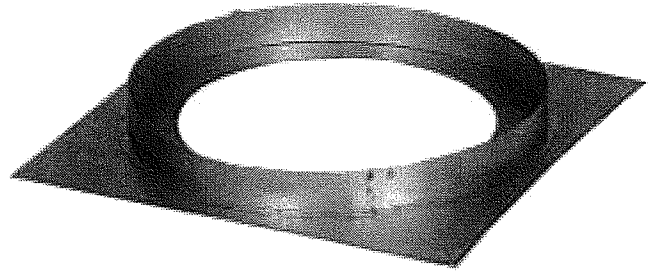
The GAR is used for lateral support. Part includes: (4) half clamp rings, (2) half draw bands, and nuts and bolts.



## Fire Stop Spacer

### Part FSS

This part is for use when penetrating a floor, ceiling, or interior side of a roof. The FSS consists of (1) fire stop spacer.

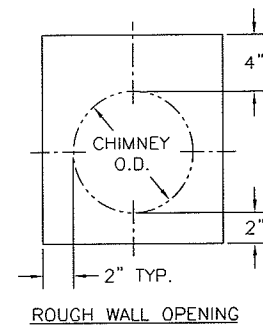
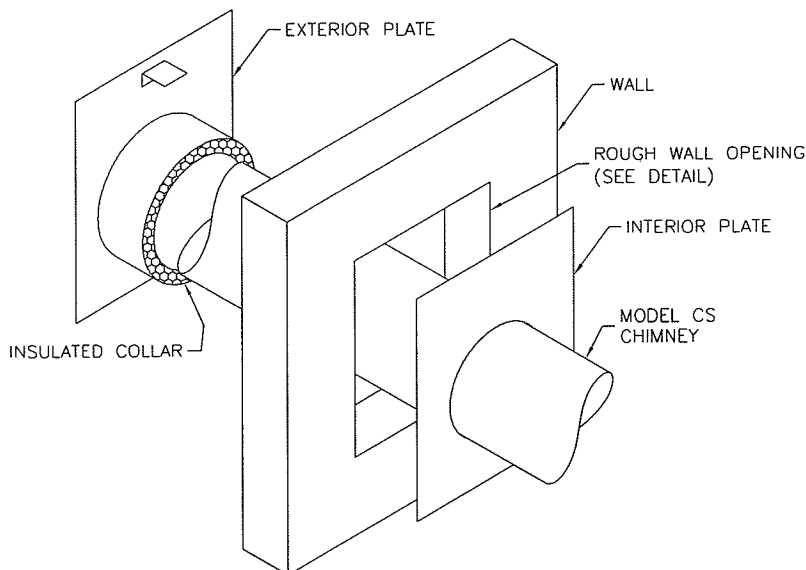
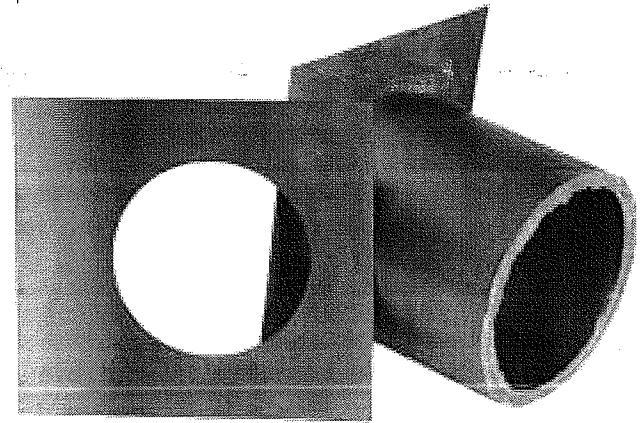


## Exterior Wall Penetration

### Part EWP

This part is used to penetrate walls of either combustible or non-combustible construction. The EWP consists of (1) interior plate and (1) exterior plate with insulated wall sleeve.

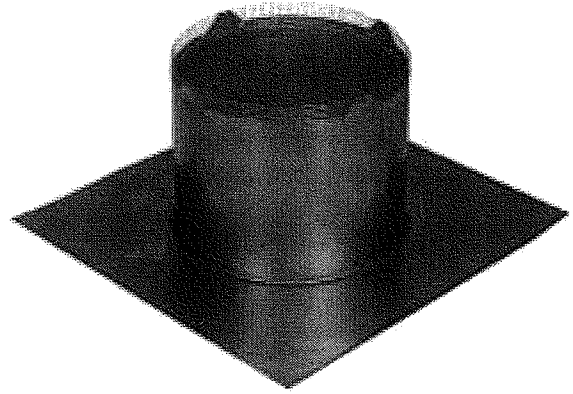
*Insulated wall sleeve may require field cutting for proper installation.*



## Flashing

### Part FLS

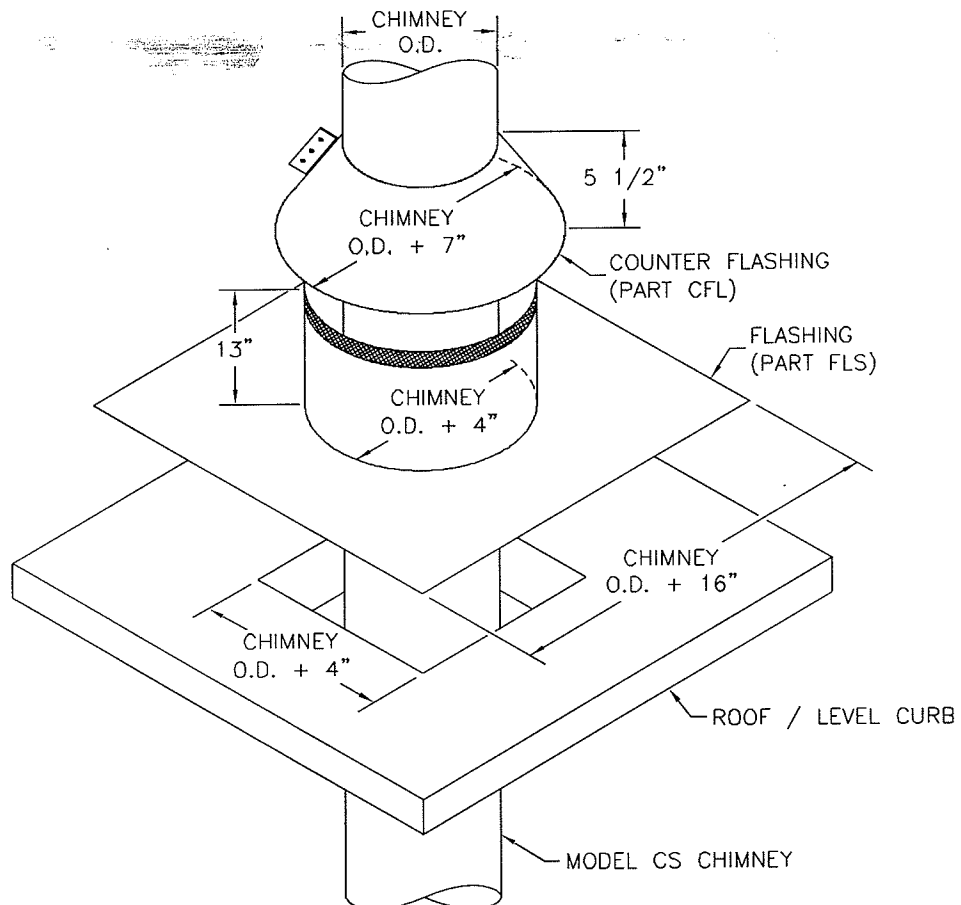
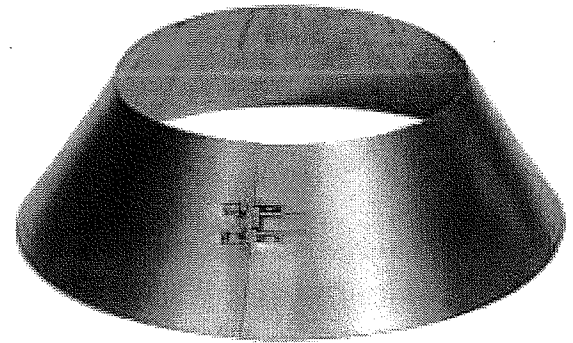
This part is installed when the exhaust system is penetrating a roof structure. The FLS consists of (1) flashing.



## Counter Flashing

### Part CFL

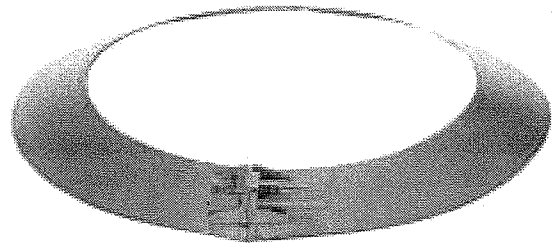
This part is installed above the flashing to provide rain protection. Sealant should be applied to form a weather tight seal. The CFL consists of (1) counter flashing, nuts and bolts.



## Rain Skirt

### Part RSK

This component is used to close off the gap between the liner and shell, protecting the air gap from the outdoor elements. The RSK consists of (1) rain skirt, nuts and bolts.

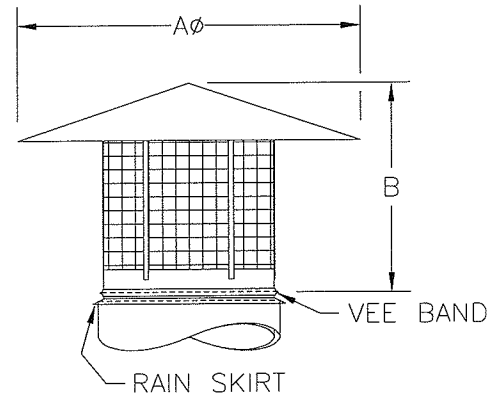


## Rain Cap with Screen

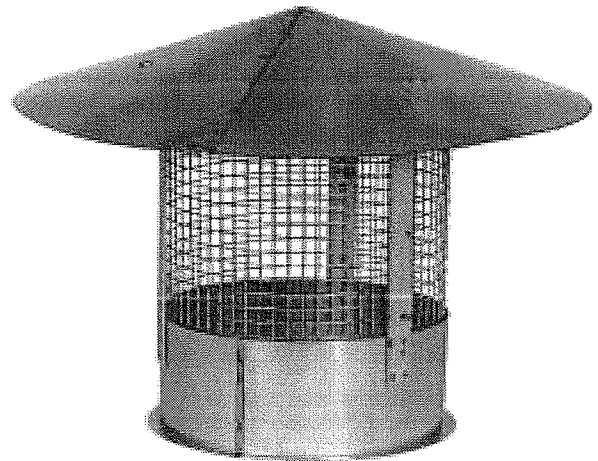
### Part SCR

This part is used for vertical terminations. The SCR consists of (1) rain cap with screen, (1) vee band, and (1) rain skirt.

Flow resistance factor:  $K = 1.25$



Rain Cap with Screen		
I.D.	AØ	B
4"	8"	8-3/8"
5"	10"	9-7/16"
6"	12"	10-1/2"
7"	14"	11-5/8"
8"	16"	12-11/16"
9"	18"	13-3/4"
10"	20"	14-7/8"
12"	24"	17"
14"	28"	19-3/16"
16"	32"	21-3/8"
18"	36"	23-1/2"
20"	40"	25-11/16"
22"	44"	27-7/8"
24"	48"	30"

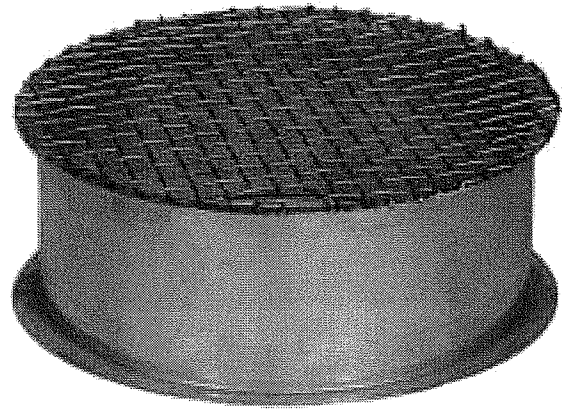


## Screen Collar Termination

### Part SCT

This part can be used as a termination when venting appliances or to cover the outdoor end of a combustion air duct. The SCT consists of (1) screen collar termination, (1) vee band, and (1) rain skirt.

*Flow resistance factor:  $K = 0.25$*

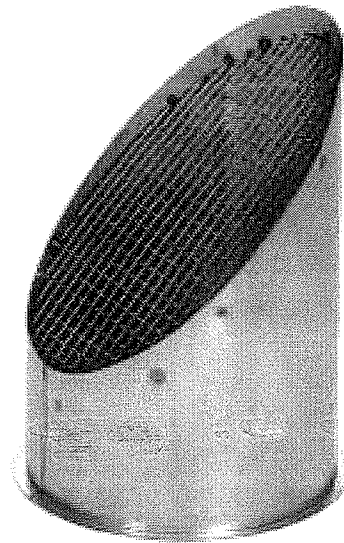


## Side Discharge with Screen

### Part SDS

This part can be used for horizontal terminations. The SDS consists of (1) side discharge with screen, (1) vee band, and (1) rain skirt.

*Flow resistance factor:  $K = 0.25$*





## Standard Warranty



VAN-PACKER WARRANTS that its chimney components are manufactured in accordance with their Underwriters Laboratories Listings and that such components will perform their intended function of exhausting combustion products without adverse leakage provided the system has been sized in accordance with good engineering practice and that the material specifications are suitable for the application. This Warranty is given to the owner of the products against defects in workmanship and materials for a period of one year after delivery. This Warranty extends only to installations where the attached equipment is operated in accordance with the manufacturer's instructions. This Warranty is further limited only to those installations with normal effluent from a boiler or if the effluent is approved by VAN-PACKER, a copy of which must be attached hereto.

Parts, products, or accessories manufactured by others are warranted only to the extent of the original manufacturer's warranty. VAN-PACKER'S obligation under this warranty is limited to repair or replacement as it shall be determined by its sole discretion upon examination by qualified personnel, as approved by VAN-PACKER and only to that material produced or fabricated at the Buda factory. The erection, installation, field fabrication or welding by installing contractors or VAN-PACKER distributors are warranted only to the extent of the installing contractor's or distributor's warranty.

VAN-PACKER reserves the right to examine the chimney during the warranty period. Operation of the equipment must be maintained in accordance with the manufacturer's instructions. In the event a violation is observed, the problem must be corrected within 30 days to VAN-PACKER'S satisfaction. In the event the violation is not corrected within 30 days, the Warranty becomes invalid.

ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED VAN-PACKER'S AFORESTATED OBLIGATION ARE HEREBY DISCLAIMED BY VAN-PACKER AND EXCLUDED FROM THE WARRANTY. The Warranties made herein by VAN-PACKER COMPANY are in lieu of and all other warranties, stated or inferred, and VAN-PACKER assumes no liability for loss of use or for any direct, indirect or consequential damage of any kind in respect to the use or operation of VAN-PACKER products, or any equipment or accessories used in connection therewith. VAN-PACKER neither assumes nor authorizes any person to assume for it any obligation in connection with the sale of the products. This Warranty shall not apply to any products or parts of products which (a) Have been repaired or altered in any manner outside of VAN-PACKER'S factory unless designated in writing by VAN-PACKER; or (b) Have been subjected to misuse, neglect or accident; or (c) Have been used in a manner contrary to VAN-PACKER'S printed instructions; or (d) Have been damaged due to malfunction of the attached equipment or faulty installation.



**VAN-PACKER CO., INC.**

# Model CS Extended Warranty

**VAN-PACKER WARRANTS** that a chimney system consisting exclusively of components manufactured by it and installed in accordance with drawings and specifications approved in writing by it against functional failure due to defects in material and workmanship, PROVIDED that the effluent being and having been vented is and was as described in writing agreed to by VAN-PACKER at the time VAN-PACKER approved the drawings and specifications pertaining to such chimney.

**THIS WARRANTY IS FOR A PERIOD OF TEN YEARS.**

All rights and limitations pertaining to this warranty may be assigned by the original owner of the chimney to the person or entity purchasing the plant or facility in which the chimney is located.

VAN-PACKER's sole obligation under this warranty is to repair or replace, as it shall determine in its sole discretion any components that fail to comply with this warranty. This warranty does not cover any labor cost for the removal or replacement of any defective product.

~~The Warranties made herein by VAN-PACKER COMPANY are in lieu of any and all other warranties, stated or inferred, and VAN-PACKER assumes no liability for loss of use or for any direct, indirect or consequential damage of any kind in respect to the use or operation of VAN-PACKER products, or any equipment or accessories used in connection therewith. VAN-PACKER does not authorize any person to assume for it any obligation in connection with the sale of the products or parts which (a) Have been repaired or altered in any manner outside of VAN-PACKER's factory; or (b) Have been subjected to misuse, neglect or accident; or (c) Have been used in a manner contrary to VAN-PACKER's printed instructions; or (d) Have been operated in a corrosive atmosphere in the presence of solvents, refrigerated vapors or halogenated compounds; or (e) Have been damaged due to malfunction of any attached or connected equipment or faulty installation.~~

**VAN-PACKER MAKES NO REPRESENTATION OR WARRANTIES, EXPRESS OR IMPLIED (INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE), EXCEPT THOSE SET FORTH HEREIN.**

The Extended Warranty is available only on systems engineered and supplied in total by VAN-PACKER.

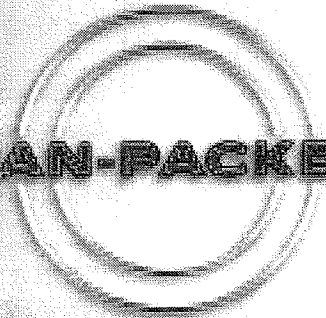
All exterior exposed chimney surfaces shall be of stainless steel or shall be coated with a minimum of one base coat of primer and one finish coat of heat and corrosion resistant paint suitable to the application.

VAN-PACKER COMPANY will provide a signed warranty upon approval. Contact VAN-PACKER for details.

COMPANY

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**VAN-PACKER® CO., INC.**



**Sales, Service and Manufacturing**

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