





Applications

PelletVent Pro is a venting system designed for stoves and inserts that use wood pellets and oil fuel. It is also built to vent biofuel products such as corn, switch grass, cherry pits, soybeans, coffee husks, sunflower hulls, walnut shells and wheat, to name a few. (Rated for continuous use flue temperatures up to 570° F.)

Materials and Construction

Laser-welded, double-wall pipe with an inner wall of super-ferritic stainless steel and a .018" laser-welded galvalume outer wall. Painted black exterior available. Primary metal-to-metal connection seals joint. Encapsulated o-ring provides a secondary seal.

Clearances

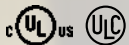
1" clearance to combustibles in the USA and Canada for appliances using corn and other biofuels, wood pellets or oil.

Diameters

3" and 4".

Listings

c-UL-us Listed to UL 641 (MH8381 and MH14420).
ULC Listed to ULC S609, ULC/ORD C441 (CMH1439 and CMH1440).



PelletVent Pro for biofuels

All PelletVent Pro® components that come into contact with flue gases are built with an inner wall of corrosion resistant super-ferritic metal. PelletVent Pro is engineered with features for a durable, safe and aesthetically pleasing venting system. PelletVent Pro is a patent-pending venting system for stoves and inserts that use wood pellets, corn and other biofuels, or oil, as fuel. As a result of Simpson Dura-Vent's cutting-edge manufacturing process and commitment to innovation, PelletVent Pro is uncompromised in attention to detail and performance. This perfect fit and finish is made possible with a laser-welded inner and outer wall. Select components are available in black.



PelletVent Pro is now UL listed for 1" clearance to combustibles in the USA and in Canada. It's double-wall, air-insulated design offers superior performance. Seams are factory-sealed on all elbows, tees, and fittings. Since the introduction of pellet stoves in the 1980's, Simpson Dura-Vent is recognized as the industry leader in venting systems for pellet stoves. Today, approximately 3 of every 4 pellet stoves in the US and Canada are vented with a Simpson Dura-Vent pellet system.

Engineered Excellence® from good science.

PELLETVENT PRO FOR BIOFUELS: THE ONLY CHOICE.



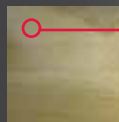
Corn and other biofuels have higher water content than wood pellets. When water combines in the flue with elements in corn, such as sulfur, nitrogen, and phosphorus, the condensation is highly acidic. These acids cause common pellet chimney vent liners made of 430, 304 and 316 stainless steels, to corrode.

Competitor's inner pipe metals for pellet

ICC	304	Security	304	Metal Fab	430
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Other manufacturers use these common metals for venting for corn and biofuels.

Joint research with OMNI Environmental Services scientifically proved Simpson Dura-Vent's super-ferritic stainless steel is resistant to corrosion caused by corn flue gases. It is the only safe choice for venting corn and other biofuel appliances.



Simpson Dura-Vent's super-ferritic inner pipe metal for PelletVent Pro

AL29-4C, while resistant to corrosion, is not recommended for temperatures at or above 600° F. Chimney fires exceeding 600°F can occur in pellet chimneys as the result of unburned fuel residue collecting in the chimney. At these temperatures, AL29-4C can become brittle, while Simpson Dura-Vent's super-ferritic stainless steel is stable and exceeds AL29-4C's performance for venting corn and other biofuels.

Competitor's inner pipe metals for pellet

Selkirk	AL 29-4C	BDM	AL 29-4C
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PELLETVENT PRO®

Simpson Dura-Vent
Engineered Excellence

PelletVent Pro for biofuels (patent pending) features a metal-to-metal seal as the primary protection against leakage. A high temperature silicone o-ring, completely encapsulated between the inner and outer wall, provides a secondary seal.

Primary metal-to-metal connection seals the joint



Encapsulated o-ring provides a secondary seal



Silicone seals fail at temperatures exceeding 600°F. Other manufacturers employ only a silicone gasket in the female end of the connection as their only leakage protection. When these devitrify or fail, there is no leakage protection, allowing combustion gases to enter the home.

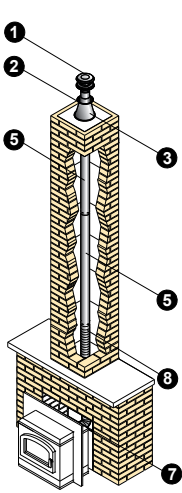


In the event of a pellet chimney fire, Simpson Dura-Vent's primary metal-to-metal seal provides continuous leakage protection. Additionally, the encapsulated o-ring, although devitrified, stays in place and continues to function as a seal.

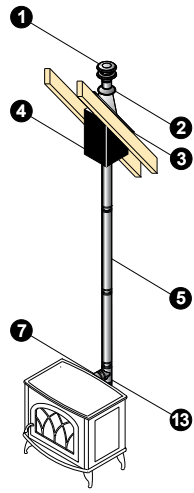
Scientifically proven materials and unequalled engineering make Pellet-Vent Pro for biofuels not only the best choice, or the safest choice, but the only choice for venting wood, corn, and other biofuels.



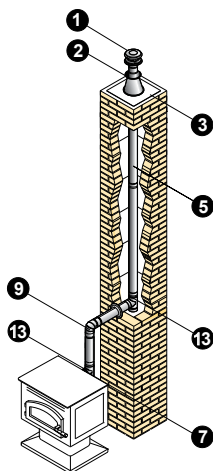
Typical Installations



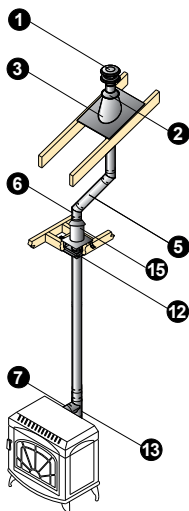
Pellet Insert



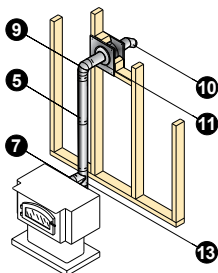
Cathedral Ceiling Stove Installation



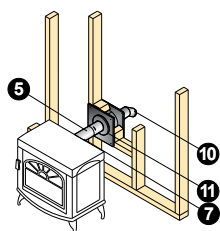
Masonry Chimney Relining



Attic Offset



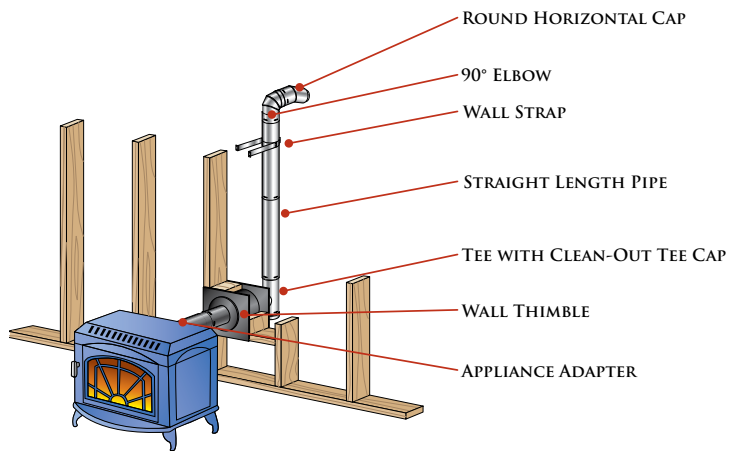
Through-The-Wall Vertical Rise



Through-The-Wall

Installation Key			
1	Vertical Cap	9	90° Elbow
2	Storm Collar	10	Horizontal Cap
3	Flashing	11	Wall Thimble
4	Cathedral Ceiling Support Box	12	Ceiling Support Firestop Spacer
5	Straight Length Pipe	13	Tee w/Clean-Out Tee Cap
6	45° Elbow	14	Wall Strap
7	Appliance Adapter	15	Attic Insulation Shield
8	60" Flexible Length		

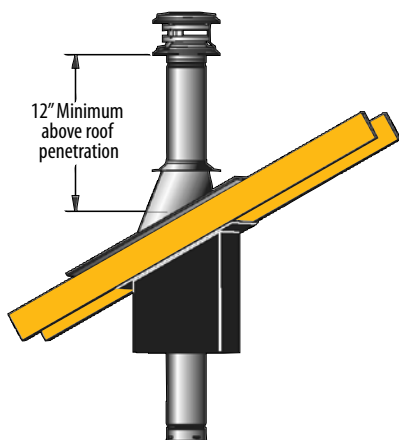
- Refer to our Typical Venting Installation drawings to select the appropriate component parts for your installation.
- The inner pipe diameter should match the outlet size of the appliance. For installations that require 4" vent and the appliance has a 3" outlet, use an Increaser Adapter 3"-4".
- Check the appliance manufacturer's installation instructions to confirm which types of vent configurations are permitted (i.e. horizontal, vertical, chimney reline, etc.). Also, check for any venting restrictions such as maximum horizontal run, minimum and maximum vertical rise, maximum offset, etc.
- Be fire safe! Maintain the minimum clearances (air-space) between the vent pipe and nearby combustibles, as specified in the appliance manufacturer's installation instructions. Use proper support and bracing. Follow local building codes and have your venting system inspected.



Planning Your Installation

1	Refer to the Typical PelletVent Pro Installations diagram, on the opposite page, to be familiar with some of the standard PelletVent Pro installations and the required component parts.
2	For a horizontal termination, you will need a Wall Thimble and a Horizontal Cap. The cap must be installed with a 6" clearance to the outside wall (refer to appliance manufacturer's installation instructions for other clearances).
3	For a vertical termination, you will need a Cathedral Ceiling Support Box or Flat Ceiling Support, Attic Insulation Shield (if passing through an attic), Flashing, Storm Collar, and Vertical Cap.
4	Determine the length of PelletVent Pro pipe required. For a vertical termination, measure the pitch of the roof and select the proper flashing. The required minimum height above the roof is 12".
5	Pellet stove inserts in masonry fireplaces will require a flex pipe to snake the vent past the smoke shelf. For transition from PelletVent Pro to an existing DuraPlus, DuraPlus HTC, or DuraTech Chimney, a Chimney Adapter is available.
6	For vertical rise of PelletVent Pro on the outside of the house, Wall Straps should be used at 4' intervals to provide proper support.
7	Important! Check to be sure that the appliance and the venting system are in compliance with all minimum clearance to combustible requirements.

Design Recommendations



The following design recommendations are intended only as a general guideline to assist in the design and selection of venting components for your installation. Always read and follow Simpson Dura-Vent Installation instructions before installing your chimney system (found with the cap or support box). Installation instructions can be viewed online at www.duravent.com, under Catalogs and Instructions.

- Size the vent to meet the appliance manufacturer's specifications.
- Avoid long runs and excessive use of elbows. Refer to the appliance manufacturer for minimum rise and maximum run configurations for the venting system.
- Use an Appliance Adapter to ensure a proper connection to appliance. Seal adapter to appliance with high temperature sealant.
- Use a Single Tee with Clean-Out Tee Cap to facilitate easy cleaning. It is recommended to use a tee off the back of an appliance.
- In the United States and Canada, maintain the minimum 1" clearance (air space) from vent pipe to combustibles. Use proper support and bracing. Follow local building codes and have your venting system inspected. Be fire safe!

PelletVent Pro Horizontal Kit



Kit includes: Round Horizontal Cap, Wall Thimble, and Appliance Adapter. Pipe lengths not included. 4" Kit includes a 3"-4" Appliance Adapter/Increaser, painted black.

SIZE	STOCK #
3"	3PVP-KHA
4"	4PVP-KHA

PelletVent Pro Vertical Kit - Flat Ceiling



Kit includes: Vertical Cap, Storm Collar, Ceiling Support Firestop Spacer, Adjustable Flashing, and Appliance Adapter. Pipe lengths not included. 4" Kit includes a 3"-4" Appliance Adapter/Increaser, painted black. Support Clamp included.

SIZE	STOCK #
3"	3PVP-KVA
4"	4PVP-KVA

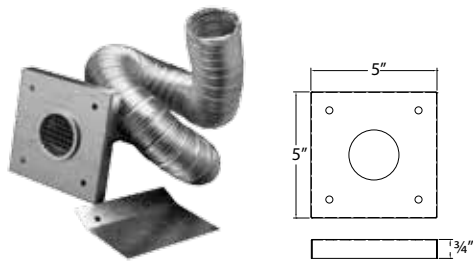
PelletVent Pro Vertical Kit - Cathedral



Kit includes: Vertical Cap, Storm Collar, Cathedral Ceiling Support Box with trim and clamp, Adjustable Flashing, and Appliance Adapter. Pipe lengths not included. 4" Kit includes a 3"-4" Appliance Adapter/Increaser, painted black.

SIZE	STOCK #
3"	3PVP-KVB
4"	4PVP-KVB

Fresh Air Intake Kit



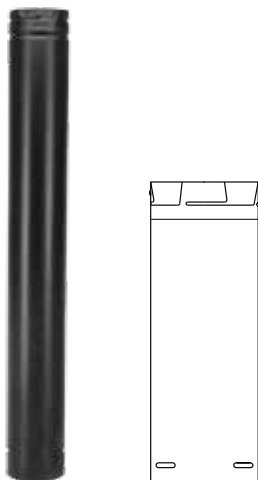
Kit includes: faceplate with screen, moisture barrier, aluminum flex, and two clamps.

Allows fresh air into an existing pellet stove installation that had been using inside air. Allows an installer to decide the best possible location for the air intake vent, not the same location as the wall thimble. The 2" diameter, 18" length flex hose expands to approximately 48".

STOCK #

3PVP-AIK

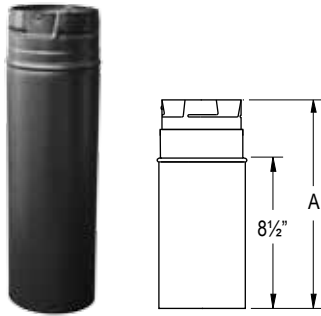
Straight Length Pipe



Features fully unitized, twist-lock construction in 3" and 4" diameters. Listed at 1" clearance to combustibles in the USA and Canada. It can be used in both vertical and horizontal installations. Stainless steel welded seam inner wall, combined with a galvalume welded seam outer wall. Pipe OD is diameter plus 5/8". Galvalume or painted black outer finish. 12" length available with stainless steel outer (SS). To calculate installed length, subtract 1 1/2" from each length of pipe.

SIZE	3"	4"
6"	3PVP-06	4PVP-06
6" BLACK	3PVP-06B	4PVP-06B
12"	3PVP-12	4PVP-12
12" BLACK	3PVP-12B	4PVP-12B
12" STAINLESS STEEL	3PVP-12SS	4PVP-12SS
24"	3PVP-24	4PVP-24
24" BLACK	3PVP-24B	4PVP-24B
24" STAINLESS STEEL	3PVP-24SS	4PVP-24SS
36"	3PVP-36	4PVP-36
36" BLACK	3PVP-36B	4PVP-36B
60"	3PVP-60	4PVP-60
60" BLACK	3PVP-60B	4PVP-60B

Pipe Extension



Use to add length to PelletVent Pro pipe. 12" pipe adds 3"-10" of length, 18" pipe adds 3"-16" of length, when used with rigid sections of pipe. Galvalume or painted black outer finish.

SIZE	STOCK #	A
3"	3PVP-12A	12"
3" BLACK	3PVP-12AB	12"
3"	3PVP-18A	18"
3" BLACK	3PVP-18AB	18"
4"	4PVP-12A	12"
4" BLACK	4PVP-12AB	12"
4"	4PVP-18A	18"
4" BLACK	4PVP-18AB	18"

NEW BioFlex Pipe



Use when relining masonry chimney for use with biofuel appliances. Made of super-ferritic stainless steel. Must be used with PelletVent Pro Male and Female Flex Adapters. Rigid pipe must be used when terminating system.

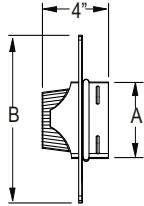
SIZE	15' FLEX	20' FLEX	25' FLEX	30' FLEX	35' FLEX	100' FLEX
3"	3PVP-15BF	3PVP-20BF	3PVP-25BF	3PVP-30BF	3PVP-35BF	3PVP-100BF
4"	4PVP-15BF	4PVP-20BF	4PVP-25BF	4PVP-30BF	4PVP-35BF	4PVP-100BF

Flex Pipe



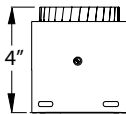
Use for offsetting rigid pipe around smoke shelf in masonry chimney only. Allows for offsets with biofuel appliances. Female and male ends twist-lock. Female end swivels for easy alignment. 60" flex section. Not for use in attic or wall spaces.

SIZE	STOCK #
3"	3PVP-60F
4"	4PVP-60F

NEW**Flex Trim Collar**

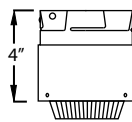
Use to connect PelletVent Pro rigid pipe to a masonry chimney with stainless steel flexible reliner. Female end swivels to allow ease of connection.

SIZE	STOCK #	A	B
3"	3PVP-FTC	3 3/8"	8 1/2"
4"	4PVP-FTC	4 5/8"	8 1/2"

Female Flex Adapter

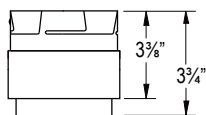
Use to connect PelletVent Pro to BioFlex when relining a masonry chimney. Only approved for use with BioFlex.

SIZE	STOCK #
3"	3PVP-ADFF
4"	4PVP-ADFF

Male Flex Adapter

Use to connect BioFlex to PelletVent Pro when relining a masonry chimney. Only approved for use with BioFlex.

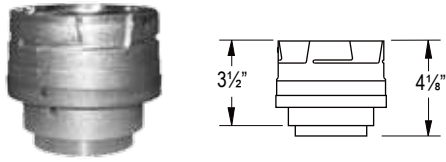
SIZE	STOCK #
3"	3PVP-ADFM
4"	4PVP-ADFM

Appliance Adapter

Use to attach to appliance outlet allowing for easy pipe connection. Seal adapter to appliance with high temperature sealant.

SIZE	STOCK #
3"	3PVP-AD
3" BLACK	3PVP-ADB
4"	4PVP-AD
4" BLACK	4PVP-ADB

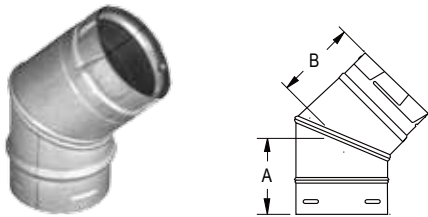
Appliance Adapter/Increaser



Use to attach to appliance outlet allowing for easy pipe connection. Allows connection of 4" vent to 3" appliance outlet. Seal adapter to appliance with high temperature sealant.

SIZE	STOCK #
3"	3PVP-X4AD
3" BLACK	3PVP-X4ADB

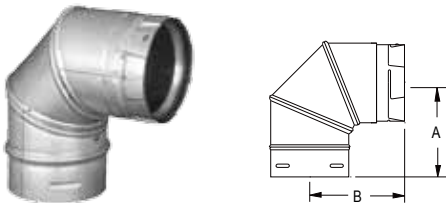
45° Elbow



Offsets obstructions as needed. Elbows swivel 360° at base. Angle not adjustable.

SIZE	STOCK #	A	B
3"	3PVP-E45	3 7/8"	4"
3" BLACK	3PVP-E45B	3 7/8"	4"
4"	4PVP-E45	3 7/8"	4"
4" BLACK	4PVP-E45B	3 7/8"	4"

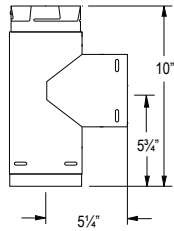
90° Elbow



Offsets obstructions as needed. Elbows swivel 360° at base. Angle not adjustable.

SIZE	STOCK #	A	B
3"	3PVP-E90	5 1/2"	5 1/2"
3" BLACK	3PVP-E90B	5 1/2"	5 1/2"
4"	4PVP-E90	5 1/2"	5 1/2"
4" BLACK	4PVP-E90B	5 1/2"	5 1/2"

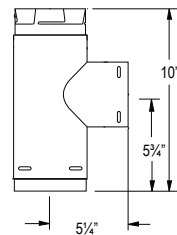
Single Tee w/Clean-Out Tee Cap



Use for a 90° offset. Branch swivels for alignment. Removeable twist-lock Clean-Out Tee Cap.

SIZE	STOCK #
3"	3PVP-T
3" BLACK	3PVP-TB
4"	4PVP-T
4" BLACK	4PVP-TB

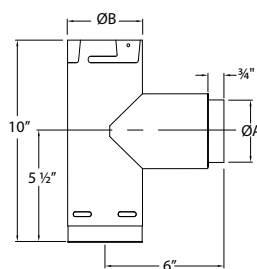
Increaser Tee w/Clean-Out Tee Cap



Attaches 3" pipe to branch and 4" pipe to body. Use for a 90° offset. Branch swivels for alignment. Removeable twist-lock Clean-Out Tee Cap.

SIZE	STOCK #
4"	4PVP-T3
4" BLACK	4PVP-T3B

NEW Adapter Tee w/Clean-Out Tee Cap

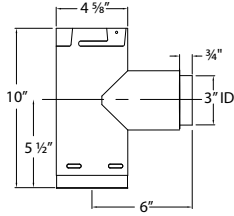


Use for a 90° offset. Attaches directly to appliance as an adapter. Removeable twist-lock Clean-Out Tee Cap.

SIZE	STOCK #	A	B
3"	3PVP-TAD	3"	3 5/8"
3" BLACK	3PVP-TADB	3"	3 5/8"
4"	4PVP-TAD	4"	4 5/8"
4" BLACK	4PVP-TADB	4"	4 5/8"

NEW

Increaser Adapter Tee w/Clean-Out Tee Cap

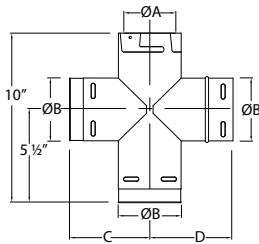


Use for a 90° offset. Attaches directly to appliance as an adapter. Converts a 3" appliance to a 4" PelletVent Pro system. Removeable twist-lock Clean-Out Tee Cap.

SIZE	STOCK #
3"	3PVP-TADX4
3" BLACK	3PVP-TADX4B

NEW

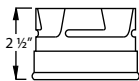
Double Tee With Clean-Out Tee Cap



Allows clean-out access for horizontal and vertical installations. Use for a 90° offset. Branch swivels for alignment. Removeable twist-lock Clean-Out Tee Cap.

SIZE	STOCK #	A	B	C	D
3"	3PVP-DBT	3"	3 5/8"	4 5/8"	4 1/2"
3" BLACK	3PVP-DBTB	3"	3 5/8"	4 5/8"	4 1/2"
4"	4PVP-DBT	4"	4 5/8"	5 1/8"	5"
4" BLACK	4PVP-DBTB	4"	4 5/8"	5 1/8"	5"

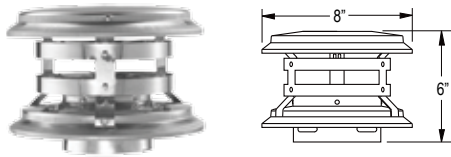
Clean-Out Tee Cap



Use as a replacement Clean-Out Tee Cap.

SIZE	STOCK #
3"	3PVP-CO
3" BLACK	3PVP-COB
4"	4PVP-CO
4" BLACK	4PVP-COB

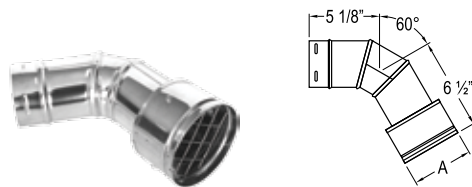
Vertical Cap



Use for vertical installations only. Required where pipe terminates above the roof line.

SIZE	STOCK #
3"	3PVP-VC
4"	4PVP-VC

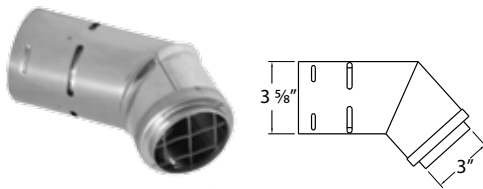
Round Horizontal Cap



Use for horizontal terminations only. Cap features a swivel collar to adjust exhaust direction. Removable screen guard for convenient cleaning.

SIZE	STOCK #	A	B	C
3"	3PVP-HRC	3 5/8"	4 1/2"	4 3/4"
4"	4PVP-HRC	3 7/8"	5 1/8"	5 5/8"

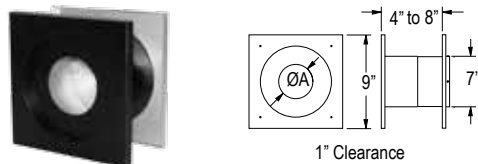
NEW Horizontal Cap



Use for horizontal terminations only. The Horizontal Cap can be turned at the gore to direct exhaust output. Designed to create a venturi effect to force exhaust out. Made of a laser-welded, super-ferritic stainless steel inner wall that is scientifically proven to resist corrosion from corn and other biofuels. Outer wall made of laser-welded stainless steel.

SIZE	STOCK #
3"	3PVP-HC
4"	4PVP-HC

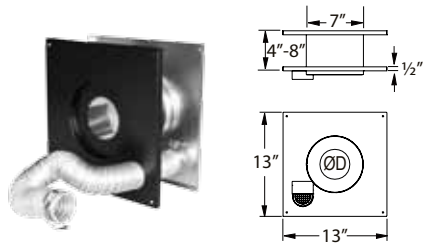
Wall Thimble



Use for through-the-wall installations. Fits between standard wall studs. Comes with an insulation ring to reduce air infiltration where the pipe slips through the thimble.

SIZE	STOCK #	A
3"	3PVP-WT	3 3/4"
4"	4PVP-WT	4 3/4"

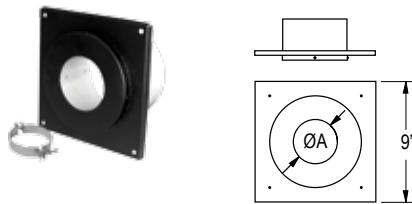
Wall Thimble Air Intake Kit



Allows outside fresh air for combustion through the wall thimble without having to cut a second hole into the wall. Comes with an insulation ring to reduce air infiltration where the pipe slips through the thimble. The 2" diameter, 18" length flex hose expands to 4'. Clamps included. Can be used in US and Canada.

SIZE	STOCK #
3"	3PVP-WTI
4"	4PVP-WTI

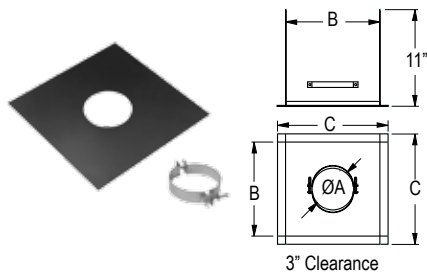
Ceiling Support Firestop Spacer



Required where vent passes through ceiling. Centers pipe to provide proper 1" clearance. Support Clamp included. Painted black.

SIZE	STOCK #	A
3"	3PVP-FS	3 3/4"
4"	4PVP-FS	4 3/4"

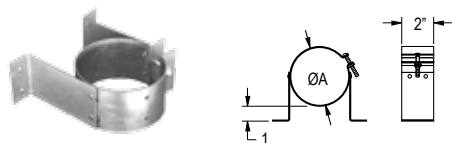
Ceiling Support Firestop Spacer - 3" Clearance



Required where vent passes through ceiling. Centers pipe to provide 3" clearance. Support Clamp included. Painted black.

SIZE	STOCK #	A	B	C
3"	3PVP-FS3	3 3/4"	9 5/8"	11 5/8"
4"	4PVP-FS3	4 3/4"	10 5/8"	12 5/8"

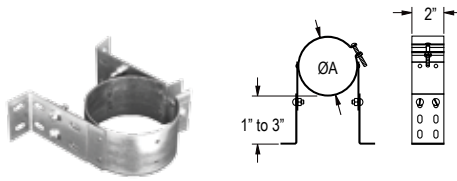
Wall Strap



Use to support vent pipe or tee sections. Provides 1" clearance.

SIZE	STOCK #	A
3"	3PVP-WS	3 5/8"
4"	4PVP-WS	4 5/8"

Adjustable Wall Strap



Use to support vent pipe or tee sections. Adjusts to provide 1"- 3" clearance.

SIZE	STOCK #	A
3"	3PVP-WSA	3 5/8"
4"	4PVP-WSA	4 5/8"

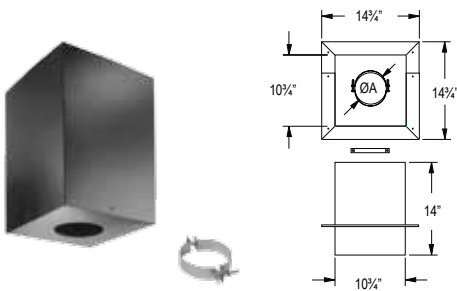
Wall Strap Extension



Use with Adjustable Wall Strap to increase extension from wall. Fits both 3" and 4" Adjustable Wall Strap.

STOCK #	3PVP-WSA-EXT

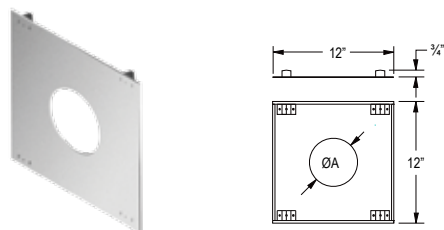
Cathedral Ceiling Support Box



Use to support pipe. May be used on flat ceilings. Painted black. Trim and clamp included.

SIZE	STOCK #	A
3"	3PVP-CS	3 3/4"
4"	4PVP-CS	4 3/4"

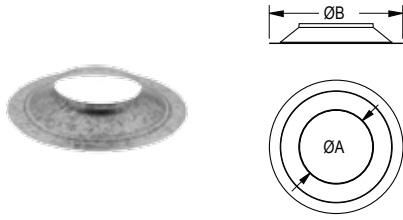
House Shield



Use to protect exterior of structure from blower discharge in horizontal venting applications.

SIZE	STOCK #	A
3"	3PVP-HS	3 3/4"
4"	4PVP-HS	4 3/4"

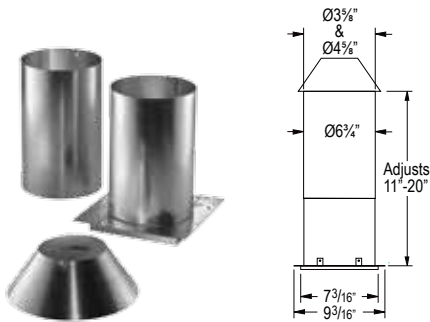
Storm Collar



Use to maintain a weather tight resistant seal between the pipe and the flashing.

SIZE	STOCK #	A	B
3"	3PVP-SC	3 3/8"	7 3/8"
4"	4PVP-SC	4 5/8"	8 1/8"

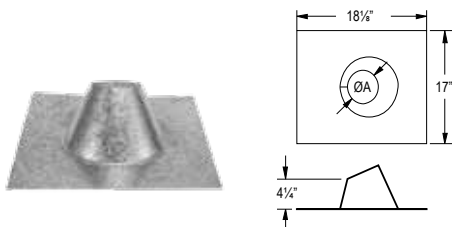
Attic Insulation Shield



Required for installations that pass through an attic to prevent insulation and debris from accumulating near the vent. Provides 1" clearance to combustibles.

SIZE	STOCK #
3"	3PVP-IS
4"	4PVP-IS

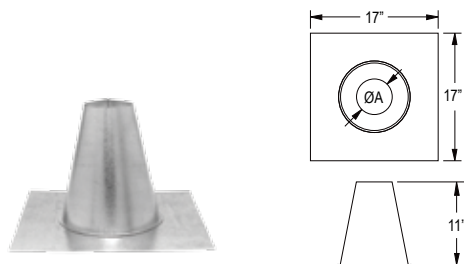
Adjustable Roof Flashing



Use to weather proof the penetration of vent pipe through the roof. Storm Collar required. Select roof flashing based on pitch of roof. For pitches of 0/12 - 6/12. For steep roof pitches, refer to the Gas Vent catalog. Made of galvalume.

SIZE	STOCK #	A
3"	3PVP-F6	3 3/4"
4"	4PVP-F6	4 3/4"

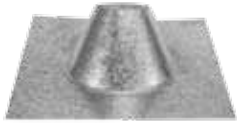
Tall Cone Roof Flashing



Use to weather proof the penetration of vent pipe through the roof. Storm Collar required. Select roof flashing based on pitch of roof. Use on flat roofs, chase enclosures, or masonry chimney. Made of galvalume.

SIZE	STOCK #	A
3"	3PVP-FF	3 3/4"
4"	4PVP-FF	4 3/4"

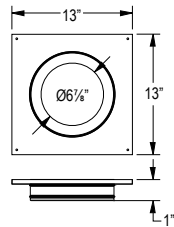
DSA Roof Flashings



Use with metal or tile roofs. Available in sizes 3" and 4", in 0/12-6/12 (shown) and 7/12-12/12 styles. Made of dead soft aluminum. Refer to Roof Flashings table for dimensions.

SIZE	3"	4"
0/12-6/12	3PVP-F6DS	4PVP-F6DS
7/12-12/12	3PVP-F12DS	4PVP-F12DS

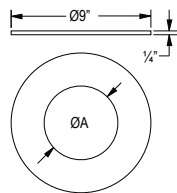
Ceiling Support/ Wall Thimble Cover



Decorative cover for ceiling support boxes and wall thimbles. Painted black. Use with reduction collar.

SIZE	STOCK #
3" - 4"	3PVP-WTC

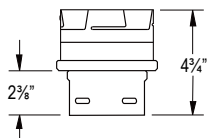
Reduction Collar



Reduces the center hole diameter in the Ceiling Support /Wall Thimble Cover to fit 3- or 4-inch pipe. Can be used as trim collar when penetrating a masonry chimney with PelletVent Pro. Painted black.

SIZE	STOCK #	A
3"	3PVP-RC	3 3/4"
4"	4PVP-RC	4 3/4"

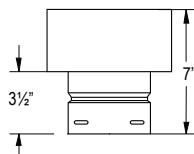
Increaser



Use to transition from 3" pipe to a 4" pipe. Not a decrease or stove adapter.

SIZE	STOCK #
3" - 4"	3PVP-X4

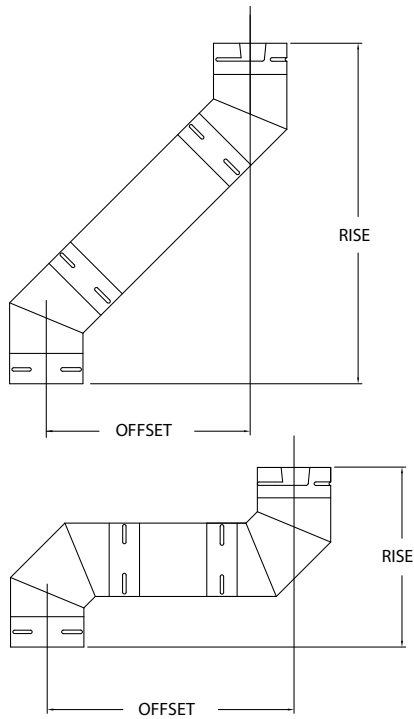
Chimney Adapter



Use to transition between PelletVent Pro to existing chimney such as DuraTech, DuraPlus or DuraPlus HTC. Requires a DVL/ DuraBlack Chimney Adapter to fasten into support box or wall thimble, for 6", use adapter 8674, for 8", use adapter 8874.

SIZE	STOCK #
3" - 6"	3PVP-X6
3" - 8"	3PVP-X8
4" - 6"	4PVP-X6
4" - 8"	4PVP-X8

Offset Chart



Elbow Angle from Vertical	Chimney Length Between Elbows	Ø3" Offset	Ø3" Rise	Ø4" Offset	Ø4" Rise
45°	0"	4 ¼"	11"	5"	12 ¾"
45°	6"	8"	14 ¾"	8 ⅝"	16 ⅜"
45°	12"	12 ¼"	19"	13 ½"	21 ⅛"
45°	24"	20 ¾"	27 ¾"	21 7⁄8"	29 ⅝"
45°	36"	29 ¼"	36"	30 ¾"	38 ⅛"
45°	24" + 24"	36 ⅝"	43 ¾"	37 ¾"	45 ½"
45°	60"	46 ⅞"	52 7⁄8"	46 ¾"	54 ½"
45°	36" + 36"	53 ½"	60 ¾"	54 ¼"	62"
90°	0"	9 ⅞"	10 ¾"	10 ⅝"	11 ¾"
90°	6"	14 ⅞"	10 ¾"	15 ⅞"	11 ¾"
90°	12"	20 ⅞"	10 ¾"	21 ⅞"	11 ¾"
90°	24"	32 ⅞"	10 ¾"	33 ⅞"	11 ¾"
90°	36"	44 ⅞"	10 ¾"	45 ⅞"	11 ¾"
90°	24" + 24"	54 ⅞"	10 ¾"	55 ⅞"	11 ¾"
90°	60"	68 ⅞"	10 ¾"	69 ⅞"	11 ¾"
90°	36" + 36"	78 ⅞"	10 ¾"	79 ⅞"	11 ¾"