Model DW
CATALOG

VAN-PACKER® CO.

CHIMNEY &
VENTING PRODUCTS

UL 103
FACTORY BUILT CHIMNEYS
FOR BUILDING HEATING APPLIANCES

UL 641 TYPE L
LOW-TEMPERATURE VENTING SYSTEM

UL 2561
1400° FAHRENHEIT
FACTORY BUILT CHIMNEYS

c UL® US

The Van-Packer Advantage

For over 75 years, Van-Packer has been supplying the Commercial and Industrial market with venting products from our Model DW (Double Wall Stainless Steel) to Free Standing Engineered Chimneys. Van-Packer is made in the USA with America made equipment and we dedicate all of our resources to provide the broadest offering in the industry.

PROFESSIONAL ENGINEERING AND TECHNICAL SUPPORT

Van-Packer welcomes the opportunity to assist you with your design or design a system that provides you maximum performance and longevity. From sizing calculations to a fully designed exhaust system, our staff will provide you with a Designed System, Chimney Sizing, complete Bill-of-Materials and CAD drawings.

APPLICATIONS

Model DW and Dplus(+) chimneys and vents are suitable for interior or exterior installations and can be used in many applications: boilers, water heaters, engines, turbines, dryers, fume or particle ventilation, incinerators, ovens, and many other applications. Model DW Series chimneys and vent systems have various components which are readily available for your venting needs. Van-Packer products are also suitable for use as grease ducts; however specific grease duct installation instructions, clearances, listing, etc. are available on our website **vpstack.com**. Always contact Van-Packer for additional uses and information, refer to NFPA 211 and additional codes and authorities having jurisdiction for specific chimney and vent system requirements.

Please Note:

1. If being used with engines or turbines special provisions are required. Contact Van-Packer for additional information, refer to NFPA 37 (Standard for Installation and use of Stationary Combustion Engines and Gas Turbines) and any other codes and authorities having jurisdiction for specific chimneys and vent requirements also refer to The Engine Exhaust Installation Instructions located on our website.

2. If being used with a wood burning appliance special provisions are required. Creosote residue is flammable and when ignited makes an extremely hot fire. It is necessary that access be provided for the inspection and cleaning. Accumulation of creosote should be removed to reduce the risk of fire. Contact Van-Packer for additional information, refer to NFPA 211, and any other codes and authorities having jurisdiction for specific chimney and vent requirements.

FUEL TYPES

LP gas, Natural Gas, #2, #4, #5, or #6 fuel oils*, wood*, coal*, grease vapors, caustic fumes, and particles. (*It is recommended that 316 stainless steel be specified when using these types of fuels.)

EXHAUST PRESSURE

Neutral, Negative, or Positive. (60” W.C.)

LISTING & CODE COMPLIANCE

Van-Packer's Model DW Series chimneys and vent system is listed by UL at 2 to 6 inch clearance to combustibles (see chart on page 4) for: Building Heating Appliance Chimney, Industrial Type 1000°F (540°C) chimney, Industrial Type 1400°F (760°C) chimney and type "L" low-temperature venting system, when installed in accordance with the Model DW installation instructions and NFPA 211 Standard for Chimneys, Fireplaces, Vents, and solid Fuel-Burning Appliances, International Mechanical Code, Uniform Mechanical Code, or other local codes.

TESTING, CLASSIFICATION, & APPLICATIONS

Model DW Series has been tested in accordance with the procedures and methods set forth by:

1. UL 103 / ULC ORD C959 (Standard Building Heating Appliance Chimney (B.H.A.) / Standard for Industrial Type 540°C Chimney). Continuous operating temperatures not exceeding 1000°F (540°C), intermittent temperatures of 1400°F (760°C) for 60 minutes and 1700°F (930°C) for 10 minutes.
2. UL 2561 / ULC ORD C959 (Standard Building Heating Appliance Chimney / Standard for Industrial Type 760°C Chimney). Continuous operating temperatures not exceeding 1400°F (760°C), intermittent temperatures of 1800°F (980°C) for 10 minutes.
3. UL 641 / ULC S609 (Standard Type "L" Low-temperature Venting System). Continuous operating temperatures not exceeding 570°F (299°C).

Model DW Series is rated for:

1. Continuous operation at 2 to 6 inch clearance to combustibles (see chart).
2. Continuous operation at zero inch clearance to non-combustibles.
3. Venting negative, neutral, and positive pressure applications. (60 inches water column).
4. Venting flue gasses from gas, liquid, and solid fuel fired appliances.

The Model DW Series chimney and vent is intended to be part of a complete system which connects the appliance with the atmosphere by means of natural draft or mechanical draft.

MODEL DW and DWplus Series

The most versatile product offered in the industry, with tees, elbows, supports, guying and transitions, nothing is left for field fabrication.

- Standard sizes of 6"- 48" diameters, larger sizes that are not UL listed are available.
- Standard gauges and material types are as follows. Inside diameters of 6" through 36" come standard with 20-gauge type 304 stainless steel inner liners. Inside diameters of 38" through 48" come standard with 18-gauge type 304 stainless steel inner liners. Outside diameters of 8" through 26" come standard with 24-gauge aluminized steel outer shells sizes 28" through 56", 20-gauge aluminized steel outer shells. Optional materials such as 316 stainless steel for inner liner and outer shell as well as other materials and gauges are available upon request.
- Model DW is standard with 1" air space between the liner and shell. DWplus(+) system comes with 1"- 4" Mineral Wool Insulation space and DWplus(C) system DC = 1" – 4" Ceramic Fiber Insulation space. 2"– 4" air space is also available. See page 4 for more information on model numbers.
- Materials ship fully enclosed and palletized until needed for ease of on-site handling.
- Standard 1 Year Warranty and 10 year Factory Extended Warranty available upon request at an additional cost.
- Quick Factory Delivery (10 day turnaround time)
- Factory Trained Representatives
- Toll-Free Consultation and Assistance – **1-888-VPSTACK (877-8225)**

ENCLOSURES

The Model DW Series Chimney is intended to be installed unenclosed or within non-combustible enclosures. The Model DW Series Chimney is not for use in one or two-family residences.

CAUTION – Do not enclose the Model DW Series Chimney in a passageway or chase constructed of combustible material such as wood. When the chimney extends through any zone or story above that on which the connected appliance is located, it is to 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.

(NOTE – Always check with local building code authorities having jurisdiction for material with appropriate fire resistance rating). If a portion of the Model DW Series Chimney is placed between a dropped ceiling and roof, that portion should be enclosed in an appropriate fire rated enclosure. The Model DW Series is NOT intended to pass through a combustible wall. Any wall, which the breeching passes through, must be of non-combustible construction.

CLEARANCE TO COMBUSTIBLES CHART			
Model	**1400°F Chimney**	*** B.H.A. 1000°F Chimney**	**Type "L" Vent**
DW 1", 2", 3" or 4" Air Space	6" (152 mm)	4" (102 mm)	4" (102 mm)
Dplus Series 1", 2", 3", or 4" insulation	4" (102 mm)	2" (51 mm)	2" (51 mm)

*=Building Heating Appliance

PART IDENTIFICATION & MATERIAL CODES

Model DW Series part numbers will start with the letter "D" prefix, followed by the air or insulation type and thickness (if applicable) followed by the chimney diameter (I.D.), then the part description code, next a special qualifier code (if applicable) and last the liner/shell material 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 dimensions, 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.

PREFIX EXAMPLES

AIR INSULATED MODELS:

D1A = Model DW with 1" air space between the liner and shell
D2A = Model DW with 2" air space between the liner and shell
D3A = Model DW with 3" air space between the liner and shell
D4A = Model DW with 4" air space between the liner and shell

INSULATION INSULATED MODELS:

D1+ = Model Dplus with 1" mineral wool insulation between the liner and shell
D2+ = Model Dplus with 2" mineral wool insulation between the liner and shell
D3+ = Model Dplus with 3" mineral wool insulation between the liner and shell
D4+ = Model Dplus with 4" mineral wool insulation between the liner and shell
D1C = Model Dplus with 1" ceramic fiber insulation between the liner and shell
D2C = Model Dplus with 2" ceramic fiber insulation between the liner and shell
D3C = Model Dplus with 3" ceramic fiber insulation between the liner and shell
D4C = Model Dplus with 4" ceramic fiber insulation between the liner and shell

D1A12STR30AL			**D2A12BTT08BA**		
Refers to a Model DW, with 1” air space, 12” I.D., 30” long straight section constructed with a 304 S.S. liner and an aluminized steel shell.			Refers to a Model DW, with 2” air space, 12” I.D. 90º boot tee section with an 08” I.D. projection constructed with a 316 S.S. liner and 304 S.S. shell.		
D1A	=	Model DW, with 1” air space	**D2A**	=	Model DW, with 2” air space
12	=	Section I.D.	**12**	=	Tee Body, 12” I.D.
STR	=	Part Code, Straight Section	**BTT**	=	Part Code, 90 Degree Boot Tee Section
30	=	Section Length 30” long	**08**	=	Tee Projection Qualifier 08” I.D.
A	=	Liner Material Code, 304 S.S.	**B**	=	Liner Material Code, 316 S.S.
L	=	Shell Material Code, ALZD Steel	**A**	=	Shell Material Code, 304 S.S.

D2+1290T08BA			**D3C1245EAC**		
Refers to a Model Dplus, with 2” Mineral Wool insulation, 12” I.D., 90º centered tee section with an 08” I.D. projection constructed with a 316 S.S. liner and 304 S.S. shell.			Refers to a Model Dplus, with 3” Ceramic Fiber insulation, 12” I.D. 45º elbow constructed with a 304 S.S. liner and 430 S.S. shell.		
D2+	=	Model DW, with 2” Mineral Wool Insulation	**D3C**	=	Model DW with 3” Ceramic Insulation
12	=	Tee Body, 12” I.D.	**12**	=	Section I.D.
90T	=	Part Code, 90 Degree Tee Section	**45E**	=	Part Code,45 Degree Elbow
08	=	Tee Projection Qualifier, 08” I.D.			No Qualifier
B	=	Liner Material Code, 316 S.S.	**A**	=	Liner Material Code, 304 S.S.
A	=	Shell Material Code, 304 S.S.	**C**	=	Shell Material Code, 430 S.S.

LINER MATERIAL CODES

A = 304 S.S.
B = 316 S.S.

SHELL MATERIAL CODES

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

MODEL DW SERIES LIMITATIONS

Genral guidelines below, please refer to installation instruction sheets on the Van-Packer website, ask your area representative or Van-Packer technical services for further details.

Maximum height above top lateral brace/guy:
6”ID – 12”ID: 10 feet
14”ID – 48”ID: 15 feet

Maximum space between lateral brace/guy equals 30 feet.

Maximum spacing between breeching supports:
6”ID - 12”ID: 10 feet
14”ID - 48”ID: 15 feet

For Maximum Allowable Height above supports, please see page 8 & 9.

EXTERIOR RECOMMENDATION

One prime coat and one finish coat of paint is recommended on exterior installations when outer shells are constructed of aluminized steel. Consider stainless steel outer shells for maintenance free applications.

TERMINATION HEIGHT ABOVE ROOF

All vents shall terminate above the roof surface through the roof flashing no lower than three feet above the roof. The height of a chimney above the roof through which it passes, and any surrounding equipment should be determined based on the appliance type. See NFPA 211 for appliance categories and their requirements. Consideration should also be given to local building codes, fire codes, and air pollution regulations. The appliance manufacturer’s recommendations for minimum heights for the operating draft needs of that appliance must also be taken into consideration.

ENGINEERING DATA

- The 350º and 500º temperatures were calculated with 17 fps flue gas velocity.
- The 1000º and 1400º temperatures were calculated with 25 fps flue gas velocity.
- All were calculated with 70ºF ambient and 5 fps air velocity.
- In areas that are subject to accidental contact by the public, keep in mind that a temperature of 140ºF for 5 seconds or 160ºF for 1 second is known to cause skin damage.

Comparative Surface Temperatures					
ID	MODEL	Flue Temperature °F			
		350	500	1000	1400
Surface Temperature °F (Mineral Wool)					
6"	DW	170	220	397	520
	DW1+	119	145	251	352
	DW2+	104	122	196	267
	DW3+	97	111	169	224
	DW4+	91	103	149	194
12"	DW	180	234	421	554
	DW1+	119	145	260	369
	DW2+	102	119	198	274
	DW3+	95	108	169	228
	DW4+	90	101	150	197
18"	DW	187	245	445	588
	DW1+	121	148	268	386
	DW2+	103	120	200	280
	DW3+	95	108	169	231
	DW4+	90	101	150	201
24"	DW	192	253	469	622
	DW1+	124	153	277	403
	DW2+	104	122	202	287
	DW3+	95	109	169	235
	DW4+	90	102	151	204
30"	DW	196	260	481	638
	DW1+	127	156	286	417
	DW2+	104	122	202	287
	DW3+	95	109	169	235
	DW4+	91	102	154	209
36"	DW	200	265	492	655
	DW1+	129	160	295	430
	DW2+	106	125	212	305
	DW3+	87	111	176	347
	DW4+	91	103	175	214
42"	DW	203	270	504	671
	DW1+	131	163	303	444
	DW2+	108	127	217	313
	DW3+	97	111	176	247
	DW4+	92	104	160	218
48"	DW	206	274	515	687
	DW1+	133	166	312	457
	DW2+	109	129	222	322
	DW3+	98	114	183	260
	DW4+	93	105	163	223

Comparative Surface Temperatures					
ID	MODEL	Flue Temperature °F			
		350	500	1000	1400
Surface Temperature °F (Ceramic)					
6"	DW	170	220	397	520
	DW1C	126	152	254	357
	DW2C	104	117	175	238
	DW3C	94	103	140	183
	DW4C	89	95	120	150
12"	DW	180	234	421	554
	DW1C	129	157	264	370
	DW2C	107	123	187	257
	DW3C	98	109	154	205
	DW4C	93	101	135	174
18"	DW	187	245	445	588
	DW1C	130	158	267	375
	DW2C	108	124	192	264
	DW3C	99	111	159	213
	DW4C	94	102	139	181
24"	DW	192	253	469	622
	DW1C	131	159	269	377
	DW2C	109	125	194	267
	DW3C	100	112	161	217
	DW4C	95	104	143	187
30"	DW	196	260	481	638
	DW1C	131	159	270	379
	DW2C	109	126	195	269
	DW3C	100	112	163	219
	DW4C	95	105	144	190
36"	DW	200	265	492	655
	DW1C	131	160	270	380
	DW2C	110	126	196	271
	DW3C	101	113	164	221
	DW4C	96	105	146	192
42"	DW	203	270	504	671
	DW1C	131	160	271	381
	DW2C	110	127	197	272
	DW3C	101	113	165	222
	DW4C	96	105	146	193
48"	DW	206	274	515	687
	DW1C	132	160	271	381
	DW2C	110	127	197	272
	DW3C	101	113	165	223
	DW4C	96	106	147	194

ALLOWABLE HEIGHT CHART

The following chart shows the allowable lengths supported by the Wall Support Assembly (WSA), Wall Flange Assembly (WFA), Plate Support Assembly (PLS), Ventilated Roof Support (VRS), Straight Section (STR), and the Tee Section (90T).

Allowable Height Chart (unit of measure is feet)																		
	Model DW						Model DWplus						Model DWplus2					
Section ID	WSA	WFA	PLS	VRS	STR	90T	WSA	WFA	PLS	VRS	STR	90T	WSA	WFA	PLS	VRS	STR	90T
6	243	243	394	125	313	105	205	205	333	105	264	88	159	159	257	81	204	68
7	216	216	359	113	286	102	183	183	304	96	242	86	142	142	236	74	188	67
8	193	193	331	102	264	100	162	162	278	85	222	84	127	127	217	67	173	65
9	173	173	305	93	243	97	146	146	257	79	205	82	116	116	203	62	162	65
10	159	159	287	85	229	95	134	134	243	72	194	81	106	106	192	57	153	64
12	136	136	258	75	207	93	114	114	216	63	173	78	92	92	175	51	140	63
14	118	118	226	66	188	91	99	99	191	56	159	77	81	81	156	46	130	63
16	105	105	203	60	176	90	88	88	171	51	148	75	72	72	140	42	121	62
18	93	93	182	55	163	78	79	79	154	46	138	66	65	65	127	38	114	54
20	85	85	168	51	155	69	71	71	142	43	131	59	59	59	117	36	108	49
22	77	77	155	47	148	62	65	65	131	40	125	53	54	54	108	33	103	43
24	71	71	145	45	142	56	60	60	122	38	120	47	44	44	89	28	88	35
26	57	57	116	36	117	40	49	49	100	31	101	35	41	41	84	26	85	29
28	53	53	109	34	113	33	46	46	94	30	98	29	39	39	79	25	83	24
30	49	49	103	33	110	27	43	43	89	28	95	24	36	36	75	24	81	20
32	46	46	97	31	106	22	40	40	84	27	92	19	34	34	72	23	78	16
34	42	42	93	29	104	17	36	36	80	25	90	15	31	31	68	21	77	13
36	38	38	89	27	102	13	33	33	77	23	88	12	28	28	66	20	75	10
38	30	30	74	22	88	12	27	27	65	19	78	10	23	23	57	17	68	9
40	28	28	71	20	88	11	24	24	63	18	77	10	21	21	55	16	67	9
42	25	25	68	19	88	11	22	22	60	17	77	10	19	19	53	15	67	9
44	23	23	66	18	87	11	20	20	58	16	77	10	18	18	51	14	67	9
46	21	21	64	16	87	11	18	18	56	15	77	10	16	16	49	13	67	9
48	19	19	62	15	87	11	17	17	55	14	77	10	15	15	48	12	67	9

ALLOWABLE HEIGHT CHART

Allowable Height Chart (unit of measure is feet)												
	Model DWplus3						Model DWplus4					
Section ID	WSA	WFA	PLS	VRS	STR	90T	WSA	WFA	PLS	VRS	STR	90T
6	125	125	203	64	161	54	101	101	164	52	130	44
7	113	113	187	59	149	53	92	92	153	49	122	44
8	103	103	176	54	140	53	85	85	145	45	115	44
9	94	94	166	51	132	53	78	78	137	42	110	44
10	87	87	158	47	126	53	73	73	132	39	105	44
12	76	76	144	42	115	52	64	64	121	35	97	44
14	67	67	129	38	108	52	57	57	109	32	91	44
16	60	60	117	35	101	52	52	52	100	30	86	44
18	55	55	107	32	96	46	47	47	91	28	82	39
20	50	50	99	30	92	41	39	39	76	23	71	32
22	41	41	82	25	78	33	36	36	71	22	68	29
24	38	38	77	24	76	30	33	33	67	21	66	26
26	36	36	73	23	73	25	31	31	63	20	64	22
28	33	33	69	22	72	21	29	29	60	19	62	18
30	31	31	65	21	70	17	28	28	57	18	61	15
32	30	30	62	20	68	14	26	26	55	18	60	12
34	27	27	59	19	67	11	24	24	52	16	59	10
36	25	25	57	17	65	9	22	22	50	15	58	8
38	21	21	50	15	60	8	18	18	45	13	53	7
40	19	19	48	14	60	8	17	17	43	12	53	7
42	17	17	47	13	60	8	15	15	42	12	53	7
44	16	16	45	12	60	8	14	14	40	11	53	7
46	14	14	44	11	60	8	13	13	39	10	53	7
48	13	13	42	11	60	8	12	12	38	10	53	7

APPROXIMATE INSTALLED WEIGHT CHART

Approximate Installed Weight Per Linear Foot					
ID	DW	D1+/D1C	D2+/D2C	D3+/D3C	D4+/D4C
6	6	7	9	11	13
7	7	8	10	12	15
8	7	9	11	13	16
9	8	9	12	14	17
10	9	10	13	16	19
12	10	12	15	18	21
14	12	14	17	20	24
16	13	15	19	22	26
18	15	17	21	25	29
20	16	19	23	27	35
22	18	21	25	33	38
24	19	22	30	35	41
26	24	28	33	38	43
28	26	30	35	40	46
30	27	32	37	43	49
32	29	34	40	46	52
34	31	36	42	48	55
36	33	38	44	51	57
38	39	45	51	58	65
40	41	47	54	61	68
42	43	49	56	64	71
44	45	51	59	66	74
46	47	54	61	69	77
48	49	56	64	72	80

Flangeless Outlet Adapter

Part D _ _ FOAB

Use the Flangeless Outlet Adapter on appliance collars without a flange. Part includes: one (1) flangeless outlet adapter, and two (2) vee band halves.

The tolerance that this will work on is plus 1/4 inch and minus 1/8 inch.

Boiler Adapter Flange

Part D _ _ BAFA

Use the Boiler Adapter Flange when the appliance has a blank flanged outlet. Part includes: one (1) two piece ring and “C” clamps.

Custom Bolt Flange

Part D _ _ BFAB_ _

Use the custom bolt flange when you have a specific unique bolt pattern you want to match. Bolts and nuts supplied by installer. Part includes:
1/4” thick van-stone type flange with a starter section and two (2) vee band halves.

Must specify outside diameter of flange, quantity of bolt holes, bolt hole diameter, and diameter of bolt circle.

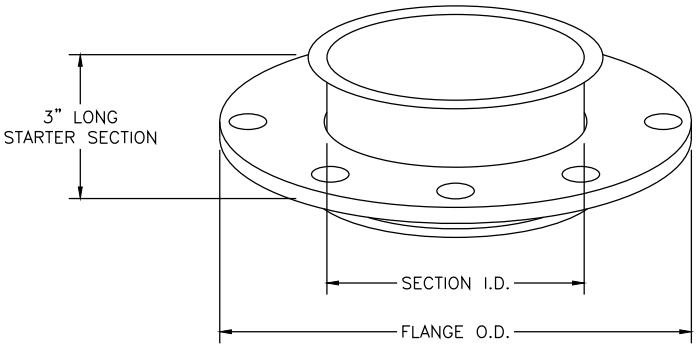
Flange Adapter Kit

Part D _ _ FAKB

Use the Flange Adapter Kit when the appliance has a 125# drilling (bolt hole pattern). Bolts and nuts supplied by installer. Part includes: 3/8" thick van-stone type flange with a starter section, two (2) vee band halves

Flow resistance factor:
ID ≤ 18": K = .40 L/D
ID > 18": K = .30 L/D

L = pipe length in feet
D = pipe diameter in inches



Flange Adapter Chart (Inches)				
Section ID	Flange OD	Bolt Circle	Bolt Holes	
			Qty	Dia
6	11	9 1/2	8	7/8
8	13 1/2	11 3/4	8	7/8
10	16	14 1/4	12	1
12	19	17	12	1
14	21	18 3/4	12	1 1/8
16	23 1/2	21 1/4	16	1 1/8
18	25	22 3/4	16	1 1/4
20	27 1/2	25	20	1 1/4
22	29 1/2	27 1/4	20	1 3/8
24	32	29 1/2	20	1 3/8
26	34 1/4	31 3/4	24	1 3/8
28	36 1/2	34	28	1 3/8
30	38 3/4	36	28	1 3/8
32	41 3/4	38 1/2	28	1 5/8
34	43 3/4	40 1/2	32	1 5/8
36	46	42 3/4	32	1 5/8
38	48 3/4	45 1/4	32	1 5/8
40	50 3/4	47 1/4	36	1 5/8
42	53	49 1/2	36	1 5/8
44	55 1/4	51 3/4	40	1 5/8
46	57 1/4	53 3/4	40	1 5/8
48	59 1/2	56	44	1 5/8

Vee Band

Part D _ _ VEE

This part is used to connect Van-Packer components together. Part includes: two (2) vee band halves and fasteners.

Draw Band

Part D _ _ DRW _

The Draw Band is used to close off the gap between mated components and provide a uniform appearance. Part includes: one (1) single-piece draw band and fasteners

Straight Section

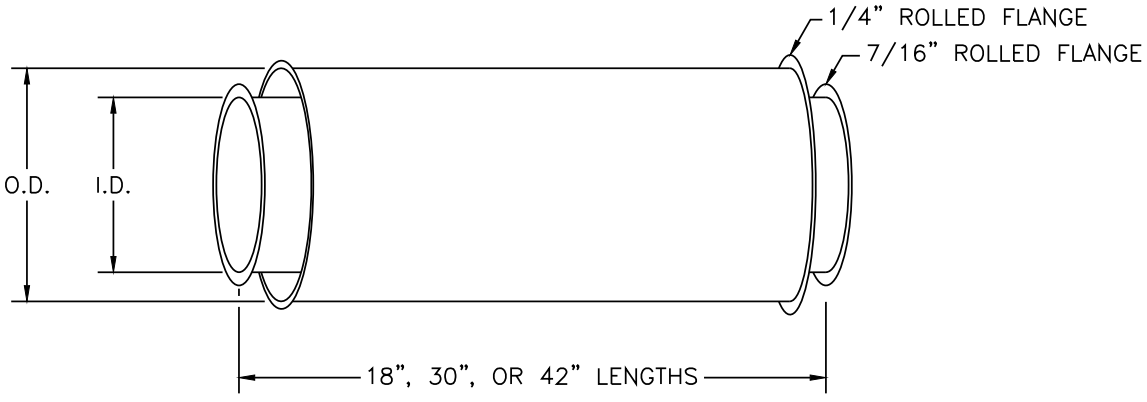
Part D _ _ _ _ STR _ _ _ _

Straight Section features flanges for ease of installation in both vertical and horizontal runs. Part includes: one (1) 18", 30", or 42" long section, two (2) vee band halves, and one (1) draw band. The Model Dplus (+) Series includes a wide strip(s) of insulation.

Flow resistance factor:
ID ≤ 18": K = .40 L/D
ID > 18": K = .30 L/D

L = pipe length in feet
D = pipe diameter in inches

(See allowable height chart on page 8 & 9)



Adjustable Expansion Section

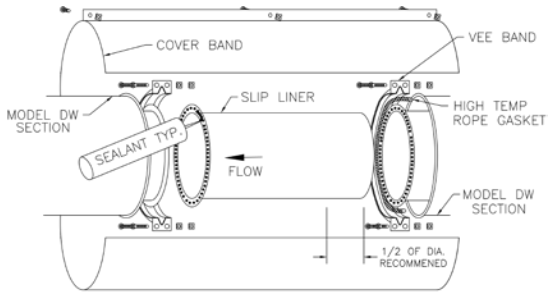
Part D _ _ _ _ ADJ _ _

Use the Adjustable Expansion Section for thermal expansion. Part includes: 3/8" hi-temp packing rope, two (2) vee band halves, slip liner, and a cover band. Length adjusts from 1½" to 19½". The Model Dplus(+) Series includes a wide strip(s) of insulation.

Flow resistance factor:
ID ≤ 18": K = .40 L/D
ID > 18": K = .30 L/D

L = pipe length in feet
D = pipe diameter in inches

NOTE: The Adjustable Expansion Section (ADJ) and the Variable Length Section (VLS) are non-load bearing. Adjustable Expansion Sections and Variable Length Sections may require field cutting for proper fit. Adjustable Expansion & Variable Length Sections are shipped inside of a straight section.



ADJUSTABLE EXPANSION SECTION
PART ADJ

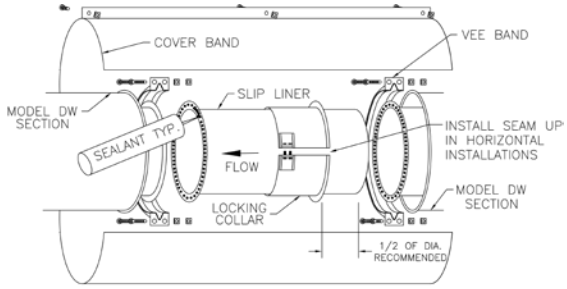
Variable Length Section

Part D_ _ _ _ VLS _ _

Use the Variable Length Section for custom length sections. Part includes: one (1) locking collar, two (2) vee bands halves, slip liner, and cover band. Length ranges from 4½" to 19½". The Model Dplus(+) Series includes a wide strip(s) of insulation.

Flow resistance factor:
ID ≤ 18": K = .40 L/D
ID > 18": K = .30 L/D

L = pipe length in feet
D = pipe diameter in inches



NOTE: REVERSE THE SLIP LINER FOR ENGINE EXHAUST APPLICATIONS SUCH AS GENERATOR.

Thermal Expansion

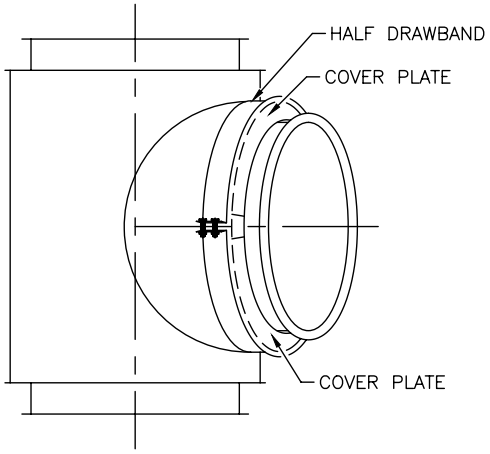
Thermal Expansion must be accommodated between any two fixed points or change of direction with either the Adjustable Expansion Section (ADJ) or a Bellow Expansion Joint (BEJ) or (LBJ)

The coefficient of thermal expansion for 300 series stainless steel is 8.9 x 10-6 (0.0000089) inches of expansion per inch of length per 1°F rise in temperature. This approximates 1" per 100°F temperature rise per 100 feet.

Cover Plate

Part D _ _ _ _ CVR _

Used as an optional component, the
Cover Plate is intended to close off the space between the liner and the shell. Use the cover plate for a uniform outside appearance or to hide insulation and liners from sight. Part includes: one (1) two piece ring and one (1) half draw band.



Unlined Bellows Expansion Joint

Part D _ _ BEJ

Used as an expansion joint designed to compensate for thermal expansion for high-pressure applications. Maximum compressive travel is 3" for diameter 6"-18" and 3½" for diameter 20"-48". Part includes: one (1) corrugated bellows without liner and two (2) vee band halves.

Flow resistance factor:
ID ≤ 18": K = .44 L/D
ID > 18": K = .33 L/D

Lined Bellows Expansion Joint

Part D _ _ LBJ

Used as an expansion joint designed to compensate for thermal expansion for high-pressure applications. Maximum compressive travel is 3” for diameter 6”-18” and 3½” for diameter 20”-48”. Part includes: one (1) corrugated bellows with liner and two (2) vee band halves.

Flow resistance factor:
ID ≤ 18”: K = .40 L/D
ID > 18”: K = .30 L/D

Flow resistance factor for diesel/turbine exhausts:
K = .25 L/D

Bellows Expansion Cover

Part D _ _ _ _ BEC _

Use the Bellows Expansion Cover to shield lined and unlined Bellow Joints. Part includes: one (1) piece cover band from 8” thru 38” O.D. or two (2) piece 40” O.D. and above. The Model Dplus Series includes a wide strip(s) of insulation.

Pressure Relief Valve

Part D _ _ PRV

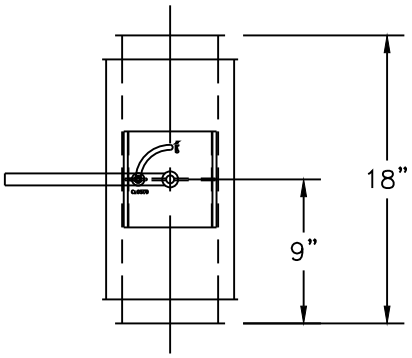
Use the Pressure Relief Valve to relieve pressure spikes. To be used in accordance with NFPA 37. Extreme care must be used when determining the location of this valve. If this valve is activated hot gas, flames and toxicants will be released into the atmosphere. Part Includes: one (1) pressure relief valve, two (2) vee bands halves. Conforms to NFPA 37.

(Consult factory to verify your specific requirements on pre-set relief valve pressure).

Butterfly Damper Section

Part D_ _ _ _ DPR18 _ _

The Butterfly Damper Section is an 18” long manually controlled in-line type damper section used to restrict the flow of effluent. The DPR is not a 100% shutoff damper, and it is not a UL listed component. Part includes: one (1) butterfly damper section, two (2) vee band halves, and one (1) draw band. The Model Dplus(+) Series includes a strip(s) of insulation.

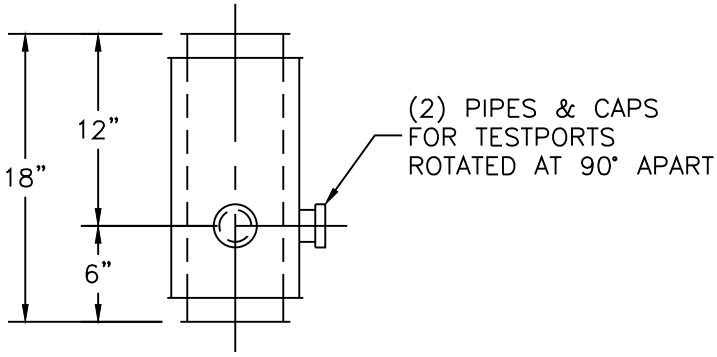


Test Port Section

Part D _ _ _ _ TPS18 _ _

The Test Port Section is intended to be used to provide access to the effluent for the insertion of a thermometer or other test equipment sensors. The standard TPS section is 18” long with two (2) two-inch threaded schedule 40 pipes 90° apart located 6” from one end. Part includes: one (1) test port section, two (2) vee band halves, one (1) draw band, and two (2) threaded caps. The Model Dplus(+) Series includes a strip(s) of insulation.

NOTE: The test port section is not intended to support the weight of test equipment. All testing equipment must be independently supported by others. Other size test ports are available, please contact factory.



Flow resistance factor, K:
K = 0.40 L/D (for ID ≤ 18 in)
K = 0.30 L/D (for ID > 18 in)

L = pipe length in feet
D = pipe diameter in inches

Eccentric Increaser Section

Part D _ _ _ _ECC _ _ _ _

The Eccentric Increaser Section is used to increase the diameter on one side of the chimney or breeching while the other side remains the same.

Parts include: one (1) eccentric increaser section, two (2) small diameter vee band halves, and one (1) small diameter draw band. Use the chart to determine the section length. Subtract the small diameter (d) from the large diameter (D), and then match the (D-d) value with its corresponding length (L).

The Model Dplus(+) Series includes a strip(s) of insulation.

Flow resistance factor, K:
(increaser) $K = 0.53 \times [1-(d/D)^2]^2$
(for two-step increaser)
Where d = small diameter (in) and
D = large diameter (in)

ECCENTRIC AND CONCENTRIC INCREASER LENGTHS	
D-d	Length
1	7 3/4”
2	11 1/2”
3	15 3/16”
4	19”

Increasers are non-load bearing parts.

Concentric Increaser Section

Part D_ _ _ _INC _ _ _ _

The Concentric Increaser Section is used to increase the chimney diameter while maintaining the current center line. Part includes: one (1) concentric increaser section, two (2) small diameter vee band halves, and one (1) small diameter draw band. Use the chart to determine the section length. Subtract the small diameter (d) from the large diameter (D), and then match the (D-d) value with its corresponding length (L). The Model Dplus(+) Series includes a strip(s) of insulation.

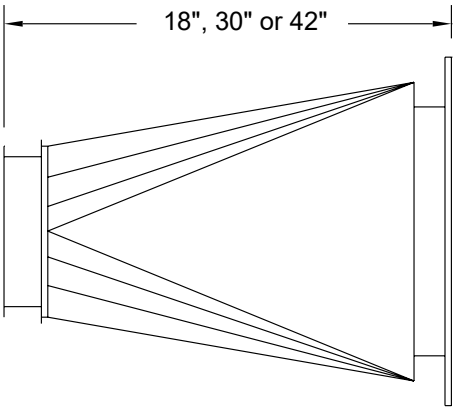
Flow resistance factor, K:
$K = 0.47 \times [1-(d/D)^2]^2$ (for one-step increaser)
$K = 0.53 * [1-(d/D)^2]^2$ (for two-step increaser)
Where d = small) diameter (in) D = large diameter (in)

Square to Round Transition

Part_ _ _ _ STS _ _ _ _

The Square to Round Transition can be used in many applications that transition square duct to round duct. Part includes: transition with (blank flange), two (2) vee band halves and one (1) draw band. The Model Dplus(+) Series includes a strip(s) of insulation.

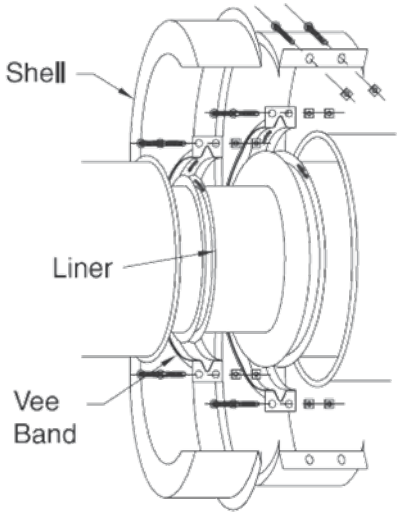
This is not a UL listed component.



Abrupt Transition

Part D _ _ _ _ATS _ _ _ _

The Abrupt Transition is a 3 inch long component designed for abrupt changes in diameters. Part includes: a liner, shell, and two (2) minor diameter vee band halves. The Abrupt Transition does not provide any type of load bearing support. The Abrupt Transition must always be isolated from loads. Do this by installing a support next to the Abrupt Transition. The Model Dplus(+) Series includes a strip(s) of insulation.



Horizontal Drain Section

Part D _ _ _ _ HDS06 _ _

Use this component to drain condensate from horizontal breeching runs. The Horizontal Drain Section is 6" long and has (1) 1" threaded drain nipple. Part includes: one (1) horizontal drain section two (2) vee band halves, and one (1) draw band. The Model Dplus(+) Series includes a strip(s) of insulation.

Flow resistance factor:
ID < 18" K = 0.40 L/D
ID > 18" K = 0.30 L/D

Vertical Drain Section

Part D _ _ _ _D/S06 _ _

Used in instances where rain or condensate removal is critical. The Vertical Drain Section should be located below the roofline, preferably as close to the appliance as possible, to prevent freezing. It has a (1) 1" threaded drain nipple. Part includes: one (1) vertical drain section, two (2) vee band halves and one (1) draw band. The Model Dplus(+) Series includes a strip(s) of insulation.

Flow resistance factor:
K = .25

6" Tall Base Drain Section

Part D _ _ _ _ BDS _ _

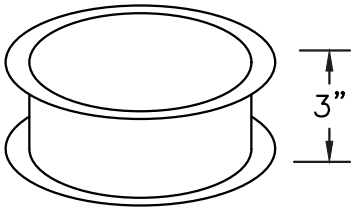
Use this component on vertical chimney installations when supports are not feasible. The Base Drain Section permits drainage of rain and or condensation. Completely closes off base of stack. Supplied with a 1" threaded coupling. Allowable height is equal to a straight section (Part: STR). ½" Anchor bolts by installer. Part includes: one (1) Base Drain Section.

Starter Section

Part D _ _ S/S _

Used to connect to fans and hoods. Part includes: one (1) starter section and two (2) vee band halves.

Flow resistance factor:
ID ≤ 18": K = .44 L/D 18/D
ID > 18": K = .33 L/D 18/D

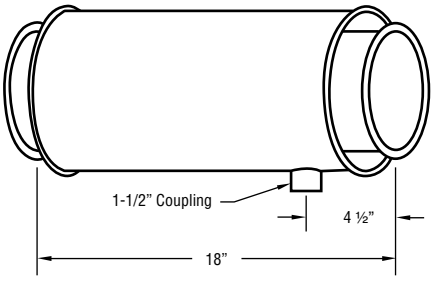


Duct Coupling Section

Part D _ _ _ _ DCS 18 _ _

Used for exhaust sampling. Part includes: one (1) duct coupling section, two (2) vee band halves and one (1) draw band. The Model Dplus(+) Series includes a strip(s) of insulation.

Flow resistance factor:
K = .40 L/D

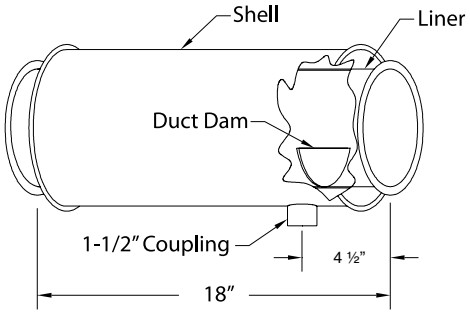


Duct Drain Section

Part D _ _ _ _ DDS 18 _ _

Use the Duct Drain Section to trap grease or condensation in a horizontal grease duct application. Part includes: one (1) duct-drain section, two (2) vee band halves and one (1) draw band and a strip of insulation. The Model Dplus(+) Series includes a strip(s) of insulation.

Flow resistance factor:
K = .40 L/D



15° Elbow

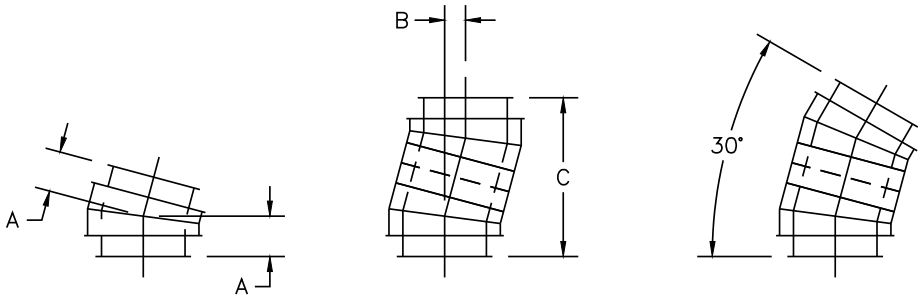
Part D _ _ _ _ 15E _ _

Part includes: one (1) 15 degree elbow, two (2) vee band halves, and one (1) draw band. The Model Dplus(+) Series includes a strip(s) of insulation.

Flow resistance factor: K = 0.06

NOTE: Elbows are non-load bearing parts.

NOTE: Elbows are available in non-standard angles upon request.



15 Degree Elbow And Offsets Dimensional Data (Inches)												
ID	DW/DWplus			DWplus2			DWplus3			DWplus4		
	A	B	C	A	B	C	A	B	C	A	B	C
6	2 7/8	1 1/2	11 7/16	3 1/16	1 9/16	11 15/16	2 3/16	1 5/8	12 7/16	3 5/16	1 11/16	12 15/16
8	3 1/16	1 9/16	11 15/15	3 3/16	1 5/8	12 7/16	3 5/16	1 11/16	12 15/16	3 7/16	1 3/4	13 1/2
10	3 3/16	1 5/8	12 7/16	3 5/16	1 3/4	12 15/16	3 7/16	1 13/16	13 1/2	3 9/16	1 7/8	14
12	3 5/16	1 11/16	12 15/16	3 7/16	1 13/16	13 1/2	3 9/16	1 7/8	14	3 11/16	1 15/16	14 9/16
14	3 7/16	1 3/4	13 1/2	3 9/16	1 7/8	14	3 11/16	1 15/16	14 9/16	3 13/16	2	15 1/16
16	3 9/16	1 7/8	14	3 11/16	1 15/16	14 9/16	3 13/16	2	15 1/16	3 15/16	2 1/16	15 9/16
18	3 11/16	1 15/16	14 9/16	3 13/16	2	15 1/16	3 15/16	2 1/16	15 9/16	4 1/16	2 1/8	16 1/16
20	3 13/16	2	15 1/16	3 15/16	2 1/16	15 9/16	4 1/16	2 1/8	16 1/16	4 1/4	2 3/16	16 5/8
22	3 15/16	2 1/16	15 9/16	4 1/16	2 1/8	16 1/16	4 1/4	2 3/16	16 5/8	4 3/8	2 1/4	17 1/8
24	4 1/16	2 1/8	16 1/16	4 1/4	2 3/16	16 5/8	4 3/8	2 1/4	17 1/8	4 1/2	2 5/16	17 5/8
26	4 1/4	2 3/16	16 5/8	4 3/8	2 1/4	17 1/8	4 1/2	2 5/16	17 5/8	4 5/8	2 3/8	18 1/8
28	4 3/8	2 1/4	17 1/8	4 1/2	2 5/16	17 5/8	4 5/8	2 3/8	18 1/8	4 3/4	2 7/16	18 5/8
30	4 1/2	2 5/16	17 5/8	4 5/8	2 3/8	18 1/8	4 3/4	2 7/16	18 5/8	4 7/8	2 1/2	19 3/16
32	4 5/8	2 3/8	18 1/8	4 3/4	2 7/16	18 5/8	4 7/8	2 1/2	19 3/16	5	2 9/16	19 11/16
34	4 3/4	2 7/16	18 5/8	4 7/8	2 1/2	19 3/16	5	2 9/16	19 11/16	5 1/8	2 11/16	20 3/16
36	4 7/8	2 1/2	19 3/16	5	2 9/16	19 11/16	5 1/8	2 11/16	20 3/16	5 5/16	2 3/8	20 3/4
38	5	2 9/16	19 11/16	5 1/8	2 11/16	20 3/16	5 5/16	2 3/8	20 3/4	5 7/16	2 13/16	21 1/4
40	5 1/8	2 11/16	20 3/16	5 5/16	2 3/4	20 3/4	5 7/16	2 13/16	21 1/4	5 9/16	2 7/8	21 3/4
42	5 1/4	2 3/8	20 3/4	5 7/16	2 13/16	21 1/4	5 9/16	2 7/8	21 3/4	5 11/16	2 15-16	22 5/16
44	5 3/8	2 13/16	21 1/4	5 9/16	2 7/8	21 3/4	5 11/16	2 15/16	22 5/16	5 13/16	3	22 13/16
46	5 9/16	2 7/8	21 3/4	5 11/16	2 15/16	22 5-16	5 13/16	3	22 13/16	5 15/16	3 1/16	23 5/16
48	5 11/16	2 15/16	22 5/16	5 13/16	3	22 13/16	5 15/16	3 1/16	23 5/16	6 1/16	3 1/8	23 13/16

30° Elbow

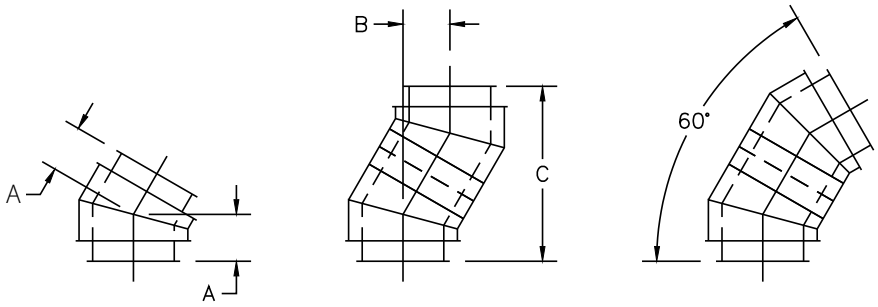
Part D _ _ _ _ 30E_ _

Part includes: one (1) 30 degree elbow, two(2) vee band halves, and one (1) draw band. The Model Dplus(+) Series includes a strip(s) of insulation.

Flow resistance factor: K = 0.12

NOTE: Elbows are non-load bearing parts.

NOTE: Elbows are available in non-standard angles upon request



30 Degree Elbow And Offsets Dimensional Data (Inches)												
ID	DW/DWplus			DWplus2			DWplus3			DWplus4		
	A	B	C	A	B	C	A	B	C	A	B	C
6	3 7/16	3 7/16	12 7/8	3 11/16	3 11/16	13 7/8	4	4	14 7/8	4 1/4	4 1/4	15 7/8
8	3 11/16	3 11/16	13 7/8	4	4	14 7/8	4 1/4	4 1/4	15 7/8	4 1/2	4 1/2	16 7/8
10	4	4	14 7/8	4 1/4	4 1/4	15 7/8	4 1/2	4 1/2	16 7/8	4 13/16	4 13/16	17 7/8
12	4 1/4	4 1/4	15 7/8	4 1/2	4 1/2	16 7/8	4 13/16	4 13/16	17 7/8	5 1/16	5 1/16	18 7/8
14	4 1/2	4 1/2	16 7/8	4 13/16	4 13/16	17 7/8	5 1/16	5 1/16	18 7/8	5 5/16	5 5/16	19 7/8
16	4 13/16	4 13/16	17 7/8	5 1/16	5 1/16	18 7/8	5 5/16	5 5/16	19 7/8	5 9/16	5 9-16	20 7/8
18	5 1/16	5 1/16	18 7/8	5 5/16	5 5/16	19 7/8	5 9/16	5 9/16	20 7/8	5 7/8	5 7/8	21 7/8
20	5 5/16	5 5/16	19 7/8	5 9/16	5 9/16	20 7/8	5 7/8	5 7/8	21 7/8	6 1/8	6 1/8	22 7/8
22	5 9/16	5 9/16	20 7/8	5 7/8	5 7/8	21 7/8	6 1/8	6 1/8	22 7/8	6 7/16	6 7/16	23 78
24	5 7/8	5 7/8	21 7/8	6 1/8	6 1/8	22 7/8	6 7/16	6 7/16	23 7/8	6 11/16	6 11/16	24 7/8
26	6 1/8	6 1/8	22 7/8	6 7/16	6 7/16	23 7/8	6 11/16	6 11/16	24 7/8	6 15/16	6 15/16	25 7/8
28	6 7/16	6 7/16	23 7/8	6 11/16	6 11/16	24 7/8	6 15/16	6 15/16	25 7/8	7 3/16	7 3/16	26 7/8
30	6 11/16	6 11/16	24 7/8	6 15/16	6 15/16	25 7/8	7 3/16	7 3/16	26 7/8	7 7/16	7 7/16	27 7/8
32	6 15/16	6 15/16	25 7/8	7 3/16	7 3/16	26 7/8	7 7/16	7 7/16	27 7/8	7 3/4	7 3/4	28 7/8
34	7/3/16	7 3/16	26 7/8	7 7/16	7 7/16	27 7/8	7 3/4	7 3/4	28 7/8	8	8	29 7/8
36	7 7/16	7 7/16	27 7/8	7 3/4	7 3/4	28 7/8	8	8	29 7/8	8 1/4	8 1/4	30 7/8
38	7 3/4	7 3/4	28 7/8	8	8	29 7/8	8 1/4	8 1/4	30 7/8	8 9/16	8 9/16	31 7/8
40	8	8	29 7/8	8 1/4	8 1/4	30 7/8	8 9/16	8 9/16	31 7/8	8 13/16	8 13/16	32 7/8
42	8 1/4	8 1/4	30 7/8	8 9/16	8 9/16	31 7/8	8 13/16	8 13/16	32 7/8	9 1/8	9 1/8	33 7/8
44	8 9/16	8 9/16	31 7/8	8 13/16	8 13/16	32 7/8	9 1/8	9 1/8	33 7/8	9 5/16	9 5/16	34 7/8
46	8 13/16	8 13/16	32 7/8	9 1/8	9 1/8	33 7/8	9 5/16	9 5/16	34 7/8	9 5/8	9 5/8	35 7/8
48	9 1/8	9 1/8	33 7/8	9 5/16	9 5/16	34 7/8	9 5/8	9 5/8	35 7/8	9 7/8	9 7/8	36 7/8

45° Elbow

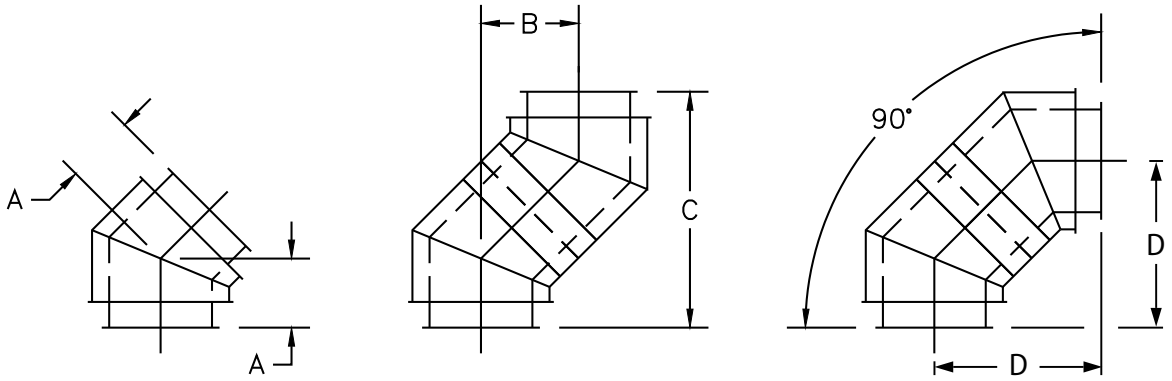
Part D _ _ _ _ 45E _ _

Part includes: one (1) 45 degree elbow, two (2) vee-band halves, and one (1) draw band. The Model Dplus(+) Series include insulation strip(s).

Flow resistance factor: K = 0.15

NOTE: Elbows are non-load bearing parts.

NOTE: Elbows are available in non-standard angles upon request



45 Degree Elbow And Offsets Dimensional Data (Inches)																
ID	DW/DWplus				DWplus2				DWplus3				DWplus4			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
6	4 1/16	5 11/16	13 3/4	9 3/4	4 7/16	6 5/16	15 3/16	10 3/4	4 7/8	6 7/8	16 9/16	11 3/4	5 1/4	7 7/16	18	12 3/4
8	4 7/16	6 5/16	15 3/16	10 3/4	4 7/8	6 7/8	16 9/16	11 3/4	5 1/4	7 7/16	18	12 3/4	5 11/16	8 1/16	19 7/16	13 3/4
10	4 7/8	6 7/8	16 9/16	11 3/4	5 1/4	7 7/16	18	12 3/4	5 11/16	8 1/16	19 7/16	13 3/4	6 1/8	8 5/8	20 13/16	14 3/4
12	5 1/4	7 7/16	18	12 3/4	5 11/16	8 1/16	19 7/16	13 3/4	6 1/8	8 5/8	20 13/16	14 3/4	6 1/2	9 3/16	22 1/4	15 3/4
14	5 11/16	8 1/16	19 7/16	13 3/4	6 1/8	8 5/8	20 13/16	14 3/4	6 1/2	9 3/16	22 1/4	15 3/4	6 15/16	9 13/16	23 11/16	16 3/4
16	6 1/8	8 5/8	20 13/16	14 3/4	6 1/2	9 3/16	22 1/4	15 3/4	6 15/16	9 13/16	23 11/16	16 3/4	7 3/8	10 3/8	25 1/16	17 3/4
18	6 1/2	9 3/16	22 1/4	15 3/4	6 15/16	9 13/16	23 11/16	16 3/4	7 3/8	10 3/8	25 1/16	17 3/4	7 3/4	11	26 1/2	18 3/4
20	6 15/16	9 13/16	23 11/16	16 3/4	7 3/8	10 3/8	25 1/16	17 3/4	7 3/4	11	26 1/2	18 3/4	8 3/16	11 9/16	27 15/16	19 3/4
22	7 3/8	10 3/8	25 1/16	17 3/4	7 3/4	11	26 1/2	18 3/4	8 3/16	11 9/16	27 15/16	19 3/4	8 9/16	12 1/8	29 5/16	20 3/4
24	7 3/4	11	26 1/2	18 3/4	8 3/16	11 9/16	27 15/16	19 3/4	8 9/16	12 1/8	29 5/16	20 3/4	9	12 3/4	30 3/4	21 3/4
26	8 3/16	11 9/16	27 15/16	19 3/4	8 9/16	12 1/8	29 5/16	20 3/4	9	12 3/4	30 3/4	21 3/4	9 7/16	13 5/16	32 1/8	22 3/4
28	8 9/16	12 1/8	29 5/16	20 3/4	9	12 3/4	30 3/4	21 3/4	9 7/16	13 5/16	32 1/8	22 3/4	9 13/16	13 7/8	33 9/16	23 3/4
30	9	12 3/4	30 3/4	21 3/4	9 7/16	13 5/16	32 1/8	22 3/4	9 13/16	13 7/8	33 9/16	23 3/4	10 1/4	14 1/2	35	24 3/4
32	9 7/16	13 5/16	32 1/8	22 3/4	9 13/16	13 7/8	33 9/16	23 3/4	10 1/4	14 1/2	35	24 3/4	10 11/16	15 1/16	36 3/8	25 3/4
34	9 13/16	13 7/8	33 9/16	23 3/4	10 1/4	14 1/2	35	24 3/4	10 11/16	15 1/16	36 3/8	25 3/4	11 1/16	15 11/16	37 13/16	26 3/4
36	10 1/4	14 1/2	35	24 3/4	10 11/16	15 1/16	36 3/8	25 3/4	11 1/16	15 11/16	37 13/16	26 3/4	11 1/2	16 1/4	39 1/4	27 3/4
38	10 11/16	15 1/16	36 3/8	25 3/4	11 1/16	15 11/16	37 3/4	26 3/4	11 1/2	16 1/4	39 1/4	27 3/4	11 7/8	16 13/16	40 5/8	28 3/4
40	11 1/16	15 11/16	37 13/16	26 3/4	11 1/2	16 1/4	39 1/4	27 3/4	11 7/8	16 13/16	40 5/8	28 3/4	12 5/16	17 7/16	42 1/16	29 3/4
42	11 1/2	16 1/4	39 1/4	27 3/4	11 7/8	16 3/16	40 5/8	28 3/4	12 5/16	17 7/16	42 1/16	29 3/4	12 3/4	18	43 7/16	30 3/4
44	11 7/8	16 13/16	40 5/8	28 3/4	12 5/16	17 7/16	42 1/16	29 3/4	12 3/4	18	43 7/16	30 3/4	13 1-8	18 9/16	44 7/8	31 3/4
46	12 5/16	17 7/16	42 1/16	29 3/4	12 /3/4	18	43 7/16	30 3/4	13 1/8	18 9/16	44 7/8	31 3/4	13 9/16	19 3/16	46 5/16	32 3/4
48	12 3/4	18	43 7/16	30 3/4	13 1/8	18 9/16	44 7/8	31 3/4	13 9/16	19 3/16	46 5/16	32 3/4	14	19 3/4	47 11/16	33 1/4

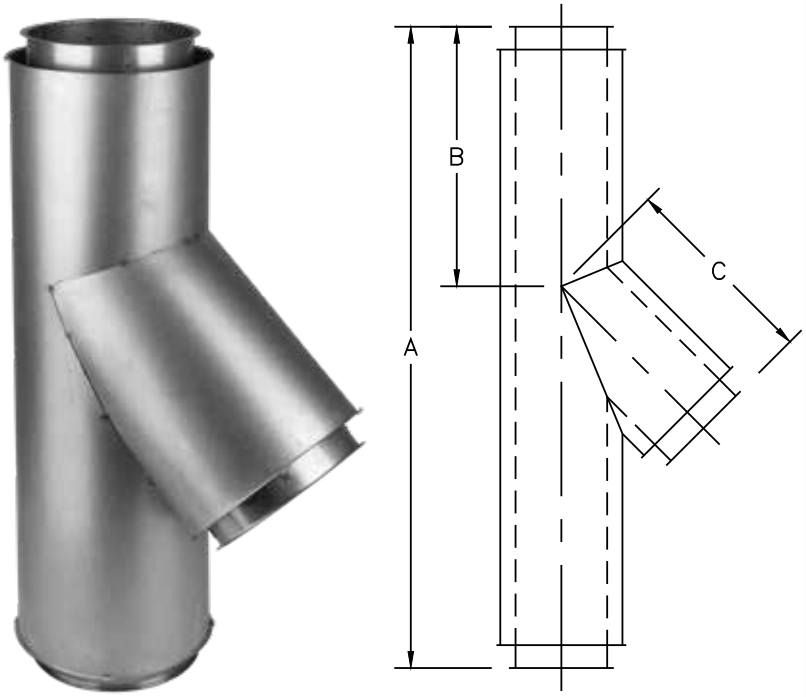
45° Tee Section

Part D _ _ _ _ 45T _ _ _ _

Use this component to make 45 degree turns. Please specify projection diameter if different than main body diameter. Part includes: one (1) 45º tee, four (4) vee band halves, and two (2) draw bands. The Model Dplus(+) Series includes a strip(s) of insulation.

Flow resistance factor:
K = .40

Chart is based on tees with full size projections.



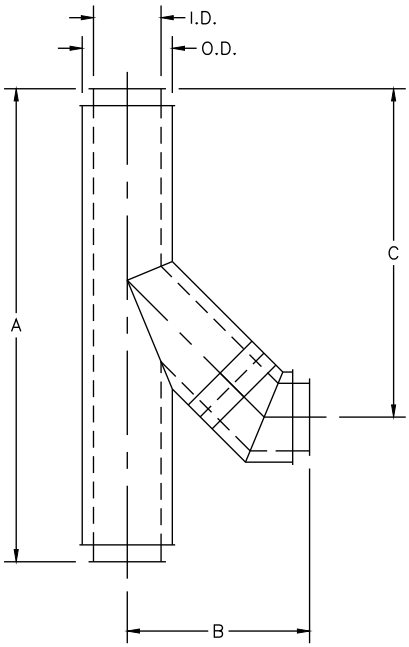
45 Degree Tee Section Dimensional Data (Inches)												
ID	DW/DWplus			DWplus2			DWplus3			DWplus4		
	A	B	C	A	B	C	A	B	C	A	B	C
6	42	17	12 11/16	42	16	15 9/16	42	15	18	42	14	20 3/8
8	42	16	15 9/16	42	15	18	42	14	20 3/8	42	13	22 13/16
10	42	15	18	42	14	20 3/8	42	13	22 13/16	42	12	25 1/4
12	42	14	20 3/8	42	13	22 13/16	42	12	25 1/4	42	11	27 5/8
14	42	13	22 13/16	42	12	25 1/4	42	11	27 5/8	42	10	30 1/16
16	42	12	25 1/4	42	11	27 5/8	42	10	30 1/16	42	9	32 1/2
18	42	11	27 5/8	42	10	30 1/16	42	9	32 1/2	60	17	34 7/8
20	42	10	30 1/16	42	9	32 1/2	60	17	34 7/8	60	16	37 5/16
22	42	9	32 1/2	60	17	34 7/8	60	16	37 5/8	60	15	39 11/16
24	60	17	34 7/8	60	16	37 5/16	60	15	39 11/16	60	14	42 1/8
26	60	18	37 5/16	60	15	39 11/16	60	14	42 1/8	60	13	44 9/16
28	60	15	39 11/16	60	14	42 1/8	60	13	44 9/16	60	12	46 15/16
30	60	14	42 1/8	60	13	44 9/16	60	12	46 15/16	60	11	49 3/8
32	60	13	44 9/16	60	12	46 15/16	60	11	49 3/8	72	16	51 13/16
34	60	12	46 15/16	60	11	49-3/8	72	16	51 13/16	72	15	54 3/16
36	60	11	49 3/8	72	16	51 13/16	72	15	54 3/16	72	14	56 5/8
38	72	16	51 13/16	72	15	54 3/16	72	14	56 5/8	72	13	59
40	72	15	54 3/16	72	14	56 5/8	72	13	59	78	15	61 7/16
42	42	14	56 5/8	72	13	59	78	15	61 7/16	78	14	63 7/8
44	72	13	59	78	15	61 7/16	78	14	63 7/8	84	16	66 1/4
46	78	15	61 7/16	78	14	63 7/8	84	16	66 1/4	90	18	68 11/16
48	78	14	63 7/8	84	16	66 1/4	90	18	68 11/16	90	17	71 1/8

Combination 45T with 45E

The 45T and 45E are ordered separately, however, when combined they yield a lower flow resistance than a 90 degree tee. Their assembled dimensions are shown in the table below.

Flow resistance factor:
K = 0.55

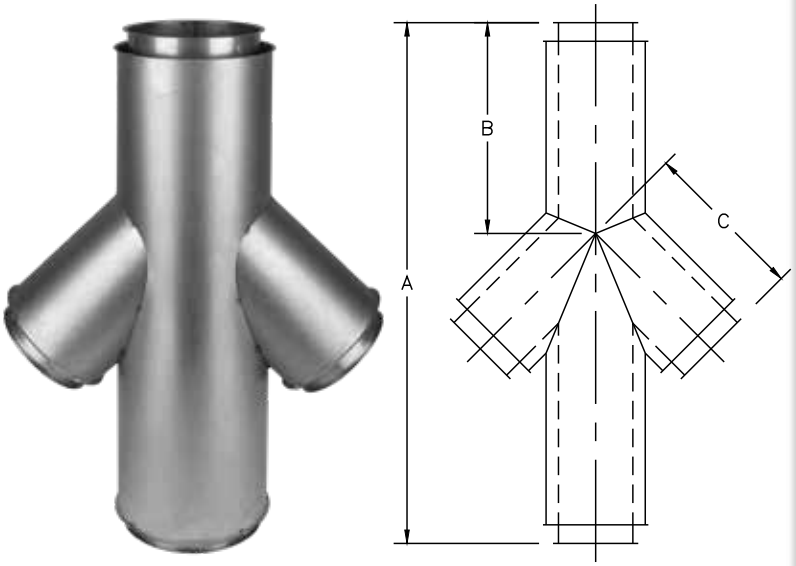
Chart is based on tees with full size projections



Combination 45 Tee with 45 Elbow Dimensional Data (Inches)												
ID	DW/DWplus			DWplus2			DWplus3			DWplus4		
	A	B	C	A	B	C	A	B	C	A	B	C
6	42	16 3/16	29 1/18	42	18 5/8	30 1/8	42	21	31 1/18	42	23 7/16	32 1/8
8	42	18 5/8	30 1/8	42	21	31 1/8	42	23 7/16	32 1/8	42	25 13/16	33 1/8
10	42	21	31 1/8	42	23 7/16	32 1/8	42	25 13/16	33 1/8	42	28 1/4	34 1/8
12	42	23 7/16	32 1/8	42	25 13/16	33 1/8	42	28 1/4	34 1/8	42	30 11/16	35 1/8
14	42	25 13/16	33 1/8	42	28 1/4	34 1/8	42	30 11/16	35 1/8	42	33 1/16	36 1/8
16	42	28 1/4	34 1/8	42	30 11/16	35 1/8	42	33 1/16	36 1/8	42	35 1/2	37 1/8
18	42	30 11/16	35 1/8	42	33 1/16	36 1/8	42	35 1/2	37 1/8	60	37 15/16	47 1/8
20	42	33 1/16	36 1/8	42	35 1/2	37 1/8	60	37 15/16	47 1/8	60	40 5/16	48 1/8
22	42	35 1/2	37 1/8	60	37 15/16	47 1-8	60	40 5/16	48 1/8	60	42 3/4	49 1/8
24	60	37 15/16	47 1/8	60	40 5/16	48 1/8	60	42 3/4	49 1/8	60	45 3/16	50 1/8
26	60	40 5/16	48 1/8	60	42 3/4	49 1/8	60	45 3/16	50 1/8	60	47 9/16	51 1/8
28	60	42 3/4	49 1/8	60	45 3/16	50 1/8	60	47 9/16	51 1/8	60	50	52 1/8
30	60	45 3/16	50 1/8	60	47 9/16	51 1/8	60	50	52 1/8	60	52 3/8	53 1/8
32	60	47 9/16	51 1/8	60	50	52 1/8	60	52 3/8	53 1/8	72	54 13/16	60 1/8
34	60	50	52 1/8	60	52 3/8	53 1/8	72	54 13/16	60 1/8	72	57 1/4	61 1/8
36	60	52 3/8	53 1/8	72	54 13/16	60 1/8	72	57 1/4	61 1/8	72	59 5/8	62 1/8
38	72	54 13/16	60 1/8	72	57 1/4	61 1/8	72	59 5/8	62 1/8	72	62 1/16	63 1/8
40	72	57 1/4	61 1/8	72	59 5/8	62 1/8	72	62 1/16	63 1/8	78	64 1/2	67 1/8
42	72	59 5/8	62 1/8	72	62 1/16	63 1/8	78	64 1/2	67 1/8	78	66 7/8	68 1/8
44	72	62 1/16	63 1/8	78	64 1/2	67 1/8	78	66 7/8	68 1/8	84	69 5/16	72 1/8
46	78	64 1/2	67 1/8	78	66 7/8	68 1/8	84	69 5/16	72 1/8	90	71 11/16	76 1/8
48	78	66 7/8	68 1/8	84	69 5/16	72 1/8	90	71 11/16	76 1/8	90	74 1/8	77 1/8

45° Double Tee Section

Part D _ _ 45T _ _ /_ _ _ _



Use this component to make two 45 degree turns from different directions. Please note projections must be at least one size smaller than body. Part includes: one (1) double tee 45º tee, six (6) vee band halves, and three (3) draw bands. The Model Dplus(+) Series includes a strip(s) of insulation.

Note: Projection ID required. Projection ID of "C" determines length of "A"

Flow resistance factor: K = .40

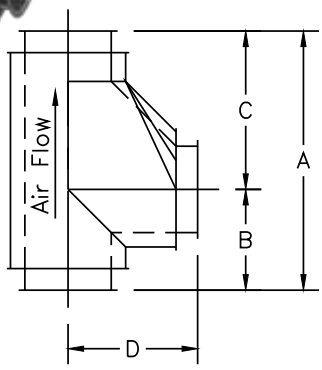
Chart is based on tees with one size smaller projections.

Double 45 Degree Tee Section Dimensional Data (Inches)												
ID	DW/DWplus			DWplus2			DWplus3			DWplus4		
	A	B	C	A	B	C	A	B	C	A	B	C
6	42	17	12 11/16	42	16	15 9/16	42	15	18	42	14	20 3/8
8	42	16	15 9/16	42	15	18	42	14	20 3/8	42	13	22 13/16
10	42	15	18	42	14	20 3/8	42	13	22 13/16	42	12	25 1/4
12	42	14	20 3/8	42	13	22 13/16	42	12	25 1/4	42	11	27 5/8
14	42	13	22 13/16	42	12	25 1/4	42	11	27 5/8	42	10	30 1/16
16	42	12	25 1/4	42	11	27 5/8	42	10	30 1/16	42	9	32 1/2
18	42	11	27 5/8	42	10	30 1/16	42	9	32 1/2	60	17	34 7/8
20	42	10	30 1/16	42	9	32 1/2	60	17	34 7/8	60	16	37 5/16
22	42	9	32 1/2	60	17	34 7/8	60	16	37 5/16	60	15	39 11/16
24	60	17	34 7/8	60	16	37 5/16	60	15	39 11/16	60	14	42 1/8
26	60	16	37 5/16	60	15	39 11/16	60	14	42 1/8	60	13	44 9/16
28	60	15	39 11/16	60	14	42 1/8	60	13	44 9/16	60	12	46 15/16
30	60	14	42 1/8	60	13	44 9/16	60	12	46 15/16	60	11	49 3/8
32	60	13	44 9/16	60	12	46 15/16	60	11	49 3/8	72	16	51 13/16
34	60	12	46 15/16	60	11	49 3/8	72	16	51 13/16	72	15	54 3/16
36	60	11	49 3/8	72	16	51 13/16	72	15	54 3/16	72	14	56 5/8
38	72	16	51 13/16	72	15	54 3/16	72	14	56 5/8	72	13	59
40	72	15	54 3/16	72	14	56 5/8	72	13	59	78	15	61 7/16
42	72	14	56 5/8	72	13	59	78	15	61 7/16	78	14	63 7/8
44	72	13	59	78	15	61 7/16	78	14	63 7/8	84	16	66 1/4
46	78	15	61 7/16	78	14	63 7/8	84	16	66 1/4	90	18	68 11/16
48	78	14	63 7/8	84	16	66 1/4	90	18	68 11/16	90	17	71 1/8

Boot Tee

Part D _ _ _ _ BTT _ _ _ _

This component is used to make low resistance 90-degree turns. In some applications this 90º boot tee can replace 45º tees and 45º elbows. Please specify projection diameter if different than main body diameter. Part includes: one (1) 90º boot tee, four (4) vee band halves, and two (2) draw bands. The Model Dplus(+) Series includes a strip(s) of insulation.



Flow resistance factor:
K = .65

Chart is based on tees with full size projections

A = Projection ID + 12” for DW and DWplus
A = Projection ID + 14” for DWplus2
A = Projection ID + 16” for DWplus3
A = Projection ID + 18” for DWplus4
B = ½ Projection ID + 4” for DW and DWplus
B = ½ Projection ID + 5” for DWplus2
B = ½ Projection ID + 6” for DWplus3
B = ½ Projection ID + 7” for DWplus4
C = B + 4”
D = B + 2”

90 Degree Boot Tee Dimensional Data (Inches)																
Model	DW/DWplus				Dwplus2				DWplus3				DWplus4			
ID	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
6	18	7	11	9	20	8	12	10	22	9	13	11	24	10	14	12
8	20	8	12	10	22	9	13	11	24	10	14	12	26	11	15	13
10	22	9	13	11	24	10	14	12	26	11	15	13	28	12	16	14
12	24	10	14	12	26	11	15	13	28	12	16	14	30	13	17	15
14	26	11	15	13	28	12	16	14	30	13	17	15	32	14	18	16
16	28	12	16	14	30	13	17	15	32	14	18	16	34	15	19	17
18	30	13	17	15	32	14	18	16	34	15	19	17	36	16	20	18
20	32	14	18	16	34	15	19	17	36	16	20	18	38	17	21	19
22	34	15	19	17	36	16	20	18	38	17	21	19	40	18	22	20
24	36	16	20	18	38	17	21	19	40	18	22	20	42	19	23	21
26	38	17	21	19	40	18	22	20	42	19	23	21	44	20	24	22
28	40	18	22	20	42	19	23	21	44	20	24	22	46	21	25	23
30	42	19	23	21	44	20	24	22	46	21	25	23	48	22	26	24
32	44	20	24	22	46	21	25	23	48	22	26	24	50	23	27	25
34	46	21	25	23	48	22	26	24	50	23	27	25	52	24	28	26
36	48	22	26	24	50	23	27	25	52	24	28	26	54	25	29	27
38	50	23	27	25	52	24	28	26	54	25	29	27	56	26	30	28
40	52	24	28	26	54	25	29	27	56	26	30	28	58	27	31	29
42	54	25	29	27	56	26	30	28	58	27	31	29	60	28	32	30
44	56	26	30	28	58	27	31	29	60	28	32	30	62	29	33	31
46	58	27	31	29	60	28	32	30	62	29	33	31	64	30	34	32
48	60	28	32	30	62	29	33	31	64	30	34	32	66	31	35	33

90° Centered Tee

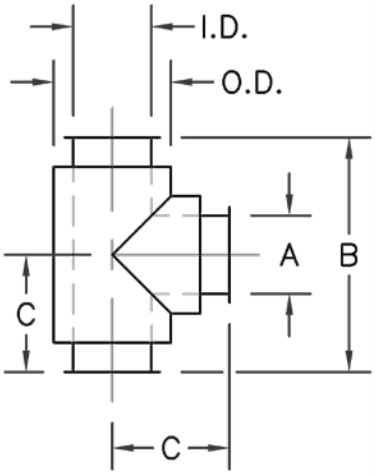
Part D _ _ _ _ 90T _ _ _ _

This component is used to make 90 degree turns and provides connection for a Barometric Damper. Please specify projection diameter if different than main body diameter. Part includes: one (1) 90º tee, four (4) vee band halves and two (2) draw bands. The Model Dplus(+) Series includes a strip(s) of insulation.

Flow resistance factor: K = 1.25

A = Projection ID
B = A + 8" for DW and DWplus
B = A + 10" for DWplus2
B = A + 12" for DWplus3
B = A + 14" for DWplus4
C = Projection Length from Center Line

DW and DWplus = ½" ID + 4"
DWplus2 = ½" ID + 5"
DWplus3 = ½" ID + 6"
DWplus4 = ½" ID + 7"



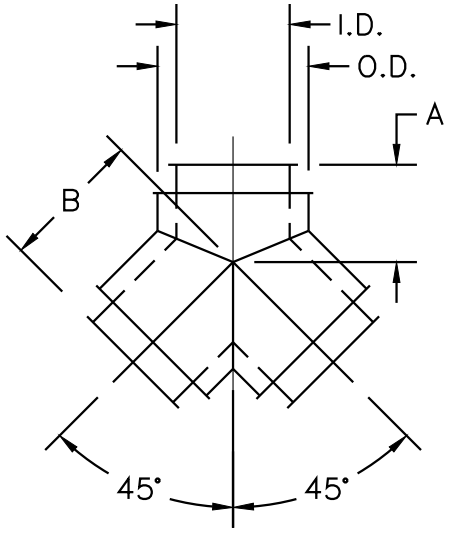
90 Degree Centered Tee Dimensional Data (Inches)									
Model	DW/DWplus			DWplus2		DWplus3		DWplus4	
ID	A	B	C	B	C	B	C	B	C
6	6	14	7	16	8	18	9	20	10
8	8	16	8	18	9	20	10	22	11
10	10	18	9	20	10	22	11	24	12
12	12	20	10	22	11	24	12	26	13
14	14	22	11	24	12	26	13	28	14
16	16	24	12	26	13	28	14	30	15
18	18	26	13	28	14	30	15	32	16
20	20	28	14	30	15	32	16	34	17
22	22	30	15	32	16	34	17	36	18
24	24	32	16	34	17	36	18	38	19
26	26	34	17	36	18	38	19	40	20
28	28	36	18	38	19	40	20	42	21
30	30	38	19	40	20	42	21	44	22
32	32	40	20	42	21	44	22	46	23
34	34	42	21	44	22	46	23	48	24
36	36	44	22	46	23	48	24	50	25
38	38	46	23	48	24	50	25	52	26
40	40	48	24	50	25	52	26	54	27
42	42	50	25	52	26	54	27	56	28
44	44	52	26	54	27	56	28	58	29
46	46	54	27	56	28	58	29	60	30
48	48	56	28	58	29	60	30	62	31

90º Wye Section

Part D _ _ _ _ WYE _ _

Used for joining two systems together or to provide cleanouts at 90º turns with a minimum resistance to flow. Part includes: one (1) 90º Wye, four (4) vee band halves and two (2) draw bands. The Model Dplus(+) Series includes a strip(s) of insulation.

Flow resistance factor:
K = 0.6



90 Degree Wye Tee Section Dimensional Data (Inches)								
Model	DW/DWplus		DWplus2		DWplus3		DWplus4	
ID	A	B	A	B	A	B	A	B
6	5 3/16	7 1/2	5 9/16	8 1/2	6	9 1/2	6 3/8	10 1/2
8	5 9/16	8 1/2	6	9 1/2	6 7/16	10 1/2	6 13/16	11 1/2
10	6	9 1/2	6 7/16	10 1/2	6 13/16	11 1/2	7 1/4	12 1/2
12	6 7/16	10 1/2	6 13/16	11 1/2	7 1/4	12 1/2	7 5/8	13 1/2
14	6 13/16	11 1/2	7 1/4	12 1/2	7 5/8	13 1/2	8 1/16	14 1/2
16	7 1/4	12 1/2	7 5/8	13 1/2	8 1/16	141/2	8 1/2	15 1/2
18	7 5/8	13 1/2	8 1/16	14 1/2	8 1/2	15 1/2	8 7/8	16 1/2
20	8 1/16	14 1/2	8 1/2	15 1/2	8 7/8	16 1/2	9 5/16	17 1/2
22	8 1/2	15 1/2	8 7/8	16 1/2	9 5/16	17 1/2	9 3/4	18 1/2
24	8 7/8	16 1/2	9 5/16	17 1/2	9 3/4	18 1/2	10 1/8	19 1/2
26	9 5/16	17 1/2	9 3/4	18 1/2	10 1/8	19 1/2	10 9/16	20 1/2
28	9 3/4	18 1/2	10 1/8	19 1/2	10 9/16	20 1/2	10 15/16	21 1/2
30	10 1/8	19 1/2	10 9/16	20 1/2	10 15/16	21 1/2	11 3/8	22 1/2
32	10 9/16	20 1/2	10 15/16	21 1/2	11 3/8	22 1/2	11 13/16	23 1/2
34	10 15/16	21 1/2	11 3/8	22 1/2	11 13/16	23 1/2	12 3/16	24 1/2
36	11 3/8	22 1/2	11 13/16	23 1/2	12 3/16	24 1/2	12 5/8	25 1/2
38	11 13/16	23 1/2	12 3/16	24 1/2	12 5/8	25 1/2	13 1/16	26 1/2
40	12 3/16	24 1/2	12 5/8	25 1/2	13 1/16	26 1/2	13 7/16	27 1/2
42	12 5/8	25 1/2	13 1/16	26 1/2	13 7/16	27 1/2	13 7/8	28 1/2
44	13 1/16	26 1/2	13 7/16	27 1/2	13 7/8	28 1/2	14 1/4	29 1/2
46	13 7/16	27 1/2	13 7/8	28 1/2	14 1/4	29 1/2	14 11/16	30 1/2
48	13 7/8	28 1/2	14 1/4	29 1/2	14 11/16	30 1/2	15 1/8	31 1/2

End Cap

Part D _ _ _ _ CAP _ _

The End Cap is used to close a system and provide an access or clean out and inspection cover. Part includes: one (1) end cap, two (2) vee band halves, and one (1) end cap cover band.

The Model Dplus(+) Series includes a strip(s) of insulation.

End Cap with Drain

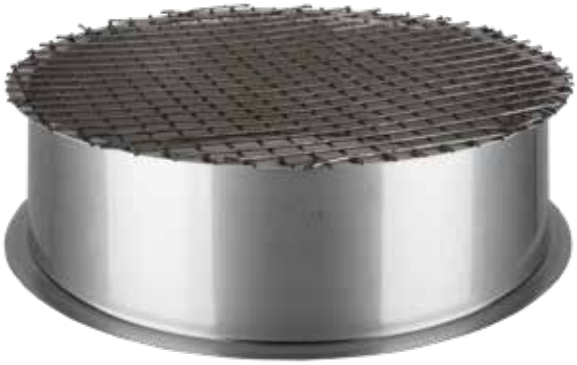
Part D _ _ _ _ C/D_ _

The End Cap with Drain has one (1) 1-inch threaded nipple.

Part includes: one (1) end cap with drain, two (2) vee band halves, and one (1) draw band. The Model Dplus(+) Series includes a strip(s) of insulation.

Screen Collar Termination

Part D _ _ _ _ SCT _ _



The Screen Collar Termination serves as a termination when venting appliances or to cover the outdoor end of combustion air duct. Part includes: one (1) screen collar termination, two (2) vee band halves,and one (1) rain skirt.

Flow resistance factor: K = 0.25

Side Discharge with Screen

Part D _ _ _ _ SDS _ _ has screen
Part D _ _ _ _ ESD _ _ no screen

This part can be used for horizontal terminations. Part includes: one (1) side discharge, two (2) vee band halves, and one (1) rain skirt.

Flow resistance factor: K = 0.25

Barometric Damper

Part D – – BMD

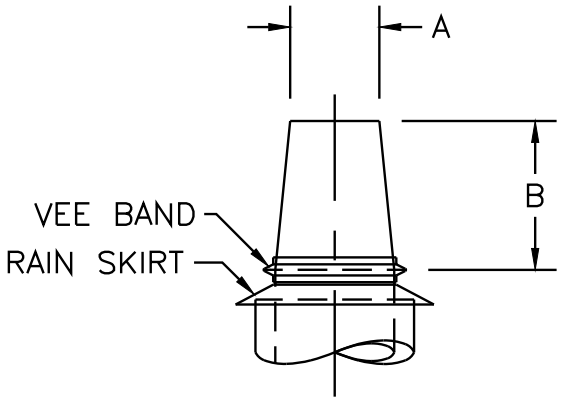
The Barometric Damper is an atmospheric type draft regulator used to relieve excess draft. Part includes: one (1) barometric damper. A cover plate is recommended on all Dplus(+) models. Please see on page 15.

Flow resistance factor: K = 0.50

Velocity Cone

Part D _ _ _ _ CON _ _

This component is used to increase velocity of exiting flue gases. Part includes: one (1) velocity cone, two (2) vee band halves and one (1) rain skirt.



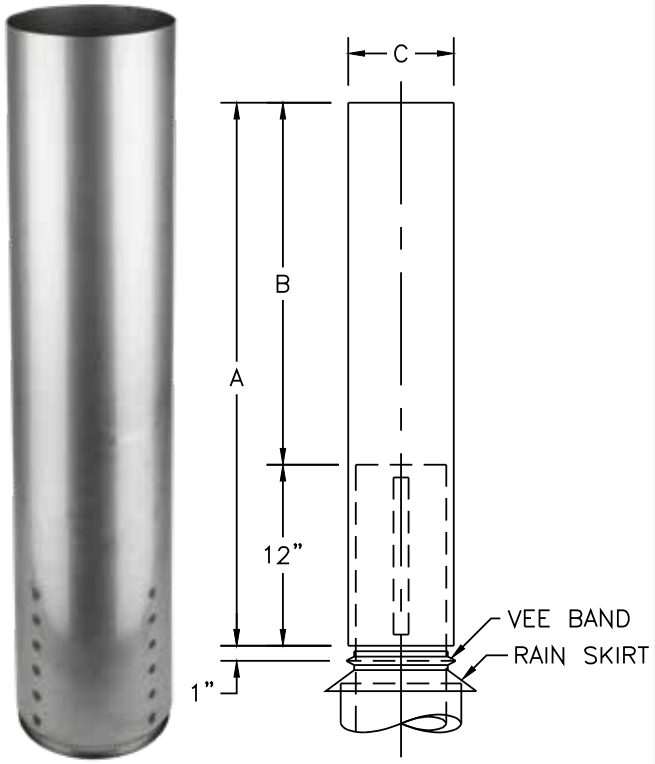
Velocity Cone Dimensional Data (Inches)		
Section ID	A	B
6	4 1/2	7 1/2
8	6 1/2	7 1/2
10	8	7 1/2
12	10	7 1/2
14	11 1/2	7 1/2
16	13	7 1/2
18	14 1/2	7 1/2
20	16	7 1/2
22	18	7 1/2
24	19 1/2	8 3/8
26	21 1/4	8 7/8
28	22 1/2	10 1/4
30	24 1/2	10 1/4
32	26	11 1/4
34	27 1/2	12 1/8
36	29 1/2	12 1/8
38	31	13
40	32 1/2	14
42	34 1/4	14 1/2
44	36	14 7/8
46	37 1/2	15 7/8
48	39 1/4	16 3/8

Low Loss Rain Cap

Part D _ _ _ _LLR _ _

Used for vertical flue terminations. The length of upper cap is related to rain protection. Rain enters top of cap, runs along inside the jacket, exits at the bottom of the jacket, releasing it back into the atmosphere, not allowing flue gases to drop back to the roof or ground.

Part includes: one (1) low loss section, two (2) vee band halves and one (1) rain skirt.

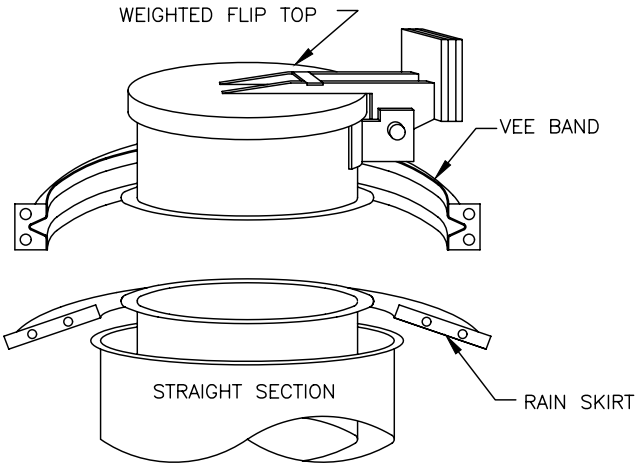


Low Loss Rain Cap Dimensional Data (Inches)			
Section ID	A	B	C
6	36	24	7
8	44	32	9
10	52	40	11
12	60	48	13
14	68	56	15
16	76	64	17
18	84	72	19
20	92	80	27

Flip Top Cap

Part D _ _ _ _ FTC _

The Flip Top Cap is used to prevent rain from entering generator exhaust pipe. Opens with internal pressure. Part includes: one (1) counter balanced flip top cap, two (2) vee bands and one (1) rain skirt.



Heavy Duty Flip Top Cap

Part D _ _ _ _ FTHD _

We also provide and recommend a Flip Top Heavy-Duty Cap for engines with extreme output pressure.

Part includes: one (1) counter balanced heavy duty flip top cap, one (1) vee band and one (1) rain skirt.

Open Top Closure

Part D _ _ _ _ OTC _

The Open Top Closure is for vertical terminations. The Open Top Closure closes the gap between the liner and the shell providing a weatherproof seal. Part includes: one (1) open top closure.

Double Cone Rain Cap

Part D _ _ _ _ DCR _ _ no screen
Part D _ _ _ _ RCS _ _ has screen

The Double Cone Rain Cap is for vertical terminations. The Double Cone Rain Cap comes with or without a screen.

Part includes: one (1) double cone rain cap, two (2) vee band halves and one (1) rain skirt.

Flow resistance factor (DCR): K = .50
Flow resistance factor (RCS): K = .75

Double Cone Rain Cap Dimensional Data (Inches)		
Section ID	A	B
6	12	9 15/16
8	16	12 1/8
10	20	14 1/4
12	24	16 7/16
14	28	18 5/8
16	32	20 3/4
18	36	22 15/16
20	40	25 1/8
22	44	27 1/4
24	48	29 7/16
26	52	31 5/8
28	56	33 3/4
30	60	35 15/16

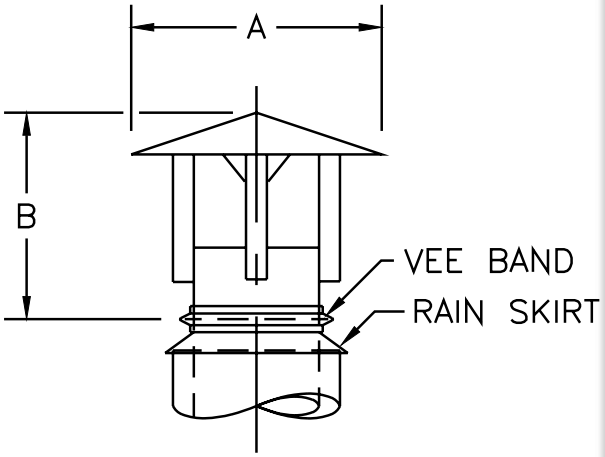
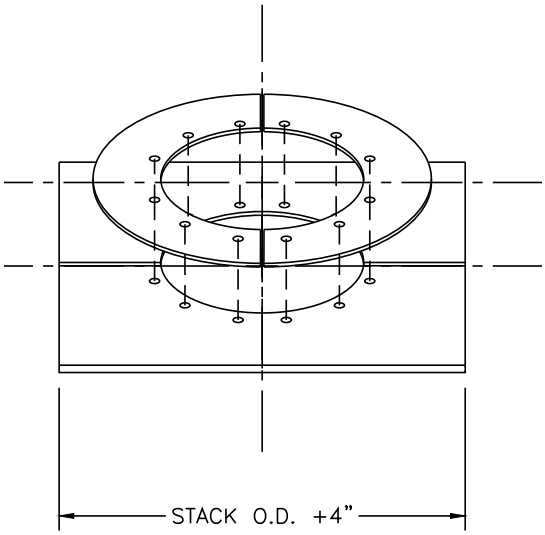


Plate Support Assembly

Part D _ _ _ _ PLS _ _

The Plate Support Assembly is used in conjunction with field-fabricated support members to provide structural vertical support for the chimney. Installing contractor shall provide rigid support angle iron over to building structure, and any required fasteners. Part includes: one (1) two-piece square support plate, one (1) two-piece round clamp flange, two (2) half draw bands. The Model Dplus(+) Series includes a strip(s) of insulation.

(See allowable height chart on page 8 & 9)

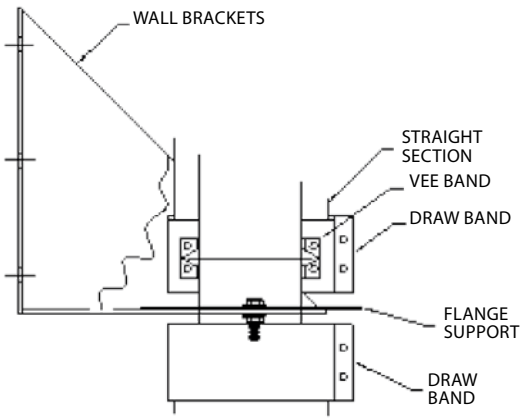


Wall Flange Assembly

Part D _ _ _ _WFA _ _

Use the Wall Flange Assembly to support vertical lengths of chimney along a wall or chase. Part includes: two (2) wall brackets, one (1) wall guide bar, one (1) flange assembly, two (2) vee band halves and one (1) draw band. Installing contractor to supply 1/2-inch hardware to securely fasten WFA to the wall. The Model Dplus(+) Series includes a strip(s) of insulation.

(See allowable height chart on page 8 & 9)



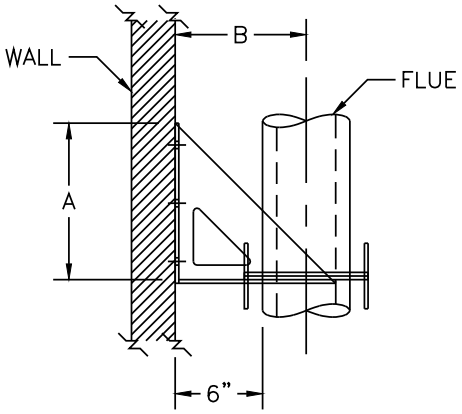
Wall Support Assembly

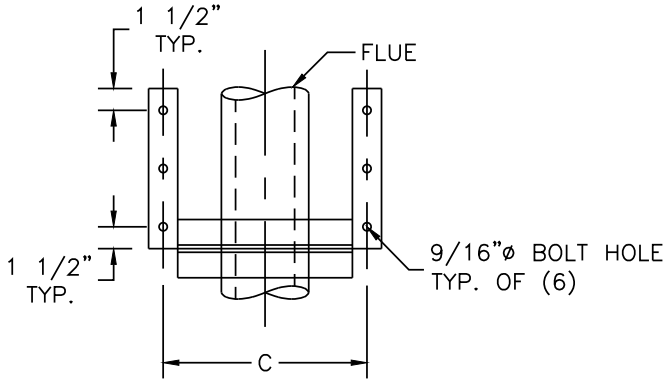
Part D _ _ _ _ WSA _ _

The Wall Support Assembly supports vertical lengths of chimney along a wall or chase. Part includes: two (2) wall brackets, one (1) two-piece bottom support plate, one (1) two-piece top support plate, two (2) half draw bands. Installing contractor to supply 1/2-inch hardware to securely fasten WSA to the wall. The Model Dplus(+) Series includes a strip(s) of insulation.

(See allowable height chart on page 8 & 9)

Note: For Dimensions see page 36.



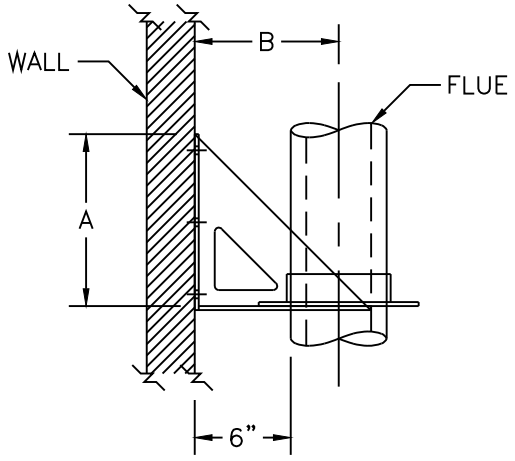


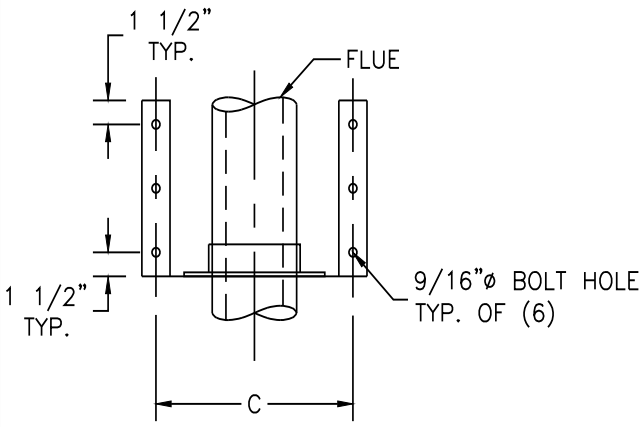
Wall Support Assembly Dimensional Data (Inches)												
Model	DW/DWplus			DWplus2			DWplus3			DWplus4		
ID	A	B	C	A	B	C	A	B	C	A	B	C
6	15	10	17 1/2	16	11	17 1/2	17	12	21 1/4	18	13	21 1/4
8	16	11	19 1/2	17	12	19 1/4	18	13	23 1/4	19	14	23
10	17	12	21 1/2	18	13	21 1/4	19	14	25	20	15	25
12	18	13	23 1/4	19	14	23	20	15	27	25	16	27
14	19	14	25	20	15	25	25	16	29	26	17	29
16	20	15	27	25	16	27	26	17	31	28	18	31
18	25	16	29	26	17	29	28	18	33	29	19	33
20	26	17	31	28	18	31	29	19	35	31	20	35
22	28	18	33	29	19	33	31	20	37	32	21	37
24	29	19	35	31	20	35	32	21	39	34	22	39
26	31	20	37	32	21	37	34	22	41	35	23	41
28	32	21	39	34	22	39	35	23	43	37	24	43
30	34	22	41	35	23	41	37	24	45	38	25	45
32	35	23	43	37	24	43	38	25	47	40	26	47
34	37	24	45	38	25	45	40	26	49	41	27	49
36	38	25	47	40	26	47	41	27	51	43	28	51
38	40	26	49	41	27	49	43	28	53	44	29	53
40	41	27	51	43	28	51	44	29	55	46	30	55
42	43	28	53	44	29	53	46	30	57	47	31	57
44	44	29	55	46	30	55	47	31	59	49	32	59
46	46	30	57	47	31	57	49	32	61	50	33	61
48	47	31	59	49	32	59	50	33	63	52	34	63

Wall Guide Assembly

Part D _ _ WGA _

The Wall Guide Assembly laterally supports vertical lengths of chimney along a wall or chase. Part includes: two (2) wall brackets, two (2) half angle rings, and one (1) wall flange bar. Installing contractor to supply 1/2-inch hardware to fasten WGA to the wall.





Wall Guide Assembly Dimensional Data (Inches)			
DW			
ID	A	B	C
4	14	9	12 7/8
5	14	9 1/2	13 7/8
6	15	10	14 7/8
7	15	10 ½	16
8	16	11	17
9	16	11 ½	18
10	17	12	18 7/8
12	18	13	20 7/8
14	19	14	22 7/8
16	20	15	24 7/8
18	25	16	26 7/8
20	26	17	29
22	28	18	31
24	29	19	33 1/16
26	31	20	35 1/16
28	32	21	37 1/16
30	34	22	39 1/16
32	35	23	41 1/16
34	37	24	43 1/16
36	38	25	45 1/16
38	40	26	47 1/16
40	41	27	49 1/16
42	43	28	51 1/16
44	44	29	53 1/16
46	46	30	55 1/16
48	47	31	57 1/16
50	49	32	59 1/16
52	50	33	61 1/16
54	52	34	63 1/16

Refer to the following guidelines to determine the appropriate size:

Product Configuration:	**12" ID Flue**
DW/D1+> Same as ID	(D12WGA)
D2+>One size larger than ID	(D14WGA)
D3+>Two sizes larger than ID	(D16WGA)
D4+>Three sizes larger than ID	(D18WGA)

Floor Guide Assembly

Part D _ _FGA _

Use the Floor Guide Assembly when penetrating floors. The floor guide rests on the floor and the struts that attach to the lateral support are lagged into the framing around the chimney vent. Fasteners supplied by installer.

Part includes: two (2) struts and two (2) half angle rings.

Full Angle Ring

Part D _ _ FAR _

The Full Angle Ring supports horizontal and vertical lengths of pipe in all diameters, Models, and exhaust types. Part includes: two (2) half angle rings. Installing contractor shall provide rigid support angle iron over to building structure, and any required fasteners.

Half Angle Ring

Part D _ _ HAR _

The Half Angle Ring supports horizontal lengths of pipe 24”ID and under. Use on Models Dplus(+) 1, 2, 3, and 4. Not for use on engine exhaust systems. Part includes: one (1) half angle ring. Installing contractor shall provide threaded rod and nuts or rigid support angle iron, for suspending from ceiling or roof.

Breeching Hanger Band

Part D _ _ BHB _

The Breeching Hanger Band supports horizontal lengths of pipe 24”ID and under. For Models DW & Dplus(+); not for use on engine exhaust systems.

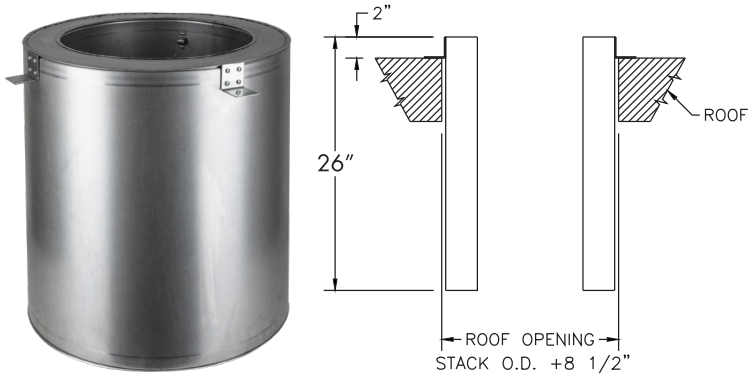
Part includes: one (1) hanger band.

Installing contractor shall provide threaded rod and nuts or rigid support angle iron, for suspending from ceiling or roof.

Insulated Roof Thimble

Part D _ _ THML

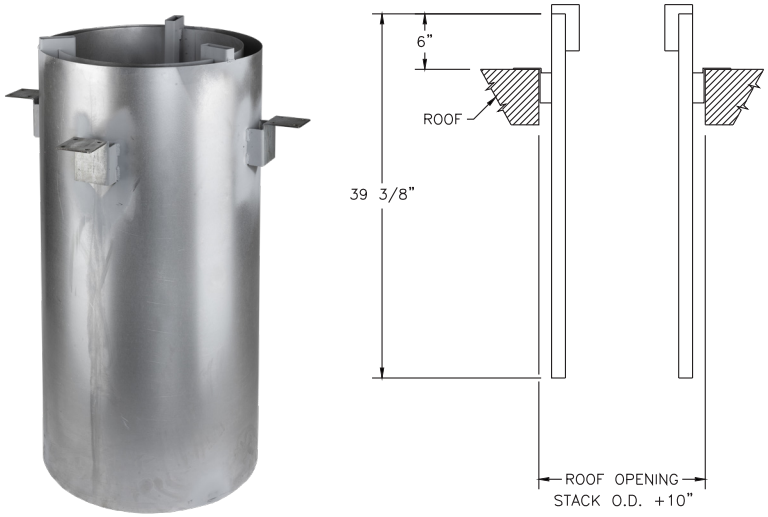
Use the Insulated Roof Thimble on Model DW and Dplus(+) Series components. Roof opening equals 8 ½ “ plus chimney outside diameter.



Ventilated Roof Thimble

Part D _ _ VRTL

Use the Ventilated Roof Thimble for Model DW and Dplus(+) Series components. Chimney OD +10”



Ventilated Roof Penetration Assembly

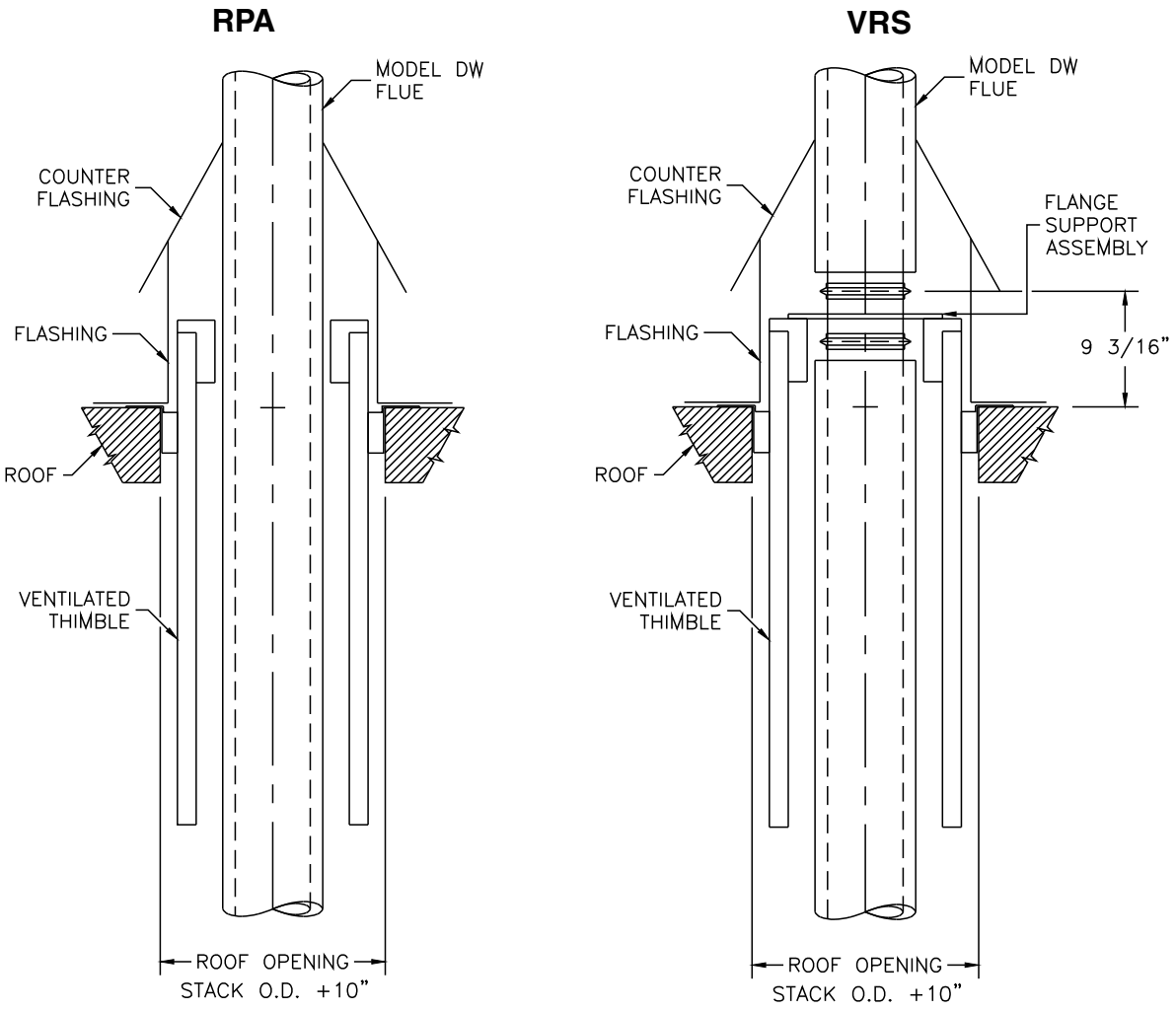
Part D _ _ RPA _

The Ventilated Roof Thimble (part VRT) used in conjunction with the flashing (part FLS) and the counter flashing (part CFL) for passage through a combustible roof structure. These three components are used for a standard flat roof penetration. May also be installed in a roof curb which would be supplied by others.

Ventilated Roof Support Assembly

Part D _ _ VRS _

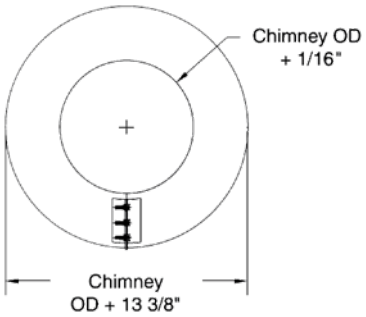
The Ventilated Thimble (part VRT) used in Conjunction with the flange support assembly (FSA), flashing (part FLS), and the counter flashing (part CFL) for passage through a combustible roof structure. Use these four components for a standard flat roof support assembly. May also be installed in a roof curb which would be supplied by others.

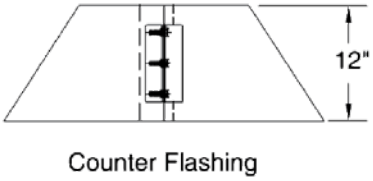


Counter Flashing

Part D _ _ CFL _

Install a counter flashing above the flashing to provide rain protection.
Apply sealant to prevent leakage.



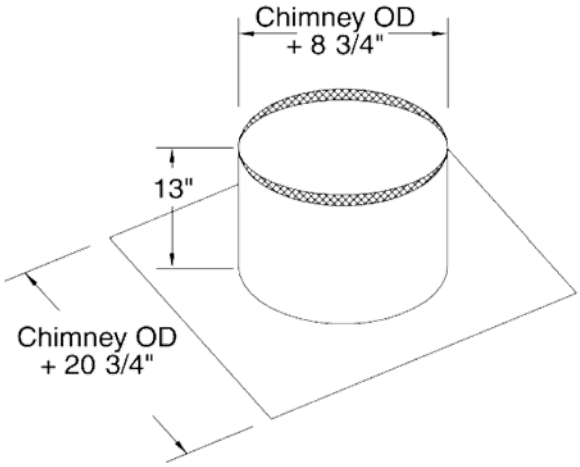


Counter Flashing

Flashing

Part D _ _ FLS _

Use when the exhaust system is penetrating a flat roof structure, or a roof curb.

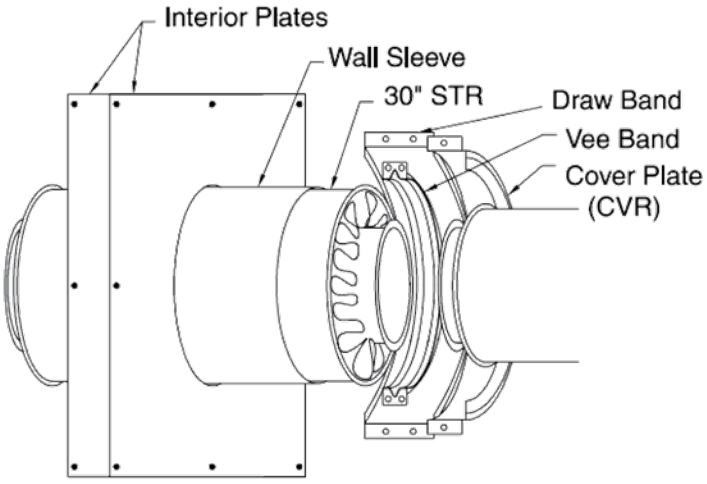


Wall Penetration Assembly

Part D _ _ _ _WPA _ _ _ _

This part is used when penetrating a wall. Part includes: straight section, one (1) wall sleeve, one (1) interior plate, two (2) vee band halves, one (1) draw band, and CVR's.

Note: This is a non-UL listed component.

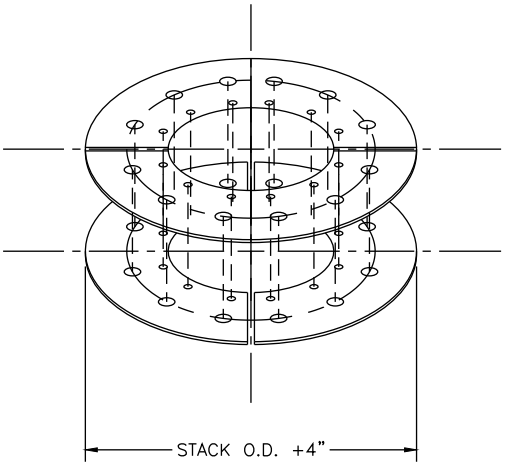


Guy Attachment Ring

Part D _ _ _ _GAR _ _

The Guy Attachment Ring used for lateral support.

Part includes: four (4) half clamp rings and (2) half draw bands. The Model Dplus(+) Series includes a strip(s) of insulation. Is intended to be used in conjunction with rigid bracing or guy wires which would be supplied by others.



Guy Tensioner

Part GUY1500 (Includes Set of Three)

Van-Packer offers a 1500-pound Guy Tensioner, which is good for up to 3" of expansion. Use the Guy Tensioner in conjunction with the Guy Attachment Ring. Van-Packer suggests using appropriate galvanized guying cable with the guy-attachment ring and guy-tension devices.

DW Lifting Device

Part D _ _ L/D

This device is designed to lift flue in a vertical position only and is not intended to lift flue from a horizontal position (see installation instructions). **The following heights are not to be exceeded.**

Part includes: one (1) lifting device and two (2) half vee bands.

Note: This is not a UL listed component.

DW Lifting Device Limitation Chart in Feet					
SECTION ID	**DW**	**DWplus**	**DWplus2**	**DWplus3**	**DWplus4**
	Height Feet	Height Feet	Height Feet	Height Feet	Height Feet
4	280	232	173	131	104
5	267	223	168	130	104
6	253	213	164	130	105
7	246	208	161	128	105
8	241	202	157	128	105
9	233	197	155	126	105
10	230	195	154	126	105
12	211	176	143	117	99
14	195	164	134	111	94
16	184	154	126	106	90
18	173	146	120	101	86
20	166	140	115	97	75
22	159	135	111	84	73
24	155	130	95	82	71
26	123	106	89	77	67
28	115	99	83	72	63
30	108	93	79	68	60
32	101	87	74	64	56
34	96	83	71	61	54
36	91	79	67	58	51
38	79	70	61	54	48
40	76	67	58	52	46
42	74	65	56	50	44
44	71	63	55	48	43
46	69	61	53	47	42
48	67	59	51	45	41

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NOTES


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