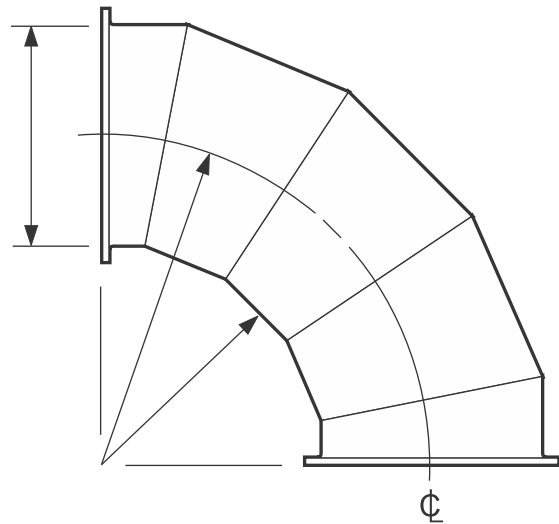


Fab-Tech **PermaShield™**

Stainless Steel Corrosive
Fume Exhaust System With
PermaShield Fluoropolymer
Barrier Coating

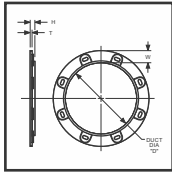


PRODUCT CATALOG

Catalog 04/24.3

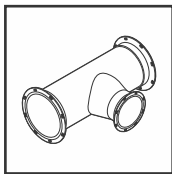
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Exhaust & Abatement



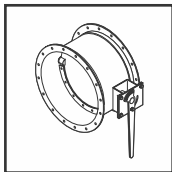
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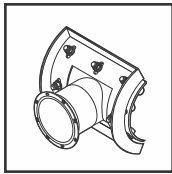
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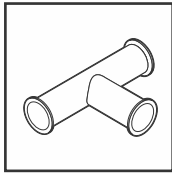
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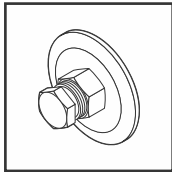
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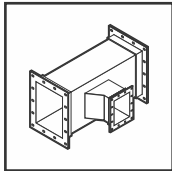
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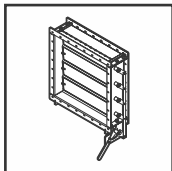
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METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

PermaShield Ductwork Fabrication Standards

The Exential Ductwork Fabrication Standard Manual is designed to aid you, our customer, in becoming acquainted with our fabrication practices. The manual is in strict accordance with the practices in the latest S.M.A.C.N.A. manuals.

GENERAL

Codes and Standards

a. **Ducts** shall be listed for use without the necessity for internal fire protection sprinklers or any devices relied on to cut off air flow in the event of fire by the following:

Factory Mutual Research Standard 4922

Limitations and Requirements:

1. The coating shall be PermaShield® fluoropolymer barrier thermoplastic resin. The average coating thickness per project shall not exceed 12 mils (.012" *0.30mm*).

For straight duct and fittings, the average coating thickness shall fall between:

10 mils +/- 4 mils (.010" +/- .004" *0.254mm +/- 0.102mm*).

For control devices, the average thickness shall fall between:

11 mils +/- 5 mils (.011" +/- .005" *0.279mm +/- 0.127mm*).

Complete and uniform coating coverage is required.

2. This duct may be used for smoke removal in special purpose areas when properly designed and sized. Sprinklers are not required.

3. The product shall be manufactured with identical resins as tested, and according to the formulation on file with FMRC, and shall meet all physical requirements of S.M.A.C.N.A. manual for Industrial Duct Construction Standards.

4. Vertical height of individual risers within the duct system are not restricted, however, they shall not penetrate other fire areas.

5. The manufacturer shall determine the suitability of the duct systems for specific corrosive environments.

6. If the process served by such duct system produces flammable residue or a combustible fume source exceeding 1ft² (0.09 m²) in area per inlet which can build up inside the duct, then internal sprinklers will be required.

7. ASTM E-84 Standard Test Method for Surface Burning Characteristics. Tested in flat sheet form at a 20 ga. (0.95mm) thickness: Flame Spread 0, Smoke Density 20.

b. **PermaShield's FM Global Approval** (4922) extends the widest possible limits from 4" (101.6mm) diameter up to and including 60" diameter (1524.0mm) duct and fittings.

DUCTWORK

a. **Base Metal** shall be a series 300 Stainless Steel. Longitudinal seams shall be fusion welded. Traverse seams shall be continuous weld. All seams shall be smooth on the interior of duct.

b. **Coating** shall be PermaShield Fluoropolymer Barrier Coating and shall be applied per Factory Mutual Research Corporation's limitations and requirements.

c. **Black Iron Rings** shall be coated with PermaProtect, Black Iron Ring Powder. This heat and chip resistant coating is electrostatically applied and sintered to the substrate.

d. **Testing** shall be performed at the factory over the entire coated surface inside and out (where applicable) and edges. The testing shall be performed with a DC spark tester used at 2500 volts.

e. Delivery, Storage, and Handling:

1. **Protection:** Protection is factory applied to ends of ductwork to prevent end damage and prevent dirt and moisture from entering ducts and fittings.

2. **Delivery:** Consignee must inspect shipment upon delivery and note any and all damages and discrepancies on Bill of Lading and notify manufacturer within 24 hours.

3. **Storage:** Coated ductwork should not be stored in an area where it will have a chance to be damaged from traffic or debris. All coated ductwork should be stored on cardboard, Styrofoam or similar materials. Where possible, store inside and protect from dirt and debris. Where necessary to store outside, store above ground and enclose with water proof wrapping to protect from dirt and debris.

4. **Handling:** If coating is scratched use appropriate protocol to "spark test" (refer to Installation and Assembly Guide, Field Modification section) and if spark is detected, contact manufacturer for repair instruction.

5. **Welding:** Under no circumstances shall welding or a heat source greater than 300°F (150°C) be allowed on the stainless steel surface of the duct.

f. Duct Assembly shall be accomplished utilizing either companion rings or EZ clamp:

1. Companion rings are available as stainless steel angle rings in sizes 4" (101.6) thru 128" (3251.2) diameter, as black iron angle rings in sizes 16" (406.4) diameter and larger, or as cast iron rings in sizes 4" (101.6) thru 14" (355.6) diameter. The minimum number of holes for flange connections is one hole for each 4" (101.6) of duct circumference to the next higher number.

2. EZ clamps are available in sizes 2" (50.8) thru 14" (355.6). The EZ band ring style of joining system shall provide a minimum compression load to the gasket of 900 PSI (6205.28kPa).

g. Gasket Technology:

1. Ring gasket material shall be PermaShield form in place, fully expanded 100% PTFE joint sealant.

4" (101.6) - 30" (762.0) diameter duct

.010" (0.25) x .75" (19.05) tape gasket

32" (812.8) diameter & up duct

1/4" (6.35) x 3/16" (4.76) rope gasket

2. EZ clamp gasket material shall be PermaShield form in place, fully expanded 100% PTFE tape or die cut gasket (2" (50.8) -3" (76.2) diameter).

exential

Exhaust & Abatement

Visit our website at www.fabtechinc.com
Email address: sales@fabtechinc.com

Exential reserves the right to change or modify specifications without notice.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Straight Duct Gauge

MIN GAUGE FOR 4' (1219.2) DUCT

MIN GAUGE FOR 8' (2438.4) DUCT

DUCT DIA "D"	-6" WG (-1,495 Pa)	-10" WG (-2,491 Pa)	-14" WG (-3,487 Pa)	-18" WG (-4,484 Pa)	STD DUCT LENGTH
4 (101.6)					
6 (152.4)					
8 (203.2)					
10 (254.0)				20	
12 (304.8)			20	20	
14 (355.6)			20	20	
16 (406.4)			20	20	
18 (457.2)		20			
20 (508.0)		20			
22 (558.8)		20			
24 (609.6)	20				47.25 (1200.15)
26 (660.4)	20				47.25 (1200.15)
28 (711.2)	20				47.25 (1200.15)
30 (762.0)	20				47.25 (1200.15)
32 (812.8)	20				47.25 (1200.15)
34 (863.6)	20				47.25 (1200.15)
36 (914.4)	20				47.25 (1200.15)
38 (965.2)	20				47.25 (1200.15)
40 (1016.0)	20				47.25 (1200.15)
42 (1066.8)	20				47.25 (1200.15)
44 (1117.6)	20				47.25 (1200.15)
46 (1168.4)	20				47.25 (1200.15)
48 (1219.2)	20				47.25 (1200.15)
50 (1270.0)	20				47.25 (1200.15)
52 (1320.8)	20				47.25 (1200.15)
54 (1371.6)	20				47.25 (1200.15)
56 (1422.4)	20				47.25 (1200.15)
58 (1473.2)	20				47.25 (1200.15)
60 (1524.0)	20				47.25 (1200.15)
62 (1574.8)	18				46.75 (1187.45)
64 (1625.6)	18				46.75 (1187.45)
66 (1676.4)	18				46.75 (1187.45)
68 (1727.2)	18				46.75 (1187.45)
70 (1778.0)	18				46.75 (1187.45)
72 (1828.8)	18				46.75 (1187.45)
74 (1879.6)	18				46.75 (1187.45)
76 (1930.4)	18				46.75 (1187.45)
78 (1981.2)	18				46.75 (1187.45)
80 (2032.0)	18				46.75 (1187.45)
82 (2082.8)	18				46.75 (1187.45)
84 (2133.6)	18				46.75 (1187.45)
86 (2184.4)	18				46.75 (1187.45)
88 (2235.2)	18				46.75 (1187.45)
90 (2286.0)	18				46.75 (1187.45)
92 (2336.8)	18				46.75 (1187.45)
94 (2387.6)	18				46.75 (1187.45)
96 (2438.4)	18				46.75 (1187.45)
98 (2489.2)	18				46.75 (1187.45)
100 (2540.0)	18				46.75 (1187.45)
102 (2590.8)	18				46.75 (1187.45)
104 (2641.6)	18				46.75 (1187.45)
106 (2692.4)	18				46.75 (1187.45)
108 (2743.2)	18				46.75 (1187.45)
110 (2794.0)	18				46.75 (1187.45)
112 (2844.8)	18				46.75 (1187.45)
114 (2895.6)	18				46.75 (1187.45)
116 (2946.4)	18				46.75 (1187.45)
118 (2997.2)	18				46.75 (1187.45)
120 (3048.0)	14				46.75 (1187.45)

DUCT DIA "D"	-6" WG (-1,495 Pa)	-10" WG (-2,491 Pa)	-14" WG (-3,487 Pa)	-18" WG (-4,484 Pa)	STD DUCT LENGTH
8 (203.2)					
10 (254.0)					
12 (304.8)				20	
14 (355.6)		20	20	20	
16 (406.4)		20	20	20	
18 (457.2)	20				
20 (508.0)	20				
22 (558.8)	20				
24 (609.6)	20				
26 (660.4)	20				
28 (711.2)	20				
30 (762.0)	20				
32 (812.8)	20				
34 (863.6)	20				
36 (914.4)	20				
38 (965.2)	20				
40 (1016.0)	20				
42 (1066.8)	20				
44 (1117.6)	20				
46 (1168.4)	20				
48 (1219.2)	20				
50 (1270.0)	20				
52 (1320.8)	20				
54 (1371.6)	20				
56 (1422.4)	20				
58 (1473.2)	20				
60 (1524.0)	20				
62 (1574.8)	20				
64 (1625.6)	20				
66 (1676.4)	20				
68 (1727.2)	20				
70 (1778.0)	20				
72 (1828.8)	20				
74 (1879.6)	20				
76 (1930.4)	20				
78 (1981.2)	20				
80 (2032.0)	20				
82 (2082.8)	20				
84 (2133.6)	20				
86 (2184.4)	20				
88 (2235.2)	20				
90 (2286.0)	20				
92 (2336.8)	20				
94 (2387.6)	20				
96 (2438.4)	20				
98 (2489.2)	20				
100 (2540.0)	20				
102 (2590.8)	20				
104 (2641.6)	20				
106 (2692.4)	20				
108 (2743.2)	20				
110 (2794.0)	20				
112 (2844.8)	20				
114 (2895.6)	20				
116 (2946.4)	20				
118 (2997.2)	20				
120 (3048.0)	20				

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Ring Mechanical Specifications

DUCT DIA.	ANGLE RING SPECIFICATIONS					RING MATERIAL & GASKETS			CAST RING SPECIFICATIONS																																																																																																														
	WIDTH (W)	THICKNESS (T)	# HOLES	BOLT HOLE SIZE	BOLT SIZE	BOLT CIRCLE DIA.	PTFE GASKET W x H	STAINLESS STEEL	BLACK IRON	DUCT DIA.	WIDTH (W)	HEIGHT (H)	THICKNESS (T)	# HOLES	BOLT HOLE SIZE	BOLT SIZE	BOLT CIRCLE DIA.																																																																																																						
4 (101.6)	1" (25.4)	1/8" (3.18)	6	7/16" (11.1)	3/8" (9.53)	5.31 (134.87)	GAS09 .01" x .75" (.25 x 19.05)	SC	BI	4	1-1/4" (31.8)	13/32" (10.32)	1/8" (3.18)	6	7/16" x 11/16" (11.1 x 17.5)	3/8	5.31																																																																																																						
6 (152.4)	1-1/4" (31.8)	1/8" (3.18)	8	7/16" x 11/16" (11.1 x 17.5)	3/8" (9.53)	7.50 (190.5)				GAS03 1/4 x 3/16 (6.35 x 4.76)	SS	BI	6	1-1/4" (31.8)	13/32" (10.32)	1/8" (3.18)	8	7/16" x 11/16" (11.1 x 17.5)	3/8	7.50																																																																																																			
8 (203.2)						9.50 (241.3)							10 (254.0)							11.50 (292.1)	12 (304.8)	13.81 (350.77)	14 (355.6)	15.81 (401.57)	16 (406.4)	17.76 (451.10)	18 (457.2)	19.76 (501.9)	20 (508.0)	21.76 (552.7)	22 (558.8)	23.88 (606.55)	24 (609.6)	25.88 (657.35)	26 (660.4)	27.88 (708.15)	28 (711.2)	29.88 (758.95)	30 (762.0)	31.88 (809.75)	32 (812.8)	33.88 (860.55)	34 (863.6)	35.88 (911.35)	36 (914.4)	37.88 (962.15)	38 (965.2)	40.38 (1025.65)	40 (1016.0)	42.38 (1076.45)	42 (1066.8)	44.38 (1127.25)	44 (1117.6)	46.38 (1178.05)	46 (1168.4)	48.38 (1228.85)	48 (1219.2)	50.38 (1279.65)	50 (1270.0)	52.88 (1343.15)	52 (1320.8)	54.88 (1393.95)	54 (1371.6)	56.88 (1444.75)	56 (1524.0)	58.88 (1495.55)	58 (1473.2)	60.88 (1546.35)	60 (1524.0)	62.88 (1597.15)	62 (1574.8)	64.88 (1647.95)	64 (1625.6)	66.88 (1698.75)	66 (1676.4)	68.88 (1749.55)	68 (1727.2)	70.88 (1800.35)	70 (1778.0)	72.88 (1851.15)	72 (1828.8)	74.88 (1901.95)	74 (1879.6)	76.88 (1952.75)	76 (1930.4)	78.88 (2003.55)	78 (1981.2)	80.88 (2054.35)	80 (2032.0)	82.88 (2105.15)	82 (2082.8)	84.88 (2155.95)	84 (2184.4)	86.88 (2206.75)	86 (2184.4)	89.38 (2270.25)	88 (2235.2)	91.38 (2321.05)	90 (2286.0)	93.38 (2371.85)	92 (2336.8)	95.38 (2422.65)	94 (2387.6)	97.38 (2473.45)	96 (2438.4)	100.38 (2549.65)	98 (2489.2)	102.38 (2600.45)	100 (2540.0)	104.38 (2651.25)	102 (2590.8)	106.38 (2702.05)	104 (2641.6)	108.38 (2752.85)	106 (2692.4)	110.38 (2803.65)	108 (2743.2)	112.38 (2854.45)	110 (2794.0)

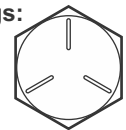
NOTES:

- DUCT 4" (101.6) TO 14" (355.6) MANUFACTURED WITH CAST RINGS AS STANDARD. DUCT 16" (406.4) TO 120" (3048.0) MANUFACTURED WITH ANGLE RINGS AS STANDARD.
- STANDARD MOUNTING HOLE LOCATIONS FOR WELDED ANGLE RINGS [32" (812.8) TO 120" (3048.0)] STRADDLE THE VERTICAL CENTERLINE UNLESS OTHERWISE SPECIFIED.
- STANDARD HARDWARE PROVIDED FOR ANGLE RING APPLICATIONS ARE PLATED GRADE 5 FASTENERS. STAINLESS STEEL HARDWARE IS RECOMMENDED FOR OUTDOOR APPLICATIONS.
- OPTION:** CUSTOM ANGLE RINGS AVAIL
- DUCT AND FITTINGS GREATER THAN 84" DIA. (2133.6) REQUIRES ENGINEERING REVIEW AND APPROVAL.

Grade 5 Bolt Markings:

Torque Specifications:

Torque in at least 3 stages



Duct Dia.	Bolt Size	Bolt Mat'l	Ft lb	In lb	Nm
4"-10" (101.4-254.0)	3/8" (9.53)	Gr.5 *SS	35 25	420 300	48 34
**12-14" (304.8-355.6)	3/8" (9.53)	Gr.5 *SS	35 25	420 300	48 34
12"-128" (304.8-3251.2)	1/2" (12.7)	Gr.5 *SS	65 60	780 720	88 82

* STAINLESS STEEL HARDWARE REQUIRES APPLICATION OF ANTI-SEIZE LUBRICANT PRIOR TO ASSEMBLY. LOCKTITE LB771 OR EQUAL.

** REQUIRED FOR RINGS WITH 7/16" DIAMETER BOLT HOLES.

PTFE GASKETS* FOR RING JOINTS

4"-30" Ø
(101.6) - (762.0)Ø
.01 X .75 TAPE
P/N: GAS09

3/4" (19.05)

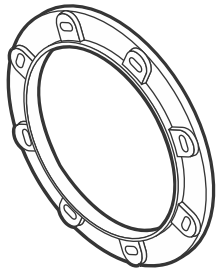
32"- 128" Ø
& RECTANGULAR
(812.8) - (3251.2)Ø
1/4" x 3/16" ROPE
P/N: GAS03

3/16" (4.76) 1/4" (6.35)

* ADHESIVE ON ONE SIDE

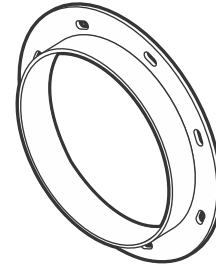
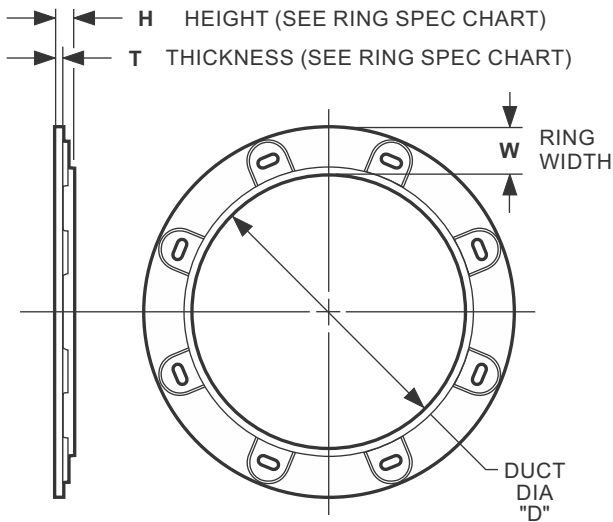
METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Ring Mechanical Specifications



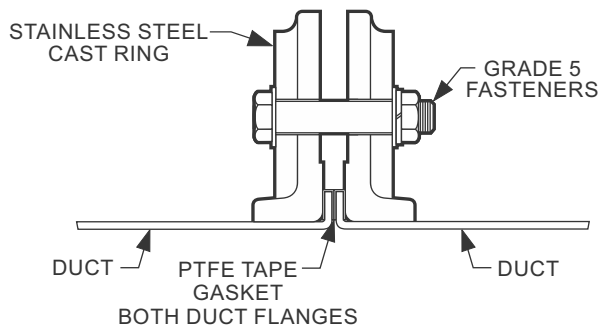
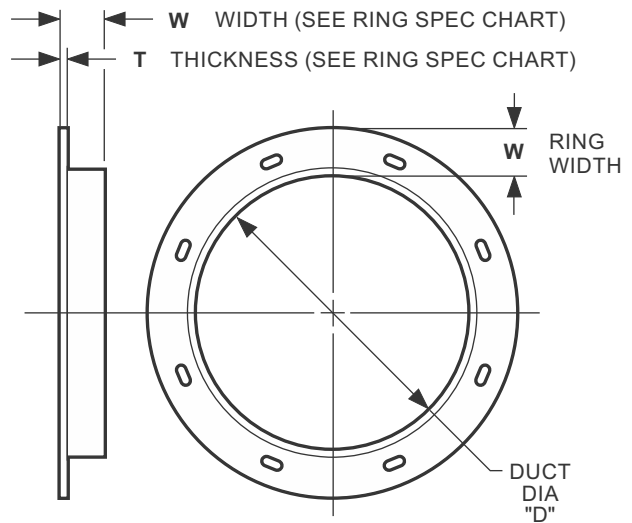
Cast Ring

STANDARD FOR DUCT 4" (101.6) TO 14" (355.6)

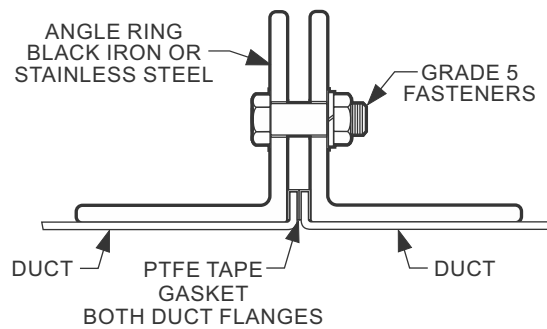


Angle Ring

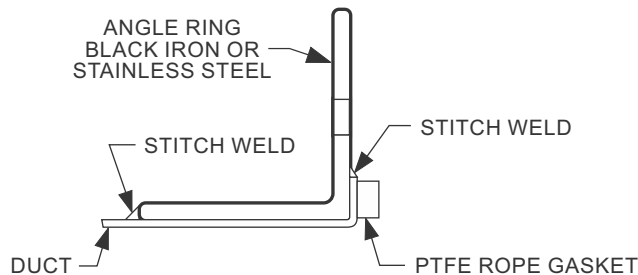
BLACK IRON ANGLE RING 16" (406.4) TO 100" (2540.0)
 STAINLESS STEEL ANGLE RING 4" (101.6) TO 128" (3251.2)



Floating Cast Ring



Floating Angle Ring



Stitch Welded Angle Ring

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

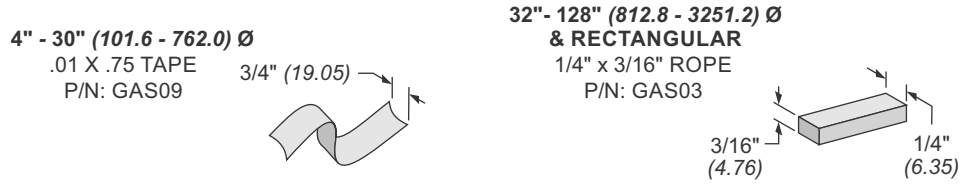
Joint Sealant Specifications

DUCT DIA "D"	RING MATERIAL & GASKETS	
	PTFE GASKET W x H	STAINLESS STEEL BLACK IRON
4 (101.6)	GAS09 .01" x .75" (.25 x 19.05)	SC
6 (152.4)		SC
8 (203.2)		SC
10 (254.0)		SC
12 (304.8)		SC
14 (355.6)		SC
16 (406.4)		SC
18 (457.2)		SC
20 (508.0)		SC
22 (558.8)		SC
24 (609.6)	GAS03 1/4" x 3/16" (6.35 x 4.76)	SS
26 (660.4)		SS
28 (711.2)		SS
30 (762.0)		SS
32 (812.8)		SS
34 (863.6)		SS
36 (914.4)		SS
38 (965.2)		SS
40 (1016.0)		SS
42 (1066.8)		SS
44 (1117.6)	GAS03 1/4" x 3/16" (6.35 x 4.76)	BI
46 (1168.4)		BI
48 (1219.2)		BI
50 (1270.0)		BI
52 (1320.8)		BI
54 (1371.6)		BI
56 (1422.4)		BI
58 (1473.2)		BI
60 (1524.0)		BI
62 (1574.8)		BI
64 (1625.6)	GAS03 1/4" x 3/16" (6.35 x 4.76)	SS
66 (1676.4)		SS
68 (1727.2)		SS
70 (1778.0)		SS
72 (1828.8)		SS
74 (1879.6)		SS
76 (1930.4)		SS
78 (1981.2)		SS
80 (2032.0)		SS
82 (2082.8)		SS
84 (2133.6)	GAS03 1/4" x 3/16" (6.35 x 4.76)	BI
86 (2184.4)		BI
88 (2235.2)		BI
90 (2286.0)		BI
92 (2336.8)		BI
94 (2387.6)		BI
96 (2438.4)		BI
98 (2489.2)		BI
100 (2540.0)		BI
102 (2590.8)		BI
104 (2641.6)	GAS03 1/4" x 3/16" (6.35 x 4.76)	SS
106 (2692.4)		SS
108 (2743.2)		SS
110 (2794.0)		SS
112 (2844.8)		SS
114 (2895.6)		SS
116 (2946.4)		SS
118 (2997.2)		SS
120 (3048.0)		SS

Technical Specifications:

- ▶ **Material:** 100% expanded PTFE (polytetrafluoroethylene), with monodirectional strength. This product is supplied with an adhesive backer only to aid in the product installation.
- ▶ **Operating Range:** The maximum applicable pressure and temperature depend mainly on the equipment and installation.
Typical use: -76°F to 300°F (-60°C to 150°C); industrial full vacuum [absolute pressure of 0.019 psi (1 mmHg(Torr) = 133 Pa = 1.33 mbar)] to 145psi (10 bar).
- ▶ **Chemical Resistance:** Chemical resistance to all media pH 0-14, except molten alkali metals and elemental fluorine.
- ▶ **Shelf Life:** ePTFE is not subject to aging and can be stored indefinitely. To ensure optimal adhesive function, we recommend use within two years of date of purchase when stored under normal conditions [70°F (21°C)] 50% Relative Humidity).

PTFE GASKETS* FOR RING JOINTS



* ADHESIVE ON ONE SIDE

FOR INDUSTRIAL USE ONLY: Not for use in food, drug, cosmetic or medical device manufacturing, processing, or packaging operations.

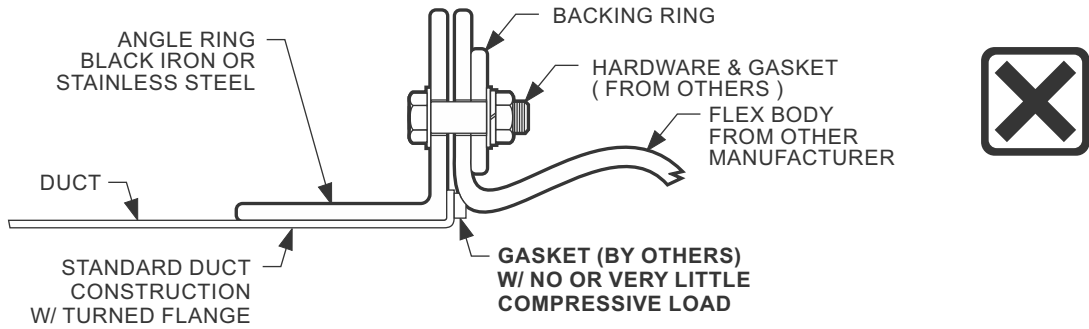
Safety Information:

- ▶ **Regulatory Information:** The gasket products supplied as a finished part in the form of spooled cord for use on PermaShield duct fittings meet the definition of an article in the United States, per OSHA Regulation 29 CFR 1910.1200(b)(6)(v) during normal intended use, and as described in EC Regulation 1907/2006/EC. These products also meet the definition of an article in the Australian Approved Criteria For Classifying Hazardous Substances [NOHSC: 1008(2004)] 3rd edition, October 2004 and of a manufactured article under Section 12 of the Canadian Hazardous Product Act. For this reason, a Material Safety Data Sheet (MSDS) or Safety Data Sheet (SDS) is not required.
- ▶ **Risks and Usage Recommendations:** These materials are non-hazardous in their original form and when applied properly. Do not heat over 600°F (315°C) and avoid burning, grinding and melting of the product. If the material is being cut or removed using burning, grinding or elevated temperature processes, or if it is involved in a fire situation, hazardous decomposition byproducts may form, including: carbon monoxide, carbon dioxide, hydrogen fluoride, carbonyl fluoride, tetrafluoroethylene, perfluoroisobutylene, and traces of incompletely burned carbon products. Inhalation of fumes from overheating or burning of this product may cause polymer fume fever, a flu-like illness with chills and fever.
- ▶ **Control Measures:** The risks from exposure can be reduced if standard practices are used. These practices include:
 - 1) Not heating product over 600°F (315°C).
 - 2) Avoid burning, grinding, high temperature cutting or melting of the product without the use of effective local exhaust ventilation and/or personal protective equipment.
 - 3) Protecting material from fire. In the event of a fire wear self-contained breathing apparatus and wear full protective equipment. Hydrogen fluoride fumes emitted during a fire can react with water to form hydrofluoric acid. Wear neoprene gloves when handling refuse from a fire.
 - 4) Dispose of according to local, state, national, and international regulations. Incinerate only if incinerator is capable of scrubbing out hydrogen fluoride and other acidic combustion products.

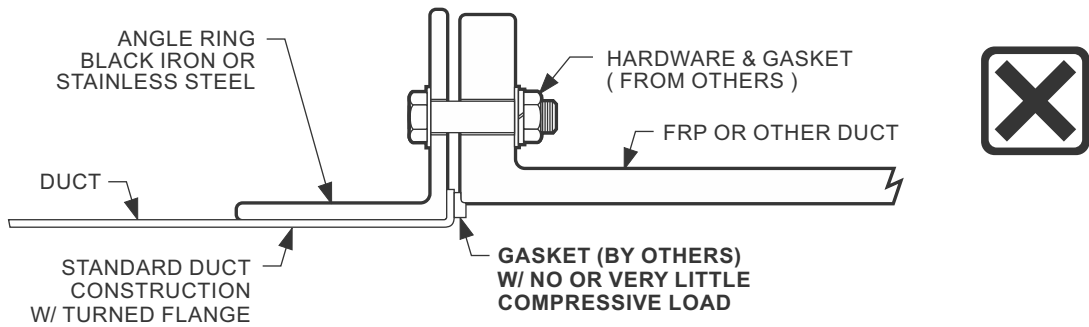
KEY: **SC** STAINLESS CAST RING
SS STAINLESS STEEL ANGLE RING
BI BLACK IRON ANGLE RING

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

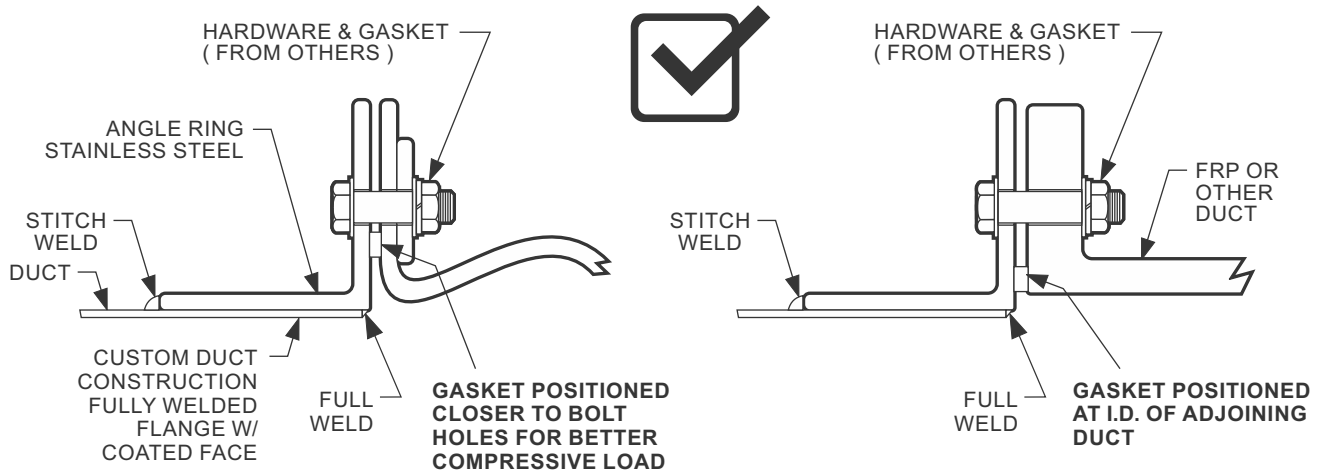
Gasket Placement For Dissimilar Duct Joint Connections



Incorrect Flex/Expansion Joint Connection



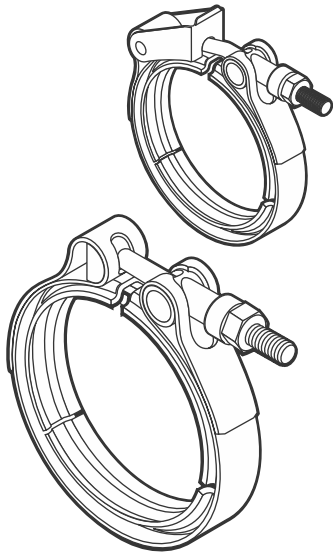
Incorrect FRP or Other Duct Joint Connection



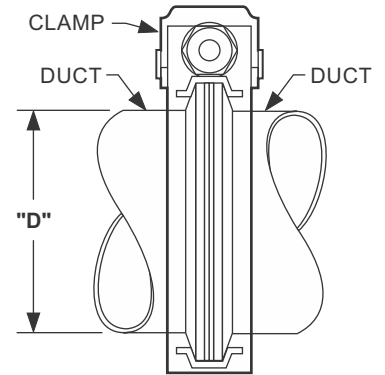
Correct Gasket Placement For Dissimilar Duct Joint Connections

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

EZ Clamp Mechanical Specifications

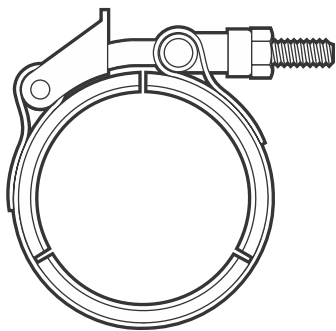


DUCT DIA. "D"	DUCT GAUGE -6" Thru -18" WG	STRAIGHT DUCT LENGTH	BACKING RING
2 (50.8)	.035 (0.89) TUBING	4 FT	WELDED
3 (76.2)	.065 (1.65) TUBING		
4 (101.6)	20ga 0.0375 (0.95)	47.25" (1200.15) ACTUAL	FLOATING
6 (152.4)			
8 (203.2)			
10 (254.0)			
12 (304.8)			
14 (355.6)			

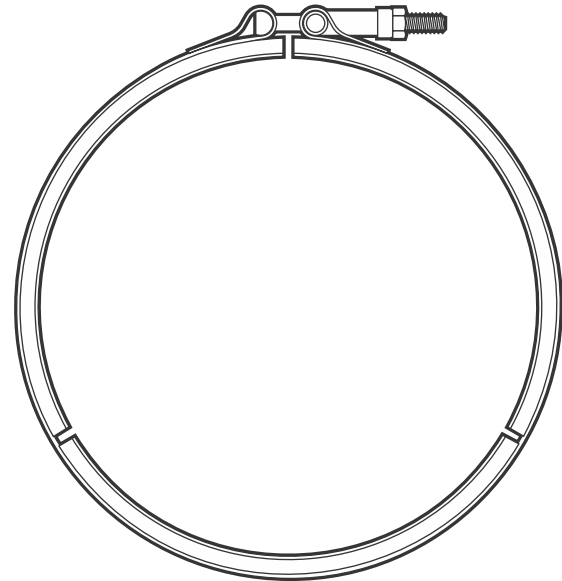


The EZ joining system is available for standard PermaShield duct from 2" (50.8) to 14" (355.6) in diameter. The combination of half round backing rings and the unique angled clamp band provides excellent clamping force with the added benefit of ease of installation.

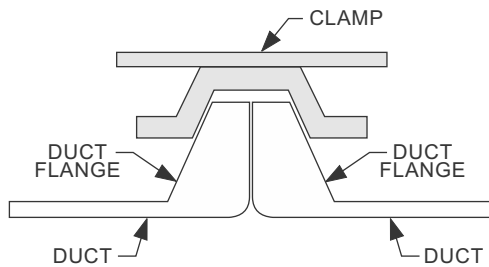
Duct Diameter	Bolt Size	Torque Specifications: Torque in at least 3 stages		
		lb*ft	lb*in	kg*m
2" (50.4) 3" (76.2) 4" (101.6) 6" (152.4)	1/4" (6.35)	6.25	75	0.9
8" (203.2) 10" (254.0) 12" (304.8) 14" (355.6)	5/16" (7.94)	10	120	1.4



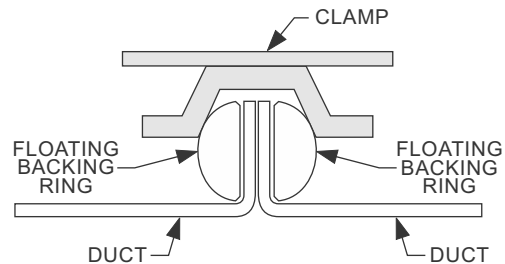
2" (50.8) & 3" (76.2) EZ CLAMP



4" (101.6) - 14" (355.6) EZ CLAMP



CROSS SECTION OF JOINT



CROSS SECTION OF JOINT

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Conversion Chart - Imperial to Metric

DUCT DIA			DUCT DIA		
Order Size	English Equivalent	Actual Size	Order Size	English Equivalent	Actual Size
50mm	2"	50.8mm	1650mm	66"	1676.4mm
100mm	4"	101.6mm	1700mm	68"	1727.2mm
150mm	6"	152.4mm	1750mm	70"	1778.0mm
200mm	8"	203.2mm	1800mm	72"	1828.8mm
250mm	10"	254.0mm	1850mm	74"	1879.6mm
300mm	12"	304.8mm	1900mm	76"	1930.4mm
350mm	14"	355.6mm	1950mm	78"	1981.2mm
400mm	16"	406.4mm	2000mm	80"	2032.0mm
450mm	18"	457.2mm	2050mm	82"	2082.8mm
500mm	20"	508.0mm	2100mm	84"	2133.6mm
550mm	22"	558.8mm	2150mm	86"	2184.4mm
600mm	24"	609.6mm	2200mm	88"	2235.2mm
650mm	26"	660.4mm	2250mm	90"	2286.0mm
700mm	28"	711.2mm	2300mm	92"	2336.8mm
750mm	30"	762.0mm	2350mm	94"	2387.6mm
800mm	32"	812.8mm	2400mm	96"	2438.4mm
850mm	34"	863.6mm	2450mm	98"	2489.2mm
900mm	36"	914.4mm	2500mm	100"	2540.0mm
950mm	38"	965.2mm	2550mm	102"	2590.8mm
1000mm	40"	1016.0mm	2600mm	104"	2641.6mm
1050mm	42"	1066.8mm	2650mm	106"	2692.4mm
1100mm	44"	1117.6mm	2700mm	108"	2743.2mm
1150mm	46"	1168.4mm	2750mm	110"	2794.0mm
1200mm	48"	1219.2mm	2800mm	112"	2844.8mm
1250mm	50"	1270.0mm	2850mm	114"	2895.6mm
1300mm	52"	1320.8mm	2900mm	116"	2946.4mm
1350mm	54"	1371.6mm	2950mm	118"	2997.2mm
1400mm	56"	1422.4mm	3000mm	120"	3048.0mm
1450mm	58"	1473.2mm	3050mm	122"	3098.8mm
1500mm	60"	1524.0mm	3100mm	124"	3149.6mm
1550mm	62"	1574.8mm	3150mm	126"	3200.4mm
1600mm	64"	1625.6mm	3200mm	128"	3251.2mm

- METRIC CONVERSIONS ARE ROUNDED TO THE MOST APPROPRIATE EVEN INCH UNLESS OTHERWISE SPECIFIED
- DUCT AND FITTINGS GREATER THAN 84" DIAMETER REQUIRES ENGINEERING REVIEW AND APPROVAL

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Weight Chart - Coated EZ Duct / Miscellaneous Fittings

DUCT DIA "D" in (mm)	Single Van Stone Ring lbs (kg)	End Cap w/ Van Stone Ring lbs (kg)	Damper w/ Van Stone Rings Manual Operation lbs (kg)	Blastgate w/ Van Stone Rings Manual Operation lbs (kg)
4 101.6	1.0 0.45	1.3 0.59	4.9 2.22	9.8 4.45
6 152.4	1.8 0.82	2.4 1.09	8.2 3.72	14.3 6.49
8 203.2	2.3 1.04	3.2 1.45	10.8 4.90	18.2 8.26
10 254.0	2.9 1.32	4.2 1.91	13.7 6.22	22.4 10.17
12 304.8	6.9 3.13	8.7 3.95	22.1 10.03	32.1 14.57
14 355.6	7.1 3.22	9.4 4.27	26.3 11.94	37.5 17.03
16 406.4	8.0 3.63	15.1 6.86	100 45.40	42.8 19.43
18 457.2	8.9 4.04	17.6 7.99	109 49.49	58.6 26.60
20 508.0	9.8 4.45	20.2 9.17	118 53.57	65.2 29.60
22 558.8	10.8 4.90	22.9 10.40	128 58.11	72.6 32.96
24 609.6	11.7 5.31	25.8 11.71	138 62.65	80.2 36.41
26 660.4	17.4 7.90	33.6 15.25	158 71.73	98.3 44.63
28 711.2	18.7 8.49	37.2 16.89	170 77.18	107 48.58
30 762.0	19.9 9.03	40.8 18.52	182 82.63	117 53.12
32 812.8	21.2 9.62	44.6 20.25	194 88.08	127 57.66
34 863.6	22.5 10.21	48.5 22.02	234 106.24	136 61.74
36 914.4	23.8 10.81	60.0 27.24	221 100.33	146 66.28
38 965.2	25.0 11.35	64.6 29.33	235 106.69	326 148.00
40 1016.0	26.3 11.94	69.4 31.51	249 113.05	337 152.00
42 1066.8	27.6 12.53	74.3 33.73	264 119.86	353 160.26
44 1117.6	28.9 13.12	79.4 36.05	280 127.12	370 167.98
46 1168.4	30.1 13.67	84.6 38.41	296 134.38	385 174.79
48 1219.2	31.4 14.26	89.9 40.81	314 142.56	406 184.32
50 1270.0	41.4 18.79	120 54.48	517 234.72	460 208.84
52 1320.8	43.1 19.57	126 57.20	544 246.98	483 219.28
54 1371.6	44.6 20.25	133 60.38	573 260.14	505 229.27
56 1422.4	46.3 21.02	140 63.56	602 273.31	530 240.62
58 1473.2	47.8 21.70	147 66.74	633 287.38	553 251.06
60 1524.0	79.5 36.09	207 93.98	725 329.15	652 296.01
62 1574.8	82.0 37.23	216 98.06	757 343.68	672 305.09
64 1625.6	84.6 38.41	225 102.15	791 359.11	696 315.98
66 1676.4	87.1 39.54	235 106.69	826 375.00	720 326.88
68 1727.2	89.7 40.72	244 110.78	861 390.89	750 339.50
70 1778.0	92.9 42.18	254 115.32	897 407.24	800 363.20
72 1828.8	94.8 43.04	263 119.40	936 424.94	816 370.46
74 1879.6	97.4 44.22	273 123.94	972 441.29	832 377.73
76 1930.4	100 45.40	283 128.48	1010 458.54	848 384.99
78 1981.2	102 46.31	293 133.02	1051 477.15	864 392.26
80 2032.0	105 47.67	304 138.02	1089 494.41	885 401.79
82 2082.8	108 49.03	314 142.56	1129 512.57	902 409.51
84 2133.6	110 49.94	325 147.55	1171 531.63	923 419.04
86 2184.4	113 51.30	336 152.54		
88 2235.2	115 52.21	347 157.54		
90 2286.0	118 53.57	358 162.53		
92 2336.8	120 54.48	369 167.53		
94 2387.6	123 55.84	380 172.52		
96 2438.4	171 77.63	437 198.40		
98 2489.2	174 78.99	450 204.30		
100 2540.0	178 80.81	463 210.20		
102 2590.8	181 82.17	475 215.65		
104 2641.6	185 83.99	488 221.55		
106 2692.4	188 85.35	502 227.91		
108 2743.2	192 87.17	515 233.81		
110 2794.0	195 88.53	528 239.71		
112 2844.8	199 90.35	542 246.07		
114 2895.6	202 91.71	555 251.97		
116 2946.4	206 93.52	569 258.33		
118 2997.2	209 94.89	583 264.68		
120 3048.0	213 96.70	598 271.49		

NOTES:

1. ALL WEIGHTS ARE CALCULATED, HARDWARE NOT INCLUDED.
2. SOME WEIGHTS FOR FITTINGS LARGER THAN 20" (508.0) DIAMETER HAVE BEEN ROUNDED TO THE NEAREST POUND.
3. TO CALCULATE THE APPROXIMATE WEIGHT FOR CUSTOM LENGTH DUCT OR FOR FITTINGS SUCH AS REDUCERS, USE THE PER FOOT WEIGHT FOR STRAIGHT DUCT IN THE PROPER PRESSURE CLASS.

EZ Duct Weight Charts

DUCT DIA "D" in (mm)	Duct Per Foot lbs (kg)	4' Duct lbs (kg)	Single Clamp lbs (kg)
4 101.6	1.8 .817	7.2 3.27	0.4 .182
6 152.4	2.7 1.23	10.9 4.95	0.6 .272
8 203.2	3.6 1.63	14.5 6.58	1.2 .545
10 254.0	4.5 2.04	18.1 8.22	1.4 .636
12 304.8	5.4 2.45	21.7 9.85	1.8 .817
14 355.6	6.3 2.86	25.5 11.58	2.0 .908

DUCT DIA "D" in (mm)	90° Elbow	
	R=1.5D lbs (kg)	R=1D lbs (kg)
4 101.6	2.2 .999	1.5 .681
6 152.4	4.5 2.04	3.5 1.59
8 203.2	8.3 3.77	6.4 2.91
10 254.0	11.9 5.40	9.0 4.09
12 304.8	15.1 6.86	10.9 4.95
14 355.6	21.7 9.85	16.0 7.26

DUCT DIA "D" in (mm)	Damper	Blastgate	End Cap
	lbs (kg)	lbs (kg)	lbs (kg)
4 101.6	3.1 1.41	7.0 3.18	1.0 .454
6 152.4	4.8 2.18	9.5 4.31	1.6 .726
8 203.2	6.4 2.91	12.7 5.77	2.6 1.18
10 254.0	8.1 3.68	15.0 6.81	3.5 1.59
12 304.8	10.3 4.68	17.9 8.13	4.4 1.99
14 355.6	12.6 5.72	21.0 9.53	5.4 2.45

DUCT DIA "D" in (mm)	60° Elbow		45° Elbow		30° Elbow	
	R=1.5D lbs (kg)	R=1D lbs (kg)	R=1.5D lbs (kg)	R=1D lbs (kg)	R=1.5D lbs (kg)	R=1D lbs (kg)
4 101.6	1.2 .545	0.8 .363	0.9 .409	0.6 .272	0.7 .318	0.4 .182
6 152.4	2.4 1.09	1.7 .772	1.9 .863	1.4 .636	1.4 .636	1.0 .454
8 203.2	4.0 1.82	2.9 1.32	3.1 1.41	2.3 1.04	2.3 1.04	1.7 .772
10 254.0	6.0 2.72	4.3 1.95	4.7 2.13	3.8 1.73	3.4 1.54	2.7 1.23
12 304.8	8.5 3.86	6.0 2.72	6.6 2.99	4.7 2.13	4.7 2.13	3.4 1.54
14 355.6	11.3 5.13	7.9 3.59	8.8 3.99	6.2 2.81	6.3 2.86	4.5 2.04

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Weight Chart - Coated Straight Duct & Elbows: -6" Wg Pressure Class

DUCT DIA "D"	Per Foot 1' - 4'	4' Duct w/ Van Stone Rings	Per Foot 4' - 8'	8' Duct w/ Van Stone Rings	30° Elbow		45° Elbow		60° Elbow		90° Elbow	
					R=1.5D	R=1D	R=1.5D	R=1D	R=1.5D	R=1D	R=1.5D	R=1D
in (mm)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)
4 101.6	1.7 0.8	9.0 4.1			2.6 1.2	2.1 1.0	2.8 1.3	2.3 1.0	3.0 1.4	2.6 1.2	3.4 1.5	2.9 1.3
6 152.4	2.6 1.2	14.2 6.4			5.0 2.3	4.6 2.1	5.5 2.5	4.9 2.2	6.0 2.7	5.3 2.4	7.0 3.2	5.9 2.7
8 203.2	3.5 1.6	18.8 8.5	3.5 1.6	32.9 14.9	7.4 3.4	6.4 2.9	8.2 3.7	6.9 3.1	9.2 4.2	7.7 3.5	10.7 4.9	8.9 4.0
10 254.0	4.4 2.0	23.6 10.7	4.4 2.0	41.3 18.8	9.7 4.4	8.4 3.8	10.9 4.9	9.0 4.1	12.3 5.6	10.1 4.6	14.4 6.5	11.9 5.4
12 304.8	5.3 2.4	35.2 16.0	5.3 2.4	56.5 25.7	17.7 8.1	15.8 7.2	19.6 8.9	16.8 7.6	21.5 9.8	18.5 8.4	25.3 11.5	21.0 9.5
14 355.6	6.2 2.8	39.2 17.8	6.2 2.8	64.1 29.1	22.0 10.0	19.2 8.7	24.8 11.3	20.7 9.4	27.6 12.5	23.2 10.5	33.2 15.1	26.8 12.2
16 406.4	7.1 3.2	44.6 20.2	7.1 3.2	73.1 33.2	26.4 12.0	22.4 10.2	30.0 13.6	24.6 11.2	33.7 15.3	27.9 12.7	41.1 18.7	32.6 14.8
18 457.2	8.0 3.6	50.0 22.7	8.0 3.6	82.1 37.3	30.7 13.9	26.0 11.8	35.2 16.0	28.5 12.9	39.8 18.1	32.7 14.8	49.0 22.2	38.4 17.4
20 457.2	8.9 4.0	55.4 25.2	8.9 4.0	91.1 41.4	35.1 15.9	29.7 13.5	40.4 18.3	32.4 14.7	45.9 20.8	37.4 17.0	56.9 25.8	44.2 20.1
22 558.8	9.8 4.4	61.0 27.7	9.8 4.4	100.3 45.5	39.4 17.9	33.6 15.3	45.6 20.7	36.3 16.5	52.0 23.6	42.1 19.1	64.8 29.4	50.0 22.7
24 609.6	10.6 4.8	65.7 29.8	10.6 4.8	108.0 49.0	44.7 20.3	37.8 17.2	52.0 23.6	42.7 19.4	59.4 27.0	47.6 21.6	74.5 33.8	57.6 26.2
26 660.4	11 5.0	81 36.8	11 5.0	126 57.2	60 27.2	51 23.2	69 31.3	57 25.9	77 35.0	63 28.6	95 43.1	75 34.1
28 711.2	12 5.4	87 39.5	12 5.4	136 61.7	67 30.4	57 25.9	77 35.0	63 28.6	87 39.5	70 31.8	107 48.6	84 38.1
30 762.0	13 5.9	93 42.2	13 5.9	146 66.3	73 33.1	62 28.1	85 38.6	70 31.8	96 43.6	78 35.4	120 54.5	93 42.2
32 812.8	14 6.4	99 44.9	14 6.4	156 70.8	79 35.8	67 30.4	93 42.2	76 34.5	106 48.1	85 38.6	128 58.1	101 45.9
34 863.6	15 6.8	105 47.7	15 6.8	166 75.3	85 38.6	73 33.1	102 46.3	83 37.7	115 52.0	93 42.2	141 64.0	111 50.4
36 914.4	16 7.3	111 50.4	16 7.3	176 79.8	91 41.3	79 35.8	111 50.4	90 40.9	124 56.0	101 45.9	154 69.9	121 54.9
38 965.2	17 7.7	117 53.1	17 7.7	186 84.3	97 44.0	85 38.6	120 54.5	97 44.0	133 60.4	109 49.5	167 75.8	131 59.5
40 1016.0	18 8.2	124 56.3	18 8.2	196 88.8	103 46.7	91 41.3	125 56.8	101 45.9	142 64.0	119 54.0	179 81.3	137 62.2
42 1066.8	19 8.6	130 59.0	19 8.6	206 93.3	109 49.5	97 44.0	135 61.3	109 49.5	151 68.0	128 58.1	195 88.5	148 67.2
44 1117.6	20 9.1	137 62.2	20 9.1	216 97.8	115 52.0	103 46.7	146 66.3	116 52.7	160 72.6	138 62.7	211 95.8	161 73.1
46 1168.4	21 9.5	143 64.9	21 9.5	226 102.3	121 54.5	109 49.5	156 70.8	125 56.8	170 76.2	149 67.6	227 103.1	173 78.5
48 1219.2	22 10.0	150 68.1	22 10.0	236 106.8	127 57.2	115 52.0	167 75.8	133 60.4	180 80.8	159 72.2	245 111.2	185 84.0
50 1270.0	27 12.3	190 86.3	27 12.3	302 137.1	160 72.6	133 60.4	197 89.4	160 72.6	239 108.5	188 85.4	281 127.6	216 98.1
52 1320.8	28 12.7	197 89.4	28 12.7	312 141.6	166 75.3	139 62.7	209 94.9	185 84.0	255 115.8	199 90.3	301 136.7	230 104.4
54 1371.6	29 13.2	204 92.6	29 13.2	322 146.1	172 77.9	145 65.1	219 99.4	191 86.7	271 121.2	209 90.3	317 144.0	249 112.0
56 1422.4	30 13.6	211 95.8	30 13.6	332 150.6	178 80.8	151 67.6	229 104.0	200 91.4	287 129.0	219 99.4	333 151.6	267 120.6
58 1473.2	31 14.1	218 99.0	31 14.1	342 155.1	184 83.3	157 70.1	239 108.5	208 94.4	303 136.7	229 104.0	349 159.3	285 128.2
60 1524.0	32 14.5	226 102.3	32 14.5	352 159.6	190 85.8	163 72.6	249 113.0	217 98.9	319 144.0	239 108.5	365 166.9	303 136.7
62 1574.8	33 15.0	235 106.3	33 15.0	362 164.1	196 88.3	169 75.1	259 117.5	226 103.5	329 149.4	249 113.0	381 174.5	321 144.3
64 1625.6	34 15.4	304 138.0	34 15.4	372 168.6	202 90.8	175 77.6	269 122.0	233 108.0	339 153.9	259 117.5	397 182.1	339 151.6
66 1676.4	35 15.9	313 142.1	35 15.9	382 173.1	208 93.3	181 80.1	279 126.5	240 108.5	349 158.4	269 122.0	413 190.7	357 159.3
68 1727.2	36 16.3	322 146.2	36 16.3	392 177.6	214 95.8	187 82.6	289 131.0	247 113.0	359 162.9	279 126.5	429 198.3	375 167.0
70 1778.0	37 16.8	333 151.2	37 16.8	402 182.1	220 98.3	193 85.1	299 135.5	254 117.5	369 167.4	289 131.0	445 205.9	393 174.7
72 1828.8	38 17.3	340 154.4	38 17.3	412 186.6	226 100.8	199 87.6	309 140.0	261 122.0	379 171.9	299 135.5	461 213.5	411 182.3
74 1879.6	39 17.7	350 158.9	39 17.7	422 191.1	232 103.3	205 90.1	319 144.5	268 126.5	389 176.4	309 140.0	477 221.1	429 190.0
76 1930.4	40 18.2	359 163.0	40 18.2	432 195.6	238 105.8	211 92.6	329 149.0	275 131.0	399 180.9	319 144.5	493 228.7	447 197.7
78 1981.2	41 18.6	367 166.6	41 18.6	442 200.1	244 108.3	217 95.1	339 153.5	282 135.5	409 185.4	329 149.0	509 236.3	465 205.4
80 2032.0	56 25.4	434 197.0	56 25.4	452 204.6	250 110.8	223 97.6	349 158.0	289 135.5	419 190.9	339 153.5	525 243.9	483 213.1
82 2082.8	58 26.3	448 203.4	58 26.3	462 209.1	256 113.3	229 100.1	359 162.5	296 140.0	429 195.4	349 158.0	541 251.5	501 220.8
84 2133.6	60 27.2	460 208.8	60 27.2	472 213.6	262 115.8	235 102.6	369 167.0	303 144.5	439 200.9	359 162.5	557 259.1	519 228.5
86 2184.4	62 28.1	474 215.2	62 28.1	482 218.1	268 118.3	241 105.1	379 171.5	310 149.0	449 205.4	369 167.0	573 266.7	537 236.2
88 2235.2	64 29.1	486 220.6	64 29.1	492 222.6	274 120.8	247 107.6	389 176.0	317 153.5	459 210.9	379 171.5	589 274.3	555 243.9
90 2286.0	66 30.0	500 227.0	66 30.0	502 227.1	280 123.3	253 110.1	399 180.5	324 158.0	469 215.4	389 176.0	605 281.9	573 251.6
92 2336.8	68 30.9	512 232.4	68 30.9	512 231.6	286 125.8	259 112.6	409 185.0	331 162.5	479 220.9	399 180.5	621 289.5	591 259.2
94 2387.6	70 31.8	526 238.8	70 31.8	522 236.1	292 128.3	265 115.1	419 189.5	338 167.0	489 225.4	409 185.0	637 297.1	609 266.9
96 2438.4	72 32.7	630 286.0	72 32.7	532 240.6	298 130.8	271 117.6	429 194.0	345 171.5	499 230.9	419 189.5	653 304.7	627 274.5
98 2489.2	74 33.6	644 292.4	74 33.6	542 245.1	304 133.3	277 120.1	439 198.5	352 176.0	509 235.4	429 194.0	669 312.3	645 282.2
100 2540.0	76 34.5	660 299.6	76 34.5	552 249.6	310 135.8	283 122.6	449 203.0	359 180.5	519 240.9	439 198.5	685 320.9	663 290.8
102 2590.8	78 35.4	674 306.0	78 35.4	562 254.1	316 138.3	289 125.1	459 207.5	366 185.0	529 245.4	449 203.0	701 328.5	681 298.4
104 2641.6	80 36.3	690 313.3	80 36.3	572 258.6	322 140.8	295 127.6	469 212.0	373 189.5	539 250.9	459 207.5	717 336.1	699 306.0
106 2692.4	82 37.2	704 319.6	82 37.2	582 263.1	328 143.3	301 130.1	479 216.5	380 194.0	549 255.4	469 212.0	733 343.7	717 313.6
108 2743.2	84 38.1	720 326.9	84 38.1	592 267.6	334 145.8	307 132.6	489 221.0	387 198.5	559 260.9	479 216.5	749 351.3	735 321.2
110 2794.0	86 39.0	734 333.2	86 39.0	602 272.1	340 148.3	313 135.1	499 225.5	394 203.0	569 265.4	489 221.0	765 358.9	753 328.8
112 2844.8	88 40.0	750 340.5	88 40.0	612 276.6	346 150.8	319 137.6	509 230.0	401 207.5	579 270.9	499 225.5	781 366.5	771 336.4
114 2895.6	90 40.9	764 346.9	90 40.9	622 281.1	352 153.3	325 140.1	519 234.5	408 212.0	589 275.4	509 230.0	797 374.1	789 344.0
116 2946.4	92 41.8	780 354.1	92 41.8	632 285.6	358 155.8	331 142.6	529 239.0	415 216.5	599 280.9	519 234.5	813 381.7	807 351.6
118 2997.2	110 49.9	858 389.5	110 49.9	642 290.1	364 158.3	337 145.1	539 243.5	422 221.0	609 285.4	529 239.0	829 389.3	825 359.2
120 3048.0	112 50.8	874 396.8	112 50.8	652 294.6	370 160.8	343 147.6	549 248.0	429 225.5	619 290.9	539 243.5	845 396.9	843 366.8

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Weight Chart - Coated Straight Duct & Elbows: -10" Wg Pressure Class

DUCT DIA "D"	Per Foot 1' - 4'	4' Duct w/ Van Stone Rings	Per Foot 4' - 8'	8' Duct w/ Van Stone Rings	30° Elbow		45° Elbow		60° Elbow		90° Elbow	
					R=1.5D	R=1D	R=1.5D	R=1D	R=1.5D	R=1D	R=1.5D	R=1D
					lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)
4 101.6	1.7 0.8	9.0 4.1			2.6 1.2	2.1 1.0	2.8 1.3	2.3 1.0	3.0 1.4	2.6 1.2	3.4 1.5	2.9 1.3
6 152.4	2.6 1.2	14.2 6.4	lb (kg)	lb (kg)	5.0 2.3	4.6 2.1	5.5 2.5	4.9 2.2	6.0 2.7	5.3 2.4	7.0 3.2	5.9 2.7
8 203.2	3.5 1.6	18.8 8.5	3.5 1.6	32.9 14.9	7.4 3.4	6.4 2.9	8.2 3.7	6.9 3.1	9.2 4.2	7.7 3.5	10.7 4.9	8.9 4.0
10 254.0	4.4 2.0	23.6 10.7	4.4 2.0	41.3 18.8	9.7 4.4	8.4 3.8	10.9 4.9	9.0 4.1	12.3 5.6	10.1 4.6	14.4 6.5	11.9 5.4
12 304.8	5.3 2.4	35.2 16.0	5.3 2.4	56.5 25.7	17.7 8.1	15.8 7.2	19.6 8.9	16.8 7.6	21.5 9.8	18.5 8.4	25.3 11.5	21.0 9.5
14 355.6	6.2 2.8	39.2 17.8	6.2 2.8	64.1 29.1	22.0 10.0	19.2 8.7	24.8 11.3	20.7 9.4	27.6 12.5	23.2 10.5	33.2 15.1	26.8 12.2
16 406.4	7.1 3.2	44.6 20.2	7.1 3.2	73.1 33.2	26.4 12.0	22.4 10.2	30.0 13.6	24.6 11.2	33.7 15.3	27.9 12.7	41.1 18.7	32.6 14.8
18 457.2	8.0 3.6	50.0 22.7	8.0 3.6	82.1 37.3	30.7 13.9	26.0 11.8	35.2 16.0	28.5 12.9	39.8 18.1	32.7 14.8	49.0 22.2	38.4 17.4
20 457.2	8.9 4.0	55.4 25.2	8.9 4.0	91.1 41.4	35.1 15.9	29.7 13.5	40.4 18.3	32.4 14.7	45.9 20.8	37.4 17.0	56.9 25.8	44.2 20.1
22 558.8	9.8 4.4	61.0 27.7	12.6 5.7	122.4 55.6	39.4 17.9	33.6 15.3	45.6 20.7	36.3 16.5	52.0 23.6	42.1 19.1	64.8 29.4	50.0 22.7
24 609.6	10.6 4.8	65.7 29.8	13.7 6.2	133.4 60.6	44.7 20.3	37.8 17.2	52.0 23.6	42.7 19.4	59.4 27.0	47.6 21.6	74.5 33.8	57.6 26.2
26 660.4	11 5.0	81 36.8	15 6.8	154 69.9	60 27.2	51 23.2	69 31.3	57 25.9	77 35.0	63 28.6	95 43.1	75 34.1
28 711.2	12 5.4	87 39.5	16 7.3	163 74.0	67 30.4	57 25.9	77 35.0	63 28.6	87 39.5	70 31.8	107 48.6	84 38.1
30 762.0	13 5.9	93 42.2	17 7.7	177 80.4	73 33.1	62 28.1	85 38.6	70 31.8	96 43.6	78 35.4	120 54.5	93 42.2
32 812.8	14 6.4	99 44.9	18 8.2	187 84.9	93 42.2	76 34.5	111 50.4	85 38.6	128 58.1	101 45.9	164 74.5	123 55.8
34 863.6	15 6.8	105 47.7	19 8.6	198 89.9	102 46.3	83 37.7	122 55.4	93 42.2	141 64.0	111 50.4	181 82.2	135 61.3
36 914.4	20 9.1	126 57.2	28 12.7	273 123.9	111 50.4	90 40.9	133 60.4	101 45.9	154 69.9	121 54.9	198 89.9	147 66.7
38 965.2	21 9.5	133 60.4	30 13.6	292 132.6	120 54.5	97 44.0	144 65.4	109 49.5	167 75.8	131 59.5	215 97.6	159 72.2
40 1016.0	22 10.0	139 63.1	32 14.5	310 140.7	125 56.8	101 45.9	152 69.0	119 54.0	179 81.3	137 62.2	234 106.2	174 79.0
42 1066.8	23 10.4	146 66.3	34 15.4	329 149.4	135 61.3	109 49.5	165 74.9	128 58.1	195 88.5	148 67.2	256 116.2	189 85.8
44 1117.6	24 10.9	153 69.5	36 16.3	348 158.0	146 66.3	116 52.7	178 80.8	138 62.7	211 95.8	161 73.1	278 126.2	205 93.1
46 1168.4	25 11.4	159 72.2	38 17.3	366 166.2	156 70.8	125 56.8	191 86.7	149 67.6	227 103.1	173 78.5	300 136.2	222 100.8
48 1219.2	26 11.8	166 75.4	40 18.2	385 174.8	167 75.8	133 60.4	206 93.5	159 72.2	245 111.2	185 84.0	325 147.6	238 108.1
50 1270.0	27 12.3	190 86.3	42 19.1	421 191.1	197 89.4	160 72.6	239 108.5	188 85.4	281 127.6	216 98.1	368 167.1	274 124.4
52 1320.8	28 12.7	197 89.4	44 20.0	440 199.8	234 106.2	186 84.4	291 132.1	216 98.1	349 158.4	262 118.9	466 211.6	341 154.8
54 1371.6	29 13.2	204 92.6	49 22.2	481 218.4	249 113.0	197 89.4	310 140.7	229 104.0	373 169.3	279 126.7	498 226.1	364 165.3
56 1422.4	30 13.6	211 95.8	51 23.2	500 227.0	264 119.9	208 94.4	329 149.4	242 109.9	397 180.2	296 134.4	530 240.6	387 175.7
58 1473.2	46 20.9	279 126.7	53 24.1	519 235.6	279 126.7	220 99.9	350 158.9	267 121.2	421 191.1	315 143.0	567 257.4	412 187.0
60 1524.0	48 21.8	351 159.4	55 25.0	599 271.9	356 161.6	292 132.6	431 195.7	342 155.3	508 230.6	393 178.4	664 301.5	497 225.6
62 1574.8	50 22.7	364 165.3	57 25.9	620 281.5	374 169.8	306 138.9	454 206.1	360 163.4	536 243.3	414 188.0	703 319.2	525 238.4
64 1625.6	52 23.6	377 171.2	59 26.8	641 291.0	392 178.0	320 145.3	478 217.0	377 171.2	565 256.5	435 197.5	743 337.3	553 251.1
66 1676.4	54 24.5	390 177.1	61 27.7	662 300.5	412 187.0	334 151.6	503 228.4	395 179.3	596 270.6	457 207.5	785 356.4	583 264.7
68 1727.2	56 25.4	403 183.0	63 28.6	683 310.1	432 196.1	349 158.4	529 240.2	414 188.0	627 284.7	480 217.9	828 375.9	613 278.3
70 1778.0	58 26.3	418 189.8	65 29.5	705 320.1	451 204.8	364 165.3	554 251.5	432 196.1	658 298.7	502 227.9	871 395.4	643 291.9
72 1828.8	60 27.2	429 194.8	67 30.4	725 329.2	540 245.2	427 193.9	676 306.9	502 227.9	820 372.3	607 275.6	1105 501.7	797 361.8
74 1879.6	62 28.1	443 201.1	69 31.3	746 338.7	564 256.1	445 202.0	707 321.0	524 237.9	859 390.0	634 287.8	1159 526.2	834 378.6
76 1930.4	64 29.1	456 207.0	71 32.2	768 348.7	588 267.0	463 210.2	738 335.1	546 247.9	898 407.7	661 300.1	1213 550.7	871 395.4
78 1981.2	66 30.0	468 212.5	101 45.9	1008 457.6	612 277.8	481 218.4	769 349.1	568 257.9	937 425.4	688 312.4	1267 575.2	908 412.2
80 2032.0	68 30.9	482 218.8	104 47.2	1038 471.3	636 288.7	499 226.5	800 363.2	590 267.9	976 443.1	715 324.6	1321 599.7	945 429.0
82 2082.8	70 31.8	496 225.2	107 48.6	1068 484.9								
84 2133.6	76 34.5	524 237.9	110 49.9	1096 497.6								
86 2184.4	78 35.4	538 244.3	113 51.3	1126 511.2								
88 2235.2	80 36.3	550 249.7	116 52.7	1154 523.9								
90 2286.0	82 37.2	564 256.1	119 54.0	1184 537.5								
92 2336.8	84 38.1	576 261.5	122 55.4	1212 550.2								
94 2387.6	86 39.0	590 267.9	125 56.8	1242 563.9								
96 2438.4	88 40.0	694 315.1	128 58.1	1362 618.3								
98 2489.2	90 40.9	708 321.4	131 59.5	1392 632.0								
100 2540.0	92 41.8	724 328.7	134 60.8	1424 646.5								
102 2590.8	94 42.7	738 335.1	137 62.2	1454 660.1								
104 2641.6	96 43.6	754 342.3	140 63.6	1486 674.6								
106 2692.4	98 44.5	768 348.7	143 64.9	1516 688.3								
108 2743.2	100 45.4	784 355.9	146 66.3	1548 702.8								
110 2794.0	102 46.3	798 362.3	149 67.6	1578 716.4								
112 2844.8	104 47.2	814 369.6	152 69.0	1610 730.9								
114 2895.6	106 48.1	828 375.9	155 70.4	1640 744.6								
116 2946.4	108 49.0	844 383.2	158 71.7	1672 759.1								
118 2997.2	110 49.9	858 389.5	161 73.1	1702 772.7								
120 3048.0	112 50.8	874 396.8	164 74.5	1734 396.8								

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Weight Chart - Coated Straight Duct & Elbows: -14" Wg Pressure Class

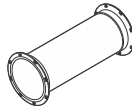

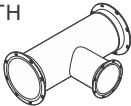
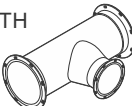
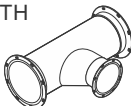
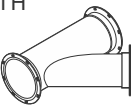

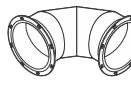
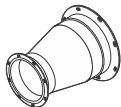
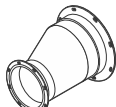
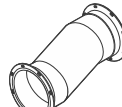

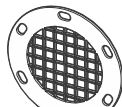

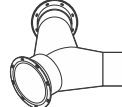


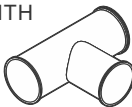
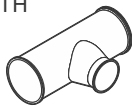


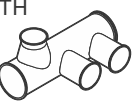
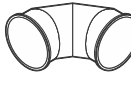
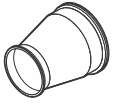
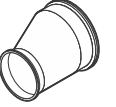


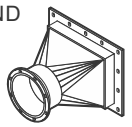
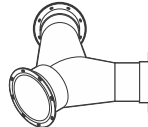
DUCT DIA "D"	Per Foot 1' - 4'	4' Duct w/ Van Stone Rings	Per Foot 4' - 8'	8' Duct w/ Van Stone Rings	30° Elbow		45° Elbow		60° Elbow		90° Elbow	
					R=1.5D	R=1D	R=1.5D	R=1D	R=1.5D	R=1D	R=1.5D	R=1D
in (mm)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)
4 101.6	1.7 0.8	9.0 4.1			2.6 1.2	2.1 1.0	2.8 1.3	2.3 1.0	3.0 1.4	2.6 1.2	3.4 1.5	2.9 1.3
6 152.4	2.6 1.2	14.2 6.4			5.0 2.3	4.6 2.1	5.5 2.5	4.9 2.2	6.0 2.7	5.3 2.4	7.0 3.2	5.9 2.7
8 203.2	3.5 1.6	18.8 8.5	3.5 1.6	32.9 14.9	7.4 3.4	6.4 2.9	8.2 3.7	6.9 3.1	9.2 4.2	7.7 3.5	10.7 4.9	8.9 4.0
10 254.0	4.4 2.0	23.6 10.7	4.4 2.0	41.3 18.8	9.7 4.4	8.4 3.8	10.9 4.9	9.0 4.1	12.3 5.6	10.1 4.6	14.4 6.5	11.9 5.4
12 304.8	5.3 2.4	35.2 16.0	5.3 2.4	56.5 25.7	17.7 8.1	15.8 7.2	19.6 8.9	16.8 7.6	21.5 9.8	18.5 8.4	25.3 11.5	21.0 9.5
14 355.6	6.2 2.8	39.2 17.8	6.2 2.8	64.1 29.1	22.0 10.0	19.2 8.7	24.8 11.3	20.7 9.4	27.6 12.5	23.2 10.5	33.2 15.1	26.8 12.2
16 406.4	7.1 3.2	44.6 20.2	7.1 3.2	73.1 33.2	26.4 12.0	22.4 10.2	30.0 13.6	24.6 11.2	33.7 15.3	27.9 12.7	41.1 18.7	32.6 14.8
18 457.2	8.0 3.6	50.0 22.7	8.0 3.6	82.1 37.3	30.7 13.9	26.0 11.8	35.2 16.0	28.5 12.9	39.8 18.1	32.7 14.8	49.0 22.2	38.4 17.4
20 457.2	8.9 4.0	55.4 25.2	11.4 5.2	111.2 50.5	35.1 15.9	29.7 13.5	40.4 18.3	32.4 14.7	45.9 20.8	37.4 17.0	56.9 25.8	44.2 20.1
22 558.8	9.8 4.4	61.0 27.7	12.6 5.7	122.4 55.6	39.4 17.9	33.6 15.3	45.6 20.7	36.3 16.5	52.0 23.6	42.1 19.1	64.8 29.4	50.0 22.7
24 609.6	10.6 4.8	65.7 29.8	13.7 6.2	133.4 60.6	44.7 20.3	37.8 17.2	52.0 23.6	42.7 19.4	59.4 27.0	47.6 21.6	74.5 33.8	57.6 26.2
26 660.4	11 5.0	81 36.8	15 6.8	154 69.9	60 27.2	51 23.2	69 31.3	57 25.9	77 35.0	63 28.6	95 43.1	75 34.1
28 711.2	16 7.3	100 45.4	16 7.3	163 74.0	75 34.1	62 28.1	89 40.4	69 31.3	102 46.3	81 36.8	130 59.0	99 44.9
30 762.0	17 7.7	107 48.6	22 10.0	218 99.0	84 38.1	69 31.3	100 45.4	77 35.0	115 52.2	91 41.3	147 66.7	111 50.4
32 812.8	18 8.2	113 51.3	24 10.9	236 107.1	93 42.2	76 34.5	111 50.4	85 38.6	128 58.1	101 45.9	164 74.5	123 55.8
34 863.6	19 8.6	120 54.5	26 11.8	255 115.8	102 46.3	83 37.7	122 55.4	93 42.2	141 64.0	111 50.4	181 82.2	135 61.3
36 914.4	20 9.1	126 57.2	28 12.7	273 123.9	111 50.4	90 40.9	133 60.4	101 45.9	154 69.9	121 54.9	198 89.9	147 66.7
38 965.2	21 9.5	133 60.4	30 13.6	292 132.6	120 54.5	97 44.0	144 65.4	109 49.5	167 75.8	131 59.5	215 97.6	159 72.2
40 1016.0	22 10.0	139 63.1	32 14.5	310 140.7	125 56.8	101 45.9	152 69.0	119 54.0	179 81.3	137 62.2	234 106.2	174 79.0
42 1066.8	23 10.4	146 66.3	37 16.8	351 159.4	135 61.3	109 49.5	165 74.9	128 58.1	195 88.5	148 67.2	256 116.2	189 85.8
44 1117.6	24 10.9	153 69.5	39 17.7	369 167.5	146 66.3	116 52.7	178 80.8	138 62.7	211 95.8	161 73.1	278 126.2	205 93.1
46 1168.4	34 15.4	196 89.0	41 18.6	388 176.2	178 70.8	138 62.7	221 100.3	161 73.1	267 121.2	198 89.9	357 162.1	259 117.6
48 1219.2	36 16.3	207 94.0	43 19.5	406 184.3	191 86.7	147 66.7	237 107.6	172 78.1	287 130.3	212 96.2	384 174.3	278 126.2
50 1270.0	38 17.3	235 106.7	45 20.4	442 200.7	219 99.4	175 79.5	272 123.5	203 92.2	325 147.6	245 111.2	434 197.0	318 144.4
52 1320.8	40 18.2	246 111.7	47 21.3	462 209.7	234 106.2	186 84.4	291 132.1	216 98.1	349 158.4	262 118.9	466 211.6	341 154.8
54 1371.6	42 19.1	257 116.7	49 22.2	481 218.4	249 113.0	197 89.4	310 140.7	229 104.0	373 169.3	279 126.7	498 226.1	364 165.3
56 1422.4	44 20.0	268 121.7	51 23.2	500 227.0	264 119.9	208 94.4	329 149.4	242 109.9	397 180.2	296 134.4	530 240.6	387 175.7
58 1473.2	46 20.9	279 126.7	53 24.1	519 235.6	279 126.7	220 99.9	350 158.9	267 121.2	421 191.1	315 143.0	567 257.4	412 187.0
60 1524.0	48 21.8	351 159.4	55 25.0	599 271.9	356 161.6	292 132.6	431 195.7	342 155.3	508 230.6	393 178.4	664 301.5	497 225.6
62 1574.8	50 22.7	364 165.3	77 35.0	776 352.3	374 169.8	306 138.9	454 206.1	360 163.4	536 243.3	414 188.0	703 319.2	525 238.4
64 1625.6	52 23.6	377 171.2	80 36.3	806 365.9	392 178.0	320 145.3	478 217.0	377 171.2	565 256.5	435 197.5	743 337.3	553 251.1
66 1676.4	54 24.5	390 177.1	83 37.7	835 379.1	412 187.0	334 151.6	503 228.4	395 179.3	596 270.6	457 207.5	785 356.4	583 264.7
68 1727.2	60 27.2	420 190.7	86 39.0	864 392.3	492 223.4	391 177.5	614 278.8	458 207.9	627 284.7	553 251.1	997 452.6	723 328.2
70 1778.0	62 28.1	434 197.0	89 40.4	894 405.9	516 234.3	409 185.7	645 292.8	480 217.9	658 298.7	580 263.3	1051 477.2	760 345.0
72 1828.8	64 29.1	446 202.5	92 41.7	922 418.6	540 245.2	427 193.9	676 306.9	502 227.9	820 372.3	607 275.6	1105 501.7	797 361.8
74 1879.6	66 30.0	459 208.4	95 43.1	951 431.8	564 256.1	445 202.0	707 321.0	524 237.9	859 390.0	634 287.8	1159 526.2	834 378.6
76 1930.4	68 30.9	472 214.3	98 44.5	980 444.9	588 267.0	463 210.2	738 335.1	546 247.9	898 407.7	661 300.1	1213 550.7	871 395.4
78 1981.2	70 31.8	484 219.7	101 45.9	1008 457.6	612 277.8	481 218.4	769 349.1	568 257.9	937 425.4	688 312.4	1267 575.2	908 412.2
80 2032.0	72 32.7	498 226.1	104 47.2	1038 471.3	636 288.7	499 226.5	800 363.2	590 267.9	976 443.1	715 324.6	1321 599.7	945 429.0
82 2082.8	74 33.6	516 234.3	107 48.6	1068 484.9								
84 2133.6	76 34.5	524 237.9	110 49.9	1096 497.6								
86 2184.4	78 35.4	538 244.3	113 51.3	1126 511.2								
88 2235.2	80 36.3	550 249.7	116 52.7	1154 523.9								
90 2286.0	82 37.3	564 256.1	119 54.0	1184 537.5								
92 2336.8	84 38.1	576 261.5	122 55.4	1212 550.2								
94 2387.6	86 39.0	590 267.9	125 56.8	1242 563.9								
96 2438.4	88 40.0	694 315.1	128 58.1	1362 618.3								
98 2489.2	121 54.9	832 377.7	131 59.5	1392 632.0								
100 2540.0	124 56.3	852 386.8	134 60.8	1424 646.5								
102 2590.8	127 57.7	870 395.0	137 62.2	1454 660.1								
104 2641.6	130 59.0	890 404.1	140 63.6	1486 674.6								
106 2692.4	133 60.4	908 412.2	143 64.9	1516 688.3								
108 2743.2	136 61.7	928 421.3	146 66.3	1548 702.8								
110 2794.0	139 63.1	946 429.5	174 79.0	1780 808.1								
112 2844.8	142 64.5	966 438.6	178 80.8	1820 826.3								
114 2895.6	145 65.8	984 446.7	182 82.6	1858 843.5								
116 2946.4	148 67.2	1004 455.8	186 84.4	1898 861.7								
118 2997.2	151 68.6	1022 464.0	190 86.3	1936 878.9								
120 3048.0	154 69.9	1042 473.1	194 88.1	1976 897.1								

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Weight Chart - Coated Straight Duct & Elbows: -18" Wg Pressure Class

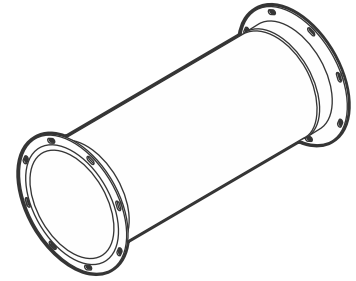
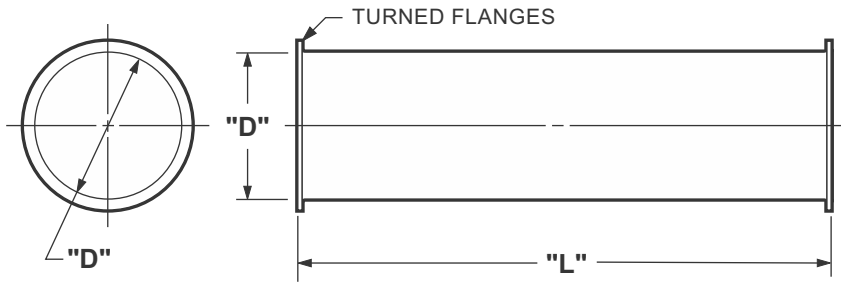
DUCT DIA "D"	Per Foot 1' - 4'	4' Duct w/ Van Stone Rings	Per Foot 4' - 8'	8' Duct w/ Van Stone Rings	30° Elbow		45° Elbow		60° Elbow		90° Elbow	
					R=1.5D	R=1D	R=1.5D	R=1D	R=1.5D	R=1D	R=1.5D	R=1D
in (mm)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)	lb (kg)
4 101.6	1.7 0.8	9.0 4.1			2.6 1.2	2.1 1.0	2.8 1.3	2.3 1.0	3.0 1.4	2.6 1.2	3.4 1.5	2.9 1.3
6 152.4	2.6 1.2	14.2 6.4			5.0 2.3	4.6 2.1	5.5 2.5	4.9 2.2	6.0 2.7	5.3 2.4	7.0 3.2	5.9 2.7
8 203.2	3.5 1.6	18.8 8.5	3.5 1.6	32.9 14.9	7.4 3.4	6.4 2.9	8.2 3.7	6.9 3.1	9.2 4.2	7.7 3.5	10.7 4.9	8.9 4.0
10 254.0	4.4 2.0	23.6 10.7	4.4 2.0	41.3 18.8	9.7 4.4	8.4 3.8	10.9 4.9	9.0 4.1	12.3 5.6	10.1 4.6	14.4 6.5	11.9 5.4
12 304.8	5.3 2.4	35.2 16.0	5.3 2.4	56.5 25.7	17.7 8.1	15.8 7.2	19.6 8.9	16.8 7.6	21.5 9.8	18.5 8.4	25.3 11.5	21.0 9.5
14 355.6	6.2 2.8	39.2 17.8	6.2 2.8	64.1 29.1	22.0 10.0	19.2 8.7	24.8 11.3	20.7 9.4	27.6 12.5	23.2 10.5	33.2 15.1	26.8 12.2
16 406.4	7.1 3.2	44.6 20.2	9.1 4.1	72.8 33.1	26.4 12.0	22.4 10.2	30.0 13.6	24.6 11.2	33.7 15.3	27.9 12.7	41.1 18.7	32.6 14.8
18 457.2	8.0 3.6	50.0 22.7	10.3 4.7	100.2 45.5	30.7 13.9	26.0 11.8	35.2 16.0	28.5 12.9	39.8 18.1	32.7 14.8	49.0 22.2	38.4 17.4
20 457.2	8.9 4.0	55.4 25.2	11.4 5.2	111.2 50.5	35.1 15.9	29.7 13.5	40.4 18.3	32.4 14.7	45.9 20.8	37.4 17.0	56.9 25.8	44.2 20.1
22 558.8	9.8 4.4	61.0 27.7	12.6 5.7	122.4 55.6	39.4 17.9	33.6 15.3	45.6 20.7	36.3 16.5	52.0 23.6	42.1 19.1	64.8 29.4	50.0 22.7
24 609.6	13.7 6.2	78.1 35.4	13.7 6.2	133.4 60.6	49.9 22.7	41.7 18.9	59.7 27.1	46.0 20.9	69.5 31.6	54.4 24.7	89.5 40.6	67.7 30.7
26 660.4	15 6.81	94 42.7	18 8.2	181 82.2	66 30.0	55 25.0	78 35.4	61 27.7	89 40.4	71 32.2	113 51.3	87 39.5
28 711.2	16 7.3	100 45.4	20 9.1	199 90.3	75 34.1	62 28.1	89 40.4	69 31.3	102 46.3	81 36.8	130 59.0	99 44.9
30 762.0	17 7.7	107 48.6	22 10.0	218 99.0	84 38.1	69 31.3	100 45.4	77 35.0	115 52.2	91 41.3	147 66.7	111 50.4
32 812.8	18 8.2	113 51.3	24 10.9	236 107.1	93 42.2	76 34.5	111 50.4	85 38.6	128 58.1	101 45.9	164 74.5	123 55.8
34 863.6	19 8.6	120 54.5	26 11.8	255 115.8	102 46.3	83 37.7	122 55.4	93 42.2	141 64.0	111 50.4	181 82.2	135 61.3
36 914.4	20 9.1	126 57.2	31 14.1	295 133.9	111 50.4	90 40.9	133 60.4	101 45.9	154 69.9	121 54.9	198 89.9	147 66.7
38 965.2	21 9.5	133 60.4	33 15.0	314 142.6	120 54.5	97 44.0	144 65.4	109 49.5	167 75.8	131 59.5	215 97.6	159 72.2
40 1016.0	28 12.7	164 74.5	35 15.9	332 150.7	139 63.1	111 50.4	173 78.5	128 58.1	207 94.0	156 70.8	276 125.3	202 91.7
42 1066.8	30 13.6	175 79.5	37 16.8	351 159.4	152 69.0	120 54.5	189 85.8	139 63.1	227 103.1	170 77.2	303 137.6	221 100.3
44 1117.6	32 14.5	186 84.4	39 17.7	369 167.5	165 74.9	129 58.6	205 93.1	150 68.1	247 112.1	184 83.5	330 149.8	240 109.0
46 1168.4	34 15.4	196 89.0	41 18.6	388 176.2	178 80.8	138 62.7	221 100.3	161 73.1	267 121.2	198 89.9	357 162.1	259 117.6
48 1219.2	36 16.3	207 94.0	43 19.5	406 184.3	191 86.7	147 66.7	237 107.6	172 78.1	287 130.3	212 96.2	384 174.3	278 126.2
50 1270.0	38 17.3	235 106.7	45 20.4	442 200.7	219 99.4	175 79.5	272 123.5	203 92.2	325 147.6	245 111.2	434 197.0	318 144.4
52 1320.8	40 18.2	246 111.7	62 28.1	579 262.9	234 106.2	186 84.4	291 132.1	216 98.1	349 158.4	262 118.9	466 211.6	341 154.8
54 1371.6	42 19.1	257 116.7	65 29.5	606 275.1	249 113.0	197 89.4	310 140.7	229 104.0	373 169.3	279 126.7	498 226.1	364 165.3
56 1422.4	44 20.0	268 121.7	68 30.9	633 287.4	264 119.9	208 94.4	329 149.4	242 109.9	397 180.2	296 134.4	530 240.6	387 175.7
58 1473.2	50 22.7	296 134.4	71 32.2	660 299.6	317 143.9	246 111.7	405 183.9	293 133.0	494 224.3	364 165.3	676 306.9	485 220.2
60 1524.0	52 23.6	367 166.6	74 33.6	747 339.1	396 179.8	319 144.8	490 222.5	370 168.0	586 266.0	445 202.0	781 354.6	575 261.1
62 1574.8	54 24.5	380 172.5	77 35.0	776 352.3	420 190.7	337 153.0	521 236.5	392 178.0	625 283.8	472 214.3	835 379.1	612 277.8
64 1625.6	56 25.4	394 178.9	88 40.0	806 365.9	444 201.6	355 161.2	552 250.6	414 188.0	664 301.5	499 226.5	889 403.6	649 294.6
66 1676.4	58 26.3	407 184.8	83 37.7	835 379.1	468 212.5	373 169.3	583 264.7	436 198.0	703 319.2	526 238.8	943 428.1	686 311.4
68 1727.2	60 27.2	420 190.7	86 39.0	864 392.3	492 223.4	391 177.5	614 278.8	458 208.0	742 336.9	553 251.1	997 452.6	723 328.2
70 1778.0	62 28.1	434 197.0	89 40.4	894 405.9	516 234.3	409 185.7	645 292.8	480 218.0	781 354.6	580 263.3	1051 477.2	760 345.0
72 1828.8	64 29.1	446 202.5	92 41.8	922 418.6	540 245.2	427 193.9	676 306.9	502 228.0	820 372.3	607 275.6	1105 501.7	797 361.8
74 1879.6	66 30.0	459 208.4	95 43.1	951 431.8	564 256.1	445 202.0	707 321.0	524 237.9	859 390.0	634 287.8	1159 526.2	834 378.6
76 1930.4	68 30.9	472 214.3	98 44.5	980 444.9	588 267.0	463 210.2	738 335.1	546 247.9	898 407.7	661 300.1	1213 550.7	871 395.4
78 1981.2	70 31.8	484 219.7	101 45.9	1008 457.6	612 277.8	481 218.4	769 349.1	568 257.9	937 425.4	688 312.4	1267 575.2	908 412.2
80 2032.0	56 25.4	498 226.1	104 47.2	1038 471.3	636 288.7	499 226.5	800 363.2	590 267.9	976 443.1	715 324.6	1321 599.7	945 429.0
82 2082.8	58 26.3	512 232.4	107 48.6	1068 484.9								
84 2133.6	60 27.2	620 281.5	110 49.9	1096 497.6								
86 2184.4	62 28.1	638 289.7	113 51.3	1126 511.2								
88 2235.2	64 29.1	654 296.9	116 52.7	1154 523.9								
90 2286.0	66 30.0	672 305.1	119 54.0	1184 537.5								
92 2336.8	68 30.9	688 312.4	122 55.4	1212 550.2								
94 2387.6	70 31.8	706 320.5	142 64.5	1380 626.5								
96 2438.4	118 53.6	814 369.6	146 66.3	1508 684.6								
98 2489.2	121 54.9	832 377.7	150 68.1	1546 701.9								
100 2540.0	124 56.3	852 386.8	154 69.9	1586 720.0								
102 2590.8	127 57.7	870 395.0	158 71.7	1624 737.3								
104 2641.6	130 59.0	890 404.1	162 73.5	1664 755.5								
106 2692.4	133 60.4	908 412.2	166 75.4	1702 772.7								
108 2743.2	136 61.7	928 421.3	170 77.2	1742 790.9								
110 2794.0	139 63.1	946 429.5	174 79.0	1780 808.1								
112 2844.8	142 64.5	966 438.6	178 80.8	1820 826.3								
114 2895.6	145 65.8	984 446.7	182 82.6	1858 843.5								
116 2946.4	148 67.2	1004 455.8	186 84.4	1898 860.7								
118 2997.2	151 68.6	1022 464.0	190 86.3	1936 878.9								
120 3048.0	154 69.9	1042 473.1	194 88.1	1976 897.1								

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

<p>ROUND DUCT</p>	<p>STRAIGHT DUCT</p>  <p>SIZE: 4"<i>(101.6)</i> - 128"<i>(3251.2)</i></p> <p>• PAGE: 18</p>	<p>STRAIGHT DUCT WITH FT FLANGE</p>  <p>SIZE: 2"<i>(50.8)</i> & 3"<i>(76.2)</i></p> <p>• PAGE: 19</p>	
<p>STRAIGHT DUCT WITH STRAIGHT TAP</p>  <p>SIZE: 6"<i>(152.4)</i> - 128"<i>(3251.2)</i></p> <p>• PAGE: 20</p>	<p>STRAIGHT DUCT WITH CONICAL TAP</p>  <p>SIZE: 6"<i>(152.4)</i> - 128"<i>(3251.2)</i></p> <p>• PAGE: 21</p>	<p>STRAIGHT DUCT WITH SHOE TAP</p>  <p>SIZE: 6"<i>(152.4)</i> - 128"<i>(3251.2)</i></p> <p>• PAGE: 22</p>	
<p>STRAIGHT DUCT WITH LATERAL TAP</p>  <p>SIZE: 6"<i>(152.4)</i> - 128"<i>(3251.2)</i></p> <p>• PAGE: 23</p>	<p>STRAIGHT DUCT WITH MULTIPLE TAPS</p>  <p>SIZE: 4"<i>(101.6)</i> - 128"<i>(3251.2)</i></p> <p>• PAGE: 24</p>	<p>GORED ELBOW 30°, 45°, 60°, 90°</p>  <p>SIZE: 4"<i>(101.6)</i> - 128"<i>(3251.2)</i></p> <p>• PAGE: 25</p>	
<p>CONCENTRIC REDUCER</p>  <p>SIZE: 6"<i>(152.4)</i> - 128"<i>(3251.2)</i></p> <p>• PAGE: 26</p>	<p>ECCENTRIC REDUCER</p>  <p>SIZE: 6"<i>(152.4)</i> - 128"<i>(3251.2)</i></p> <p>• PAGE: 26</p>	<p>OFFSET</p>  <p>SIZE: 4"<i>(101.6)</i> - 128"<i>(3251.2)</i></p> <p>• PAGE: 27</p>	
<p>END CAP</p>  <p>SIZE: 4"<i>(101.6)</i> - 128"<i>(3251.2)</i></p> <p>• PAGE: 28</p>	<p>MESH END CAP</p>  <p>SIZE: 4"<i>(101.6)</i> - 36"<i>(914.4)</i></p> <p>• PAGE: 29</p>	<p>CONCENTRIC ROUND TO RECTANGULAR TRANSITION</p>  <p>• PAGE: 30</p>	<p>CUSTOM FITTING</p>  <p>• PAGE: 31</p>
<p>ROUND DUCT EZ CLAMP</p>	<p>STRAIGHT DUCT</p>  <p>SIZE: 4"<i>(101.6)</i> - 14"<i>(355.6)</i></p> <p>• PAGE: 18</p>	<p>STRAIGHT DUCT WITH FT FLANGE</p>  <p>SIZE: 2"<i>(50.8)</i> & 3"<i>(76.2)</i></p> <p>• PAGE: 19</p>	
<p>STRAIGHT DUCT WITH STRAIGHT TAP</p>  <p>SIZE: 4"<i>(101.6)</i> - 14"<i>(355.6)</i></p> <p>• PAGE: 20</p>	<p>STRAIGHT DUCT WITH CONICAL TAP</p>  <p>SIZE: 6"<i>(152.4)</i> - 14"<i>(355.6)</i></p> <p>• PAGE: 21</p>	<p>STRAIGHT DUCT WITH SHOE TAP</p>  <p>SIZE: 6"<i>(152.4)</i> - 14"<i>(355.6)</i></p> <p>• PAGE: 22</p>	
<p>STRAIGHT DUCT WITH LATERAL TAP</p>  <p>SIZE: 4"<i>(101.6)</i> - 14"<i>(355.6)</i></p> <p>• PAGE: 23</p>	<p>STRAIGHT DUCT WITH MULTIPLE TAPS</p>  <p>SIZE: 4"<i>(101.6)</i> - 14"<i>(355.6)</i></p> <p>• PAGE: 24</p>	<p>GORED ELBOWS 30°, 45°, 60°, 90°</p>  <p>SIZE: 4"<i>(101.6)</i> - 14"<i>(355.6)</i></p> <p>• PAGE: 25</p>	
<p>CONCENTRIC REDUCER</p>  <p>SIZE: 4"<i>(101.6)</i> - 14"<i>(355.6)</i></p> <p>• PAGE: 26</p>	<p>ECCENTRIC REDUCER</p>  <p>SIZE: 4"<i>(101.6)</i> - 14"<i>(355.6)</i></p> <p>• PAGE: 26</p>	<p>OFFSET</p>  <p>SIZE: 4"<i>(101.6)</i> - 14"<i>(355.6)</i></p> <p>• PAGE: 27</p>	
<p>END CAP</p>  <p>SIZE: 4"<i>(101.6)</i> - 14"<i>(355.6)</i></p> <p>• PAGE: 28</p>	<p>CONCENTRIC ROUND TO RECTANGULAR TRANSITION</p>  <p>• PAGE: 30</p>	<p>CUSTOM FITTING</p>  <p>• PAGE: 31</p>	

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Straight Duct



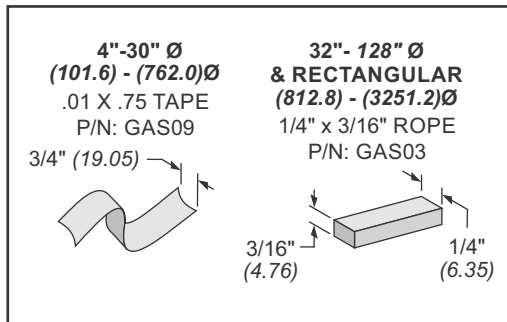
STANDARD DUCT LENGTHS ("L1")

RING	DIAMETER	"L1"=4' (1219.2)	"L1"=8' (2438.4)
EZ/SC	4" (101.6) & 6" (152.4)	47.25" (1200.5)	NA
EZ/SC	8" (203.2) TO 14" (355.6)	47.25" (1200.5)	95.25" (2419.35)
BI	16" (406.4) TO 48" (1219.2)	47.25" (1200.5)	95.25" (2419.35)
BI	50" (1270) TO 120" (3048)	46.75" (1187.45)	94.75" (2406.65)
SS	4" (101.6) TO 48" (1219.2)	47.25" (1200.5)	95.25" (2419.35)
SS	50" (1270) TO 128" (3251.2)	46.75" (1187.45)	94.75" (2406.65)

DUCT JOINT / RING TYPE

- EZ** EZ CLAMP
4"Ø-14"Ø (101.6 - 355.6)
- SC** STAINLESS CAST RING
4"Ø-14"Ø (101.6 - 355.6)
- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2)

STANDARD PTFE GASKETS



* ADHESIVE ON ONE SIDE

GASKET APPLICATION EXCEPTIONS TABLE

Product	Size Inches (mm)	Gasket Application			
		GAS01	GAS02	GAS03	GAS09
Wafer Damper	4(101.6) - 10(254.0)	F*			F**
	12(304.8) - 14(355.6)		F*		F**
End Cap	4(101.6) - 10(254.0)	F*			F**
	12(304.8) - 14(355.6)		F*		F**
	16(406.4) - 24(609.6)		F		
	26(660.4) - 30(762.0)			F	
AMCA HVD Damper HVD Damper Ultra Series Damper Blastgate - Actuated	16(406.4) - 24(609.6)		P		
	26+(660.4)			P	

P - Apply gasket on PRODUCT
F - Apply gasket on adjoining FLANGE

* - Apply specified gasket on top of GAS09
** - Factory applied gasket

NOTE: GASKET APPLICATION EXCEPTIONS

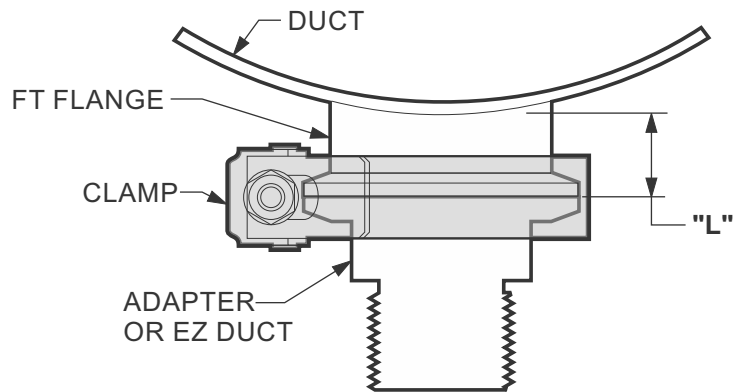
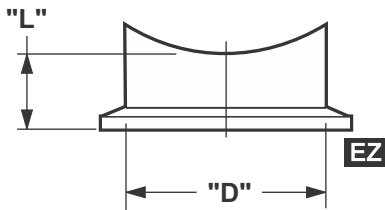
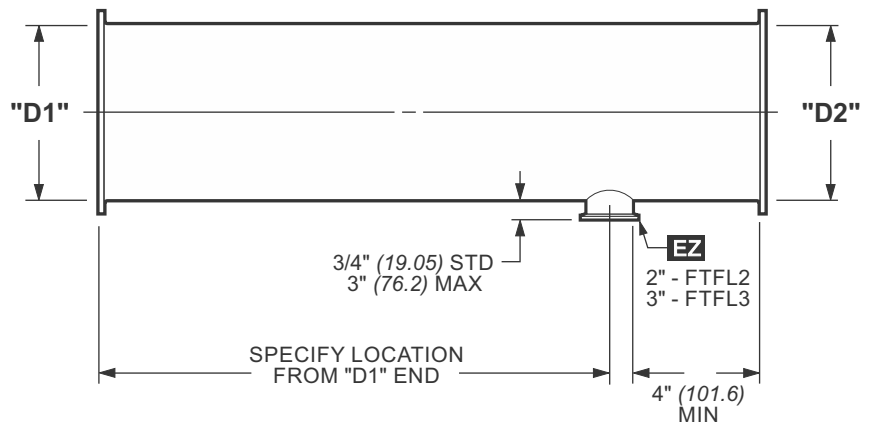
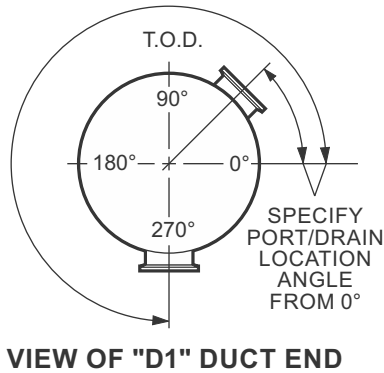
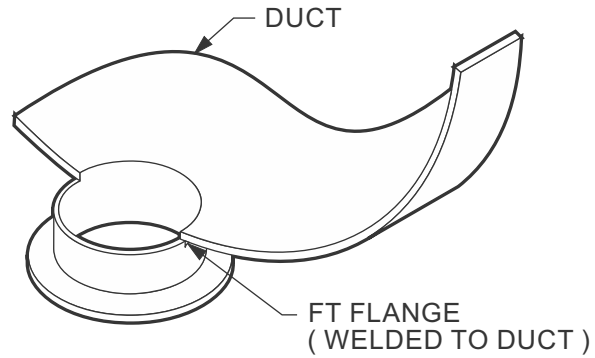
WHERE STANDARD GASKET APPLICATION IS NOT POSSIBLE; FOR EXAMPLE WHEN JOINING AN END CAP TO A STANDARD DUCT FLANGE IN SIZES BELOW 32" (812.8) DIAMETER THERE IS NO ROLLED FLANGE FACE TO APPLY GAS09 GASKET TAPE ON THE CAP. IN THIS INSTANCE, USE THE EXCEPTIONS TABLE TO IDENTIFY THE PROPER GASKET APPLICATION REQUIREMENTS. FOR THIS EXAMPLE; WITH A 14" (355.6) END CAP, APPLY GAS02 GASKET OVER THE DUCT FLANGE GAS09 PRIOR TO ASSEMBLY OF THE JOINT.

NOTES:

- SEE THE **STANDARDS SECTION** FOR INFORMATION ABOUT DUCT GAUGE, DUCT PRESSURE CLASSES, RING MECHANICAL SPECS, HARDWARE AND GASKETS.
 - OPTION:** CUSTOM LENGTH
 - OPTION:** RAW END
 - OPTION:** REFER TO FT FLANGE SYSTEM SECTION FOR ADAPTERS, DRAINS AND TEST PORTS.
- DUCT GREATER THAN 84" DIA. (2133.6mm) REQUIRES ENGINEERING REVIEW AND APPROVAL.
- GREATER THAN STANDARD DUCT LENGTHS AND/OR HIGHER SYSTEM PRESSURES MAY REQUIRE ADDITIONAL STIFFENERS PER SMACNA, SPECIFICATION GUIDELINES AVAILABLE.
- SEE INSTALLATION AND ASSEMBLY GUIDE FOR SHORTENING 4" THRU 22" DUCT IN THE FIELD.
- ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Straight Duct with FT Flange



PART NO.	DESCRIPTION	"D"	"L"
FTFL2	2" FT FLANGE	2" (50.8)	.75" (19.05)
FTFL3	3" FT FLANGE	3" (76.2)	.75" (19.05)

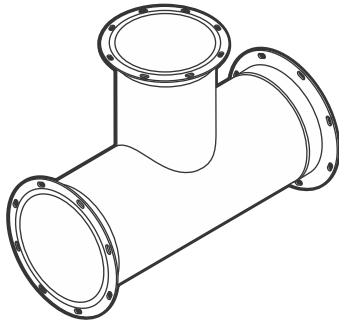
NOTES:

1. OUR RECOMMENDATION IS TO ADD TAPS TO STANDARD 4' (1219.2) AND 8' (2438.4) STRAIGHT DUCT WHEN POSSIBLE - TAP DIMENSIONS SHOWN ARE MINS.
2. SEE FT FLANGE SYSTEM SECTION FOR ADAPTERS AND THE EZ FITTINGS SECTION FOR DUCT TO USE WITH THE FT FLANGE. THE FT FLANGE / TEST PORT MAY BE INSTALLED ON FITTINGS OTHER THAN STRAIGHT DUCT (USE CUSTOM ORDER SHEET).

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Straight Duct with Straight Tap

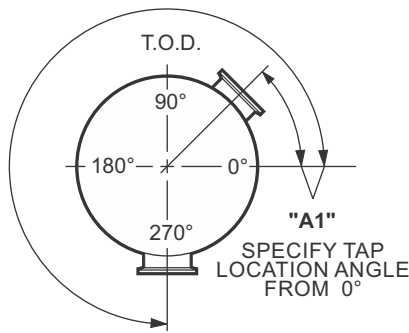
STRAIGHT TAP



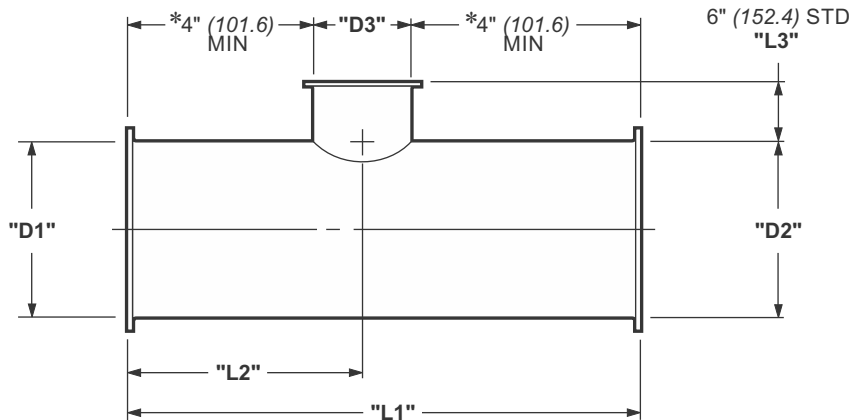
"L1" MIN = "D3" + 8" (203.2)
 "L1" MAX = 96-1/4" (2444.8)
 "D3" MAX = 88" (2235.2)

STRAIGHT TAP GREATER THAN 88" (2235.2) ["D3"]
 REQUIRES 2 PIECE DESIGN AND ENGINEERING REVIEW

*** MIN DISTANCE TO DUCT END**
 "D1" = 4" (101.6) - 94" (2387.6) : 4" (101.6) MIN
 "D1" = 96" (2438.4) - 120" (3048.0) : 5" (127.0) MIN

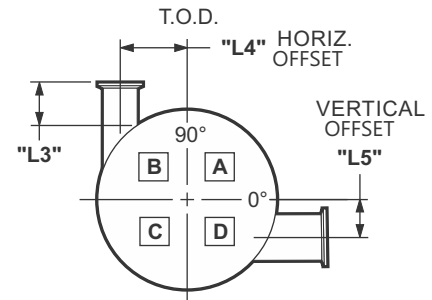


VIEW OF "D1" DUCT END



STANDARD DUCT LENGTHS ("L1")

RING	DIAMETER	"L1"=4' (1219.2)	"L1"=8' (2438.4)
EZ/SC	4" (101.6) & 6" (152.4)	47.25" (1200.5)	NA
EZ/SC	8" (203.2) TO 14" (355.6)	47.25" (1200.5)	95.25" (2419.35)
BI	16" (406.4) TO 48" (1219.2)	47.25" (1200.5)	95.25" (2419.35)
BI	50" (1270) TO 120" (3048)	46.75" (1187.45)	94.75" (2406.65)
SS	4" (101.6) TO 48" (1219.2)	47.25" (1200.5)	95.25" (2419.35)
SS	50" (1270) TO 128" (3251.2)	46.75" (1187.45)	94.75" (2406.65)



"D1" TAP OFFSET VIEW

NOTES:

- OUR RECOMMENDATION IS TO ADD TAPS TO STANDARD 4' (1219.2) AND 8' (2438.4) STRAIGHT DUCT WHEN POSSIBLE - TAP DIMENSIONS SHOWN ARE MINIMUMS.
- SEE THE STANDARDS SECTION FOR INFORMATION ABOUT DUCT GAUGE, DUCT PRESSURE CLASSES, RING MECHANICAL SPECS, HARDWARE AND GASKETS.
OPTION: CUSTOM LENGTH
OPTION: RAW END
OPTION: MULTIPLE & OFFSET TAPS AVAILABLE (SEE THE MULTIPLE TAP PAGE).
- DUCT GREATER THAN 84" DIA. (2133.6) REQUIRES ENGINEERING REVIEW AND APPROVAL.
- GREATER THAN STANDARD DUCT LENGTHS AND/OR HIGHER SYSTEM PRESSURES MAY REQUIRE ADDITIONAL STIFFENERS PER SMACNA, SPECIFICATION GUIDELINES AVAILABLE.
- ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

DUCT JOINT / RING TYPE

- EZ** EZ CLAMP
4"Ø-14"Ø (101.6 - 355.6)
- SC** STAINLESS CAST RING
4"Ø-14"Ø (101.6 - 355.6)
- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2)

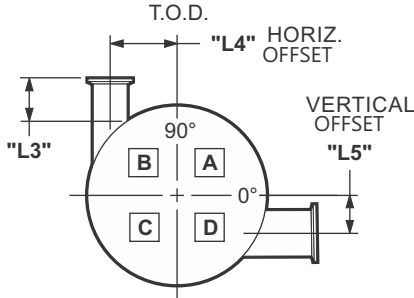
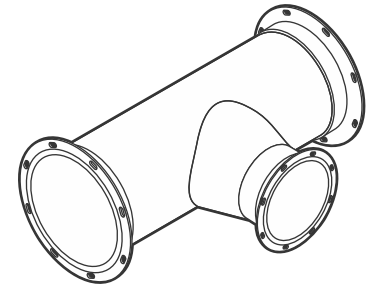
METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Straight Duct with Conical Tap

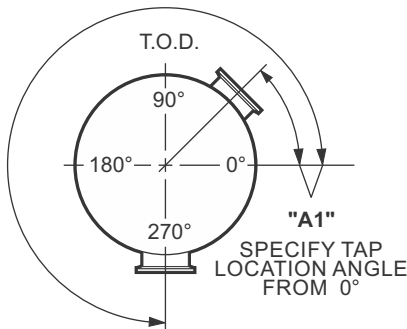
CONICAL TAP

"L1" MIN = "D3" + 10" (254.0)
 "L1" MAX = 96-1/4" (2444.8)
 "D3" MAX = 86" (2184.4)

CONICAL TAP GREATER THAN 86" (2184.4) ["D3"] REQUIRES 2 PIECE DESIGN AND ENGINEERING REVIEW

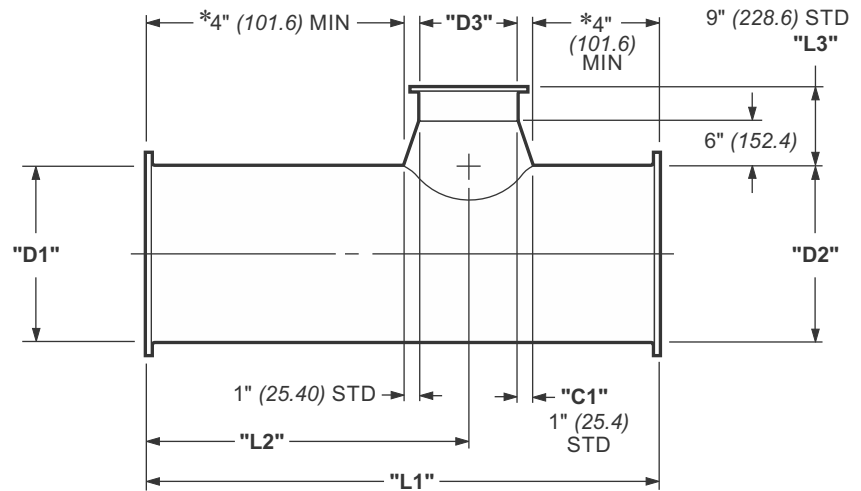


"D1" TAP OFFSET VIEW



VIEW OF "D1" DUCT END

*** MIN DISTANCE TO DUCT END**
 "D1" = 4" (101.6) - 94" (2387.6) : 4" (101.6) MIN
 "D1" = 96" (2438.4) - 128" (3251.2) : 5" (127.0) MIN



STANDARD DUCT LENGTHS ("L1")

RING	DIAMETER	"L1"=4' (1219.2)	"L1"=8' (2438.4)
EZ/SC	4" (101.6) & 6" (152.4)	47.25" (1200.5)	NA
EZ/SC	8" (203.2) TO 14" (355.6)	47.25" (1200.5)	95.25" (2419.35)
BI	16" (406.4) TO 48" (1219.2)	47.25" (1200.5)	95.25" (2419.35)
BI	50" (1270) TO 120" (3048)	46.75" (1187.45)	94.75" (2406.65)
SS	4" (101.6) TO 48" (1219.2)	47.25" (1200.5)	95.25" (2419.35)
SS	50" (1270) TO 128" (3251.2)	46.75" (1187.45)	94.75" (2406.65)

NOTES:

- OUR RECOMMENDATION IS TO ADD TAPS TO STANDARD 4' (1219.2) AND 8' (2438.4) STRAIGHT DUCT WHEN POSSIBLE - TAP DIMENSIONS SHOWN ARE MINIMUMS.2
- SEE THE STANDARDS SECTION FOR INFORMATION ABOUT DUCT GAUGE, DUCT PRESSURE CLASSES, RING MECHANICAL SPECS, HARDWARE AND GASKETS.
OPTION: CUSTOM LENGTH
OPTION: RAW END
OPTION: MULTIPLE & OFFSET TAPS AVAILABLE (SEE THE MULTIPLE TAP PAGE).
- DUCT GREATER THAN 84" DIA. (2133.6mm) REQUIRES ENGINEERING REVIEW AND APPROVAL.
- GREATER THAN STANDARD DUCT LENGTHS AND/OR HIGHER SYSTEM PRESSURES MAY REQUIRE ADDITIONAL STIFFENERS PER SMACNA, SPECIFICATION GUIDELINES AVAILABLE.
- ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

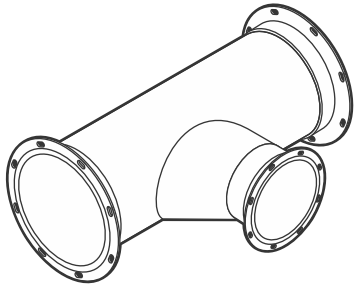
DUCT JOINT / RING TYPE

- EZ** EZ CLAMP
4"Ø-14"Ø (101.6 - 355.6)
- SC** STAINLESS CAST RING
4"Ø-14"Ø (101.6 - 355.6)
- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2)

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Straight Duct with Shoe Tap

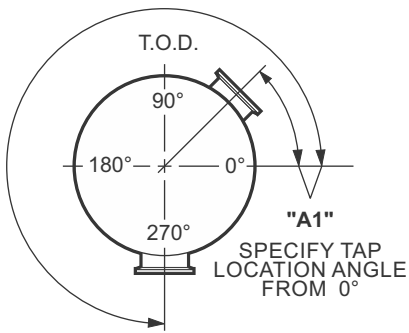
SHOE TAP



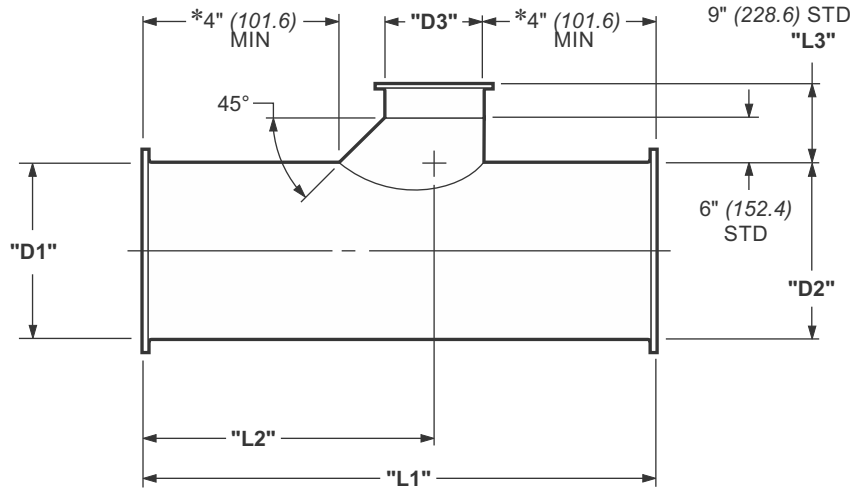
"L1" MIN = "D3" + 6" (152.4)(SHOE LENGTH) + 8" (203.2)
 "L1" MAX = 96-1/4" (2444.8)
 "D3" MAX = 86" (2184.4)

SHOE TAP GREATER THAN MAX "D3"
 REQUIRES 2 PIECE DESIGN
 AND ENGINEERING REVIEW

*** MIN DISTANCE TO DUCT END**
 "D1" = 4" (101.6) - 94" (2387.6) : 4" (101.6) MIN
 "D1" = 96" (2438.4) - 128" (3251.2) : 5" (127.0) MIN

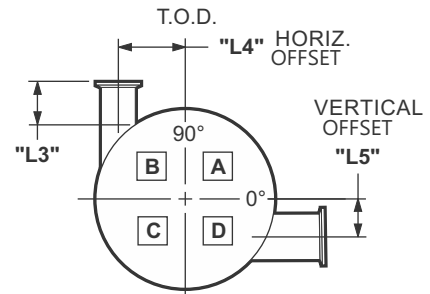


VIEW OF "D1" DUCT END



STANDARD DUCT LENGTHS ("L1")

RING	DIAMETER	"L1"=4' (1219.2)	"L1"=8' (2438.4)
EZ/SC	4" (101.6) & 6" (152.4)	47.25" (1200.5)	NA
EZ/SC	8" (203.2) TO 14" (355.6)	47.25" (1200.5)	95.25" (2419.35)
BI	16" (406.4) TO 48" (1219.2)	47.25" (1200.5)	95.25" (2419.35)
BI	50" (1270) TO 120" (3048)	46.75" (1187.45)	94.75" (2406.65)
SS	4" (101.6) TO 48" (1219.2)	47.25" (1200.5)	95.25" (2419.35)
SS	50" (1270) TO 128" (3251.2)	46.75" (1187.45)	94.75" (2406.65)



"D1" TAP OFFSET VIEW

NOTES:

- OUR RECOMMENDATION IS TO ADD TAPS TO STANDARD 4' (1219.2) AND 8' (2438.4) STRAIGHT DUCT WHEN POSSIBLE - TAP DIMENSIONS SHOWN ARE MINIMUMS.
- SEE THE STANDARDS SECTION FOR INFORMATION ABOUT DUCT GAUGE, DUCT PRESSURE CLASSES, RING MECHANICAL SPECS, HARDWARE AND GASKETS.
OPTION: CUSTOM LENGTH
OPTION: RAW END
OPTION: MULTIPLE & OFFSET TAPS AVAILABLE (SEE THE MULTIPLE TAP PAGE).
- DUCT GREATER THAN 84" DIA. (2133.6mm) REQUIRES ENGINEERING REVIEW AND APPROVAL.
- GREATER THAN STANDARD DUCT LENGTHS AND/OR HIGHER SYSTEM PRESSURES MAY REQUIRE ADDITIONAL STIFFENERS PER SMACNA, SPECIFICATION GUIDELINES AVAILABLE.
- ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

DUCT JOINT / RING TYPE

- EZ** EZ CLAMP
4"Ø-14"Ø (101.6 - 355.6)
- SC** STAINLESS CAST RING
4"Ø-14"Ø (101.6 - 355.6)
- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2)

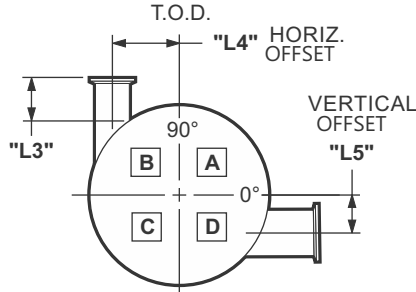
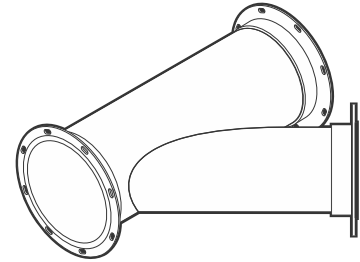
METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Straight Duct with Lateral Tap

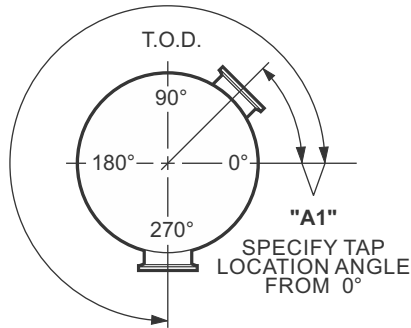
45° LATERAL TAP

"L1" MIN = ("D3" X 1.414) + "L2 MIN" + "L4"
 (SEE MIN LENGTH CHART FOR "L4")
 "L1" MAX = 96-1/4" (2444.8)
 "D3" MAX = 60" (152.4)

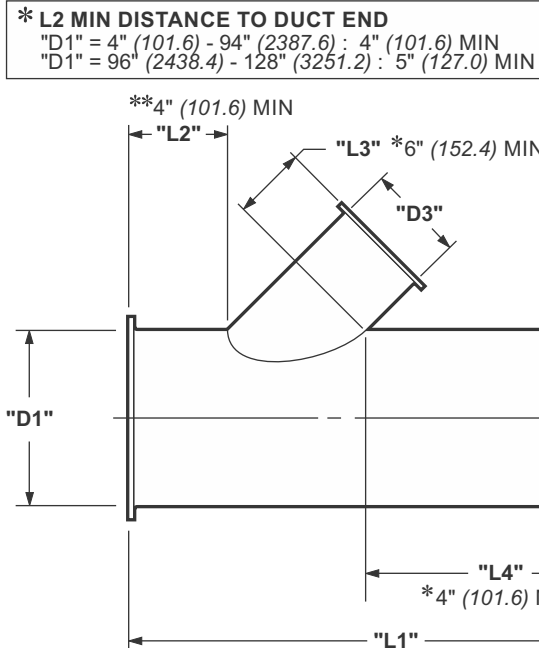
LATERAL TAP GREATER
 THAN 60" (152.4) ["D3"]
 REQUIRES 2 PIECE DESIGN
 AND ENGINEERING REVIEW



"D1" TAP OFFSET VIEW



VIEW OF "D1" DUCT END



*** L2 MIN DISTANCE TO DUCT END**
 "D1" = 4" (101.6) - 94" (2387.6) : 4" (101.6) MIN
 "D1" = 96" (2438.4) - 128" (3251.2) : 5" (127.0) MIN

STANDARD DUCT LENGTHS ("L1")

RING	DIAMETER	"L1"=4' (1219.2)	"L1"=8' (2438.4)
EZ/SC	4" (101.6) & 6" (152.4)	47.25" (1200.5)	NA
EZ/SC	8" (203.2) TO 14" (355.6)	47.25" (1200.5)	95.25" (2419.35)
BI	16" (406.4) TO 48" (1219.2)	47.25" (1200.5)	95.25" (2419.35)
BI	50" (1270) TO 120" (3048)	46.75" (1187.45)	94.75" (2406.65)
SS	4" (101.6) TO 48" (1219.2)	47.25" (1200.5)	95.25" (2419.35)
SS	50" (1270) TO 128" (3251.2)	46.75" (1187.45)	94.75" (2406.65)

*MINIMUM LENGTH FOR "L3" AND "L4"

"D1"	"L3"	"L4"
4" (101.6) - 48" (1219.2)	6" (152.4)	4" (101.6)
50" (1270.0) - 58" (1473.2)	7" (177.8)	4" (101.6)
60" (1524.0) - 94" (2387.6)	8" (203.2)	5" (127.0)
96" (2438.4) - 120" (3048.0)	10½" (266.7)	6" (152.4)

NOTES:

- OUR RECOMMENDATION IS TO ADD TAPS TO STANDARD 4' (1219.2) AND 8' (2438.4) STRAIGHT DUCT WHEN POSSIBLE - TAP DIMENSIONS SHOWN ARE MINIMUMS.
- SEE THE STANDARDS SECTION FOR INFORMATION ABOUT DUCT GAUGE, DUCT PRESSURE CLASSES, RING MECHANICAL SPECS, HARDWARE AND GASKETS.
OPTION: CUSTOM LENGTH
OPTION: RAW END
OPTION: MULTIPLE & OFFSET TAPS AVAILABLE (SEE THE MULTIPLE TAP PAGE).
- DUCT GREATER THAN 84" DIA. (2133.6mm) REQUIRES ENGINEERING REVIEW AND APPROVAL.
- GREATER THAN STANDARD DUCT LENGTHS AND/OR HIGHER SYSTEM PRESSURES MAY REQUIRE ADDITIONAL STIFFENERS PER SMACNA, SPECIFICATION GUIDELINES AVAILABLE.
- ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

DUCT JOINT / RING TYPE

EZ	EZ CLAMP 4"Ø-14"Ø (101.6 - 355.6)
SC	STAINLESS CAST RING 4"Ø-14"Ø (101.6 - 355.6)
BI	BLACK IRON ANGLE RING 16"Ø-120"Ø (406.4 - 3048.0)
SS	STAINLESS ANGLE RING 4"Ø-128"Ø (101.6 - 3251.2)

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

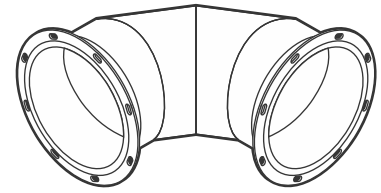
Gored Elbow

STANDARD RADIUS AT THE DUCT CENTERLINE

"R1" = 1.5 X "D"

STANDARD THROAT RADIUS

"R2" = "D"



LIMITATIONS

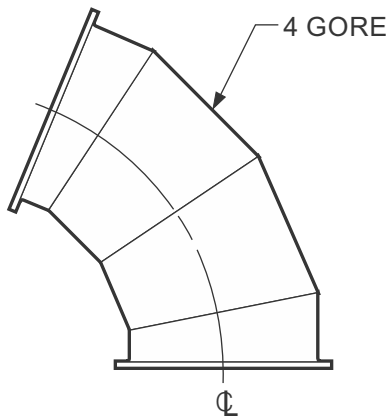
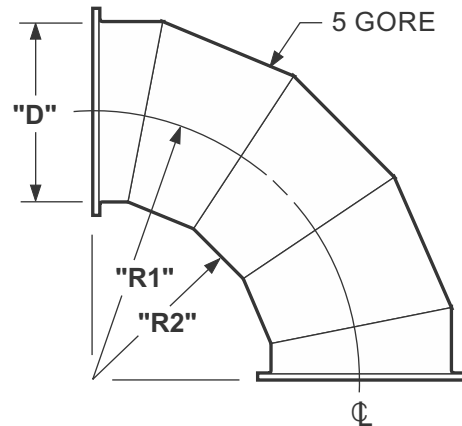
DUE TO MANUFACTURING LIMITATIONS, THE FOLLOWING ELBOWS ARE NOT AVAILABLE AS ONE PIECE FITTINGS:

- FULL RADIUS 90° ELBOW > 56" (1422.4) DIA.
- FULL RADIUS 60° ELBOW > 82" (2082.8) DIA.
- FULL RADIUS 45° ELBOW > 106" (2092.4) DIA.
- HALF RADIUS 90° ELBOW > 76" (1930.4) DIA.

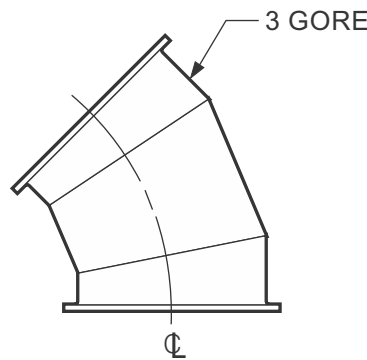
LARGE ELBOWS ABOVE THESE LIMITS WILL BE MANUFACTURED AS SMALLER FITTINGS (AN 86" DIA. 90° ELBOW WILL BE SUPPLIED AS TWO 45° ELBOWS FOR EXAMPLE) OR AS A CLAM SHELL DESIGNED FITTING AS TWO OR MORE PIECES. THIS APPLIES TO ALL LARGE FITTINGS AS WELL AS ELBOWS.

ALSO DUE TO MANUFACTURING LIMITATIONS, MANY OF THE SMALLER 1/2 RADIUS ELBOWS WILL REQUIRE CAST RINGS OR FLAT RINGS.

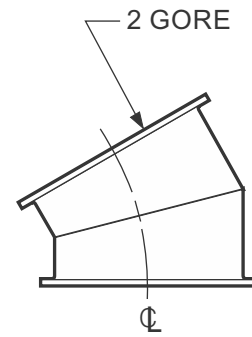
90° ELBOW



60° ELBOW



45° ELBOW



30° ELBOW

NOTES:

1. SEE THE STANDARDS SECTION FOR INFORMATION ABOUT DUCT GAUGE, DUCT PRESSURE CLASSES, RING MECHANICAL SPECS, HARDWARE AND GASKETS.

OPTION: CUSTOM NUMBER OF GORES AVAILABLE

OPTION: CUSTOM RADII AVAILABLE

OPTION: THROAT EXTENSIONS AVAILABLE

2. DUCT GREATER THAN 84" DIA. (2133.6mm) REQUIRES ENGINEERING REVIEW AND APPROVAL.

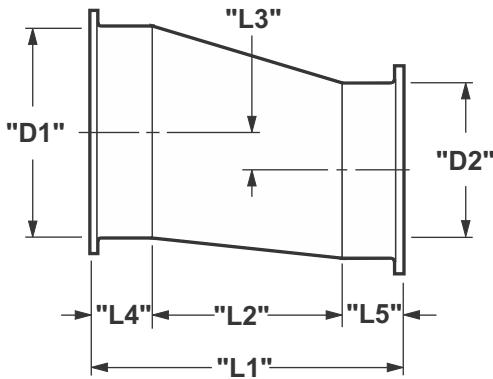
3. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

DUCT JOINT / RING TYPE

- EZ** EZ CLAMP
4"Ø-14"Ø (101.6 - 355.6)
- SC** STAINLESS CAST RING
4"Ø-14"Ø (101.6 - 355.6)
- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2)

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Concentric and Eccentric Reducer



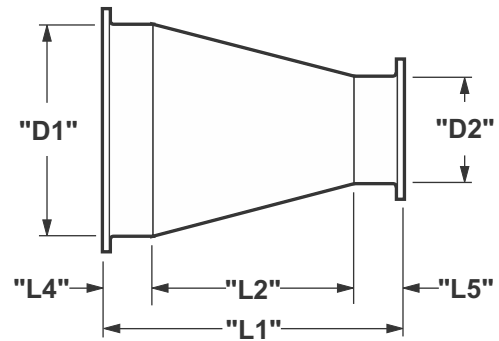
ECCENTRIC

Formula to calculate the minimum length for an eccentric reducer:

$$"L1" = "L2" + "L4" + "L5"$$

Use this chart for minimum length of "L2":
(Shorter taper or "L2" length can be fabricated, but will effect air flow.)

AMOUNT OF REDUCTION "D1" minus "D2"	MINIMUM LENGTH "L2"
6" (152.4) AND LESS	12" (304.8)
7" (177.8) TO 9" (228.6)	18" (457.2)
10" (254.0) TO 13" (330.2)	24" (609.6)
14" (355.6) TO 17" (431.8)	30" (762.0)



CONCENTRIC

Formula to calculate the minimum length for a concentric reducer:

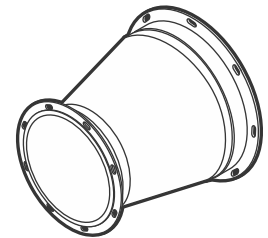
$$"L1" = "L2" + "L4" + "L5"$$

Use this chart for minimum length of "L2":
(Shorter taper or "L2" length can be fabricated, but will effect air flow.)

AMOUNT OF REDUCTION "D1" minus "D2"	MINIMUM LENGTH "L2"
9" (228.6) AND LESS	12" (304.8)
10" (254.0) TO 14" (355.6)	18" (457.2)
15" (381.0) TO 19" (482.6)	24" (609.6)
20" (508.0) TO 24" (609.6)	30" (762.0)

Use this chart for minimum length of "L4" & "L5":

DUCT DIAMETER "D1" or "D2"	MINIMUM LENGTH "L4" or "L5"
4" (101.6) TO 58" (1473.2)	3" (76.2)
60" (1524.0) TO 94" (2387.6)	4" (101.6)
96" (2438.4) TO 128" (3251.2)	5" (127.0)



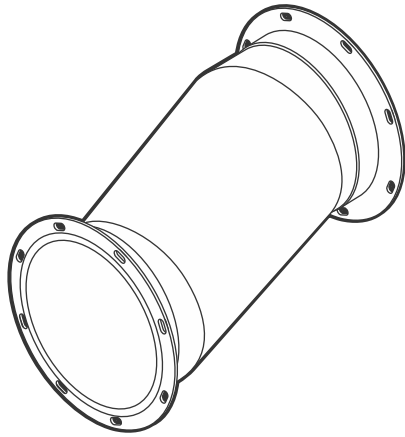
NOTES:

- SEE THE STANDARDS SECTION FOR INFORMATION ABOUT DUCT GAUGE, DUCT PRESSURE CLASSES, RING MECHANICAL SPECS, HARDWARE AND GASKETS.
OPTION: CUSTOM LENGTHS AVAILABLE
- DUCT GREATER THAN 84" DIA. (2133.6mm) REQUIRES ENGINEERING REVIEW AND APPROVAL.
- ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

DUCT JOINT / RING TYPE

- EZ** EZ CLAMP
4"Ø-14"Ø (101.6 - 355.6)
- SC** STAINLESS CAST RING
4"Ø-14"Ø (101.6 - 355.6)
- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2)

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)



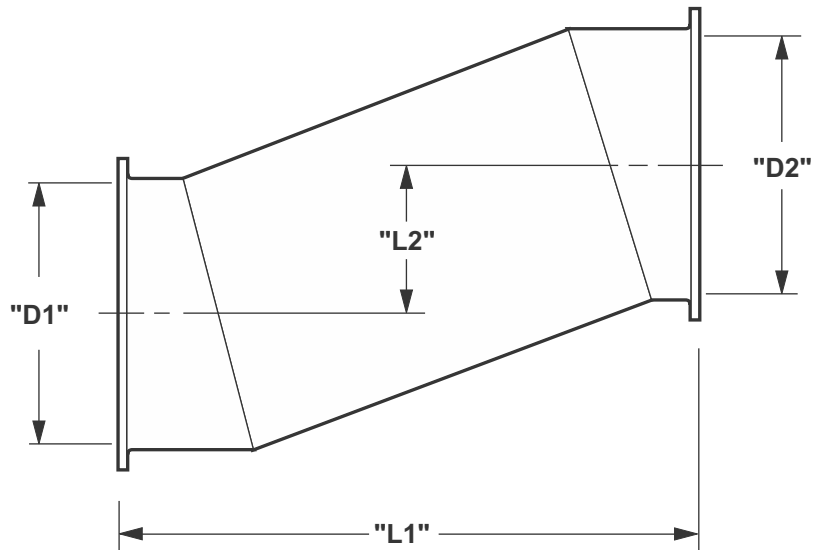
JOINT SYSTEM

EZ CLAMP	4" (101.6) - 14" (355.6)
SS CAST RING	4" (101.6) - 14" (355.6)
BI ANGLE RING	16" (406.4) - 120" (3048.0)
SS ANGLE RING	4" (406.4) - 128" (3251.2)

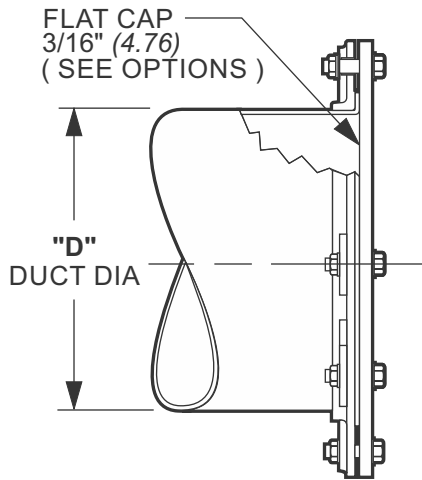
OR A COMBINATION OF JOINING SYSTEMS

NOTE

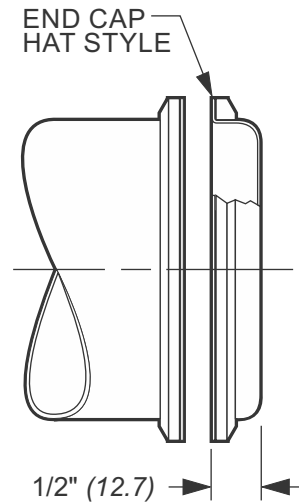
ALL FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.



METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)



4" (101.6) - 14" (355.6)
FLAT CAP
CONFIGURATION



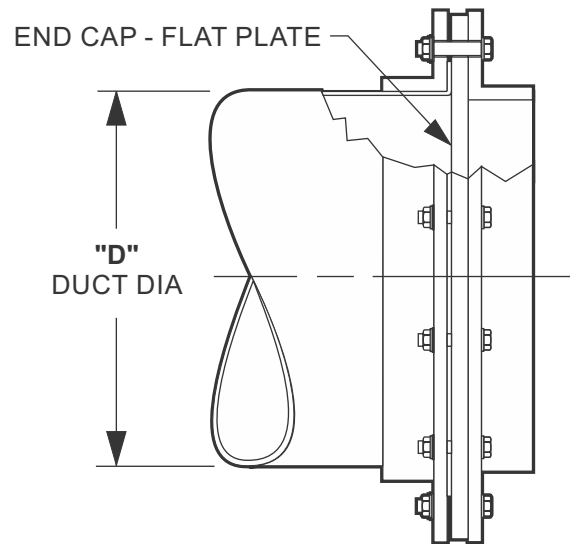
4" (101.6) - 14" (355.6)
EZ CONFIGURATION

NOTE

ALL FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

OPTIONS

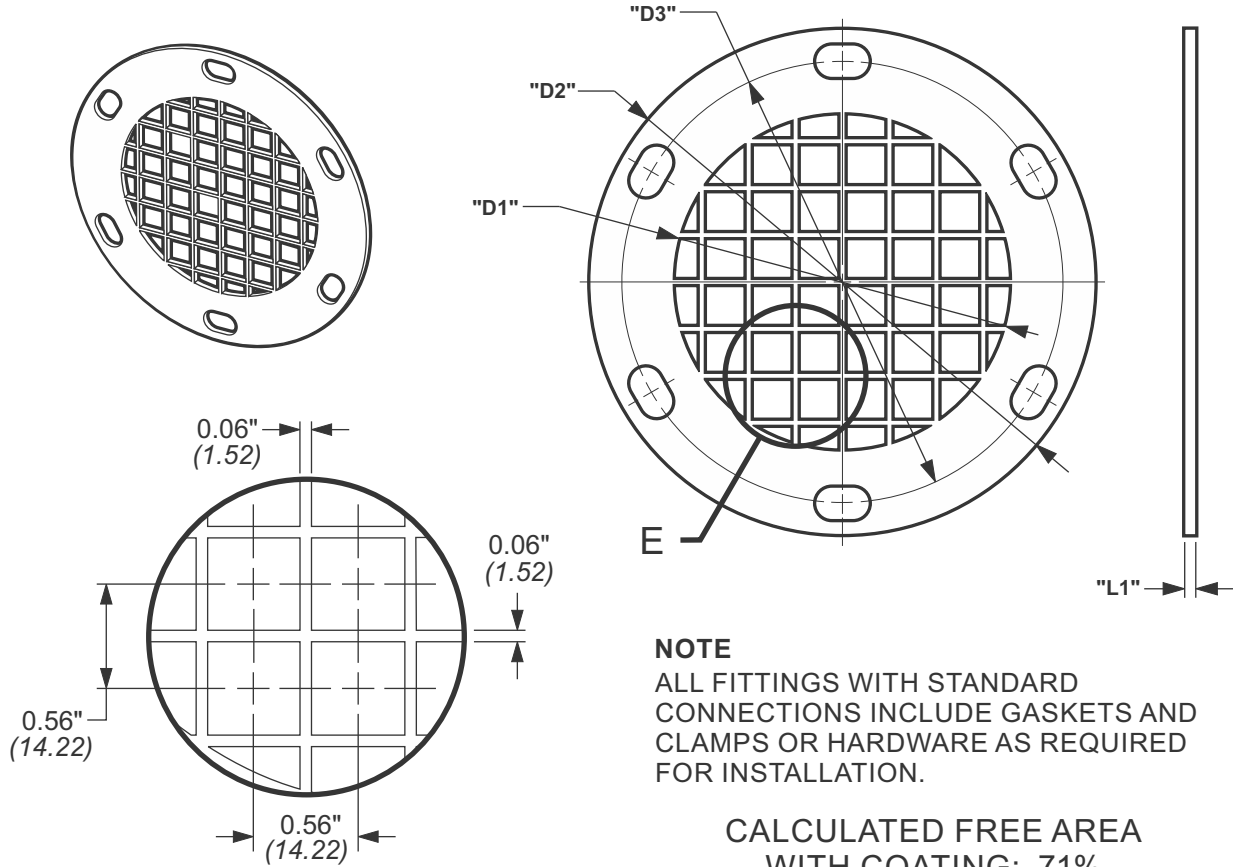
CLEAR POLYCARBONATE VIEWPORT ENDCAPS AVAILABLE UP TO 12" (304.8) DIA. LARGER SIZES AVAILABLE WITH ENGINEERING REVIEW AND APPROVAL.



16" (406.4) - 128" (3251.2)
ANGLE RING CONFIGURATION
WITH ADDED SUPPORT
ANGLE RING

TRANSVERSE STIFFENERS REQUIRED FOR END CAPS OVER 36" (914.4) DIA.

Mesh End Cap



NOTE
ALL FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

CALCULATED FREE AREA
WITH COATING: 71%
WITHOUT COATING: 79%

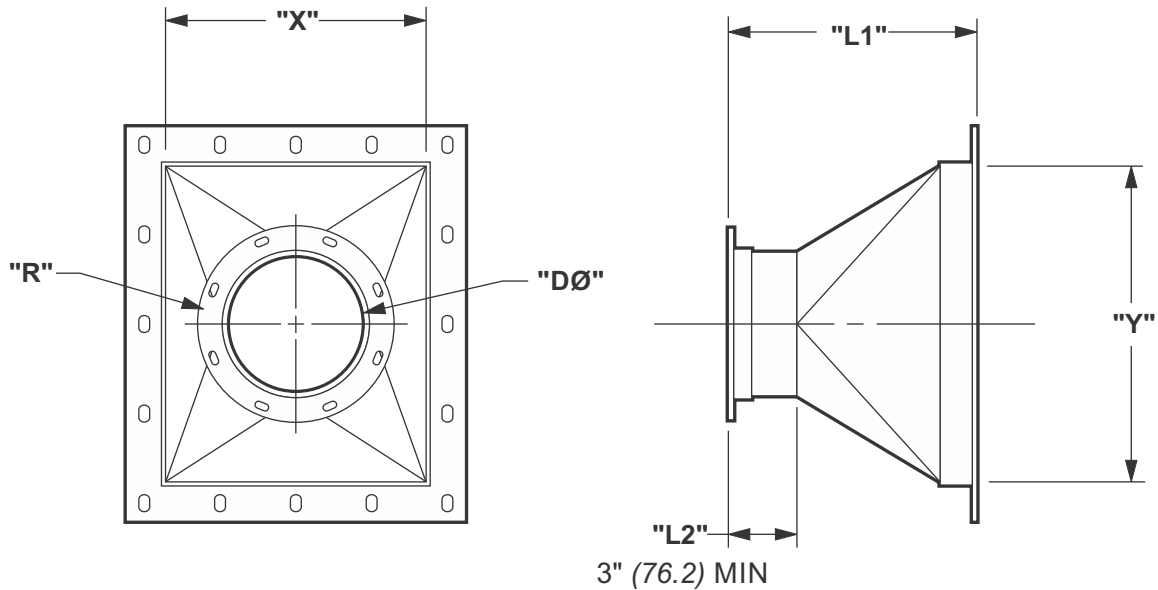
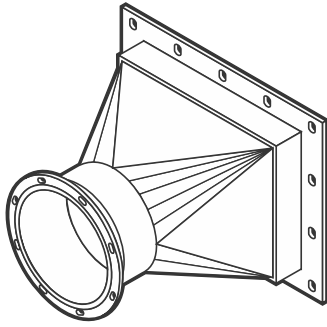
DETAIL E

* I.D. "D1"	O.D. "D2"	BOLT HOLE DIA "D3"	THK "L1"	NO. HOLES	SLOT SIZE
4-1/16" (103.2)	6-1/16" (154.0)	5.3" (134.6)	10GA(3.57)	6	7/16" (11.11) HOLE
6-1/8" (155.6)	8-5/8" (219.1)	7.5" (190.5)	10GA(3.57)	6	7/16" x 11/16" (11.11x17.5)
8-1/8" (206.4)	10-5/8" (269.9)	9.5" (241.3)	10GA(3.57)	8	7/16" x 11/16" (11.11x17.5)
10-1/8" (257.2)	12-5/8" (320.7)	11.5" (292.1)	10GA(3.57)	8	7/16" x 11/16" (11.11x17.5)
12-3/16" (309.6)	15-3/16" (385.8)	13.81" (350.8)	10GA(3.57)	12	9/16" x 3/4" (14.29x19.5)
14-3/16" (360.4)	17-3/16" (436.6)	15.81" (401.6)	10GA(3.57)	12	9/16" x 3/4" (14.29x19.5)
16-3/16" (411.2)	19-3/16" (487.4)	17.76" (451.1)	10GA(3.57)	16	9/16" x 3/4" (14.29x19.5)
18-3/16" (462.0)	21-3/16" (538.2)	19.76" (501.9)	10GA(3.57)	16	9/16" x 3/4" (14.29x19.5)
20-3/16" (512.8)	23-3/16" (589.0)	21.76" (552.7)	10GA(3.57)	20	9/16" x 3/4" (14.29x19.5)
22-3/16" (563.6)	25-3/16" (639.8)	23.88" (606.6)	10GA(3.57)	20	9/16" x 3/4" (14.29x19.5)
24-3/16" (614.4)	27-3/16" (690.6)	25.88" (657.4)	10GA(3.57)	20	9/16" x 3/4" (14.29x19.5)
26-3/16" (665.2)	30-3/16" (766.7)	27.88" (708.2)	10GA(3.57)	24	9/16" x 3/4" (14.29x19.5)
28-3/16" (716.0)	32-3/16" (817.6)	29.88" (759.0)	10GA(3.57)	24	9/16" x 3/4" (14.29x19.5)
30-3/16" (766.7)	34-3/16" (868.4)	31.88" (809.8)	10GA(3.57)	28	9/16" x 3/4" (14.29x19.5)
32-1/16" (814.4)	36-1/16" (916.0)	33.88" (860.6)	10GA(3.57)	28	9/16" x 3/4" (14.29x19.5)
34-1/16" (865.2)	38-1/16" (966.8)	35.88" (911.4)	10GA(3.57)	32	9/16" x 3/4" (14.29x19.5)
36-1/16" (916.0)	40-1/16" (1017.6)	37.88" (962.2)	10GA(3.57)	32	9/16" x 3/4" (14.29x19.5)

* Mesh End Cap I.D. to the nearest whole number matches standard duct diameters (see Ring Mechanical Specification page).

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Concentric Round to Rectangular Transition



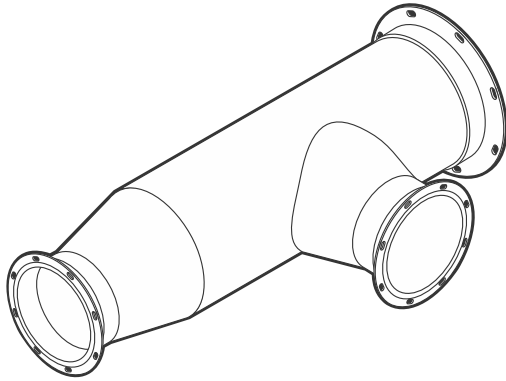
NOTES:

1. SEE THE STANDARDS SECTION OF THE PRODUCT CATALOG FOR INFORMATION ABOUT DUCT GAUGE, RING MECHANICAL SPECS, HARDWARE AND GASKETS.
OPTION: RAW END AVAILABLE
2. FOR ECCENTRIC RECTANGULAR TO ROUND FITTING, USE THE CUSTOM FITTING ORDER SHEET.
3. ROUND DUCT GREATER THAN 84" (2133.6) DIAMETER REQUIRES ENGINEERING REVIEW AND APPROVAL.
4. RECTANGULAR DUCT WIDTH OR HEIGHT OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW AND APPROVAL.
5. A CENTER STIFFENER (1" SCH40 PIPE) IS ADDED AT THE MIDPOINT OF THE FLANGE FOR RECTANGULAR DUCT WIDTH OR HEIGHT OF 50" (1270.0) AND GREATER.
6. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

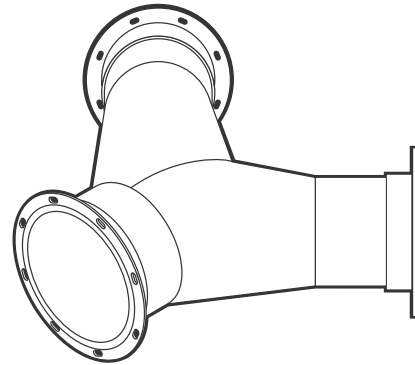
DUCT JOINT / RING TYPE FOR ROUND JOINT

- EZ** EZ CLAMP
4"Ø-14"Ø (101.6 - 355.6)
- SC** STAINLESS CAST RING
4"Ø-14"Ø (101.6 - 355.6)
- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2)

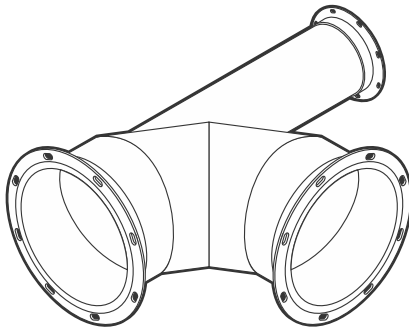
METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)



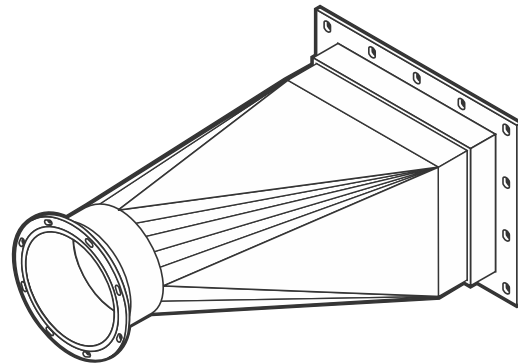
90 DEGREE REDUCING TEE



90 DEGREE WYE



ELBOW WITH HEEL TAP



ECCENTRIC ROUND TO RECTANGULAR TRANSITION

NOTES:

1. SEE THE STANDARDS SECTION OF THE PRODUCT CATALOG FOR INFORMATION ABOUT DUCT GAUGE, RING MECHANICAL SPECS, HARDWARE AND GASKETS.
2. USE THE CUSTOM FITTING ORDER SHEET TO DESCRIBE YOUR FITTING.
3. ROUND DUCT GREATER THAN 84" (2133.6) DIAMETER REQUIRES ENGINEERING REVIEW AND APPROVAL.
4. RECTANGULAR DUCT WIDTH OR HEIGHT OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW AND APPROVAL.
5. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

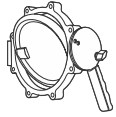
DUCT JOINT / RING TYPE FOR ROUND JOINT

- EZ** EZ CLAMP
4"Ø-14"Ø (101.6 - 355.6)
- SC** STAINLESS CAST RING
4"Ø-14"Ø (101.6 - 355.6)
- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2)

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

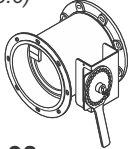
CONTROL DEVICES

4"-12" (101.6-304.8)
WAFER ISOLATION DAMPER




• PAGE: 36

4"-14" (101.6 - 355.6)
INDUSTRIAL ISOLATION DAMPER



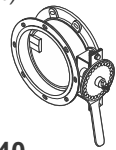
• PAGE: 38

6"-14" (152.4 - 355.6)
INDUSTRIAL ISOLATION DAMPER
AMCA



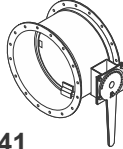
• PAGE: 39

4"-14" (101.6 - 355.6)
INDUSTRIAL ISOLATION SHORT DAMPER



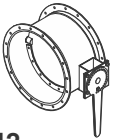
• PAGE: 40

16"-34" (406.4 - 863.6)
HIGH VALUE HEAVY DUTY INDUSTRIAL DAMPER
AMCA



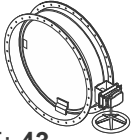
• PAGE: 41

16"-48" (406.4 - 1219.2)
HIGH VALUE HEAVY DUTY INDUSTRIAL DAMPER (HVD)



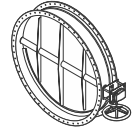
• PAGE: 42

36"-48" (914.4 - 1219.2)
HIGH VALUE HEAVY DUTY INDUSTRIAL DAMPER
AMCA



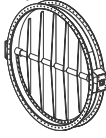
• PAGE: 43

50" & LARGER (1270.0 - 3048.0)
HEAVY DUTY INDUSTRIAL DAMPER



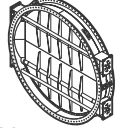
• PAGE: 44

16"-84" (406.4 - 2133.6)
ULTRA SERIES INDUSTRIAL DAMPER



• PAGE: 45

86"-120" (2184.4 - 3048.0)
ULTRA SERIES DUAL BLADE INDUSTRIAL DAMPER



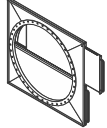
• PAGE: 46

4"-36" (101.6 - 914.4)
HORIZONTAL RUN BLASTGATE



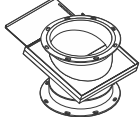
• PAGE: 48

38" & LARGER (965.2 - 3048.0)
HORIZONTAL RUN BLASTGATE



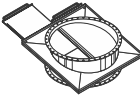
• PAGE: 50

4"-36" (101.6 - 914.4)
VERTICAL RUN ISOLATION BLASTGATE




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38" & LARGER (965.2 - 3048.0)
VERTICAL RUN ISOLATION BLASTGATE



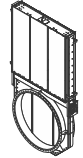
• PAGE: 54

16"-36" (406.4 - 914.4)
HORIZONTAL RUN ACTUATED BLASTGATE



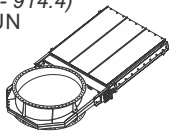
• PAGE: 49

38" & LARGER (965.2 - 3048.0)
HORIZONTAL RUN ACTUATED BLASTGATE



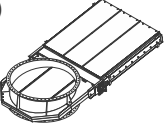
• PAGE: 51

16"-36" (406.4 - 914.4)
VERTICAL RUN ACTUATED BLASTGATE



• PAGE: 53


38" & LARGER (965.2 - 3048.0)
VERTICAL RUN ACTUATED BLASTGATE



• PAGE: 55

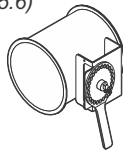
CONTROL DEVICES PSP-EZ™

2" & 3" (50.8 & 76.2)
MICRO ADJUSTABLE EZ DAMPER



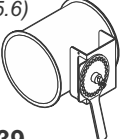
• PAGE: 37

4" - 14" (101.6 - 355.6)
INDUSTRIAL ISOLATION DAMPER



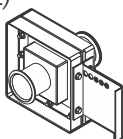
• PAGE: 38

AMCA
6" - 14" (152.4 - 355.6)
INDUSTRIAL ISOLATION DAMPER



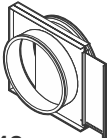
• PAGE: 39

2" & 3" (50.8 & 76.2)
HORIZONTAL RUN & VERTICAL RUN EZ BLASTGATE



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4" - 14" (101.6 - 355.6)
HORIZONTAL RUN BLASTGATE



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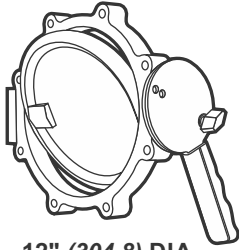
4" - 14" (101.6 - 355.6)
VERTICAL RUN BLASTGATE



• PAGE: 52

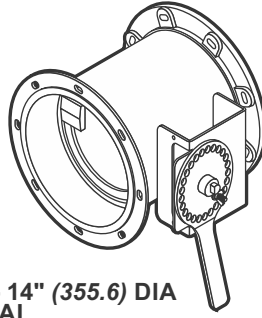
METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Round Damper Comparison Chart



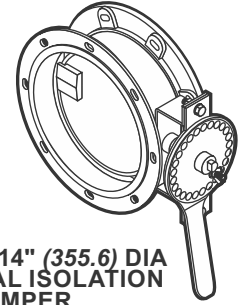
**4" (101.6) - 12" (304.8) DIA
WAFER ISOLATION
DAMPER**

BODY: COATED SOLID ALUMINUM BODY
BODY LENGTH: 1" (25.4)
COATING: PERMASHIELD FLUOROPOLYMER BARRIER COATING
BLADE: COATED 10GA (3.57) STAINLESS STEEL WITH FULLY WELDED DRIVE AXLE
4"Ø BLADE: MACHINED PTFE
EDGE SEALS: VITON EXTRUDED RUBBER
BLADE HOLDERS: MOLDED 25% GLASS FILLED PTFE
AXLE: DUAL SHAFT 1/2" (12.7) DIA STAINLESS STEEL
AXLE SEALS: LIQUID TIGHT - POS & NEG SYSTEM PRESSURE
BEARINGS: NYLON
COATING: FLUOROPOLYMER BARRIER COATING
QUADRANT: MANUAL LOCKING HANDLE
LOCKOUT: 1/2° INTERVALS
BLADE OPENS: CW
OPEN/CLOSE TORQUE: 250 in-lb (28.25 N-m) RECOMMENDED MINIMUM



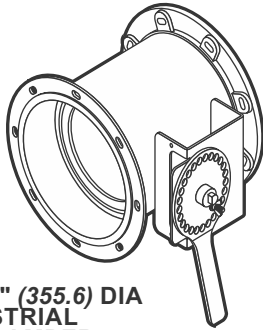
**4" (101.6) - 14" (355.6) DIA
INDUSTRIAL
ISOLATION DAMPER**

BODY: COATED 20GA (0.95) STAINLESS STEEL
BODY LENGTH: 9-1/4" (235.0)
OPTION: CUSTOM LENGTH
COATING: PERMASHIELD FLUOROPOLYMER BARRIER COATING
JOINING SYSTEM: FLOATING CAST STAINLESS STEEL RINGS
OPTION: EZ JOINING SYSTEM 4"-14"
OPTION: CUSTOM HOLE PATTERN
BLADE: VIRGIN TEFLON 4" (101.6) 10GA (3.57) COATED SS 6"-14" (152.4-355.6)
EDGE SEALS: FLUROELASTOMER
BLADE HOLDERS: VIRGIN TEFLON 4" (101.6) ISOLATION MOLDED PTFE 6"-14" (152.4-355.6) ISOLATION
AXLES: DUAL SHAFT 1/2" (12.7) DIA STAINLESS STEEL
AXLE SEALS: LIQUID TIGHT
ACTUATOR: MANUAL LEVER
OPTION: ELECTRIC ACTUATOR (SS RINGS)
OPTION: PNEUMATIC ACTUATOR (SS RINGS) (ACTUATORS ONLY AVAILABLE W/ SS RINGS)
LOCKOUT: 1/2° INTERVALS
BLADE OPENS: CCW
OPEN/CLOSE TORQUE: 250 in-lb (28.25 N-m) RECOMMENDED MINIMUM



**4" (101.6) - 14" (355.6) DIA
INDUSTRIAL ISOLATION
SHORT DAMPER**

BODY: COATED 20GA (0.95) STAINLESS STEEL
BODY LENGTH: 4" (101.6) MIN W/ EZ FLANGES 4-1/2" (114.3) MIN W/ CAST & FLAT RINGS
OPTION: CUSTOM LENGTH
COATING: PERMASHIELD FLUOROPOLYMER BARRIER COATING
JOINING SYSTEM: FLOATING CAST STAINLESS STEEL RINGS
OPTION: FLOATING STAINLESS STEEL FLAT RINGS 4" (101.6) - 14" (355.6)
OPTION: EZ JOINING SYSTEM 4" (101.6) - 14" (355.6)
OPTION: CUSTOM HOLE PATTERN
BLADE: 4" (101.6): VIRGIN TEFLON 6" (152.4) - 14" (355.6): 10GA (3.57) COATED STAINLESS STEEL
EDGE SEALS: FLUROELASTOMER
BLADE HOLDERS: MOLDED PTFE
AXLES: DUAL SHAFT 1/2" (12.7) DIA STAINLESS STEEL
AXLE SEALS: LIQUID TIGHT
ACTUATOR: MANUAL LEVER
LOCKOUT: 1/2° INTERVALS
BLADE OPENS: CCW
OPEN/CLOSE TORQUE: 1000 in-lb (113.0 N-m) RECOMMENDED MINIMUM

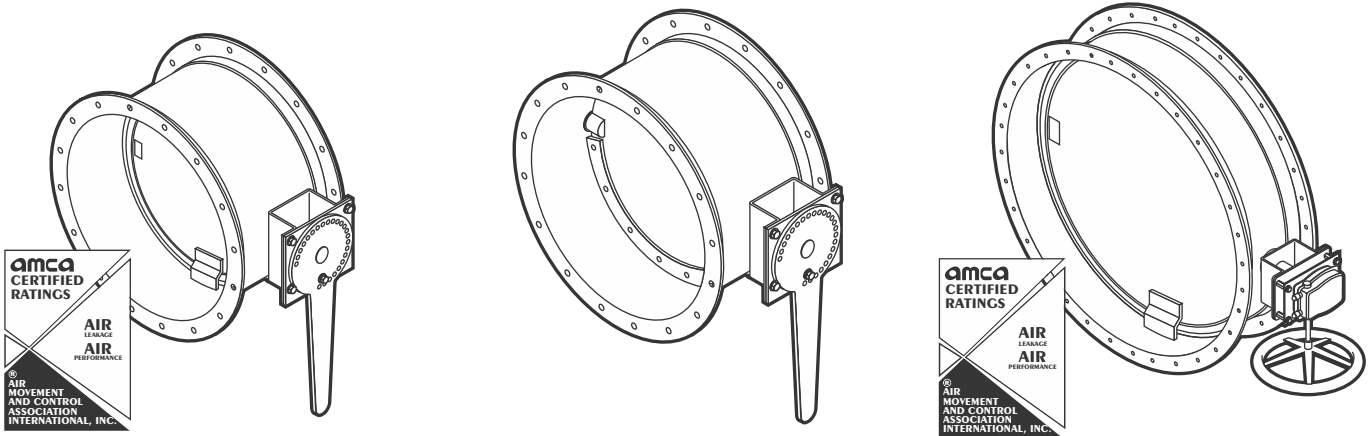


**6" (152.4) - 14" (355.6) DIA
AMCA INDUSTRIAL
ISOLATION DAMPER**

BODY: COATED 20GA (0.95) STAINLESS STEEL
BODY LENGTH: 9-1/4" (235.0)
OPTION: CUSTOM LENGTH
COATING: PERMASHIELD FLUOROPOLYMER BARRIER COATING
JOINING SYSTEM: FLOATING CAST STAINLESS STEEL RINGS
OPTION: EZ JOINING SYSTEM 6" (152.4) - 14" (355.6)
OPTION: CUSTOM HOLE PATTERN
BLADE: OFFSET - 10GA (3.57) COATED STAINLESS STEEL
EDGE SEALS: VITON
BLADE HOLDERS: MOLDED PTFE
AXLES: DUAL SHAFT 1/2" (12.7) DIA STAINLESS STEEL
AXLE SEALS: LIQUID TIGHT
ACTUATOR: MANUAL LEVER
OPTION: ELECTRIC ACTUATOR (SS RINGS)
OPTION: PNEUMATIC ACTUATOR (SS RINGS) (ACTUATORS ONLY AVAILABLE W/ SS RINGS)
LOCKOUT: 1/2° INTERVALS
BLADE OPENS: CCW
OPEN/CLOSE TORQUE: 250 in-lb (28.25 N-m) RECOMMENDED MINIMUM

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Round Damper Comparison Chart



**16" (406.4) - 34" (863.6) DIA
AMCA HIGH VALUE HEAVY DUTY
INDUSTRIAL DAMPER**

DIFFERENTIAL PRESSURE: 10" WG (2.491 kPa)
BODY: COATED 12GA (2.78) STAINLESS STEEL
BODY LENGTH: 10" (254.0)
COATING: PERMASHIELD FLUOROPOLYMER
 BARRIER COATING
JOINING SYSTEM: STITCH WELDED COATED
 BLACK IRON VAN STONE RINGS
OPTION: CUSTOM HOLE PATTERN
MOUNTING HOLES: STRADDLE VERTICAL
 CENTERLINE
BLADE: OFFSET - 1/4" (6.35) COATED
 STAINLESS STEEL
BLADE EDGE SEAL: VITON
BLADE STOPS: WELDED
AXLES: DUAL SHAFT 1.38 (34.9) DIA SS
AXLE SEALS: LIQUID TIGHT
SLEEVE BEARINGS: THERMOPLASTIC
ACTUATOR: MANUAL LEVER
OPTION: MANUAL GEAR BOX W/ LOCK OUT
OPTION: CUSTOM ACTUATOR MOUNTING KIT
OPTION: ELECTRIC ACTUATOR
OPTION: PNEUMATIC ACTUATOR
LOCKOUT: 1/2° INTERVALS
BLADE OPENS: CCW
OPEN/CLOSE TORQUE: 1000 in-lb (113.0 N-m)
 RECOMMENDED
 MINIMUM

**16" (406.4) - 48" (1219.2) DIA
HIGH VALUE HEAVY DUTY
INDUSTRIAL DAMPER (HVD)**

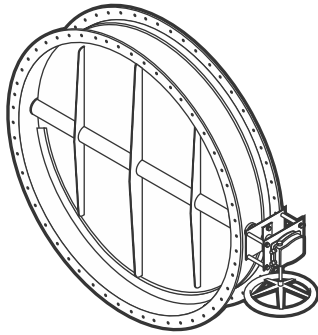
DIFFERENTIAL PRESSURE: 10" WG (2.491 kPa)
BODY: COATED 12GA (2.78) STAINLESS STEEL
BODY LENGTH: 10" (254.0)
COATING: PERMASHIELD FLUOROPOLYMER
 BARRIER COATING
JOINING SYSTEM: STITCH WELDED COATED
 BLACK IRON VAN STONE RINGS
OPTION: CUSTOM HOLE PATTERN
OPTION: STITCH WELDED STAINLESS STEEL
 VAN STONE RINGS
MOUNTING HOLES: STRADDLE VERTICAL
 CENTERLINE
BLADE: 1/4" (6.35) COATED STAINLESS STEEL
BLADE STOPS: WELDED W/ VITON BLADE SEAL
AXLES: DUAL SHAFT 1.38 (34.9) DIA SS
AXLE SEALS: LIQUID TIGHT
SLEEVE BEARINGS: THERMOPLASTIC
ACTUATOR: MANUAL LEVER
OPTION: MANUAL GEAR BOX W/ LOCK OUT
OPTION: CUSTOM ACTUATOR MOUNTING KIT
OPTION: ELECTRIC ACTUATOR
OPTION: PNEUMATIC ACTUATOR
LOCKOUT: 1/2° INTERVALS
BLADE OPENS: CCW
OPEN/CLOSE TORQUE: 1000 in-lb (113.0 N-m)
 RECOMMENDED
 MINIMUM

**36" (914.4) - 48" (1219.2) DIA
AMCA HIGH VALUE HEAVY DUTY
INDUSTRIAL DAMPER**

DIFFERENTIAL PRESSURE: 10" WG (2.491 kPa)
BODY: COATED 12GA (2.78) STAINLESS STEEL
BODY LENGTH: 10" (254.0)
COATING: PERMASHIELD FLUOROPOLYMER
 BARRIER COATING
JOINING SYSTEM: STITCH WELDED COATED
 BLACK IRON VAN STONE RINGS
OPTION: CUSTOM HOLE PATTERN
MOUNTING HOLES: STRADDLE VERTICAL
 CENTERLINE
BLADE: OFFSET - 1/4" (6.35) COATED
 STAINLESS STEEL
BLADE EDGE SEAL: VITON
BLADE STOPS: WELDED
AXLES: DUAL SHAFT 1.38 (34.9) DIA SS
AXLE SEALS: LIQUID TIGHT
SLEEVE BEARINGS: THERMOPLASTIC
ACTUATOR: MANUAL GEAR BOX W/ LOCK OUT
OPTION: CUSTOM ACTUATOR MOUNTING KIT
OPTION: ELECTRIC ACTUATOR
OPTION: PNEUMATIC ACTUATOR
LOCKOUT: 1/2° INTERVALS
BLADE OPENS: CCW
OPEN/CLOSE TORQUE: 1000 in-lb (113.0 N-m)
 RECOMMENDED
 MINIMUM

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Round Damper Comparison Chart



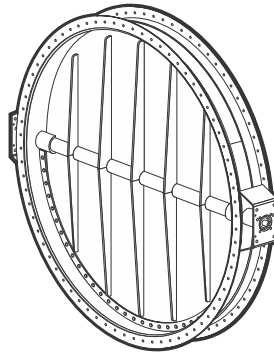
**50" (1270.0) DIA. & LARGER
REINFORCED HEAVY DUTY
INDUSTRIAL DAMPER**

DIFFERENTIAL PRESSURE: 10" WG (2.491 kPa)
BODY: COATED 1/4" (6.35) STAINLESS STEEL
OPTION: AVAIL TO 120" (3048.0) DIA W/
ENGINEERING REVIEW
BODY LENGTH: 10" (254.0)
COATING: PERMASHIELD FLUOROPOLYMER
BARRIER COATING
JOINING SYSTEM: FULLY WELDED STAINLESS
STEEL VAN STONE RINGS
OPTION: CUSTOM HOLE PATTERN
MOUNTING HOLES: STRADDLE VERTICAL
CENTERLINE
BLADE: 3/8" (9.5) COATED REINFORCED
STAINLESS STEEL
BLADE STOPS: WELDED
AXLES: DUAL SHAFT 1.85 (46.99) DIA
STAINLESS STEEL
AXLE SEALS: LIQUID TIGHT
SLEEVE BEARINGS: THERMOPLASTIC
ACTUATOR: GEAR ACTUATOR W/ LOCK OUT
OPTION: CUSTOM ACTUATOR MOUNTING KIT
OPTION: ELECTRIC ACTUATOR
OPTION: PNEUMATIC ACTUATOR

**PNEUMATIC ACTUATED DAMPERS
HYTORC ACTUATOR STANDARD**

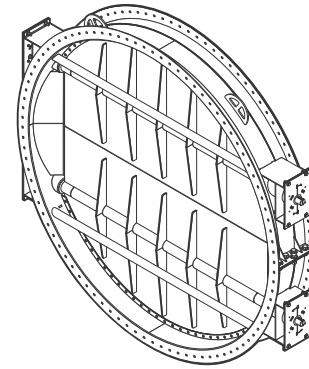
XL45 - UP TO 20" (508.0)
XL280 - 21" (533.4) TO 48" (1219.2)
XL425 - 49" (1244.6) TO 94" (2387.6)

LOCKOUT: 1/2" INTERVALS
BLADE OPENS: CCW
OPEN/CLOSE TORQUE: 1600 in-lb (180.78 N-m)
RECOMMENDED MIN



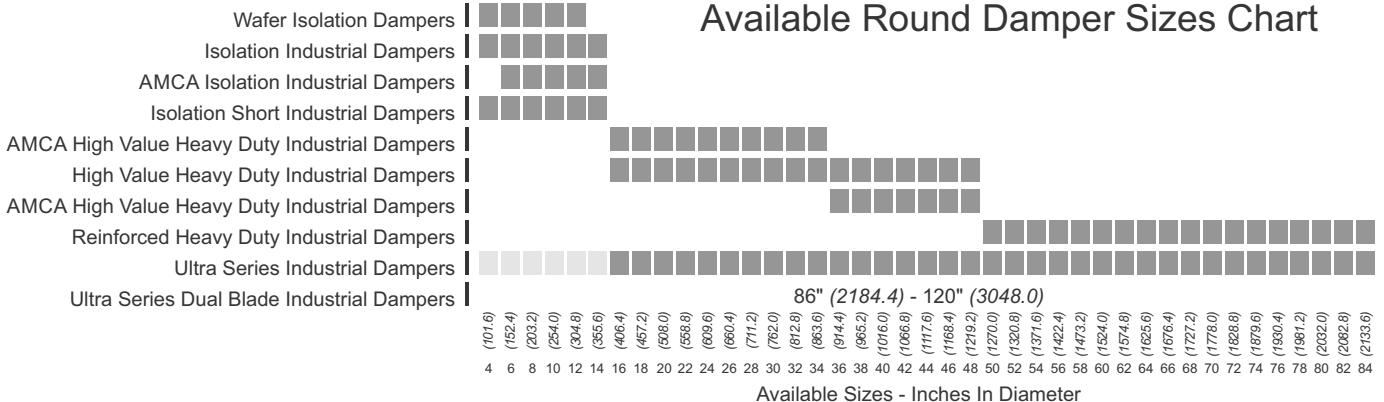
**16" (406.4) - 84" (2133.6) DIA.
ULTRA SERIES
INDUSTRIAL DAMPER**

DIFFERENTIAL PRESSURE: 30" WG (7.473 kPa)
BODY: COATED 16" - 44" (406.4 - 1117.6) DIA.
10GA (3.57) STAINLESS STEEL
COATED 46" - 84" (1168.4 - 2133.6) DIA.
1/4" (6.35) STAINLESS STEEL
OPTION: AVAIL TO 120" (3048.0) DIA W/
ENGINEERING REVIEW
BODY LENGTH: 10" (254.0)
COATING: PERMASHIELD FLUOROPOLYMER
BARRIER COATING
JOINING SYSTEM: FULLY WELDED STAINLESS
STEEL VAN STONE RINGS
OPTION: CUSTOM HOLE PATTERN
MOUNTING HOLES: STRADDLE VERTICAL
CENTERLINE
BLADE: COATED REINFORCED
16" - 58" (406.4 - 1473.2) DIA. 1/4" (6.35)
STAINLESS STEEL
60" - 84" (1524.0 - 2133.6) DIA. 3/8" (9.5)
STAINLESS STEEL
BLADE STOPS: WELDED
AXLES: 16" - 44" (406.4 - 1117.6) DIA.
DUAL SHAFT 1.20 (30.5) DIA SS
46" - 58" (1168.4 - 1473.2) DIA.
DUAL SHAFT 1.85 (47.0) DIA SS
60" & UP (152.4) DIA.
DUAL SHAFT 2.45 (62.2) DIA SS
AXLE SEALS: LIQUID TIGHT
SLEEVE BEARINGS:
BRONZE SLEEVE [16" - 58" (406.4 - 1473.2)]
SPHERICAL HEIM [60" - 84" (1524.0 - 2133.6)]
ACTUATOR:
NONE; STANDARD INTERFACE FOR
ROTORK HIGH SPEED SI-1-Q SERIES
OPTION: CUSTOM ACTUATOR MOUNTING KIT
OPTION: ELECTRIC ACTUATOR
OPTION: PNEUMATIC ACTUATOR
LOCKOUT: VARIABLE POSITION
BLADE POSITION INDICATOR: IDLE SIDE
BLADE OPENS: CCW



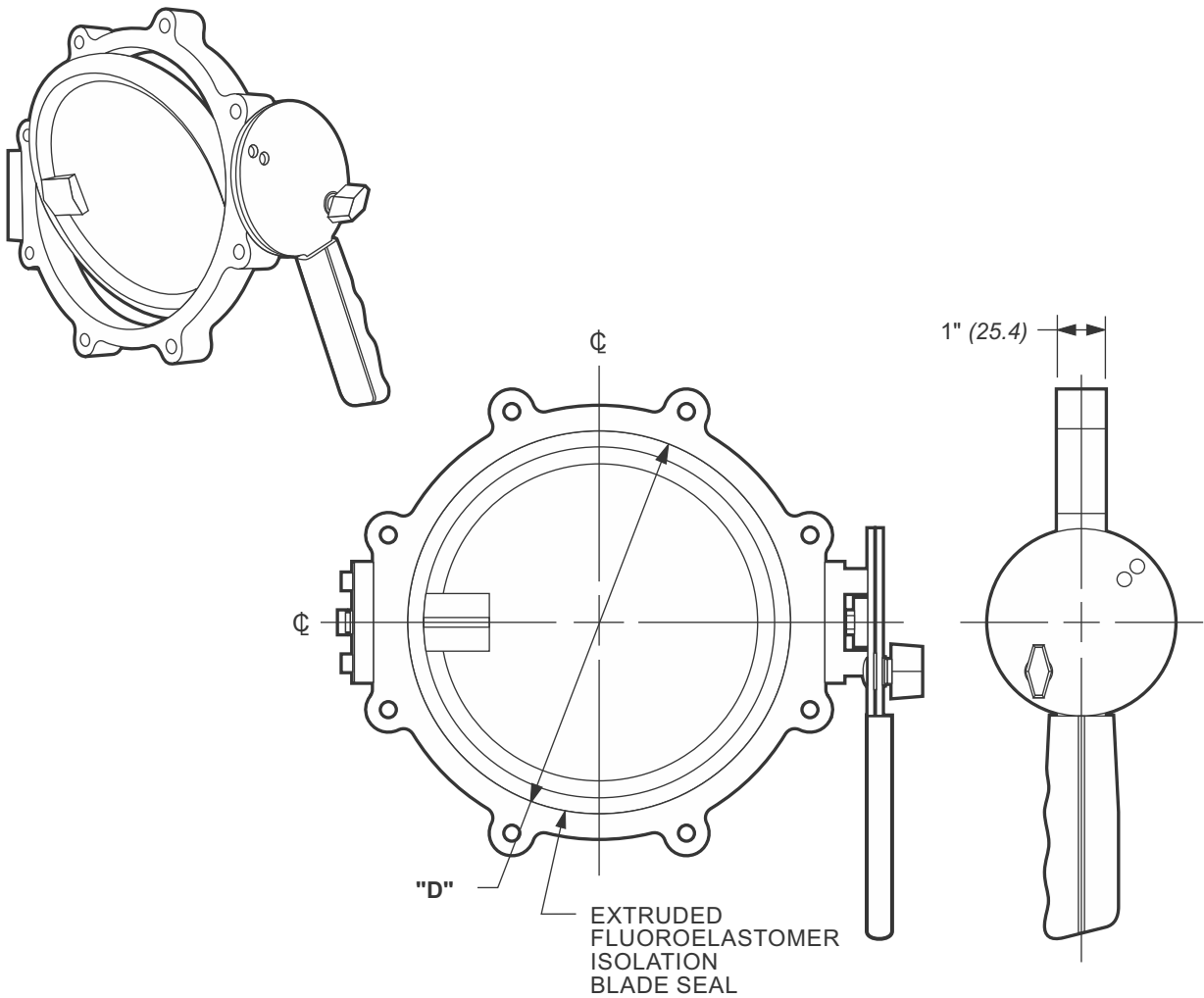
**86" (2184.4) - 120" (3048.0) DIA.
ULTRA SERIES DUAL BLADE
INDUSTRIAL DAMPER**

DIFFERENTIAL PRESSURE: 30" WG (7.473 kPa)
BODY: COATED 1/4" (6.35) STAINLESS STEEL
BODY LENGTH: 14.5" (368.3)
COATING: PERMASHIELD FLUOROPOLYMER
BARRIER COATING
JOINING SYSTEM: FULLY WELDED STAINLESS
STEEL VAN STONE RINGS
OPTION: CUSTOM HOLE PATTERN
MOUNTING HOLES: STRADDLE VERTICAL
CENTERLINE
BLADE: COATED REINFORCED
3/8" (9.5) STAINLESS STEEL
BLADE STOPS: WELDED
AXLES: DUAL SHAFT 2.00 (50.8) DIA SS
AXLE SEALS: LIQUID TIGHT
BEARINGS: SPHERICAL HEIM
ACTUATOR: NONE, F14 / FA14 MOUNTING
PATTERN
OPTION: CUSTOM ACTUATOR MOUNTING KIT
LOCKOUT: VARIABLE POSITION
BLADE POSITION INDICATOR: IDLE SIDE
BLADE OPENS: CW (TOP) - CCW (BOTTOM)



METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

4" (101.6) - 14" (355.6) Wafer Isolation Damper



SPECIFICATIONS

BODY: COATED SOLID ALUMINUM BODY
BODY LENGTH: 1" (25.4)
COATING: PERMASHIELD FLUOROPOLYMER BARRIER COATING
BLADE: COATED 10GA (3.57) STAINLESS STEEL WITH FULLY WELDED DRIVE AXLE
4"Ø (101.6) BLADE: MACHINED PTFE
EDGE SEALS: VITON EXTRUDED RUBBER
BLADE HOLDERS: MOLDED 25% GLASS FILLED PTFE DUAL SHAFT 1/2"Ø 33 STAINLESS STEEL
AXLE SEALS: LIQUID TIGHT - POS & NEG SYSTEM PRESSURE
BEARINGS: NYLON
COATING: FLUOROPOLYMER BARRIER COATING
QUADRANT: MANUAL LOCKING HANDLE
LOCKOUT: 1/2° INTERVALS
BLADE OPENS: CW
OPEN/CLOSE TORQUE: 250 in-lb (28.25 N-m) RECOMMENDED MIN

BOLT HOLE SPECIFICATIONS

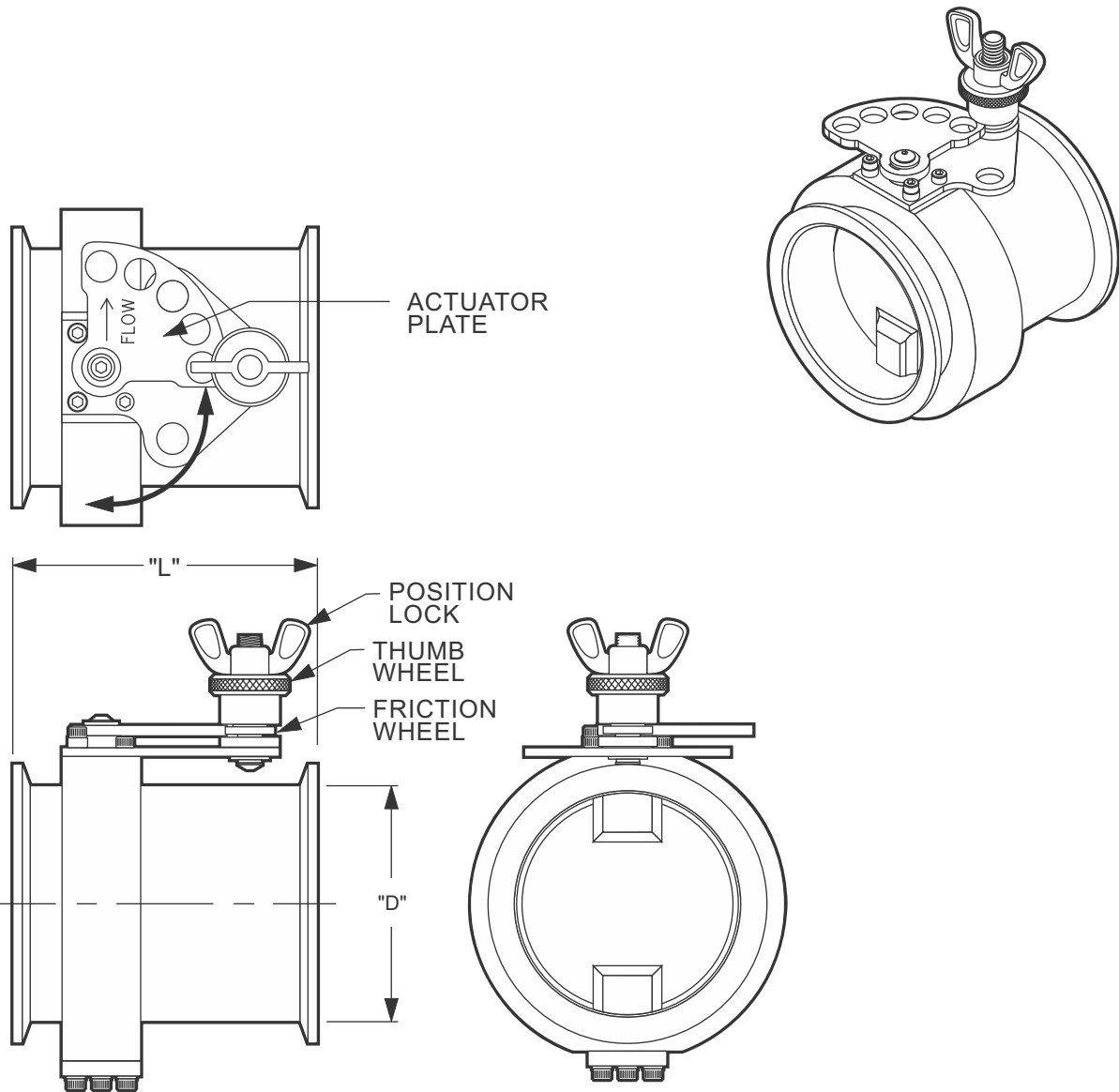
DUCT DIA "D"	NO. OF HOLES	BOLT HOLE SIZE	BOLT SIZE	BOLT CIRCLE DIA.
4 (50.8)	6	7/16 (11.1)	3/8 (9.53)	5.31 (134.87)
6 (152.4)				7.50 (190.5)
8 (203.2)				9.50 (241.3)
10 (254.0)	8	9/16 (14.2)	1/2 (12.7)	11.50 (292.1)
12 (304.8)				13.81 (350.77)
14 (355.6)				15.81 (401.57)

NOTES:

1. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

2" (50.8) & 3" (76.2) Micro-Adjustable EZ Damper



PART NO.	DESCRIPTION	"D"	"L"
PZD02	2" EZ-DAMPER	2" (50.8)	3.875" (98.43)
PZD03	3" EZ-DAMPER	3" (76.2)	3.875" (98.43)

NOTES:

1. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

4" (101.6) - 14" (355.6) Industrial Isolation Damper

SPECIFICATIONS

BODY: COATED 20GA (0.95) STAINLESS STEEL

BODY LENGTH: 9-1/4" (234.9)

OPTION: CUSTOM LENGTH

COATING: PERMASHIELD FLUOROPOLYMER BARRIER COATING

JOINING SYSTEM: FLOATING CAST STAINLESS STEEL RINGS

OPTION: EZ JOINING SYSTEM 4" (101.6) - 14" (355.6)

OPTION: CUSTOM HOLE PATTERN

BLADE: VIRGIN TEFLON 4" (101.6)

10GA (3.57) COATED STAINLESS STEEL 6"-14" (152.4-355.6)

EDGE SEALS: FLUOROELASTOMER

BLADE HOLDERS: VIRGIN TEFLON 4" (101.6) ISOLATION

MOLDED PTFE 6" (152.4) - 14" (355.6) ISOLATION

AXLES: DUAL SHAFT 1/2" (12.7) DIA. STAINLESS STEEL

AXLE SEALS: LIQUID TIGHT

ACTUATOR: MANUAL LEVER

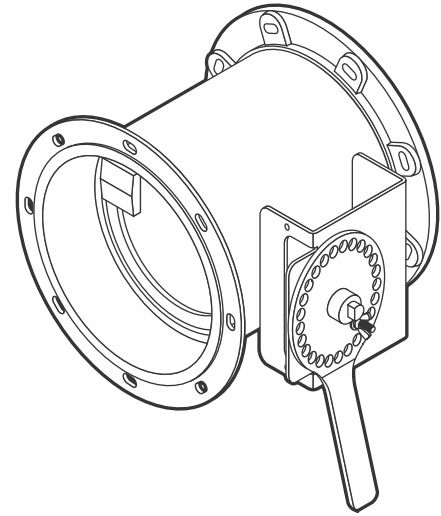
OPTION: ELECTRIC ACTUATOR (SS ANGLE RINGS ONLY)

OPTION: PNEUMATIC ACTUATOR (SS ANGLE RINGS ONLY)

LOCKOUT: 1/2° INTERVALS

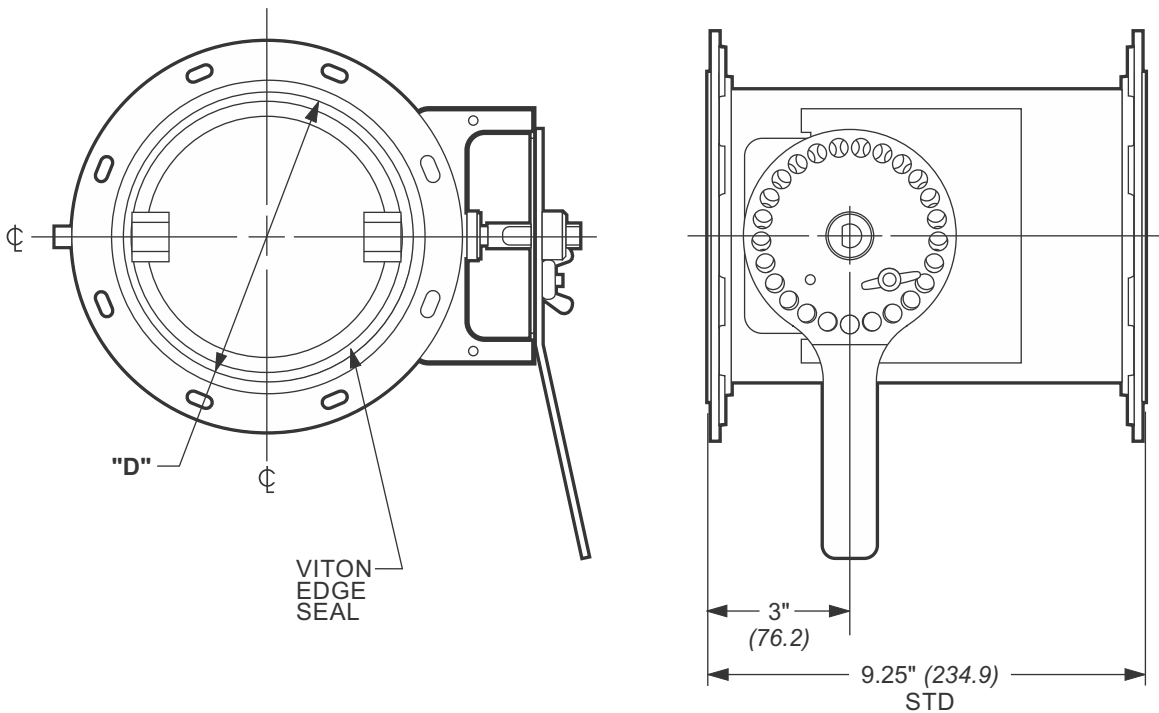
BLADE OPENS: CCW

OPEN/CLOSE TORQUE: 250 in-lb (28.25 N-m) RECOMMENDED MIN



NOTES:

1. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.



METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

4" (101.6) -14" (355.6) Industrial Isolation Short Damper

SPECIFICATIONS

BODY: COATED 20GA (0.95) STAINLESS STEEL

BODY LENGTH: 4" (101.6) MIN WITH EZ FLANGES
4-1/2" (114.3) MIN WITH CAST OR FLAT RINGS

OPTION: CUSTOM LENGTH

COATING: PERMASHIELD FLUOROPOLYMER BARRIER COATING

JOINING SYSTEM: FLOATING CAST STAINLESS STEEL RINGS

OPTION: FLOATING STAINLESS STEEL FLAT RINGS 4" (101.6) - 14" (355.6)

OPTION: EZ JOINING SYSTEM 4" (101.6) - 14" (355.6)

OPTION: CUSTOM HOLE PATTERN

BLADE: 4" (101.6) VIRGIN TEFLON
6" (152.4) -14" (355.6): 10GA (3.57) COATED STAINLESS STEEL

EDGE SEAL: FLUOROELASTOMER

BLADE HOLDERS: MOLDED PTFE

AXLES: DUAL SHAFT 1/2" (12.7) DIA. STAINLESS STEEL

AXLE SEALS: LIQUID TIGHT

ACTUATOR: MANUAL LEVER

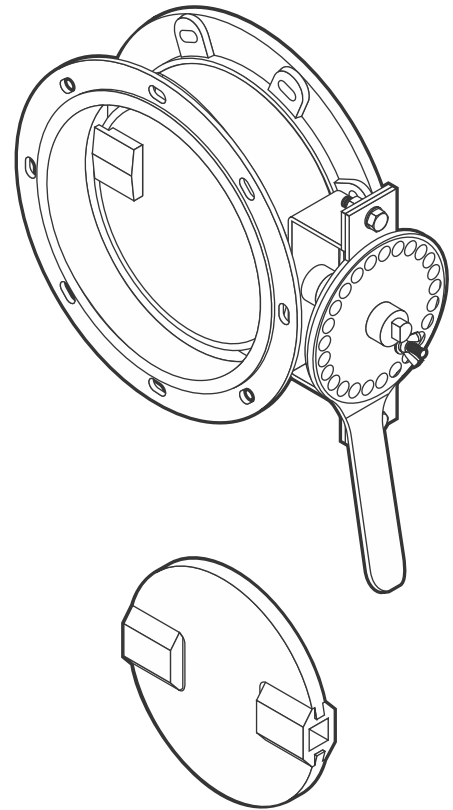
LOCKOUT: 1/2° INTERVALS

BLADE OPENS: CCW

OPEN/CLOSE TORQUE: 250 in-lb (28.25 N-m) RECOMMENDED MIN

NOTES:

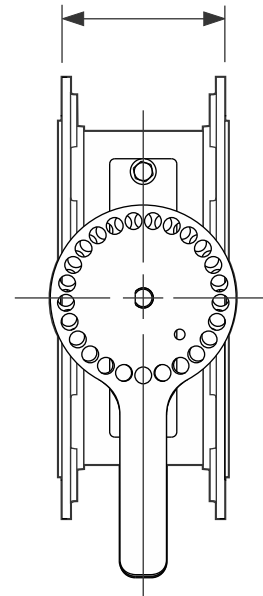
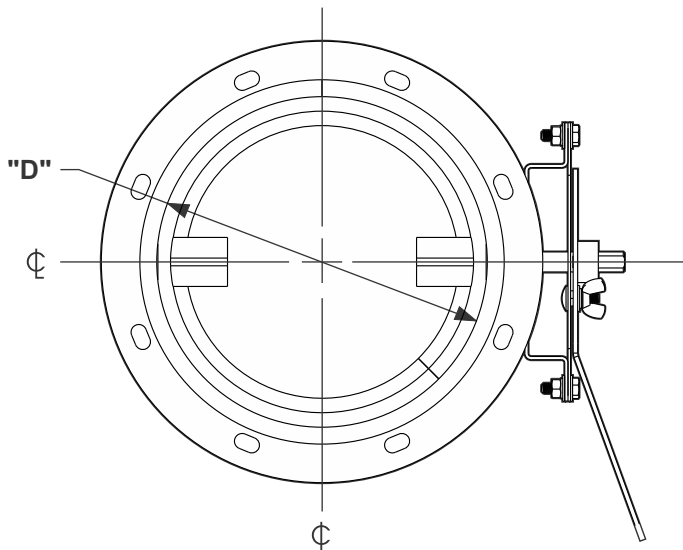
1. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.



4" PTFE blade
with molded PTFE
blade holders

DIAMETER	BLADE	BODY
4" (101.6)	PTFE	20GA (0.95)
6" (152.4) TO 14" (355.6)	10GA (3.57)	20GA (0.95)

4" (101.6) MIN
WITH EZ FLANGES
4-1/2" (114.3) MIN
WITH CAST OR FLAT RINGS

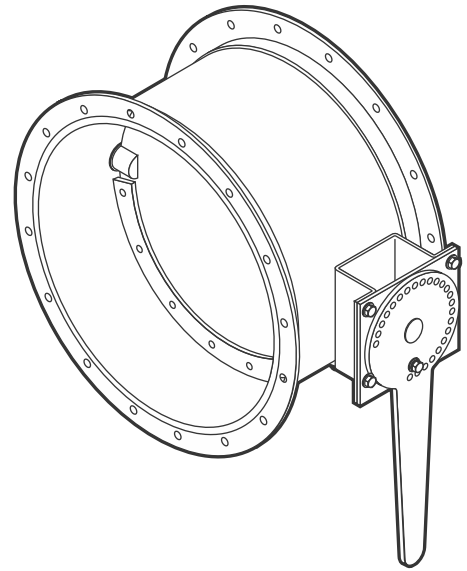


METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

16" (406.4) - 48" (1219.2) High Value Heavy Duty Industrial Damper (HVD)

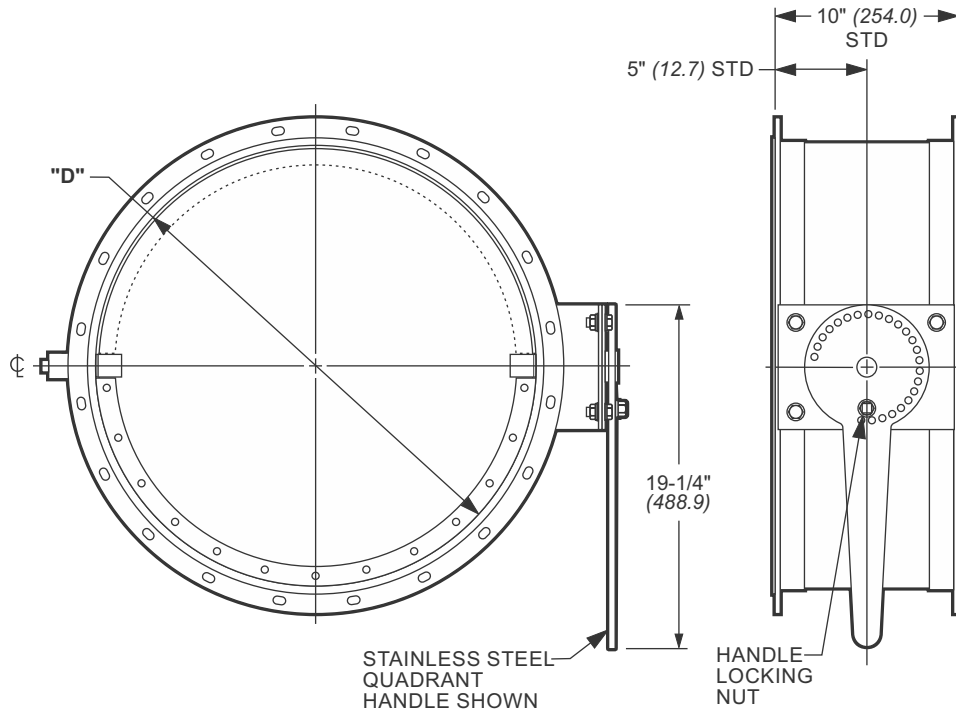
SPECIFICATIONS

- DIFFERENTIAL PRESSURE:** 10" WG (2.491 kPa)
- BODY:** COATED 12GA (2.78) STAINLESS STEEL
- BODY LENGTH:** 10" (254.0)
- COATING:** PERMASHIELD FLUOROPOLYMER BARRIER COATING
- JOINING SYSTEM:** FULLY WELDED STAINLESS STEEL VAN STONE RINGS
- OPTION:** CUSTOM HOLE PATTERN
- OPTION:** STITCH WELDED STAINLESS STEEL VAN STONE RINGS
- MOUNTING HOLES:** STRADDLE VERTICAL CENTERLINE
- BLADE:** 1/4" (6.35) COATED STAINLESS STEEL
- BLADE STOPS:** WELDED W/ VITON BLADE SEAL
- AXLES:** DUAL SHAFT 1.38 (35.1) DIA. STAINLESS STEEL
- AXLE SEALS:** LIQUID TIGHT
- SLEEVE BEARINGS:** THERMOPLASTIC
- ACTUATOR:** MANUAL LEVER
- OPTION:** MANUAL GEAR BOX W/ LOCK OUT
- OPTION:** CUSTOM ACTUATOR MOUNTING KIT
- OPTION:** ELECTRIC ACTUATOR
- OPTION:** PNEUMATIC ACTUATOR
- LOCKOUT:** 1/2° INTERVALS
- BLADE OPENS:** CCW
- OPEN/CLOSE TORQUE:** 1000 in-lb (112.98 N-m) RECOMMENDED MIN



NOTES:

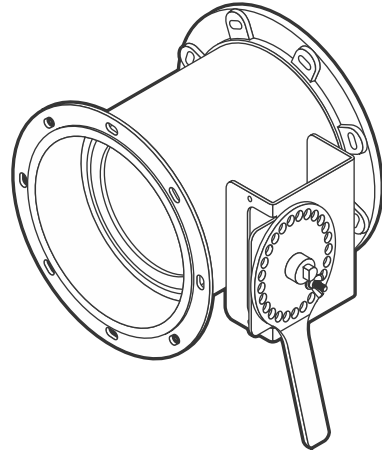
1. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.



*SHOWN WITH MANUAL HANDLE ACTUATOR OPTION

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

6" (152.4) - 14" (355.6) AMCA Industrial Isolation Damper



EXENTIAL U.S. INC. CERTIFIES THAT THE INDUSTRIAL SINGLE BLADE ISOLATION DAMPER SHOWN HEREIN IS LICENSED TO BEAR THE AMCA SEAL. THE RATINGS SHOWN ARE BASED ON TESTS AND PROCEDURES PERFORMED IN ACCORDANCE WITH AMCA PUB 511 AND COMPLY WITH THE REQUIREMENTS OF THE AMCA CERTIFIED RATINGS PROGRAM.

THE AMCA CERTIFIED RATINGS SEAL APPLIES TO AIR LEAKAGE RATINGS AND AIR PERFORMANCE RATINGS.

1. TEST METHOD PER AMCA STANDARD 500-89
DATA BASED ON A SEATING TORQUE OF: 764 in-lbf/ft² FOR 6" (152.4) DAMPER, 234 in-lbf/ft² FOR 14" DAMPER
2. AIR LEAKAGE IS BASED ON OPERATION BETWEEN 50° F & 104° F (10° C TO 40° C) AND DATA CORRECTED TO REPRESENT STANDARD AIR DENSITY 0.075 lbs/ft³

SPECIFICATIONS

BODY: COATED 20GA (0.95) STAINLESS STEEL

BODY LENGTH: 9-1/4" (234.9)

OPTION: CUSTOM LENGTH

COATING: PERMASHIELD FLUOROPOLYMER BARRIER COATING

JOINING SYSTEM: FLOATING CAST STAINLESS STEEL RINGS

OPTION: EZ JOINING SYSTEM 6" (152.4) - 14" (355.6)

OPTION: CUSTOM HOLE PATTERN

BLADE: OFFSET - 10GA (3.57) COATED STAINLESS STEEL

BLADE EDGE SEAL: FLUROELASTOMER

BLADE HOLDERS: MOLDED PTFE

AXLES: DUAL SHAFT 1/2" (12.7) DIA. STAINLESS STEEL

AXLE SEALS: LIQUID TIGHT

ACTUATOR: MANUAL LEVER

OPTION: ELECTRIC ACTUATOR

OPTION: PNEUMATIC ACTUATOR

LOCKOUT: 1/2° INTERVALS

BLADE OPENS: CCW

Damper Dia.	Pressure	AMCA Leakage Class
6" - 14" (152.4 - 355.6)	1" WG	1A
	4", 8", 12" WG	1

TESTED LEAKAGE RATES AVAILABLE, CONTACT EXENTIAL INC.

Leakage Classification L/s/m² (ft³/min/ft²)

Pressure Class	Required Range		Extended Range (Optional)	
	0.25 kPa (1" wg)	1.0 kPa (4" wg)	2.0 kPa (8" wg)	3.0 kPa (12" wg)
1A	15.2 (3)*	N/A	N/A	N/A
1	20.3 (4)	40.6 (8)	55.9 (11)	71.1 (14)
2	50.8 (10)	102 (20)	142 (28)	178 (35)
3	203 (40)	406 (80)	569 (112)	711 (140)

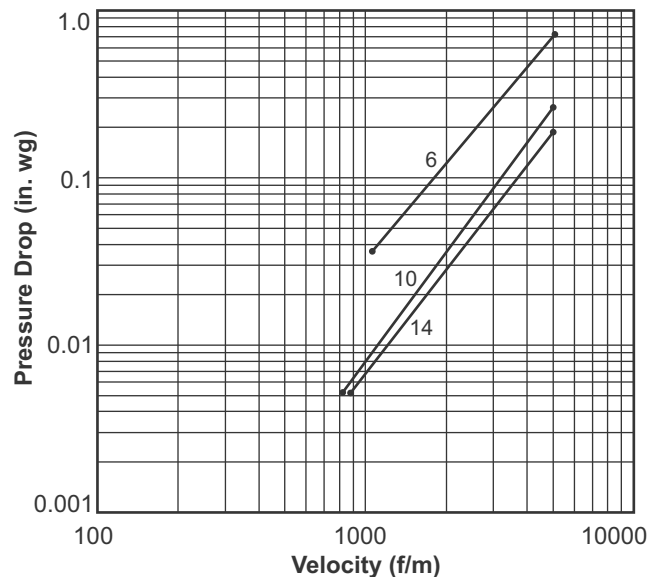
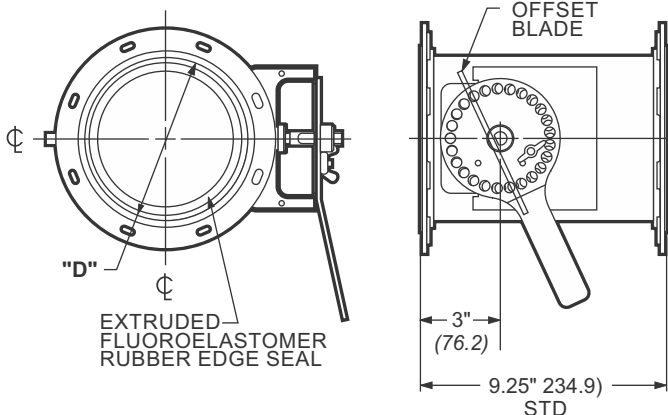
*Units for maximum ratings in () are CFM Sq. Ft.

■ Damper Leakage Test based on ANSI/AMCA Standard 500-D-07, Ref. Fig 5.6

■ Pressure Drop Test based on AMCA Standard 500-D-98, Ref. Fig 5.3

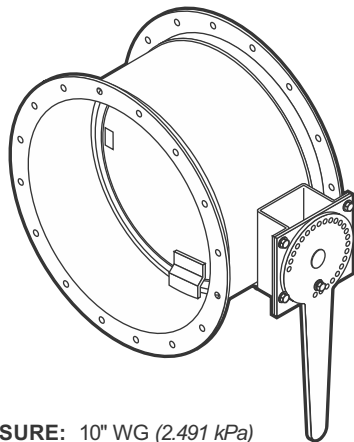
NOTES:

1. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.



METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

16" (406.4) - 34" (863.6) AMCA High Value Heavy Duty Industrial Damper



SPECIFICATIONS

DIFFERENTIAL PRESSURE: 10" WG (2.491 kPa)
BODY: COATED 12GA (3.57) STAINLESS STEEL
BODY LENGTH: 10" (254.0)
COATING: PERMASHIELD FLUOROPOLYMER BARRIER COATING
JOINING SYSTEM: STITCH WELDED COATED BLACK IRON VAN STONE RINGS

OPTION: CUSTOM HOLE PATTERN

MOUNTING HOLES: STRADDLE VERTICAL CENTERLINE
BLADE: OFFSET - 1/4" (6.35) COATED STAINLESS STEEL
BLADE EDGE SEAL: VITON
BLADE STOPS: WELDED
AXLES: DUAL SHAFT 1.38" (35.1) DIA. STAINLESS STEEL
AXLE SEALS: LIQUID TIGHT

SLEEVE BEARINGS: THERMOPLASTIC
ACTUATOR: MANUAL LEVER

OPTION: MANUAL GEAR BOX W/ LOCK OUT

OPTION: CUSTOM ACTUATOR MOUNTING KIT

OPTION: ELECTRIC ACTUATOR

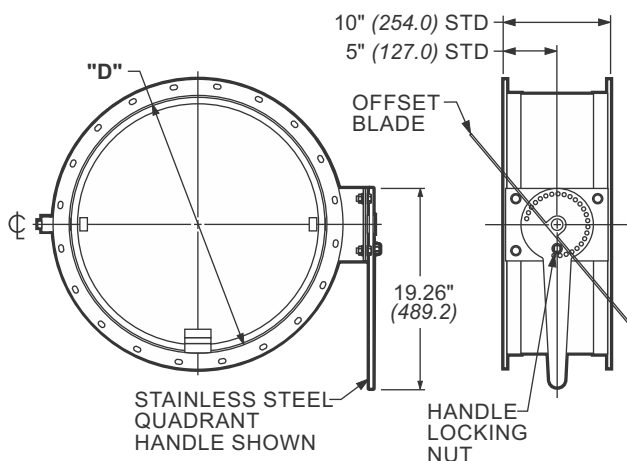
OPTION: PNEUMATIC ACTUATOR

LOCKOUT: 1/2° INTERVALS

BLADE OPENS: CCW

NOTES:

- ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.



EXENTIAL U.S. INC. CERTIFIES THAT THE INDUSTRIAL SINGLE BLADE ISOLATION DAMPER SHOWN HEREIN IS LICENSED TO BEAR THE AMCA SEAL. THE RATINGS SHOWN ARE BASED ON TESTS AND PROCEDURES PERFORMED IN ACCORDANCE WITH AMCA PUB 511 AND COMPLY W/ THE REQUIREMENTS OF THE AMCA CERTIFIED RATINGS PROGRAM.

THE AMCA CERTIFIED RATINGS SEAL APPLIES TO AIR LEAKAGE RATINGS AND AIR PERFORMANCE RATINGS.

- TEST METHOD PER AMCA STANDARD 500-89: DATA BASED ON A SEATING TORQUE OF: 764 in-lbf/ft² FOR 16" (406.4) DAMPER, 86 in-lbf/ft² FOR 48" (1219.2) DAMPER
- AIR LEAKAGE IS BASED ON OPERATION BETWEEN 50°F & 104°F (10°C TO 40°C) AND DATA CORRECTED TO REPRESENT STANDARD AIR DENSITY 0.075 lbs/ft³

Damper Dia.	Pressure	AMCA Leakage Class
16" - 34" (406.4 - 863.6)	1" WG	1A
	4", 8", 12" WG	1

TESTED LEAKAGE RATES AVAILABLE, CONTACT EXENTIAL INC.

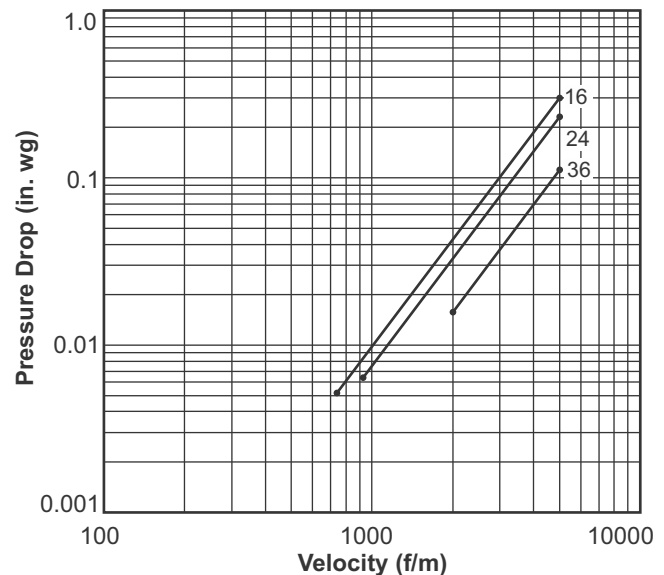
Leakage Classification L/s/m² (ft³/min/ft²)

Pressure Class	Required Range		Extended Range (Optional)	
	0.25 kPa (1" wg)	1.0 kPa (4" wg)	2.0 kPa (8" wg)	3.0 kPa (12" wg)
1A	15.2 (3)*	N/A	N/A	N/A
1	20.3 (4)	40.6 (8)	55.9 (11)	71.1 (14)
2	50.8 (10)	102 (20)	142 (28)	178 (35)
3	203 (40)	406 (80)	569 (112)	711 (140)

*Units for maximum ratings in () are CFM Sq. Ft.

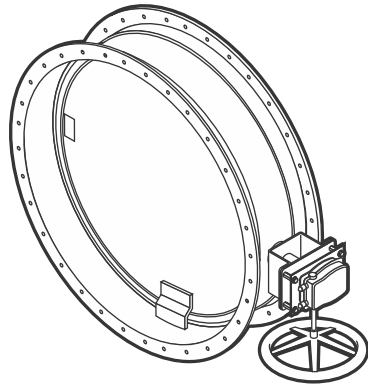
■ Damper Leakage Test based on ANSI/AMCA Standard 500-D-07, Ref. Fig 5.6

■ Pressure Drop Test based on AMCA Standard 500-D-98, Ref. Fig 5.3



METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

36" (914.4) - 48" (1219.2) AMCA High Value Heavy Duty Industrial Damper



SPECIFICATIONS

DIFFERENTIAL PRESSURE: 10" WG (2.491 kPa)
BODY: COATED 12GA (2.78) STAINLESS STEEL
JOINING SYSTEM: STITCH WELDED COATED BLACK IRON VAN STONE RINGS

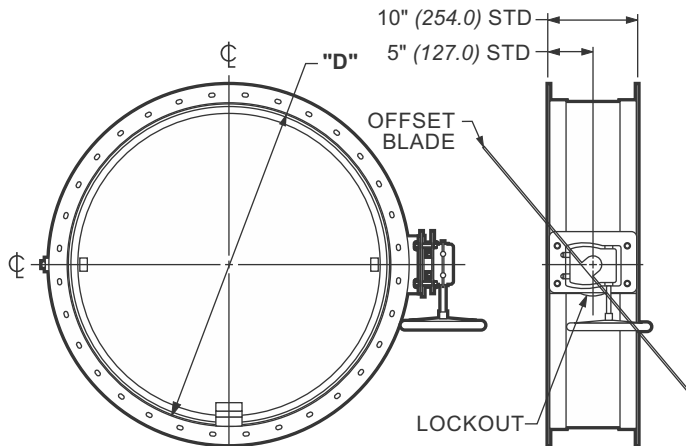
OPTION: CUSTOM HOLE PATTERN

MOUNTING HOLES: STRADDLE VERTICAL CENTERLINE
BODY LENGTH: 10" (254.0)
COATING: PERMASHIELD FLUOROPOLYMER BARRIER COATING
BLADE: OFFSET - 1/4" (6.35) COATED STAINLESS STEEL
BLADE EDGE SEAL: VITON
BLADE STOPS: WELDED
AXLES: DUAL SHAFT 1.38 (35.1) DIA. STAINLESS STEEL
AXLE SEALS: LIQUID TIGHT
SLEEVE BEARINGS: THERMOPLASTIC
ACTUATOR: MANUAL GEAR BOX W/ LOCK OUT
OPTION: CUSTOM ACTUATOR MOUNTING KIT
OPTION: ELECTRIC ACTUATOR
OPTION: PNEUMATIC ACTUATOR

LOCKOUT: 1/2° INTERVALS
BLADE OPENS: CCW

NOTES:

- ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.



EXENTIAL U.S. INC. CERTIFIES THAT THE INDUSTRIAL SINGLE BLADE ISOLATION DAMPER SHOWN HEREIN IS LICENSED TO BEAR THE AMCA SEAL. THE RATINGS SHOWN ARE BASED ON TESTS AND PROCEDURES PERFORMED IN ACCORDANCE WITH AMCA PUB 511 AND COMPLY W/ THE REQUIREMENTS OF THE AMCA CERTIFIED RATINGS PROGRAM.

THE AMCA CERTIFIED RATINGS SEAL APPLIES TO AIR LEAKAGE RATINGS AND AIR PERFORMANCE RATINGS.

- TEST METHOD PER AMCA STANDARD 500-89: DATA BASED ON A SEATING TORQUE OF: 125 in-lbf/ft² FOR 16" (406.4) DAMPER, 86 in-lbf/ft² FOR 48" (1219.2) DAMPER
- AIR LEAKAGE IS BASED ON OPERATION BETWEEN 50°F & 104°F (10°C TO 40°C) AND DATA CORRECTED TO REPRESENT STANDARD AIR DENSITY 0.075 lbs/ft³

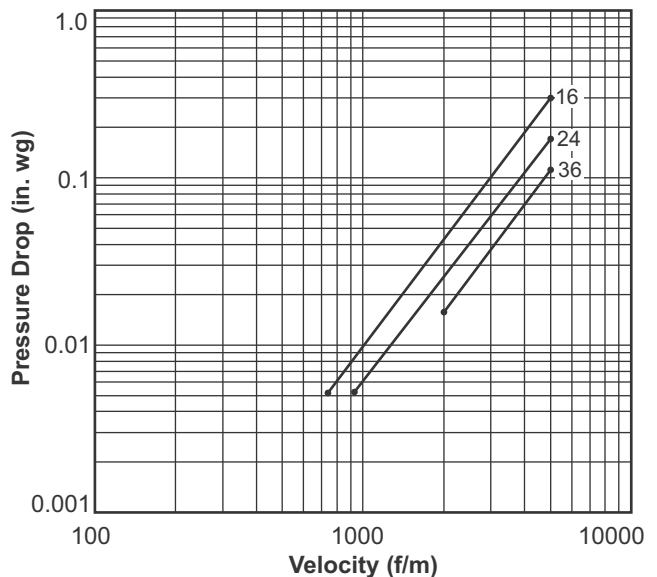
Damper Dia.	Pressure	AMCA Leakage Class
36" - 48" (914.4 - 1219.2)	1" WG	1A
	4", 8", 12" WG	1

TESTED LEAKAGE RATES AVAILABLE, CONTACT EXENTIAL INC.

Pressure Class	Leakage Classification L/s/m ² (ft ³ /min/ft ²)			
	Required Range	Extended Range (Optional)		
	0.25 kPa (1" wg)	1.0 kPa (4" wg)	2.0 kPa (8" wg)	3.0 kPa (12" wg)
1A	15.2 (3)*	N/A	N/A	N/A
1	20.3 (4)	40.6 (8)	55.9 (11)	71.1 (14)
2	50.8 (10)	102 (20)	142 (28)	178 (35)
3	203 (40)	406 (80)	569 (112)	711 (140)

*Units for maximum ratings in () are CFM Sq. Ft.

- Damper Leakage Test based on ANSI/AMCA Standard 500-D-07, Ref. Fig 5.6
- Pressure Drop Test based on AMCA Standard 500-D-98, Ref. Fig 5.3



METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

50" (1270.0) & Larger Reinforced Heavy Duty Industrial Damper

SPECIFICATIONS

DIFFERENTIAL PRESSURE: 10" WG (2.491 kPa)

BODY: COATED 1/4" (6.35) STAINLESS STEEL

OPTION: AVAIL TO 120" (3048.0) DIA. W/ ENGINEERING REVIEW

JOINING SYSTEM: FULLY WELDED STAINLESS STEEL VAN STONE RINGS

OPTION: CUSTOM HOLE PATTERN

MOUNTING HOLES: STRADDLE VERTICAL CENTERLINE

BODY LENGTH: 10" (254.0)

COATING: PERMASHIELD FLUOROPOLYMER BARRIER COATING

BLADE: 3/8" (9.53) COATED REINFORCED STAINLESS STEEL

BLADE STOPS: WELDED

AXLES: DUAL SHAFT 1.85 (47.0) DIA. STAINLESS STEEL

AXLE SEALS: LIQUID TIGHT

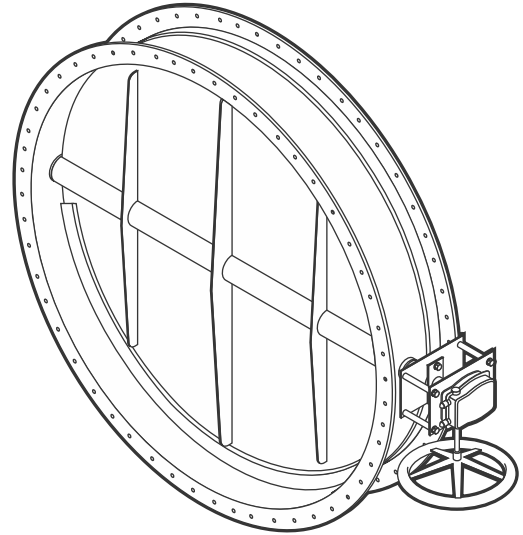
SLEEVE BEARINGS: THERMOPLASTIC

ACTUATOR: GEAR ACTUATOR W/ LOCK OUT

OPTION: CUSTOM ACTUATOR MOUNTING KIT

OPTION: ELECTRIC ACTUATOR

OPTION: PNEUMATIC ACTUATOR



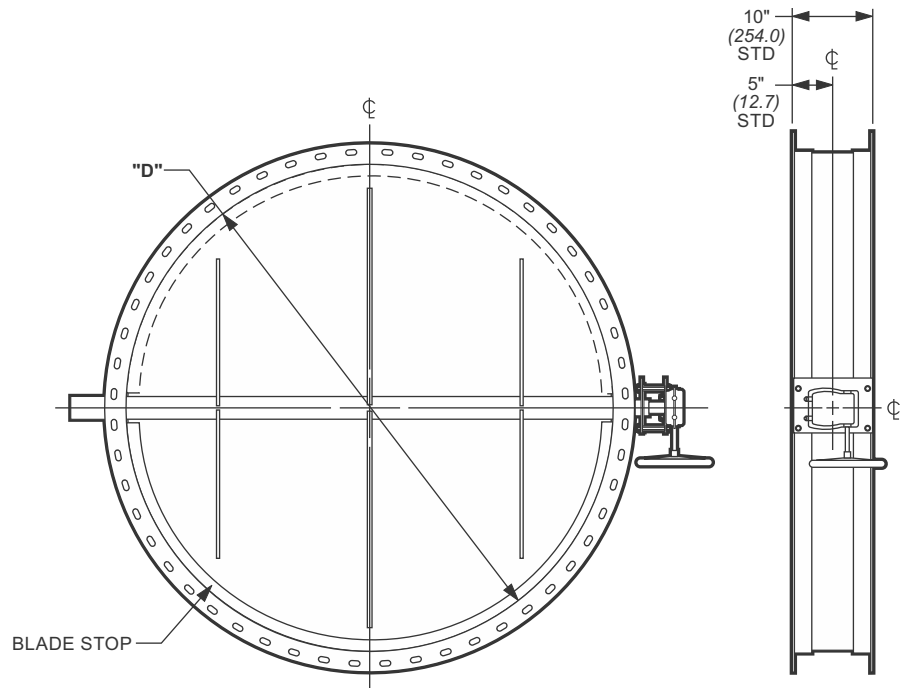
**PNEUMATIC ACTUATED DAMPERS
HYTORK ACTUATOR STANDARD**

XL45 - UP TO 20" (508.0)
XL280 - 21" (533.4) TO 48" (1219.2)
XL425 - 49" (1244.6) TO 94" (2387.6)

LOCKOUT: 1/2° INTERVALS

BLADE OPENS: CCW

OPEN/CLOSE TORQUE: 1600 in-lb (180.78 N-m) RECOMMENDED MIN

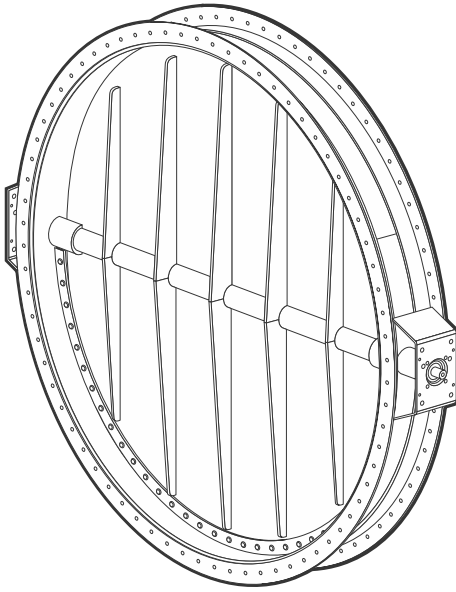


NOTES:

ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

16" (406.4) - 84" (2133.6) Ultra Series Industrial Damper



SPECIFICATIONS

DIFFERENTIAL PRESSURE: 30" WG (7.473 kPa)

BODY: COATED 16" (406.4) - 44" (1117.6) DIA. 10GA (3.57) STAINLESS STEEL
COATED 46" (1168.4) - 84" (2133.6) DIA. 1/4" (6.35) STAINLESS STEEL

OPTION: AVAIL TO 120" (3048.0) DIA. W/ ENGINEERING REVIEW

JOINING SYSTEM: FULLY WELDED STAINLESS STEEL VAN STONE RINGS

OPTION: CUSTOM HOLE PATTERN

MOUNTING HOLES: STRADDLE VERTICAL CENTERLINE

BODY LENGTH: 10" (254.0)

COATING: PERMASHIELD FLUOROPOLYMER BARRIER COATING

BLADE: COATED REINFORCED
16" (406.4) - 58" (1473.2) DIA. 1/4" (6.35) STAINLESS STEEL
60" (1524.0) - 84" (2133.6) DIA. 3/8" (9.53) STAINLESS STEEL

BLADE STOPS: WELDED

AXLES: 16" (406.4) - 44" (1117.6) DIA. DUAL SHAFT 1.20 (30.5) DIA. STAINLESS STEEL
46" (1168.4) - 58" (1473.2) DIA. DUAL SHAFT 1.85 (47.0) DIA. STAINLESS STEEL
60" (1524.0) & UP DUAL SHAFT 2.45 (62.2) DIA. STAINLESS STEEL

AXLE SEALS: LIQUID TIGHT

SLEEVE BEARINGS: BRONZE SLEEVE [16" (406.4) - 58" (1473.2)]
SPHERICAL HEIM [60" (1524.0) - 84" (2133.6)]

ACTUATOR: NONE, STANDARD INTERFACE FOR ROTORK HIGH SPEED SI-1 SERIES

OPTION: CUSTOM ACTUATOR MOUNTING KIT

OPTION: ELECTRIC ACTUATOR

OPTION: PNEUMATIC ACTUATOR

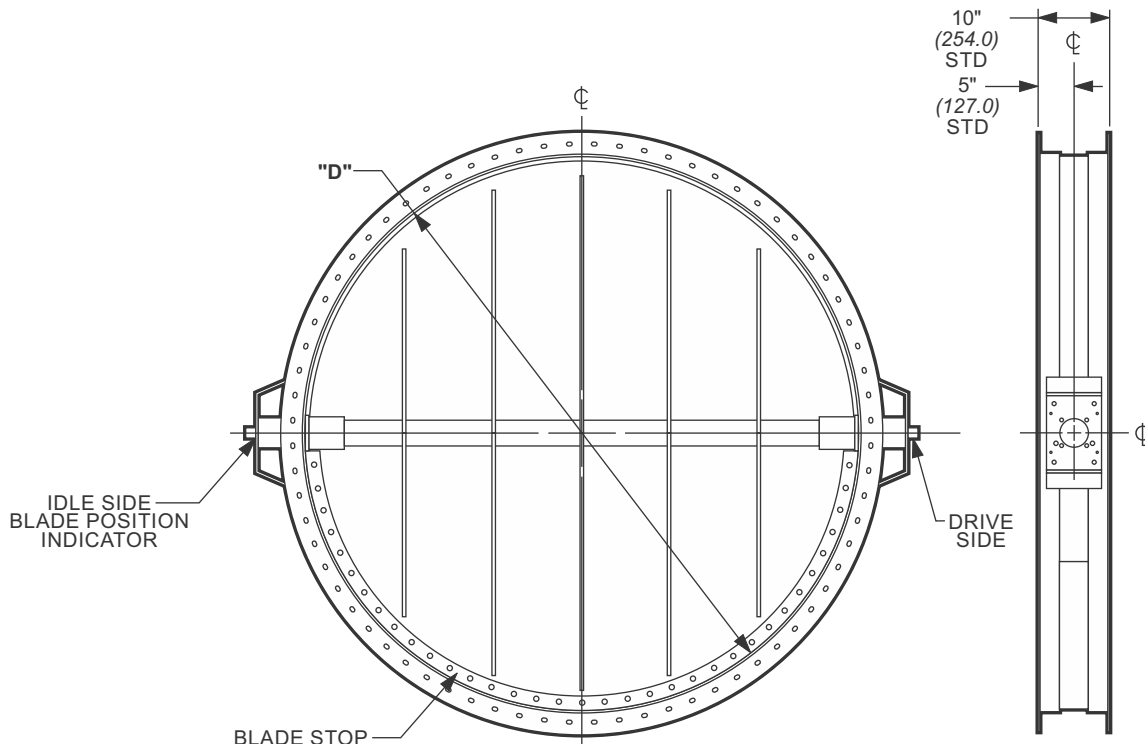
LOCKOUT: VARIABLE POSITION

BLADE POSITION INDICATOR: IDLE SIDE

BLADE OPENS: CCW

NOTES:

1. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

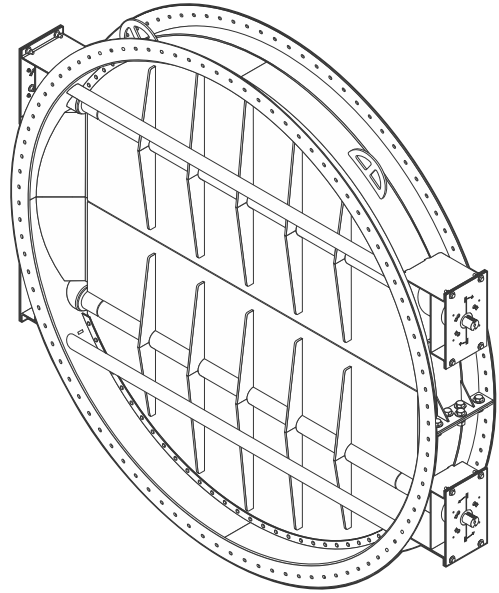


METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

86" (2184.4) - 120" (3048.0) Ultra Series Industrial Damper

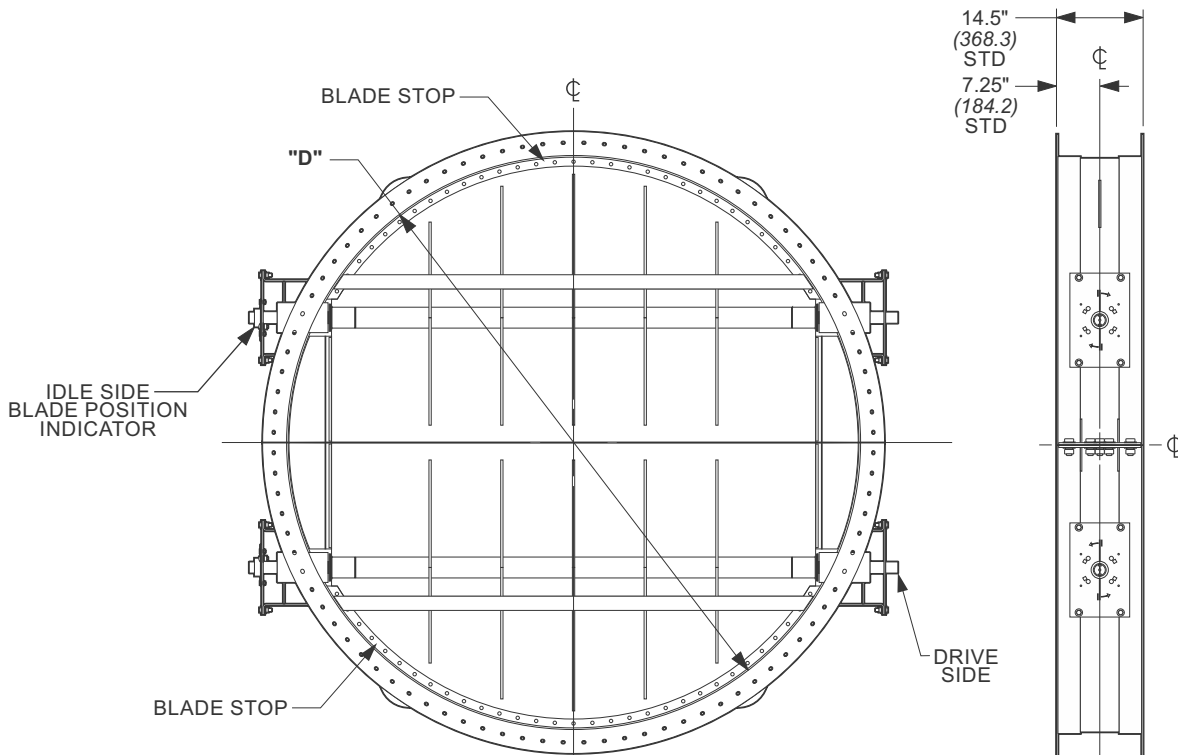
SPECIFICATIONS

- DIFFERENTIAL PRESSURE:** 30" WG (7.473 kPa)
- BODY:** 1/4" (6.35) STAINLESS STEEL
- JOINING SYSTEM:** FULLY WELDED STAINLESS STEEL VAN STONE RINGS
- OPTION:** CUSTOM HOLE PATTERN
- MOUNTING HOLES:** STRADDLE VERTICAL CENTERLINE
- BODY LENGTH:** 14.5" (368.3)
- COATING:** PERMASHIELD FLUOROPOLYMER BARRIER COATING
- BLADES:** COATED REINFORCED
3/8" (9.53) STAINLESS STEEL
- BLADE STOPS:** WELDED
- AXLES:** DUAL SHAFT 2.00 (50.8) DIA. STAINLESS STEEL
- AXLE SEALS:** LIQUID TIGHT
- BEARINGS:** SPHERICAL HEIM
- ACTUATOR:** NONE, F14 / FA14 MOUNTING PATTERN
- OPTION:** CUSTOM ACTUATOR MOUNTING KIT
- LOCKOUT:** VARIABLE POSITION
- BLADE POSITION INDICATOR:** IDLE SIDE
- BLADE OPENS:** CW (TOP) - CCW (BOTTOM)



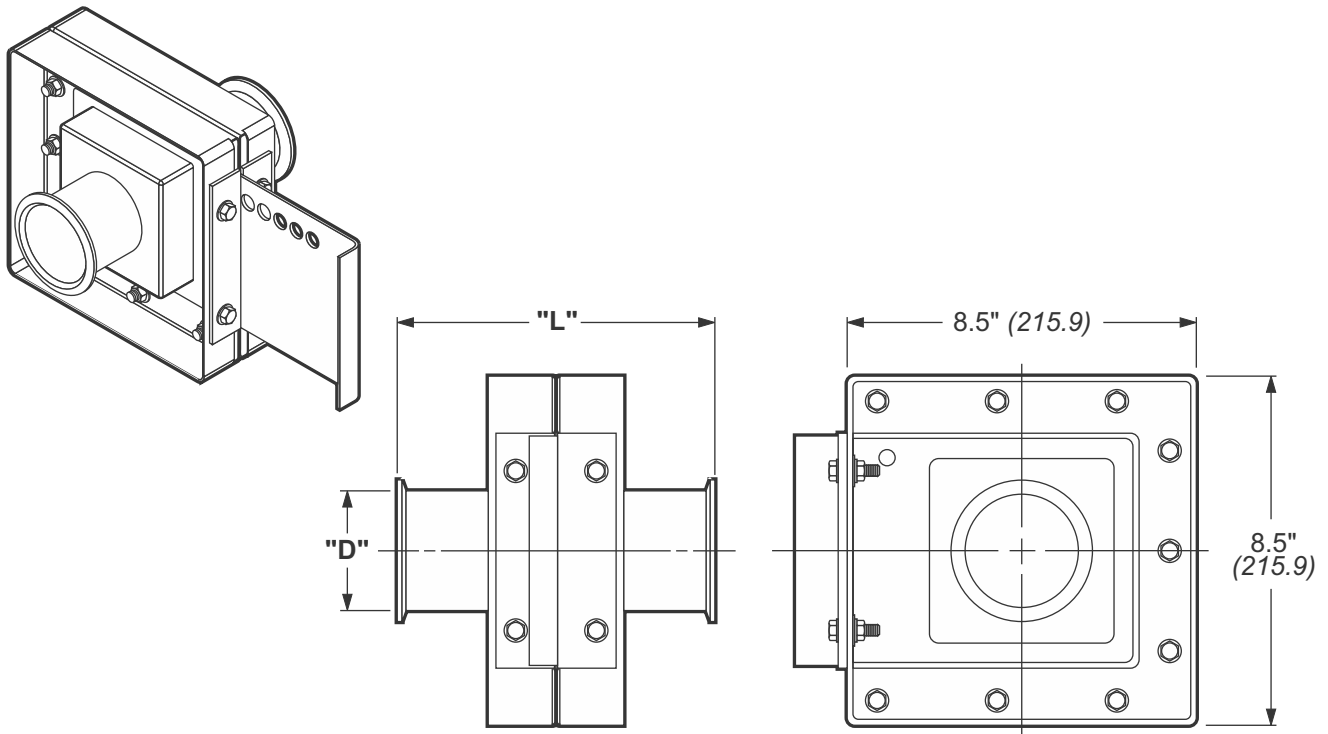
NOTES:

1. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

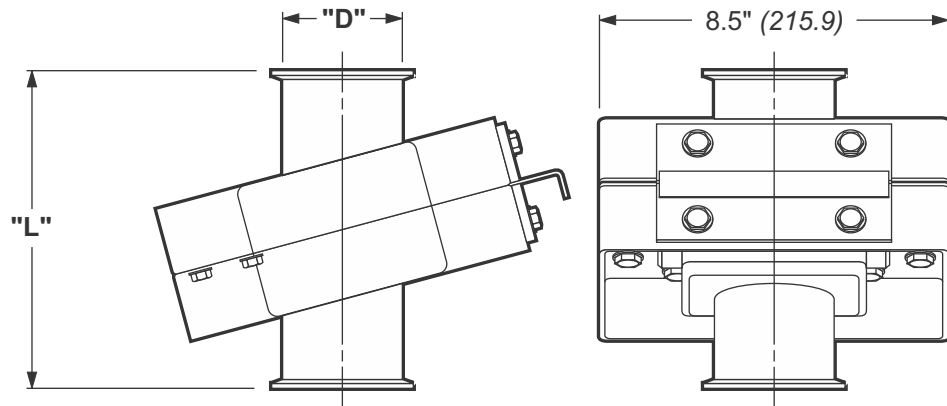


METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

2" (50.8) & 3" (76.2) EZ Blastgate



PART NO.*	DESCRIPTION	"D"	"L"
PZB02H	2" EZ-BLASTGATE HORIZONTAL	2" (50.8)	8.000" (203.2)
PZB03H	3" EZ-BLASTGATE HORIZONTAL	3" (76.2)	8.000" (203.2)



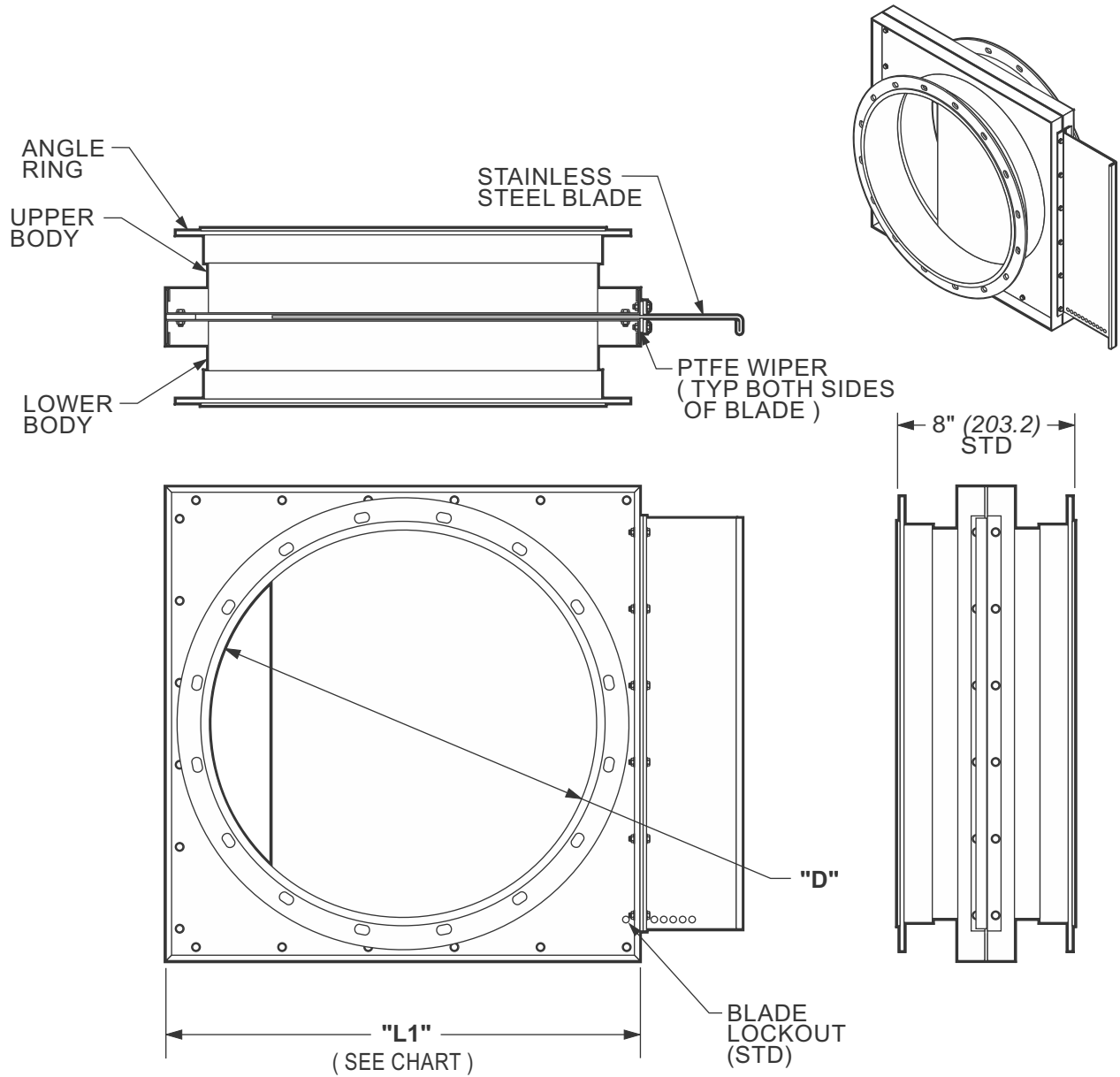
PART NO.*	DESCRIPTION	"D"	"L"
PZB02V	2" EZ-BLASTGATE VERTICAL	2" (50.8)	8.000" (203.2)
PZB03V	3" EZ-BLASTGATE VERTICAL	3" (76.2)	8.000" (203.2)

NOTES:

1. STAINLESS STEEL FRAME MATERIAL.
2. BLADE LOCKOUT SYSTEM
3. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

4" (101.6) -36" (914.4) Horizontal Run Isolation Blastgate



DUCT DIA. "D"	OUTSIDE DIM "L1"	BODY	BLADE	BODY BOLTS	NO. OF BLADES
4" (101.6) TO 16" (406.4)	DIA. "D" + 4" (101.6)	18GA (1.27)	18GA (1.27)	.31" (7.87)	1
18" (457.2) TO 36" (914.4)	DIA. "D" + 4.5" (114.3)	16GA (1.59)	16GA (1.59)	.31" (7.87)	1

NOTES:

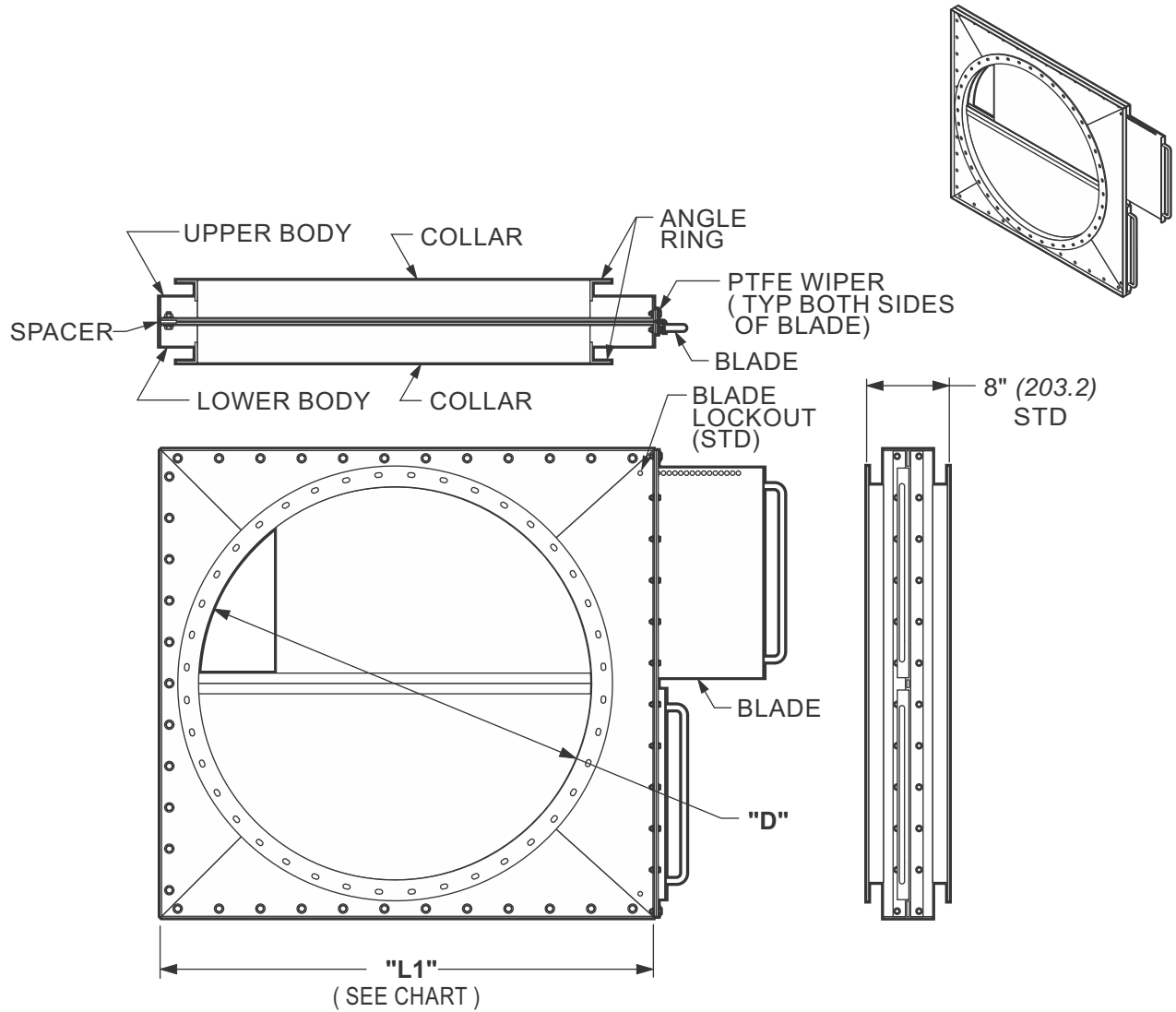
1. STAINLESS STEEL FRAME MATERIAL.
2. BLADE LOCKOUT SYSTEM.
3. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

DUCT JOINT / RING TYPE

- EZ** EZ CLAMP
4"Ø-14"Ø (101.6 - 355.6)
- SC** STAINLESS CAST RING
4"Ø-14"Ø (101.6 - 355.6)
- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2)

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

38" (965.2) & Larger Horizontal Run Isolation Blastgate



DUCT DIA. "D"	OUTSIDE DIM "L1"	BODY	BLADE	COLLAR	BODY BOLTS	NO. OF BLADES
38" (965.2) TO 46" (1168.4)	DIA. "D" + 10" (254.0)	10GA(3.57)	14GA(2.78)	14GA(2.78)	.31" (7.87)	2
48" (1219.2) TO 60" (1524.0)	DIA. "D" + 11" (279.4)	10GA(3.57)	12GA(1.98)	14GA(2.78)	.38" (9.65)	2
62" (1574.8) TO 84" (2133.6)	DIA. "D" + 11" (279.4)	10GA(3.57)	12GA(1.98)	14GA(2.78)	.38" (9.65)	3
*86" (2184.4) TO 96" (2438.4)	DIA. "D" + 11" (279.4)	10GA(3.57)	10GA(3.57)	12GA(1.98)	.50" (12.7)	3
*98" (2489.2) and UP	DIA. "D" + 11" (279.4)	3/16(4.76)	10GA(3.57)	10GA(3.57)	.63" (16.0)	4

* Blastgates 86" (2184.4) diameter and larger subject to engineering review and approval.

NOTES:

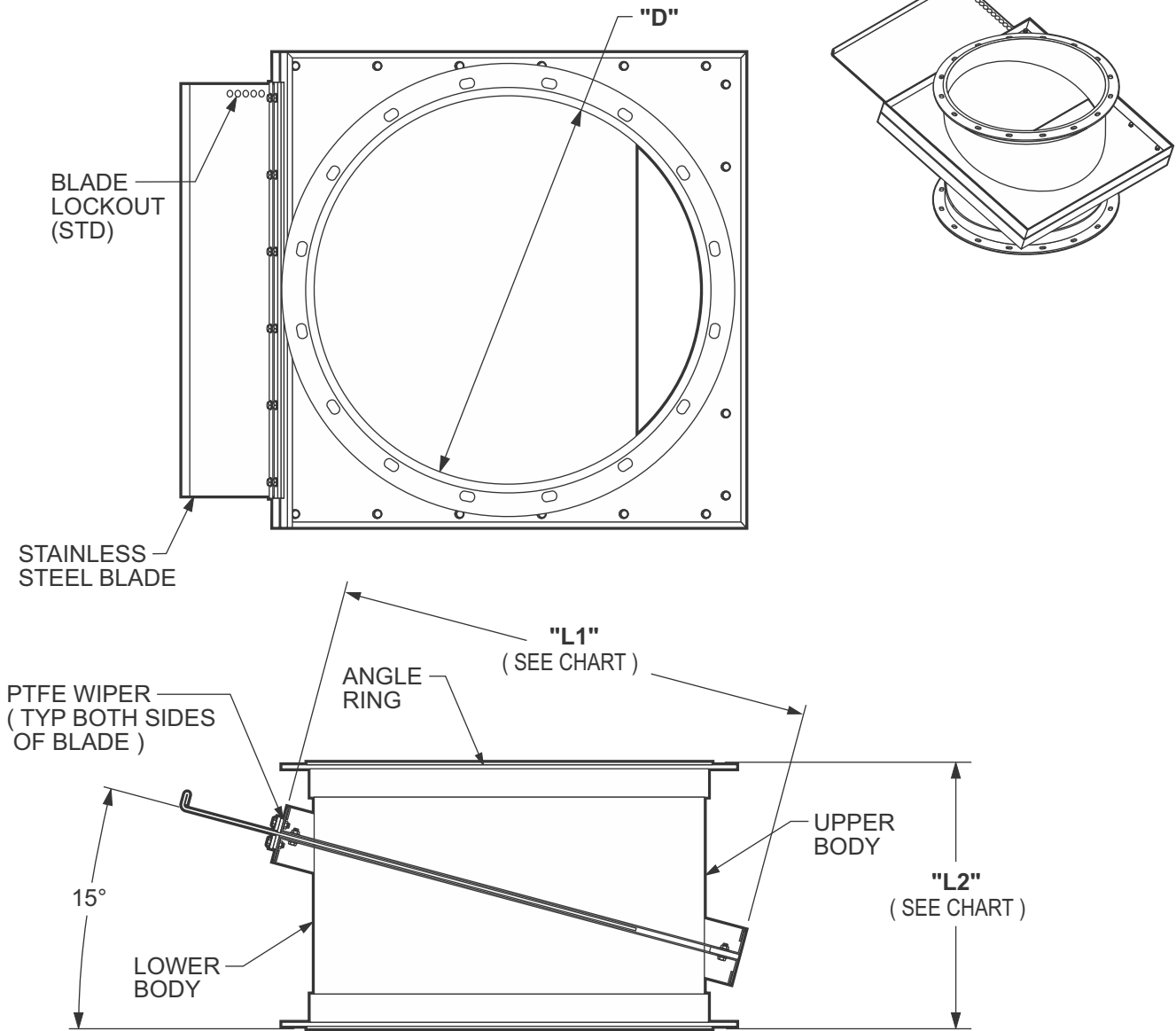
1. STAINLESS STEEL BODY, RINGS AND BLADE.
2. BLADE LOCKOUT SYSTEM.
3. BLASTGATES GREATER THAN 86" DIA. (2184.4mm) REQUIRES ENGINEERING REVIEW AND APPROVAL.
4. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

DUCT JOINT / RING TYPE

- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2)

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

4" (101.6) - 36" (914.4) Vertical Run Isolation Blastgate



DUCT DIA. "D"	OUTSIDE DIM "L1"	BODY	BLADE	FRAME BOLTS	NO. OF BLADES	BLADE ANGLE	LENGTH "L2"
4" (101.6) TO 8" (203.2)	DIA. "D" + 4" (101.6)	18GA(1.27)	18GA(1.27)	.31"(7.87)	1	15°	8" (203.2)
10" (254.0) TO 16" (406.4)	DIA. "D" + 4" (101.6)	18GA(1.27)	18GA(1.27)	.31"(7.87)	1	15°	12" (304.8)
18" (457.2) TO 36" (914.4)	DIA. "D" + 4.5" (114.3)	16GA(1.59)	16GA(1.59)	.31"(7.87)	1	15°	16" (406.4)

NOTES:

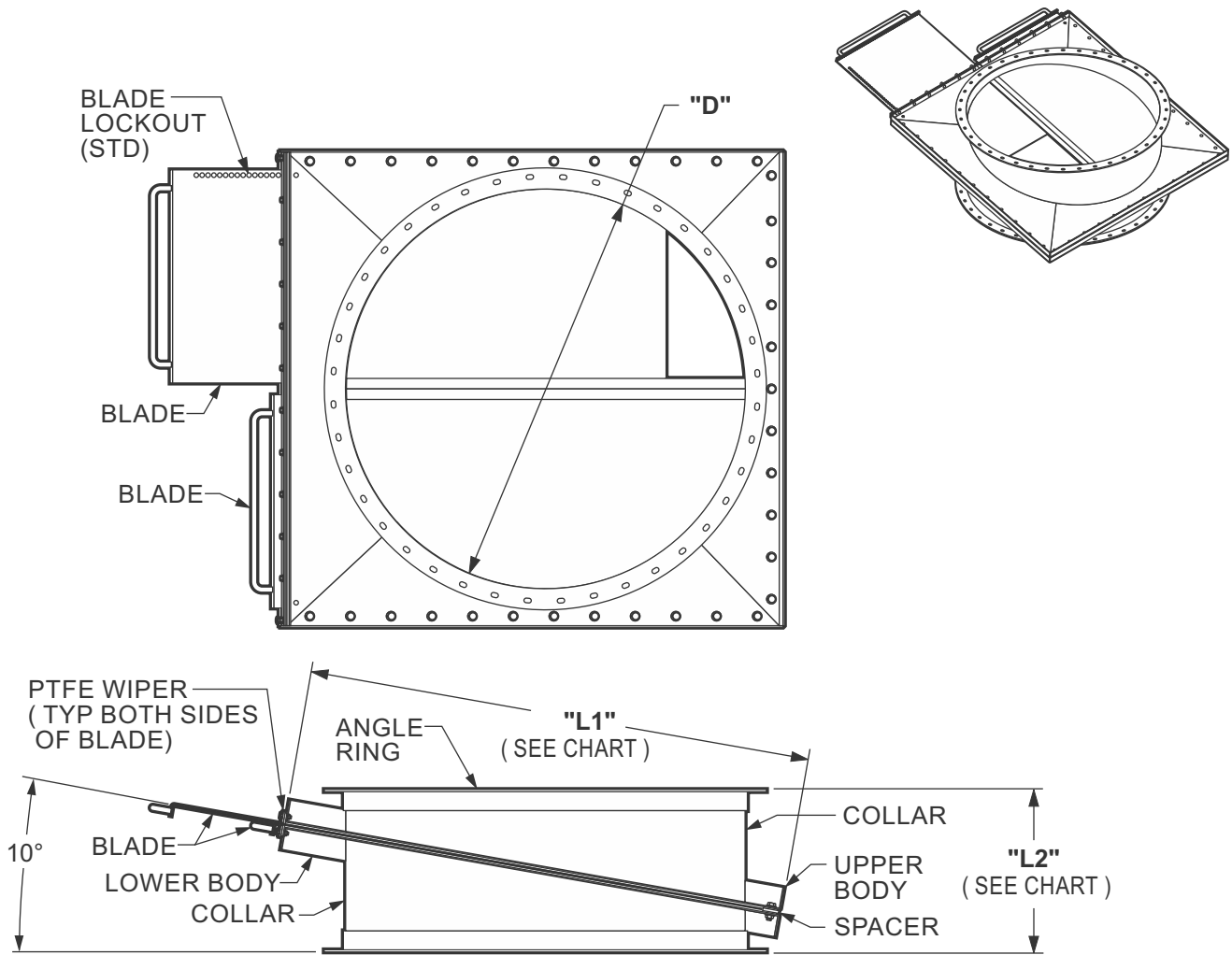
1. STAINLESS STEEL BODY, RINGS AND BLADE.
2. BLADE LOCKOUT SYSTEM.
3. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

DUCT JOINT / RING TYPE

- EZ** EZ CLAMP
4"Ø-14"Ø (101.6 - 355.6)
- SC** STAINLESS CAST RING
4"Ø-14"Ø (101.6 - 355.6)
- SS** STAINLESS ANGLE RING
4"Ø-120"Ø (101.6 - 3048.0)

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

38" (965.2) & Larger Vertical Run Isolation Blastgate



DUCT DIA. "D"	OUTSIDE DIM "L1"	BODY	BLADE	FRAME BOLTS	NO. OF BLADES	BLADE ANGLE	LENGTH "L2"
38" (965.2) TO 46" (1168.4)	DIA. "D" + 10" (254.0)	10GA (3.57)	14GA (1.98)	.31" (7.87)	2	10°	16" (406.4)
48" (1219.2) TO 60" (1524.0)	DIA. "D" + 11" (279.4)	10GA (3.57)	12GA (2.78)	.38" (9.65)	2	10°	24" (609.6)
62" (1574.8) TO 84" (2133.6)	DIA. "D" + 11" (279.4)	10GA (3.57)	12GA (2.78)	.38" (9.65)	3	10°	24" (609.6)

NOTES:

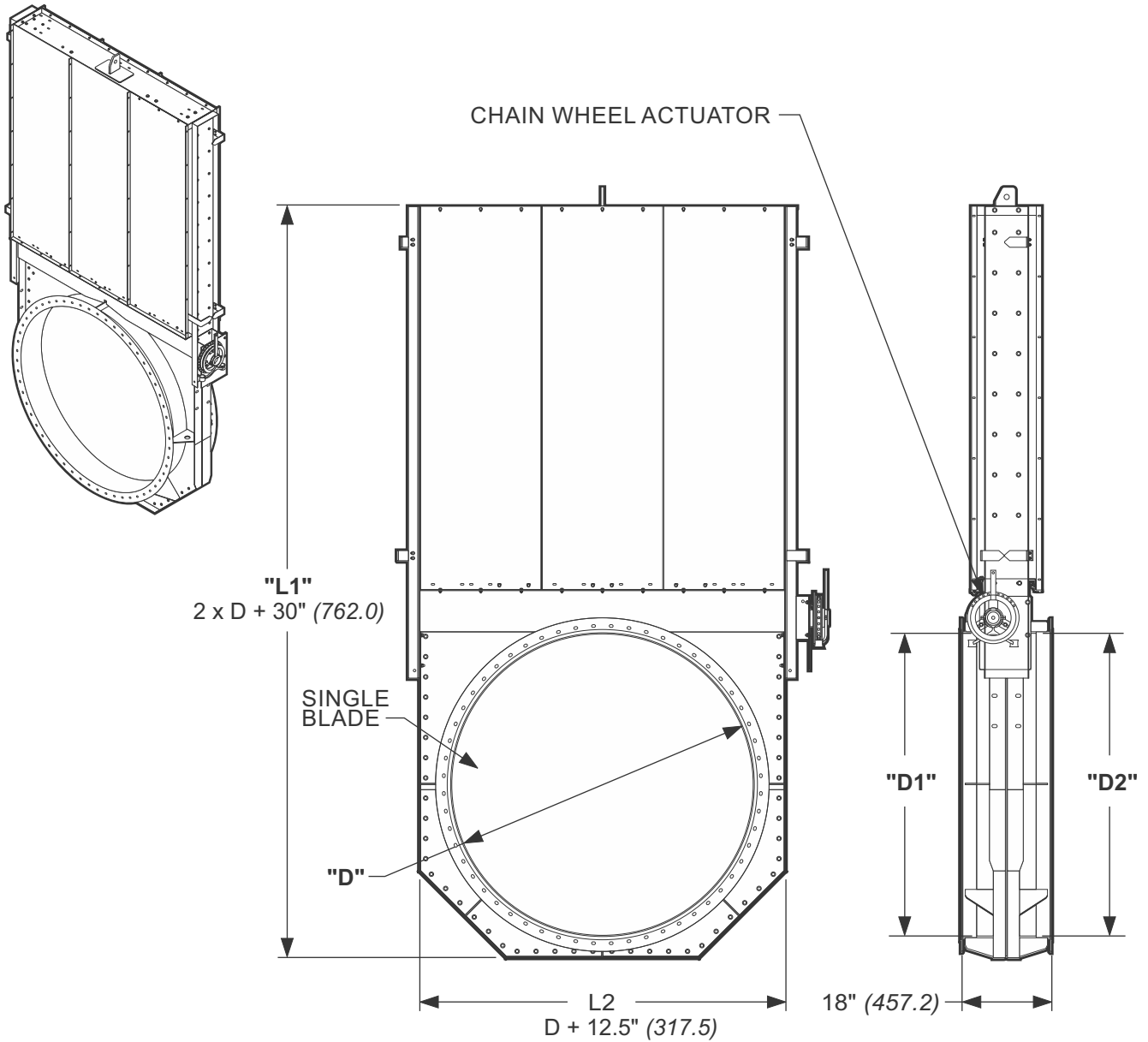
1. BLASTGATES 86" (2184.4) DIAMETER AND LARGER ARE SUBJECT TO ENGINEERING REVIEW AND APPROVAL.
2. STAINLESS STEEL BODY, RINGS AND BLADE.
3. BLADE LOCKOUT SYSTEM.
4. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

DUCT JOINT / RING TYPE

- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2)

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

16" (406.4) - 36" (914.4) Horizontal Run Actuated Isolation Blastgate



DUCT DIA. "D"	OUTSIDE DIM "L1"	BODY	BLADE	FRAME BOLTS	NO. OF BLADES
16"(406.4) TO 36"(914.4)	2 x D + 30" (762.0)	10GA (3.57)	12GA (2.78)	.38" (9.65)	1

NOTES:

1. STAINLESS STEEL BODY, RINGS AND BLADE.
2. BLADE LOCKOUT SYSTEM.
3. EXTERIOR POSITION INDICATOR.
4. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

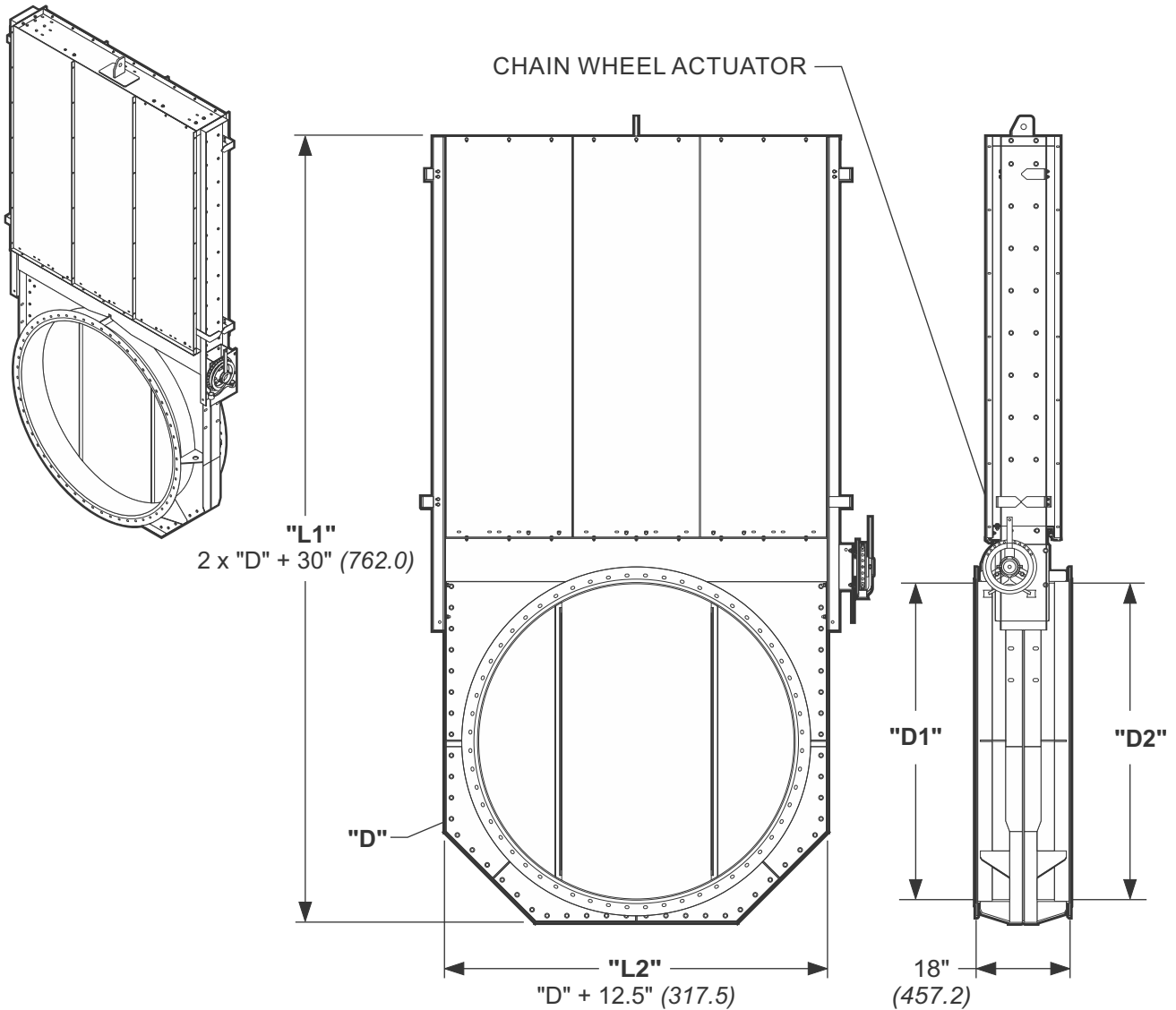
OPTION: BELLOWS ENCLOSED LEAD SCREW FOR ADDITIONAL CORROSION RESISTANCE (ADDS TO L1 LENGTH)

DUCT JOINT / RING TYPE

- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.4 - 3251.2)

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

38" (965.2) & Larger Horizontal Run Actuated Isolation Blastgate



DUCT DIA. "D"	OUTSIDE DIM "L1"	BODY	BLADE	FRAME BOLTS	NO. OF BLADES
38" (965.2) TO 64" (1625.6)	2 x D + 30" (762.0)	10GA(3.57)	12GA(2.78)	.38"(9.65)	1
66" (1676.4) TO 88" (2235.2)	2 x D + 30" (762.0)	10GA(3.57)	12GA(2.78)	.43"(10.92)	1

NOTES:

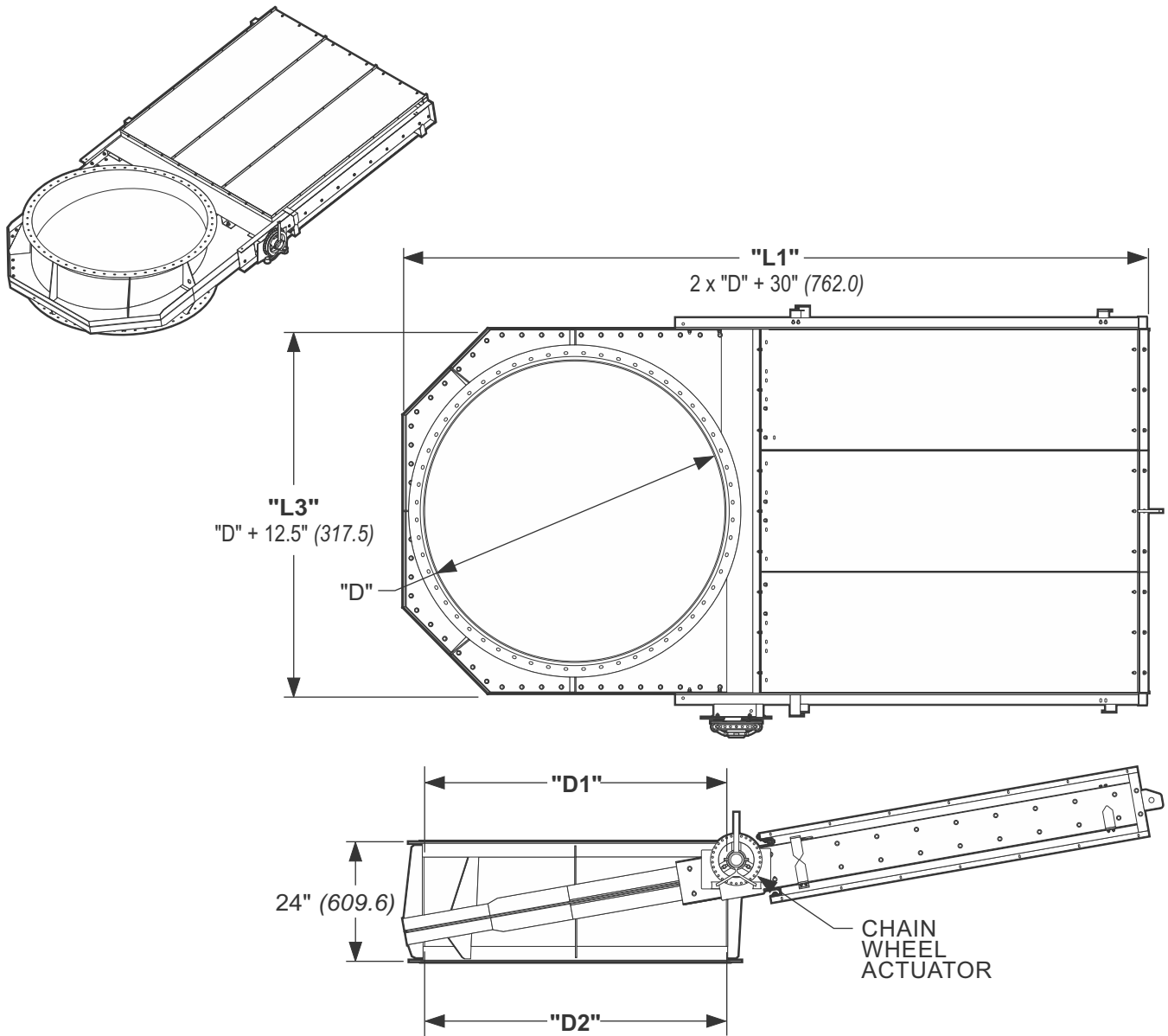
1. STAINLESS STEEL BODY, RINGS AND BLADE.
2. BLADE LOCKOUT SYSTEM.
3. EXTERIOR POSITION INDICATOR.
- OPTION:** BELLOWS ENCLOSED LEAD SCREW FOR ADDITIONAL CORROSION RESISTANCE (ADDS TO L1 LENGTH)
4. BLASTGATES 90" (2286.0) DIAMETER AND LARGER SUBJECT TO ENGINEERING REVIEW AND APPROVAL.
5. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

DUCT JOINT / RING TYPE

- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2)

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

16" (406.4) -36" (914.4) Vertical Run Actuated Isolation Blastgate



DUCT DIA. "D"	OUTSIDE DIM "L1"	BODY	BLADE	FRAME BOLTS	NO. OF BLADES	BLADE ANGLE
16" (406.4) TO 36" (914.4)	2 x D + 30" (762.0)	10GA (3.57)	12GA (2.78)	.38" (9.65)	1	10°

NOTES:

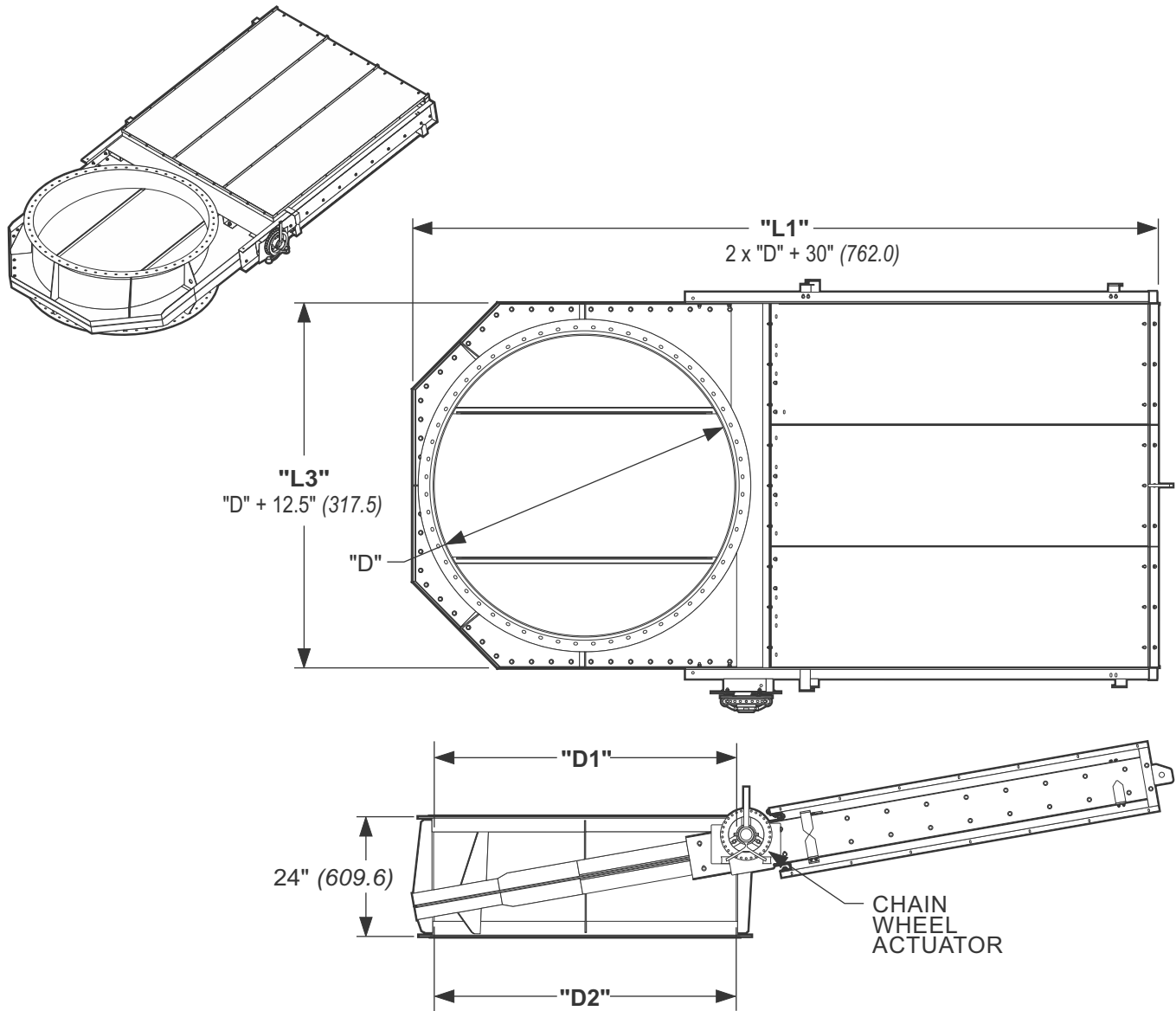
1. STAINLESS STEEL BODY, RINGS AND BLADE.
2. BLADE LOCKOUT SYSTEM.
3. EXTERIOR POSITION INDICATOR.
- OPTION:** BELLOWS ENCLOSED LEAD SCREW FOR ADDITIONAL CORROSION RESISTANCE (ADDS TO L1 LENGTH)
4. BLASTGATES 90" (2286.0) DIAMETER AND LARGER SUBJECT TO ENGINEERING REVIEW AND APPROVAL.
5. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

DUCT JOINT / RING TYPE

- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2)

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

38" (965.2) & Larger Vertical Run Actuated Isolation Blastgate



DUCT DIA. "D"	OUTSIDE DIM "L1"	BODY	BLADE	FRAME BOLTS	NO. OF BLADES	BLADE ANGLE
38"(965.2) TO 64"(1625.6)	2 x D + 30" (762.0)	10GA(3.57)	12GA(2.78)	.38"(9.65)	1	10°
66"(1676.4) TO 88"(2235.2)	2 x D + 30" (762.0)	10GA(3.57)	12GA(2.78)	.43"(10.92)	1	10°


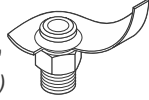

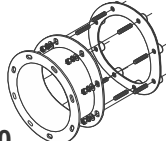


NOTES:





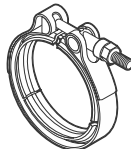
1. STAINLESS STEEL BODY, RINGS AND BLADE.
2. BLADE LOCKOUT SYSTEM.
3. EXTERIOR POSITION INDICATOR.
- OPTION:** BELLOWS ENCLOSED LEAD SCREW FOR ADDITIONAL CORROSION RESISTANCE (ADDS TO L1 LENGTH)
4. BLASTGATES 90" (2286.0) DIAMETER AND LARGER SUBJECT TO ENGINEERING REVIEW AND APPROVAL.
5. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

DUCT JOINT / RING TYPE

- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2)

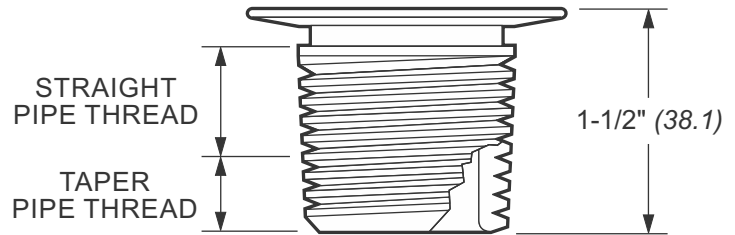
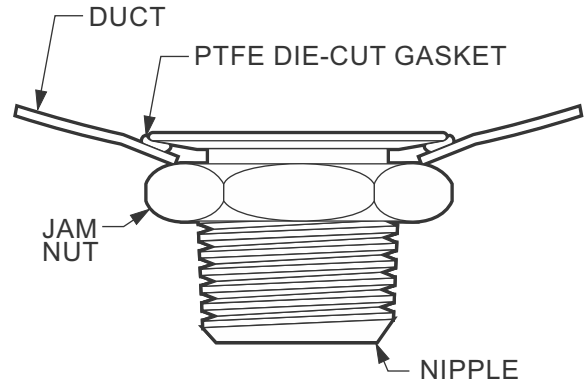
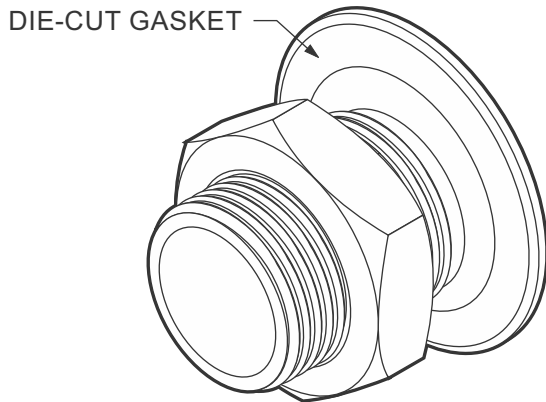
METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

<p>ACCESSORIES</p>	<p>FIELD INSTALLED NIPPLE</p> <p>SIZE: 1" & 2" <i>(25.4 & 58.8)</i></p> <p>• PAGE: 57</p> 	<p>FIELD INSTALLED TEST PORT</p> <p>SIZE: 3/8", 3/4", 2" <i>(9.5, 19.1, 58.8)</i></p> <p>• PAGE: 58</p> 
<p>FIELD INSTALLED SADDLE TAP</p> <p>SIZE: 4"-24" TEE <i>(101.6 - 609.6)</i></p> <p>• PAGE: 59</p> 	<p>FIELD INSTALLED HOT TAP</p> <p>SIZE: 4"-48" <i>(101.6 - 1219.2)</i></p> <p>• PAGE: 60</p> 	<p>CAST RING STAINLESS STEEL</p> <p>SIZE: 4"-14" <i>(101.6 - 355.6)</i></p> <p>• PAGE: 61</p> 
<p>ANGLE RING STAINLESS STEEL</p> <p>SIZE: 4"-128" <i>(101.6 - 3251.2)</i></p> <p>• PAGE: 62</p> 		

<p>ACCESSORIES EZ FITTINGS</p>	<p>FIELD INSTALLED SADDLE TAP</p> <p>SIZE: 4" TO 14" TEE <i>(101.6 - 355.6)</i></p> <p>• PAGE: 59</p> 	<p>CLAMP</p> <p>SIZE: 2" & 3" <i>(50.8 & 76.2)</i></p> <p>• PAGE: 63</p> 
<p>DIE CUT GASKET</p> <p>SIZE: 2" & 3" <i>(50.8 & 76.2)</i></p> <p>• PAGE: 63</p> 	<p>CLAMP KIT</p> <p>SIZE: 2" & 3" <i>(50.8 & 76.2)</i></p> <p>• PAGE: 63</p> 	<p>CLAMP KIT</p> <p>SIZE: 4" TO 14" <i>(101.6 - 355.6)</i></p> <p>• PAGE: 63</p> 

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Field Installed Nipple



PART NO.	DESCRIPTION	MIN. HOST DUCT	MATERIAL THICKNESS
PRT01	1" NPT NIPPLE	6" (152.4) DIA. DUCT MIN.	16 GA (1.59) MAX MATERIAL THICKNESS
PRT02	2" NPT NIPPLE	10" (254.0) DIA. DUCT MIN.	

NOTES:

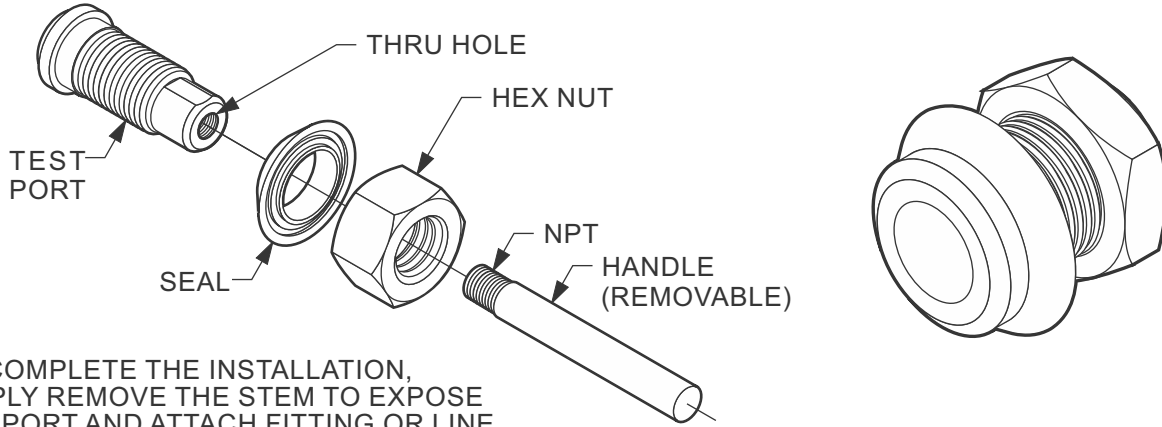
1. REFER TO **INSTALLATION AND ASSEMBLY GUIDE** FOR ASSEMBLY INSTRUCTIONS.
2. PERMASHIELD FLUOROPOLYMER BARRIER COATING ON INSIDE SURFACE AND FLANGE FACES.
3. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

***SWAGE KIT REQUIRED TO INSTALL**
ONLY ONE KIT REQUIRED TO INSTALL MULTIPLE NIPPLES

PART NO.*	DESCRIPTION
TPS01	MANUAL KIT FOR 1" (25.4)
TPS02	HYDRAULIC KIT FOR 1" (25.4) & 2" (50.8)

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Field Installed Test Port

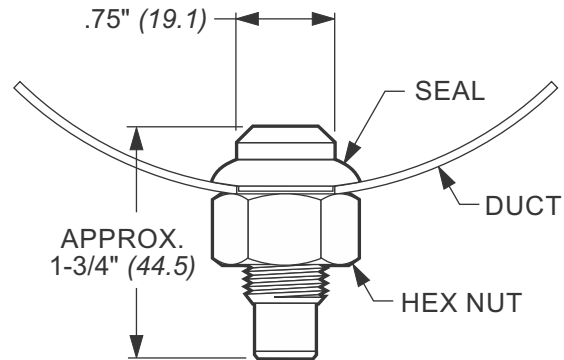


TO COMPLETE THE INSTALLATION, SIMPLY REMOVE THE STEM TO EXPOSE THE PORT AND ATTACH FITTING OR LINE.

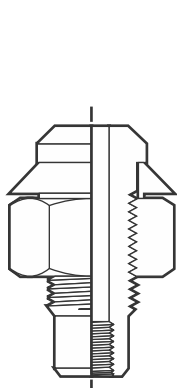
PART NO.	DESCRIPTION	MIN. HOST DUCT	THRU HOLE	REDRILL	I.D. TAP HOLE
FTFI38TP	3/8" TEST PORT (9.5)	2" DIA. DUCT MIN. (50.8 MIN.)	1/4" DIA. (6.35)	3/8" MAX (9.5)	1/16" NPT (1.6)
FTFI34TP	3/4" TEST PORT (19.1)	6" DIA. DUCT MIN. (152.4 MIN.)	1/2" DIA. (12.7)	3/4" MAX (19.1)	1/4" NPT (6.35)
FTFI20TP	2" TEST PORT (50.8)	12" DIA. DUCT MIN. (304.8 MIN.)	9/16" DIA. (14.29)	1-3/4" MAX (44.5)	3/8" NPT (9.5)

NOTES:

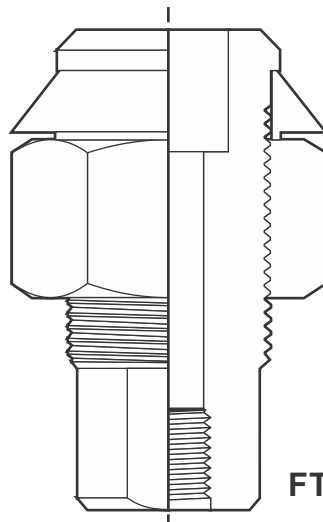
- REFER TO **INSTALLATION AND ASSEMBLY GUIDE** FOR ASSEMBLY INSTRUCTIONS.
- PERMASHIELD FLUOROPOLYMER BARRIER COATING ON INSIDE SURFACE AND FLANGE FACES.
- NIPPLE MADE OF PURE PVDF, SEAL MADE OF VITON, STAINLESS STEEL HEX NUT.
- ABLE TO RE-DRILL THROUGH HOLE TO SLIGHTLY LARGER HOLE OR DRILL AND TAP TEST PORT FOR FEMALE THREADS - THREAD O.D. CANNOT EXCEED MAX RE-DRILL DIAMETER.
- INSTALLS IN DUCT AS SMALL AS 2" (50.8) DIAMETER - PROVIDES LIQUID TIGHT SEAL - DOES NOT COMPROMISE THE INTEGRITY OF THE DUCT INTERIOR COATING.
- THE UNIQUE HANDLE DESIGN OF THIS TEST PORT ALLOWS IT TO BE INSTALLED QUICKLY AND EASILY IN-THE-FIELD WITH COMMON TOOLS AND WITHOUT SYSTEM SHUTDOWN OR DISASSEMBLY.



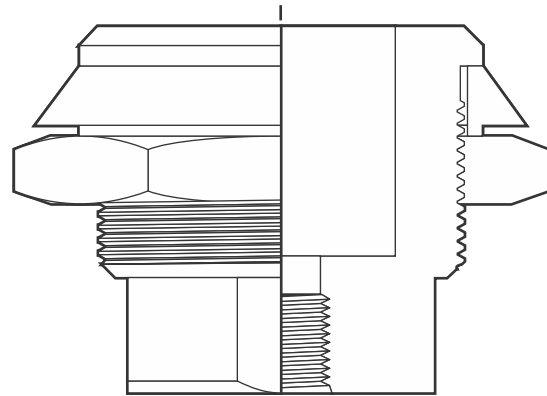
3/8" (9.5) TEST PORT



FTFI38TP



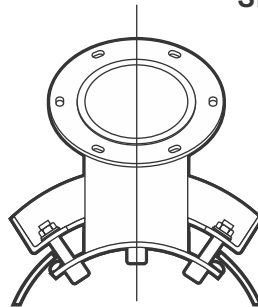
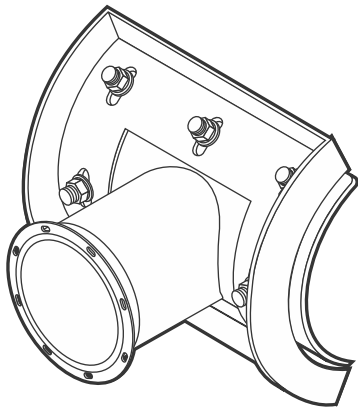
FTFI34TP



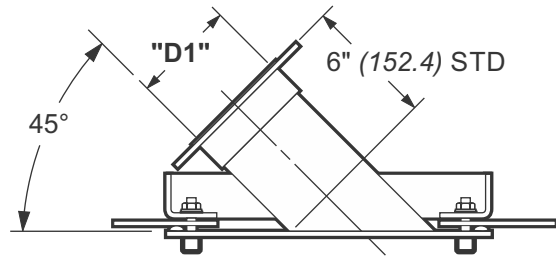
FTFI20TP

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

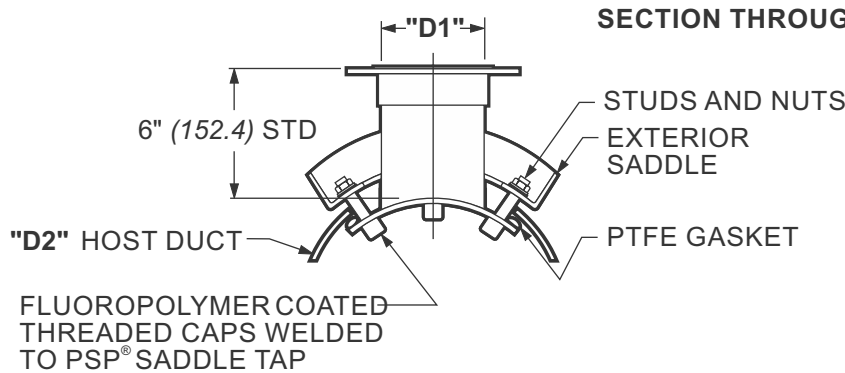
Field Installed Saddle Tap



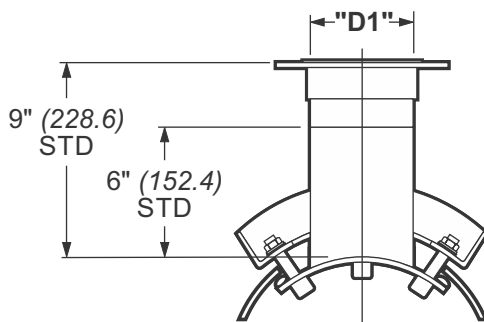
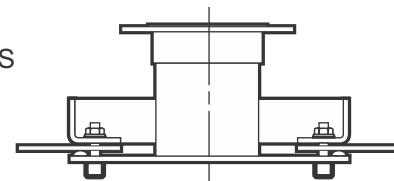
SECTION THROUGH DUCT - LATERAL TAP



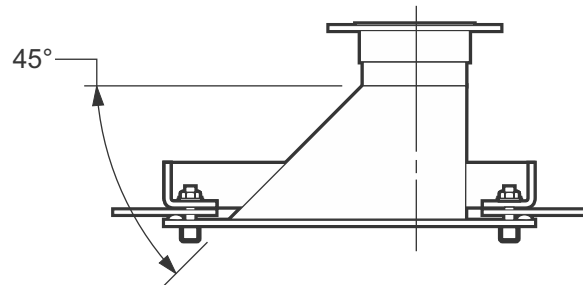
HOST DUCT I.D., WALL THICKNESS & MATERIAL TYPE
(REQUIRED INFORMATION)



SECTION THROUGH DUCT - STRAIGHT TAP



SECTION THROUGH DUCT - BOOT TAP



NOTES:

1. REFER TO **INSTALLATION AND ASSEMBLY GUIDE** FOR ASSEMBLY INSTRUCTIONS.
2. PERMASHIELD FLUOROPOLYMER BARRIER COATING ON INSIDE SURFACE AND FLANGE FACES.
3. THE PERMASHIELD SADDLE TAP WILL ALLOW A NEW BRANCH TO BE INSTALLED WITHOUT SHUTTING DOWN OR DISMANTLING THE EXHAUST SYSTEM.
4. STRAIGHT TAP STANDARD - OTHER TAP STYLES AVAILABLE WITH ENGINEERING REVIEW AND APPROVAL.
5. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

DUCT JOINT / RING TYPE

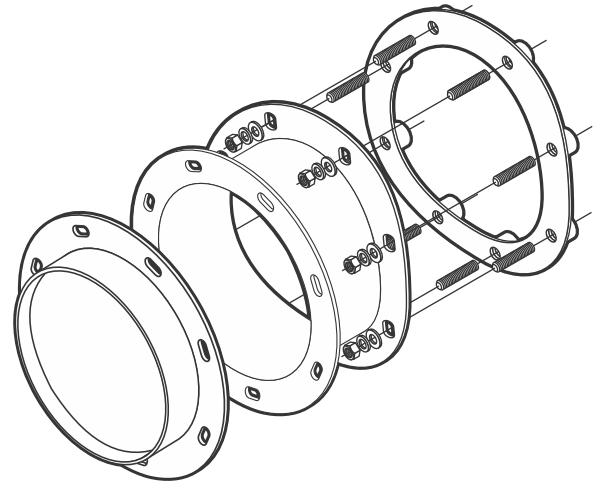
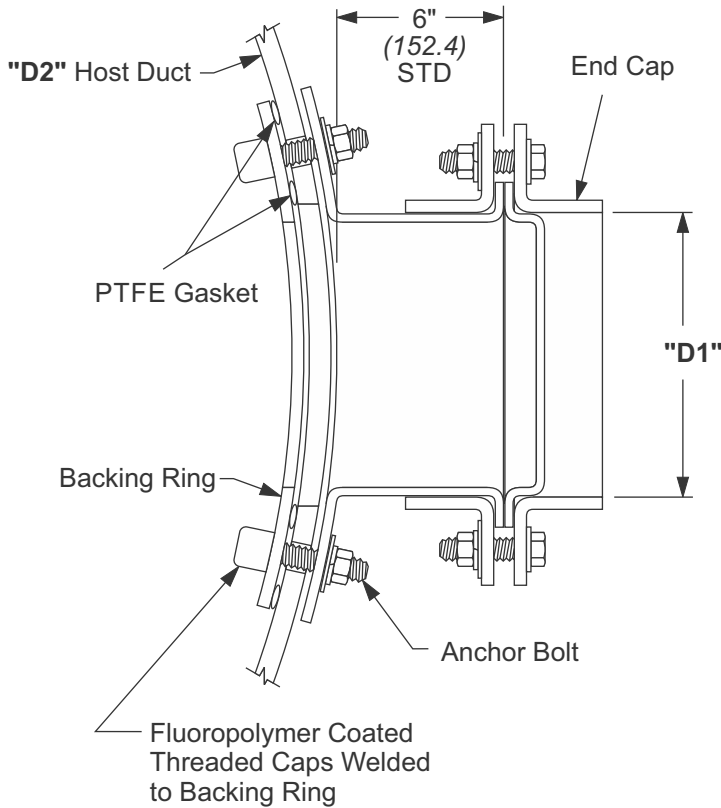
- EZ** EZ CLAMP
4"Ø-14"Ø (101.6 - 355.6)
- SC** STAINLESS CAST RING
4"Ø-14"Ø (101.6 - 355.6)
- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2)

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Field Installed Hot Tap

HOST DUCT I.D., PRESSURE CLASS & MATERIAL TYPE
(REQUIRED INFORMATION)

SECTION THROUGH DUCT - HOT TAP



ALLOWABLE TAP SIZE CHART

Tap Size Dia.	Minimum Host Dia.
4 (101.6)	10 (254.0)
6 (152.4)	10 (254.0)
8 (203.2)	14 (355.6)
10 (254.0)	16 (406.4)
12 (304.8)	20 (508.0)
14 (355.6)	22 (558.8)
16 (406.4)	26 (660.4)
18 (457.2)	28 (711.2)
20 (508.0)	32 (812.8)
22 (558.8)	34 (863.6)
24 (609.6)	38 (965.2)
26 (660.4)	40 (1016.0)
28 (711.2)	44 (1117.6)
30 (762.0)	48 (1219.2)
32 (812.8)	50 (1270.0)
34 (863.6)	54 (1371.6)
36 (914.4)	56 (1422.4)
38 (965.2)	60 (1524.0)
40 (1016.0)	62 (1574.8)
42 (1066.8)	66 (1676.4)
44 (1117.6)	68 (1727.2)
46 (1168.4)	72 (1828.8)
48 (1219.2)	74 (1879.6)

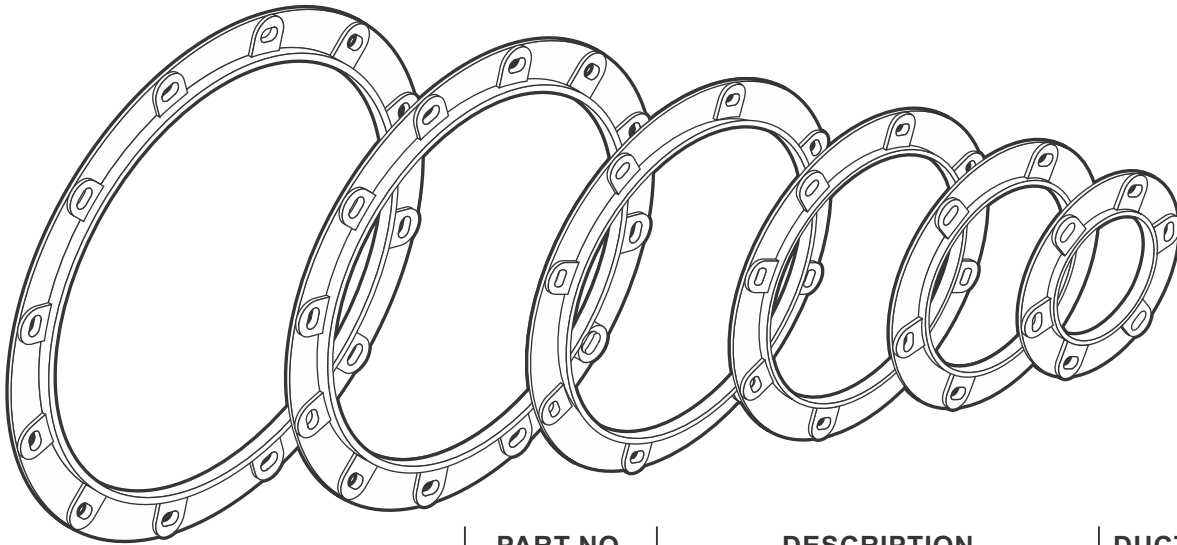
DUCT JOINT / RING TYPE

- SC** STAINLESS CAST RING
4"Ø-14"Ø (101.6 - 355.6)
- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2)

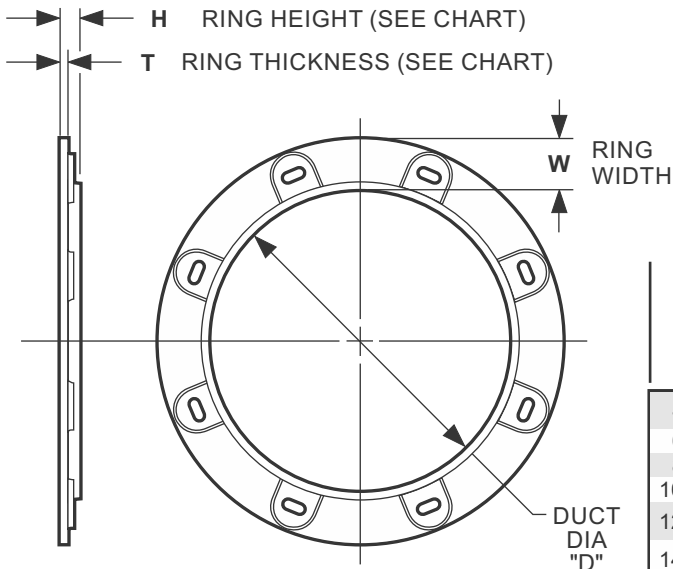
NOTES:

1. REFER TO **INSTALLATION AND ASSEMBLY GUIDE** FOR ASSEMBLY INSTRUCTIONS.
2. PERMASHIELD FLUOROPOLYMER BARRIER COATING ON BACKING RING AND INTERIOR SURFACES.
3. ONLY STRAIGHT TAP AVAILABLE FOR THIS TAP CONFIGURATION.
4. ISOLATION BOX REQUIRED FOR INSTALLATION.
5. THE PERMASHIELD FIELD INSTALLED HOT TAP WILL ALLOW A NEW BRANCH TO BE INSTALLED IN AN EXISTING SYSTEM WITHOUT SHUTTING DOWN THE EXHAUST SYSTEM.
6. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.
7. ONLY FOR HOST DUCT APPLICATIONS THAT ARE 14GA (2MM) OR THINNER.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)



PART NO.	DESCRIPTION	DUCT DIA.
RC04	STAINLESS STEEL CAST RING	4" (101.6)
RC06	STAINLESS STEEL CAST RING	6" (152.4)
RC08	STAINLESS STEEL CAST RING	8" (203.2)
RC10	STAINLESS STEEL CAST RING	10" (254.0)
RC12	STAINLESS STEEL CAST RING	12" (304.8)
RC14	STAINLESS STEEL CAST RING	14" (355.6)



CAST RING SPECIFICATIONS							
DUCT DIA "D"	WIDTH (W)	HEIGHT (H)	THICKNESS (T)	# HOLES	BOLT HOLE SIZE	BOLT SIZE	BOLT CIRCLE DIA.
4 (101.6)				6			5.31 (134.9)
6 (152.4)	1-1/4" (31.8)	13/32" (10.32)	1/8" (3.18)	8	7/16" x 11/16" (11.1 x 17.5)	3/8 (9.5)	7.50 (190.5)
8 (203.2)			11.50 (292.1)				
10 (254.0)			13.81 (350.8)				
12 (304.8)	1-1/2" (38.1)	1/2" (12.7)	3/16" (4.76)	12	9/16" x 3/4" (14.3 x 19.1)	1/2 (12.7)	15.81 (401.6)
14 (355.6)							

NOTES:

1. REFER TO **INSTALLATION AND ASSEMBLY GUIDE** FOR ASSEMBLY INSTRUCTIONS.
2. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

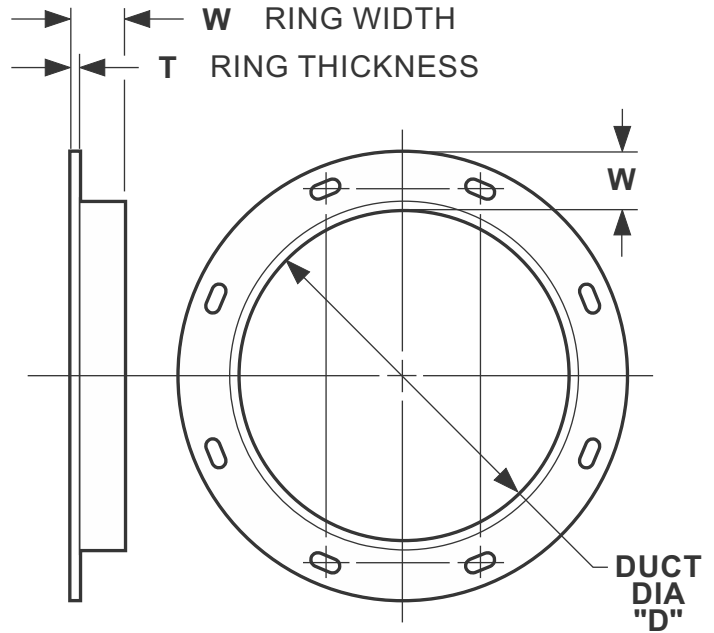
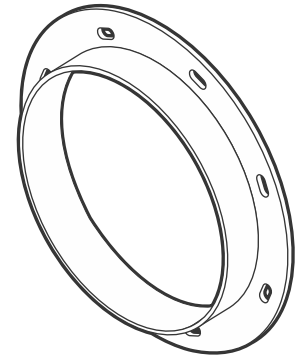
METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Angle Ring

DUCT DIA "D"	ANGLE RING SPECIFICATIONS					BOLT HOLE DIA.
	WIDTH (W)	THICKNESS (T)	# HOLES	BOLT HOLE SIZE	BOLT SIZE	
16 (406.4)	1-1/2" (38.1)	3/16" (4.76)	16	9/16" x 3/4" (14.29 x 19.05) SLOT	1/2" (12.7)	17.76 (451.10)
18 (457.2)			19.76 (501.9)			
20 (508.0)			21.76 (552.7)			
22 (558.8)			23.88 (606.55)			
24 (609.6)			25.88 (657.35)			
26 (660.4)			27.88 (708.15)			
28 (711.2)			29.88 (758.95)			
30 (762.0)			31.88 (809.75)			
32 (812.8)			33.88 (860.55)			
34 (863.6)			35.88 (911.35)			
36 (914.4)			37.88 (962.15)			
38 (965.2)			40.38 (1025.65)			
40 (1016.0)			42.38 (1076.45)			
42 (1066.8)			44.38 (1127.25)			
44 (1117.6)			46.38 (1178.05)			
46 (1168.4)			48.38 (1228.85)			
48 (1219.2)	2" (50.8)	3/16" (4.76)	44	9/16" x 3/4" (14.29 x 19.05) SLOT	1/2" (12.7)	50.38 (1279.65)
50 (1270.0)			52.88 (1343.15)			
52 (1320.8)			54.88 (1393.95)			
54 (1371.6)			56.88 (1444.75)			
56 (1422.4)			58.88 (1495.55)			
58 (1473.2)			60.88 (1546.35)			
60 (1524.0)			62.88 (1597.15)			
62 (1574.8)			64.88 (1647.95)			
64 (1625.6)			66.88 (1698.75)			
66 (1676.4)			68.88 (1749.55)			
68 (1727.2)			70.88 (1800.35)			
70 (1778.0)			72.88 (1851.15)			
72 (1828.8)			74.88 (1901.95)			
74 (1879.6)			76.88 (1952.75)			
76 (1930.4)			78.88 (2003.55)			
78 (1981.2)			80.88 (2054.35)			
80 (2032.0)	3" (76.2)	3/16" (4.76)	76	9/16" x 3/4" (14.29 x 19.05) SLOT	1/2" (12.7)	82.88 (2105.15)
82 (2082.8)			84.88 (2155.95)			
84 (2133.6)			86.88 (2206.75)			
86 (2184.4)			89.38 (2270.25)			
88 (2235.2)			91.38 (2321.05)			
90 (2286.0)			93.38 (2371.85)			
92 (2336.8)			95.38 (2422.65)			
94 (2387.6)			97.38 (2473.45)			
96 (2438.4)			100.38 (2549.65)			
98 (2489.2)			102.38 (2600.45)			
100 (2540.0)			104.38 (2651.25)			
102 (2590.8)			106.38 (2702.05)			
104 (2641.6)			108.38 (2752.85)			
106 (2692.4)			110.38 (2803.65)			
108 (2743.2)			112.38 (2854.45)			
110 (2794.0)			114.38 (2905.25)			
112 (2844.8)	116.38 (2956.05)					
114 (2895.6)	4" (101.6)	3/16" (4.76)	108	9/16" x 3/4" (14.29 x 19.05) SLOT	1/2" (12.7)	118.38 (3006.85)
116 (2946.4)			120.38 (3057.65)			
118 (2997.2)			122.38 (3108.45)			
120 (3048.0)			124.38 (3159.25)			

DUCT JOINT / RING TYPE

- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2)

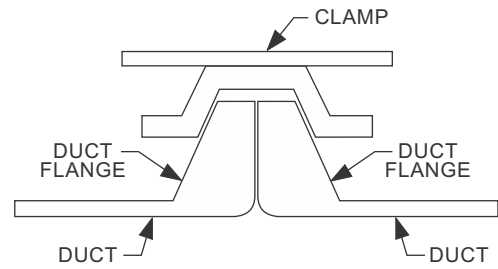
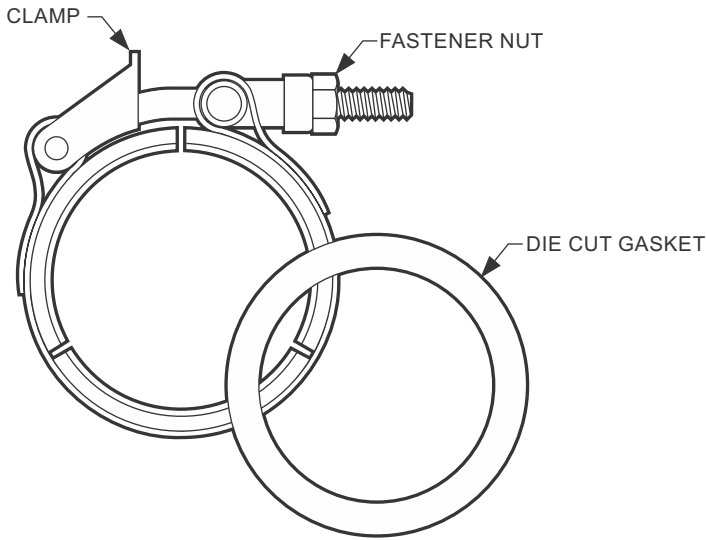


NOTES:

1. STANDARD MOUNTING HOLE LOCATIONS FOR WELDED (FIXED) ANGLE RINGS STRADDLE THE VERTICAL CENTERLINE UNLESS OTHERWISE SPECIFIED.
 - OPTION:** CUSTOM HOLE PATTERN
 - OPTION:** CUSTOM ORIENTATION
2. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

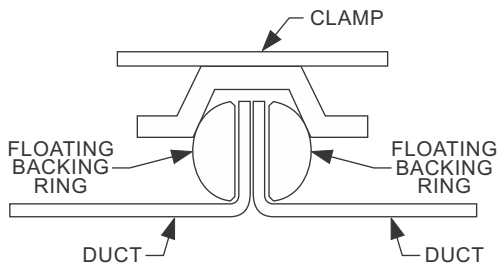
EZ Clamp Kit



**CROSS SECTION OF
2" (50.8) & 3" (76.2) EZ JOINT**

PART NO.	DESCRIPTION	DUCT DIA.
CL002KT	2" CLAMP KIT	2" (50.8)
CL003KT	3" CLAMP KIT	3" (76.2)
CL002	2" CLAMP	2" (50.8)
CL003	3" CLAMP	3" (76.2)
GAS11	2" GASKET	2" (50.8)
GAS13	3" GASKET	3" (76.2)

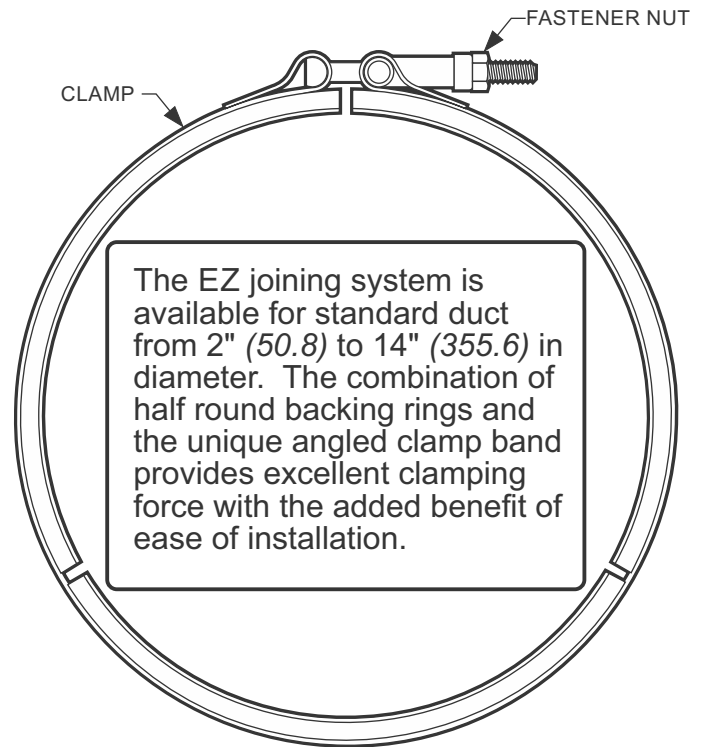
Each Kit above contains a clamp and PTFE die cut gasket



**CROSS SECTION OF
4" (101.6) - 14" (355.6) EZ JOINT**

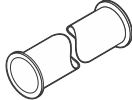
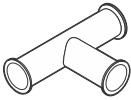
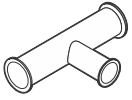
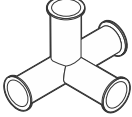
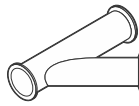





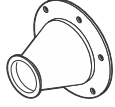


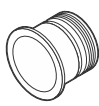
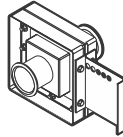
PART NO.	DESCRIPTION	DUCT DIA.
CL004KT	4" CLAMP KIT	4" (101.6)
CL006KT	6" CLAMP KIT	6" (152.4)
CL008KT	8" CLAMP KIT	8" (203.2)
CL010KT	10" CLAMP KIT	10" (254.0)
CL012KT	12" CLAMP KIT	12" (304.8)
CL014KT	14" CLAMP KIT	14" (355.6)

Each Kit above contains a clamp, PTFE tape gasket, and two backing rings



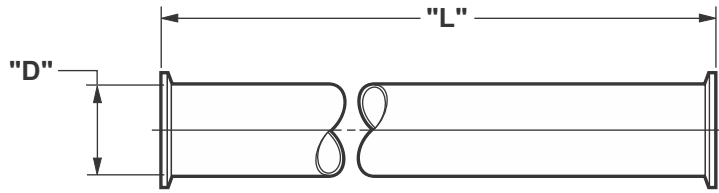
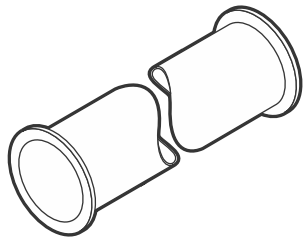
The EZ joining system is available for standard duct from 2" (50.8) to 14" (355.6) in diameter. The combination of half round backing rings and the unique angled clamp band provides excellent clamping force with the added benefit of ease of installation.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

<p>2" (50.8) & 3" (76.2) EZ FITTINGS</p>	<p>STRAIGHT DUCT 4' LENGTH OR CUSTOM SIZE: 2" & 3" (50.8 & 76.2) • PAGE: 65</p> 	<p>STRAIGHT TEE SIZE: 2" & 3" (50.8 & 76.2) • PAGE: 65</p> 
<p>REDUCING TEE SIZE: 3" TO 2" (76.2 TO 50.8) • PAGE: 65</p> 	<p>DOUBLE TEE SIZE: 2" & 3" (50.8 & 76.2) • PAGE: 66</p> 	<p>LATERAL - 45° SIZE: 2" & 3" (50.8 & 76.2) • PAGE: 66</p> 
<p>ELBOW 90° SIZE: 2" & 3" (50.8 & 76.2) • PAGE: 66</p> 	<p>ELBOW 45° SIZE: 2" & 3" (50.8 & 76.2) • PAGE: 67</p> 	<p>ELBOW 30° SIZE: 2" & 3" (50.8 & 76.2) • PAGE: 67</p> 
<p>ECCENTRIC ADAPTER SIZE: 3" (76.2) TO 2" (50.8) 4" (101.6) TO 2" (50.8) 4" (101.6) TO 3" (76.2) • PAGE: 67</p> 	<p>CONCENTRIC ADAPTER SIZE: 3" (76.2) TO 2" (50.8) 4" (101.6) TO 2" (50.8) 4" (101.6) TO 3" (76.2) • PAGE: 68</p> 	<p>VAN STONE TO EZ FLANGE ADAPTER SIZE: 3" (76.2) TO 2" (50.8) 4" (101.6) TO 2" (50.8) 4" (101.6) TO 3" (76.2) • PAGE: 68</p> 
<p>END CAP SIZE: 2" & 3" (50.8 & 76.2) • PAGE: 68</p> 	<p>MICRO ADJUSTABLE DAMPER SIZE: 2" & 3" (50.8 & 76.2) • PAGE: 69</p> 	<p>FIELD INSTALL STRAIGHT DUCT FLANGE SIZE: 2" & 3" (50.8 & 76.2) • PAGE: 70</p> 
<p>BLASTGATE SIZE: 2" & 3" (50.8 & 76.2) • PAGE: 71</p> 		

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

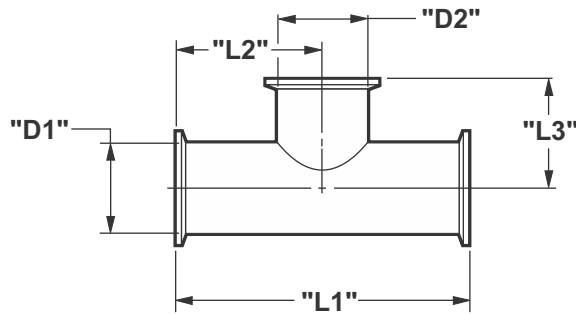
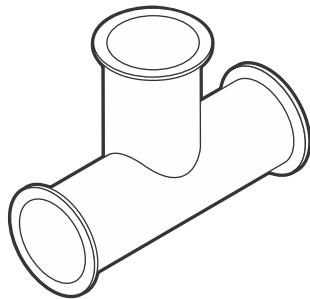
EZ Straight



PART NO.	DESCRIPTION	"D"	"L"
PZP002	2" LINE	2" (50.8)	47.25" (1200.2)
PZS002	2" LINE CUSTOM LENGTH	2" (50.8)	CUSTOM
PZP003	3" LINE	3" (76.2)	47.25" (1200.2)
PZS003	3" LINE CUSTOM LENGTH	3" (76.2)	CUSTOM

All fittings with standard connections include gaskets and clamps or hardware as required for installation.

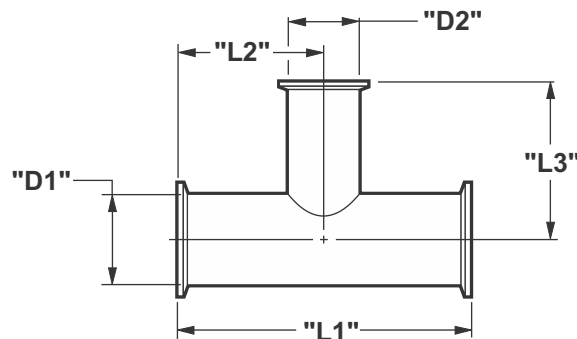
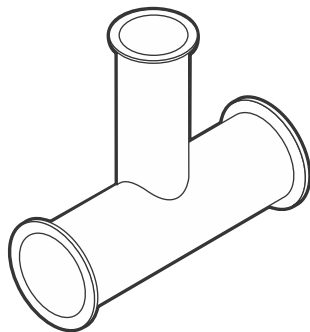
EZ Tee



PART NO.	DESCRIPTION	"D1"	"D2"	"L1"	"L2"	"L3"
02T02	2" LINE WITH 2" TEE	2" (50.8)	2" (50.8)	6.24" (158.5)	3.12" (79.2)	3.12" (79.2)
03T03	3" LINE WITH 3" TEE	3" (76.2)	3" (76.2)	6.74" (171.2)	3.37" (85.6)	3.37" (85.6)

All fittings with standard connections include gaskets and clamps or hardware as required for installation.

EZ Reducing Tee

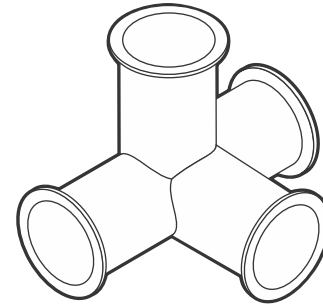
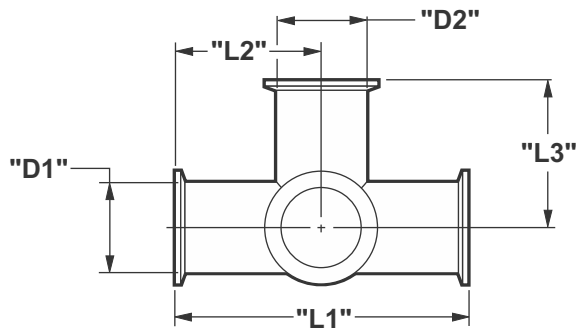


PART NO.	DESCRIPTION	"D1"	"D2"	"L1"	"L2"	"L3"
03T02	3" LINE WITH 2" TEE	3" (76.2)	2" (50.8)	6.74" (171.2)	3.37" (85.6)	3.62" (91.9)

All fittings with standard connections include gaskets and clamps or hardware as required for installation.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

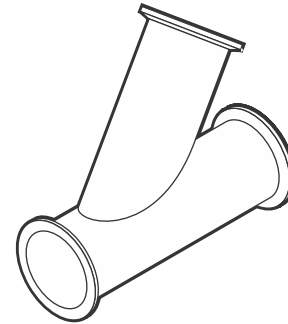
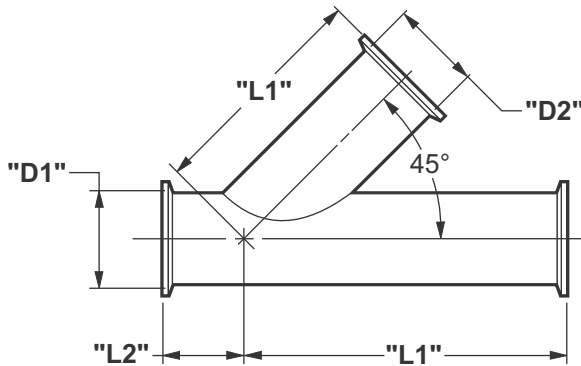
EZ Double Tee



PART NO.	DESCRIPTION	"D1"	"D2"	"L1"	"L2"	"L3"
2T2T2	2" LINE W/ DOUBLE 2" TEE	2" (50.8)	2" (50.8)	6.24" (158.5)	3.12" (79.2)	3.12" (79.2)

All fittings with standard connections include gaskets and clamps or hardware as required for installation.

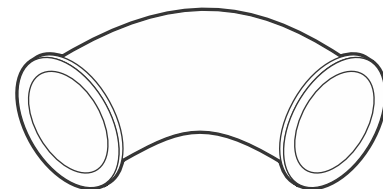
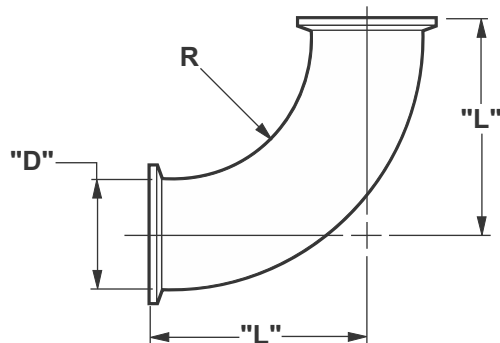
EZ Lateral



PART NO.	DESCRIPTION	"D1"	"D2"	"L1"	"L2"
02Y02	2" LINE WITH 2" LATERAL	2" (50.8)	2" (50.8)	7.25" (184.2)	2.00" (50.8)
03Y03	3" LINE WITH 3" LATERAL	3" (76.2)	3" (76.2)	9.31" (236.5)	2.03" (51.6)

All fittings with standard connections include gaskets and clamps or hardware as required for installation.

90° EZ Elbow

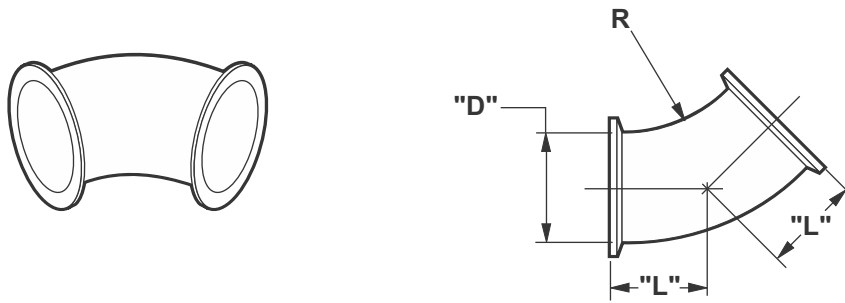


PART NO.	DESCRIPTION	"D"	"L"	R
PZE02	2" 90° ELBOW	2" (50.8)	3.12" (79.2)	2" (50.8)
PZE03	3" 90° ELBOW	3" (76.2)	4.62" (117.3)	3" (76.2)

All fittings with standard connections include gaskets and clamps or hardware as required for installation.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

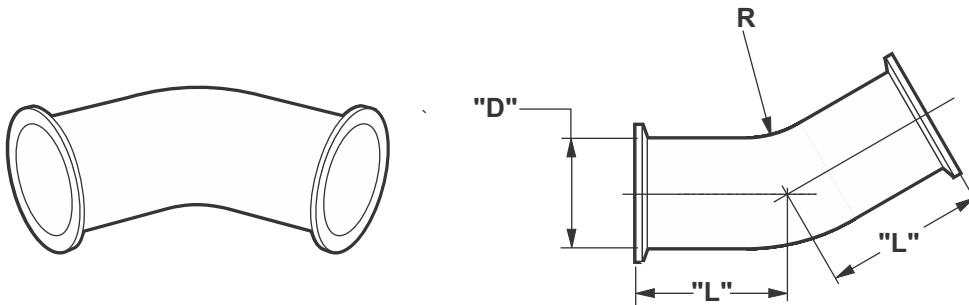
45° EZ Elbow



PART NO.	DESCRIPTION	"D"	"L"	R
PZ502	2" 45° ELBOW	2" (50.8)	1.37" (34.8)	2" (50.8)
PZ503	3" 45° ELBOW	3" (76.2)	2.00" (50.8)	3" (76.2)

All fittings with standard connections include gaskets and clamps or hardware as required for installation.

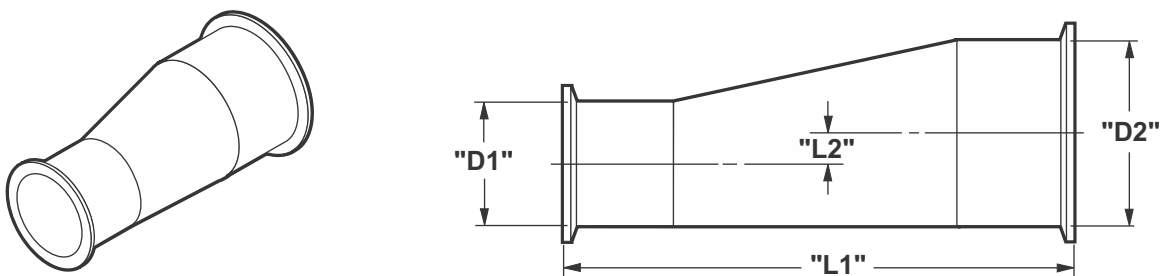
30° EZ Elbow



PART NO.	DESCRIPTION	"D"	"L"	R
PZ302	2" 30° ELBOW	2" (50.8)	1.94" (49.3)	2" (50.8)
PZ303	3" 30° ELBOW	3" (76.2)	2.38" (60.5)	3" (76.2)

All fittings with standard connections include gaskets and clamps or hardware as required for installation.

Eccentric EZ Reducer

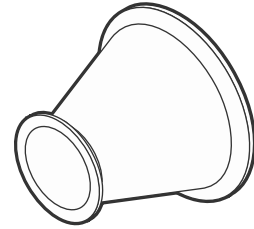
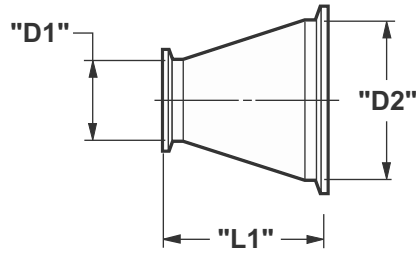


PART NO.	DESCRIPTION	"D1"	"D2"	"L1"	"L2"
PEA32F	2" TO 3" ECCENTRIC	2" (50.8)	3" (76.2)	8.25" (209.6)	0.50" (12.7)
PEA42F	2" TO 4" ECCENTRIC	2" (50.8)	4" (101.6)	12.75" (323.9)	1.00" (25.4)
PEA43F	3" TO 4" ECCENTRIC	3" (76.2)	4" (101.6)	8.00" (203.2)	0.50" (12.7)

All fittings with standard connections include gaskets and clamps or hardware as required for installation.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

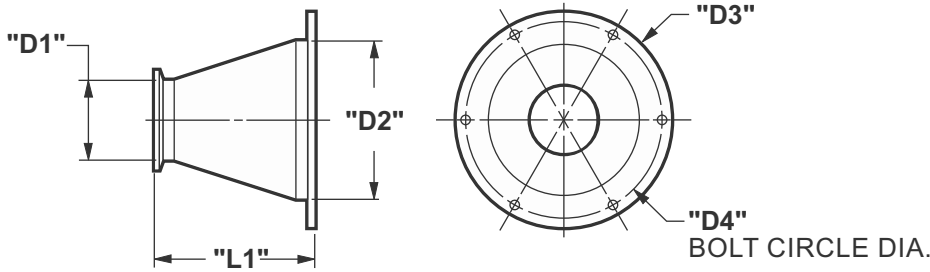
Concentric EZ Reducer



PART NO.	DESCRIPTION	"D1"	"D2"	"L1"
PCA32F	2" TO 3" CONCENTRIC	2" (50.8)	3" (76.2)	3.87" (98.3)
PCA42F	2" TO 4" CONCENTRIC	2" (50.8)	4" (101.6)	3.87" (98.3)
PCA43F	3" TO 4" CONCENTRIC	3" (76.2)	4" (101.6)	3.87" (98.3)

All fittings with standard connections include gaskets and clamps or hardware as required for installation.

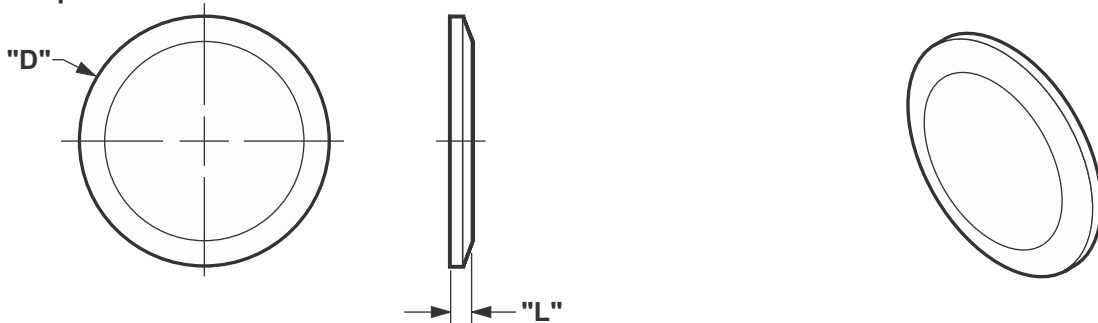
Angle Ring to EZ Reducer



PART NO.	DESCRIPTION	"D1"	"D2"	"L1"	"D3" O.D.	"D4" DIA.
PCA32R	2" TO 3" ANGLE RING	2" (50.8)	3" (76.2)	4.25" (107.9)	5.06" (128.5)	4.31" (109.5)
PCA42R	2" TO 4" ANGLE RING	2" (50.8)	4" (101.6)	3.88" (98.6)	6.06" (153.9)	5.31" (134.9)
PCA43R	3" TO 4" ANGLE RING	3" (76.2)	4" (101.6)	4.25" (107.9)	6.06" (153.9)	5.31" (134.9)

All fittings with standard connections include gaskets and clamps or hardware as required for installation.

EZ End Cap

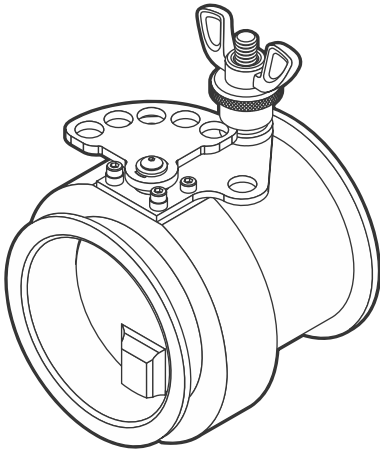


PART NO.	DESCRIPTION	"D"	"L"
PZC02	2" END CAP	2" (50.8)	0.21" (5.33)
PZC03	3" END CAP	3" (76.2)	0.21" (5.33)

All fittings with standard connections include gaskets and clamps or hardware as required for installation.

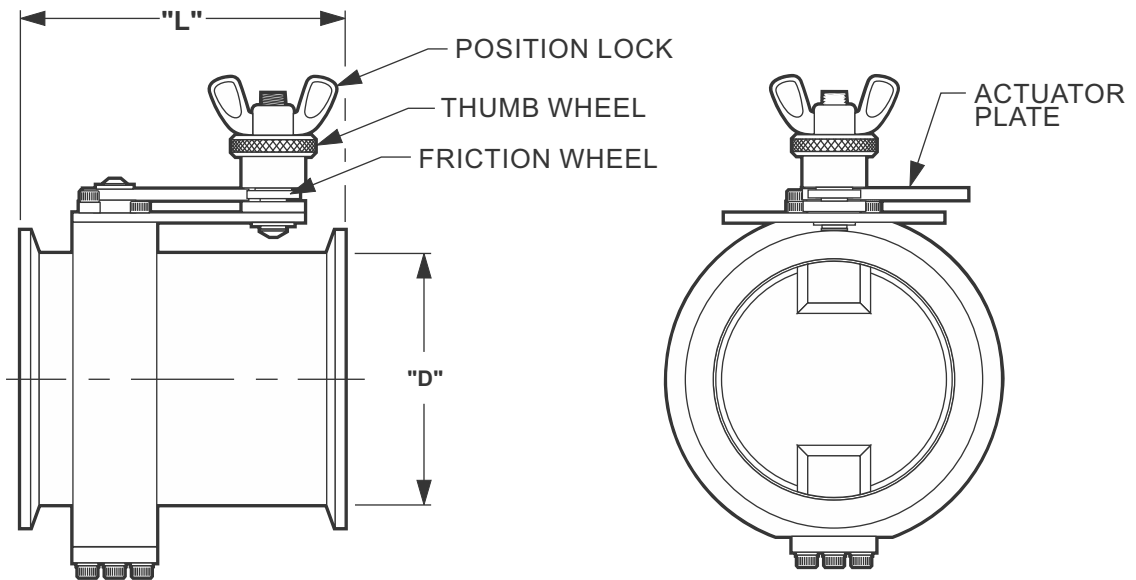
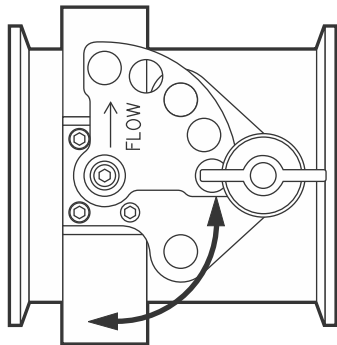
METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Micro-Adjustable EZ Damper



PART NO.	DESCRIPTION	"D"	"L"
PZD02	2" EZ-DAMPER	2" (50.8)	3.875" (98.4)
PZD03	3" EZ-DAMPER	3" (76.2)	3.875" (98.4)

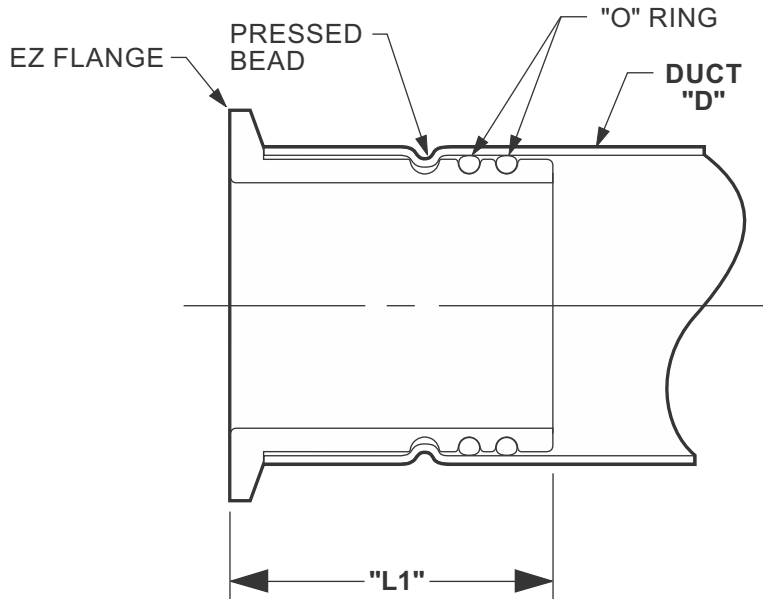
All fittings with standard connections include gaskets and clamps or hardware as required for installation.



METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Field Installed Straight Duct EZ Flange

REPLACEMENT FLANGE FOR 2" (50.8) & 3" (76.2)
STRAIGHT DUCT MODIFIED OR CUT TO LENGTH IN THE FIELD
REFER TO INSTALLATION AND ASSEMBLY GUIDE



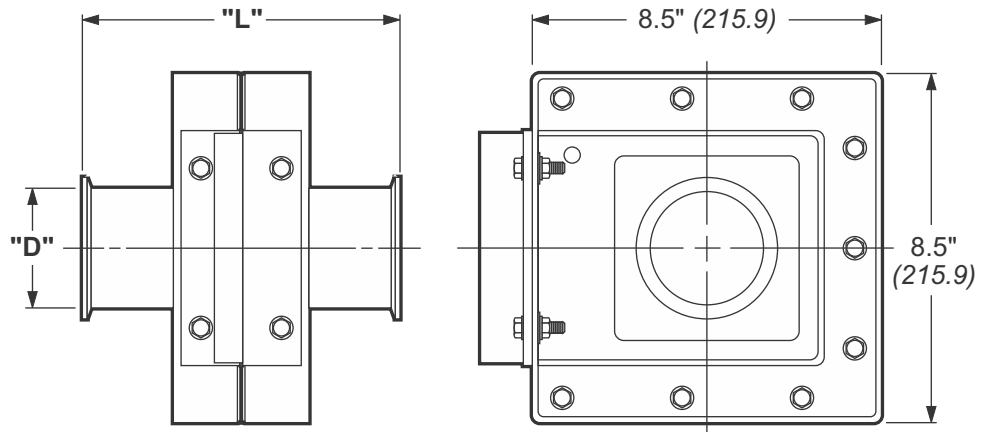
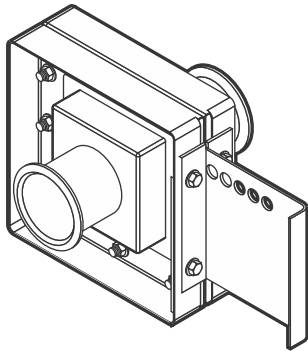
PART NO.	DESCRIPTION	"D"	"L1"
HTB02	2" FIELD FLANGE	2" (50.8)	2" (50.8)
HTB03	3" FIELD FLANGE	3" (76.2)	2" (50.8)

**FOR USE ON EZ STRAIGHT DUCT ONLY
NOT DESIGNED FOR EZ ELBOWS, TEES, OR REDUCERS**

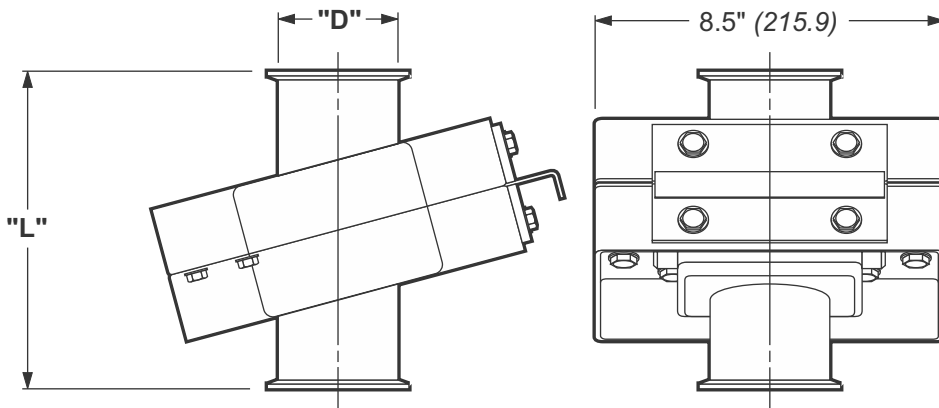
NOTES:

1. REQUIRES PURCHASE OF PRESSING WHEEL, PART #D0700 FOR INSTALLATION. THE PRESSING WHEEL IS USED TO PRESS A BEAD AROUND THE DUCT TO COMPLETE THE INSTALLATION. WHEEL FITS RIDGID PIPE CUTTER MODEL 3S. REFER TO **INSTALLATION AND ASSEMBLY GUIDE** FOR ASSEMBLY INSTRUCTIONS.
2. PERMASHIELD FLUOROPOLYMER BARRIER COATING ON INTERIOR AND EXTERIOR SURFACES.
3. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)



PART NO.	DESCRIPTION	"D"	"L"
PZB02H	2" EZ-BLASTGATE HORIZONTAL	2" (50.8)	8.000" (203.2)
PZB03H	3" EZ-BLASTGATE HORIZONTAL	3" (76.2)	8.000" (203.2)

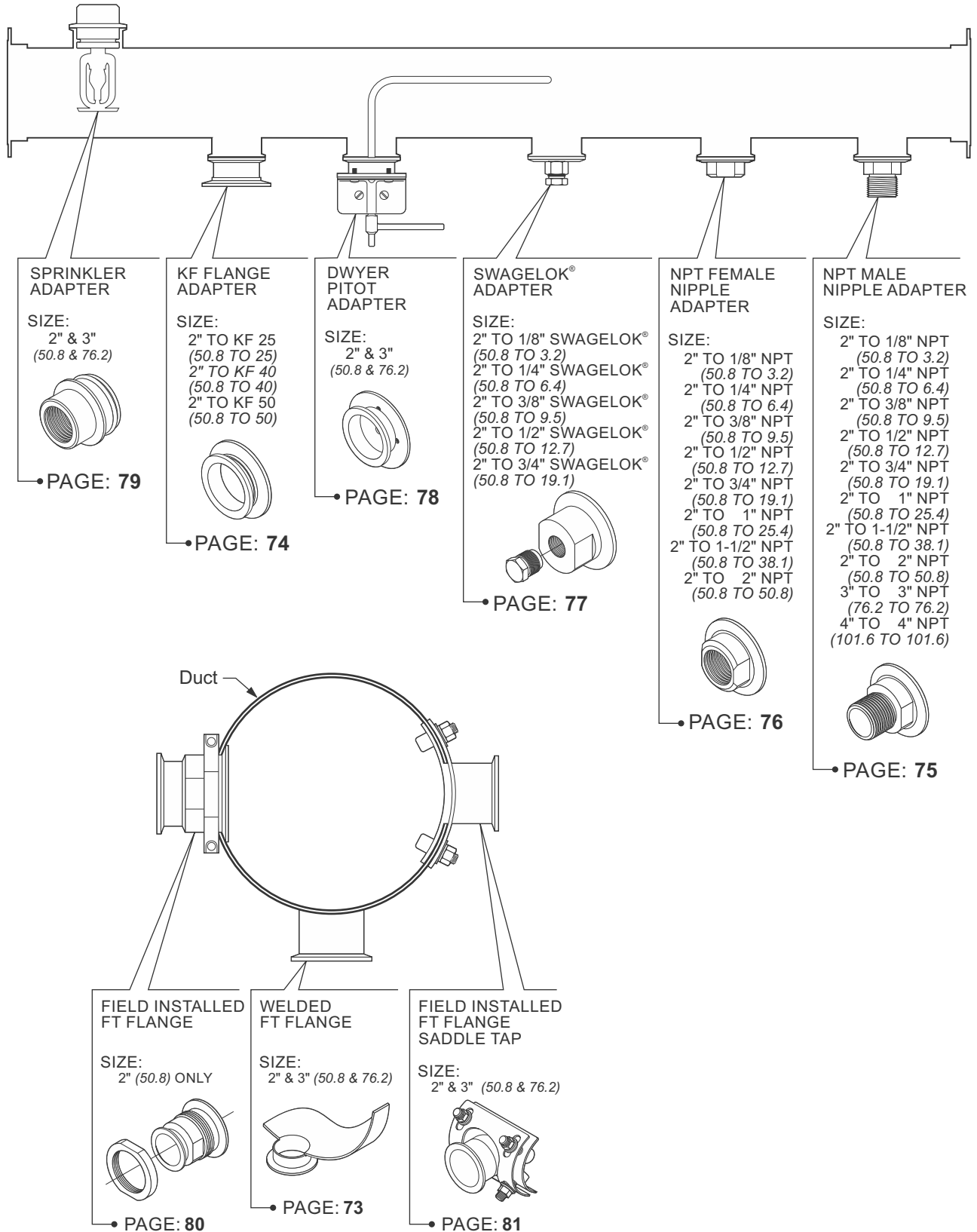


PART NO.	DESCRIPTION	"D"	"L"
PZB02V	2" EZ-BLASTGATE VERTICAL	2" (50.8)	8.000" (203.2)
PZB03V	3" EZ-BLASTGATE VERTICAL	3" (76.2)	8.000" (203.2)

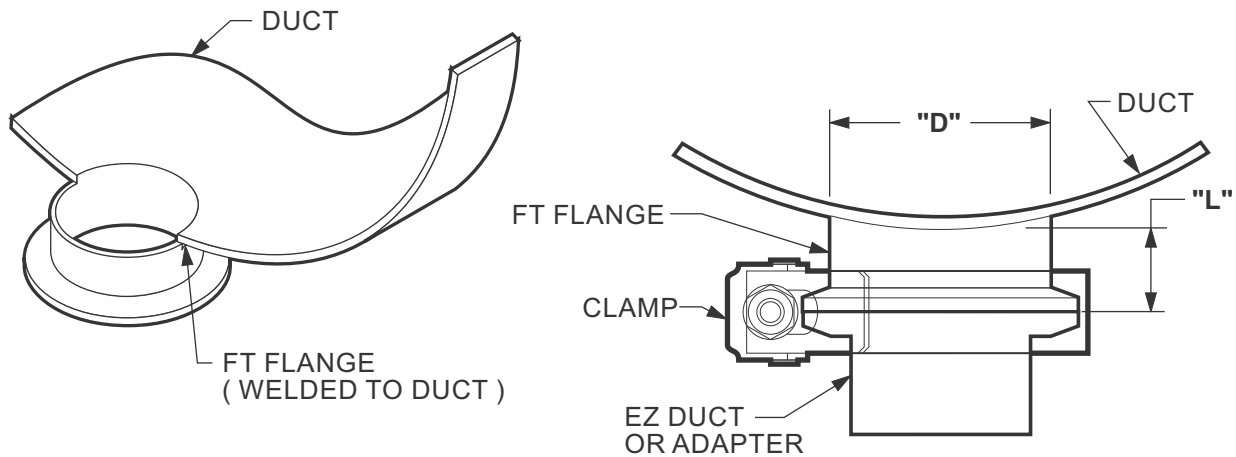
NOTES:

1. STAINLESS STEEL FRAME MATERIAL, BLADE LOCKOUT SYSTEM
2. PERMASHIELD FLUOROPOLYMER BARRIER COATING ON FLANGE FACES AND INTERIOR SURFACES.
3. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)



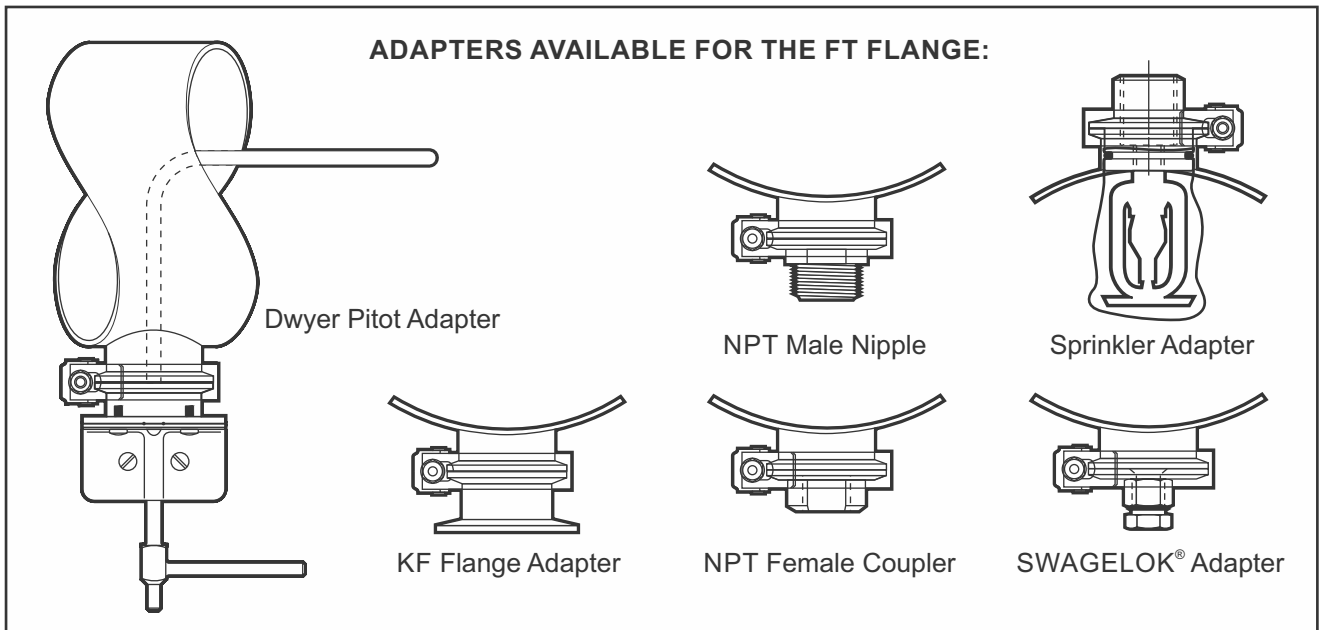
METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)



PART NO.	DESCRIPTION	"D"	"L"
FTFL2	2" FT FLANGE	2" (50.8)	.75" (19.1)
FTFL3	3" FT FLANGE	3" (76.2)	.75" (19.1)

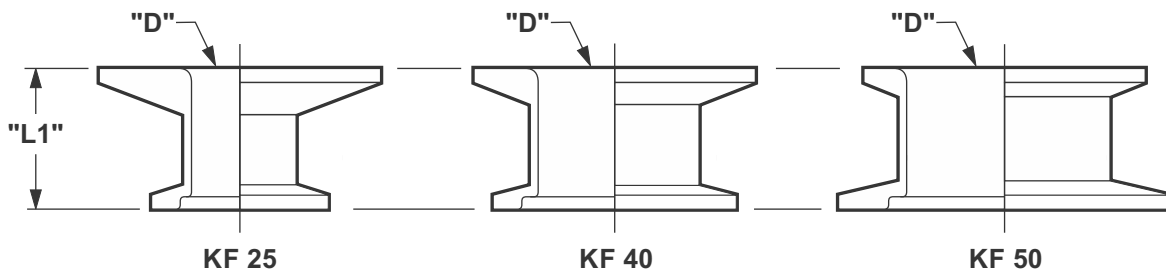
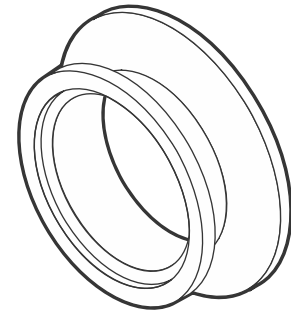
NOTES:

1. REFER TO **INSTALLATION AND ASSEMBLY GUIDE** FOR ASSEMBLY INSTRUCTIONS.
2. PERMASHIELD FLUOROPOLYMER BARRIER COATING ON INSIDE SURFACE AND FLANGE FACES.
3. FT FLANGE / TEST PORT MAY BE INSTALLED ON FITTINGS OTHER THAN STRAIGHT DUCT.
4. REFER TO THE EZ FITTINGS SECTION FOR DUCT OR THE FT FLANGE SYSTEM SECTION FOR ADAPTERS TO ATTACH TO THE FAB-TECH FLANGE.
5. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.



METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

KF Flange Adapter



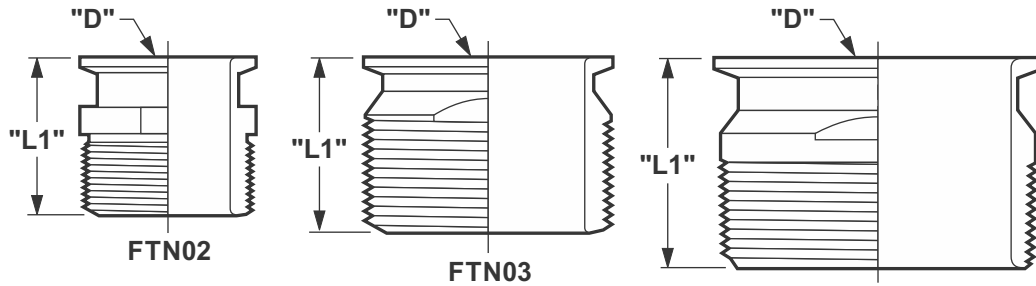
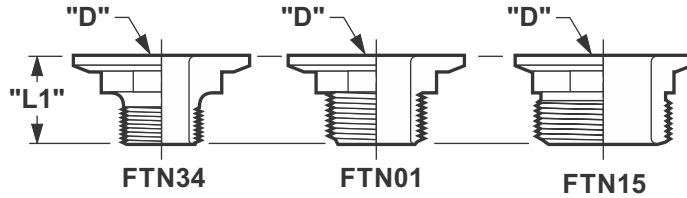
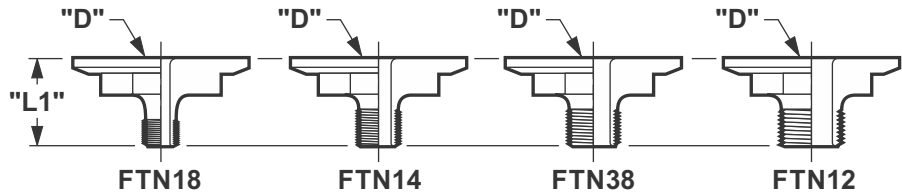
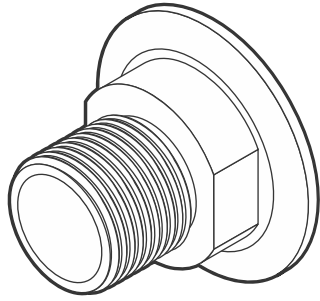
PART NO.	DESCRIPTION	KF	"D"	"L1"
FTK25	2" TO 25 KF FLANGE	25mm	2" (50.8)	1.25" (31.8)
FTK40	2" TO 40 KF FLANGE	40mm	2" (50.8)	1.25" (31.8)
FTK50	2" TO 50 KF FLANGE	50mm	2" (50.8)	1.25" (31.8)

NOTES:

1. REFER TO **INSTALLATION AND ASSEMBLY GUIDE** FOR ASSEMBLY INSTRUCTIONS.
2. PERMASHIELD FLUOROPOLYMER BARRIER COATING ON INSIDE SURFACE AND FLANGE FACES.
3. KF ADAPTERS ARE ONLY AVAILALBE FOR 2" (50.8) FT FLANGE CONNECTION.
4. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

NPT Male Nipple Adapter



FTN04
USED WITH 4" (101.6) PSP-EZ™ TAP

PART NO.	DESCRIPTION	"D"	PIPE THREAD	"L1"
FTN18	2" TO 1/8" NPT	2" (50.8)	1/8" (3.2) NPT	1.25" (31.8)
FTN14	2" TO 1/4" NPT	2" (50.8)	1/4" (6.4) NPT	1.25" (31.8)
FTN38	2" TO 3/8" NPT	2" (50.8)	3/8" (9.5) NPT	1.25" (31.8)
FTN12	2" TO 1/2" NPT	2" (50.8)	1/2" (12.7) NPT	1.25" (31.8)
FTN34	2" TO 3/4" NPT	2" (50.8)	3/4" (19.1) NPT	1.50" (38.1)
FTN01	2" TO 1" NPT	2" (50.8)	1" (25.4) NPT	1.50" (38.1)
FTN15	2" TO 1.5" NPT	2" (50.8)	1.5" (38.1) NPT	1.50" (38.1)
FTN02	2" TO 2" NPT	2" (50.8)	2" (50.8) NPT	2.25" (57.2)
FTN03	3" TO 3" NPT	3" (76.2)	3" (76.2) NPT	2.50" (63.5)
FTN04**	4" TO 4" NPT	4" (101.6)	4" (101.6) NPT	3.00" (76.2)

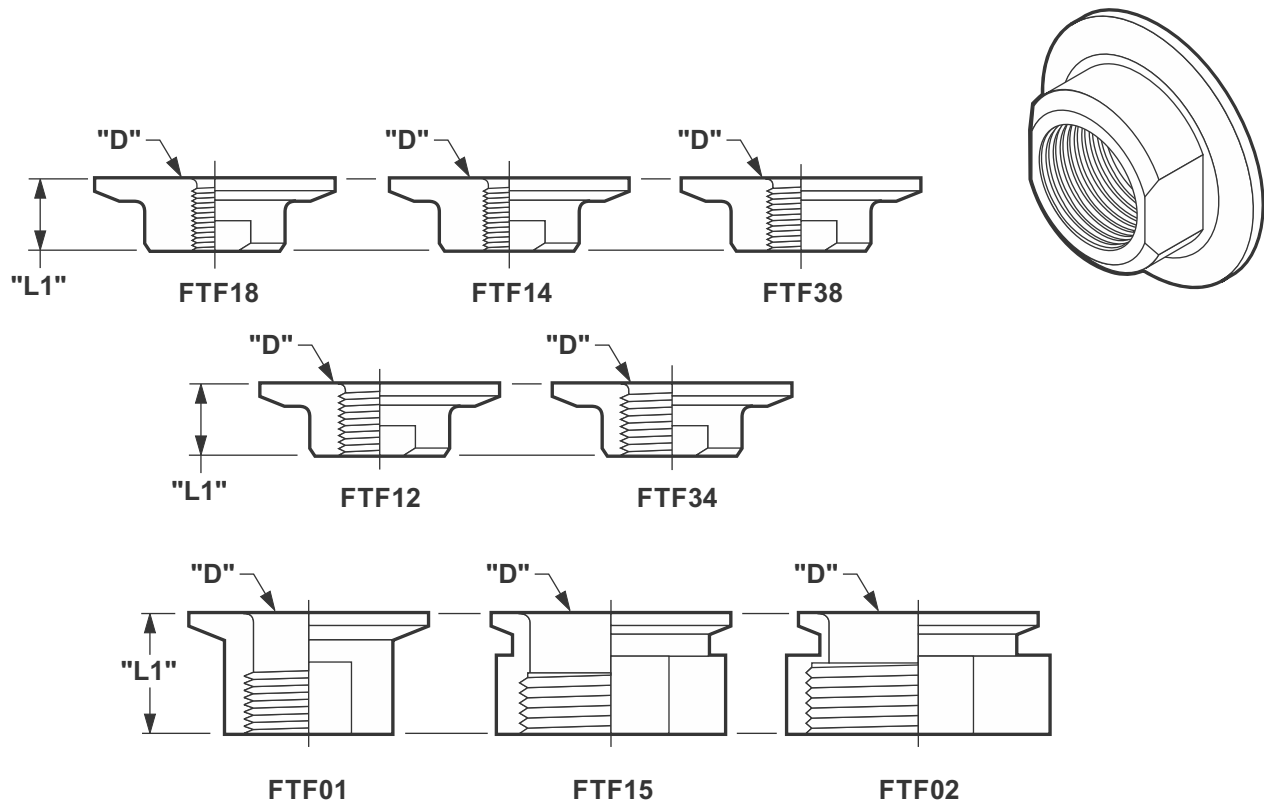
**USED WITH 4" (101.6) PSP-EZ™ TAP

NOTES:

1. REFER TO **INSTALLATION AND ASSEMBLY GUIDE** FOR ASSEMBLY INSTRUCTIONS.
2. PERMAshield FLUOROPOLYMER BARRIER COATING ON INSIDE SURFACE AND FLANGE FACE.
3. NPT NIPPLES ARE NOT COVERED UNDER WARRANTY OTHER THAN FOR DEFECTS IN MANUFACTURE. NPT THREADS ARE NOT COATED AND SINCE THE THREADS COULD POSSIBLY COME IN CONTACT WITH CORROSIVE FUMES AND FLUIDS, EXENTIAL OFFERS ONLY A LIMITED WARRANTY FOR THESE PARTS. DEPENDING ON THE SPECIFIC APPLICATION, NPT ADAPTERS SHOULD FALL INTO THE CLASSIFICATION OF CONSUMABLE PARTS.
4. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

NPT Female Coupler Adapter



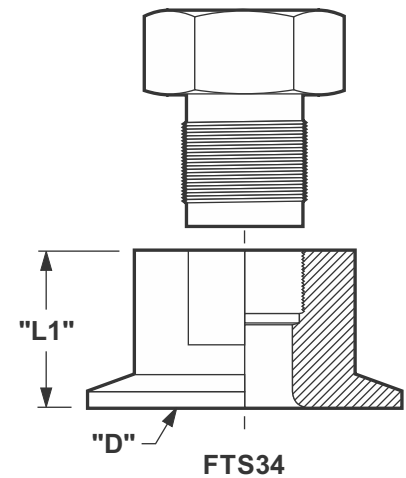
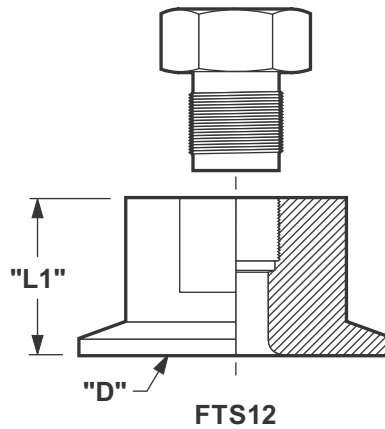
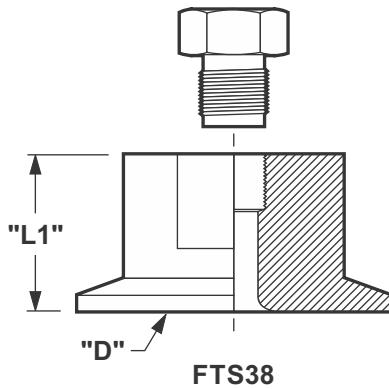
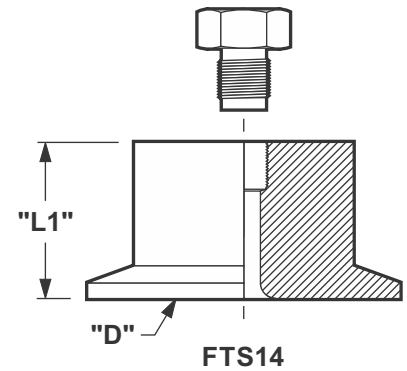
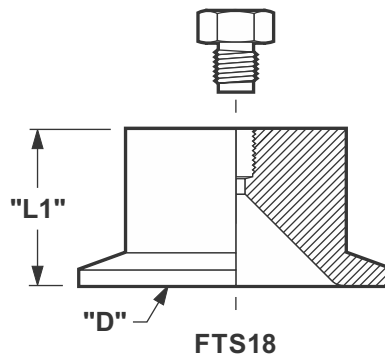
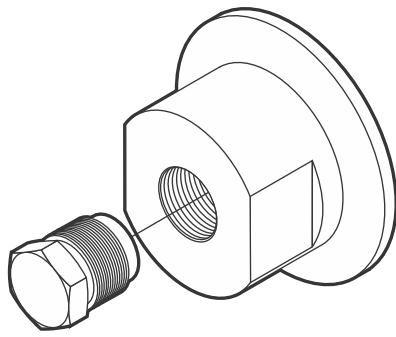
PART NO.	DESCRIPTION	"D"	PIPE THREAD	"L1"
FTF18	2" TO 1/8" NPT	2" (50.8)	1/8" (3.2) NPT	.75" (19.1)
FTF14	2" TO 1/4" NPT	2" (50.8)	1/4" (6.4) NPT	.75" (19.1)
FTF38	2" TO 3/8" NPT	2" (50.8)	3/8" (9.5) NPT	.75" (19.1)
FTF12	2" TO 1/2" NPT	2" (50.8)	1/2" (12.7) NPT	.75" (19.1)
FTF34	2" TO 3/4" NPT	2" (50.8)	3/4" (19.1) NPT	.75" (19.1)
FTF01	2" TO 1" NPT	2" (50.8)	1" (25.4) NPT	1.25" (31.8)
FTF15	2" TO 1.5" NPT	2" (50.8)	1.5" (38.1) NPT	1.25" (31.8)
FTF02	2" TO 2" NPT	2" (50.8)	2" (50.8) NPT	1.25" (31.8)

NOTES:

1. REFER TO **INSTALLATION AND ASSEMBLY GUIDE** FOR ASSEMBLY INSTRUCTIONS.
2. PERMASHIELD FLUOROPOLYMER BARRIER COATING ON FLANGE FACE.
3. NPT NIPPLES ARE NOT COVERED UNDER WARRANTY OTHER THAN FOR DEFECTS IN MANUFACTURE. NPT THREADS ARE NOT COATED AND SINCE THE THREADS COULD POSSIBLY COME IN CONTACT WITH CORROSIVE FUMES AND FLUIDS, EXENTIAL OFFERS ONLY A LIMITED WARRANTY FOR THESE PARTS. DEPENDING ON THE SPECIFIC APPLICATION, NPT ADAPTERS SHOULD FALL INTO THE CLASSIFICATION OF CONSUMABLE PARTS.
4. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Swagelok® Adapter



PART NO.	DESCRIPTION	"D"	THREAD	"L1"
FTS18**	2" TO 1/8" (3.2) SWAGELOK®	2" (50.8)	8Mx1.25	1.25" (31.75)
FTS14	2" TO 1/4" (6.4) SWAGELOK®	2" (50.8)	7/16-20UNF	1.25" (31.75)
FTS38	2" TO 3/8" (9.5) SWAGELOK®	2" (50.8)	9/16-20UN	1.25" (31.75)
FTS12	2" TO 1/2" (12.7) SWAGELOK®	2" (50.8)	3/4-20UNEF	1.25" (31.75)
FTS34	2" TO 3/4" (19.1) SWAGELOK®	2" (50.8)	1-20UNEF	1.25" (31.75)

**FTS18 IS AVAILABLE AS A CUSTOM ADAPTER, NOT A STOCK ITEM

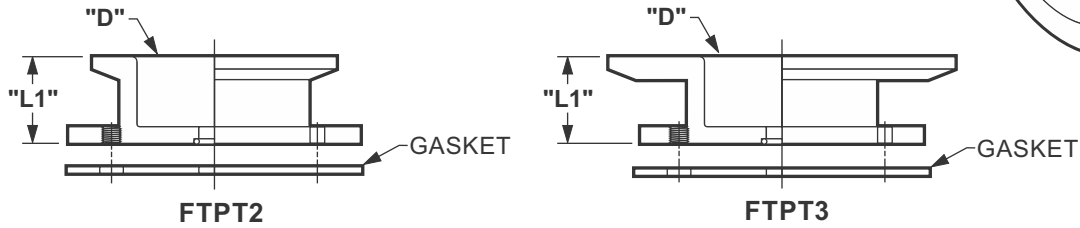
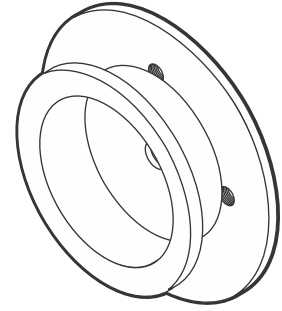
NOTES:

1. REFER TO **INSTALLATION AND ASSEMBLY GUIDE** FOR ASSEMBLY INSTRUCTIONS.
2. PERMASHIELD FLUOROPOLYMER BARRIER COATING ON INSIDE SURFACE AND FLANGE FACE.
3. SWAGELOK ADAPTERS ARE NOT COVERED UNDER WARRANTY OTHER THAN FOR DEFECTS IN MANUFACTURE. SWAGELOK THREADS ARE NOT COATED AND SINCE THE THREADS COULD POSSIBLY COME IN DIRECT CONTACT WITH CORROSIVE FUMES AND FLUIDS, EXENTIAL OFFERS ONLY A LIMITED WARRANTY FOR THESE PARTS. DEPENDING ON THE SPECIFIC APPLICATION, SWAGELOK ADAPTERS SHOULD FALL INTO THE CLASSIFICATION OF CONSUMABLE PARTS.
4. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

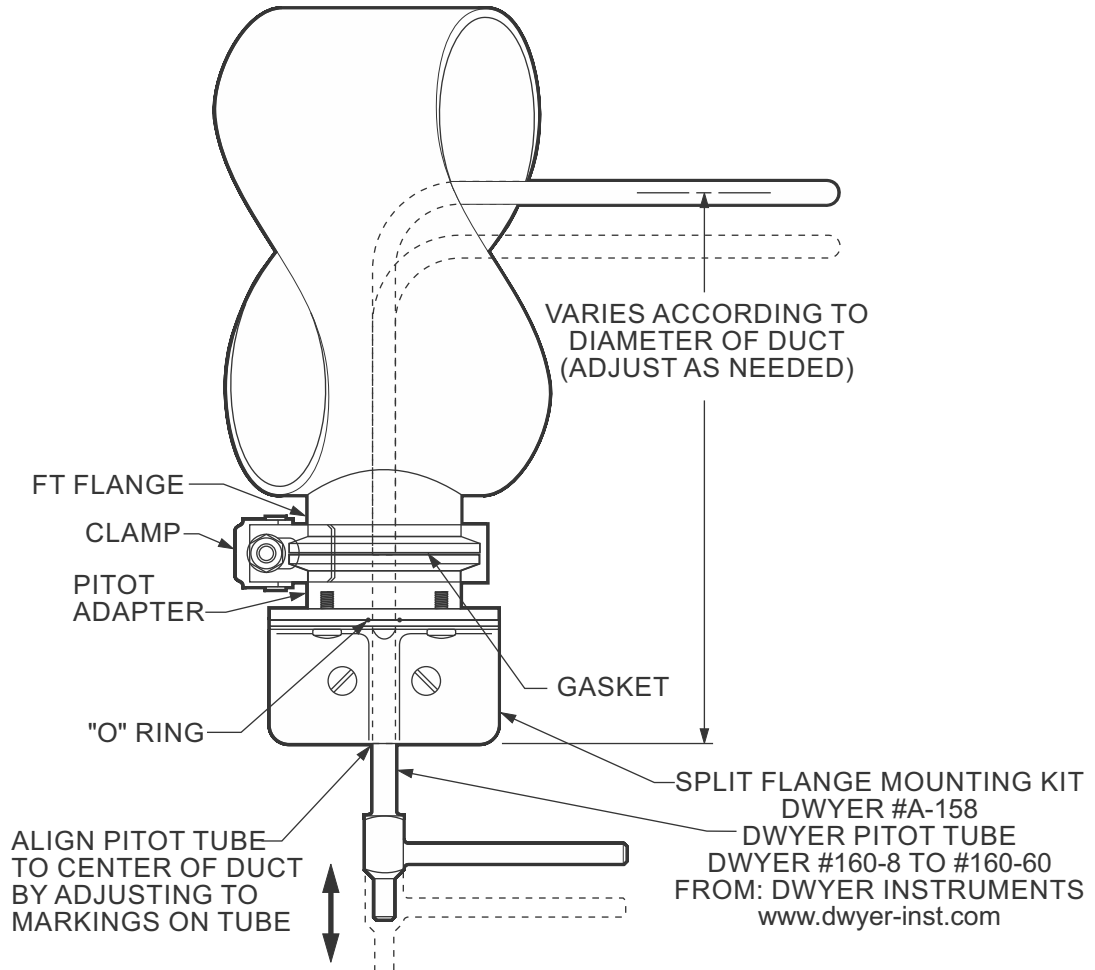
Dwyer Pitot Adapter

PART NO.	DESCRIPTION	"D"	"L1"
FTPT2	2" PITOT FLANGE	2" (50.8)	0.88" (22.4)
FTPT3	3" PITOT FLANGE	3" (76.2)	0.88" (22.4)



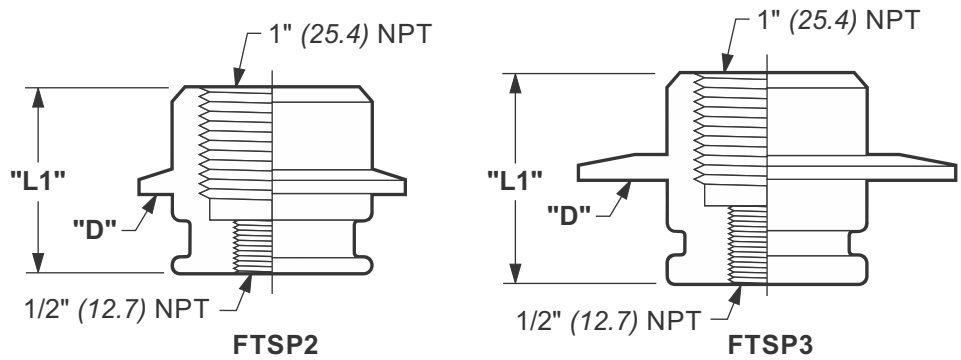
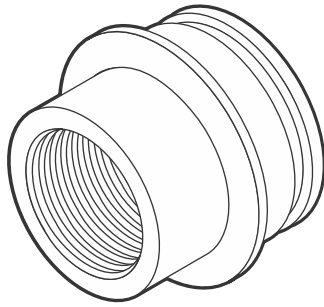
NOTES:

1. REFER TO **INSTALLATION AND ASSEMBLY GUIDE** FOR ASSEMBLY INSTRUCTIONS.
2. PERMASHIELD FLUOROPOLYMER BARRIER COATING ON INSIDE SURFACE AND FLANGE FACES.
3. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.



METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

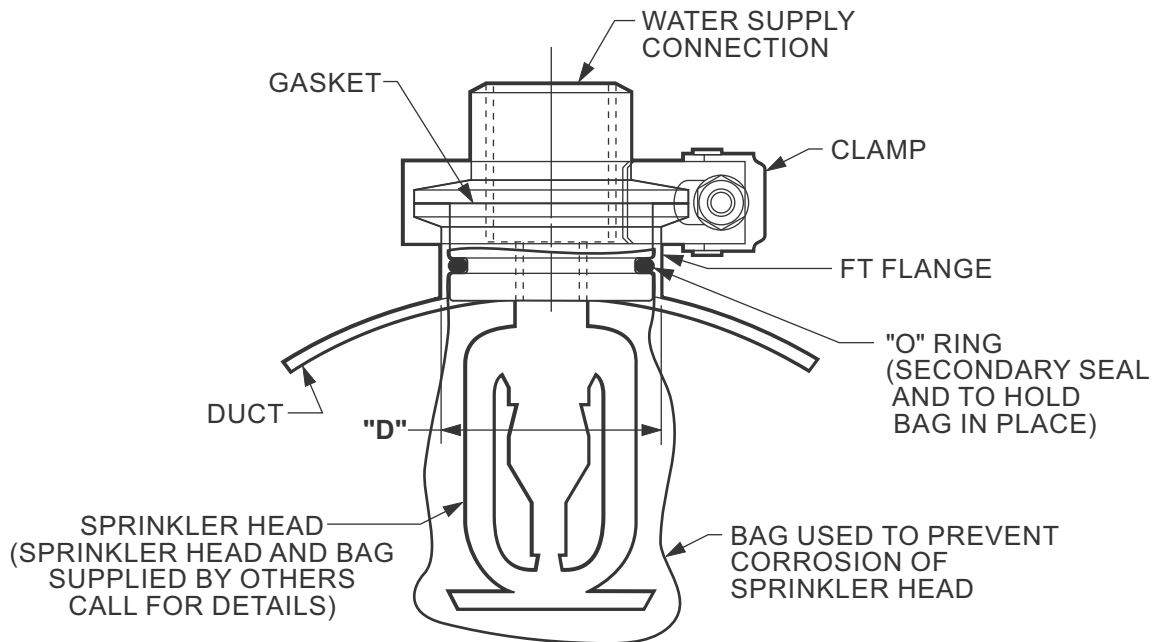
Sprinkler Adapter



PART NO.	DESCRIPTION	"D"	"L1"
FTSP2	2" SPRINKLER FLANGE	2" (50.8)	1.10" (27.9)
FTSP3	3" SPRINKLER FLANGE	3" (76.2)	2.00" (50.8)

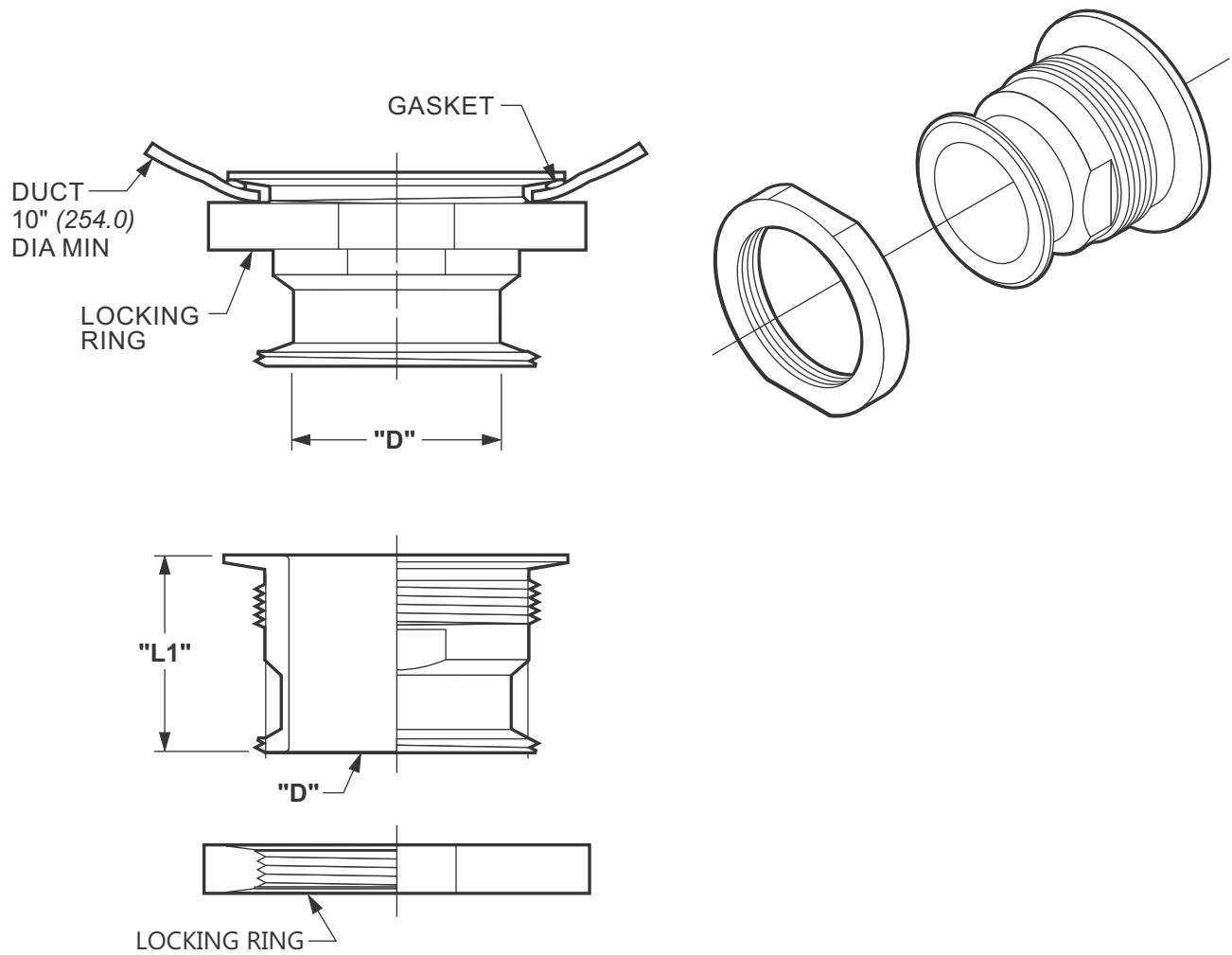
NOTES:

1. REFER TO **INSTALLATION AND ASSEMBLY GUIDE** FOR ASSEMBLY INSTRUCTIONS.
2. PERMASHIELD FLUOROPOLYMER BARRIER COATING ON FLANGE FACE AND O-RING SURFACES.
3. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.



METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Field Installed 2" (50.8) FT Flange



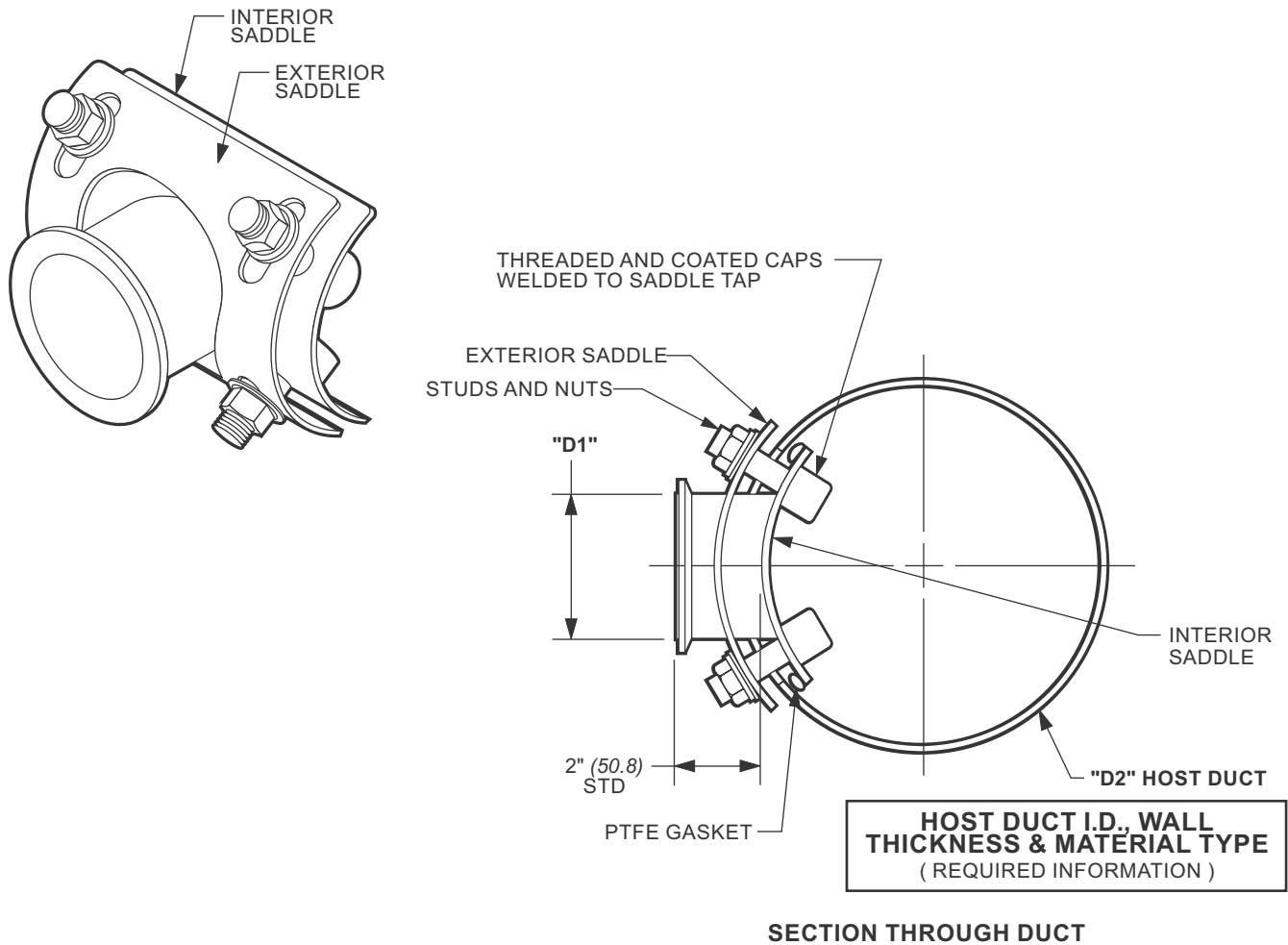
PART NO.	DESCRIPTION	"D"	"L1"	HOST DUCT DIAMETER
FTFL2FI	2" (50.8) FIELD FLANGE	2" (50.8)	1.69" (42.9)	10" (254.0) DIAMETER MINIMUM

NOTES:

1. REFER TO **INSTALLATION AND ASSEMBLY GUIDE** FOR ASSEMBLY INSTRUCTIONS.
2. PERMASHIELD FLUOROPOLYMER BARRIER COATING ON INSIDE SURFACE AND FLANGE FACE.
3. REQUIRES HYDRAULIC PUNCH & SWAGE KIT (TPS02) TO INSTALL - CHECK ACCESSORIES SECTION.
4. REQUIRES DISASSEMBLY OF DUCT TO INSTALL THIS FITTINGS.
5. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Field Installed FT Flange Saddle Tap

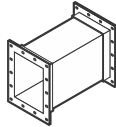
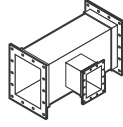
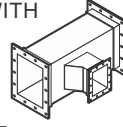
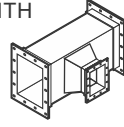
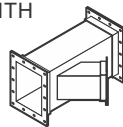
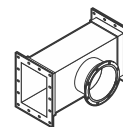
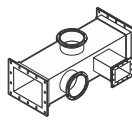
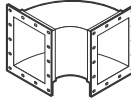
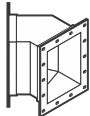
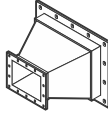
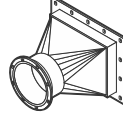
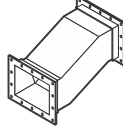
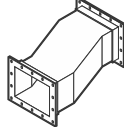
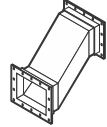
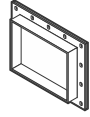


PART NO.	DESCRIPTION	"D1"	"D2"
PZQ02	2" EZ-TAP	2" (50.8)	6" (152.4) MIN
PZQ03	3" EZ-TAP	3" (76.2)	8" (203.2) MIN

NOTES:

1. REFER TO **INSTALLATION AND ASSEMBLY GUIDE** FOR ASSEMBLY INSTRUCTIONS.
2. PERMASHIELD FLUOROPOLYMER BARRIER COATING ON INSIDE SURFACE AND FLANGE FACE.
3. THE FIELD INSTALLED FT FLANGE SADDLE TAP WILL ALLOW A NEW 2" DIAMETER BRANCH TO BE INSTALLED IN A 6" (152.4) AND LARGER DIAMETER DUCT OR A NEW 3" (76.2) DIAMETER BRANCH TO BE INSTALLED IN AN 8" (203.2) AND LARGER DIAMETER DUCT **WITHOUT SHUTTING DOWN THE EXHAUST SYSTEM.**
4. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

<p>RECTANGULAR DUCT</p>	<p>STRAIGHT DUCT</p>  <p>• PAGE: 84</p>	<p>STRAIGHT DUCT WITH STRAIGHT RECTANGULAR TAP</p>  <p>• PAGE: 84</p>
<p>STRAIGHT DUCT WITH RECTANGULAR BOOT TAP</p>  <p>• PAGE: 85</p>	<p>STRAIGHT DUCT WITH RECTANGULAR CONICAL TAP</p>  <p>• PAGE: 85</p>	<p>STRAIGHT DUCT WITH RECTANGULAR LATERAL TAP</p>  <p>• PAGE: 86</p>
<p>STRAIGHT DUCT WITH ROUND TAP</p>  <p>• PAGE: 86</p>	<p>STRAIGHT DUCT WITH MULTIPLE TAPS</p>  <p>• PAGE: 87</p>	<p>RADIAL ELBOW 30°, 45°, 60°, 90°</p>  <p>• PAGE: 87</p>
<p>MITERED ELBOW 30°, 45°, 60°, 90°</p>  <p>• PAGE: 88</p>	<p>CONCENTRIC TRANSITION</p>  <p>• PAGE: 89</p>	<p>CONCENTRIC RECTANGULAR TO ROUND TRANSITION</p>  <p>• PAGE: 89</p>
<p>VERTICAL OFFSET</p>  <p>• PAGE: 90</p>	<p>HORIZONTAL OFFSET</p>  <p>• PAGE: 90</p>	<p>DOUBLE OFFSET</p>  <p>• PAGE: 91</p>
<p>END CAP</p>  <p>• PAGE: 91</p>		

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Rectangular Mounting Flange Standards

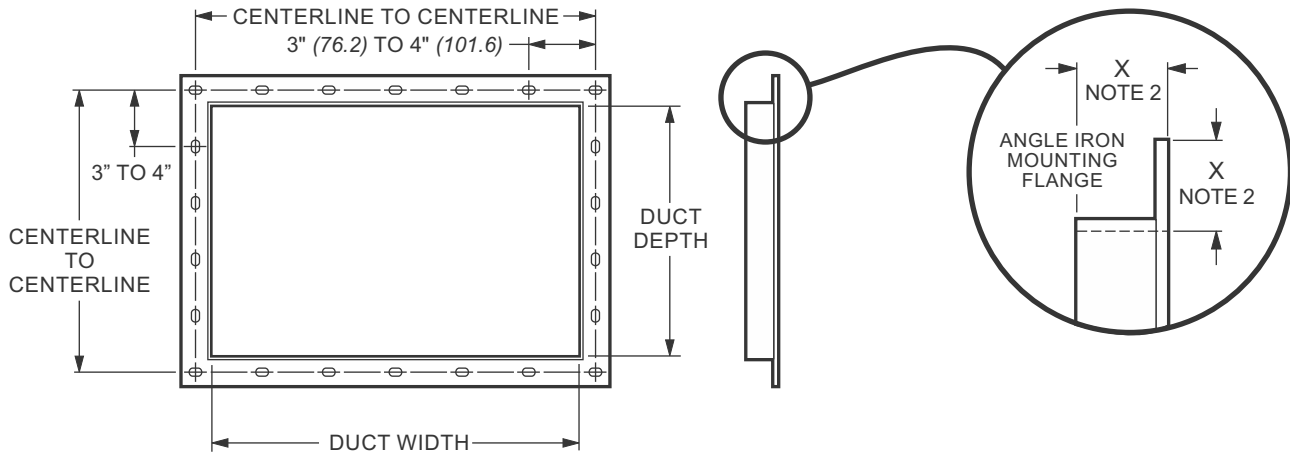


TABLE BELOW IS FOR STANDARD DUCT LENGTH OF 48-1/4" (1225.6)
S = STIFFENER ADDED

DUCT WIDTH	-6" W.G. (-1,495 Pa)		-10" W.G. (-2,491 Pa)		-14" W.G. (-3,487 Pa)		-18" W.G. (-4,484 Pa)	
	DUCT GAUGE	ANGLE SIZE	DUCT GAUGE	ANGLE SIZE	DUCT GAUGE	ANGLE SIZE	DUCT GAUGE	ANGLE SIZE
12" (304.8) - 24" (609.6)	16(1.59)	1.5" (38.1)	12(2.78)	1.5" (38.1)	12(2.78)	1.5" (38.1)	10(3.57)	2" (50.8)
26" (660.4) - 36" (914.4)	16	1.5" (38.1)	12	2" (50.8)	12	2" (50.8)	10	2" (50.8)
38" (965.2) - 48" (1219.2)	16	2" (50.8)	12	2" (50.8)	12	2" (50.8)	10	3" (76.2)
50" (1270.0) - 60" (1524.0)	16S	2" (50.8)	12S	2" (50.8)	12S	2" (50.8)	10S	2" (50.8)
62" (1574.8) - 72" (1828.8)	16S	2" (50.8)	12S	2" (50.8)	12S	2" (50.8)	10S	2" (50.8)
74" (1879.6) - 84" (2133.6)	16S	2" (50.8)	12S	2" (50.8)	12S	2" (50.8)	10S	2.5" (63.5)
86" (2184.4) - 96" (2438.4)	16S	2" (50.8)	12S	2" (50.8)	12S	2.5" (63.5)	10S	3" (76.2)

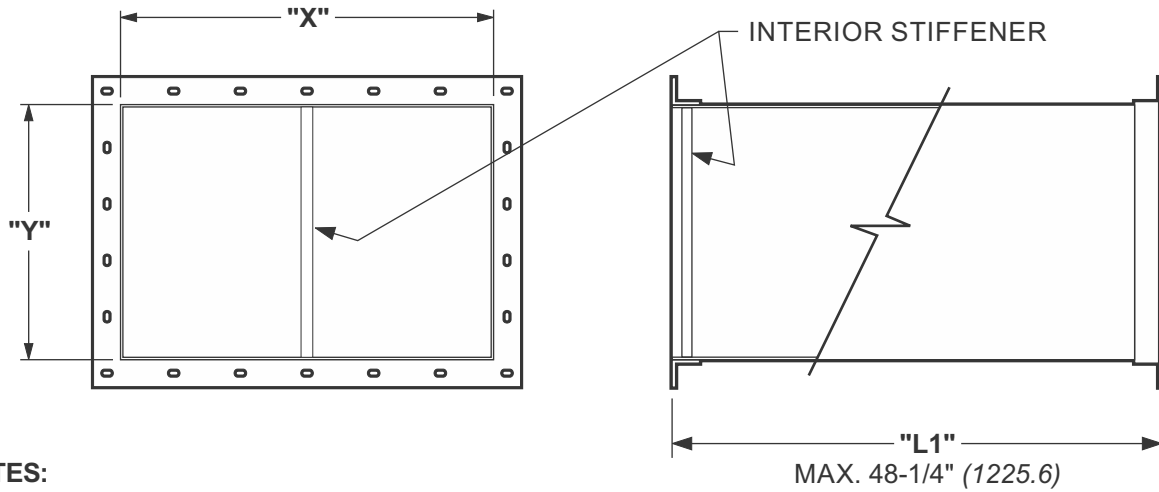
REFER TO **INSTALLATION AND ASSEMBLY GUIDE** FOR ASSEMBLY INSTRUCTIONS.

NOTES:

- ANGLE RING MATERIAL IS STAINLESS STEEL AND WELDED, NOT FLOATING.
- REFER TO **INSTALLATION AND ASSEMBLY GUIDE** FOR ASSEMBLY INSTRUCTIONS.
- ANGLE SIZES (X): 1.5" (38.1), 2" (50.8), 2.5" (63.5), AND 3.0" (76.2)
- ANGLE THICKNESS FOR ALL SIZES: 3/16" (4.76)
- FLANGE ANGLE SIZE DETERMINED FROM DUCT WIDTH AND SYSTEM PRESSURE.
- FLANGE MATERIAL IS STAINLESS STEEL.
- PERMASHIELD FLUOROPOLYMER BARRIER COATING ON INSIDE SURFACE AND FLANGE FACES.
- THE NUMBER OF HOLES FOR THE BOLT PATTERN IS DETERMINED FROM THE DUCT WIDTH AND DEPTH. HOLE TO HOLE DISTANCE WILL BE CALCULATED TO BE BETWEEN 3" (76.2) TO 4" (101.6). OBLONG HOLES ARE PUNCHED ALONG THE FRAME CENTERLINE.
- DUCT WIDTH OR DEPTH OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW.
- INTERIOR STIFFENERS (1" SCH40 PIPE) ARE WELDED BETWEEN DUCT SIDES 50" (1270.0) WIDE OR GREATER. SEPARATE OFFSET STIFFENERS ARE USED WHEN BOTH DUCT WIDTH AND DEPTH ARE 50" (1270.0) OR GREATER.
- ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Straight Duct



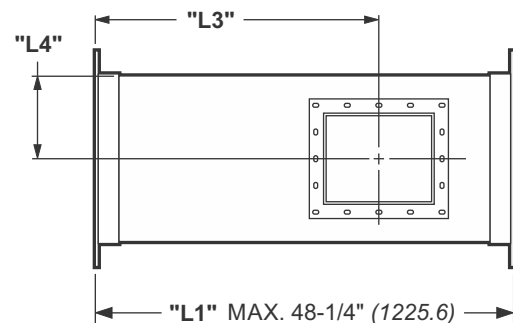
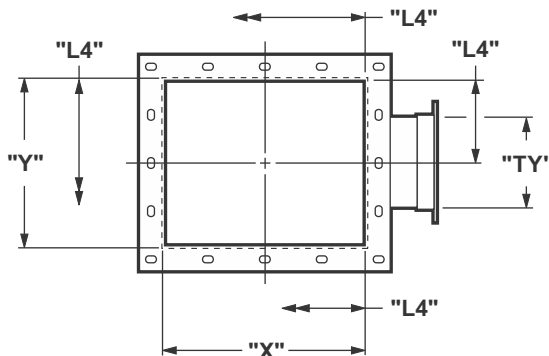
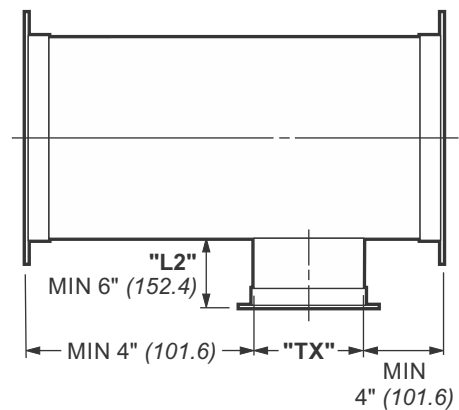
NOTES:

1. **OPTION:** CUSTOM LENGTH
2. **OPTION:** RAW END
3. INTERIOR STIFFENERS (1" SCH40 PIPE) ARE WELDED BETWEEN THE OPPOSITE MIDPOINTS OF THE DUCT FLANGE FOR DUCT WIDTH OR DEPTH OF 50" (1270.0) WIDE OR GREATER.
4. DUCT WIDTH OR DEPTH OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW.
5. GREATER THAN STANDARD DUCT LENGTHS AND/OR HIGHER SYSTEM PRESSURES MAY REQUIRE ADDITIONAL STIFFENERS PER SMACNA, SPECIFICATION GUIDELINES AVAILABLE.
6. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

Straight Duct with Straight Rectangular Tap

NOTES:

1. **OPTION:** CUSTOM LENGTH
2. **OPTION:** RAW END
3. INTERIOR STIFFENERS (1" SCH40 PIPE) ARE WELDED BETWEEN THE OPPOSITE MIDPOINTS OF THE DUCT FLANGE FOR DUCT WIDTH OR DEPTH OF 50" (1270.0) WIDE OR GREATER.
4. DUCT WIDTH OR DEPTH OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW.
5. GREATER THAN STANDARD DUCT LENGTHS AND/OR HIGHER SYSTEM PRESSURES MAY REQUIRE ADDITIONAL STIFFENERS PER SMACNA, SPECIFICATION GUIDELINES AVAILABLE.
6. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

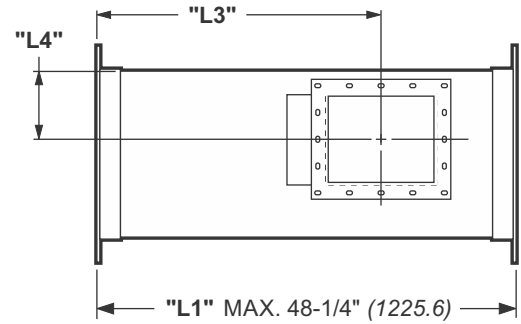
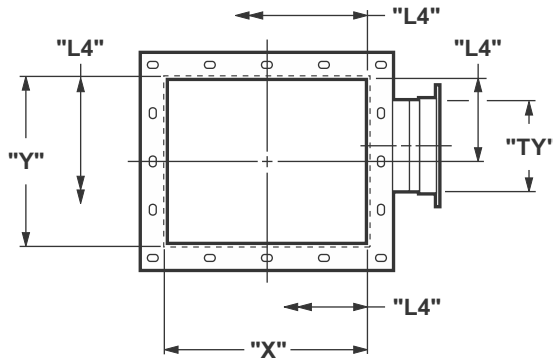
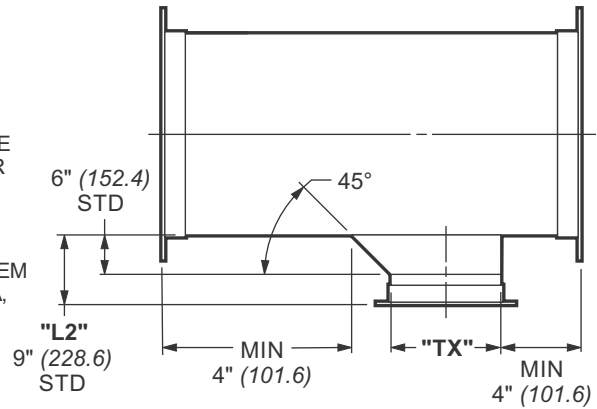


METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Straight Duct with Rectangular Boot Tap

NOTES:

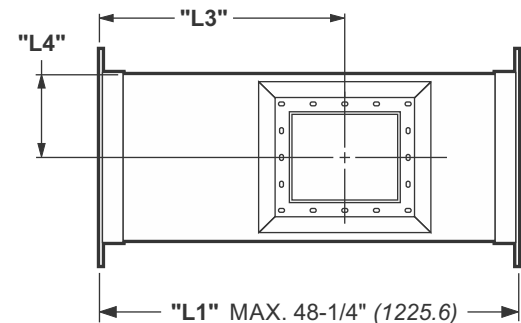
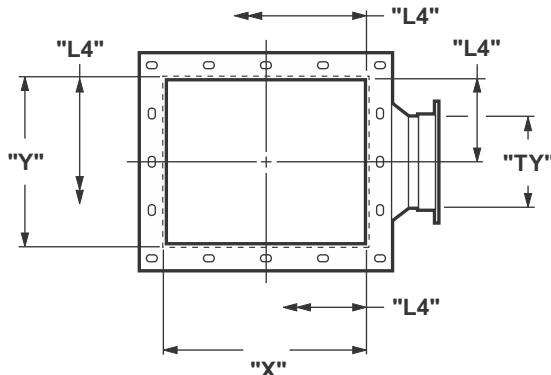
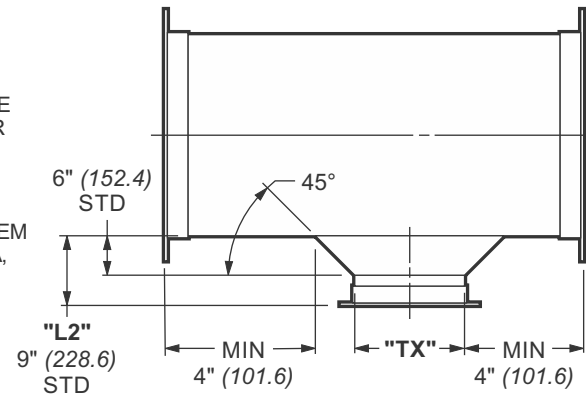
1. **OPTION:** CUSTOM LENGTH
2. **OPTION:** RAW END
3. INTERIOR STIFFENERS (1" SCH40 PIPE) ARE WELDED BETWEEN THE OPPOSITE MIDPOINTS OF THE DUCT FLANGE FOR DUCT WIDTH OR DEPTH OF 50" (1270.0) WIDE OR GREATER.
4. DUCT WIDTH OR DEPTH OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW.
5. GREATER THAN STANDARD DUCT LENGTHS AND/OR HIGHER SYSTEM PRESSURES MAY REQUIRE ADDITIONAL STIFFENERS PER SMACNA, SPECIFICATION GUIDELINES AVAILABLE.
6. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.



Straight Duct with Rectangular Conical Tap

NOTES:

1. **OPTION:** CUSTOM LENGTH
2. **OPTION:** RAW END
3. INTERIOR STIFFENERS (1" SCH40 PIPE) ARE WELDED BETWEEN THE OPPOSITE MIDPOINTS OF THE DUCT FLANGE FOR DUCT WIDTH OR DEPTH OF 50" (1270.0) WIDE OR GREATER.
4. DUCT WIDTH OR DEPTH OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW.
5. GREATER THAN STANDARD DUCT LENGTHS AND/OR HIGHER SYSTEM PRESSURES MAY REQUIRE ADDITIONAL STIFFENERS PER SMACNA, SPECIFICATION GUIDELINES AVAILABLE.
6. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

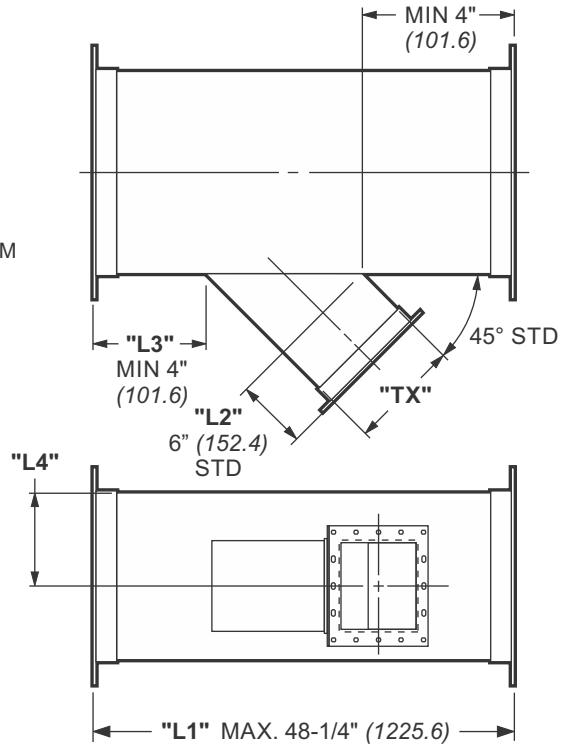
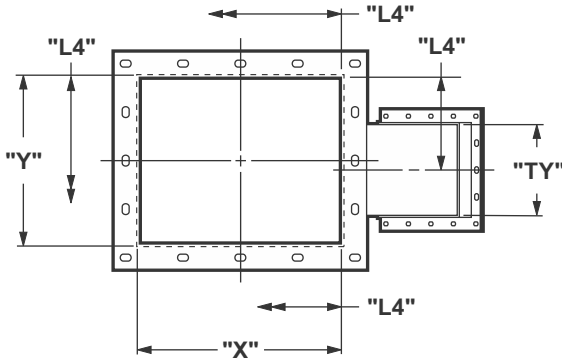


METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Straight Duct with Rectangular Lateral Tap

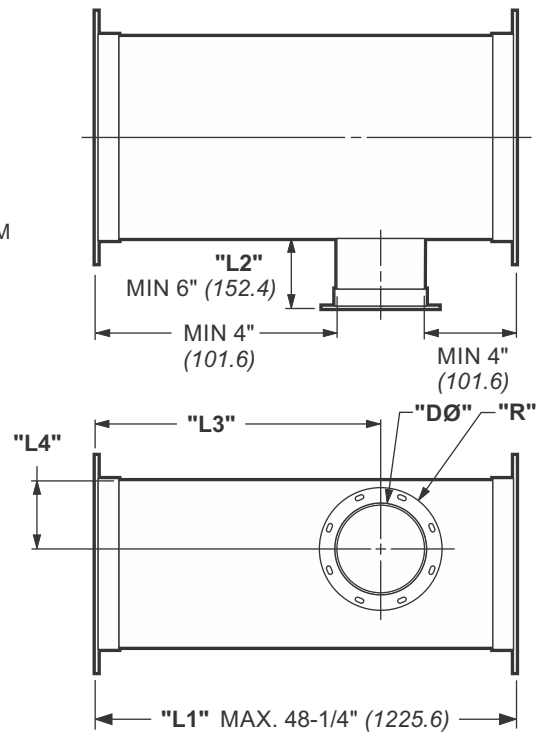
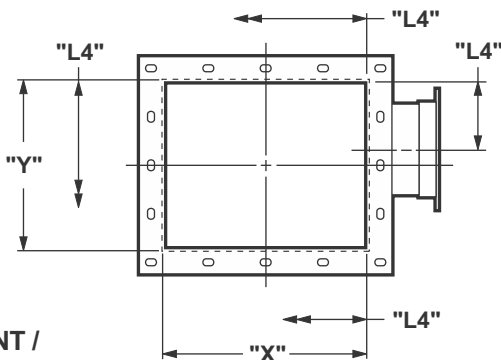
NOTES:

- OPTION:** CUSTOM LENGTH
- OPTION:** RAW END
- INTERIOR STIFFENERS (1" SCH40 PIPE) ARE WELDED BETWEEN THE OPPOSITE MIDPOINTS OF THE DUCT FLANGE FOR DUCT WIDTH OR DEPTH OF 50" (1270.0) WIDE OR GREATER.
- DUCT WIDTH OR DEPTH OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW.
- GREATER THAN STANDARD DUCT LENGTHS AND/OR HIGHER SYSTEM PRESSURES MAY REQUIRE ADDITIONAL STIFFENERS PER SMACNA, SPECIFICATION GUIDELINES AVAILABLE.
- ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.



NOTES:

- OPTION:** CUSTOM LENGTH
- OPTION:** RAW END
- INTERIOR STIFFENERS (1" SCH40 PIPE) ARE WELDED BETWEEN THE OPPOSITE MIDPOINTS OF THE DUCT FLANGE FOR DUCT WIDTH OR DEPTH OF 50" (1270.0) WIDE OR GREATER.
- DUCT WIDTH OR DEPTH OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW.
- GREATER THAN STANDARD DUCT LENGTHS AND/OR HIGHER SYSTEM PRESSURES MAY REQUIRE ADDITIONAL STIFFENERS PER SMACNA, SPECIFICATION GUIDELINES AVAILABLE.
- ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

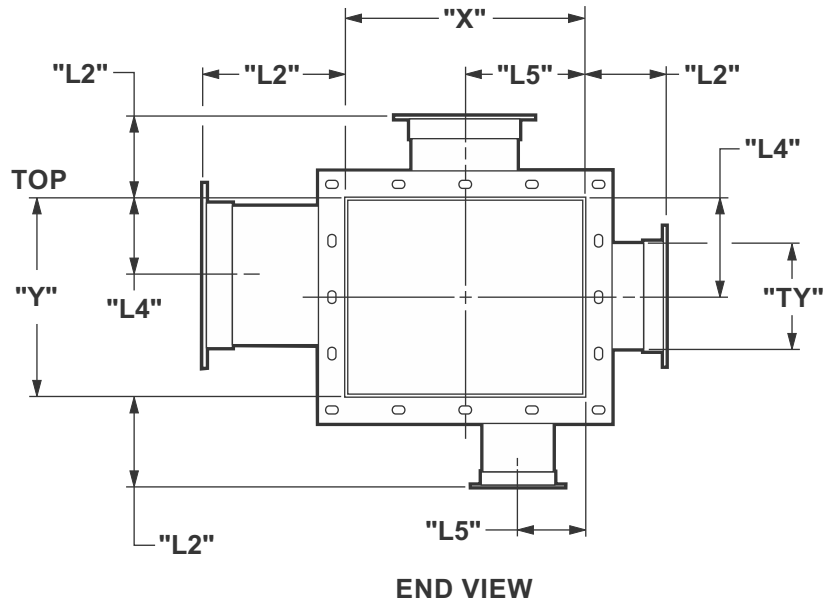
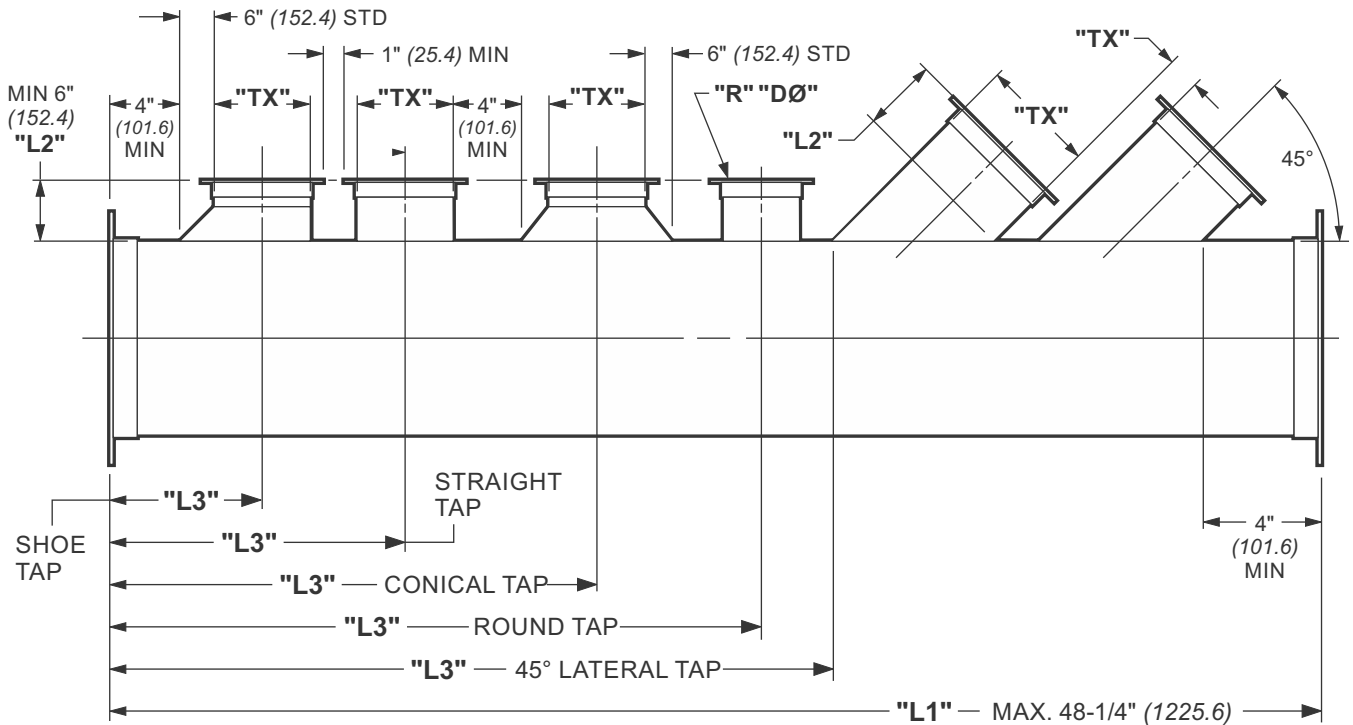


DUCT JOINT / RING TYPE

- | | | | |
|--|---|--|--|
| EZ EZ CLAMP
4"Ø-14"Ø (101.6 - 355.6) | SC STAINLESS CAST RING
4"Ø-14"Ø (101.6 - 355.6) | BI BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0) | SS STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2) |
|--|---|--|--|

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Straight Duct with Multiple Taps



DUCT JOINT / RING TYPE

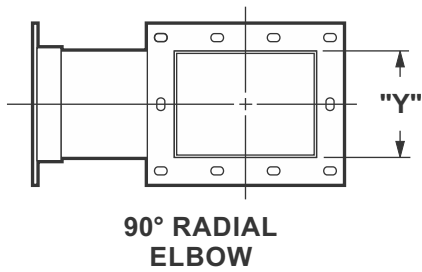
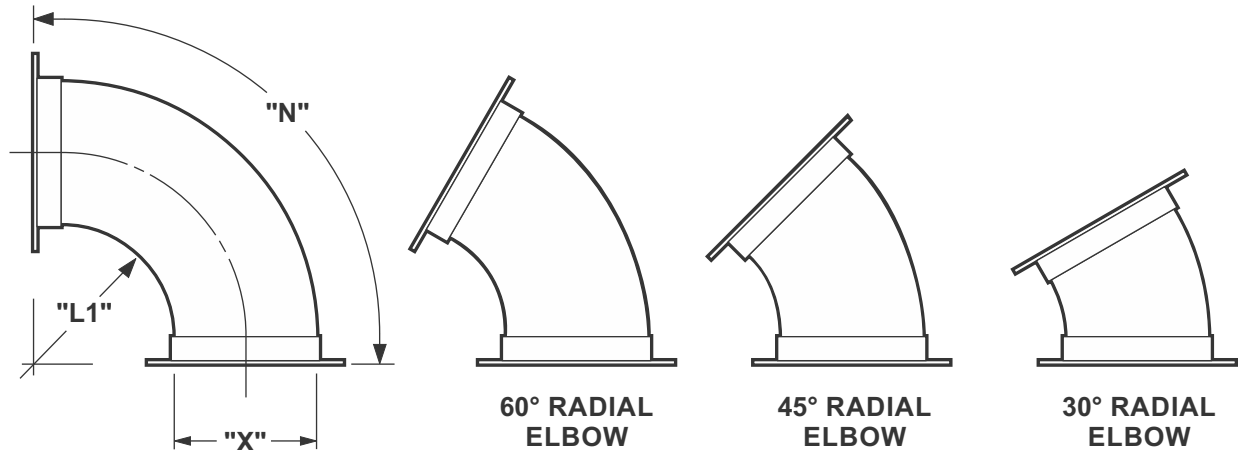
- EZ** EZ CLAMP
4"Ø-14"Ø (101.6 - 355.6)
- SC** STAINLESS CAST RING
4"Ø-14"Ø (101.6 - 355.6)
- BI** BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0)
- SS** STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2)

NOTES:

1. **OPTION:** CUSTOM LENGTH
2. **OPTION:** RAW END
3. INTERIOR STIFFENERS (1" SCH40 PIPE) ARE WELDED BETWEEN THE OPPOSITE MIDPOINTS OF THE DUCT FLANGE FOR DUCT WIDTH OR DEPTH OF 50" (1270.0) WIDE OR GREATER.
4. DUCT WIDTH OR DEPTH OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW.
5. GREATER THAN STANDARD DUCT LENGTHS AND/OR HIGHER SYSTEM PRESSURES MAY REQUIRE ADDITIONAL STIFFENERS PER SMACNA, SPECIFICATION GUIDELINES AVAILABLE.
6. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

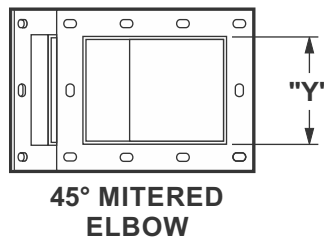
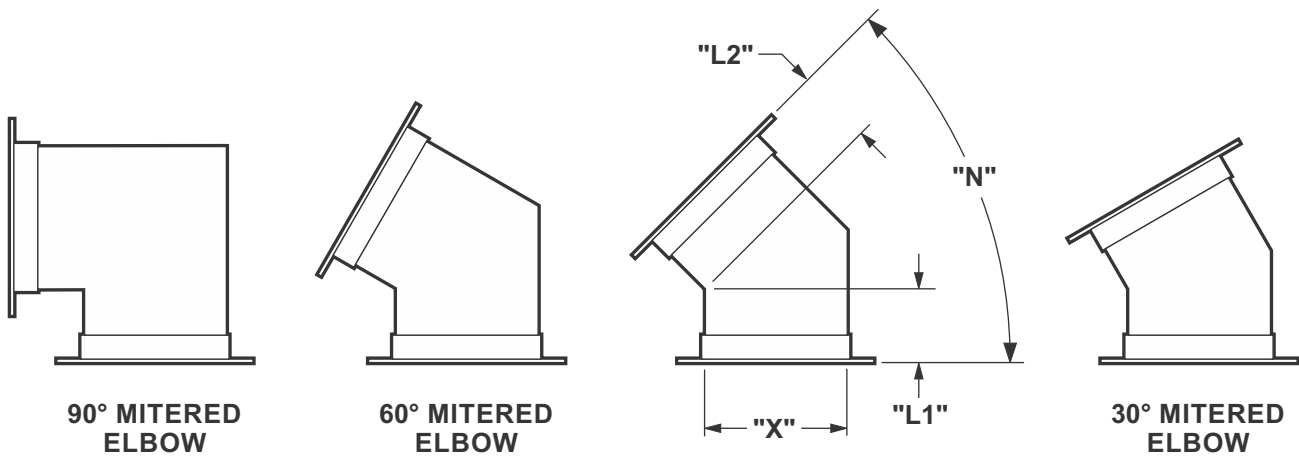
90°, 60°, 45°, 30° or Custom Elbow



NOTES:

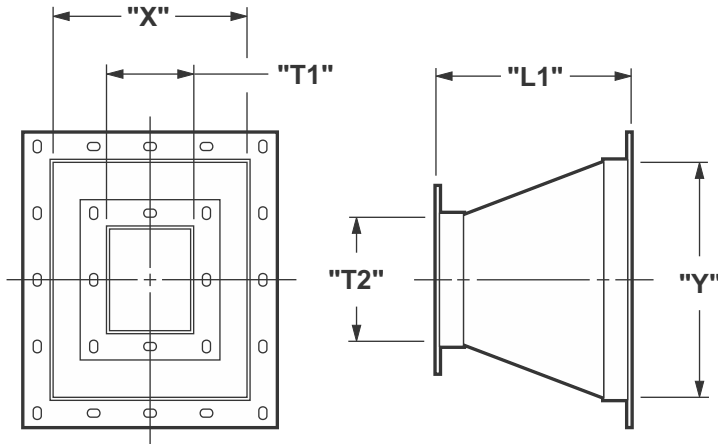
1. **OPTION:** RAW END
2. INTERIOR STIFFENERS (1" SCH40 PIPE) ARE WELDED BETWEEN THE OPPOSITE MIDPOINTS OF THE DUCT FLANGE FOR DUCT WIDTH OR DEPTH OF 50" (1270.0) WIDE OR GREATER.
3. DUCT WIDTH OR DEPTH OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW.
4. GREATER THAN STANDARD DUCT LENGTHS AND/OR HIGHER SYSTEM PRESSURES MAY REQUIRE ADDITIONAL STIFFENERS PER SMACNA, SPECIFICATION GUIDELINES AVAILABLE.
5. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

90°, 60°, 45°, 30° or Custom Mitered Elbow



METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

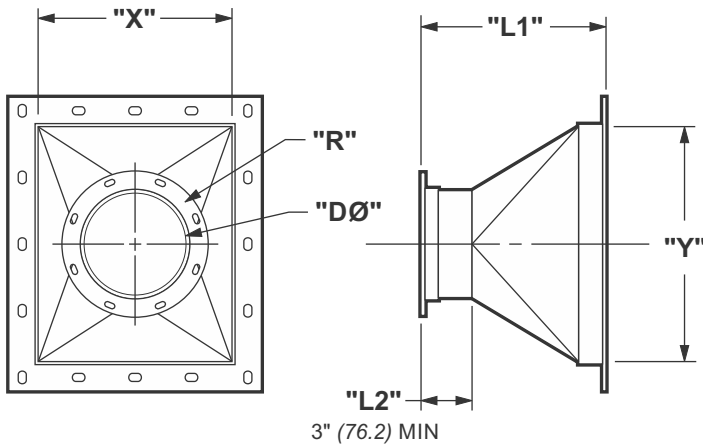
Concentric Transition



NOTES:

1. **OPTION:** RAW END
2. INTERIOR STIFFENERS (1" SCH40 PIPE) ARE WELDED BETWEEN THE OPPOSITE MIDPOINTS OF THE DUCT FLANGE FOR DUCT WIDTH OR DEPTH OF 50" (1270.0) WIDE OR GREATER.
3. DUCT WIDTH OR DEPTH OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW.
4. GREATER THAN STANDARD DUCT LENGTHS AND/OR HIGHER SYSTEM PRESSURES MAY REQUIRE ADDITIONAL STIFFENERS PER SMACNA, SPECIFICATION GUIDELINES AVAILABLE.
5. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.
6. FOR ECCENTRIC RECTANGULAR TO RECTANGULAR FITTING, USE THE CUSTOM FITTING ORDER SHEET.

Concentric Rectangular to Round Transition



NOTES:

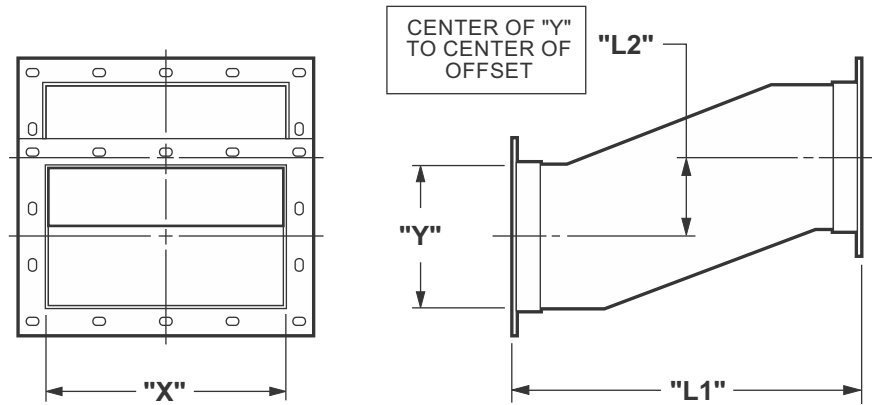
1. **OPTION:** RAW END
2. INTERIOR STIFFENERS (1" SCH40 PIPE) ARE WELDED BETWEEN THE OPPOSITE MIDPOINTS OF THE DUCT FLANGE FOR DUCT WIDTH OR DEPTH OF 50" (1270.0) WIDE OR GREATER.
3. DUCT WIDTH OR DEPTH OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW.
4. GREATER THAN STANDARD DUCT LENGTHS AND/OR HIGHER SYSTEM PRESSURES MAY REQUIRE ADDITIONAL STIFFENERS PER SMACNA, SPECIFICATION GUIDELINES AVAILABLE.
5. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.
6. FOR ECCENTRIC RECTANGULAR TO ROUND FITTING, USE THE CUSTOM FITTING ORDER SHEET.

DUCT JOINT / RING TYPE

- | | | | |
|--|---|--|--|
| EZ EZ CLAMP
4"Ø-14"Ø (101.6 - 355.6) | SC STAINLESS CAST RING
4"Ø-14"Ø (101.6 - 355.6) | BI BLACK IRON ANGLE RING
16"Ø-120"Ø (406.4 - 3048.0) | SS STAINLESS ANGLE RING
4"Ø-128"Ø (101.6 - 3251.2) |
|--|---|--|--|

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

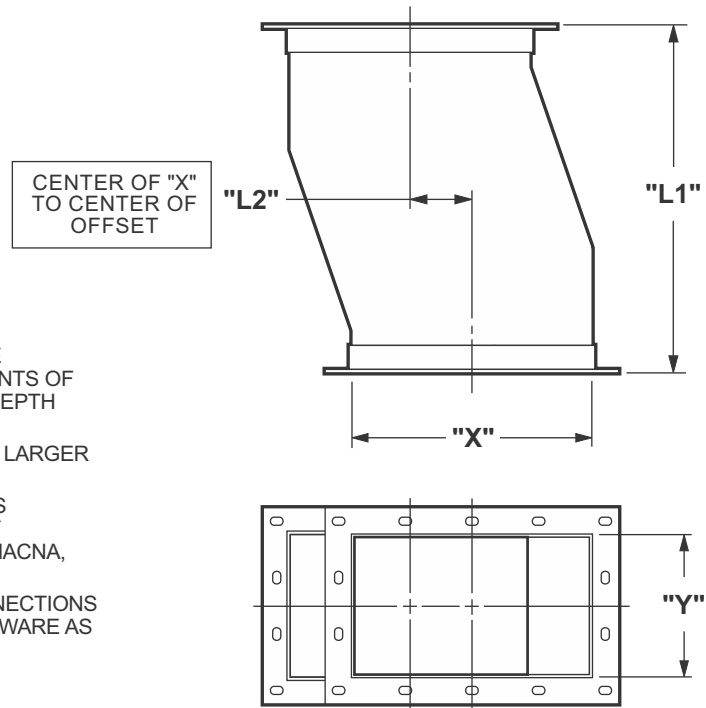
Vertical Offset



NOTES:

1. **OPTION:** RAW END
2. INTERIOR STIFFENERS (1" SCH40 PIPE) ARE WELDED BETWEEN THE OPPOSITE MIDPOINTS OF THE DUCT FLANGE FOR DUCT WIDTH OR DEPTH OF 50" (1270.0) WIDE OR GREATER.
3. DUCT WIDTH OR DEPTH OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW.
4. GREATER THAN STANDARD DUCT LENGTHS AND/OR HIGHER SYSTEM PRESSURES MAY REQUIRE ADDITIONAL STIFFENERS PER SMACNA, SPECIFICATION GUIDELINES AVAILABLE.
5. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

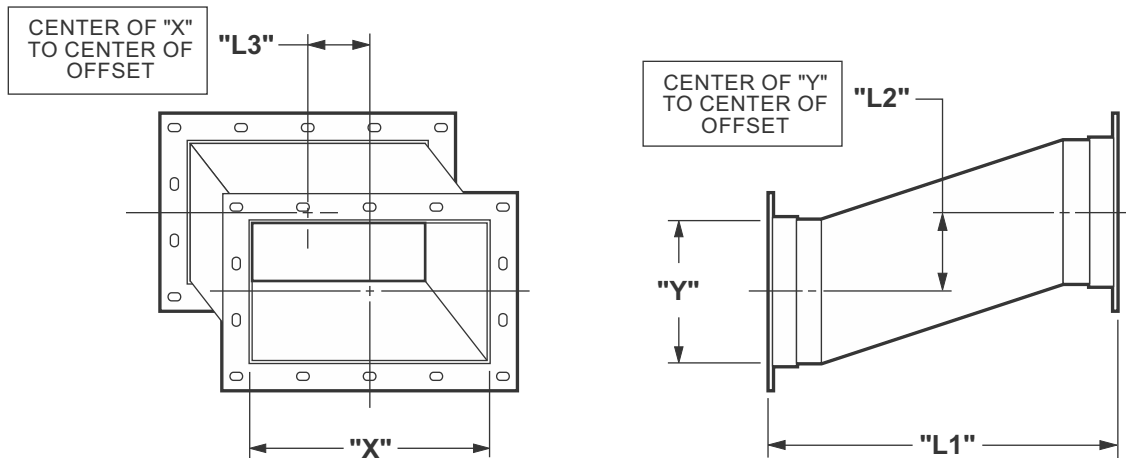
Horizontal Offset



NOTES:

1. **OPTION:** RAW END
2. INTERIOR STIFFENERS (1" SCH40 PIPE) ARE WELDED BETWEEN THE OPPOSITE MIDPOINTS OF THE DUCT FLANGE FOR DUCT WIDTH OR DEPTH OF 50" (1270.0) WIDE OR GREATER.
3. DUCT WIDTH OR DEPTH OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW.
4. GREATER THAN STANDARD DUCT LENGTHS AND/OR HIGHER SYSTEM PRESSURES MAY REQUIRE ADDITIONAL STIFFENERS PER SMACNA, SPECIFICATION GUIDELINES AVAILABLE.
5. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

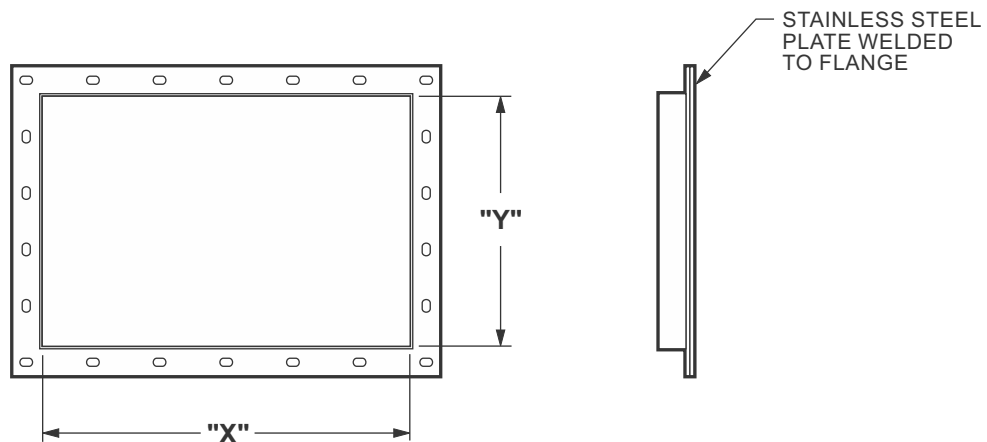
Double Offset



NOTES:

1. **OPTION:** RAW END
2. INTERIOR STIFFENERS (1" SCH40 PIPE) ARE WELDED BETWEEN THE OPPOSITE MIDPOINTS OF THE DUCT FLANGE FOR DUCT WIDTH OR DEPTH OF 50" (1270.0) WIDE OR GREATER.
3. DUCT WIDTH OR DEPTH OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW.
4. GREATER THAN STANDARD DUCT LENGTHS AND/OR HIGHER SYSTEM PRESSURES MAY REQUIRE ADDITIONAL STIFFENERS PER SMACNA, SPECIFICATION GUIDELINES AVAILABLE.
5. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

End Cap



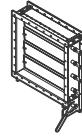
NOTES:

1. FLANGE MATERIAL WILL BE STAINLESS STEEL UNLESS OTHER MATERIAL IS SPECIFIED.
2. A STIFFENER (ANGLE MATERIAL MATCHING THE FRAME) IS ADDED AT THE FLANGE MIDPOINT OR WHERE AESTHETICALLY PLEASING FOR DUCT WIDTH OR DEPTH OF 50" (1270.0) AND GREATER (AS REQUIRED TO MEET MAXIMUM 4' (1219.2) SPACING).
3. DUCT WIDTH OR DEPTH OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW.
5. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

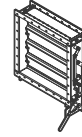
**RECTANGULAR
CONTROL
DEVICES**

INDUSTRIAL
RECTANGULAR
PARALLEL BLADE
CONTROL DAMPER



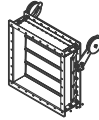
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INDUSTRIAL
RECTANGULAR
OPPOSED BLADE
CONTROL DAMPER



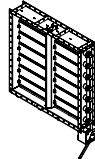
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INDUSTRIAL
RECTANGULAR
INDUSTRIAL
BACKDRAFT
DAMPER



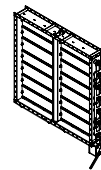
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HEAVY DUTY
RECTANGULAR
PARALLEL BLADE
CONTROL DAMPER



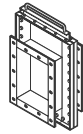
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HEAVY DUTY
RECTANGULAR
OPPOSED BLADE
CONTROL DAMPER



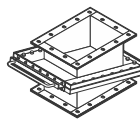
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HORIZONTAL
BLASTGATE



• PAGE: 97

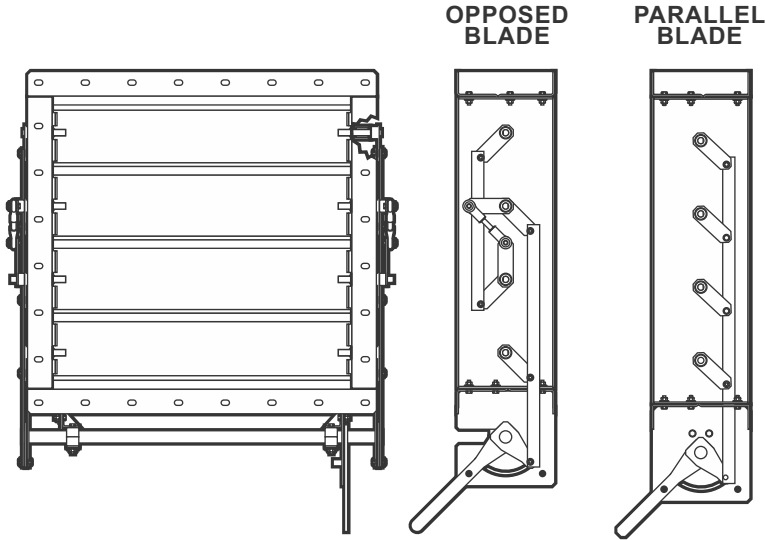
VERTICAL
BLASTGATE



• PAGE: 97

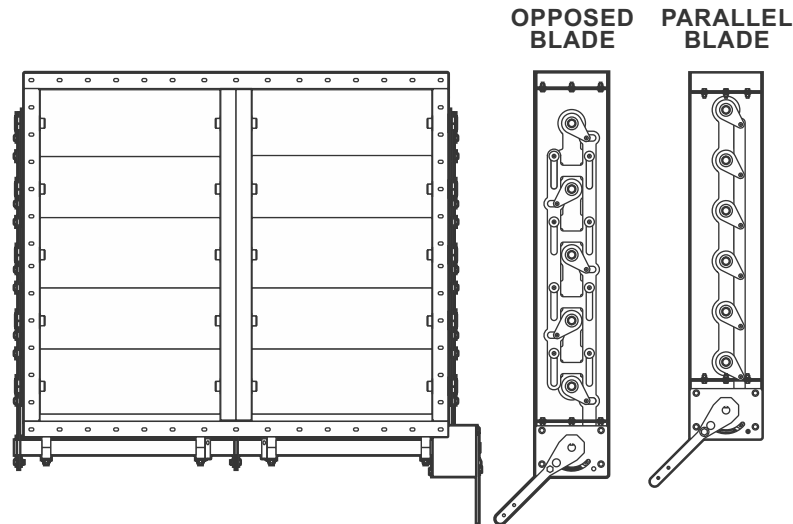
METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Rectangular Damper Comparison Chart



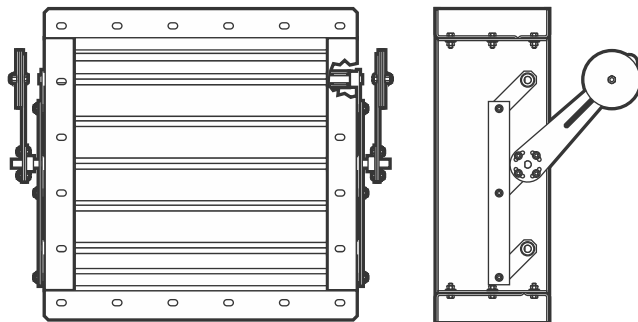
8"x8" (203.2) to 36"x36" (914.4)
INDUSTRIAL CONTROL DAMPERS
PARALLEL OR OPPOSED BLADE CONFIG.

- FRAME: 10GA (3.57) STAINLESS STEEL:
CENTER SUPPORTS AS REQUIRED
- FRAME LENGTH: 8" (203.2) STD
- COATING: PERMASHIELD FLUOROPOLYMER BARRIER
- JOINING SYSTEM: 2" (50.8) FLANGES
- MOUNTING HOLES: .562" (14.27) X .75" (19.05) SLOTS:
≤ 4" (101.6) ON CENTER
- BLADES: COATED 10GA (3.57) STAINLESS STEEL
- AXLES: .50" (12.7) DIA. STAINLESS STEEL
- SHAFT SEALS: LIQUID TIGHT
- LINKAGE: LOCATED OUTSIDE THE AIRSTREAM:
TWIN DRIVE AS REQUIRED
- QUADRANT PLATES: 10GA (3.57) STAINLESS STEEL
- QUADRANT LEVER: .25" (6.35) STAINLESS STEEL
- LOCKOUT: FULL OPEN / FULL CLOSE
- FRAME SEALS: PTFE
- ACTUATOR: MANUAL HANDLE
- OPTION:** CUSTOM ACTUATOR MOUNTING KIT
- OPTION:** BLANK ACTUATOR MOUNTING KIT
(PLATE & SHAFT ADAPTER) FOR
CUSTOMER SUPPLIED ACTUATOR
- OPTION:** PNEUMATIC ACTUATOR
- OPTION:** ELECTRIC ACTUATOR
- OPTION:** GEAR DRIVE WITH LOCKING DAMPER SHAFT



36"x36" (914.4) to 120"x120" (3048.0)
HEAVY DUTY CONTROL DAMPERS
PARALLEL OR OPPOSED BLADE CONFIG.

- FRAME: 10GA (3.57) STAINLESS STEEL - CENTER SUPPORT
WITH LINKAGE REQUIRED FOR BLADES LONGER
THAN 36" (914.4)
- FRAME LENGTH: 10" (254.0) STD
- COATING: PERMASHIELD FLUOROPOLYMER BARRIER
- JOINING SYSTEM: 2" (50.8) FLANGES
- MOUNTING HOLES: .562" (14.27) X .750" (19.05) SLOTS:
3" (76.2) TO 4" (101.6) ON CENTER
- BLADES: COATED 10GA (3.57) STAINLESS STEEL
- AXLES: 1.38" DIA. (35.1) STAINLESS STEEL
- SHAFT SEALS: LIQUID TIGHT
- QUADRANT PLATES: 10GA (3.57) STAINLESS STEEL
- QUADRANT LEVER: .25" (6.35) STAINLESS STEEL
- LOCKOUT: FULL OPEN / FULL CLOSE
- FRAME SEALS: PTFE
- ACTUATOR: MANUAL HANDLE
- OPTION:** ACTUATOR MOUNTING KIT
- OPTION:** BLANK MOUNTING KIT - PLATE & SHAFT ADAPTER
FOR CUSTOMER SUPPLIED ACTUATOR
- OPTION:** PNEUMATIC ACTUATOR
- OPTION:** GEAR DRIVE WITH LOCKING DAMPER SHAFT
- EXTERNAL LINKAGES: 10GA (3.57) STAINLESS STEEL
TWIN DRIVE AS REQUIRED



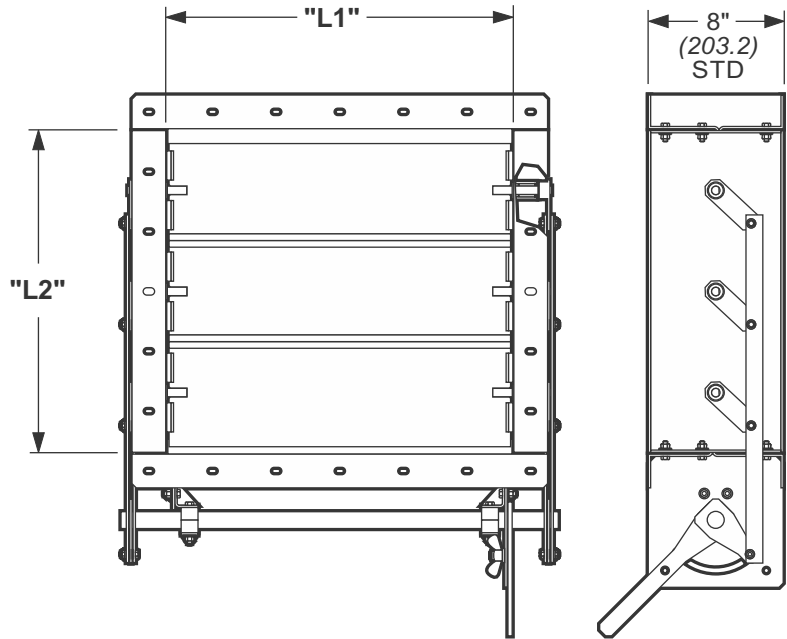
8"x8" (914.4) to 120"x120" (3048.0)
INDUSTRIAL BACKDRAFT DAMPER

- FRAME: 10GA (3.57) STAINLESS STEEL:
CENTER SUPPORTS AS REQUIRED
- FRAME LENGTH: 8" (203.2) STD
- COATING: PERMASHIELD FLUOROPOLYMER BARRIER
- JOINING SYSTEM: 2" (50.8) FLANGES
- MOUNTING HOLES: .562" (14.27) X .75" (19.05) SLOTS:
≤ 4" (101.6) ON CENTER
- BLADES: COATED 14GA (1.98) STAINLESS STEEL
- AXLES: .50" (12.7) DIA. STAINLESS STEEL
- SHAFT SEALS: LIQUID TIGHT
- FRAME SEALS: PTFE
- COUNTERWEIGHTS: MANUAL ADJUSTABLE
- LINKAGES: 10GA (3.57) STAINLESS STEEL
LOCATED OUTSIDE AIRSTREAM:
TWIN DRIVE AS REQUIRED

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Industrial Rectangular Parallel Blade Control Damper

SIZE: 8" X 8" (203.2) TO 36" X 36" (914.4)
FRAME: 10GA (3.57) STAINLESS STEEL:
 CENTER SUPPORTS AS REQUIRED
FRAME LENGTH: 8" (203.2) STD
COATING: PERMASHIELD FLUOROPOLYMER BARRIER
JOINING SYSTEM: 2" (50.8) FLANGES
MOUNTING HOLES: .562" (14.27) X .75" (19.05) SLOTS:
 ≤ 4" (101.6) ON CENTER
BLADES: COATED 10GA (3.57) STAINLESS STEEL
AXLES: .50" (12.7) DIA. STAINLESS STEEL
SHAFT SEALS: LIQUID TIGHT
LINKAGE: LOCATED OUTSIDE THE AIRSTREAM:
 TWIN DRIVE AS REQUIRED
QUADRANT PLATES: 10GA (3.57) STAINLESS STEEL
QUADRANT LEVER: .25" (6.35) STAINLESS STEEL
LOCKOUT: FULL OPEN / FULL CLOSE
FRAME SEALS: PTFE
ACTUATOR: MANUAL HANDLE
OPTION: CUSTOM ACTUATOR MOUNTING KIT
OPTION: BLANK ACTUATOR MOUNTING KIT
 (PLATE & SHAFT ADAPTER) FOR
 CUSTOMER SUPPLIED ACTUATOR
OPTION: PNEUMATIC ACTUATOR
OPTION: ELECTRIC ACTUATOR
OPTION: GEAR DRIVE WITH LOCKING DAMPER SHAFT

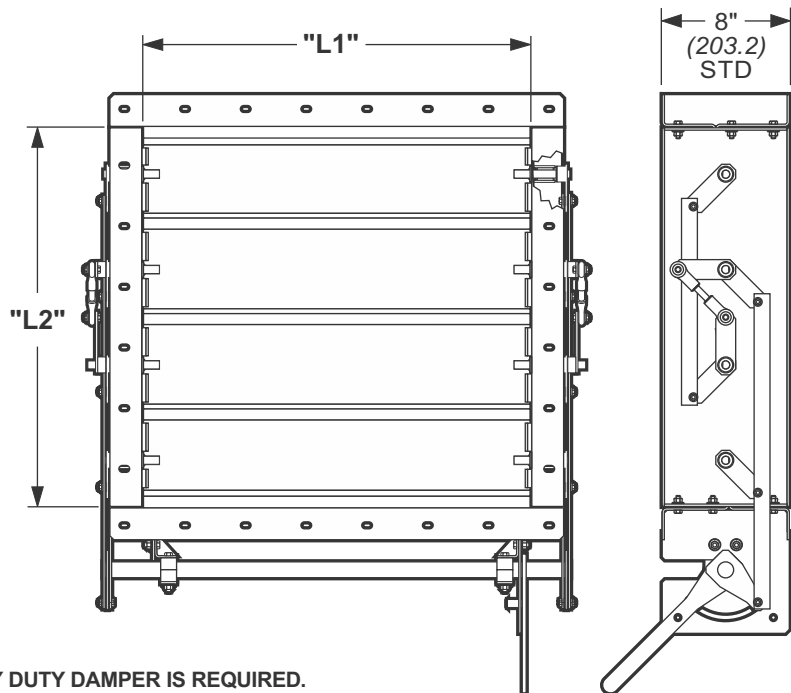


NOTES:

1. FOR "L1" OR "L2" LONGER THAN 36" (914.4) - **HEAVY DUTY DAMPER IS REQUIRED.**
2. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

Industrial Rectangular Opposed Blade Control Damper

SIZE: 8" X 8" (203.2) TO 36" X 36" (914.4)
FRAME: 10GA (3.57) STAINLESS STEEL:
 CENTER SUPPORTS AS REQUIRED
FRAME LENGTH: 8" (203.2) STD
COATING: PERMASHIELD FLUOROPOLYMER BARRIER
JOINING SYSTEM: 2" (50.8) FLANGES
MOUNTING HOLES: .562" (14.27) X .75" (19.05) SLOTS:
 ≤ 4" (101.6) ON CENTER
BLADES: COATED 10GA (3.57) STAINLESS STEEL
AXLES: .50" (12.7) DIA. STAINLESS STEEL
SHAFT SEALS: LIQUID TIGHT
LINKAGE: LOCATED OUTSIDE THE AIRSTREAM:
 TWIN DRIVE AS REQUIRED
QUADRANT PLATES: 10GA (3.57) STAINLESS STEEL
QUADRANT LEVER: .25" (6.35) STAINLESS STEEL
LOCKOUT: FULL OPEN / FULL CLOSE
FRAME SEALS: PTFE
ACTUATOR: MANUAL HANDLE
OPTION: CUSTOM ACTUATOR MOUNTING KIT
OPTION: BLANK ACTUATOR MOUNTING KIT
 (PLATE & SHAFT ADAPTER) FOR
 CUSTOMER SUPPLIED ACTUATOR
OPTION: PNEUMATIC ACTUATOR
OPTION: ELECTRIC ACTUATOR
OPTION: GEAR DRIVE WITH LOCKING DAMPER SHAFT

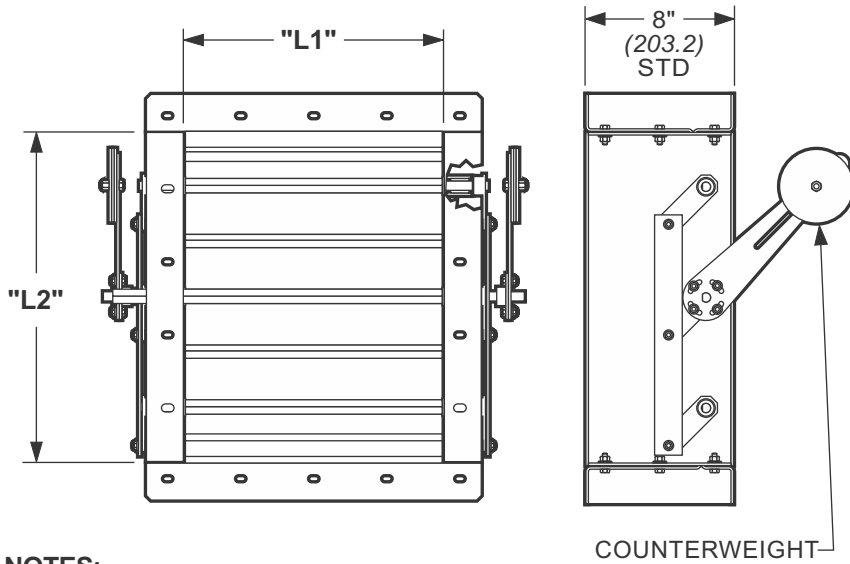


NOTES:

1. FOR "L1" OR "L2" LONGER THAN 36" (914.4) - **HEAVY DUTY DAMPER IS REQUIRED.**
2. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

Industrial Rectangular Backdraft Damper



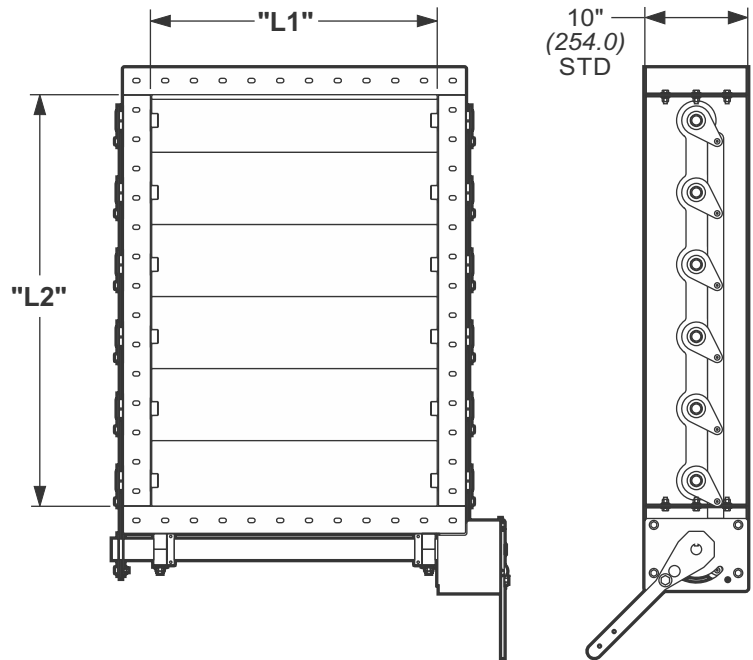
SIZE: 8" X 8" (914.4) TO 120" X 120" (3048.0)
FRAME: 10GA (3.57) STAINLESS STEEL:
 CENTER SUPPORTS AS REQUIRED
FRAME LENGTH: 8" (203.2) STD
COATING: PERMASHIELD FLUOROPOLYMER
 BARRIER COATING
JOINING SYSTEM: 2" (50.8) FLANGES
MOUNTING HOLES: .562" (14.27) X .75" (19.05) SLOTS:
 ≤ 4" (101.6) ON CENTER
BLADES: COATED 14GA (1.98) STAINLESS STEEL
AXLES: .50" (12.7) DIA. STAINLESS STEEL
SHAFT SEALS: LIQUID TIGHT
FRAME SEALS: PTFE
COUNTERWEIGHTS: MANUAL ADJUSTABLE
LINKAGES: 10GA (3.57) STAINLESS STEEL
 LOCATED OUTSIDE AIRSTREAM:
 TWIN DRIVE AS REQUIRED

NOTES:

1. CENTER SUPPORT REQUIRED FOR BLADES LONGER THAN 36" (914.4) ("L1")
2. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

Heavy Duty Rectangular Parallel Blade Control Damper

- SIZE:** 36" X 36" (914.4) X 120" X 120" (3048.0)
FRAME: 10GA (3.57) STAINLESS STEEL:
 CENTER SUPPORTS WITH LINKAGE AS REQUIRED
 FOR BLADES LONGER THAN 36" (914.4)
FRAME LENGTH: 10" (254.0) STD
COATING: PERMASHIELD FLUOROPOLYMER BARRIER
JOINING SYSTEM: 2" (50.8) FLANGES
MOUNTING HOLES: .562" (14.27) X .75" (19.05) SLOTS:
 3" (76.2) TO 4" (101.6) ON CENTER
BLADES: COATED 10GA (3.57) STAINLESS STEEL
AXLES: 1.38" (35.05) DIA. STAINLESS STEEL
SHAFT SEALS: LIQUID TIGHT
LINKAGE: 10GA (3.57) STAINLESS STEEL
 LOCATED OUTSIDE THE AIRSTREAM:
 TWIN DRIVE AS REQUIRED
QUADRANT PLATES: 10GA (3.57) STAINLESS STEEL
QUADRANT LEVER: .25" (6.35) STAINLESS STEEL
LOCKOUT: FULL OPEN / FULL CLOSE
FRAME SEALS: PTFE
ACTUATOR: MANUAL HANDLE
OPTION: CUSTOM ACTUATOR MOUNTING KIT
OPTION: BLANK ACTUATOR MOUNTING KIT
 (PLATE & SHAFT ADAPTER) FOR
 CUSTOMER SUPPLIED ACTUATOR
OPTION: PNEUMATIC ACTUATOR
OPTION: ELECTRIC ACTUATOR
OPTION: GEAR DRIVE WITH LOCKING DAMPER SHAFT

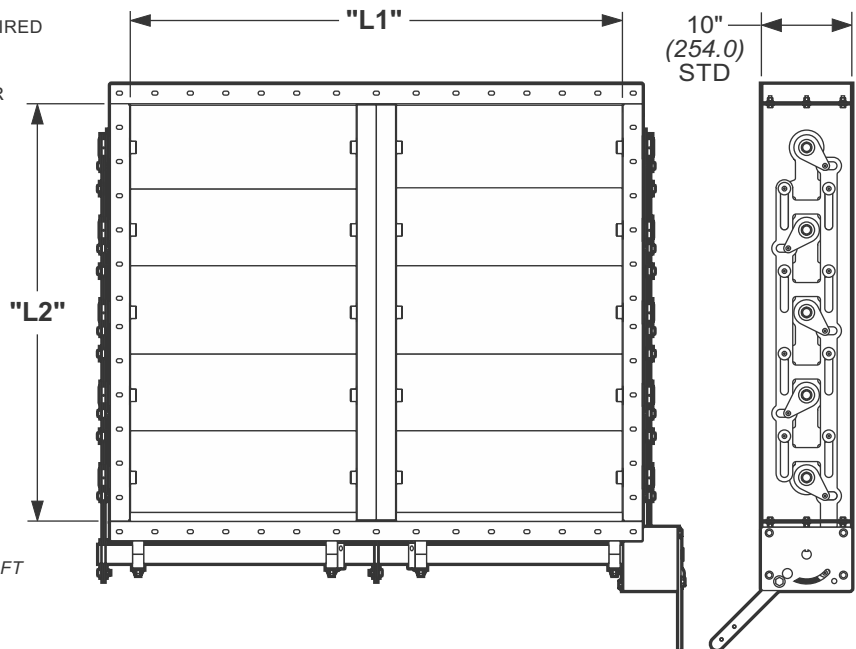


NOTES:

1. CENTER SUPPORT W/ CENTER LINKAGE REQUIRED FOR BLADES LONGER THAN 36" (914.4) ("L1").
2. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

Heavy Duty Rectangular Opposed Blade Control Damper

- SIZE:** 36" X 36" (914.4) X 120" X 120" (3048.0)
FRAME: 10GA (3.57) STAINLESS STEEL:
 CENTER SUPPORTS WITH LINKAGE AS REQUIRED
 FOR BLADES LONGER THAN 36" (914.4)
FRAME LENGTH: 10" (254.0) STD
COATING: PERMASHIELD FLUOROPOLYMER BARRIER
JOINING SYSTEM: 2" (50.8) FLANGES
MOUNTING HOLES: .562" (14.27) X .75" (19.05) SLOTS:
 3" (76.2) TO 4" (101.6) ON CENTER
BLADES: COATED 10GA (3.57) STAINLESS STEEL
AXLES: 1.38" (35.05) DIA. STAINLESS STEEL
SHAFT SEALS: LIQUID TIGHT
LINKAGE: 10GA (3.57) STAINLESS STEEL
 LOCATED OUTSIDE THE AIRSTREAM:
 TWIN DRIVE AS REQUIRED
QUADRANT PLATES: 10GA (3.57) STAINLESS STEEL
QUADRANT LEVER: .25" (6.35) STAINLESS STEEL
LOCKOUT: FULL OPEN / FULL CLOSE
FRAME SEALS: PTFE
ACTUATOR: MANUAL HANDLE
OPTION: CUSTOM ACTUATOR MOUNTING KIT
OPTION: BLANK ACTUATOR MOUNTING KIT
 (PLATE & SHAFT ADAPTER) FOR
 CUSTOMER SUPPLIED ACTUATOR
OPTION: PNEUMATIC ACTUATOR
OPTION: ELECTRIC ACTUATOR
OPTION: GEAR DRIVE WITH LOCKING DAMPER SHAFT

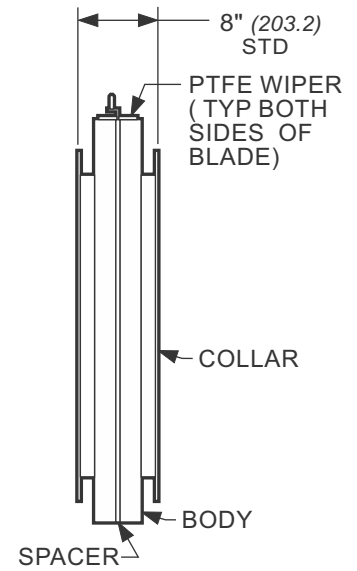
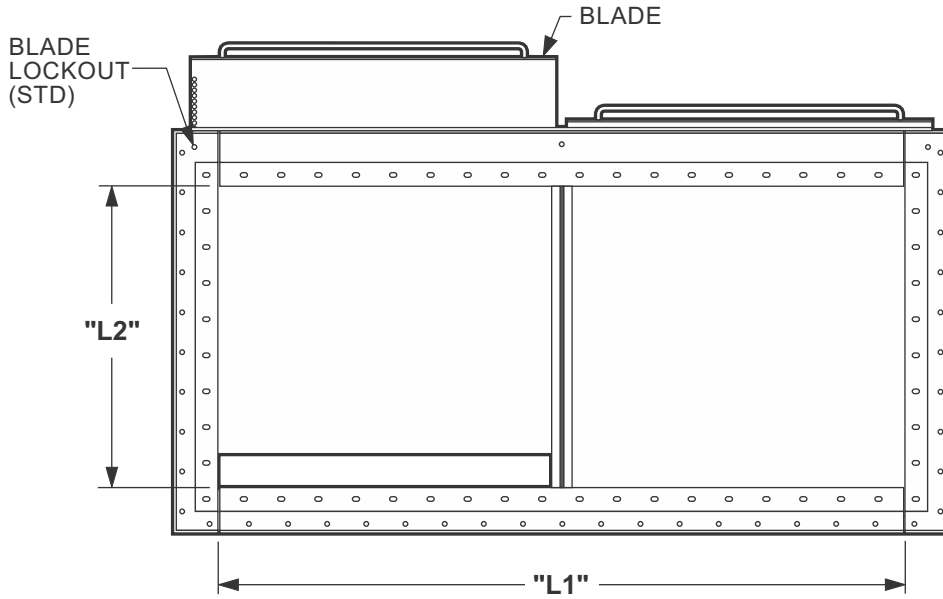


NOTES:

1. CENTER SUPPORT W/ CENTER LINKAGE REQUIRED FOR BLADES LONGER THAN 36" (914.4) ("L1").
2. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)

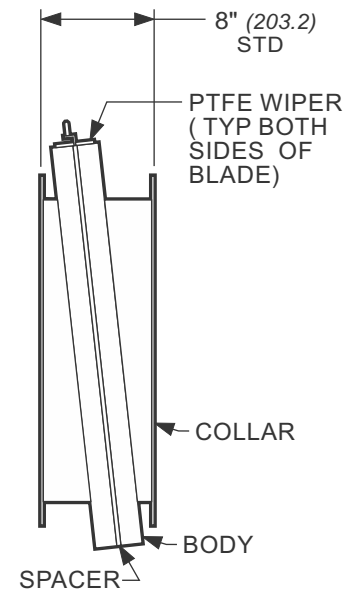
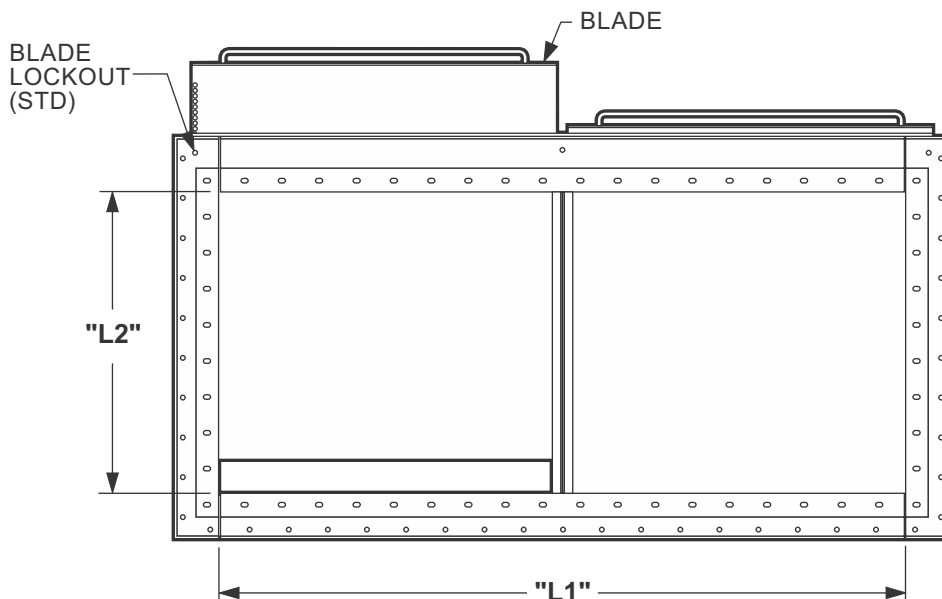
Horizontal Blastgate



NOTES:

1. STAINLESS STEEL BODY, RINGS AND BLADES - BLADE LOCKOUT SYSTEM.
2. CENTER SUPPORT REQUIRED FOR BLADES LONGER THAN 36" (914.4) ("L1").
3. DUCT WIDTH OR DEPTH OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW.
4. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

Vertical Blastgate



NOTES:

1. STAINLESS STEEL BODY, RINGS AND BLADES - BLADE LOCKOUT SYSTEM.
2. CENTER SUPPORT REQUIRED FOR BLADES LONGER THAN 36" (914.4) ("L1").
3. DUCT WIDTH OR DEPTH OF 98" (2489.2) AND LARGER REQUIRES ENGINEERING REVIEW.
4. ALL DUCT FITTINGS WITH STANDARD CONNECTIONS INCLUDE GASKETS AND CLAMPS OR HARDWARE AS REQUIRED FOR INSTALLATION.

METRIC EQUIVALENTS ARE SHOWN IN PARENTHESIS & ITALICS (MILLIMETERS OR AS NOTED)