

Single Wall Round Spiral Duct and Fittings Construction Standards

Positive Pressure

Gauge selection for G90 galvanized steel (ASTM A653), paint grip steel (A40), type 304 stainless steel, and poly coated steel (PCS/PVC).*

Fittings are spot welded and/or gorelocked through 40" diameter. All larger fittings are continuously welded except for PCS/PVC fittings. All fittings can be provided as continuously welded if required.

Duct Diameter	2005 SMACNA 10" WG		1995 SMACNA 2" WG		1995 SMACNA 10" WG	
	Spiral Pipe	Fittings	Spiral Pipe	Fittings	Spiral Pipe	Fittings
3"-6"	26	26	26	26	26	26
7"-8"	26	26	26	26	26	26
9"-10"	26	26	26	26	26	26
12"	26	26	26	26	26	24
14"	26	26	26	26	26	24
16"	26	26	24	24	24	22
18"	26	26	24	24	24	22
20"-24"	26	24	24	24	24	22
26"	24	22	24	24	24	22
28"-36"	24	22	24	22	22	20
38"-42"	24	22	22	20	22	20
44"-48"	22	20	22	20	20	20
50"	22	20	22	20	20	20
52"-60"	22	20	20	18	18	18
62"-66"	22	18	18	16	18	16
68"-84"	20	18	18	16	18	16

Duct Diameter	2005 SMACNA 10" WG		1995 SMACNA 2" WG		1995 SMACNA 10" WG	
	Spiral Pipe	Fittings	Spiral Pipe	Fittings	Spiral Pipe	Fittings
3"-8"	26	26	26	24	26	20
9"-14"	26	26	26	24	26	20
16"-26"	24	24	24	22	24	20
28"-36"	24	22	22	20	22	20
38"-50"	22	20	20	20	20	18
52"-60"	20	18	18	18	18	18
62"-84"	18	16	18	16	18	16

Gauge selection for aluminum type 3003.

Fittings are spot welded and/or gorelocked through 40" diameter. All larger fittings are continuously welded. All fittings can be provided as continuously welded if required.

Duct Diameter	2005 SMACNA 10" WG: POSITIVE		2005 SMACNA 2" WG: NEGATIVE	
	Spiral Pipe	Fittings	Spiral Pipe	Fittings
3"-8"	0.025"	0.032"	0.025"	0.040"
9"-14"	0.025"	0.032"	0.032"	0.040"
16"-26"	0.032"	0.040"	0.040"	0.050"
28"-36"	0.040"	0.050"	0.050"	0.063"
38"-50"	0.050"	0.063"	0.063"	0.071"
52"-60"	0.063"	0.071"	consult factory	0.090"
62"-84"	consult factory	0.090"	consult factory	consult factory

Single Wall Round Spiral Duct and Fittings Construction Standards

Negative Pressure

Gauge selection for galvanized steel (ASTM A653), paint grip steel (A40), type 304 stainless steel, and poly coated steel (PCS/PVC).*

Fittings are spot welded and/or gorelocked through 40" diameter. All larger fittings are continuously welded except for PCS/PVC fittings. All fittings can be provided as continuously welded if required.

Max. Duct Diam.	2005 SMACNA 2" WG				2005 SMACNA 4" WG				2005 SMACNA 6" WG			
	Spiral Pipe	Rein. & Spacing	Fittings	Rein. & Spacing	Spiral Pipe	Rein. & Spacing	Fittings	Rein. & Spacing	Spiral Pipe	Rein. & Spacing	Fittings	Rein. & Spacing
6"	26		26		26		26		26		26	
8"	26		26		26		26		26		26	
10"	26		26		26		26		26		26	
12"	26		26		26		24		24		24	
14"	26		24		24		22		24		22	
16"	26		24		24		22		26	A12	22	A12
18"	26	A12	24	A12	26	A12	24	A12	26	A12	22	A12
20"	26	A12	24	A12	26	A12	24	A12	26	A12	22	A12
22"	26	A12	24	A12	26	A12	24	A12	24	A12	22	A12
24"	26	A12	24	A12	26	A12	24	A12	24	A12	22	A12
30"	26	A12	24	A12	24	A12	22	A12	24	A12	20	A12
36"	26	A12	24	A12	24	A12	22	A12	22	B12	20	B12
42"	26	A12	22	A12	22	B12	20	B12	22	B12	18	B12
48"	24	A12	22	A12	22	B12	20	B12	20	B12	18	B12
54"	24	B12	22	B12	22	B12	18	B12	20	C12	18	C12
60"	24	B12	22	B12	22	C12	18	C12	20	C12	18	C12
66"	24	B12	20	B12	20	C12	18	C12	18	E12	16	E12
72"	22	B12	20	B12	20	D12	18	D12	18	E12	16	E12
78"	22	C12	20	C12	20	E12	18	E12	18	E12	16	E12
84"	22	C12	20	C12	20	E12	18	E12	18	F12	16	F12
90"	22	D12	18	D12	18	E12	16	E12	18	G12	16	G12
96"	22	E12	18	E12	18	E12	16	E12	18	G12	16	G12

Max. Duct Diam.	2005 SMACNA 10" WG				2005 SMACNA 2" WG				RIDCS CLASS 12" WG			
	Spiral Pipe	Rein. & Spacing	Fittings	Rein. & Spacing	Spiral Pipe	Rein. & Spacing	Fittings	Rein. & Spacing	Spiral Pipe	Rein. & Spacing	Fittings	Rein. & Spacing
6"	26		26		26		24		22		22	
8"	26		24		26		24		22		22	
10"	26		24		26		24		22		22	
12"	24		22		26		24		22		22	
14"	24	A12	22	A12	26		24		22		22	
16"	24	A12	22	A12	24		22		22		22	
18"	24	A12	22	A12	24		22		20		20	F1 20
20"	24	A12	22	A12	24		22		20		20	F1 20
22"	24	A12	20	A12	24		22		18		20	F1 20
24"	22	A12	20	A12	24		20		18		20	F1 20
30"	22	A12	18	A12	22		20		16		18	F1 20
36"	20	B12	18	B12	22		20		16		16	F1 12
42"	20	B12	18	B12	20		18		20	F1 12	16	F1 12
48"	18	C12	16	C12	20		18		20	F1 12	14	F1 12
54"	18	D12	16	D12	18		16		20	F1 12	14	F1 12
60"	18	E12	16	E12	18		16		18	F1 12	12	F1 12
66"	18	E12	16	E10	16		14		18	F1 12	12	F1 12
72"	18	E12	16	F10	16		14		18	F1 12	12	F1 12
78"	16	G12	16	G6	16		14		18	F1 12	10	F1 12
84"	16	G12	16	G6	16		14		18	F1 12	10	F1 12
90"	16	G12	16	G6	N/A		N/A		18	F1 12	10	F1 12
96"	16	G12	16	G6	N/A		N/A		18	F1 12	10	F1 12

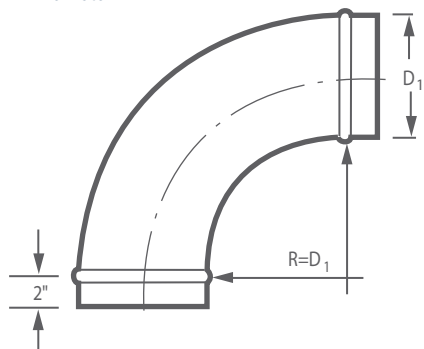
A, B, C, D, E, F, G = Angle ring reinforcements per SMACNA 2005 HVAC DCS Table 3-2

F1 = F1 reinforcement per SMACNA RIDCS, Chapter 12

* Refer to note on the bottom of page 2.

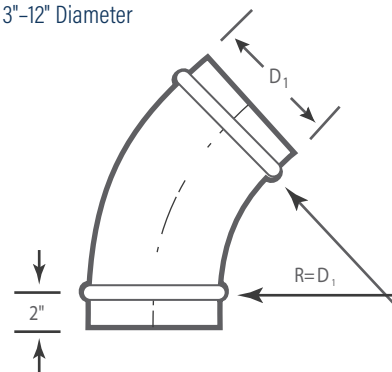
90° Pressed Elbow

3"-12" Diameter

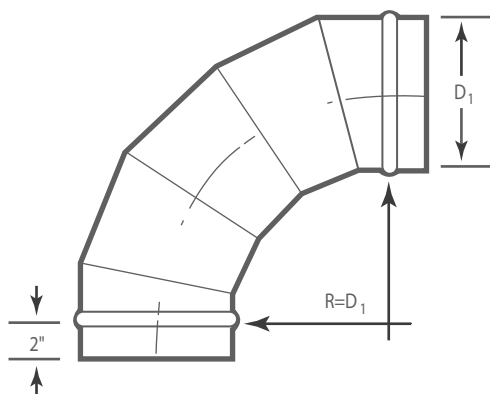


45° Pressed Elbow

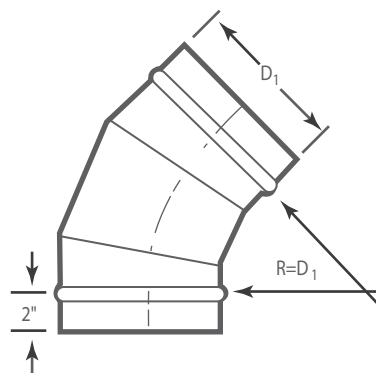
3"-12" Diameter



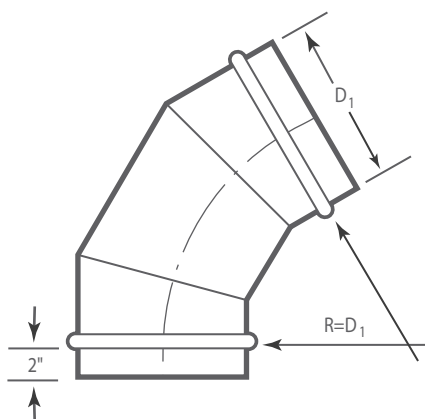
90° 5-Piece Gored Elbow



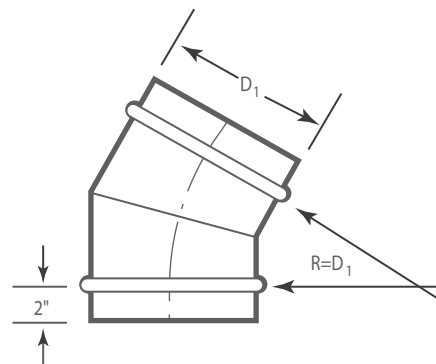
45° 3-Piece Gored Elbow



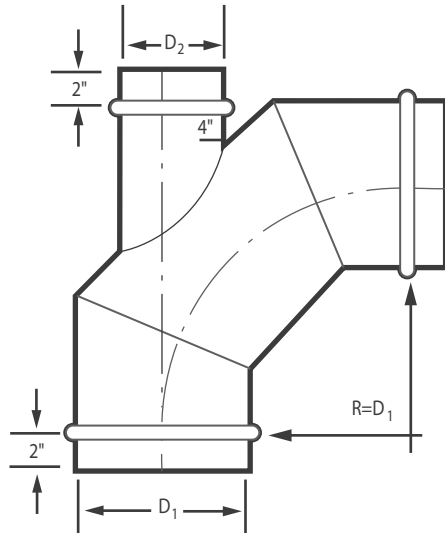
60° 3-Piece Gored Elbow



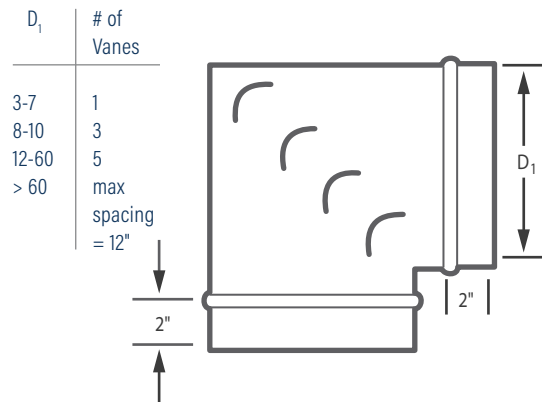
22½° and 30° 2-Piece Gored Elbow



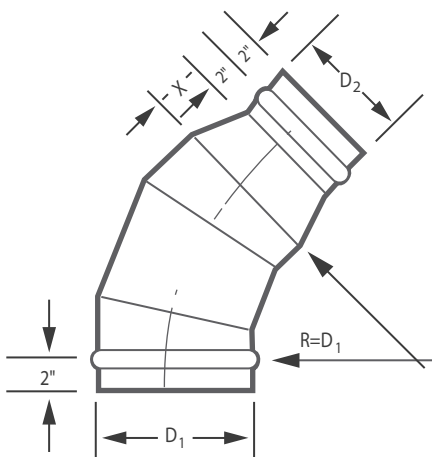
90° 3-Piece Elbow with Heel Tap



90° 2-Piece Mitered Elbow

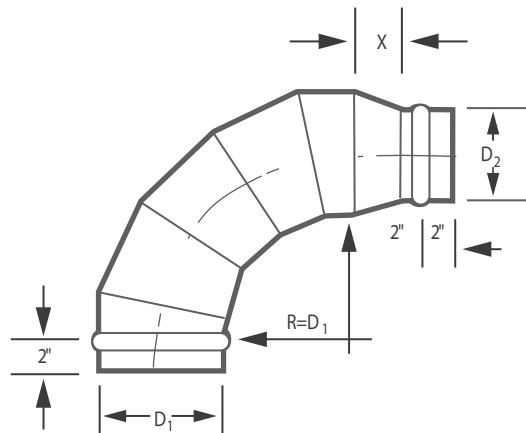


45° 3-Piece Elbow with Reducer



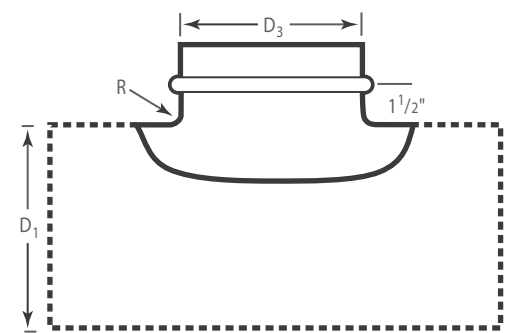
$X = D_1 - D_2$
4" Minimum

90° 5-Piece Elbow with Reducer



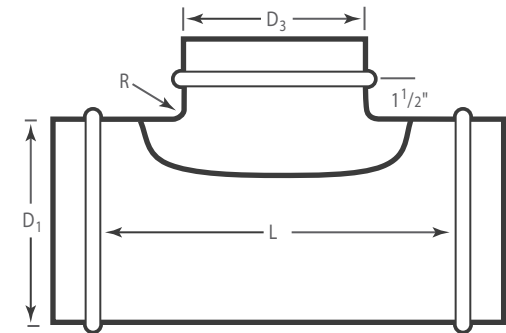
$X = D_1 - D_2$
4" Minimum

Field Installed Pressed Tap



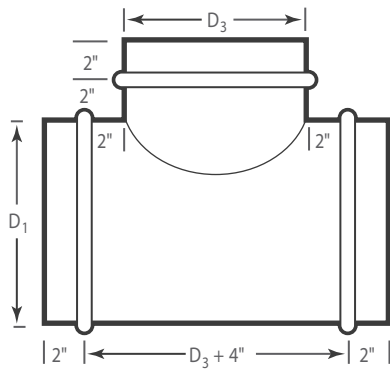
D ₃ /D ₁	R	L (PT)
4"/4"	.394"	14"
4"/6"	.394"	14"
4"/8"	.394"	14"
4"/10"	.394"	14"
4"/12"	.394"	14"
6"/6"	.787"	16"
6"/8"	.787"	16"
6"/10"	.787"	16"
6"/12"	.787"	16"
6"/14"	.787"	16"
6"/16"	.787"	16"
6"/18"	.787"	16"
8"/8"	.787"	18"
8"/10"	.787"	18"
8"/12"	.787"	18"
8"/14"	.787"	18"
8"/16"	.787"	18"
8"/18"	.787"	18"
8"/20"	.787"	18"
8"/22"	.787"	18"
8"/24"	1.0"	20"
10"/10"	1.0"	20"
10"/12"	1.0"	20"
10"/14"	1.0"	20"
10"/16"	1.0"	20"
10"/18"	1.0"	20"
10"/20"	1.0"	20"
10"/22"	1.0"	20"
10"/24"	1.0"	20"
12"/12"	1.0"	22"
12"/14"	1.0"	22"
12"/16"	1.0"	22"
12"/18"	1.0"	22"
12"/20"	1.0"	22"
12"/22"	1.0"	22"
12"/24"	1.0"	22"

Pressed Tee

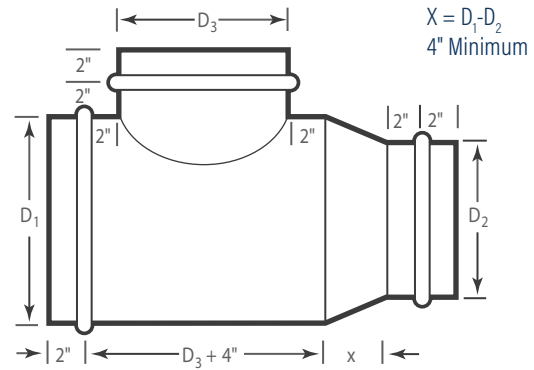


Straight Tees

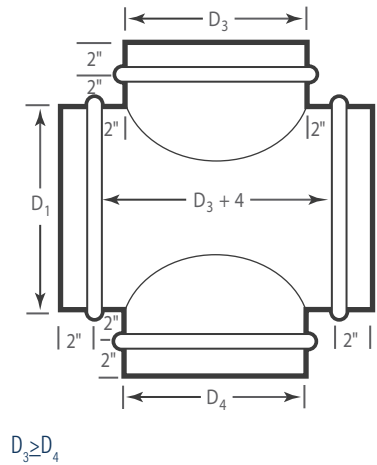
Tee



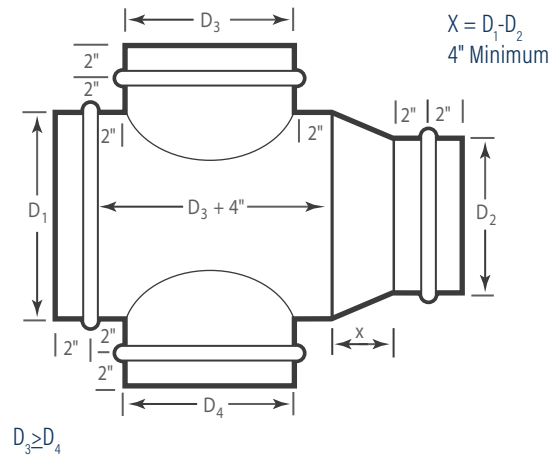
Reducing Tee



Cross Tee

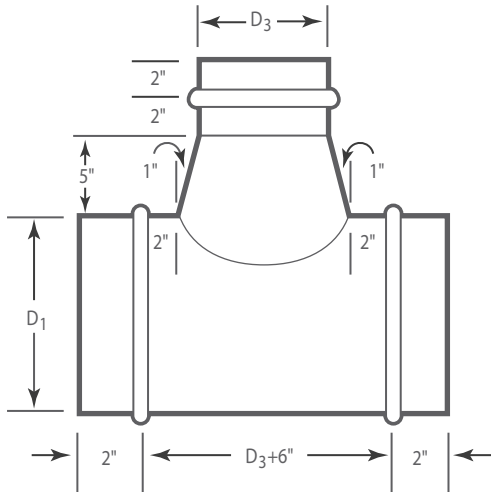


Reducing Cross Tee

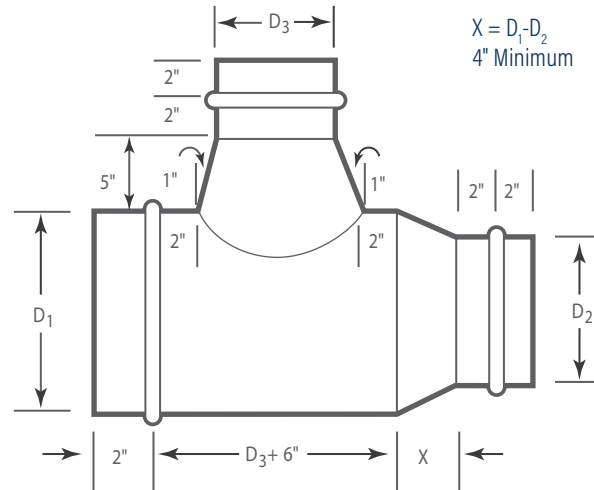


Conical Tees

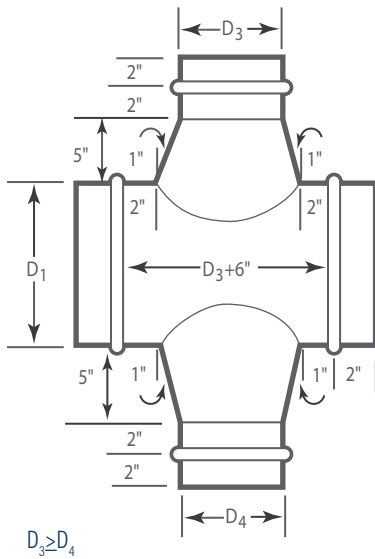
Conical Tee



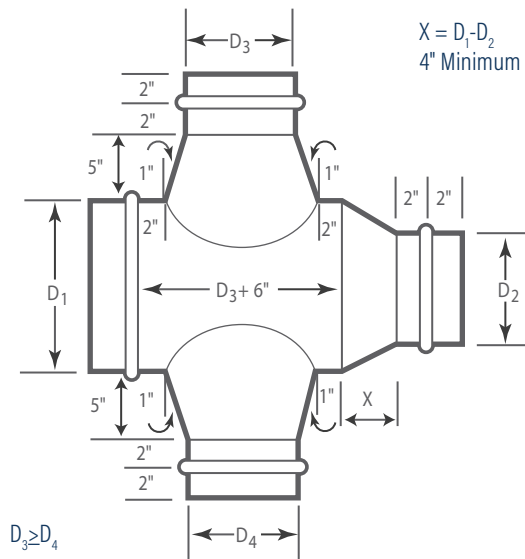
Reducing Conical Tee



Conical Cross Tee

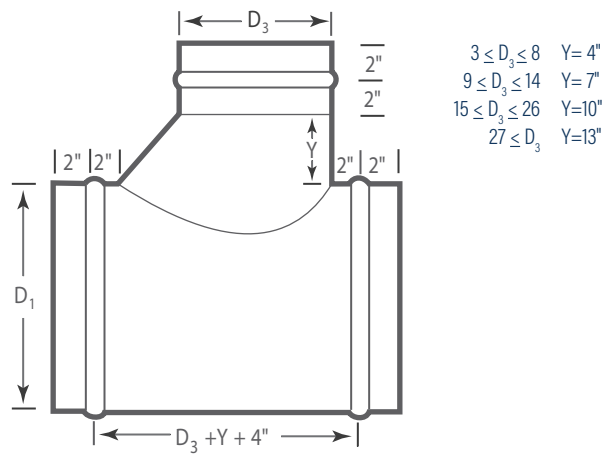


Reducing Conical Cross Tee

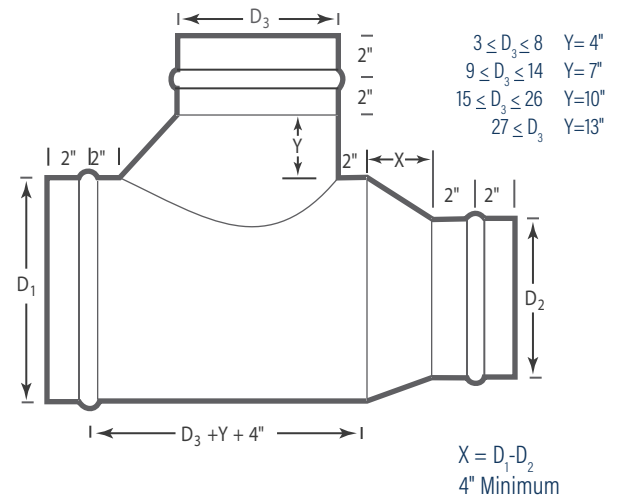


Combination Tees

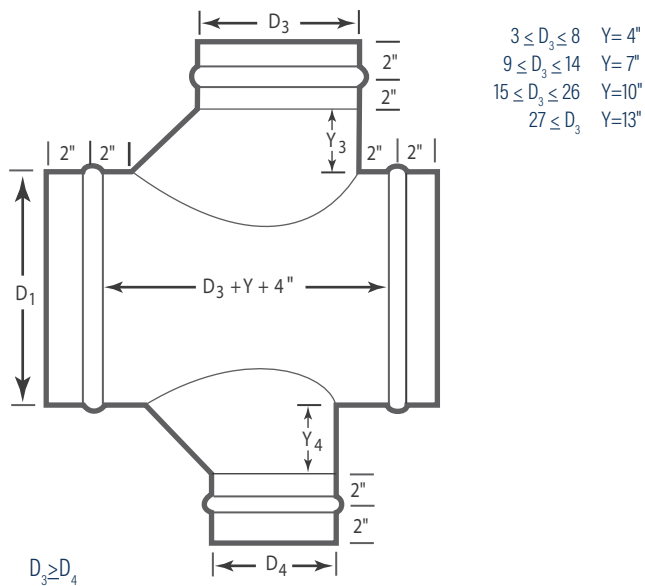
Combination Tee



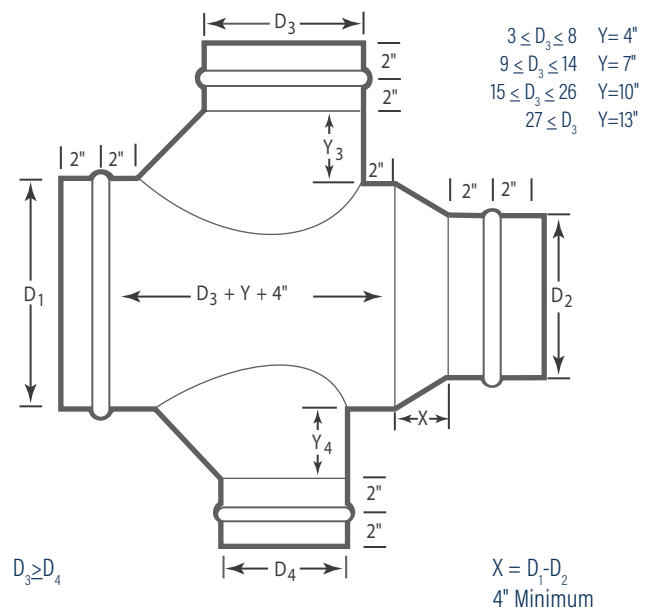
Reducing Combination Tee



Combination Cross

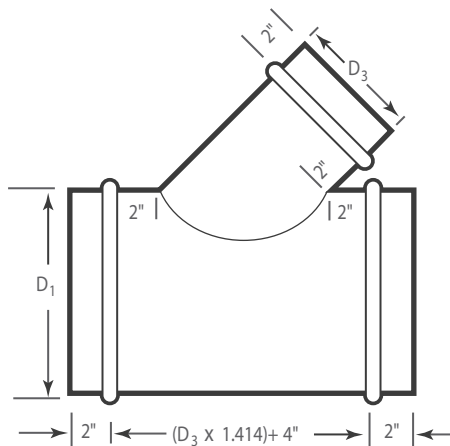


Reducing Combination Cross

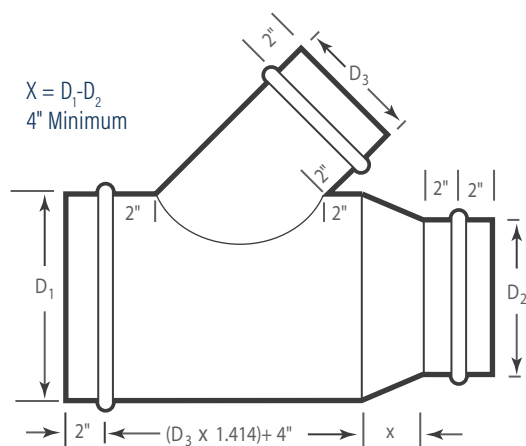


Straight Laterals

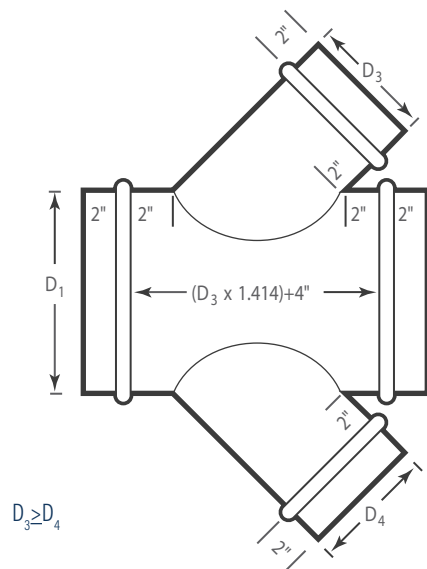
Lateral 45°



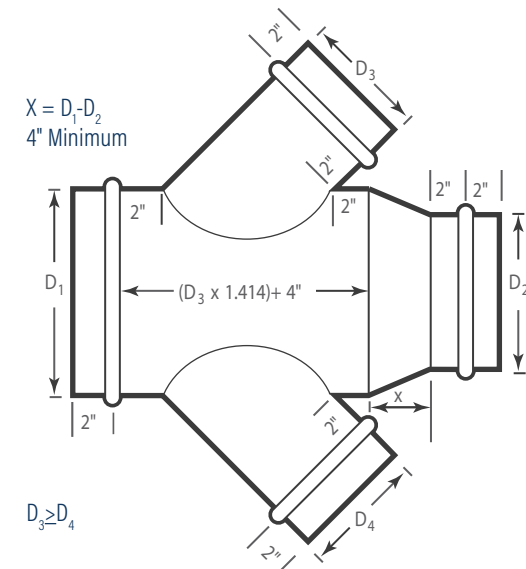
Reducing Lateral 45°



Lateral Cross 45°

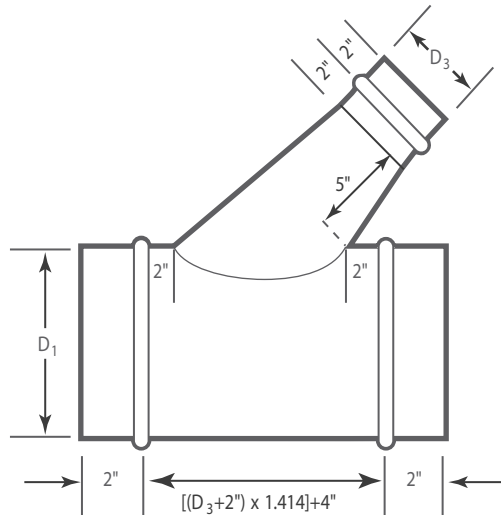


Reducing 45° Lateral Cross

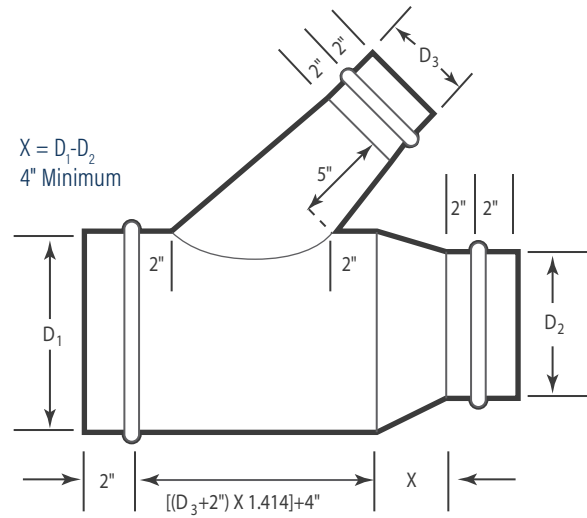


Conical Laterals

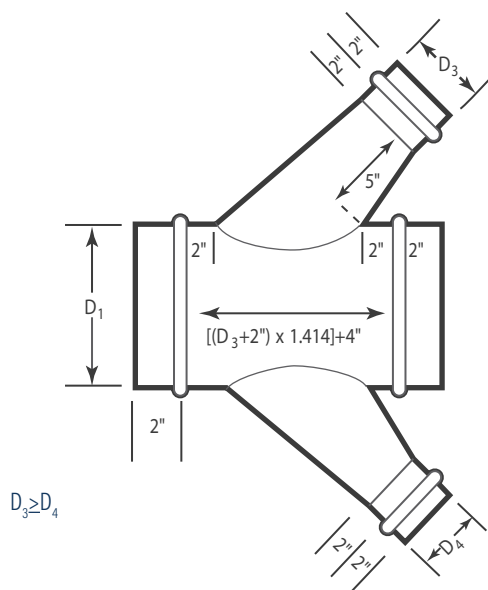
Conical Lateral 45°



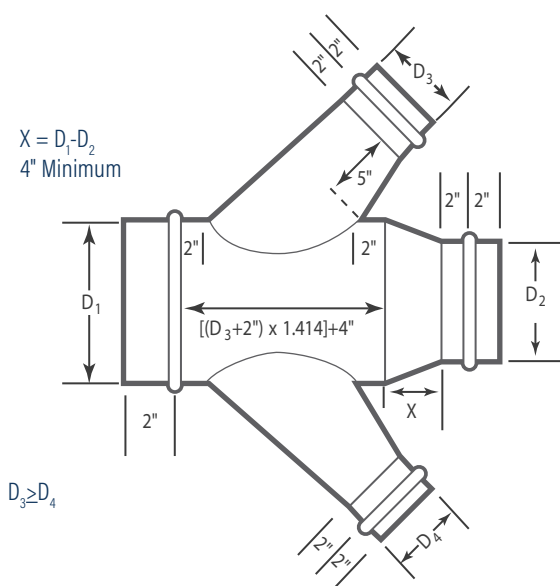
Reducing Conical Lateral 45°



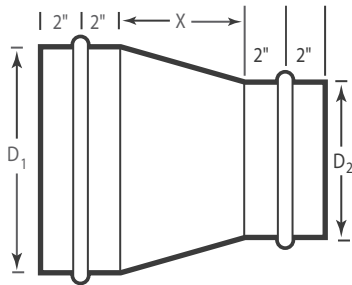
Conical Lateral 45° Cross



Reducing Conical 45° Lateral Cross

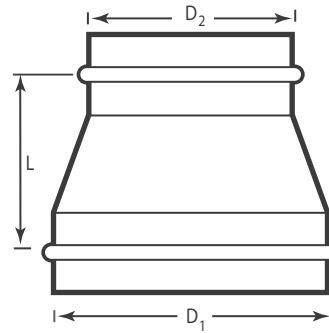


Concentric Reducer



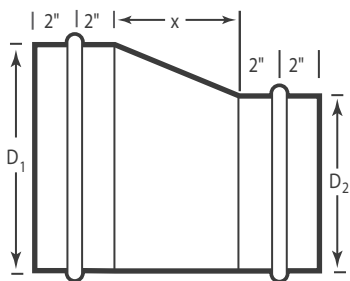
$X = D_1 - D_2$
4" Minimum

Pressed Reducer



D_2/D_1	L
4"/3"	1 7/8"
5"/3"	2 3/4"
5"/4"	1 7/8"
6"/4"	3 1/8"
6"/5"	2 1/4"
7"/5"	3 5/8"
7"/6"	2 3/4"
8"/5"	4 1/2"
8"/6"	3 5/8"
8"/7"	2 3/4"
9"/6"	4 1/2"
9"/7"	3 5/8"
9"/8"	2 3/4"
10"/6"	5 3/8"
10"/7"	4 1/2"
10"/8"	3 5/8"
10"/9"	2 3/4"
12"/8"	5 3/8"
12"/9"	4 1/2"
12"/10"	3 5/8"

Eccentric Reducer

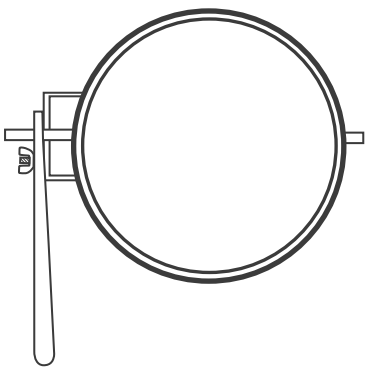
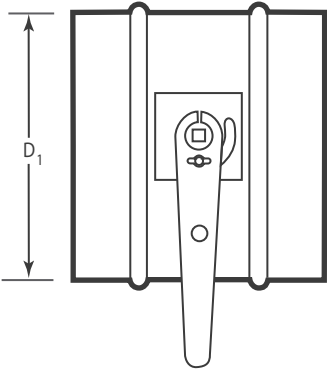


$X = D_1 - D_2$
4" Minimum

Damper

Dampers come standard with:

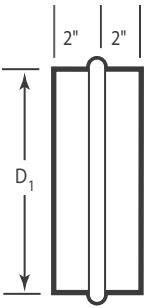
- $\frac{3}{8}$ " locking handle
- Nylon bushings
- Insulation stand off



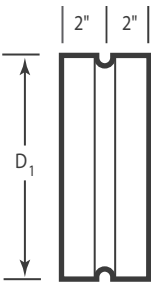
D₁

3"
4"
5"
6"
7"
8"
9"
10"
12"
14"
16"
18"
20"
22"
24"

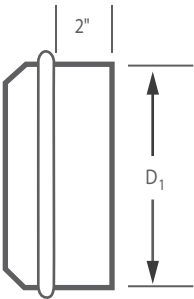
Pipe Couplings



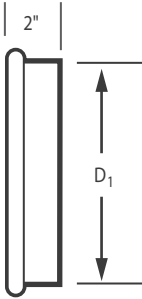
Fitting Couplings



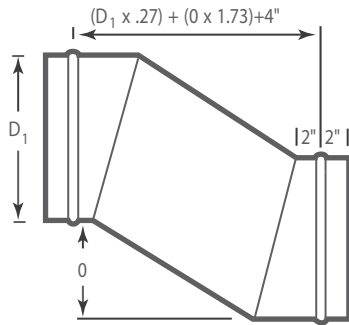
Pressed End Cap



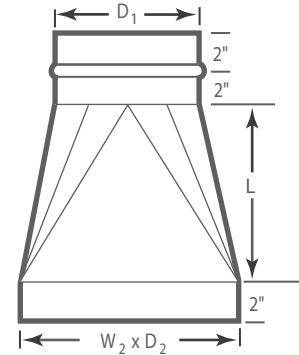
End Cap



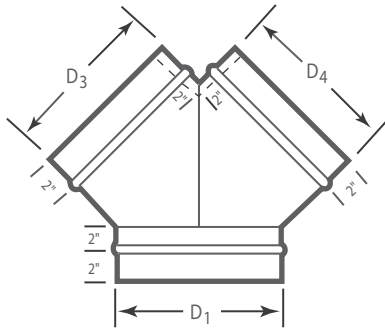
30° Offset



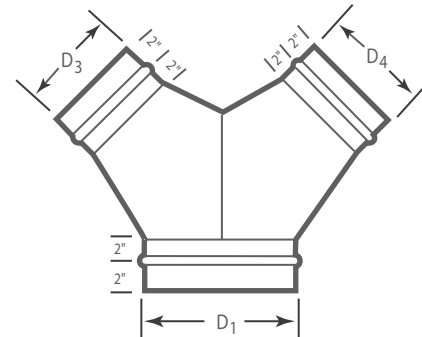
Rectangle to Round



Wye Branch

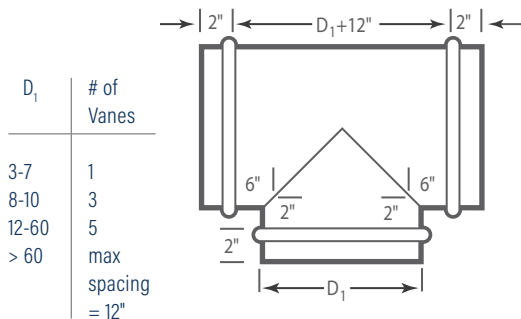


Reducing Wye Branch



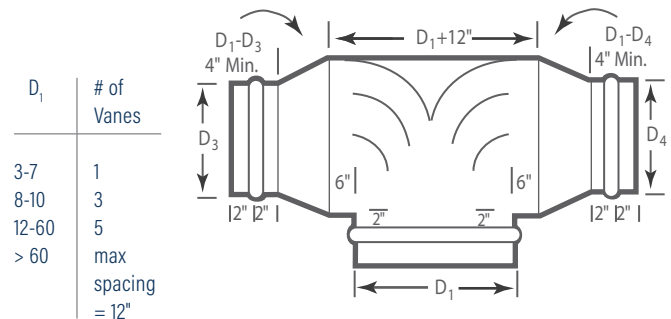
Bullhead Tee

With or without vanes



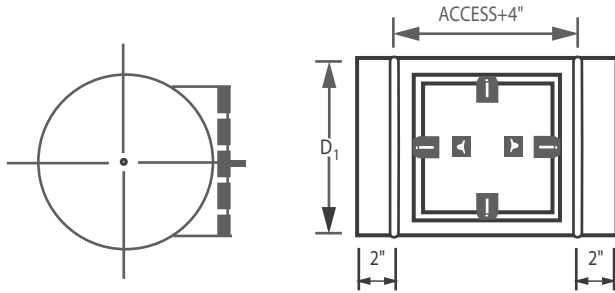
Reducing Bullhead Tee

With or without vanes



Rectangular Access Section

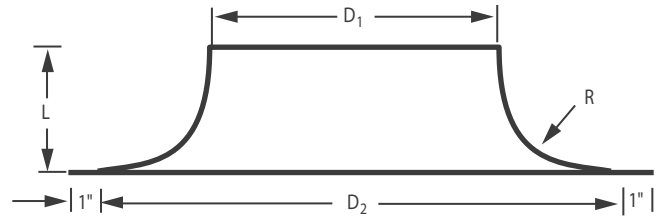
Also available as shop-installed SRTA or field-installed accessory FRTA.



D_1	Access Size
8" to 12"	8" x 8"
13" to 17"	12" x 12"
18" and over	18" x 18"

Negative and positive pressure.

Spun Bellmouth

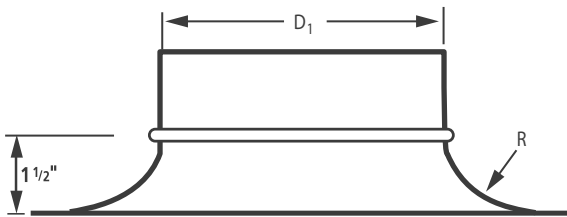


D_1	D_2	L	R
13"	19"	4"	3"
14"	21"	4"	3"
15"	24"	5"	4"
16"	26"	5"	4"
17"	25"	5"	4"
18"	26"	5"	4"
20"	28"	5"	4"
21"	29"	5"	4"
22"	32"	6"	5"
23"	33"	6"	5"
24"	34"	6"	5"
26"	38"	7"	6"
28"	40"	7"	6"
30"	42"	7"	6"
32"	46"	8"	7"
34"	48"	8"	7"
36"	50"	8"	7"
38"	52"	8"	7"
40"	56"	9"	8"
42"	58"	9"	8"
44"	60"	9"	8"
46"	62"	9"	8"
48"	64"	9"	8"

D_1	D_2	L
12"	14"	3½"
14"	16"	3½"
16"	18"	3½"
18"	20"	3½"
20"	22"	3½"
22"	24"	3½"
24"	26"	3½"
26"	28"	3½"
28"	30"	3½"
30"	32"	3½"
32"	34"	3½"
34"	36"	3½"
36"	38"	3½"
38"	40"	3½"
40"	42"	3½"
42"	44"	3½"
44"	46"	3½"
46"	48"	3½"
48"	40"	3½"
50"	52"	3½"
52"	54"	3½"
54"	56"	3½"
56"	58"	3½"
58"	60"	3½"
60"	62"	3½"

Pressed Bellmouth

Galvanized only

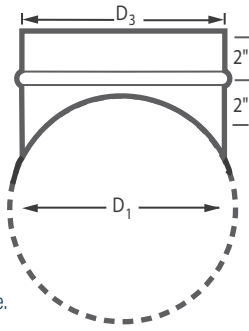


D_1	R
4"	.394"
5"	.472"
6"	.787"
7"	1.0"
8"	1.0"
9"	1.0"
10"	1.0"
12"	1.0"

Accessories

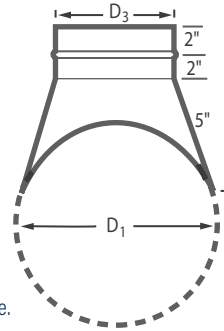
Shop Installed / Field Installed

Shop/Field Installed Tap



Standard flange is ½".
2" flange is also available.

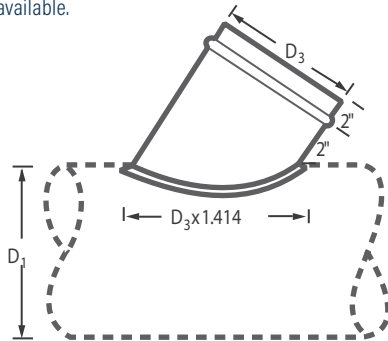
Shop/Field Installed Conical Tap



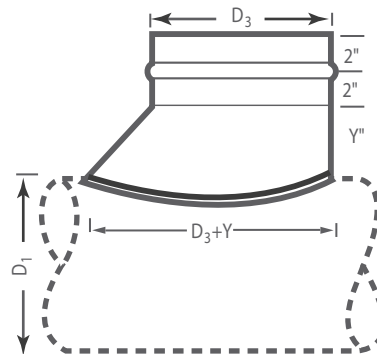
Standard flange is ½".
2" flange is also available.

Shop/Field Installed Lateral Tap

Standard flange is ½".
2" flange is also available.

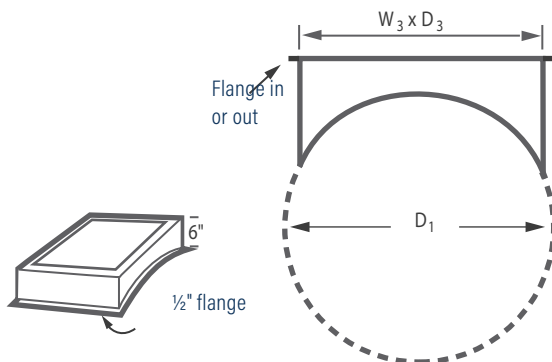


Shop/Field Installed Combination Tap

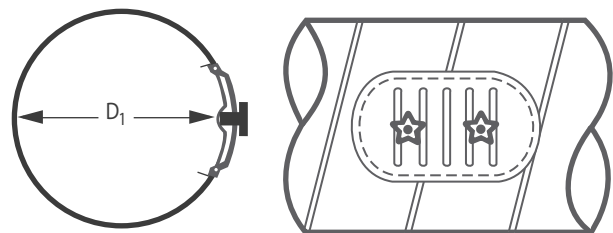


Standard flange is ½".
2" flange is also available.

Shop/Field Rectangle on Round



Field Installed Standard Door



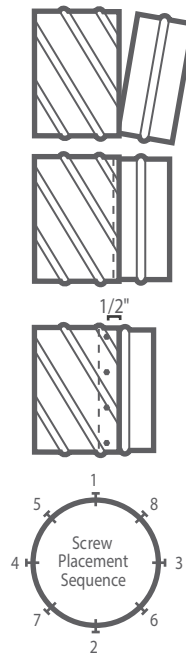
Installation

SINGLE WALL SLIP JOINT

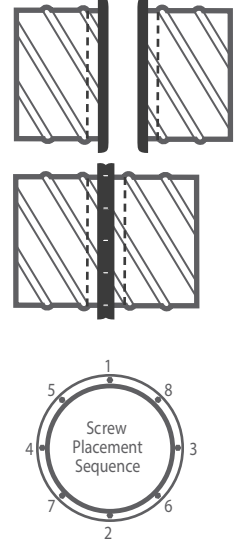
Metal fittings are sized to slip into, and should be used with, spiral duct. A tight fit is necessary to minimize friction loss and to promote proper sealing. Care should be taken during handling and installation to avoid dents and distortions that can cause improper fit or difficult installation.

1. Bring the bottom of the fitting collar into the spiral duct at a slight angle.
2. Carefully work the rest of the collar into the spiral duct until approximately one inch of the collar remains exposed between the end of the spiral duct and the stop bead of the fitting collar. Do not use a screwdriver or knife to help make the connection. Apply pressure with the heel of your hand or with your fist to help slip the fitting into the duct.
3. Apply duct sealer to this exposed area.
4. Push the fitting into the spiral duct until the stop bead meets the edge of the spiral duct.
5. Fasten the fitting into the spiral duct with screws per the chart at right. The screws should be evenly spaced around the perimeter of the connection, approximately $\frac{1}{2}$ " back from the stop bead. Placement of the screws should be opposite of each other as demonstrated in the diagram.

Installation of
Slip Joint Connector



Installation of
Flange Connector



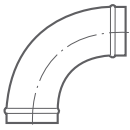
FLANGE

Flanges come factory-mounted on fittings and spiral duct. Flanges are standard for all duct 61" in diameter, but are available in smaller sizes.

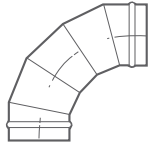
1. Place closed cell neoprene gasket on the face of one of the mating flanges.
2. Push the flanges together keeping the edges of the flanges aligned
3. Clamp the flanges to help hold them in place.
4. Screw the flanges together with self-tapping screws per the chart at right. The screws should be evenly spaced around the perimeter of the connection. Placement of the screws should be opposite of each other as demonstrated in the diagram.

Duct Perimeter Round Equiv.	# of Screws	
	Slip Fit	Flange
4"-9"	3	NA
10"	3	4
12"-16"	3	6
18"-20"	4	8
22"-26"	5	10
28"-30"	6	12
32"-36"	7	14
38"-42"	8	16
44"-46"	9	18
48"-52"	10	20
54"-56"	11	22
58"-60"	12	24
62"-66"	NA	26
68"-72"	NA	28
74"-76"	NA	30
78"-84"	NA	32

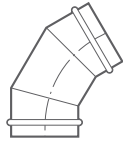
Fittings and Accessories



90° Pressed Elbow



90° 5-Piece Elbow



45° 3-Piece Elbow



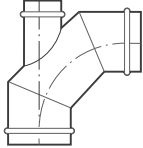
45° Pressed Elbow



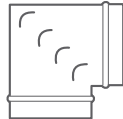
60° 3-Piece Elbow



22½° and 30° 2-Pc. Elbow



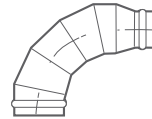
90° 3-Pc. Elbow
with Heel Tap



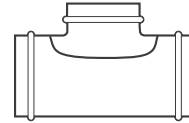
90° Mitered Elbow



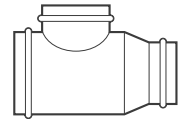
45° 3-Piece Elbow
with Reducer



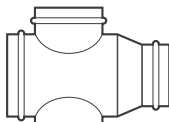
90° 5-Piece Elbow
with Reducer



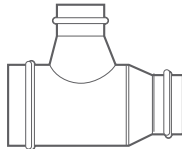
Pressed Tee



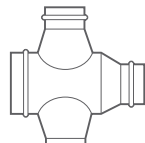
Reducing Tee



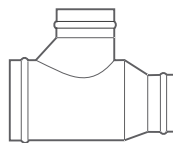
Reducing Tee Cross



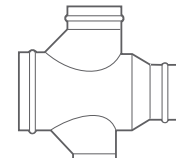
Reducing Conical Tee



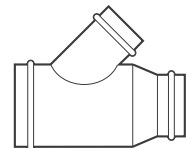
Reducing Conical
Cross



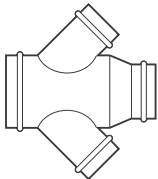
Reducing Combination
Tee



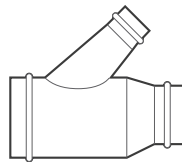
Reducing Combination
Cross



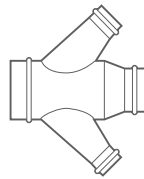
Reducing Lateral 45°



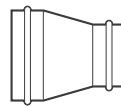
Reducing 45°
Lateral Cross



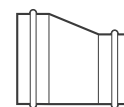
Reducing Lateral 45°



Reducing Conical
45° Lateral Cross



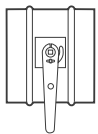
Concentric Reducer



Eccentric Reducer



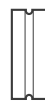
Pressed Reducer



Damper



Pipe Coupling



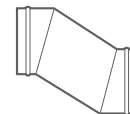
Fitting Coupling



Pressed End Cap



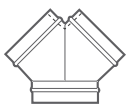
End Cap



30° Offset



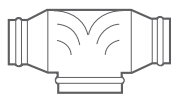
Rectangle to Round



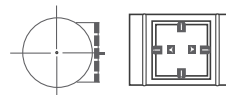
Wye Branch



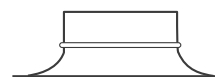
Reducing Wye Branch



Reducing Bullhead
Tee



Rectangular Access
Section



Pressed Bellmouth



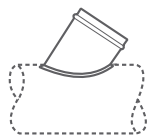
Spun Bellmouth



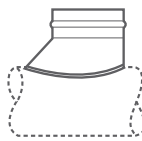
Shop/Field Installed
Tap



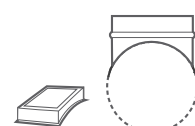
Shop/Field Installed
Conical Tap



Shop/Field Installed
Lateral Tap



Shop/Field Installed
Combination Tap



Shop/Field Installed
Rectangle on Round



Field Installed
Standard Door