



**GREATER
WISCONSIN
SHEET
METAL**



Parts Catalog



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Ductwork Fabrication Shop

- Galvanized Ducts/Fittings
- Stainless Steel Ducts/Fittings
- Aluminum Ducts/Fittings
- Black Iron Ducts/Fittings
- Paint Grip or Polyvinyl-Coated Duct/Fittings
- Gorelocked Fittings
- Spiral Pipe (Galvanized, Aluminum, Paintgrip, PCD, Perforated)
- Oval Pipe & Fittings (Galvanized, Aluminum, Paintgrip, PCD)

Cutting Edge Technology Allows Competitive Pricing and Quality Construction

Equipment

- Automated 5' Duct Coil Line by Lockformer
- Spiral Duct Machine by Spiro
- Gorelocker by Spiral-Helix
- 24' x 6' HD Plasma Table
- 10' Vulcan Plasma Table by Lockformer
- 5 AXIS Waterjet Cutting Table

Other Equipment

- 40-ton Iron Worker
- Welding Machines-Mig / Tig / Arc
- Spot Welder
- 10' Hand Brake - up to 16 gauge
- 10' Shear - up to 10 gauge
- 5' Bearer - up to 18 gauge
- Hand Form Rollers
- TDC Roll Former
- Automatic Duct Board Machine
- 12' - 250 ton CNC Press Brake
- 4' Box and Pan Brake
- 8'/10' Hand Brake – up to 16 gauge
- 4' Shear – up to 16 gauge
- 6' Power Roller – up to 14 gauge
- Flat S-and-Drive machine
- Snap Lock and Pittsburgh Machines
- Notcher by Clausing-Edwards - up to 10 gauge

Custom

3D coordination modeling system allows us to design ductwork fittings and download them directly to our plasma table for optimal efficiency



General Capabilities

Automated 5' Duct Coil Line by Lockformer

- 59" drive to drive and 56 1/4" TDC to TDC
- Snap Lock and Pittsburgh Capabilities
- Assembled and unassembled L's and 4 piece ductwork
- 26 to 18 gauge (Paint Grip, galvanized, and PCD)
- All longitudinal seams include cold pump sealant

Spiral Machines

- Paint Grip, Polyvinyl Coated (PCD), Galvanized, Aluminum, and perforated
- 3" to 48" (Odd sizes 3" to 13")
- Standard stock 10' lengths even sizes 4" to 18" 26 gauge
- Made to length orders

Gorelocker

- 8" to 48"
- 24 to 20 gauge (Stainless, Aluminum, Galvanized, PCD, Black Iron and Paint Grip)
- Caulked seams upon request

24' HD Plasma Table

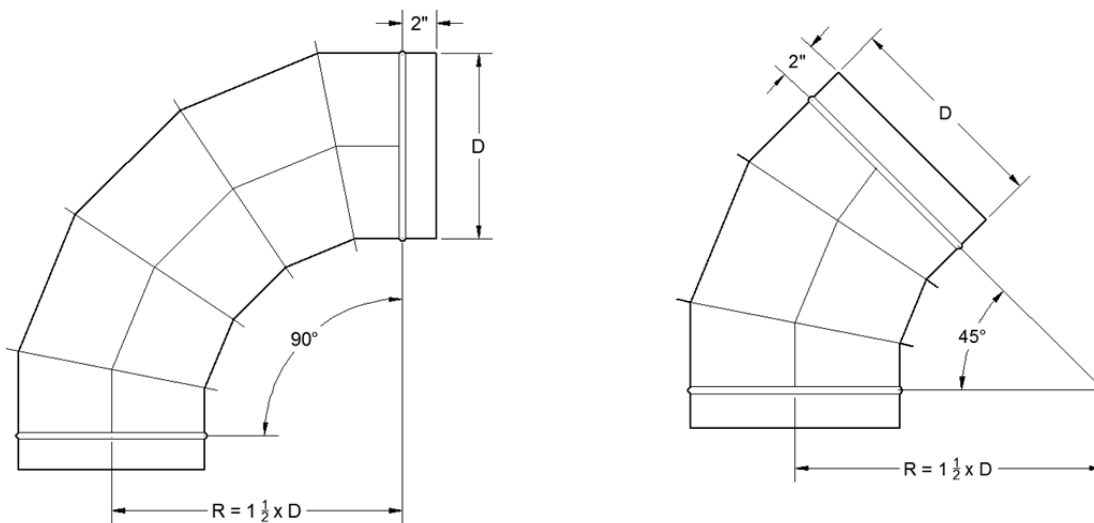
- 130A HD Torch Assembly - 18 gauge to 1/2" plate
- 65A HD Torch Assembly



All round fittings can be made to any degree, radius, and thickness of material and are available in Paint Grip, Stainless Steel, Aluminum, Black Iron, and 4x4mil Polyvinyl coated. Pricing upon request.

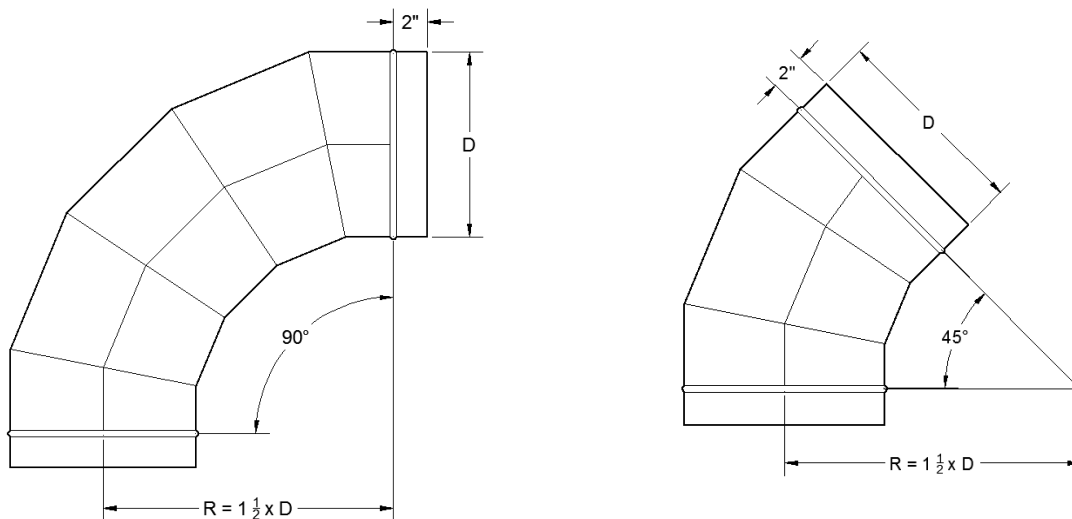
Gore Locked Elbow

(Minimum 1xCLR)

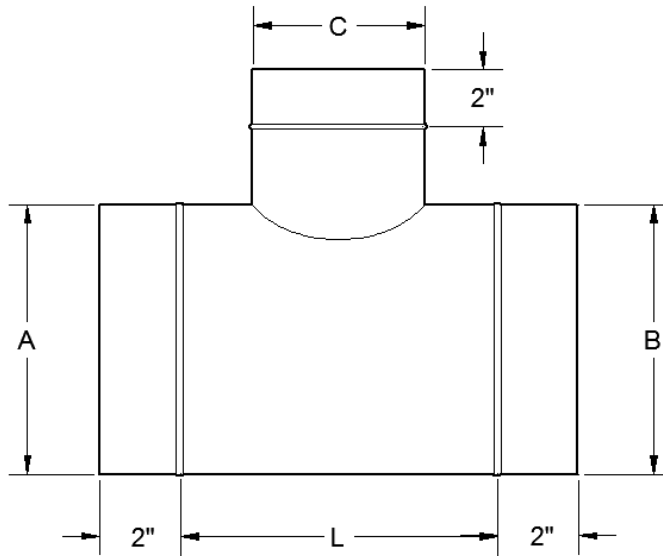


Welded Elbow

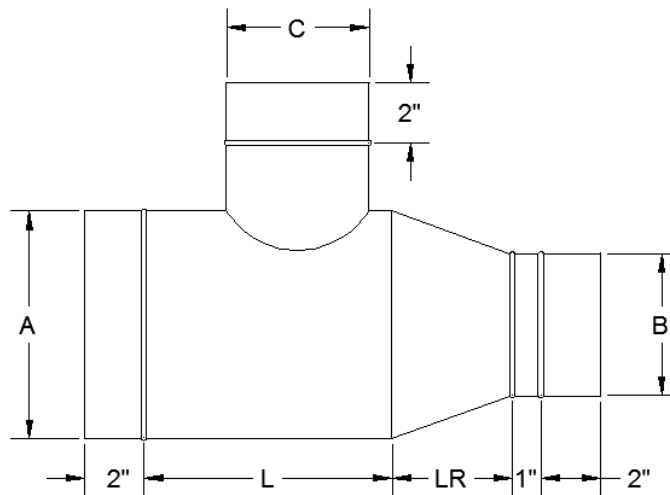
(Minimum 1xCLR)



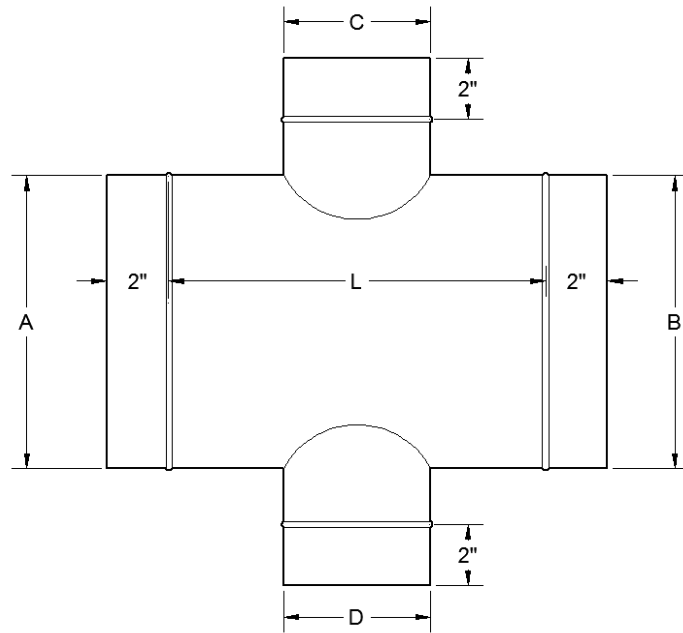
90° Tee



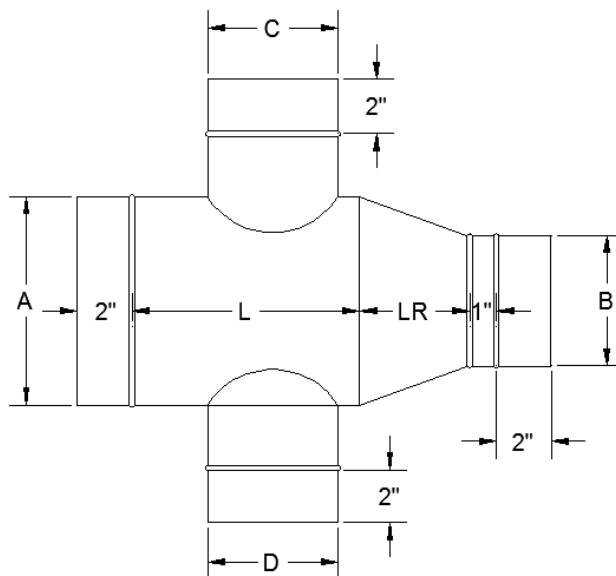
Tee with Reducer



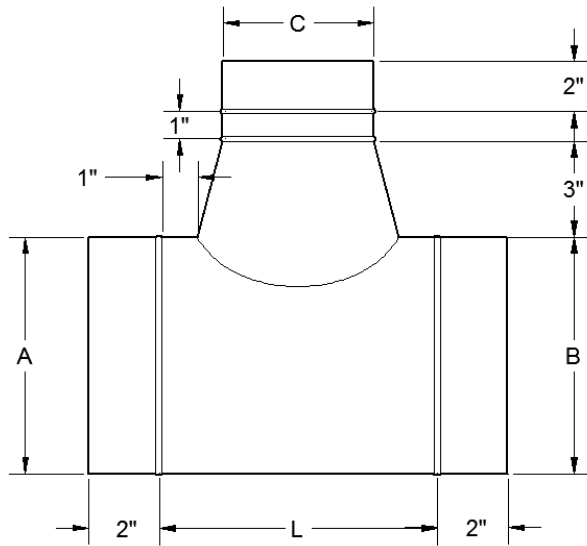
Cross



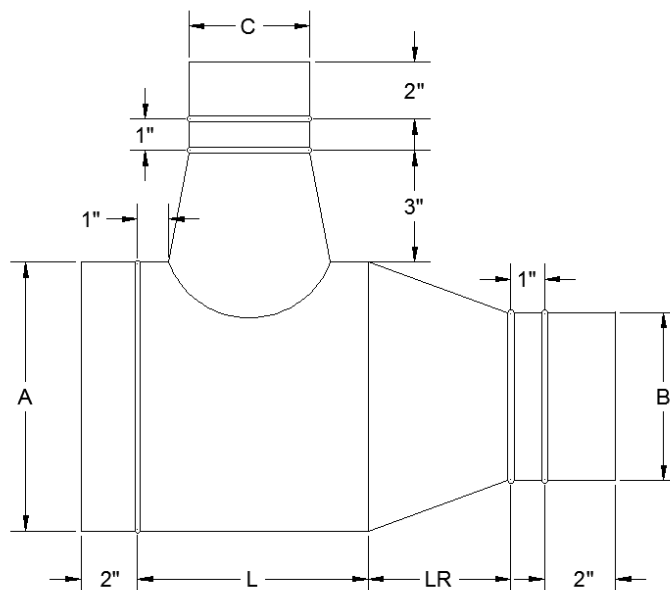
Cross with Reducer



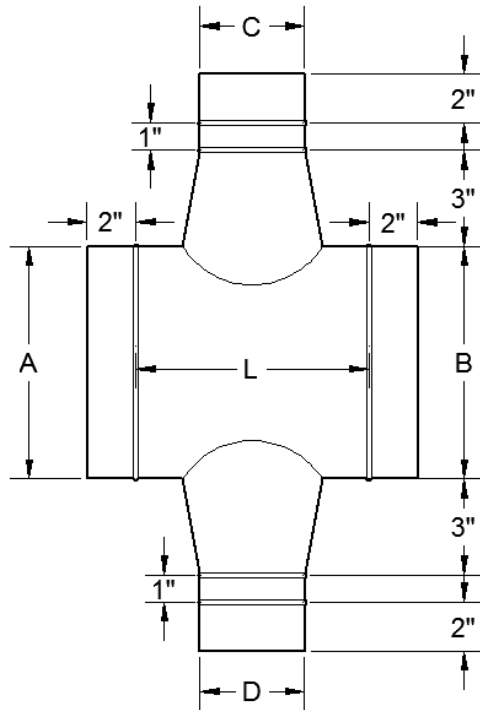
Conical Tee



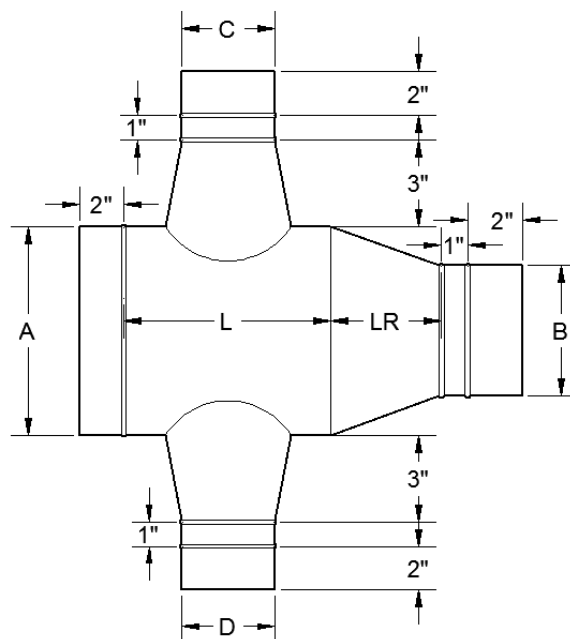
Conical Tee with Reducer



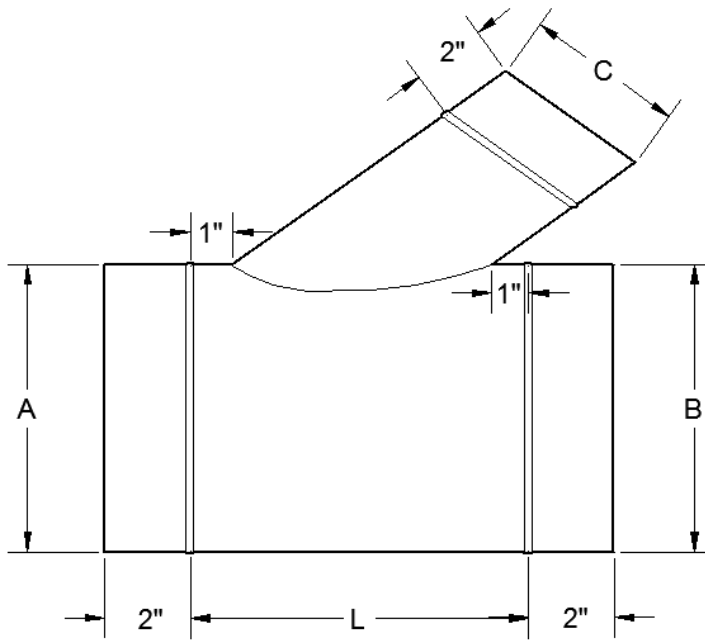
Conical Cross



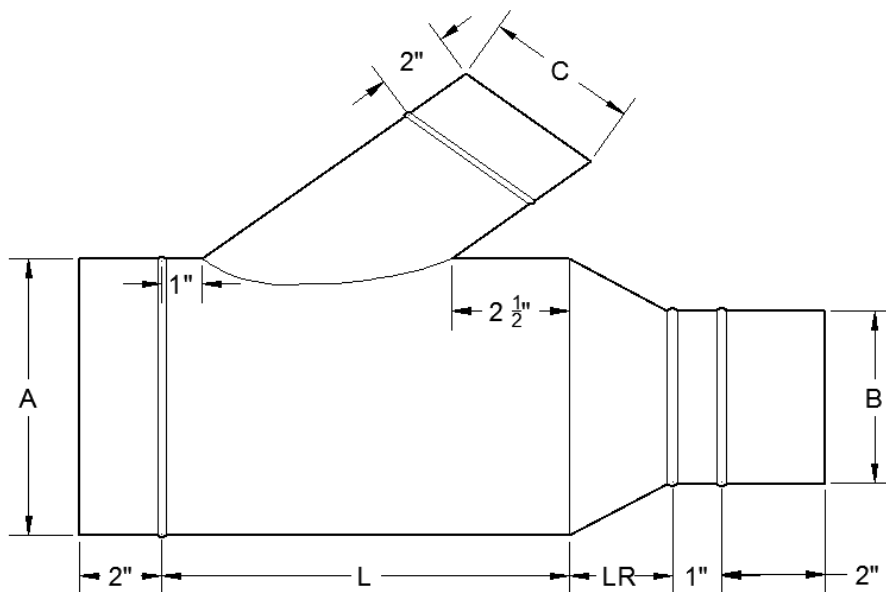
Conical Cross with Reducer



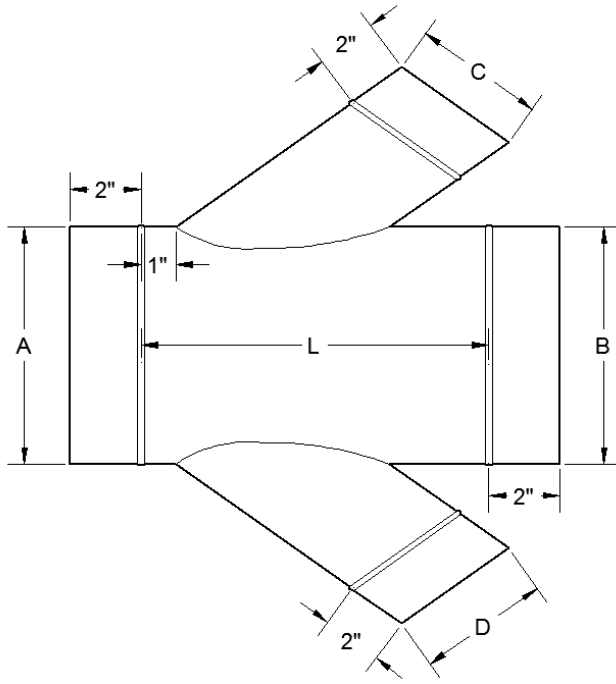
Lateral



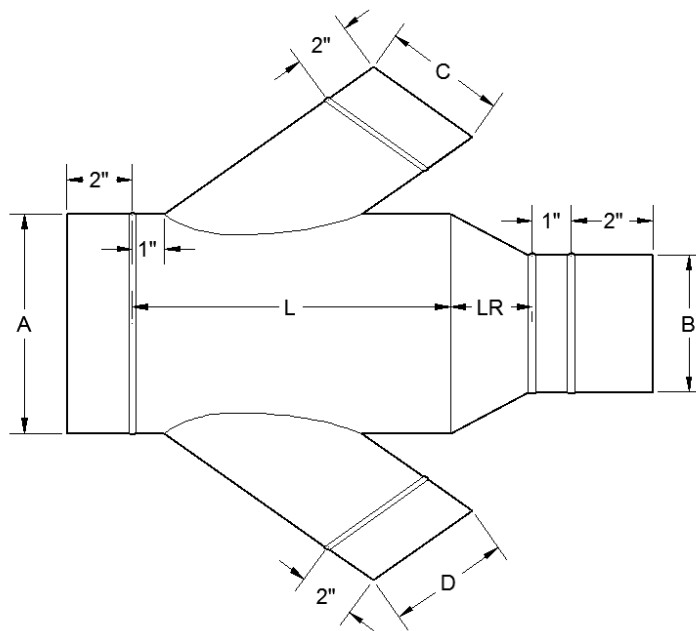
Lateral with Reducer



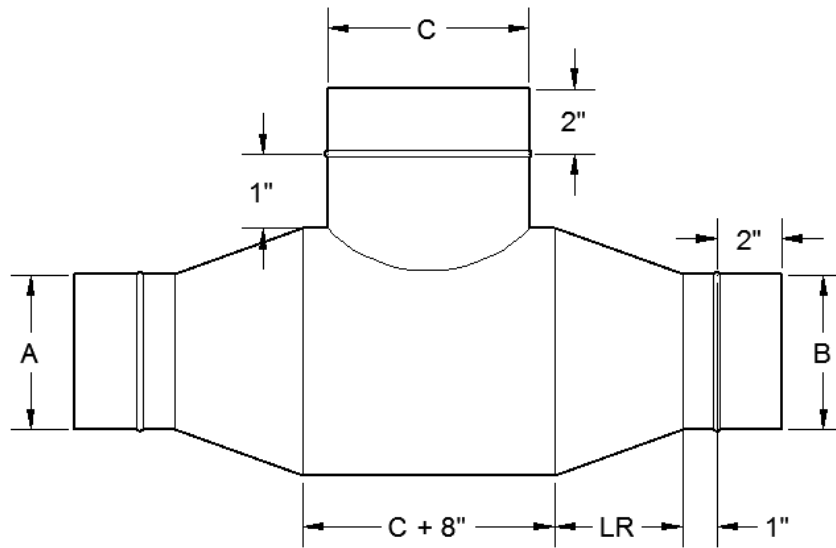
Lateral Cross



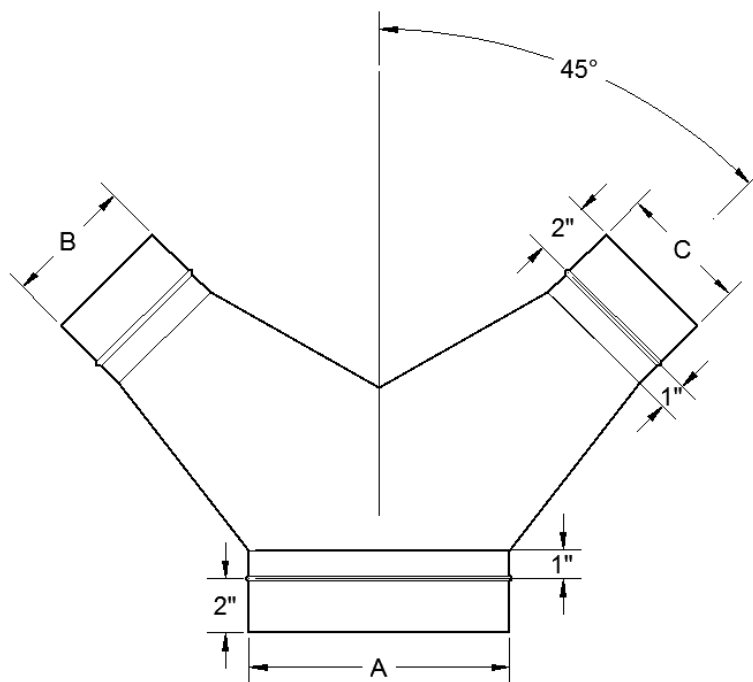
Lateral Cross with Reducer



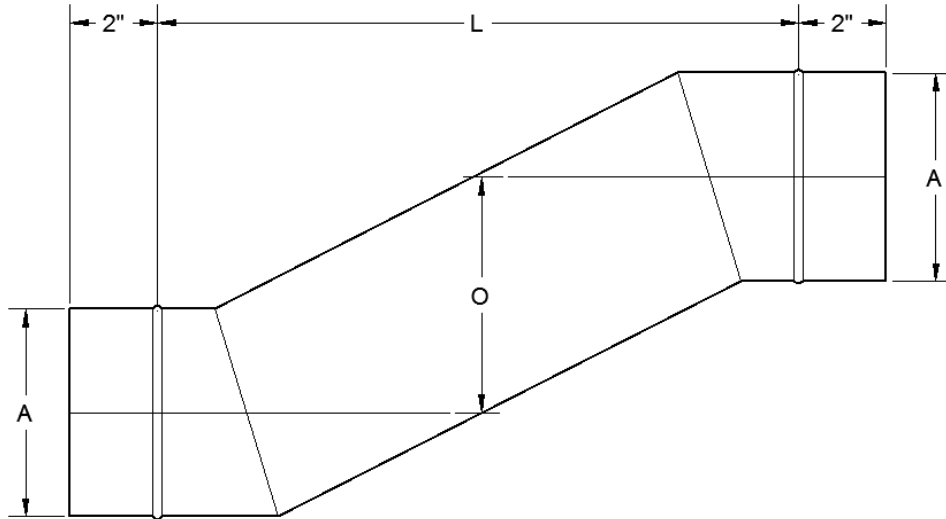
Bullnose Tee (Bullhead)



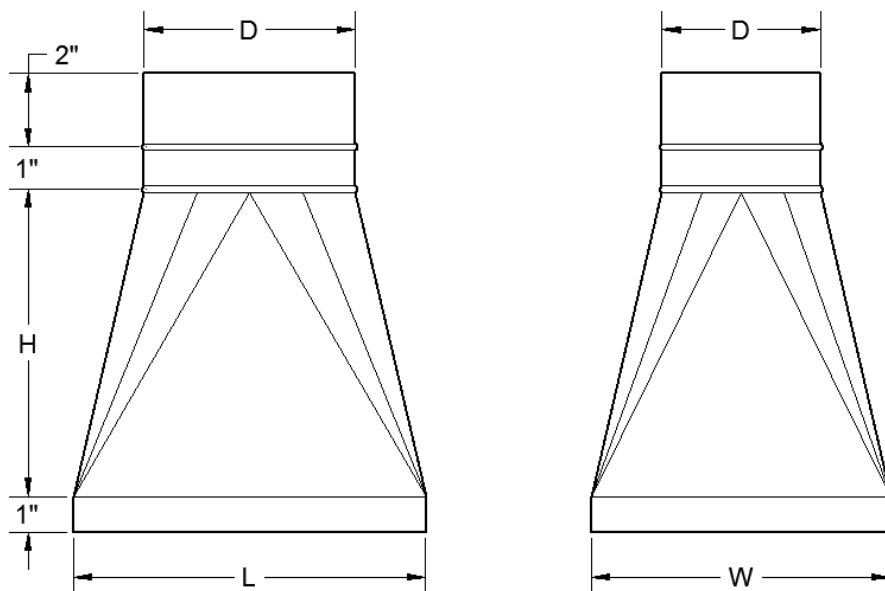
Pair of Pants



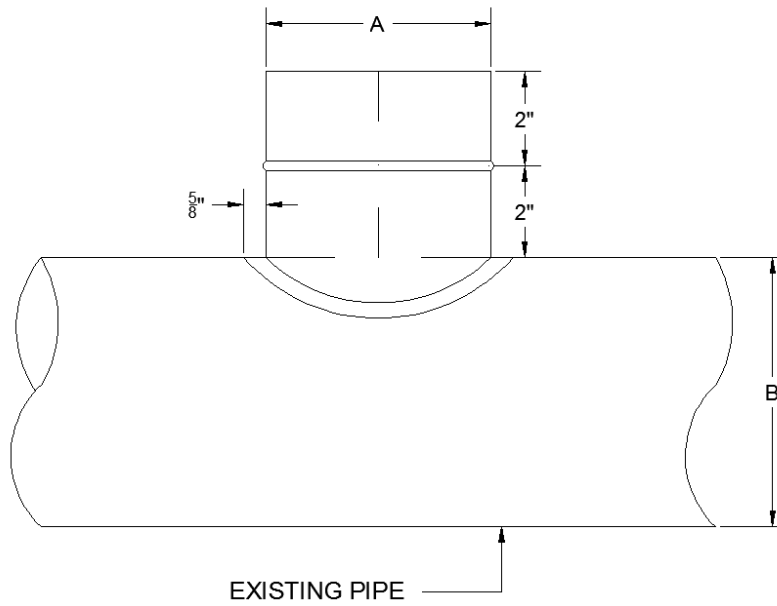
Offset



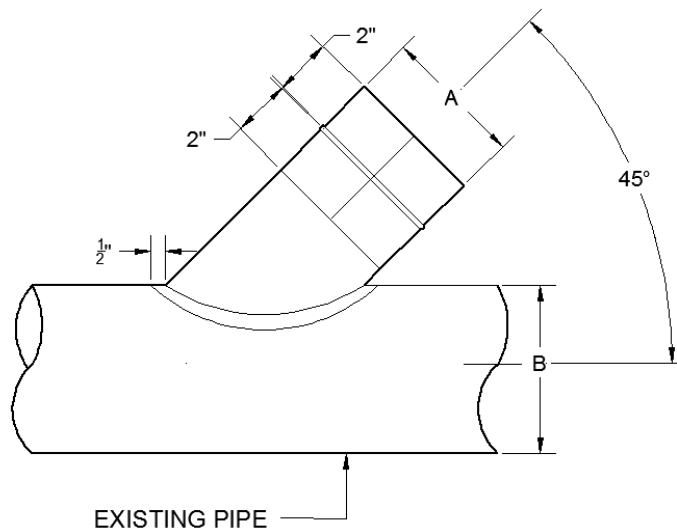
Square to Round



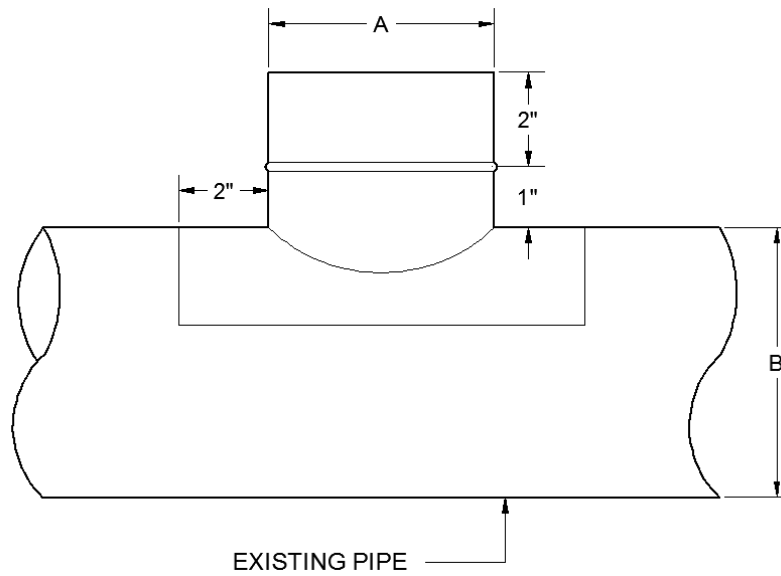
90° Swedged Saddle



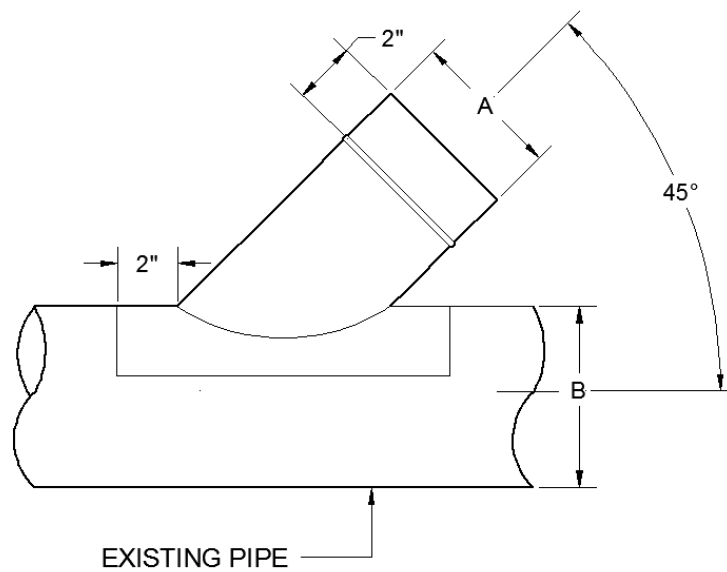
45° Swedged Saddle



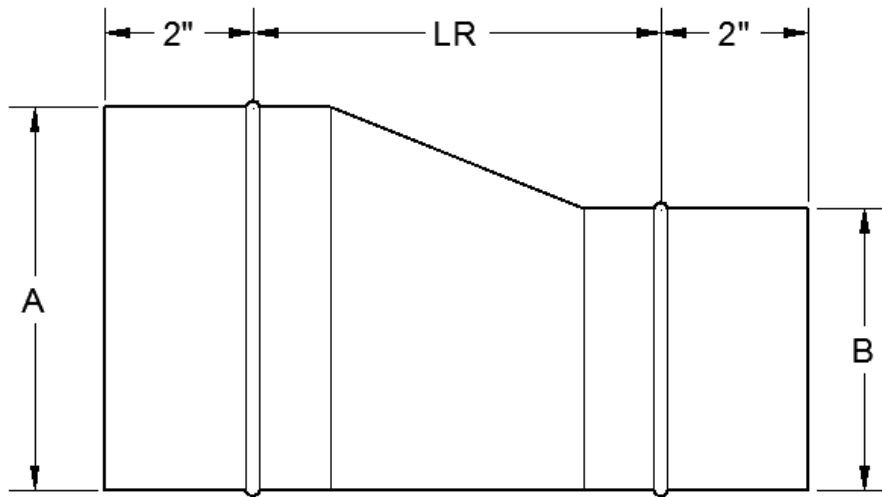
90° Full Saddle



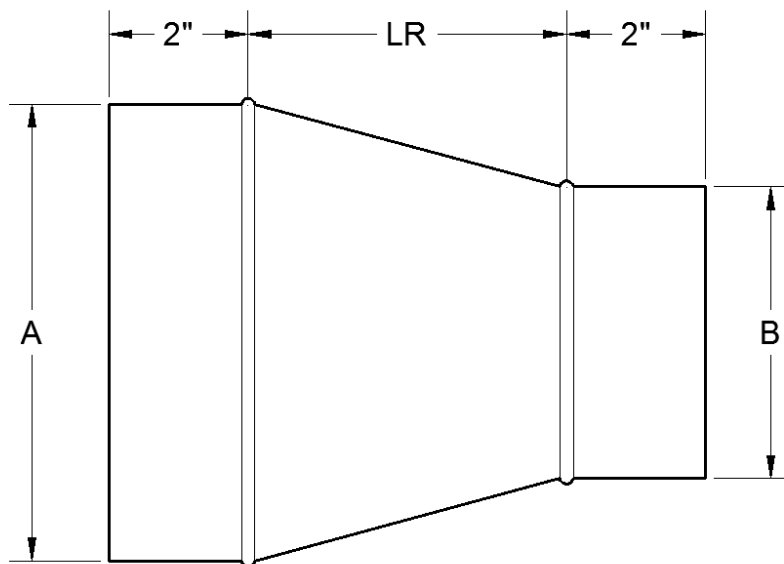
45° Full Saddle



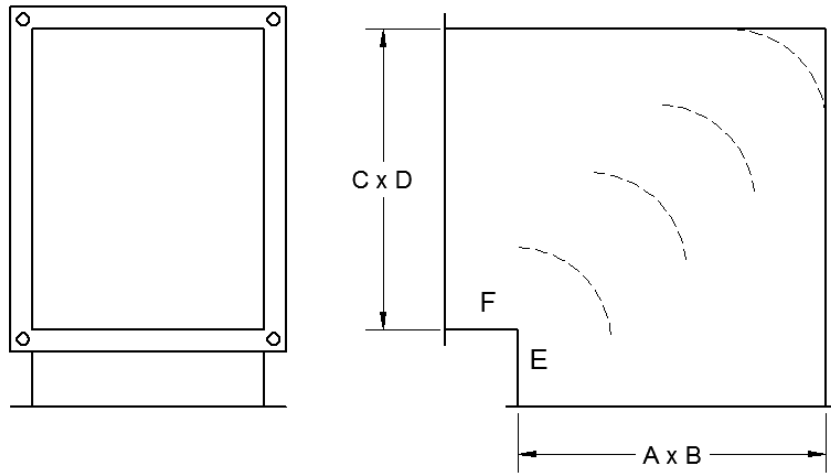
Eccentric Reducer



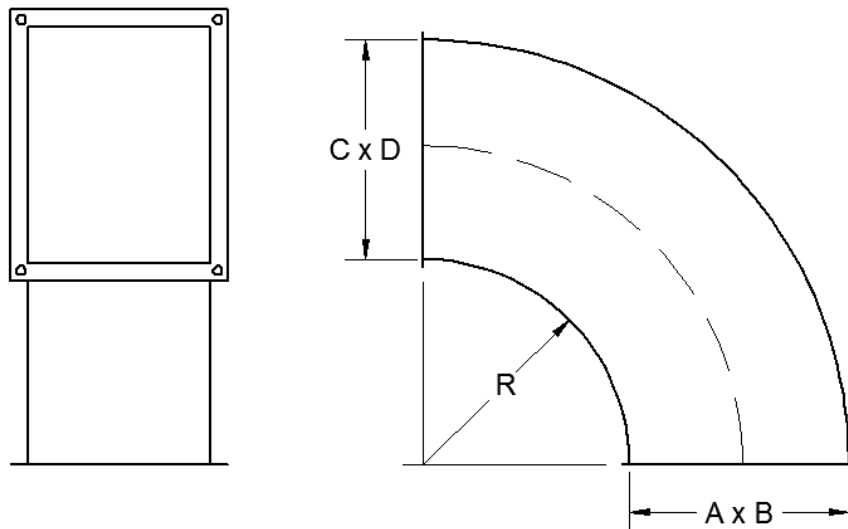
Concentric Reducer



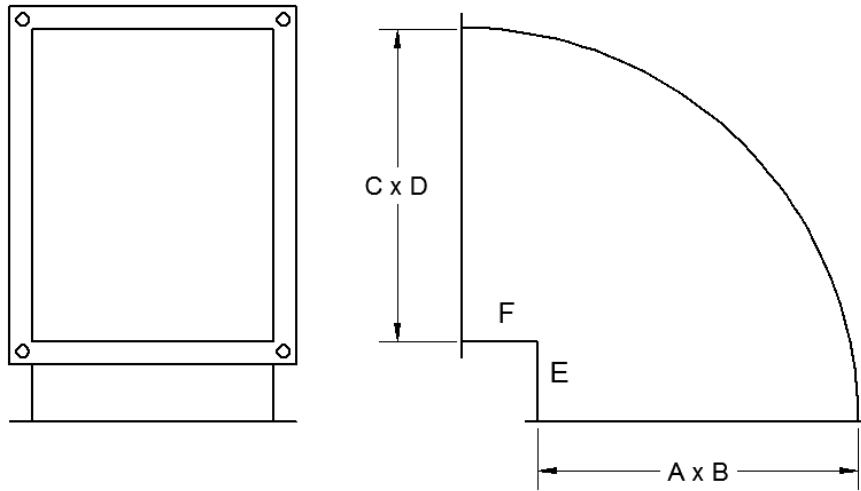
Square Throat Elbow



Radius Elbow

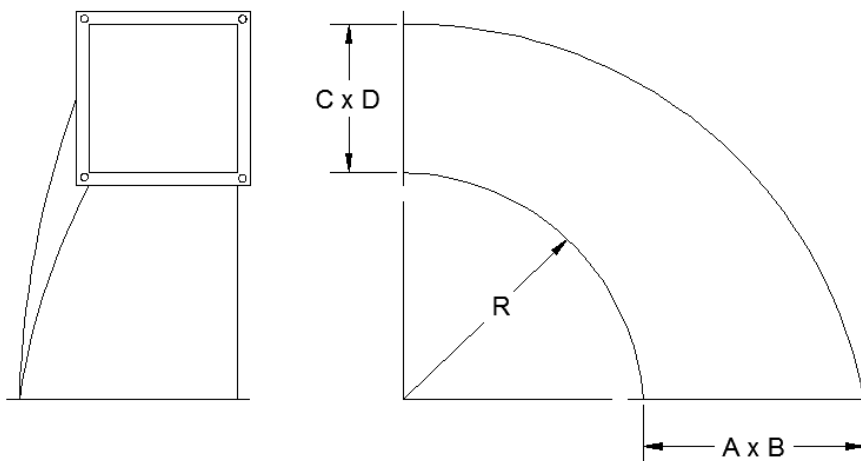


Radius Elbow with Square Throat

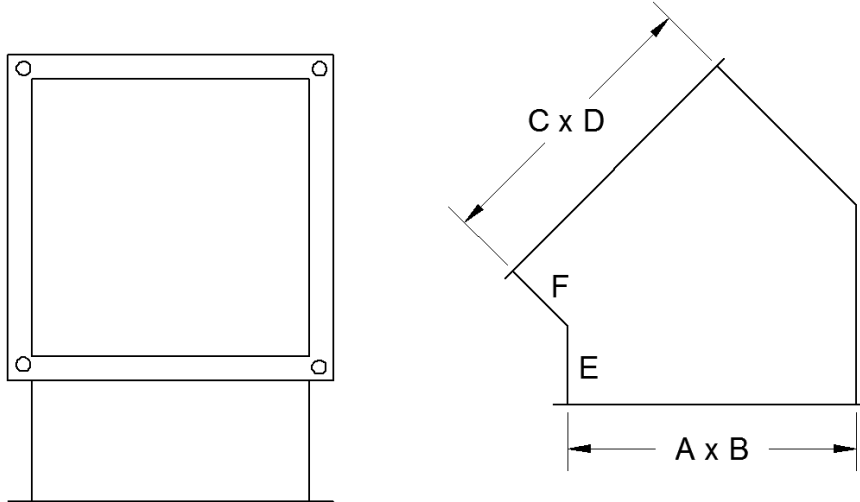


Radius Elbow

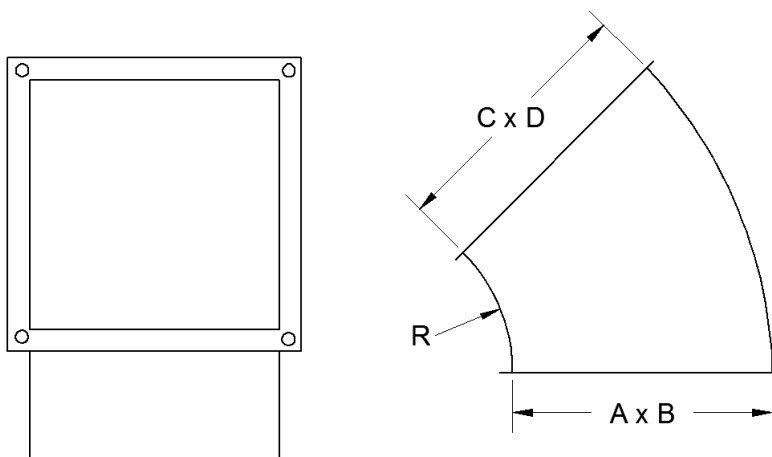
(Left or Right)



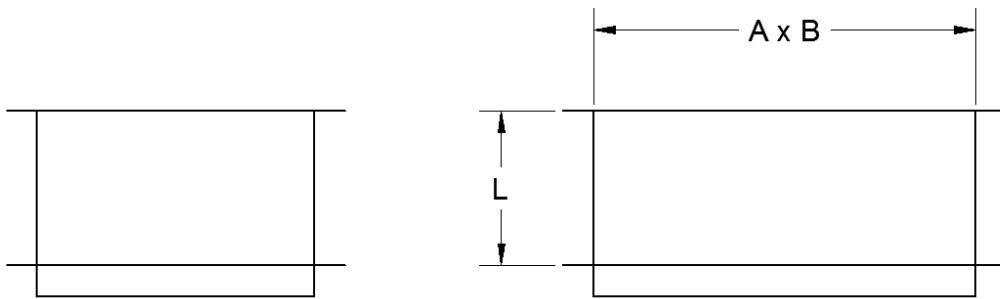
Square Throat Angle



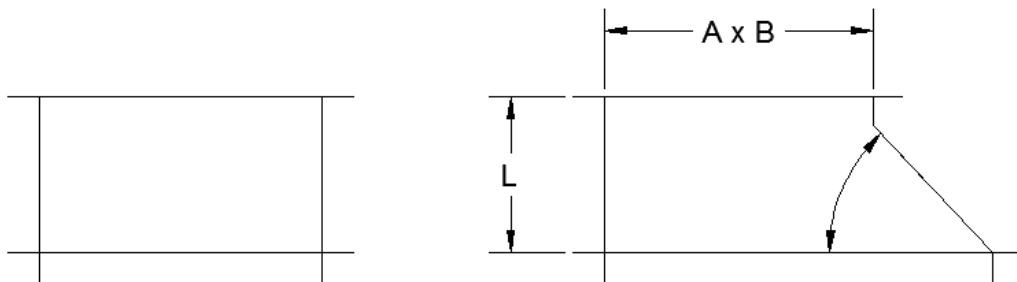
Radius Angle



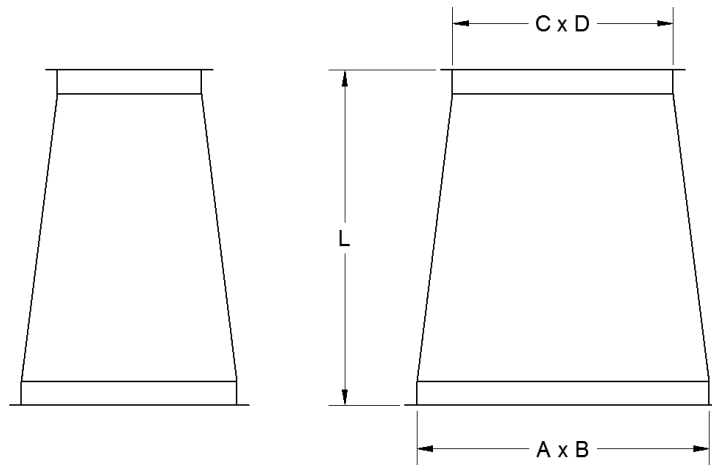
Straight 90° Tap



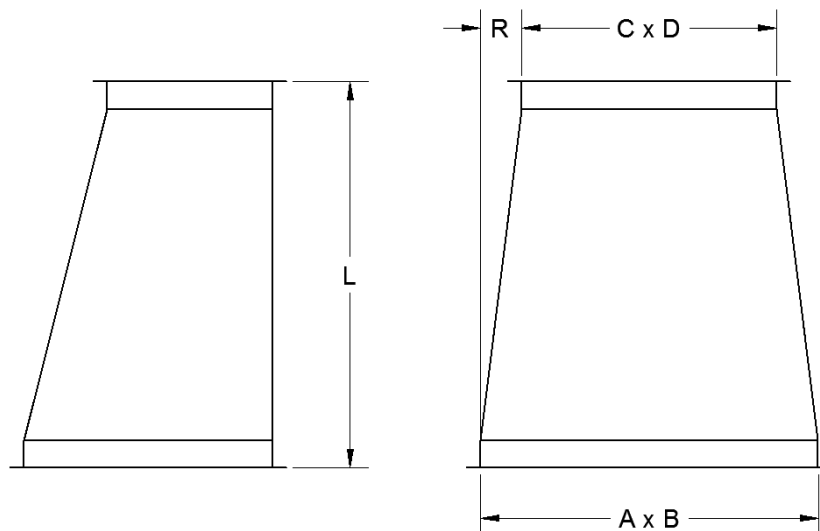
90° Increased Tap



Concentric Transition

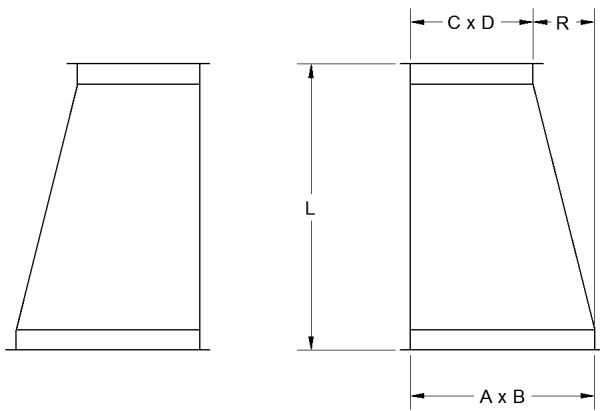


Top or Bottom Flat Transition

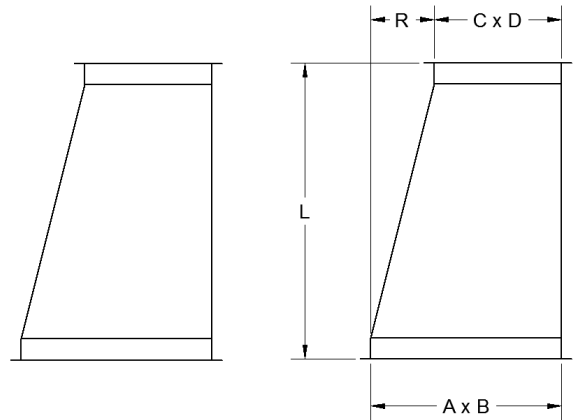


Transition

Top and Left Sides Flat

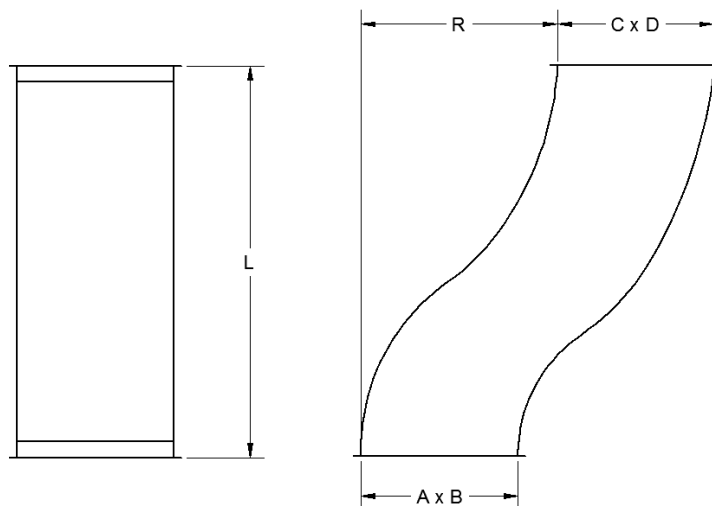


Top and Right Sides Flat



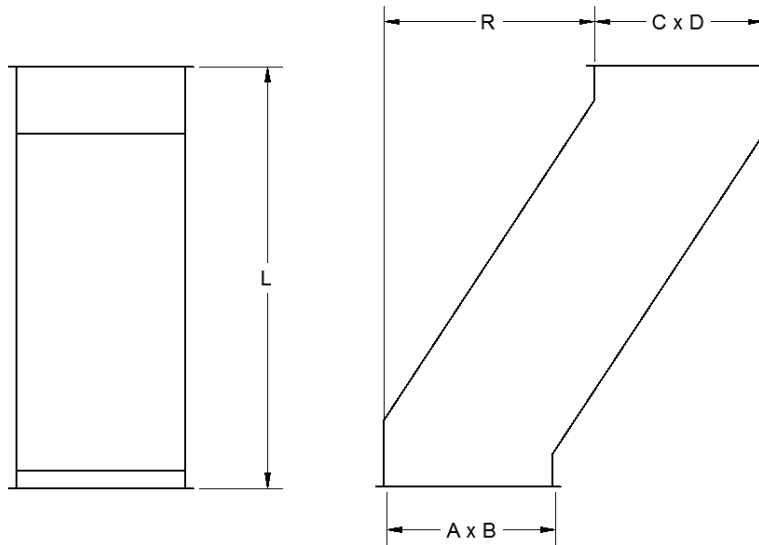
Radius Offset

$$(L = R + 1/2C) \text{ minimum}$$



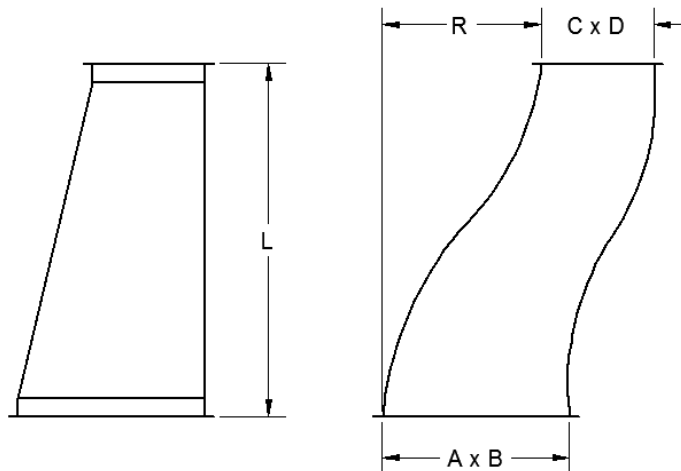
Offset

$$(L = R + 1/2C) \text{ minimum}$$



Reducing Offset

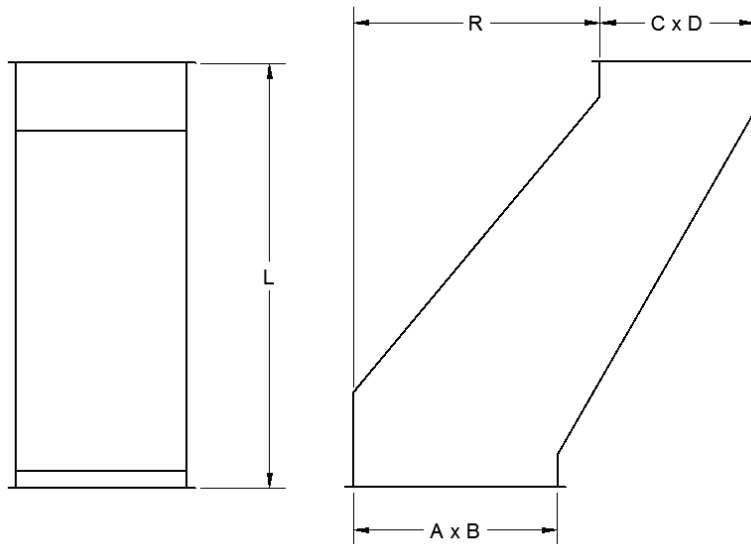
$$(L = R + 1/2C) \text{ minimum}$$



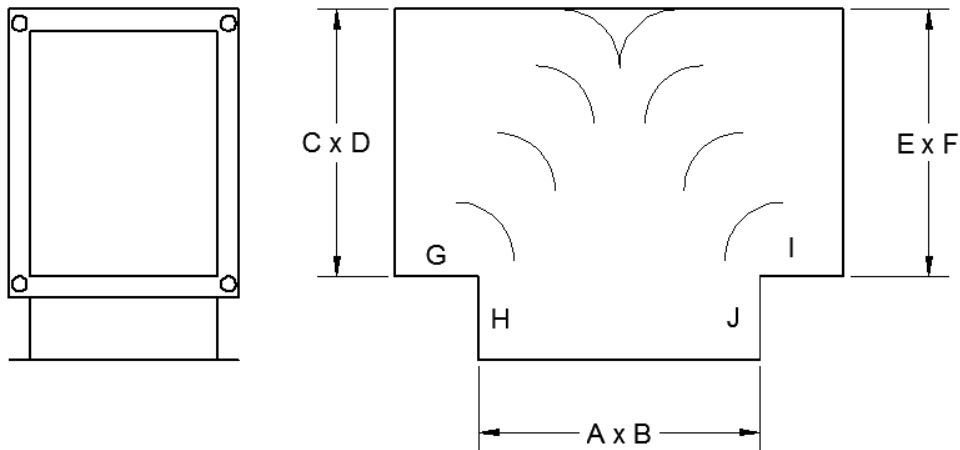
Reducing Offset

(Left or Right)

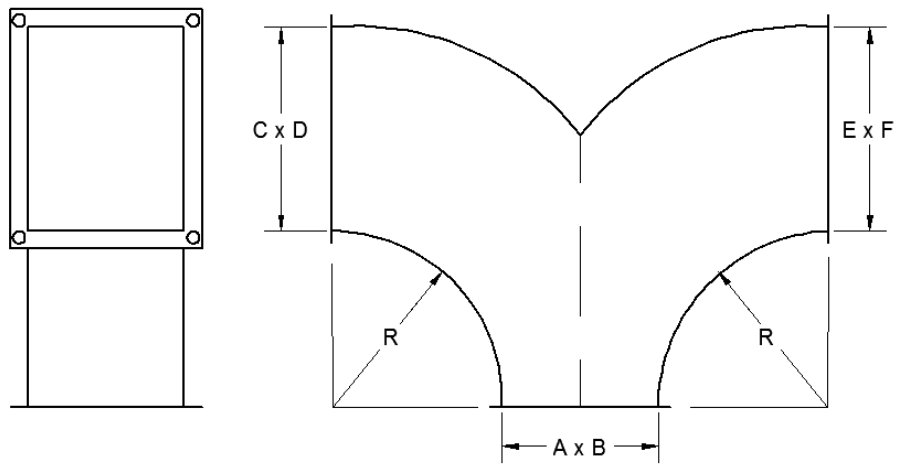
$$(L = R + 1/2C) \text{ minimum}$$



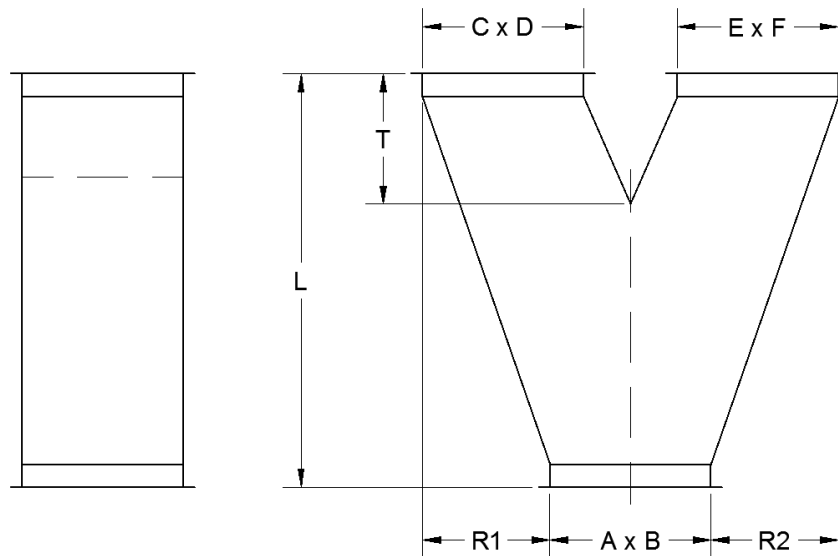
Bullhead Tee



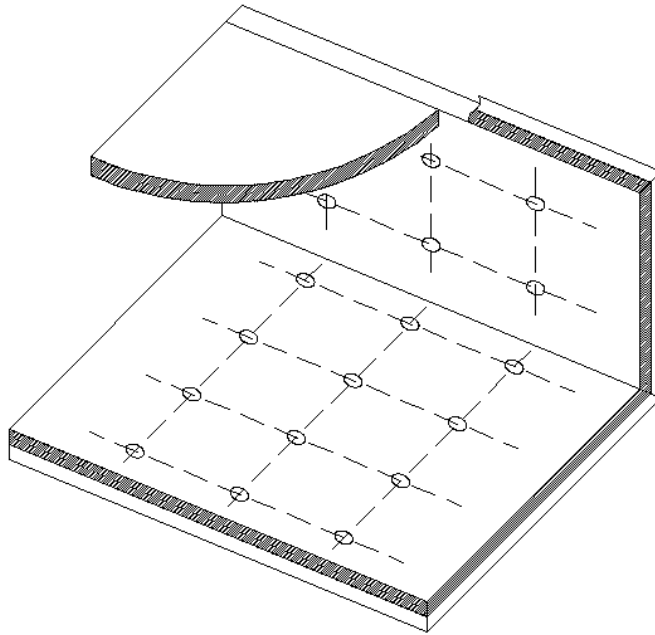
Y-Branch



Pants

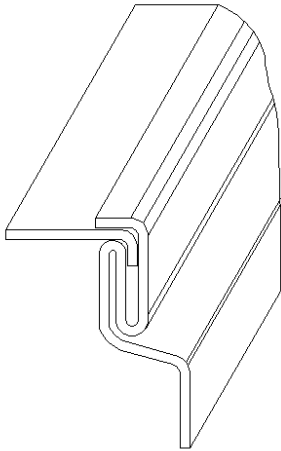


Insulation

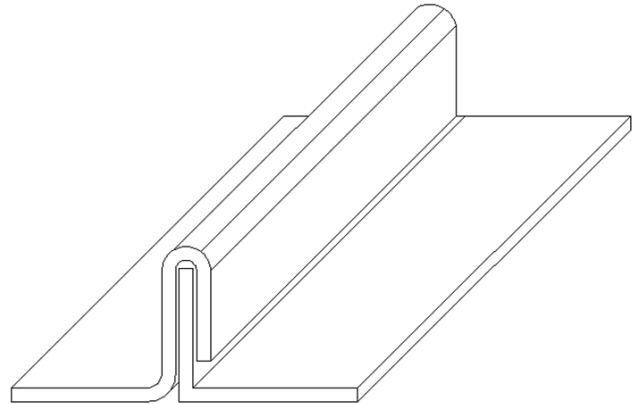


- Fiberglass insulation - 1/2", 1", 1 1/2", 2" common stock sizes
- 1/2" & 1" Armsell Insulation

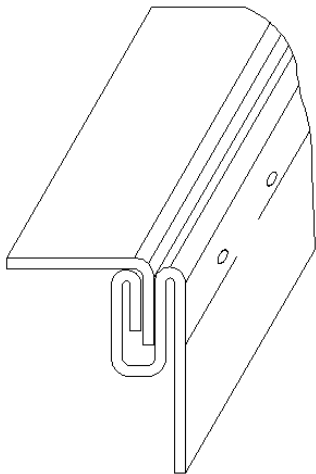
Pittsburgh Lock (26 to 18 gauge)



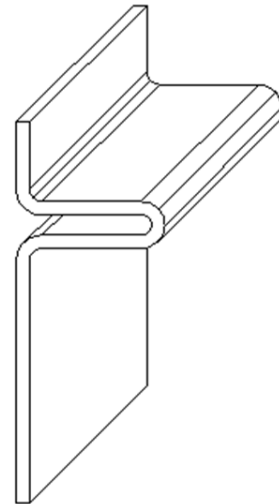
Gore Lock (24 to 20 gauge)



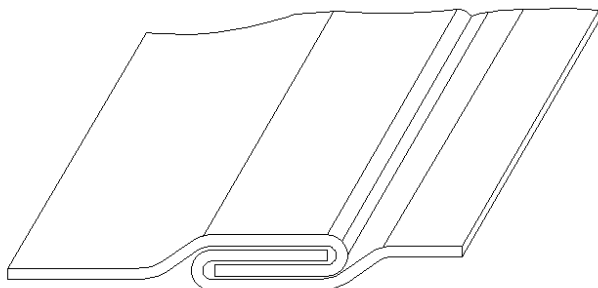
**Button Punch Snap Lock
(26 to 18 gauge)**



**Hammer Lock/Outside Stub
(26 to 20 gauge)**



Flat Lock/ACME (26 to 20 gauge)





Oval Pipe

Pipe is offered standard as spiral oval with lock-formed seams.

Standard materials shown here, other materials available upon request.

MATERIAL AND GAUGE AVAILABILITY

- Galvanized Steel 26 to 10 gauge
- Paint Grip Steel 24 to 18 gauge

Material sold as paint grip is not "Ready to Paint"– It will require cleaning.

- 304 Stainless 26 to 10 gauge
- 316 Stainless 26 to 10 gauge
- MMF PVC 26 to 18 gauge

MMF PVC is not recommended for use in high visibility applications.

- Aluminum 0.25" to .125" 16 .080"
- Carbon Steel 18 to 10 gauge
- Perforated 22 and 20 gauge

ALUMINUM (3003 H14) DUCT THICKNESS

ADJUSTMENTS:

Steel Gauge	Aluminum Thickness
26	.025"
24	.032"
22	.040"
20	.050"
18	.065"





Oval Pipe

All pipe is fabricated from hot-dipped G60 or better galvanized steel in gauges that meet or exceed SMACNA standards for Oval duct. Oval duct and fittings shall be as manufactured with the following standards:

Spiral Duct – Shall be constructed of galvanized steel in the following minimum gauges:

Major Axis	Gauge
24" and smaller	24 Ga
25" to 48"	22 Ga
49" to 74"	20 Ga



SPIRAL PIPE LOCK

Longseam Duct – (For sizes not available in spiral construction) Shall be constructed of galvanized steel in the following minimum gauges:

Major Axis	Gauge
30" and smaller	20 Ga
31" and larger	18 Ga

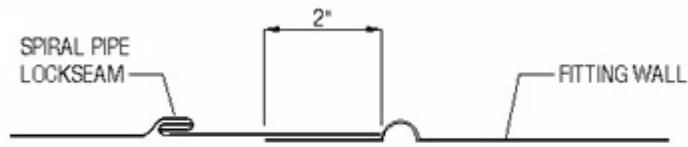
Oval Size & Gauge* Chart

Minor Axis	6	8	10	12	14	16	18	20	22	24	26	
Stock Diameter	Major Axis											
16												24
18		23.8	22.7	21.5	20.3							
20		27.0	25.8	24.7	23.5	22.3	21.2					
22		30.1	29.0	27.8	26.7	25.5	24.3	23.2				
24		33.3	32.1	31.0	29.8	28.7	27.5	26.3	25.2			22 gauge
26		36.5	35.3	34.1	33.0	31.8	30.7	29.5	28.3			
28		39.6	38.5	37.3	36.1	35.0	33.8	32.7	31.5	30.3		
30		42.8	41.6	40.5	39.3	38.1	37.0	35.8	34.7	33.5	32.3	
32		46.0	44.8	43.6	42.5	41.3	40.1	39.0	37.8	36.7	35.5	
34		49.1	48.0	46.8	45.6	44.5	43.3	42.1	41.0	39.8	39.7	
36		52.3	51.1	50.0	48.8	47.6	46.5	45.3	44.1	43.0	41.8	
38		55.5	54.3	53.1	52.0	50.8	49.6	48.5	47.3	46.1	45.0	20 gauge
40		58.6	57.5	56.3	55.1	54.0	52.8	51.6	50.5	49.3	47.1	
42		61.8	60.6	59.5	58.3	57.1	56.0	54.8	53.6	52.5	51.3	
44		64.9	63.8	62.6	61.5	60.3	59.1	58.0	56.8	55.6	54.5	
46		68.1	66.9	65.8	64.6	63.5	62.3	61.1	60.0	58.8	57.6	
48		71.3	70.1	68.9	67.8	66.6	65.5	64.3	63.1	62.0	60.8	
50		74.4	73.3	72.1	70.9	69.8	68.6	67.5	66.3	65.1	64.0	
52		77.6	76.4	75.3	74.1	72.9	71.8	70.6	69.5	68.3	67.1	18 gauge
54		80.8	79.6	78.4	77.3	76.1	74.9	73.8	72.6	71.5	70.3	
56			82.8	81.6	80.4	79.3	78.1	76.9	75.8	74.6	73.5	
58						82.4	81.3	80.1	78.9	77.8	76.6	
60								83.3	82.1	80.9	79.8	

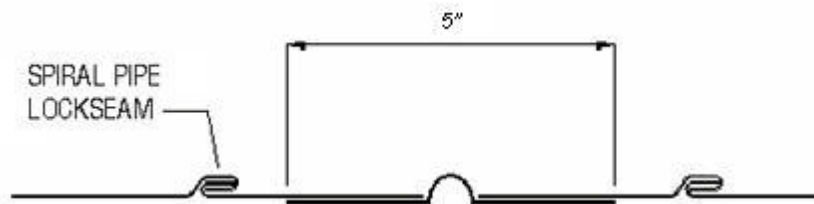
*Gauges as per SMACNA "HVAC Duct Construction Standards", Rev. 3, 2005

Oval

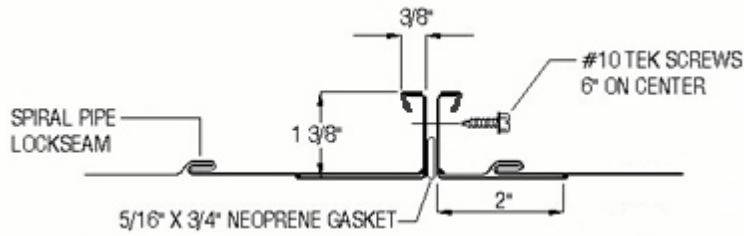
Seams and Connections



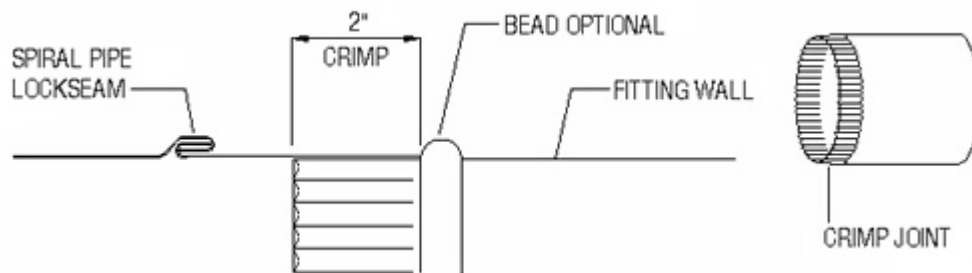
Pipe to Fitting Connection



Pipe to Pipe Connection



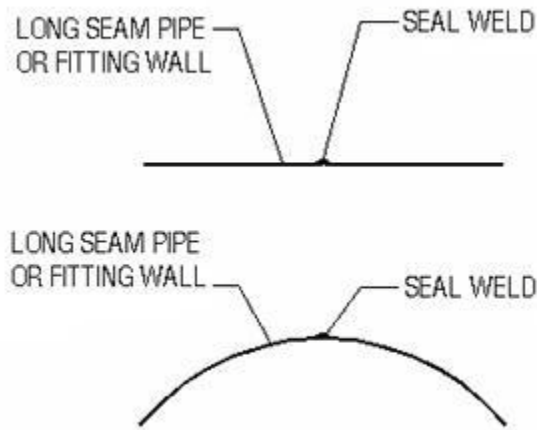
Flanged Connection



Crimp Fit Connection

Oval

Seams and Connections



Welded Long Seam
Butt Weld Joint

Ovalmate and Accuflange connections can also be provided.

Fittings / Long Seam Pipe

All fittings are made standard as male size (1/8" smaller) for slip fit into standard spiral pipe except for female coupling, which is made to slip over standard round duct. Fittings come standard unsealed, with sealing available on request. Fittings are fabricated from hot-dipped galvanized steel that meets or exceeds SMACNA standards. Elbows, unless otherwise specified, are fabricated with centerline radius equal to 1-1/2 times the duct diameter. 90° elbows are of 5-piece segmented construction. 45° elbows are of 3-piece segmented construction. Elbow fittings are fabricated in maximum 22 ½ degree segments with welded seam construction for maximum rigidity and durability. Fittings are fabricated standard, but not limited to, the chart on page 2.

Insulation

Standard insulation is 1" thick, 1.5 pound per cubic foot density, with a thermal conductivity (ASTM C 518) @ 75° F mean temperature of 0.26 (BTUin./hr.ft.2°F), Surface burning characteristics (ASTM E 84, UL 723) are 25 flame spread, 50 smoke developed.

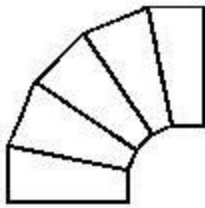
Sound absorption coefficients (ASTM C 423, Type A)

Frequency, Hz						
125	250	500	1000	2000	4000	NRC
0.17	0.24	0.62	0.79	0.88	0.96	0.65

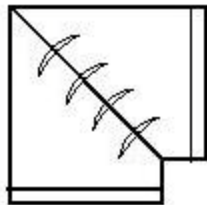
Oval

Fittings

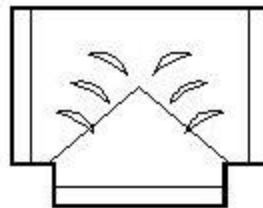
1 GORED ELBOW



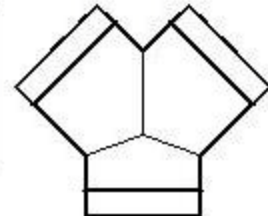
2 MITERED 90° ELBOW



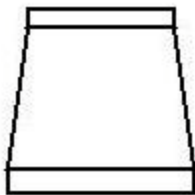
3 BULLHEAD TEE



4 WYE (PANTS)



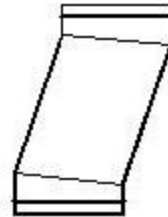
5 CONCENTRIC REDUCER



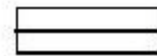
6 ECCENTRIC REDUCER



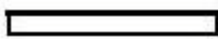
7 OFFSET



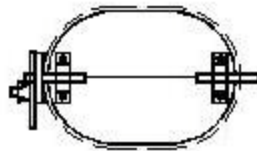
8 MALE DUPLING



9 END CAP



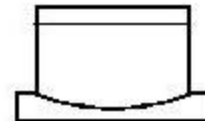
10 DAMPER



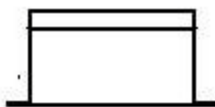
11 FLEX



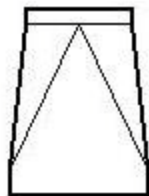
12 SADDLE TAP ON ROUND



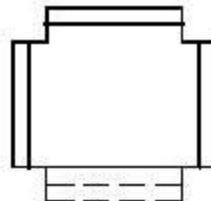
13 SADDLE TAP ON FLAT



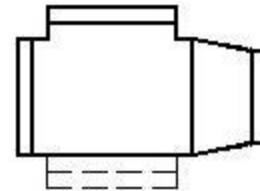
14 SQUARE - OVAL



15 STRAIGHT TEE OR CROSS



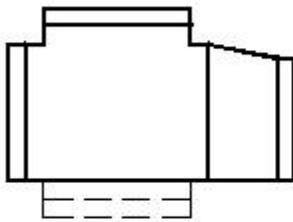
16 REDUCING TEE OR CROSS



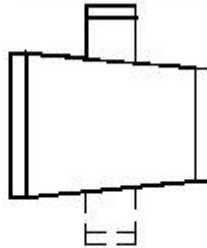
Oval

Fittings

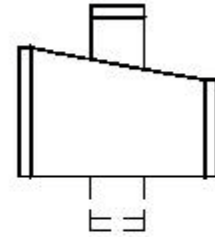
17 REDUCING TEE OR
CROSS - SCENTRIC



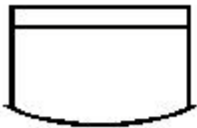
18 REDUCING BODY
TEE OR CROSS



19 REDUCING BODY
TEE/CROSS ECC



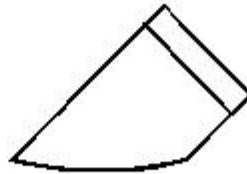
20 TAP CODE S



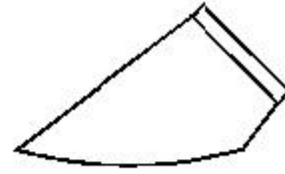
21 TAP CODE L



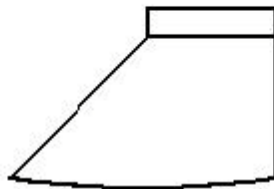
22 TAP CODE D



23 TAP CODE C



24 TAP CODE B

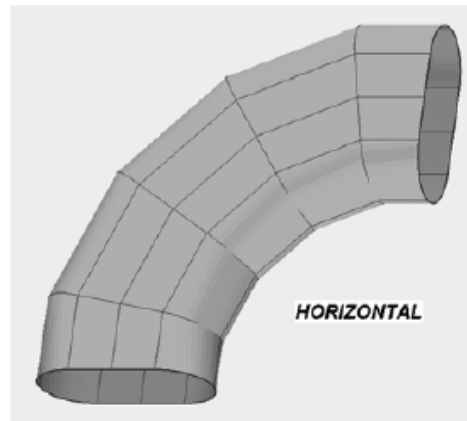
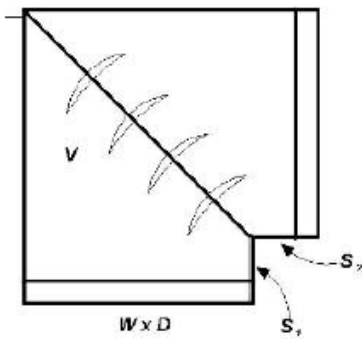
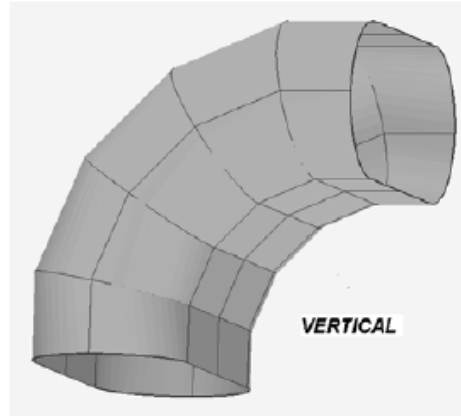
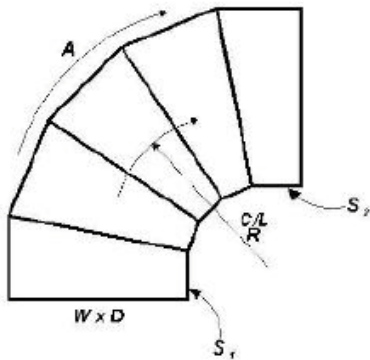


25 REGISTER TAP
TAP CODE R



Oval

Fittings



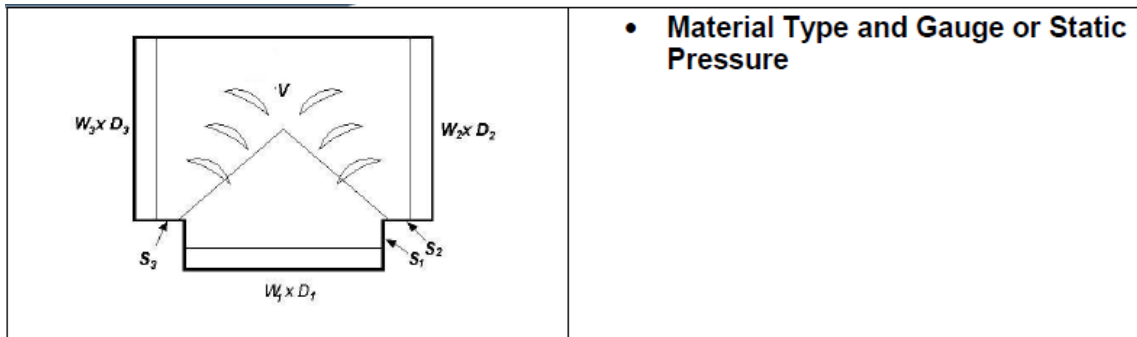
Bull Head

Information Required:

- Horizontal / Vertical
- W equals Major Axis
- D equals Minor Axis
- S equals Straights
- A equals Total Angle
- Centerline Radius
- Vanes

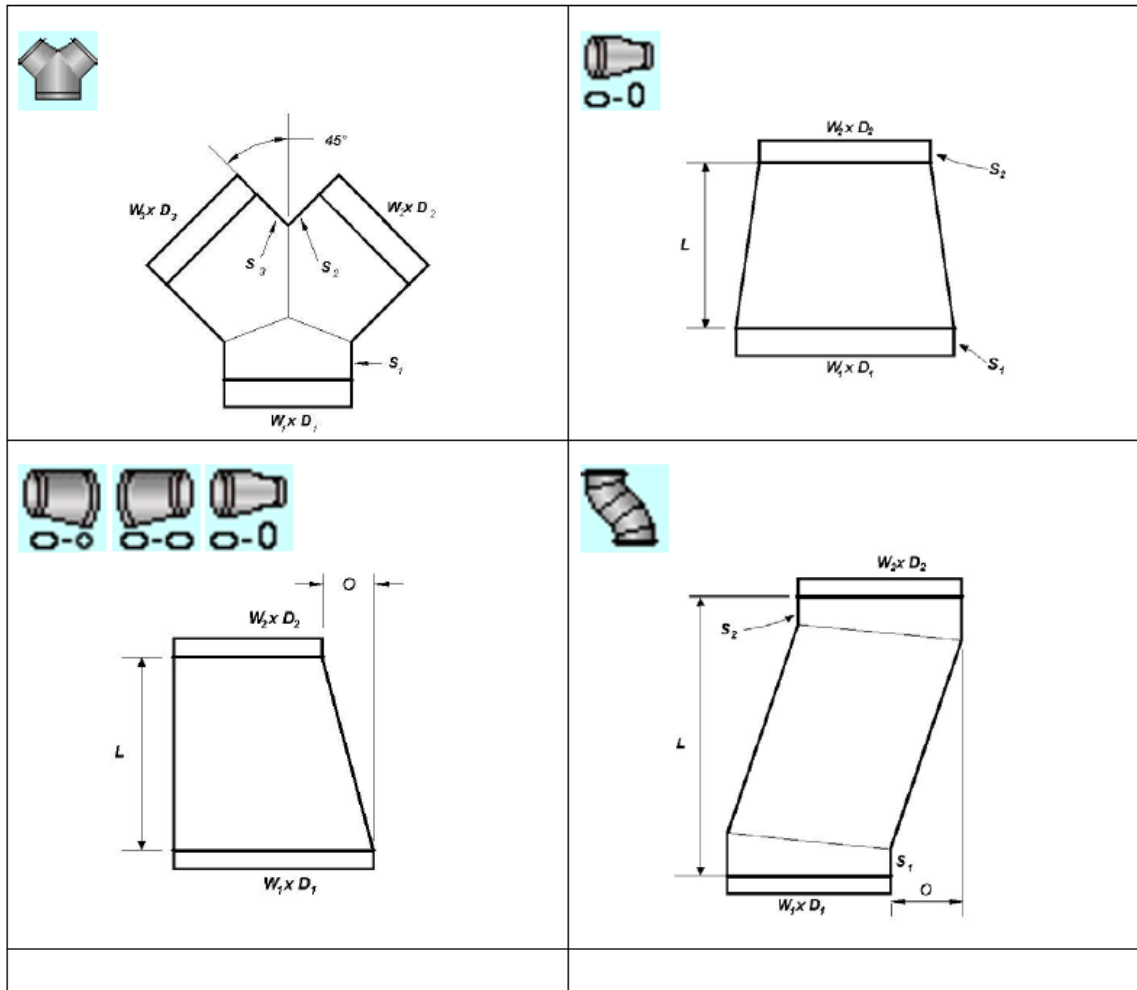
Oval

Fittings




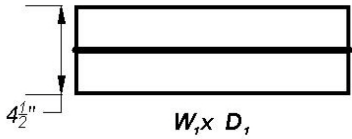
OVAL

WYE / REDUCERS / OFFSET / COUPLING




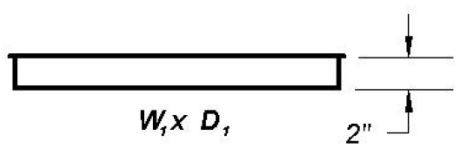

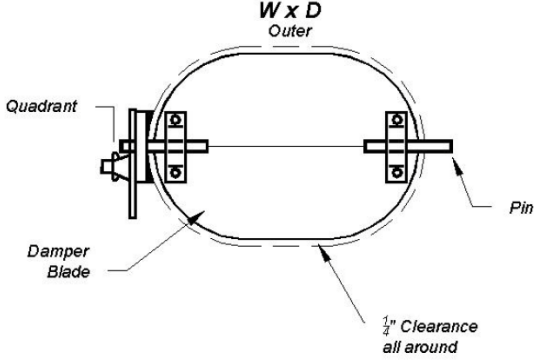



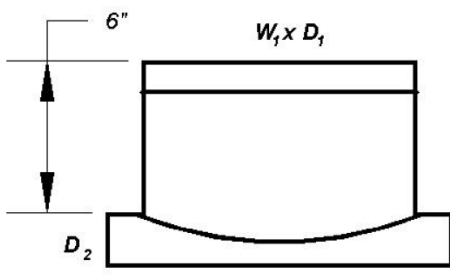
Oval

Fittings

 <p>Coupler 2</p> 	<p>Information Required:</p> <ul style="list-style-type: none"> • Horizontal / Vertical • W equals Major Axis • D equals Minor Axis • S equals Straights • Vanes • L equals Length • O equals Offset • Material Type and Gauge or Static Pressure
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
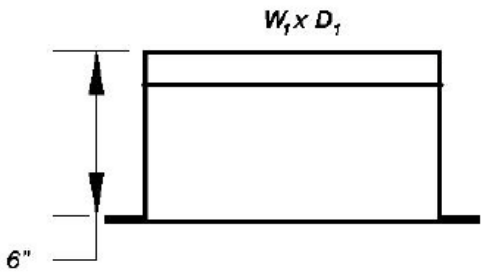
OVAL

ENDCAP / DAMPER / FLEX / SADDLE TAPS


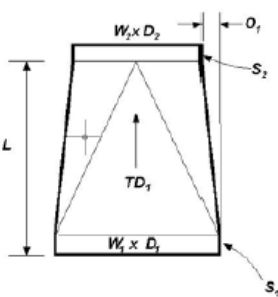

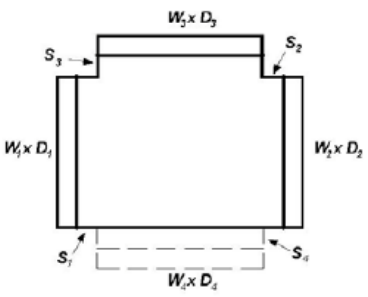

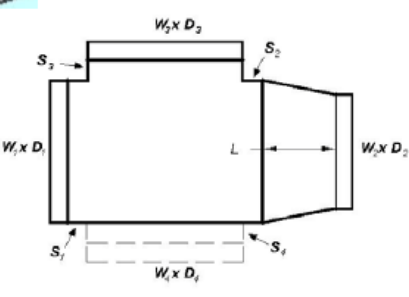

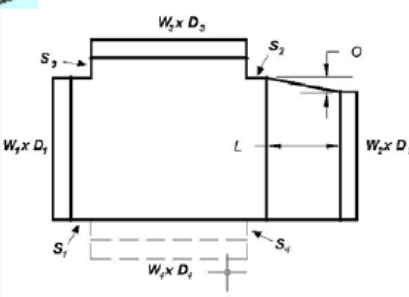
Oval

Fittings

 	<p>Information Required:</p> <ul style="list-style-type: none"> • Horizontal / Vertical • W equals Major Axis • D equals Minor Axis • D2 equals Diameter • Length • Damper Requirements • Flex Requirements • Material Type and Gauge or Static Pressure
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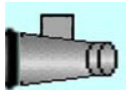
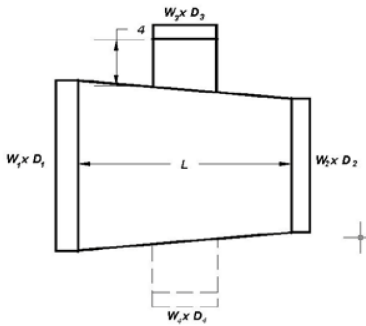
OVAL

SQUARE to OVAL / TEES / CROSSES

 <p>□ to Oval</p> 	 
 	 

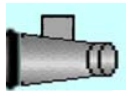
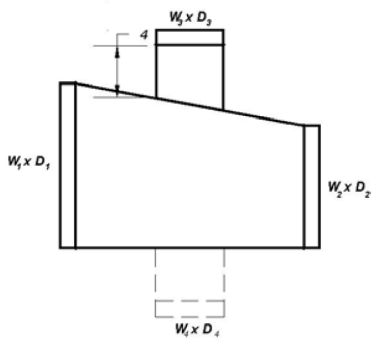

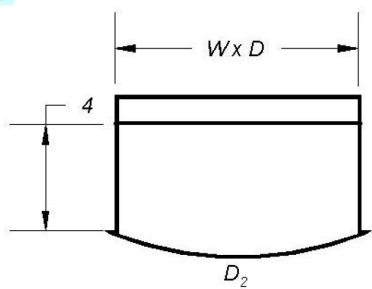


Oval

Fittings

 	<p>Information Required:</p> <ul style="list-style-type: none"> • Horizontal / Vertical • W equals Major Axis • D equals Minor Axis • W3 x D3 • (W4 x D4) • Straights • Length • Offset • Material Type and Gauge or Static Pressure
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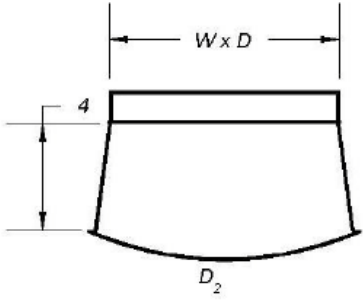
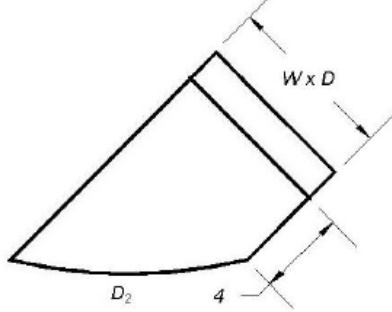
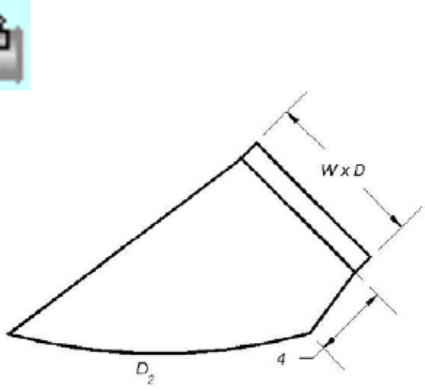
OVAL

TEES / CROSSES / TAPS

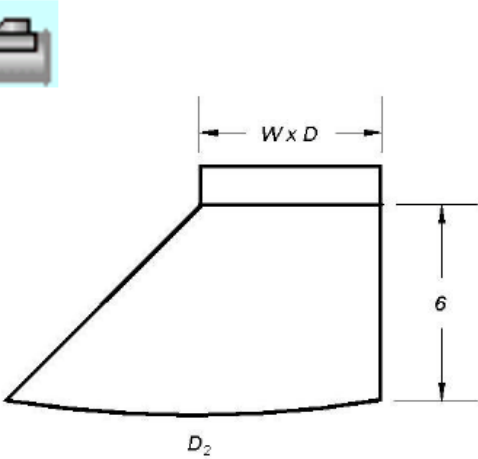
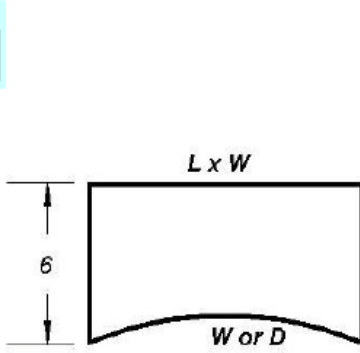
Oval

Fittings

	
	<p>Information Required:</p> <ul style="list-style-type: none"> • Horizontal / Vertical • W equals Major Axis • D equals Minor Axis • W3 x D3 • (W4 x D4) • Straights • Length • D 2 equals Mating Radius • Material Type and Gauge or Static Pressure

OVAL

SHOE TAP / REGISTER TAP

	
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