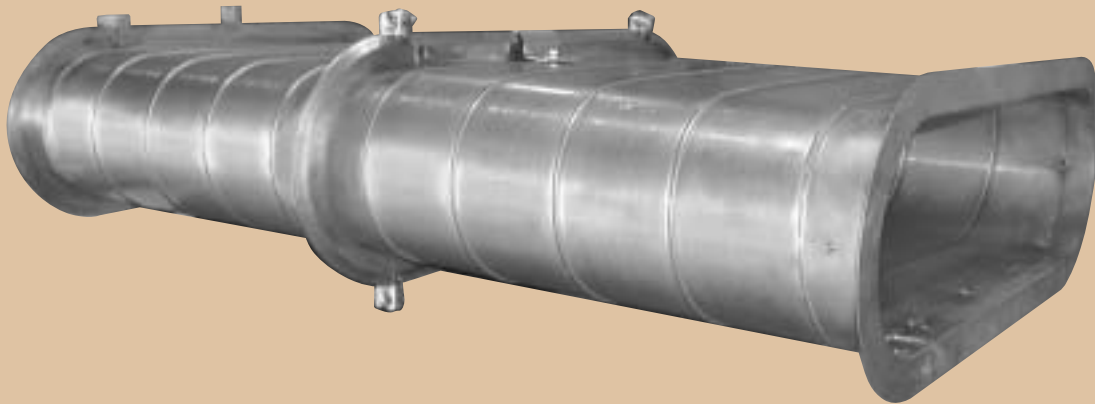




Sheet Metal Connectors Inc.

SPECIFICATIONS FOR FLAT OVAL DUCT AND FITTINGS



MINNEAPOLIS, MN
5850 Main Street N.E.
Minneapolis, MN 55432
LOCALLY CALL: 763-572-0000
TOLL FREE: 1-800-328-1966
FAX: 763-572-1100

ROCKFORD, IL
5601 Sandy Hollow Road
Rockford, IL 61109
LOCALLY CALL: 815-874-4600
TOLL FREE: 1-866-504-4600
FAX: 815-874-9979



Corporate Headquarters

SHEET METAL CONNECTORS, INC.

5850 MAIN STREET N.E. • MINNEAPOLIS, MINNESOTA 55432

Toll Free: 800-328-1966 Local: 763-572-0000 Fax: 763-572-1100

www.smcduct.com

Manufacturing Facilities

5850 Main Street N.E.

Minneapolis, MN 55432

LOCAL: 763-572-0000

TOLL FREE: 1-800-328-1966

FAX: 763-572-1100

5601 Sandy Hollow Road

Rockford, IL 61109

LOCAL: 815-874-4600

TOLL FREE: 1-866-504-4600

FAX: 815-874-9979

**Sheet Metal Connectors, Inc. is proud to be a member or affiliated
with the following associations;**



YELLOW LABEL

Sheet Metal Workers' International Association
Washington, DC



Sheet Metal Air Conditioning Contractors'
National Association
Chantilly, VA



SPIDA
Spiral Duct Manufacturers Association
Irmo, SC

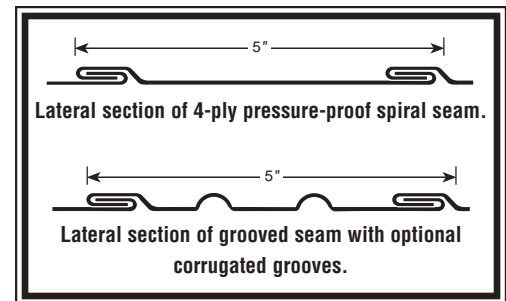


SMACNA Testing & Research Institute
Chantilly, VA

Flat Oval Spiral Pipe & Fittings

Sheet Metal Connectors, Inc. (SMC)

Sheet Metal Connectors, Inc. flat oval single wall duct and fittings are one part of our complete line of HVAC products. Flat oval duct has been designed for restricted space conditions that cannot accept round spiral duct. Flat Oval Spiral Pipe is fabricated in spiral lock seam or longitudinal welded construction. Applied end treatments can be E-Z flange with barrel clamp, standard slip connection, or angle iron rings. Refer to the chart below for specific materials, gauges, and lengths.



MATERIAL	THICKNESS	ASTM	TYPE	LENGTH
Galvanized	26 - 16 gauge	A-653	G60-G90	1' to 12' - 10' standard
Paint Grip	24 - 18 gauge	A-653	A60	1' to 12' - 10' standard
PVS	24 - 16 gauge	A-653	4 x 1, 4 x 4	1' to 12' - 10' standard
Aluminum	.032 - .073	B-316	3003 H-14	1' to 12' - 10' standard
Stainless Steel	24 - 20 gauge	A-240	304 or 316	1' to 12' - 10' standard

Flat Oval Construction

Flat oval is for positive pressure applications only. See Sheet Metal Connectors, Inc. recommended size and gauge chart below.

MAJOR DIMENSION DUCT WIDTH	SPIRAL SEAM DUCT GAUGE	LONGITUDINAL SEAM DUCT GAUGE	GAUGES OF FITTINGS
To 24"	24	20	20
26" to 36"	22	20	20
38" to 48"	22	18	18
50" to 60"	20	18	18
62" to 70"	20	16	16
72" and up	18	16	16



Note: SMACNA Testing and Research Institute verified that Sheet Metal Connectors, Inc. shop standards comply with the 1995-2nd edition of the SMACNA HVAC Duct Construction Standards.

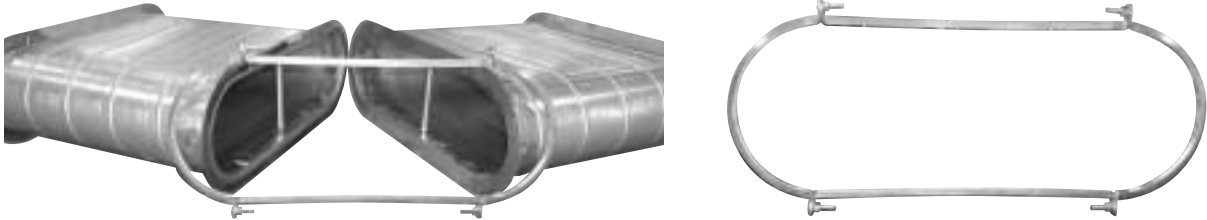


SHEET METAL CONNECTORS, INC.

Flat Oval Connections

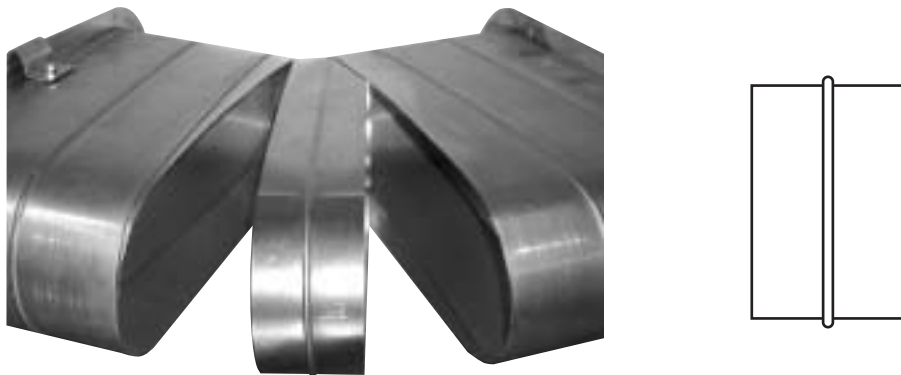
E-Z Flange with Barrel Clamp

The E-Z flange with barrel clamp can be factory installed or shipped loose for field installation. A set consists of two E-Z flanges and one barrel clamp. For field installation the installer attaches the E-Z flange to the pipe and fittings. Next the installer applies the gasket to one flange, mates the two flanges together and attaches the barrel clamp. Sheet Metal Connectors, Inc. also installs E-Z flanges. Flanges are fastened and internally sealed on both ends of spiral pipe and fittings.



Standard Spiral Pipe Connector

Pipe to Pipe connections are made by using a fitting size coupling that slips inside the mating pipe sections, as shown below. A stop bead runs around the middle of the coupling to center the coupling in the connection. Secure the connection by installing sheet metal screws through the outer shell of the duct, 1/2 inch from the stop bead.



Flat Oval Spiral Pipe

Flat oval duct shall be manufactured from Sheet Metal Connectors spiral pipe with the following gauges, unless otherwise specified.

Nominal Duct Width	Equivalent Round*	Gauge	LBS/FT
6" x 22"	12"	24	5.51
25"	12 1/2"	22	7.54
28"	13"	22	8.38
31 1/2"	13 1/2"	22	9.21
34 1/2"	14 1/2"	22	10.05
37 1/2"	15"	22	10.89
41"	15 1/2"	22	11.73
44"	16"	22	12.56
8" x 21"	13 1/2"	24	5.51
24"	14 1/2"	24	7.54
27"	15"	22	8.38
30 1/2"	16"	22	9.21
33"	16 1/2"	22	10.05
36 1/2"	17 1/2"	22	10.89
39 1/2"	18"	22	11.73
43"	18 1/2"	22	12.56
46"	19"	22	13.40
50"	19 1/2"	20	15.57
52 1/2"	20"	20	17.75
10" x 23"	15 1/2"	24	7.54
26"	17"	22	8.38
29"	17 1/2"	22	9.21
32 1/2"	18 1/2"	22	10.05
35 1/2"	19 1/2"	22	10.89
38 1/2"	20"	22	11.73
42"	21"	22	12.56
45"	21 1/2"	22	13.40
48"	22"	22	15.57
51 1/2"	22 1/2"	20	17.75
54 1/2"	23"	20	18.75
57 1/2"	24"	20	19.75
61"	24 1/2"	20	20.75
64"	25"	20	21.75
67"	25 1/2"	20	22.72
70"	26"	20	23.70
74"	26 1/2"	18	28.90
76 1/2"	27"	18	34.10
12" x 25"	18"	22	8.38
28"	19"	22	9.21
31"	20"	22	10.05
34 1/2"	21"	22	10.89
37 1/2"	22"	22	11.73
40 1/2"	22 1/2"	22	12.56
44"	23 1/2"	22	13.40
47"	24"	22	15.57
50"	25"	20	17.75
53 1/2"	26"	20	18.75
56 1/2"	26 1/2"	20	19.75
59"	27"	20	20.75
63"	27 1/2"	20	21.75
66"	28"	20	22.72
69"	28 1/2"	20	23.70
72"	29"	18	28.90
75 1/2"	30"	18	34.10

* For Equal Capacity and Friction Loss

Nominal Duct Width	Equivalent Round*	Gauge	LBS/FT
14" x 27"	20"	22	9.21
30"	21 1/2"	22	10.05
33"	22 1/2"	22	10.89
36 1/2"	23 1/2"	22	11.73
39 1/2"	24 1/2"	22	12.56
42 1/2"	25 1/2"	22	13.40
46"	26"	22	15.57
49"	27"	20	17.75
52"	28"	20	18.75
55 1/2"	28 1/2"	20	19.75
58 1/2"	29"	20	20.75
61 1/2"	30"	20	21.75
65"	30 1/2"	20	22.72
68"	31"	20	23.70
71"	32"	18	28.90
74 1/2"	32 1/2"	18	34.10
16" x 25 1/2"	21"	22	9.21
29"	22 1/2"	22	10.05
32"	23 1/2"	22	10.89
35"	24 1/2"	22	11.73
38 1/2"	26"	22	12.56
41 1/2"	27"	22	13.40
45"	28"	22	15.57
48"	28 1/2"	22	17.75
51"	29 1/2"	20	18.57
54"	30 1/2"	20	19.75
57"	31"	20	20.75
60 1/2"	32"	20	21.75
63"	33"	20	22.72
67"	33 1/2"	20	23.70
70"	34"	18	28.90
73"	34 1/2"	18	34.10
18" x 28"	23"	22	10.05
31"	24 1/2"	22	10.89
34"	26"	22	11.73
37"	27"	22	12.56
40 1/2"	28"	22	13.40
43"	29"	22	15.57
46 1/2"	30"	22	15.10
50"	31"	20	18.75
53"	32"	20	19.75
56"	34"	20	20.75
59 1/2"	33 1/2"	20	21.75
62 1/2"	34 1/2"	20	22.72
65 1/2"	35 1/2"	20	23.70
70"	36"	18	28.90
72"	36 1/2"	18	34.10
20" x 29 1/2"	25"	22	10.89
33"	26 1/2"	22	11.73
36"	28"	22	12.56
39 1/2"	29"	22	13.40
42 1/2"	30"	22	15.57
45 1/2"	31 1/2"	22	17.75
49"	32"	20	18.75
52"	33 1/2"	20	19.75
55"	34 1/2"	20	20.75
58"	35 1/2"	20	21.75
61"	36"	20	22.75
64 1/2"	37"	20	23.70
68"	38"	18	28.90
71"	37 1/2"	18	34.10

* For Equal Capacity and Friction Loss

*Equivalent round dimension is the diameter of the round duct which will have the same volume and friction loss.

These tables are given only as a courtesy. Sheet Metal Connectors is not responsible for any results listed on these charts.



SHEET METAL CONNECTORS, INC.

Flat Oval Duct and Fittings

Legend

FOD - Flat Oval Duct
 FOSET - Offset
 FOS - Coupling
 FON - End Cap
 FOTREC - Oval to Rectangular
 FOR - Reducer

FOE - Elbow
 FOT - Tee
 FOL - Lateral
 FOC - Cross
 FOST - Saddle
 FOY - WYE Fitting

H - Height
 Z - Dimension of Offset
 V - Body Length
 L - Reducer Length
 R - Radius
 S - Slip (2")

Dimension

- The "A" dimension is what you see in the plain view.
- The "B" or second dimension is the hidden dimension.

Example: A 24 x 12 FOE-90-5 is a "Hard Bend" or "Long Way" flat oval 90° elbow
 A 12 x 24 FOE-90-5 is an "Easy Bend" or "Short Way" flat oval 90° elbow

When dimensions C x D, and/or E x F, and/or G x H are shown, the first dimension is the plan dimension. If a fitting end is round, use only one dimension.

Conical fittings taper only on plan side.

Vane Chart

For mitered elbows and tees use the following chart if vanes are required.

"A" Dimension	Number of Vanes
3-9"	2
10-14"	3
15-19"	4
20-60"	5
Over 60"	12" spacing

Ordering

Specify type of fitting and list the following dimensions:

Elbow - A x B

Laterals - (A x B) x (C x D) x (E x F) x (V)

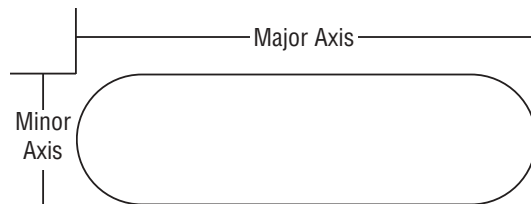
Reducers - (A x B) x (C x D) x (V) x (Z)

Tees - (A x B) x (C x D) x (E x F) x (V)

Crosses - (A x B) x (C x D) x (E x F) x (G x H) x (V)

Offsets - (A x B) x (C x D) x (V) x (Z)

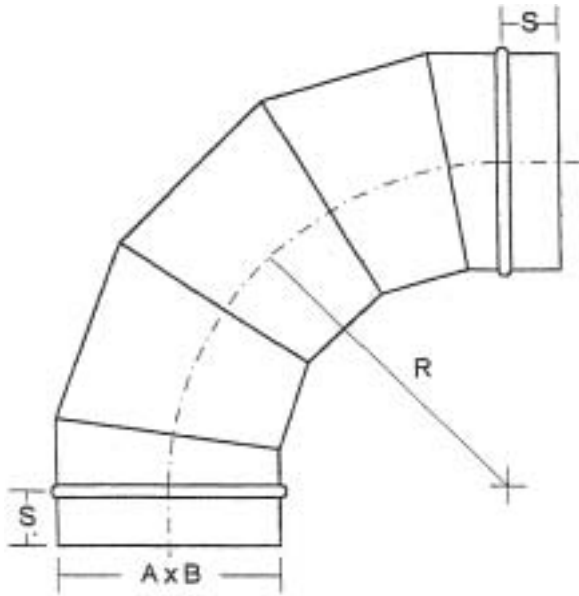
The drawings shown on the following pages are illustrative of the types of fittings manufactured. SMC does not recommend deviation from these drawings.



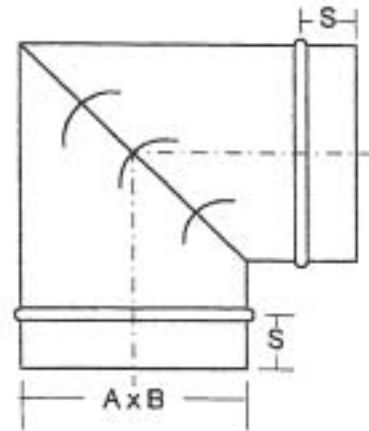
SHEET METAL CONNECTORS, INC.

Fittings

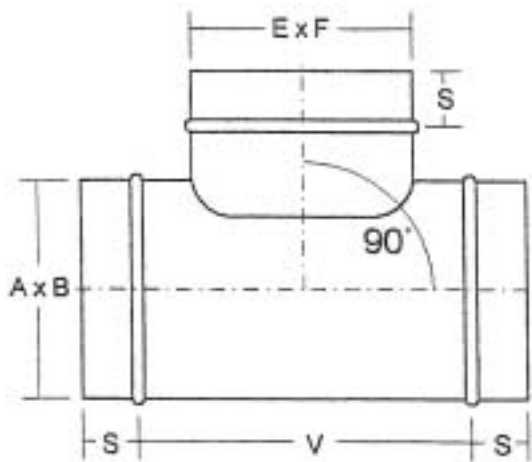
FOE-90-5 FOE-60-4
FOE-45-3
FOE-(Angle)-(No. of Pieces)
 $R = A \times 1.5$



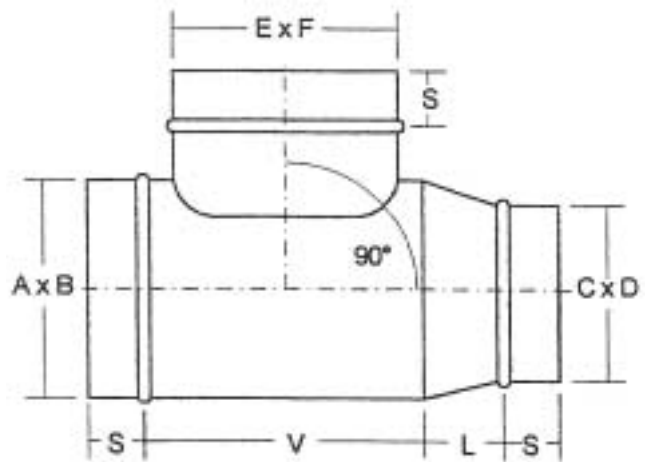
FOE-90-2
Mitered 90°
Specify with or without vanes



FOT-1
Straight Tee



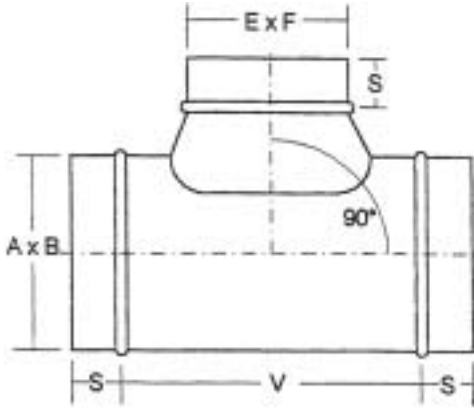
FOT-1R
Reducing Tee



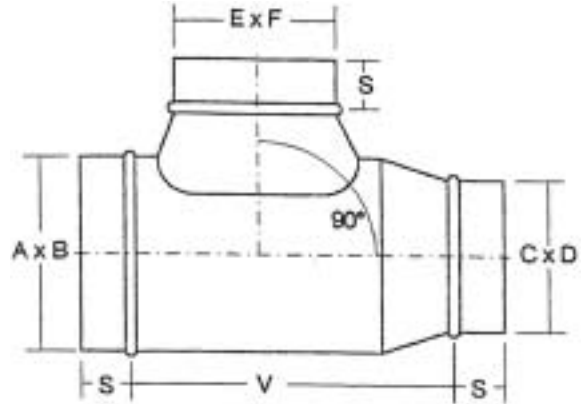
SHEET METAL CONNECTORS, INC.

Fittings

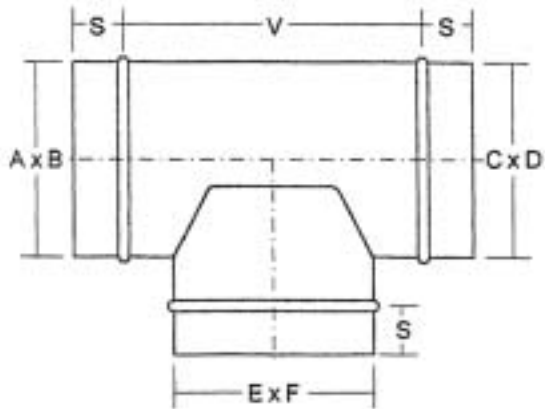
FOCON-T-1
Conical Tee



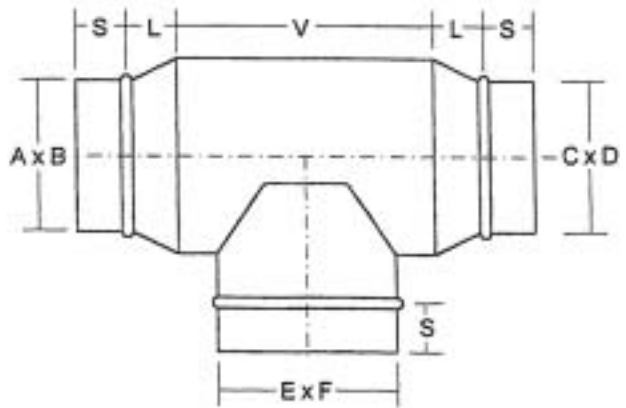
FOCON-T-1R
Reducing Conical Tee



FOBT
Bull Head Tee
Specify With our Without Turning Vanes

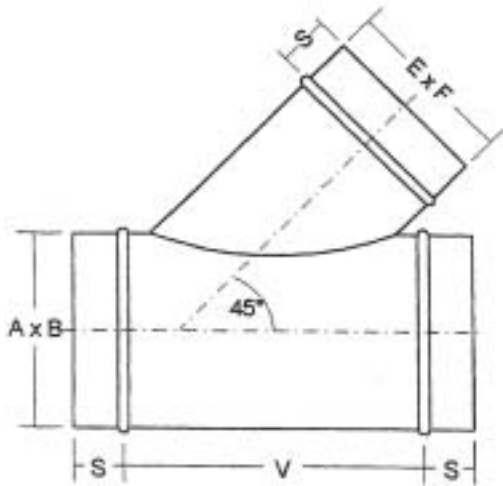


FOBTR
Reducing Bullhead Tee
Specify With or Without Turning Vanes

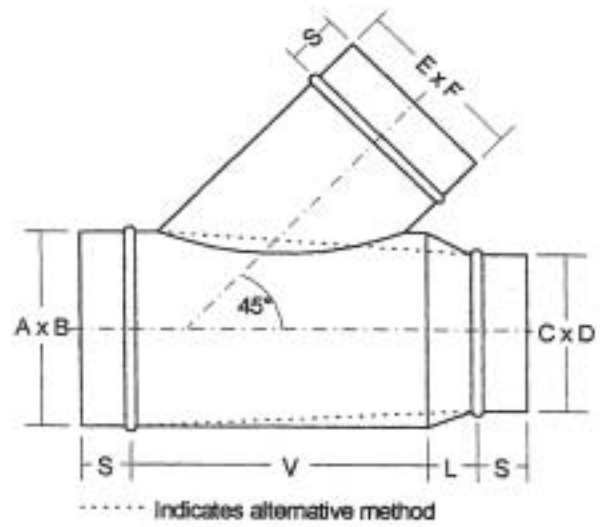


Fittings

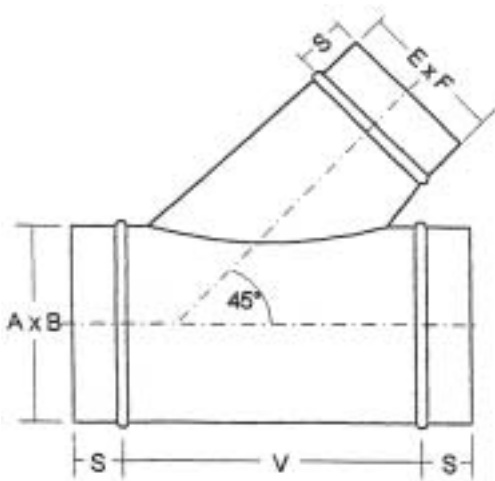
FOL-1
Lateral



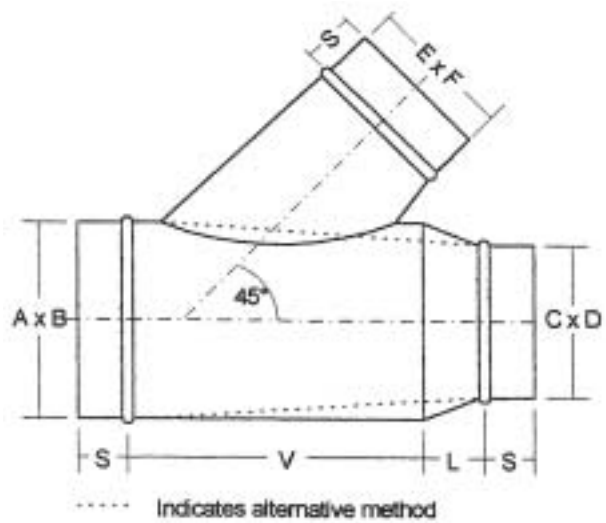
FOL-1R
Reducing Lateral



FOCON-L-1
Conical Lateral

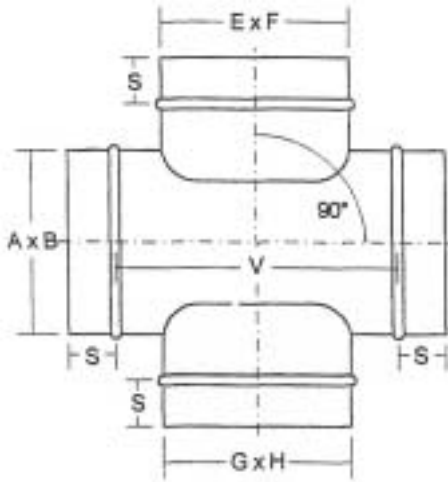


FOCON-L-1R
Reducing Conical Lateral

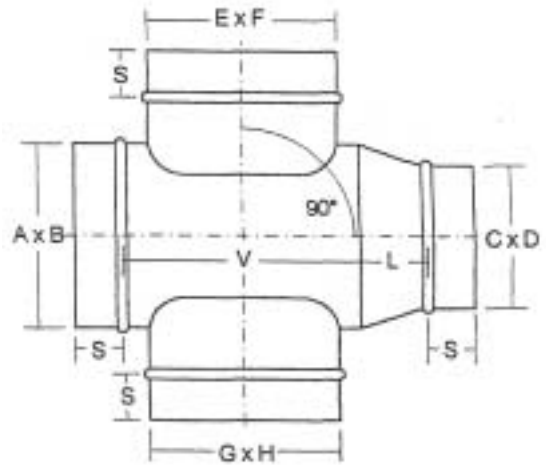


Fittings

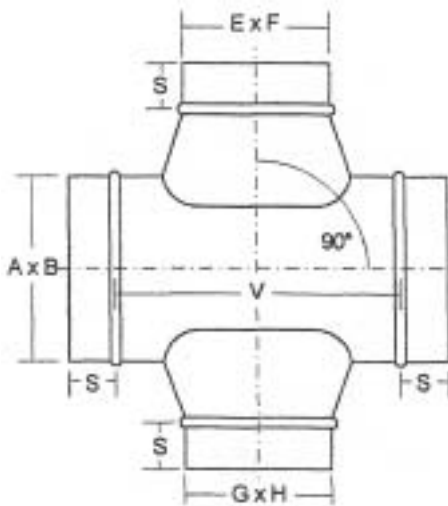
**FOC-2
Cross**



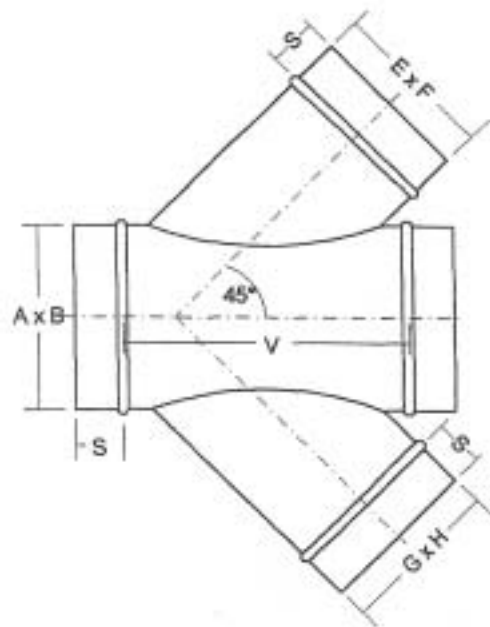
**FOC-2R
Reducing Cross**



**FOCON-C-2
Conical Cross**

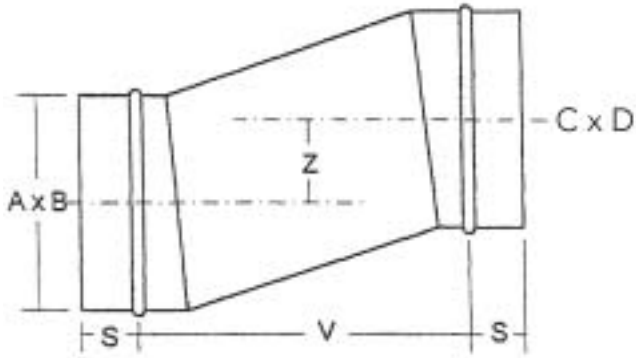


**FOLC-2
Lateral Cross**

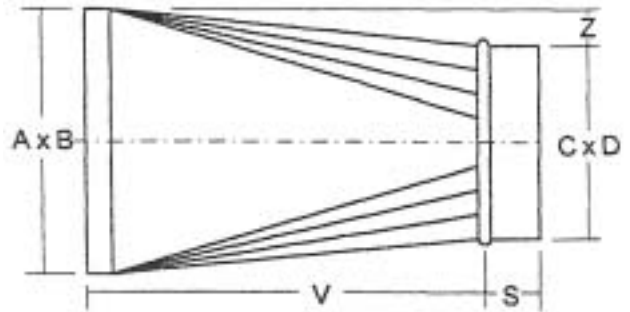


Fittings

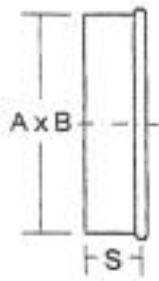
**FOSET
Offset**



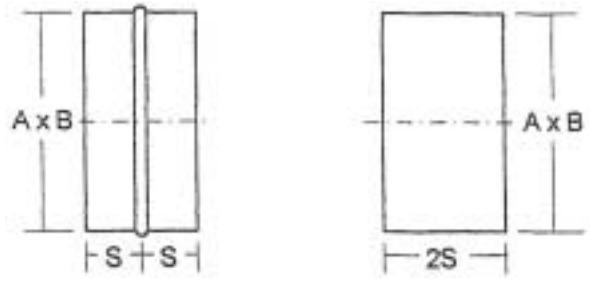
**FOTREC or FOTRND
Oval to Rectangular
Oval to Round**



**FON-1 for Pipe
FON-2 for Fitting
End Cap**

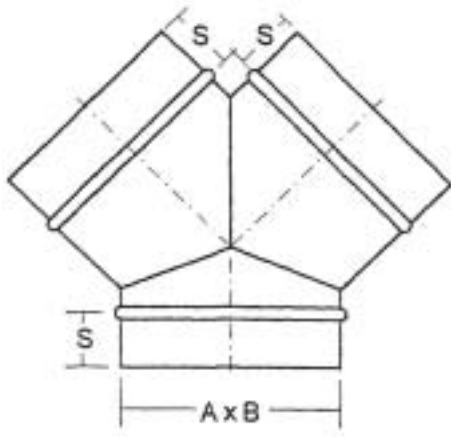


**FOS-1 for Pipe
FOS-2 for fitting
Coupling**

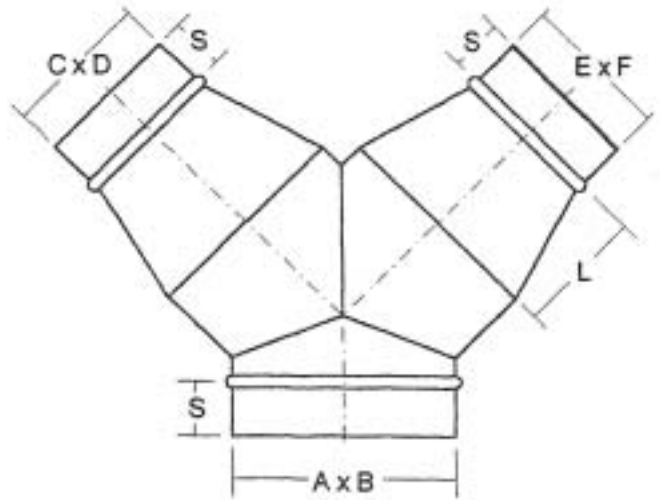


Fittings

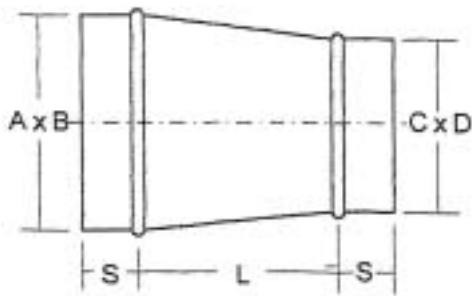
FOY
Equal Y Branch



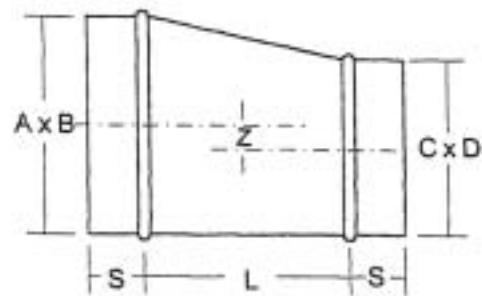
FOREDY
Reducing Y Branch



FOR
Concentric Reducer

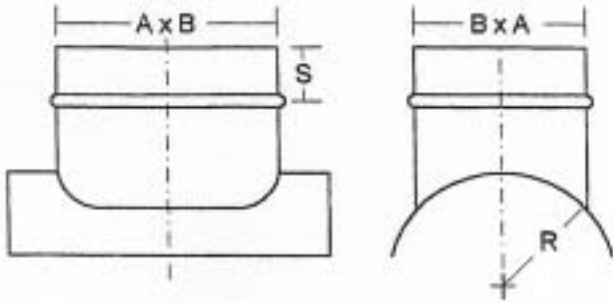


FOER
Eccentric Reducer
Specify "Z" Dimension
Specify top up, down or flat

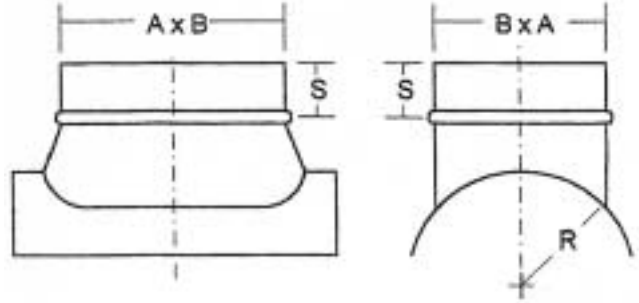


Fittings

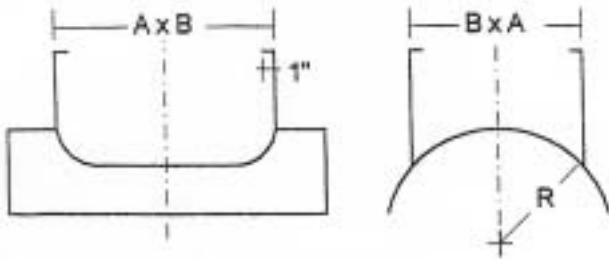
FOST
Saddle Tap
 Specify Minor Axis (2xR)



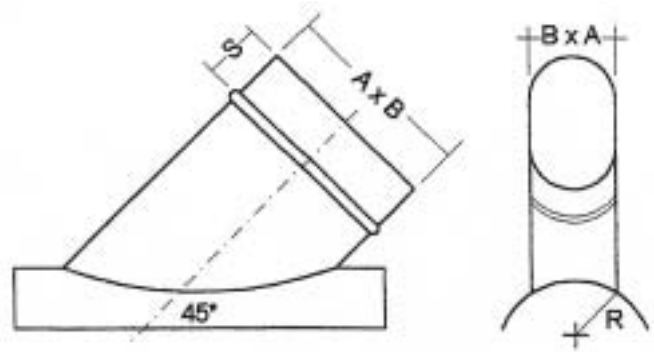
FOCST
Conical Saddle Tap
 Specify Minor Axis (2xR)



FOGBT
Grille Box Tap
 Specify Minor Axis (2xR)



FOLST
Lateral Saddle Tap
 Specify Minor Axis (2xR)



DP1010 WATER BASED DUCT SEALANT - Gray

A smooth, water based, premium quality, U.L. 181 Classified, high velocity duct sealant for commercial and residential use.

Available in 1/12 gallon tubes, 1 gallon pail, or 5 gallon pail.

Recommended Uses:

- Sealing metal joints on air duct where a smooth finish is desired
- Sealing connections on flexible duct or fiberglass ductboard
- Intended for use on duct systems which do not exceed 15 inches water column pressure



DP1090 SOLVENT BASED DUCT SEALANT

A premium quality UL Classified high velocity duct sealant, for commercial use.

Recommended Uses:

- DP1090 is formulated for sealing low, medium and high-pressure metal duct systems in commercial and industrial applications
- DP1090 is intended for use on duct systems which do not exceed 15 inches water column pressure
- DP1090 is ideal for sealing rectangular, round, oval and metal flexible ducts.



DP2501 WATER BASED DUCT LINER ADHESIVE - Clear

A water based, premium quality U.L. Classified duct liner adhesive.

DP 2501 is specifically formulated for roller and low pressure spray applications.

Available in 5 gallon pails, 54 gallon drum

Recommended Uses:

- Bonding fibrous duct liner installation to galvanized ductwork
- Sealing cut edges of fiberglass insulation
- Bonding kraft backed foil coverings to fiberglass and urethane flat stock or pipe insulation
- Bonding multiple layers of fibrous insulation board



DP2502 WATER BASED DUCT LINER ADHESIVE - Clear

A water based, premium quality U.L. Classified duct liner adhesive. DP 2502 is a higher viscosity version of DP 2501. DP 2502 is specifically formulated for spray, brush, and roller applications.

Available in 5 gallon pails, 54 gallon drum

Recommended Uses:

- Bonding fibrous duct liner installation to galvanized ductwork
- Sealing cut edges of fiberglass insulation
- Bonding kraft backed foil coverings to fiberglass and urethane flat stock or pipe insulation
- Bonding multiple layers of fibrous insulation board



DP 2590 SOLVENT BASED SPRAY ADHESIVE

A premium quality, solvent based, fast drying, non-flammable, pressure sensitive insulation adhesive. DP 2590 is supplied in a convenient spray system which is both portable and cost effective.

Available in 12# canister or 40# canister. Pro spray gun and 12' hose sold separately.

Recommended Uses:

- Bonding fiberglass duct liner to galvanized steel, stainless steel and aluminum HVAC duct
- Bonding fiberglass insulation to the exterior of galvanized steel, stainless steel and aluminum HVAC duct
- Sealing and bonding laps in HVAC duct insulation
- Adhering kraft backed foil and foil jacketing to urethane foam



DP 77 INDUSTRIAL SPRAY ADHESIVE

Solvent based industrial strength aerosol duct liner spray adhesive.

Available in 12 oz. spray cans.

Recommended Uses:

- Bonding galvanized metal, wood, fiberglass, foam rubber, cardboard, textiles, cloth and plastics



DP 2" CHIP BRUSH



DUCT TAPE

Product Number	Description Application	Colors	Adhesive	Total Thickness mils (mm)	Tensile Strength lbs/in (kg/cm)	Adhesion To Steel ozs/in (g/cm)
557 Printed	Premium performance duct tape specifically engineered for flex duct systems. Meets UL 181B-FX & UL 723	Grey	Natural Rubber	14.0 (0.36)	45 (8.01)	50 (560)
229	Heavy duty contractor grade duct tape with extra thick adhesive for conformability Meets UL 723	Grey	Natural Rubber	12.0 (0.30)	25 (4.45)	70 (784)
339 Printed	Dead-soft aluminum foil backed duct tape for fiberglass duct systems. UL 181 A-P approved	Silver	Acrylic	4.4 (0.11)	25 (4.45)	72 (806)
330	All-weather duct tape, working temperature range of -35°F to 260°F, plain dead soft aluminum foil, extremely conformable.	Silver	Acrylic	3.5 (0.08)	20 (3.56)	45 (504)



Sheet Metal Connectors, Inc.
5850 Main Street N.E.
Minneapolis, Minnesota 55432-5439