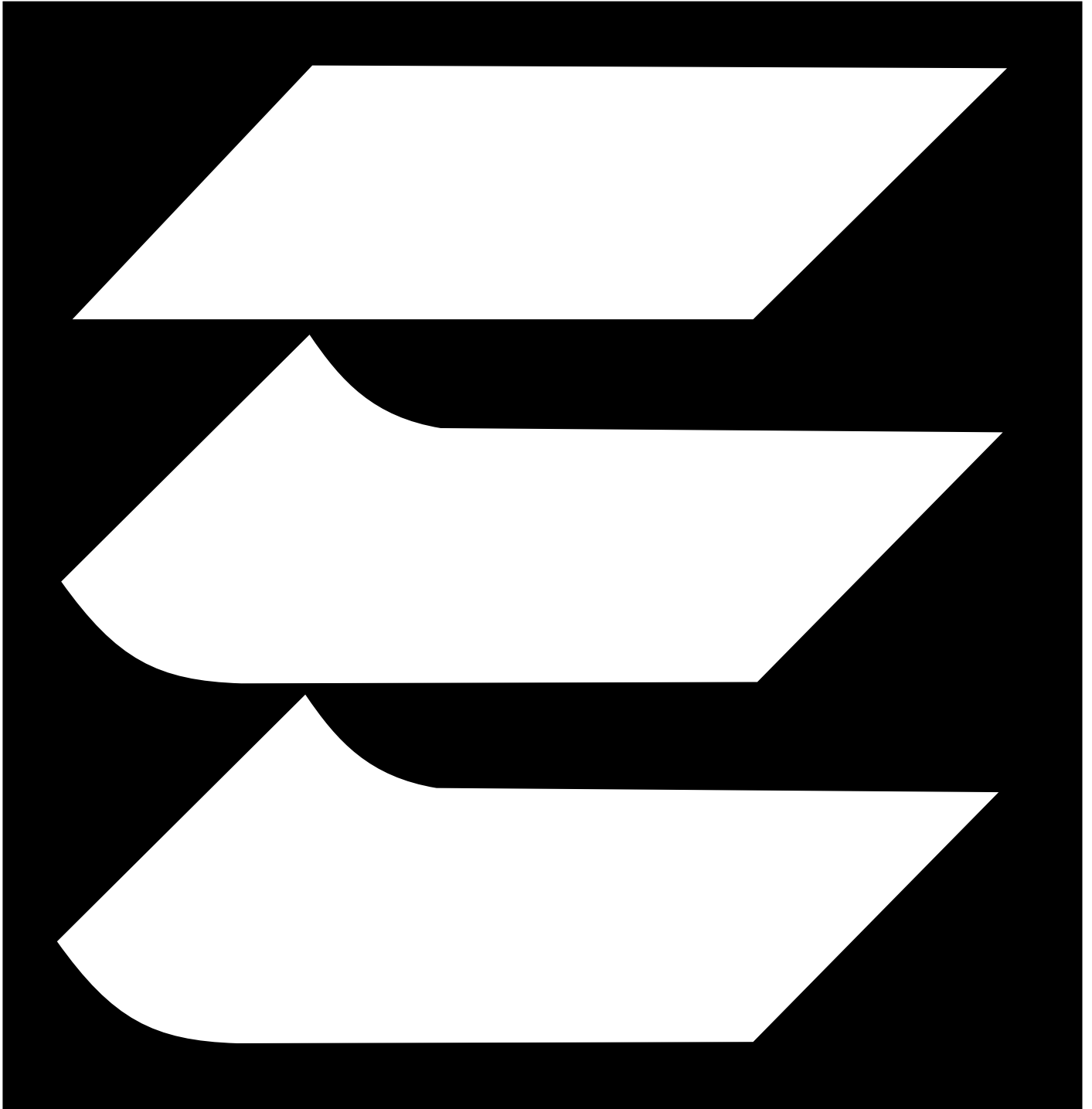




Eastern  
**RECTANGULAR**



**RECTANGULAR DUCTWORK**



# Eastern RECTANGULAR

## RECTANGLE PIPE AND FITTINGS CONSTRUCTION STANDARDS

### Positive and Negative Pressure

Gauge selection for galvanized steel (ASTM A653), paint grip steel, type 304 and 316 stainless steel, and Eastern Poly Coated Steel (PCS). Adjustments must be made for the use of 3003 aluminum.

Standard seams are Pittsburgh lock, type L-1, for both pipe and fittings. All seams are factory sealed.

**Legend:** Eastern Sheet Metal (ESM) offers two types of intermediate reinforcement for rectangular duct work: external reinforcement and mid panel tie rods. Tie rods at the duct joints will be provided where required in addition to the intermediate reinforcement. Two construction tables for each pressure class are provided, corresponding to each reinforcement method.

### EXTERIOR REINFORCEMENT

Maximum Duct Dimension	Gauge	Conn	Joint Tie Rods #	Center Rein. #	Rein.Tie Rods#
0 to 8	26	FS/D	N/R	N/R	N/R
9 to 10	26	SS/D	N/R	N/R	N/R
11 to 12	26	SS/D	N/R	N/R	N/R
13 to 14	26	SS/D	N/R	N/R	N/R
15 to 16	26	SS/D	N/R	N/R	N/R
17 to 18	26	SS/D	N/R	N/R	N/R
19 to 20	26	SS/D	N/R	N/R	N/R
21 to 22	26	SS/D	N/R	N/R	N/R
23 to 24	26	SS/D	N/R	N/R	N/R
25 to 26	26	SS/D	N/R	N/R	N/R
27 to 28	24	TDF	N/R	N/R	N/R
29 to 30	24	TDF	N/R	N/R	N/R
31 to 36	26	TDF	N/R	N/R	N/R
37 to 42	24	TDF	N/R	1	N/R
43 to 48	22	TDF	N/R	1	N/R
49 to 54	26	TDF	N/R	1	N/R
55 to 60	26	TDF	1	1	N/R
61 to 72	20	TDF	1	1	N/R
73 to 84	20	TDF	1	1	1
85 to 96	20	TDF	1	1	1
97 to 108	18	TDF	2	1	2
109 to 120	18	TDF	2	1	2

### MID PANEL TIE ROD REINFORCEMENT

Maximum Duct Dimension	Gauge	Conn	Joint Tie Rods #	Mid Panel Tie Rods #
0 to 8	26	FS/D	N/R	N/R
9 to 10	26	SS/D	N/R	N/R
11 to 12	26	SS/D	N/R	N/R
13 to 14	26	SS/D	N/R	N/R
15 to 16	26	SS/D	N/R	N/R
17 to 18	26	SS/D	N/R	N/R
19 to 20	26	SS/D	N/R	N/R
21 to 22	26	SS/D	N/R	N/R
23 to 24	26	SS/D	N/R	N/R
25 to 26	26	SS/D	N/R	N/R
27 to 28	24	TDF	N/R	N/R
29 to 30	24	TDF	N/R	N/R
31 to 36	26	TDF	N/R	N/R
37 to 42	24	TDF	N/R	1
43 to 48	22	TDF	N/R	1
49 to 54	22	TDF	N/R	1
55 to 60	26	TDF	1	1
61 to 72	20	TDF	1	1
73 to 84	20	TDF	1	2
85 to 96	20	TDF	1	2
97 to 108	18	TDF	2	EXT
109 to 120	18	TDF	2	EXT

FS/D = Flat Slip (T-6) and Drive (T1)

SS/D = Standing Slip (T-10) and Drive (T1)

TDF = 4 Bolt Connection (T25B)

N/R = Not Required

EXT = Use External Reinforcement

ESM will fabricate to any specified construction or shop standard. Please see page 6 for available seams and connections.

### MATERIAL AND GAUGE AVAILABILITY

Galvanized Steel	26 to 10 gauge
Paint Grip Steel	26 to 16 gauge
<i>Material sold as paint grip is not "Ready to Paint"— It will require cleaning.</i>	
304 Stainless	26 to 10 gauge
316 Stainless	26 to 10 gauge
Easter PCS	26 to 18 gauge
<i>Eastern PCS is not recommended for use in high visibility applications.</i>	
Aluminum	.025" to .125"
Carbon Steel	18 to 10 gauge

### ALUMINUM (3003 H14) DUCT THICKNESS ADJUSTMENTS:

Steel Gauge	Aluminum Thickness
26	.025"
24	.032"
22	.040"
20	.050"
18	.065"
16	.080"



# Eastern RECTANGULAR

## RECTANGLE PIPE AND FITTINGS CONSTRUCTION STANDARDS

### 1/2" WG - 5ft. Duct Gauge and Reinforcement Selection - Maximum Drive = 18"

#### EXTERIOR REINFORCEMENT

Maximum Duct Dimension	Gauge	Conn	Joint Tie Rods #	Center Rein. #	Rein.Tie Rods#
0 to 8	26	FS/D	N/R	N/R	N/R
9 to 10	26	SS/D	N/R	N/R	N/R
11 to 12	26	SS/D	N/R	N/R	N/R
13 to 14	26	SS/D	N/R	N/R	N/R
15 to 16	26	SS/D	N/R	N/R	N/R
17 to 18	26	SS/D	N/R	N/R	N/R
19 to 20	26	SS/D	N/R	N/R	N/R
21 to 22	26	SS/D	N/R	N/R	N/R
23 to 24	26	SS/D	N/R	N/R	N/R
25 to 26	26	SS/D	N/R	N/R	N/R
27 to 28	26	TDF	N/R	N/R	N/R
29 to 30	26	TDF	N/R	N/R	N/R
31 to 36	26	TDF	N/R	N/R	N/R
37 to 42	26	TDF	N/R	1	N/R
43 to 48	24	TDF	N/R	1	N/R
49 to 54	24	TDF	1	1	N/R
55 to 60	24	TDF	1	1	N/R
61 to 72	22	TDF	1	1	N/R
73 to 84	22	TDF	1	1	N/R
85 to 96	22	TDF	1	1	N/R
97 to 108	18	TDF	1	1	N/R
109 to 120	18	TDF	1	1	N/R

#### MID PANEL TIE ROD REINFORCEMENT

Maximum Duct Dimension	Gauge	Conn	Joint Tie Rods #	Mid Panel Tie Rods #
0 to 8	26	FS/D	N/R	N/R
9 to 10	26	SS/D	N/R	N/R
11 to 12	26	SS/D	N/R	N/R
13 to 14	26	SS/D	N/R	N/R
15 to 16	26	SS/D	N/R	N/R
17 to 18	26	SS/D	N/R	N/R
19 to 20	26	SS/D	N/R	N/R
21 to 22	26	SS/D	N/R	N/R
23 to 24	26	SS/D	N/R	N/R
25 to 26	26	SS/D	N/R	N/R
27 to 28	26	TDF	N/R	N/R
29 to 30	26	TDF	N/R	N/R
31 to 36	26	TDF	N/R	N/R
37 to 42	26	TDF	N/R	N/R
43 to 48	24	TDF	N/R	N/R
49 to 54	24	TDF	N/R	1
55 to 60	24	TDF	N/R	1
61 to 72	22	TDF	N/R	1
73 to 84	22	TDF	N/R	1
85 to 96	22	TDF	N/R	1
97 to 108	18	TDF	N/R	EXT
109 to 120	18	TDF	N/R	EXT

### 1" WG - 5ft. Duct Gauge and Reinforcement Selection - Maximum Drive = 18"

#### EXTERIOR REINFORCEMENT

Maximum Duct Dimension	Gauge	Conn	Joint Tie Rods #	Center Rein. #	Rein.Tie Rods#
0 to 8	26	FS/D	N/R	N/R	N/R
9 to 10	26	SS/D	N/R	N/R	N/R
11 to 12	26	SS/D	N/R	N/R	N/R
13 to 14	26	SS/D	N/R	N/R	N/R
15 to 16	26	SS/D	N/R	N/R	N/R
17 to 18	26	SS/D	N/R	N/R	N/R
19 to 20	26	SS/D	N/R	N/R	N/R
21 to 22	26	SS/D	N/R	N/R	N/R
23 to 24	26	SS/D	N/R	N/R	N/R
25 to 26	26	SS/D	N/R	N/R	N/R
27 to 28	26	TDF	N/R	N/R	N/R
29 to 30	26	TDF	N/R	N/R	N/R
31 to 36	24	TDF	N/R	N/R	N/R
37 to 42	24	TDF	N/R	N/R	N/R
43 to 48	22	TDF	N/R	N/R	N/R
49 to 54	22	TDF	N/R	N/R	N/R
55 to 60	24	TDF	N/R	1	N/R
61 to 72	24	TDF	N/R	1	N/R
73 to 84	22	TDF	1	1	N/R
85 to 96	20	TDF	1	1	N/R
97 to 108	18	TDF	2	1	2
109 to 120	18	TDF	2	1	2

#### MID PANEL TIE ROD REINFORCEMENT

Maximum Duct Dimension	Gauge	Conn	Joint Tie Rods #	Mid Panel Tie Rods #
0 to 8	26	FS/D	N/R	N/R
9 to 10	26	SS/D	N/R	N/R
11 to 12	26	SS/D	N/R	N/R
13 to 14	26	SS/D	N/R	N/R
15 to 16	26	SS/D	N/R	N/R
17 to 18	26	SS/D	N/R	N/R
19 to 20	26	SS/D	N/R	N/R
21 to 22	26	SS/D	N/R	N/R
23 to 24	26	SS/D	N/R	N/R
25 to 26	26	SS/D	N/R	N/R
27 to 28	26	TDF	N/R	N/R
29 to 30	26	TDF	N/R	N/R
31 to 36	24	TDF	N/R	N/R
37 to 42	24	TDF	N/R	N/R
43 to 48	22	TDF	N/R	N/R
49 to 54	22	TDF	N/R	N/R
55 to 60	24	TDF	N/R	1
61 to 72	24	TDF	N/R	2
73 to 84	22	TDF	1	2
85 to 96	20	TDF	1	2
97 to 108	18	TDF	2	EXT
109 to 120	18	TDF	2	EXT



# Eastern RECTANGULAR

## RECTANGLE PIPE AND FITTINGS CONSTRUCTION STANDARDS

### 2" WG - 5ft. Duct Gauge and Reinforcement Selection - Maximum Drive = 18"

#### EXTERIOR REINFORCEMENT

Maximum Duct Dimension	Gauge	Conn	Joint Tie Rods #	Center Rein. #	Rein.Tie Rods#
0 to 8	26	FS/D	N/R	N/R	N/R
9 to 10	26	SS/D	N/R	N/R	N/R
11 to 12	26	SS/D	N/R	N/R	N/R
13 to 14	26	SS/D	N/R	N/R	N/R
15 to 16	26	SS/D	N/R	N/R	N/R
17 to 18	26	SS/D	N/R	N/R	N/R
19 to 20	26	SS/D	N/R	N/R	N/R
21 to 22	26	SS/D	N/R	N/R	N/R
23 to 24	26	SS/D	N/R	N/R	N/R
25 to 26	26	SS/D	N/R	N/R	N/R
27 to 28	24	TDF	N/R	N/R	N/R
29 to 30	24	TDF	N/R	N/R	N/R
31 to 36	26	TDF	N/R	N/R	N/R
37 to 42	24	TDF	N/R	1	N/R
43 to 48	22	TDF	N/R	1	N/R
49 to 54	22	TDF	N/R	1	N/R
55 to 60	22	TDF	1	1	N/R
61 to 72	20	TDF	1	1	N/R
73 to 84	20	TDF	1	1	1
85 to 96	20	TDF	1	1	1
97 to 108	18	TDF	2	1	2
109 to 120	18	TDF	2	1	2

#### MID PANEL TIE ROD REINFORCEMENT

Maximum Duct Dimension	Gauge	Conn	Joint Tie Rods #	Mid Panel Tie Rods #
0 to 8	26	FS/D	N/R	N/R
9 to 10	26	SS/D	N/R	N/R
11 to 12	26	SS/D	N/R	N/R
13 to 14	26	SS/D	N/R	N/R
15 to 16	26	SS/D	N/R	N/R
17 to 18	26	SS/D	N/R	N/R
19 to 20	26	SS/D	N/R	N/R
21 to 22	26	SS/D	N/R	N/R
23 to 24	26	SS/D	N/R	N/R
25 to 26	26	SS/D	N/R	N/R
27 to 28	24	TDF	N/R	N/R
29 to 30	24	TDF	N/R	N/R
31 to 36	26	TDF	N/R	N/R
37 to 42	24	TDF	N/R	1
43 to 48	22	TDF	N/R	1
49 to 54	22	TDF	N/R	1
55 to 60	22	TDF	1	1
61 to 72	20	TDF	1	1
73 to 84	20	TDF	1	2
85 to 96	20	TDF	1	2
97 to 108	18	TDF	2	EXT
109 to 120	18	TDF	2	EXT

### 3" WG - 5ft. Duct Gauge and Reinforcement Selection - Maximum Drive = 18"

#### EXTERIOR REINFORCEMENT

Maximum Duct Dimension	Gauge	Conn	Joint Tie Rods #	Center Rein. #	Rein.Tie Rods#
0 to 8	26	TDF	N/R	N/R	N/R
9 to 10	26	TDF	N/R	N/R	N/R
11 to 12	26	TDF	N/R	N/R	N/R
13 to 14	24	TDF	N/R	N/R	N/R
15 to 16	24	TDF	N/R	N/R	N/R
17 to 18	24	TDF	N/R	N/R	N/R
19 to 20	24	TDF	N/R	N/R	N/R
21 to 22	24	TDF	N/R	N/R	N/R
23 to 24	24	TDF	N/R	N/R	N/R
25 to 26	24	TDF	N/R	N/R	N/R
27 to 28	22	TDF	N/R	N/R	N/R
29 to 30	22	TDF	N/R	N/R	N/R
31 to 36	24	TDF	N/R	1	N/R
37 to 42	22	TDF	N/R	1	N/R
43 to 48	22	TDF	1	1	N/R
49 to 54	22	TDF	1	1	N/R
55 to 60	20	TDF	1	1	N/R
61 to 72	20	TDF	1	1	1
73 to 84	20	TDF	1	1	1
85 to 96	18	TDF	1	1	1
97 to 108	18	TDF	2	1	2
109 to 120	18	TDF	2	1	2

#### MID PANEL TIE ROD REINFORCEMENT

Maximum Duct Dimension	Gauge	Conn	Joint Tie Rods #	Mid Panel Tie Rods #
0 to 8	26	TDF	N/R	N/R
9 to 10	26	TDF	N/R	N/R
11 to 12	26	TDF	N/R	N/R
13 to 14	24	TDF	N/R	N/R
15 to 16	24	TDF	N/R	N/R
17 to 18	24	TDF	N/R	N/R
19 to 20	24	TDF	N/R	N/R
21 to 22	24	TDF	N/R	N/R
23 to 24	24	TDF	N/R	N/R
25 to 26	24	TDF	N/R	N/R
27 to 28	22	TDF	N/R	N/R
29 to 30	22	TDF	N/R	N/R
31 to 36	24	TDF	N/R	1
37 to 42	22	TDF	N/R	1
43 to 48	22	TDF	1	1
49 to 54	22	TDF	1	1
55 to 60	20	TDF	1	1
61 to 72	20	TDF	1	2
73 to 84	20	TDF	1	2
85 to 96	18	TDF	1	2
97 to 108	18	TDF	2	EXT
109 to 120	18	TDF	2	EXT



# Eastern RECTANGULAR

## RECTANGLE PIPE AND FITTINGS CONSTRUCTION STANDARDS

### 4" WG - 5ft. Duct Gauge and Reinforcement Selection - Maximum Drive = 18"

#### EXTERIOR REINFORCEMENT

Maximum Duct Dimension	Gauge	Conn	Joint Tie Rods #	Center Rein. #	Rein.Tie Rods#
0 to 8	26	TDF	N/R	N/R	N/R
9 to 10	26	TDF	N/R	N/R	N/R
11 to 12	26	TDF	N/R	N/R	N/R
13 to 14	24	TDF	N/R	N/R	N/R
15 to 16	24	TDF	N/R	N/R	N/R
17 to 18	24	TDF	N/R	N/R	N/R
19 to 20	24	TDF	N/R	N/R	N/R
21 to 22	24	TDF	N/R	N/R	N/R
23 to 24	22	TDF	N/R	N/R	N/R
25 to 26	22	TDF	N/R	N/R	N/R
27 to 28	22	TDF	N/R	N/R	N/R
29 to 30	24	TDF	N/R	1	N/R
31 to 36	22	TDF	N/R	1	N/R
37 to 42	22	TDF	1	1	N/R
43 to 48	20	TDF	1	1	N/R
49 to 54	20	TDF	1	1	N/R
55 to 60	20	TDF	1	1	1
61 to 72	20	TDF	1	1	1
73 to 84	18	TDF	1	1	1
85 to 96	18	TDF	1	1	1
97 to 108	18	TDF	2	1	2
109 to 120	18	TDF	2	1	2

#### MID PANEL TIE ROD REINFORCEMENT

Maximum Duct Dimension	Gauge	Conn	Joint Tie Rods #	Mid Panel Tie Rods #
0 to 8	26	TDF	N/R	N/R
9 to 10	26	TDF	N/R	N/R
11 to 12	26	TDF	N/R	N/R
13 to 14	26	TDF	N/R	N/R
15 to 16	26	TDF	N/R	N/R
17 to 18	26	TDF	N/R	N/R
19 to 20	26	TDF	N/R	N/R
21 to 22	26	TDF	N/R	N/R
23 to 24	26	TDF	N/R	N/R
25 to 26	26	TDF	N/R	N/R
27 to 28	26	TDF	N/R	N/R
29 to 30	26	TDF	N/R	N/R
31 to 36	26	TDF	N/R	N/R
37 to 42	26	TDF	N/R	N/R
43 to 48	24	TDF	N/R	N/R
49 to 54	24	TDF	N/R	1
55 to 60	24	TDF	N/R	1
61 to 72	22	TDF	N/R	1
73 to 84	22	TDF	N/R	1
85 to 96	22	TDF	N/R	1
97 to 108	18	TDF	N/R	EXT
109 to 120	18	TDF	N/R	EXT

### 6" WG - 5ft. Duct Gauge and Reinforcement Selection - Maximum Drive = 18"

#### EXTERIOR REINFORCEMENT

Maximum Duct Dimension	Gauge	Conn	Joint Tie Rods #	Center Rein. #	Rein.Tie Rods#
0 to 8	24	TDF	N/R	N/R	N/R
9 to 10	24	TDF	N/R	N/R	N/R
11 to 12	24	TDF	N/R	N/R	N/R
13 to 14	26	TDF	N/R	1	N/R
15 to 16	26	TDF	N/R	1	N/R
17 to 18	26	TDF	N/R	1	N/R
19 to 20	26	TDF	N/R	1	N/R
21 to 22	24	TDF	N/R	1	N/R
23 to 24	24	TDF	N/R	1	N/R
25 to 26	24	TDF	N/R	1	N/R
27 to 28	22	TDF	N/R	1	N/R
29 to 30	22	TDF	N/R	1	N/R
31 to 36	20	TDF	N/R	1	N/R
37 to 42	20	TDF	1	1	N/R
43 to 48	20	TDF	1	1	1
49 to 54	20	TDF	1	1	1
55 to 60	20	TDF	1	1	1
61 to 72	18	TDF	1	1	1
73 to 84	18	TDF	1	1	1
85 to 96	16	TDF	1	1	1
97 to 108	16	TDF	2	1	2
109 to 120	16	TDF	2	1	2

#### MID PANEL TIE ROD REINFORCEMENT

Maximum Duct Dimension	Gauge	Conn	Joint Tie Rods #	Mid Panel Tie Rods #
0 to 8	26	TDF	N/R	N/R
9 to 10	26	TDF	N/R	N/R
11 to 12	26	TDF	N/R	N/R
13 to 14	26	TDF	N/R	N/R
15 to 16	26	TDF	N/R	N/R
17 to 18	26	TDF	N/R	N/R
19 to 20	26	TDF	N/R	N/R
21 to 22	26	TDF	N/R	N/R
23 to 24	26	TDF	N/R	N/R
25 to 26	26	TDF	N/R	N/R
27 to 28	26	TDF	N/R	N/R
29 to 30	26	TDF	N/R	N/R
31 to 36	26	TDF	N/R	N/R
37 to 42	26	TDF	N/R	N/R
43 to 48	24	TDF	N/R	N/R
49 to 54	24	TDF	N/R	1
55 to 60	24	TDF	N/R	1
61 to 72	22	TDF	N/R	1
73 to 84	22	TDF	N/R	1
85 to 96	22	TDF	N/R	1
97 to 108	18	TDF	N/R	EXT
109 to 120	18	TDF	N/R	EXT

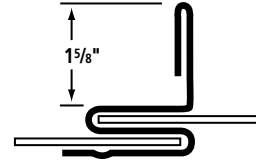
## CONNECTOR TYPES



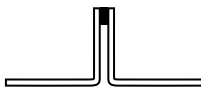
T-1 DRIVE SLIP



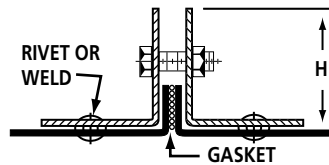
T-6 HEMMED "S" SLIP



T-10 STANDING S



T-21 WELD FLANGE



T-22 COMPANION ANGLES

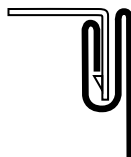


T-25b FLANGED

## SEAM TYPES (Fig. 1-5)



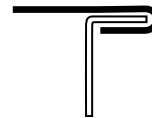
L-1 PITTSBURGH  
LOCK



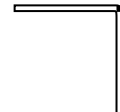
L-2 BUTTON PUNCH  
SNAP LOCK



L-4 STANDING SEAM



L-5 SINGLE  
CORNER SEAM



CORNER WELD

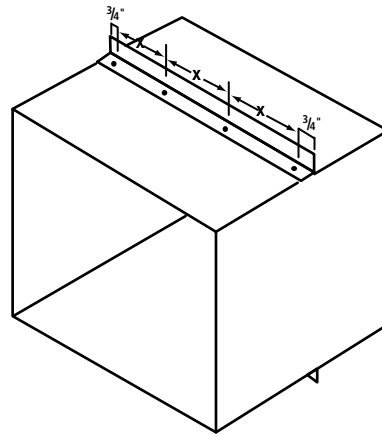
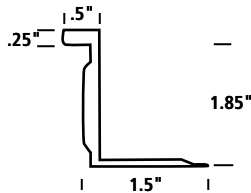


# Rectangular REINFORCEMENT

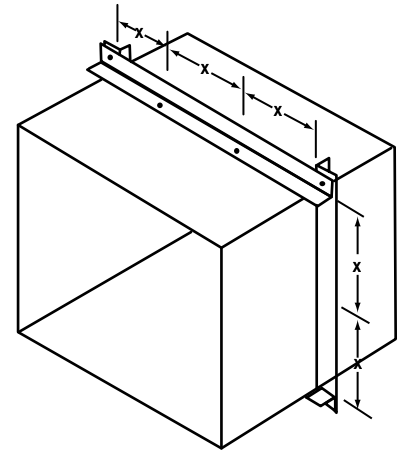
## INTERMEDIATE REINFORCEMENT

### H REINFORCEMENT

Rollformed from 24 gauge galvanized steel. Conforms to SMACNA "H" equivalent.



2-Sided Reinforcement



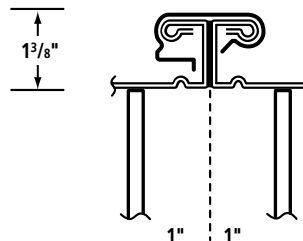
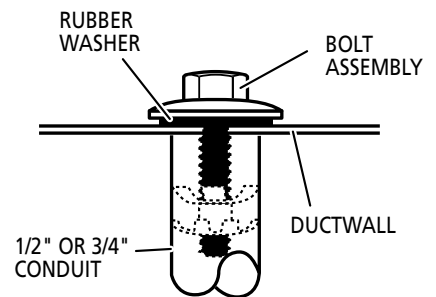
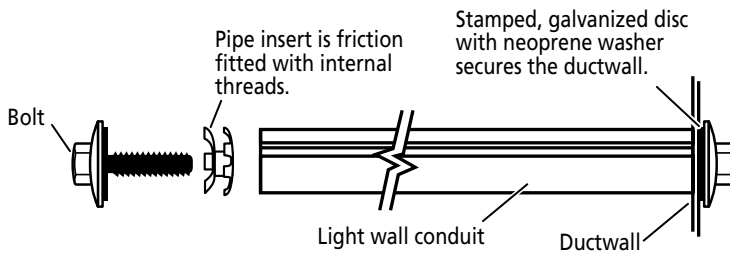
4-Sided Reinforcement

X=8" Maximum fastener (tack weld, spotweld, bolt, screw, or rivet) spacing when ends are tied, the 3/4" interval may be omitted.

When reinforcements occur at the same location on adjacent sides at 4" W.G. (1000 Pa) static and over, tie the ends.

For duct  $\geq 4"$  W.G., ends of reinforcement must be tied together.

## TIE RODS



Each duct section is tied at both ends



# Rectangular LINER

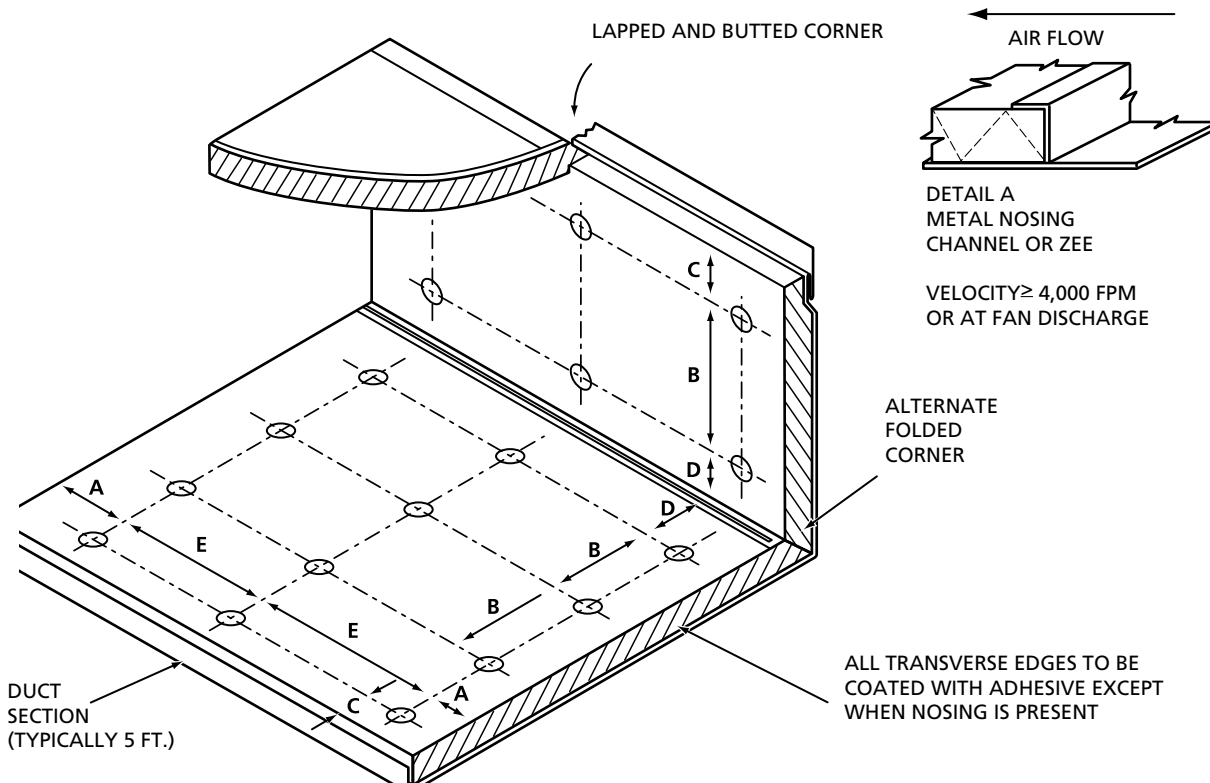
## EASTERN SHEET METAL STOCKS

½"-2 lb. density liner

1"-1½ lb. density liner

*Other thicknesses and densities available upon request.*

## LINER INSTALLATION



## TECHNICAL DATA

Fire Resistance: Meets NFPA 90A and NFPA 90B Standards for fire safety.

Temperature Range: ASTM C 411. Up to +250°F (+121°C)

Air Velocity: ASTM C 1071

Maximum 6000 fpm (1829 mpm)

Water Vapor Sorption: ASTM C 2204. Less than 3% by weight.

Surface Burning Characteristics: UL/ULC Listed. When tested in accordance with ASTM E 84, UL 723, CAN 4-S102, and NFPA-255, Knauf Duct Liner E•M does not exceed: 25 Flame spread, 50 Smoke developed

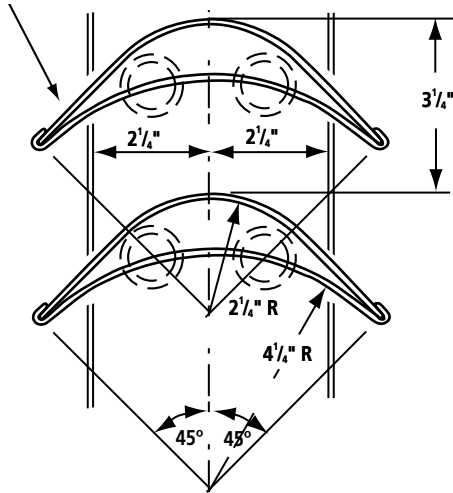
Microbial Growth: ASTM C 1338, G21, G22. The airstream surface mat facing is treated with an EPA registered antimicrobial agent to aid in the prevention of fungal and bacterial growth.



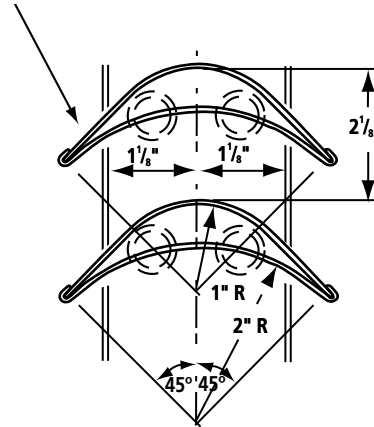
# Rectangular VANES

## DUAL VANES

24 ga MIN.

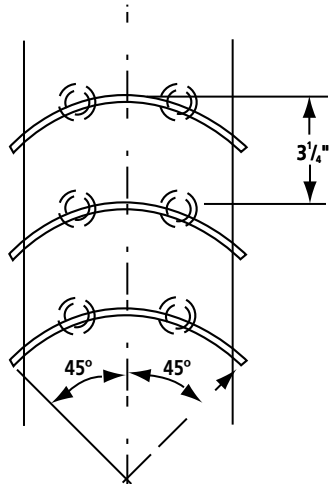


25 ga MIN.

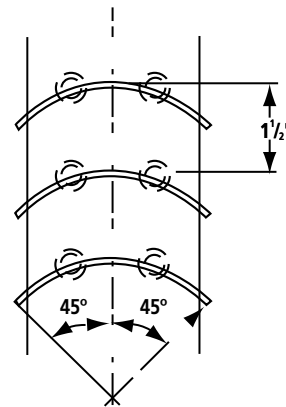


## SINGLE VANES

22 ga MIN.



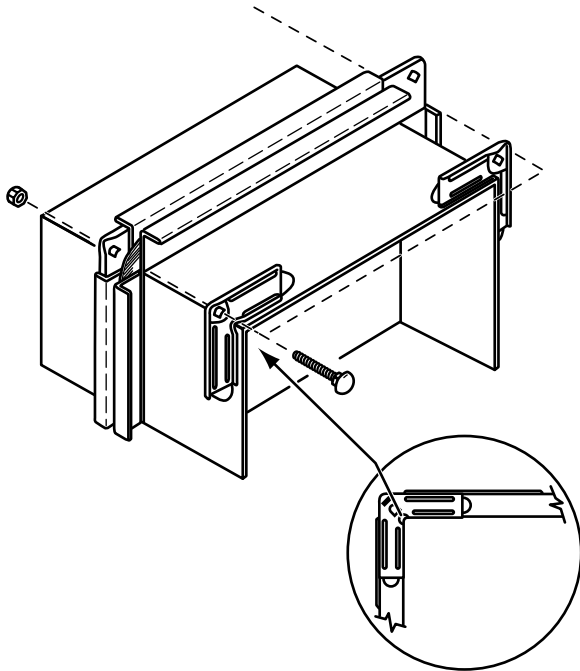
24 ga MIN.



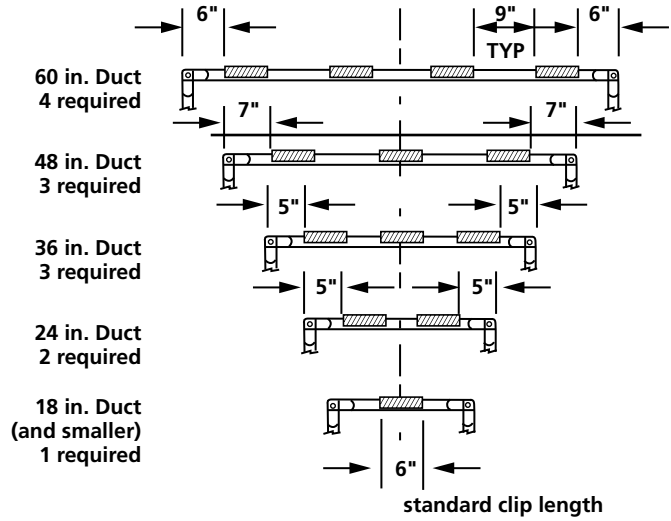


# Rectangular DUCT & FITTINGS

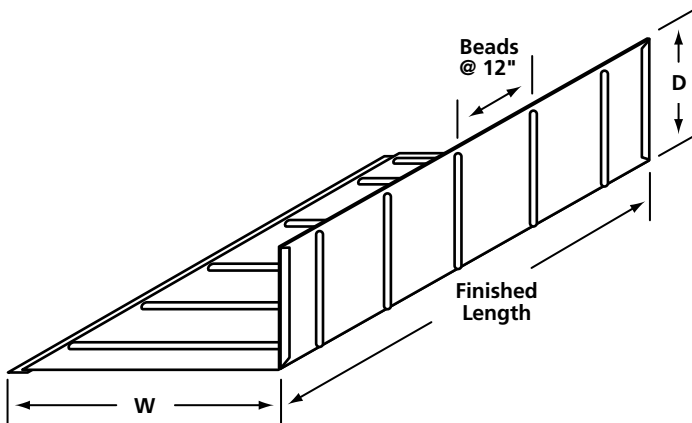
## TDF CONNECTION



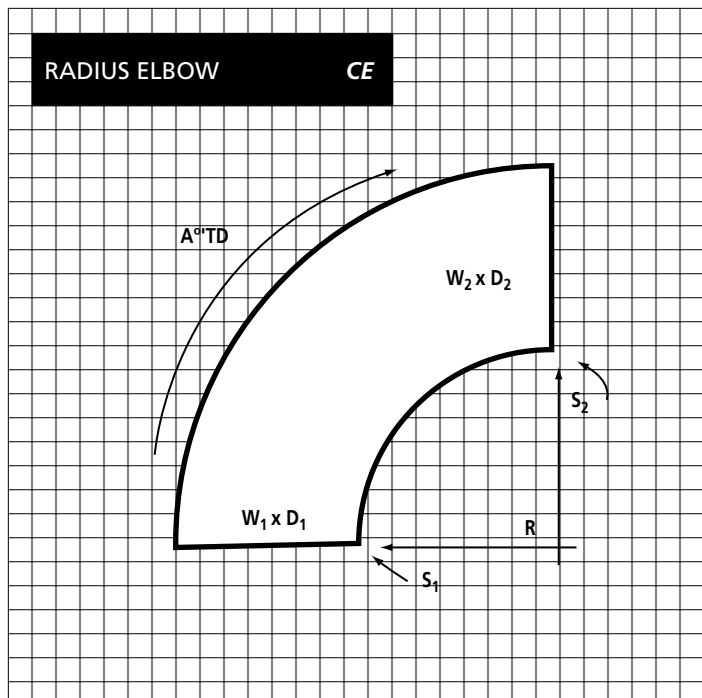
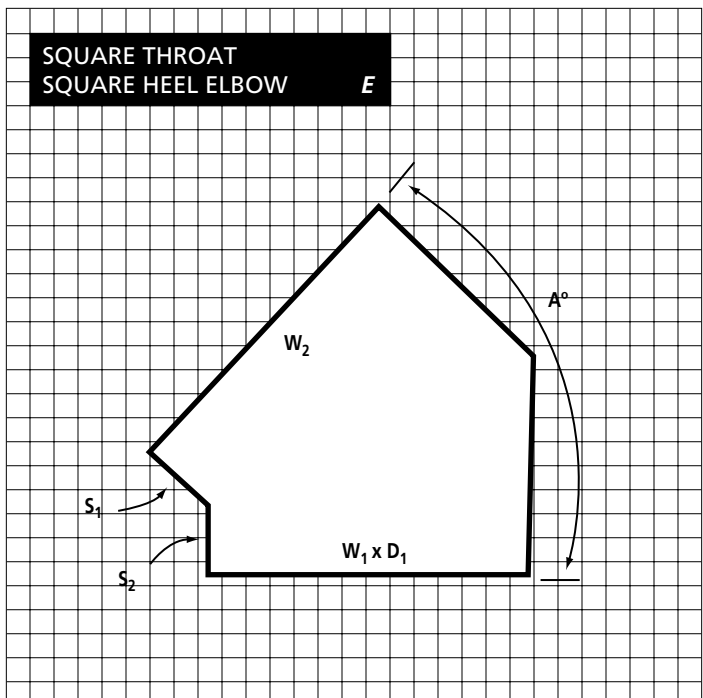
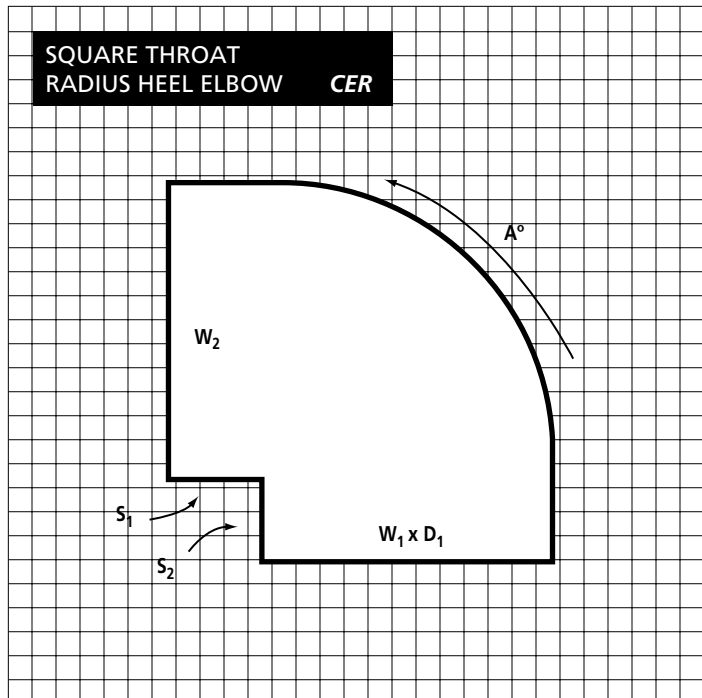
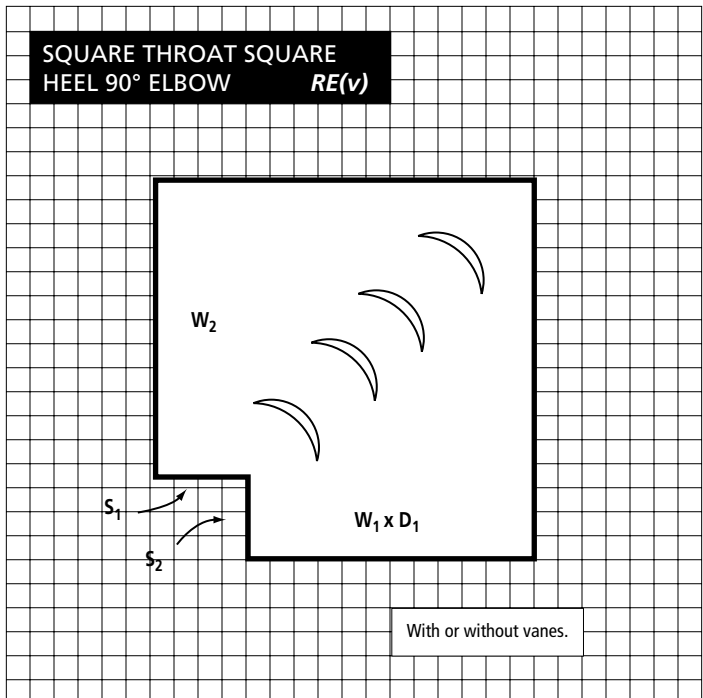
## RECOMMENDED CLIP SPACING



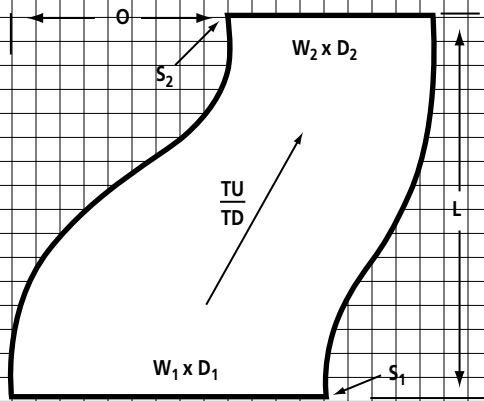
## STRAIGHT DUCT



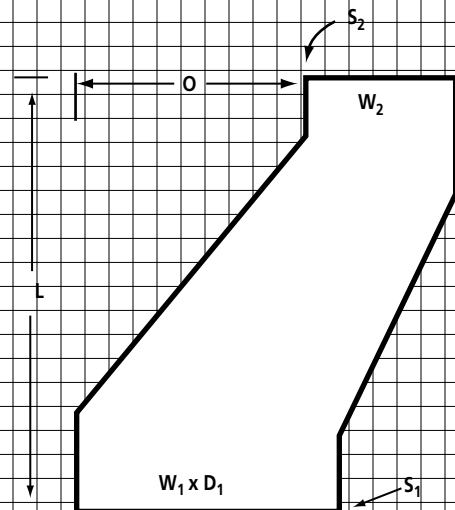
- 56" - finished length with TDF
- 59" - finished length with drive cleat edges
- 60" - length with ends unfinished.



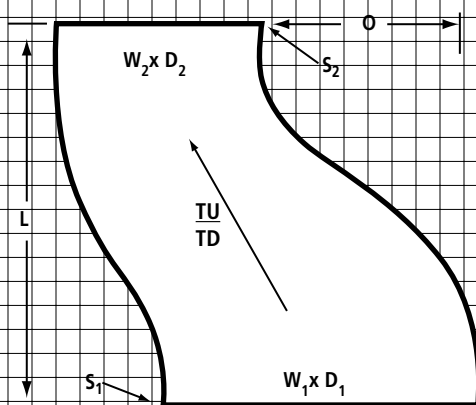
**OGEE OFFSET RIGHT OS**



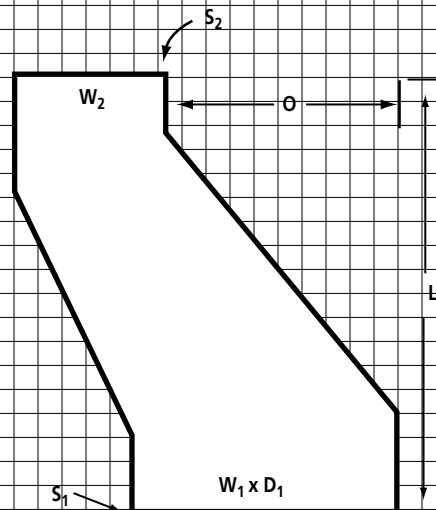
**SQUARE OFFSET RIGHT RO**



**OGEE OFFSET LEFT OSL**



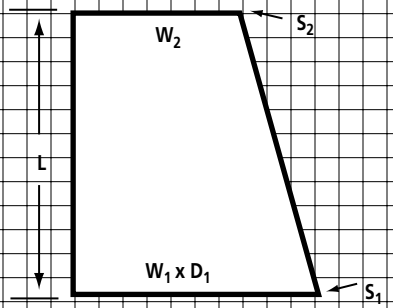
**SQUARE OFFSET LEFT ROL**



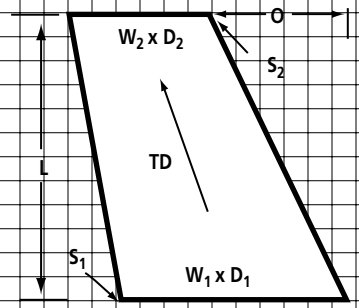


# Rectangular TRANSITIONS

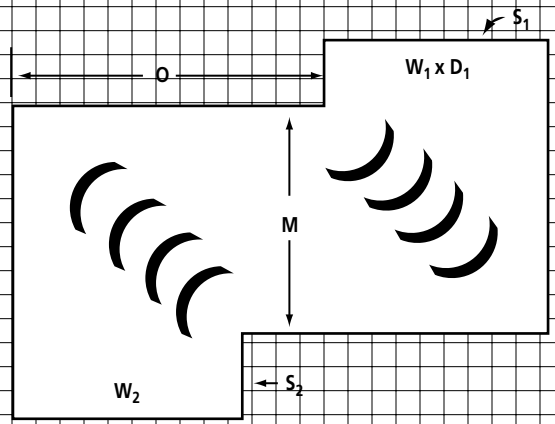
**TRANSITION STRAIGHT SIDES**  
*RDS2U*



**OFFSET LEFT** *RSL*

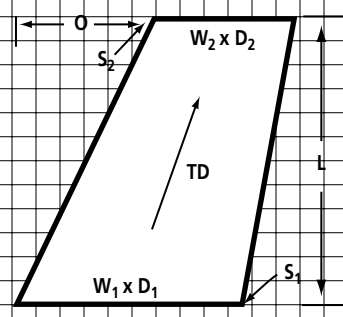


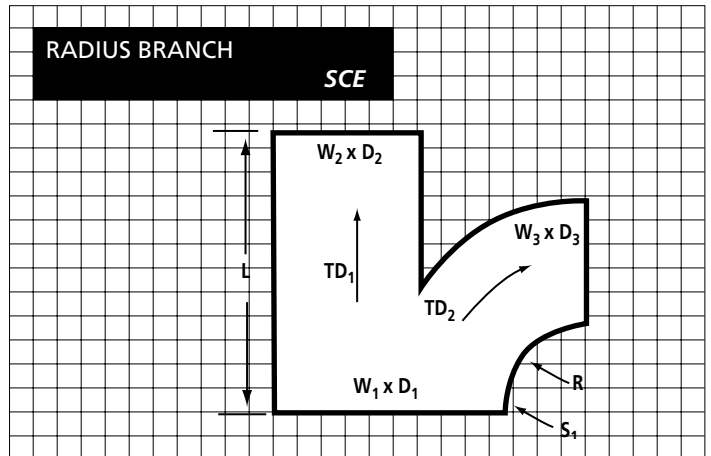
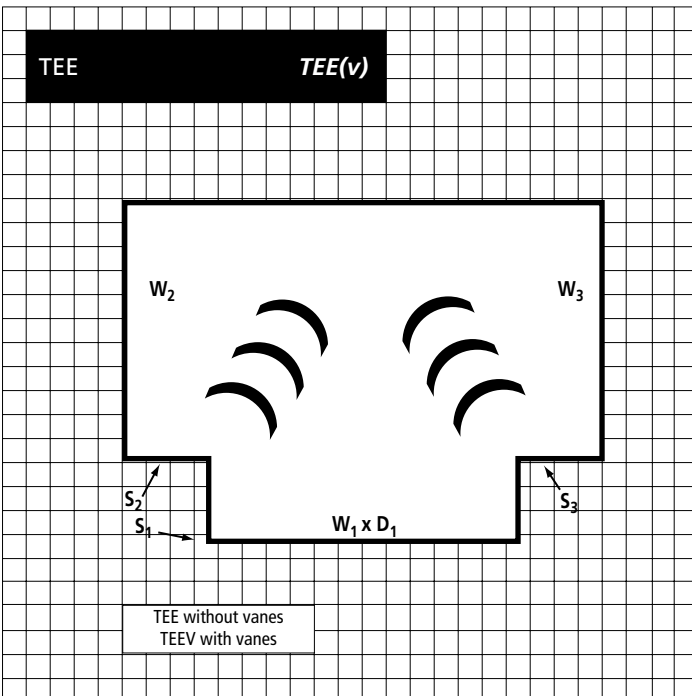
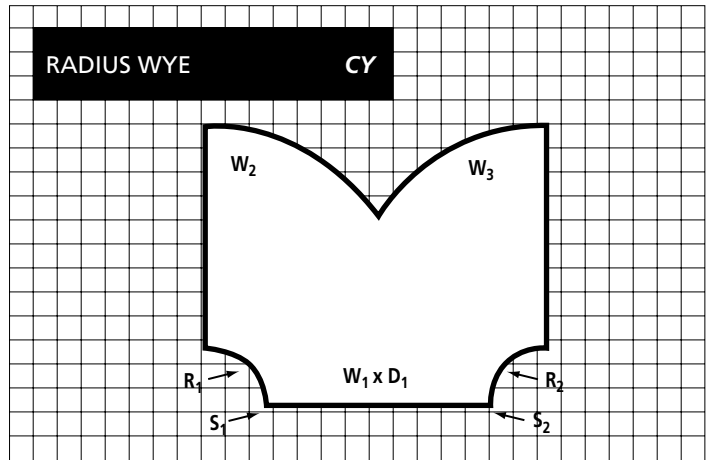
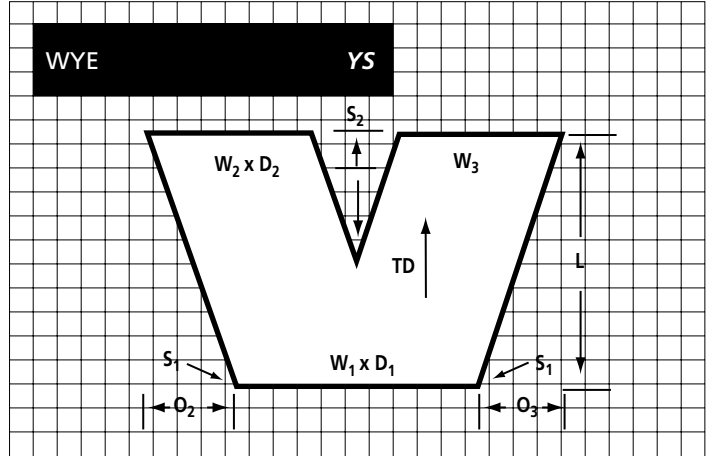
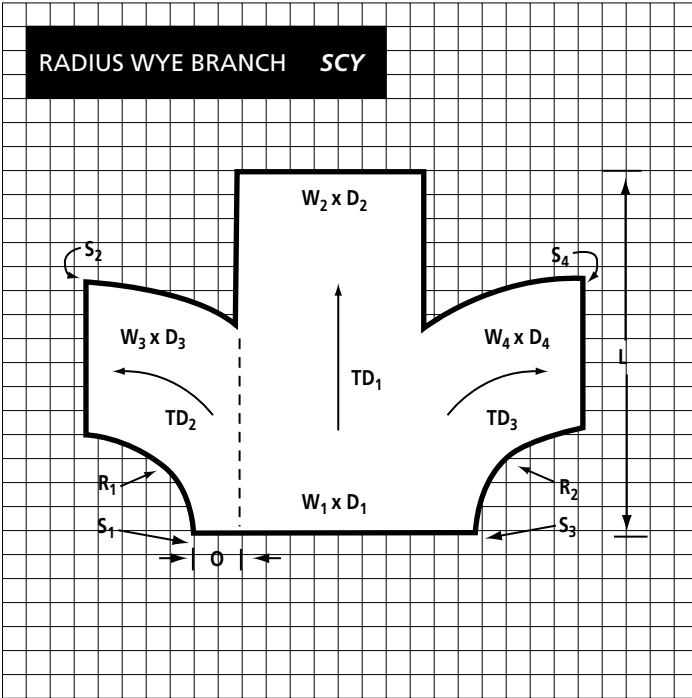
**DOUBLE SQUARE ELBOW**  
*REO(v)*



With or without vanes.

**OFFSET RIGHT** *RS*

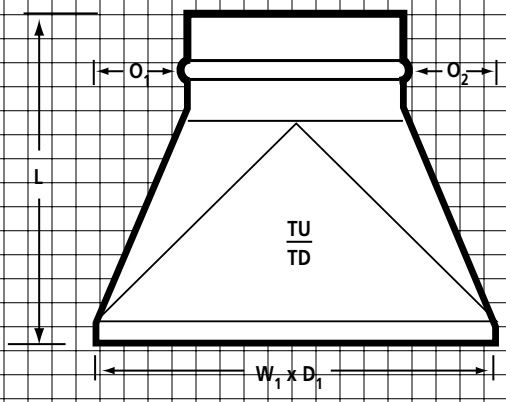




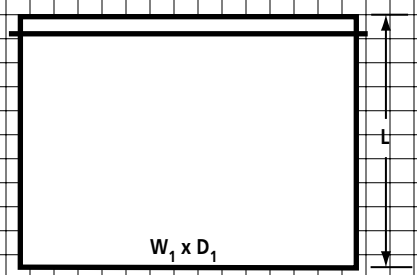


# Rectangular MISCELLANEOUS

**SQUARE TO ROUND  
TO OVAL**      **SQR**

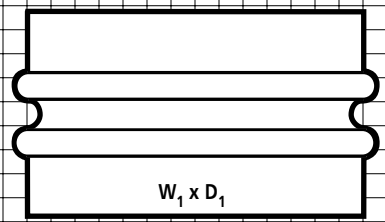


**STRAIGHT TAP**      **ATAP**

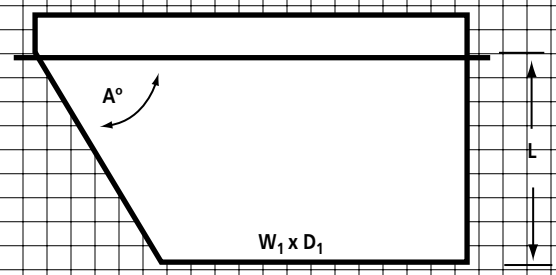


Available in outside or  
inside collar lock

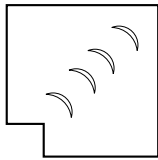
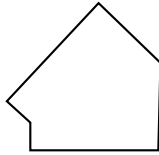
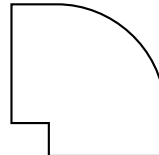
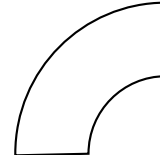
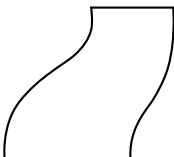
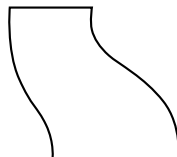
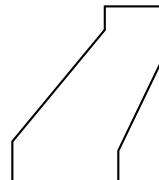
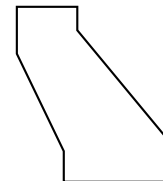
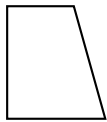
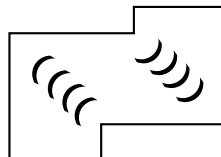
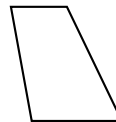
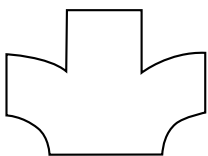
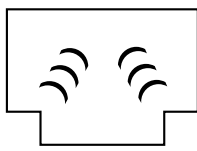
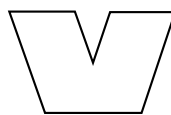
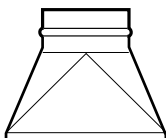
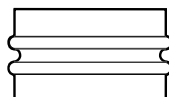
**CANVAS**      **C**



**FLARED TAP**      **STAP**



# RECTANGULAR

*RE(v)**E**CER**CE**OS**OSL**RO**ROL**RDS2U**REO(v)**RSL**RS**SCY**TEE(v)**YS**CY**SCE**SQR**C**ATAP**STAP*