

# SPIRAL ROUND DUCT SYSTEMS

TAMBE METAL PRODUCTS

**E**nergy Efficient

**C**ost less to install

**O**ften requires less space

**N**eeds less hangers

**O**peration costs lower

**M**ore noise free

**I**nstallation simplified

**C**leaning less complicated

**A**irflow measurements easier

**L**ighter in weight



# Round Duct CONSTRUCTION STANDARDS

## TAMBE METAL PRODUCTS

MAX DIAMETER	POSITIVE PRESSURE					
	+2" w.g.		+4" w.g.		+10" w.g.	
	Spiral Seam	Long. Seam	Spiral Seam	Long. Seam	Spiral Seam	Long. Seam
6"	28	28	28	28	28	28
8"	28	28	28	28	28	26
10"	28	26	28	26	28	26
12"	28	26	28	26	26	24
14"	28	26	26	24	26	24
16"	26	24	26	24	24	22
18"	26	24	24	24	24	22
19-26"	26	24	24	22	24	22
27-36"	24	22	22	20	22	20
37-50"	22	20	20	20	20	20
51-60"	20	18	18	18	18	18
61-84"	18	16	18	16	18	16

MAX DIAMETER	NEGATIVE PRESSURE					
	-2" w.g.		-4" w.g.		-10" w.g.	
	Spiral Seam	Long. Seam	Spiral Seam	Long. Seam	Spiral Seam	Long. Seam
6"	28	28	28	28	26	26
7"	28	28	28	28	26	26
8"	28	28	28	28	26	26
9"	28	28	28	26	26	24
10"	28	28	26	26	26	22
11"	28	26	26	24	26	22
12"	28	26	26	24	24	22
13"	28	26	26	24	24	20
14"	28	24	24	22	24	20
15"	28	24	24	22	22	20
16"	26	24	24	22	22	18
17"	26	24	24	20	22	18
18"	24	22	24	20	22	18
19"	24	22	24	20	22	18
20"	24	22	22	20	22	18
21"	24	20	22	18	22	18
22"	24	20	22	18	22	16
23"	24	20	22	18	20	16
24"	22	20	22	18	20	16
25-26"	22	20	20	18	20	18 A4
27-29"	22	18	20	16	18	16 A4
30"	22	18	20	16	18	16 B4
31-33"	20	18	20	16	18	16 B4
34"	20	18	20	20 A6	18	16 B4
35-36"	20	16	20	20 A6	18	16 B4
37-42"	20	16	18	18 B6	18 F12	
43-48"	20	18 A6	18	18 B6	18 F6	
49-60"	18	18 B4	18 F6	16 B4	18 F6	
61-72"	16		18 F6		16 F4	

An alphabet letter in the table means that reinforcement angles or their equivalent must be used at the foot interval following the letter. The angle sizes are:

**A** = 1" x 1" x 1/8"; **B** = 1-1/4" x 1-1/4" x 3/16"; **C** = 1-1/2" x 1-1/2" x 3/16"; **D** = 1-1/2" x 1-1/2" x 1/4"; **E** = 2" x 2" x 3/16"; **F** = 2" x 2" x 1/4"

If companion flange joints are used as reinforcements, those for 25" to 36" diameter shall be 1-1/2" x 1-1/2" x 3/16"; for 37" to 48" diameter 2" x 2" x 3/16"; for 40" to 60" diameter 2-1/2" x 2-1/2" x 3/16"; for 61" to 72" diameter 3" x 3" x 1/4".

# Round Duct **CONSTRUCTION STANDARDS**

**TAMBE** METAL PRODUCTS

## ALUMINUM ROUND DUCT GAUGE SCHEDULE

Duct Diameter in inches	Maximum +2" w.g. Static Positive		Maximum -2" w.g. Static Negative	
	Spiral Gauge Seam	Longitudinal Gauge Seam	Spiral Gauge Seam	Longitudinal Gauge Seam
3 thru 8"	.025"	.032"	.025"	.040"
9 thru 14"	.025"	.032"	.032"	.040"
15 thru 26"	.032"	.040"	.040"	.050"
27 thru 36"	.040"	.050"	.050"	.063"
37 thru 50"	.050"	.063"	.063"	.071"
51 thru 60"	.063"	.071"	N.A.	.090"
61 thru 84"	N.A.	.090"	N.A.	N.A.

## POLYVINYL COATED DUCT GAUGES FOR UNDERGROUND DUCT AND FITTINGS

Duct Diameter in inches	Gauges	Fittings
4 thru 8"	26 Gauge	26 Gauge
9 thru 16"	24 Gauge	24 Gauge
18 thru 24"	22 Gauge	22 Gauge
26 thru 32"	20 Gauge	20 Gauge
34 thru 60"	18 Gauge	18 Gauge

## POLYVINYL COATED DUCT GAUGES FOR ABOVE GROUND DUCT AND FITTINGS

Duct Diameter in inches	Gauges	Fittings
4 thru 14"	26 Gauge	26 Gauge
16 thru 26"	24 Gauge	24 Gauge
28 thru 36"	22 Gauge	22 Gauge
38 thru 50"	20 Gauge	20 Gauge
52 thru 60"	18 Gauge	18 Gauge

\* Gauges equal or exceed SMACNA standards

# Round Duct **SEAMS**

**TAMBE** METAL PRODUCTS



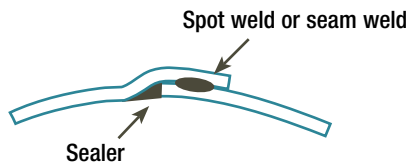
Spiral pipe lock seam (RL-1)

**Available  
Gauges**

Galvanized	28-16
Stainless steel	26-22
Aluminum	22-16
Paint grip	26-16
Poly vinyl coated	26-18
Perforated	22



Spiral pipe lock seam (RL-1)  
(Corrugated 14" and larger for extra strength below grade)



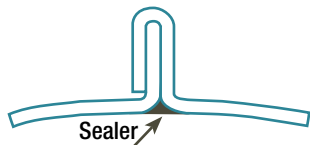
Spot weld and bonded seam  
or continuous seam weld

Galvanized	26-20
Stainless steel	26-20
Aluminum	22-20
Paint grip	26-20
Poly vinyl coated (button punched or riveted)	26-18



Butt-welded seam

Galvanized	20-10
Stainless steel	20-10
Aluminum	18-1/4"
Paint grip	20-10



Gore locked seam

Galvanized	26-18
Stainless steel	26-22
Aluminum	22-16
Paint grip	26-18
Poly vinyl coated	26-18

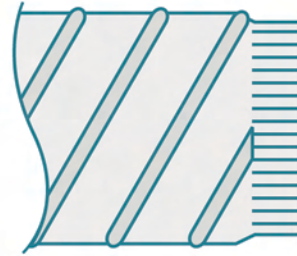
# Round Duct **CONNECTORS**

TAMBE METAL PRODUCTS

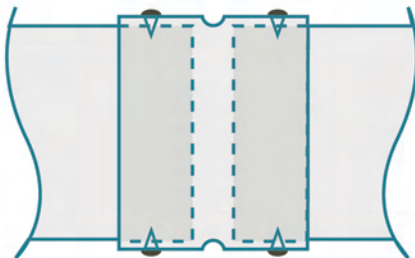
## PIPE COUPLING



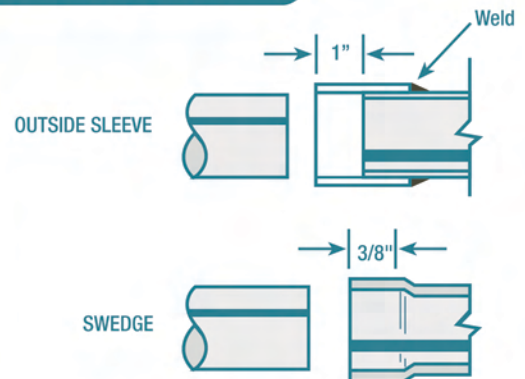
## CRIMPED END



## FITTING COUPLING



## SWEDGE/SLEEVE



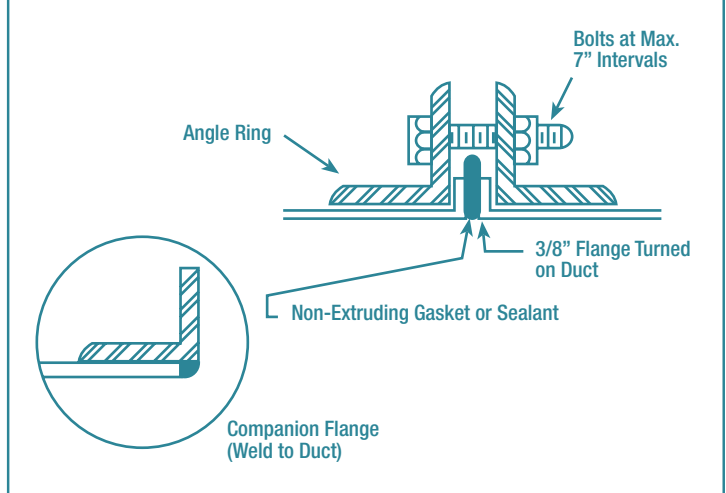
# Round Duct CONNECTORS

TAMBE METAL PRODUCTS

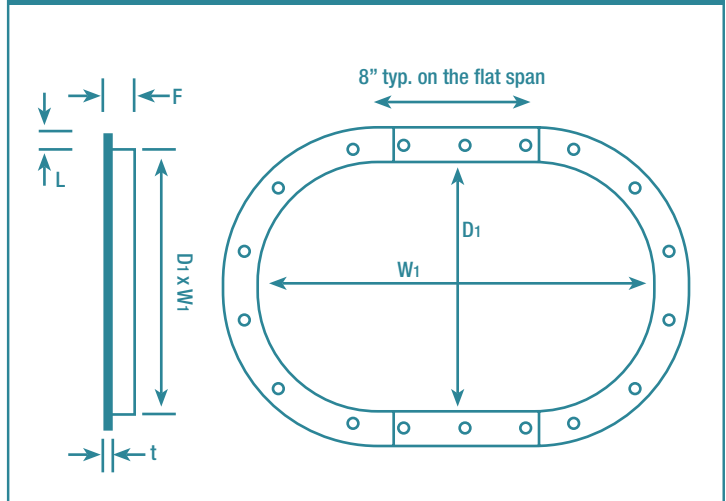
## Angle Iron Ring Specifications

ORDER SIZE	ANGLE MILD STEEL	I.D.	BOLT HOLES	HOLE SIZE	BOLT CIRCLE	WEIGHT LBS.
3	PRESSED	3-1/16	6	9/32	4-5/16	0.70
4	10 GA	4-1/16	6	9/32	5-5/16	0.85
5		5-1/16	6	9/32	6-5/16	1.20
6	1-1/4 X	6-1/8	6	3/8	7-5/16	1.75
7	1-1/4 X	7-1/8	6	3/8	8-1/2	2.00
8	1/8	8-1/8	6	3/8	9-9/16	2.25
9		9-1/8	6	3/8	10-5/8	2.50
10		10-1/8	6	3/8	11-13/16	2.75
11		11-1/8	6	3/8	12-3/4	3.00
12	1-1/2 X	12-3/16	8	7/16	14	4.00
13	1-1/2 X	13-3/16	8	7/16	15	4.25
14	1/8	14-3/16	8	7/16	16	4.75
15		15-3/16	8	7/16	17	5.00
16	1-1/2 X	16-3/16	8	7/16	18	8.00
17	1-1/2 X	17-	8	7/16	19	8.25
18	3/16	3/1618-	8	7/16	20	8.50
19		3/16	12	7/16	20 3/4	8.75
20		19-3/16	12	7/16	21-3/4	9.50
21		20-3/16	12	7/16	22-3/4	10.25
22		21-3/16	12	7/16	23-3/4	10.75
23		22-3/16	12	7/16	24-7/8	11.25
24		23-3/16	12	7/16	25-7/8	11.50
25	2X2 X	24-3/16	16	7/16	26-7/8	15.75
26	3/16	25-3/16	16	7/16	28-3/8	16.50
27		26-	16	7/16	29-3/8	16.75
28		3/1627-	16	7/16	30-3/8	18.00
29		3/16	16	7/16	31-3/8	18.75
30		28-3/16	16	7/16	32-3/8	19.50
31		29-3/16	16	7/16	33-3/8	19.75
32		30-3/16	16	7/16	34-3/8	20.00
33		31-3/16	16	7/16	35-3/8	21.25
34		32-3/16	16	7/16	36-3/8	22.50
35		33-3/16	16	7/16	37-3/8	22.75
36		34-3/16	16	7/16	38-3/8	23.00
37		35-	24	7/16	39-3/8	23.75
38		3/1636-	24	7/16	40-3/8	24.50
39		3/16	24	7/16	41-3/8	25.00
40		37-3/16	24	7/16	42-3/8	25.75
41		38-3/16	24	7/16	43-3/8	26.25
42		39-3/16	24	7/16	44-3/8	26.50
43		40-3/16	24	7/16	45-3/8	27.50
44		41-3/16	24	7/16	46-3/8	28.00
45		42-3/16	24	7/16	47-3/8	28.50
46		43-3/16	24	7/16	48-3/8	29.00
47		44-3/16	24	7/16	49-3/8	30.00
48		45-3/16	24	7/16	50-3/8	30.75
49		46-3/16	24	7/16	51-3/8	31.50
50		47-3/16	24	7/16	52-3/8	32.00
52		48-3/16	24	7/16	54-3/8	33.75
54		49-3/16	24	7/16	56-3/8	35.00
56		50-3/16	24	7/16	58-3/8	36.25
58		52-3/16	24	7/16	60-3/8	37.50
60		54-3/16	24	7/16	62-3/8	38.75
62		56-3/16	24	7/16	64-3/8	40.00
64		58-3/16	24	7/16	66-3/8	41.50
66		60-3/16	24	7/16	68-3/8	42.75
68		62-3/16	24	7/16	70-3/8	44.00
70		64-3/16	24	7/16	72-3/8	45.25
72		66-3/16	24	7/16	74-3/8	46.50

## Vanstone Flange/Companion Flange



## Oval Angle Ring Dimensions



a Minor Axis (inches)	Bolt Hole Diameter (inches)	Number of Bolts on Curved Side	LxF Nominal Size (inches)	t Nominal Thickness
3-5	9/32	6	1 x 1	10 gauge
5-11	3/8	6	1-1/4 x 1-1/4	1/8"
12-14	7/16	8	1-1/2 x 1-1/2	1/8"
16-18	7/16	8	1-1/2 x 1-1/2	3/16"
19-24	7/16	12	1-1/2 x 1-1/2	3/16"
25-36	7/16	16	2 x 2	3/16"
37-50	7/16	24	2 x 2	3/16"

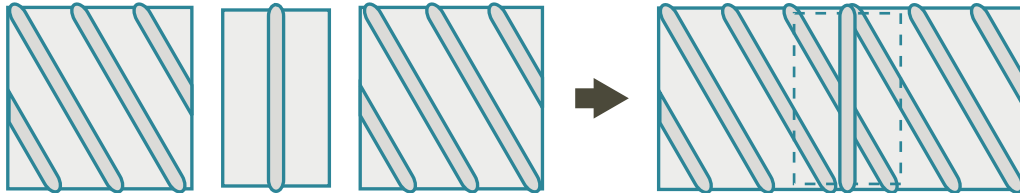
Standard Rings are hot rolled steel.  
Galvanized, aluminum, and stainless steel rings are also available.

# Round Duct **INSTALLATION**

**TAMBE** METAL PRODUCTS

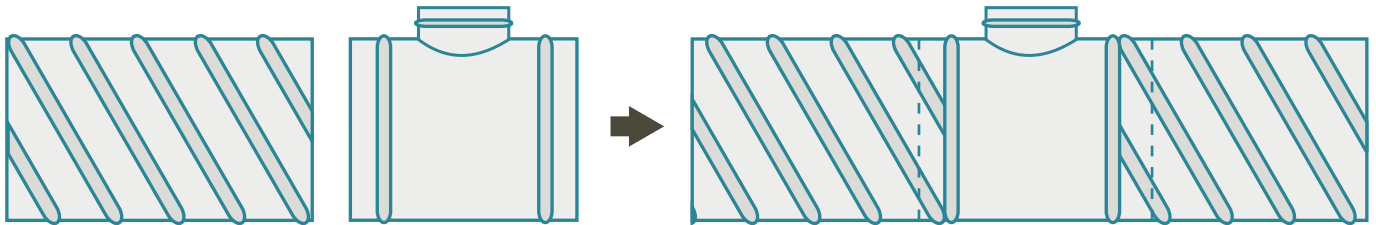
## Installation of slip joint connectors

Duct-to-joint connections are made by using a duct coupling that slips inside the duct sections.



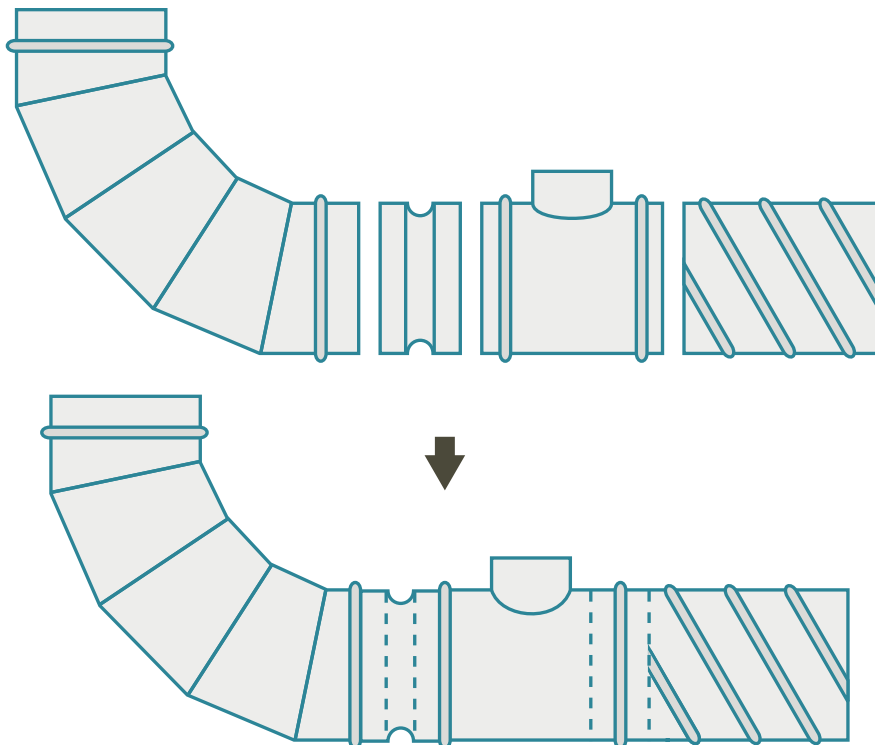
## Duct-to-fitting connections

Duct-to-fitting connections are made by slipping the fitting collar into the duct.



## Fitting-to-fitting connections

Connections can be made by using a short section of duct or by using a fitting coupling.

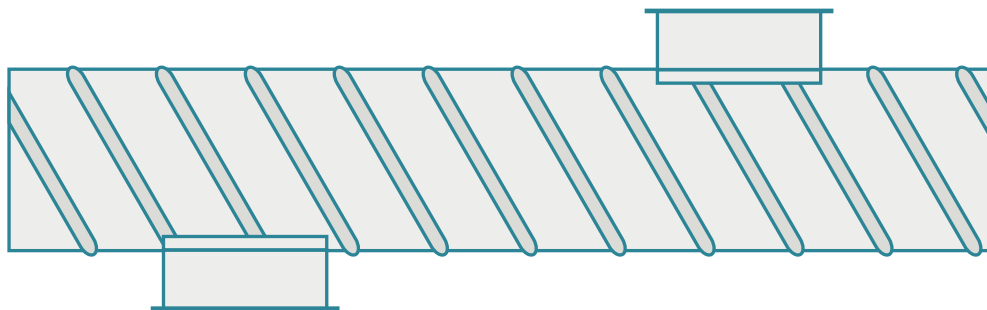
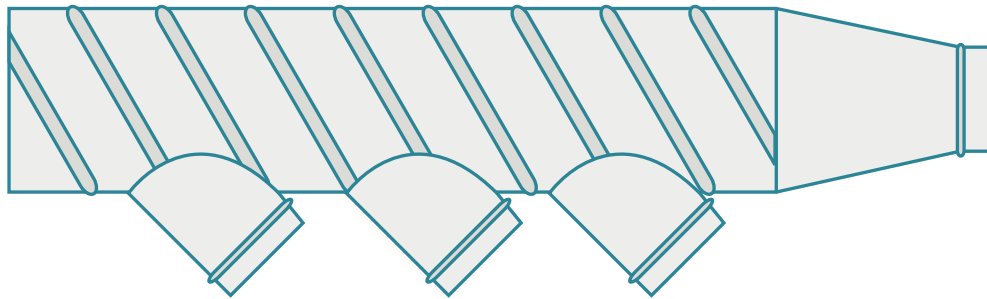
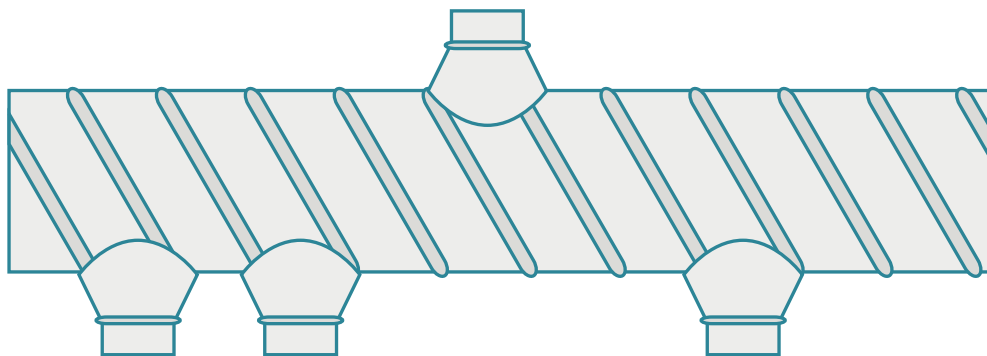


# Round Duct **MANIFOLDS/ASSEMBLIES**

**TAMBE** METAL PRODUCTS

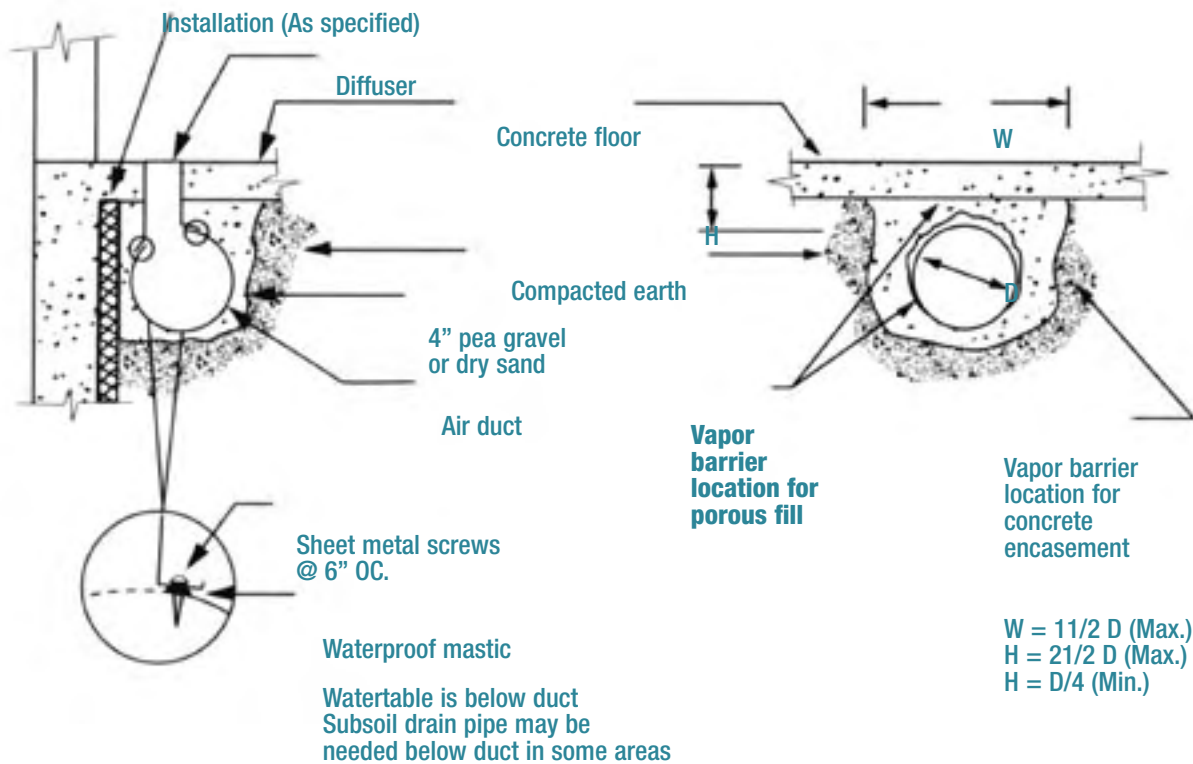
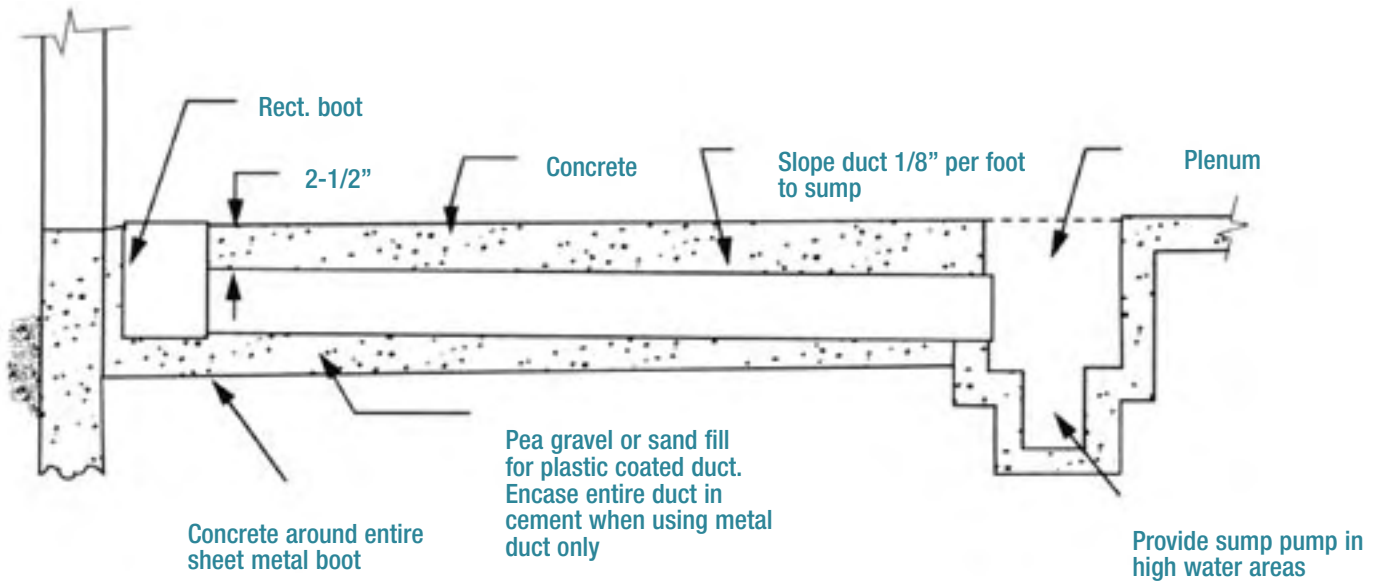
## **Tambe Metal Products standard manifolds/assemblies of duct and fittings**

We offer manifolds/assemblies of duct and fittings from our standard duct and fitting components. Manifolds/assemblies reduce field labor and potential sources of leakage by eliminating joints between pipe and standard fittings.



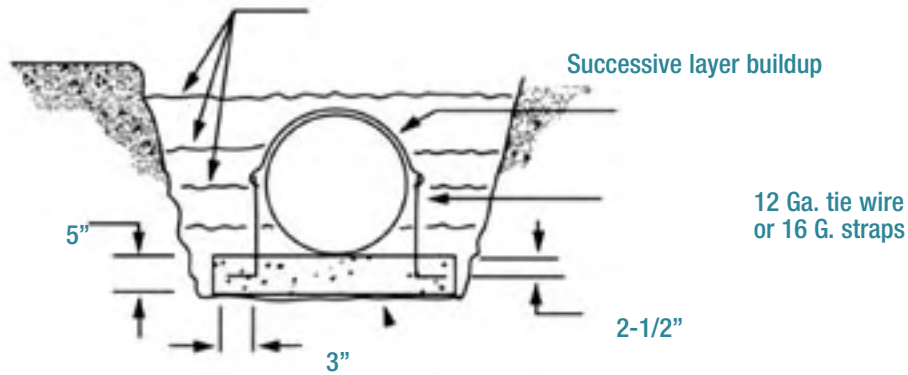
# Underground **INSTALLATION**

**TAMBE** METAL PRODUCTS

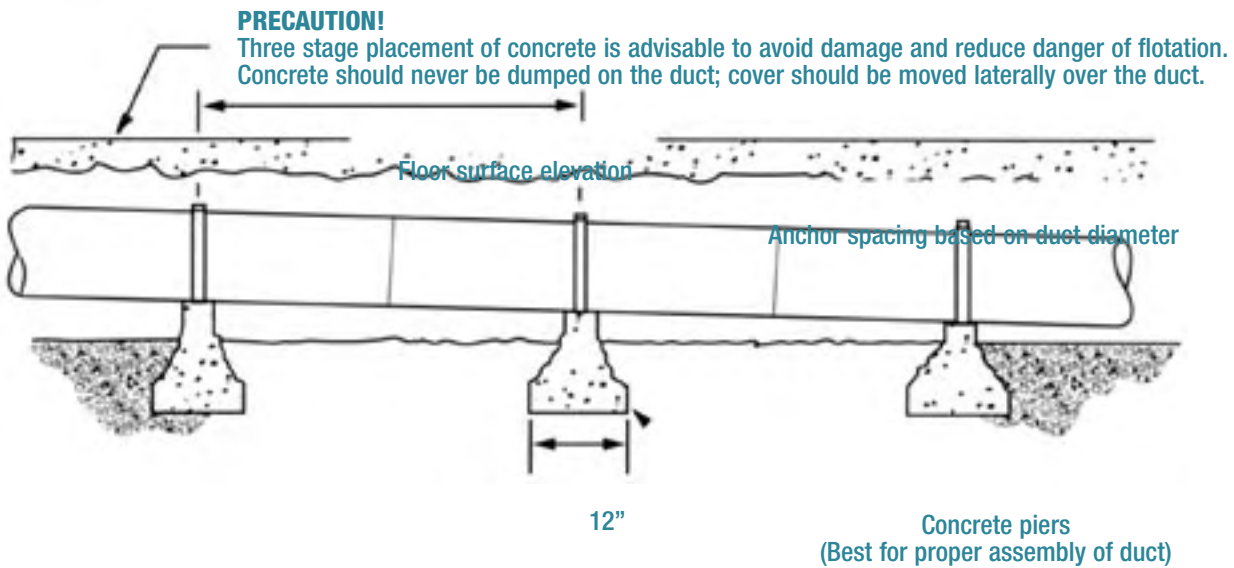


# Underground **INSTALLATION**

**TAMBE** METAL PRODUCTS



**Pre-poured base slab**



**Typical anchorage of ducts to be encased in concrete**

\* This illustration is a design guide

# Approximate Weight **SPIRAL DUCT**

In pounds per linear foot -- Based on galvanized steel

## TAMBE METAL PRODUCTS

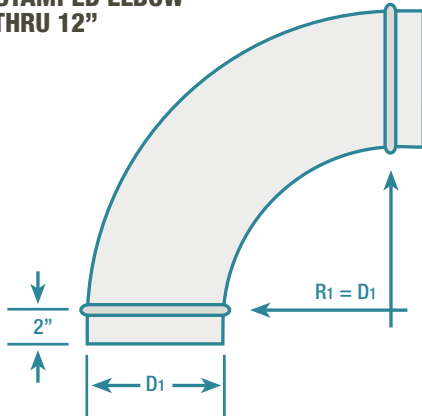
DIAMETER	WEIGHT PER FOOT					
	26 gauge	24 gauge	22 gauge	20 gauge	18 gauge	16 gauge
3	.76	1.01	1.23	1.48		
4	1.02	1.35	1.64	1.94		
5	1.28	1.69	2.06	2.42		
6	1.54	2.03	2.47	2.91	3.88	4.76
7	1.79	2.37	2.88	3.40	4.52	5.58
8	2.05	2.71	3.29	3.86	5.17	6.34
9	2.31	3.05	3.71	4.37	5.82	7.18
10	2.57	3.39	4.12	4.86	6.47	7.92
11	2.82	3.73	4.54	5.34	7.11	8.72
12	3.08	4.07	4.95	5.83	7.75	9.54
13	3.34	4.41	5.36	6.32	8.48	10.31
14	3.59	4.74	5.77	6.81	9.05	11.05
15	3.84	5.08	6.18	7.28	9.70	11.80
16	4.11	5.42	6.60	7.78	10.34	12.65
17	4.36	5.77	7.02	8.25	11.08	13.47
18	4.63	6.10	7.43	8.76	11.64	14.32
19	4.89	6.44	7.84	9.25	12.29	15.09
20	5.15	6.78	8.25	9.73	12.93	15.85
22	5.65	7.46	9.08	10.71	14.23	17.50
24	6.16	8.14	9.91	11.68	15.52	19.00
26	6.67	8.82	10.73	12.66	16.82	20.70
28	7.18	9.50	11.56	13.63	18.11	22.20
30	7.71	10.18	12.38	14.60	19.41	23.90
32	8.22	10.84	13.21	15.58	20.71	25.50
34	8.72	11.54	14.01	16.51	21.97	27.08
36	9.27	12.20	14.90	17.53	23.29	28.80
38	9.73	12.88	15.67	18.46	24.51	30.26
40	10.30	13.56	16.50	19.48	25.88	31.75
42	10.77	14.25	17.32	20.40	27.21	33.47
44	11.35	14.91	18.16	21.42	28.47	35.00
46	11.86	15.59	18.99	22.39	29.77	36.65
48	12.36	16.26	19.82	23.36	31.06	38.30
50	12.88	16.99	20.63	24.33	32.37	39.94
52	13.39	17.12	21.44	25.30	33.68	41.58
54	13.91	18.05	22.26	26.28	34.98	43.18
56	14.42	18.98	23.08	27.25	36.27	44.78
58	14.94	19.65	23.91	28.23	37.56	46.38
60	15.45	20.34	24.73	29.20	38.84	47.97

# Single Wall Round **ELBOWS**

**TAMBE** METAL PRODUCTS

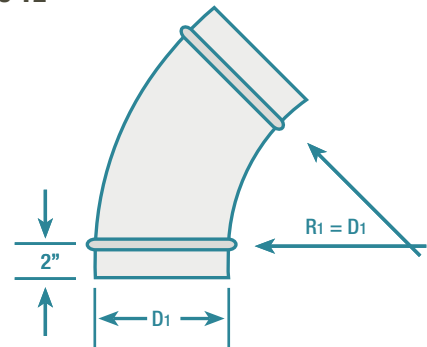
**E90**

**90° DIE STAMPED ELBOW**  
3" DIA. THRU 12"



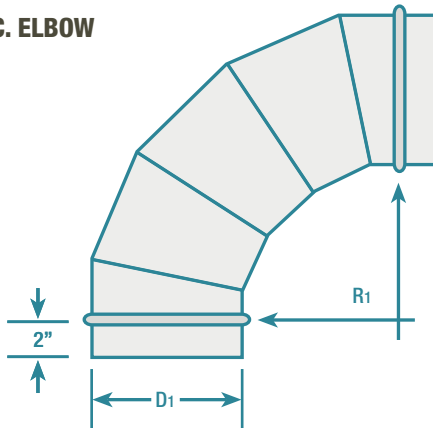
**E45**

**45° DIE STAMPED ELBOW**  
3" DIA. THRU 12"



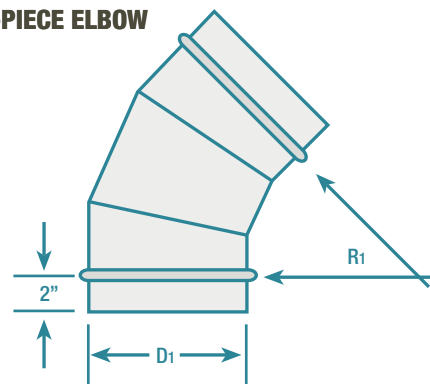
**E90**

**90° 5-PC. ELBOW**



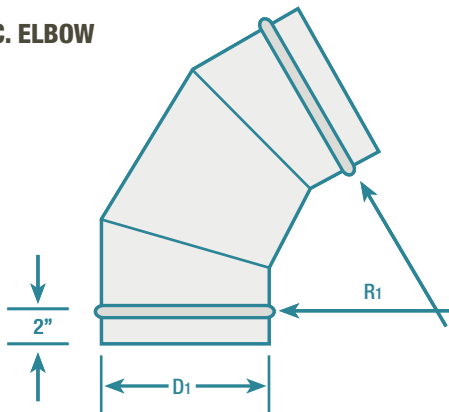
**E45**

**45° 3-PIECE ELBOW**



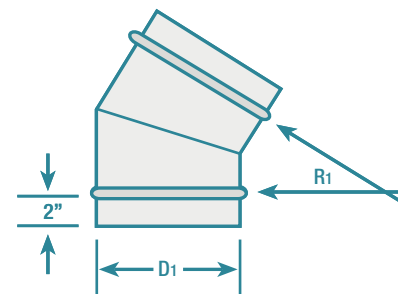
**E60**

**60° 3-PC. ELBOW**



**E15/E30**

**15° & 30° 2-PIECE ELBOW**

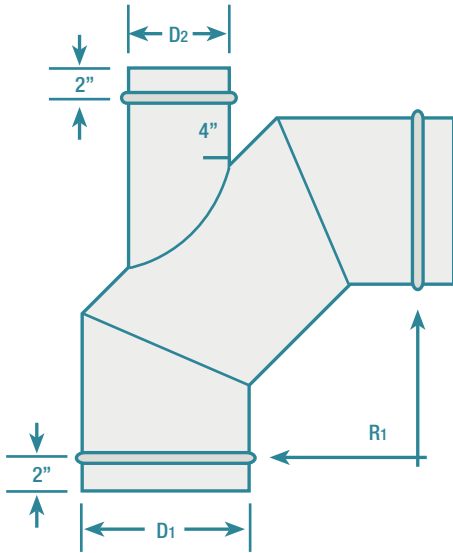


# Single Wall Round **ELBOWS**

TAMBE METAL PRODUCTS

**90° 3-PC. ELBOW WITH STRAIGHT LATERAL**

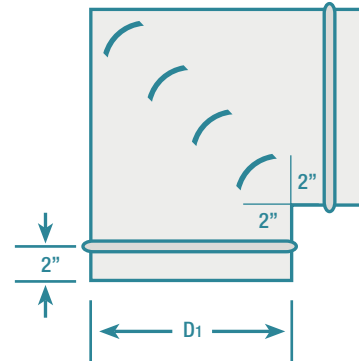
**E90L**



**E290/EV290**

With or without vanes.

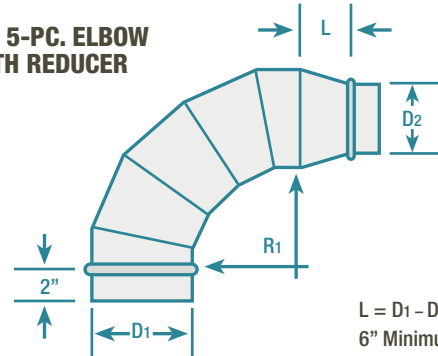
**90° 2-PC. ELBOW**



D1	No. of vanes
3-9	2
10-14	3
15-19	4
20-60	5
≥60	Max 12" spacing

**E90R**

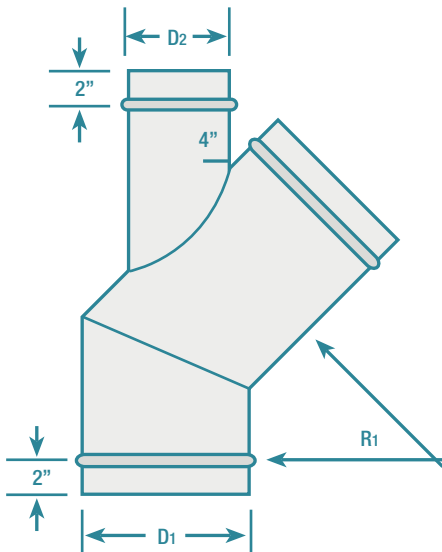
**90° 5-PC. ELBOW WITH REDUCER**



$L = D1 - D2$   
6" Minimum

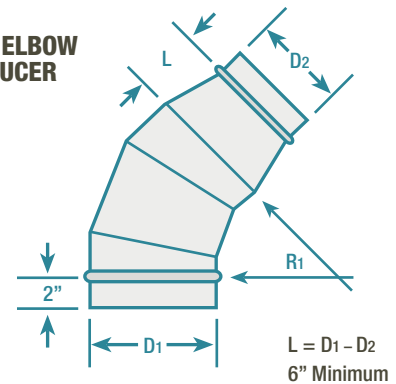
**45° 2-PC. ELBOW WITH STRAIGHT LATERAL**

**E45L**



**E45R**

**45° 3-PC. ELBOW WITH REDUCER**



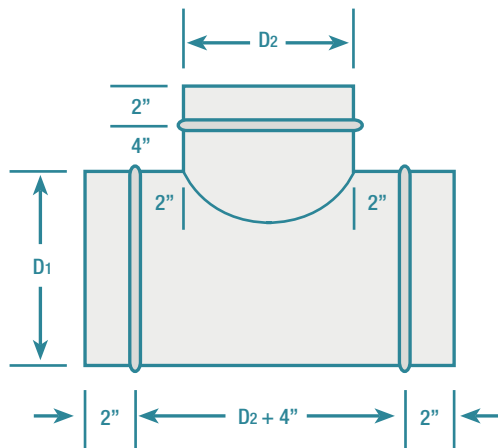
$L = D1 - D2$   
6" Minimum

# Single Wall Round **STRAIGHT TEES**

TAMBE METAL PRODUCTS

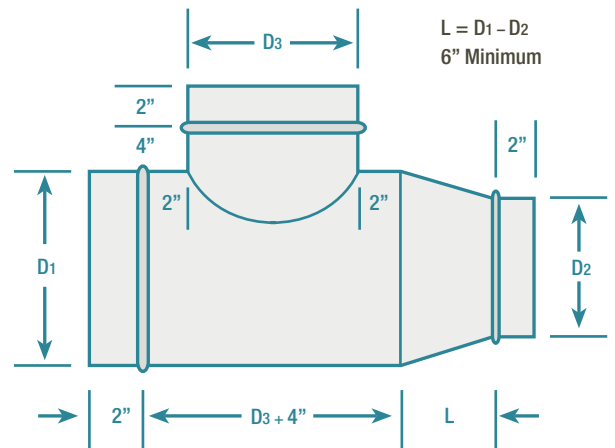
T

TEE



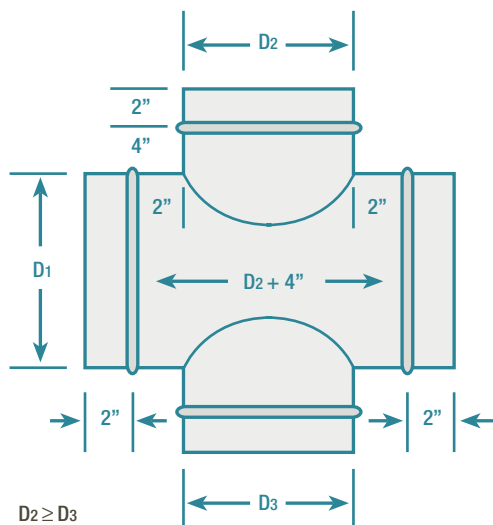
TR

REDUCING TEE



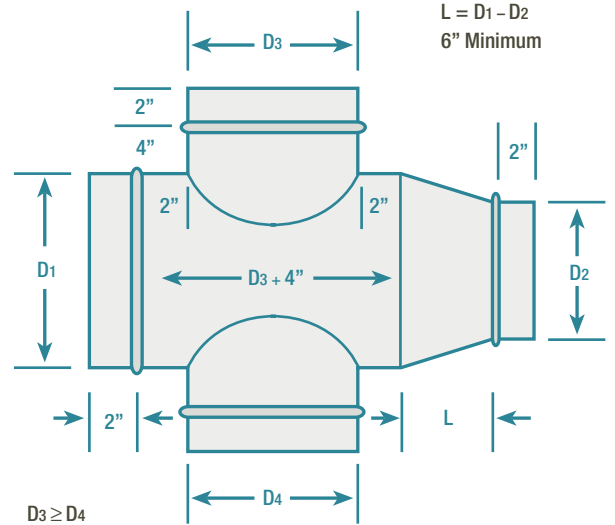
TX

TEE CROSS



TRX

REDUCING TEE CROSS

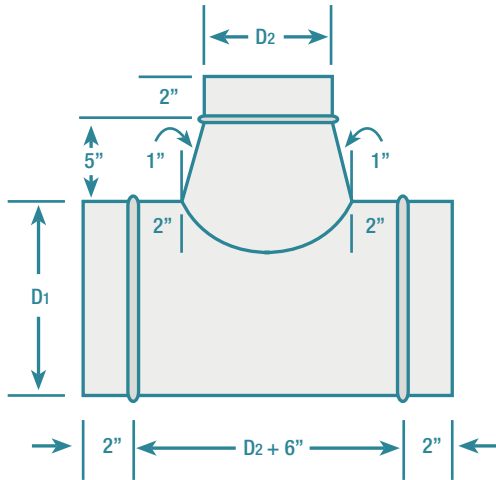


# Single Wall Round CONICAL TEES

TAMBE METAL PRODUCTS

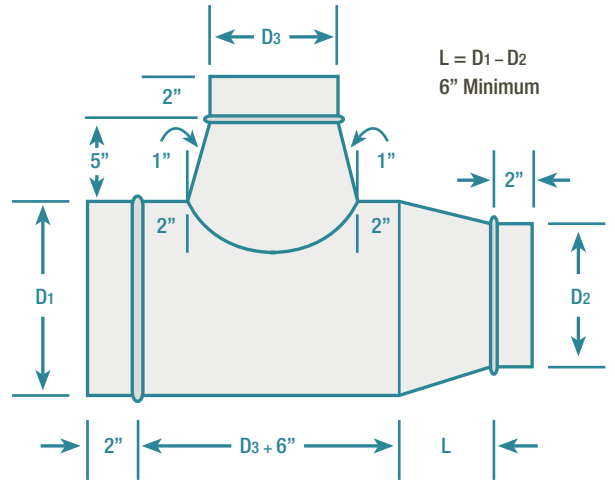
CT

CONICAL TEE



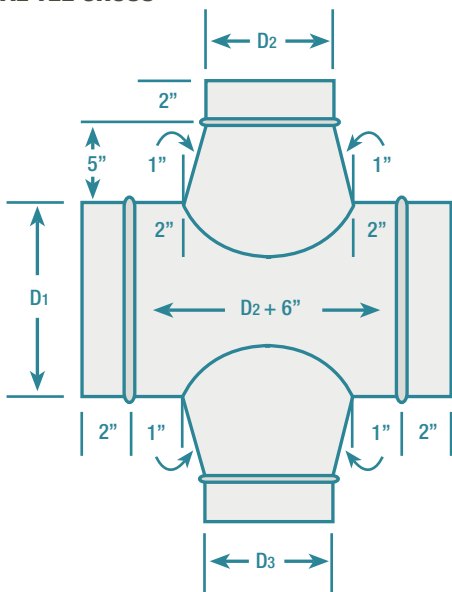
CTR

REDUCING CONICAL TEE



CTX

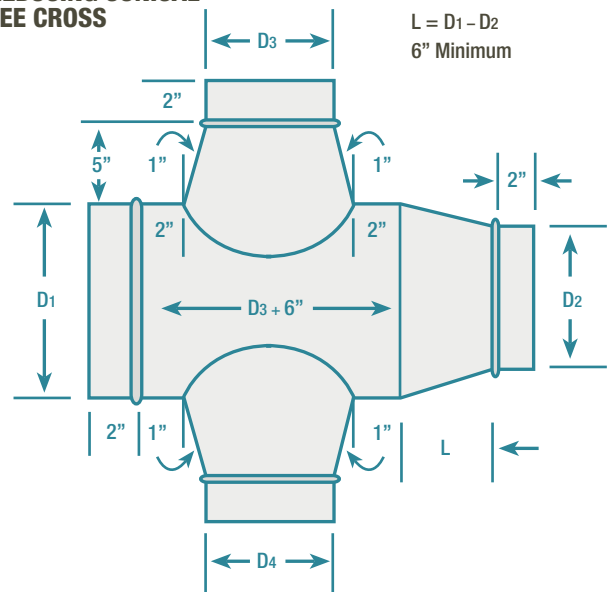
CONICAL TEE CROSS



$D_2 \geq D_3$

CTRX

REDUCING CONICAL TEE CROSS



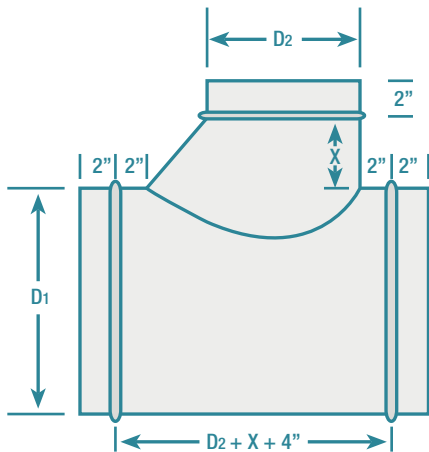
$D_3 \geq D_4$

# Single Wall Round **SHOE TEES**

TAMBE METAL PRODUCTS

## ST

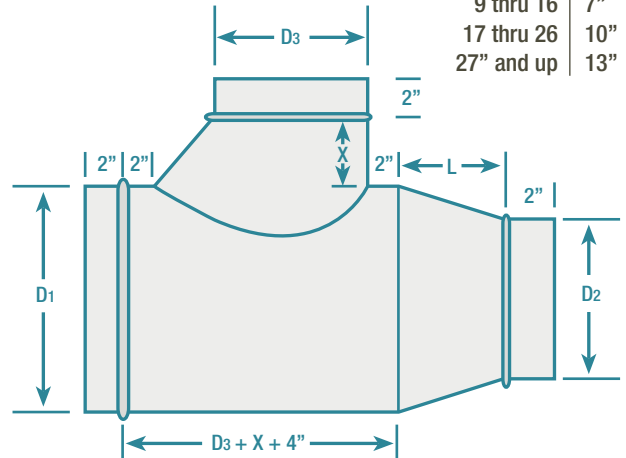
### SHOE TEE



D2	X
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"

## STR

### REDUCING SHOE TEE

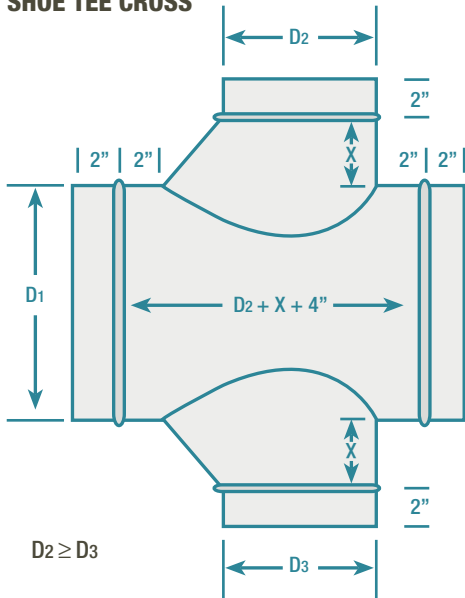


D3	X
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"

$L = D1 - D2$   
Minimum 6"

## STX

### SHOE TEE CROSS

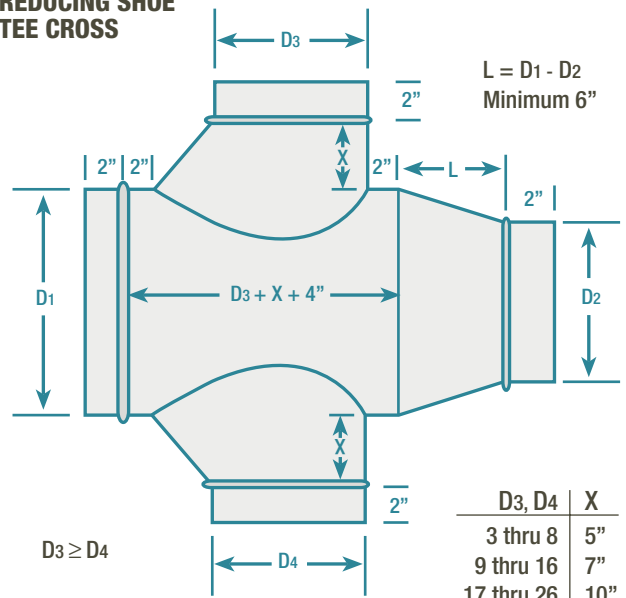


D2, D3	X
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"

$D2 \geq D3$

## STRX

### REDUCING SHOE TEE CROSS



$L = D1 - D2$   
Minimum 6"

D3, D4	X
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"

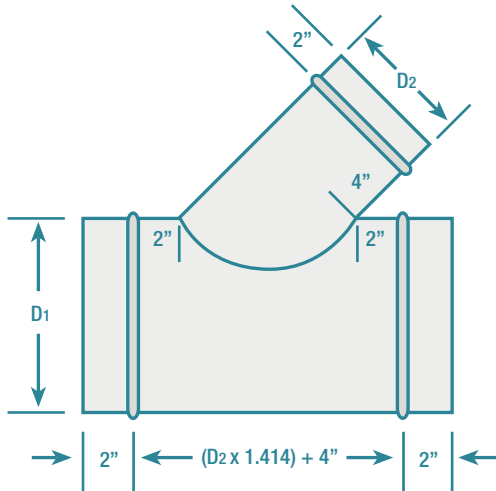
$D3 \geq D4$

# Single Wall Round **STRAIGHT LATERALS**

TAMBE METAL PRODUCTS

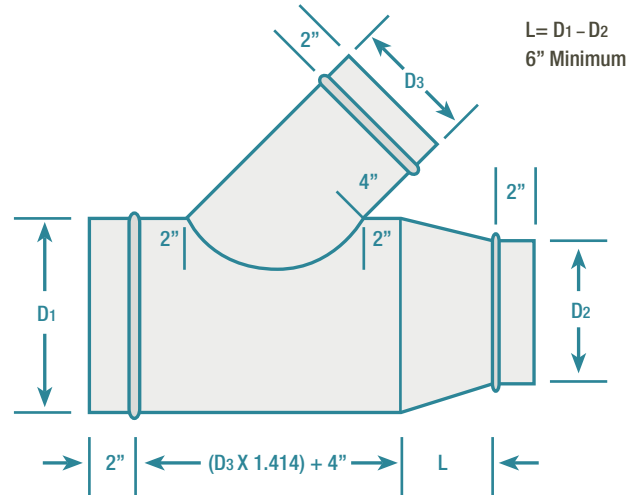
L

45° LATERAL



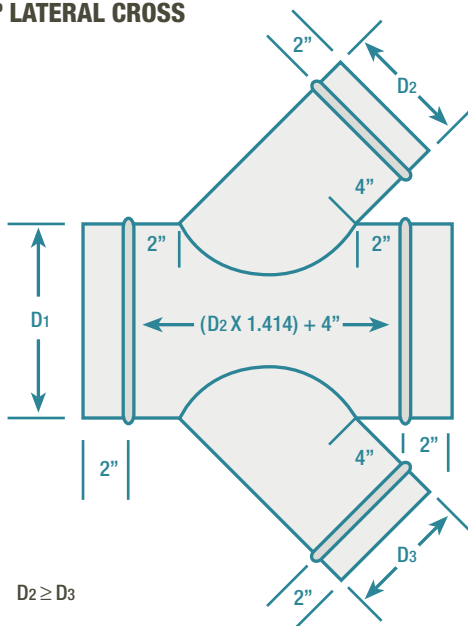
LR

45° REDUCING LATERAL



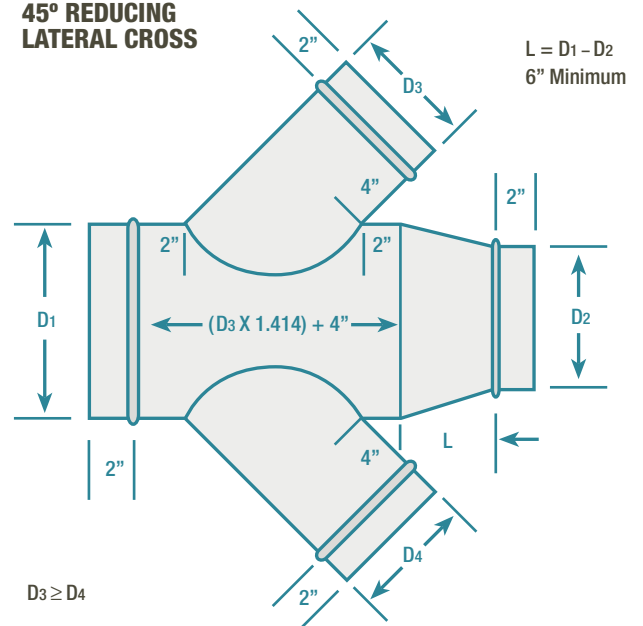
LX

45° LATERAL CROSS



LRX

45° REDUCING LATERAL CROSS

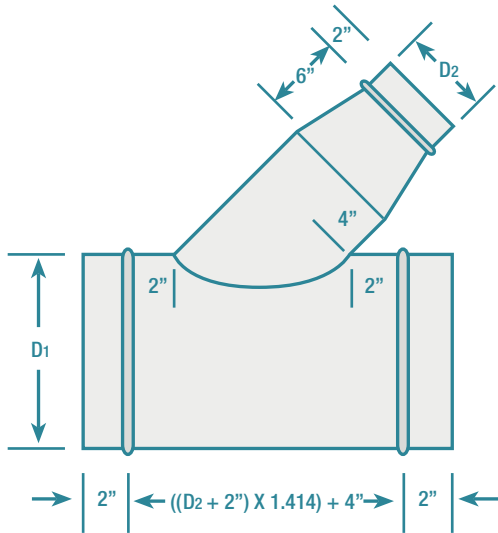


# Single Wall Round CONICAL LATERALS

TAMBE METAL PRODUCTS

CL

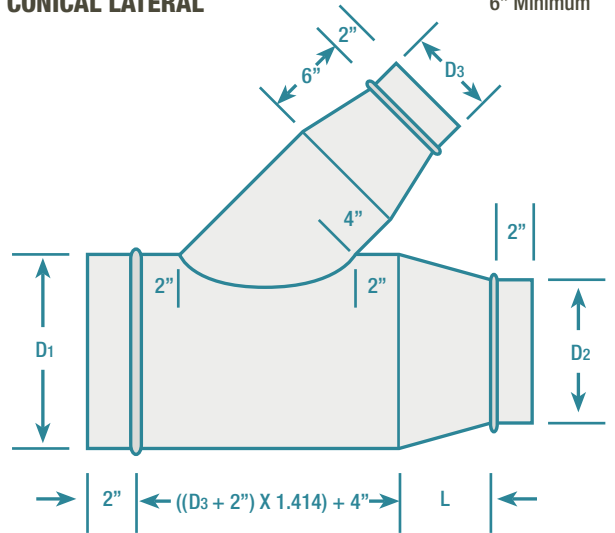
45° CONICAL LATERAL



CLR

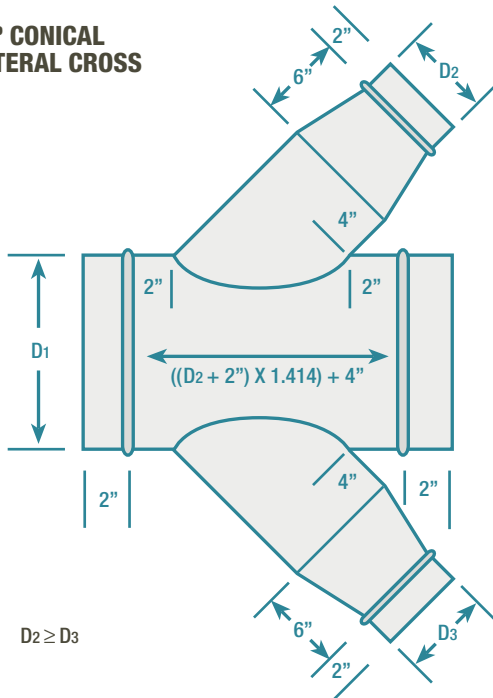
45° REDUCING CONICAL LATERAL

$L = D_1 - D_2$   
6" Minimum



CLX

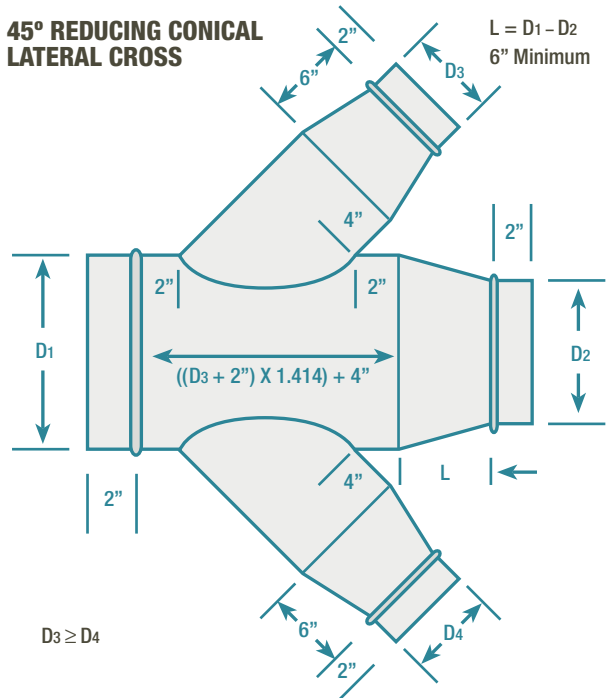
45° CONICAL LATERAL CROSS



CLR X

45° REDUCING CONICAL LATERAL CROSS

$L = D_1 - D_2$   
6" Minimum



# Single Wall Round MISCELLANEOUS

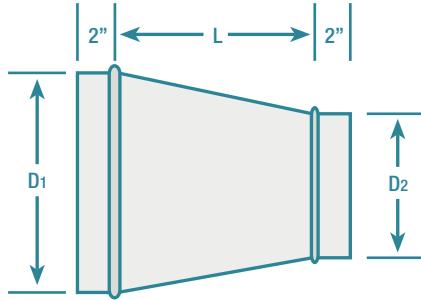
TAMBE METAL PRODUCTS

RDC

CONCENTRIC REDUCER

$$L = D_1 - D_2$$

6" Minimum

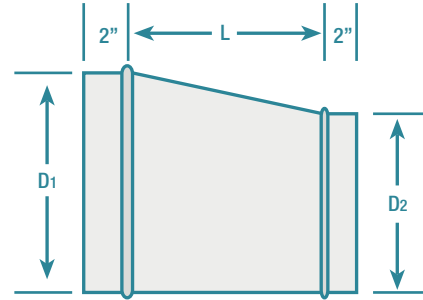


RDE

ECCENTRIC REDUCER

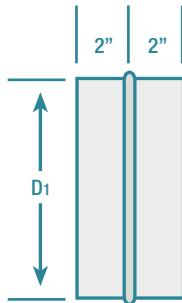
$$L = 2 [D_1 - D_2]$$

6" Minimum



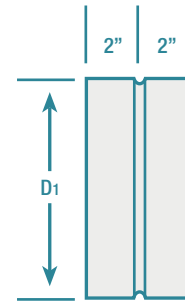
PC

PIPE COUPLING



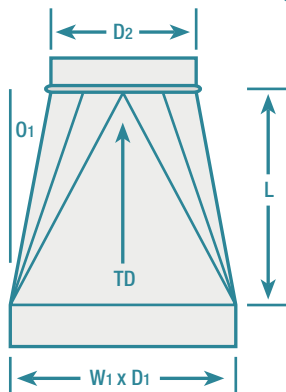
FC

FITTING COUPLING



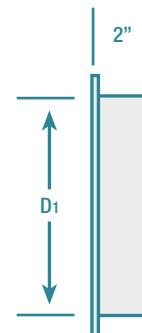
RTR

RECTANGLE TO ROUND



EC

END CAP

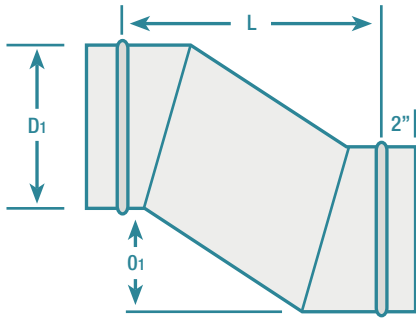


# Single Wall Round MISCELLANEOUS

TAMBE METAL PRODUCTS

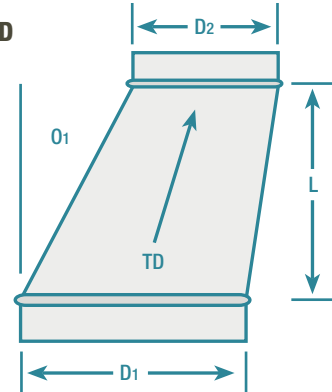
## SET

### OFFSET



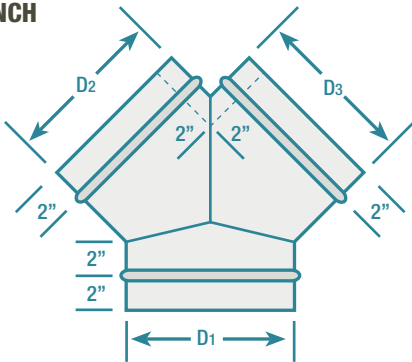
## ROET

### ROUND TO ROUND



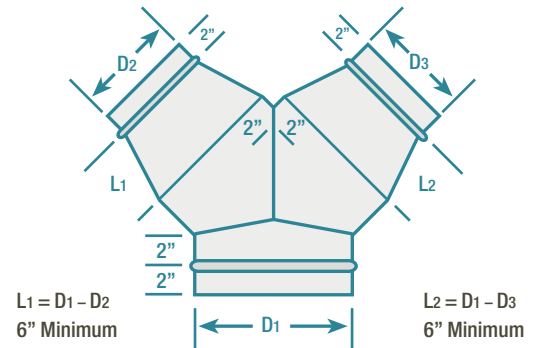
## Y45

### Y BRANCH



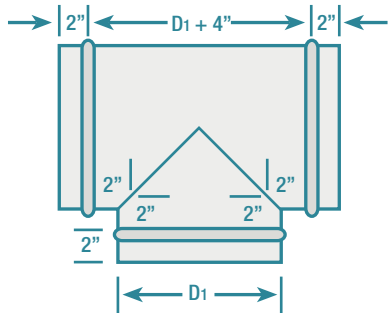
## YR45

### REDUCING Y BRANCH



## BHT/BHTV

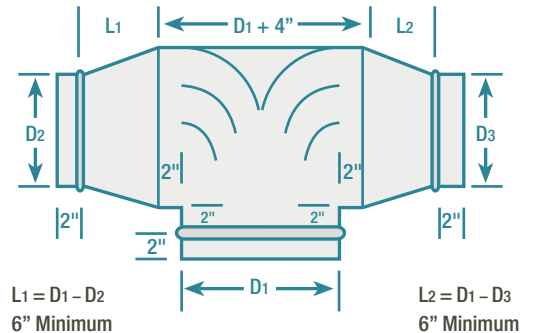
### BULL HEAD TEE With or without vanes.



D1	No. of vanes
3-7	1
8-10	3
10-60	5
>60	Max 12" spacing

## BHTR/BHTRV

### REDUCING BULL HEAD TEE With or without vanes.



# Shop/Field Installed **ACCESSORIES**

## TAMBE METAL PRODUCTS

**TAP**

**TAP 90**

Standard flange is 1/2".  
2" saddle is also available.

**CONICAL TAP**

**CTAP 90**

Standard flange is 1/2".  
2" saddle is also available.

**LATERAL TAP**

**TAP 45**

Standard flange is 1/2". 2" saddle is also available.

**SHOE TAP**

D2	L
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"

Standard flange is 1/2". 2" saddle is also available.

**REGISTER TAP**

**RECTAP**

Flange in or out

1/2" Flange

**ACCESS DOOR**

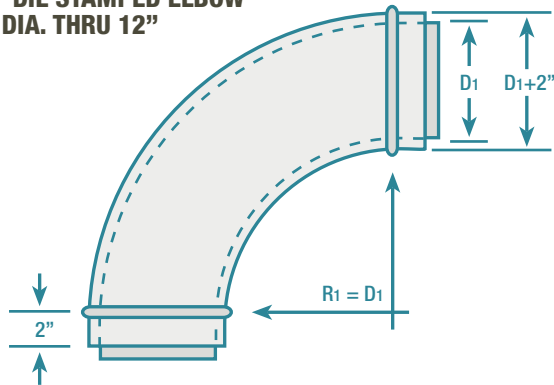
**ADOOR**

# Double Wall Round **ELBOWS**

TAMBE METAL PRODUCTS

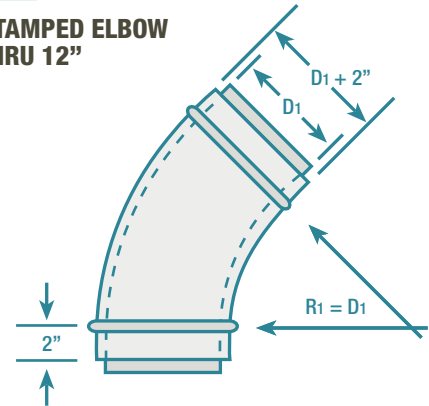
**E90**

**90° DIE STAMPED ELBOW**  
3" DIA. THRU 12"



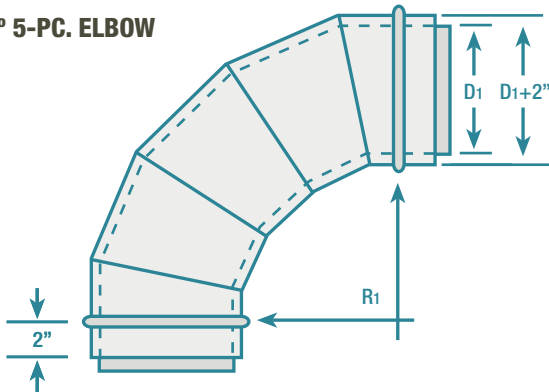
**E45**

**45° DIE STAMPED ELBOW**  
3" DIA. THRU 12"



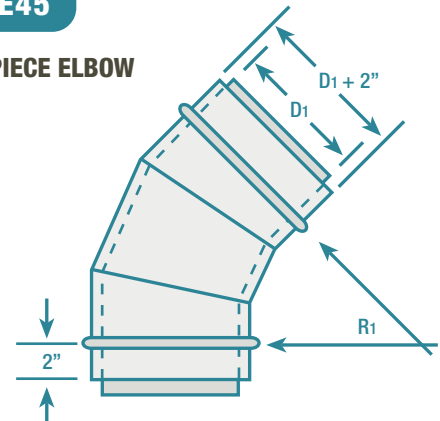
**E90**

**90° 5-PC. ELBOW**



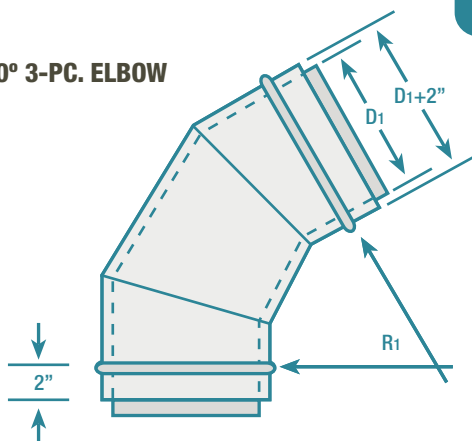
**E45**

**45° 3-PIECE ELBOW**



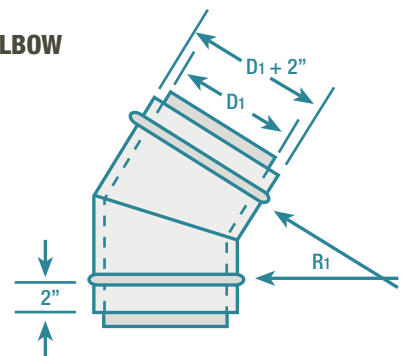
**E60**

**60° 3-PC. ELBOW**



**E15/E30**

**15° & 30°**  
**2-PIECE ELBOW**

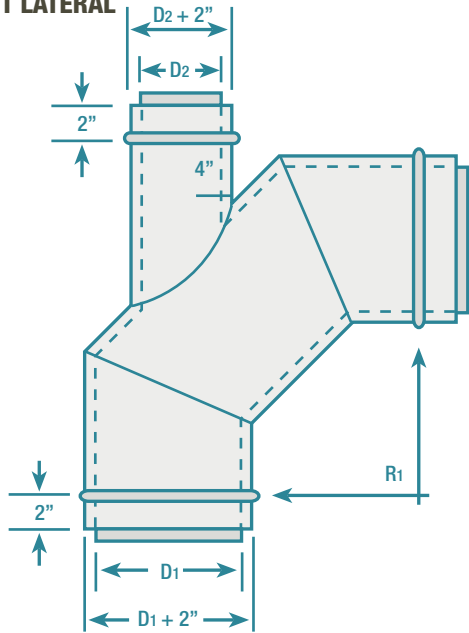


# Double Wall Round **ELBOWS**

TAMBE METAL PRODUCTS

**90° 3-PC. ELBOW WITH STRAIGHT LATERAL**

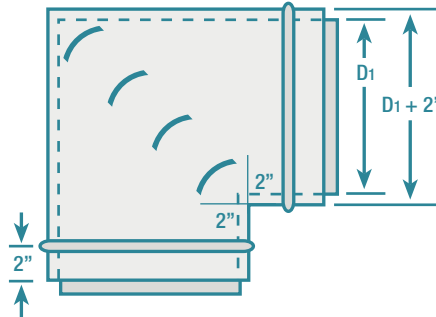
**E90L**



**E290/EV290**

**90° 2-PC. ELBOW**

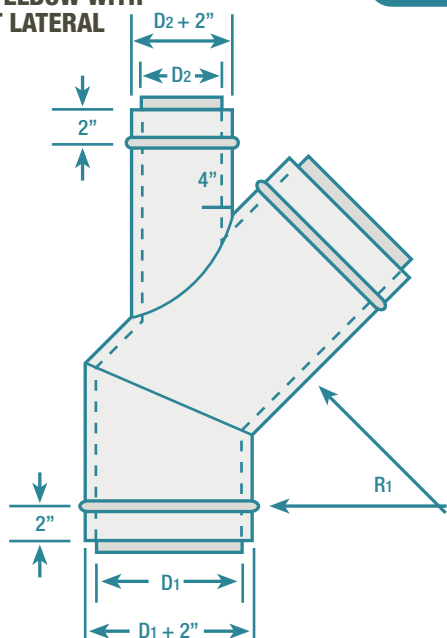
With or without vanes.



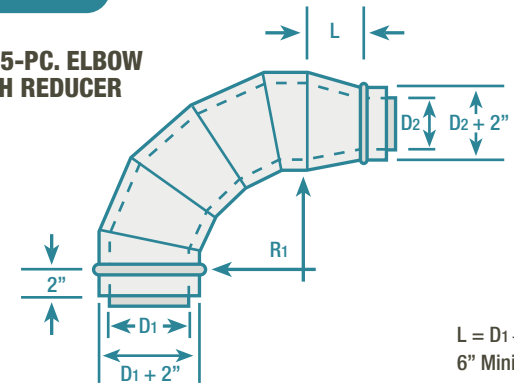
D1	No. of vanes
3-9	2
10-14	3
15-19	4
20-60	5
≥60	Max 12" spacing

**45° 2-PC. ELBOW WITH STRAIGHT LATERAL**

**E45L**

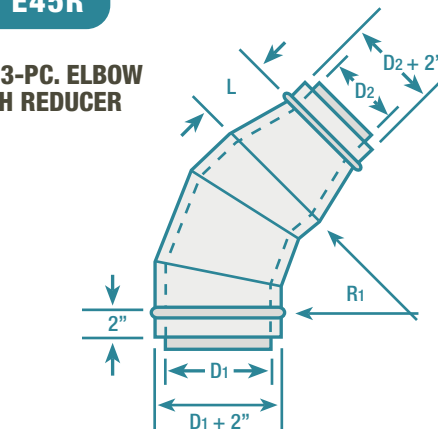


**90° 5-PC. ELBOW WITH REDUCER**



$L = D1 - D2$   
6" Minimum

**45° 3-PC. ELBOW WITH REDUCER**



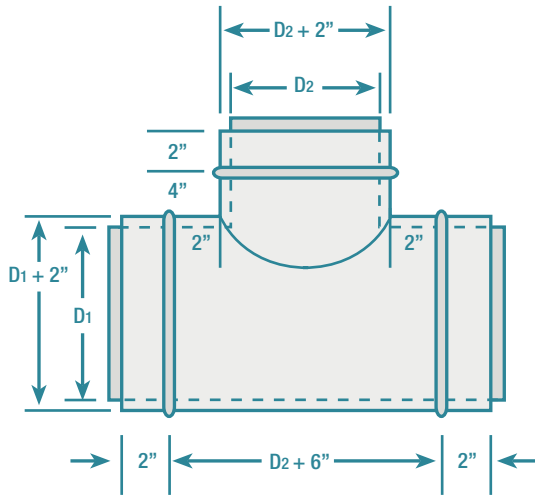
$L = D1 - D2$   
6" Minimum

# Double Wall Round **STRAIGHT TEES**

TAMBE METAL PRODUCTS

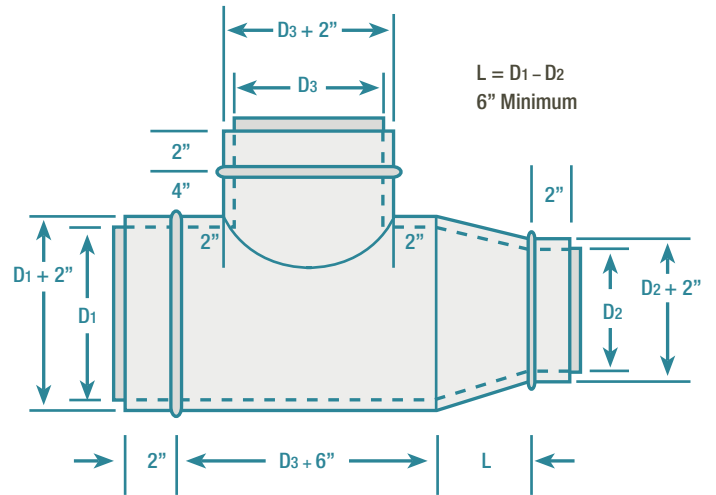
**T**

**TEE**



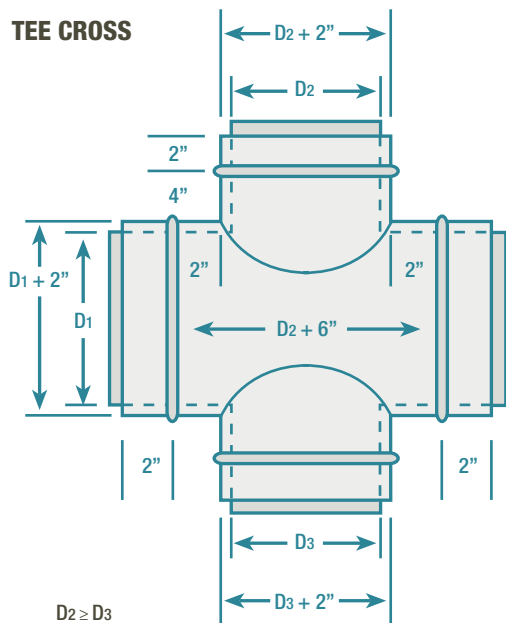
**TR**

**REDUCING TEE**



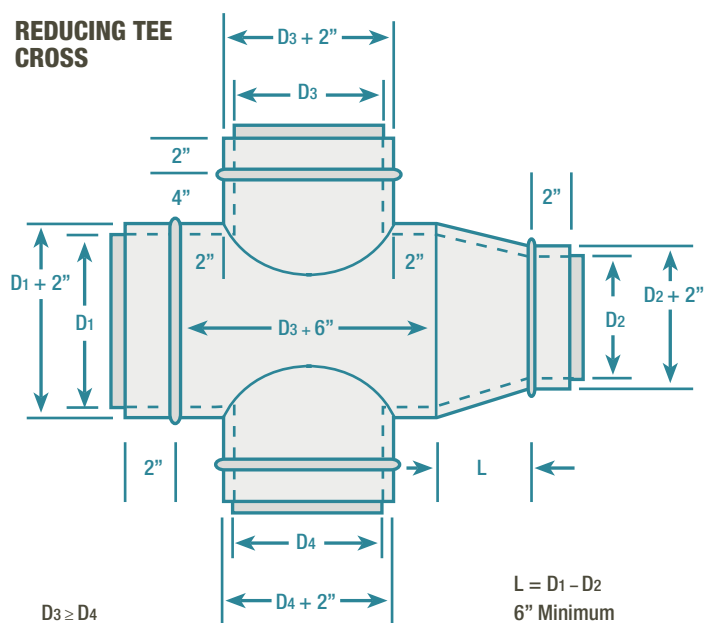
**TX**

**TEE CROSS**



**TRX**

**REDUCING TEE CROSS**

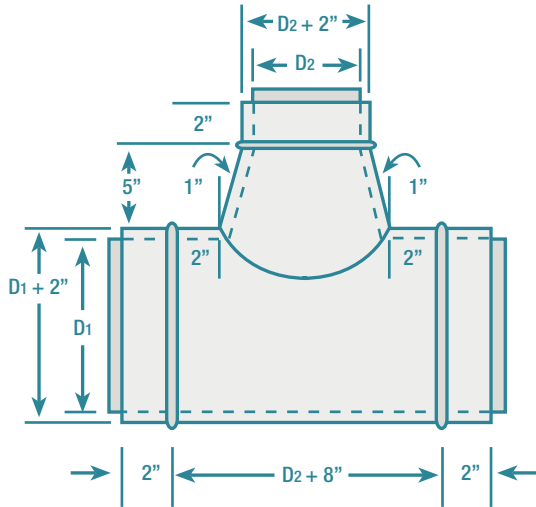


# Double Wall Round CONICAL TEES

TAMBE METAL PRODUCTS

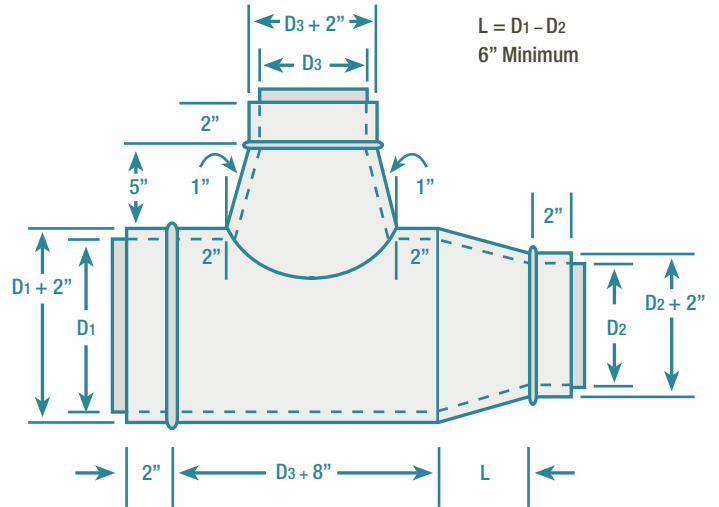
## CT

### CONICAL TEE



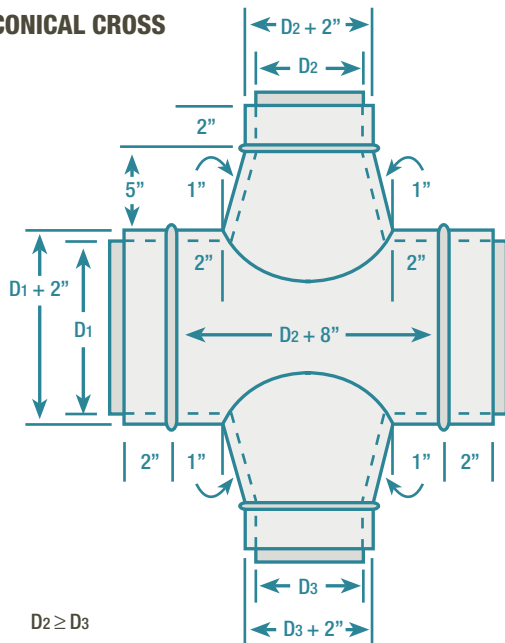
## CTR

### REDUCING CONICAL TEE



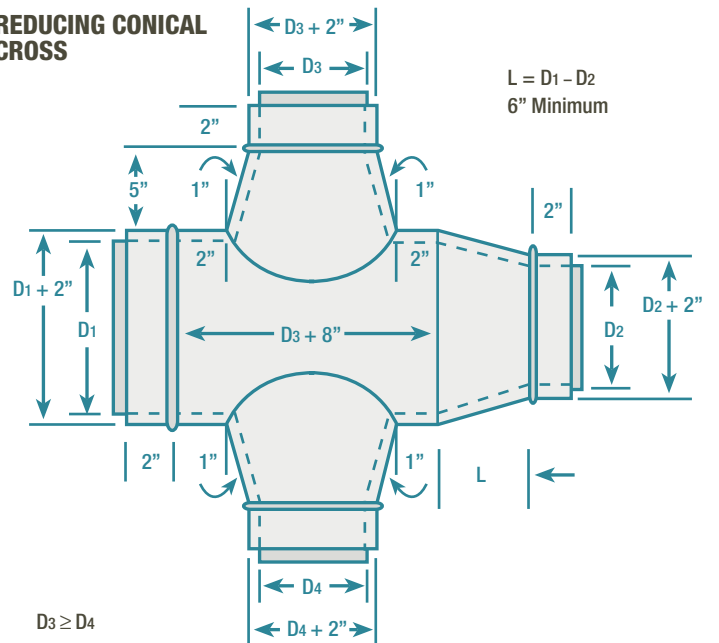
## CTX

### CONICAL CROSS



## CTRX

### REDUCING CONICAL CROSS



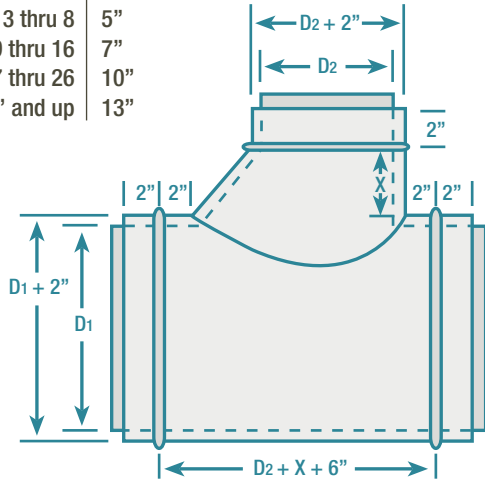
# Double Wall Round **SHOE TEES**

TAMBE METAL PRODUCTS

## ST

### SHOE TEE

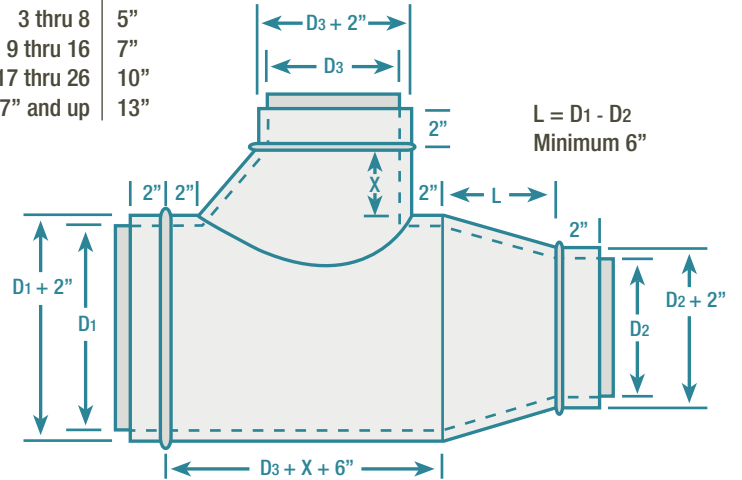
D2	X
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"



## STR

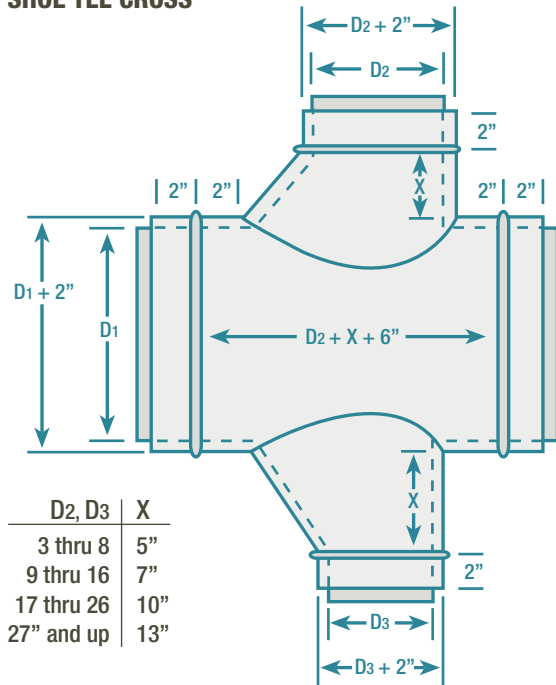
### REDUCING SHOE TEE

D3	X
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"



## STX

### SHOE TEE CROSS

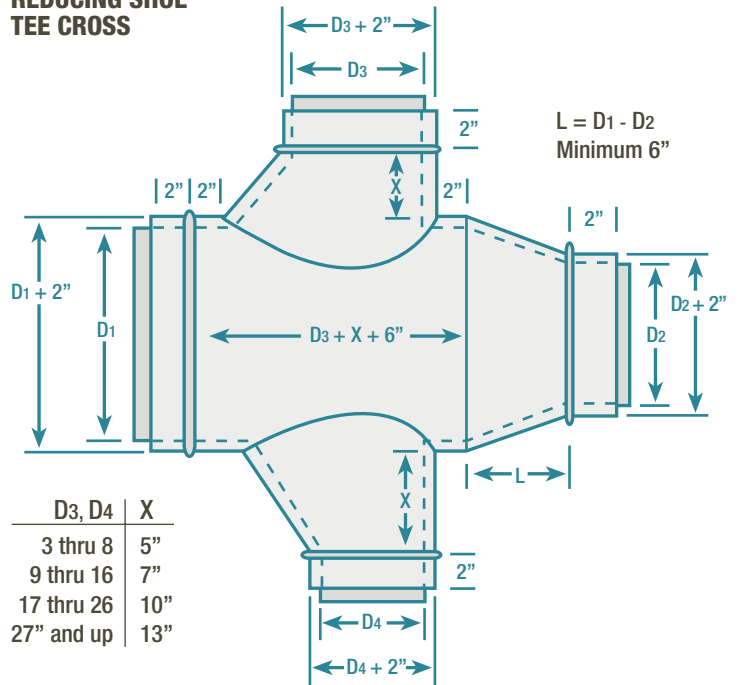


D2, D3	X
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"

D2 ≥ D3

## STRX

### REDUCING SHOE TEE CROSS



D3, D4	X
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"

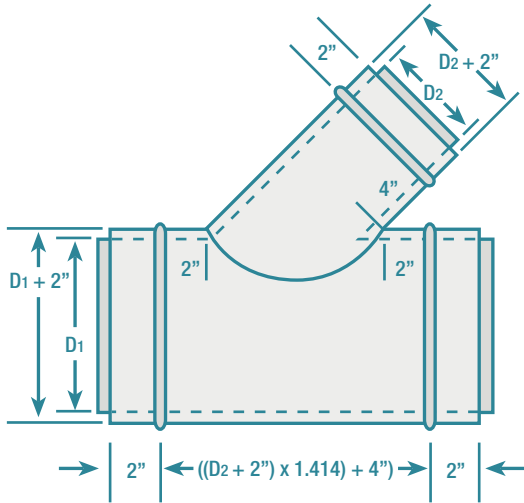
D3 ≥ D4

# Double Wall Round STRAIGHT LATERALS

TAMBE METAL PRODUCTS

L

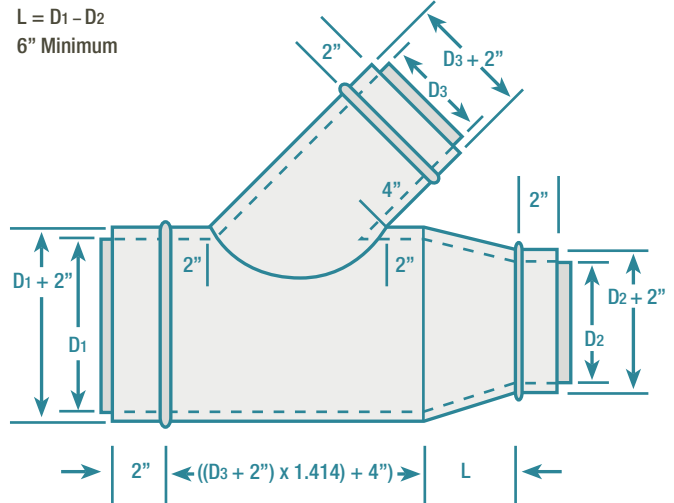
## 45° LATERAL



LR

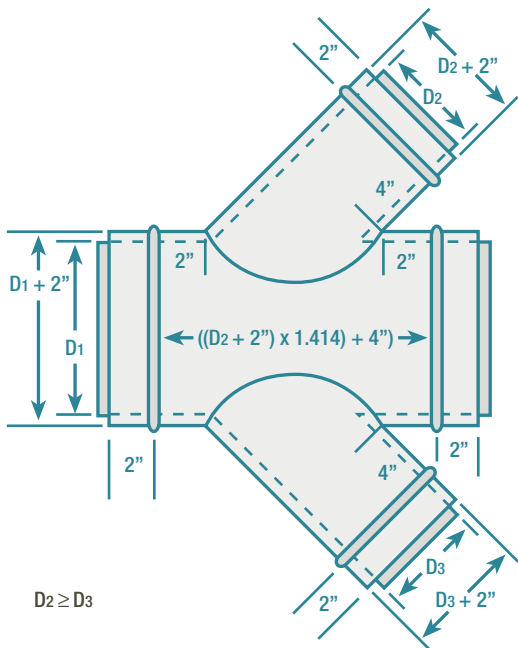
## 45° REDUCING LATERAL

$L = D_1 - D_2$   
6" Minimum



LX

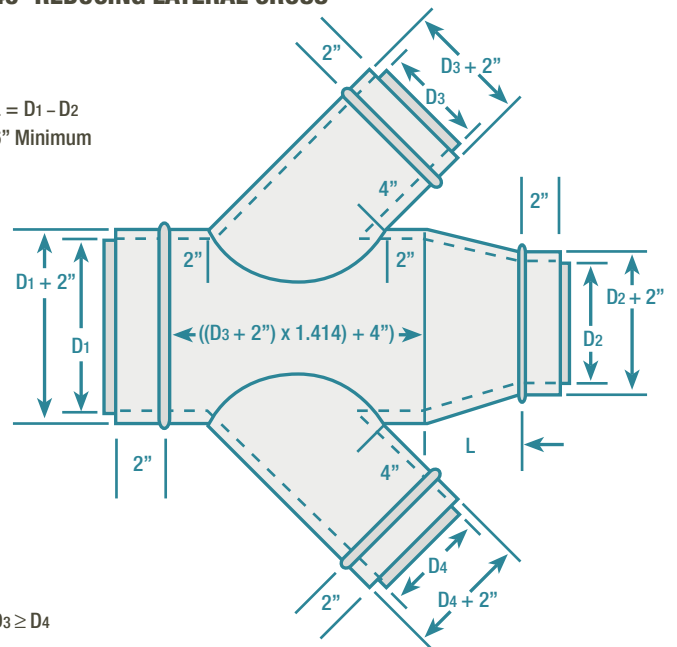
## 45° LATERAL CROSS



LRX

## 45° REDUCING LATERAL CROSS

$L = D_1 - D_2$   
6" Minimum

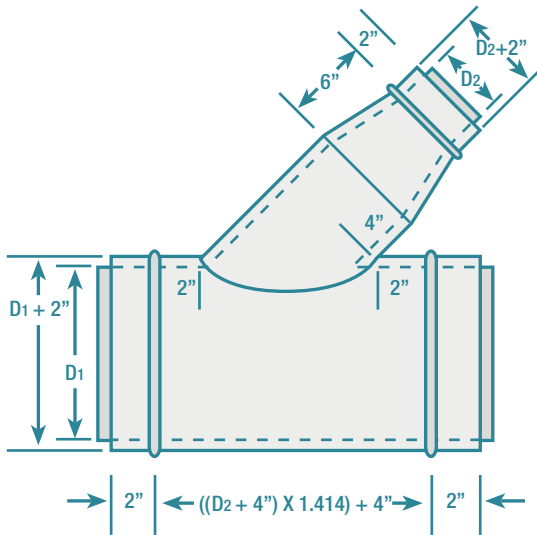


# Double Wall Round CONICAL LATERALS

TAMBE METAL PRODUCTS

CL

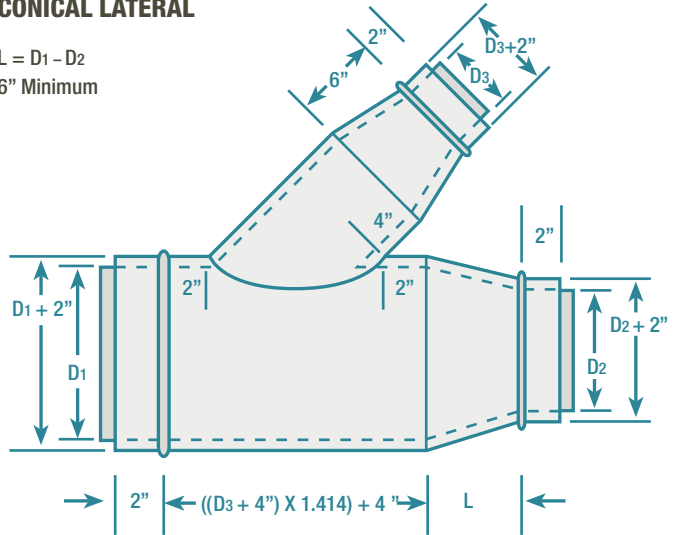
45° CONICAL LATERAL



CLR

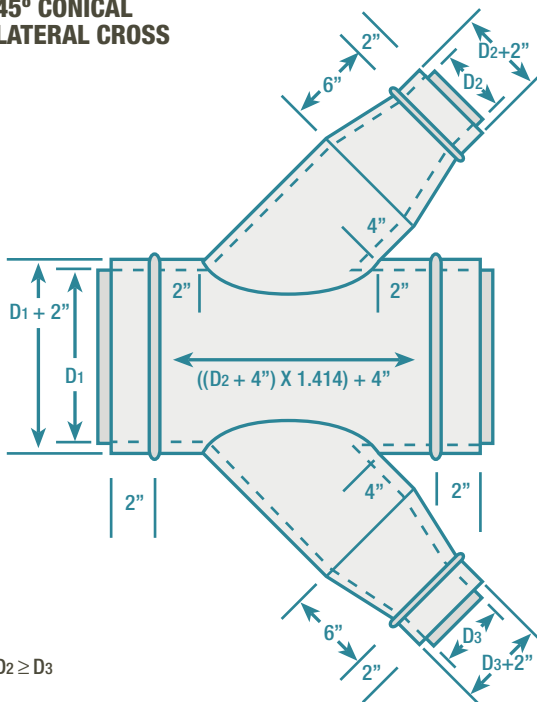
45° REDUCING CONICAL LATERAL

$L = D_1 - D_2$   
6" Minimum



CLX

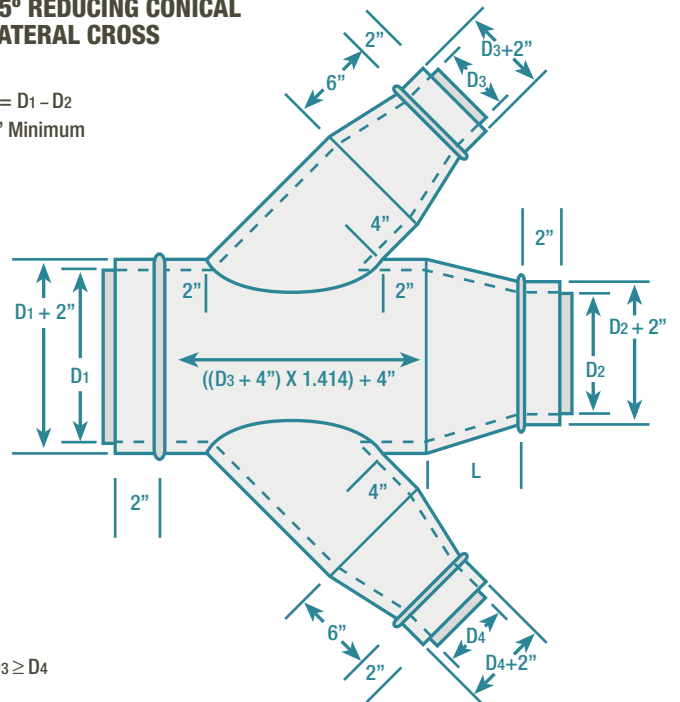
45° CONICAL LATERAL CROSS



CLR X

45° REDUCING CONICAL LATERAL CROSS

$L = D_1 - D_2$   
6" Minimum



# Double Wall Round MISCELLANEOUS

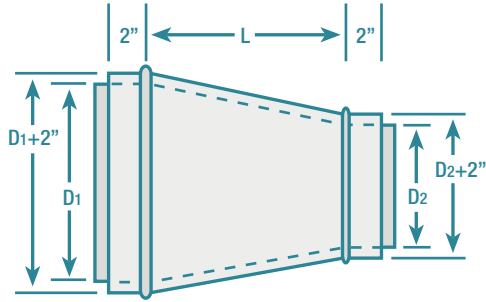
TAMBE METAL PRODUCTS

## RDC

### CONCENTRIC REDUCER

$$L = D_1 - D_2$$

6" Minimum

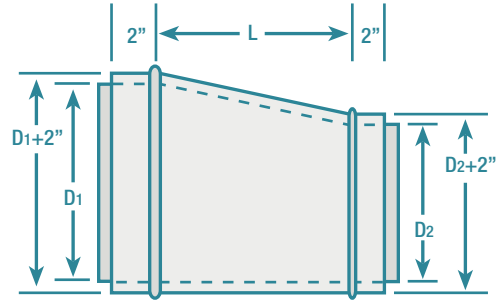


## RDE

### ECCENTRIC REDUCER

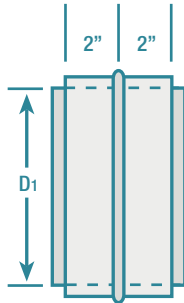
$$L = 2 [D_1 - D_2]$$

6" Minimum



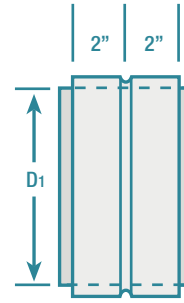
## PC

### PIPE COUPLING



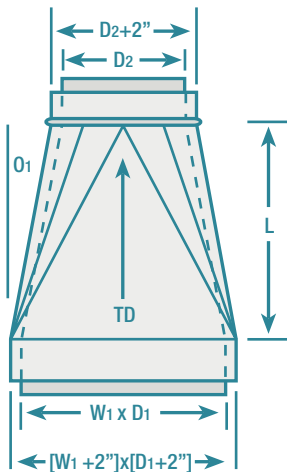
## FC

### FITTING COUPLING



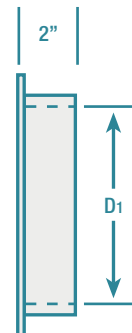
## RTR

### RECTANGLE TO ROUND



## EC

### END CAP

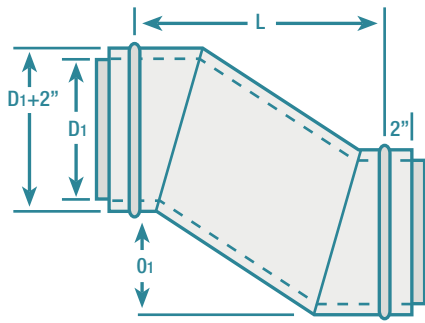


# Double Wall Round MISCELLANEOUS

TAMBE METAL PRODUCTS

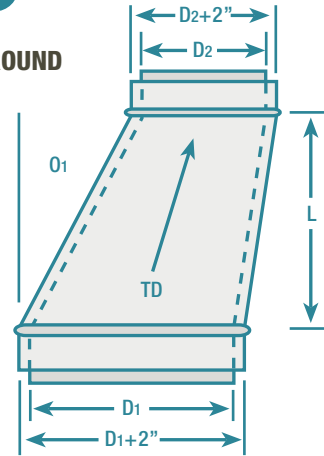
## SET

### OFFSET



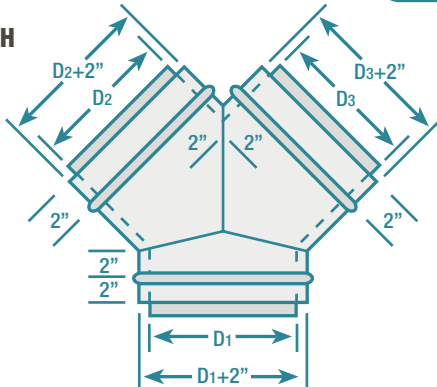
## ROET

### ROUND TO ROUND



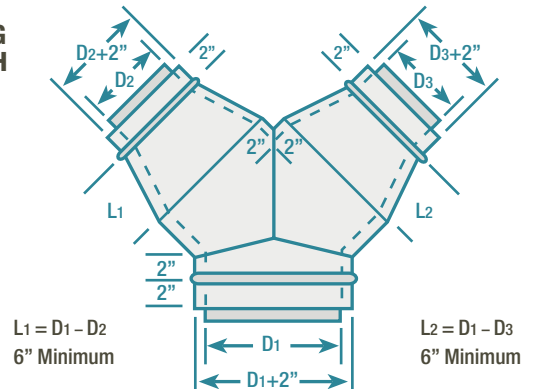
## Y45

### Y BRANCH



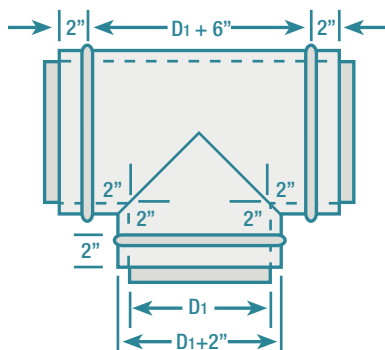
## YR45

### REDUCING Y BRANCH



## BHT/BHTV

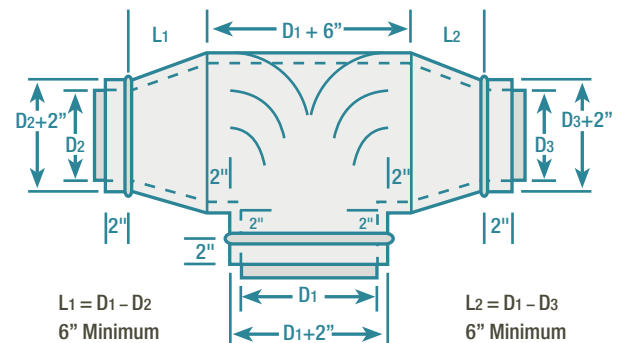
### BULL HEAD TEE With or without vanes.



D1	No. of vanes
3-7	1
8-10	3
10-60	5
>60	Max 12" spacing

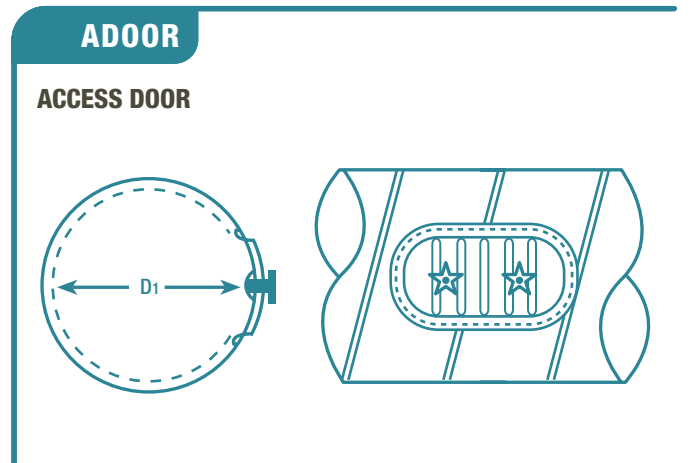
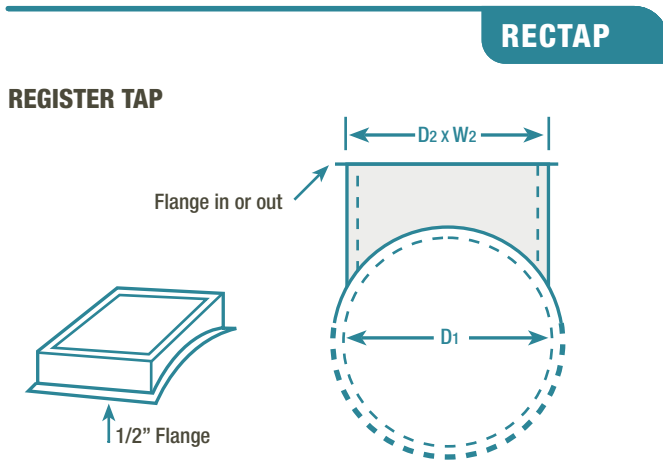
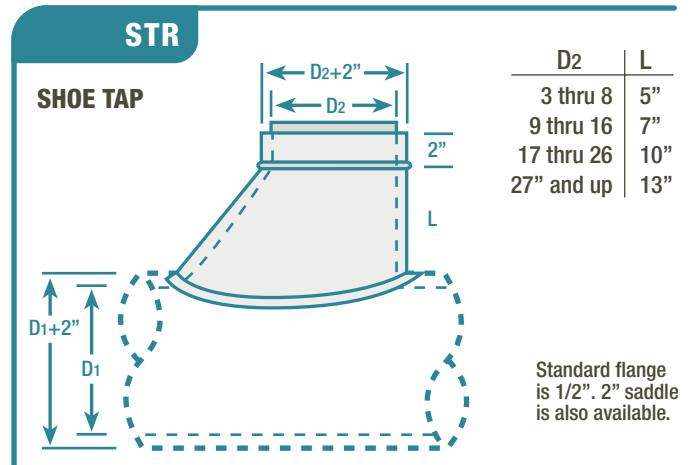
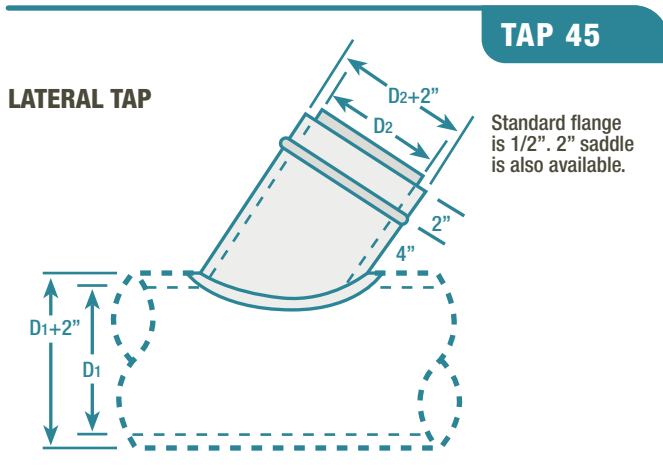
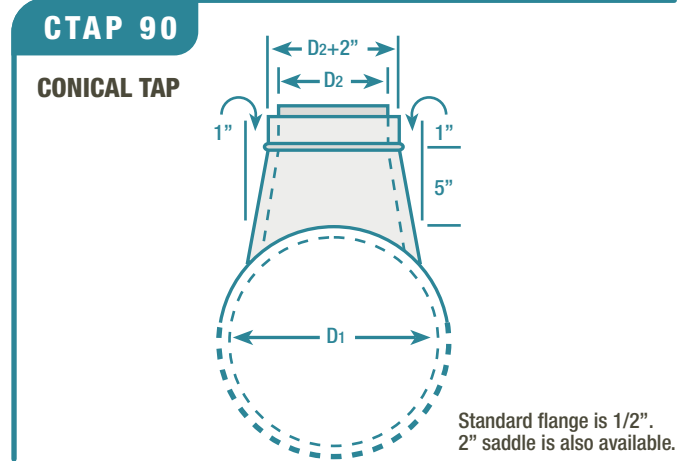
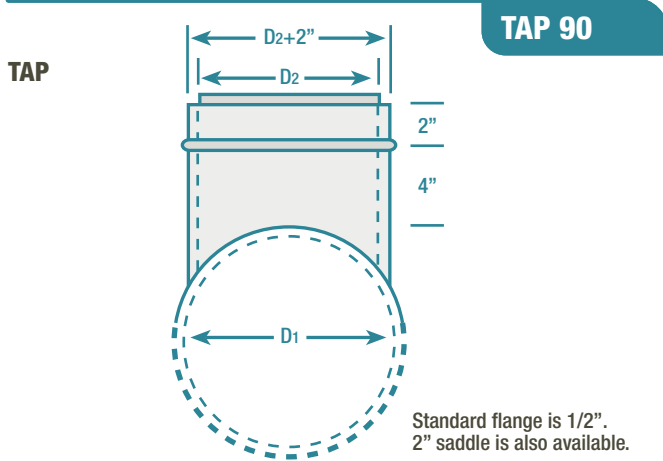
## BHTR/BHTRV

### REDUCING BULL HEAD TEE With or without vanes.



# Shop/Field Installed **ACCESSORIES**

**TAMBE** METAL PRODUCTS



# OVAL DUCT SYSTEMS

TAMBE METAL PRODUCTS

Flat oval duct combines the advantages of round duct and rectangular duct because it may fit in spaces where there is not enough room for round duct, and it can be joined using the techniques of round duct assembly.

Spiral flat oval duct is machine-made from round spiral lockseam duct and is available in varying sizes and aspect ratios. It can be made with longitudinal seams.

Flat oval duct has considerably less flat surface that is susceptible to vibration and requires less reinforcement than a corresponding size of rectangular duct. The deflection of the flat oval duct under pressure is related to the flat span rather than the overall width of the duct.

Any round duct fitting can have an equivalent fitting made in flat oval. As in rectangular duct, a hard bend elbow denotes the plane of the duct width, whereas an easy bend elbow denotes the bend in the plane of the duct height. Any branch fitting can be made with the branch tap either round or flat oval. The tap of the flat oval fitting can be located anywhere on the circumference of the fitting body. If the diameter of a round tap is greater than the height of the flat oval body, a transition can be made from flat oval to round, providing an equivalent area at the base of the transition.

Flat oval duct is for positive pressure applications only unless special designs are used.



# Oval Duct CONSTRUCTION STANDARDS

## TAMBE METAL PRODUCTS

### FLAT OVAL DUCT CONSTRUCTION

Major Dimension Duct Width	Spiral Seam Duct Gauge	Longitudinal Seam Duct Gauge	Gauge of Fittings
to 24"	24	20	20
25 to 36"	22	20	20
37 to 48"	22	18	18
49 to 60"	20	18	18
61 to 70"	20	16	16
71" and up	18	16	16

\* Initial spiral sizes indicated are for fabrication purposes only. For conversion from rectangular or round to oval, consult factory.

### Nominal flat oval pipe sizes

* INITIAL SPIRAL SIZE	MINOR AXIS																MAJOR AXIS
	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	
15	20																
16	22																
17	23	22	21	20	19												
18	25	24	23	21	20	19											
19	26	25	24	23	22	21											
20	28	27	26	25	23	22	21										
22	31	30	29	28	27	25	24	23									
24	34	33	32	31	30	29	27	26	25								
26	37	36	35	34	33	32	31	29	28	27							
28	41	39	38	37	36	35	34	33	31	30							
30	44	42	41	40	39	38	37	36	35	33	32						
32	47	46	45	43	42	41	40	39	38	37	35	34					
34	50	49	48	47	45	44	43	42	41	40	39	37	36				
36	53	52	51	50	49	47	46	45	44	43	42	41	39	38			
38	56	55	54	53	52	51	49	48	47	46	45	44	43	41	40		
40	59	58	57	56	55	54	53	51	50	49	48	47	46	45	43	42	
42	63	61	60	59	58	57	56	55	53	52	51	50	49	48	47	45	
44	66	65	63	62	61	60	59	58	57	55	54	53	52	51	50	49	
46	69	68	67	65	64	63	62	61	60	59	57	56	55	54	53	52	
48	72	71	70	69	67	66	65	64	63	62	61	59	58	57	56	55	
50		74	73	72	71	69	68	67	66	65	64	63	61	60	59	58	
52				75	74	73	71	70	69	68	67	66	65	63	62	61	
54						76	75	73	72	71	70	69	68	67	65	64	
56						79	78	77	75	74	73	72	71	70	69	67	
58							81	80	79	77	76	75	74	73	72	71	
60									82	81	79	78	77	76	75	74	
62										85	84	83	81	80	79	77	
64												86	85	83	82	80	
66														87	85	83	
68															89	86	
70																91	
72																93	

# Oval Duct CONSTRUCTION STANDARDS

TAMBE METAL PRODUCTS

## Actual flat oval pipe sizes

INITIAL SPIRAL SIZE	MINOR AXIS																MAJOR AXIS
	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	
15	20.14																
16	21.71																
17	23.28	22.14	21.00	19.85	18.71												
18	24.85	23.71	22.57	21.42	20.28	19.14											
19	26.42	25.28	24.14	23.00	21.85	20.71											
20	27.99	26.85	25.71	24.57	23.42	22.28	21.14										
22	31.13	29.99	28.85	27.71	26.57	25.42	24.28	23.14									
24	34.27	33.13	31.99	30.85	29.71	28.57	27.42	26.28	25.14								
26	37.42	36.27	35.13	33.99	32.85	31.71	30.57	29.42	28.28	27.14							
28	40.56	39.42	38.27	37.13	35.99	34.85	33.71	32.57	31.42	30.28							
30	43.70	42.56	41.42	40.27	39.13	37.99	36.85	35.71	34.57	33.42	32.28						
32	46.84	45.70	44.56	43.42	42.27	41.13	39.99	38.85	37.71	36.57	35.42	34.28					
34	49.98	48.84	47.70	46.56	45.42	44.27	43.13	41.99	40.85	39.71	38.57	37.42	36.28				
36	53.12	51.98	50.84	49.70	48.56	47.42	46.27	45.13	43.99	42.85	41.71	40.57	39.42	38.28			
38	56.27	55.12	53.98	52.84	51.70	50.56	49.42	48.27	47.13	45.99	44.85	43.71	42.57	41.42	40.28		
40	59.41	58.27	57.12	55.98	54.84	53.70	52.56	51.42	50.27	49.13	47.99	46.85	45.71	44.57	43.42	42.28	
42	62.55	61.41	60.27	59.12	57.98	56.84	55.70	54.56	53.42	52.27	51.13	49.99	48.85	47.71	46.57	45.42	
44	65.69	64.55	63.41	62.27	61.12	59.98	58.84	57.70	56.56	55.42	54.27	53.13	51.99			49.71	48.57
46	68.83	67.69	66.55	65.41	64.27	63.12	61.98	60.84	59.70	58.56	57.42	56.27	55.13			52.85	51.71
48	71.87	70.83	69.69	68.55	67.41	66.27	65.12	63.98	62.84	61.70	60.56	59.42	58.27			55.99	54.85
50		73.97	72.83	71.69	70.55	69.41	68.27	67.12	65.98	64.84	63.70	62.56	61.42			59.13	57.99
52				74.83	73.69	72.55	71.41	70.27	69.12	67.98	66.84	65.70	64.56			62.27	61.13
54						75.69	74.55	73.41	72.27	71.12	69.98	68.84	67.70			65.42	64.27
56						78.83	77.69	76.55	75.41	74.27	73.12	71.98	70.84			68.56	67.42
58							80.83	79.69	78.55	77.41	76.27	75.12	73.98			71.71	70.56
60									81.69	80.55	79.41	78.27	77.12			74.84	73.70
62										84.83	83.69	82.55	81.41	80.27		77.98	76.84
64												85.69	84.55	83.41		81.12	79.98
66														86.55		84.27	83.12
68																87.41	86.27
70																90.55	89.41
72																	92.55

# Oval Duct **INSTALLATION**

**TAMBE** METAL PRODUCTS

## **Single wall slip fit**

1. The fittings are male sized to slip into the pipe section. A good tight fit is necessary for minimalizing friction loss and good sealing. Care should be taken during handling to avoid any dents or distortions that can cause improper fit and difficult installation.
2. A sharp blow to the top of the collar with hand or sheet metal mallet can cause the collar to seat into the duct. For larger sized duct, straddle the duct and slightly compress duct sideways while another person jiggles the fitting into the duct.
3. As a last resort, a half moon cut on the top of the collar to eliminate the “high-spot” and the fitting slips easily into place.

## **Double wall slip fit**

The inner and outer collars of fittings are male sized and designed to slip into the connecting duct. The inner collar projects beyond the outer collar permitting the inner collar to be started into the inner liner of the duct section similar to the single wall technique.

1. Bring bottom of inner collar into the duct section at a slight angle.
2. Using slight pressure, work the rest of the collar into the duct.
3. When the inner collar is fully started into the duct, start the outer collar in the same manner. Tilt the bottom edge slightly upon insertion and tap the “high-spots” to work the collar into the duct.

It is suggested to save time, sub-assemblies be made on the floor then hoisted into place.

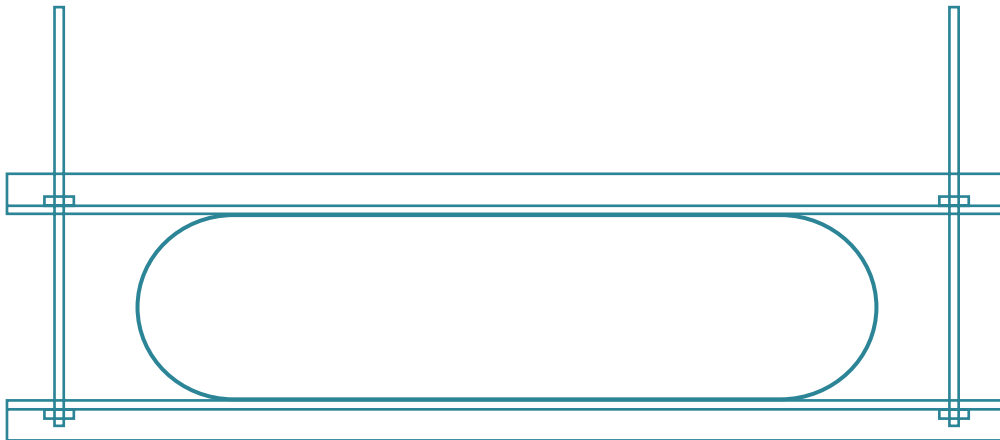
## **Additional suggestions for installation**

1. Rest your duct on two blocks of wood and then using your hands and moving the duct, in an up and down motion, will help you make your connection without damaging the duct.
2. Allowances have already been made in fittings for installation. Should a kink occur through handling, by carefully straightening out the kinks and bends a good connection can still be made.
3. **DO NOT** use a hammer and screwdriver to make a connection. The possibility of causing damages internally is a real danger to friction loss. Apply pressure with the heel of your hand or a good thump with your fist can help the fitting slip into the duct.
4. Apply duct sealant to the internal end of the spiral approximately 1” and apply duct sealant around the slip part of your fitting. As the fitting slips into the spiral duct the sealant will not scrape off in the slip connection.
5. Whenever possible brush your internal joint to make it smooth inside and out; also, inspect your sealed joints for coverage. One to two days after completing the connections check connections for shrinkage of the duct sealant. Reapply sealant where needed.

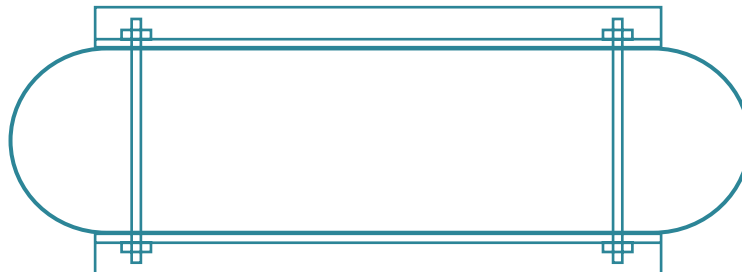
# Oval Duct **REINFORCEMENT**

**TAMBE** METAL PRODUCTS

## Double trapeze reinforcement and hanger for oval duct



## Flat span reinforcement with internal tie rods for oval duct



See the following 4 pages for size and spacing of reinforcement.  
Reinforcement schedules are shown for 2", 3', 4', and 6" W.G. systems.

# Oval Duct REINFORCEMENT

TAMBE METAL PRODUCTS

## 2" W.G. Reinforcement

To use this table:

1. Find the minor axis of the oval size you wish to reinforce in the first row.
2. Go down the column for that minor axis until you reach the major axis of the oval size you wish to reinforce.
3. To the left of the major axis you will find the appropriate reinforcement.

INITIAL SPIRAL SIZE	MINOR AXIS																MAJOR AXIS
	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	
15	B8/20	NR/19	NR/18	NR/17	NR/16												
16	C8/22	B8/21	NR/19	NR/18	NR/17												
17	C8/23	B8/22	NR/21	NR/20	NR/19	NR/18											
18	C6/25	C8/24	B8/23	NR/21	NR/20	NR/19											
19	C8/26	C10/25	B8/24	NR/23	NR/22	NR/21											
20	D8/28	C8/27	C10/26	D8/25	NR/23	NR/22	NR/21										
22	E8/31	D8/30	C8/29	C10/28	NR/27	NR/25	NR/24										
24	E6/34	E8/33	D8/32	C8/31	C10/30	NR/29	NR/27	NR/26									
26	F5/37	E6/36	E8/35	D8/34	C8/33	C10/32	NR/31	NR/29	NR/28								
28	F5/41	F5/39	E6/38	E8/37	D8/36	C8/35	C10/34	NR/33	NR/31	NR/30							
30	F4/44	F5/43	F5/41	E6/40	E8/39	D8/38	C8/37	C10/36	NR/35	NR/33	NR/32						
32	F4/47	F4/46	F5/45	F5/43	E6/42	E8/41	D8/40	C8/39	C10/38	NR/37	NR/35	NR/34					
34	H5/50	F4/49	F4/48	F5/47	F5/45	E6/44	E8/43	D8/42	C8/41	C10/40	NR/39	NR/37	NR/36				
36	H5/53	H5/52	G5/51	G5/50	F5/49	F5/47	E6/46	E8/45	D8/44	C8/43	C10/42	NR/41	NR/39	NR/38			
38	H4/56	H5/55	H5/54	G5/53	G5/52	F6/51	F6/49	E6/48	E8/47	D8/46	C8/45	C10/44	NR/43	NR/41	NR/40		
40	H4/59	H4/58	H5/57	H5/56	G5/55	GS/54	F6/53	F6/51	E8/50	E10/49	D8/48	C8/47	C10/46	NR/45	NR/43	NR/42	
42	G3/63	H4/61	H4/60	H5/59	H5/58	GS/57	G5/56	F6/55	F6/53	E8/52	E10/51	D10/50	C8/49	C10/48	NR/47	NR/45	
44	G3/66	G3/65	H4/63	H4/62	H5/61	H5/60	G5/59	G5/58	F6/57	F6/55	E8/54	E10/53	D10/52	C10/51	NR/50	NR/49	
46	H3/69	G3/68	G3/67	H4/65	H4/64	H5/63	H5/62	G5/61	G5/60	F6/59	F6/57	E8/56	E10/55	D10/54	C10/53	NR/52	
48	I4/72	H3/71	G3/70	G3/69	H4/67	H4/66	H5/65	H5/64	G5/63	G5/62	F6/61	F6/59	E8/58	E10/57	D10/56	C10/55	
50		I4/74	I4/73	I5/72	G3/71	H4/69	H4/68	H5/67	H5/66	G5/65	G5/64	F6/63	F6/61	E8/60	E10/59	D10/58	
52				I5/75	I5/74	I5/73	H5/71	H4/70	H5/69	H5/68	G5/67	G5/66	F6/65	F6/63	E8/62	E10/61	
54						I5/76	I5/75	H5/73	H5/72	H5/71	H5/70	G5/69	G5/68	F6/67	F6/65	E8/64	
56						I5/79	I5/78	I5/77	H5/75	H5/74	H5/73	H6/72	G5/71	G5/70	F6/69	F6/67	
58							I4/81	I5/80	I5/79	H5/77	H5/76	H5/75	H6/74	G6/73	G6/72	F6/71	
60									I5/82	I5/81	H5/79	H5/78	H5/77	H6/76	G6/75	G6/74	
62									I4/85	I5/84	I5/83	H5/81	H5/80	H5/79	H6/78	G6/77	
64											I5/86	I5/85	H5/83	H5/82	H5/81	H6/80	
66													I5/87	H5/85	H5/84	H5/83	
68														I5/89	H5/87	H5/86	
70															I5/91	H5/89	
72																I5/93	

# Oval Duct **REINFORCEMENT**

TAMBE METAL PRODUCTS

## 3" W.G. Reinforcement

To use this table:

1. Find the minor axis of the oval size you wish to reinforce in the first row.
2. Go down the column for that minor axis until you reach the major axis of the oval size you wish to reinforce.
3. To the left of the major axis you will find the appropriate reinforcement.

INITIAL SPIRAL SIZE	MINOR AXIS																MAJOR AXIS
	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	
15	B8/20	NR/19	NR/18	NR/17	NR/16												
16	C6/22	B8/21	NR/19	NR/18	NR/17												
17	C6/23	B8/22	NR/21	NR/20	NR/19	NR/18											
18	D6/25	C6/24	B8/23	NR/21	NR/20	NR/19											
19	D6/26	D8/25	B8/24	NR/23	NR/22	NR/21											
20	E6/28	D6/27	C8/26	B8/25	NR/23	NR/22	NR/21										
22	E6/31	E6/30	D6/29	C8/28	C8/27	NR/25	NR/24										
24	F5/34	E6/33	E6/32	D6/31	C8/30	C8/29	NR/27	NR/26									
26	F4/37	F5/36	E6/35	E6/34	D6/33	C8/32	C8/31	NR/29	NR/28								
28	F4/41	F4/39	F5/38	E6/37	E6/36	D6/35	C8/34	C8/33	NR/31	NR/30							
30	G4/44	F4/43	F4/41	F5/40	E6/39	E6/38	D6/37	C8/36	C8/35	NR/33	NR/32						
32	G4/47	G4/46	F4/45	F4/43	F5/42	E6/41	E6/40	D8/39	C8/38	C8/37	NR/35	NR/34					
34	H4/50	G4/49	G4/48	F4/47	F4/45	F5/44	E6/43	E6/42	D6/41	C8/40	C8/39	NR/37	NR/36				
36	H4/53	H4/52	H5/51	H5/50	F4/49	F4/47	F5/46	E6/45	E6/44	D6/43	C8/42	C8/41	NR/39	NR/38			
38	H3/56	H4/55	H4/54	H5/53	H5/52	G5/51	G5/49	F5/48	E6/47	E6/46	D6/45	C8/44	C8/43	NR/41	NR/40		
40	H3/59	H3/58	H4/57	H4/56	H5/55	H5/54	G5/53	G5/51	F6/50	E6/49	E6/48	D6/47	C8/46	C8/45	NR/43	NR/42	
42	H3/63	H3/61	H3/60	H4/59	H4/58	H5/57	H5/56	G5/55	G5/53	F6/52	E6/51	E8/50	D6/49	C8/48	C8/47	NR/45	
44	H3/66	H3/65	H3/63	H3/62	H4/61	H4/60	H5/59	H5/58	G5/57	G5/55	F6/54	E6/53	E8/52	D8/51	C8/50	C8/49	
46	I3/69	H3/68	H3/67	H3/65	H3/63	H4/63	H4/62	H5/61	H5/60	G5/59	G5/57	F6/56	E6/55	E8/54	D8/53	C8/52	
48	I3/72	I3/71	H3/70	H3/69	H3/67	H3/66	H4/65	H4/64	H5/63	H5/62	G5/61	G5/59	F6/58	E6/57	E8/56	D8/55	
50		I4/74	I3/73	I4/72	H3/71	H3/69	H3/68	H4/67	H4/66	H5/65	H5/64	G5/63	G5/61	F6/60	E6/59	E8/58	
52				I4/75	I4/74	I4/73	I5/71	H3/70	H4/69	H4/68	H5/67	H5/66	G5/65	G5/63	F6/62	E6/61	
54						I4/76	I4/75	I5/73	I5/72	I5/71	H4/70	H5/69	H5/68	G5/67	G5/65	F6/64	
56						I3/79	I4/78	I4/77	I5/75	I5/74	I5/73	I5/72	H5/71	H5/70	G5/69	G5/67	
58							I3/81	I4/80	I4/79	I5/77	I5/76	I5/75	I5/74	H6/73	H6/72	G5/71	
60									I4/82	I4/81	I5/79	I5/78	I5/77	I5/76	H6/75	H6/74	
62									I3/85	I4/84	I4/83	I5/81	I5/80	I5/79	I5/78	H6/77	
64											I4/86	I4/85	I5/83	I5/82	I5/81	I5/80	
66													I4/87	I5/85	I5/84	I5/83	
68														I4/89	I5/87	I5/86	
70															I4/91	I5/89	
72																I4/93	

# Oval Duct **REINFORCEMENT**

TAMBE METAL PRODUCTS

## 4" W.G. Reinforcement

To use this table:

1. Find the minor axis of the oval size you wish to reinforce in the first row.
2. Go down the column for that minor axis until you reach the major axis of the oval size you wish to reinforce.
3. To the left of the major axis you will find the appropriate reinforcement.

INITIAL SPIRAL SIZE	MINOR AXIS																MAJOR AXIS
	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	
15	C5/20	C6/19	NR/18	NR/17	NR/16												
16	C5/22	C5/21	B6/19	NR/18	NR/17												
17	D5/23	C5/22	C6/21	NR/20	NR/19	NR/18											
18	E5/25	C5/24	C5/23	B6/21	NR/20	NR/19											
19	E6/26	D6/25	C5/24	C6/23	NR/22	NR/21											
20	E5/28	E6/27	D6/26	C5/25	B6/23	NR/22	NR/21										
22	F5/31	E5/30	E6/29	D6/28	B8/27	NR/25	NR/24										
24	F5/34	F5/33	E5/32	E6/31	D6/30	B8/29	NR/27	NR/26									
26	G4/37	F5/36	F5/35	E5/34	E6/33	D6/32	B8/31	NR/29	NR/28								
28	G4/41	G4/39	F5/38	F5/37	E5/36	E6/35	D6/34	B8/33	NR/31	NR/30							
30	G3/44	G4/43	G4/41	F5/40	F5/39	E5/38	E6/37	D6/36	B8/35	NR/33	NR/32						
32	G3/47	G3/46	G4/45	G4/43	F5/42	F5/41	E5/40	E6/39	D6/38	B8/37	NR/35	NR/34					
34	H3/50	G3/49	G3/48	G4/47	G4/45	F5/44	F5/43	E5/42	E6/41	D6/40	B8/39	NR/37	NR/36				
36	H3/53	H3/52	H4/51	H4/50	G4/49	G4/47	F5/46	F5/45	E5/44	E6/43	D6/42	B8/41	NR/39	NR/38			
38	I3/56	H3/55	H3/54	H4/53	H4/52	H5/51	H5/49	F5/48	F5/47	E5/46	E6/45	D6/44	B8/43	NR/41	NR/40		
40	I3/59	I3/58	H3/57	H3/56	H4/55	H4/54	H5/53	H5/51	G6/50	F6/49	E5/48	E6/47	D6/46	B8/45	NR/43	NR/42	
42	I3/63	I3/61	I3/60	H3/59	H3/58	H4/57	H4/56	H5/55	H5/53	G6/52	F6/51	E6/50	E6/49	D6/48	B8/47	NR/45	
44	I3/66	I3/65	I3/63	I3/62	H3/61	H3/60	H4/59	H4/58	H5/57	H5/55	G6/54	F6/53	E6/52	E8/51	D8/50	B8/49	
46		I3/68	I3/67	I3/65	I3/64	H3/63	H3/62	H4/61	H4/60	H5/59	H5/57	G6/56	F6/55	E6/54	E8/53	D8/52	
48		I2.5/71	I3/70	I3/69	I3/67	I3/66	H3/65	H3/64	H4/63	H4/62	H5/61	H5/59	G6/58	F6/57	E6/56	E8/55	
50		J3/74	J3/73	H3/72	I3/71	I3/69	I3/68	H3/67	H3/66	H4/65	H4/64	H5/63	H5/61	G6/60	F6/59	E6/58	
52				H3/75	H3/74	H3/73	I4/71	I3/70	H3/69	H3/68	H4/67	H4/66	H5/65	H5/63	G6/62	F6/61	
54						H3/76	H3/75	I4/73	I4/72	I5/71	H3/70	H4/69	H4/68	H5/67	H5/65	G6/64	
56						J3/79	H3/78	H3/77	I4/75	I4/74	I5/73	I5/72	H4/71	H4/70	H5/69	H5/67	
58							J3/81	H3/80	H3/79	I4/77	I4/76	I5/75	I5/74	I5/73	I5/72	H5/71	
60									H3/82	H3/81	I4/79	I4/78	I5/77	I5/76	I5/75	I5/74	
62									J3/85	H3/84	H3/83	I4/81	I4/80	I5/79	I5/78	I5/77	
64											H3/86	H3/85	I4/83	I4/82	I5/81	I5/80	
66													H3/87	I4/85	I4/84	I5/83	
68														H3/89	I4/87	I4/86	
70															H3/91	I4/89	
72																H3/93	

# Oval Duct REINFORCEMENT

TAMBE METAL PRODUCTS

## 6" W.G. Reinforcement

To use this table:

1. Find the minor axis of the oval size you wish to reinforce in the first row.
2. Go down the column for that minor axis until you reach the major axis of the oval size you wish to reinforce.
3. To the left of the major axis you will find the appropriate reinforcement.

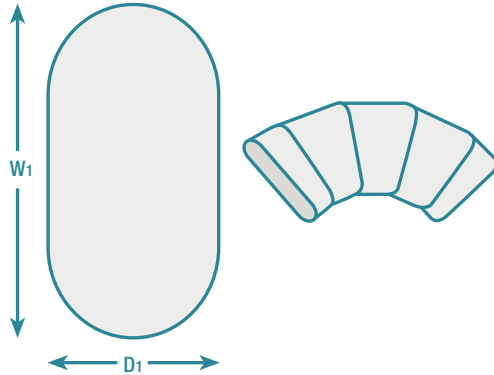
INITIAL SPIRAL SIZE	MINOR AXIS																MAJOR AXIS
	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	
15	C4/20	C5/19	NR/18	NR/17	NR/16												
16	D4/22	C4/21	C5/19	NR/18	NR/17												
17	E4/23	C4/22	C5/21	NR/20	NR/19	NR/18											
18	E4/25	D4/24	C4/23	C5/21	NR/20	NR/19											
19	E5/26	E5/25	C4/24	C5/23	NR/22	NR/21											
20	F5/28	E5/27	D5/26	C4/25	C5/23	NR/22	NR/21										
22	F4/31	F5/30	E5/29	D5/28	D5/27	B6/25	NR/24										
24	G4/34	F4/33	F5/32	E5/31	D5/30	D5/29	B6/27	NR/26									
26	H3/37	G4/36	F4/35	E5/34	E5/33	D5/32	D5/31	B6/29	NR/28								
28	H3/41	H3/39	G4/38	F4/37	F5/36	E5/35	D5/34	D5/33	B6/31	NR/30							
30	H2.5/44	H3/43	H3/41	G4/40	F4/39	F5/38	E5/37	D5/36	D5/35	B6/33	NR/32						
32	H2.5/47	H2.5/46	H3/45	H3/43	G4/42	F4/41	F5/40	E5/39	D5/38	D5/37	B6/35	NR/34					
34	I2.5/50	H2.5/48	H2.5/48	H3/47	H3/45	G4/44	F4/43	F5/42	E5/41	D5/40	D5/39	B6/37	NR/36				
36	I2.5/53	I2.5/52	H3/51	H3/50	H3/49	H4/47	G4/46	F4/45	F5/44	E5/43	D5/42	D5/41	B6/39	NR/38			
38	I2.5/56	I2.5/55	I2.5/54	H3/53	H3/52	H4/51	H4/49	G4/48	F4/47	F5/46	E5/45	D5/44	D5/43	B6/41	NR/40		
40	I2.5/59	I2.5/58	I2.5/57	I2.5/56	H3/55	H3/54	H4/53	H4/51	H5/50	G5/49	F5/48	E5/47	D5/46	D5/45	B6/43	NR/42	
42	I2.5/63	I2.5/61	I2.5/60	I2.5/59	I2.5/58	H3/57	H3/56	H4/55	H4/53	H5/52	G5/51	F6/50	E5/49	D5/48	D5/45	B6/45	
44	I2.5/66	I2.5/65	I2.5/63	I2.5/62	I2.5/61	I2.5/60	H3/59	H3/58	H4/57	H4/55	H5/54	G5/53	F6/52	F6/51	D6/50	D5/49	
46	J2/69	I2.5/68	I2.5/67	I2.5/65	I2.5/64	I2.5/63	I2.5/62	H3/61	H3/60	H4/59	H4/57	H5/56	G5/55	F6/54	F6/53	D6/52	
48	J2.5/72	J2/74	I2.5/70	I2.5/69	I2.5/67	I2.5/66	I2.5/65	I2.5/64	H3/63	H3/62	H4/61	H4/59	H5/58	G5/57	F6/56	F6/55	
50		J2.5/74	J2.5/73	J3/72	I2.5/71	I2.5/69	I2.5/68	I2.5/67	I2.5/66	H3/65	H3/64	H4/63	H4/61	H5/60	G5/59	F6/58	
52				J2.5/75	J3/74	J3/73	I3/71	I2.5/70	I2.5/69	I2.5/68	H3/67	H3/66	H4/65	H4/63	H5/62	G5/61	
54						J3/76	J3/75	I3/73	I3/72	I4/71	I2.5/70	H3/69	H3/68	H4/67	H4/65	H5/64	
56						J2.5/79	J3/78	J3/77	I3/75	I3/74	I4/73	I4/72	H3/71	H3/70	H4/69	H4/67	
58							J2.5/81	J3/80	J3/79	I3/77	I3/76	I4/75	I4/74	I4/73	I4/72	H4/71	
60									J3/82	J3/81	I3/79	I3/78	I4/77	I4/76	I4/75	I4/74	
62									J2.5/85	J3/84	J3/83	I3/81	I3/80	I4/79	I4/78	I4/77	
64											J3/86	J3/85	I3/83	I3/82	I4/81	I4/80	
66													J3/87	I3/85	I3/84	I4/83	
68														J3/89	I3/87	I3/86	
70															J3/91	I3/89	
72																J3/93	

# Single Wall Oval **ELBOWS**

TAMBE METAL PRODUCTS

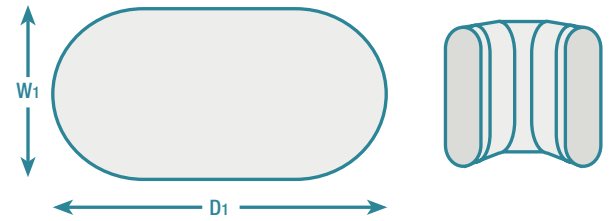
**HB**

**HARD BEND**



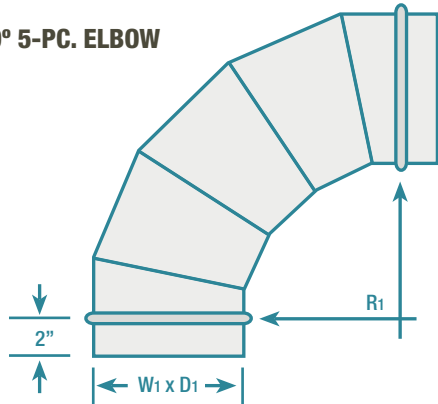
**EB**

**EASY BEND**



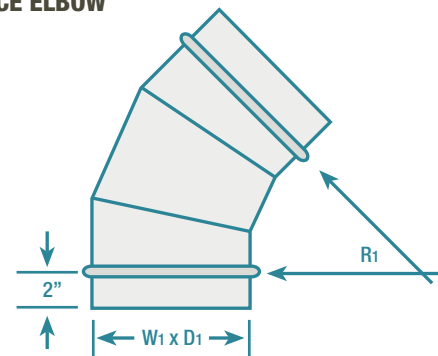
**E90**

**90° 5-PC. ELBOW**



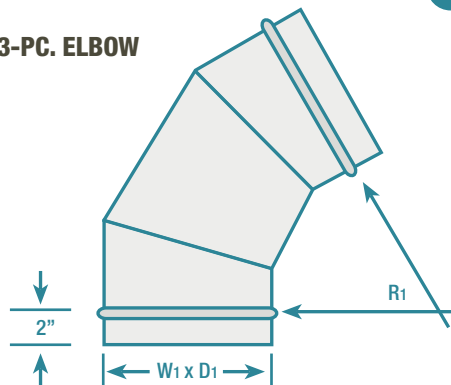
**E45**

**45° 3-PIECE ELBOW**



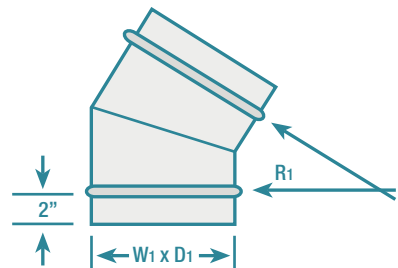
**E60**

**60° 3-PC. ELBOW**



**E15/E30**

**15° & 30° 2-PIECE ELBOW**

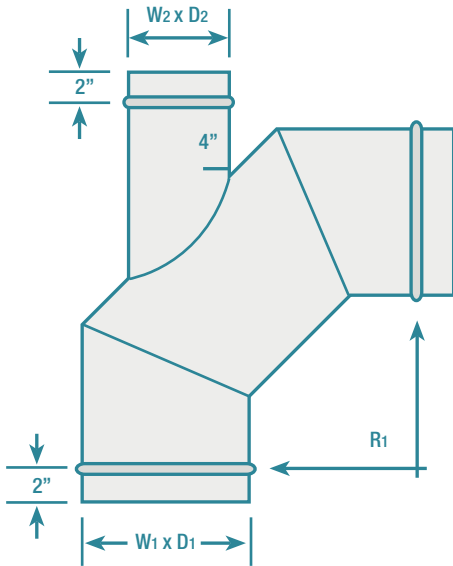


# Single Wall Oval **ELBOWS**

TAMBE METAL PRODUCTS

**90° 3-PC. ELBOW WITH STRAIGHT LATERAL**

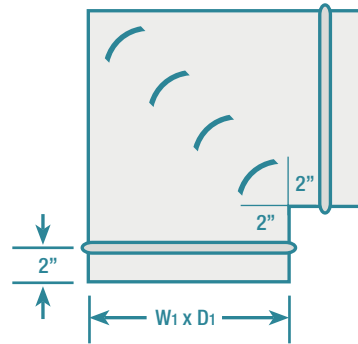
**E90L**



**E290/EV290**

With or without vanes.

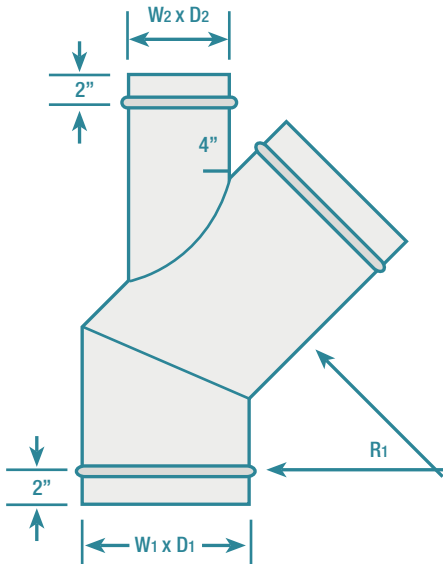
**90° 2-PC. ELBOW**



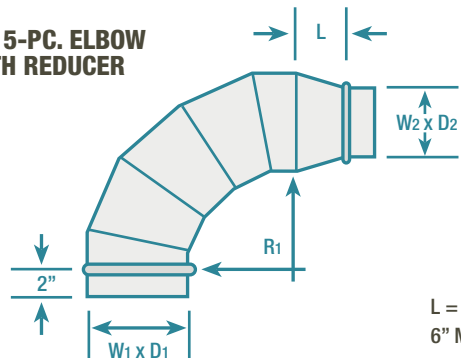
D1	No. of vanes
3-9	2
10-14	3
15-19	4
20-60	5
≥60	Max 12" spacing

**45° 2-PC. ELBOW WITH STRAIGHT LATERAL**

**E45L**

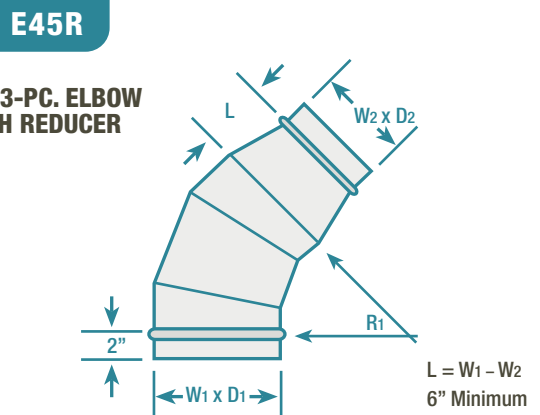


**90° 5-PC. ELBOW WITH REDUCER**



$L = W_1 - W_2$   
6" Minimum

**45° 3-PC. ELBOW WITH REDUCER**



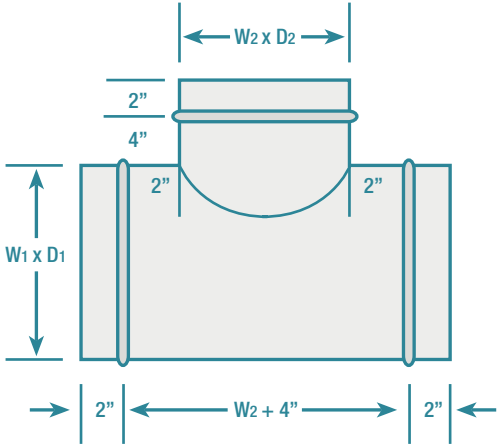
$L = W_1 - W_2$   
6" Minimum

# Single Wall Oval STRAIGHT TEES

TAMBE METAL PRODUCTS

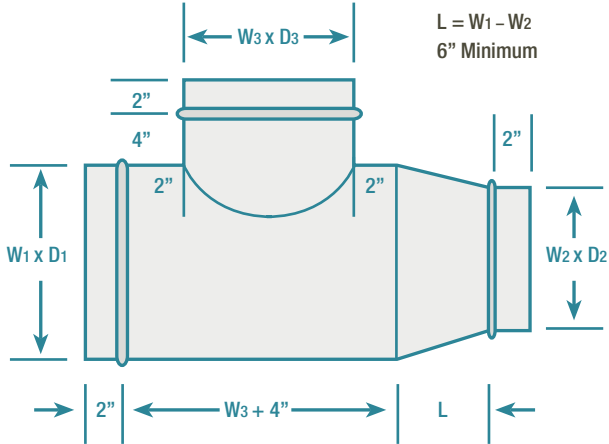
T

TEE



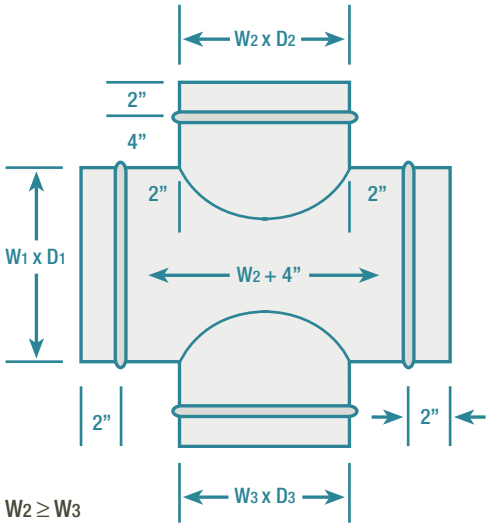
TR

REDUCING TEE



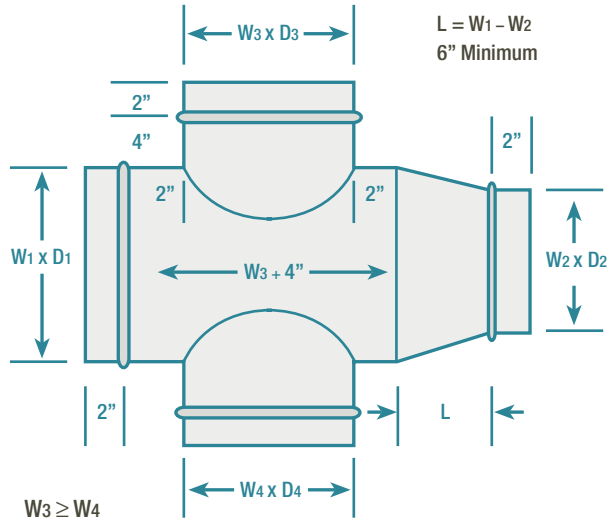
TX

TEE CROSS



TRX

REDUCING TEE CROSS

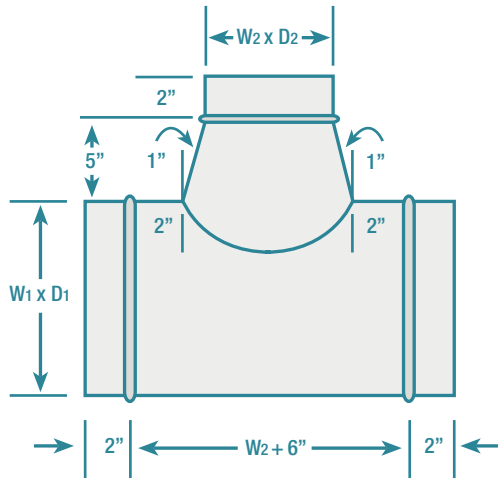


# Single Wall Oval CONICAL TEES

TAMBE METAL PRODUCTS

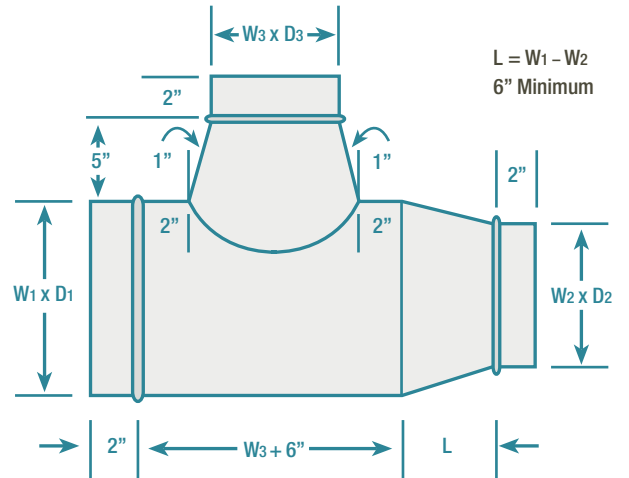
CT

CONICAL TEE



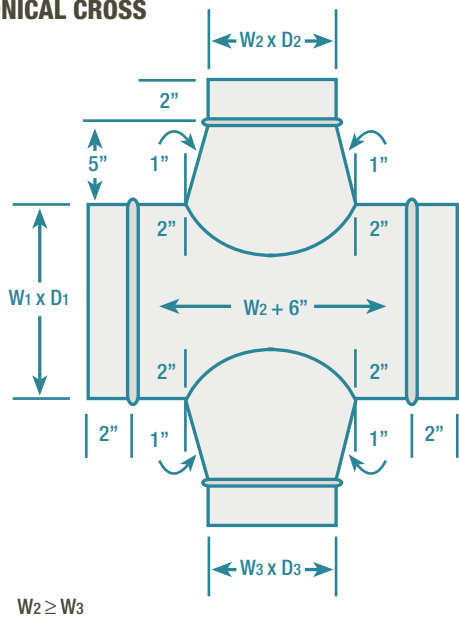
CTR

REDUCING CONICAL TEE



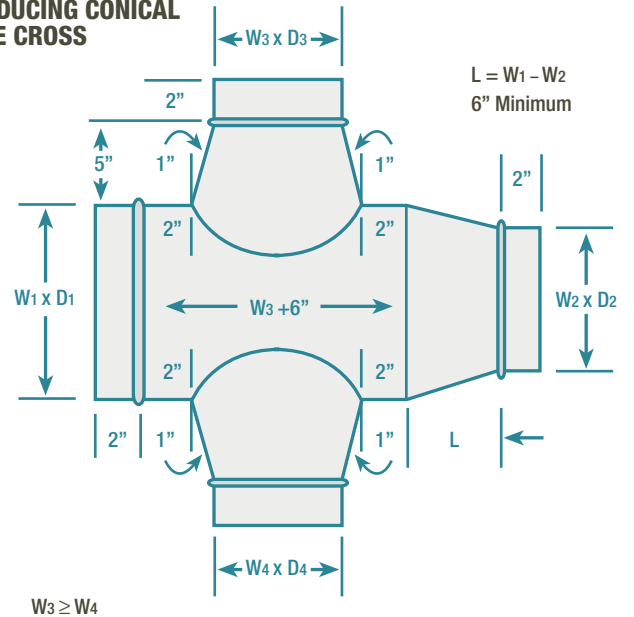
CTX

CONICAL CROSS



CTRX

REDUCING CONICAL TEE CROSS

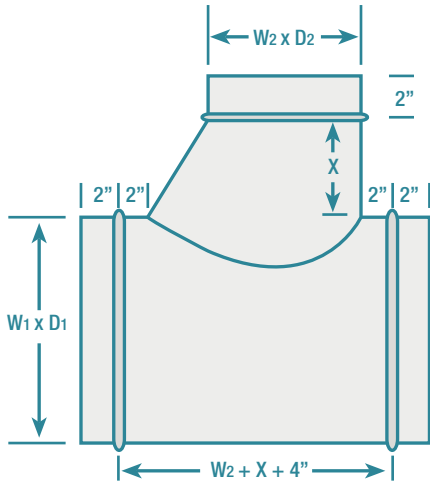


# Single Wall Oval **SHOE TEES**

TAMBE METAL PRODUCTS

## ST

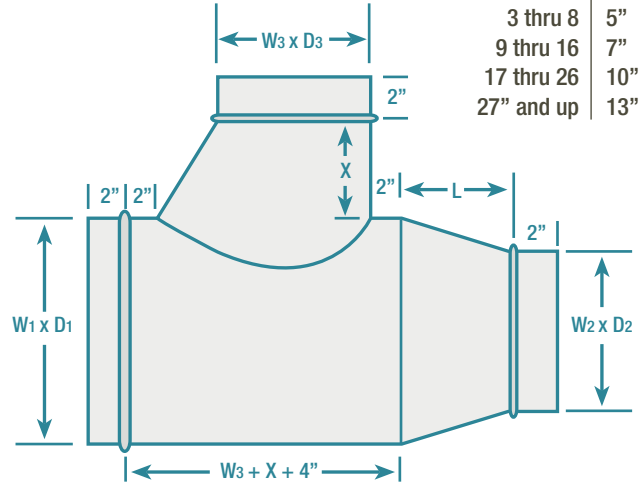
### SHOE TEE



W2	X
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"

## STR

### REDUCING SHOE TEE

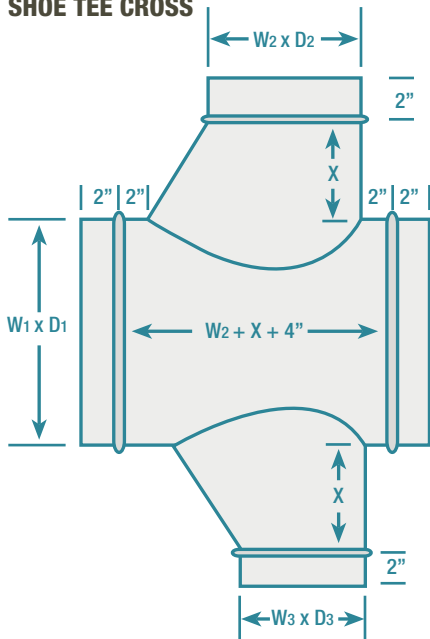


W3	X
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"

$L = W1 - W2$   
Minimum 6"

## STX

### SHOE TEE CROSS

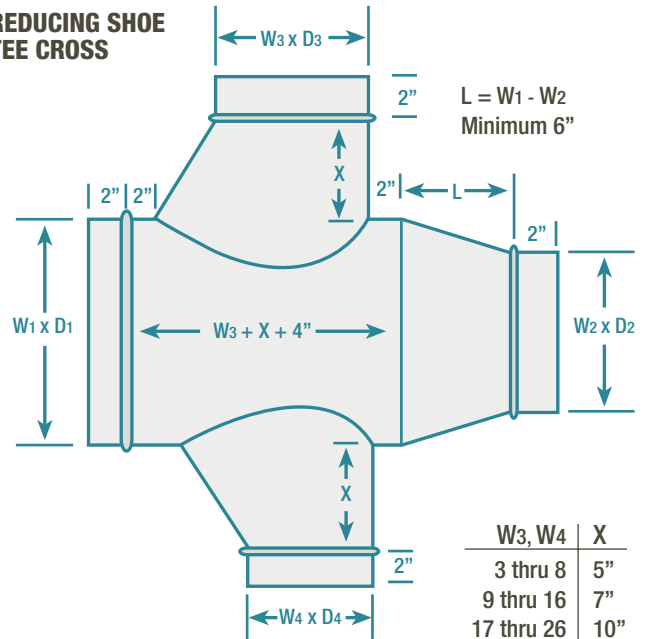


W2, W3	X
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"

$W2 \geq W3$

## STRX

### REDUCING SHOE TEE CROSS



$L = W1 - W2$   
Minimum 6"

W3, W4	X
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"

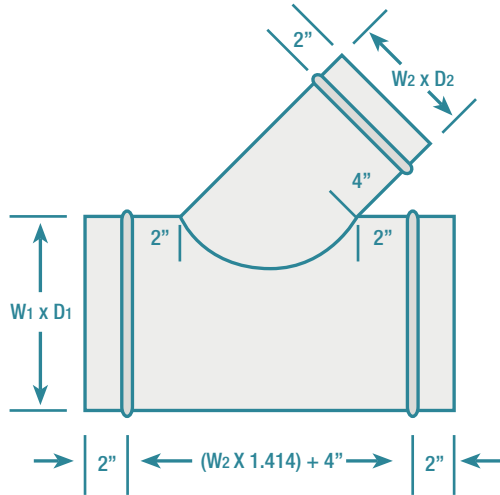
$W3 \geq W4$

# Single Wall Oval **STRAIGHT LATERALS**

TAMBE METAL PRODUCTS

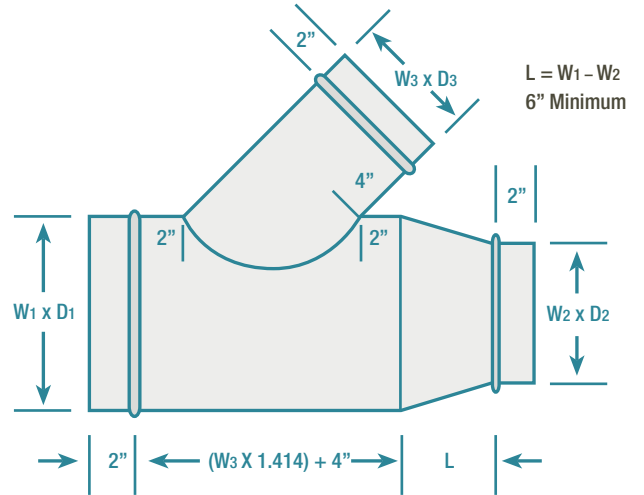
L

45° LATERAL



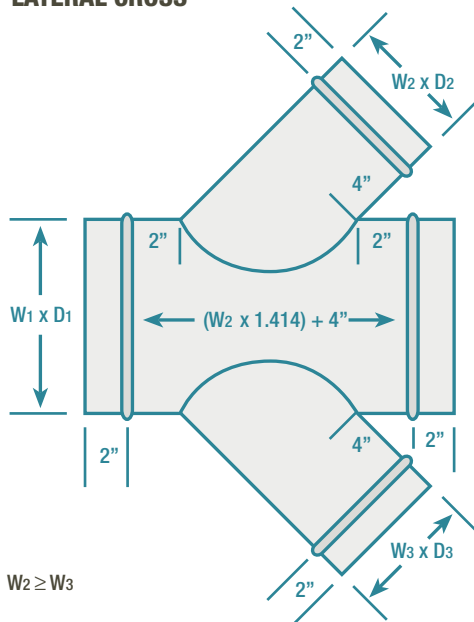
LR

45° REDUCING LATERAL



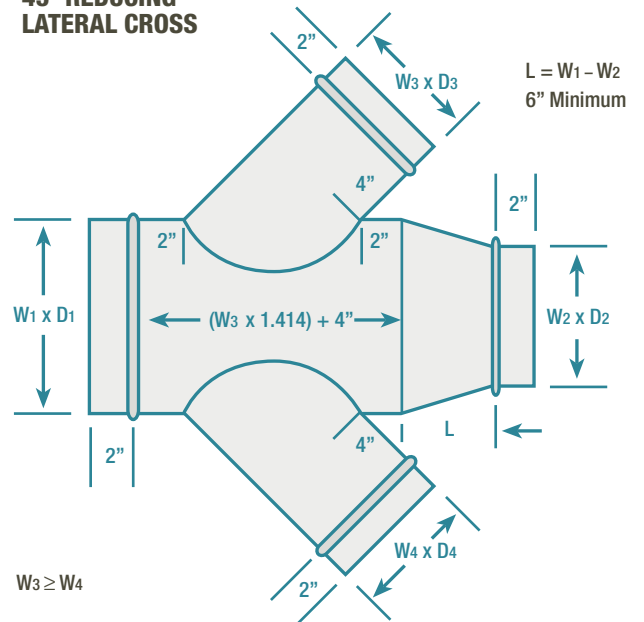
LX

45° LATERAL CROSS



LRX

45° REDUCING LATERAL CROSS

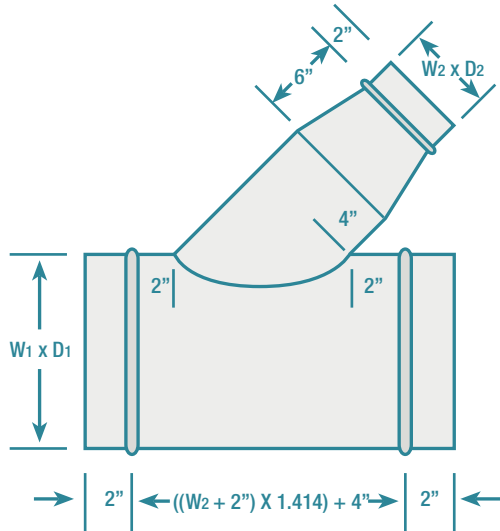


# Single Wall Oval CONICAL LATERALS

TAMBE METAL PRODUCTS

CL

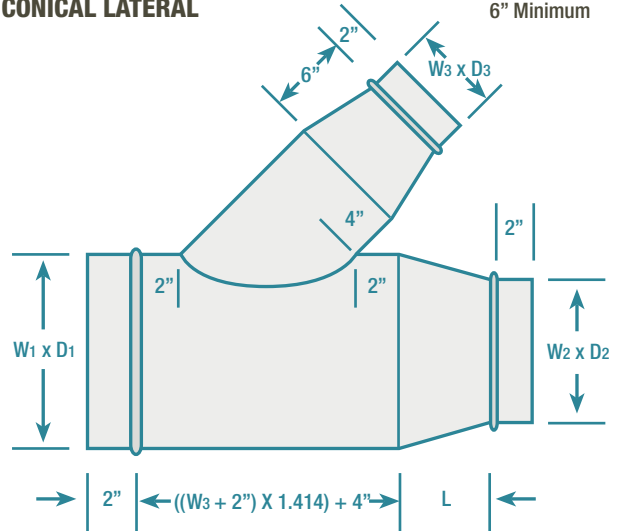
45° CONICAL LATERAL



CLR

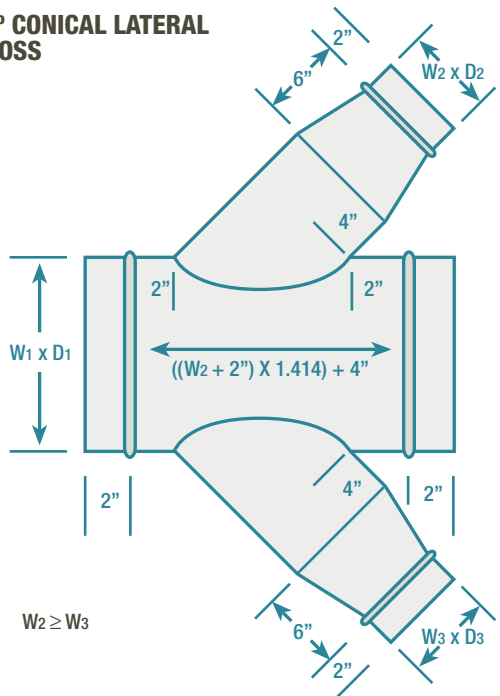
45° REDUCING CONICAL LATERAL

$L = W_1 - W_2$   
6" Minimum



CLX

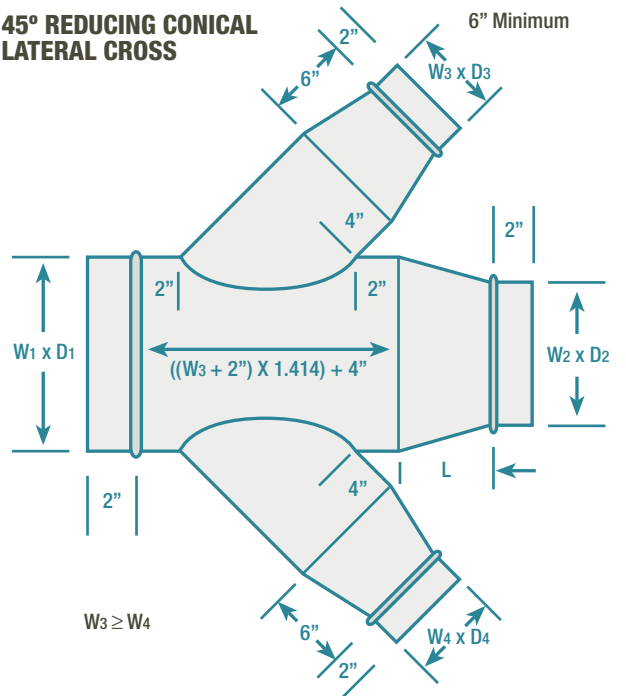
45° CONICAL LATERAL CROSS



CLR X

45° REDUCING CONICAL LATERAL CROSS

$L = W_1 - W_2$   
6" Minimum



# Single Wall Oval MISCELLANEOUS

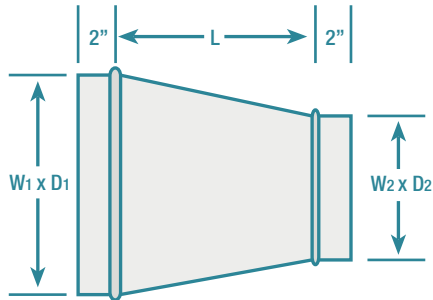
TAMBE METAL PRODUCTS

## RDC

### CONCENTRIC REDUCER

$$L = W_1 - W_2$$

6" Minimum

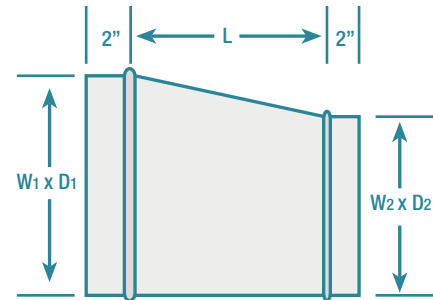


## RDE

### ECCENTRIC REDUCER

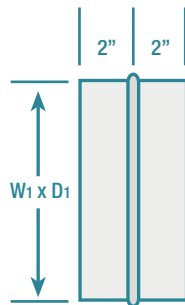
$$L = 2 [W_1 - W_2]$$

6" Minimum



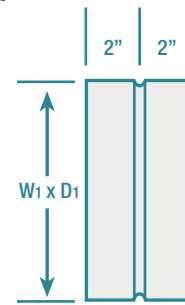
## PC

### PIPE COUPLING



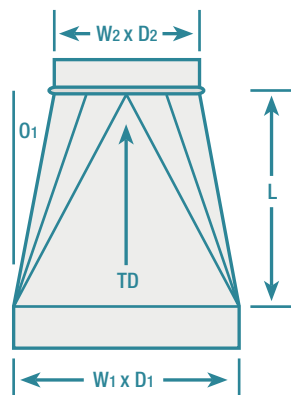
## FC

### FITTING COUPLING



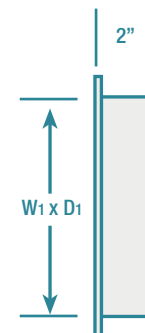
## RTR

### RECTANGLE TO ROUND



## EC

### END CAP

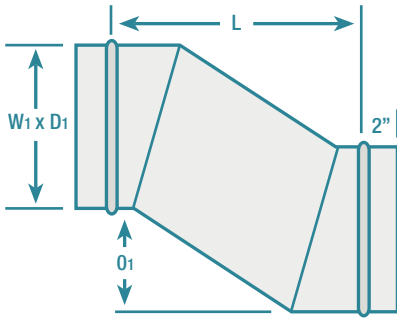


# Single Wall Oval MISCELLANEOUS

TAMBE METAL PRODUCTS

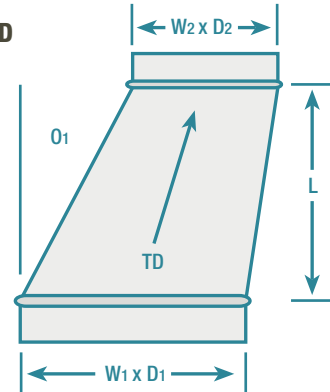
## SET

### OFFSET



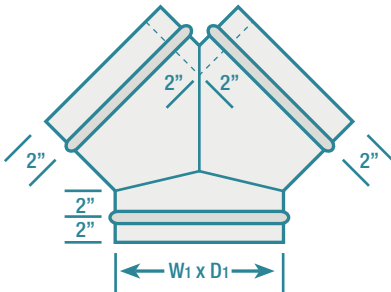
## ROET

### ROUND TO ROUND



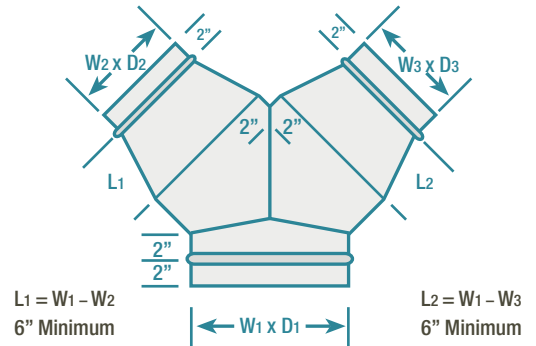
## Y45

### Y BRANCH



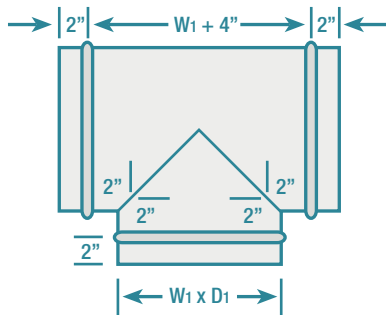
## YR45

### REDUCING Y BRANCH



## BHT/BHTV

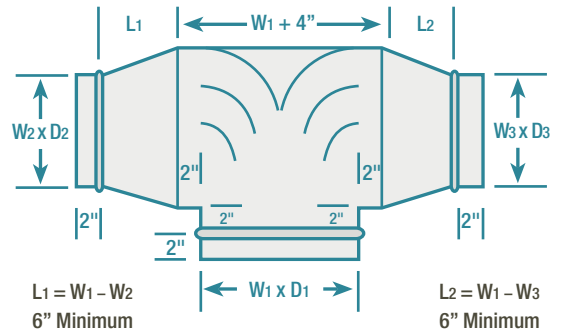
### BULL HEAD TEE With or without vanes.



D1	No. of vanes
3-7	1
8-10	3
10-60	5
>60	Max 12" spacing

## BHTR/BHTRV

### REDUCING BULL HEAD TEE With or without vanes.

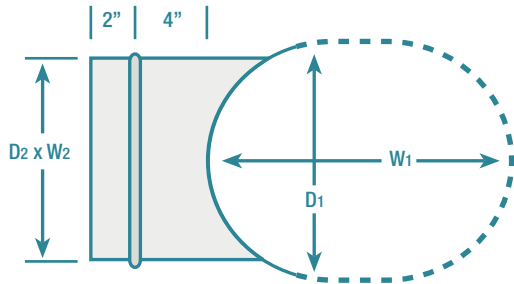


# Shop/Field Installed **ACCESSORIES**

TAMBE METAL PRODUCTS

## TAP 90

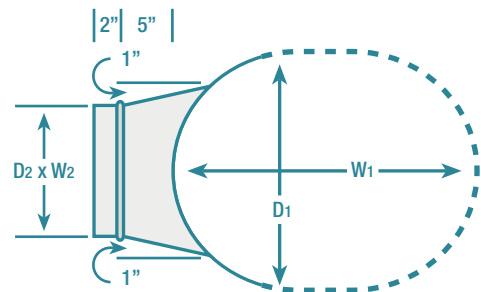
### TAP



Standard flange is 1/2".  
2" saddle is also available.

## CTAP 90

### CONICAL TAP

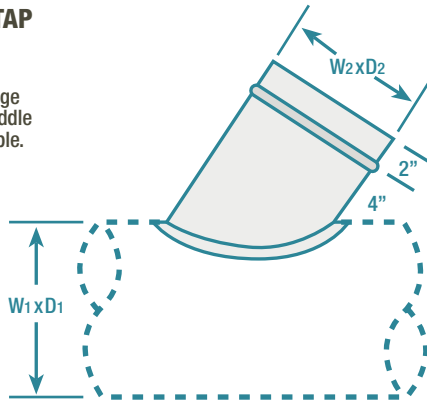


Standard flange is 1/2".  
2" saddle is also available.

## TAP 45

### LATERAL TAP

Standard flange is 1/2". 2" saddle is also available.

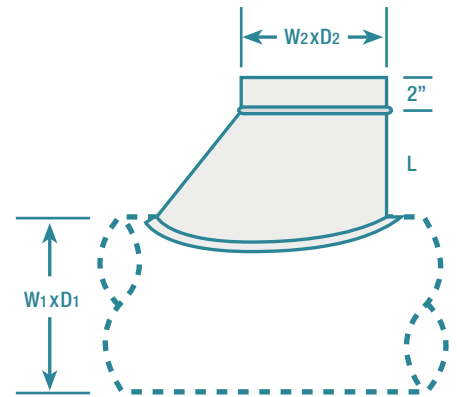


## STR

### SHOE TAP

W2	L
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"

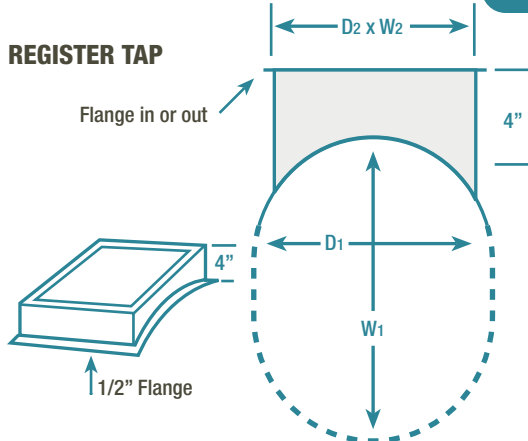
Standard flange is 1/2". 2" saddle is also available.



## RECTAP

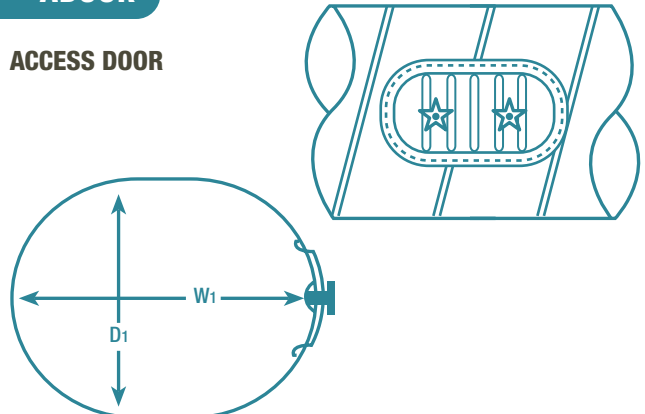
### REGISTER TAP

Flange in or out



## ADOOR

### ACCESS DOOR

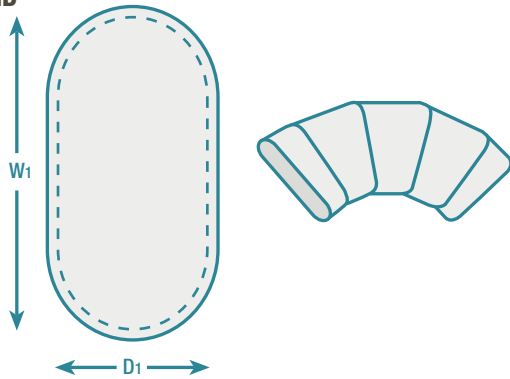


# Double Wall Oval **ELBOWS**

TAMBE METAL PRODUCTS

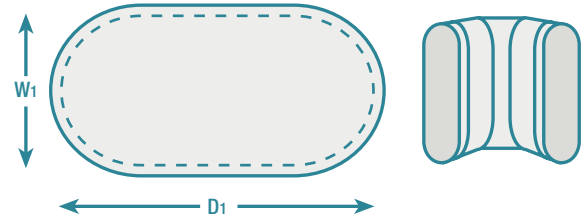
**HB**

**HARD BEND**



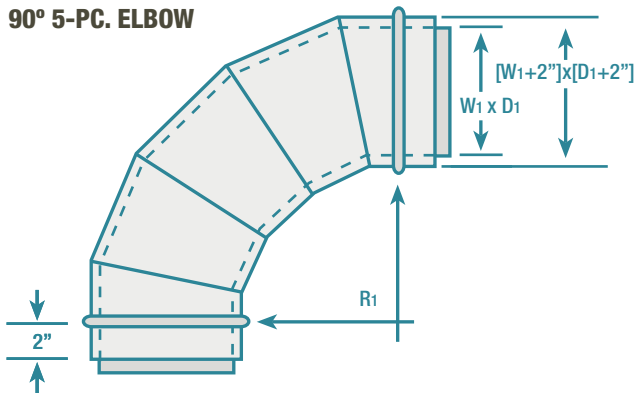
**EB**

**EASY BEND**



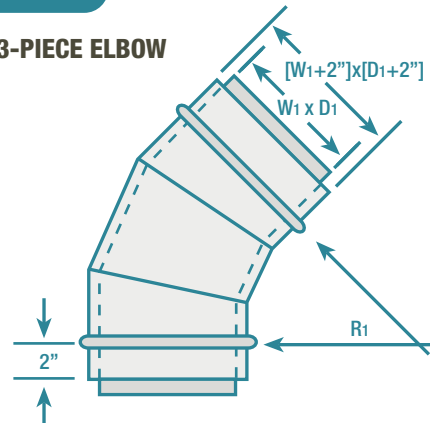
**E90**

**90° 5-PC. ELBOW**



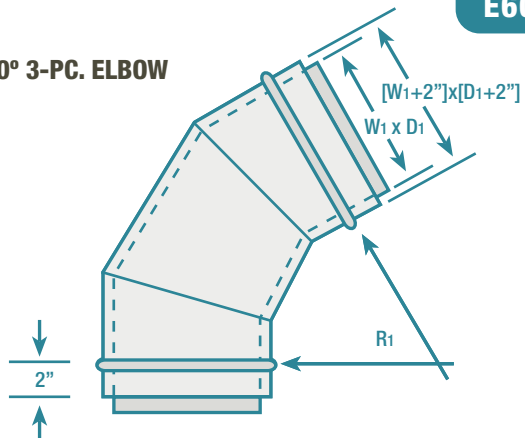
**E45**

**45° 3-PIECE ELBOW**



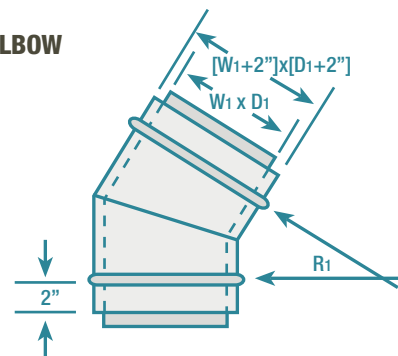
**E60**

**60° 3-PC. ELBOW**



**E15/E30**

**15° & 30°  
2-PIECE ELBOW**

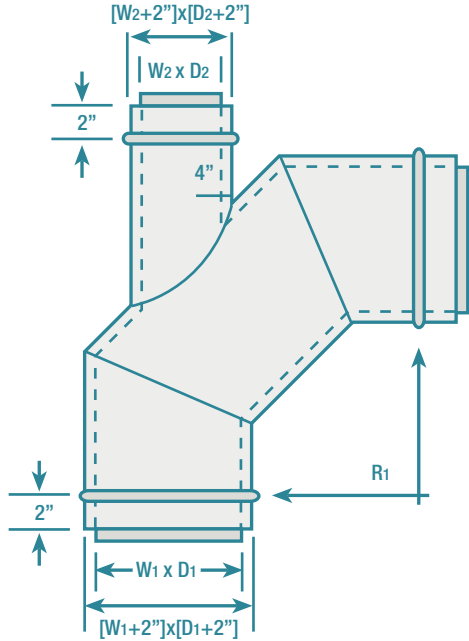


# Double Wall Oval **ELBOWS**

TAMBE METAL PRODUCTS

## 90° 3-PC. ELBOW WITH STRAIGHT LATERALS

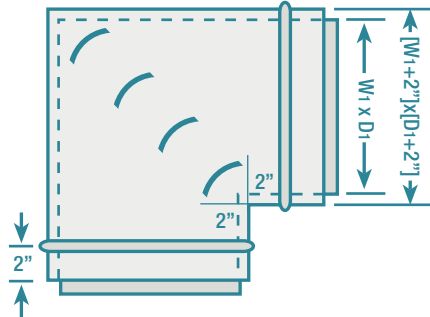
**E90L**



## E290/EV290

With or without vanes

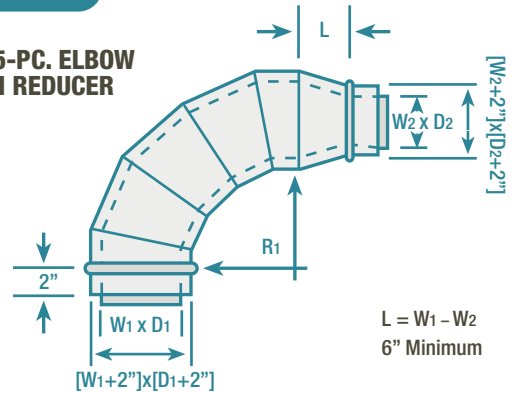
### 90° 2-PC. ELBOW



D1	No. of vanes
3-9	2
10-14	3
15-19	4
20-60	5
≥60	Max 12" spacing

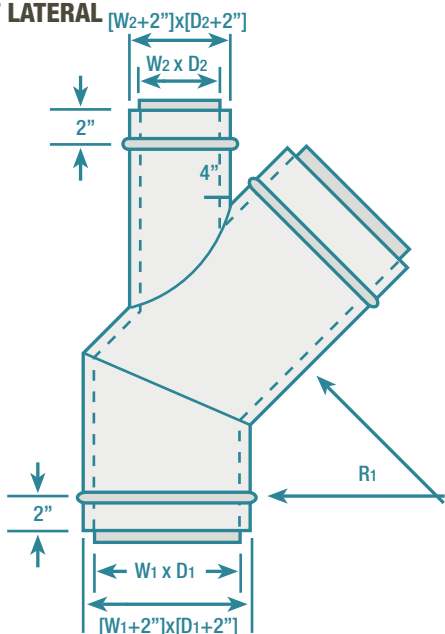
## E90R

### 90° 5-PC. ELBOW WITH REDUCER



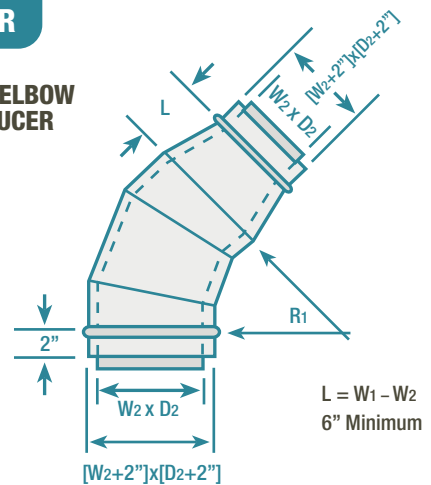
## 45° 2-PC. ELBOW WITH STRAIGHT LATERAL

**E45L**



## E45R

### 45° 3-PC. ELBOW WITH REDUCER

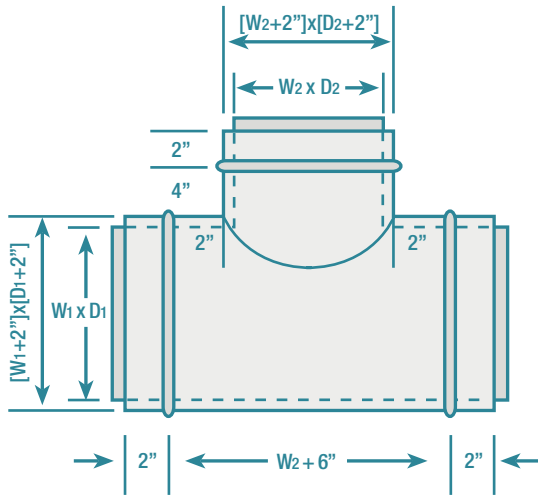


# Double Wall Oval STRAIGHT TEES

TAMBE METAL PRODUCTS

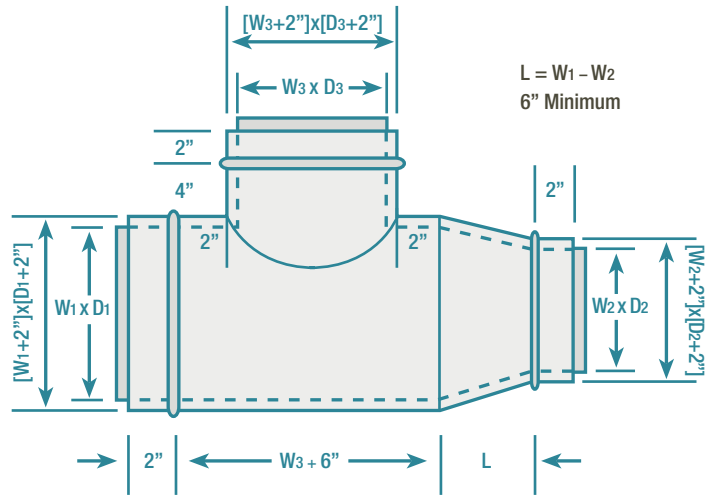
T

TEE



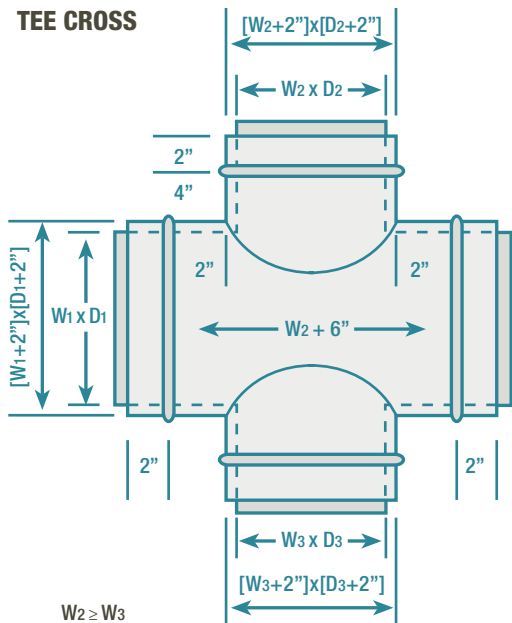
TR

REDUCING TEE



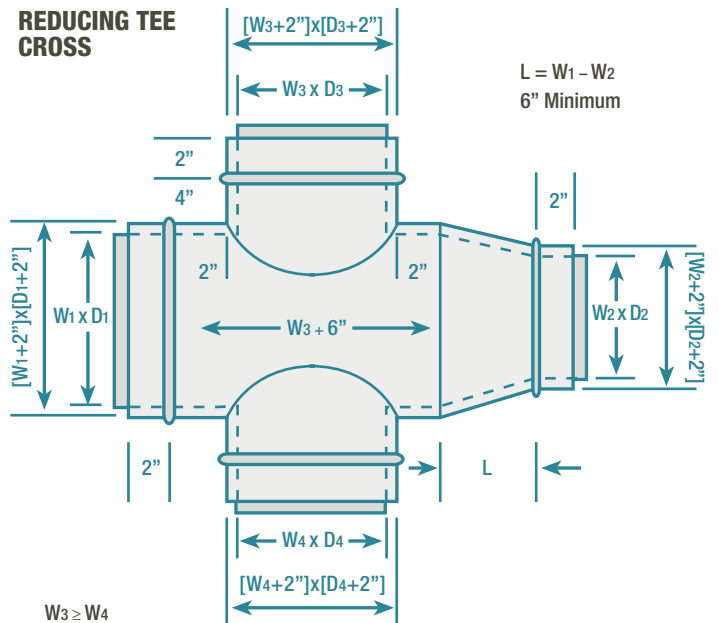
TX

TEE CROSS



TRX

REDUCING TEE CROSS

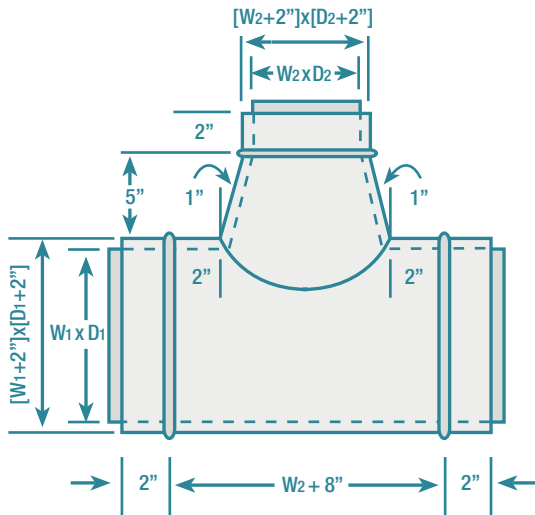


# Double Wall Oval CONICAL TEES

TAMBE METAL PRODUCTS

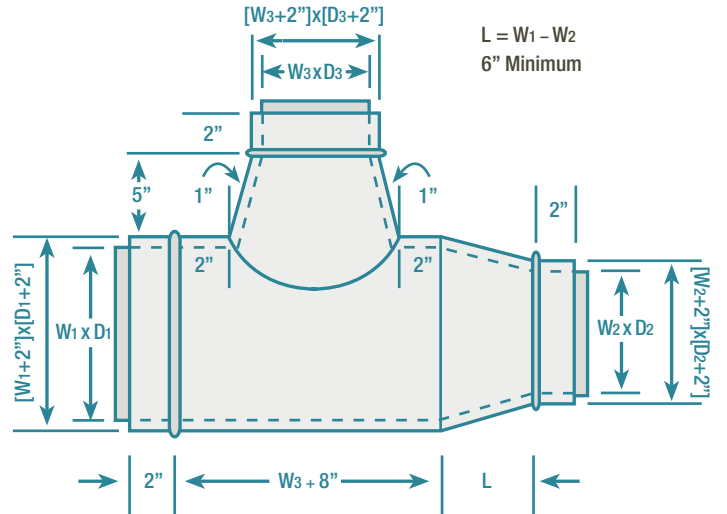
**CT**

**CONICAL TEE**



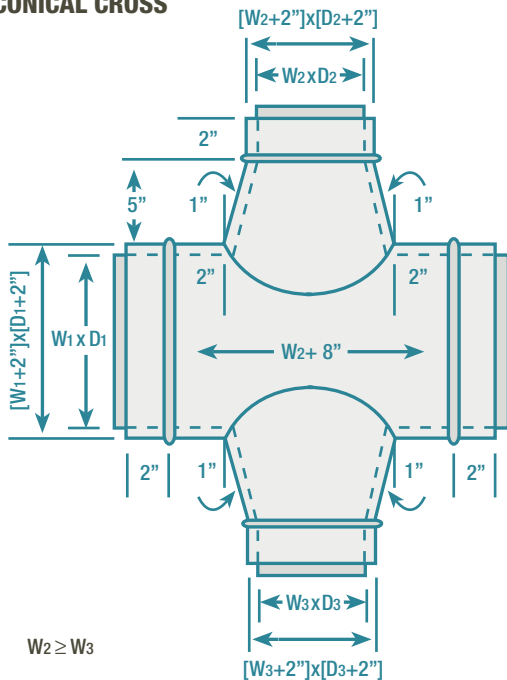
**CTR**

**REDUCING CONICAL TEE**



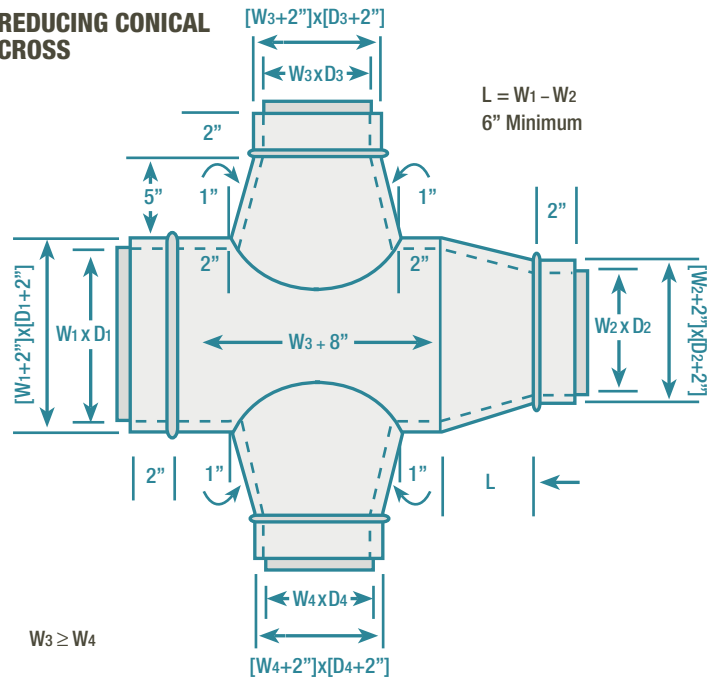
**CTX**

**CONICAL CROSS**



**CTR<sub>X</sub>**

**REDUCING CONICAL CROSS**



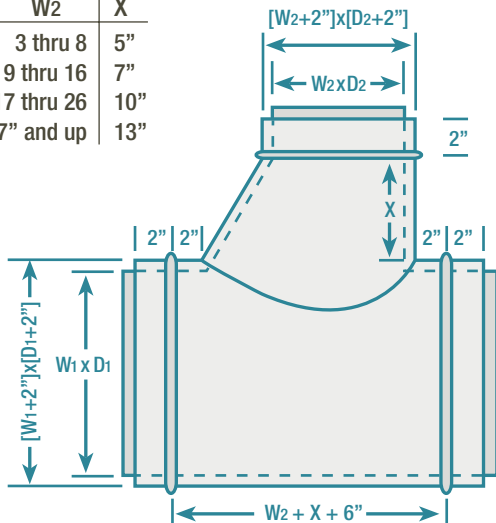
# Double Wall Oval SHOE TEES

TAMBE METAL PRODUCTS

## SHOE TEE

ST

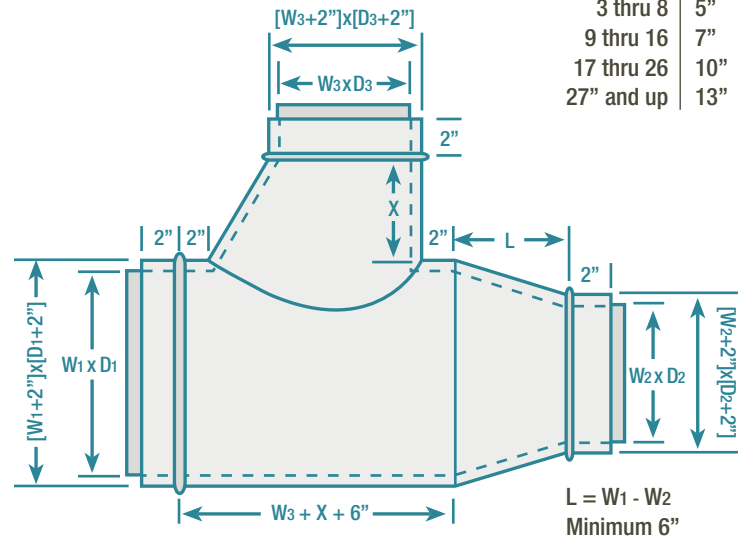
W <sub>2</sub>	X
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"



## REDUCING SHOE TEE

STR

W <sub>3</sub>	X
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"



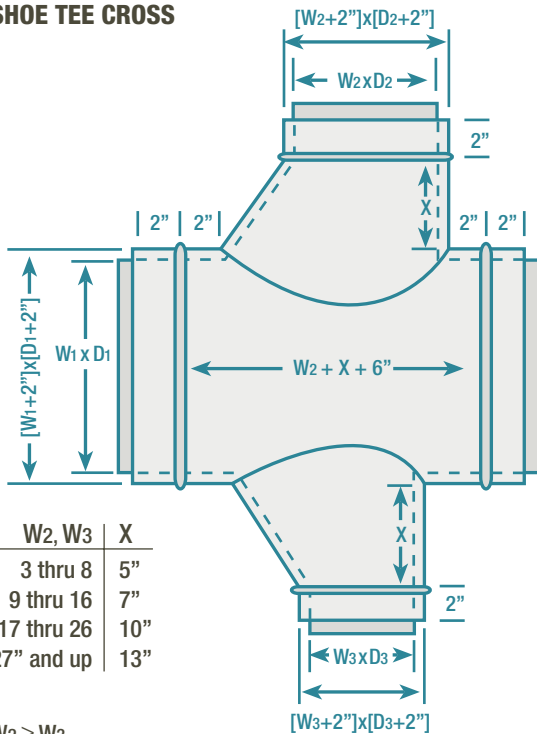
L = W<sub>1</sub> - W<sub>2</sub>  
Minimum 6"

## SHOE TEE CROSS

STX

W <sub>2</sub> , W <sub>3</sub>	X
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"

W<sub>2</sub> ≥ W<sub>3</sub>

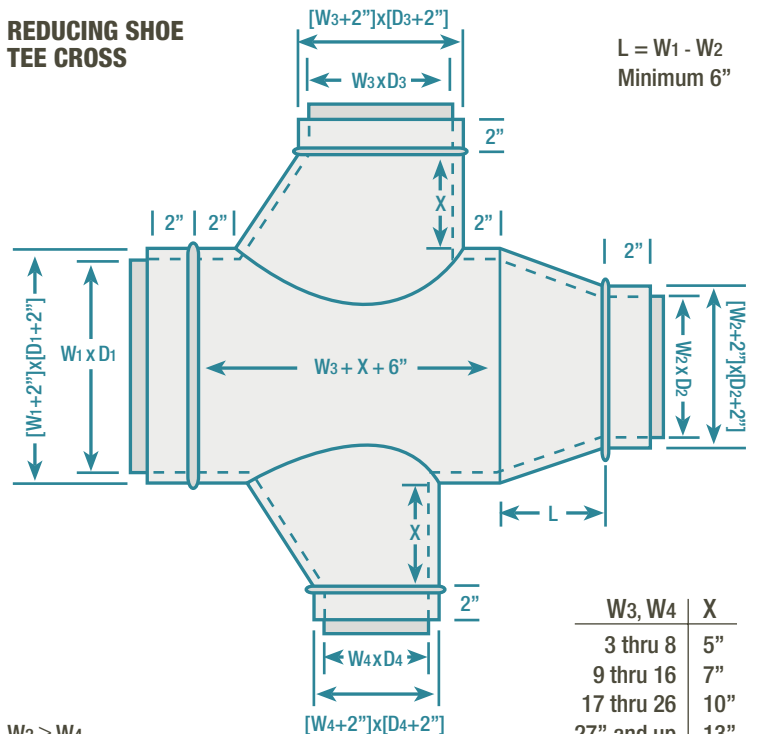


## REDUCING SHOE TEE CROSS

STRX

L = W<sub>1</sub> - W<sub>2</sub>  
Minimum 6"

W<sub>3</sub> ≥ W<sub>4</sub>



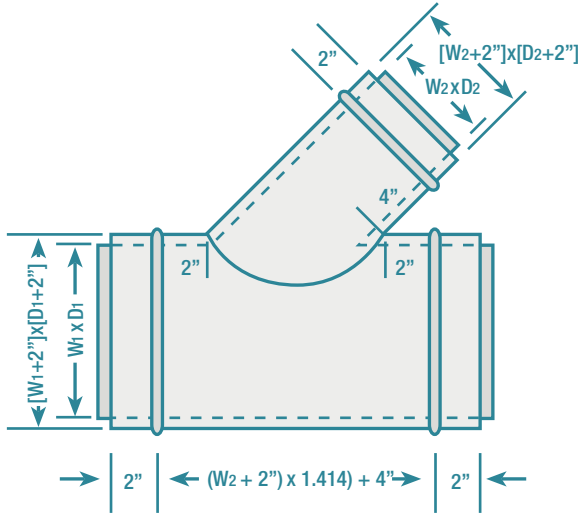
W <sub>3</sub> , W <sub>4</sub>	X
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"

# Double Wall Oval STRAIGHT LATERALS

TAMBE METAL PRODUCTS

L

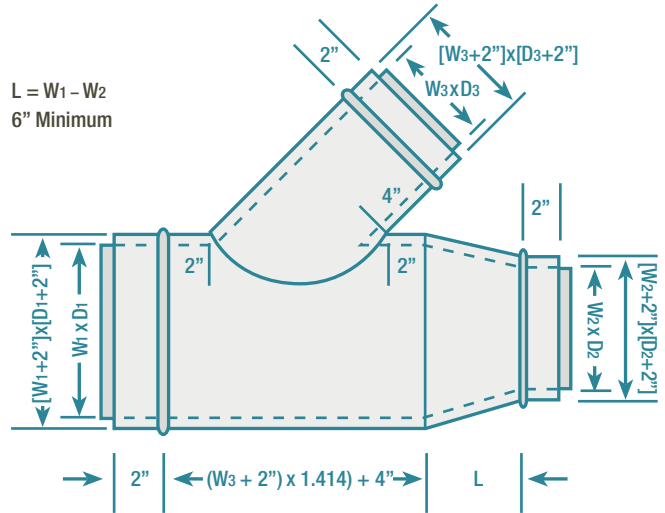
## 45° LATERAL



LR

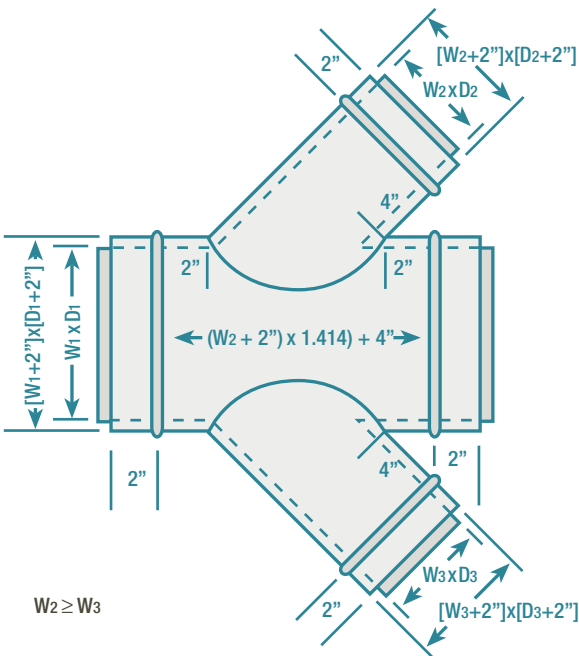
## 45° REDUCING LATERAL

$L = W_1 - W_2$   
6" Minimum



LX

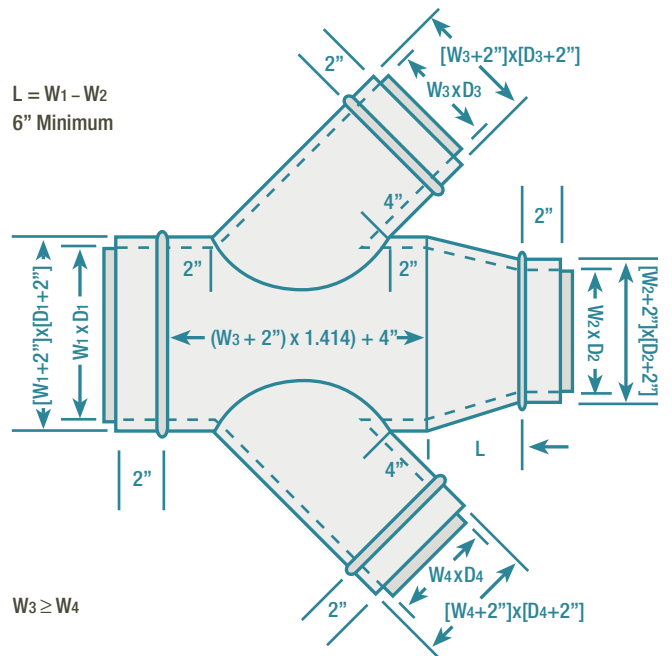
## 45° LATERAL CROSS



LRX

## 45° REDUCING LATERAL CROSS

$L = W_1 - W_2$   
6" Minimum

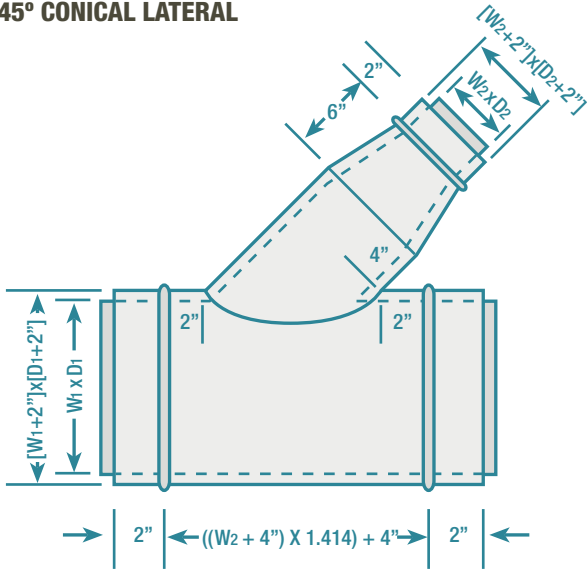


# Double Wall Oval CONICAL LATERALS

TAMBE METAL PRODUCTS

## CL

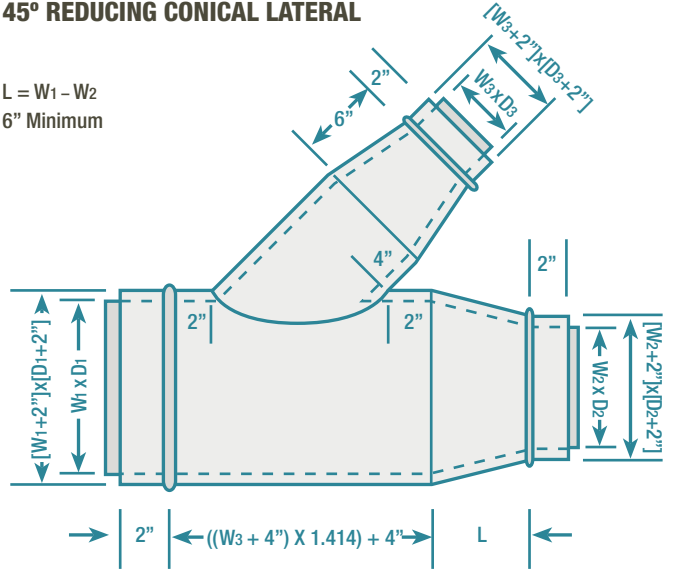
### 45° CONICAL LATERAL



## CLR

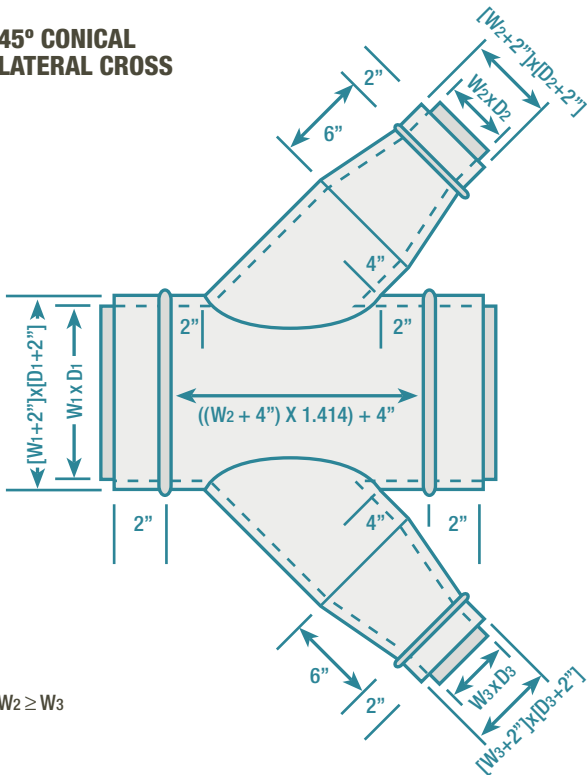
### 45° REDUCING CONICAL LATERAL

$L = W_1 - W_2$   
6" Minimum



## CLX

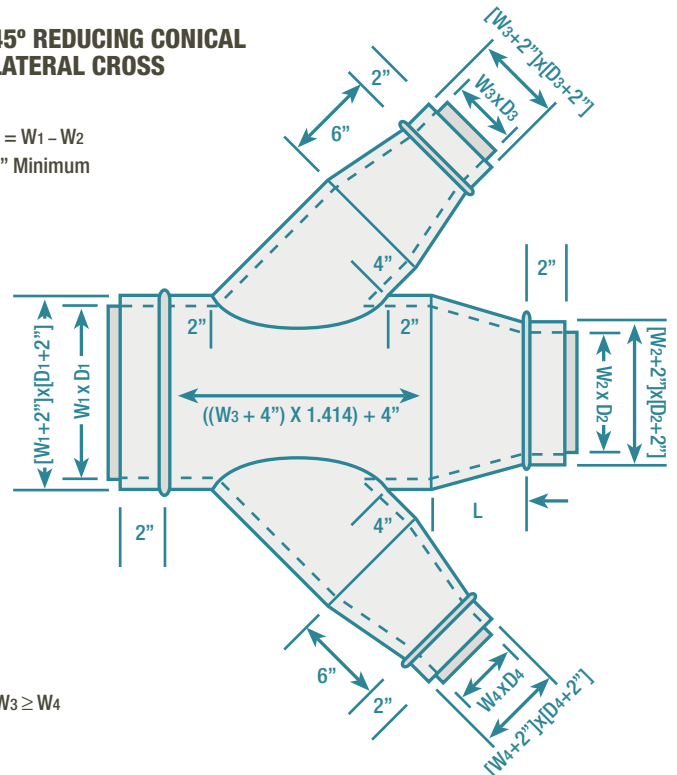
### 45° CONICAL LATERAL CROSS



## CLR X

### 45° REDUCING CONICAL LATERAL CROSS

$L = W_1 - W_2$   
6" Minimum



# Double Wall Oval MISCELLANEOUS

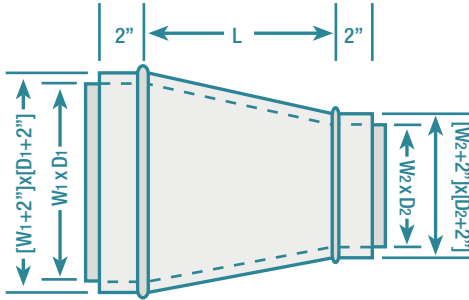
TAMBE METAL PRODUCTS

## RDC

### CONCENTRIC REDUCER

$$L = W_1 - W_2$$

6" Minimum

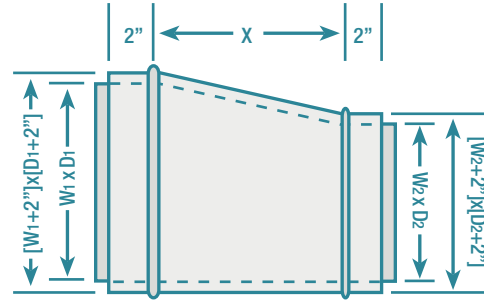


## RDE

### ECCENTRIC REDUCER

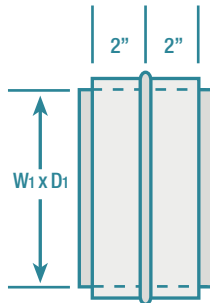
$$L = 2 [W_1 - W_2]$$

6" Minimum



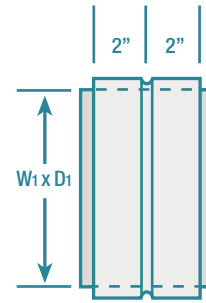
## PC

### PIPE COUPLING



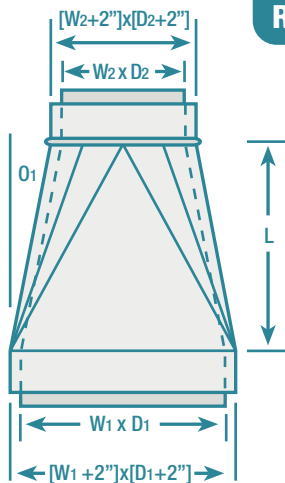
## FC

### FITTING COUPLING



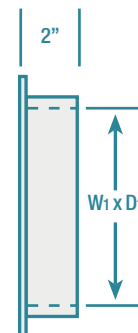
## RTR

### RECTANGULAR TO ROUND



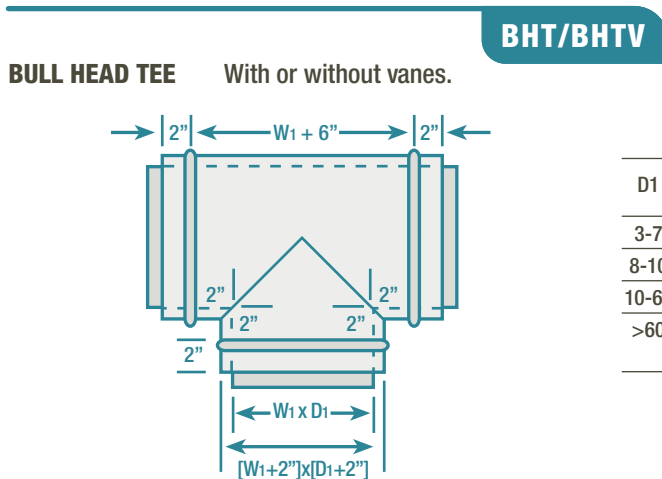
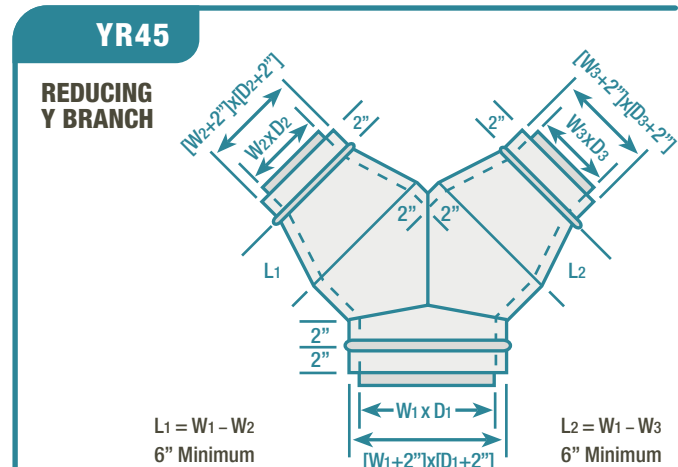
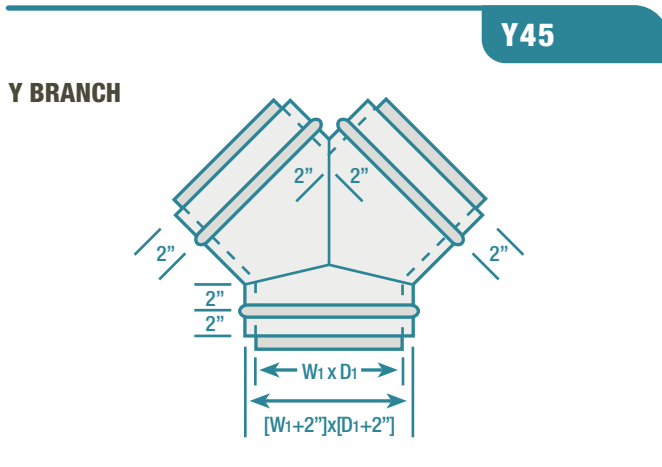
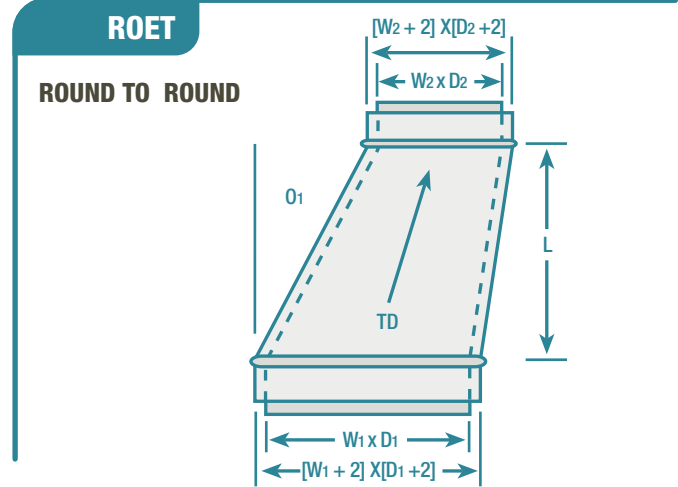
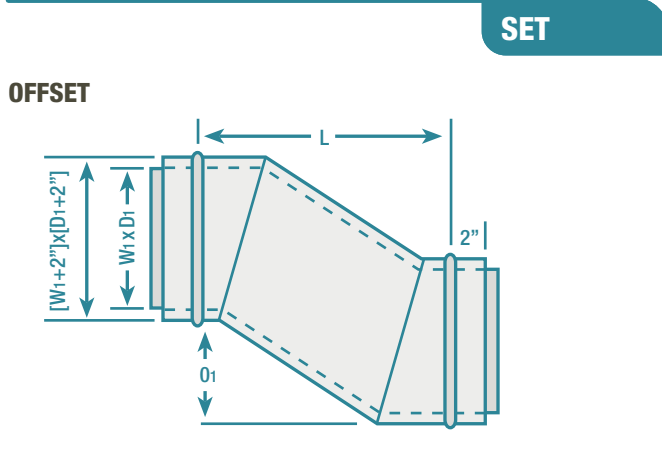
## EC

### END CAP

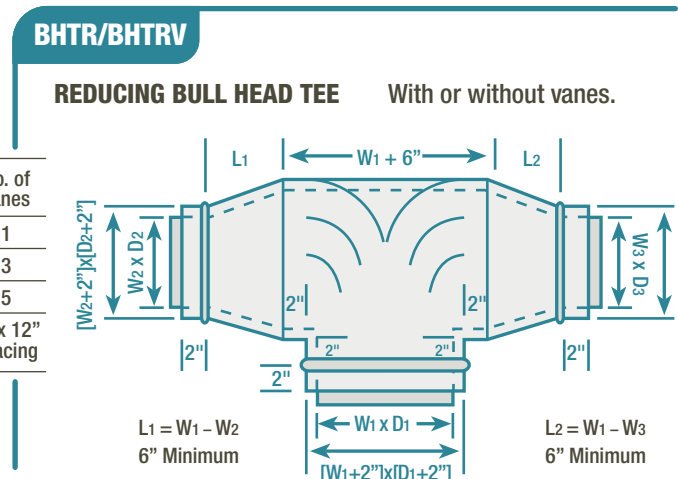


# Double Wall Oval MISCELLANEOUS

TAMBE METAL PRODUCTS



D1	No. of vanes
3-7	1
8-10	3
10-60	5
>60	Max 12" spacing

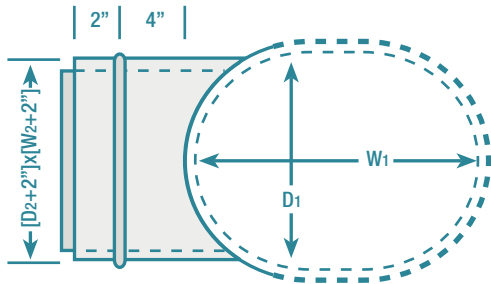


# Shop/Field Installed **ACCESSORIES**

TAMBE METAL PRODUCTS

## TAP 90

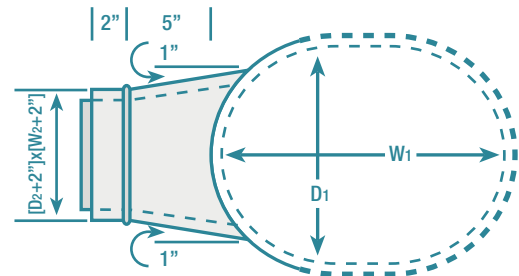
### TAP



Standard flange is 1/2".  
2" saddle is also available.

## CTAP 90

### CONICAL TAP

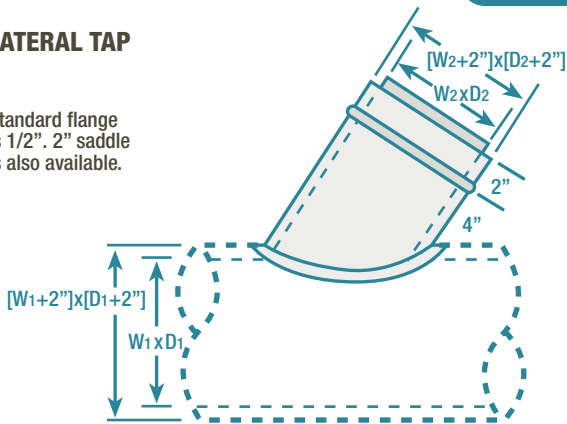


Standard flange is 1/2".  
2" saddle is also available.

## TAP 45

### LATERAL TAP

Standard flange is 1/2". 2" saddle is also available.

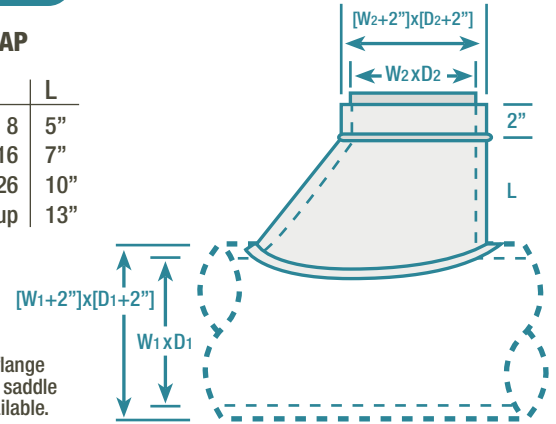


## STR

### SHOE TAP

W2	L
3 thru 8	5"
9 thru 16	7"
17 thru 26	10"
27" and up	13"

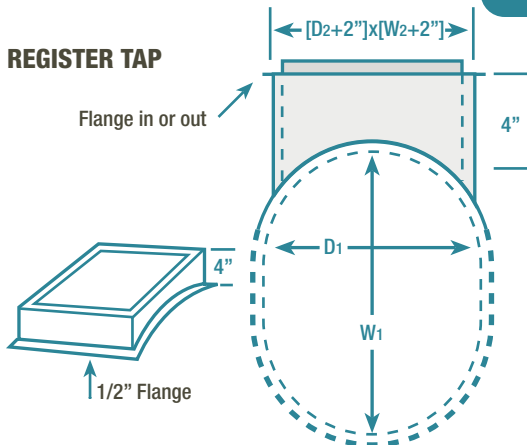
Standard flange is 1/2". 2" saddle is also available.



## RECTAP

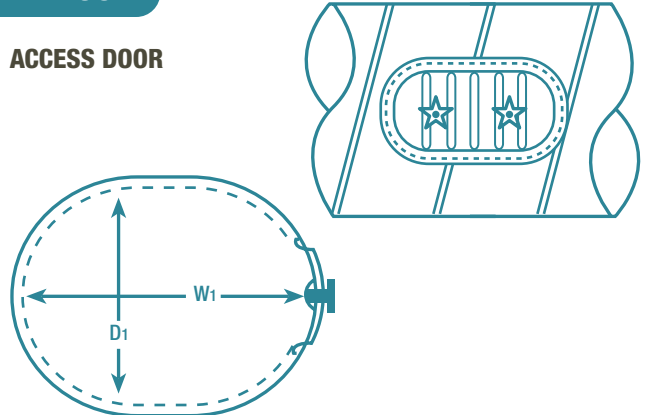
### REGISTER TAP

Flange in or out



## ADOOR

### ACCESS DOOR



# Rectangular Duct **SEAMS & CONNECTORS**

**TAMBE** METAL PRODUCTS

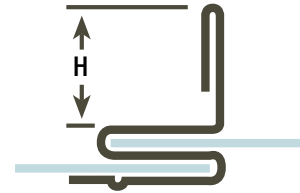
## Connector Types



T- 1 Drive slip



T- 6 Hemmed "S" slip



T-10 Standing S



T- 21 Weld flange

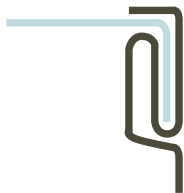


T- 22 Companion angles



Flanged  
(With gasket)  
T-25b

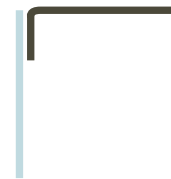
## Seam Types



L-1 Pittsburgh lock



L-2 Button punch  
snap lock



Lap seam



L-4 Standing seam



L-5 Single  
corner seam

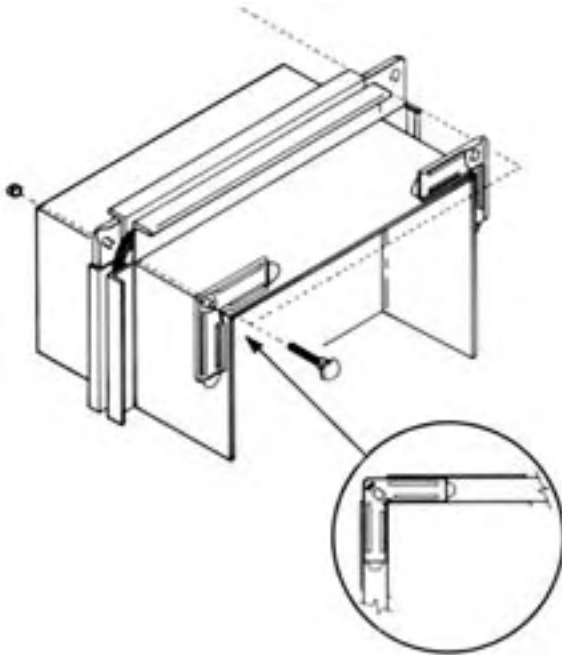


Corner weld

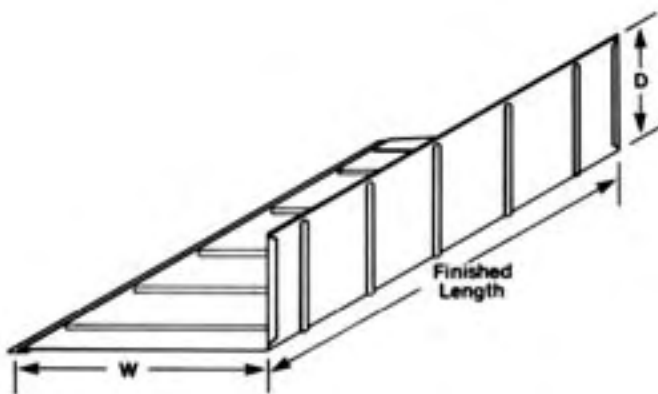
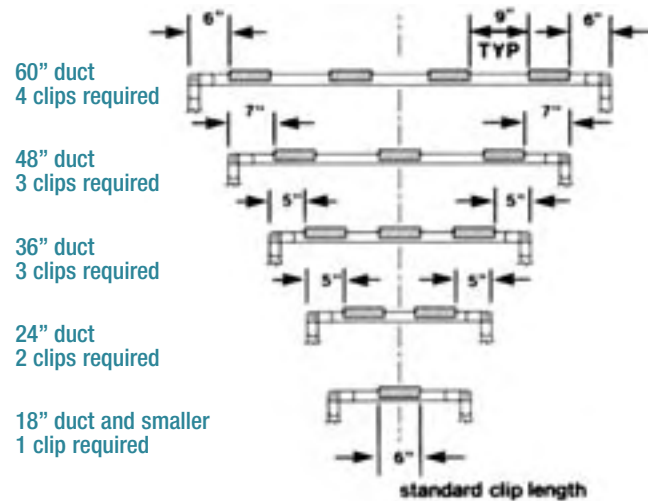
# Rectangular Duct **STANDARDS**

**TAMBE** METAL PRODUCTS

## TDF Connection



## Recommended clip spacing



## Straight Duct

### Method of fabrication:

Two "L" shaped sections are assembled in the field to form the finished joint of ductwork. This allows ductwork to be shipped in knocked down condition requiring less cartage space and easier handling. Wrap around fabrication also available.

**56" finished length with T.D.F.**

**59" finished length with drive cleat edges**

**60" length with ends unfinished**

# Weights on STRAIGHT and T.D.F.

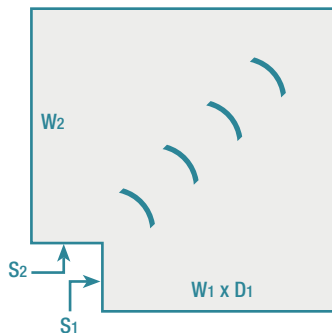
## TAMBE METAL PRODUCTS

DUCT SIZE TOTAL	Sq. Ft.	WEIGHT PER FOOT OF DUCT					DUCT SIZE TOTAL	Sq. Ft.	WEIGHT PER FOOT OF DUCT				
		26 gauge	24 gauge	22 gauge	20 gauge	18 gauge			26 gauge	24 gauge	22 gauge	20 gauge	18 gauge
12"	2.07	2.14	2.73	3.12	3.67	4.77	67"	11.49	10.70	13.64	16.60	19.55	25.45
13"	2.24	2.30	2.93	3.35	3.95	5.14	68"	11.66	10.85	13.84	16.84	19.83	25.82
14"	2.40	2.45	3.12	3.60	4.24	5.52	69"	11.84	11.00	14.04	17.08	20.12	26.20
15"	2.58	2.60	3.32	3.84	4.52	5.89	70"	12.02	11.16	14.25	17.33	20.41	26.58
16"	2.76	2.76	3.53	4.08	4.80	6.25	71"	12.19	11.31	14.44	17.56	20.69	26.95
17"	2.92	2.91	3.72	4.32	5.09	6.63	72"	12.36	11.47	14.64	17.80	20.98	27.32
18"	3.10	3.07	3.92	4.57	5.37	6.99	73"	12.53	11.62	14.84	18.04	21.26	27.68
19"	3.27	3.23	4.12	4.80	5.66	7.36	74"	12.70	11.78	15.04	18.29	21.55	28.05
20"	3.43	3.38	4.31	5.25	6.19	8.06	75"	12.87	11.94	15.24	18.54	21.83	28.42
21"	3.61	3.59	4.52	5.50	6.48	8.43	76"	13.05	12.10	15.44	18.79	22.12	28.80
22"	3.78	3.70	4.72	5.74	6.76	8.81	77"	13.22	12.25	15.63	19.02	22.40	29.16
23"	3.95	3.86	4.92	5.98	7.05	9.18	78"	13.39	12.41	15.83	19.26	22.68	29.53
24"	4.12	4.01	5.11	6.23	7.33	9.54	79"	13.56	12.56	16.03	19.49	22.96	29.90
25"	4.28	4.16	5.31	6.47	7.61	9.91	80"	13.73	12.72	16.23	19.73	23.25	30.27
26"	4.45	4.31	5.51	6.70	7.90	10.28	81"	13.90	12.88	16.42	19.98	23.53	30.64
27"	4.64	4.47	5.72	6.95	8.19	10.66	82"	14.08	13.04	16.62	20.23	23.82	31.02
28"	4.81	4.64	5.92	7.19	8.47	11.04	83"	14.25	13.19	16.82	20.47	24.10	31.38
29"	4.97	4.79	6.12	7.44	8.76	11.40	84"	14.42	13.35	17.03	20.71	24.39	31.75
30"	5.15	4.94	6.31	7.67	9.04	11.77	85"	14.59	13.50	17.22	20.95	24.67	32.13
31"	5.31	5.11	6.51	7.91	9.32	12.13	86"	14.76	13.65	17.42	21.19	24.96	32.49
32"	5.48	5.25	6.71	8.15	9.60	12.50	87"	14.93	13.81	17.62	21.43	25.24	32.87
33"	5.67	5.41	6.90	8.39	9.89	12.88	88"	15.11	13.97	17.83	21.68	25.53	33.25
34"	5.84	5.57	7.10	8.64	10.18	13.26	89"	15.28	14.12	18.02	21.92	25.81	33.61
35"	6.00	5.72	7.30	8.88	10.46	13.62	90"	15.45	14.28	18.22	22.16	26.10	33.98
36"	6.18	5.88	7.50	9.13	10.74	13.98	91"	15.62	14.43	18.41	22.40	26.38	34.34
37"	6.34	6.04	7.69	9.36	11.02	14.35	92"	15.79	14.58	18.61	22.64	26.66	34.71
38"	6.52	6.19	7.89	9.60	11.31	14.72	93"	15.96	14.74	18.81	22.88	26.95	35.08
39"	6.70	6.34	8.11	9.85	11.60	15.10	94"	16.14	14.90	19.01	23.12	27.24	35.46
40"	6.87	6.50	8.30	10.09	11.88	15.48	95"	16.31	15.05	19.21	23.36	27.52	35.82
41"	7.03	6.65	8.50	10.33	12.16	15.84	96"	16.48	15.21	19.41	23.61	27.80	36.19
42"	7.21	6.81	8.69	10.56	12.45	16.21	97"	16.65	15.36	19.60	23.84	28.08	36.56
43"	7.37	6.96	8.88	10.80	12.73	16.57	98"	16.82	15.52	19.80	24.08	28.37	36.93
44"	7.55	7.12	9.08	11.05	13.02	16.94	99"	16.99	15.67	20.00	24.33	28.65	37.31
45"	7.73	7.27	9.28	11.29	13.31	17.32	100"	17.17	15.83	20.21	24.58	28.94	37.69
46"	7.90	7.43	9.48	11.54	13.60	17.70	101"	17.34	15.98	20.40	24.81	29.22	38.05
47"	8.07	7.59	9.68	11.78	13.87	18.06	102"	17.51	16.14	20.60	25.05	29.51	38.42
48"	8.24	7.75	9.88	12.02	14.15	18.42	103"	17.68	16.29	20.79	25.29	29.79	38.78
49"	8.41	7.90	10.08	12.25	14.43	18.79	104"	17.85	16.45	20.99	25.53	30.08	39.15
50"	8.58	8.05	10.28	12.49	14.72	19.17	105"	18.02	16.61	21.19	25.78	30.36	39.52
51"	8.75	8.27	10.48	12.73	15.00	19.54	106"	18.20	16.77	21.39	26.03	30.65	39.90
52"	8.93	8.37	10.68	12.98	15.29	19.92	107"	18.37	16.92	21.58	26.26	30.93	40.26
53"	9.10	8.52	10.87	13.22	15.57	20.28	108"	18.54	17.07	21.78	26.50	31.21	40.63
54"	9.37	8.68	11.07	13.47	15.86	20.65	109"	18.71	17.23	21.98	26.74	31.49	41.00
55"	9.44	8.83	11.26	13.70	16.14	21.01	110"	18.88	17.39	22.18	26.98	31.78	41.38
56"	9.61	8.98	11.46	13.94	16.42	21.38	111"	19.05	17.55	22.38	27.22	32.06	41.75
57"	9.78	9.14	11.66	14.19	16.71	21.76	112"	19.23	17.71	22.59	27.47	32.35	42.13
58"	9.96	9.30	11.87	14.44	17.00	22.14	113"	19.40	17.86	22.78	27.71	32.63	42.49
59"	10.13	9.45	12.07	14.67	17.28	22.50	114"	19.57	18.01	22.98	27.95	32.92	42.86
60"	10.30	9.61	12.27	14.91	17.57	22.87	115"	19.74	18.16	23.17	28.19	33.20	43.22
61"	10.47	9.76	12.46	15.15	17.84	23.24	116"	19.91	18.31	23.37	28.43	33.48	43.59
62"	10.64	9.92	12.65	15.40	18.12	23.61	117"	20.08	18.47	23.57	28.67	33.77	43.97
63"	10.81	10.08	12.85	15.64	18.41	23.98	118"	20.26	18.63	23.78	28.92	34.06	44.35
64"	10.99	10.24	13.06	153.88	18.71	24.36	119"	20.44	18.79	23.98	29.16	34.35	44.72
65"	11.16	10.39	13.25	16.12	18.99	24.72	120"	20.66	18.95	24.18	29.40	34.63	45.09
66"	11.33	10.55	13.45	16.36	19.27	25.09							

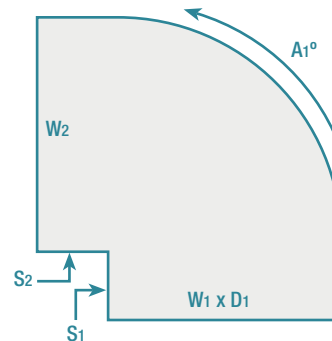
# Rectangular **ELBOWS**

TAMBE METAL PRODUCTS

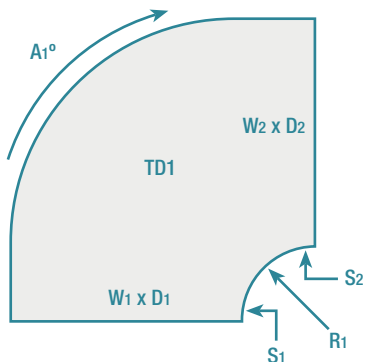
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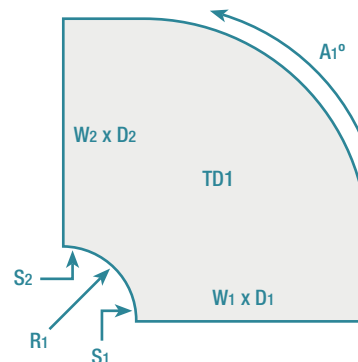
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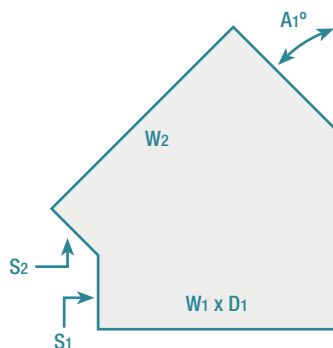
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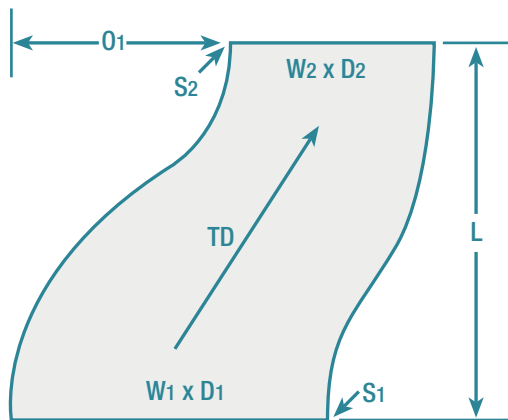
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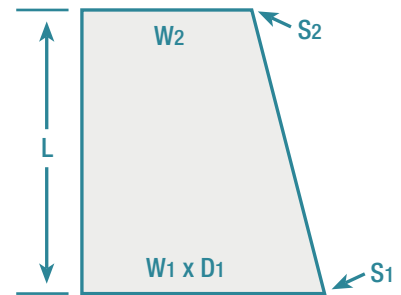
# Rectangular TRANSITIONS

TAMBE METAL PRODUCTS

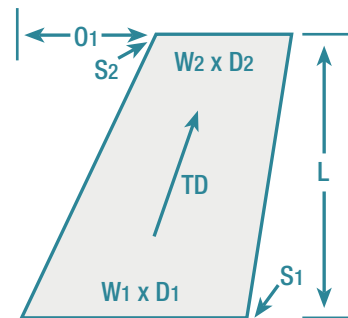
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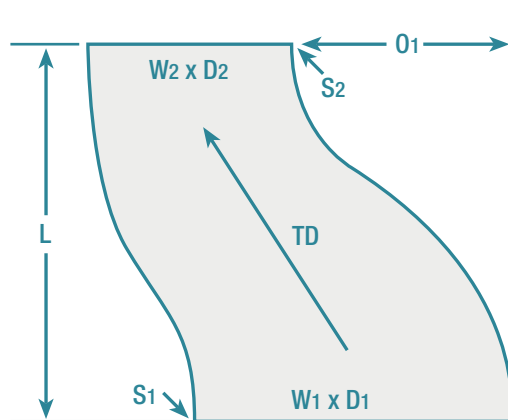
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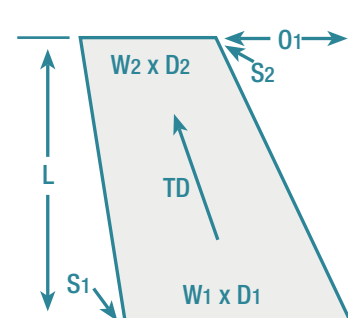
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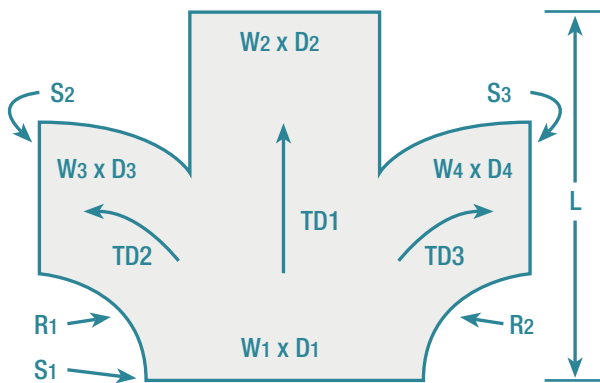
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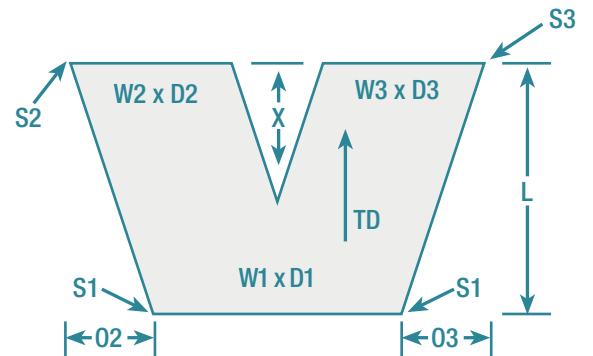
# Rectangular **Y'S & TEES**

TAMBE METAL PRODUCTS

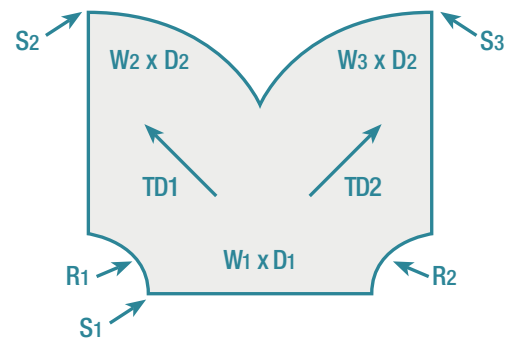
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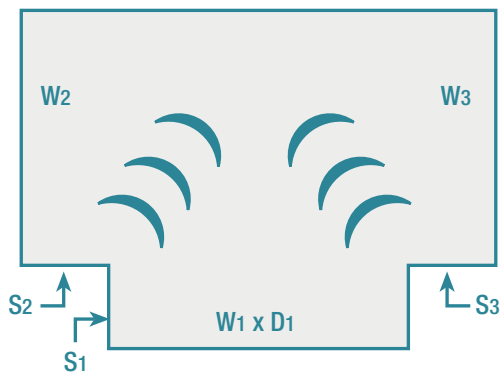
### YS



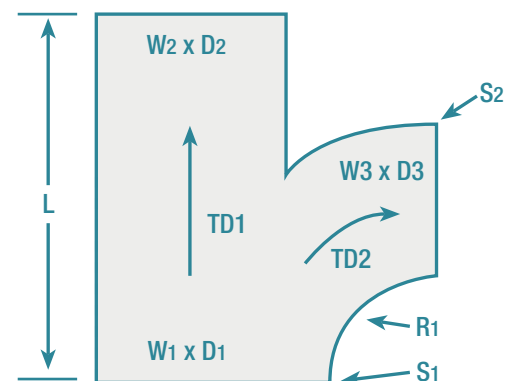
### CYT



### TEE/TEEV



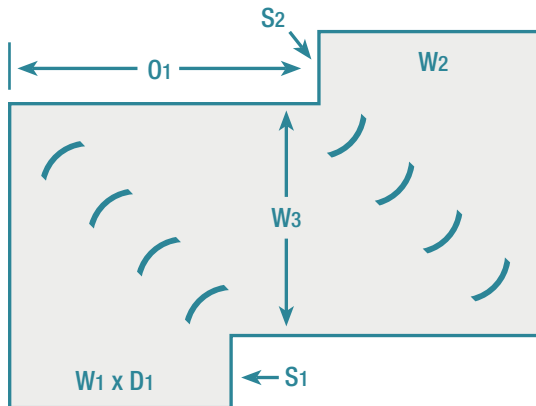
### SCE



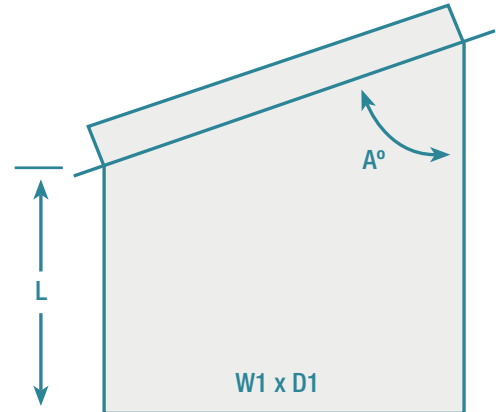
# Rectangular MISCELLANEOUS

TAMBE METAL PRODUCTS

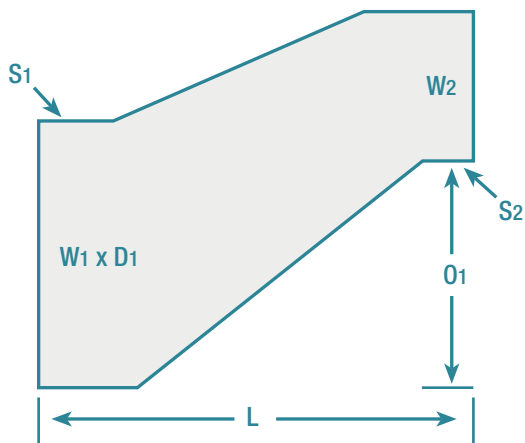
REO



ATAP



RO



STAP

