



# **DOUBLE WALL FLAT OVAL HVAC DUCT and FITTINGS**

for Air Duct and Fittings  
as Manufactured by Members of SPIDA

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Irmo, SC 29063

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## DOUBLE WALL FLAT OVAL DUCT AND FITTINGS

### LEGEND

DWFOSP- FLAT OVAL SPIRAL

DWFOSET – OFFSET

DWFOS – COUPLING

DWFON – END CAP

DWFOTREC – OVAL TO RECTANGULAR

DWFOR – REDUCER

S – SLIP (2")

H – HEIGHT

Z – DIMENSION OF OFFSET

DWFOE – ELBOW

DWFOT – TEE

DWFOL – LATERAL

DWFOC - CROSS

DWFOST –SADDLE

DWFOY – WYE FITTING

V – BODY LENGTH

L – REDUCER LENGTH

R - RADIUS

### MATERIAL

GALVANIZED STEEL

ALUMINUM

PVS

PAINT GRIP

STAINLESS

### DIMENSION

The "A" dimension is what you see in the plan view.

The "a" or second dimension is the hidden dimension.

Eg: a 24x12 DWFOE-90-5-H is a "Hard Bend" or "Long Way" flat oval 90 elbow

a 12x24 DWFOE-90-5-E is an "Easy Bend" or "Short Way" flat oval 90 elbow

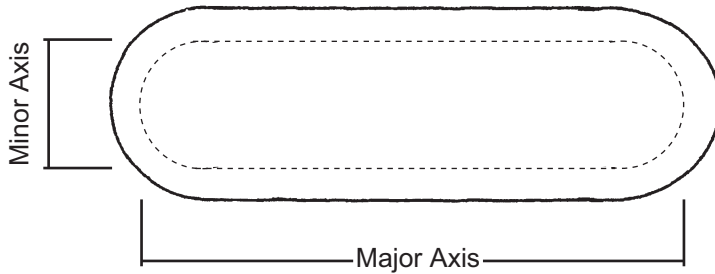
When dimensions B x b, and/or C x c, and/or D x d are shown, the first dimension is the plan dimension. If a fitting end is round, use only one dimension.

Conical fittings may taper only on plan side.

### VANE CHART

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

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



**OUTER WALL**

2005 SMACNA POSITIVE PRESSURE GAUGES		
MAJOR AXIS	SPIRAL SEAM	FITTINGS
10-24"	24	20
25-36"	22	20
37-48"	22	18
49-60"	20	18
61-70"	20	16
71"-UP	18	16

**INNER WALL**

2005 SMACNA POSITIVE PRESSURE GAUGES		
MAJOR AXIS	SPIRAL SEAM	FITTINGS
10-24"	26	22
25-36"	22	22
37-48"	22	22
49-60"	22	22
61-70"	22	22
71"-UP	22	22

**ORDERING** Specify type of fitting and list the following dimensions:

- ELBOWS - A x a,B x b
- LATERALS - A x a,B x b,C x c
- REDUCERS - A x a,B x b,L, Z
- TEES - A x a,B x b,C x c
- CROSSES - A x a,B x b,C x c,D x d
- OFFSETS - A x a,B x b,L,Z

The drawings shown are illustrative of the types of fittings manufactured.

All fittings, unless noted, are male sized on each end for slip-joint assembly with Flat Oval Duct.

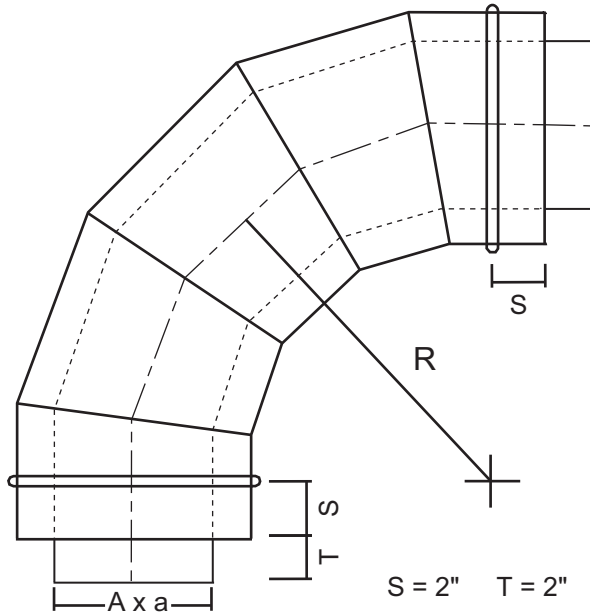
Sizes shown are nominal. Consult your manufacture for details.

Flat Oval Duct is to be used in positive pressured applications only. Vanstone or other proprietary connections are available by special order.



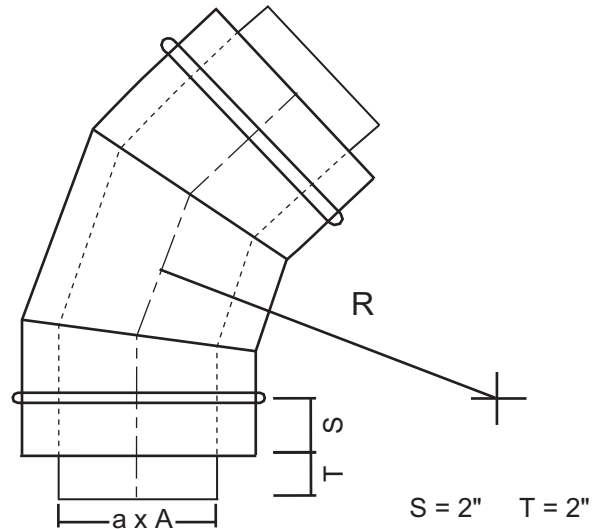
# FLAT OVAL FITTINGS

DWFOE-90-5-H  
 DWFOE-60-4-H  
 FOE = (Angle)-(No. of Gores)-(Hard Bend)



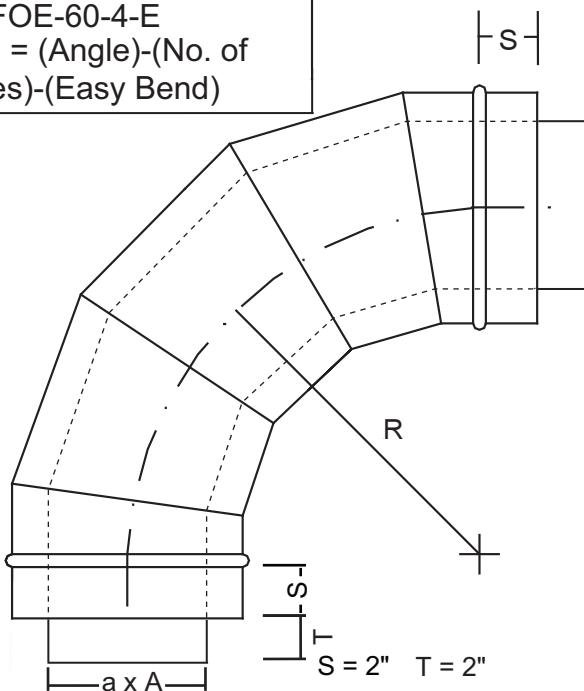
E = Elbow 90 = Degree 5 = Number of Gores  
 R = 1.5 x A on 5 Gore 90 degree elbows  
 R = 1 x A on 4 Gore 90 degree elbows

FOE-45-3-E  
 FOE = (Angle)-(No. of Gores)-(Easy Bend or Hard Bend)



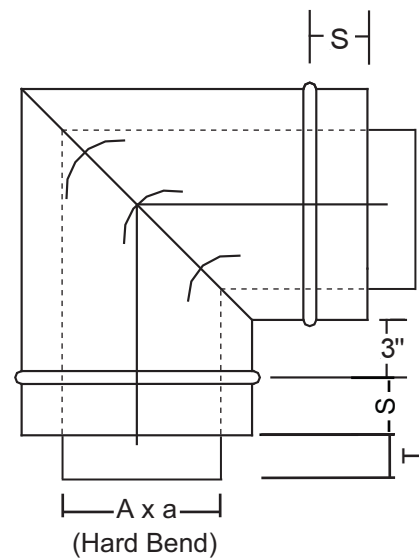
E = Elbow 90 = Degree 5 = Number of Gores  
 R = 1.5 x A on 3 Gore 45 degree elbows

DWFOE-90-5-E  
 DWFOE-60-4-E  
 FOE = (Angle)-(No. of Gores)-(Easy Bend)



E = Elbow 90 = Degree 5 = Number of Gores  
 R = 1.5 x A on 5 Gore 90 degree elbows  
 R = 1 x A on 4 Gore 90 degree elbows  
 R = 1.5 x A on 3 Gore 45 degree elbows

FOEV-90-2-E Mitered 90 Standard with vanes  
 FOEV-90-2-H FOEV = (Angle)-(No. of Pieces)-(Easy or Hard bend)

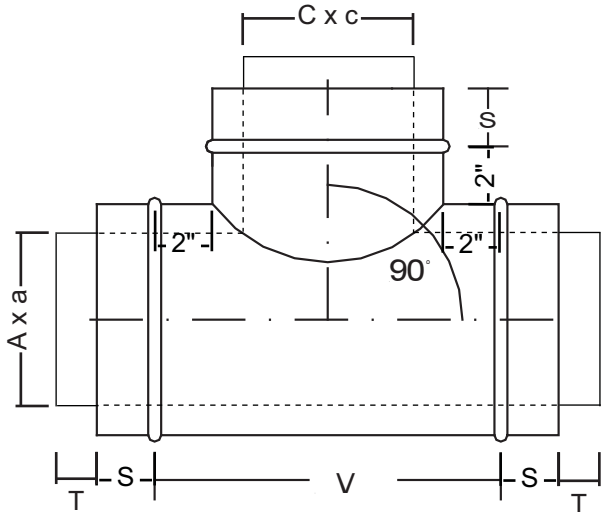


Specify with or without turning vanes

S = 2" T = 2"

# FLAT OVAL FITTINGS

**DWFOT-1  
TEE**

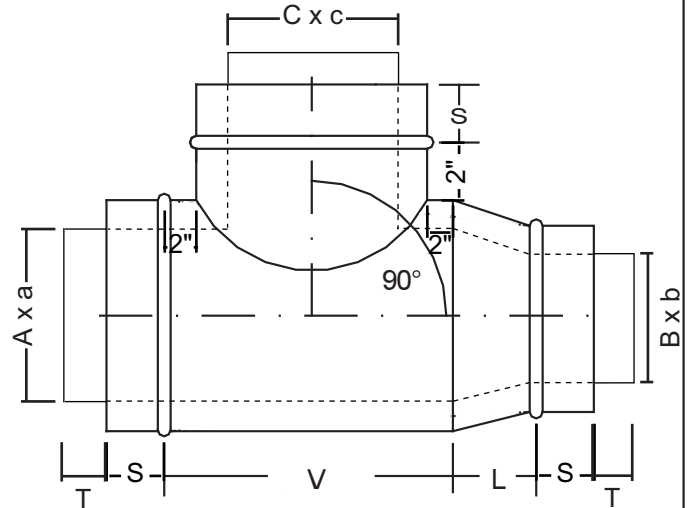


$$S = 2" \quad T = 2"$$

$$V = C + 6"$$

A & C are inner shell dimension

**DWFOT-1R  
REDUCING TEE**



$$S = 2" \quad T = 2"$$

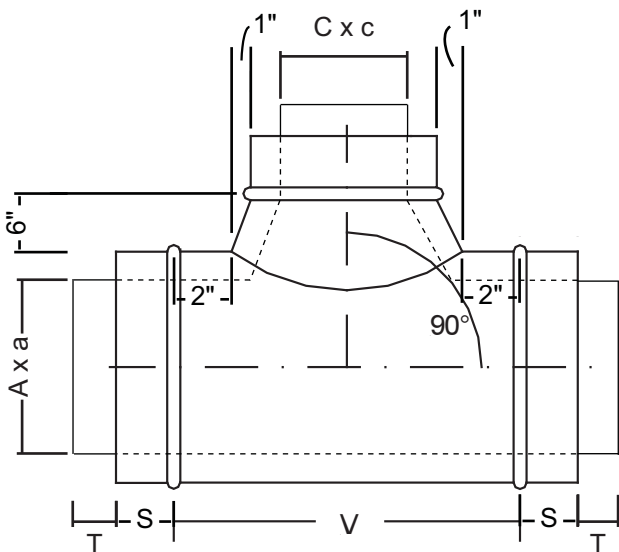
$$V = C + 6"$$

$$L = 12" \text{ IF } (A-B) < 16$$

$$24" \text{ IF } (A-B) > 16$$

A, B & C are inner shell dimension

**DWFOCON-T-1  
CONICAL TEE**

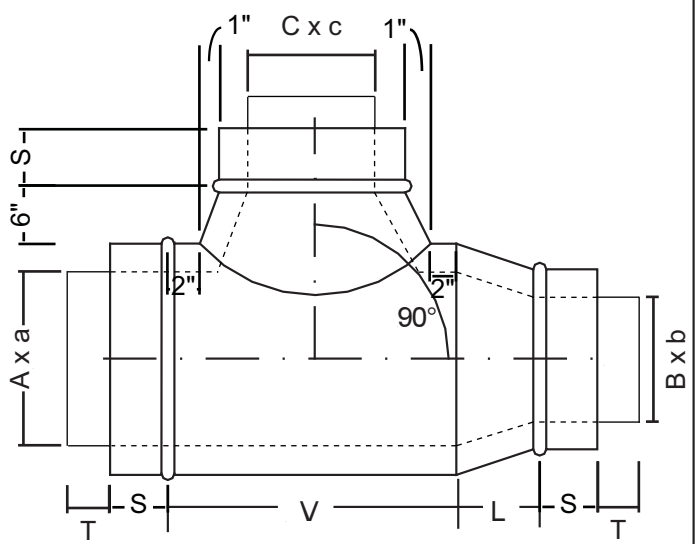


$$S = 2" \quad T = 2"$$

$$V = (C + 2") + 6"$$

A & C are inner shell dimension

**DWFOCON-T-1R  
CONICAL REDUCING TEE**



$$S = 2" \quad T = 2"$$

$$V = (C + 2") + 6"$$

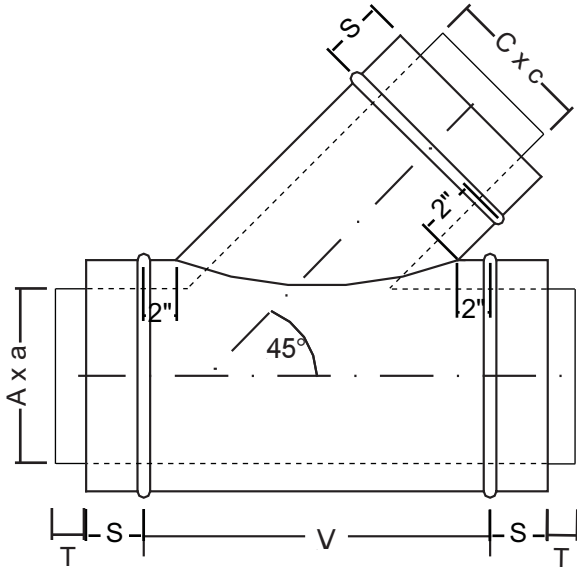
$$L = 12" \text{ IF } (A-B) < 16$$

$$24" \text{ IF } (A-B) > 16$$

A, B & C are inner shell dimension

# FLAT OVAL FITTINGS

**DWFOL  
LATERAL**

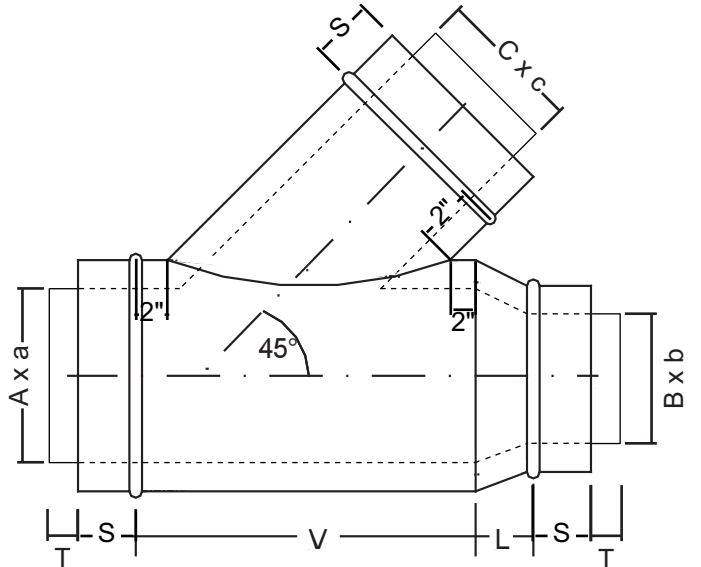


$$S = 2" \quad T = 2"$$

$$V = ((C+2) \times 1.414) + 4"$$

A & C are inner shell dimension

**DWFOLR  
REDUCING LATERAL**



$$S = 2" \quad T = 2"$$

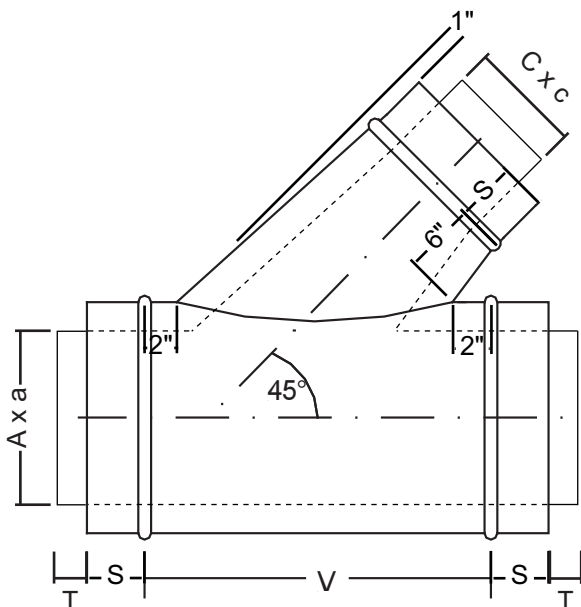
$$V = ((C+2) \times 1.414) + 4"$$

$$L = 12" \text{ IF } (A-B) < 16$$

$$24" \text{ IF } (A-B) > 16$$

A, B & C are inner shell dimension

**DWFOCON-L  
CONICAL LATERAL**

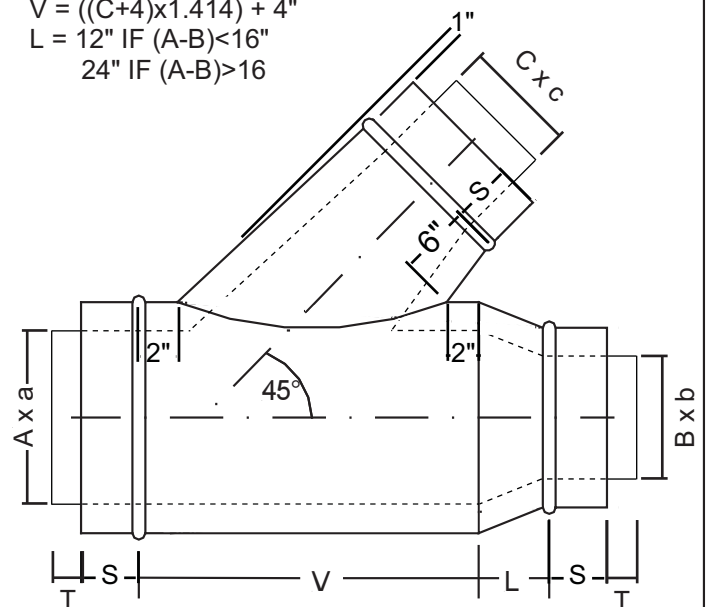


$$S = 2" \quad T = 2"$$

$$V = ((C+4) \times 1.414) + 4"$$

A & C are inner shell dimension

**DWFOCON-LR  
CONICAL REDUCING LATERAL**



$$S = 2" \quad T = 2"$$

$$V = ((C+4) \times 1.414) + 4"$$

$$L = 12" \text{ IF } (A-B) < 16$$

$$24" \text{ IF } (A-B) > 16$$

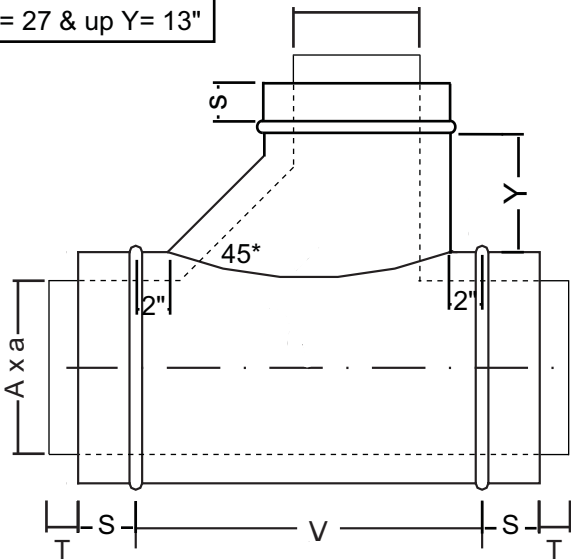
A, B & C are inner shell dimension

# FLAT OVAL FITTINGS

## DWFOCMBT COMBINATION TEE

C = 3 - 8 Y = 4"  
 C = 9 - 14 Y = 7"  
 C = 15 - 26 Y = 10"  
 C = 27 & up Y = 13"

S = 2" T = 2"  
 $V = ((C+2) + Y) + 4"$   
 C x c

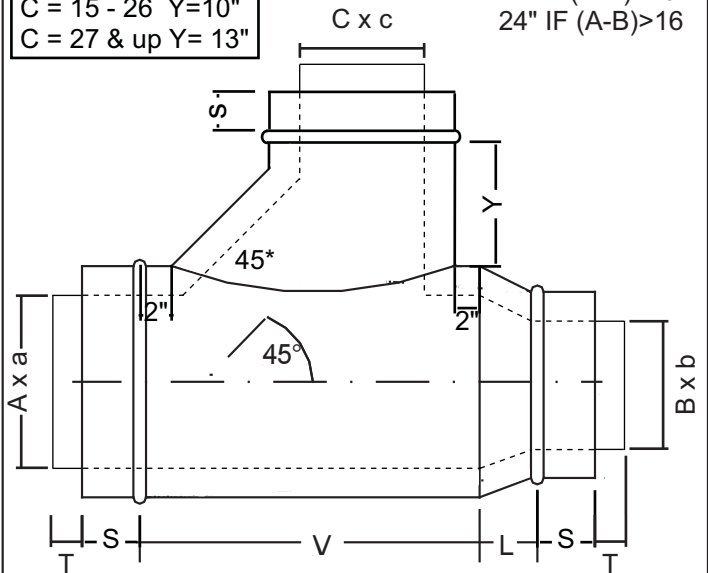


A & C are inner shell dimension

## DWFOCMBTR COMBINATION TEE RED.

C = 3 - 8 Y = 4"  
 C = 9 - 14 Y = 7"  
 C = 15 - 26 Y = 10"  
 C = 27 & up Y = 13"

S = 2" T = 2"  
 $V = ((C+2) + Y) + 4"$   
 L = 12" IF (A-B) < 16  
 24" IF (A-B) > 16



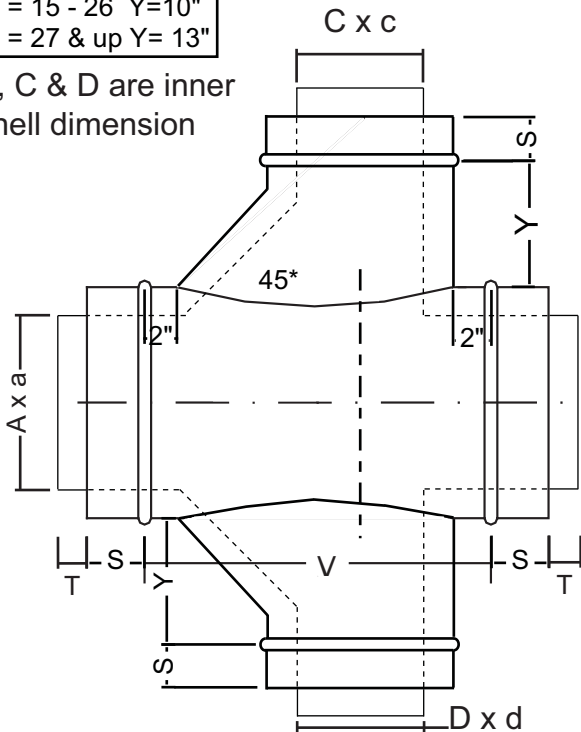
A, B & C are inner shell dimension

## DWFOCMBC COMBINATION CROSS

C = 3 - 8 Y = 4"  
 C = 9 - 14 Y = 7"  
 C = 15 - 26 Y = 10"  
 C = 27 & up Y = 13"

S = 2" T = 2"  
 $V = ((\text{larger of } C \text{ or } D+2) + Y) + 4"$

A, C & D are inner shell dimension



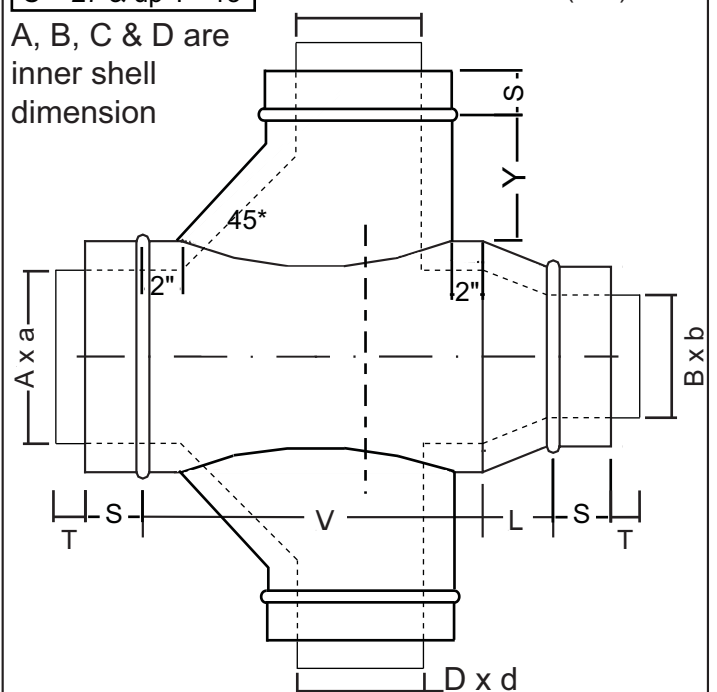
7

## DWFOCMBCR COMBINATION CROSS RED.

C = 3 - 8 Y = 4"  
 C = 9 - 14 Y = 7"  
 C = 15 - 26 Y = 10"  
 C = 27 & up Y = 13"

S = 2" T = 2"  
 $V = ((\text{larger of } C \text{ or } D+2) + Y) + 4"$   
 L = 12" IF (A-B) < 16  
 24" IF (A-B) > 16

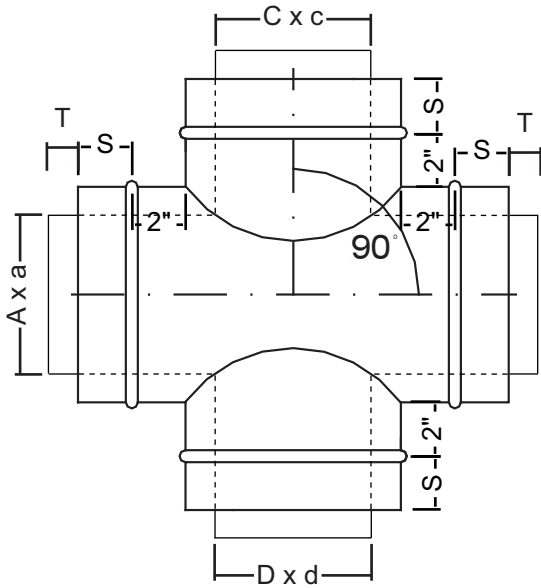
A, B, C & D are inner shell dimension





# FLAT OVAL FITTINGS

**DWFOC  
CROSS**

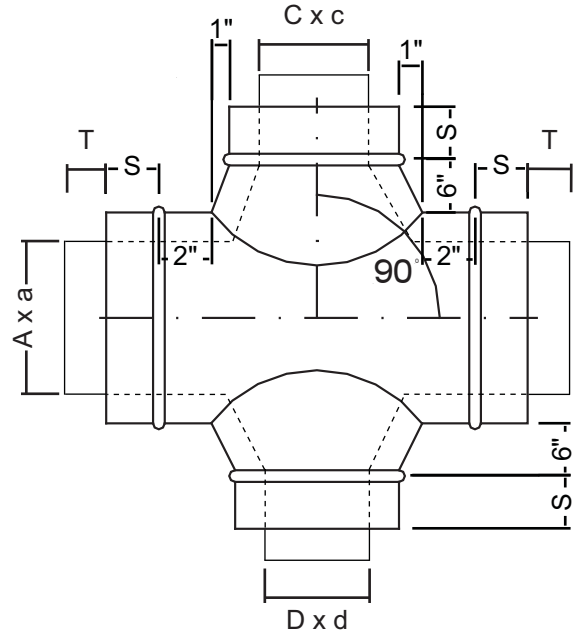


$$V = (\text{LARGEST TAP} + 2) + 4$$

$$S = 2" \quad T = 2"$$

A, C & D are inner shell dimension

**DWFOCON-C  
CONICAL CROSS**

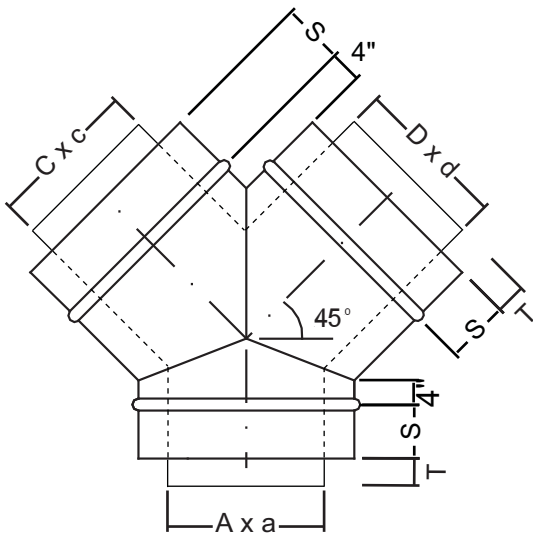


$$V = (\text{LARGEST TAP} + 4) + 4$$

$$S = 2" \quad T = 2"$$

A, C & D are inner shell dimension

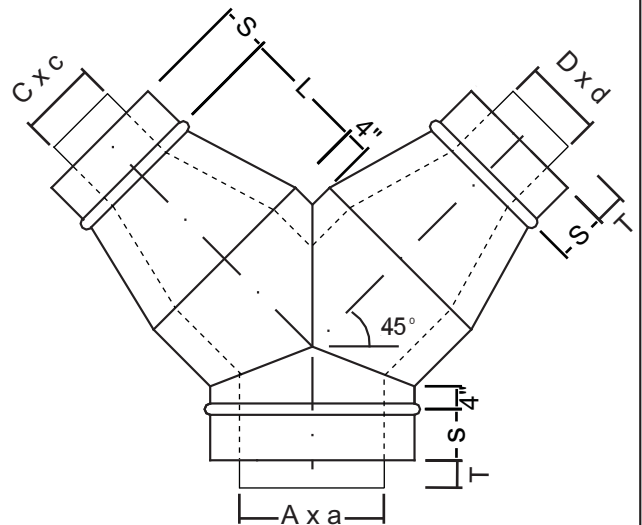
**DWFOY  
EQUAL Y**



$$S = 2" \quad T = 2"$$

A, C & D are inner shell dimension

**DWFORED-Y  
REDUCING Y**



$$S = 2" \quad T = 2"$$

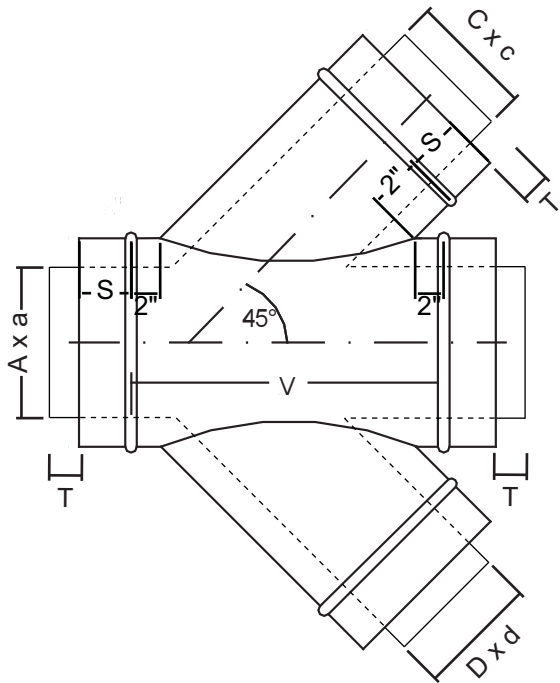
$$L = 12" \text{ IF } (A-B) < 16$$

$$24" \text{ IF } (A-B) > 16$$

A, C & D are inner shell dimension

# FLAT OVAL FITTINGS

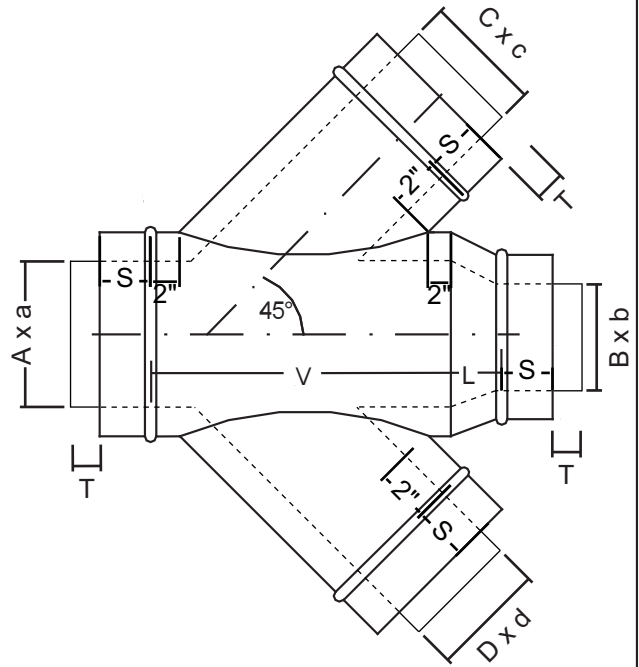
**DWFOLC  
LATERAL CROSS**



$S = 2'' \quad T = 2''$   
 $V = ((\text{LARGEST OF TAPS} + 2) \times 1.414) + 4$

A, C & D are inner shell dimension

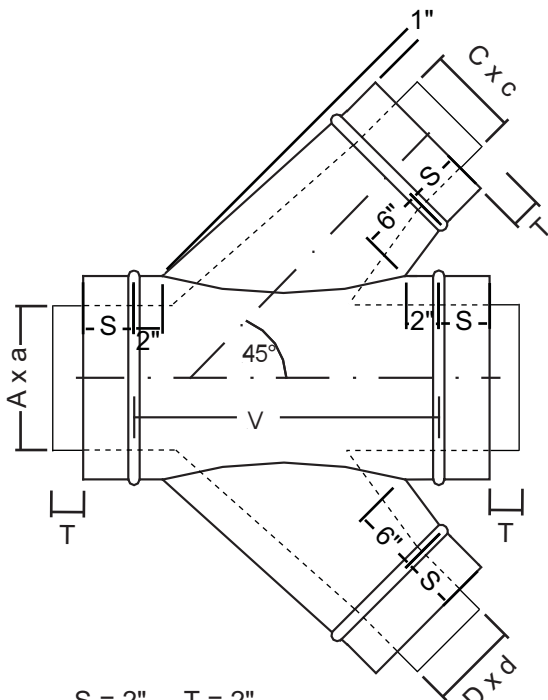
**DWFOLCR  
REDUCING LATERAL CROSS**



$S = 2'' \quad T = 2''$   
 $V = ((\text{LARGEST OF TAPS} + 2) \times 1.414) + 4$   
 $L = 12'' \text{ IF } (A-B) < 16$   
 $24'' \text{ IF } (A-B) > 16$

A, B, C & D are inner shell dimension

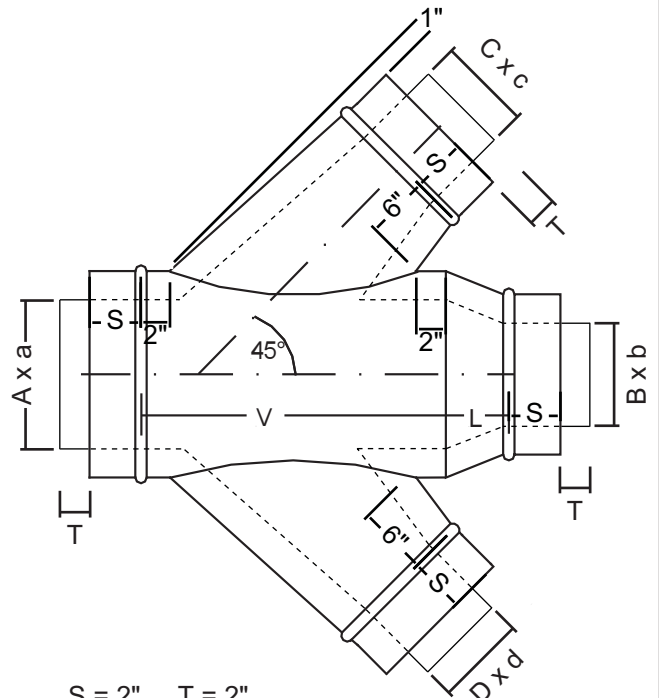
**DWFOCON-LC  
CONICAL LATERAL CROSS**



$S = 2'' \quad T = 2''$   
 $V = ((\text{LARGER OF TWO TAPS} + 4) \times 1.414) + 4$

9 A, C & D are inner shell dimension

**DWFOCON-LCR  
CONICAL REDUCING LATERAL CROSS**

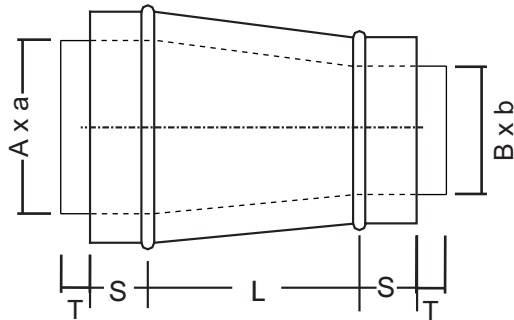


$S = 2'' \quad T = 2''$   
 $V = ((\text{LARGER OF TWO TAPS} + 4) \times 1.414) + 4$   
 $L = 12'' \text{ IF } (A-B) < 16 \quad 24'' \text{ IF } (A-B) > 16$

A, B, C & D are inner shell dimension

# FLAT OVAL FITTINGS

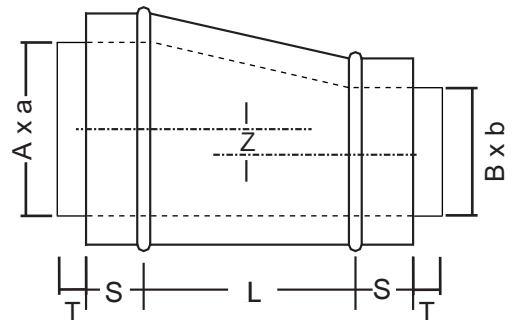
**DWFOR  
CONCENTRIC REDUCER**



$S = 2'' \quad T = 2''$   
 $L = 12'' \text{ IF } (A-B) < 16$   
 $24'' \text{ IF } (A-B) > 16$

A & B are inner shell dimension

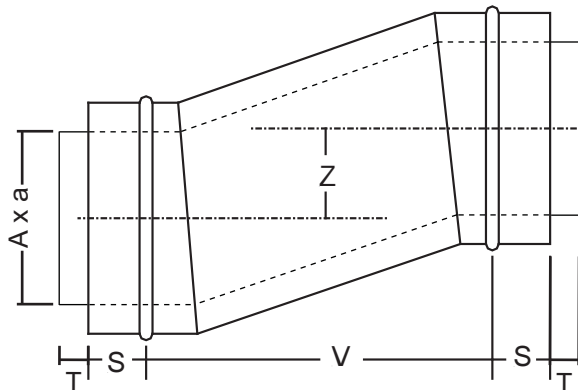
**DWFOER  
ECCENTRIC REDUCER**



$S = 2'' \quad T = 2''$   
 $L = 12'' \text{ IF } (A-B) < 16$   
 $24'' \text{ IF } (A-B) > 16$

A & B are inner shell dimension

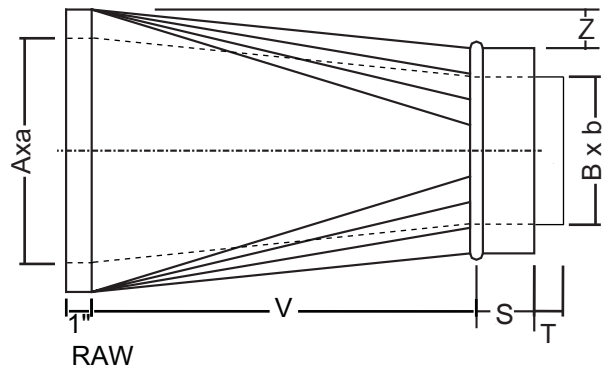
**DWFOSET  
OFFSET**



$S = 2'' \quad T = 2''$   
 $V = Z \times 2 \frac{1}{2} \text{ (MIN. } 12'')$

A & B are inner shell dimension

**DWFOTR  
RECTANGLE TO FLAT OVAL**

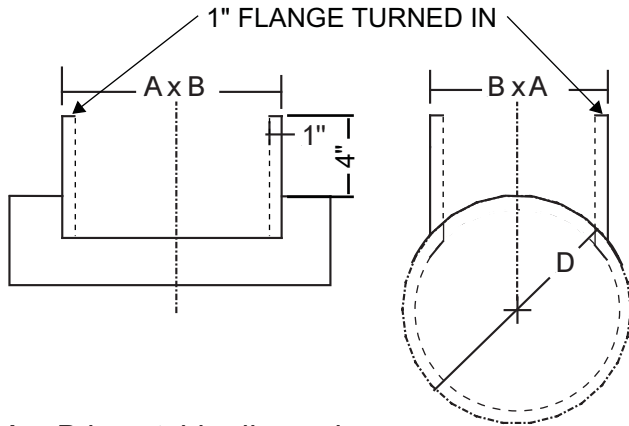


$S = 2'' \quad T = 2''$   
 $V = 12'' \text{ IF } (A-B) < 16$   
 $24'' \text{ IF } (A-B) > 16$

Aa & B are inner shell dimension

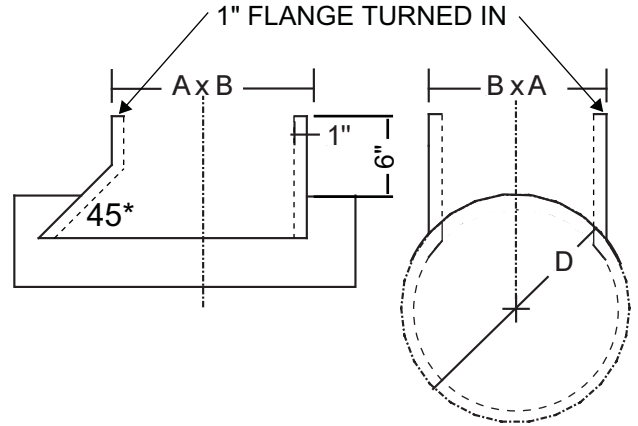
# FLAT OVAL FITTINGS

**DWGBT  
GRILLE BOX TAP**



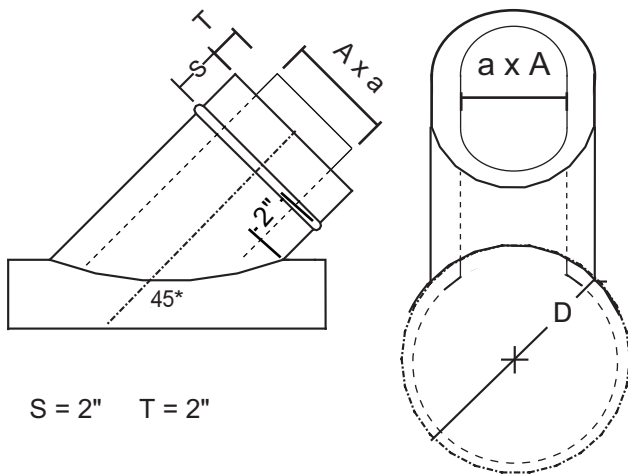
A x B is outside dimension

**DWTEGBT TAPERED ENTRY  
GRILLE BOX TAP**



A x B is outside dimension

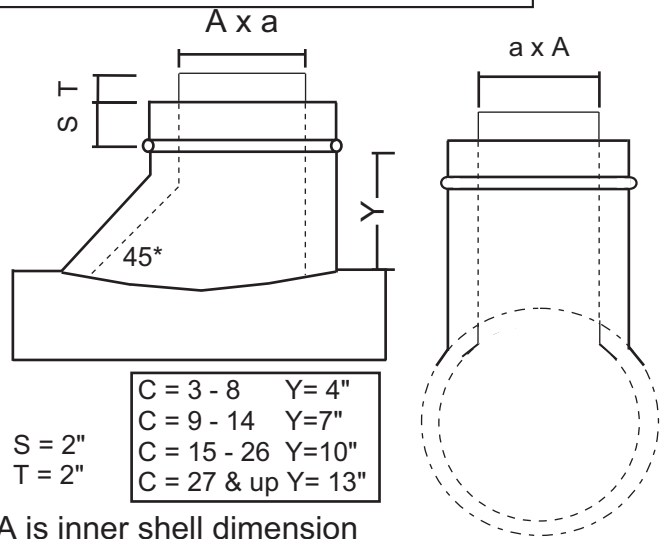
**DWFOLST  
LATERAL SADDLE TAP**



S = 2" T = 2"

A is inner shell dimension

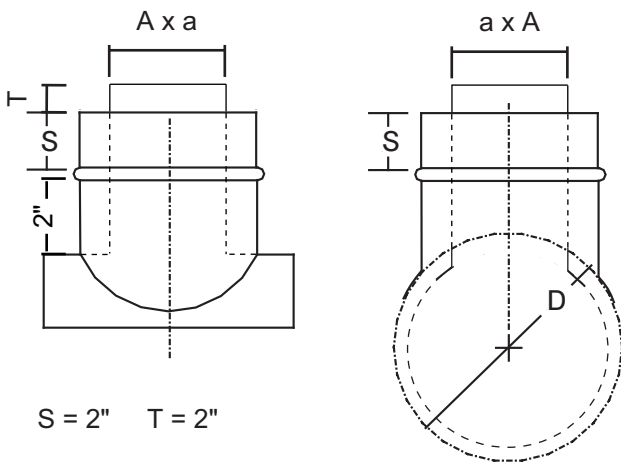
**DWFOCMBST  
COMBINATION SADDLE TAP**



S = 2"  
T = 2"

A is inner shell dimension

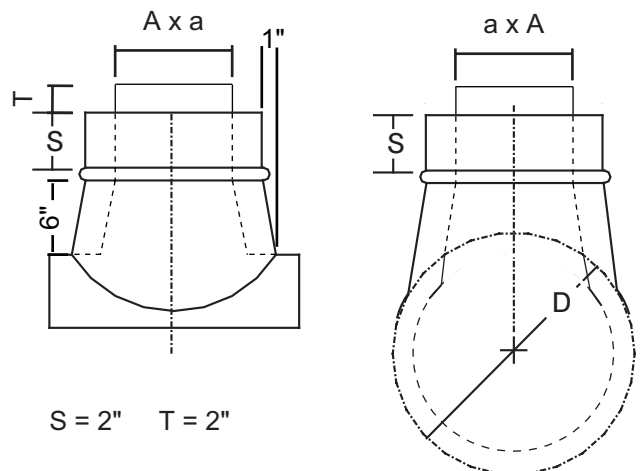
**DWFOST  
SADDLE TAP**



S = 2" T = 2"

11 A is inner shell dimension

**DWFOCST  
CONICAL SADDLE TAP**

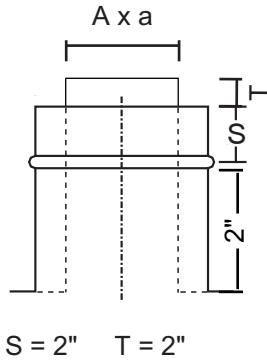


S = 2" T = 2"

A is inner shell dimension

# FLAT OVAL FITTINGS

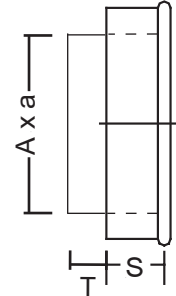
DWFOFT  
FLAT TAP



$S = 2''$   $T = 2''$

A is inner shell dimension

DWFON-1 for duct  
DWFON-2 for fittings  
**END CAP**

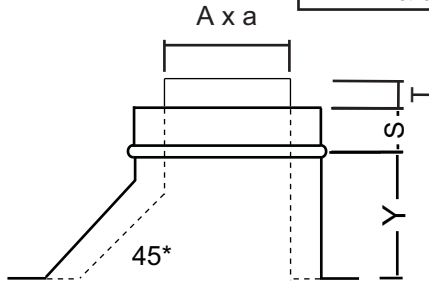


$S = 2''$   $T = 2''$

A is inner shell dimension

DWFOCMBFT  
COMBINATION  
FLAT TAP

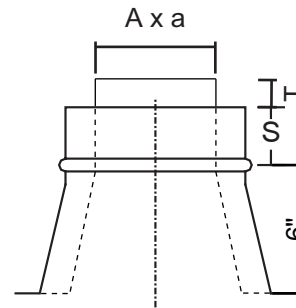
$A = 3 - 8$   $Y = 4''$   
 $A = 9 - 4$   $Y = 7''$   
 $A = 15 - 26$   $Y = 10''$   
 $A = 27 \text{ \& up}$   $Y = 13''$



$S = 2''$   $T = 2''$

A is inner shell dimension

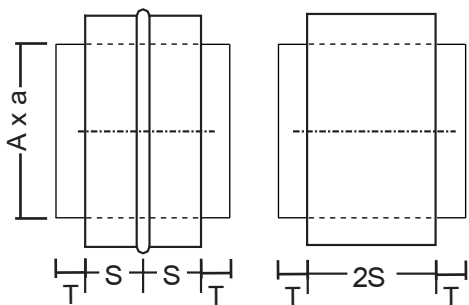
DWFOCFT  
CONICAL FLAT TAP



$S = 2''$   $T = 2''$

A is inner shell dimension

DWFOS-1 for duct to duct (male)  
DWFOS-2 for fitting to fitting  
(female)



$S = 2''$   $T = 2''$

A is inner shell dimension

## CONNECTIONS

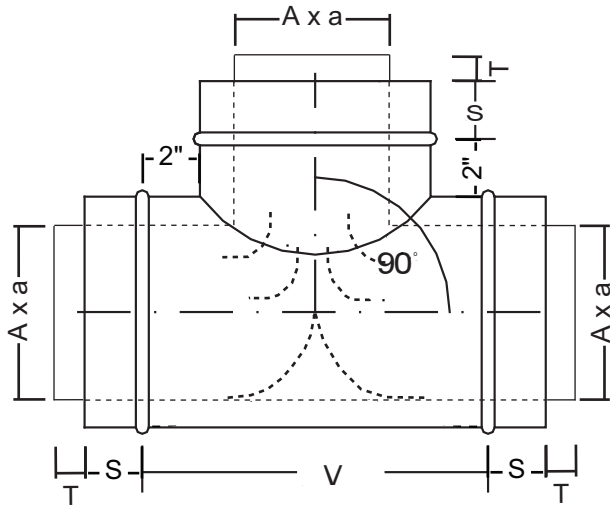
There are a number of methods of connecting fittings and spiral ductwork together. These include but are not limited to the following:

- 1- Slip fit (as illustrated in this catalogue)
- 2- Angle rings (vanstone or welded)
- 3- Proprietary flanges and connectors (Econo flange and Spiral mate)

# FLAT OVAL FITTINGS

DWFOBHT  
BULL HEAD TEE

SPLITTER VANE  
STD. OPT. TURNING  
VANES



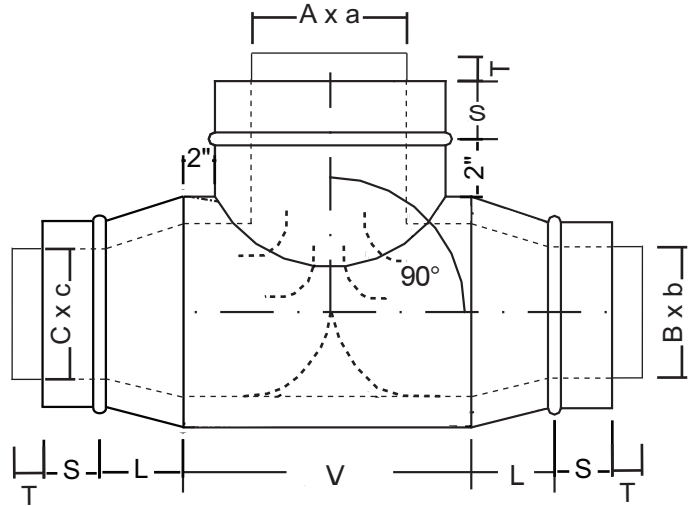
$$S = 2" \quad T = 2"$$

$$V = A + 4$$

A is inner shell dimension

DWFOBHTR  
BULLHEAD TEE RED.

SPLITTER VANE  
STD. OPT. TURNING  
VANES



$$S = 2" \quad T = 2"$$

$$V = A + 4"$$

$$L = 12" \text{ IF } (A-B) < 16$$

$$24" \text{ IF } (A-B) > 16$$

A, B & C are inner shell dimensions