



**DOUBLE WALL
ROUND
HVAC DUCT
and
FITTINGS**

Standards and Dimensional Data
for Round Air Duct and Fittings
as Manufactured by Members of SPIDA

Turn Key Duct Systems is a proud member of SPIDA

ROUND DOUBLE WALL DUCT AND FITTINGS

LEGEND

| | |
|--------------------------|----------------------------|
| DWE ----- ELBOW | DWN -----END CAP |
| DWT ----- TEE | DWCON ----- CONICAL |
| DWL ----- LATERAL | DWCST ----- CURVED SADDLE |
| DWC ----- CROSS | DWFT ----- FLAT SADDLE |
| DWR ----- REDUCER | DWY ----- WYE FITTING |
| DWSET ---- OFFSET | AR ----- ANGLE IRON RING |
| DWST----- SADDLE TAP | DWR2R -----SQUARE TO ROUND |
| DWB-----BELLMOUTH | DWS-2 -----FEMALE COUPLING |
| DWS-1 -----MALE COUPLING | |

MATERIAL (SPECIFY)

GALVANIZED STEEL
PAINT GRIP

ALUMINUM
STAINLESS
PVS

DIMENSIONING

| | |
|-------------------------------------|-----------------------------|
| S – SLIP (2") | V – BODY LENGTH |
| H – HEIGHT | L – REDUCER LENGTH |
| Z – DIMENSION OF OFFSET | R - RADIUS |
| A – DIAMETER OF MAIN INLET | B – DIAMETER OF MAIN OUTLET |
| C,D,E,F – DIAMETER OF TAKE OFF TAPS | |

VANE CHART

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

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

ORDERING

Specify type of fitting and list the following dimensions:

ELBOWS - A,B TEES - A,B,(C,D,E,F)
LATERALS - A,B,(C,D,E,F) CROSSES - A,B,C,D,(E,F,G,H)
REDUCERS - A,B,C,D,(L,Z) OFFSETS - A,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 Spiral Duct.

Vanstone or other proprietary connections are available by special order.

Galvanized or Paint Grip Minimum Gauges for Spiral Double Wall Duct

| POSITIVE PRESSURE | | | | to +10" W.G. | | | |
|-------------------|------|-----------|---------|--------------|------|-----------|---------|
| OUTER WALL | | | | INNER WALL | | | |
| SIZE | PIPE | SIZE | FITTING | SIZE | PIPE | SIZE | FITTING |
| 3" - 14" | 26 | 3" - 18" | 26 | 3" - 14" | 26 | 3" - 18" | 26 |
| 15" - 18" | 26 | 19" - 24" | 24 | 15" - 18" | 26 | 19" - 24" | 24 |
| 19" - 24" | 26 | 25" - 42" | 22 | 19" - 24" | 26 | 25" - 42" | 22 |
| 25" - 42" | 24 | 43" - 60" | 20 | 25" - 42" | 24 | 43" - 60" | 20 |
| 43" - 60" | 22 | 61" - 96" | 18 | 43" - 60" | 22 | 61" - 96" | 18 |
| 61" - 66" | 22 | | | 61" - 66" | 22 | | |
| 67" - 96" | 20 | | | 67" - 96" | 20 | | |

SPIRAL PIPE CONSTRUCTION: Roll formed, continuous interlocked pipe. The outer wall performs as the pressure shell and will be constructed and sealed for the appropriate pressure class. The inner wall pipe is standard perforated with 3/32" diameter holes on 3/16" staggered centers. Solid inner shell is available on pipe.

FITTING CONSTRUCTION: Spot welded or Gore locked seams with factory sealed joints. Optional continuously welded seams. Inner wall is standard solid fittings. Perforated inner fittings are also available.

INSULATION: Fibrous glass blanket with a 'K' factor of .24, maximum flame spread of 25, R factor of 4.2 and a UL 723 classification.

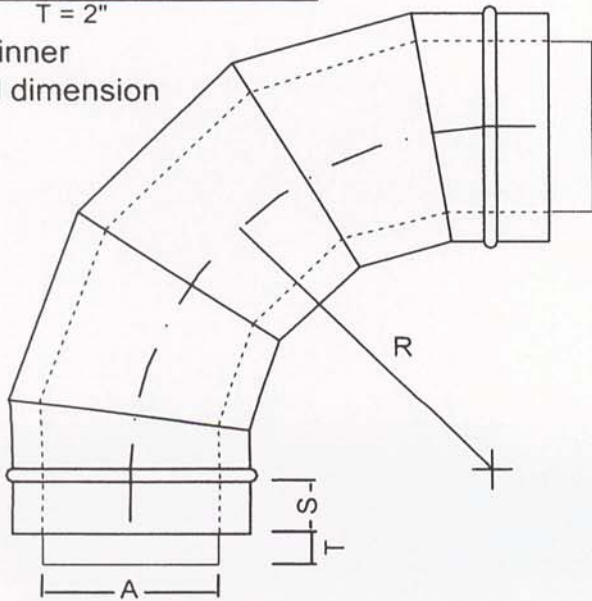
Optional: Mylar liner is between perforated inner shell and the insulation.

ROUND FITTINGS

DWE-90-5 DWE-90-4 DWE-45-3
GORED ELBOW

S = 2" T = 2"

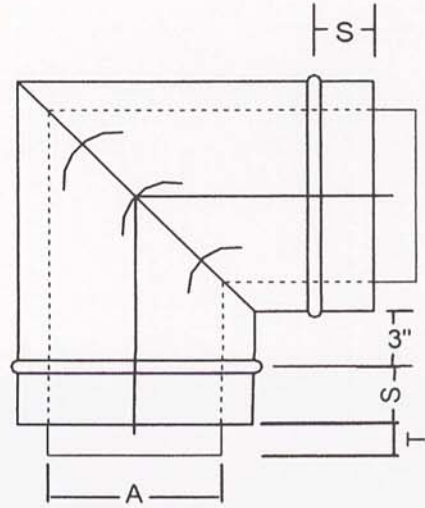
A is inner shell dimension



E = Elbow 90 = Degree 5 = Number of Gores
 $R = 1.5 \times (A + 2)$ on 5 gore 90 elbows
 $R = 1 \times (A + 2)$ on 4 gore 90 elbows
 $R = 1.5 \times (A + 2)$ on 3 gore 45 elbows

4

DWEV-90-2
2 pc 90°



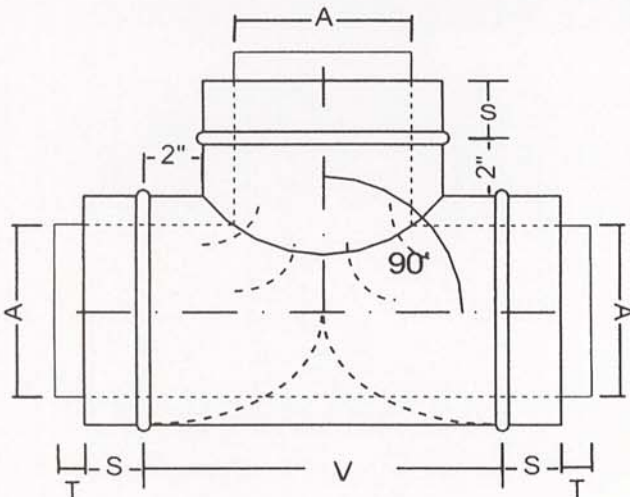
Specify with or without turning vanes

S = 2" T = 2"

A is inner shell dimension

DWBHT
BULL HEAD TEE

SPLITTER VANE
STD. OPT. TURNING
VANES

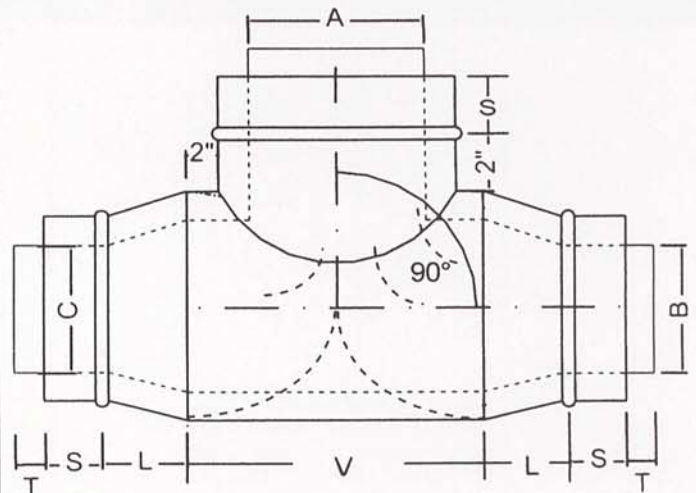


S = 2" T = 2"
 $V = (A + 2) + 4$

A is inner shell dimension

DWBHTR
BULLHEAD TEE RED.

SPLITTER VANE
STD. OPT. TURNING
VANES



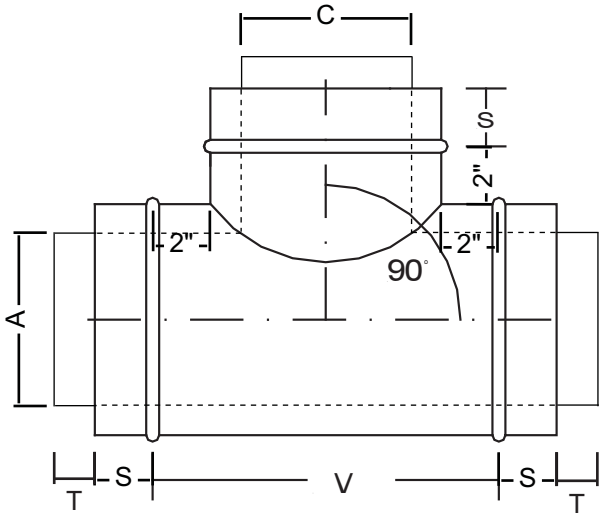
S = 2" T = 2"
 $V = (A + 2) + 4$
 $L = A - B$ (4" MIN, 12" MAX.)

A, B & C are inner shell dimension

4

ROUND FITTINGS

**DWT-1
TEE**

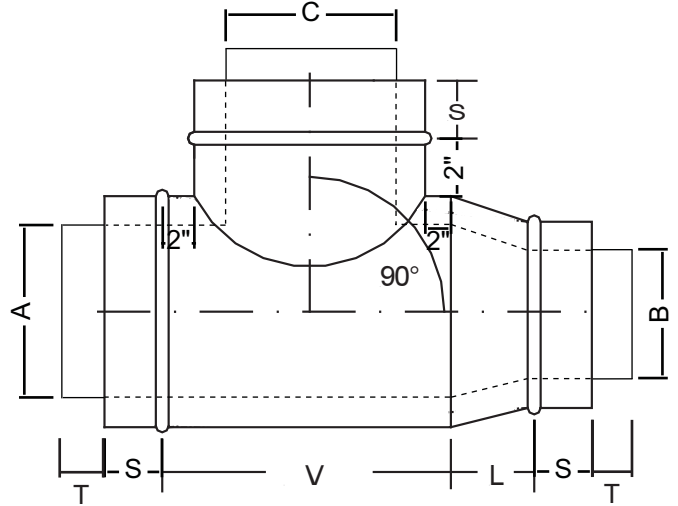


$$S = 2'' \quad T = 2''$$

$$V = C + 6''$$

A & C are inner shell dimension

**DWT-1R
REDUCING TEE**



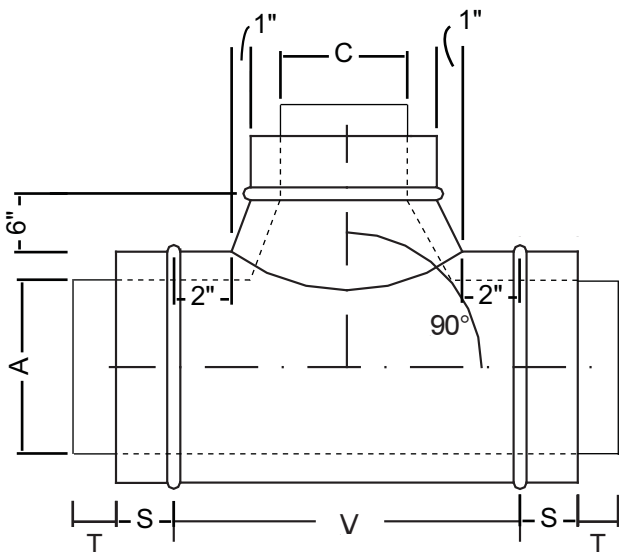
$$S = 2'' \quad T = 2''$$

$$V = C + 6''$$

$$L = A - B \text{ (4" MIN, 12" MAX.)}$$

A, B & C are inner shell dimension

**DWCON-T-1
CONICAL TEE**

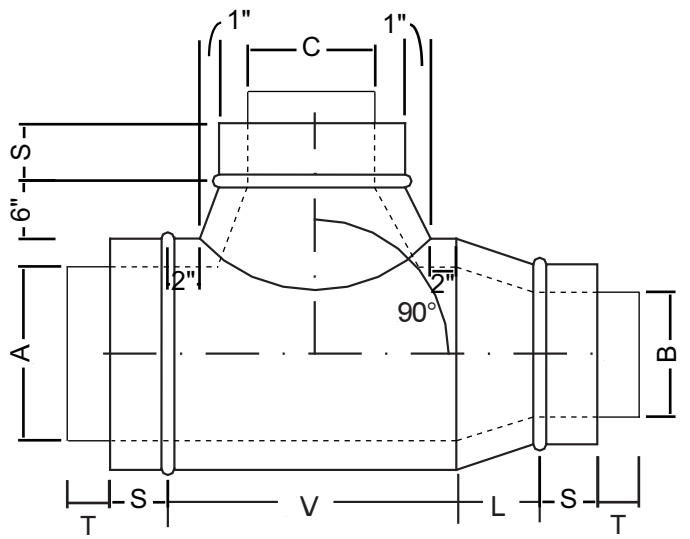


$$S = 2'' \quad T = 2''$$

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

A & C are inner shell dimension

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



$$S = 2'' \quad T = 2''$$

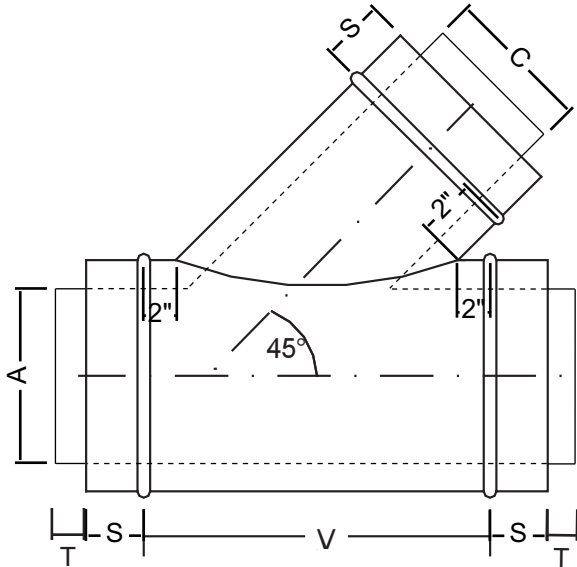
$$V = (C + 2'') + 6''$$

$$L = A - B \text{ (4" MIN, 12" MAX.)}$$

A, B & C are inner shell dimension

ROUND FITTINGS

**DWL
LATERAL**

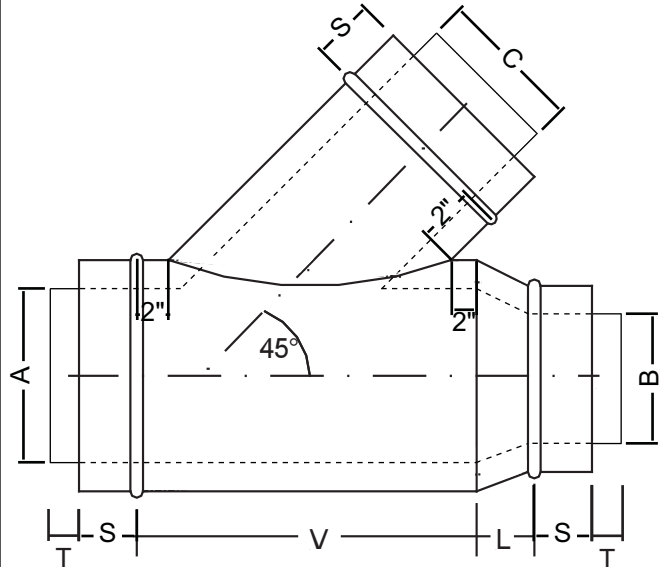


$$S = 2" \quad T = 2"$$

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

A & C are inner shell dimension

**DWLR
REDUCING LATERAL**



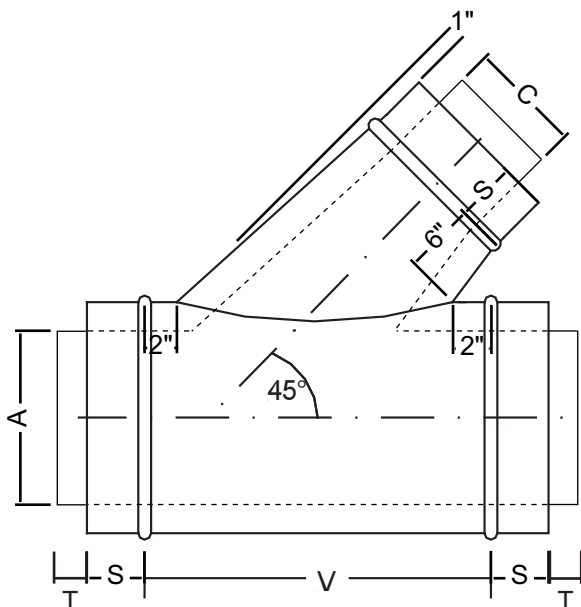
$$S = 2" \quad T = 2"$$

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

$$L = A - B \text{ (MIN. 4" MAX 12")}$$

A, B & C are inner shell dimension

**DWCON-L
CONICAL LATERAL**

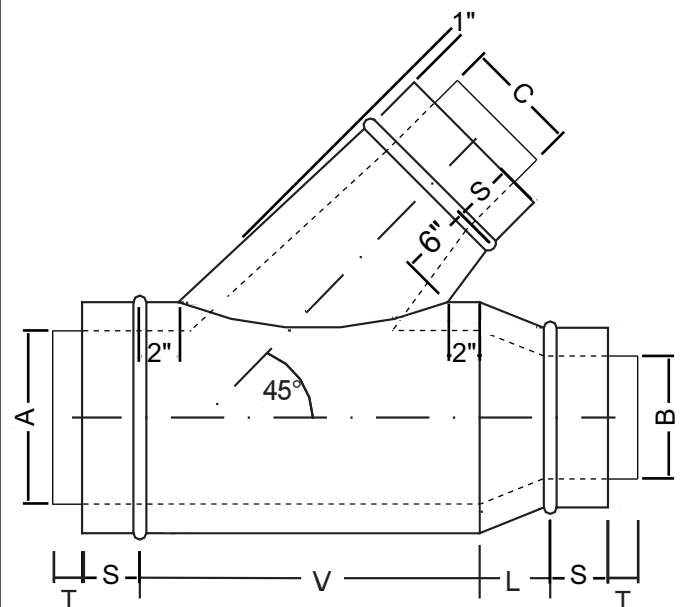


$$S = 2" \quad T = 2"$$

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

6 A & C are inner shell dimension

**DWCON-LR
CONICAL REDUCING LATERAL**



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

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

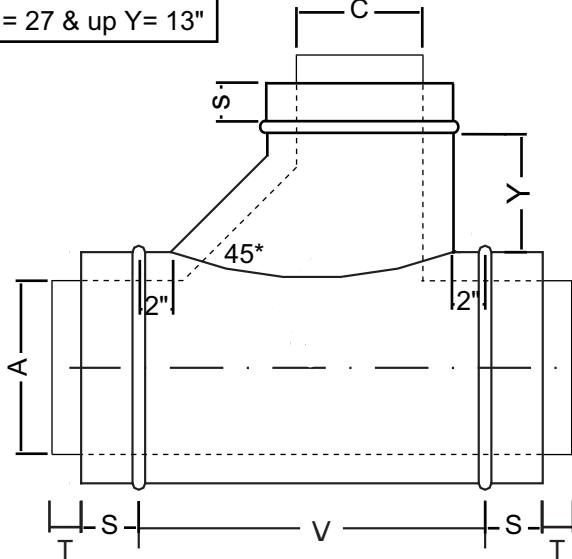
$$L = A - B \text{ (MIN. 4" MAX. 12")}$$

A, B & C are inner shell dimension

ROUND FITTINGS

DWCMBT COMBINATION TEE

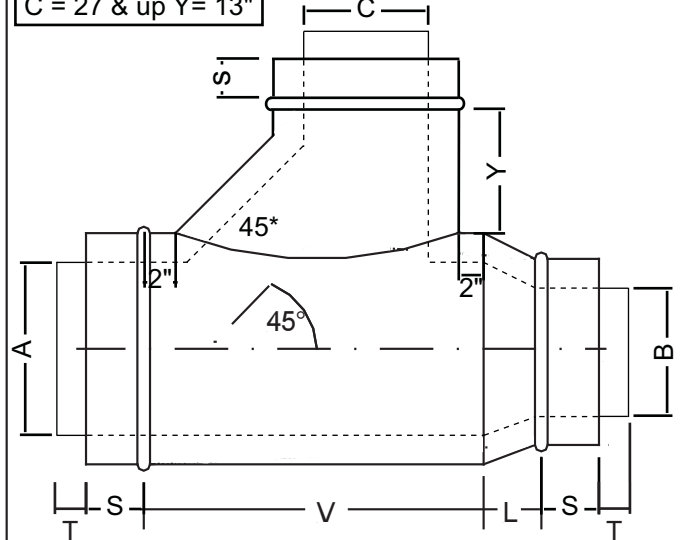
C = 3 - 8 Y = 4"
 C = 9 - 14 Y = 7"
 C = 15 - 26 Y = 10"
 C = 27 & up Y = 13"
 S = 2" T = 2"
 $V = ((C+2) + Y) + 4"$



A & C are inner shell dimension

DWCMBTR 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"
 $V = ((C+2) + Y) + 4"$
 $L = A-B$ (MIN. 4" MAX 12")

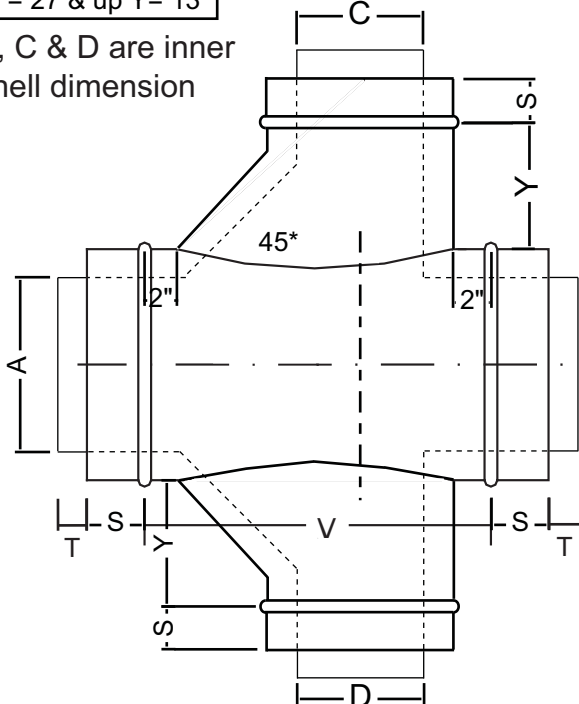


A, B & C are inner shell dimension

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

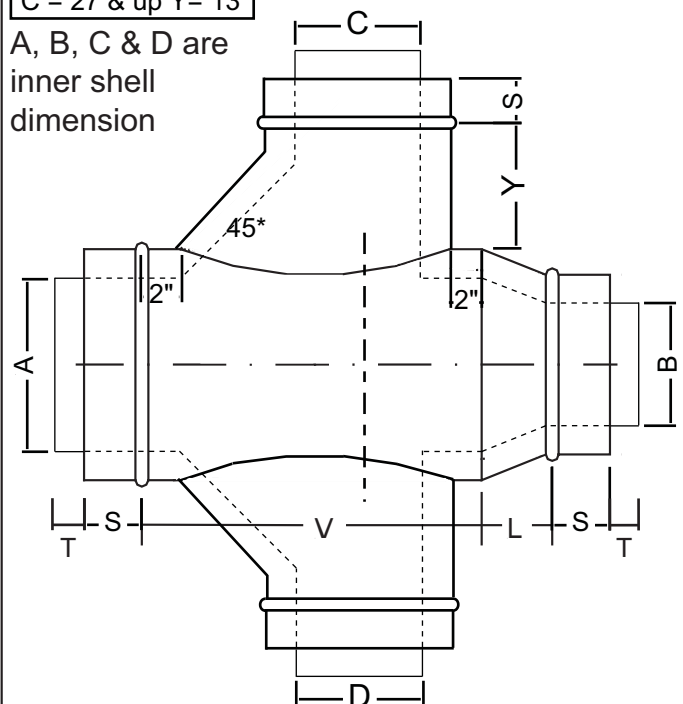
A, C & D are inner shell dimension



DWCMBCR COMBINATION CROSS RED.

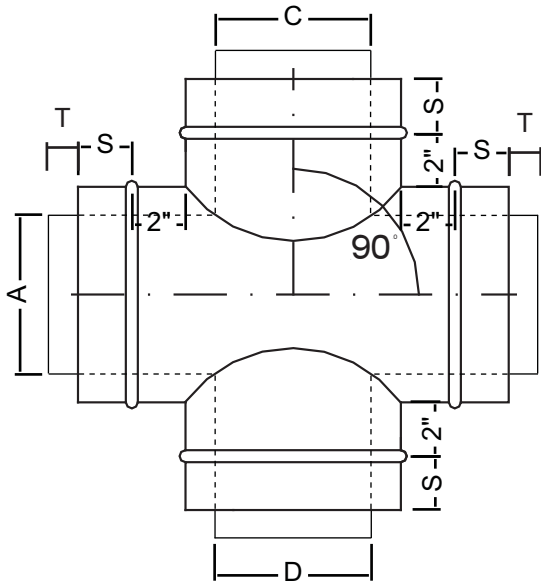
C = 3 - 8 Y = 4"
 C = 9 - 14 Y = 7"
 C = 15 - 26 Y = 10"
 C = 27 & up Y = 13"
 S = 2" T = 2"
 $V = ((\text{larger of } C \text{ or } D+2) + Y) + 4"$
 $L = A-B$ (MIN. 4" MAX 12")

A, B, C & D are inner shell dimension



ROUND FITTINGS

**DWC
CROSS**

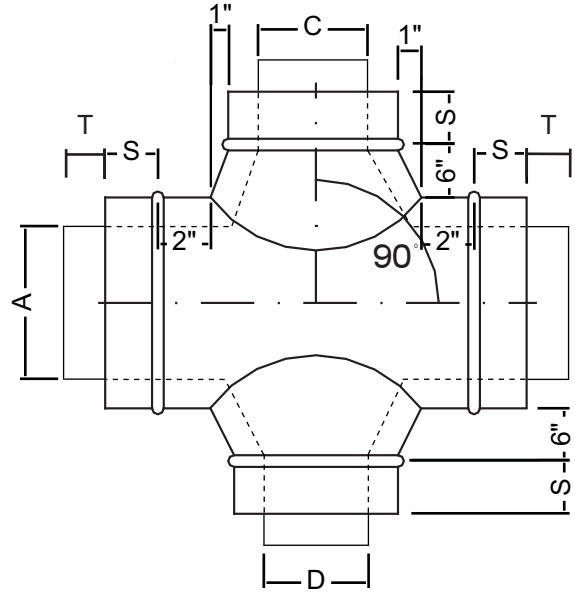


$$V = (\text{LARGEST TAP} + 2) + 4$$

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

A, C & D are inner shell dimension

**DWCON-C
CONICAL CROSS**

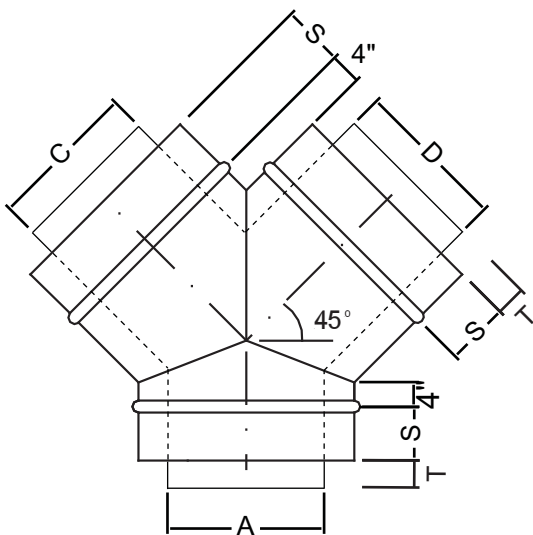


$$V = (\text{LARGEST TAP} + 4) + 4$$

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

A, C & D are inner shell dimension

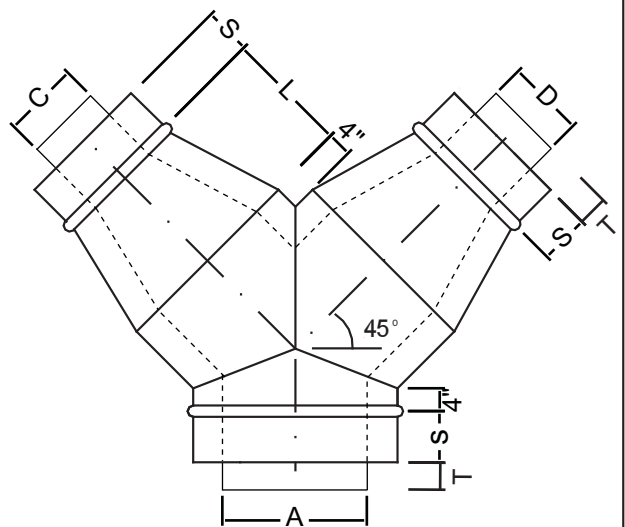
**DWY
EQUAL Y**



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

A, C & D are inner shell dimension

**DWRED-Y
REDUCING Y**



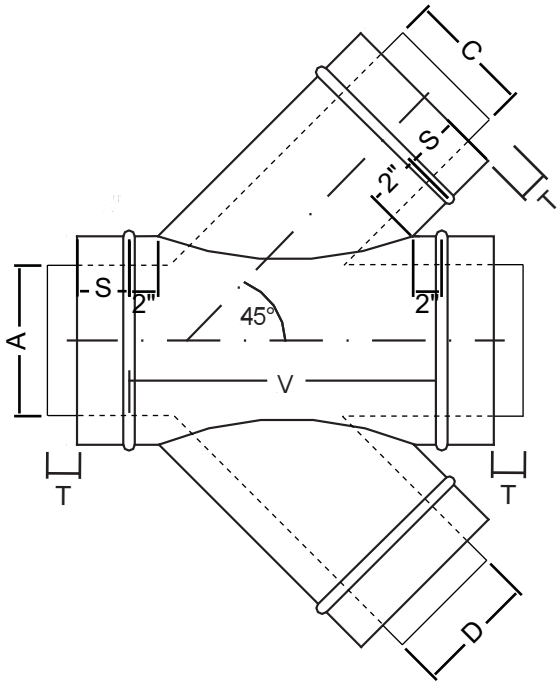
$$S = 2" \quad T = 2"$$

$$L = A - (C \text{ or } D) \text{ (4" MIN. 12" MAX.)}$$

A, C & D are inner shell dimension

ROUND FITTINGS

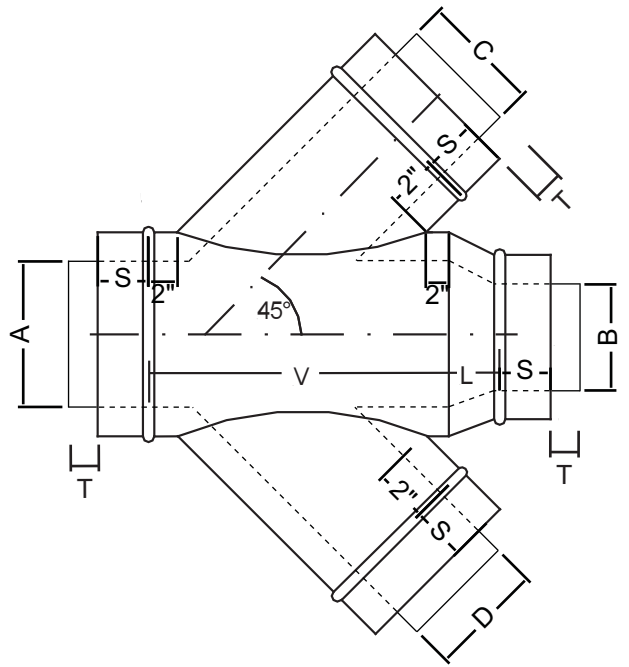
**DWLC
LATERAL CROSS**



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

A, C & D are inner shell dimension

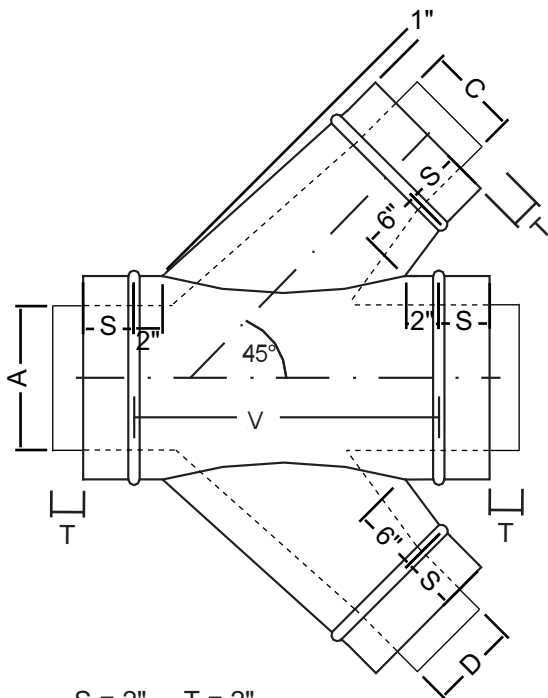
**DWLCR
REDUCING LATERAL CROSS**



$S = 2'' \quad T = 2''$
 $V = ((\text{LARGEST OF TAPS} + 2) \times 1.414) + 4$
 $L = A - B \text{ (MIN. } 4'' \text{ MAX. } 4'')$

A, B, C & D are inner shell dimension

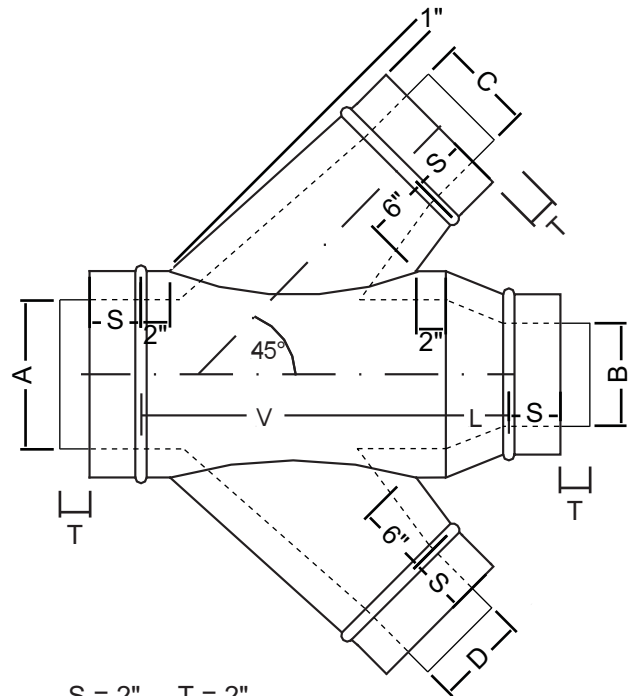
**DWCON-LC
CONICAL LATERAL CROSS**



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

9 A, C & D are inner shell dimension

**DWCON-LCR
CONICAL REDUCING LATERAL CROSS**

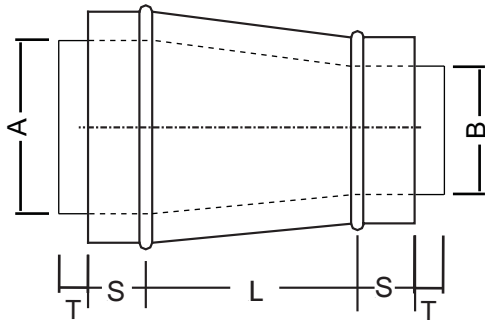


$S = 2'' \quad T = 2''$
 $V = ((\text{LARGER OF TWO TAPS} + 4) \times 1.414) + 4$
 $L = A - B \text{ (MIN. } 4'' \text{ MAX. } 12'')$

A, B, C & D are inner shell dimension

ROUND FITTINGS

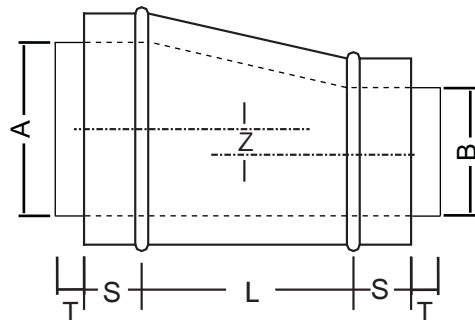
DWR CONCENTRIC REDUCER



$S = 2'' \quad T = 2''$
 $L = A - B \text{ (MIN. } 4'' \text{ MAX. } 12'')$

A & B are inner shell dimension

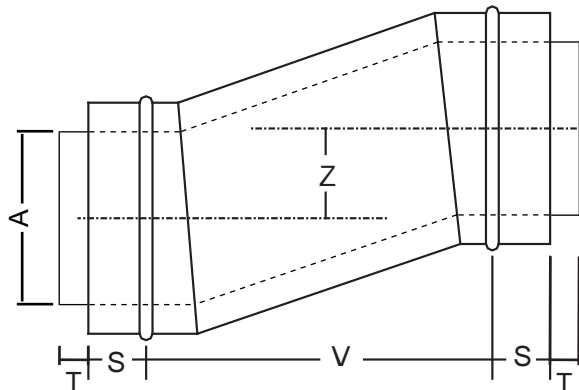
DWER ECCENTRIC REDUCER



$S = 2'' \quad T = 2''$
 $L = (A - B) \times 1 \frac{3}{4}'' \text{ (MIN. } 4'')$

A & B are inner shell dimension

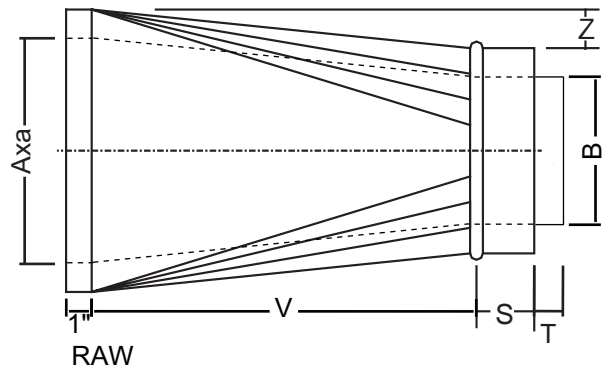
DWSET OFFSET



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

A & B are inner shell dimension

DWRTR RECTANGLE TO ROUND

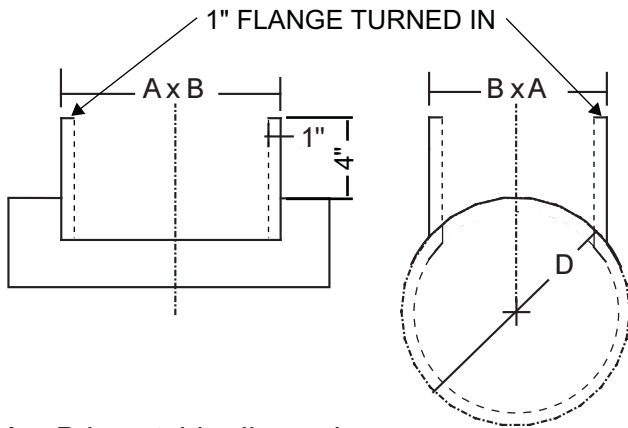


$S = 2'' \quad T = 2''$
 $V = A - B \text{ (MIN. } 6'')$

Aa & B are inner shell dimension

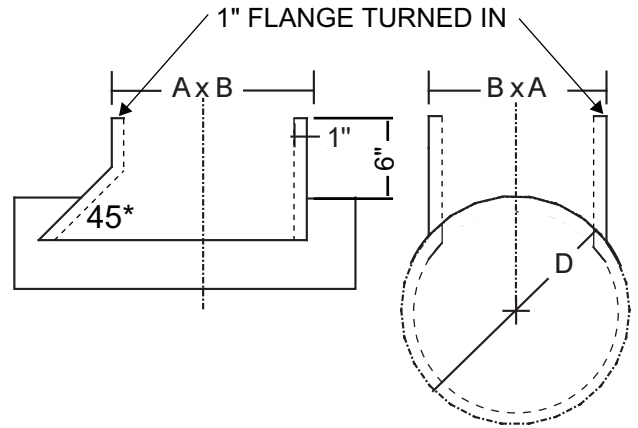
ROUND FITTINGS

**DWGBT
GRILLE BOX TAP**



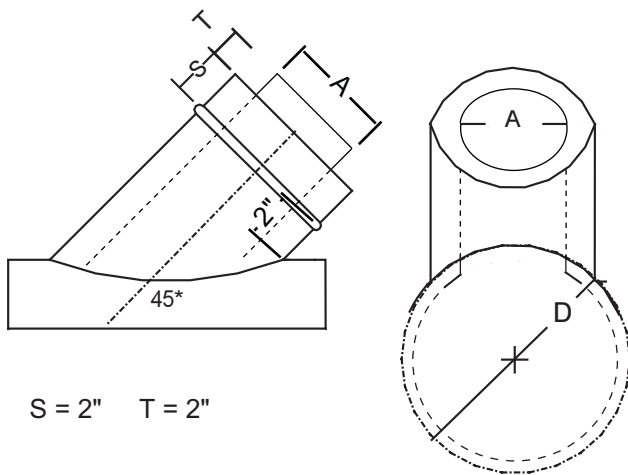
A x B is outside dimension

**DWTEGBT TAPERED ENTRY
GRILLE BOX TAP**



A x B is outside dimension

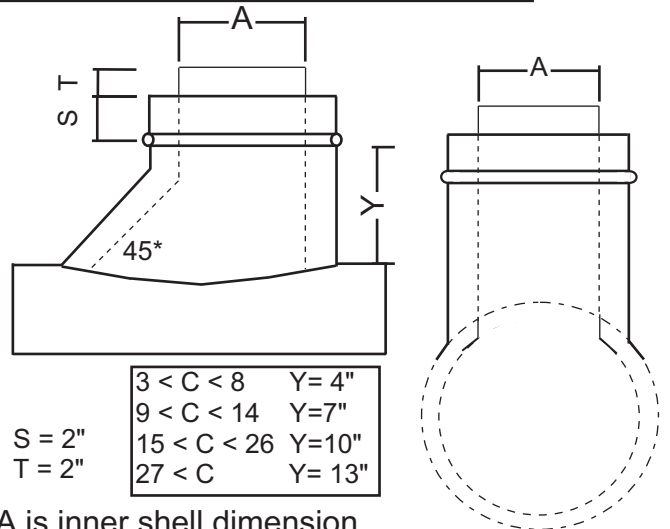
**DWLST
LATERAL SADDLE TAP**



S = 2" T = 2"

A is inner shell dimension

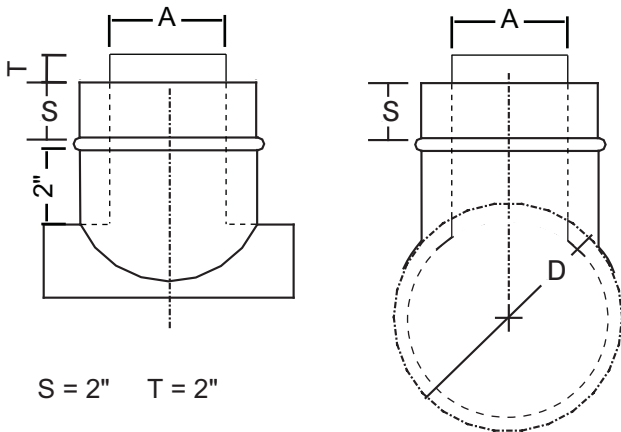
**DWCMBST
COMBINATION SADDLE TAP**



S = 2"
T = 2"

A is inner shell dimension

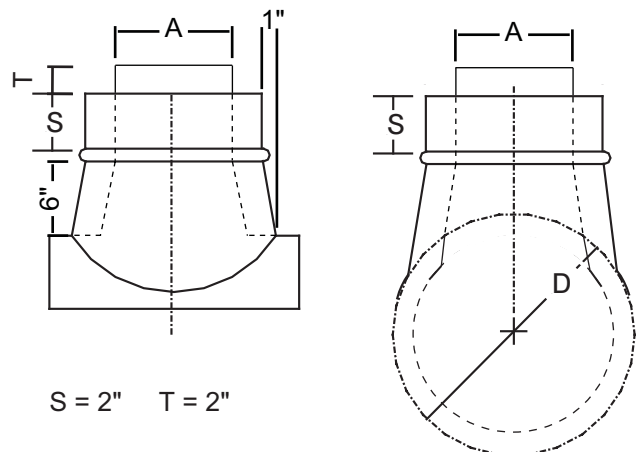
**DWST
SADDLE TAP**



S = 2" T = 2"

11 A is inner shell dimension

**DWCST
CONICAL SADDLE TAP**

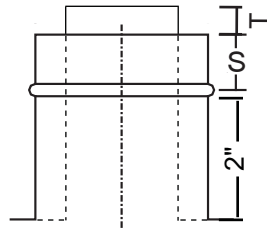


S = 2" T = 2"

A is inner shell dimension

ROUND FITTINGS

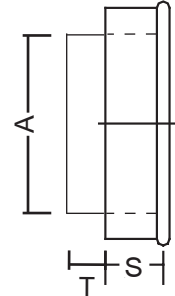
**DWFT
FLAT TAP**



$S = 2'' \quad T = 2''$

A is inner shell dimension

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

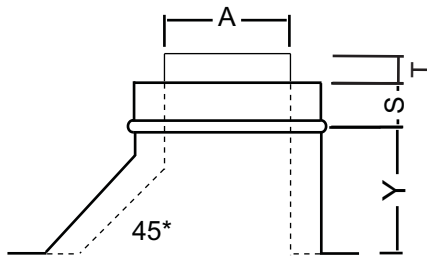


$S = 2'' \quad T = 2''$

A is inner shell dimension

**DWCMBFT
COMBINATION
FLAT TAP**

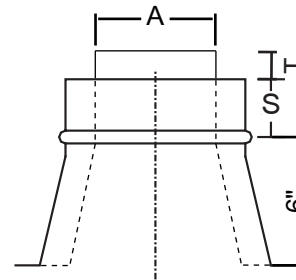
A = 3 - 8 Y = 4"
A = 9 - 4 Y = 7"
A = 15 - 26 Y = 10"
A = 27 & up Y = 13"



$S = 2'' \quad T = 2''$

A is inner shell dimension

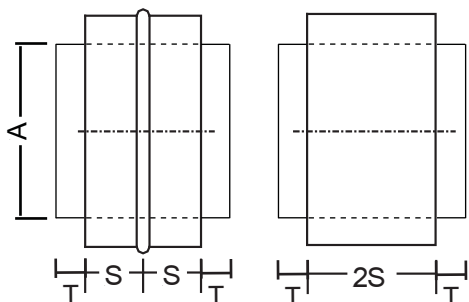
**DWCFT
CONICAL FLAT TAP**



$S = 2'' \quad T = 2''$

A is inner shell dimension

**S-1 for duct to duct (male)
S-2 for fitting to fitting (female)
COUPLING**



$S = 2'' \quad T = 2''$

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)