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
DWT ------ TEE
DWL ------ LATERAL
DWC ------ CROSS
DWR ------ REDUCER
DWSET ---- OFFSET
DWST------ SADDLE TAP
DWB--------BELLMOUTH
DWS-1 ------MALE COUPLING

DWN --------END CAP
DWCON ------ CONICAL
DWCST------- CURVED SADDLE
DWFT-------- FLAT SADDLE
DY --------- WYE FITTING
AR -------- ANGLE IRON RING
DWR2R ------SQUARE TO ROUND
DWS-2 --------FEMALE COUPLING

MATERIAL (SPECIFY)

GALVANIZED STEEL
PAINT GRIP
ALUMINUM
STAINLESS
PVS

DIMENSIONING

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

VANE CHART

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

<table>
<thead>
<tr>
<th>“A” Dimension</th>
<th>Number of Vanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 – 9”</td>
<td>2</td>
</tr>
<tr>
<td>10 – 14”</td>
<td>3</td>
</tr>
<tr>
<td>15 – 19”</td>
<td>4</td>
</tr>
<tr>
<td>20 – 60”</td>
<td>5</td>
</tr>
<tr>
<td>Over 60”</td>
<td>12” spacing</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>SIZE</th>
<th>PIPE</th>
<th>SIZE</th>
<th>FITTING</th>
<th>SIZE</th>
<th>PIPE</th>
<th>SIZE</th>
<th>FITTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>3&quot; - 14&quot;</td>
<td>26</td>
<td>3&quot; - 18&quot;</td>
<td>26</td>
<td>3&quot; - 14&quot;</td>
<td>26</td>
<td>3&quot; - 18&quot;</td>
<td>26</td>
</tr>
<tr>
<td>15&quot; - 18&quot;</td>
<td>26</td>
<td>19&quot; - 24&quot;</td>
<td>24</td>
<td>15&quot; - 18&quot;</td>
<td>26</td>
<td>19&quot; - 24&quot;</td>
<td>24</td>
</tr>
<tr>
<td>19&quot; - 24&quot;</td>
<td>26</td>
<td>25&quot; - 42&quot;</td>
<td>22</td>
<td>19&quot; - 24&quot;</td>
<td>26</td>
<td>25&quot; - 42&quot;</td>
<td>22</td>
</tr>
<tr>
<td>25&quot; - 42&quot;</td>
<td>24</td>
<td>43&quot; - 60&quot;</td>
<td>20</td>
<td>25&quot; - 42&quot;</td>
<td>24</td>
<td>43&quot; - 60&quot;</td>
<td>20</td>
</tr>
<tr>
<td>43&quot; - 60&quot;</td>
<td>22</td>
<td>61&quot; - 96&quot;</td>
<td>18</td>
<td>43&quot; - 60&quot;</td>
<td>22</td>
<td>61&quot; - 96&quot;</td>
<td>18</td>
</tr>
<tr>
<td>61&quot; - 66&quot;</td>
<td>22</td>
<td>61&quot; - 66&quot;</td>
<td>22</td>
<td>61&quot; - 66&quot;</td>
<td>22</td>
<td>61&quot; - 66&quot;</td>
<td>22</td>
</tr>
<tr>
<td>67&quot; - 96&quot;</td>
<td>20</td>
<td>67&quot; - 96&quot;</td>
<td>20</td>
<td>67&quot; - 96&quot;</td>
<td>20</td>
<td>67&quot; - 96&quot;</td>
<td>20</td>
</tr>
</tbody>
</table>

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(A+2) on 5 gore 90 elbows
R = 1x(A+2) on 4 gore 90 elbows
R = 1.5x(A+2) on 3 gore 45 elbows

DWEV-90-2
2 pc 90°

Specify with or without turning vanes
S = 2"  T = 2"
A is inner shell dimension

SPLITTER VANE
STD. OPT. TURNING VANES

DWBHT
BULL HEAD TEE

SPLITTER VANE
STD. OPT. TURNING VANES

DWBHTR
BULLHEAD TEE RED.

S = 2"  T = 2"
V = (A+2) + 4
A is inner shell dimension

S = 2"  T = 2"
V = (A+2) + 4"
L = A-B (4" MIN, 12" MAX.)
A, B & C are inner shell dimension
**ROUND FITTINGS**

**DWT-1 TEE**

S = 2"  T = 2"
V = C + 6"

A & C are inner shell dimension

**DWT-1R REDUCING TEE**

S = 2"  T = 2"
V = C + 6"
L = A-B (4" MIN, 12" MAX.)

A, B & C are inner shell dimension

**DWCON-T-1 CONICAL TEE**

S = 2"  T = 2"
V = (C + 2") + 6"

A & C are inner shell dimension

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

S = 2"  T = 2"
V = (C + 2") + 6"
L = A-B (4" MIN, 12" MAX.)

A, B & C are inner shell dimension
ROUND FITTINGS

DWL
LATERAL

S = 2"  T = 2"
V = ((C+2)x1.414) + 4"
A & C are inner shell dimension

DWLR
REDUCING LATERAL

S = 2"  T = 2"
V = ((C+2)x1.414) + 4"
L = A-B (MIN. 4" MAX 12")
A, B & C are inner shell dimension

DWCON-L
CONICAL LATERAL

S = 2"  T = 2"
V = ((C+2)x1.414) + 4"
A & C are inner shell dimension

DWCON-LR
CONICAL REDUCING LATERAL

S = 2"  T = 2"
V = ((C+2)x1.414) + 4"
L = A-B (MIN. 4" MAX 12")
A, B & C are inner shell dimension
ROUND FITTINGS

**DWC CROSS**

V = (LARGEST TAP + 2) + 4  
S = 2” T = 2”

A, C & D are inner shell dimension

**DWCON-C CONICAL CROSS**

V = (LARGEST TAP + 4) + 4  
S = 2” T = 2”

A, C & D are inner shell dimension

**DWY EQUAL Y**

S = 2” T = 2”

A, C & D are inner shell dimension

**DWRED-Y REDUCING Y**

S = 2” T = 2”  
L = A - (C or D) (4” MIN. 12” MAX.)

A, C & D are inner shell dimension
ROUND FITTINGS

DWLC
LATERAL CROSS

S = 2"  T = 2"
V = ((LARGEST OF TAPS+2) X 1.414) + 4

A, C & D are inner shell dimension

DWLCR
REDUCING LATERAL CROSS

S = 2"  T = 2"
V = ((LARGEST OF TAPS+2) X 1.414) + 4
L = A-B (MIN. 4" MAX. 4")

A, B, C & D are inner shell dimension

DWCON-LC
CONICAL LATERAL CROSS

S = 2"  T = 2"
V = ((LARGER OF TWO TAPS +4) x 1.414) + 4

A, C & D are inner shell dimension

DWCON-LCR
CONICAL REDUCING LATERAL CROSS

S = 2"  T = 2"
V = ((LARGER OF TWO TAPS +4) x 1.414) + 4
L = A-B (MIN. 4" MAX. 12")

A, B, C & D are inner shell dimension
### ROUND FITTINGS

<table>
<thead>
<tr>
<th>DWR</th>
<th>CONCENTRIC REDUCER</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Diagram" /></td>
<td><img src="image2.png" alt="Diagram" /></td>
</tr>
<tr>
<td>A &amp; B are inner shell dimension</td>
<td>A &amp; B are inner shell dimension</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DWSET</th>
<th>OFFSET</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3.png" alt="Diagram" /></td>
<td><img src="image4.png" alt="Diagram" /></td>
</tr>
<tr>
<td>S = 2“  T = 2“  V = 2 1/2 x Z (MIN. 12“)</td>
<td>S = 2“  T = 2“  V = A-B (MIN. 6“)</td>
</tr>
<tr>
<td>A &amp; B are inner shell dimension</td>
<td>Aa &amp; B are inner shell dimension</td>
</tr>
<tr>
<td>ROUND FITTINGS</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
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<tr>
<td><strong>DWGBT</strong></td>
<td></td>
</tr>
<tr>
<td>GRILLE BOX TAP</td>
<td></td>
</tr>
<tr>
<td>1&quot; FLANGE TURNED IN</td>
<td></td>
</tr>
<tr>
<td>A x B is outside dimension</td>
<td></td>
</tr>
<tr>
<td><strong>DWTEGBT</strong></td>
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</tr>
<tr>
<td>TAPERED ENTRY GRILLE BOX TAP</td>
<td></td>
</tr>
<tr>
<td>1&quot; FLANGE TURNED IN</td>
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<tr>
<td>A x B is outside dimension</td>
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<tr>
<td><strong>DWLST</strong></td>
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</tr>
<tr>
<td>LATERAL SADDLE TAP</td>
<td></td>
</tr>
<tr>
<td>S = 2&quot; T = 2&quot;</td>
<td></td>
</tr>
<tr>
<td>A is inner shell dimension</td>
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<tr>
<td><strong>DWCMBST</strong></td>
<td></td>
</tr>
<tr>
<td>COMBINATION SADDLE TAP</td>
<td></td>
</tr>
<tr>
<td>3 &lt; C &lt; 8 Y= 4&quot;</td>
<td></td>
</tr>
<tr>
<td>9 &lt; C &lt; 14 Y= 7&quot;</td>
<td></td>
</tr>
<tr>
<td>15 &lt; C &lt; 26 Y= 10&quot;</td>
<td></td>
</tr>
<tr>
<td>27 &lt; C Y= 13&quot;</td>
<td></td>
</tr>
<tr>
<td>S = 2&quot; T = 2&quot;</td>
<td></td>
</tr>
<tr>
<td>A is inner shell dimension</td>
<td></td>
</tr>
<tr>
<td><strong>DWST</strong></td>
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<tr>
<td>SADDLE TAP</td>
<td></td>
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<td>S = 2&quot; T = 2&quot;</td>
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<td></td>
</tr>
<tr>
<td><strong>DWCST</strong></td>
<td></td>
</tr>
<tr>
<td>CONICAL SADDLE TAP</td>
<td></td>
</tr>
<tr>
<td>S = 2&quot; T = 2&quot;</td>
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<tr>
<td>A is inner shell dimension</td>
<td></td>
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</tbody>
</table>
# ROUND FITTINGS

## DWFT
**FLAT TAP**

![Diagram](image1)

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

A is inner shell dimension

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

![Diagram](image2)

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

A is inner shell dimension

## DWCMBFT
**COMBINATION FLAT TAP**

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

A is inner shell dimension

## DWCFT
**CONICAL FLAT TAP**

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

A is inner shell dimension

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

![Diagram](image3)

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

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)