DOUBLE WALL FLAT OVAL HVAC DUCT and FITTINGS

for Air Duct and Fittings as Manufactured by Members of SPIDA

Turn Key Duct Systems is a proud member 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'  DWFOE - ELBOW
DWFOSET - OFFSET  DWFOT - TEE
DWFOS - COUPLING  DWFOL - LATERAL
DWFON - END CAP  DWFOC - CROSS
DWFOTREC - OVAL TO RECTANGULAR  DWFOST - SADDLE
DWFOR - REDUCER  DWFOY - WYE FITTING
  S - SLIP (2")  V - BODY LENGTH
  H - HEIGHT  L - REDUCER LENGTH
  Z - DIMENSION OF OFFSET  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.

<table>
<thead>
<tr>
<th>&quot;A&quot; Dimension</th>
<th>Number of Vanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - 9&quot;</td>
<td>2</td>
</tr>
<tr>
<td>10 - 14&quot;</td>
<td>3</td>
</tr>
<tr>
<td>15 - 19&quot;</td>
<td>4</td>
</tr>
<tr>
<td>20 - 60&quot;</td>
<td>5</td>
</tr>
<tr>
<td>Over 60&quot;</td>
<td>12&quot; spacing</td>
</tr>
</tbody>
</table>
ORDERING Specify type of fitting and list the following dimensions:

<table>
<thead>
<tr>
<th>ELBOWS - A x a, B x b</th>
<th>TEES - A x a, B x b, C x c</th>
</tr>
</thead>
<tbody>
<tr>
<td>LATERALS - A x a, B x b, C x c</td>
<td>CROSSSES - A x a, B x b, C x c, D x d</td>
</tr>
<tr>
<td>REDUCERS - A x a, B x b, L, Z</td>
<td>OFFSETS - A x a, B x b, L, Z</td>
</tr>
</tbody>
</table>

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 DUCT & FITTINGS SIZES

### STANDARD SIZING CHART
For 6" through 20" minor axis

<table>
<thead>
<tr>
<th>INITIAL SPIRAL SIZE</th>
<th>MINOR AXIS</th>
<th>NOMINAL MAJOR AXIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>14</td>
<td>19</td>
<td></td>
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<tr>
<td>15</td>
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<td>44</td>
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<td>65</td>
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<td>46</td>
<td>69</td>
<td>68</td>
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<tr>
<td>48</td>
<td>72</td>
<td>71</td>
</tr>
</tbody>
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**FLAT OVAL DUCT & FITTINGS SIZES**

**STANDARD SIZING CHART**
For 6" through 20" minor axis
**FLAT OVAL FITTINGS**

<table>
<thead>
<tr>
<th>DWFOE-90-5-H</th>
<th>FOE = (Angle)-(No. of Gores)-(Hard Bend)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DWFOE-60-4-H</td>
<td>FOE = (Angle)-(No. of Gores)-(Easy Bend or Hard Bend)</td>
</tr>
</tbody>
</table>

**ROUND FITTINGS**

- **E-90-1**
  - STAMPED 90
  - 3" - 12" Diameter only
  - \( R = 1.5 \times A \)

- **E-45-1**
  - STAMPED 45
  - 3" - 12" Diameter only
  - \( R = 1 \times A \)

**GORED ELBOWS**

- **EV-90-2**
  - 2 pc 90
  - Specify with or without turning vanes
  - \( S = 2" \) \( T = 2" \)

**FLAT OVAL FITTINGS**

- **DWFOE-90-5-E**
  - FOE = (Angle)-(No. of Gores)-(Easy Bend)
  - \( S = 2" \) \( T = 2" \)

- **DFOWE-90-5-H**
  - FOE = (Angle)-(No. of Gores)-(Hard Bend)
  - \( S = 2" \) \( T = 2" \)

**FLAT OVAL FITTINGS**

- **FOE-45-3-E**
  - FOE = (Angle)-(No. of Gores)-(Easy Bend or Hard Bend)
  - \( S = 2" \) \( T = 2" \)

- **FOEV-90-2-E**
  - Mitered 90 Standard with vanes
  - FOEV = (Angle)-(No. of Pieces)-(Easy or Hard Bend)
  - \( S = 2" \) \( T = 2" \)

**FLAT OVAL FITTINGS**

- **FOEV-90-2-H**
  - Mitered 90 Standard with vanes
  - FOEV = (Angle)-(No. of Pieces)-(Easy or Hard Bend)
  - \( S = 2" \) \( T = 2" \)

**FLAT OVAL FITTINGS**

- **DFOWE-60-4-E**
  - FOE = (Angle)-(No. of Gores)-(Hard Bend)
  - \( S = 2" \) \( T = 2" \)

**FLAT OVAL FITTINGS**

- **DFOWE-60-4-H**
  - FOE = (Angle)-(No. of Gores)-(Hard Bend)
  - \( S = 2" \) \( T = 2" \)

**FLAT OVAL FITTINGS**

- **DWFOE-90-5-H**
  - FOE = (Angle)-(No. of Gores)-(Hard Bend)
  - \( S = 2" \) \( T = 2" \)

**FLAT OVAL FITTINGS**

- **DFOWE-90-5-H**
  - FOE = (Angle)-(No. of Gores)-(Hard Bend)
  - \( S = 2" \) \( T = 2" \)

**FLAT OVAL FITTINGS**

- **DWFOE-60-4-H**
  - FOE = (Angle)-(No. of Gores)-(Hard Bend)
  - \( S = 2" \) \( T = 2" \)

**FLAT OVAL FITTINGS**

- **DFOWE-60-4-H**
  - FOE = (Angle)-(No. of Gores)-(Hard Bend)
  - \( S = 2" \) \( T = 2" \)
FLAT OVAL FITTINGS

**DWFOT-1 TEE**

A & C are inner shell dimension

**DWFOT-1R REDUCING TEE**

A, B & C are inner shell dimension

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**DWFOCON-T-1 CONICAL TEE**

A & C are inner shell dimension

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

A, B & C are inner shell dimension
FLAT OVAL FITTINGS

**DWFOL LATERAL**

![Diagram of DWFOL LATERAL fitting]

- \( S = 2" \quad T = 2" \)
- \( V = ((C+2) \times 1.414) + 4" \)

A & C are inner shell dimension

**DWFOLR REDUCING LATERAL**

![Diagram of DWFOLR REDUCING LATERAL fitting]

- \( S = 2" \quad T = 2" \)
- \( V = ((C+2) \times 1.414) + 4" \)
- \( L = 12" \) IF \((A-B) < 16"\)
- \( 24" \) IF \((A-B) > 16"\)

A, B & C are inner shell dimension

**DWFOCON-L CONICAL LATERAL**

![Diagram of DWFOCON-L CONICAL LATERAL fitting]

- \( S = 2" \quad T = 2" \)
- \( V = ((C+4) \times 1.414) + 4" \)

A & C are inner shell dimension

**DWFOCON-LR CONICAL REDUCING LATERAL**

![Diagram of DWFOCON-LR CONICAL REDUCING LATERAL fitting]

- \( S = 2" \quad T = 2" \)
- \( V = ((C+4) \times 1.414) + 4" \)
- \( L = 12" \) IF \((A-B) < 16"\)
- \( 24" \) 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"

\[ S = 2"  \quad T = 2" \]

\[ V = ((C+2) + Y) + 4" \]

\[ A \times a \]

\[ T \quad S \quad V \quad S \quad T \]

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"

\[ S = 2"  \quad T = 2" \]

\[ V = ((C+2) + Y) + 4" \]

\[ C \times c \]

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

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

A, B & C are inner shell dimension

### DWFOCMBCR
**COMBINATION CROSS RED.**

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

\[ S = 2"  \quad T = 2" \]

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

\[ C \times c \]

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

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

A, B, C & D are inner shell dimension

### DWFOCMBCT
**COMBINATION CROSS**

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

\[ S = 2"  \quad T = 2" \]

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

\[ A \times a \]

\[ A \times a \]

A, C & D are inner shell dimension

### DWFOCMBCTR
**COMBINATION CROSS RED.**

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

\[ S = 2"  \quad T = 2" \]

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

\[ C \times c \]

\[ A \times a \]

\[ A \times a \]

A, B, C & D are inner shell dimension

### FLAT OVAL FITTINGS
FLAT OVAL FITTINGS

**DWFOC CROSS**

- $V = (\text{LARGEST TAP} + 2) + 4$
- $S = 2$" $T = 2$"  

A, C & D are inner shell dimension

**DWFOCON-C CONICAL CROSS**

- $V = (\text{LARGEST TAP} + 4) + 4$
- $S = 2$" $T = 2$"  

A, C & D are inner shell dimension

**DWFOY EQUAL Y**

- $S = 2$" $T = 2$"  

A, C & D are inner shell dimension

**DWFORED-Y REDUCING Y**

- $S = 2$" $T = 2$"  
- $L = 12$" IF (A-B)<16  
- $24$" IF (A-B)>16  

A, C & D are inner shell dimension
FLAT OVAL FITTINGS

**DWFOLOC**
LATERAL CROSS

- **DWFOLOC**
- **LATERAL CROSS**

A, C & D are inner shell dimension

**DWFOLOC**
REDUCING LATERAL CROSS

- **DWFOLOC**
- **REDUCING LATERAL CROSS**

A, B, C & D are inner shell dimension

**DWFOCON-LC**
CONICAL LATERAL CROSS

- **DWFOCON-LC**
- **CONICAL LATERAL CROSS**

A, C & D are inner shell dimension

**DWFOCON-LCR**
CONICAL REDUCING LATERAL CROSS

- **DWFOCON-LCR**
- **CONICAL REDUCING LATERAL CROSS**

A, B, C & D are inner shell dimension

\[ S = 2" \quad T = 2" \]
\[ V = ((\text{LARGEST OF TAPS} + 2) \times 1.414) + 4 \]

L = 12" IF (A-B)<16
24" IF (A-B)>16

S = 2"  T = 2"  V = ((\text{LARGER OF TWO TAPS} + 4) \times 1.414) + 4
L = 12" IF (A-B)<16  24" IF (A-B)>16
**FLAT OVAL FITTINGS**

<table>
<thead>
<tr>
<th>DWFOR</th>
<th>DWFOER</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CONCENTRIC REDUCER</strong></td>
<td><strong>ECCENTRIC REDUCER</strong></td>
</tr>
</tbody>
</table>

- **DWFOR**
  - **A x a**
  - **B x b**
  - **S = 2”**
  - **T = 2”**
  - **L = 12” IF (A-B)<16**
  - **24” IF (A-B)>16**

- **DWFOER**
  - **A x a**
  - **B x b**
  - **S = 2”**
  - **T = 2”**
  - **L = 12” IF (A-B)<16**
  - **24” IF (A-B)>16**

- **A & B are inner shell dimension**

---

<table>
<thead>
<tr>
<th>DWFOSET</th>
<th>DWFOTR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OFFSET</strong></td>
<td><strong>RECTANGLE TO FLAT OVAL</strong></td>
</tr>
</tbody>
</table>

- **DWFOSET**
  - **A x a**
  - **B x b**
  - **S = 2”**
  - **T = 2”**
  - **V = Z x 2 1/2 (MIN. 12”)**

- **DWFOTR**
  - **A x a**
  - **B x b**
  - **S = 2”**
  - **T = 2”**
  - **V = 12” IF (A-B)<16**
  - **24” IF (A-B)>16**

- **A & B are inner shell dimension**

---

A & B are inner shell dimension
FLAT OVAL FITTINGS

**DWGBT**
GRILLE BOX TAP

1" FLANGE TURNED IN

A x B is outside dimension

**DWTEGBT**
TAPERED ENTRY
GRILLE BOX TAP

1" FLANGE TURNED IN

A x B is outside dimension

**DWFOLST**
LATERAL SADDLE TAP

\[ S = 2" \quad T = 2" \]

A is inner shell dimension

**DWFOCMBST**
COMBINATION SADDLE TAP

\[ S = 2" \quad T = 2" \]

A is inner shell dimension

**DWFOST**
SADDLE TAP

\[ S = 2" \quad T = 2" \]

A is inner shell dimension

**DWFOCST**
CONICAL SADDLE TAP

\[ S = 2" \quad T = 2" \]

A is inner shell dimension
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**

<table>
<thead>
<tr>
<th>S</th>
<th>A</th>
<th>x</th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>S</td>
<td>V</td>
<td></td>
</tr>
</tbody>
</table>

S = 2"  
T = 2"

V = A + 4"

A is inner shell dimension

---

**DWFOBHTR**  
**BULLHEAD TEE RED.**

**SPLITTER VANE**  
**STD. OPT. TURNING VANES**

<table>
<thead>
<tr>
<th>S</th>
<th>A</th>
<th>x</th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>S</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>S</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

S = 2"  
T = 2"

V = A + 4"

L = 12" IF (A-B)<16  
24" IF (A-B)>16

A,B & C are inner shell dimensions