



2126 W. 21st. St. • P.O. Box 12273 • Jacksonville, FL 32209
904-475-1822 • FAX 904-355-2104

DOUBLE WALL ROUND DUCTWORK

Where double wall ductwork is required by specification, all double wall round ductwork will be spiral lockseam construction with matching fittings. Construction of the outer shell will be in accordance with the pressure requirements of either high or low pressure guages as shown below.

SMACNA 1985 GAUGES

ROUND DUCT			ROUND FITTINGS		
DIAMETER	LOW PRESS	HIGH PRESS	DIAMETER	LOW PRESS	HIGH PRESS
3" - 14"	28	26	3" - 14"	26	24
15" - 26"	26	24	15" - 26"	24	22
27" - 36"	24	22	27" - 36"	22	20
37" - 50"	22	20	37" - 50"	20	18
51" - 60"	20	18	51" - 60"	18	16
61" +	18	16	61" +	16	16

All duct and fittings shall be made from galvanized steel per ASTM A-527. The zinc coating will be G-60 or higher.

Insulation will be one inch thick or higher if specified with K value of .27 or better..

Fittings will be constructed with solid inner liner of 26 guage or heavier galvanized steel. Ductwork will be constructed with a perforated inner liner of galvanized steel ribbed spiral lockseam. Perforated material will have an open area of 23%.

Fitting seams will be tack welded and sealed with a high pressure duct sealant unless required to be fully welded by specification.

All elbows will have a center-line radius of 1.5 times the diameter unless specified otherwise. Construction will be gored according to the following table:

DEGREES	GORES
0 - 30	2
31 - 75	3
76 - 90	5

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Job _____

Contractor _____

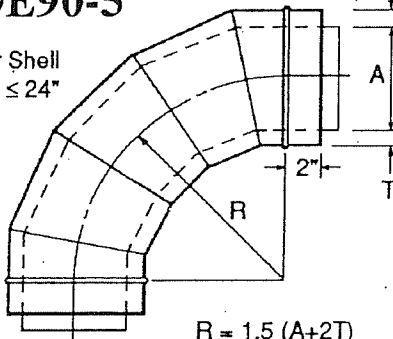
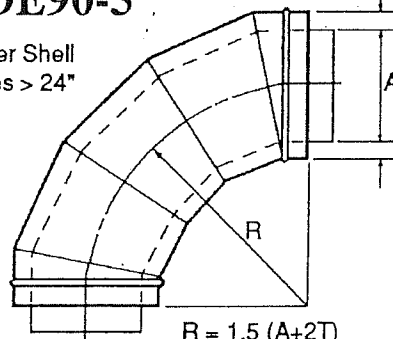
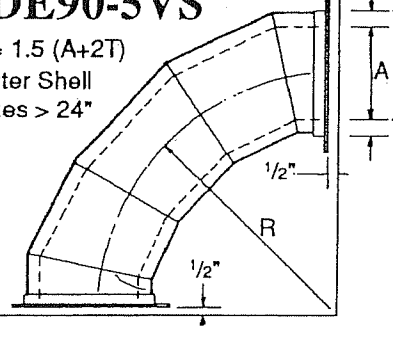
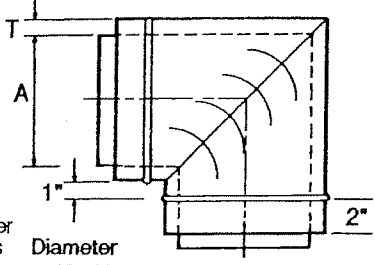
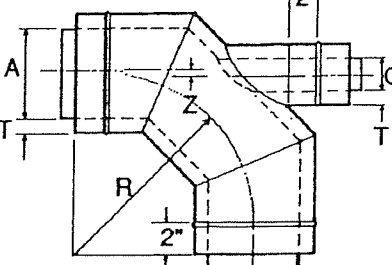
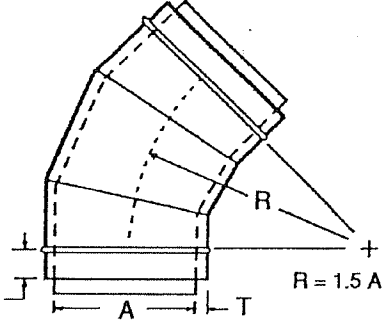
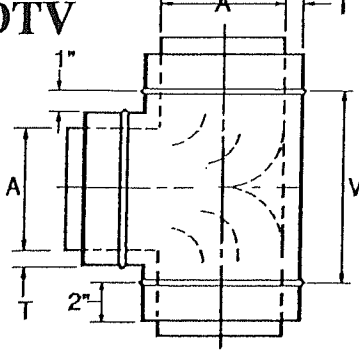
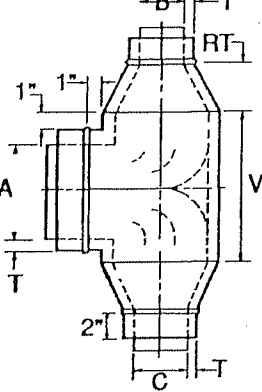
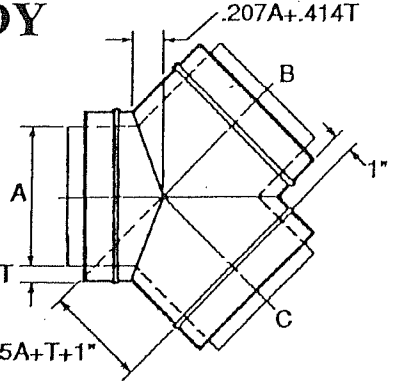
Location _____

Engineer _____

Representative _____

Date _____

DOUBLE WALL ROUND DUCT AND FITTINGS

<p>DE90-5</p> <p>Outer Shell Sizes $\leq 24"$</p>  <p>$R = 1.5 (A+2T)$</p> <p>Fabricated 5 Gore 90° Elbow</p>	<p>DE90-5</p> <p>Outer Shell Sizes $> 24"$</p>  <p>$R = 1.5 (A+2T)$</p> <p>Fabricated 5 Gore 90° Elbow</p>	<p>DE90-5VS</p> <p>$R = 1.5 (A+2T)$ Outer Shell Sizes $> 24"$</p>  <p>Fabricated 5 Gore 90° Elbow w/ Van Stone Connector Ends</p>								
<p>DEV90-2 (Vaned)</p>  <p>Number Vanes Diameter</p> <table border="1"> <tbody> <tr> <td>2</td> <td>3"- 9"</td> </tr> <tr> <td>3</td> <td>10"-12 1/2"</td> </tr> <tr> <td>4</td> <td>13"-19"</td> </tr> <tr> <td>5</td> <td>20" & up</td> </tr> </tbody> </table> <p>Mitered 2 Piece Elbow</p>	2	3"- 9"	3	10"-12 1/2"	4	13"-19"	5	20" & up	<p>DEH90-3</p>  <p>Tap is centered on center gore. $Z=0.086 (A+2T)$</p> <p>$R = 1.5 (A+2T)$</p> <p>Heel Tap 90° Elbow</p>	<p>DE45-3</p>  <p>$R = 1.5 A$</p> <p>Fabricated 3 Gore 45° Elbow</p>
2	3"- 9"									
3	10"-12 1/2"									
4	13"-19"									
5	20" & up									
<p>DTV</p>  <p>Bull Head Tee</p>	<p>DTVR</p>  <p>Number Vanes Diameter</p> <table border="1"> <tbody> <tr> <td>1</td> <td>3"- 5"</td> </tr> <tr> <td>2</td> <td>6"-9"</td> </tr> <tr> <td>3</td> <td>10"-14"</td> </tr> <tr> <td>4</td> <td>15"-19"</td> </tr> </tbody> </table> <p>10" Centers 20" & up</p> <p>Reducing Bull Head Tee</p>	1	3"- 5"	2	6"-9"	3	10"-14"	4	15"-19"	<p>DY</p>  <p>$.207A+.414T$</p> <p>$.5A+T+1"$</p> <p>WYE Branch 90</p>
1	3"- 5"									
2	6"-9"									
3	10"-14"									
4	15"-19"									

<p>DYR</p> <p>Reducing Wye Branch 90</p>	<p>DT</p> <p>Straight Tee</p>	<p>DTR</p> <p>Reducing Straight Tee</p>
<p>DTC-180</p> <p>Straight Tee Cross</p>	<p>DTCR-180</p> <p>Reducing Straight Tee Cross</p>	<p>DL</p> <p>Straight Lateral</p>
<p>DLR</p> <p>Reducing Straight Lateral</p>	<p>CON-DT</p> <p>Conical Tee</p>	<p>CON-DTR</p> <p>Reducing Conical Tee</p>
<p>CON-DTR2</p> <p>Double Reducing Conical Tee</p>	<p>CON-DTC-180</p> <p>Straight Conical Cross</p>	<p>CON-DTCR-180</p> <p>Reducing Conical Cross</p>

DCT

C	X
3"-8"	3"
9"-16"	6"
17"-24"	9"
25"-up	12"

Straight Combination Tee

DCTR

C	X
3"-8"	3"
9"-16"	6"
17"-24"	9"
25"-up	12"

Reducing Combination Tee

DCTC-180°

$C \geq D$
 $L = C + X + 2T + 3"$

C	X
3"-8"	3"
9"-16"	6"
17"-24"	9"
25"-up	12"

Straight Combination Tee Cross

DCTCR-180°

$L = [C + X + 3"] + [(A - B) \text{ min. } 2"]$
 $C \geq D$

C	X
3"-8"	3"
9"-16"	6"
17"-24"	9"
25"-up	12"

Reducing Combination Tee Cross

DR

$L = A - B \text{ min. } 2"$

Concentric Reducer

DRE

$L = A - B \text{ min. } 2"$

Eccentric Reducer

AD-NEG

Access Door - Negative Pressure Type

TAPS

CONTOURED STRAIGHT TEE TAP CONTOURED CONICAL TEE TAP CONTOURED LATERAL TAP

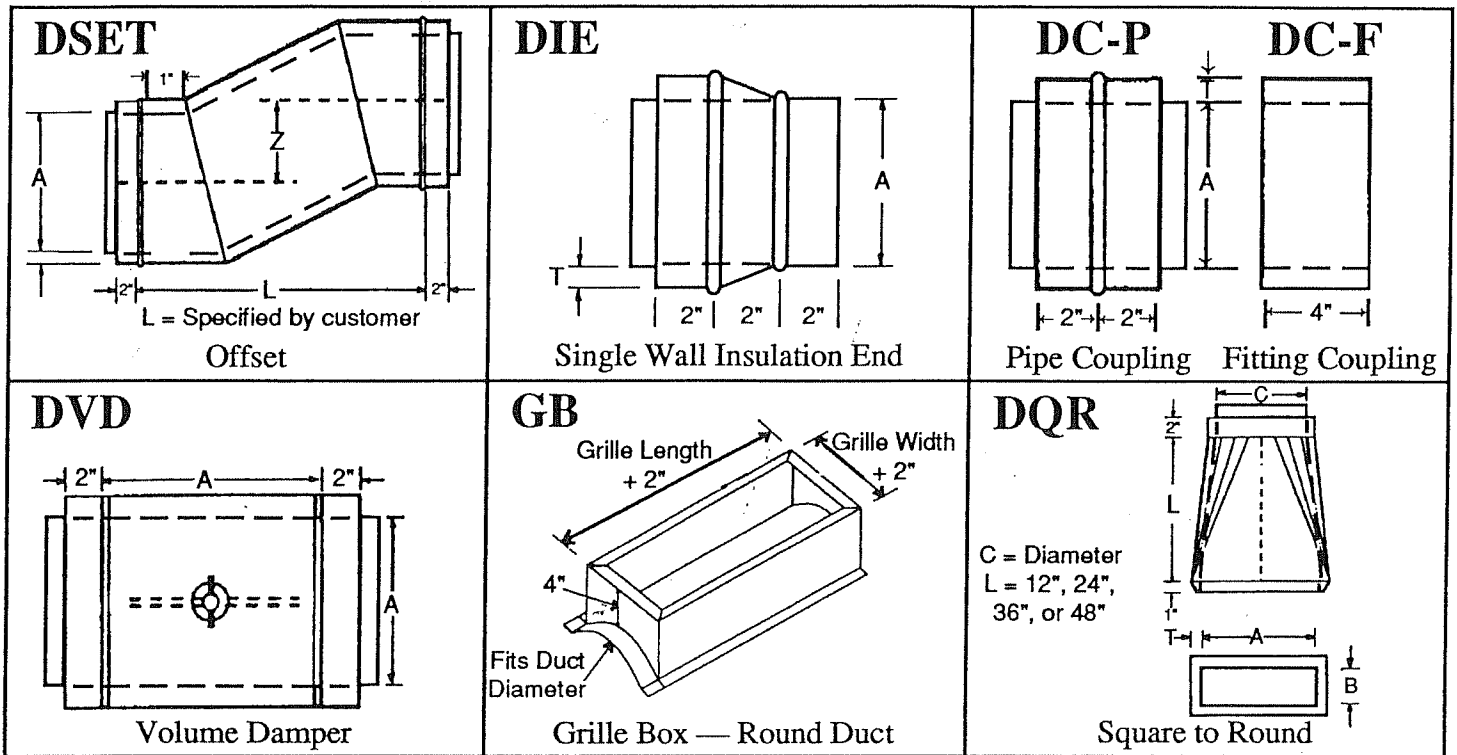
SADDLE TEE TAP SADDLE CONICAL TEE TAP SADDLE LATERAL TAP

EC-F

EC-P

F (Fitting) P (Pipe)
End Cap

TYPICAL TAPS ON DOUBLE WALL SPIRAL DUCT



Specifications

Double wall round duct and fittings are fabricated of galvanized steel meeting ASTM A-527 standards. Unless otherwise specified, a one inch blanket of fiberglass insulation is provided. Spiral lock seam duct is provided in any length or standard lengths of 10, 12 or maximum 20 feet. Longitudinal seam duct is supplied in lengths up to 5 feet. Duct has a construction tolerance of plus or minus 1/2 inch in length. The internal liner of duct, unless otherwise specified, is perforated (3/32" diameter holes on 3/16" staggered centers, yielding approx. 23% open area) and is solid for fittings. The liner is of ribbed construction when I.D. exceeds 8". Fitting seams are either standing seam, welded seam, spot welded and bonded seam, or punch lock and bonded seam construction, depending on SMACNA's standards. Welded joints are coated with a corrosion resistant paint. Spot welded fitting joints are sealed with

a bonding cement. Tee and lateral tap entrances are fabricated with radiused entrances, free of weld build-up, burrs or irregularities.

Standard centerline radius for elbows is 1 1/2 times the diameter unless otherwise noted. The radius on an elbow is bead to bead unless noted. Inner and outer elbows are die stamped, mitered, gored or pleated construction.

Fittings normally have 2" slip fit outer connection ends which slip inside the duct. Fitting inner liner extends 2" further than the outer shell. Fittings have a construction tolerance of plus or minus 1/4 inch. Duct to duct as well as fitting to fitting slip couplings are available. Angle ring connections are available either welded to the spiral duct or Van Stoned to the fitting. Longitudinal duct 20 gauge and heavier is continuously welded, 22 gauge and lighter is spot welded and bonded.

Minimum Gauges for Double Wall Round Duct and Fittings

Inner Liner Diameter Inches	0-2 Inch WG Standard					2-10 Inch WG Standard				
	Spiral Duct		Longitudinal Seam	Round Fittings		Spiral Duct		Longitudinal Seam	Round Fittings	
	Outer Shell	Inner Liner		Outer Shell	Outer Shell	Inner Liner	Outer Shell		Outer Shell	Outer Shell
4-12	28	28	26	26	24	26	28	24	24	24
13-24	26	28	24	24	24	24	28	22	22	24
25-34	24	28	22	22	24	22	28	20	20	24
35-42	22	28	20	20	22	20	28	20	20	22
44-48	22	26	20	20	22	20	26	20	20	22
50-58	20	26	18	18	22	18	26	18	18	22
60-82	-	22	16	16	20	-	22	16	16	20

Double wall ribbed round duct with 0-10 inch WG rating is available. 6"- 42" dia. outer duct is 28 gauge, larger is 26 gauge. Dimensioning (based on air supply systems): A = dia. of inlet; B = dia. of outlet; C, D, E, F = dia. of all taps (branches); R = centerline radius; Z, X, L = misc. dimensions; T = thickness of insulation (on these sheets T=1"); RL = reducer length max. 12". Tees are 90° and laterals are 45° unless noted. Impulse Air is continuously improving its product design and construction techniques. We reserve the right to alter and change specifications and