



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

SINGLE WALL OVAL DUCT

Where oval ductwork is required by specification (0-10 in. wg) , all oval ductwork will be spiral lockseam or longitudinal seam construction with matching fittings in accordance with the following tables.

SMACNA 1985 GAUGES

Major Axis	Spiral Ga.	Long Seam Ga.	Fitting Ga.
to 24"	24	20	20
25" - 36"	22	20	20
37" - 48"	22	18	18
49" - 60"	20	18	18
61" - 70"	20	16	16
71" +	18	16	16

Duct and fittings will be made from galvanized steel per ASTM A-527. The Zinc coating will be G-60 or higher.

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

Elbows, both easy-bend and hard-bend, will have a center-line radius of 1.5 times the minor or major depending on required configuration. Elbows will be gored construction according to the following table.

Degrees	Gores
0 - 30	2
31 - 75	3
76 - 90	5

Optionally branches off ductwork can be factory mounted taps off ductwork instead of fittings. Tap configuration will be straight or conical as indicated by the specifications.

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Jacksonville, FL 32209

(904) 475-1822

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Job _____

Contractor _____

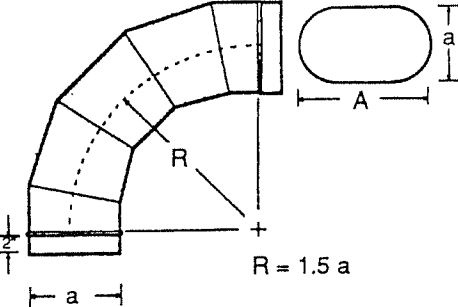
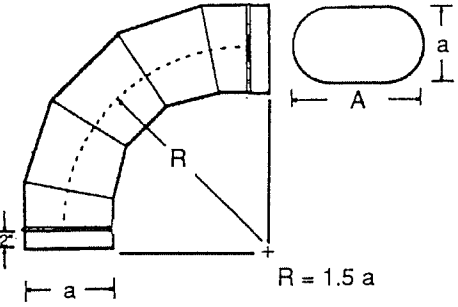
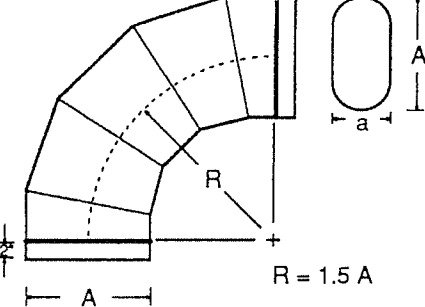
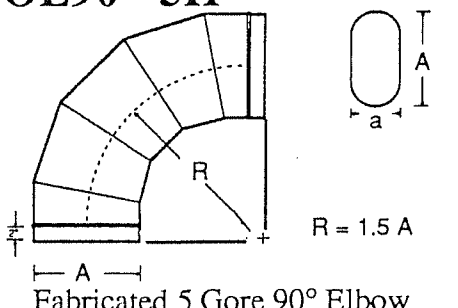
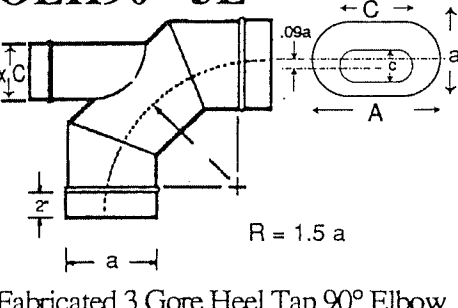
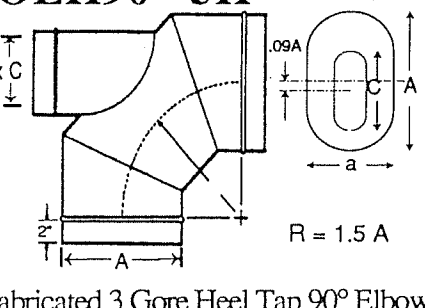
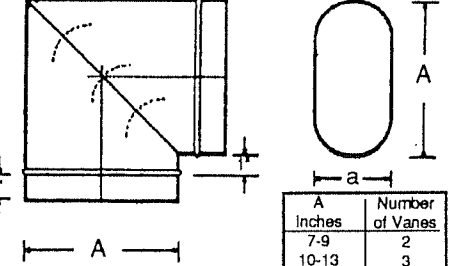
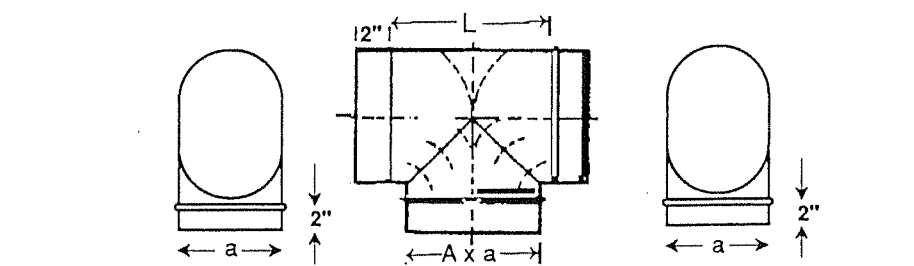
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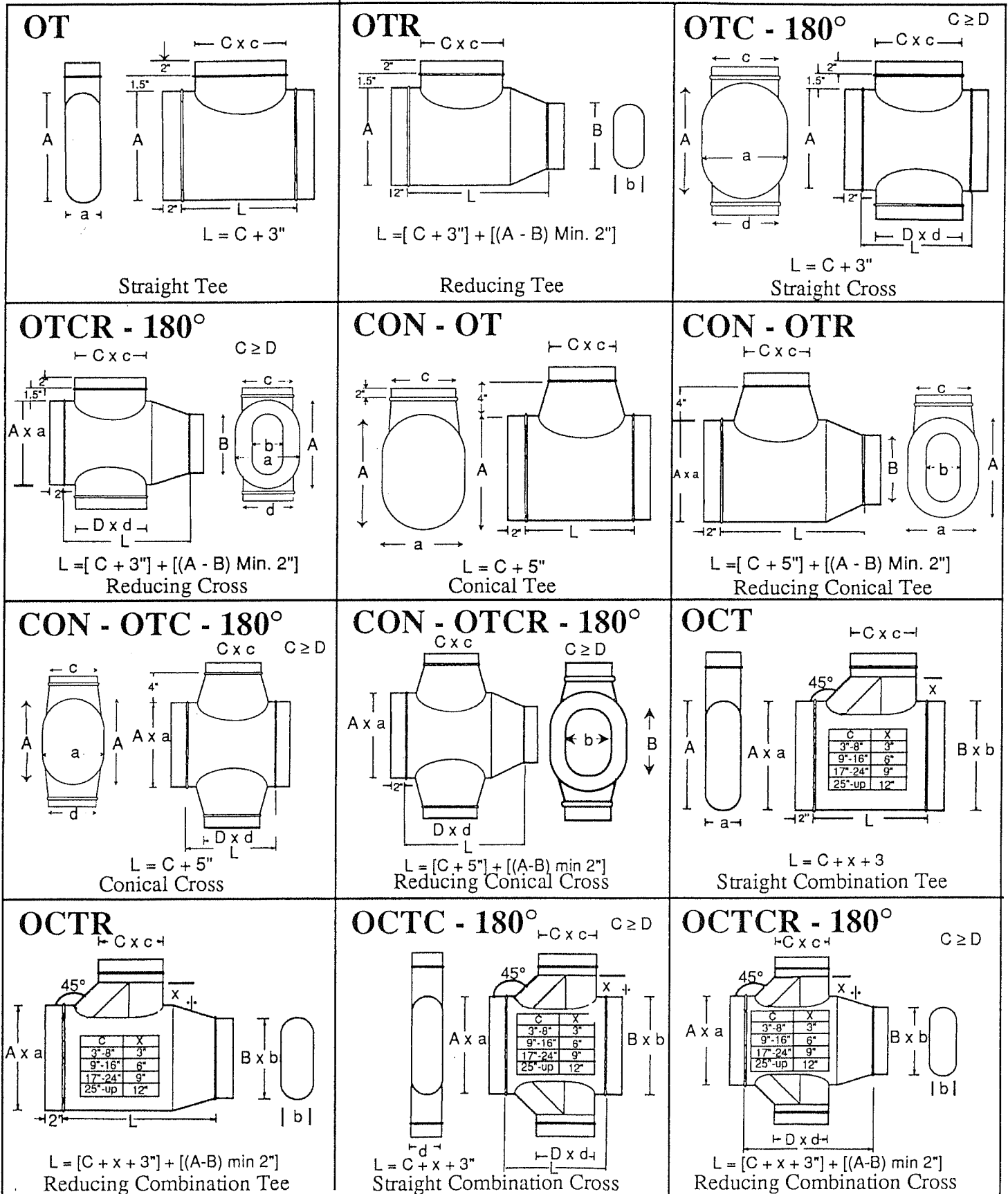
Engineer _____

Representative _____

Date _____

SINGLE WALL OVAL DUCT AND FITTINGS

<p>OE90 - 5E ($a \leq 24''$)</p>  <p>Fabricated Gore 90° Elbow Easy Bend</p>	<p>OE90 - 5E ($a > 24''$)</p>  <p>Fabricated 5 Gore 90° Elbow Easy Bend</p>	<p>OE90 - 5H ($a \leq 24''$)</p>  <p>Fabricated 5 Gore 90° Elbow Hard Bend</p>											
<p>OE90 - 5H ($a \geq 24''$)</p>  <p>Fabricated 5 Gore 90° Elbow Hard Bend</p>	<p>OE90 - 3E</p>  <p>Fabricated 3 Gore Heel Tap 90° Elbow Easy Bend</p>	<p>OE90 - 3H</p>  <p>Fabricated 3 Gore Heel Tap 90° Elbow Hard Bend</p>											
<p>OEE90-2 OR OE90-2</p>  <table border="1" data-bbox="430 1858 592 1974"> <thead> <tr> <th>A Inches</th> <th>Number of Vanes</th> </tr> </thead> <tbody> <tr> <td>7-9</td> <td>2</td> </tr> <tr> <td>10-13</td> <td>3</td> </tr> <tr> <td>14-19</td> <td>4</td> </tr> <tr> <td>20 & Up</td> <td>5</td> </tr> </tbody> </table> <p>Mitered 2-piece 90° Elbow Easy Bend or Hard Bend (as shown)</p>		A Inches	Number of Vanes	7-9	2	10-13	3	14-19	4	20 & Up	5	<p>OTVE OR OTVH</p>  <p>Bull Head Tee Easy Bend or Hard Bend (as shown)</p> <p>$L = A + 3''$</p>	
A Inches	Number of Vanes												
7-9	2												
10-13	3												
14-19	4												
20 & Up	5												



OYE -90 OR OYH -90

$A=B=C$
 $a=b=c$

Non-Reducing Wye Easy Bend
or Hard Bend (as shown)

OYRE-90 OR OYRH-90

Reducing Wye Easy Bend
or Hard Bend (as shown)

OL

$L=1.414C+3"$

Straight Lateral 45°

OLR

$L=[1.414C+3"]+(A-B)\text{Min }2"$

Reducing Straight Lateral

OLC - 180°

$L=1.414C+3"$

Lateral Cross

OLCR - 180°

$L=[1.414C+3"]+(A-B)\text{Min }2"$

Reducing Lateral Cross

OSETE

Z and L to be specified
Z not to exceed 0.75a

Offset Easy Bend

OSETH

Z and L to be specified
Z not to exceed 0.75A

Offset Hard Bend

QO

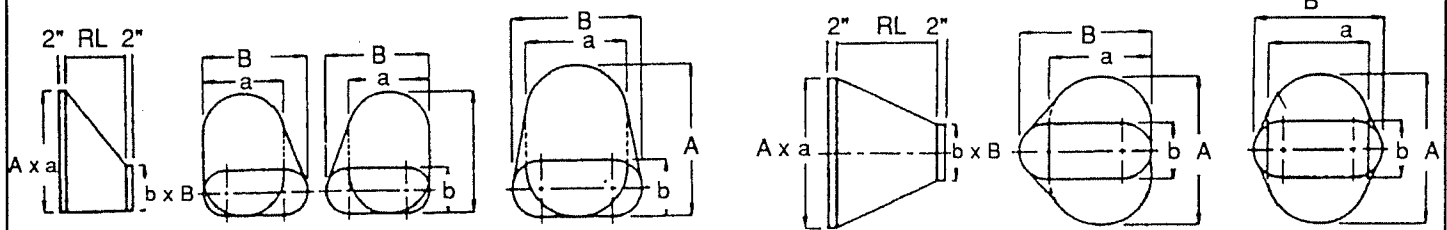
A, B, C and L to be specified

Square to Oval
Offset Transitions Available

OR

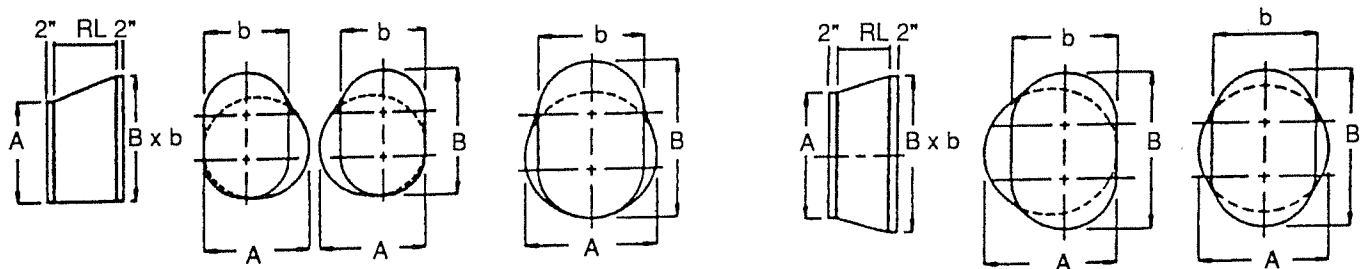
Eccentric Oval to Flat Oval Transitions can be supplied in a variety of configurations.
Please consult the factory or supply a sketch of the fitting.

OR



Rotated Axis to Flat Oval Eccentric Transitions can be supplied in a variety of configurations. Please consult the factory or supply a sketch of the fitting.

OR



Eccentric Round to Flat Oval Eccentric Transitions can be supplied in a variety of configurations. Please consult the factory or supply a sketch of the fitting.

Specifications

Single wall oval duct and fittings are fabricated of galvanized steel meeting ASTM A-527 & A-525 standards. Spiral lock seam oval duct is provided in any length or standard lengths of 6, 10, or 12 feet. Longitudinal seam oval duct is supplied in lengths up to 5 feet. Duct has a construction tolerance of plus or minus 1/2 inch in length. Fitting seams are either 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. Elbows are of mitered or gored construction. Fittings normally have 2" slip fit connections which slip inside the duct run. Fittings have a construction tolerance of plus or minus 1/4 inch. Duct to Duct as well as fitting to fitting couplings are available. Angle ring connections are available either welded to the spiral duct or Van Stoned to the fitting. Longitudinal seam duct 20 gauge and heavier is continuously welded. 22 gauge and lighter is spot welded and bonded construction.

Minimum Gauges for Single Wall Oval Duct and Fittings and Ribbed Oval Spiral Duct

Major Axis Inches	0-10 Inch WG SMACNA Standard			Major Axis Inches	0-2 Inch WG Impulse Air Standard	
	Spiral Duct	Longitudinal Seam	Oval Fitting		Ribbed Spiral Duct	Oval Fitting
9-24	24	20	20	9-30	28	26
25-36	22	20	20	31-42	28	24
37-48	22	18	18	43-49	26	24
49-60	20	18	18	50-60	26	22
61-70	20	16	16	61-68	N/A	22
71-82	18	16	16	69-82	N/A	20

Dimensioning: A = dia. of inlet major axis a = dia. of inlet minor axis; B = dia. of outlet major axis; b = dia. of outlet minor axis; C, D, E, F = dia. of tap inner liner major axis; c, d, e, f = dia. of tap inner liner minor axis; R = centerline radius; Z, X, L = misc. dimensions; RL = reducer length; RL = 12" for cases where A-B ≤ 15. Where A-B ≥ 16", RL = equal 24". S = slip fit length on fittings (S = 2" standard) All 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 dimensions at any time without prior notice.



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SPIRAL FLAT OVAL DUCT

Nominal	Actual	Basic Round	Equivalent Round	Gauge
4 x 7	4 x 7.2	6	6	24
4 x 9	4 x 8.8	7	6	24
4 x 10	4 x 10.4	8	7	24
4 x 12	4 x 11.9	9	7	24
4 x 13	4 x 13.6	10	8	24
4 x 15	4 x 15.2	11	8	24
4 x 17	4 x 16.6	12	9	24
4 x 18	4 x 18.4	13	9	24
4 x 20	4 x 19.8	14	9	24
4 x 21	4 x 21.4	15	10	24

Note: all equivalent round sizes are based upon
“equal friction” design, per ASHRAE Guide.



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SPIRAL FLAT OVAL DUCT

Nominal	Actual	Basic Round	Equivalent Round	Gauge
6 x 8	6 x 7.6	7	7	24
6 x 9	6 x 9.3	8	8	24
6 x 11	6 x 10.8	9	9	24
6 x 12	6 x 12.4	10	9	24
6 x 14	6 x 14.0	11	10	24
6 x 15	6 x 15.5	12	10	24
6 x 17	6 x 17.1	13	11	24
6 x 19	6 x 18.6	14	11	24
6 x 20	6 x 20.3	15	12	24
6 x 22	6 x 21.9	16	12	24
6 x 25	6 x 25.0	18	13	22
6 x 28	6 x 28.3	20	13	22
6 x 32	6 x 31.4	22	14	22
6 x 35	6 x 34.5	24	14	22
6 x 37	6 x 37.7	26	15	22
6 x 41	6 x 40.7	28	15	22
6 x 44	6 x 44.0	30	16	22
6 x 47	6 x 47.1	32	17	22

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Nominal	Actual	Basic Round	Equivalent Round	Gauge
8 x 10	8 x 9.7	9	9	24
8 x 11	8 x 11.2	10	10	24
8 x 13	8 x 12.8	11	11	24
8 x 15	8 x 14.5	12	12	24
8 x 16	8 x 15.9	13	12	24
8 x 18	8 x 17.5	14	13	24
8 x 19	8 x 19.1	15	13	24
8 x 21	8 x 20.8	16	14	24
8 x 24	8 x 23.9	18	15	24
8 x 27	8 x 27.1	20	15	22
8 x 30	8 x 30.3	22	16	22
8 x 34	8 x 33.3	24	17	22
8 x 37	8 x 36.5	26	17	22
8 x 40	8 x 39.6	28	18	22
8 x 43	8 x 42.8	30	18	22
8 x 46	8 x 45.9	32	19	22
8 x 49	8 x 49.1	34	19	20
8 x 52	8 x 52.3	36	20	20
8 x 56	8 x 55.4	38	20	20
8 x 59	8 x 58.5	40	21	20
8 x 62	8 x 61.7	42	22	20
8 x 65	8 x 64.8	44	22	20
8 x 68	8 x 67.9	46	23	20

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Nominal	Actual	Basic Round	Equivalent Round	Gauge
10 x 12	10 x 11.6	11	11	24
10 x 13	10 x 13.3	12	12	24
10 x 15	10 x 14.8	13	13	24
10 x 16	10 x 16.4	14	13	24
10 x 18	10 x 18.0	15	14	24
10 x 20	10 x 19.5	16	15	24
10 x 24	10 x 22.9	18	16	24
10 x 26	10 x 26.0	20	17	22
10 x 29	10 x 29.2	22	18	22
10 x 32	10 x 32.2	24	19	22
10 x 34	10 x 35.4	26	19	22
10 x 39	10 x 38.5	28	20	22
10 x 42	10 x 41.7	30	21	22
10 x 45	10 x 44.8	32	22	22
10 x 48	10 x 48.0	34	22	22
10 x 51	10 x 51.1	36	23	20
10 x 54	10 x 54.3	38	23	20
10 x 58	10 x 57.4	40	24	20
10 x 61	10 x 60.5	42	24	20
10 x 64	10 x 63.6	44	25	20
10 x 67	10 x 66.7	46	25	20
10 x 70	10 x 70.1	48	26	20
10 x 73	10 x 73.1	50	27	18

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SPIRAL FLAT OVAL DUCT

Nominal	Actual	Basic Round	Equivalent Round	Gauge
12 x 14	12 x 13.7	13	13	24
12 x 15	12 x 15.2	14	14	24
12 x 17	12 x 16.9	15	15	24
12 x 18	12 x 18.4	16	16	24
12 x 21	12 x 21.5	18	17	24
12 x 25	12 x 24.8	20	18	22
12 x 28	12 x 28.0	22	19	22
12 x 31	12 x 31.0	24	20	22
12 x 34	12 x 34.2	26	21	22
12 x 36	12 x 37.3	28	22	22
12 x 41	12 x 40.5	30	23	22
12 x 44	12 x 43.7	32	24	22
12 x 47	12 x 46.9	34	25	22
12 x 50	12 x 50.0	36	26	20
12 x 53	12 x 53.2	38	26	20
12 x 56	12 x 56.2	40	27	20
12 x 60	12 x 59.4	42	27	20
12 x 63	12 x 62.5	44	28	20
12 x 66	12 x 65.6	46	28	20
12 x 69	12 x 68.9	48	29	20
12 x 72	12 x 72.0	50	30	18
12 x 75	12 x 75.2	52	30	18
12 x 78	12 x 78.4	54	31	18
12 x 81	12 x 81.3	56	31	18

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Nominal	Actual	Basic Round	Equivalent Round	Gauge
14 x 17	14 x 17.3	16	16	24
14 x 20	14 x 20.3	18	18	24
14 x 24	14 x 23.7	20	19	24
14 x 27	14 x 26.9	22	20	22
14 x 30	14 x 29.9	24	21	22
14 x 33	14 x 33.1	26	22	22
14 x 36	14 x 36.2	28	23	22
14 x 40	14 x 39.4	30	24	22
14 x 43	14 x 42.5	32	25	22
14 x 46	14 x 45.7	34	26	22
14 x 49	14 x 48.9	36	27	20
14 x 52	14 x 51.7	38	28	20
14 x 55	14 x 55.1	40	29	20
14 x 58	14 x 58.3	42	30	20
14 x 62	14 x 61.3	44	30	20
14 x 65	14 x 64.5	46	31	20
14 x 68	14 x 67.7	48	31	20
14 x 71	14 x 70.8	50	32	18
14 x 74	14 x 73.8	52	32	18
14 x 77	14 x 76.9	54	33	18
14 x 80	14 x 80.2	56	34	18
16 x 19	16 x 19.4	18	18	24
16 x 22	16 x 22.5	20	20	24
16 x 26	16 x 25.7	22	21	22
16 x 29	16 x 28.7	24	22	22
16 x 32	16 x 32.0	26	23	22
16 x 35	16 x 35.1	28	24	22
16 x 38	16 x 38.2	30	25	22
16 x 42	16 x 41.4	32	26	22
16 x 45	16 x 44.6	34	27	22
16 x 48	16 x 47.7	36	28	22
16 x 51	16 x 50.9	38	29	20
16 x 54	16 x 53.9	40	30	20
16 x 57	16 x 57.2	42	31	20
16 x 60	16 x 60.2	44	32	20
16 x 64	16 x 63.3	46	33	20
16 x 67	16 x 66.6	48	33	20
16 x 70	16 x 69.8	50	34	20
16 x 73	16 x 72.8	52	35	18
16 x 76	16 x 76.1	54	35	18
16 x 79	16 x 79.0	56	36	18

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Nominal	Actual	Basic Round	Equivalent Round	Gauge
18 x 22	18 x 21.4	20	20	24
18 x 24	18 x 24.6	22	22	24
18 x 28	18 x 27.6	24	23	22
18 x 31	18 x 30.8	26	25	22
18 x 34	18 x 33.9	28	26	22
18 x 37	18 x 37.1	30	27	22
18 x 40	18 x 40.2	32	28	22
18 x 44	18 x 43.4	34	29	22
18 x 47	18 x 46.7	36	30	22
18 x 50	18 x 49.7	38	31	20
18 x 53	18 x 52.8	40	32	20
18 x 56	18 x 56.0	42	33	20
18 x 59	18 x 59.1	44	34	20
18 x 62	18 x 62.2	46	35	20
18 x 66	18 x 65.4	48	36	20
18 x 69	18 x 68.5	50	36	20
18 x 72	18 x 71.7	52	37	18
18 x 75	18 x 74.9	54	38	18
18 x 78	18 x 77.9	56	39	18
20 x 26	20 x 26.5	24	24	22
20 x 30	20 x 29.7	26	25	22
20 x 33	20 x 32.8	28	27	22
20 x 36	20 x 36.0	30	28	22
20 x 39	20 x 39.1	32	29	22
20 x 42	20 x 42.3	34	30	22
20 x 46	20 x 45.4	36	32	22
20 x 49	20 x 48.6	38	33	20
20 x 52	20 x 51.7	40	34	20
20 x 55	20 x 54.8	42	35	20
20 x 58	20 x 57.9	44	35	20
20 x 61	20 x 61.1	46	36	20
20 x 64	20 x 64.3	48	37	20
20 x 68	20 x 67.4	50	38	20
20 x 71	20 x 70.6	52	39	18
20 x 74	20 x 73.8	54	40	18
20 x 77	20 x 76.7	56	41	18

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Nominal	Actual	Basic Round	Equivalent Round	Gauge
22 x 25	22 x 25.4	24	26	22
22 x 29	22 x 28.3	26	27	22
22 x 32	22 x 31.4	28	28	22
22 x 35	22 x 34.8	30	29	22
22 x 38	22 x 37.9	32	30	22
22 x 41	22 x 41.2	34	31	22
22 x 44	22 x 44.3	36	32	22
22 x 47	22 x 47.4	38	34	22
22 x 50	22 x 50.5	40	35	20
22 x 53	22 x 53.7	42	36	20
22 x 57	22 x 56.8	44	37	20
22 x 60	22 x 59.9	46	38	20
22 x 63	22 x 63.1	48	39	20
22 x 66	22 x 66.3	50	40	20
22 x 69	22 x 69.4	52	41	18
22 x 73	22 x 72.6	54	41	18
22 x 76	22 x 75.6	56	42	18
22 x 79	22 x 78.6	58	43	18
22 x 82	22 x 81.8	60	44	18
24 x 27	24 x 27.1	26	28	22
24 x 30	24 x 30.3	28	29	22
24 x 34	24 x 33.4	30	30	22
24 x 36	24 x 36.5	32	31	22
24 x 40	24 x 40.1	34	32	22
24 x 43	24 x 43.1	36	34	22
24 x 46	24 x 46.3	38	35	22
24 x 49	24 x 49.4	40	36	20
24 x 52	24 x 52.6	42	37	20
24 x 56	24 x 55.6	44	38	20
24 x 59	24 x 58.7	46	39	20
24 x 62	24 x 62.0	48	40	20
24 x 65	24 x 65.1	50	41	20
24 x 68	24 x 68.3	52	42	20
24 x 71	24 x 71.5	54	43	18
24 x 75	24 x 74.4	56	44	18
24 x 78	24 x 77.5	58	45	18
24 x 81	24 x 80.6	60	46	18

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