





# OVAL

Midwest Metal Fabricators, LLC should be your first source for oval pipe and fittings. We offer a large selection of oval ductwork fabricated to SMACNA 2005 Rev 3 standards. We stock the following: minimum G60 lock forming quality galvanized steel; type 304 stainless steel; alloy 3003 H14 aluminum; galvanized (paint grip) steel; and poly-vinyl coated steel. Pipe is offered standard as spiral oval with lock-formed seams. We also offer fabricating services per your request. The chart below indicates our stocked materials; however, we do handle other materials for fast turnaround times. Call or fax us with your requirements.

### MATERIAL AND GAUGE AVAILABILITY

- Galvanized Steel 26 to 10 gauge
  - Paint Grip Steel 24 to 18 gauge
- Material sold as paint grip is not "Ready to Paint" – It will require cleaning.
- 304 Stainless 26 to 10 gauge
  - 316 Stainless 26 to 10 gauge
  - MMF PVC 26 to 18 gauge
- MMF PVC is not recommended for use in high visibility applications.
- Aluminum 025" to .125"
  - Carbon Steel 18 to 10 gauge
  - Perforated 22 and 20 gauge

### ALUMINUM (3003 H14) DUCT THICKNESS ADJUSTMENTS:

Steel Gauge	Aluminum Thickness
26	.025"
24	.032"
22	.040"
20	.050"
18	.065"
16	.080"

Included in this brochure are our standard oval pipe and fittings. If you can't find your requirements please contact the factory so that we may better serve you. We are confident that you will be pleased with the results.

### PLEASE NOTE:

All products furnished by Midwest Metal Fabricators are of the highest quality materials and workmanship. Midwest Metal Fabricators does not, however, have any control over the design or installation of any system. It is up to the user to determine the suitability of these products for any application. Selection of material manufacturer for duct construction subject to change by Midwest Metal Fabricators without notice.





# Oval Pipe

All pipe is fabricated from hot-dipped G60 or better galvanized steel in gauges that meet or exceed SMACNA standards for Oval duct. Oval duct and fittings shall be as manufactured with the following standards:

Spiral Duct – Shall be constructed of galvanized steel in the following minimum gauges:

Major Axis	Gauge
24" and smaller	24 Ga
25" to 48"	22 Ga
49" to 74"	20 Ga



SPIRAL PIPE LOCK

Longseam Duct – (For sizes not available in spiral construction) Shall be constructed of galvanized steel in the following minimum gauges:

Major Axis	Gauge
30" and smaller	20 Ga
31" and larger	18 Ga

## Midwest Metal Fabricators, Ltd Oval Size & Gauge\* Chart

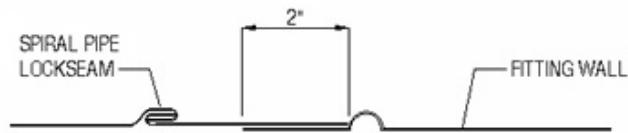
Stock Diameter	Major Axis												
	6	8	10	12	14	16	18	20	22	24	26		
16													24
18		23.8	22.7	21.5	20.3								
20		27.0	25.8	24.7	23.5	22.3	21.2						
22		30.1	29.0	27.8	26.7	25.5	24.3	23.2					
24		33.3	32.1	31.0	29.8	28.7	27.5	26.3	25.2				
26		36.5	35.3	34.1	33.0	31.8	30.7	29.5	28.3				22 gauge
28		39.6	38.5	37.3	36.1	35.0	33.8	32.7	31.5	30.3			
30		42.8	41.6	40.5	39.3	38.1	37.0	35.8	34.7	33.5	32.3		
32		46.0	44.8	43.6	42.5	41.3	40.1	39.0	37.8	36.7	35.5		
34		49.1	48.0	46.8	45.6	44.5	43.3	42.1	41.0	39.8	39.7		
36		52.3	51.1	50.0	48.8	47.6	46.5	45.3	44.1	43.0	41.8		
38		55.5	54.3	53.1	52.0	50.8	49.6	48.5	47.3	46.1	45.0		
40		58.6	57.5	56.3	55.1	54.0	52.8	51.6	50.5	49.3	47.1		
42		61.8	60.6	59.5	58.3	57.1	56.0	54.8	53.6	52.5	51.3		
44		64.9	63.8	62.6	61.5	60.3	59.1	58.0	56.8	55.6	54.5		
46		68.1	66.9	65.8	64.6	63.5	62.3	61.1	60.0	58.8	57.6	20 gauge	
48		71.3	70.1	68.9	67.8	66.6	65.5	64.3	63.1	62.0	60.8		
50		74.4	73.3	72.1	70.9	69.8	68.6	67.5	66.3	65.1	64.0		
52		77.6	76.4	75.3	74.1	72.9	71.8	70.6	69.5	68.3	67.1		
54		80.8	79.6	78.4	77.3	76.1	74.9	73.8	72.6	71.5	70.3		
56			82.8	81.6	80.4	79.3	78.1	76.9	75.8	74.6	73.5	18 gauge	
58						82.4	81.3	80.1	78.9	77.8	76.6		
60								83.3	82.1	80.9	79.8		

\*Gauges as per SMACNA "HVAC Duct Construction Standards", Rev. 3, 2005

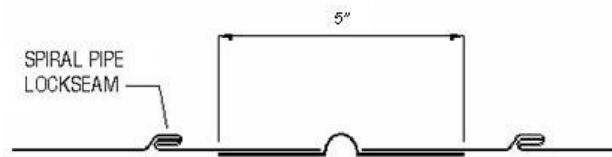


# OVAL

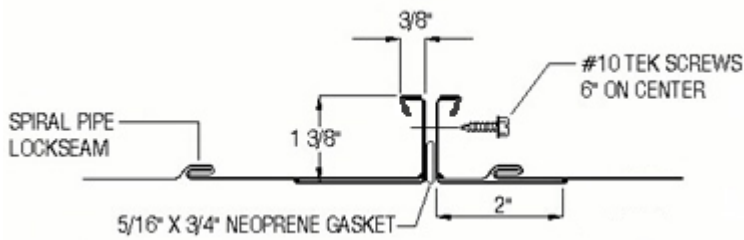
## Seams and Connections



Pipe to Fitting connection

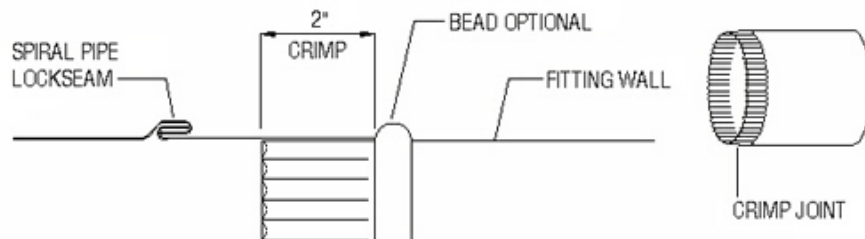


Pipe to Pipe coupling



Flanged Connection

MIDWEST METAL FABRICATORS can also supply crimp fit fittings and welded components for customer request:

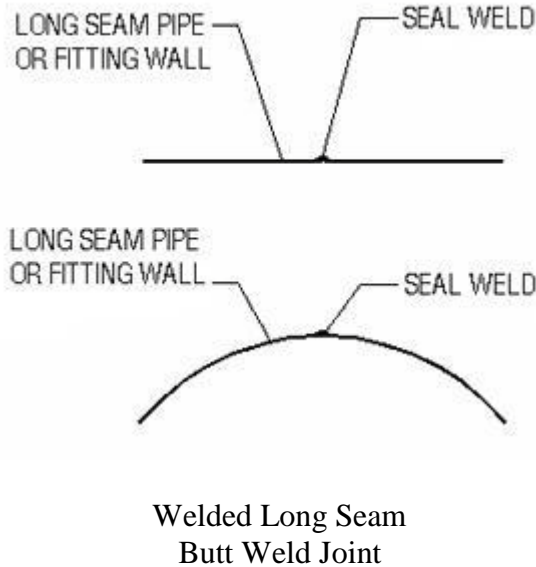


Crimp Fit Connection



# OVAL

## Seams and Connections



Midwest Metal Fabricators can also provide Ovalmate and Accuflange connections to the customer's requirements.

### Fittings / Long Seam Pipe

All fittings are made standard as male size (1/8" smaller) for slip fit into standard spiral pipe except for female coupling, which is made to slip over standard round duct. Fittings come standard unsealed, with sealing available on request. Fittings are fabricated from hot-dipped galvanized steel that meets or exceeds SMACNA standards. Elbows, unless otherwise specified, are fabricated with centerline radius equal to 1-1/2 times the duct diameter. 90° elbows are of 5-piece segmented construction. 45° elbows are of 3-piece segmented construction. Elbow fittings are fabricated in maximum 22 1/2 degree segments with welded seam construction for maximum rigidity and durability. Fittings are fabricated standard, but not limited to, the chart on page 2.

### Insulation

Standard insulation is 1" thick, 1.5 pound per cubic foot density, with a thermal conductivity (ASTM C 518) @ 75° F mean temperature of 0.26 (BTU-in./hr.ft.2°F), Surface burning characteristics (ASTM E 84, UL 723) are 25 flame spread, 50 smoke developed.

### Sound absorption coefficients (ASTM C 423, Type A)

Frequency, Hz						
125	250	500	1000	2000	4000	NRC
0.17	0.24	0.62	0.79	0.88	0.96	0.65



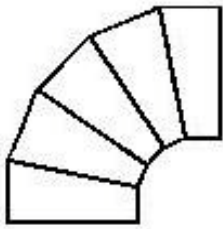
Our stock also includes 1/2" thick, 1 1/2" standard faced, and 2" @ 1.5 lb insulation. Other sizes and weights can be supplied to

customer specification.

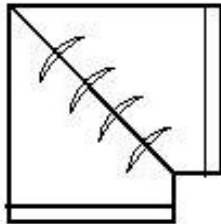
# OVAL

## Fittings

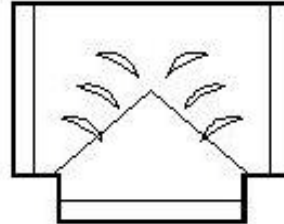
1 GORED ELBOW



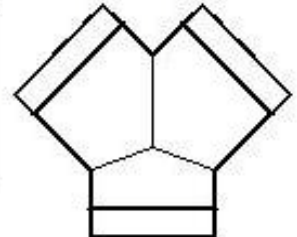
2 MITERED 90° ELBOW



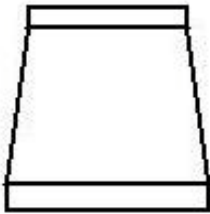
3 BULLHEAD TEE



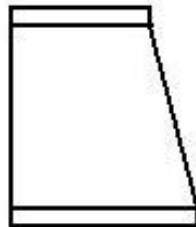
4 WYE (PANTS)



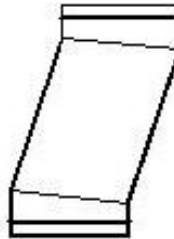
5 CONCENTRIC REDUCER



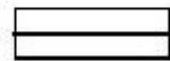
6 ECCENTRIC REDUCER



7 OFFSET



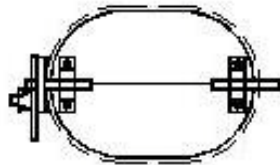
8 MALE DUPLING



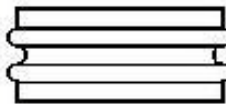
9 END CAP



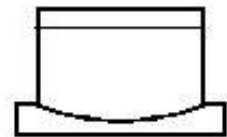
10 DAMPER



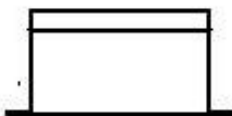
11 FLEX



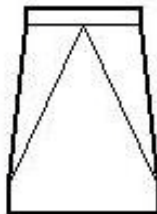
12 SADDLE TAP ON ROUND



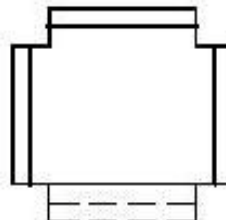
13 SADDLE TAP ON FLAT



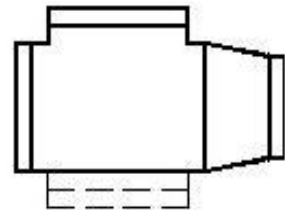
14 SQUARE - OVAL



15 STRAIGHT TEE OR CROSS



16 REDUCING TEE OR CROSS

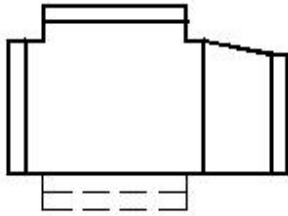




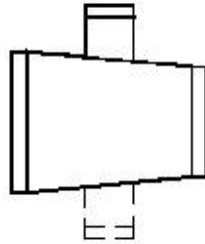
# OVAL

## Fittings

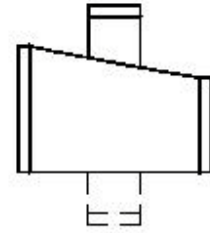
17 REDUCING TEE OR  
CROSS - SCENTRIC



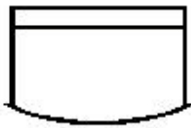
18 REDUCING BODY  
TEE OR CROSS



19 REDUCING BODY  
TEE/CROSS ECC



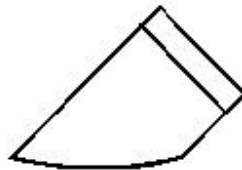
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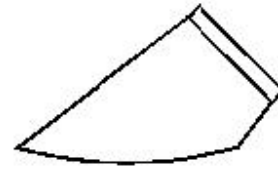
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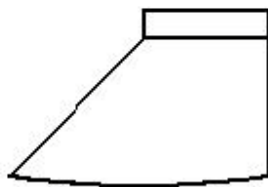
22 TAP CODE D



23 TAP CODE C



24 TAP CODE B




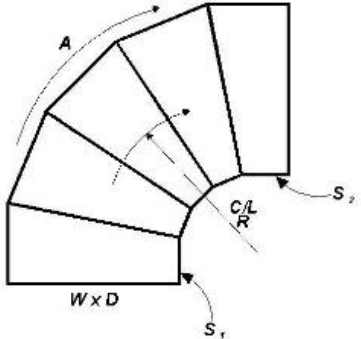
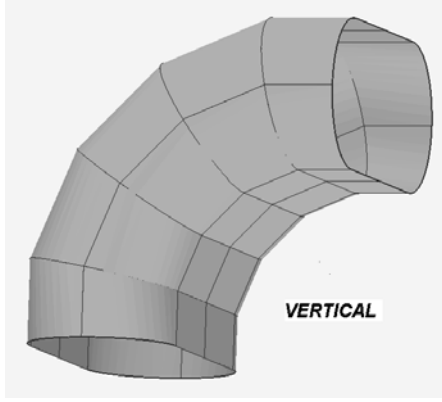

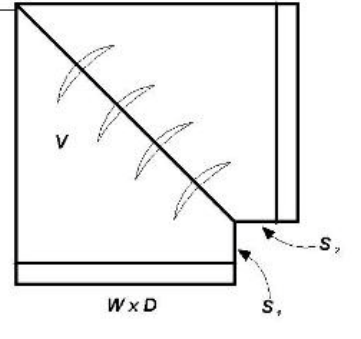
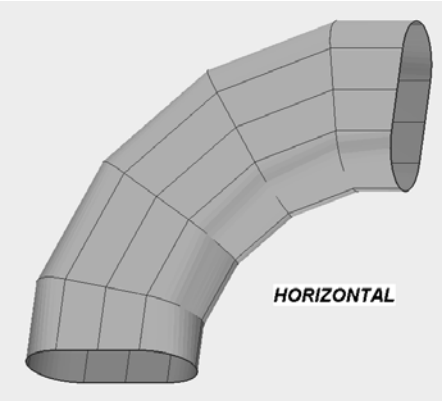

25 REGISTER TAP  
TAP CODE R

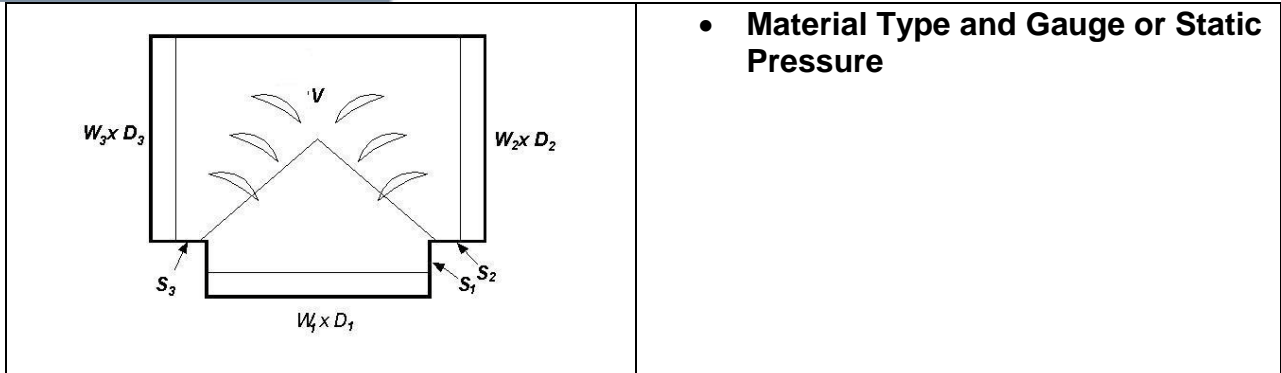


Use the following illustrations and their dimensions shown to fill out the takeoff sheets. There are also sketch areas and note areas to include all special requirements.

# OVAL

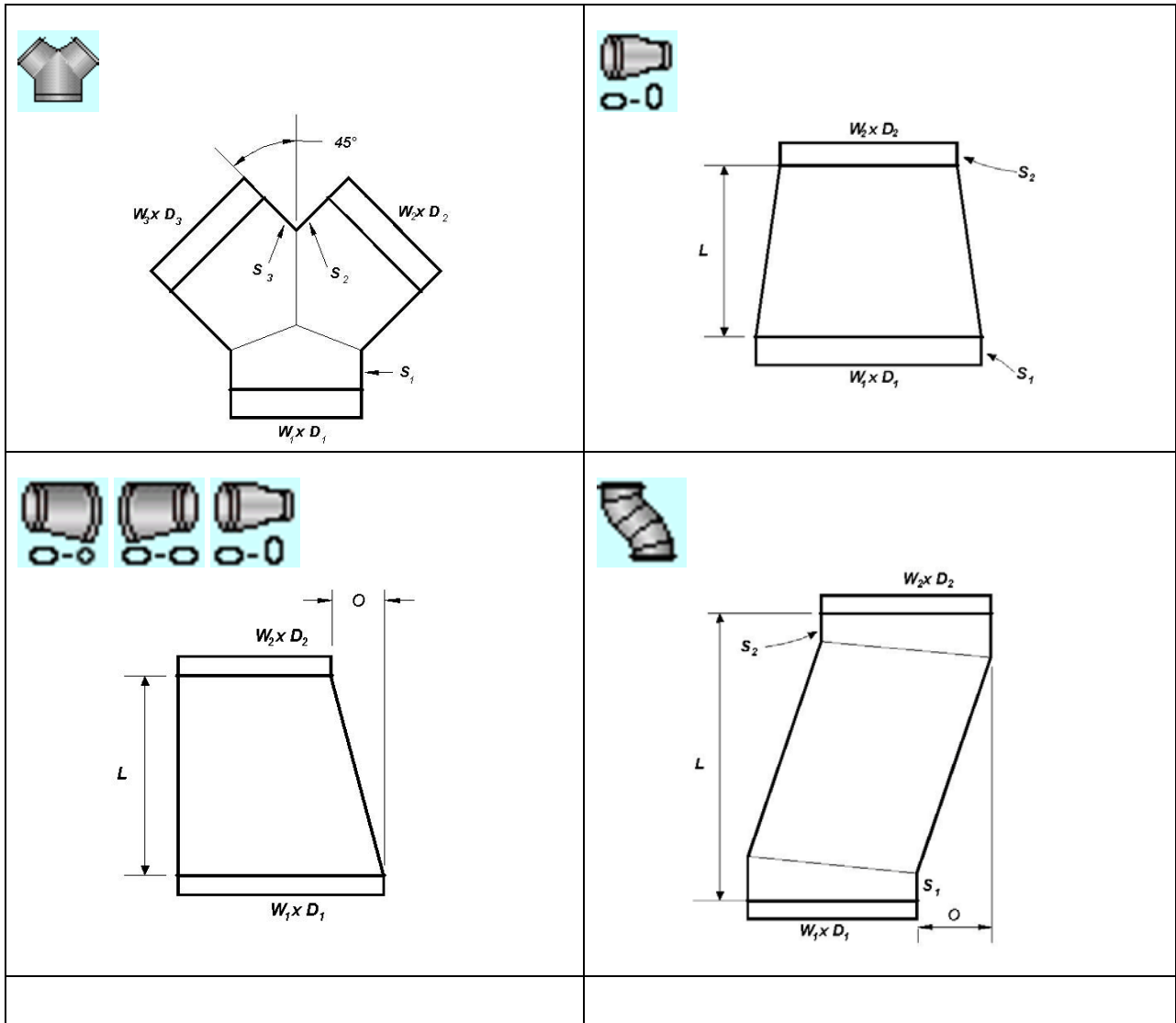
## ELBOWS / BULLHEAD TEE


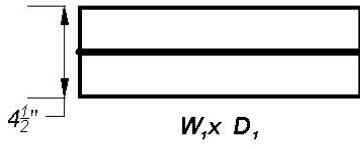
 <p>S</p>		 <p>VERTICAL</p>	
		 <p>HORIZONTAL</p>	
 <p>Bull Head</p>	<p>Information Required:</p> <ul style="list-style-type: none"> <li>• <b>Horizontal / Vertical</b></li> <li>• <b>W equals Major Axis</b></li> <li>• <b>D equals Minor Axis</b></li> <li>• <b>S equals Straights</b></li> <li>• <b>A equals Total Angle</b></li> <li>• <b>Centerline Radius</b></li> <li>• <b>Vanes</b></li> </ul>		



# OVAL


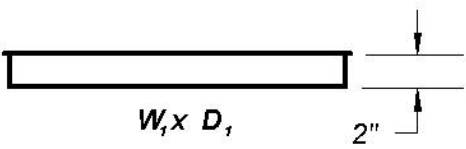

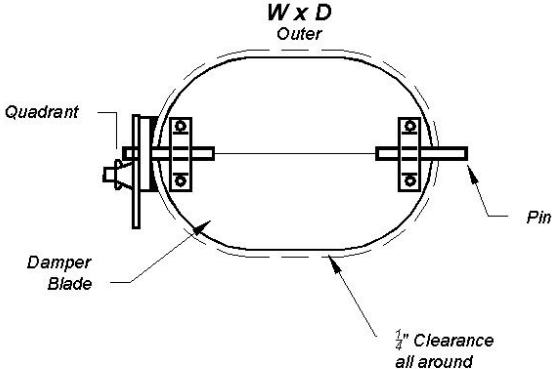



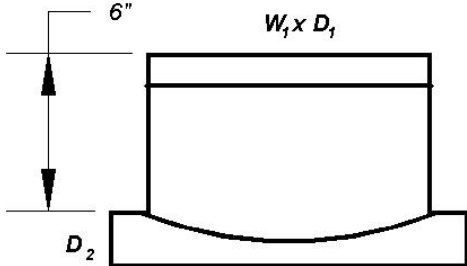
WYE / REDUCERS / OFFSET / COUPLING


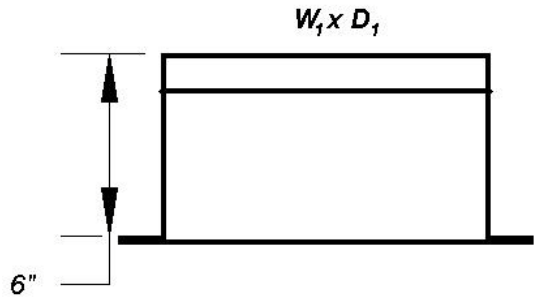


 <p>Coupler 2</p> 	<p>Information Required:</p> <ul style="list-style-type: none"> <li>• <b>Horizontal / Vertical</b></li> <li>• <b>W equals Major Axis</b></li> <li>• <b>D equals Minor Axis</b></li> <li>• <b>S equals Straights</b></li> <li>• <b>Vanes</b></li> <li>• <b>L equals Length</b></li> <li>• <b>O equals Offset</b></li> <li>• <b>Material Type and Gauge or Static Pressure</b></li> </ul>
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# OVAL


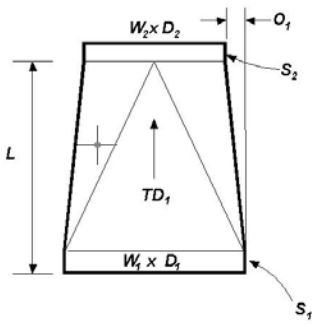
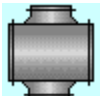
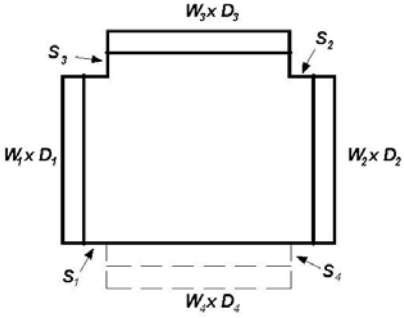
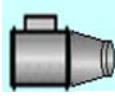
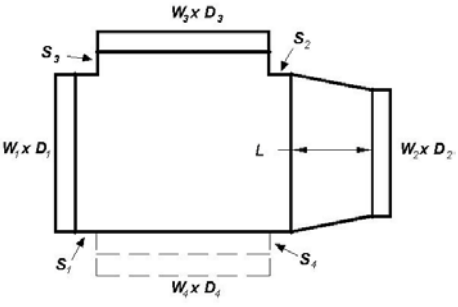
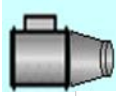
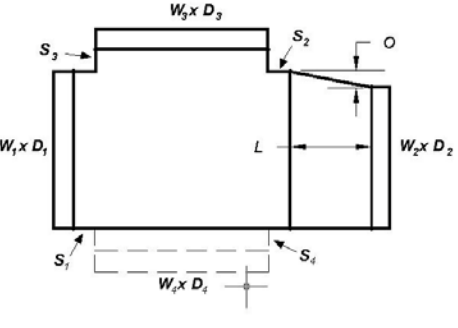
ENDCAP / DAMPER / FLEX / SADDLE TAPS

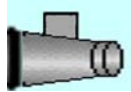
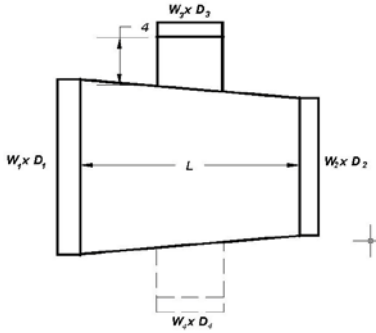
 	 
 	 

 	<p>Information Required:</p> <ul style="list-style-type: none"> <li>• <b>Horizontal / Vertical</b></li> <li>• <b>W equals Major Axis</b></li> <li>• <b>D equals Minor Axis</b></li> <li>• <b>D2 equals Diameter</b></li> <li>• <b>Length</b></li> <li>• <b>Damper Requirements</b></li> <li>• <b>Flex Requirements</b></li> <li>• <b>Material Type and Gauge or Static Pressure</b></li> </ul>
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# OVAL

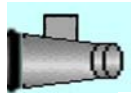
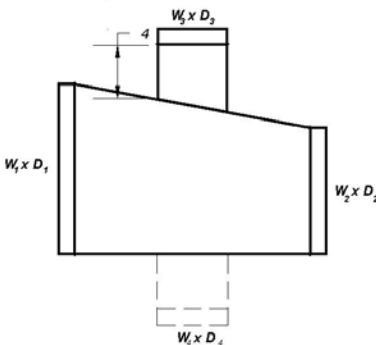

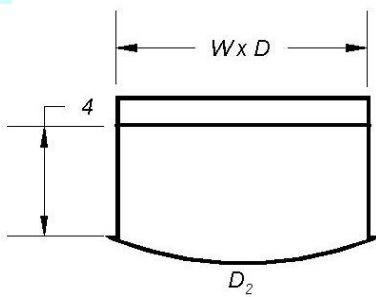
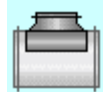

## SQUARE to OVAL / TEES / CROSSES

 <p>□ to Oval</p> 	 
 	 

 	<p>Information Required:</p> <ul style="list-style-type: none"> <li>• <b>Horizontal / Vertical</b></li> <li>• <b>W equals Major Axis</b></li> <li>• <b>D equals Minor Axis</b></li> <li>• <b>W3 x D3</b></li> <li>• <b>(W4 x D4)</b></li> <li>• <b>Straights</b></li> <li>• <b>Length</b></li> <li>• <b>Offset</b></li> <li>• <b>Material Type and Gauge or Static Pressure</b></li> </ul>
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# OVAL

TEES / CROSSES / TAPS

	<p>Information Required:</p> <ul style="list-style-type: none"> <li>• Horizontal / Vertical</li> <li>• W equals Major Axis</li> <li>• D equals Minor Axis</li> <li>• W3 x D3</li> <li>• (W4 x D4)</li> <li>• Straights</li> <li>• Length</li> <li>• D 2 equals Mating Radius</li> <li>• Material Type and Gauge or Static Pressure</li> </ul>

# OVAL

## SHOE TAP / REGISTER TAP

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Information Required:

- **Horizontal / Vertical**
- **W equals Major Axis**
- **D equals Minor Axis**
- **D 2 equals Mating Radius**
- **Register Flange In/Out/Size**
- **Material Type and Gauge or Static Pressure**