

The logo consists of a white geometric design on a blue background. It features a central blue diamond shape surrounded by four white trapezoidal shapes that together form a larger diamond shape.

Control Air Conditioning Corporation

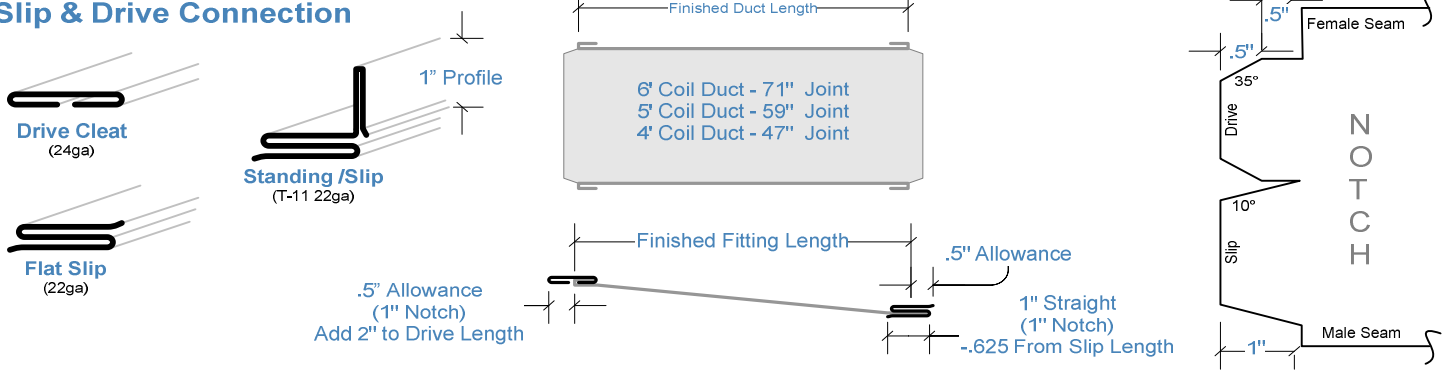
Detailing Standards



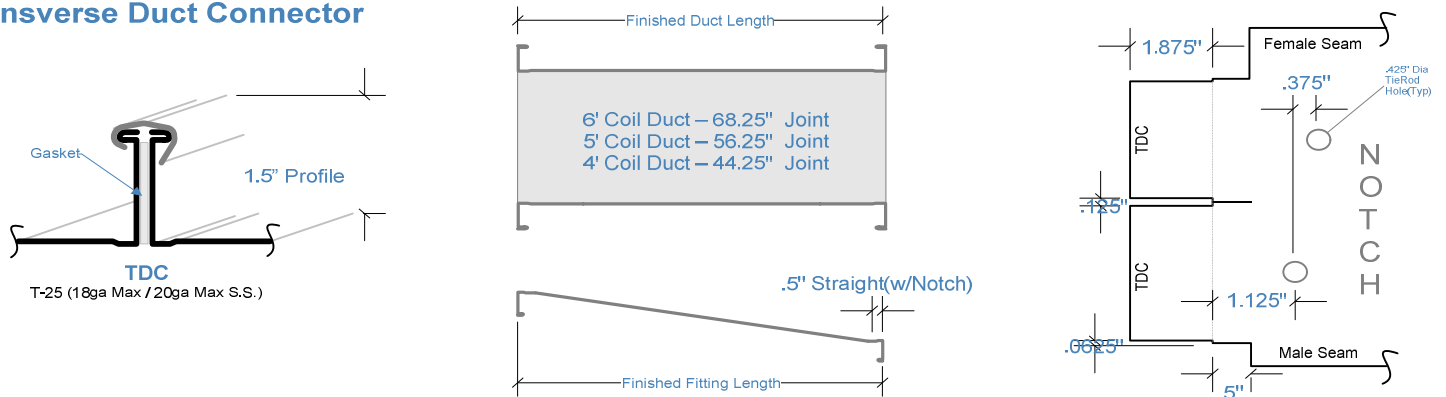
Detailing Standards Rectangular

Rectangular Connection Details

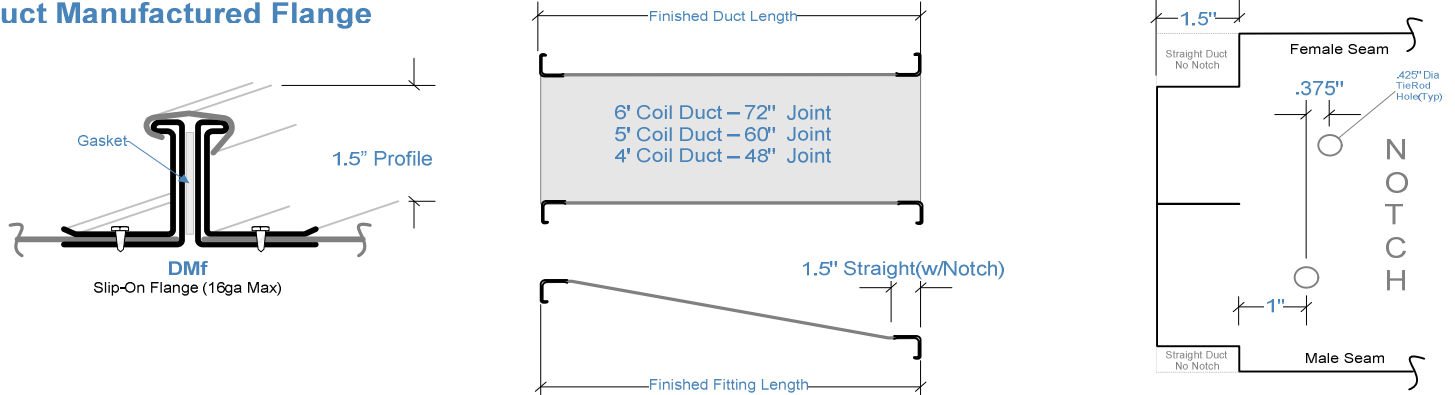
Slip & Drive Connection



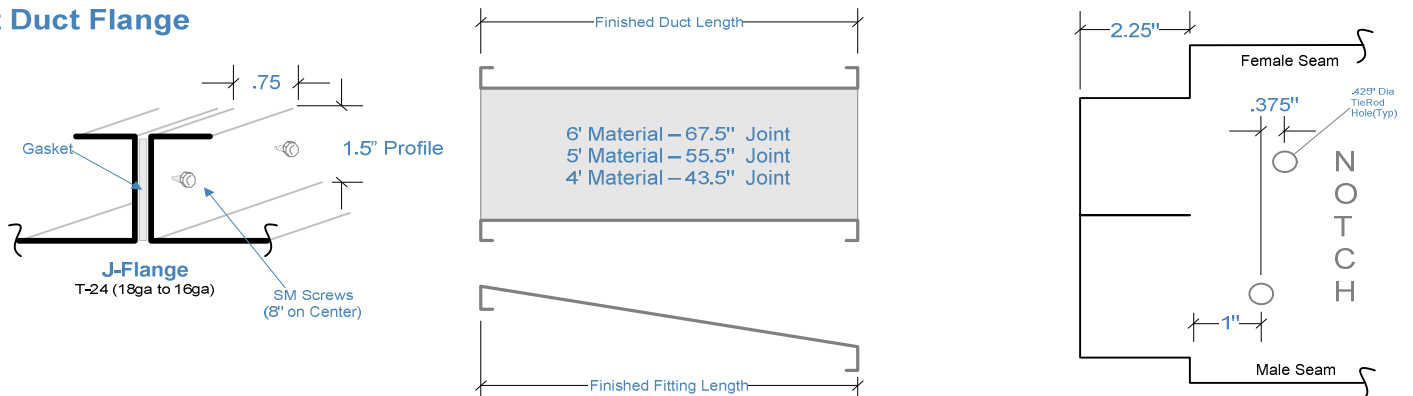
Transverse Duct Connector



Duct Manufactured Flange

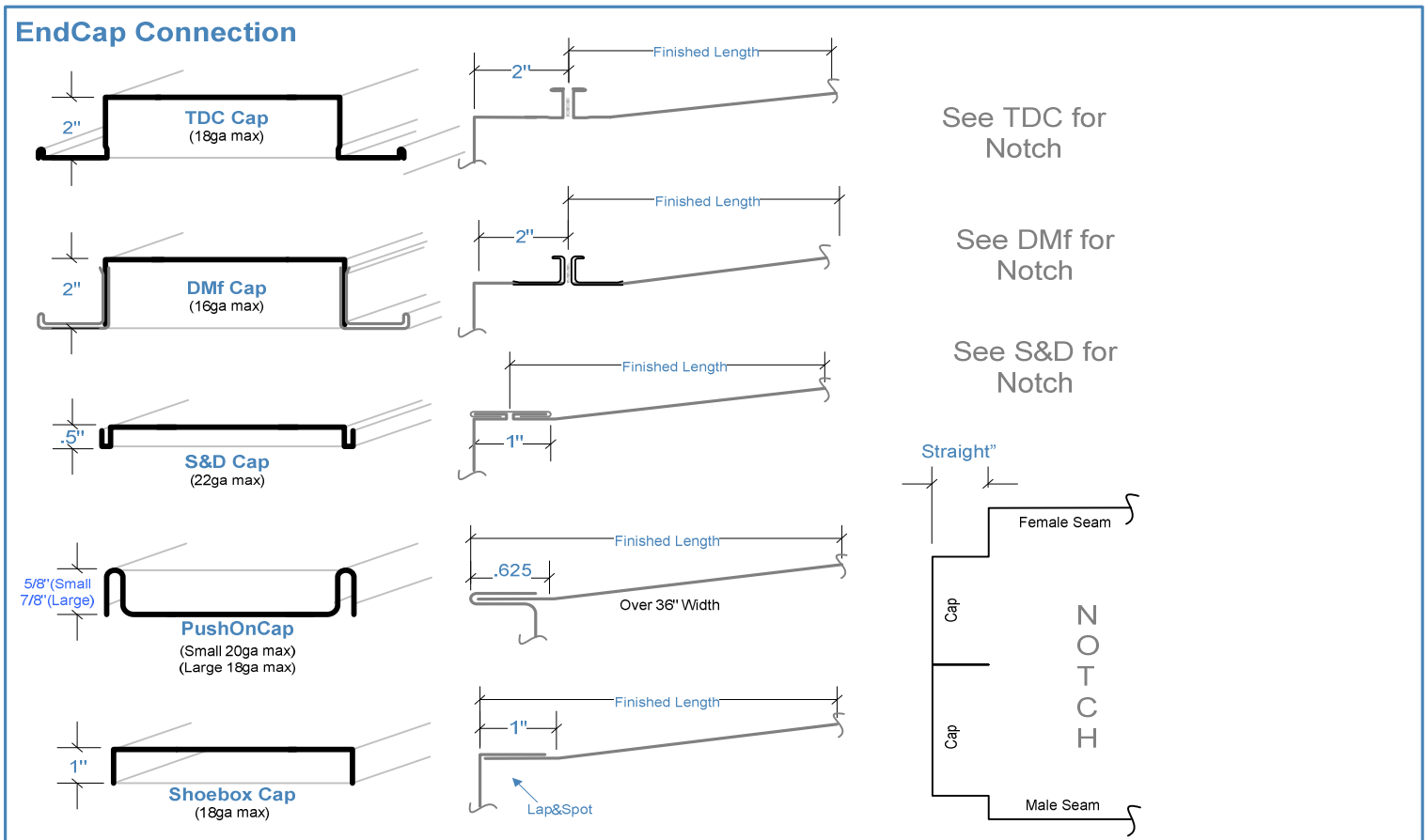
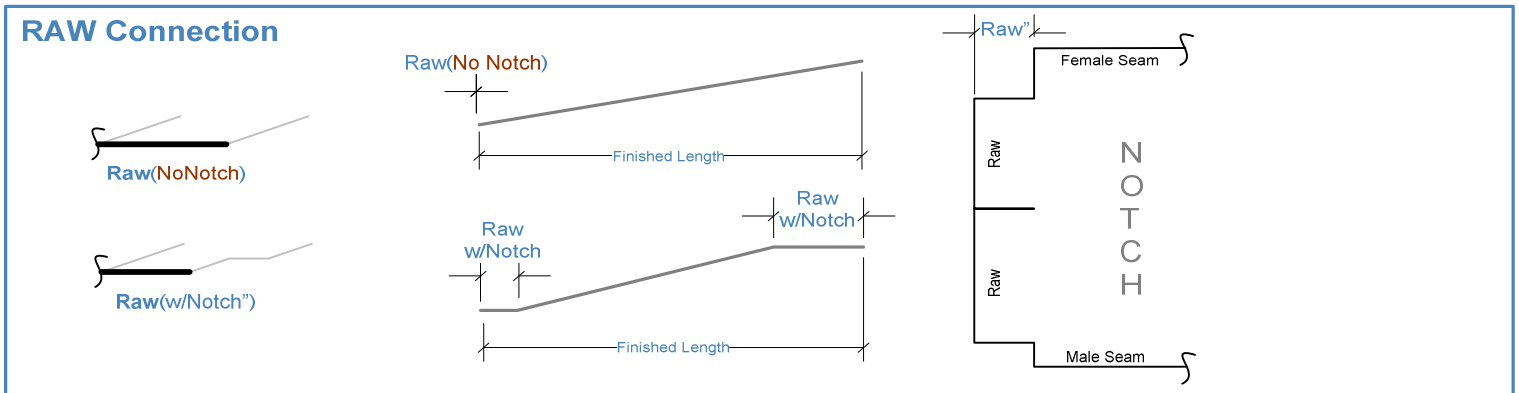
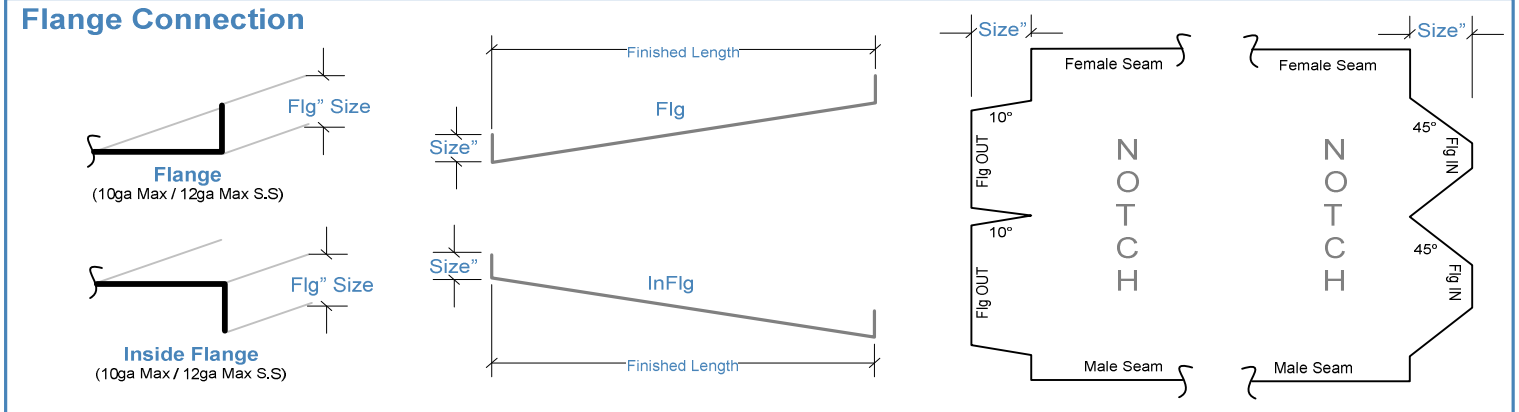


Joint Duct Flange



Detailing Standards Rectangular

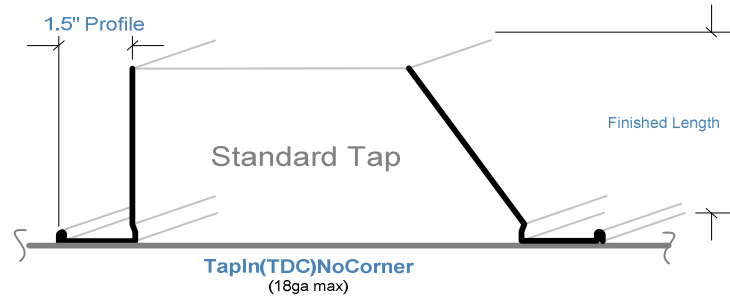
Rectangular Connection Details



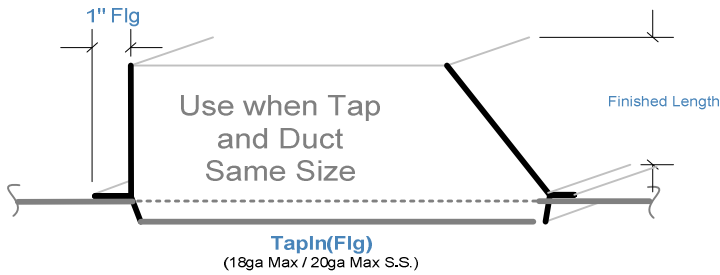
Detailing Standards Rectangular

Rectangular Connection Details

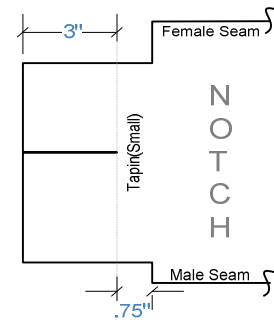
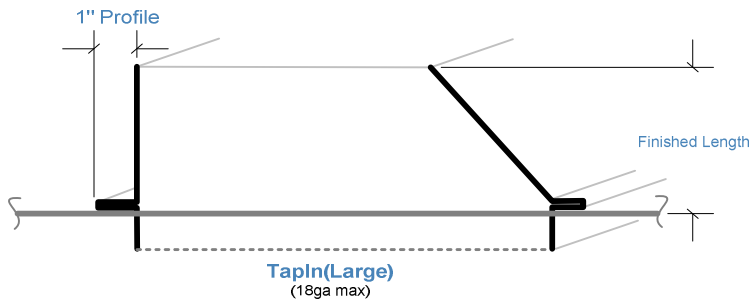
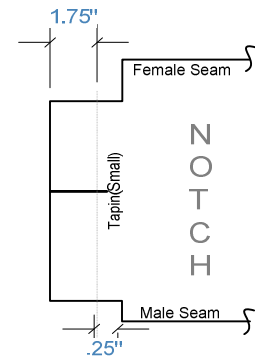
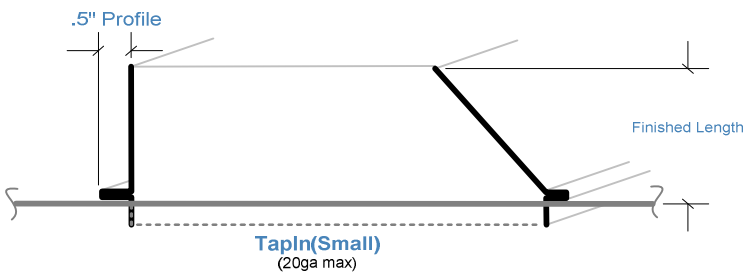
TapIn Connection



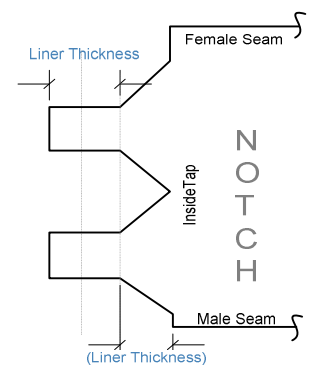
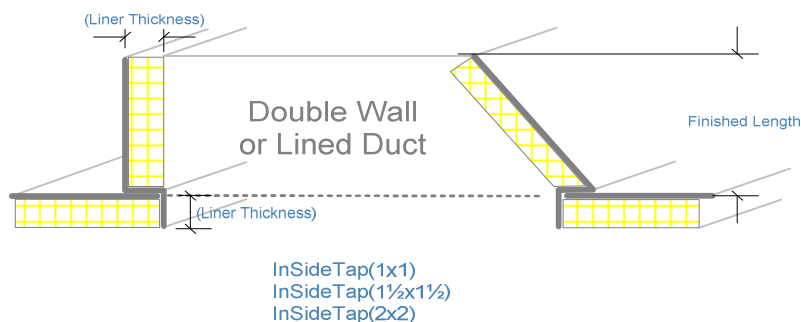
See TDC for
Notch



See FlgOut for
Notch



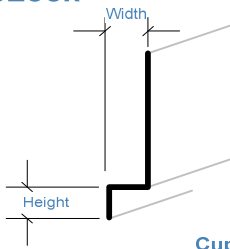
Inside Tap



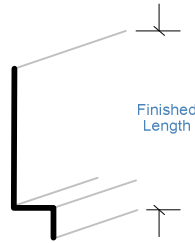
Detailing Standards Rectangular

Rectangular Connection Details

CupLock

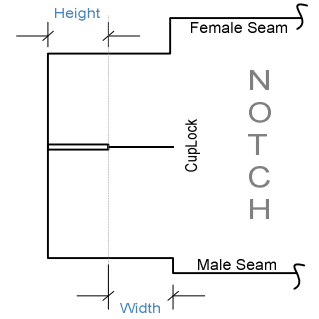


CupLock
(Width x Height)

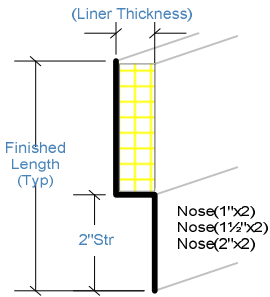


Finished Length

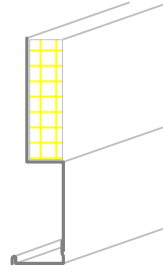
Sizes (W x H)
 CupLock(1x1)
 CupLock(1x1½)
 CupLock(1x2)
 CupLock(1½x1)
 CupLock(1½x1½)
 CupLock(1½x2)
 CupLock(2x1)
 CupLock(2x1½)
 CupLock(2x2)



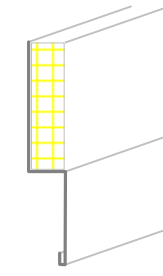
Nose Connector



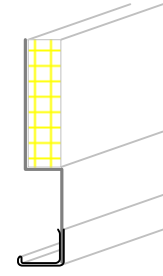
Nose
(Liner Thickness w/ 2"Str)



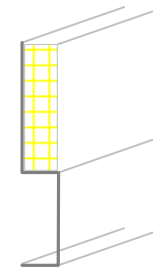
Nose(TDC 1'x2)
 Nose(TDC 1½'x2)
 Nose(TDC 2'x2)



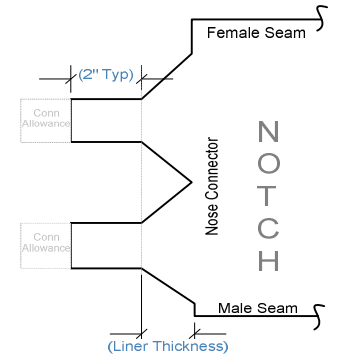
Nose(S&D 1'x2)
 Nose(S&D 1½'x2)
 Nose(S&D 2'x2)



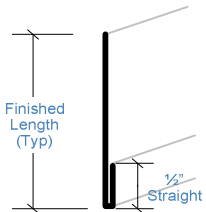
Nose(DMf 1'x2)
 Nose(DMf 1½'x2)
 Nose(DMf 2'x2)



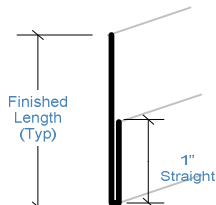
Nose(FLG 1'x2)
 Nose(FLG 1½'x2)
 Nose(FLG 2'x2)



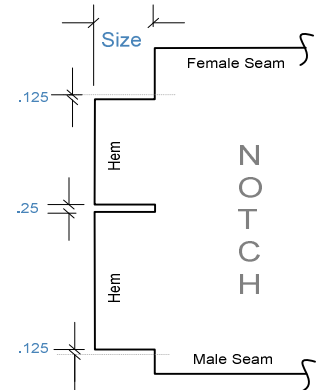
Hem



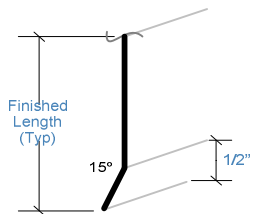
HemIN(1/2")
 or
HemOUT(1/2")



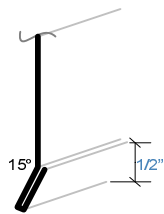
HemIN(1")
 or
HemOUT(1")



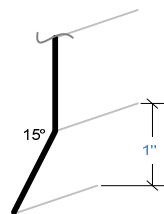
DripEdge



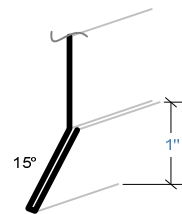
Kink(½")



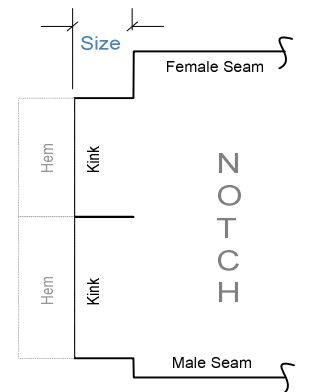
Kink(½"w/Hem)



Kink(1")



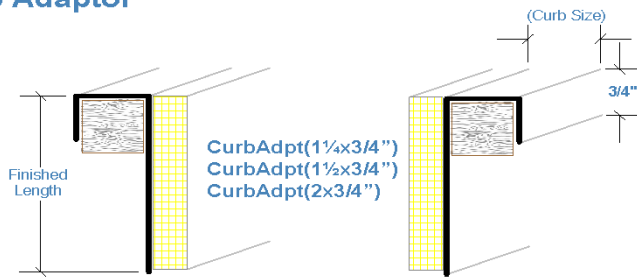
Kink(1"w/Hem)



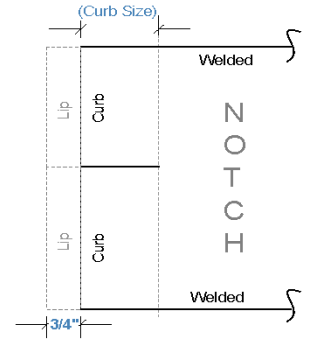
Detailing Standards Rectangular

Rectangular Connection Details

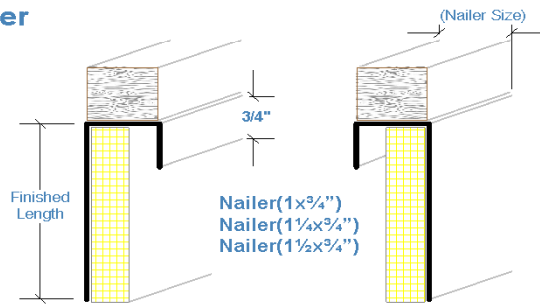
Curb Adaptor



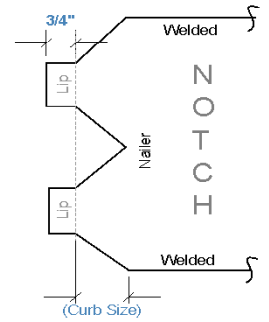
CurbAdpt(1¼x¾")
 CurbAdpt(1½x¾")
 CurbAdpt(2x¾")



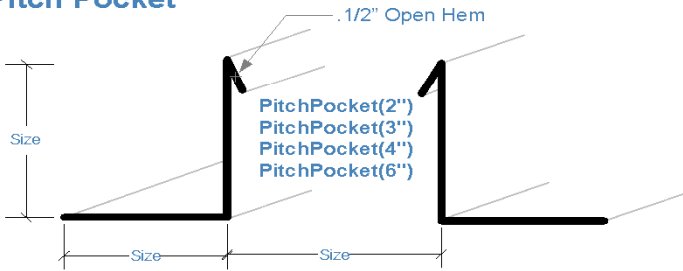
Nailer



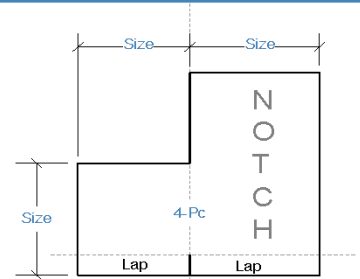
Nailer(1x¾")
 Nailer(1½x¾")
 Nailer(1½x¾")



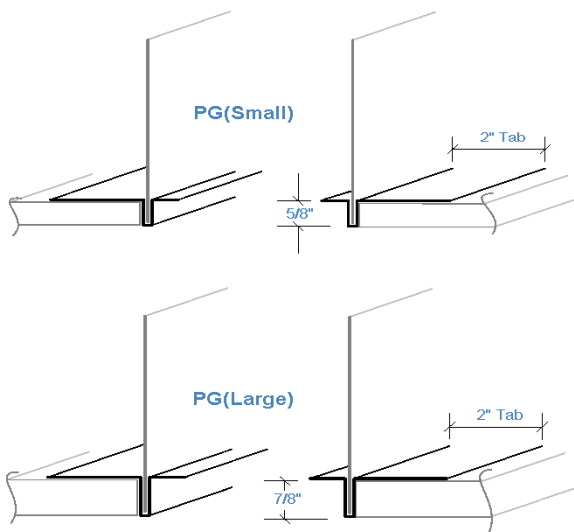
Pitch Pocket



PitchPocket(2")
 PitchPocket(3")
 PitchPocket(4")
 PitchPocket(6")

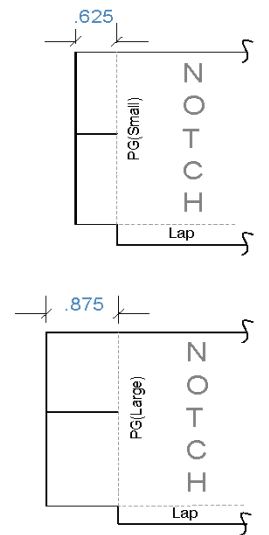


Plaster Ground



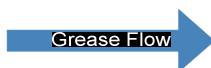
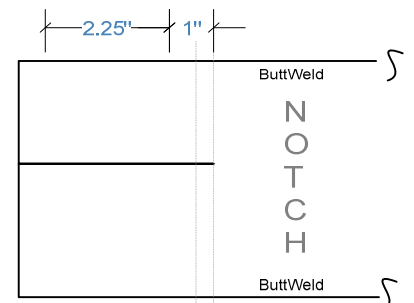
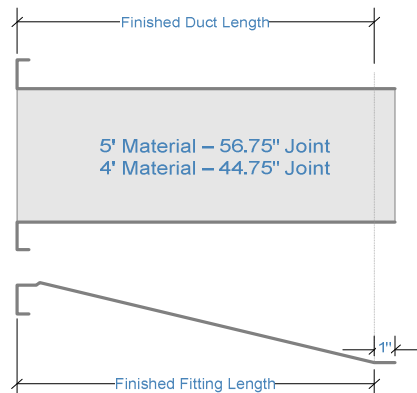
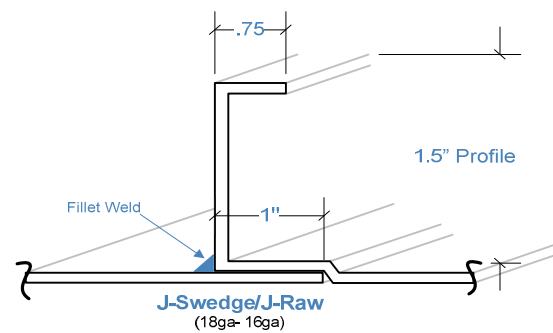
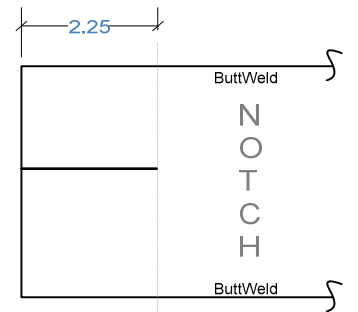
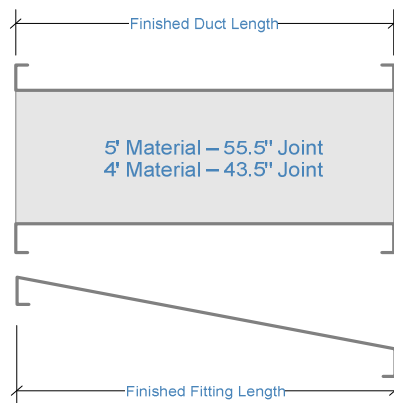
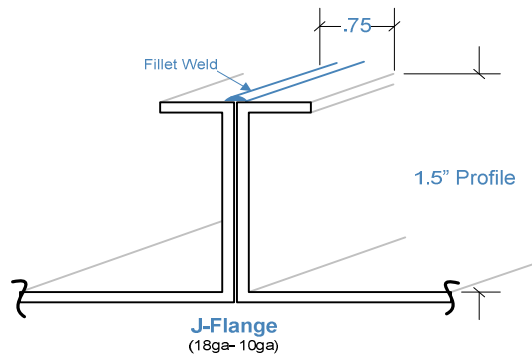
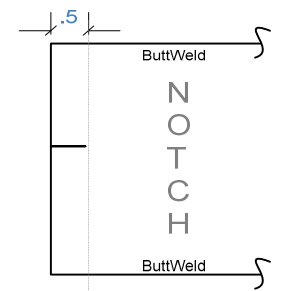
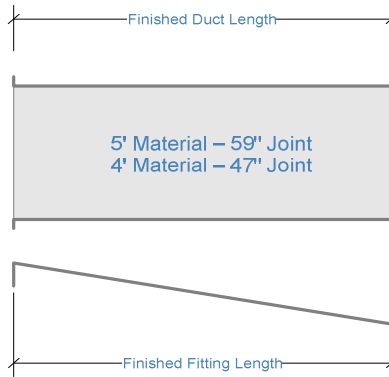
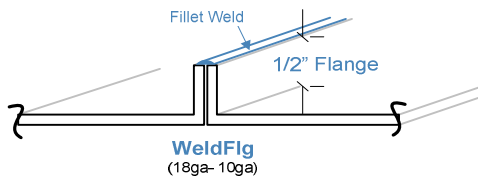
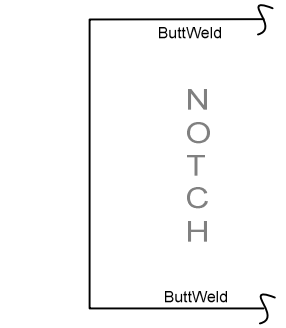
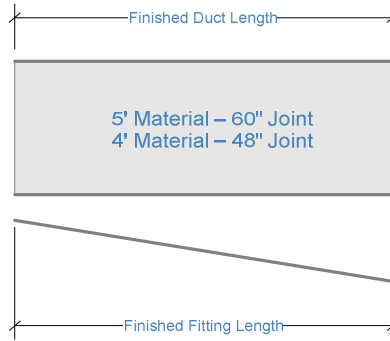
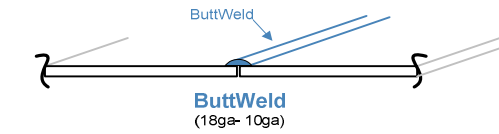
PG(Small)

PG(Large)



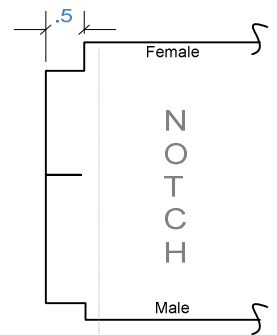
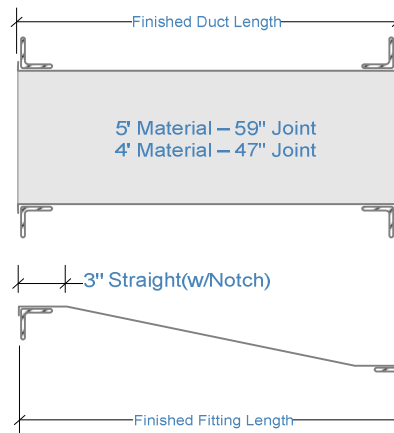
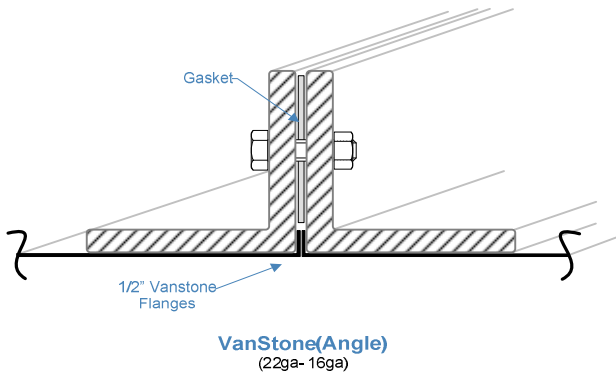
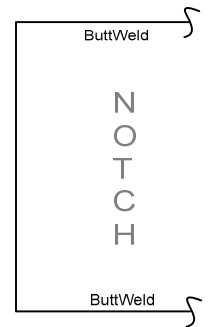
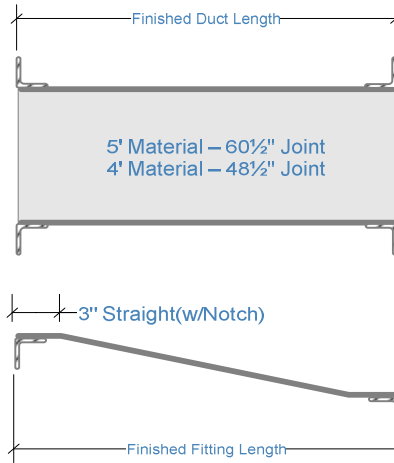
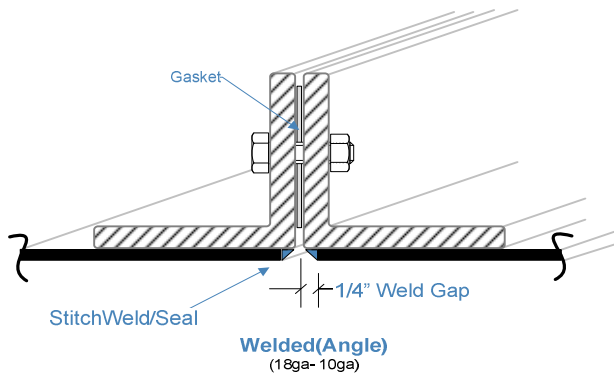
Rectangular Connection Details

Welded Connections

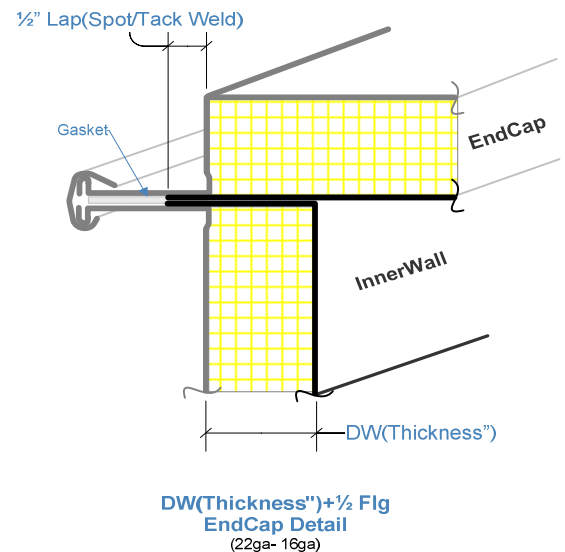
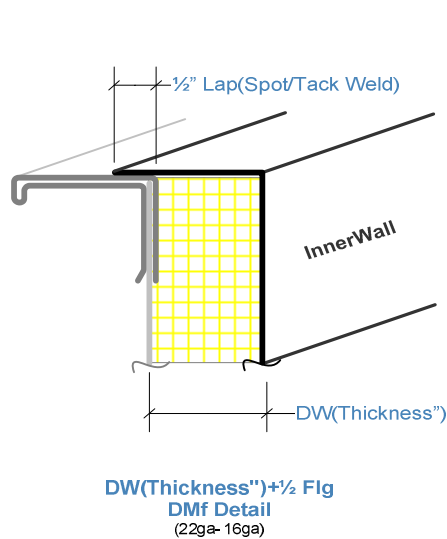
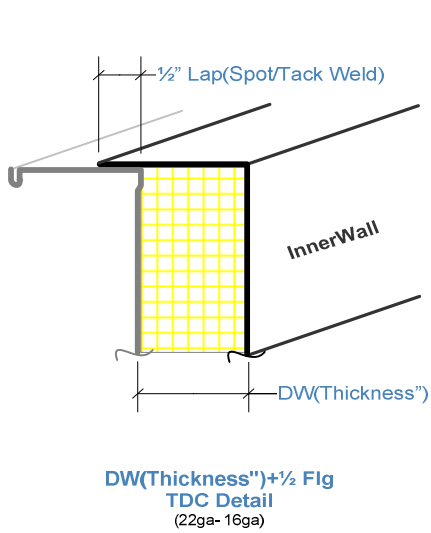


Rectangular Connection Details

Companion Angles



Double Wall Inner Connections



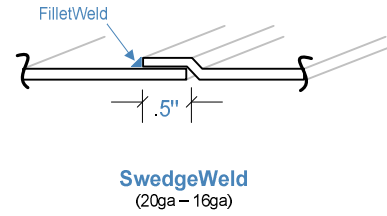
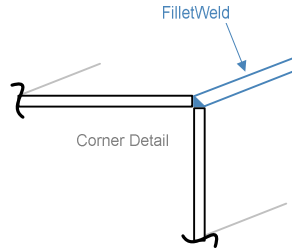
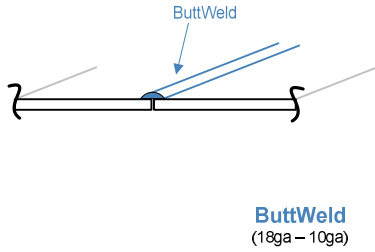
Rectangular Seam Details

Longitudinal Seams		
<p>Pittsburgh (26ga- 18ga)</p>	<p>SnapLock (26ga- 22ga)</p>	
<p>Lap&Spot (26ga- 16ga)</p>	<p>Lap&Rivit (26ga- 16ga)</p>	<p>Lap&Screw (26ga- 16ga) Typ-#10x 3/8 Sm-Screw</p>
<p>Lap&Solder (26ga- 16ga)</p>	<p>ReverseLap (26ga- 16ga)</p>	<p>CornerLap(Size) (26ga- 16ga)</p>

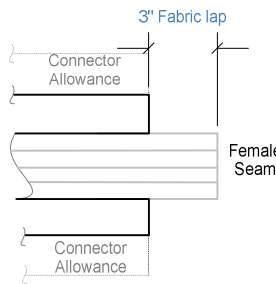
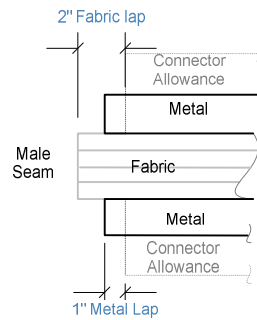
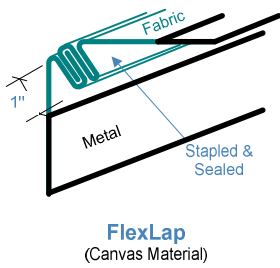
Segmenting Seams	
<p>S/TDC (26ga- 18ga)</p>	<p>S/Seam(Size) (26ga- 18ga)</p>
<p>S/Flange(Size) (26ga- 10ga)</p>	<p>S/Panel(Size) (26ga- 10ga)</p>
<p>AcmeLock (26ga- 20ga)</p>	<p>Lap(Size) (26ga- 10ga)</p>

Rectangular Seam Details

Weld Seams



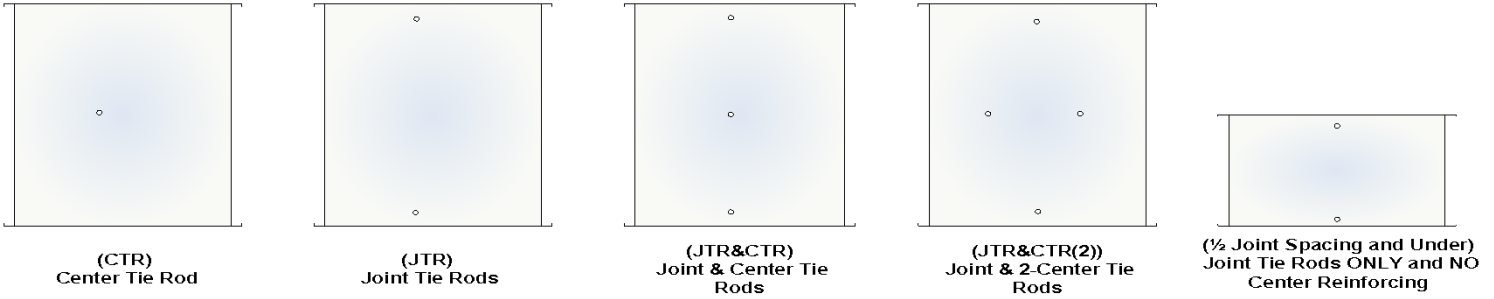
Misc Seams



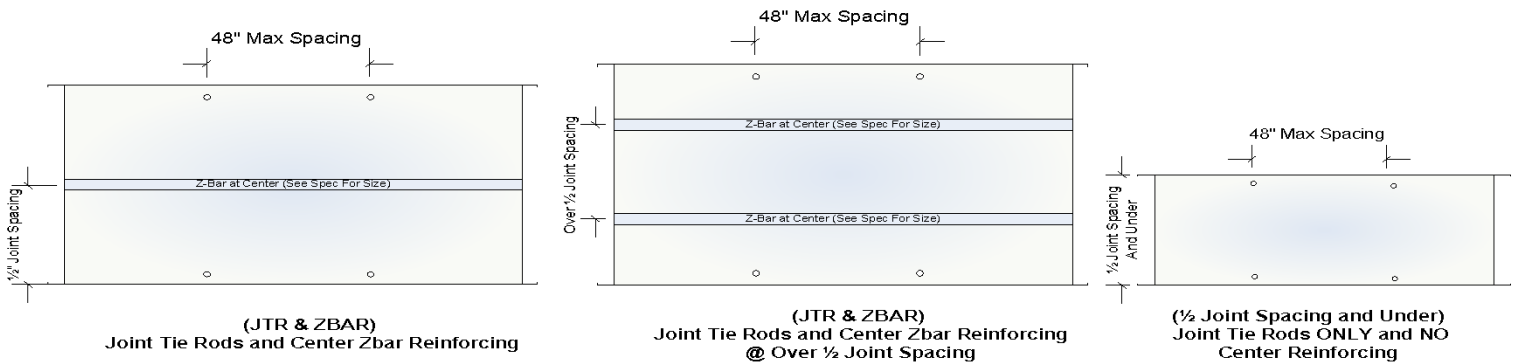
Detailing Standards Rectangular

Tie Rods & Reinforcing

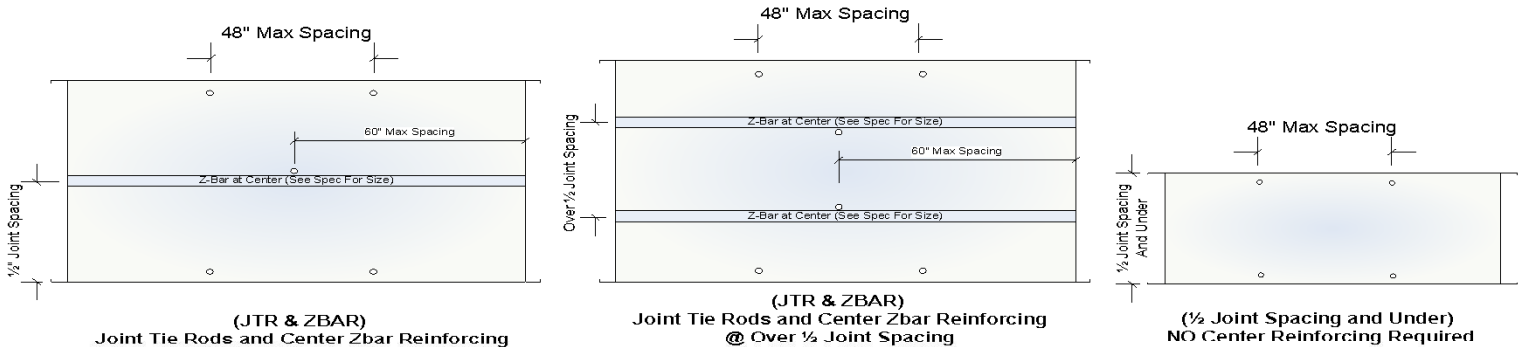
Duct with Tie Rods ONLY



Duct with Joint Tie Rod and Center Reinforcing ONLY



Duct with Joint Tie Rod and Center Reinforcing and Tie Rods



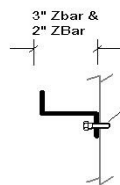
Tierod and Z-Bar Details



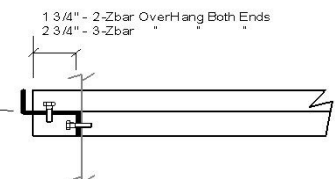
Tie Rod Assembly with Flange Nut, O-Ring and Weld Nut



Tie Rod Assembly (Add $\frac{1}{2}$ " Conduit for All Exhaust Duct)
And
ALL Tie Rods Over 96" in Length



Z-Bar Detail (T&B)

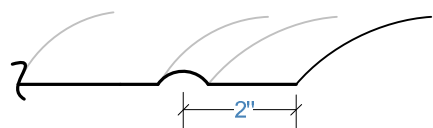


Z-Bar Detail (4-Sides)

Detailing Standards Round

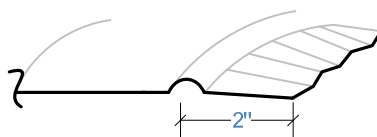
Round Connector Details

Round Connectors Details



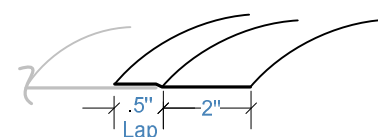
Bead(2")
(28ga- 18ga)

Note: Use for Couplings or Coupling Size Fittings



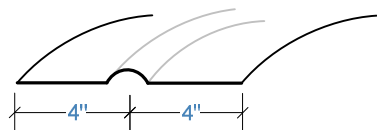
Crimp/Bead(2")
(28ga- 18ga)

Note: Use for Pipe or Pipe Size Fittings



Collar(2")
(26ga- 18ga)

*Note: Use for Coupling Size Fittings
Lap Can Be, Spot welded, Riveted Screwed, Soldered or Clinched*



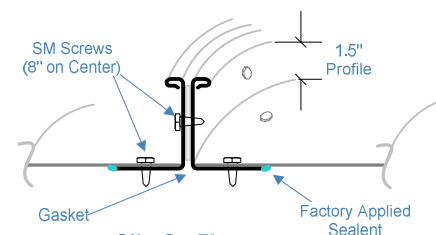
Coupling(4")
(28ga- 18ga)

Note: Use for Couplings or Coupling Size Fittings



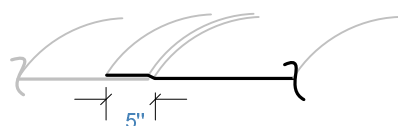
Adjustable Seam (Edge Lock)
(28ga- 22ga)

Note: Used for Factory Made Adjustable Elbows



Slip-On Flange
(28ga- 18ga)

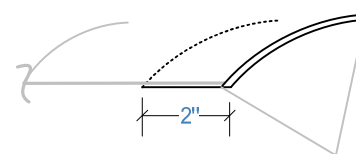
Note: Normally Pipe Size(ID)



Swedge(1/2")
(28ga- 16ga)

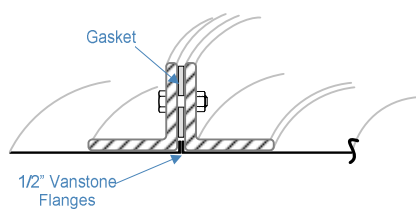


Flange^(Roll Formed)
(26ga- 18ga)



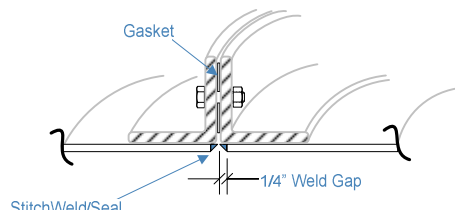
Cap/Plug
(28ga- 18ga)

*Note: Coupling Size
Collar Can Be, Spot welded, Riveted Screwed, Soldered or Clinched*



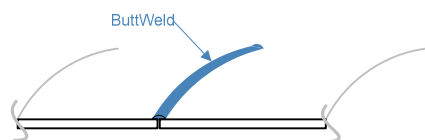
AngRing(Vanstone)
(22ga- 16ga)

Note: Normally Pipe Size(ID)



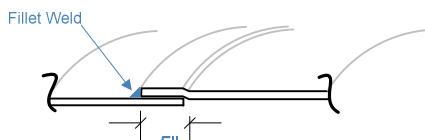
AngRing(Welded)
(18ga- 10ga)

Note: Normally Pipe Size(ID)



Buttweld
(18ga- 10ga)

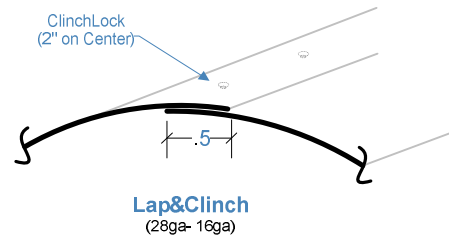
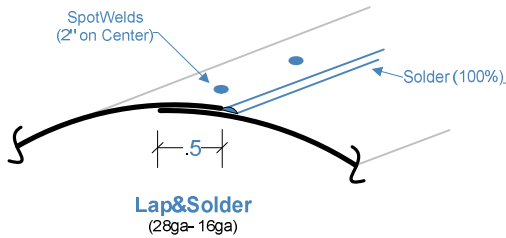
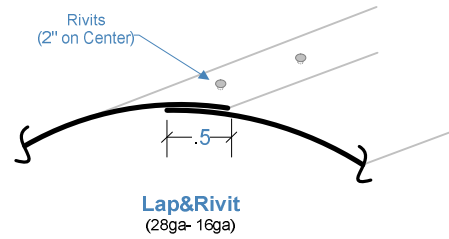
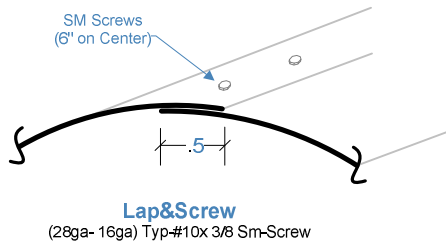
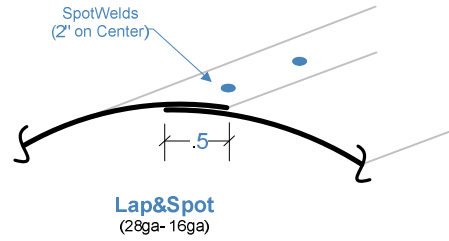
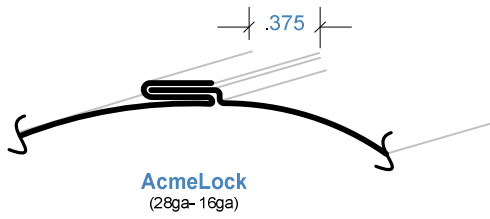
Note: Normally Pipe Size(ID)



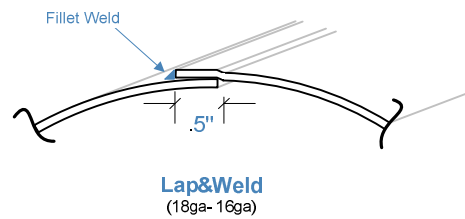
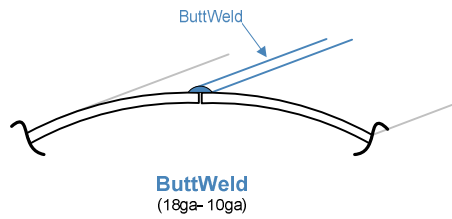
SwedgeWeld
(18ga- 16ga)

Note: Normally Pipe Size(ID)

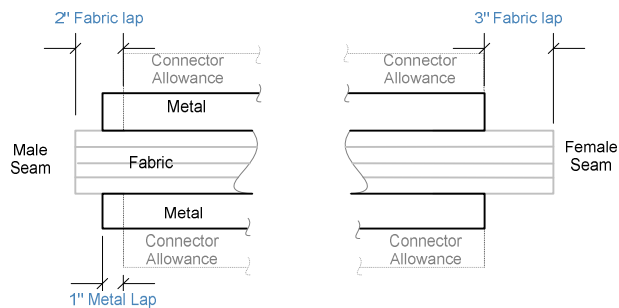
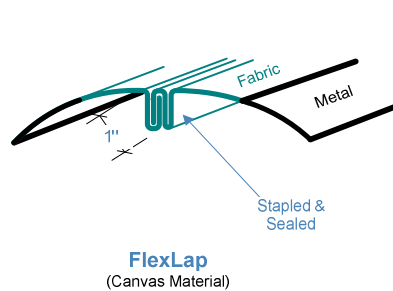
Longitudinal Seams



Weld Seams



Misc Seams



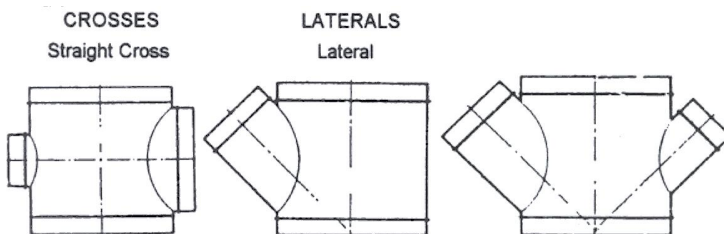
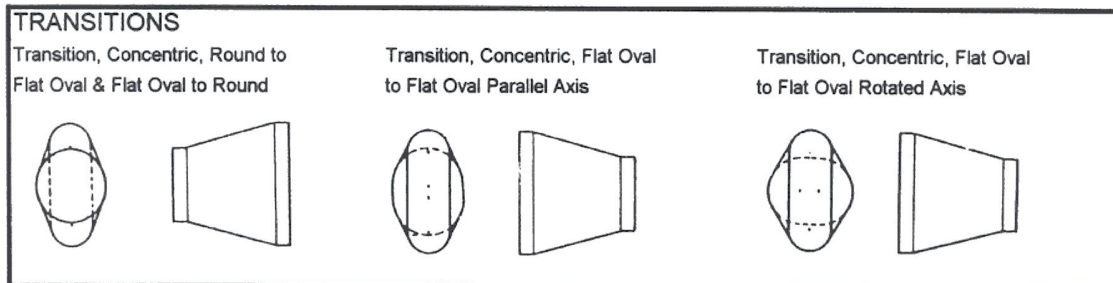
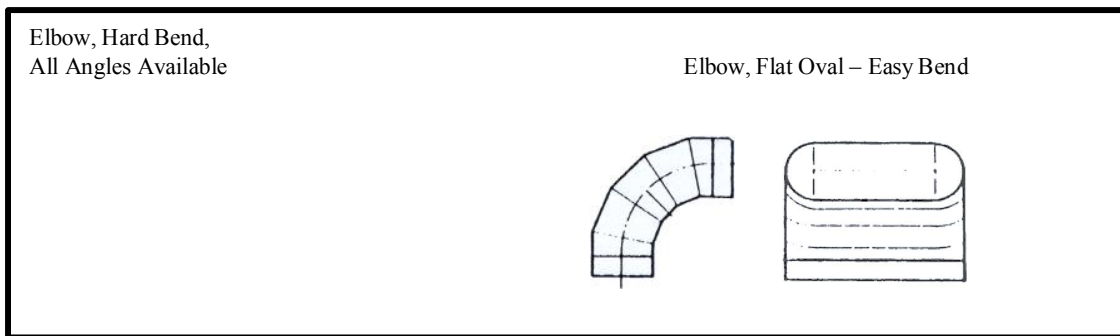
FLAT OVAL FITTINGS

Flat oval fittings in most cases go into limited space requirements where round duct cannot be used. Fittings that can be made in round may also be fabricated as flat oval.

Flat Oval Tees and Crosses. The branches are 180 degrees apart on the same axis and on the curved side of the duct. Many other shapes and angles are available but must be accompanied by a sketch.

Flat Oval and Round Reducers/Transitions can be fabricated to desired length and also be made in many different configurations. All transitions are based on centerline dimensions, unless specified and accompanied by a sketch.

When illustrating fittings, the dimension that can be seen is the first number of the pair. This may be either the major or the minor axis, depending on what axis is in view.

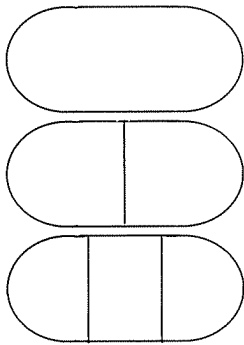


Many Other Fittings Available...



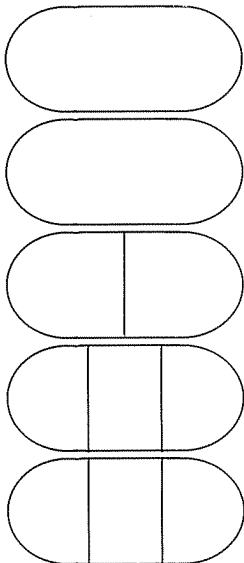
OVAL CONSTRUCTION STANDARDS

OVAL FITTINGS



size	no. of rods	gauge
0-30	no rods	20g.
31-60	1 rod	18g.
61-up	2 rods	16g.

OVAL PIPE



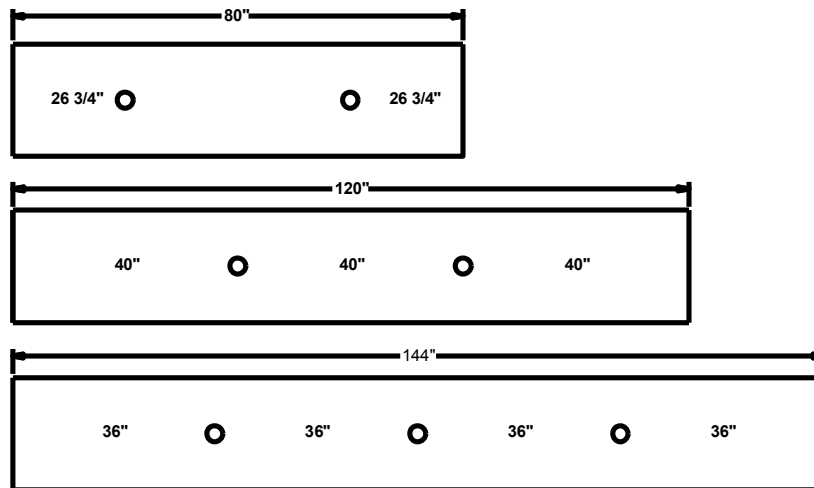
size	no. of rods	gauge
0-24	no rods	24g.
25-48	no rods	22g.
49-60	1 rod	20g.
61-70	2 rods	20g.
71-up	2 rods	18g.



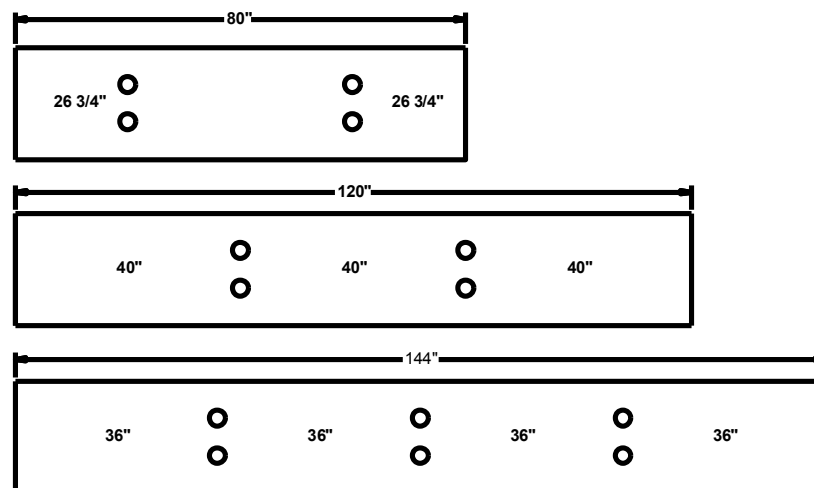
Oval Duct Construction Standards – Rod Spacing

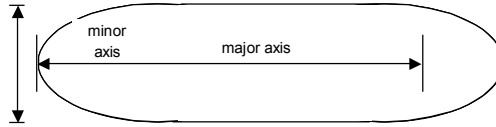
Number of Tie Rods used
along length of duct.
(40" Maximum Spacing)

Duct Width 37" to 60"



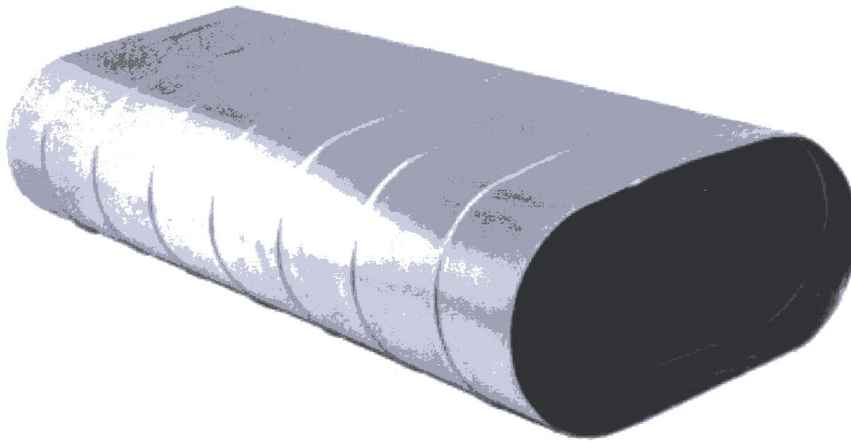
Duct Width 61" & Up



OVAL SIZES

**ROUND
TUBE**

	Minor Axis										
SIZE	5	6	8	10	12	14	16	18	20	22	24
10	13 12.9										
12	16 16.0	15 15.4	14 14.3								
14	19 19.1	19 18.6	17 17.4	16 16.3	15 15.2						
16	22 22.3	22 21.7	21 20.6	20 19.5	18 18.4	17 17.3					
18	25 25.4	25 24.8	24 23.7	23 22.7	22 21.6	20 20.4					
20	29 28.6	28 28.0	27 26.8	26 25.8	25 24.7	24 23.5	22 22.3	21 21.1			
22	32 31.7	31 31.1	30 30.0	29 29.1	28 28.0	27 26.9	26 25.7	24 24.3	23 23.1		
24	35 34.8	34 34.3	33 33.1	32 32.2	31 31.0	30 29.9	29 28.7	28 27.6	27 26.5	25 25.1	
26	38 38.0	37 37.4	36 36.3	35 35.4	34 34.2	33 33.1	32 32.0	31 30.8	30 29.7	28 28.3	27 27.1
28	41 41.1	41 40.6	39 39.4	39 38.5	37 37.4	36 36.2	35 35.1	34 33.9	33 32.8	31 31.4	30 30.3
30	44 44.3	44 43.7	43 42.6	42 41.6	41 40.5	39 39.3	38 38.2	37 37.0	36 35.9	35 34.6	33 33.4
32	47 47.4	47 46.8	46 45.7	45 44.9	44 43.7	43 42.6	41 41.4	40 40.3	39 39.1	38 37.7	37 36.6
34	51 50.6	50 50.0	49 48.8	48 48.0	47 46.8	46 45.7	45 44.6	43 43.4	42 42.3	41 40.8	40 39.7
36	54 53.7	53 53.1	52 52.0	51 51.1	50 49.9	49 48.8	48 47.6	47 46.5	45 45.4	44 44.0	43 42.8
38	57 56.8	56 56.3	55 55.1	54 54.4	53 53.2	52 52.1	51 50.9	50 49.8	49 48.6	47 47.1	46 46.0
40	60 60.0	59 59.4	58 58.3	58 57.5	56 56.4	55 55.2	54 54.1	53 52.9	52 51.8	50 50.3	49 49.1
42	63 63.1	63 62.5	61 61.4	61 60.6	60 59.5	58 58.4	57 57.2	56 56.1	55 54.9	53 53.4	52 52.3
44	66 66.3	66 65.7	65 64.5	64 63.7	63 62.6	61 61.4	60 60.3	59 59.2	58 58.0	57 56.6	55 55.4
46	69 69.4	69 68.8	68 67.7	67 67.0	66 65.9	65 64.8	64 63.6	63 62.5	61 61.3	60 59.7	59 58.6
48	73 72.5	72 72.0	71 70.8	70 70.0	69 68.9	68 67.7	67 66.6	65 65.4	64 64.3	63 62.8	62 61.7
50	76 75.7	75 75.1	74 74.0	73 73.4	72 72.2	71 71.1	70 70.0	69 68.8	68 67.7	66 66.0	65 64.8
52	79 78.8	78 78.3	77 77.1	77 76.5	75 75.3	74 74.2	73 73.1	72 71.9	71 70.8	69 69.1	68 68.0
54			80 80.3	79 79.1	79 78.5	77 77.3	76 76.2	75 75.0	74 73.9	72 72.3	71 71.1
56				82 82.3	81 81.1	81 80.5	79 79.3	78 78.2	77 77.1	75 75.4	74 74.3
58					84 84.3	83 83.1	82 82.0	81 81.4	80 80.2	79 78.5	77 77.4
60								84 84.0	83 82.8	82 81.7	81 80.5

OVAL SPIRAL DUCT SUBMITTAL



- *LIGHTER THAN LONGITUDINAL DUCT
- *MORE EFFECTIVE THAN SQUARE DUCT
- *SPACE SAVER

- *OVER 300 SIZES
- *STANDARD LENGTHS
- *SLIP FIT CONNECTIONS

Hanger installation details applicable to rectangular ducts are generally applicable to flat oval duct.

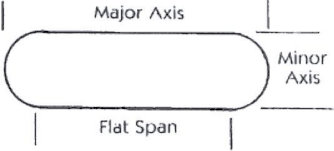
Oval Spiral Duct is a single wall duct with a unique 4 ply locking seam creating wall stability. It is available in hundreds of sizes with minor axis from 4" to 20" and major axis from 10" to 80". For sizes beyond the range of manufactured spiral duct or alternative construction ECO Products will provide OvalWeld Duct with a longitudinal seam or continuous seam weld. Oval Spiral Duct is fabricated to SMACNA Duct Construction Standards or customer code request.

GALVANIZED STEEL

<u>GAUGE SCHEDULE</u>			
Flat Oval Spiral Duct		Welded Oval Fittings	
Major Axis	Gauge	Major Axis	Gauge
to 24"	24	to 36"	20
25" to 48"	22	37" to 50"	18
49" to 70"	20	51" and Up	16
71" and Up	18		

All Fittings shall be manufactured with continuous welds, or tack welded and sealed. Flat Oval shall be manufactured from spiral pipe with the following gauges listed above, unless otherwise specified.

Reinforcement for flat sides (flat surface) of oval duct shall be of the same size and spacing interval as specified for rectangular duct or shall otherwise be manufactured to limit wall deflection to 3/4" and reinforcement deflection to 1/4".



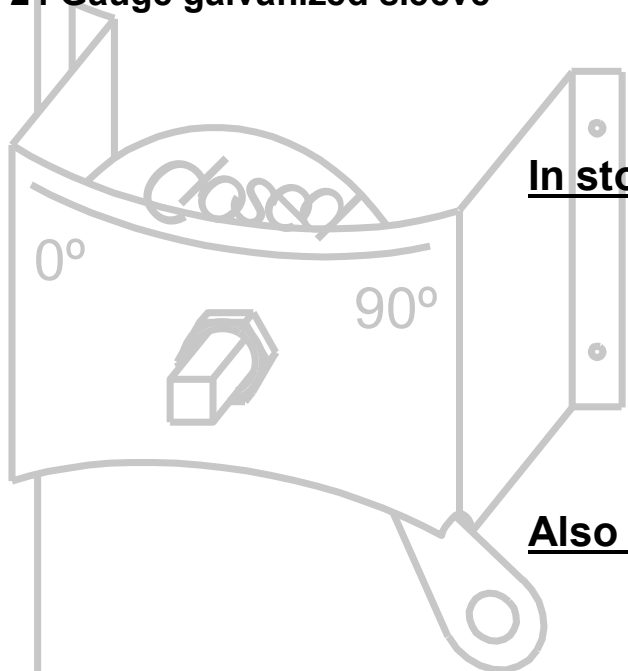
MATERIAL:
Flat Oval Pipe and Fittings are manufactured from galvanized steel meeting spec ASTM A-527-71 (lockforming quality).

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Manual Control Volume Dampers

Fully Assembled Manual Control Dampers

- Continuous 3/8" Square Aluminum Rod
- Aluminum end bearing with rubber O-ring and spring steel retaining ring.
- 1 1/2" Standoff (18 Gauge galvanized)
- Locking quadrant with Nylon Bushing
- 18 Gauge galvanized damper blade – Stamped for extra rigidity!
- 24 Gauge galvanized sleeve



In stock:

- Round, from 6" to 14" diameter (Even Sizes)
- Fully assembled
- Crimp x Raw
- 24 Gauge Sleeves

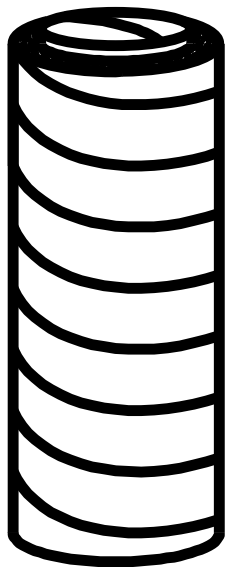
Also available in:

- Larger diameters
- Rectangular sleeves
- Oval Sleeves
- Internally lined pipe
- Heavier Gauges

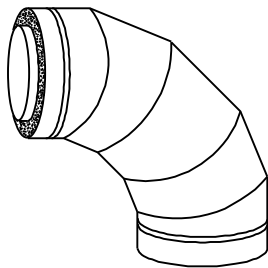
Double Wall Duct & Fittings

ECO Products Double Wall Pipe is constructed with a 1" thick fiberglass insulation blanket, sandwiched between an outer spiral metal pressure shell, and an inner plain (or perforated) metal liner.

Advantages to double wall duct systems include fan noise reduction, cross talk control, assured thermal conductivity, and permanent insulation protection.



A complete line of double wall fittings can be furnished to compliment ECO Double Wall Spiral Pipe.



Acoustical Advantages

- Fan noise reduction and cross-talk control
- High transmission loss through duct walls
- Reduction of system noise
 - Noise reduction rating based on actual condition of installation

Thermal Insulation Advantages

- Assured thermal conductivity
- Vapor barrier integrity
- Permanent protection of the insulation
- Assured uniformity

Mechanical Advantages

- Lower friction loss penalty for noise reduction
- Predictable friction factor
- Automatic expansion joint
- Sheet metal screws do not project into air stream
- Improved appearance
- Double fire protection
- Space saving

- **Outer Metal Pressure Shell**
- **1" Thick Insulation**
- **Internal plain metal liner or**
- **Internal perforated metal liner**



Rectangular or Spiral Double Wall Duct & Fittings

ECO Products Double Wall Pipe is constructed with a 2" thick fiberglass insulation blanket, sandwiched between an outer spiral metal pressure shell, and an inner plain (or perforated) metal liner.

Advantages to double wall duct systems include fan noise reduction, cross talk control, assured thermal conductivity, and permanent insulation protection.

Acoustical Advantages

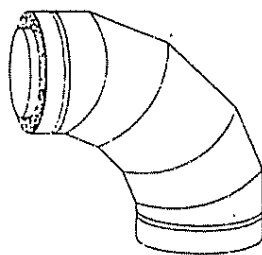
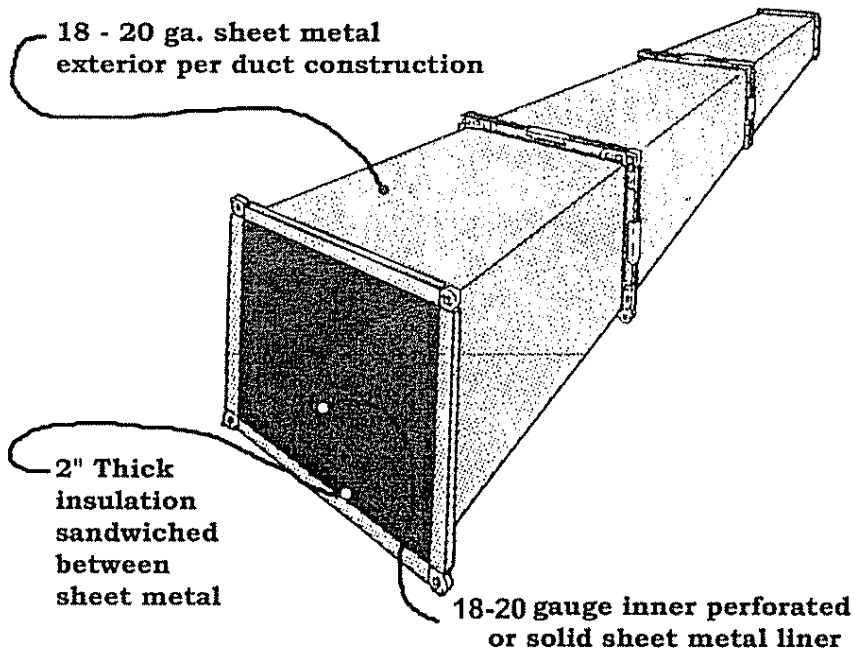
- Fan noise reduction and cross-talk control
- High transmission loss through duct walls
- Reduction of system noise
 - Noise reduction rating based on actual condition of installation

Thermal Insulation Advantages

- Assured thermal conductivity
- Vapor barrier integrity
- Permanent protection of the insulation
- Assured uniformity

Mechanical Advantages

- Lower friction loss penalty for noise reduction
- Predictable friction factor
- Automatic expansion joint
- Sheet metal screws do not project into air stream
- Improved appearance
- Double fire protection
- Space saving



- Outer Metal Pressure Shell
- 2" Thick Insulation
- Internal plain metal liner or
- Internal perforated metal liner





Rectangular Duct and Fittings

General Information & Specification Data

Material Specifications:

- A. All galvanized ductwork is fabricated by using ASTM A90, A568, A653, and A924 commercial grade lock forming G-90/G-60 materials.
- B. All material and gauges fabricated per code and customer request.
- C. Options of stainless steel, aluminum, paintable galvanized, and other materials available upon request.

Ductwork Specifications:

- A. Full Section (wrap around): One piece joint section with one button lock or Pittsburgh lock longitudinal seam and end treatment required for joining connectors.
- B. Half Section: Two-piece joint section with two button lock or Pittsburgh lock longitudinal seams and end treatment required for joining connectors.
- C. Four Piece Section: Four-piece joint section with four button lock or Pittsburgh longitudinal seams and end treatment required for joining connectors.
- D. All duct is beaded on 12" centers, with first bead 6" from end for extra strength. Cross breaking is available upon request.
- E. All duct is available in any length requested. Standard lengths are 4', 5', or 6'.
- F. All slips and drives, nuts, bolts, gaskets, and reinforcements are included on duct and fitting quotes.
- G. All duct and fittings are available lined or unlined.
- H. All rectangular duct is shipped unassembled (KD), unless otherwise requested.
- I. All rectangular fittings are shipped assembled, unless otherwise requested



Rectangular Duct and Fittings

General Information & Specification Data

Seams and Transverse Connections:

- A. Button lock, available in 28 gauge through 20 gauge.
- B. Pittsburgh lock, available in 26 gauge through 18 gauge.
- C. Spot welded lock, available in 28 gauge through 16 gauge.
- D. Continuous welded lock, available in 20 gauge through 10 gauge.
- E. Slip and Drive connections available with ½" notch and open hem for drive; customer to specify placement of Slip and Drive
- F. TDC (Transverse Duct Connections) is an excellent low air leakage system wherein a flange is roll formed onto the end of the duct, creating a bolt-up connection that is more economical than traditional 4 bolt connectors.
- G. 4 Bolt flange connectors are available for higher static pressure systems.
- H. Pressure sealant is available upon request. Consult your code or construction manuals for sealant requirements.

Lined Ductwork:

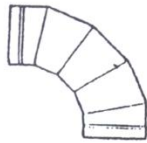



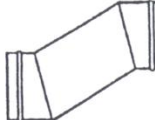
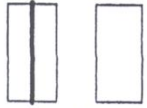



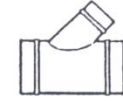
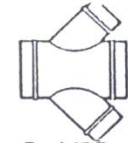
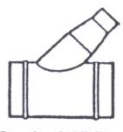
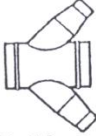

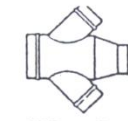

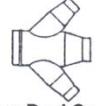
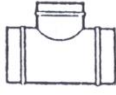


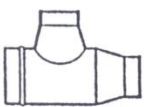
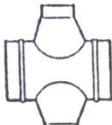
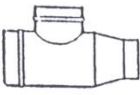
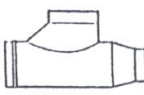
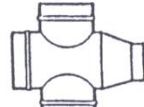
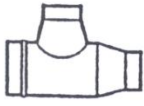
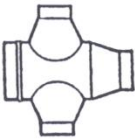


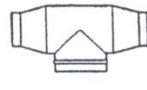
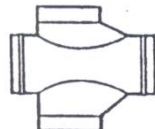
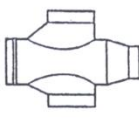
- A. Duct liner installed has been tested in accordance with the procedures set forth in NFPA-90A, by Underwriters Laboratories and the manufacturer of the duct liner material. Operating temperatures to 250° F, velocities up to 3,000 FPM. Available in thicknesses from ½" to 3", and densities from 1 ½ to 3 pounds per cubic foot.
- B. Flame retardant, water based adhesive, as well as spot welded pins, are used to adhere the duct liner to the duct wall. Approximate operating temperature for the adhesive is 30° to 160° F.

The installing contractor should select the duct system consistent with the static pressure class, applicable sealing requirements, materials involved, duct support intervals, and other provisions for proper assembly of ductwork. The precise type, size, material, and fasteners used in joint assemblies are in several instances left open to the judgment of the contractor; consult SMACNA HVAC Duct Construction Standards Manual, Uniform Mechanical Code, and/or job code requirements.

All statements, technical information, and recommendations contained herein are based on tests believed to be reliable, but the accuracy thereof is not guaranteed.

Specifications subject to change without notice

HIGH PRESSURE FITTINGS

 LR 90	 LR 60	 LR 45	 LR 30	 Offset
 Couplings Male/Female	 Plug/Cap Male/Female	 Concentric Reducer	 Eccentric Reducer	 45 Deg. Lateral
 Dual 45 Deg. Lateral	 Conical 45 Deg. Lateral	 Dual Conical 45 Deg. Lateral	 45 Deg. Reducing Lateral	 45 Deg. Dual Reducing Lateral
 45 Deg. Conical Reducing Lateral	 45 Deg. Dual Conical Reducing Lateral	 90 Deg. Tee	 90 Deg. Boot Tee	 Dual 90 Deg. Tee
 Conical 90 Deg. Tee	 90 Deg. Dual Conical Tee	 90 Deg. Reducing Tee	 90 Deg. Boot Reducing Tee	 90 Deg. Dual Reducing Tee
 90 Deg. Conical Reducing Tee	 Dual Conical Tee	 True Pant Wye	 Conical True Wye	 Reducing Bullhead Tee
 90 Deg. Dual Boot Tee	 Dual Boot Reducing Tee			



HIGH PRESSURE FITTING SUBMITTAL

MATERIAL:

All high-pressure fittings are fabricated from Commercial Grade *G60/G90* galvanized coating, conforming to ASTM A90, A568, A653, A924. All fittings are fabricated to code or customer specified code and gauges.

Stainless Steel, Aluminum, Galvanized, Paintable Galvanized and other materials are available upon request.

FABRICATION:

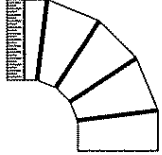
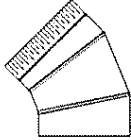
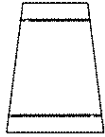
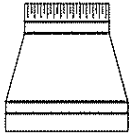

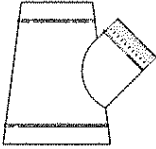
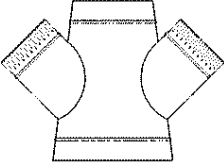
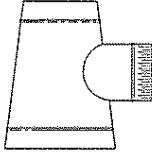
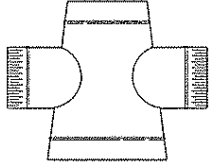
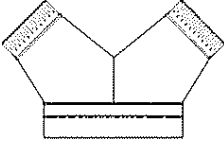
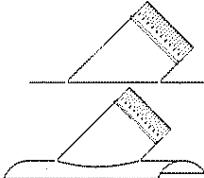
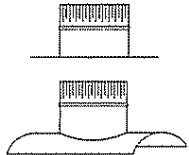
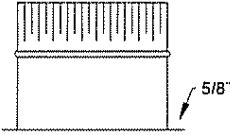
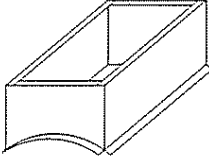
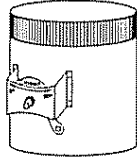
Elbows and fittings are fabricated on a rotary machine using a 3/8" offset to assure air flow efficiency and strength. All fittings are fabricated with a 2" minimum slip fit end to assure tightness of installation.

Fittings are either spot or tack welded 1" centerline and pressure sealed or continuous welded upon customer request. Elbows are long radius (1.5 x centerline) or short radius using a minimum of 2 gores.

All fittings are fabricated for 8" positive static pressure and 2" negative static pressure conforming to SMACNA HV AC Duct Construction Standards, SMACNA Industrial Duct Construction Standards and Uniform Mechanical Code. Other static pressure system gauges are available upon request.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Low Pressure Fittings

 <p>Adjustable 90 Elbows</p>	 <p>Adjustable 45 Elbows</p>	 <p>Tapers</p>
 <p>Reducers</p>	 <p>End Caps</p>	 <p>Wyes</p>
 <p>Dual Branch Wyes</p>	 <p>Tees</p>	 <p>Dual Branch Tees</p>
 <p>Pant Wyes</p>	 <p>45 Saddle Taps</p>	 <p>90 Saddle Taps</p>
 <p>LP Tap</p>	 <p>Rectangular Saddle Tap</p>	 <p>Volume Dampers</p>

Eco products has the capability of producing many other low pressure fittings; if you need a fitting that is not shown, just give us a call.



LOW PRESSURE FITTING SUBMITTAL

MATERIAL:

All low pressure fittings are fabricated from Commercial Grade G60/G90 galvanized coating, conforming to ASTM A90, A568, A653, A924. All fittings are fabricated to code or customer code and gauge.

Stainless Steel, Aluminum, Galvanized, Paintable Galvanized and other materials are available upon request.

FABRICATION:

Adjustable elbows are fabricated on a rotary machine using a 3/8 inch offset swivel for adjustability. All other fittings are fabricated with an overlap, flange branch or joint to assure strength. Elbows and fittings are fabricated with either male/female, female/female or slip fit ends to assure tightness and ease of installation. All elbows and fittings are either spot welded, riveted or stapled approximately 3" centerline to conform to SMACNA Standards and Uniform Mechanical Commercial Codes. All Low Pressure Fittings are available with pressure seam sealer upon request.

Specifications subject to change without notice



SPIRAL DUCT SUBMITTAL AND SPECIFICATION DATA

MATERIALS :

Spiral Duct is manufactured from Commercial Grade G60/G90 galvanized steel, conforming to ASTM A90, A568, A653, A924 prime lockforming material that allows this galvanized material to withstand a maximum of 400 Deg. F temperature. Stainless Steel, Aluminum, Paintable Galvanized and other materials are available upon request.

STANDARDS/CODES:

SMACNA, ASHRAE, U.L., UMC., L.A. CITY and other standards or codes upon request.

GAUGES:

28 gauge thru 14 gauge.

DIAMETERS :

Spiral Duct can be made available in diameters from 3" thru 80". Corrugation can be made available from 10" thru 80".

LENGTHS:

Stock lengths; 6', 7 ½', 10'

Other lengths up to 35' available upon request.

CONNECTIONS:

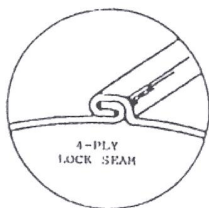
Stock is crimped one end and raw other end. Available with raw ends or flanges, for angle or flat rings.

FIELD CONNECTIONS:

Consult code and construction standards for proper mating of connections and sealants.

Under 2" S.P. - All ducts and fittings shall be securely joined by telescoping the crimped male end or connecting high velocity collar into the adjoining section and secure with proper approved fastening devices such as minimum ½" self tapping sheet metal screws.

Over 2" S.P. - All ducts and fittings shall be securely joined by male or female connecting collar or sleeve, with high velocity duct sealant applied to the surface of connections and approved fastening devices. Longitudinal seams must be sealed.



SPECIFICATIONS SUBJECT CHANGE WITHOUT NOTICE

Round Spiral

- 6" to 60" Diameter
- 28 Gauge to 14 Gauge
- Single Wall
- Interior Lined
- Double Wall (perforated or solid inner wall)

Oval Spiral

- 5 x 13 through 24 x 81 (Equivalent to 10" to 60" round)
- 24 to 18 Gauge
- Single Wall
- Interior Lined
- Double Wall (perforated or solid inner wall)

Fittings

- Elbows
- Wyes
- Reducers
- Taps
- Transitions

Materials

- Galvanized
 - G60/G90
 - Conforming to ASTM A90, A568, A653, A924
- Aluminum
- Stainless Steel



Union Made Products!



Vanemate Vane & Rail System

The **Vanemate** system from **ECO Products** is a patented innovation that has been proven stronger than any other vane and rail system currently available, and reduces turning vane assembly labor by as much as 50%.

The key to the system is in the patented **snaplock** design. Buttons punched in the ends of the vanes when they are cut 'snap' into slots in our specially designed rail.

Buttons in the vanes can be formed by using the **Vanemate cutter**, available in 2" or 4" models, which simultaneously shears the vane to length while punching the button in each end. If a shear type vanemaker is being used, a simple modification to the shear blade will **automatically punch the button holes**.

ECO rail is specially designed to accept the buttons in the vanes, to create a very strong connection. Another unique design feature is that the rail **nests** together for easy storage, and the **insert tabs are pre-formed at 90°**, so less time is spent preparing the rail for final assembly.

The vane/rail sections can either be pushed together manually, or by using the Vanemate assembler. **No peening, chiseling, or welding is required**; the system is locked together!

	Gauge	Width	Bundle Qty (Ft)	Vane Centers
2" Vane	26		100	N/A
2" Rail	24	4.5	200	2 1/2"
4" Vane	24		50	N/A
4" Rail	22	7	100	3 1/2"

Patent Number 5,927,339

ECO TIE RODS

ECO Tie Rods are made from solid steel, zinc plated 3/8" threaded rod. The inner flange nut is permanently crimped onto the rod, leaving 5/8" to 'pop' through the duct wall.

As the rods are 'popped' into holes in the duct, the rubber O-Ring is sandwiched between the inner flange and duct wall to create an air tight, water tight seal.

To complete the assembly, just 'zip' on threaded flange nuts from the outside.

Decrease Tie Rod
labor costs by as
much as 75%!

Decrease total Tie Rod
Reinforcement costs
by as much as 50%!

- Finished, ready to install ECO Tie Rods are less expensive than conduit type reinforcements or transverse angle reinforcements. No more cutting and deburring; no more scrap conduit; one less operation!
- ECO Tie Rods are stronger than conduit tie rods! Solid steel, from end to end. No more worries about conduit kinking or conduit inserts failing over time.
- ECO Tie Rods are less labor intensive to install into ductwork than conduit type reinforcements. ECO Tie Rods are a one-man operation: Pop them in, Zip on the nuts, and the system is complete.
- ECO Tie rods are a SMACNA approved reinforcement. ECO Tie Rods reduce the need for expensive and time consuming transverse angle or Z-bar reinforcements!

ECO Tie Rods are stocked for
even duct sizes, 10" through 36"

Odd sizes, or sizes over 36", are
available by special order.

Patent Number 6,116,833

