



AIR DISTRIBUTION SYSTEMS & PRODUCTS

PRODUCTS CATALOGUE





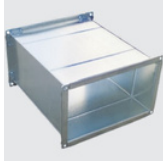
RECTANGULAR DUCT

SINGLE-LINED-DOUBLE WALL



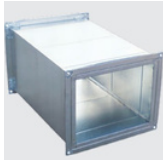
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Straight Duct



Straight Duct-SD

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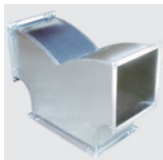
- Solid Inner Shell With Thermal Insulation-DWD
- Perforated Inner Shell-DWPD

Straight Lined Duct



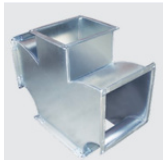
Straight Lined-SLD

Split Bend



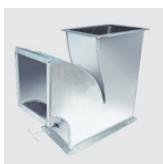
Split Bend-SB

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Y Branch



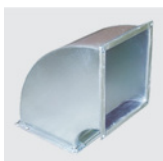
Wye-Branch - WYEBS

Reducer



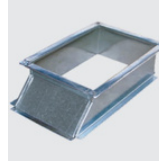
- Concentric Reducer-CRED
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- Rectangular Radius Bend-RE
- Radius Elbow With Splitter Vanes-REV
- Transitional Elbow-TE
- Square Throat Bend -SQEV

Take Off 450



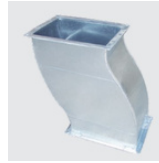
Take Off 45° to 45°

Turning Vanes



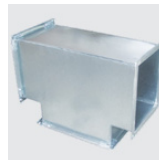
- Turning Vanes
- Splitters vanes

Offset



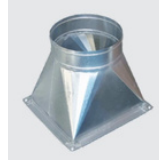
- Offset - OFF
- Radius Offset-ROFF

Rectangular Tee



Rectangular Tee-RECTEE

Rectangular To Round



Transition Duct - RR

Material of Construction

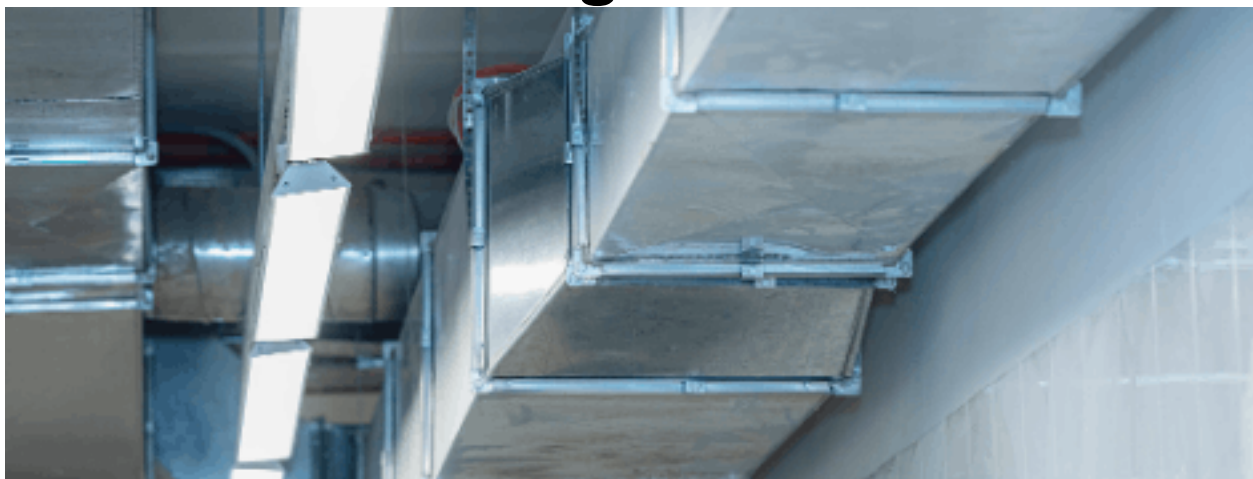
Method of Construction

Rectangular Duct Specifications

- Transverse Joints
- Corner Assembly
- Assembly Sequence
- Duct Work Construction Schedule
- Duct Factory Shop Standard



Rectangular Duct



Parallel Solutions offers factory-manufactured rectangular duct and accessories designed to provide a top-tier selection of products across a wide range of standard dimensions. With the aim of reducing on-site assembly expenses, the rectangular duct is provided in lengths of up to 1.2 meters, extendable to 1.5 meters as an option. The longitudinal seams are typically created using Pittsburgh locks. Besides the cost-effective TDCTM transverse duct connectors, the options include S-drive slip joints, four-bolt connectors, and applied duct connectors. The rectangular ductwork can be shipped in fully assembled form or disassembled. Our standard rectangular items adhere to SMACNA's 2005 duct construction standards. Additionally, we have the capability to create customized rectangular ducts for commercial and industrial applications, tailored to your specific requirements.



Benefits

- Installation is easy and hassle-free, unlike manual flange application.
- The TDC connection becomes a flawless airtight seal upon completion.
- Noise is absent due to the integrated flange, unlike other types.
- No additional internal sealing around edges is required.
- TDC ducts can be assembled and disassembled smoothly without affecting structural integrity.
- System balance ensures precise CFM as air leakage is nearly non-existent.
- Transverse seams come with pre-applied factory sealant.
- Duct components are clearly labeled and cross-referenced for straightforward installation.



Straight Duct (SD)



Connectors shall be:

- TDC (Transverse duct connector)
35 x35 mm
- S & D - Slip & Drive
- Slide on Flanges-35x35 mm
- Angle Frame with welded joints
30 x 30mm to 50 x 50 mm

Duct & Fittings can be supplied either fully assembled form or partial assembled (minimum requirement for assemble of straight duct at site) as per project requirement.

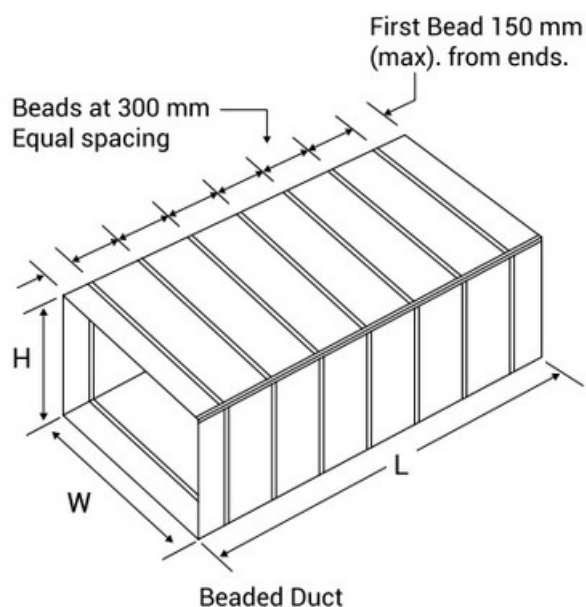
Discription

The specified construction must adhere to the standards outlined in SMACNA-2005 3rd Edition. Rectangular straight ducts with single walls will be constructed using Pittsburgh lock or double corner lock longitudinal seam methods. The ducts will come in standard nominal lengths of 1200 mm and 1130 mm.

Steel specification

- Galvanized Steel - ASTM 653 - G90 (Regular Spangles)
- Black steel ASTM - A366/A619
- Stainless Steel - ASTM A240/480 (316L 2B & 304)
- Aluminum - ASTM B 209 - Type alloy 3003 - H14

Dimension



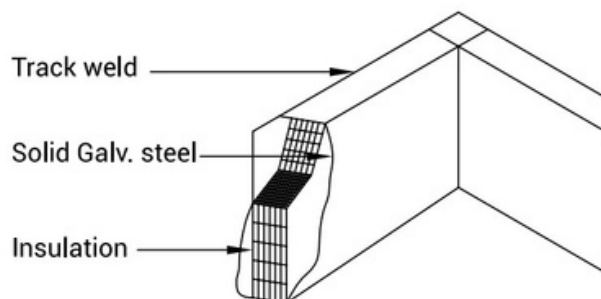
The duct can be provided upon request, in both black steel and stainless steel variations, offering versatility. Furthermore, our comprehensive range includes rectangular straight ducts and fittings, all of which are adaptable with double-wall construction or equipped with standard thermal/acoustic lining upon your preference.



Straight Double Wall Duct (Solid Inner Shell With Thermal Insulation)



Dimension

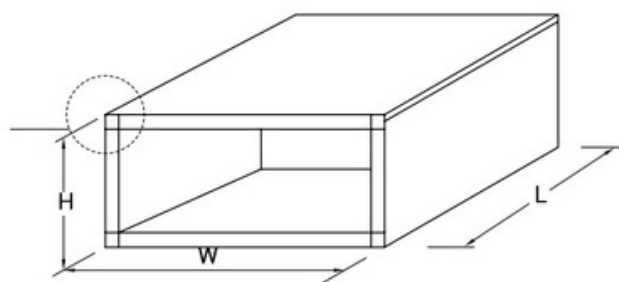


Discription

Double Wall Rectangular shaped straight ducts and accessories come with an insulated lining wrapped in black glass tissue, which acts as protection against the growth of microorganisms and erosion.

This insulation, designed for both thermal and acoustic benefits, can withstand air velocities of up to 25 m/s. The typical supplied lengths are 1130 and 1200 mm, with a standard thickness of 25 mm for acoustic/thermal insulation and a density of 48 kg/m³. Different thicknesses and densities are available upon request.

Outer and inner shell can be supplied with galvanized steel, black steel, aluminium stainless steel or painted steel.



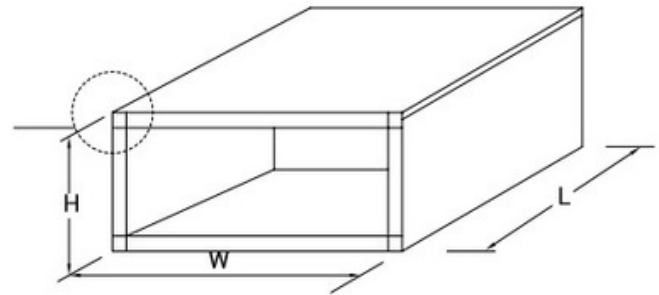
Duct will be supplied pon Request with Black steel & Stainless steel.



Straight Double Wall Duct (Perforated Inner Shell)



Dimension



Discription

The Double Wall Rectangular Straight Duct and its components offer remarkable noise management within the air distribution process. These insulated double-wall ducts consist of a sturdy outer metal layer and a perforated inner shell, enveloping a layer of acoustic/thermal insulation for enhanced sound and temperature control.

Standard construction made of galvanized steel with a galvanized perforated inner wall with standard acoustic /thermal insulation of thickness 25 mm; 48kg/m³ density with BGT facing.

Insulation type can be changed upon request. Outer shell can be supplied in galvanized steel, stainless steel, black steel, aluminium or painted steel while inner perforated shell to be in galvanized or black steel.

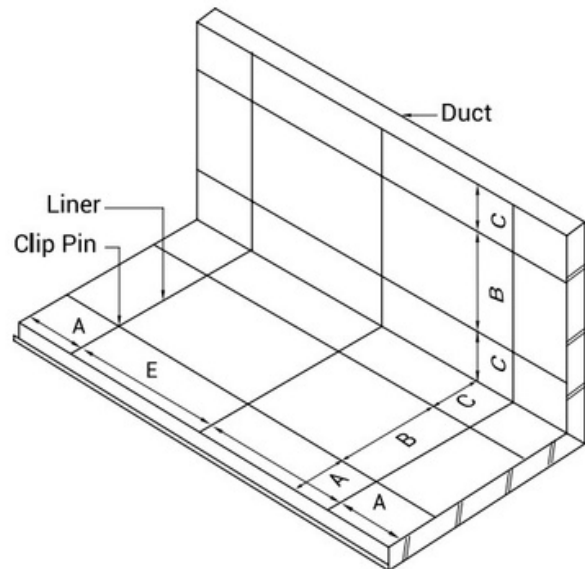
Rubber insulation can be provided instead fiber glass insulation upon request



Straight Lined Duct (SLD)



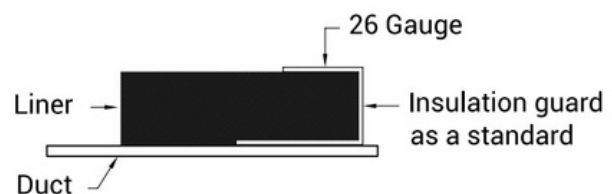
Dimension



Discription

Double Wall Rectangular lined straight ducts and fittings are provided with an insulated liner covered in black glass tissue, serving to guard against microbial development and erosion. This thermal/acoustic insulation has the capacity to endure air velocities of up to 25 m/s. Standard supply length are 1130 & 1200 mm Standard acoustic/thermal insulation thickness: 25 mm; density 48 kg/m³. Others thickness and density can be supplied on request.

- Fasteners shall be either self adhesive or rib pin type.
- Adhesive shall be applied at ends of liner.
- Fixing a metal nosing an optional and upon request only.
- All transverse edges shall be coated with adhesive except nosing is present.
- Maximum spacing for fasteners, Actual intervals are approximately.

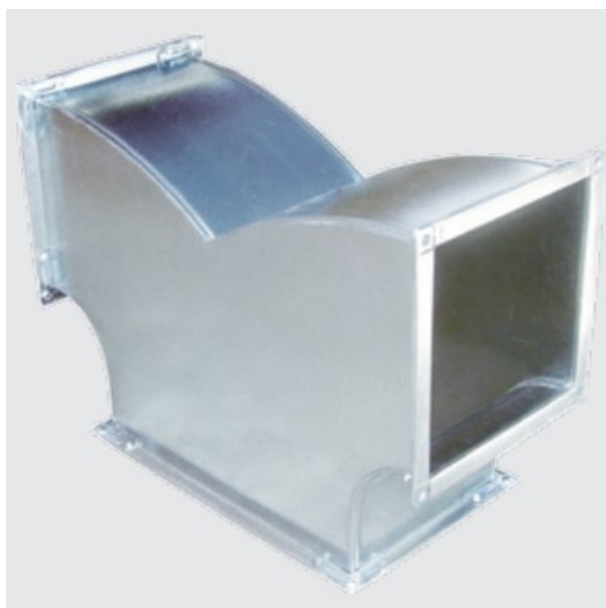


Air Velocity	Dimensions				
	A	B	C	D	E
0-2500 FPM	3"	12"	4"	6"	18"
0-12.50 M/S	76	305	102	152	457
2501-5000FPM	3"	6"	4"	6"	16"
12.51-25 M/S	76	152	102	152	406

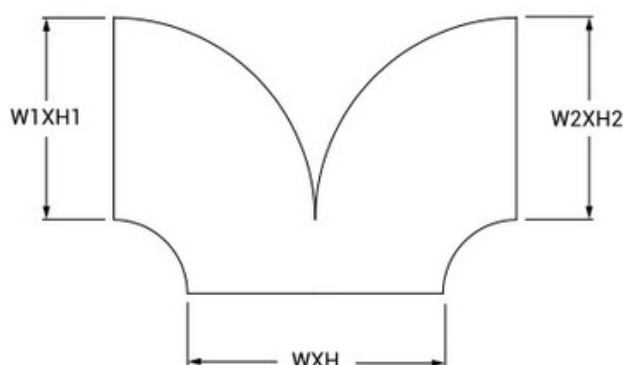
Upon request rubber insulation can be provided instead fiber glass insulation



Rectangular Split Bend(SB)



Dimension



Discription

Standard construction Shall be in compliance with SMACNA-2005 3rd Edition; Galvanized steel Specification ASTM A 653 -G90 Lock Forming Quality/Regular Spangles. (for other material consult Parallel Solutions)

Duct & Fittings can be supplied either fully assembled form or partial assembled as per project requirement.

Splitter bend serving in both direction i.e, left and right.

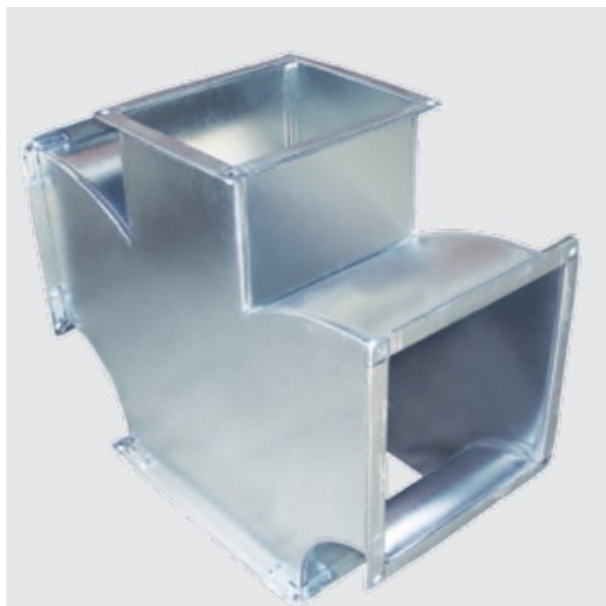
Duct will be supplied upon Request with Black steel & Stainless steel

Connectors shall be:

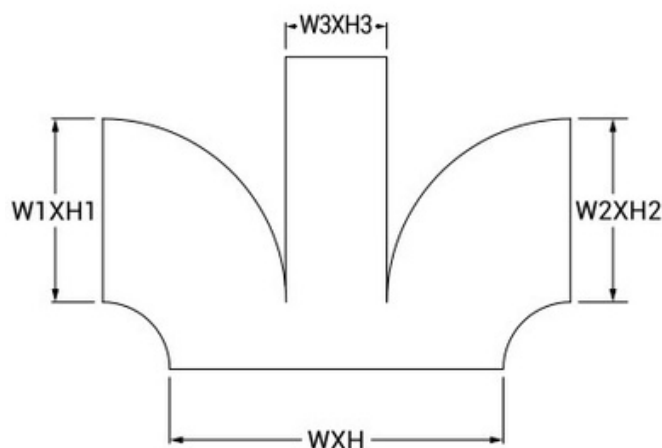
- TDC (Transverse duct connector)
35 x35mm
- S & D-Slip & Drive
- Slide on Flanges-35x35 mm
- Angle Frame with welded joints
30 x 30mm to 50 x 50 mm



Rectangular Parallel Flow Branch(CF)



Dimension



Discription

Standard construction Shall be in compliance with SMACNA-2005 3rd Edition; Galvanized steel Specification ASTM A 653 -G90 Lock Forming Quality/Regular Spangles. (for other material consult Parallel Solutions)

Duct & Fittings can be supplied either fully assembled form or partial assembled as per project requirement.

Splitter bend serving in both direction i.e, left and right.

Duct will be supplied upon Request with Black steel & Stainless steel

Connectors shall be:

- TDC (Transverse duct connector)
35 x35mm
- S & D-Slip & Drive
- Slide on Flanges-35x35 mm
- Angle Frame with welded joints
30 x 30mm to 50 x 50 mm



Y- Branch With Splitter Damper(WYEBS)



Discription

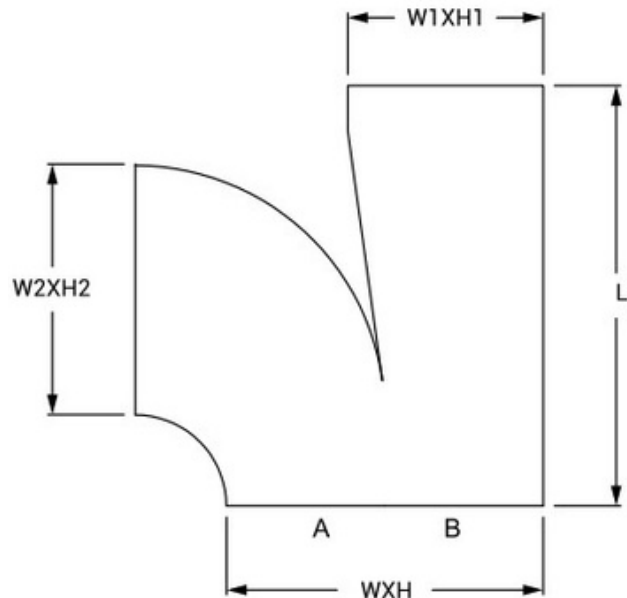
Standard construction Shall be in compliance with SMACNA-2005 3rd Edition; Galvanized steel Specification ASTM A 653 -G90 Lock Forming Quality/Regular Spangles. (for other material consult Parallel Solutions)

Duct & Fittings can be supplied either fully assembled form or partial assembled (minimum requirement for assemble of straight duct at site) as per project requirement.

Connectors shall be:

- TDC (Transverse duct connector) 35 x35mm
- S & D-Slip & Drive
- Slide on Flanges-35x35 mm
- Angle Frame with welded joints 30 x 30mm to 50 x 50 mm

Dimension



WYE Branch with a damper serving in both direction i.e, left and right.

Splitter Damper Length is Equal to 1.5 A
Where: A = 100 mm Min.

Trunk may be divided using:

$$A = \left(\frac{(W2 \times H2)}{(W1 \times H1) + (W2 \times H2)} \right) W$$
$$B = \left(\frac{(W1 \times H1)}{(W1 \times H1) + (W2 \times H2)} \right) W$$

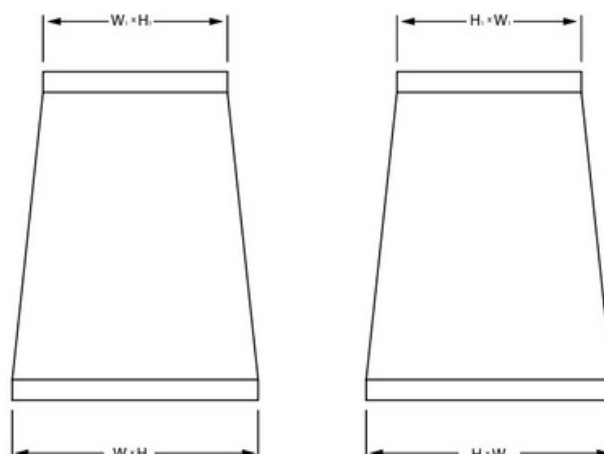
Duct will be supplied upon request with Black steel & Stainless steel



Rectangular Concentric Reducer(CRED)



Dimension



Discription

Standard construction Shall be in compliance with SMACNA-2005 3rd Edition; Galvanized steel Specification ASTM A 653 -G90 Lock Forming Quality/Regular Spangles. (for other material consult Parallel Solutions)

Duct & Fittings can be supplied either fully assembled form or partial assembled (minimum requirement for assemble of straight duct at site) as per project requirement.

The single wall rectangular concentric reducer will feature Pittsburgh lock longitudinal seam construction. The duct will be supplied in the standard length, unless any specific variations are specified.

Duct will be supplied upon Request with Black steel & Stainless steel

Connectors shall be:

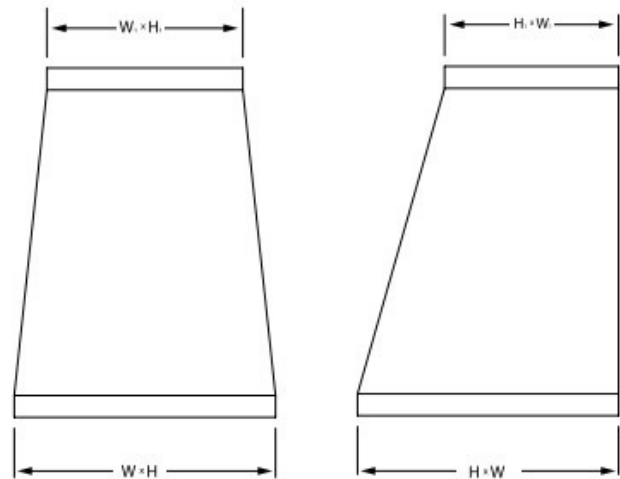
- TDC (Transverse duct connector)
35 x35mm
- S & D-Slip & Drive
- Slide on Flanges-35x35 mm
- Angle Frame with welded joints
30 x 30mm to 50 x 50 mm



Eccentric Reducer(ERED)



Dimension



Discription

Standard construction Shall be in compliance with SMACNA-2005 3rd Edition; Galvanized steel Specification ASTM A 653 -G90 Lock Forming Quality/Regular Spangles. (for other material consult Parallel Solutions)

Duct & Fittings can be supplied either fully assembled form or partial assembled (minimum requirement for assemble of straight duct at site) as per project requirement.

Eccentric reducer shall be Pittsburgh lock longitudinal seam construction.

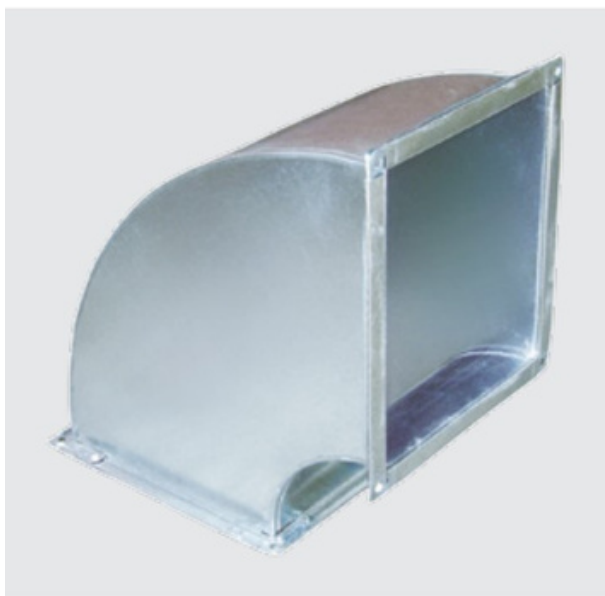
Duct will be supplied upon request with Black steel & Stainless steel

Connectors shall be:

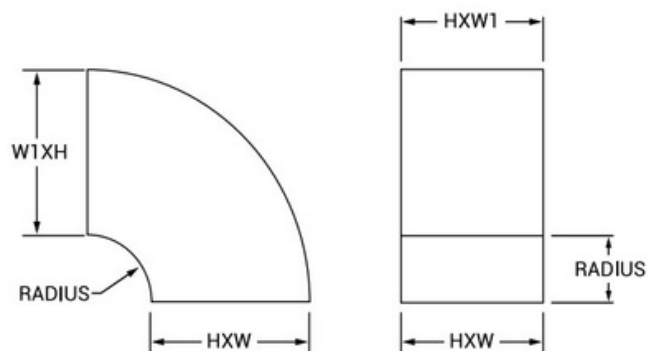
- TDC (Transverse duct connector)
35 x35mm
- S & D-Slip & Drive
- Slide on Flanges-35x35 mm
- Angle Frame with welded joints
30 x 30mm to 50 x 50 mm



Rectangular Radius Elbow(RE)



Dimension



Discription

Standard construction Shall be in compliance with SMACNA-2005 3rd Edition; Galvanized steel Specification ASTM A 653 -G90 Lock Forming Quality/Regular Spangles. (for other material consult Parallel Solutions)

Duct & Fittings can be supplied either fully assembled form or partial assembled as per project requirement.

Rectangular Radius bend shall be Pittsburgh lock longitudinal seam construction.

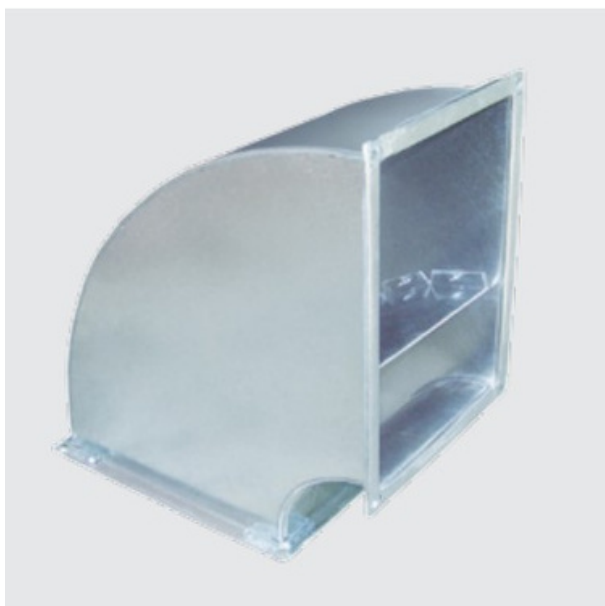
Duct will be supplied upon Request with Black steel & Stainless steel

Connectors shall be:

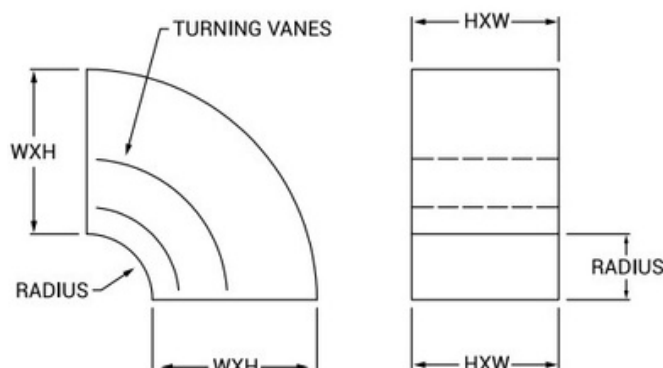
- TDC (Transverse duct connector)
35 x35mm
- S & D-Slip & Drive
- Slide on Flanges-35x35 mm
- Angle Frame with welded joints
30 x 30mm to 50 x 50 mm



Radius Elbow With Splitter Vanes(REV)



Dimension



Discription

Standard construction Shall be in compliance with SMACNA-2005 3rd Edition; Galvanized steel Specification ASTM A 653 -G90 Lock Forming Quality/Regular Spangles. (for other material consult Parallel Solutions)

Duct & Fittings can be supplied either fully assembled form or partial assembled (minimum requirement for assemble of straight duct at site) as per project requirement.

Radius Elbow with Splitter Vanes shall be Pittsburgh lock longitudinal seam construction, with mentioned and standard length. Radius bend with splitter vanes when bending radius is less than width

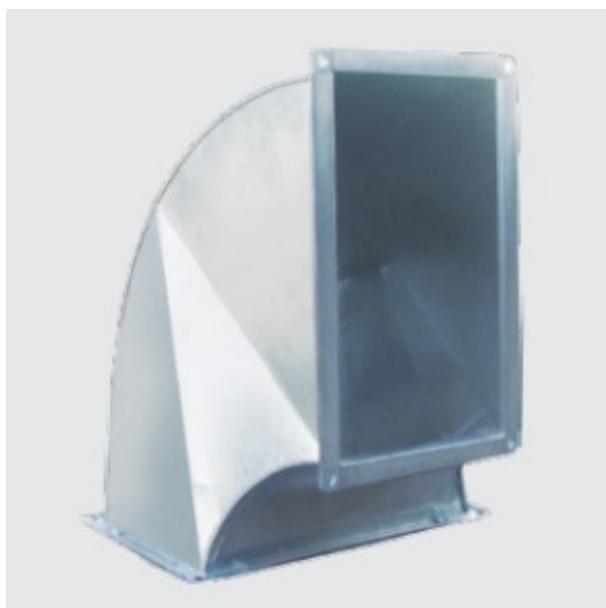
Duct will be supplied upon request with Black steel & Stainless steel

Connectors shall be:

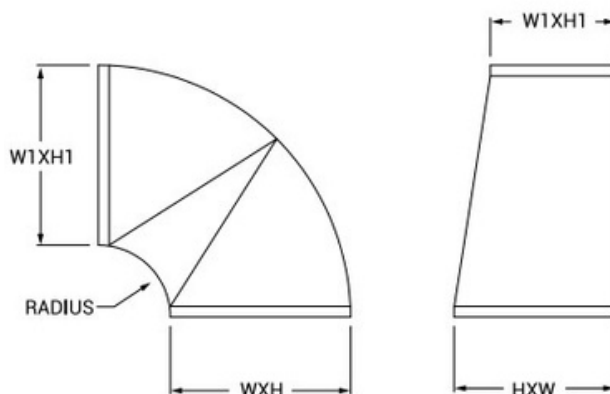
- TDC (Transverse duct connector)
35 x35mm
- S & D-Slip & Drive
- Slide on Flanges-35x35 mm
- Angle Frame with welded joints
30 x 30mm to 50 x 50 mm



Drop Check Elbow(TE)



Dimension



Discription

Standard construction Shall be in compliance with SMACNA-2005 3rd Edition; Galvanized steel Specification ASTM A 653 -G90 Lock Forming Quality/Regular Spangles. (for other material consult Parallel Solutions)

Duct & Fittings can be supplied either fully assembled form or partial assembled as per project requirement.

Transitional Elbow shall be Pittsburgh lock longitudinal seam construction

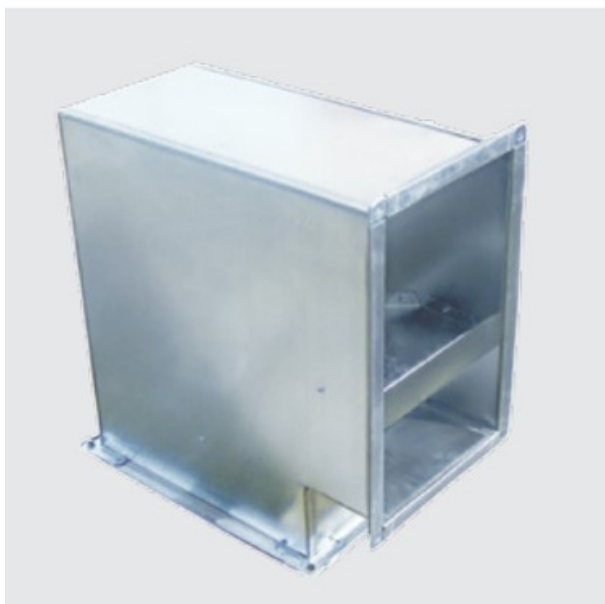
Duct will be supplied upon Request with Black steel & Stainless steel

Connectors shall be:

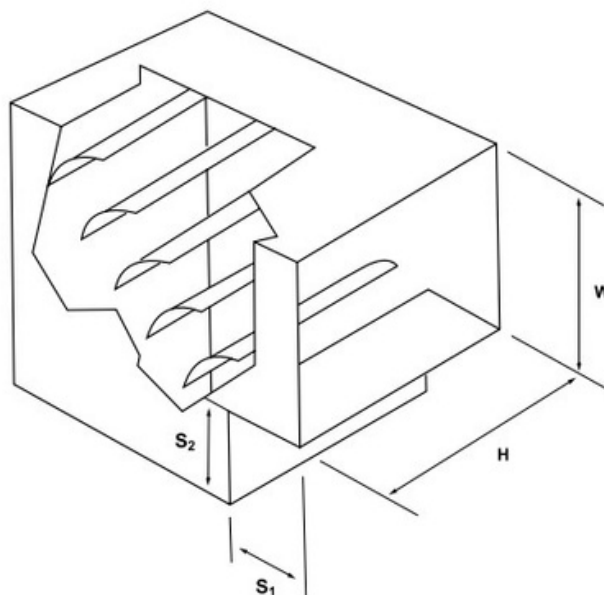
- TDC (Transverse duct connector)
35 x35mm
- S & D-Slip & Drive
- Slide on Flanges-35x35 mm
- Angle Frame with welded joints
30 x 30mm to 50 x 50 mm



Mitered Elbow With Vanes (SQEV)



Dimension



Discription

Standard Square Throat Elbow with Turning Vanes shall be available with throat length N1 & N2=150 mm

Ordering

Product Code : SQEV-W-H-TL

Type-SQEV

W-Width-mm

H-Height-mm

TL-Throat Length N-mm

*Standard Throat Length Shall be
N1 & N2=150 mm

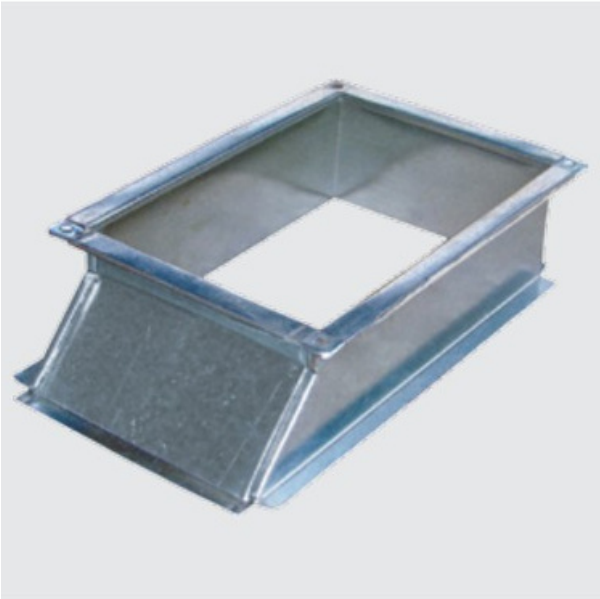
Duct will be supplied upon request with Black steel & Stainless steel

Connectors shall be:

- TDC (Transverse duct connector)
35 x35mm
- S & D-Slip & Drive
- Slide on Flanges-35x35 mm
- Angle Frame with welded joints
30 x 30mm to 50 x 50 mm



Rectangular Take Off-45° (TO 45°)



Description

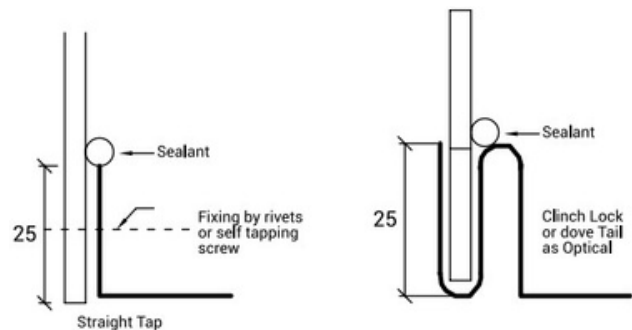
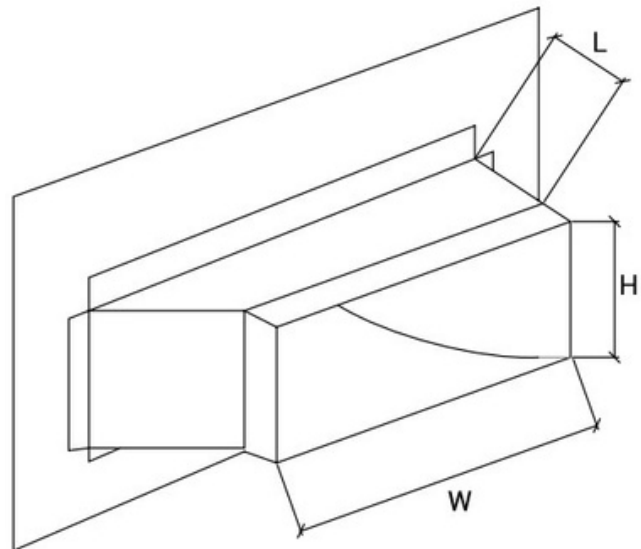
Standard construction Shall be in compliance with SMACNA-2005 3rd Edition; Galvanized steel Specification ASTM A 653 -G90 Lock Forming Quality/Regular Spangles. (for other material consult Parallel Solutions)

Duct & Fittings can be supplied either fully assembled form or partial assembled (minimum requirement for assemble of straight duct at site) as per project requirement.

Connectors shall be:

- TDC (Transverse duct connector) 35 x35mm
- S & D-Slip & Drive
- Slide on Flanges-35x35 mm
- Angle Frame with welded joints 30 x 30mm to 50 x 50 mm

Dimension



Take off 45o connection can be supplied with splitter damper upon request.

Ordering

Product Code : SQEV-W-H-TL

Type-SQEV

W-Width-mm

H-Height-mm

TL-Throat Length N-mm

*Standard Throat Length Shall be

N1 & N2=150 mm

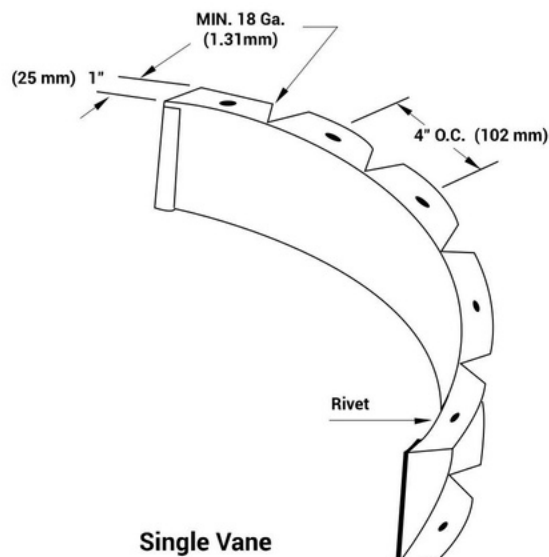
Duct will be supplied upon request with Black steel & Stainless steel



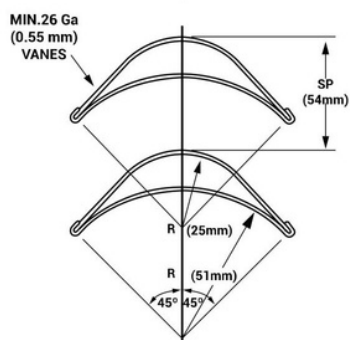
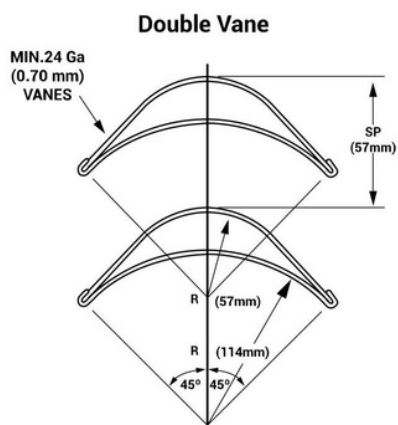
Fabrication & Assembly of TURNING VANES



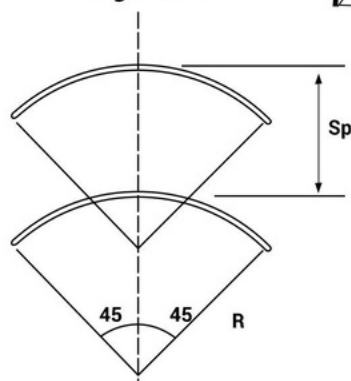
SHORT RADIUS VANES



Discription



Single Vane



DUCT SIZE	Single Vane Schedule			
	Type	R	Sp	Ga
0-914	Small	50	38	24 (0.7mm)
914 Up	Large	114	83	22 (0.85mm)
* 1500 Up Segmented				

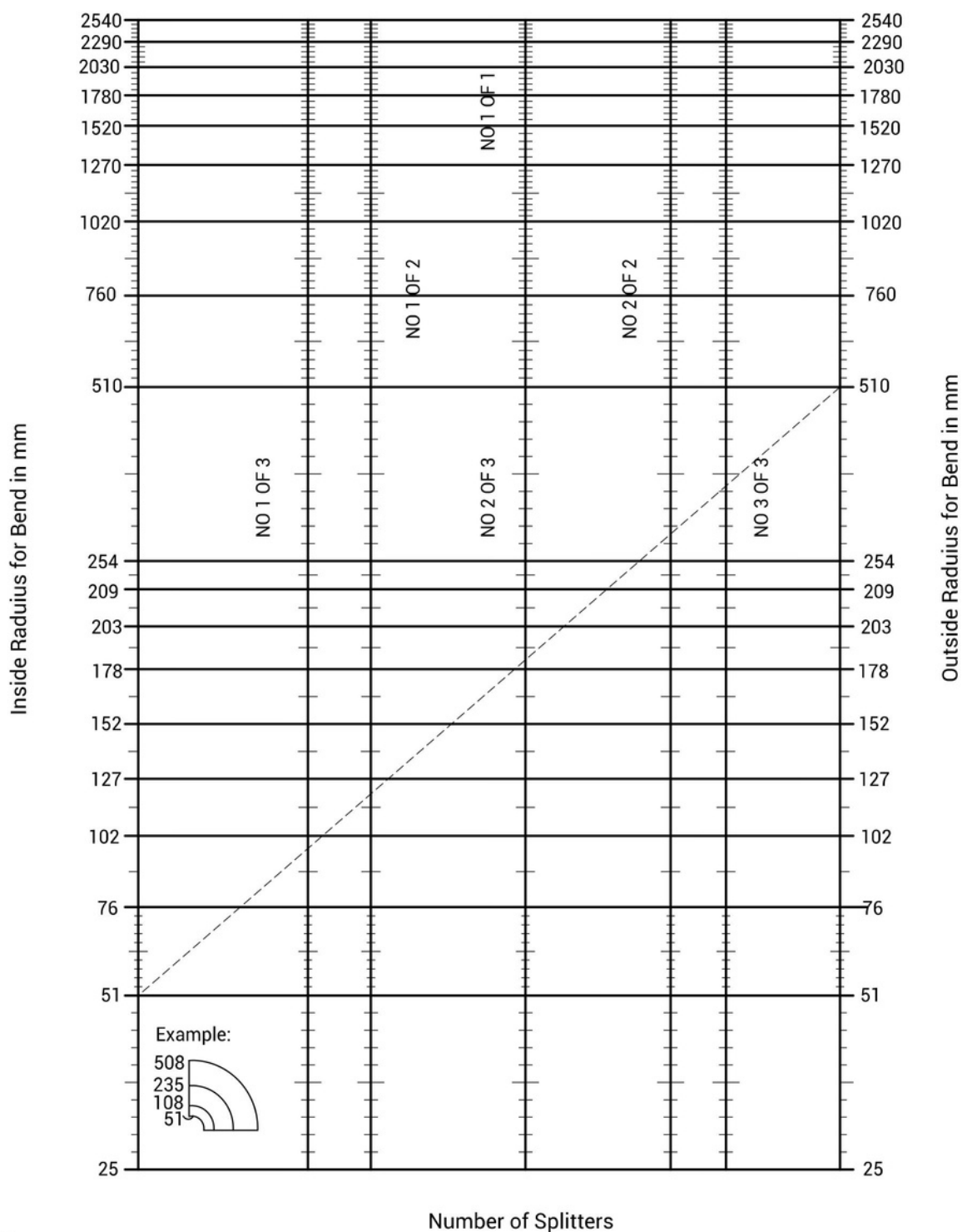
DUCT SIZE	Double Vane Schedule			
	Type	R	Sp	Ga
0-1219	Small	51	54	26(0.55mm)
1219 Up	Large	114	83	24(0.7mm)
* 1500 Up Segmented				

Duct will be supplied upon Request with Black steel & Stainless steel



SPLITTERS VANES

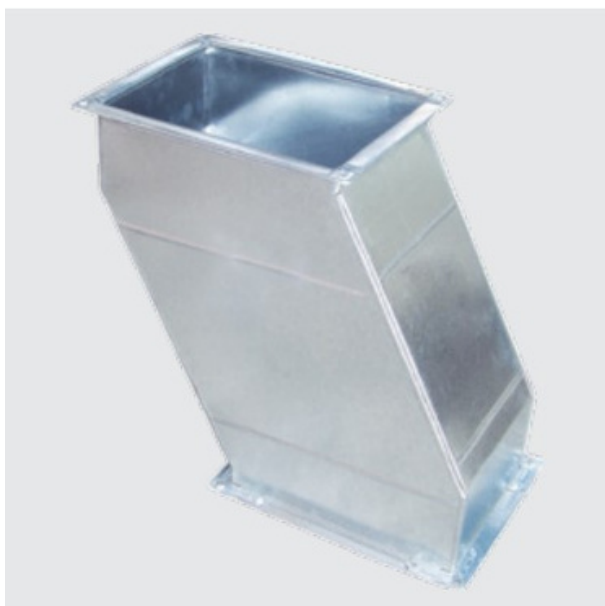
NUMBER OF SPLITTERS VANES FOR BENDS

**Note:**

- Up to 300 mm width - No Vanes
 - 301 to 600 mm width - 1 Vane
 - 601 to 1200 mm width - 2 Vanes
 - 1201 and above - 3 Vanes
- No Vanes Are Required For Elbows Less Than 45°



Rectangular Mitered Offset(OFF)

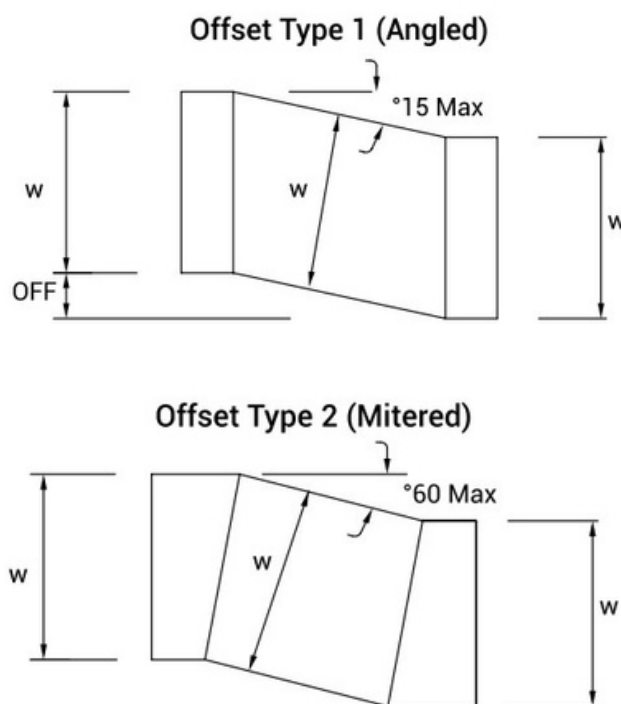


Discription

Standard construction Shall be in compliance with SMACNA-2005 3rd Edition; Galvanized steel Specification ASTM A 653 -G90 Lock Forming Quality/Regular Spangles. (for other material consult Parallel Solutions)

Duct & Fittings can be supplied either fully assembled form or partial assembled as per project requirement.

Dimension



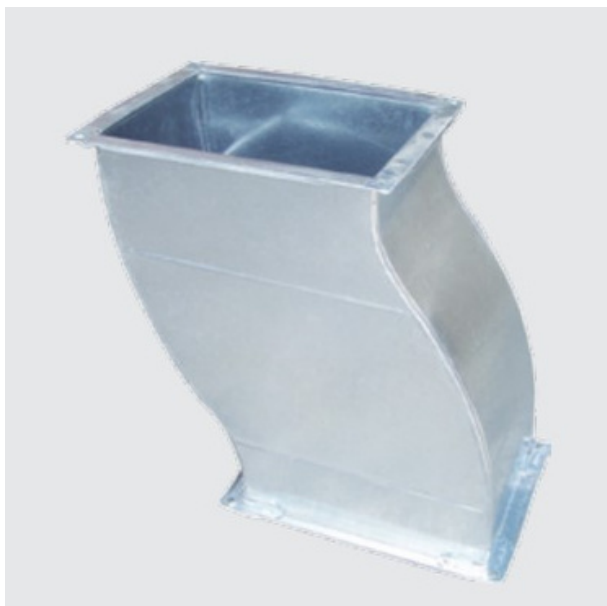
Duct will be supplied upon Request with Black steel & Stainless steel

Connectors shall be:

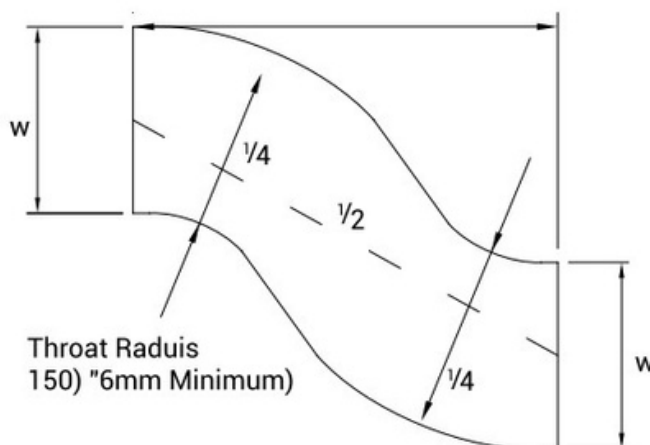
- TDC (Transverse duct connector)
35 x35mm
- S & D-Slip & Drive
- Slide on Flanges-35x35 mm
- Angle Frame with welded joints
30 x 30mm to 50 x 50 mm



Rectangular Radius Offset (ROFF)



Dimension



Discription

Standard construction Shall be in compliance with SMACNA-2005 3rd Edition; Galvanized steel Specification ASTM A 653 -G90 Lock Forming Quality/Regular Spangles. (for other material consult Parallel Solutions)

Duct & Fittings can be supplied either fully assembled form or partial assembled (minimum requirement for assemble of straight duct at site) as per project requirement.

Duct will be supplied upon request with Black steel & Stainless steel

Connectors shall be:

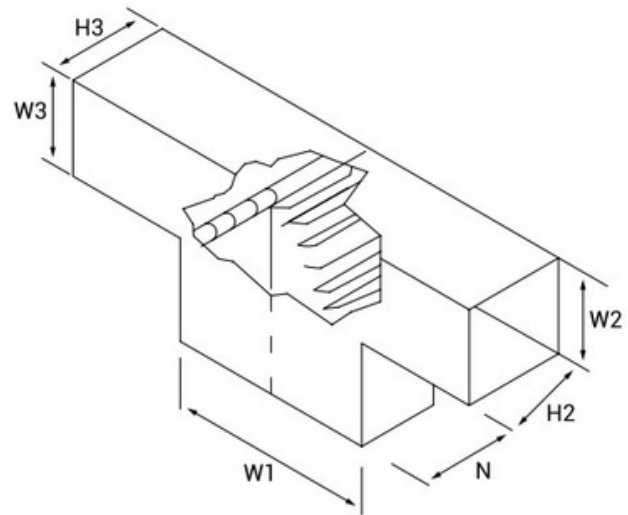
- TDC (Transverse duct connector)
35 x35mm
- S & D-Slip & Drive
- Slide on Flanges-35x35 mm
- Angle Frame with welded joints
30 x 30mm to 50 x 50 mm



Rectangular Tee(RECTEE)



Dimension



Discription

Standard construction Shall be in compliance with SMACNA-2005 3rd Edition; Galvanized steel Specification ASTM A 653 -G90 Lock Forming Quality/Regular Spangles. (for other material consult Parallel Solutions)

Duct & Fittings can be supplied either fully assembled form or partial assembled (minimum requirement for assemble of straight duct at site) as per project requirement.

Rectangular TEE shall be standard throat $N=150\text{mm}$, otherwise mentioned the throat length

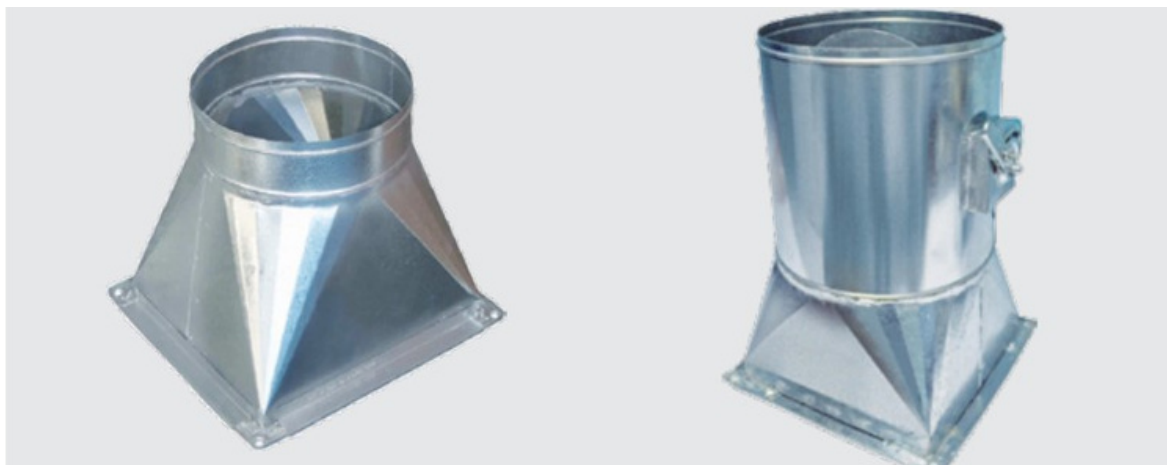
Duct will be supplied upon request with Black steel & Stainless steel

Connectors shall be:

- TDC (Transverse duct connector)
35 x35mm
- S & D-Slip & Drive
- Slide on Flanges-35x35 mm
- Angle Frame with welded joints
30 x 30mm to 50 x 50 mm



Rectangular To Round(RR)



Discription

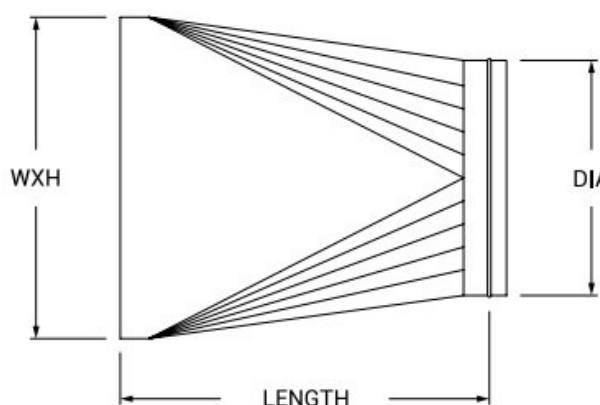
Standard construction Shall be in compliance with SMACNA-2005 3rd Edition; Galvanized steel Specification ASTM A 653 -G90 Lock Forming Quality/Regular Spangles. (for other material consult Parallel Solutions)

Duct & Fittings can be supplied either fully assembled form or partial assembled as per project requirement.

Connectors shall be:

- TDC (Transverse duct connector) 35 x35mm
- S & D-Slip & Drive
- Slide on Flanges-35x35 mm
- Angle Frame with welded joints 30 x 30mm to 50 x 50 mm
- Flange out type

Dimension



Rectangular to round Fittings shall be concentric, unless otherwise mentioned.

Ordering

Product Code : SQEV-W-H-TL

Type-SQEV

W-Width-mm

H-Height-mm

TL-Throat Length N-mm

*Standard Throat Length Shall be

N1 & N2=150 mm

Duct will be supplied upon Request with Black steel & Stainless steel



Material of Construction

1. Stainless Steel



Stainless Steel Ducts are mainly used in Kitchen, Laboratories, Food Processing Units and Operation Rooms in Hospitals or wherever more hygiene and durability is required. It has extreme durability, corrosion resistance and longevity compared to GI steel. Its rigidity makes it excellent choice for moving high volume of air without making any damage to the duct

Type: Ducts are fabricated in accordance with ASTM A240/480 and various other metal standards.

Grade: 201, 202, 304, 304L, 316 and 316L with different finishing.

Longitudinal Seam: with Pittsburgh Seam up to 1.6mm thick and continuous welded seam for the metal above 1.6mm thickness.

Transverse Connection shall be either 35mm self flange/ slide on flange/ Slip drive or with angle bar.

Reinforcement can be provided based on the requirements of the customer

2. Mild Steel

Mild Steel -commonly referred as Black Steel- Cold Rolled Sheet, LFQ, with Oil Exposed mat finished is mainly used to fabricate Kitchen Exhaust Ducts. Ducts are fabricated in compliance with ASTM A 666/A and NFPA (National Fire Protection Association).

Standard Length of the duct shall be maximum of 1200mm and metal thickness to be in a range of 1.2mm to 3mm.



Longitudinal Seam: For 1.2mm sheet, the seam can either be Pittsburgh seam or continuous welded. Above 1.2 mm thick, continuous welded joint is preferred it.

Transverse Connection shall be Mild Steel Angle Bar 30mmX30mmX3mm or 40mmX 40mm X 4mm or 50mmX50mmx5mm with continuous welded to the duct. Reinforcement shall be provided based on the requirements of the customer. All MS ducts are supplied with duly painted with red epoxy primer.

3. Aluminum



Aluminum sheets are used for Cladding as well as duct work. It has high durability, resistance to corrosion, light weight and easy to install. Ducts are fabricated in compliance with ASTM B209 alloy type 3003 H14

Longitudinal Seam: with Pittsburgh seam or riveted joints are done in special cases such as cladding.

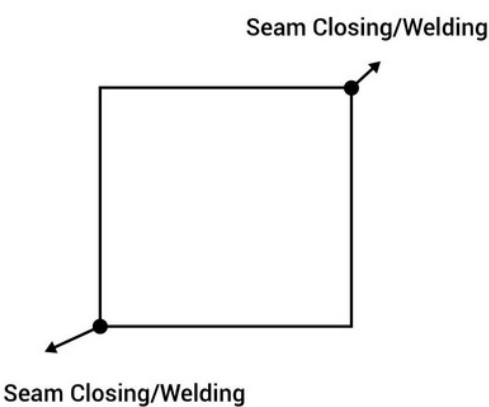
Transverse connection shall be either 35 mm self flanges or Slip drive



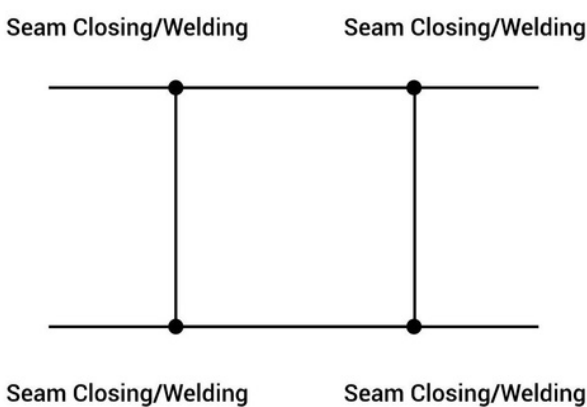
Method of Construction

Longitudinal

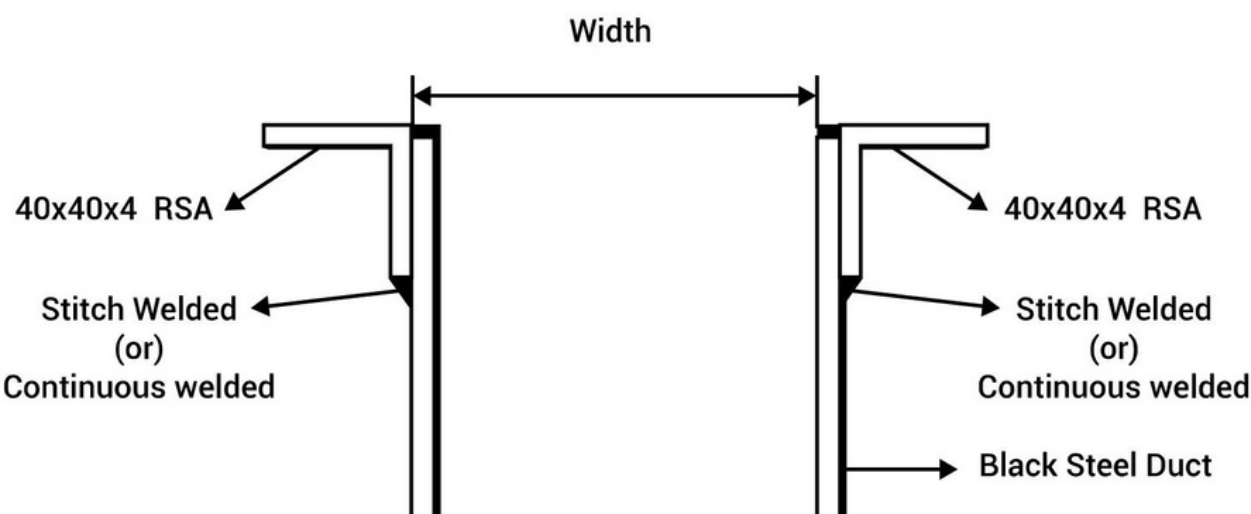
Type I



Type II



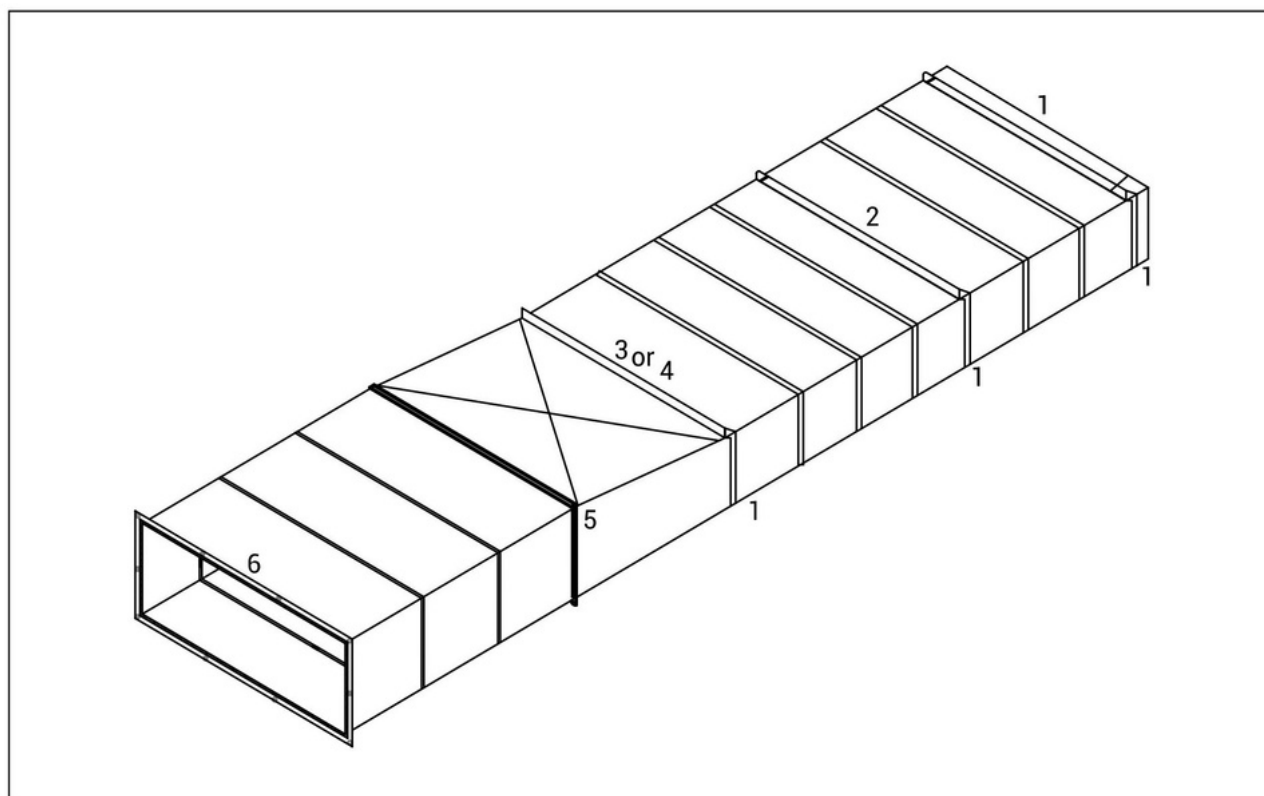
Transverse Joints





Rectangular Duct Specifications

Transverse Joints



Drive Slip & Hemmed "S" Slip



1 Drive Slip

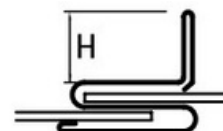


2 Hemmed "S" Slip

Reinforced "S" Slip & Standing S

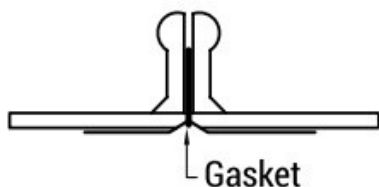


3 Reinforced "S" Slip



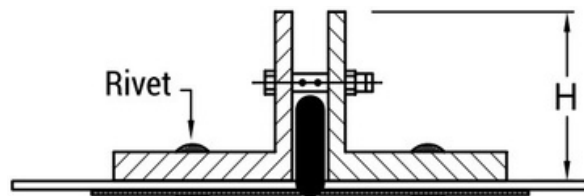
4 Standing S

Slide on Flange



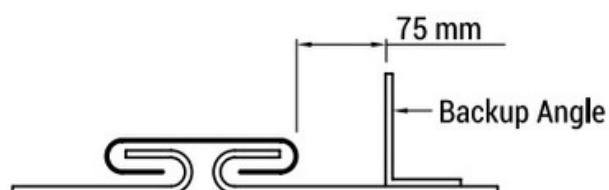
Gasket

Companion Angles



Rivet

Backup Angle for Drive Slip



75 mm

Backup Angle

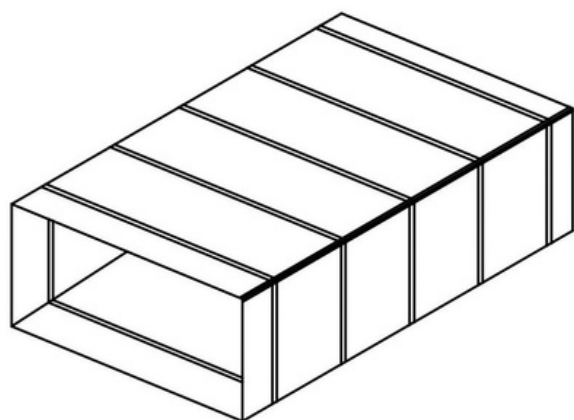
TDC Self Flange T-25A



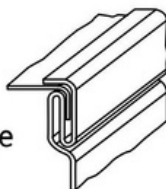
*All Dimensions and detail shall be as per SMACNA Standard



PITTSBURGH LOCK

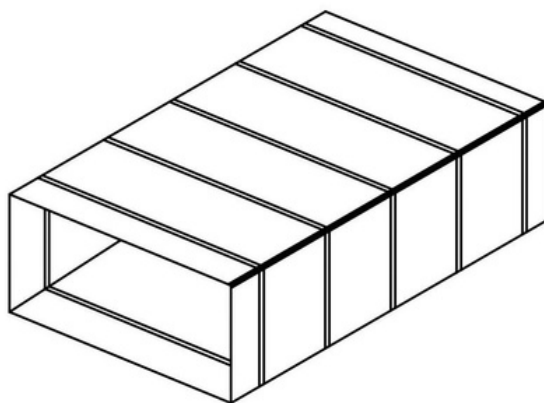


* Up to 18 Gauge

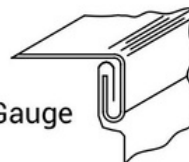


DOUBLE CORNER SEAM

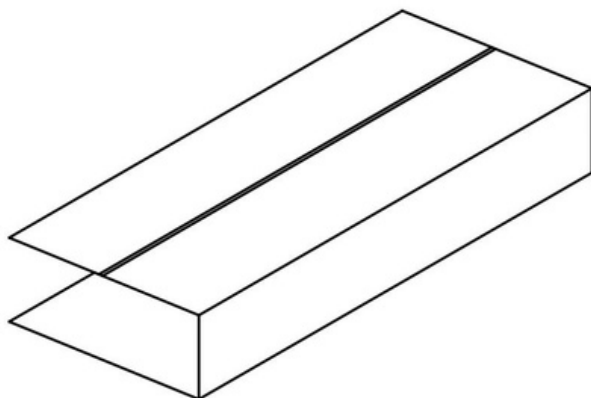
Only for Slip & Drive Slide on flange & angle framed Ducts



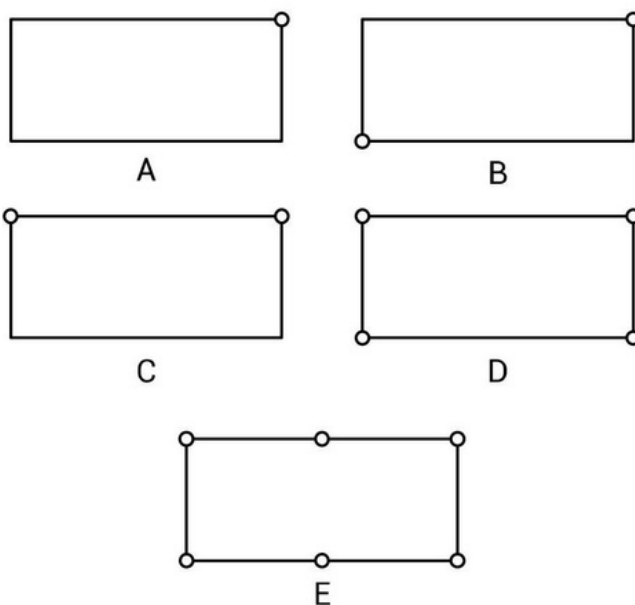
* Up to 20 Gauge



ACME LOCK



SEAM LOCATION



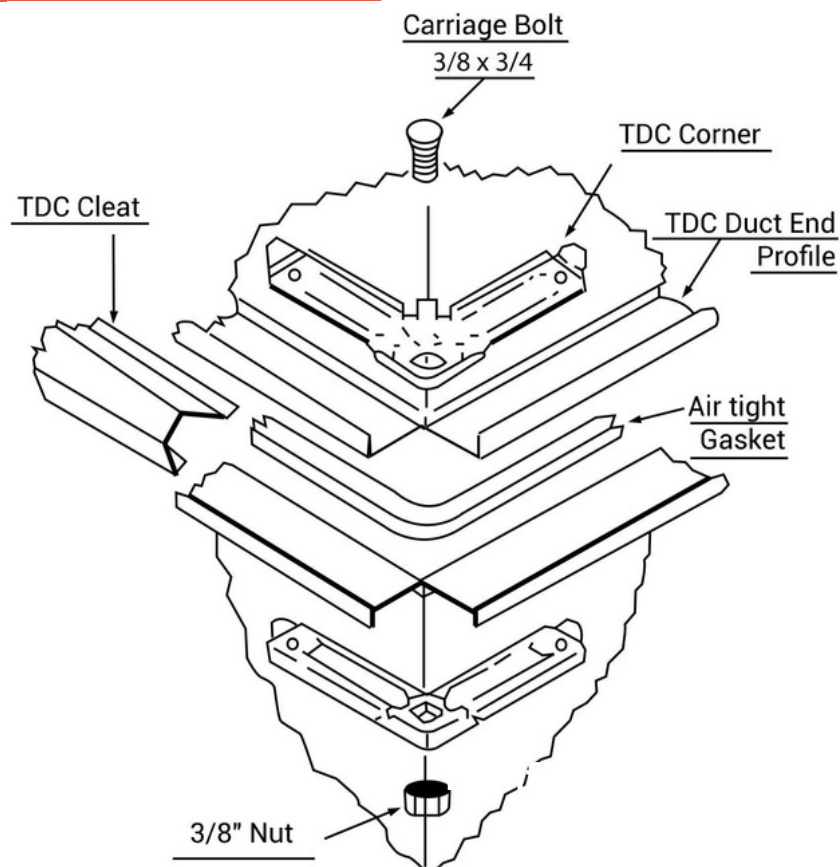
Seam location



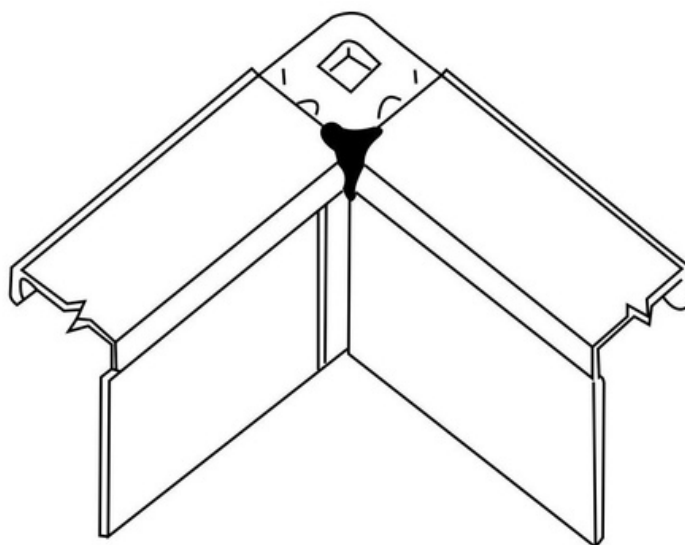
Rectangular Duct Specifications

Corner Assembly

TDC Corner



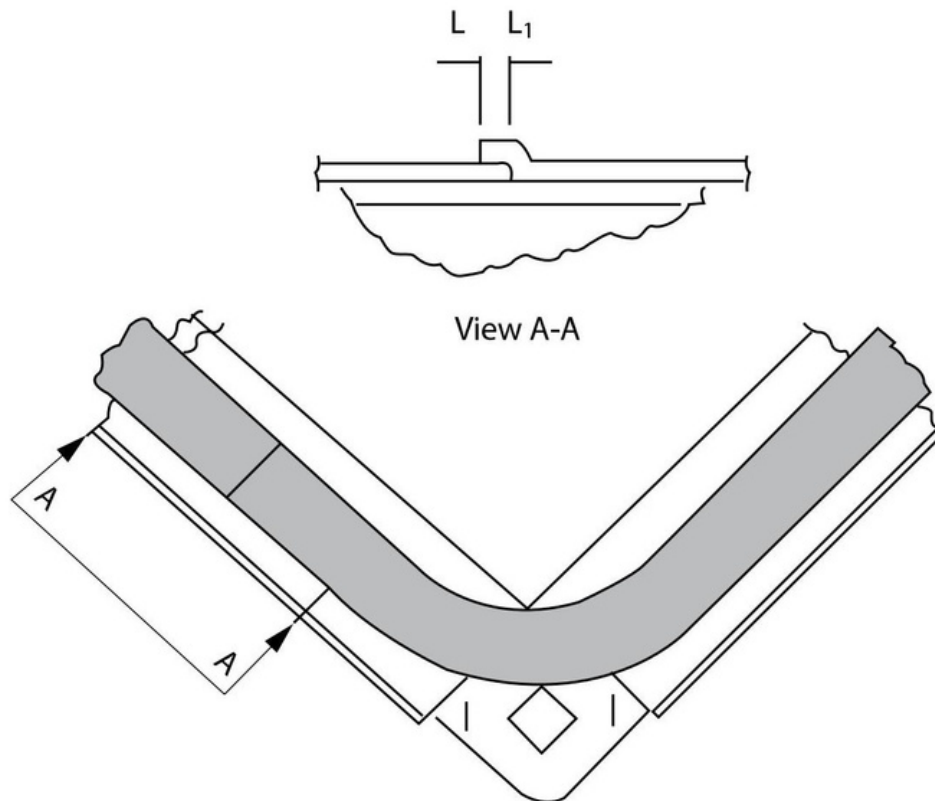
Instruction



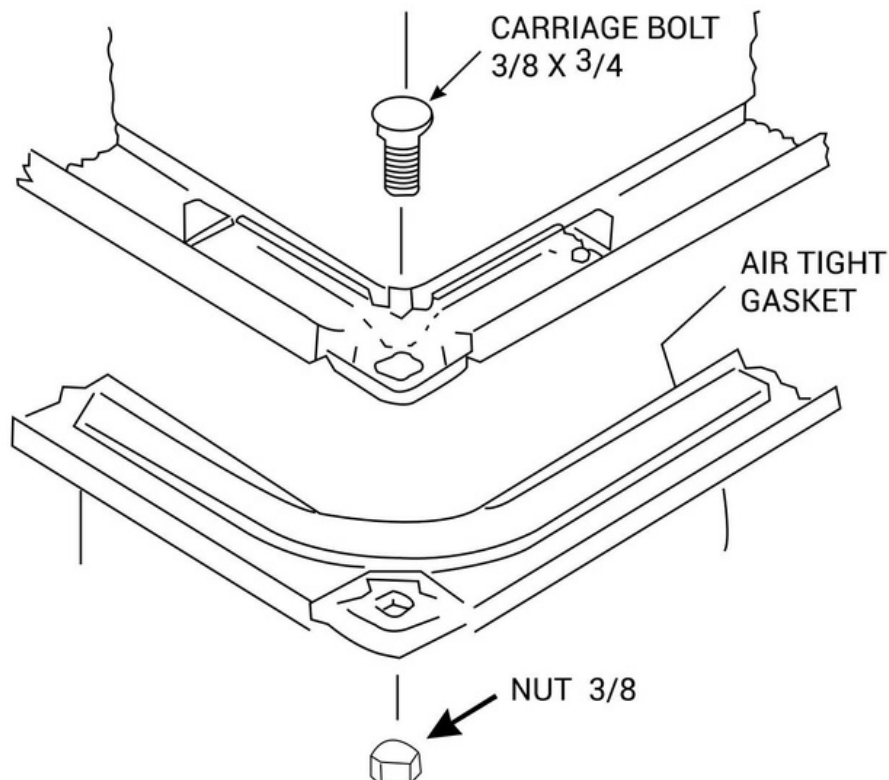
Apply Sealant over the corner and lock joint as shown. If a small Gap occurs at the end of the Lock Joint beside the TDC flange , adjust the left and right TDC Notches heads laterally so the corner notches they make are the same size as the depth of the lock (as set on Rollformer). This readjustment should eliminate any such gaps and possible leakage.



ASSEMBLY SEQUENCE



This preparation is required on only one end of each duct to be joined. Place a single length of gasket on the center of the TDC flange on all four sides of the duct sections to be joined. Turn gasket at corners as shown. The ends of the strip of gasket must overlap by 1/4" at a point about 9" away from any bolt hole.



Place one prepared end, and one bald end of Duct sections together, align the bolt holes and secure with 3/8" x 3/4" long carriage bolts at all four corners.



Rectangular Duct Specifications

Assembly Sequence

TDC CLEAT

Maximum space between clips More than 3" W.G. 6" 3" W.G. Or less 9"

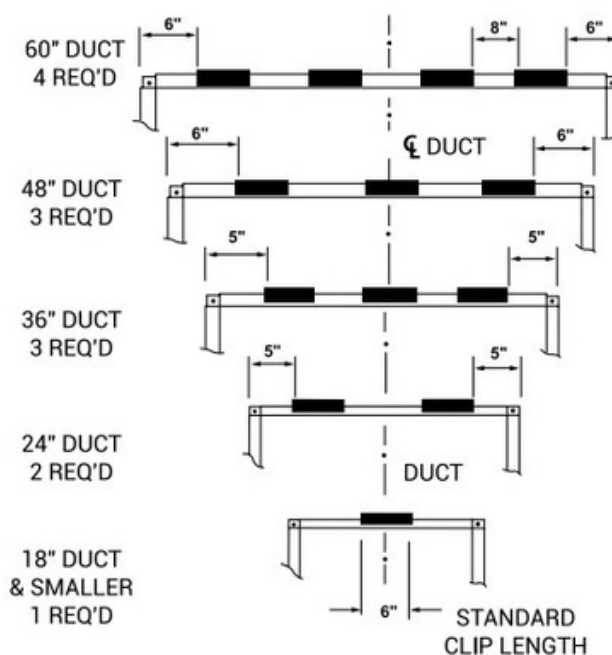


To tighten the grip of the TDC Clip to the flange by over bending the long leg of the Clip. Use the forming end of the tool as shown above

CAUTION: Use of a hammer for installation will damage Clip and may cause leakage.

RECOMMENDED CLIP SPACING

Maximum space between clips More than 3" W.G. 6" 3" W.G. Or less 9"



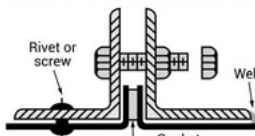
The clamping TDC Clips are installed with 6"wide full coverage TDC Clip tool as shown. For Clip Spacing, see (Recommended clip spacing) When using TDC in conjunction with slip-on four bolt Connectors, it may be desirable to increase tension on TDC Clip.



Rectangular Duct Specifications

Duct Work Construction Schedule

PRESSURE CLASS: 2"INCH, 500 PASCALS - AS PER SMACNA 2005, 3RD EDITION

Duct Size	Duct Gauge	Maximum Standard, Length, mm	Longitudinal Seams Straight & Fittings	Intermediate, Reinforcement	Transverse Connector	
					T1 Drive Slip	T-6 Hemmed Slip
0-400mm	26G (0.55mm)	1200	Double Corner Seam 	Not Required	 T1 Drive Slip	 T-6 Hemmed Slip
401-700mm	24G (0.70mm)	1130	Pittsburgh Lock 	Not Required	TDC-35 TDC JOINT 	
701-900mm	24G (0.70mm)	1130	Pittsburgh Lock 	Not Required	TDC-35 TDC JOINT 	
901-1200mm	22G (0.80mm)	1130	Pittsburgh Lock 	1 X JOINT TIE ROD	TDC-35 TDC JOINT 	
1201-1500mm	20G (1.00mm)	1130	Pittsburgh Lock 	1 X JOINT TIE ROD	TDC-35 TDC JOINT 	
1501-1800mm	20G (1.00mm)	1130	Pittsburgh Lock 	1 X JOINT TIE ROD + 1 X MID PANNEL TIE ROD	TDC-35 TDC JOINT 	
1801-2100mm	20G (1.00mm)	1130	Pittsburgh Lock 	1 X JOINT TIE ROD + 2 X MID PANNEL TIE ROD	TDC-35 TDC JOINT 	
Above 2101mm **	18G (1.20mm)	1200	Pittsburgh Lock 	REINFORCEMENT AT 600mm DISTANCE GALAVANISED ANGLE 50X50X5mm	GI ANGLE FRAME 50X50X5mm 	

Note :

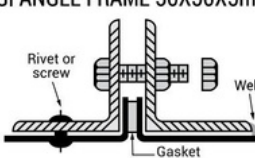
1. Duct sizes that are 150mm and over and upto 20G-1.00mm Thickness shall be beaded.
2. Standard Construction shall be made of Galvanized Steel confirming to ASTM A653-G90, Sheets
3. Thickness of the sheets will be as per the SMACNA Tolerance sheet.
4. Joint Reinforcement @ 1.20Meter distance.



Rectangular Duct Specifications

Duct Work Construction Schedule

PRESSURE CLASS: 3"INCH, 750 PASCALS - AS PER SMACNA 2005, 3RD EDITION

Duct Size	Duct Gauge	Maximum Standard, Length, mm	Longitudinal Seams Straight & Fittings	Intermediate, Reinforcement	Transverse Connector	
					T1 Drive Slip	T-6 Hemmed Slip
0-250mm	24G (0.70mm)	1200	Double Corner Seam 	Not Required	 T1 Drive Slip	 T-6 Hemmed Slip
251-750mm	24G (0.70mm)	1130	Pittsburgh Lock 	Not Required	TDC-35 TDC JOINT 	
751-900mm	22G (0.80mm)	1130	Pittsburgh Lock 	Not Required	TDC-35 TDC JOINT 	
901-1000mm	20G (1.00mm)	1130	Pittsburgh Lock 	Not Required	TDC-35 TDC JOINT 	
1001-1200mm	20G (1.00mm)	1130	Pittsburgh Lock 	1 X JOINT TIE ROD	TDC-35 TDC JOINT 	
1201-1800mm	18G (1.20mm)	1130	Pittsburgh Lock 	1 X JTR	TDC-35 TDC JOINT 	
1800-2100mm	18G (1.20mm)	1130	Pittsburgh Lock 	"1 X JOINT TIE ROD + 2 X MID PANNEL TIE ROD"	TDC-35 TDC JOINT 	
" Above 2101mm **"	16G (1.50mm)	1200	Pittsburgh Lock 	NA	GI ANGLE FRAME 50X50X5mm 	

Note :

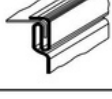
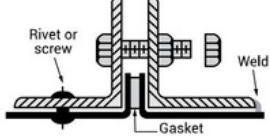
1. Duct sizes that are 150mm and over and upto 20G-1.00mm Thickness shall be beaded.
2. Standard Construction shall be made of Galvanized Steel confirming to ASTM A653-G90, Sheets
3. Thickness of the sheets will be as per the SMACNA Tolerance sheet.
4. Joint Reinforcement @ 1.20Meter distance.



Rectangular Duct Specifications

Duct Work Construction Schedule

PRESSURE CLASS: 4"INCH, 1000 PASCALS - AS PER SMACNA 2005, 3RD EDITION

Duct Size	Duct Gauge	Maximum Standard, Length, mm	Longitudinal Seams Straight & Fittings	Intermediate, Reinforcement	Transverse Connector
0-450mm	24G (0.70mm)	1130	Pittsburgh Lock 	Not Required	TDC-35 TDC JOINT 
451-600mm	24G (0.70mm)	1130	Pittsburgh Lock 	Not Required	TDC-35 TDC JOINT 
600 - 750mm	22G (0.80mm)	1130	Pittsburgh Lock 	Not Required	TDC-35 TDC JOINT 
751-900mm	22G (0.80mm)	1130	Pittsburgh Lock 	1 X JOINT TIE ROD	TDC-35 TDC JOINT 
901-1000mm	20G (1.00mm)	1130	Pittsburgh Lock 	1 X JOINT TIE ROD	TDC-35 TDC JOINT 
1001-1500mm	18 G (1.20mm)	1130	Pittsburgh Lock 	1 X JOINT TIE ROD	TDC-35 TDC JOINT 
1501 & Above	16G (1.00mm)	1200	Pittsburgh Lock 	1 x MPT	GI ANGLE FRAME 50X50X5mm 

Note :

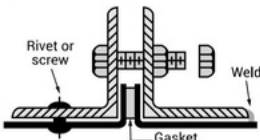
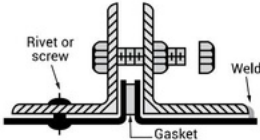
1. Duct sizes that are 150mm and over and upto 20G-1.00mm Thickness shall be beaded.
2. Standard Construction shall be made of Galvanized Steel confirming to ASTM A653-G90, Sheets
3. Thickness of the sheets will be as per the SMACNA Tolerance sheet.
4. Joint Reinforcement @ 1.20Meter distance.



Rectangular Duct Specifications

Duct Work Construction Schedule

PRESSURE CLASS: 6"INCH, 1500 PASCALS - AS PER SMACNA 2005, 3RD EDITION

Duct Size	Duct Gauge	Maximum Standard, Length, mm	Longitudinal Seams Straight & Fittings	Intermediate, Reinforcement	Transverse Connector
0-500mm	24G (0.70mm)	1130	Pittsburgh Lock 	Not Required	TDC-35 TDC JOINT 
501-650mm	22G (0.80mm)	1130	Pittsburgh Lock 	Not Required	TDC-35 TDC JOINT 
651 - 750mm	20G (1.00mm)	1130	Pittsburgh Lock 	Not Required	TDC-35 TDC JOINT 
751-900mm	20G (0.10mm)	1130	Pittsburgh Lock 	1 X JOINT TIE ROD	TDC-35 TDC JOINT 
901-1200mm	18G (1.20mm)	1130	Pittsburgh Lock 	1 X JOINT TIE ROD	TDC-35 TDC JOINT 
1201-1500mm	16 G (1.20mm)	1200	Pittsburgh Lock 	1 x MPT	GI ANGLE FRAME 50X50X5mm 
1501 & Above	16G (1.00mm)	1200	Pittsburgh Lock 	Angle Frame 50x50x5mm Reinforcement @ Max Length 600mm	GI ANGLE FRAME 50X50X5mm 

Note :

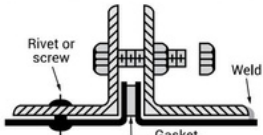
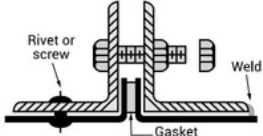
1. Duct sizes that are 150mm and over and upto 20G-1.00mm Thickness shall be beaded.
2. Standard Construction shall be made of Galvanized Steel confirming to ASTM A653-G90, Sheets
3. Thickness of the sheets will be as per the SMACNA Tolerance sheet.
4. Joint Reinforcement @ 1.20Meter distance.



Rectangular Duct Specifications

Duct Work Construction Schedule

PRESSURE CLASS: 10"INCH, 2500 PASCALS - AS PER SMACNA 2005, 3RD EDITION

Duct Size	Duct Gauge	Maximum Standard, Length, mm	Longitudinal Seams Straight & Fittings	Intermediate, Reinforcement	Transverse Connector
0-300mm	24G (0.70mm)	1130	Pittsburgh Lock 	Not Required	TDC-35 TDC JOINT 
301-350mm	22G (0.80mm)	1130	Pittsburgh Lock 	Not Required	TDC-35 TDC JOINT 
351 - 550mm	20G (1.00mm)	1130	Pittsburgh Lock 	Not Required	TDC-35 TDC JOINT 
551-700mm	20G (1.00mm)	1130	Pittsburgh Lock 	1 X JOINT TIE ROD	TDC-35 TDC JOINT 
701-1000mm	18 G (1.20mm)	1130	Pittsburgh Lock 	1 X JOINT TIE ROD	TDC-35 TDC JOINT 
1001-1300mm	16 G (1.20mm)	1200	Pittsburgh Lock 	1 X JOINT TIE ROD	GI ANGLE FRAME 50X50X5mm 
1301 & Above	16G (1.00mm)	1200	Pittsburgh Lock 	Angle Frame 50x50x5mm Reinforcement @ Max Length 600mm	GI ANGLE FRAME 50X50X5mm 

Note :

- 1.Duct sizes that are 150mm and over and upto 20G-1.00mm Thickness shall be beaded.
2. Standard Construction shall be made of Galvanized Steel confirming to ASTM A653-G90, Sheets
3. Thickness of the sheets will be as per the SMACNA Tolerance sheet.
4. Joint Reinforcement @ 1.20Meter distance.



PLENUMS



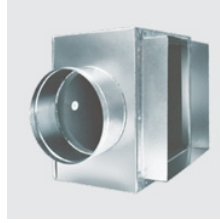
Contents

Linear Plenum Boxes



Liner Plenum-LP

Square Plenum Boxes



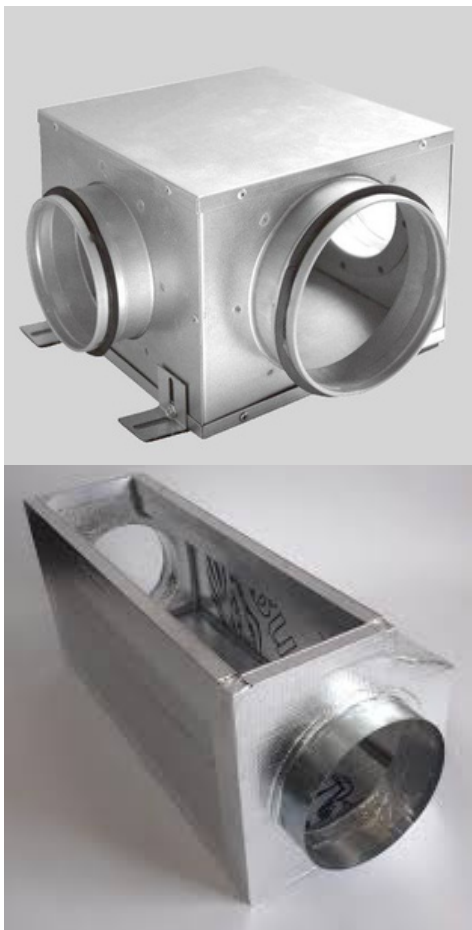
Square Plenum
Box - SPB



Plenums



Plenum boxes find application in directing air through diffusers and grilles for both supply and exhaust purposes. They secure an uninterrupted air stream to the diffuser, and those integrated with dampers allow personalized adjustment of the diffuser. Moreover, acoustic insulation is typically included with the plenum box, aiding in diminishing sound. As a result, noise originating from airflow within the air duct system and inter-room sound transmission is lessened.



Benefits

Parallel Solutions plenum boxes encompass plenum boxes designed for installation in ceilings or walls/skirts. The plenum boxes typically come with dampers and measuring instruments, in addition to acoustic insulation. The K-factors are indicated on the adjustment wire. These plenum boxes negate the necessity for a straight air duct preceding the diffuser, affording greater flexibility in installation.

- Capable of functioning under high pressure with minimal noise
- Precise and dependable measurement
- Expansive dynamic operational range (from 100% to 0%)
- Adaptable for future system alterations
- Simplified installation and balancing
- Compact dimensions



Linear Plenum Boxes(LP)



Discription

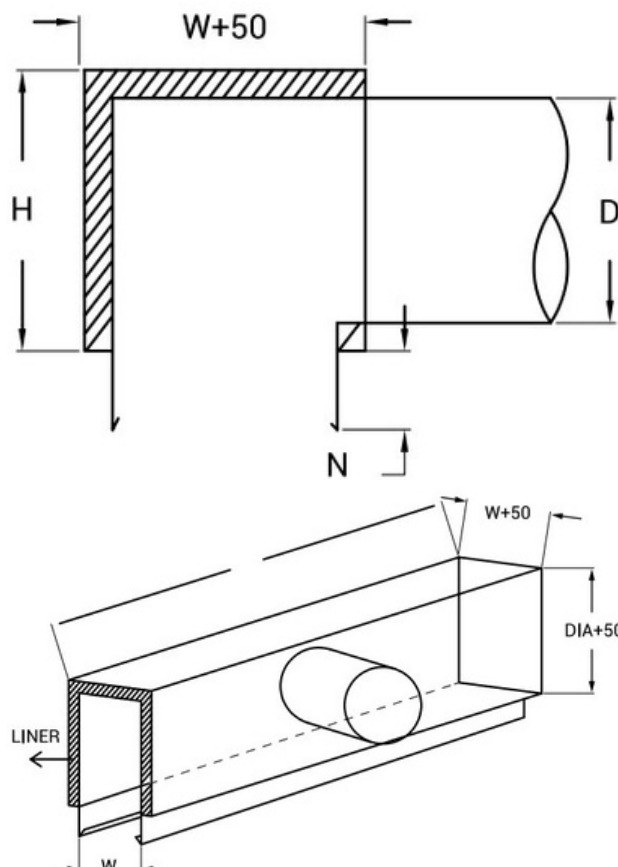
Linear plenum box standard supply shall be made of 24 gauge galvanized steel G-90 with a standard liner of 25 thick; 48 kg/m³ density.(On request instead of fiber glass insulation 15MM thick rubber foam insulation will be provided)

- Spigot with Volume Control Damper can be supplied on request as optional.
- Spigot inlet can be fixed either on top or any side of box as per site requirement.

Ordering Product Code :
LP- W - H

TYPE- LP
W-Width-mm
H- Height-mm

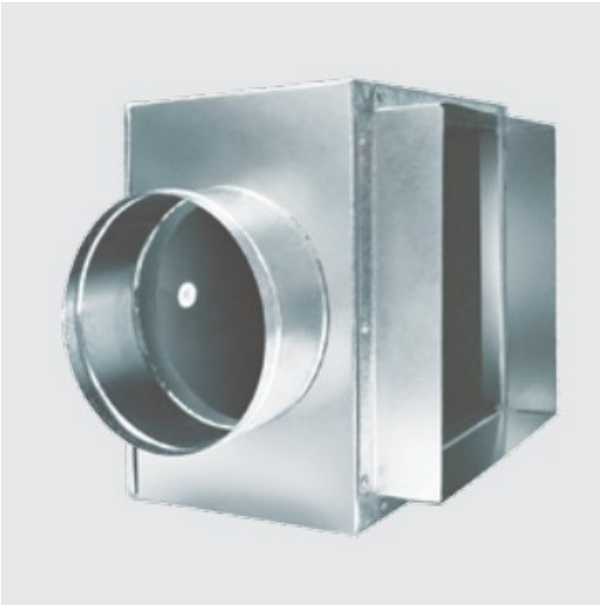
Dimension



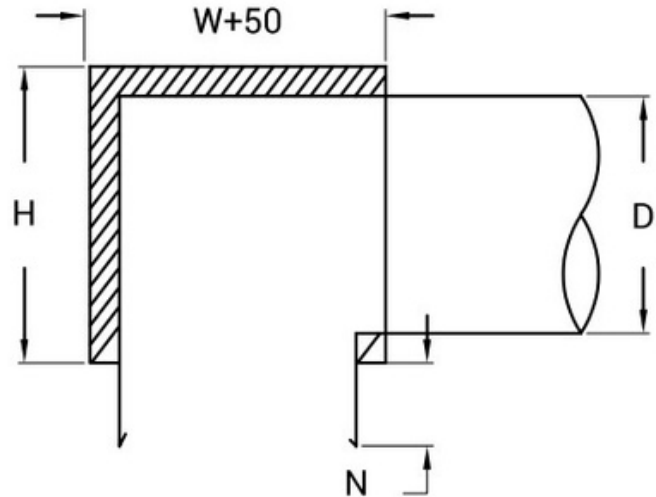
Other sizes are available on request



Square Plenum Boxes (SPB)



Dimension



Discription

Square plenum box standard supply shall be made of 24 gauge galvanized steel G-90 with a standard liner of 25 thick; 48 kg/m³ density.(On request instead of fiber glass insulation 15mm thick rubber foam insulation will be provided)

- Spigot with Volume Control Damper can be supplied on request as optional.

Ordering Product Code :

LP- W - H

TYPE- LP

W-Width-mm

H- Height-mm

Standard Sizes Of Plenum Boxes Dimension

All dimensions for below table are in mm

SL.NO	Diffuser Size H X L	Plenum Size H5+ X L5+	Spigot Inlet Dia.
1	150 X 150	155 X 155	100
2	225 X 225	230 X 230	150
3	300 X 300	305 X 305	200
4	375 X 375	380 X 380	250
5	450 X 450	455 X 455	300
6	525 X 525	530 X 530	350
7	600 X 600	605 X 605	400

Plenum sizes can varies as per customer's actual requirement. Spigot inlet can fix either on top or any side of box as per site requirement.

Other sizes are available on request

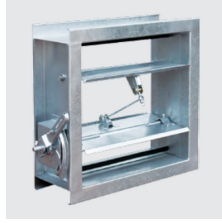


VOLUME CONTROL DAMPER



Contents

Volume Control Damper

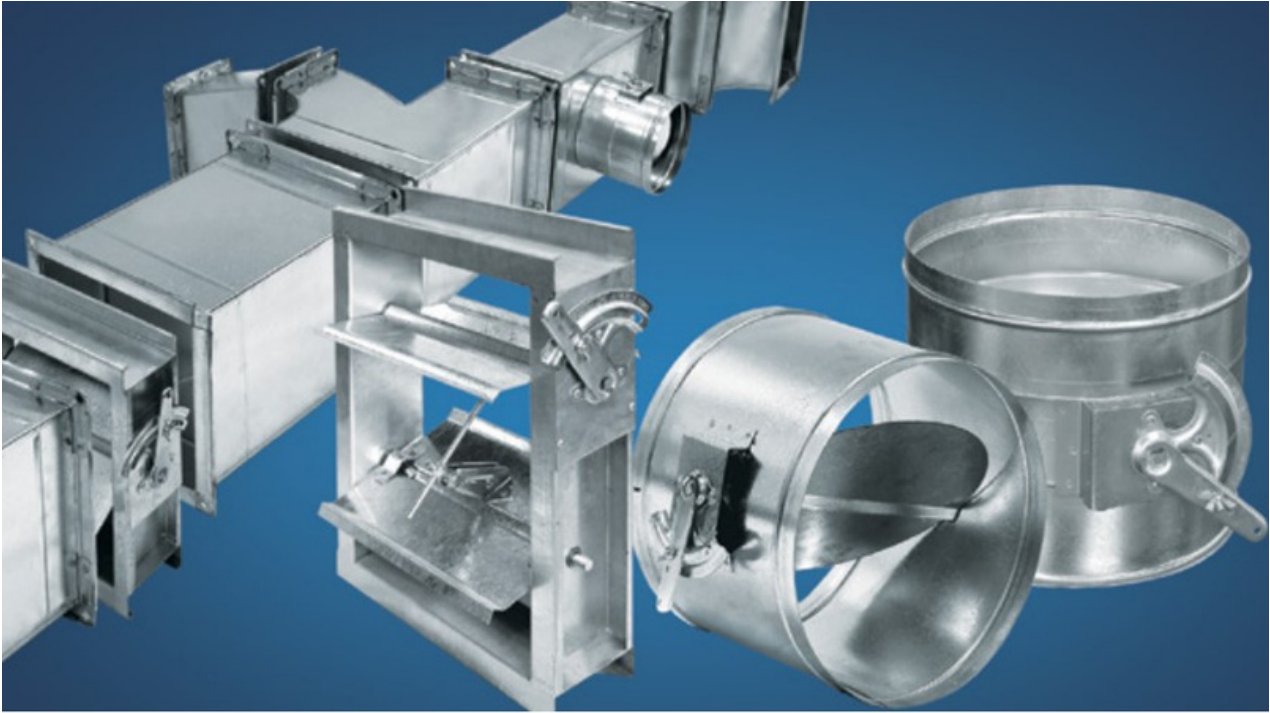


(Round Damper(VCD)





Volume Control Damper



Airflow within duct systems is modulated by volume control dampers. These dampers are offered in various sizes such as round, rectangular, and flat oval. They can be equipped with manual or electric actuators as needed. The quadrant assembly is purposefully constructed to enable easy transition to motorization, eliminating the necessity for extra parts.

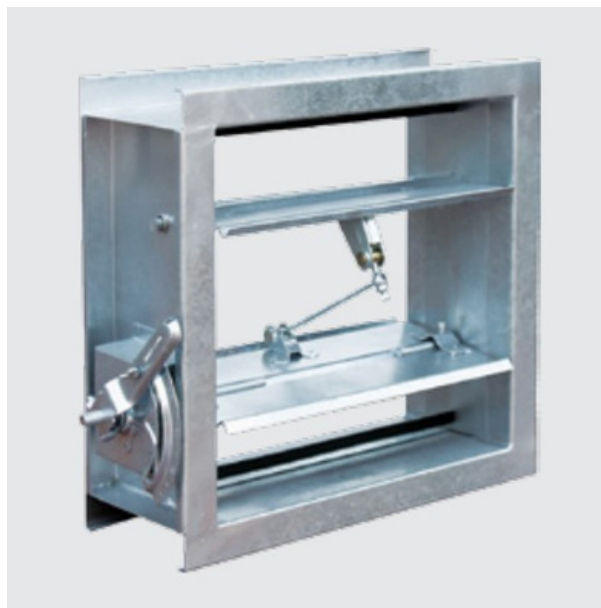
Benefits



The purpose of the volume control dampers is to regulate the airflow volume to different sections of the duct network. These dampers have the capability to be installed within the ductwork and can operate either automatically or manually. Recognizing the interconnected nature of HVAC technologies, along with their relationship to other electrical demands and maintenance procedures, plays a vital role in delineating particular HVAC technologies and comprehensive systems. Just like lighting, the options and potential arrangements for HVAC systems are extensive and diverse. We stand as prominent and trustworthy manufacturers of volume control dampers in the industry, consistently striving to provide our clients with superior, standardized machinery, all delivered punctually.



Volume Control Damper (VD)



Discription

The design of Volume Control Dampers is intended to ensure effortless operation while upholding secure and seamless airflow and distribution, aiming to attain the utmost level of comfort.

Ordering

Product Code: VD-XX-AA-W-H

- XX Type A : T.D.C
 Type B : S&D
 Type C : Slide on Flange
 Type D : Angle Frame
- AA OPB : Opposed Blade
 PB : Parallels Blade

W= Width
 H= Height

SPECIFICATION

Volume control damper shall be supplied with standard material and construction. Frame shall be 150 mm x 35 mm- 18 gauge galvanized steel channel with TDC corners. Blades shall be 18 gauge galvanized steel reinforced with 3 longitudinal structurally designed vees. Axles shall be 1/2" diameter GI Coated steel. Linkage shall be exposed in frame. Control shaft shall be 6" long G.I. Coated; 1/2 " diameter. Hand quadrant for manual operation. Mill finish compliance with ASTM A 653 G-90 Standard size shall be from 6"x 6" to 48"x 72" (Single section)

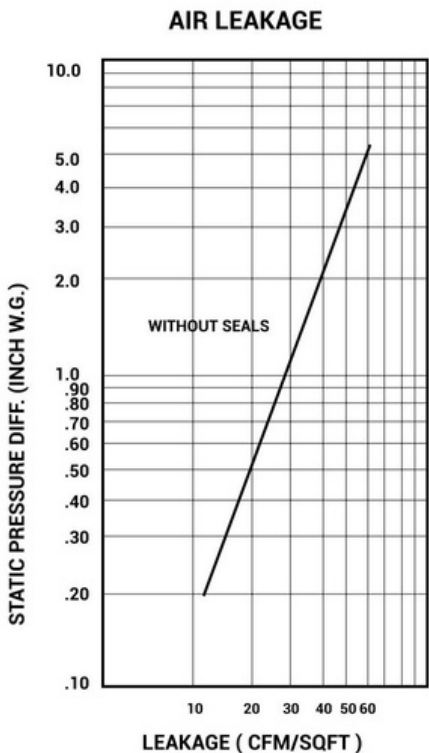
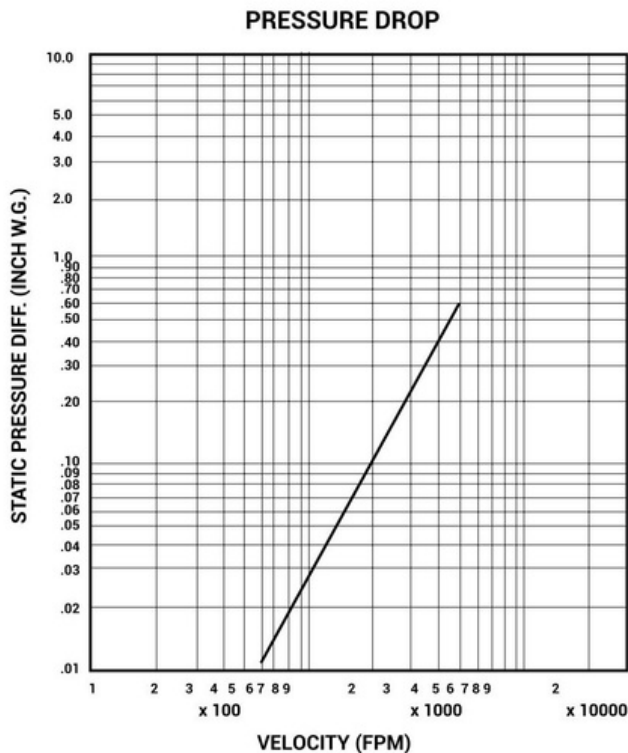
Material Specification

SIZE in mm	GAUGE	
	Blade	Frame
From 100 to 1000	18G	18G
From 1001 to 2000	18G	16G
2001 & above	16G	16G



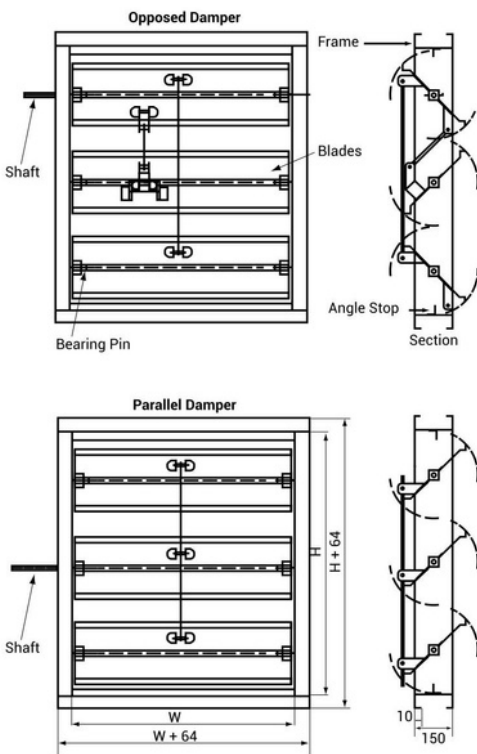
Volume Control Damper (Butterfly)

PERFORMANCE DATA



- Performance Shown is at standard air density of 0.075 lb/ft³.
- Test size 36" wide by 36" height

DIMENSIONS



PARTS DESCRIPTION

All parts and accessories used shall be DURO DYNE-USA (or) INDIAN origin Please refer the below details.

Parts Description	Product Code	Remarks
Quadline Air Regulator	KL-7R	18G
Stampline Air Regulator Set	KS-145	16G
Parallel Blade Brackets	BKP-814	16G
Low Opax Bracket	BKP-24	
Strap Set	BKP-13	
Bronze Bush	BKP-10	

Upon Request Dampers will be supplied with Black steel & Stainless steel



ROUND DAMPER (VCD)



Discription

Round Dampers are designed to suit the easiest operation with maintaining safe and smooth air flow and distribution to achieve the maximum comfort level.

All parts and accessories used shall be DURO DYNE-USA (or) INDIAN origin Please refer the below details.

Parts Description	Product Code	Remarks
Quadline Air Regulator	KL-7R	
Stampline Air Regulator Set	KS-145	
Parallel Blade Brackets	BKP-814	
Low Opax Bracket	BKP-24	
Strap Set	BKP-13	
Bronze Bush	BKP-10	

SPECIFICATION

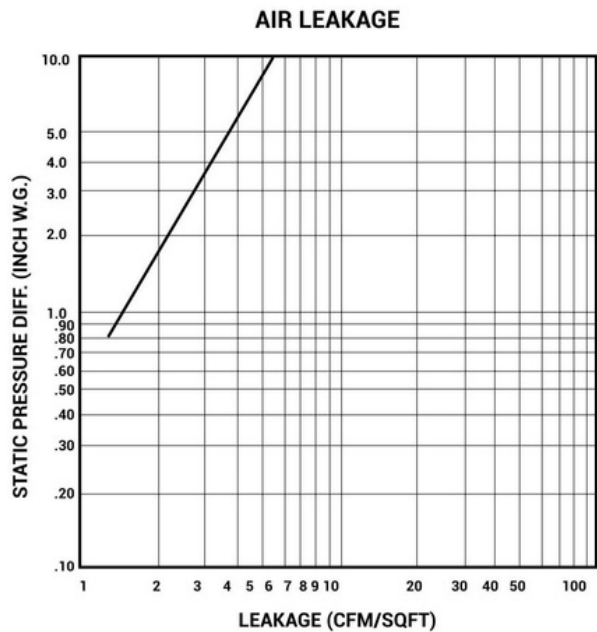
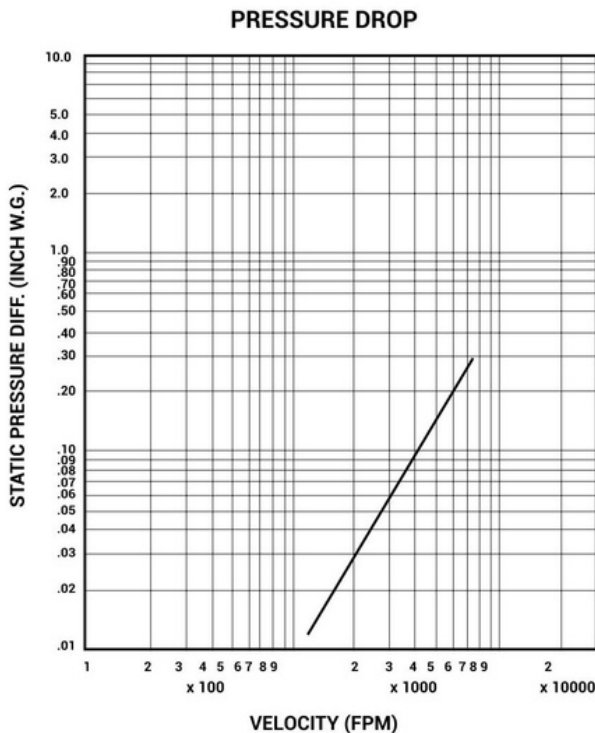
SIZE in mm	Quadrant Details	GAUGE	
		Blade	Frame
From 100 to 200		20G	22G
From 201 to 250	KS-195	20G	22G
From 251 to 400	KL-7R	20G	22G
401 & Above	KL-7R	18G	20G

Upon Request Dampers will be supplied with Black steel & Stainless steel



Volume Control Damper (Butterfly)

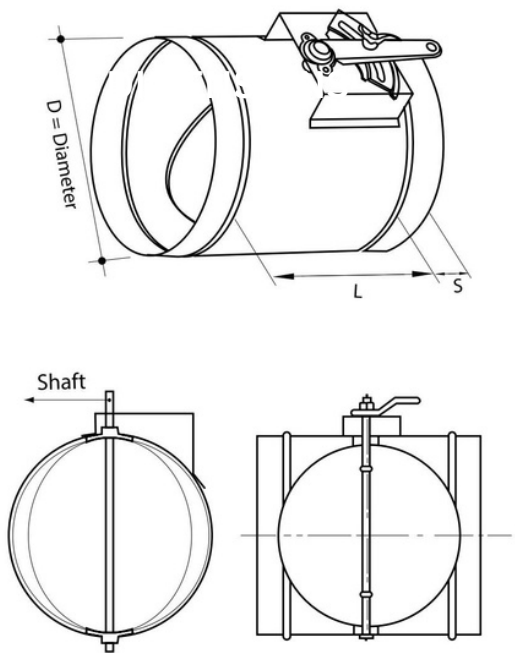
PERFORMANCE DATA



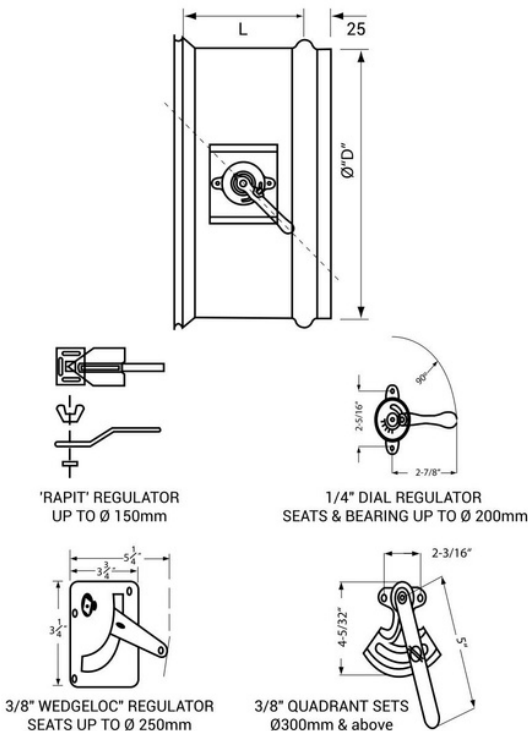
- Performance Shown is at standard air density of 0.075 lb/ft³.
- Test size 36" wide by 36" height

DIMENSIONS

Single Blade



Spin Collar





Back Draft Damper

Termed the Pressure Relief Damper, this component is utilized in ventilation systems to maintain one-directional airflow. While the system is active, the blades of the back-draft dampers remain open; upon system shutdown, gravity prompts their automatic closure, thus averting reverse airflow. It also serves as a barrier against unfiltered air, along with the entry of birds, insects, and other foreign matter into the system.

Wall mounted



Standard construction:

Frame:

18ga (1.2mm) galvanized steel sheet.

Blade:

Galvanized steel sheet of .6mm thickness or Aluminum Sheet of .7mm thickness.

Linkage:

Galvanized steel sheet 25x20gauge

Bearing:

Plastic bearing with 6mm dia

Wall mounted



Standard construction:

Frame:

18ga (1.2mm) galvanized steel sheet.

Blade:

Galvanized steel sheet of .6mm thickness or Aluminum Sheet of .7mm thickness.

Linkage:

Galvanized steel sheet 25x20gauge

Bearing:

Plastic bearing with 6mm dia

For more details consult
Parallel Solutions

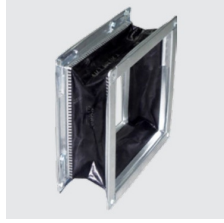


Flexible Duct Connector

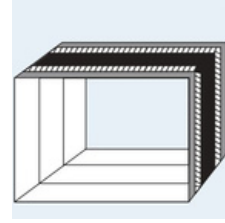
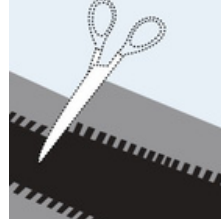


Contents

Flexible Duct Connector



Mounting Instructions





Flexible Duct Connector



Every heating or ventilation air duct system connects to mechanical devices housing fans or blowers. These devices generate vibrations and sounds that travel through the metal ducts in the entire setup. To counteract vibrations and noise stemming from air handling units, fans, and related equipment, it's strongly advised to incorporate an airtight, flexible joint between the equipment's outlet and the air duct. This joint, comprising a fabric connected to metal sheets on either side, is termed a 'Flexible Duct Connector'.



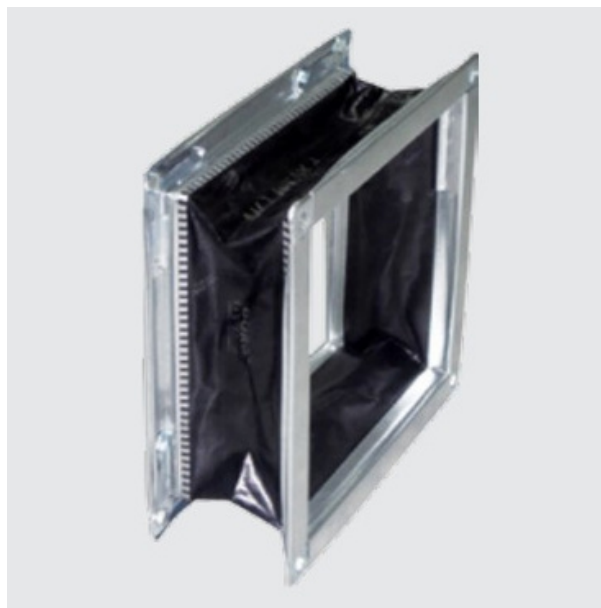
Benefits

The Flexible Duct Connector, featuring PVC Polyester, neoprene, polyurethane, and silicone coatings, proves highly appropriate for scenarios demanding elevated chemical resistance, commendable temperature and moisture resistance, and robust mechanical endurance.

This connector is suitable for circular, oval, and rectangular air ducts, allowing easy shaping with minimal waste generation. Furthermore, this versatile connector accommodates round, oval, and rectangular air duct configurations, offering the convenience of effortless shaping while minimizing material waste.



Flexible Duct Connector (FDCJ / FDCE)



Discription

Applied in industrial and commercial settings, Flexible Duct Connectors serve to eradicate noise and vibration in duct systems. Their primary function involves isolating vibration and noise at the point of origin, achieved through an airtight, fabric-to-steel joint on both sides. This connector is positioned between mechanical equipment or moving components, effectively mitigating the transmission of noise and vibration. Different fabric types, cloth widths, and metal widths can be selected to match specific job needs or the particular application's characteristics.

Ordering Product Code

FDCJ-1.75" X 3" X 1.75"-WXH

FDCE-2.75" X 4" X 2.75"-WXH

Type-FDCJ/FDCE

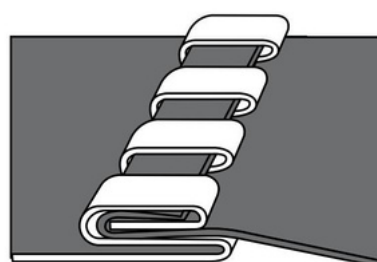
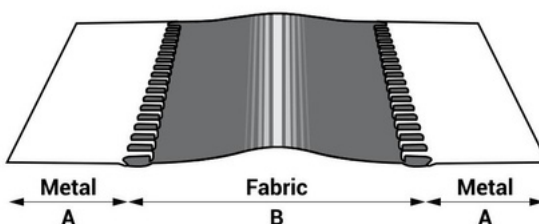
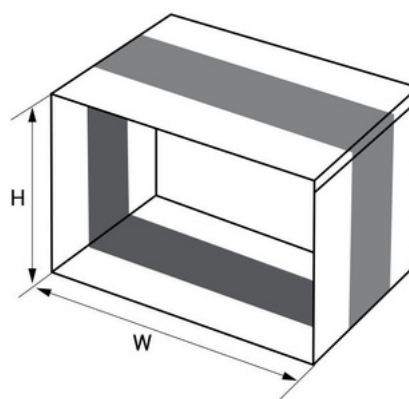
Size-Metal x Fabric x Metal

Metal-Galvanized

W- Width mm

H-Height mm

CONSTRUCTION



Guard Lock Seam

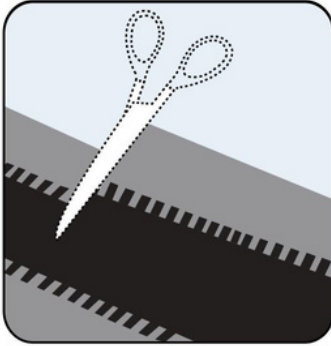


Flexible Duct Connector

Mounting Instructions for Flexible Connectors

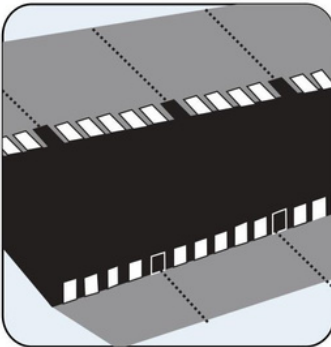
Ensure that the notched side of the connector faces outward and position the joint in the middle of a side rather than at a corner.

1.



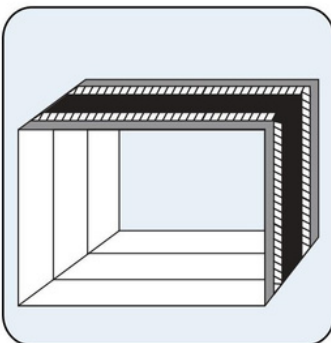
Remove the roll from box, and cut the connector to the required length

2.



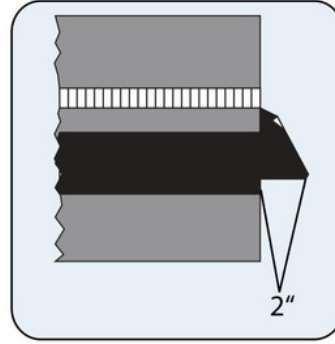
Holding the seam portion upwards to an angle of 90 degrees, make notches at the points where bending is required.

3.



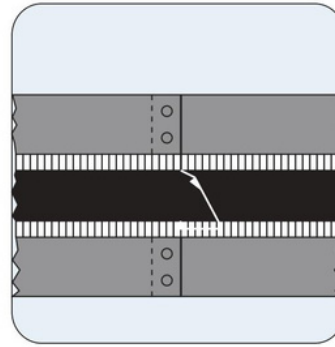
Bend the connector to form the required shape.

4.



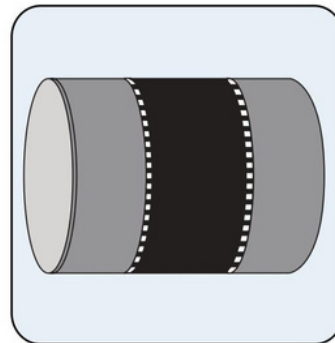
From the end of the connector, cut away metal portion exposing only the fabric, with length of around 2 inches

5.



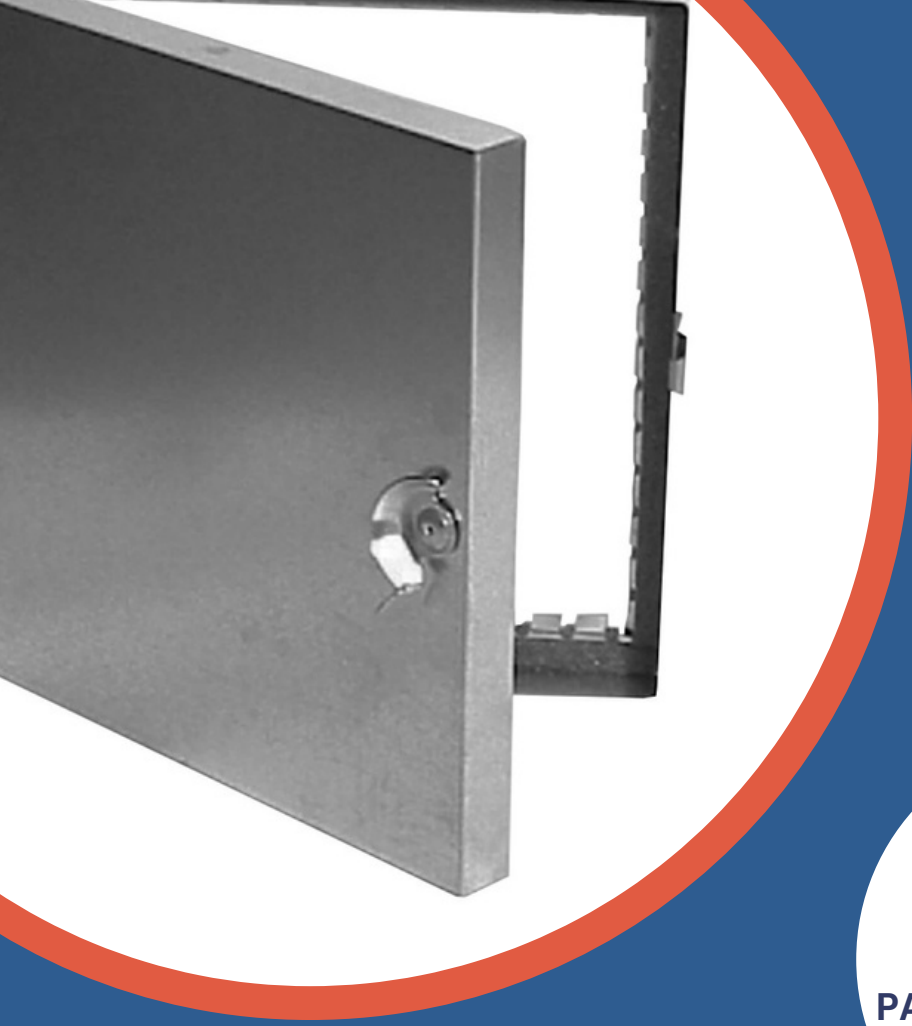
Join the two ends of the sheet metal by using rivets or screws. Apply a liberal amount of adhesive on the fabric portion under the tongue, and hold the joint for few seconds to ensure the seal

6.



Round Flexible connection can also be fabricated using the same procedure

One Side of the connector to be fixed with rivets on the mouth of the equipment and the other side to be fixed with rivets onto duct



DUCT Access Door



Contents

Access Door with Camlock



ADC

Access Door with Hinges



ADHC



Duct Access Door



Access Doors are intended for utilization within central air conditioning ductwork setups, enabling entry for maintenance or to reach fire dampers, heaters, filters, or other internal equipment. The access door's durable and sturdy build ensures minimal air leakage, even when subjected to elevated duct pressures. A double-walled door panel, supplemented with mineral wool insulation, enhances resistance to heat transfer.

Benefits

The Access door provides convenient entry to your ductwork, enabling personnel to examine, upkeep, and cleanse the ducts. Ensuring the cleanliness of the ducts is especially crucial, as inaccessible ducts can result in the accumulation of grease, dirt, and oil, posing a significant fire risk. This buildup can additionally impact the safety and operational efficiency of other constituents of your exhaust system, including the exhaust fan.

- Appropriate for mounting on smooth-surfaced air ducts, these doors can be effortlessly installed during on-site operations.
- The insulating double-wall build functions as both an air leakage barrier and a heat transfer deterrent.
- Suited for both insulated and non-insulated ducts





Access Door with Camlock (ADC)



Description

ADC model shall be camlocks on both end, the selection is ideal where sufficient clearance is not available for door movement, can be easily dismantled from the frame easily.

Ordering Product Code :

LP- W - H

Type-ADC

W-Width-mm

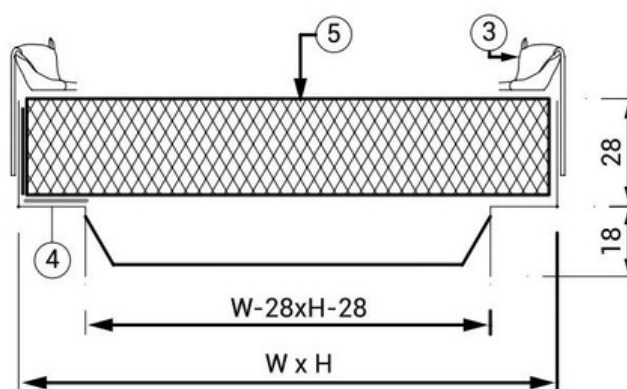
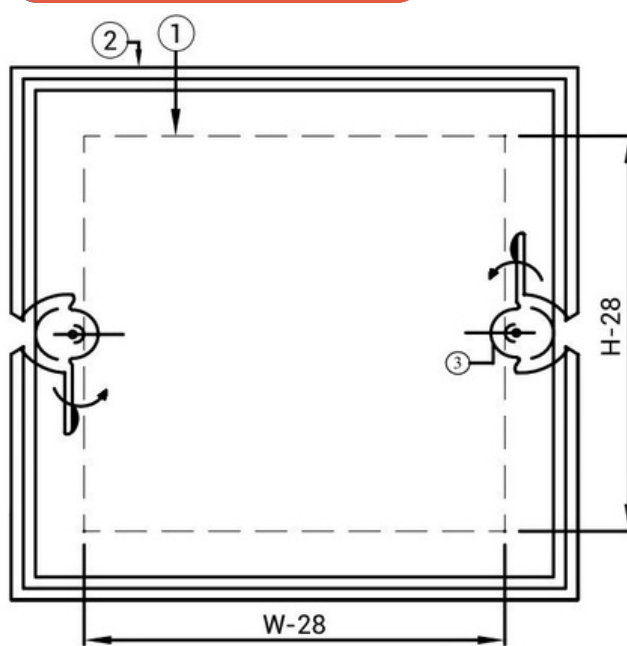
H- Height-mm

SPECIFICATION

- ADC model is available with 25 mm and 50 mm thick fiber glass insulation; density 56 kg/m³ for indoor and out door application respectively with introduction of MM airoflex gasket.
- Designed to provide clear access to fire dampers, volume control dampers, filters etc.
- Shall be Cam locks on both ends.

- One camlock on both edge up to 350 mm.
- Two camlocks on both edge on 351 and larger size.
- Made of 22 gauge galvanized steel frame and 24 gauge galvanized steel double wall door

Dimension



1. Door Panel 2. Frame 3. Self tightening camlocks
4. Gasget 5. Mineral wool insulation

All fittings are available with double wall and acoustic liner.



Access Door with Hinges/Camlock (ADHC)



Discription

ADHC model shall be with hinges on one end and the camlock on other end, the selection Shall be as per the available clearance require to open the door. Otherwise select the ADHC model if sufficient clearance is not available

Ordering Product Code :

LP- W - H

Type-ADC

W-Width-mm

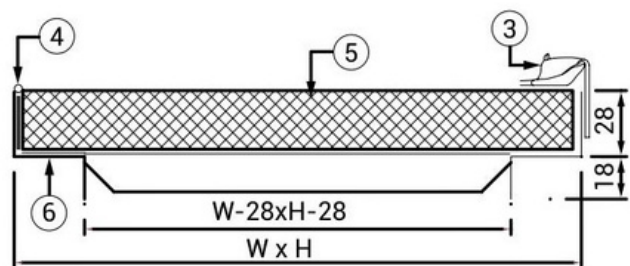
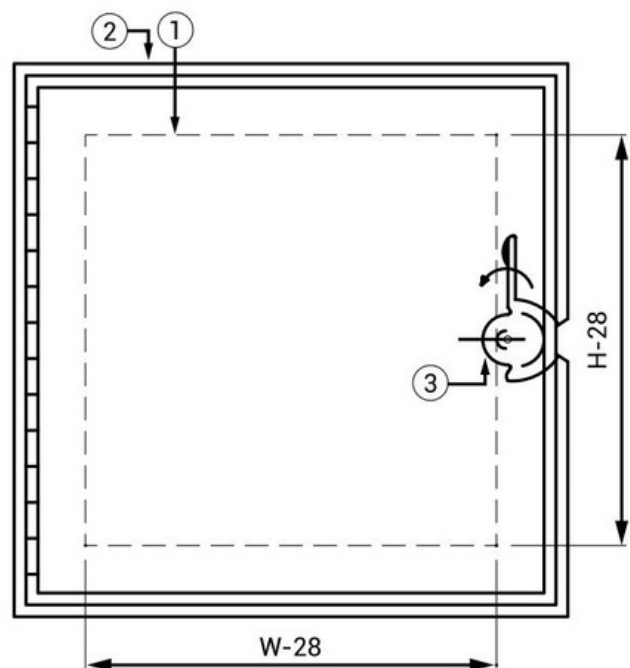
H- Height-mm

SPECIFICATION

- ADHC model is available with 25 mm and 50 mm thick fibre glass insulation; density 56 kg/m³ for indoor and out door application respectively with introduction of MM airoflex gasket
- Designed to provide clear access to fire dampers, volume control dampers, filters etc.
- Shall be Cam locks on both ends.

- One camlock on both edge up to 350 mm.
- Two camlocks on both edge on 350 and larger size.
- Made of 22 gauge galvanized steel frame and 24 gauge galvanized steel double wall door

Dimension



1. Door Panel 2. Frame 3. Self tightening camlocks
4. Continuous Piano Hinged 5. Mineral wool insulation 6. Gasget

All fittings are available with double wall and acoustic liner.

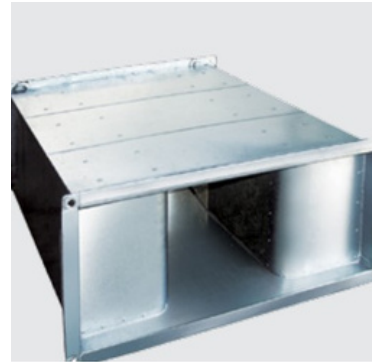
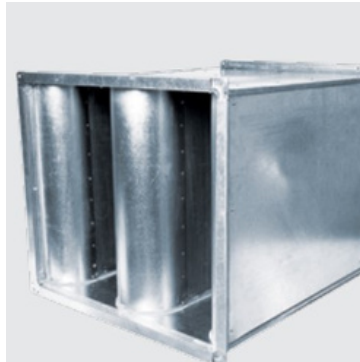
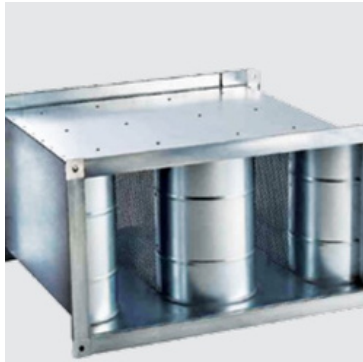


SOUND ATTENUATOR



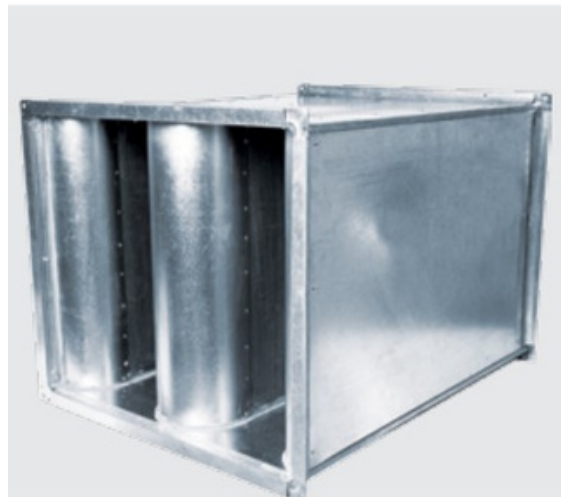
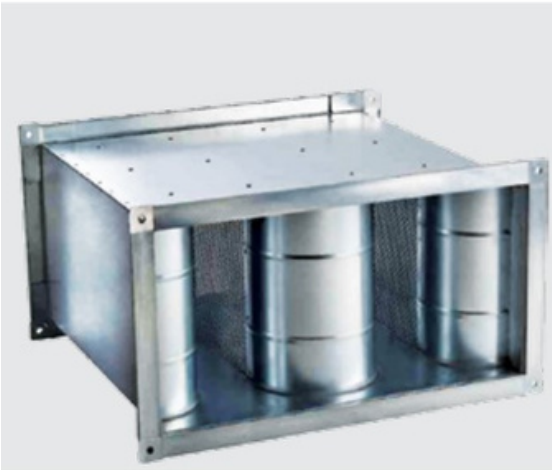
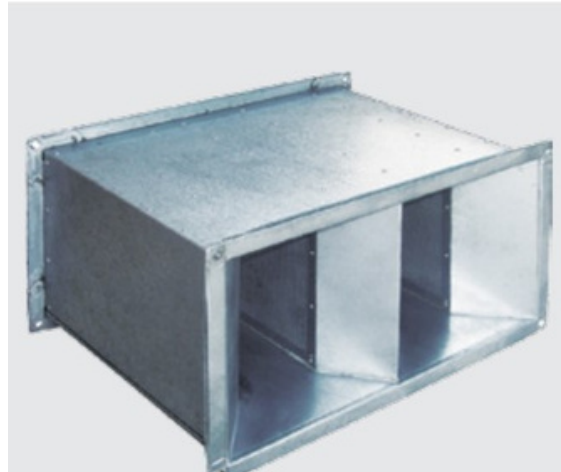
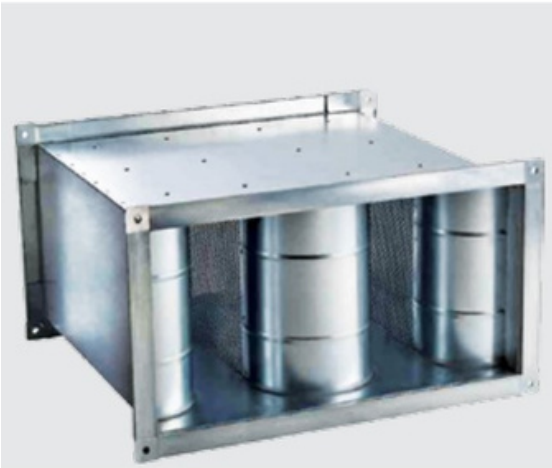
Contents

Rectangular Sound Attenuator - ESA





Rectangular Sound Attenuator(ESA)



Different types of sound attenuator

NOISE CONTROL FOR HVAC SYSTEMS

Effective acoustical design necessitates balanced collaboration across architecture, structural, mechanical, electrical engineering, and acoustic fields. Postponing acoustical design until after finalizing the structural system design can limit the design team's options for choosing and placing affordable noise control equipment and accessories.

Attaining HVAC noise standards requires addressing various sound sources and pathways. Follow specific procedures to achieve desired noise levels and recommended criteria.

Discription

Ordering Product Code:

ESA - A - W- H- L

STL - Type
SA - Sound
Attenuator
A - Type
W - Width
H - Height
L - Length

- Both Horizontal & Vertical construction are Available
- Upon request TDC, S&D, side on Flange connector type are also available



Rectangular Sound Attenuator (ESA)

SELECTION PROCEDURE

- From chart 1 select an attenuator for appropriate fan static pressure, type of ventilated space and space NC level
- From Chart 2 select the recommended space NC level for the type of area concerned

CHART 1

Type of ventilated area being served by low velocity systems utilizing DW 142 Classes A or B ductwork											
		Rooms with average furnishing: floors carpeted, including:			Rooms with limited furnishing: mainly hard surface; including:			Rooms without furnishings, Including			High velocity CAV/VAV systems incorporating terminal units & utilizing DW 142 class C ductwork 2000pa maximum
		Office, Banks, Libraries, Lecture room, Hotel & Restaurant Rooms, Department stores			Hospital, Supermarkets, Computer Rooms, Labs, Cafes, Museums, Canteen, Toilets			Kitchens, Sport Halls, Swimming pools, Warehouse & Garages			
Fan Static Pressure Criterion Type		250pa	500pa	1000pa	250pa	500pa	1000pa	250pa	500pa	1000pa	
<u>NC 45</u>	ESA 20-100	900	900	900	900	900	1200	900	900	1500	1200
<u>NC 45</u>	ESA 20-150	900	1200	1200	1200	1500	1800	1500	1800	2100	1800
<u>NC 40</u>	ESA 20-100	900	900	1200	1200	1200	1500	1200	1500	1500	1500
<u>NC 40</u>	ESA 20-150	1200	1500	1800	1500	1800	2100	1800	2100	2100	2100
<u>NC 35</u>	ESA 20-100	1200	1200	1500	1500	1500	1800	1500	1800	1800	1800
<u>NC 35</u>	ESA 20-150	1800	1500	2100	1800	2100	2400	2100	2100	2400	2400



Rectangular Sound Attenuator (ESA)

RECOMMENDED DESIGN CRITERIA FOR VARIOUS FUNCTIONAL AREA

CHART 1

Locations	NC
Section1 -Industrial	
Warehouse, Garage	45-50
Workshop (light Engg.)	45-55
Workshop (Heavy Engg.)	50-65
Section 2 -Hotels	
Individual Room	20-30
Ballroom, banquet Room	30-35
Lobby, corridor	35-40
Kitchen , Laundry	40-45
Section 3- Hospitals	
Audiometric Room	20-25
Operation Theatre, Single Bed Ward	30-35
Staff Room, Recreation Room	30-40
Multy Bed Ward , Waiting Room	35
Corridor, Lab	35-40
Wash Room, Toilet, Kitchen	35-45
Section 4 -Offices	
Big Conference Room, Board Room	25-30
Small Conference Room, Reception, Executive Office	30-35
Open Plan Office	35
Drawing Area, Computer Suite	35-45
Section 5 -Restaurants, Shops & Stores	
Restaurants, Department Store	35-40
Cafeteria, Canteen, Public House, Retail Shop	40-45
Section 6- Public Buildings	
Assembly Hall	25-35
Library, Bank , Museum	30-35
Court Room	25-30
Wash Room, Toilet	35-45
Swimming pool , Sports Area	40-50
Car Park , Garage	55
Section 7- Academic buildings	
Church, Mosque	25-30
Class Room, Lecture Theatre	25-35
Lab, Workshop	35-40
Corridor, gym	35-45
Section 7 - Academic Buildings	
Bed Room	25
Living Room	30



Rectangular Sound Attenuator (ESA)

RECTANGULAR SOUND ATTENUATOR CONSTRUCTION STANDARD

CONSTRUCTION

CASING

The casing of attenuators is fabricated from pre-galvanized steel sheet, conforming to BS 2989 Z270. Construction adheres to DW-144 and ASTM A 653, G90, and SMACNA standards for low and medium pressure setups.

FLANGES

35 mm TDC flanges which is listed/approved in SMACNA and DW144 construction schedule.

Where the width or height of the dimension exceeds 2000 mm the flanges shall be 35 mm galvanized slide on flange type as per DW144. Intermediate flanges shall be fitted to attenuators over 1.2 m long (Optional) For high pressure application please consult ETA.

SPLITTERS

Splitter frame shall be constructed as per DW 144 using galvanized steel sheet.

ABSORBING MATERIAL

The sound-absorbing material for the splitter will consist of fibrous glass slab, covered by glass cloth and perforated sheet. This material should be non-reactive, resistant to pests and decay, moisture-resistant, and carry a Class 1 rating for flame spread according to BS 476 Part 7 1971. It can withstand air speeds of up to 30m/s without surface erosion.

OPTIONAL FEATURES

Model	Standard Width
ESAP	Mutiple of 300 mm

melinex Lining-where clinical conditions or grease atmosphere dominate, a thin plastic membrane would be used to totally enclose the sound absorbent material. This is used far hospitals and food applications etc.



**Delivering Excellence in Air Distribution
Systems & Products**