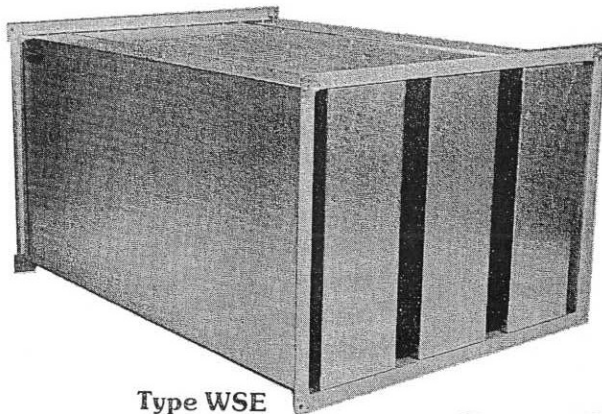




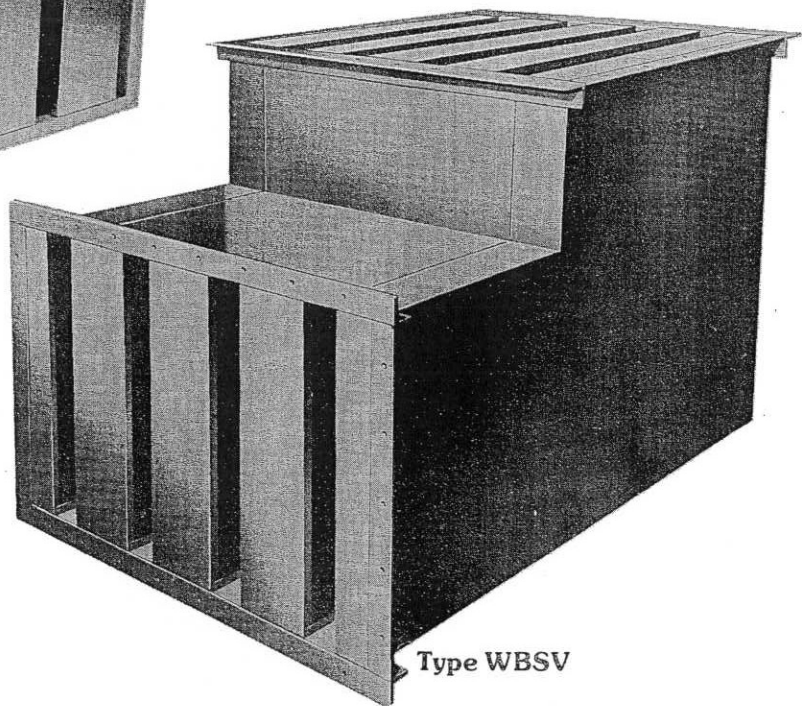
**VENT-TECH**  
VENTILATION TECHNOLOGY & PRODUCTS



# Splitter Silencers for Fan Systems



Type WSE



Type WBSV

- \* CHOICE OF DRILLED OR NEW CLAMPED FLANGES
- \* HIGHER ATTENUATION PATENTED BEND TYPE
- \* GALVANISED STEEL CONSTRUCTION
- \* MINERAL FIBRE SPLITTER INFILL
- \* EROSION RESISTANT FACINGS
- \* OPTIONAL MOISTURE RESISTANT LINING
- \* LOW RESISTANCE TO AIRFLOW
- \* HIGH SYSTEM PRESSURE VERSION
- \* HIGH TEMPERATURE MODEL AVAILABLE
- \* FULLY METRIC RANGE

# Types WS-WSE-WBS

**Casing:** Lock formed pre-galvanised steel sheet.  
Flanges of rolled steel angle hot dip galvanised drilled for duct connection or, Formed flanges of pre-galvanised steel strip suitable for clamp fixing (Variant code WSE).  
Alternatively spigot ends can be provided, please enquire. All welded cases are available for duct pressures between 1000 and 3000 Pa (Variant code WSP).  
For higher pressures please enquire.

**Splitters:** Frames are formed from pre-galvanised sheet steel.  
Absorbent material is resin bonded mineral fibre in slab form with erosion resistant facing.  
An impervious moisture resistant lining is available (Variant code WSM) for moist air or critically clean applications, e.g. hospitals. The use of the lining also allows the silencer to be low pressure steam-cleaned.  
Some reduction in attenuation due to the lining will be experienced.  
Splitters are normally mounted vertically.

**Performances:** Data is derived from tests to BS4718 1971. Measurements of a noise source are made with and without the silencer in position. The difference between the recorded levels is the static (without airflow) attenuation or insertion loss of the silencer.

**Size Range:** Standard heights (less flanges): 300—1500mm in 150mm increments.  
Standard lengths: 600—2400mm in 300mm increments. Larger silencers are supplied in sections to be fixed together on site.

Standard widths (less flanges)					
Airway Width mm	No of Airways				
	1	2	3	4	5
50	250	500	750	1000	1250
75	275	550	825	1100	1375
100	300	600	900	1200	1500
150	350	700	1050	1400	1750

## 90° Bend Type Silencers

Type WBS is a modified splitter silencer with integral air turning vanes to keep pressure losses to a minimum.  
Additional attenuation is obtained (see Table B) together with compactness in plant room layout.

**Fume Handling:** For mildly corrosive atmosphere Chlorinated rubber paint is available (Variant code WSK).  
Where this finish is not sufficiently corrosion resistant many sizes can be supplied constructed in PVC.  
Please enquire giving details of the application.

**Temperature Range:** WS, WSE, WBS -40° to +80°C  
With impervious lining (WSM) -40° to +80°C  
High Temperature (T) -40° to +320°C  
PVC +40°C max.

**Low Pressure Loss:** Inlet and outlet fairings (Variant code WSL) fitted to the splitters reduce pressure losses by 25%. The silencer casing length is increased by 300mm to accommodate the fairings.

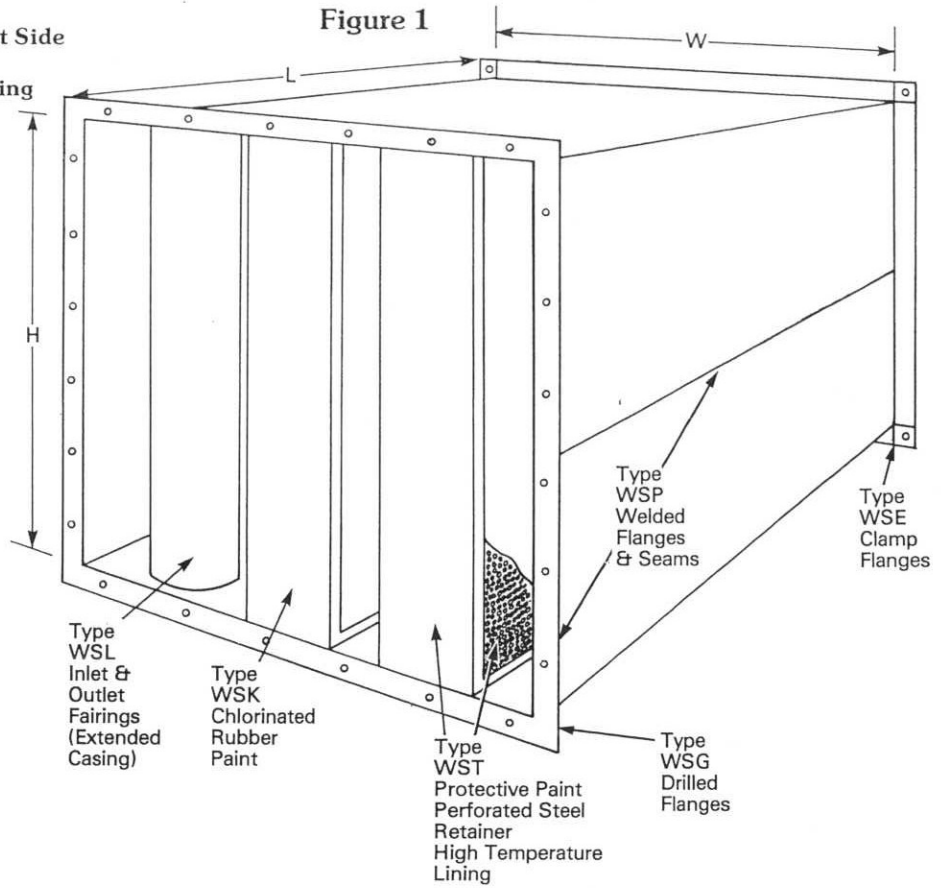
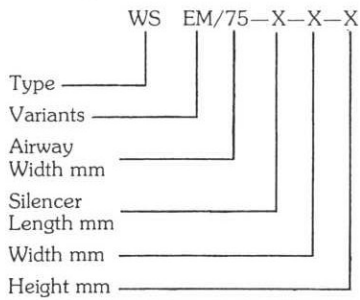
**For Marine and other applications please enquire**



# Splitter Silencers: Coding

- Code**
- WS Drilled Flanges (with Side Liners)
  - WSG Drilled Flanges (without Side Liners)
  - WSE Clamp Flanges (without Side Liners)
  - WSM Moisture Resistant Lining
  - WSL Low Pressure Loss
  - WSP High System Pressure
  - WST High Temperature
  - WSK Fume Resistant
- Variant**

**Example:**

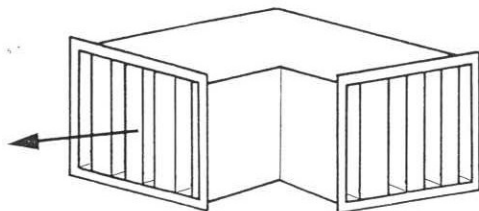
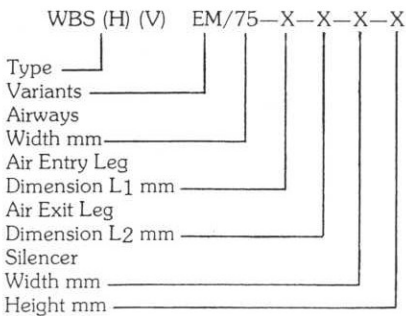


# 90° Mitred Bend Type Silencers

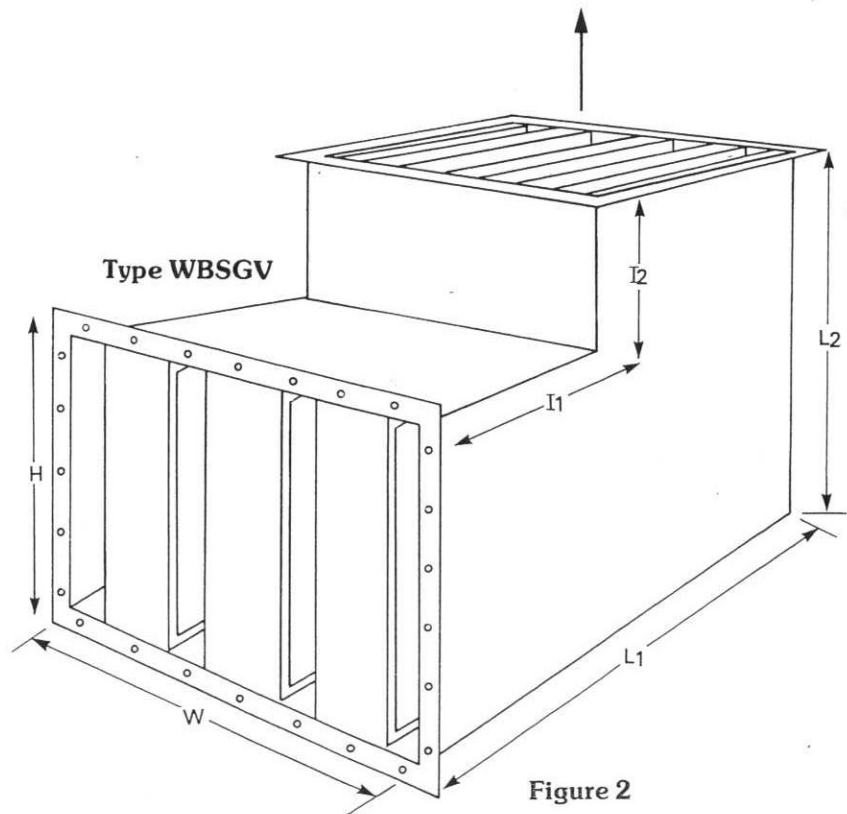
**Code** WBS (HorV)  
Plus Variants  
as for type WS

H or V = Horizontal or Vertical Air Exit Leg.

**Example**



**Type WBSEH**



**Figure 2**

$L_1 + L_2$  Minimum Dimension 100mm  
(300mm with Fairings Type WBSLH)



## Splitter Silencer Performance Type WS/WSE

Intermediate airway widths are available to suit individual requirements. Please enquire.

**Table A**

		Octave Band Mid Frequencies							
Air-ways mm	Length mm	Frequency Hz							
		63	125	250	500	1K	2K	4K	8K
50	600	6	12	22	31	40	40	40	30
	900	8	16	27	45	55	55	55	50
	1200	10	20	36	55	55	55	55	55
	1500	13	24	42	55	55	55	55	55
	1800	15	30	51	55	55	55	55	55
	2100	17	34	55	55	55	55	55	55
	2400	19	38	55	55	55	55	55	55
75	600	5	8	11	24	31	32	24	20
	900	6	11	19	34	45	45	39	28
	1200	7	14	26	46	55	55	52	38
	1500	9	17	30	48	55	55	55	42
	1800	10	20	34	50	55	55	55	46
	2100	12	23	40	55	55	55	55	55
	2400	13	24	45	55	55	55	55	55
100	600	4	7	11	21	31	29	21	20
	900	5	9	16	30	39	39	31	26
	1200	6	12	23	40	51	51	41	29
	1500	8	15	26	43	53	53	45	32
	1800	9	17	30	47	55	55	49	36
	2100	11	20	35	55	55	55	55	43
	2400	12	23	40	55	55	55	55	47
150	600	2	5	8	12	15	15	11	7
	900	3	6	11	20	25	25	15	8
	1200	4	7	15	26	33	33	19	11
	1500	5	9	18	33	41	41	24	13
	1800	6	11	22	39	49	49	29	16
	2100	7	13	26	45	55	55	34	19
	2400	8	15	30	52	55	55	39	21

## WBS Silencers

The value of additional attenuation due to the mitred bend should be deducted from the attenuation required.

To obtain the attenuation dimensions L1 + L2 must be equal or greater than 2.5 × height for Type WBSV or 2.5 × width for Type WBSH

**Table B**

Silencer Height for WBSV or width for WBSH	Additional Attenuation in Octave Bands Hz							
	63	125	250	500	1K	2K	4K	8K
300	0	0	2	8	6	3	3	3
450	0	1	5	7	4	3	3	3
600	0	2	8	6	0	3	3	3
750	0	3	8	5	0	3	3	3
900	0	5	7	4	0	3	3	3
1050	0	7	7	4	0	3	3	3
1200	1	8	6	4	0	3	3	3
1350	2	8	6	3	0	3	3	3
1500	3	8	5	3	0	3	3	3

The following airway velocities generally should not be exceeded for the ventilated space noise levels tabulated in order to avoid possible noise regeneration in the silencer.

Airway Velocity =

$$\frac{\text{Volume Flow Rate m}^3/\text{s}}{\text{Number of Airways} \times \text{Airway Width} \times \text{Height (metres)}}$$

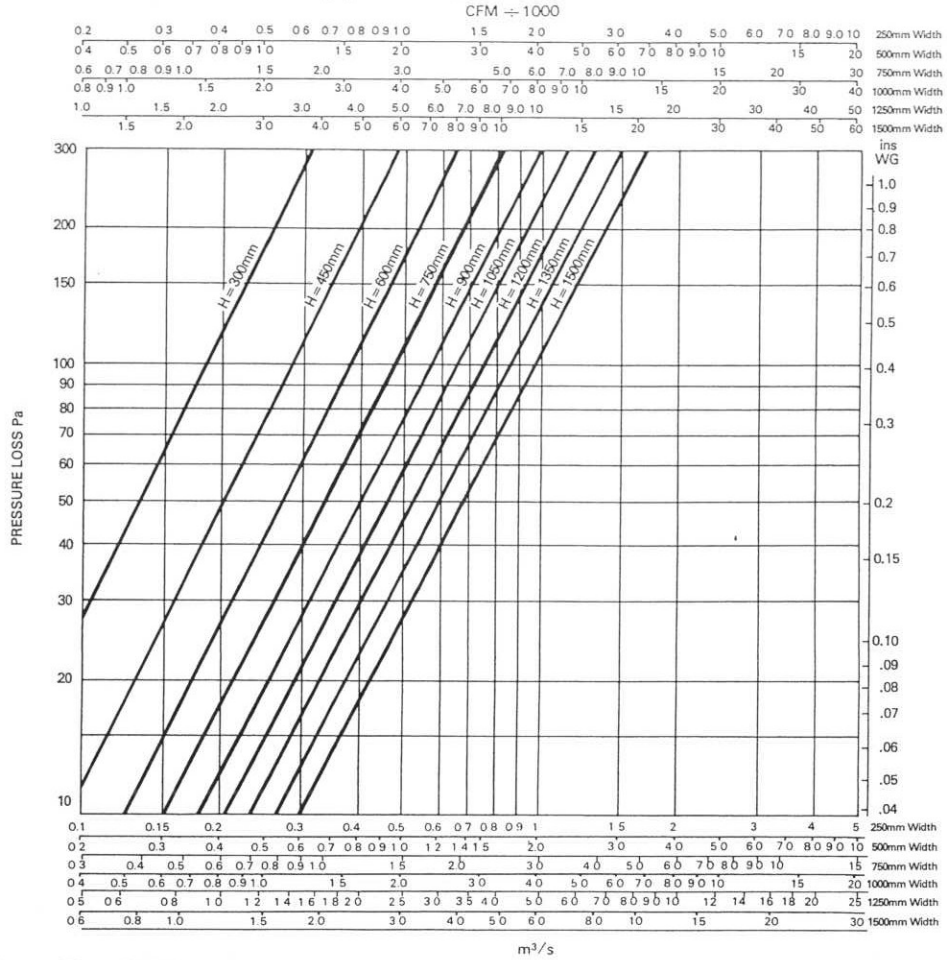
Number of Airways × Airway Width × Height (metres)

**Table C**

Velocity m/s	NC/NR Level
15	45–50
13	35–40
10	30

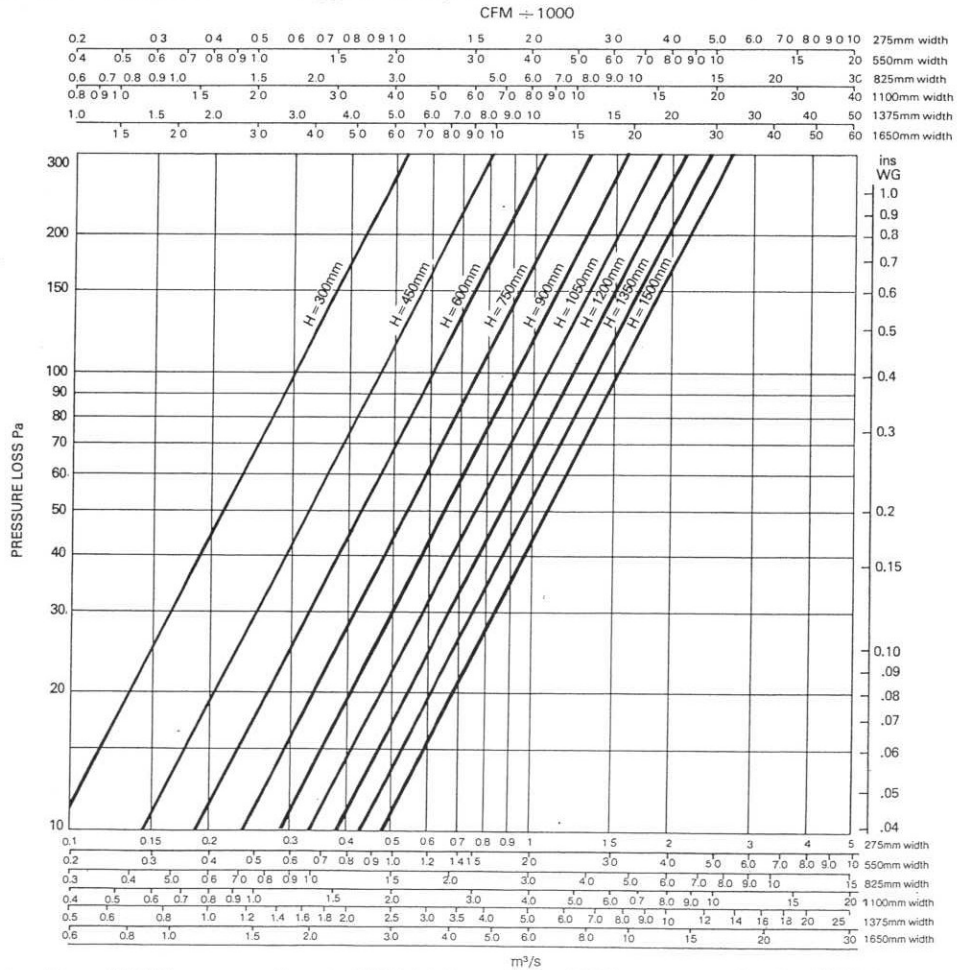
For special applications please enquire.

# Chart 1 Resistance to Air Flow Type WS/50



Note: Type WBS pressure loss is 30% higher. Type WSL pressure loss is 25% lower.

# Chart 2 Resistance to Air Flow Type WS/75



Note: Type WBS pressure loss is 30% higher. Type WSL pressure loss is 25% lower.



# Dimensions and Weights

## Types WS, WSE and WBS silencers

Type WS/WSE/WBS

Number of Modules	Approx. Weight in kg for length below				
	Height B mm	900 mm	1200 mm	1500 mm	1800 mm
1	300	26	32	39	44
	450	32	39	48	55
	600	37	46	56	64
2	300	44	54	65	75
	450	51	62	79	91
	600	58	73	90	103
	750	70	86	106	120
	900	78	96	118	133
3	1050	92	113	138	154
	450	76	91	117	133
	600	85	106	131	149
	750	102	125	153	172
	900	112	137	168	189
	1050	121	149	184	207
	1200	130	161	199	223
4	1350	156	184	222	253
	1500	170	205	243	282
	600	106	133	166	189
	750	128	157	193	218
	900	140	171	212	239
	1050	150	185	230	260
5	1200	160	199	249	280
	1350	192	235	294	331
	1500	203	247	313	353
	900	168	206	255	288
	1050	179	223	277	312
5	1200	191	239	298	336
	1350	230	281	353	399
	1500	242	296	375	423

Note: A and B are internal casing dimensions.

Dimension 'A' = (Airway width + 200) × No. of modules.  
Flange widths 'E' are as follows:

Longest side up to 900mm—flange width E = 40mm.

Longest side above 900mm—flange width E = 50mm.

Dimension 'J' = Dim. 'B'—50mm when dim. 'E' = 40mm

= Dim. 'B' + 60mm when dim. 'E' = 50mm.

Dimension 'K' = Dim. 'A' + 50mm when dim. 'E' = 40mm

= Dim. 'A'—60mm when dim. 'E' = 50mm.

Fixing hole pitches 'F' are in all cases 150mm, clearance holes for M10 screws.  
N must not be less than 50mm.

Due to a policy of continuous development and improvement the right is reserved to supply products which may differ from those illustrated and described in this publication. Certified dimensions will be supplied on receipt of order.

$$\text{Number of Modules} = \frac{\text{Width}}{\text{Airway size} + 200\text{mm}}$$

Example:

WS/100-900-600-600

$$\text{Number of Modules} = \frac{600}{100 + 200} = 2 \text{ Modules}$$

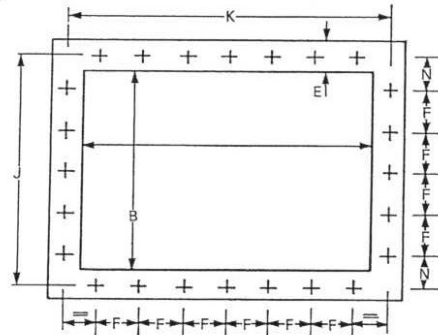
### Other Acoustic Products

Type WSO (splitters only) can be tailor made to fit into builders work ducts and shafts. See Publication AF1.5.

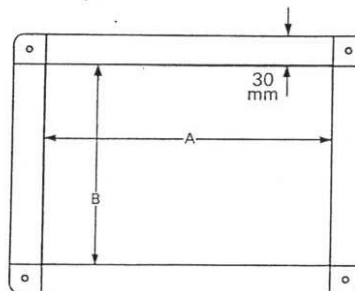
Cylindrical Silencers See Publication AF1.3C.  
Roof unit Silencers (Acoustic Curbs) Acoustic Louvers. See Publication RU25.11  
Acoustic Jackets for Fans.

### Dimensions:

#### Types WS and WBS silencers



#### Type WSE Silencers Clamped Flange



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