



**Atmospheric Vent  
Silencers**



Industrial & Marine Silencers





## **Maximum performance** **Minimum fuss**

Industrial and Marine Silencers (IMS) designs and builds products for organisations engaged in power generation, marine, co-generation, offshore, petro-chemical, railroad and general construction activities. We can also produce a virtually infinite range of custom-built units in a wide variety of shapes and sizes.





### **The right solution**

We cater for installations of every kind and scale and have attenuation capabilities to meet the most stringent in-plant and environmental demands. IMS engineers are well qualified to help you choose the right design for your needs, particularly where low-noise levels and extensive pipe work systems are crucial factors.

### **Comprehensive components**

We offer a comprehensive range of associated components – from a single bolt to a complete system – which can be supplied

as loose items or as fabricated parts to suit all types of installations.

### **Design and installation**

IMS offers a full system design and installation service and our site engineers undertake total 'turn-key' projects – from initial design to installation and commissioning – in a wide variety of countries and conditions throughout the world.

### **Meeting the regulations**

IMS engineers know how to work within local planning and environmental regulations to

ensure a solution that meets your requirements as well as those of the relevant regulatory authorities.

### **Find out more**

[Discover the most cost-effective solution to meet your particular requirements.](#)

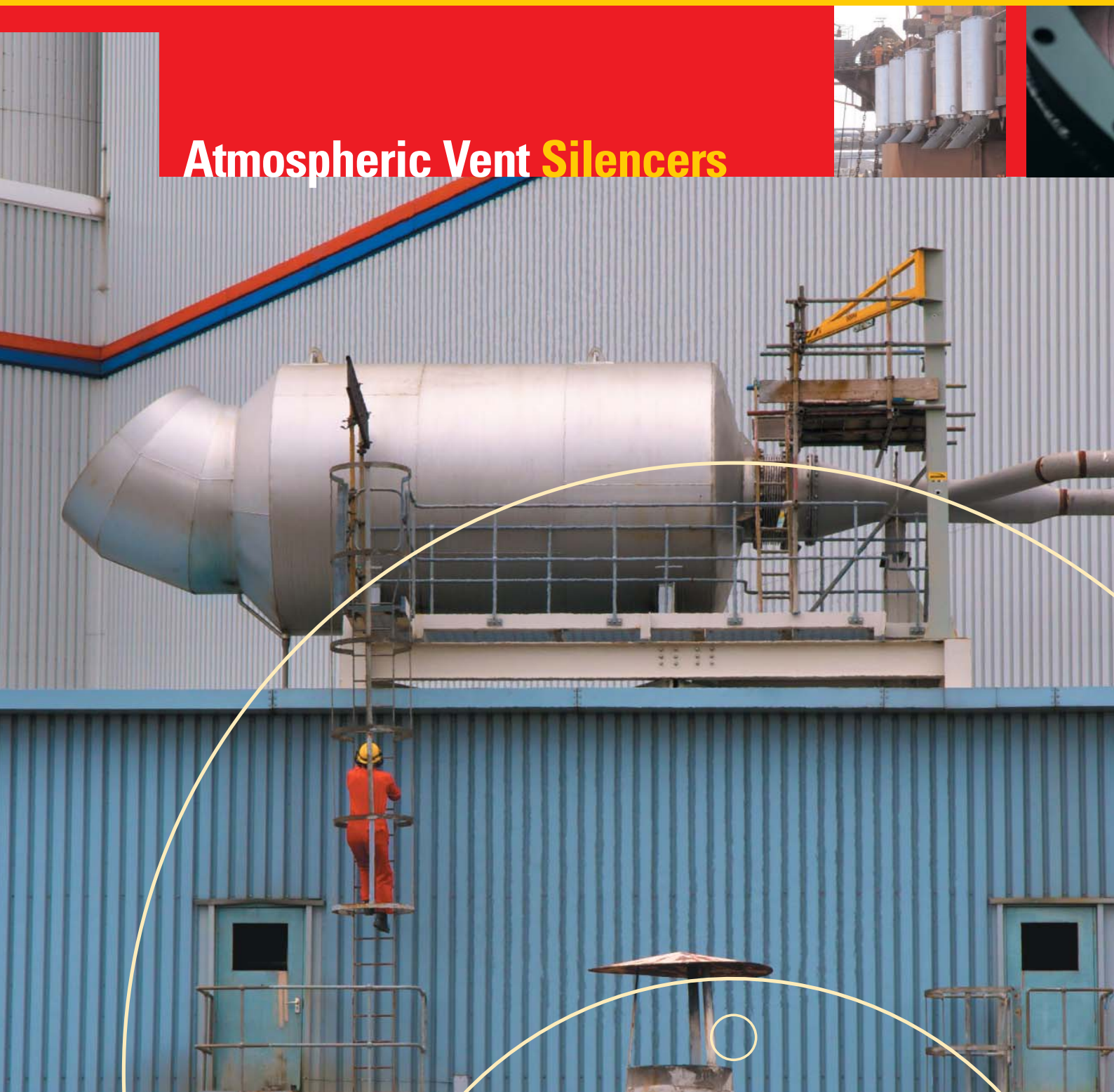
### **Contact us today:**

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Email [sales@silencers.co.uk](mailto:sales@silencers.co.uk)

# Atmospheric Vent Silencers





## Efficient. Effective. And quiet.

Atmospheric vent silencers are designed to cut the noise generated by the expansion of gases from an elevated pressure to atmospheric pressure. The noise produced is a combination of 'shock noise' generated by the rapid reduction in pressure across the relief device and the noise created by the turbulent flow of gas downstream.

### How they work

The IMS-designed VT series of vent silencers consists of an inlet diffuser, an expansion chamber and an absorptive section. The vented gas enters the inlet diffuser of the silencer and expands across a series of small holes in the diffuser body as it proceeds into the expansion chamber. From there it flows into the absorptive section before being passed into the atmosphere.

The diffuser forces the vented gas to pass through small radial holes normal to the initial gas flow. This breaks the single axial gas jet into a series of smaller radial jets, increasing the frequency of the generated noise so that it can be better attenuated by the absorptive section of the silencer.

In circumstances where the gas velocity in the inlet pipe is low, a simple open pipe and a target plate can be used in place of the multi-holed diffuser.

The pressure at the inlet diffuser of the IMS design of vent silencer is never more than 0.5 barg to ensure exemption from the requirements of the Pressure Equipment Directive. This sometimes necessitates an inlet diffuser diameter greater than the vent line. The two can be connected by a transition section.

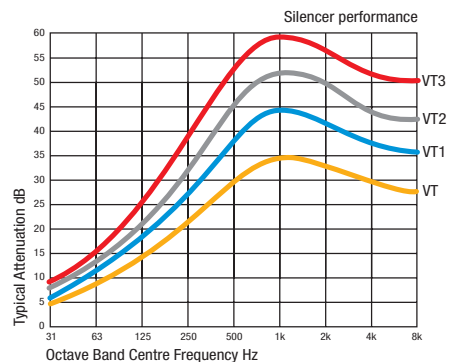
The cross-sectional area of the silencer is a function of the flow rate of the gas to be handled, while the length of the silencer controls its acoustic performance.

### Where they are applied

Vent silencers are used in areas where it is necessary to:

- reduce work place noise levels to a desired occupational limit
- cut the intrusion of industrial noise into residential areas.

Vent silencers are used to suppress the noise generated by safety relief valves, process vents, dumping gas to atmosphere during compressor or boiler set-up sequences, de-pressurising lines for maintenance, ejector discharges and steam exhausts, and the blowdown of pipelines for cleaning purposes.



# The VT Series

The VT Series has an absorptive internal liner complemented by annular rings and/or pods. IMS have produced a standard range capable of accepting flow rates up to 377 m<sup>3</sup>/sec at atmospheric pressure (limited to 60 m/sec maximum velocity through the absorptive section). The VT series is available in five versions with insertion losses from 20 dB(A) to 54 dB(A).

The open-ended standard units include support brackets or feet for vertical or horizontal installation, a drain point, lifting lugs, various flanged inlets designed to restrict mass flows and bird guards.

Optional extras include rain cowl outlets, tailpipe and flange outlets, sliding inlet connections and special paint finishes to meet customer specifications. The designs can be produced in a wide choice of materials and finishes to suit individual

requirements, along with special designs for larger flows, axial inlets and multiple inlet applications.

## Accessories

All sizes are supplied with the following accessories:

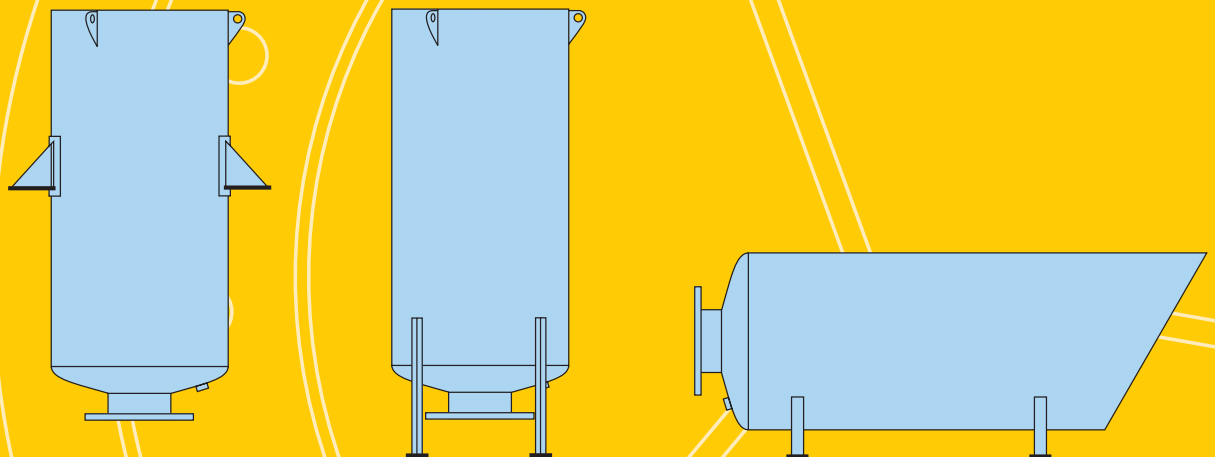
- Flanged inlet to BS4504 PN6, 10 and 16, BS.10 (Table D) and ASA B16.5 150 lb, 300 lb and 600 lb (ANSI) ratings
- Lifting lugs
- Drain point
- Two standard mounting brackets or three standard support feet up to 1000.0 mm long (40.0")
- Heat resistant aluminium or black painted finish capable of withstanding up to 500°C without deterioration for high temperature applications
- Red oxide paint finishes for standard applications
- Plain inlet and outlet pipe connections are available, if required.

## Customised designs

Where the standard range does not meet your requirements, special tailor-made designs can be offered.

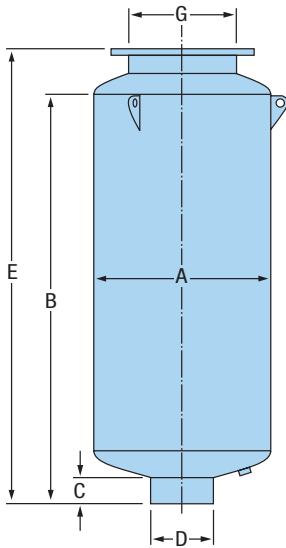
## Enquiry specifications

To help us prepare an accurate response, we request that each enquiry for steam service should include the mass flow rate of the product, the safety valve set pressure and the upstream temperature. For other gases the specific heat ratio and the molecular weight of the gas are also required. To aid the selection process, notification of any mandatory noise levels at a specific distance is also essential.

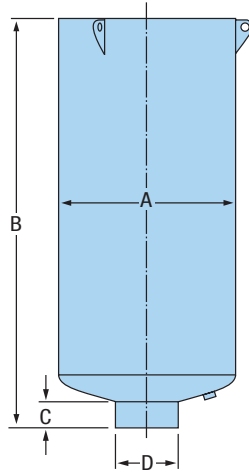


Typical mounting arrangements

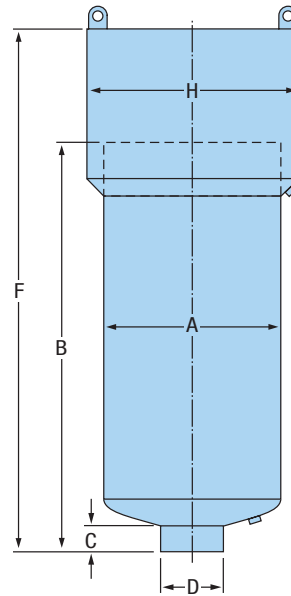
# VTseries



Tailpipe / Flanged Outlet



Standard Open Ended

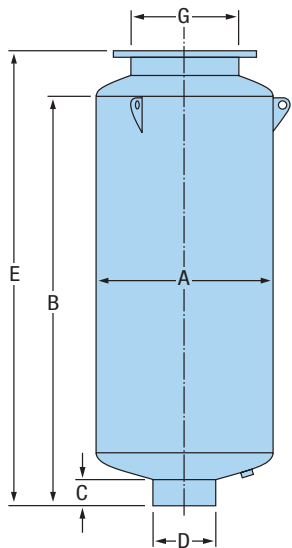


Raincowl Outlet

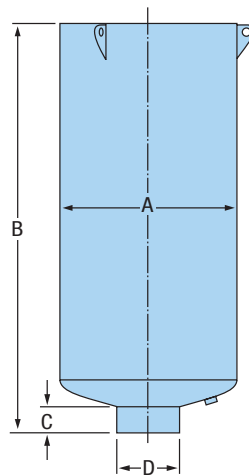
	A	B	C	D	E	F	G	H	Weight
Silencer Ref	Dia. mm	mm	mm	N.Bore mm	mm	mm	Dia. mm	Dia. mm	KG approx
14 VT	360.00	800.00	100.00	100.00	1200.00	1550.00	250.00	460.00	70.00
18 VT	460.00	1000.00	100.00	150.00	1450.00	1750.00	300.00	560.00	100.00
22 VT	560.00	1200.00	100.00	150.00	1700.00	1950.00	350.00	660.00	175.00
26 VT	660.00	1300.00	125.00	200.00	1900.00	2050.00	400.00	760.00	210.00
30 VT	760.00	1500.00	125.00	250.00	2100.00	2250.00	500.00	920.00	340.00
36 VT	920.00	1800.00	150.00	300.00	2450.00	2550.00	600.00	1110.00	500.00
40 VT	1020.00	2200.00	150.00	350.00	2750.00	3000.00	700.00	1250.00	670.00
45 VT	1150.00	2400.00	150.00	400.00	3100.00	3400.00	760.00	1370.00	860.00
48 VT	1220.00	2400.00	150.00	400.00	3100.00	3400.00	920.00	1530.00	1050.00
54 VT	1370.00	2400.00	150.00	400.00	3100.00	3400.00	920.00	1630.00	1100.00
64 VT	1630.00	2400.00	150.00	450.00	3100.00	3400.00	1060.00	1950.00	1400.00
72 VT	1830.00	2400.00	150.00	450.00	3100.00	3400.00	1220.00	2050.00	1840.00
78 VT	2000.00	2400.00	175.00	500.00	3100.00	3400.00	1370.00	2400.00	2280.00
86 VT	2200.00	2400.00	175.00	600.00	3100.00	3400.00	1524.00	2650.00	2140.00
96 VT	2450.00	2400.00	175.00	600.00	3100.00	3400.00	1676.00	2950.00	2600.00
104 VT	2650.00	2500.00	200.00	750.00	3200.00	3500.00	1830.00	3200.00	3280.00
112 VT	2850.00	2500.00	200.00	750.00	3200.00	3500.00	1980.00	3450.00	3760.00
120 VT	3050.00	2500.00	200.00	750.00	3200.00	3500.00	2083.00	3700.00	4120.00
128 VT	3250.00	2600.00	200.00	900.00	3300.00	3600.00	2286.00	3950.00	5100.00
136 VT	3450.00	2800.00	200.00	900.00	3500.00	3800.00	2440.00	4200.00	5700.00
144 VT	3650.00	2800.00	200.00	900.00	3500.00	3800.00	2440.00	4450.00	5600.00

Dimensions and weights are for guidance only

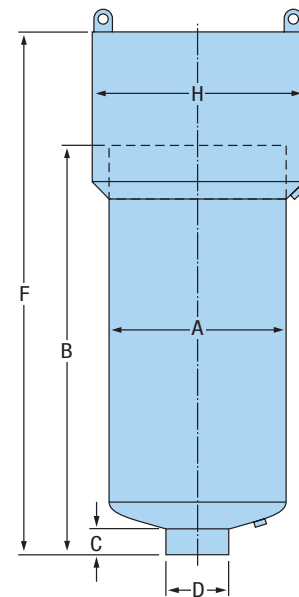
# VT1 series



Tailpipe / Flanged Outlet



Standard Open Ended



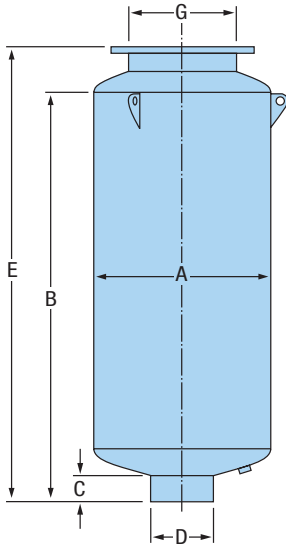
Raincowl Outlet

Silencer Ref	A	B	C	D	E	F	G	H	Weight
	Dia. mm	mm	mm	N.Bore mm	mm	mm	Dia. mm	Dia. mm	KG approx
14 VT1	360.00	1200.00	100.00	100.00	1600.00	1950.00	250.00	460.00	90.00
18 VT1	460.00	1400.00	100.00	150.00	1850.00	2150.00	300.00	560.00	135.00
22 VT1	560.00	1600.00	100.00	150.00	2100.00	2350.00	350.00	660.00	230.00
26 VT1	660.00	1800.00	125.00	200.00	2400.00	2550.00	400.00	760.00	280.00
30 VT1	760.00	2100.00	125.00	250.00	2700.00	2850.00	500.00	920.00	450.00
36 VT1	920.00	2500.00	150.00	300.00	3150.00	3250.00	600.00	1110.00	680.00
40 VT1	1020.00	2800.00	150.00	350.00	3450.00	3800.00	700.00	1250.00	900.00
45 VT1	1150.00	3200.00	150.00	400.00	3850.00	4200.00	760.00	1370.00	1160.00
48 VT1	1220.00	3200.00	150.00	400.00	3900.00	4200.00	920.00	1530.00	1380.00
54 VT1	1370.00	3000.00	150.00	400.00	3700.00	4000.00	920.00	1630.00	1460.00
64 VT1	1630.00	3000.00	150.00	450.00	3700.00	4000.00	1060.00	1950.00	1840.00
72 VT1	1830.00	3000.00	150.00	450.00	3700.00	4000.00	1220.00	2050.00	2410.00
78 VT1	2000.00	3000.00	175.00	500.00	3700.00	4200.00	1370.00	2400.00	2840.00
86 VT1	2200.00	3000.00	175.00	600.00	3700.00	4200.00	1524.00	2650.00	2850.00
96 VT1	2450.00	3000.00	175.00	600.00	3700.00	4200.00	1676.00	2950.00	3430.00
104 VT1	2650.00	3400.00	200.00	750.00	4100.00	4600.00	1830.00	3200.00	4270.00
112 VT1	2850.00	3400.00	200.00	750.00	4100.00	4500.00	1980.00	3450.00	4700.00
120 VT1	3050.00	3400.00	200.00	750.00	4100.00	4600.00	2083.00	3700.00	5150.00
128 VT1	3250.00	3800.00	200.00	900.00	4500.00	5100.00	2286.00	3950.00	6340.00
136 VT1	3450.00	3800.00	200.00	900.00	4500.00	5200.00	2440.00	4200.00	7060.00
144 VT1	3650.00	3800.00	200.00	900.00	5500.00	5200.00	2440.00	4450.00	7500.00

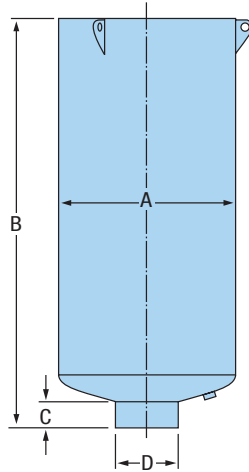
Dimensions and weights are for guidance only



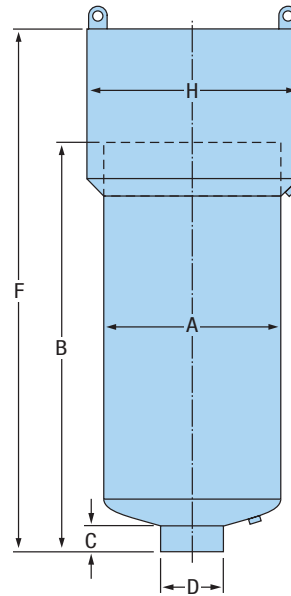
# VT2 series



Tailpipe / Flanged Outlet



Standard Open Ended

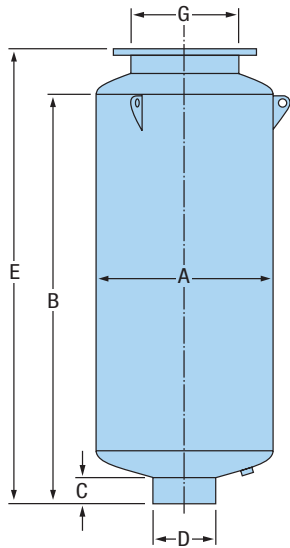


Raincowl Outlet

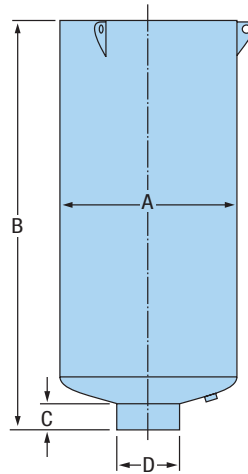
Silencer Ref	A	B	C	D	E	F	G	H	Weight
	Dia. mm	mm	mm	N.Bore mm	mm	mm	Dia. mm	Dia. mm	KG approx
14 VT2	360.00	1600.00	100.00	100.00	2000.00	2350.00	250.00	460.00	130.00
18 VT2	460.00	1800.00	100.00	150.00	2250.00	2550.00	300.00	560.00	175.00
22 VT2	560.00	2200.00	100.00	150.00	2700.00	2950.00	350.00	660.00	275.00
26 VT2	660.00	2600.00	125.00	200.00	3200.00	3350.00	400.00	760.00	410.00
30 VT2	760.00	3000.00	125.00	250.00	3600.00	3750.00	500.00	920.00	650.00
36 VT2	920.00	3600.00	150.00	300.00	4250.00	4350.00	600.00	1110.00	880.00
40 VT2	1020.00	4000.00	150.00	350.00	4650.00	5000.00	700.00	1250.00	1260.00
45 VT2	1150.00	4500.00	150.00	400.00	5150.00	5500.00	760.00	1370.00	1640.00
48 VT2	1220.00	4500.00	150.00	400.00	5200.00	5500.00	920.00	1530.00	1880.00
54 VT2	1370.00	3800.00	150.00	400.00	4500.00	4800.00	920.00	1630.00	1930.00
64 VT2	1630.00	3800.00	150.00	450.00	4500.00	4800.00	1060.00	1950.00	2500.00
72 VT2	1830.00	3800.00	150.00	450.00	4500.00	4800.00	1220.00	2050.00	3300.00
78 VT2	2000.00	3800.00	175.00	500.00	4500.00	5000.00	1370.00	2400.00	3840.00
86 VT2	2200.00	3800.00	175.00	600.00	4500.00	5000.00	1524.00	2650.00	3840.00
96 VT2	2450.00	3800.00	175.00	600.00	4500.00	5000.00	1676.00	2950.00	4680.00
104 VT2	2650.00	4300.00	200.00	750.00	5000.00	5500.00	1830.00	3200.00	5700.00
112 VT2	2850.00	4300.00	200.00	750.00	5000.00	5500.00	1980.00	3450.00	6310.00
120 VT2	3050.00	4300.00	200.00	750.00	5000.00	5500.00	2083.00	3700.00	6980.00
128 VT2	3250.00	4800.00	200.00	900.00	5500.00	6100.00	2286.00	3950.00	8370.00
136 VT2	3450.00	4800.00	200.00	900.00	5500.00	6200.00	2440.00	4200.00	9170.00
144 VT2	3650.00	4800.00	200.00	900.00	6500.00	6200.00	2440.00	4450.00	10000.00

Dimensions and weights are for guidance only

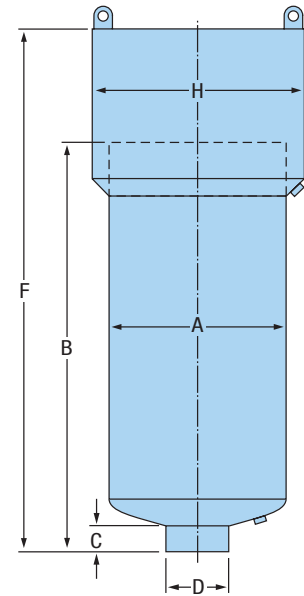
# VT3 series



Tailpipe / Flanged Outlet



Standard Open Ended



Raincowl Outlet

Silencer Ref	A	B	C	D	E	F	G	H	Weight
	Dia. mm	mm	mm	N.Bore mm	mm	mm	Dia. mm	Dia. mm	KG approx
14 VT3	360.00	2000.00	100.00	100.00	2400.00	2750.00	250.00	460.00	160.00
18 VT3	460.00	2400.00	100.00	150.00	2900.00	3150.00	300.00	560.00	225.00
22 VT3	560.00	3100.00	100.00	150.00	3600.00	3850.00	350.00	660.00	350.00
26 VT3	660.00	3500.00	125.00	200.00	4100.00	4250.00	400.00	760.00	500.00
30 VT3	760.00	4100.00	125.00	250.00	4700.00	4850.00	500.00	920.00	830.00
36 VT3	920.00	4800.00	150.00	300.00	5450.00	5550.00	600.00	1110.00	1240.00
40 VT3	1020.00	5400.00	150.00	350.00	6050.00	6400.00	700.00	1250.00	1620.00
45 VT3	1150.00	6100.00	150.00	400.00	6750.00	7100.00	760.00	1370.00	2100.00
48 VT3	1220.00	6100.00	150.00	400.00	6800.00	7100.00	920.00	1530.00	2400.00
54 VT3	1370.00	4700.00	150.00	400.00	5400.00	5700.00	920.00	1630.00	2400.00
64 VT3	1630.00	4700.00	150.00	450.00	5400.00	5700.00	1060.00	1950.00	3050.00
72 VT3	1830.00	4800.00	150.00	450.00	5500.00	5800.00	1220.00	2050.00	4100.00
78 VT3	2000.00	4800.00	175.00	500.00	5500.00	6000.00	1370.00	2400.00	4800.00
86 VT3	2200.00	4800.00	175.00	600.00	5500.00	6000.00	1524.00	2650.00	4810.00
96 VT3	2450.00	4800.00	175.00	600.00	5500.00	6000.00	1676.00	2950.00	5790.00
104 VT3	2650.00	5200.00	200.00	750.00	5900.00	6400.00	1830.00	3200.00	6960.00
112 VT3	2850.00	5200.00	200.00	750.00	5900.00	6400.00	1980.00	3450.00	7750.00
120 VT3	3050.00	5200.00	200.00	750.00	5900.00	6400.00	2083.00	3700.00	8600.00
128 VT3	3250.00	5700.00	200.00	900.00	6400.00	7000.00	2286.00	3950.00	10250.00
136 VT3	3450.00	5700.00	200.00	900.00	6400.00	7100.00	2440.00	4200.00	11210.00
144 VT3	3650.00	5700.00	200.00	900.00	6400.00	7100.00	2440.00	4450.00	12200.00

Dimensions and weights are for guidance only

# VTS series

## Economic and efficient

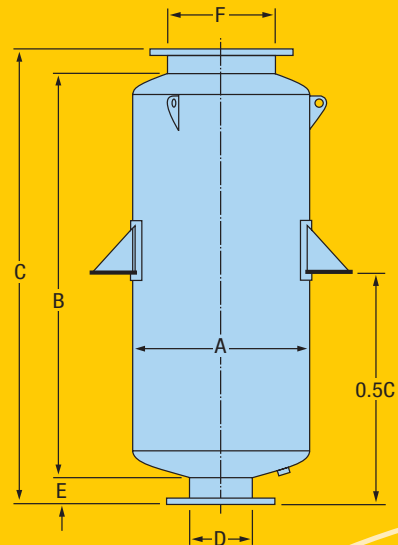
VTS silencers are limited to flow rates not exceeding 5.50 m<sup>3</sup>/sec at atmospheric pressure.

VTS silencers are 'straight through' absorptive types with an inlet diffuser and internal absorptive lining only.

VTS units can be used at any time where a pressurised gas is being vented to atmosphere. Corrosive gases can be treated with special design considerations.

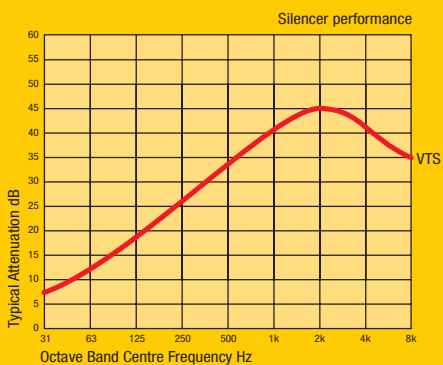
Typical applications include steam ejectors, small steam and gas vents, small process vents, turbine or compressor bypass systems, small safety and relief valves.

The units can be installed vertically or horizontally.



	A	B	C	D	E	F	Weight
Silencer Ref	Dia. mm	mm	mm	N.Bore mm	mm	mm	KG approx
5 VTS	310.00	1500.00	1750.00	50.00	100.00	125.00	45.00
6 VTS	310.00	1850.00	2050.00	75.00	100.00	150.00	55.00
8 VTS	360.00	2050.00	2250.00	100.00	100.00	200.00	70.00
10 VTS	410.00	2550.00	2750.00	150.00	100.00	250.00	120.00
12 VTS	460.00	3050.00	3250.00	200.00	100.00	300.00	340.00

Dimensions and weights are for guidance only





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[www.silencers.co.uk](http://www.silencers.co.uk)

*Many thanks to Corus CC&I Scunthorpe site; Scottish & Southern, Keadby; Tarmac Topblock, Linford; for their generous permission to photograph IMS Atmospheric Vent Silencer installations on site.*

*Represented in:* Denmark, France, Germany, Greece, India, Italy, Norway, Singapore, Sweden and the United Arab Emirates