

Vent Silencers

An Overview



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making the world a quieter place



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Vent silencers

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IAC Acoustics Overview



IAC Acoustics is the world's leading provider of sound and acoustic control products, spanning the largest number of market sectors from hot gas silencers to audiology rooms and acoustic testing facilities.

With major research facilities in the USA and Europe, IAC Acoustics has always been a pioneer in the noise control sector with many world first's in terms of design and performance innovation. For over 60 years, IAC Acoustics has built a level of trust within the industry with a guaranteed performance rating on all products, backed by certified and accredited testing data.

In the power generation and oil and gas industries, IAC Acoustics is the only supplier with manufacturing facilities all over the world, enabling a truly global reach, matched by an unrivalled level of local service.

From a standalone product to a turnkey package and everything in between, IAC Acoustics can provide a suitable solution to your noise issue.

In an era where the demand for power is ever increasing, IAC Acoustics, is, and always has been, committed to **making the world a quieter place.**



Why Choose IAC Acoustics ?

IAC Acoustics has over 60 years experience and completed thousands of installations worldwide.

Continuous investment in research and development drives our passion for innovation. We can also carry out on-site R&D for specific applications, if required.

IAC Acoustics designs, manufactures and installs everything from a standalone noise control solution to full turnkey packages.

Our service is available in any region in the world including local manufacture, project management and installation.



making the world a quieter place

Product presentation : Vent silencer



A **vent silencer** is a device that is intended to reduce the very high noise level created when high pressure gas or steam is expanded to atmosphere.

This noise is produced by the rapid turbulence of the mixing gas jet and energy release of the compressed gas. Most of the noise occurs at the expansion across the valve and is emitted at the stack opening.

The vent silencer can also provide back pressure relief for the system ensuring proper operation.

There are two noise reduction principles used in a vent silencer.

The first is a reactive section (diffuser) to attenuate the low frequencies and provide broad band noise reduction.

The second principle is absorption of the high frequency audible noise into a sound absorbing material.

Areas

Combined Cycles



CHP Plants



Fossil Fuel Power Plants



Thermal Solar Plants



Nuclear Power Plants



Industrial Applications



Oil & Gas applications



This applies to new plants and refurbishment of existing facilities. Vent silencers from IAC Acoustics can even be rented.

Applications



Noise reduction of high pressure gas flow for:

- Safety Valve (PSV)
- Relief valve (PRV)
- Ejector
- Start up valve
- Snort-valve
- Flash and Blow Down Tanks

Fluids under high pressures create lots of turbulence, noises and shock waves when they are released to the atmosphere.

Our capabilities :

Acoustic design and optimisation
3D CAD model engineering
Static calculation
Pressure part calculation
Pressure part design check
Pressure directive compliance
Quality inspection
Full technical documentation
Full supply-chain service

Vent Silencer Specification



Hydraulic sizing

- Flow rate, valve set pressure and temperature
- Saturated or Superheated Steam
- Other gases: oxygen, methane...

Type of operation

- Safety: intermittent operation
- Control, start-up and blow down: regular or continuous operation

Pressure Drop / Back Pressure

- Valve integrity factor
- Control and stabilisation of process condition

Material Specification

- From low temperature to high temperature
- Corrosion allowance

Noise Guarantee details

- Point of measure
- Pipe noise interference

Pipe Connection

- Butt weld
- Flanges
- Counters flanges /seals/bolts

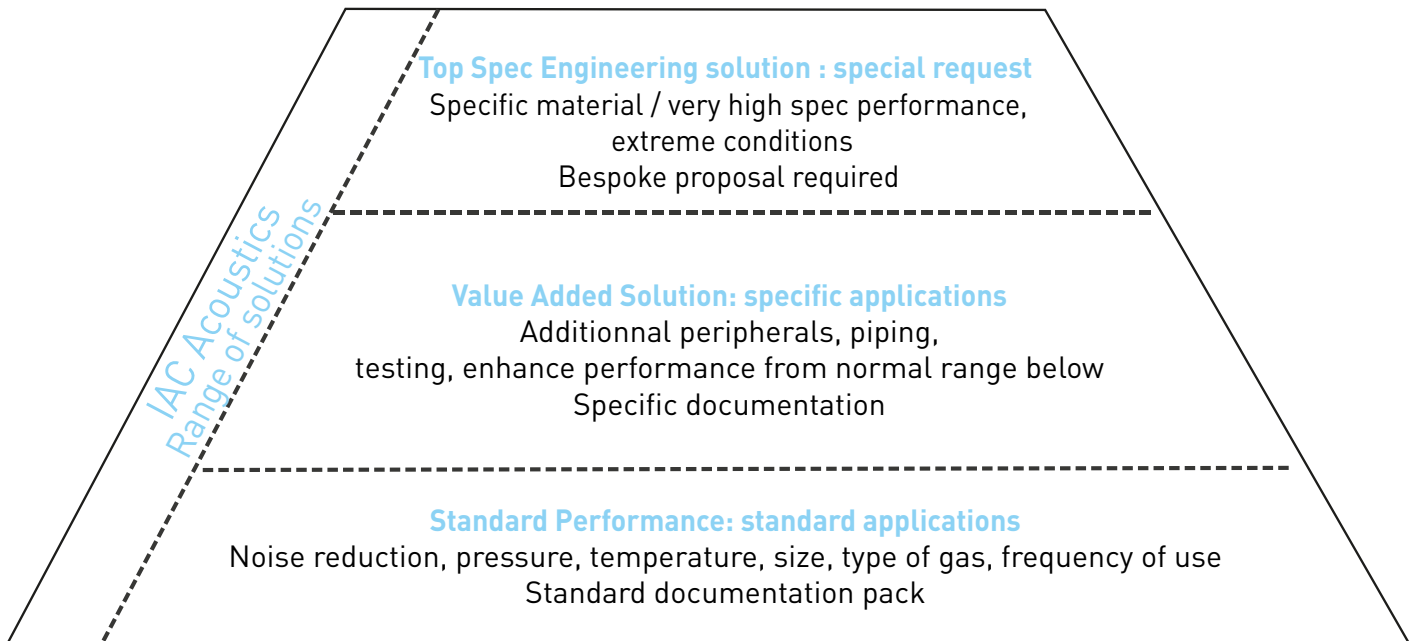
Rain Hoods

- Impact on noise guarantee depending on measure point
- Snow and ice issue

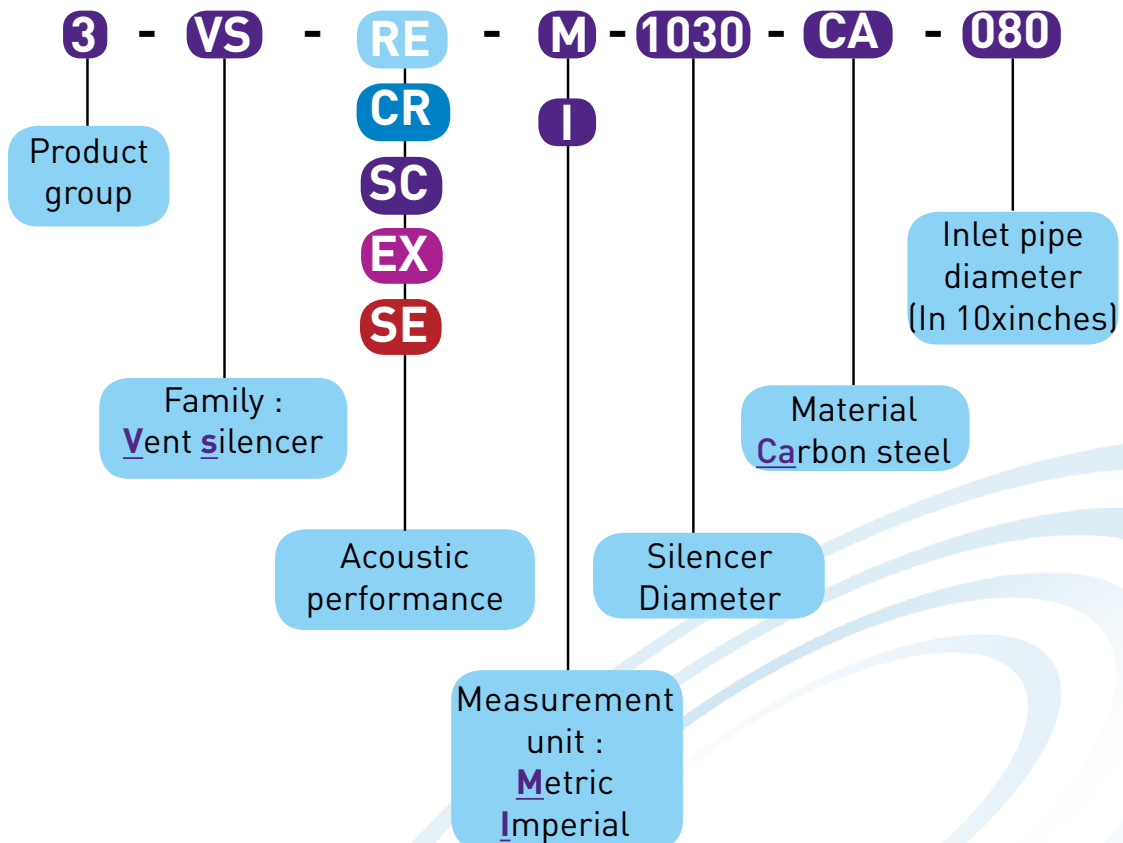
PED

- Applicable within the EEC and elsewhere whenever the customer requires it
- For silencer with diffuser tubes and pressure drop (1st stage) above 0.5 bar g
- Mechanical withstand guarantee: NDT, PMI, CE Marking

Product Guidelines

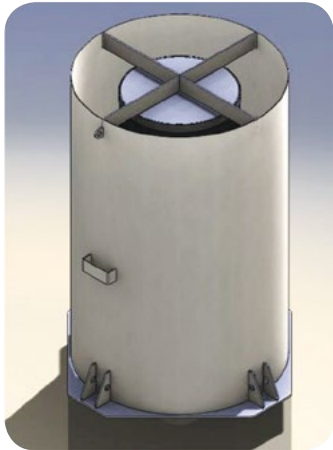


Product references



Vent silencer : Standard range and beyond

Noise reduction (dBA)



VS Special

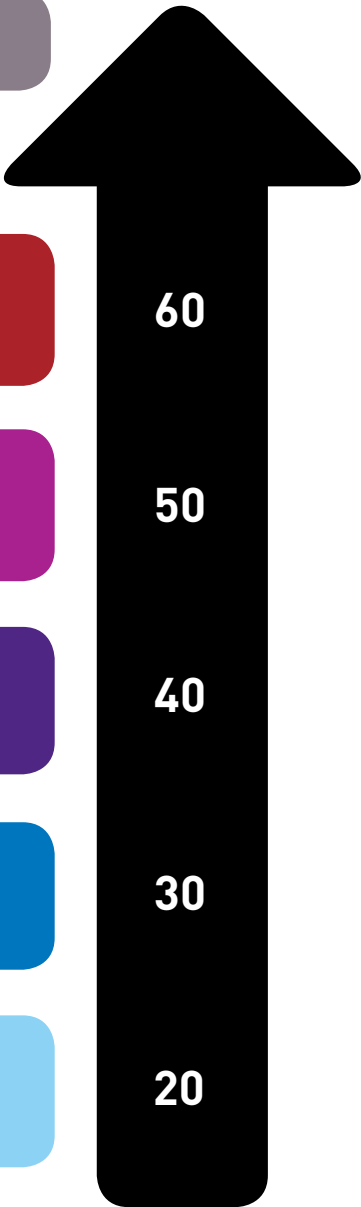
VS Super Extreme
• From 0 to 90 lb/s [40 kg/s]

VS Extreme
• From 0 to 90 lb/s [40 kg/s]

VS Super Critical
• From 0 to 90 lb/s [40 kg/s]

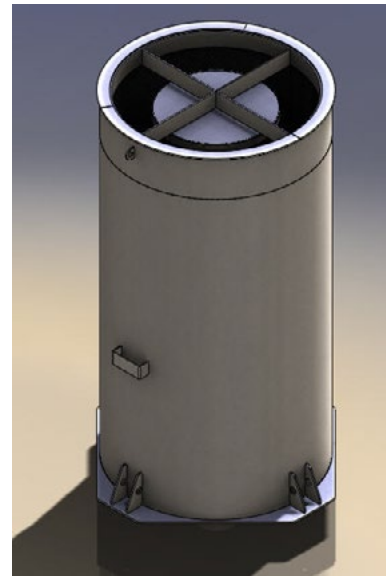
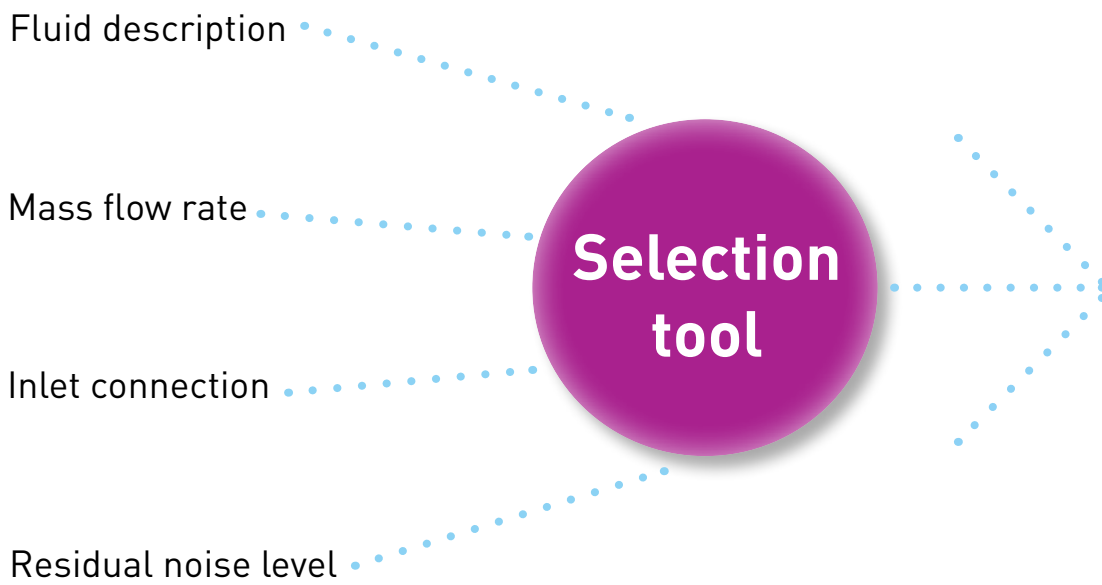
VS Critical
• From 0 to 150 lb/s [70 kg/s]

VS Residential
• From 0 to 150 lb/s [70 kg/s]



Selection tool

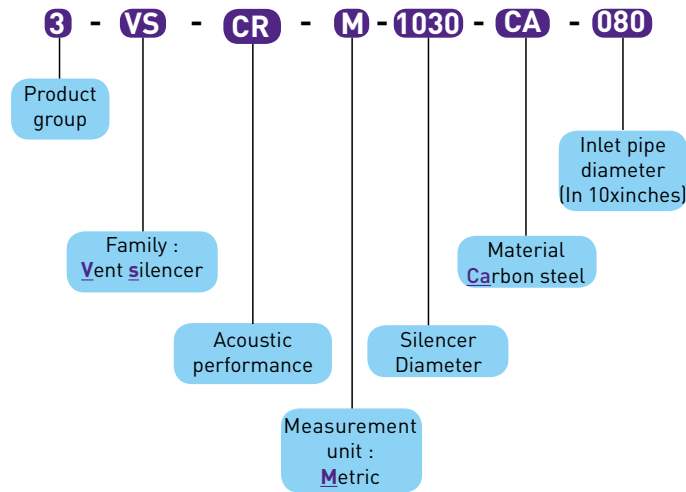
For standard silencers



Vent Silencer - Steam

Metric unit

Sample of reference tag



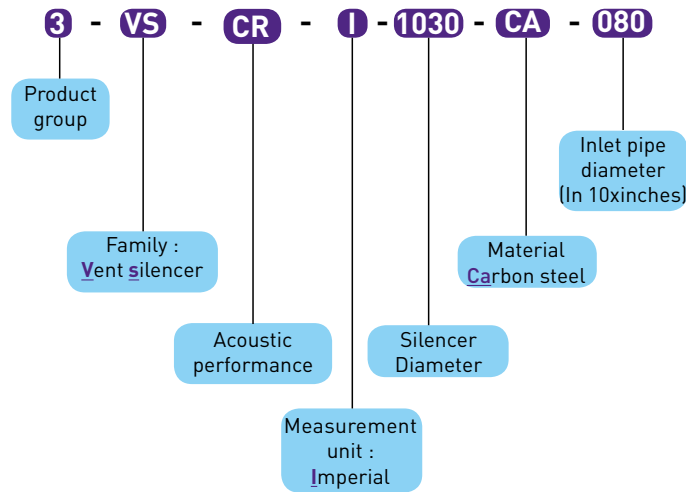
Outer dimension

outer Ø	Length (mm)				Weight (kg)			
	VS Residential	VS Critical	VS Super critical	VS Extreme	VS Residential	VS Critical	VS Super critical	VS Extreme
320	510	510	510	610	38	39	43	49
470	750	750	750	900	88	91	102	117
630	1010	1010	1010	1210	154	158	180	208
790	1260	1260	1260	1520	238	245	282	326
880	1410	1410	1410	1690	294	302	349	404
950	1520	1520	1520	1820	341	351	406	471
1030	1650	1650	1650	1980	403	414	481	558
1110	1770	1770	1770	2120	462	475	552	641
1190	1900	1900	1900	2280	529	544	633	736
1270	2030	2030	2030	2440	607	624	743	864
1360	2180	2180	2180	2610	782	805	942	1100
1460	2330	2330	2330	2800	953	981	1137	1323
1560	2500	2500	2500	3000	1094	1126	1306	1521
1670	2670	2670	2670	3210	1257	1293	1530	1781
1790	2860	2860	2860	3440	1444	1486	1878	2203
1920	3070	3070	3070	3680	1738	1788	2245	2622
2050	3290	3290	3290	3940	1998	2056	2603	3040
2200	3520	3520	3520	4220	2299	2366	3003	3511
2360	3770	3770	3770	4520	3178	3270	4011	4712

Vent Silencer - Steam

Imperial unit

Sample of reference tag



Outer dimension

outer Ø	Length (in)				Weight (lb)			
	VS Residential	VS Critical	VS Super critical	VS Extreme	VS Residential	VS Critical	VS Super critical	VS Extreme
13	20	20	20	24	84	86	95	108
19	30	30	30	36	194	201	225	258
25	40	40	40	48	340	348	397	459
31	50	50	50	60	525	540	622	719
35	55	55	55	67	648	666	769	891
37	60	60	60	72	752	774	895	1038
41	65	65	65	78	888	913	1060	1230
44	70	70	70	84	1019	1047	1217	1413
47	75	75	75	90	1166	1199	1396	1623
50	80	80	80	96	1338	1376	1638	1905
54	86	86	86	103	1724	1775	2077	2425
57	92	92	92	110	2101	2163	2507	2917
61	98	98	98	118	2412	2482	2879	3353
66	105	105	105	126	2771	2851	3373	3926
70	113	113	113	135	3183	3276	4140	4857
75	121	121	121	145	3832	3942	4949	5781
81	129	129	129	155	4405	4533	5739	6702
87	139	139	139	166	5068	5216	6620	7740
93	148	148	148	178	7006	7209	8843	10388

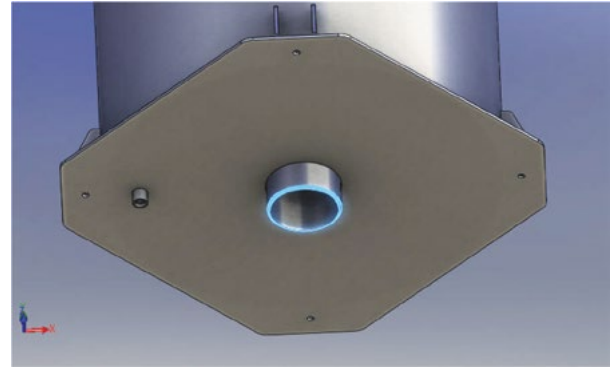
Above figures are given only as information

Options

Connection

(Standard supply : Butt weld)
Connecting flanges

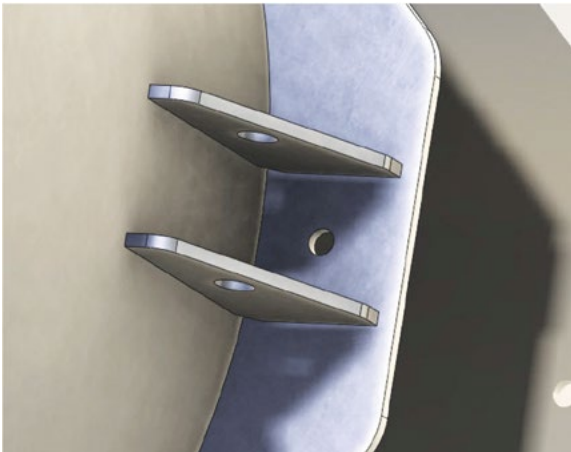
- Standard: WN flanges Class 150# as per ASME B 16.5
- Options available for other classes and alternatives (For example slip-on)



Support

Standard supports are part of bottom plate

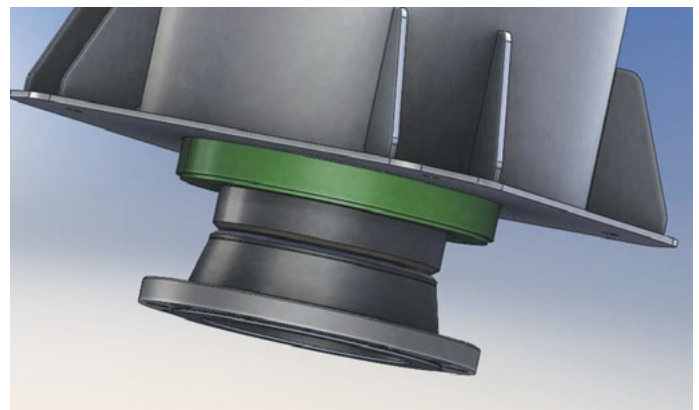
Other support can be supplied as options



Stuffing Box

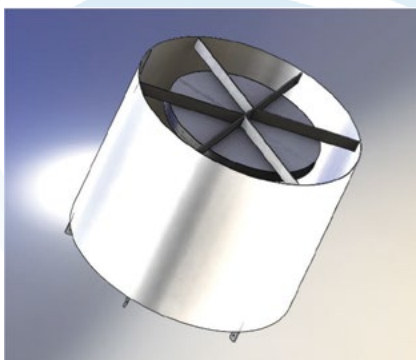
Allows pipe movements due to thermal expansion, avoiding nozzle loads

- Standard radial movement is : +/- 20 mm [3/4"]
- Standard axial movement up to 50mm [2"]
- Pipe sealing is maintained



Rain hoods

- Prevents rain entering the silencer
- Bottom drain as standard



Our customers

APA Gasnet - Foster Wheeler - EDF - Dresser - Exxon - Air Liquide - Thermax - Jacobs - Bocard - Cegelec
- Alstom - Technip - Chiyoda - Total - JGV - Aramco - Reliance - Cevital SPA - CME Engineering
- CNIM - SNC-Lavalin - CTEP - QatarGaz - QatarGaz - ESB - COFIVA - Cockerill Mechanical Industrie



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