Vent Silencers
An Overview

www.iac-australia.com.au

making the world a quieter place
## Vent silencers

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MAKING THE WORLD A QUIETER PLACE
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.
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 group: Ventsilencer**

**Acoustic performance:**

**Measurement unit:** Metric

**Diameter:** CRSC

**Material:** Carbon steel

**Inlet pipe diameter:** (In 10x inches)

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**Top Spec Engineering solution:** special request
- Specific material / very high spec performance,
- Extreme conditions
- Bespoke proposal required

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**Value Added Solution:** specific applications
- Additional peripherals, piping,
- Testing, enhance performance from normal range below
- Specific documentation

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**Standard Performance:** standard applications
- Noise reduction, pressure, temperature, size, type of gas, frequency of use
- Standard documentation pack

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**Product references**

**Product group:** 3 - VS

**Family:** Vent silencer

**Acoustic performance:** RE

**Measurement unit:** Metric

**Diameter:** 1030

**Material:** Carbon steel

**Inlet pipe diameter:** (In 10x inches)
**Vent silencer**: *Standard range and beyond*

- **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]

Noise reduction (dBA)
Selection tool
For standard silencers

Fluid description
Mass flow rate
Inlet connection
Residual noise level
**Vent Silencer - Steam**

**Metric unit**

Sample of reference tag

```
3 - VS - CR - M - 1030 - CA - 080
```

**Outer dimension**

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Above figures are given only as information
# Vent Silencer - Steam

## Imperial unit

**Sample of reference tag**

- **Product group**: VS
- **Family**: Vent silencer
- **Acoustic performance**
- **Material**: Carbon steel
- **Silencer Diameter**
- **Measurement unit**: Imperial

## Outer dimension

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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
Contacts & Countries

We are global and local

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