



STEAM VENT SILENCER

PRODUCT OVERVIEW

ENEVA Steam Vent Silencers are engineered to reduce the high noise levels generated during the release of pressurized steam to atmospheric conditions. Such events commonly occur during safety valve discharge, blow-down operations, turbine bypass systems and start-up venting.

When high-pressure steam expands rapidly to atmospheric pressure, significant aerodynamic and acoustic noise is produced. ENEVA silencers effectively attenuate this noise while maintaining acceptable back pressure limits for the connected equipment.

Each silencer is custom designed based on steam flow conditions, required noise reduction level and system pressure limitations to ensure safe and reliable operation.

WORKING PRINCIPLE

ENEVA Steam Vent Silencers utilize a combined reactive and absorptive silencing principle.

The noise reduction process occurs in two stages:

1. Diffuser Section

The incoming steam expands in a diffuser section, reducing pressure and distributing the flow.

2. Absorption Section

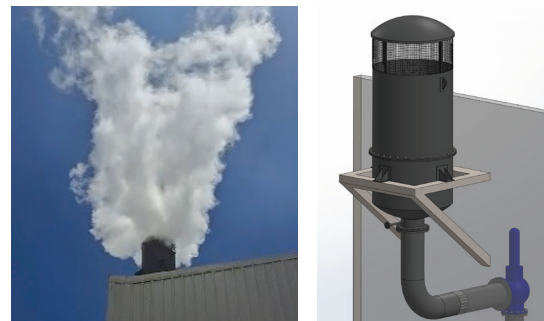
The steam then passes through sound-absorbing passages where acoustic energy is dissipated.

This hybrid design effectively reduces both low-frequency and high-frequency noise components, achieving optimal sound levels at specified distances from the vent outlet.

The dimensions of the silencer (diameter and height) are determined according to:

- Required sound attenuation level
- Steam mass flow rate
- Operating pressure and temperature
- Allowable back pressure limits of connected equipment

ENEVA ENGINEERING APPROACH



Steam vent silencers are not standard accessories but critical components of the overall safety and process system.

ENEVA designs each silencer through a comprehensive engineering process including:

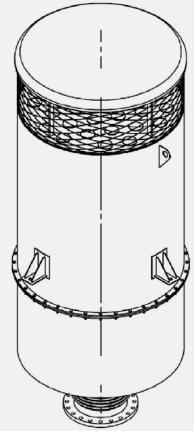
- Acoustic calculations based on international standards (VDI etc.)
- Steam flow and thermodynamic analysis
- Back pressure verification for connected valves and equipment
- Mechanical design considering thermal expansion and structural loads
- Integration of expansion joints when required

Depending on the application, diffuser sections may be designed as pressure vessels in accordance with EN or ASME codes.

TECHNICAL SPECIFICATIONS (TYPICAL)



Sound Attenuation	Up to 60 dB(A) depending on design conditions
Steam Temperature	Up to 550 °C
Inlet Diameter Range	DN25 – DN600
Steam Capacity	Up to 200 t/h per unit
Back Pressure	Optimized for connected equipment
Outer Shell Material	Carbon Steel or Stainless Steel
Internal Components	Carbon Steel or Stainless Steel depending on design temperature



TYPICAL APPLICATIONS

- Safety valve vent lines
- Boiler blow-down systems
- Pressure control and reducing valve vents
- Start-up and purge lines
- Turbine bypass and warm-up vents
- Industrial steam venting systems



STANDARD DELIVERY SCOPE

Optional equipment may include expansion joints and special mounting arrangements depending on installation requirements.

- Diffuser section
- Sound absorbing section
- Bird screen
- Rain hood
- Support legs
- Drain nozzle
- Lifting lugs



WHY ENEVA?

- Project-specific acoustic and thermodynamic design
- Compliance with international engineering standards
- Optimized back pressure performance
- Robust industrial construction for long service life
- Reliable solutions for critical steam venting systems

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