GROUPE BOËT

COMPRESSED AIR ACTIVITY

APPLICATIONS

Paper Mills - Printing Industry - Pharmaceutical Industry - Food & Beverage Industry - Wastewater Treatment - Plants Plastics Industry - Petrochemical Industry - Energy Sector - Mining Industry

- From 20 to 40 dB attenuation
- Qualified by 3D numerical simulation
- Standard or customized solutions
- Low pressure drop
- Fast delivery
- ISO 9001:2015 certified quality

From 20 to 40 dB

Customized Solution

Available from Stock

FIELDS OF APPLICATION

Users of the Air-S silencer range generally require low-pressure compressed air or vacuum. Typical applications include:

- Pneumatic conveying of powdered or granular materials through ducts
- Combustion air supply
- Drying air supply
- Aeration of fermentation processes
- Wastewater basin aeration
- Filter cleaning / unclogging
- Vacuum packaging
- Vacuum handling for material conveying
- Vacuum freeze-drying (lyophilization)
- Vacuum distillation

NOISE SOURCES AND PATHS OF PROPAGATION

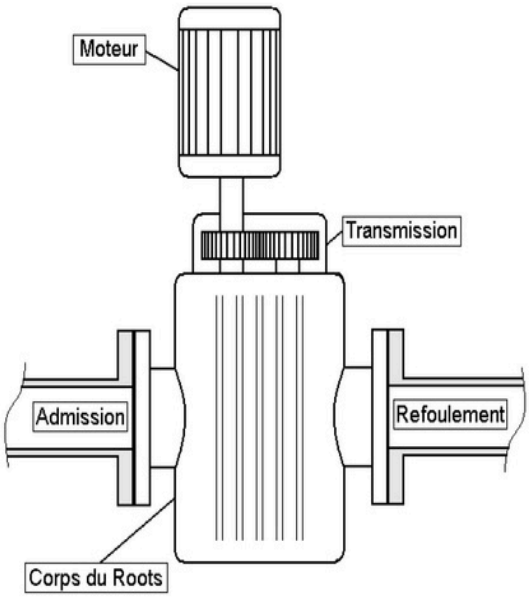
A rotary positive displacement compressor, particularly a Roots-type blower, can generate noise levels up to 135 dBA. The noise level at the machine inlet is generally lower than at the outlet, but it may become predominant when the inlet is connected to the atmosphere.

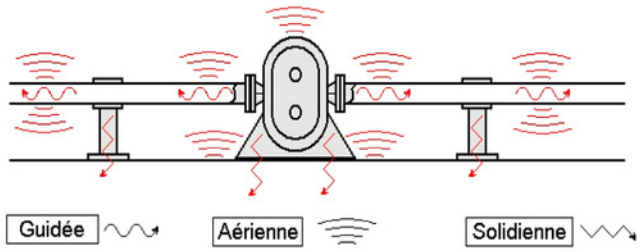
The main sources of noise are:

- Noise induced by pulsations on the discharge side
- Aerodynamic noise on the intake side
- Mechanical noise, mainly from transmission
- Electric motor

These can be divided into the following sub-assemblies:

- Intake
- Discharge
- Roots casing
- Transmission



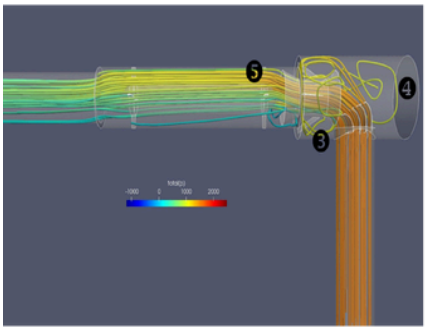


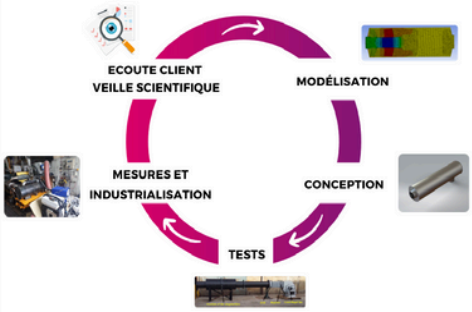
The propagation paths through which noise and vibrations can travel from a source to a receiver are:

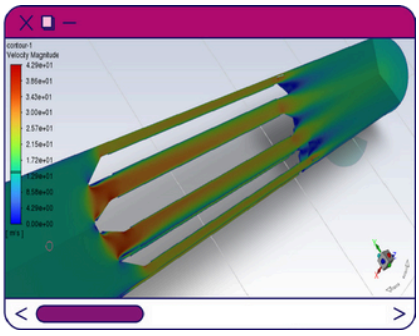
- Guided: Guided propagation of sound through ducts (minimal attenuation over distance)
- Airborne: Transmission of sound waves through a fluid medium, generally air
- Structure-borne: Transmission of acoustic vibrations through solid materials

OUR EXPERTISE

As a pioneer, Groupe Boët has distinguished itself through the continuous development of new acoustic and aerodynamic simulation tools, from the analog calculators of the 1970s to today's fully digital 3D simulators.



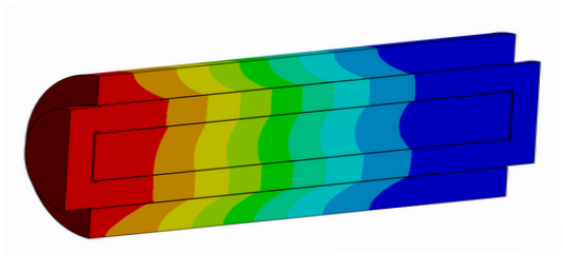


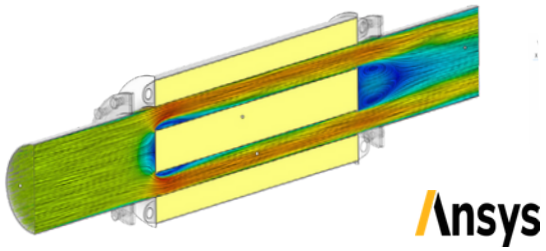


Thanks to its in-depth technical expertise, Groupe Boët guarantees the acoustic, aerodynamic, and mechanical performance of its Air-S silencers:

1. Implementation of tailored solutions for low frequencies (complex geometries, choke-tubes, quarter-wavelength), as well as for medium and high frequencies (fiber).
2. Characterization in an independent laboratory of the behavior and performance of absorbing materials at low and high temperatures
3. Characterization in an independent laboratory of the behavior and performance of absorbing materials at low and high temperatures.
4. Elimination of the risk of coincidence between the silencer's mechanical modes and the fundamental frequency, as well as the first harmonics of the equipment, through modal analysis.

All our tools have been qualified on static and dynamic test benches.





CFD (Computational Fluid Dynamics) study of the aerodynamic behavior of an AIR-S silencer using ANSYS FLUENT.

PRODUCT RANGE PRESENTATION

Goal

The standard range offers a reliable and durable product solution, available from stock.
The objective of this standard silencer range is to provide an effective response to the noise issues encountered by rotary positive displacement compressor manufacturers as well as end users.The standard range does not comply with PED requirements; however, silencers can be designed for this application and adapted to each specific use case.

Features

These silencers are manufactured in standard carbon steel S235JR and are externally protected with a black primer coating. They can also be manufactured in stainless steel upon request.
The basic designation of each silencer is defined by two key parameters: the nominal diameter (DN) of the inlets and outlets, and the sound attenuation class in dB(A).
The standard silencer range covers DN80 to DN350. For larger diameters, a customized design can be provided.
The indicated attenuation values are based on air at ambient temperature at the inlet and 60°C at the outlet. They are valid within an octave band range from 63 Hz to 8 kHz. Detailed acoustic and aerodynamic performance data are available in the product datasheet on our website.
Further information on the use and installation of our product can be found by consulting the OMM (Operation & Maintenance Manual).

Our different models

Three attenuation classes are offered: 20 dBA, 30 dBA, and 40 dBA.
Silencers in the 20 dBA and 30 dBA attenuation classes are of the absorptive type, containing fibers that reduce noise through dissipation. In contrast, the 40 dBA model operates on a reactive principle. This system attenuates low frequencies by creating a phase shift of the sound waves.
For attenuation performance, models with a global attenuation of 20 dBA guarantee a minimum attenuation of 20 dB across all narrowband frequencies within the octave bands from 500 Hz to 4000 Hz, while models with a nominal global attenuation of 30 dBA guarantee a minimum attenuation of 30 dB across all narrowband frequencies within the octave bands from 250 Hz to 4000 Hz.
The 40 dBA class model will be proposed and customized to meet the specific requirements of your projects.

Product Codification :

- Air-S → Compressed Air Silencer Product Family
- 20, 30, 40 → Acoustic Performance
- MF → Medium Frequency
- DN → Nominal Inlet and Outlet Diameter
- 80, 100, 150, 200, 250, 300, → DN dimension in mm
- Axial-Axial/Radial-Axial → Connection

AIR-S 20 silencer, DN350, axial inlet/outlet, matte black coating.

CUSTOM-MADE AIR-S SILENCERS

In addition to its standard range of AIR-S silencers, Groupe Boët offers customized solutions designed to meet the specific requirements of each customer, whether in terms of dimensions, materials, performance, or integration.

Our acoustic engineering and manufacturing approach enables the design of optimized silencers perfectly adapted to project specifications.Our project engineers provide rigorous follow-up, ensuring the proper integration of our products into your final environment and the success of your projects.In addition, we integrate associated functions such as gas treatment, spark arresters, stacks, or measurement ports (NFX hatch). A wide range of products is available: catalytic silencers, rectangular, oval, stacks, and more.

Fittings & Accessories :

Outlets

Smooth Elbow

Bevel Cut

Rain Cap

Connections

Plain Ends

Flanges

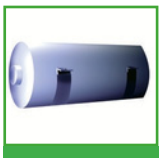
Drains

Brackets

Type V

Type VP

Type H



Type HC

Available Options

- Special external protection (metalizing, etc.)
- Custom finishing color
- Materials in stainless steel 304L or 316L
- Custom supports (feet, saddles, etc.)
- External sound insulation
- Water separator function
- Inspection report (outside PED scope)
- PED compliance (pressure above 0.5 bar)

WHY CHOOSE GROUPE BOËT AS YOUR PARTNER?

With over 60 years of expertise, we provide high-performance acoustic solutions to reduce noise pollution and meet your specific requirements.

As a partner, single point of contact, and responsible provider, Groupe Boët delivers a comprehensive "turnkey" service — from on-site measurements and optimization diagnostics, through design, manufacturing, and installation of technical solutions, all the way to final acceptance and guaranteed performance.

We operate across diverse and demanding sectors such as energy production (including nuclear), construction, industry, and healthcare.

Together with you, we take on the challenges of environmental and energy transition.

OUR RECOMMENDATIONS

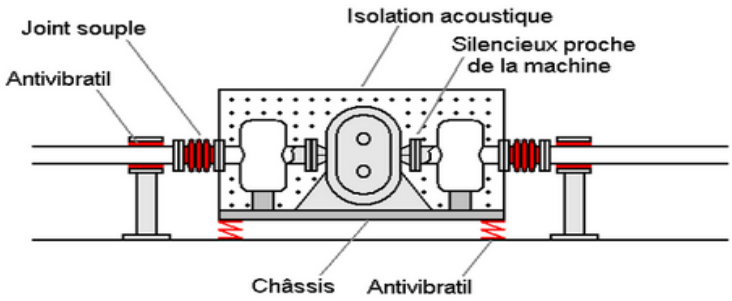
Inlet and outlet silencers, adapted to the characteristics of the machine, are an effective and proven solution to reduce internal noise in ducts. Attenuation levels of around 10 dB to 40 dB are generally achieved with this type of silencer.
However, silencers alone are not always sufficient to reduce the overall noise level of the installation to the desired level, as airborne and structure-borne propagation often mask the actual contribution of the silencer. It then becomes necessary to acoustically treat all propagation paths to achieve the expected result.
A complete treatment of noise pollution requires, in addition to silencers, effectively addressing all sources and propagation paths by applying the following solutions:

1) Limiting airborne noise

- Installation of silencers as close as possible to the machine
- External acoustic insulation of silencers and ducts
- Installation of partial or full acoustic enclosures

2) Limiting structure-borne vibration transmission

- Anti-vibration mounts between frame, machine, and floor
- Expansion joints/compensators between ducts and silencers
- Anti-vibration supports



STANDARDS AND QUALIFICATIONS

- **Quality Certification: ISO 9001:2015**
- **Testing and Product Qualification Resources**

1. Static and dynamic test bench
2. Finite element calculation / ANSYS / CFD (Fluent)

- **Design and Construction Codes**

3. PED 2014/68/EU
4. EN 13480-3 & EN 13445-?
5. CODETI & CODAP
6. ASME B31.n & ASME VIII BPVC
7. RCC-M

- **Non-Destructive Testing**

8. Dye penetrant testing
9. Radiography
10. PMI (Positive Material Identification)
11. Ultrasonic testing

- **Manufacturer's Documentation**

THEY TRUST US

OTHER PRODUCTS FROM GROUPE BOËT

ENGINE EXHAUST SILENCER

ATMOPSHERIC SILENCER

VENTILATION SILENCER

ACOUSTIC LOUVER

ACOUSTIC SCREEN

ACOUSTIC ENCLOSURE

Certified quality management system

ISO 9001

ISO 19443

Certified company

EN 15085-2

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