



BBM Akustik Technologie
Engine exhaust silencers
for all industrial applications



**Solving industrial noise problems
for more than 35 years.**

**BBM Akustik Technologie – a leading
supplier of industrial silencers and enclosures.**

**EN ISO
9001:2008
certified**

Our products

Flue-gas silencers

- Bypass silencers
- Gas turbine silencers
- HRSG ducts
- Main Stacks



Steam silencers

- Vent silencers
- Start-up silencers
- Blow-off silencers
- Flash tank silencers



Acoustic enclosures and claddings

- Facades and shrouds
- Partial HRSG enclosures
- Steam and gas turbine enclosures
- Supply and erection



Exhaust systems

- Exhaust ducts
- Expansion joints
- Silencers and stacks
- Retrofits



Engine exhaust silencers

- Intake and exhaust flow silencers
- For diesel and gas engines
- For all industrial applications
- DNV certified spark arrestor



Condensate systems

- Complete system design
- Static and dynamic calculation
- Condensate tanks and flash tanks
- Piping and blow-off silencers



Cooling tower silencers

- Natural draught cooling towers
- Forced air cooling towers
- Cell cooling towers
- Hybrid cooling towers



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**Engine exhaust silencers
for all industrial applications**

MÜLLER-BBM
INNOVATION
EXPERIENCE
EXCELLENCE
SINCE 1962

Engine exhaust silencers

Noise control
for all industrial applications



BBM engine exhaust silencers

BBM Akustik Technologie in Germany is one of the world's leading suppliers for engine silencers. Our silencers are used in intake and exhaust applications of liquid and gaseous fuel engines. We offer the highest quality acoustically optimised silencers at reasonable prices, anywhere in the world. BBM silencers can be found in a number of industries.

BBM scope of supply

We supply an entire range of silencers for diesel and natural gas engines for installations ranging from small to large, as well as all of the necessary accessories. We supply customised intake and exhaust flow silencers for every type of industrial application.

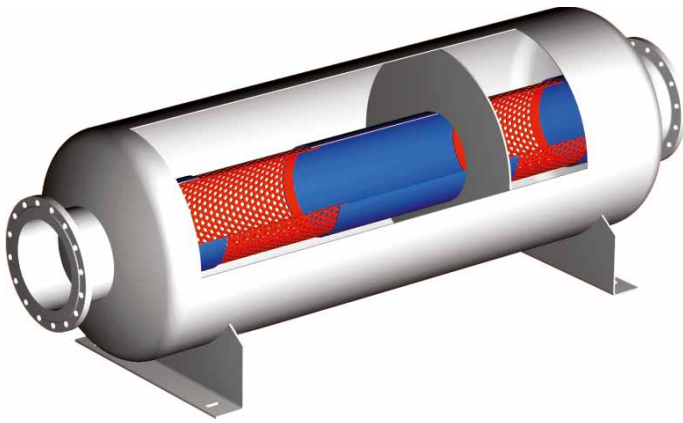
Silencers can be designed to fit the shape of any casing (round, rectangular, or oval), using a wide range of materials. Inlets and outlet will be arranged as required by the customer.



BBM spark arrestors

On request, our silencers can be equipped with integrated spark arrestors. These specially developed arrestors – certified by Det Norske Veritas – feature the following characteristics:

- Compact design
- High separation of particles
- Best solution for maritime and off-shore applications
- Easy cleaning of collection chamber
- Good flow distribution resulting in low pressure drop



Acoustic design and calculation

We design silencers with an attenuation range of 10 to 60 dB(A). The silencers can be the absorbing, resonator, or reactive type, and in most cases a combination of these. Acoustic and velocity/pressure drop calculations for each design have to be executed in parallel to get the most optimised result. We also offer space-saving solutions.

Our acoustic designs include optimised solutions for the entire system. BBM Akustik Technologie guarantees the entire system, based on our R&D and site measurements.

BBM design for low-frequency attenuation

BBM Akustik Technologie is a specialist in the development and design for low-frequency silencers. With our expertise and patented solutions, we create silencers with the highest level of attenuation, especially when it comes to very low frequencies and very low pressure drop.

CFD calculations

The silencers are exposed to high temperatures and high velocity turbulent flow.

In-house CFD studies verify the silencer design, taking into consideration flow noise, pressure drop, and mechanical stability.

Silencer development requires on-going improvement of the silencer design.

BBM materials

Our specific design reflects:

- The choice of material in accordance with aero-thermal requirements
- Extremely robust and thermal load resistant design of internal structures using FEM calculations
- Special care is taken with the absorbing materials using protective layers between perforated sheets and the absorption material in order to guarantee a long life

Planning, 3-D design, detailed engineering and project management

Almost all projects are represented in a 3-D (CAD) model. The use of such software enables us to verify all of the critical elements in order to allow for "tailor-made" detailed engineering.

BBM design and development of silencers

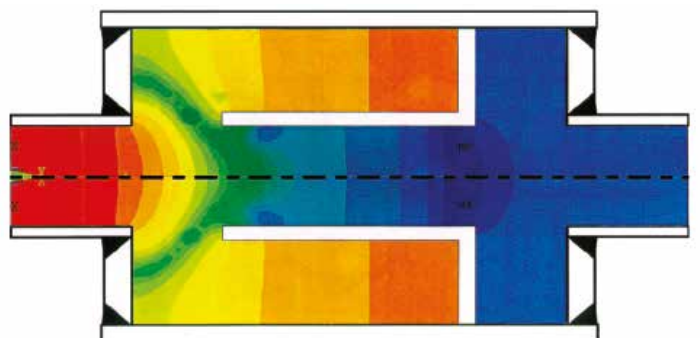
Our expertise is based on research conducted at our in-house test facilities and on extensive field measurements, which support our calculations.

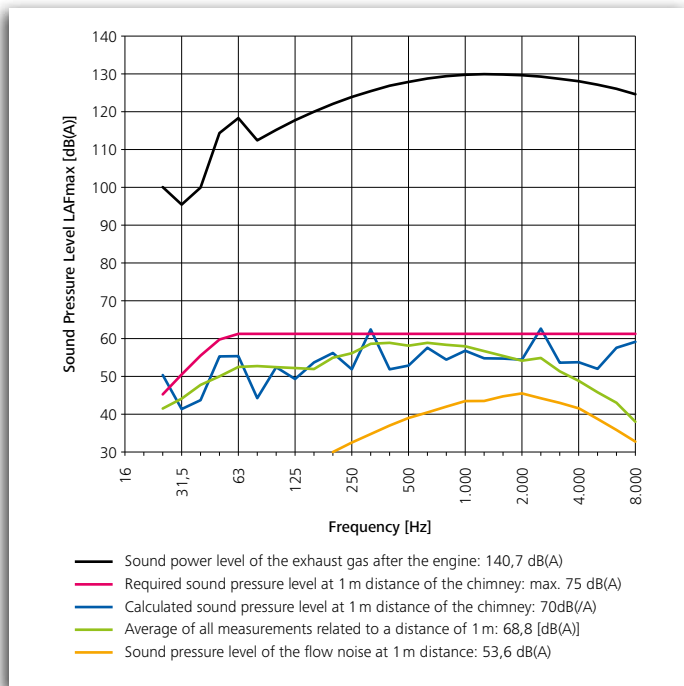
All new materials are tested in our own test benches.

Overall concept and cost optimisation

The silencers are designed by competent engineers, using powerful computer programs with multiple optimisation routines.

These programs and our long-term experience in the design of industrial silencers make it possible for us to meet the most stringent acoustic requirements.





What's in it for you?

- Customised silencers that meet the highest acoustic requirements
- Solutions ready for serial production
- Guaranteed mechanical and acoustic design
- Optimisation of the silencers' pressure loss and acoustic requirements taking economic aspects into consideration
- Access to all of the experience of the Müller-BBM Group
- Acoustic design of the entire system
- High engineering standards
- Own factories in order to ensure the high quality and shortest delivery time
- Fixed prices
- Structural design, CFD and FEM calculations on request
- Inspection and documentation of each silencer

We will accompany you throughout the entire project