



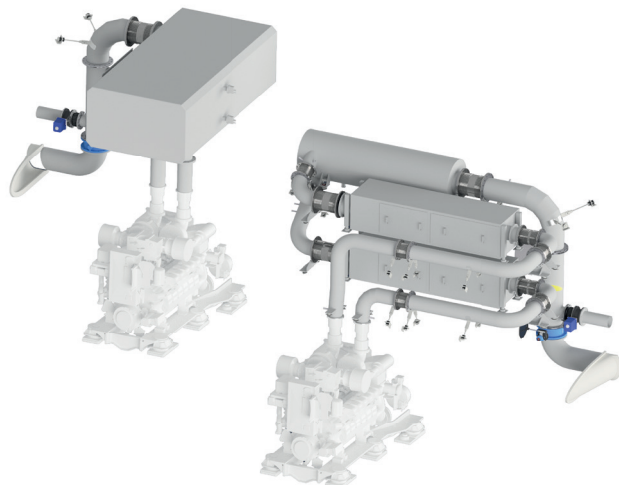
## Noise attenuation

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In general, all yachts have maximum noise levels established by the client for interior spaces and on deck. It can be very difficult for yards to calculate these levels for equipment to ensure they meet these restrictions, especially the exhaust system. The best solution is to rely on MarQuip's experience and advice.

Our exhaust silencers reduce exhaust noise over the entire bandwidth from low to medium and high frequencies of 25 to 35 dB (A). Additional attenuation of up to 20 dB (A) can be achieved by leading the exhaust gas out underwater. An underwater outlet on a main engine exhaust system allows for substantial noise attenuation.

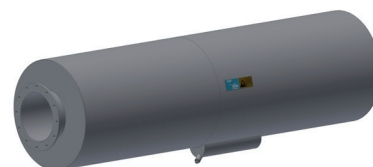
More is expected of generator exhaust systems as they do not utilise an underwater exhaust. These systems are equipped with an additional water lift separator to allow for even greater sound attenuation of up to 45 dB(A).





### **Dry exhaust gas silencer**

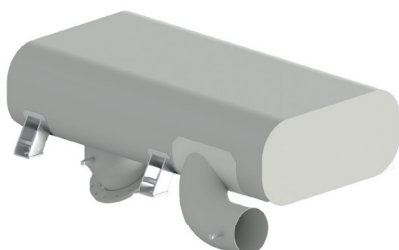
Dry exhaust gas silencers are used in both dry and combined dry/wet exhaust systems. The silencer can be of a reactive, absorptive or a combined type. This allows for noise attenuation for a specifically chosen frequency range or over a wide frequency range.



In addition to various standard ranges, MarQuip also designs and delivers fully customised silencers. Depending on the client's preference, silencers can be equipped with single, double or quadruple inlets, radial in and outlet positions, mounting supports, condensation drains, spark arrestors and/or integrated catalytic converters and even SCR systems.

The illustration shows a standard silencer and attenuation specifications for three of the most frequently used silencers. Passive and active filters can be integrated inside silencers and exhaust systems optimised by the integration of a SCR. This makes it unnecessary to choose between noise or emission reduction.

Here are two examples of custom-designed dry exhaust gas silencers. Silencers are made of either GRP (for wet silencers) mild steel, Corten steel or stainless steel, and welded according to quality standard NEN 25817 Class C or Class B



Oval-shaped main engine silencer, used in engine rooms where height is an issue.



Wet silencer in GRP