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A UNIFIED APPROACH TO EXHAUST SYSTEMS

Unpleasant exhaust fumes, stains on the hull, particles in the water.... The standard solution to such challenges on a superyacht is to fit a soot filter. What is not always recognized, however, is that filters themselves can have an impact on the way an exhaust system works, leading to silting, backpressure issues, white smoke and cooling problems. An integrated approach to the entire exhaust system is the best way forward.

“An exhaust system is not just a simple pipe that leads exhaust underwater,” says engineer and MarQuip specialist Wiebe Voorneveld. “It’s a finely tuned arrangement of components, each with its own role to play. You cannot just buy a soot filter off the shelf and expect it to be plug-and-play compatible with any existing system. There is much more than simple technical compatibility to a well-functioning exhaust solution. The components are more complex than the sum of their parts, and it’s crucial to ensure they fit together perfectly, with all eventualities accounted for.”

A soot filter has a major impact on an exhaust system due to the mechanism it uses to burn soot and the resulting additional heat,

which must also go through the exhaust pipe. If all heat-generating components are not taken into account in the capacity calculations, the cooling system will be inadequate, leading to issues such as salt blockage in the separator – which is also seen with generators. Other common problems with propulsion engines are caused by an inadequate mix of cooling water and exhaust gases due to suboptimal design of the mixer or scoop. This leads to the infamous black hull effect.

Cost-effective

“Optimizing an exhaust system is one of the most cost-effective investments owners can make,” Wiebe explains. “Soot is very aggressive on paint, and not just in aesthetic terms. It causes the paint to peel and crack, and as we all know, a new coat doesn’t come cheap. Moreover, no one wants to see soot particles in the water while swimming around their yacht. And hull cleaning is a never-ending and demanding task for the crew. MarQuip is currently involved in many refits and we’ve worked out special scoop and mixer designs to avoid these hull issues.

There are various solutions we can implement, depending on the boat or the type of engine.”

MarQuip is well-positioned to respond to the problems linked to exhaust

systems. “All our solutions are custom-made, and we guarantee the proper functioning of the whole, not just the separate pieces,” Wiebe adds. “If a client asks for a soot filter, we start with the engine outlet and finish with the overboard, making sure everything in-between works perfectly.”

If you buy a pipe here, a soot filter there and a silencer at yet another place and put them all together, who’s responsible for what? MarQuip offers a single-source in order to put together the best possible system for the yacht and guarantee a seamless operation. “We don’t need to provide all of the components: we can build on existing ones, calculate the corresponding needs and add those parts that best complement them,” said Wiebe. We look at whether the cooling system is large enough, whether there is enough cooling water and whether modifications are present or need to be made. It all comes down to understanding the big picture.”

MarQuip will be on hand at all the upcoming yacht exhibitions, including Monaco, METSTRADE and FLIBS, to answer questions and provide more information on this subject.

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Exhaust system on M/Y BELLE DE JOUR

