A study of the Norwegian research organization SINTEF conducted in 2019 sees benefits for using heavy fuel oil (high Sulphur fuel oil, HSFO) in combination with scrubbers in comparison to the changeover to low-sulphur fuel (LSFO). The main reason is the overall ecologic footprint: considerably more energy is needed for the production of LSFO which consequently leads to a higher amount of greenhouse gas emissions. While there are approximately 9 to 10 grams of CO₂ equivalents emitted during the production of one MJ HSFO the amount adds up to 13 to 15 grams per MJ for LSFO.
During longstanding reliable partnerships, EagleBurgmann has developed innovative solutions for numerous companies from the shipping sector. “The best evidence for the quality of our work is when customers decide to address us with new technical challenges like in this case”, Alborzi reports. “The first project was initiated by the request of a manufacturer who wanted to supply the scrubber for a retrofit order directly with the ideal expansion joints.” A rather unusual demand as usually a manufacturer just delivers the ECGS. The entire surrounding piping and the expansion joints, the hangers, everything is done by a contractor. “The customer had already made positive experiences with EagleBurgmann in the past and thus knew he would be in good hands regarding metal expansion joints”, Alborzi remembers. The collaboration with EagleBurgmann in the early state of the project turned out to be a clear competitive advantage for the customer. He was able to contrast favorably with the market by providing a complete solution package and an even more reliable product.
Every project is customized
Meanwhile more than 30 similar projects have been implemented and more are in the pipeline. The multitude of requirements for retrofit projects is extraordinarily challenging. From cruise liners and ferries right up to containerships all kinds of vessels have to be equipped. “Some of these ships are 20 years old and nobody was planning to install scrubbers when they were built,” explains Jan Grodzinski, key account manager for engine makers at EagleBurgmann. “There is little installation space and in many cases there is not even the complete design data available.”

Existing pipelines have to be cut and modified. The manufacturer customizes the scrubber for each particular ship and engine size. Concerning the attachment to the exhaust gas system he relies on the engineering competence EagleBurgmann has built during more than 50 years in the expansion joint industry. “Specialists travel all over the globe to the shipyards, take a look at the conditions on site and pass the constraints to us”, Grodzinski elucidates. “Our task is then something like ‘We need all room in the funnel to fit the scrubber in and have less than 50 cm for the inlet and outlet connections. Please help us to find a suitable solution.’”

Extremely short project life spans
The speed of the business requires a permanently high responsiveness and maximum customer orientation. “The market is dictating that speed”, Grodzinski outlines. “There is for example a free slot in a shipyard for a few weeks and several ship-owners are trying to put their vessel there. Then they need a scrubber manufacturer who can react quickly and finalize his concept within two to three days. EagleBurgmann has adapted to these very agile market requirements and is able to draw up a fitting design and submit a competitive tender within a few hours. In many cases, two to three weeks later the finished products have to be ready on site for assembly.”

Metal expansion joints are needed at different positions for attaching the scrubber to the exhaust gas system. At the exhaust inlet and outlet as well as at the pipelines where sea water is passed to the scrubber or contaminated scrubbing water is passed to the aftertreatment.
Competence in materials and processing, wide product range and comprehensive certifications
A strong competence in choosing and processing a wide range of materials is a key success factor of EagleBurgmann. “We know which kinds of steel ideally meet the customers’ needs. Thus, we are able to keep a stock available and start the production at short notice.”, Grodzinski illustrates. Furthermore, the longstanding experience with different installation places as well as a modular product design contribute to EagleBurgmanns’ high flexibility. As almost all parts hold type approvals and are classified by the most important classification societies for shipping, the documentation effort for the tried and tested components is also minimized.

Reliable in performance and sustainability
After more than 150 metal expansion joints have been used for scrubber applications, Alborzi and Grodzinski offer a positive summary: “Despite the challenging requirements the metal expansion joints run very reliable and there haven’t been any failures up to now. We’re proud to contribute our share to more sustainability within the shipping industry with our technology and our products.”

Metal Expansion Joints for scrubbers
- Materials: 254 SMO, AISI321
- Available diameters: DN 40 ... DN 5000
- Temperature spectrum: up to 900 °C
- Movements: axial, lateral, angular
- Classifications: DNV-GL, Bureau Veritas, American Bureau of Shipping, Lloyd’s Register of Shipping, Russian Maritime Register of Shipping, Nippon Kaiji Kyokai

EagleBurgmann – at the leading edge of industrial sealing technology
Our products are used wherever safety and reliability count: in the industries of oil & gas, refineries, petrochemicals, chemicals, pharmaceuticals, food, power, water and many more. About 6,000 employees contribute their ideas, solutions and dedication every day to ensure that customers around the globe can rely on our seals. With our modular TotalSealCare Service, we emphasize our strong customer orientation and offer custom-tailored services for every need. Rely on excellence.