

RELY ON EXCELLENCE

Reliable partner for innovations on the future market of water

EagleBurgmann establishes new product line eMG for the market leader Grundfos

Hardly any other market is as dynamic as the water industry. Mega trends such as the increasing urbanization, demographic growth or climate change constantly present companies from the water sector with new challenges. In addition to its importance as drinking water, water is a vital economic factor as an energy source, transport medium and raw material. Used as a central coolant, solvent and cleaning agent, it is hard to imagine any production plant without it. Requirements for the sealing technology are as many-faceted and complex as the applications. EagleBurgmann has been supplying components for the water industry for 130 years, covering the entire spectrum from extraction and purification to wastewater treatment. In close collaboration with leading companies from the industry, technical innovations are driven forward which are customized specifically to the user's needs.

The Grundfos Holding is a long-standing customer from the water industry with whom EagleBurgmann has had a fruitful development partnership for several decades. The company which was founded in 1944 in Bjerringbro, Denmark, is now by far the largest manufacturer of centrifugal pumps in the world. The close collaboration between Grundfos and EagleBurgmann is far from being taken for granted, as Josef Nagelstrasser, Senior Sales Director Water EMEA at EagleBurgmann, explains. "Grundfos itself has a solid expertise concerning the development and production of seals. We are therefore particularly proud that EagleBurgmann has been an important

partner of Grundfos and the main supplier of sealing solutions for decades."

Technical exchange creates mutual benefit

A confident, open exchange at eye level is essential under these circumstances. Periodically, experts from both sides meet and discuss areas of improvement and requirements from the market. "Grundfos relies on EagleBurgmann as a provider of innovation and fresh impetus who combines in-depth knowledge of the industry with profound and broad know-how in sealing technology", Nagelstrasser emphasizes. "This cooperation shows that our partnership is not just an empty phrase, but that it is really lived."



The virtual water footprint

Factors like the higher population density as well as the continuously developing living standard in emerging countries have a serious impact on the global water demand. How big this influence is can be surmised by having a look at the "virtual water footprint". This key indicator describes how much water is needed for the production of certain goods. A single cup of coffee requires 132 liters. For the production of one pair of jeans, 11,000 liters are needed. Each produced PC consumes 20,000 liters and each car 400,000 liters. Thus, the global water usage per person and day adds up to nearly 3,800 liters.

EagleBurgmann: sealing specialist for all water applications

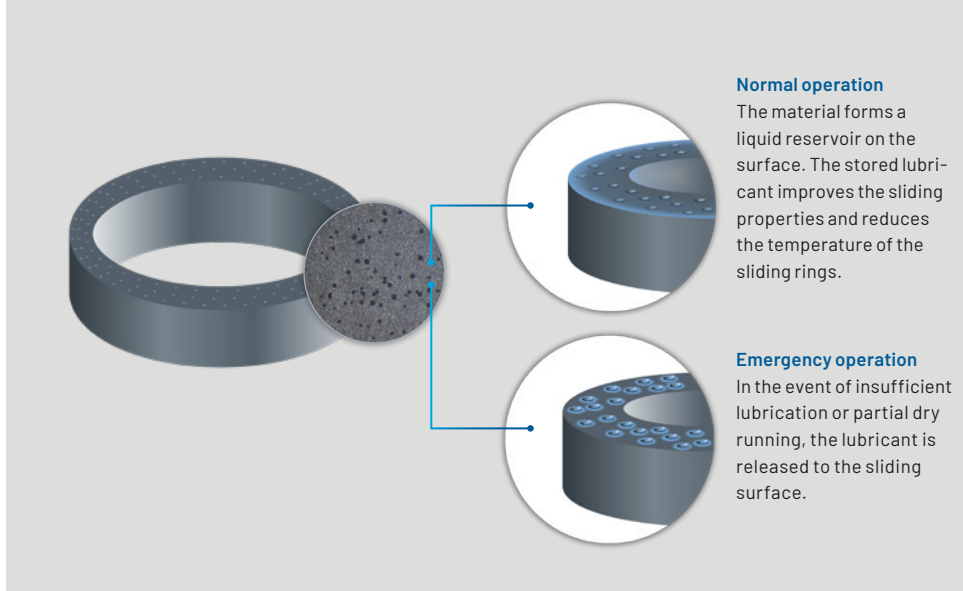
- Supplier for the water industry for more than 130 years
- Sealing solutions for all kinds of pumps, macerators and aerators
- Full service provider: research and development, consulting, engineering, construction, dimensioning and modular services from a single source
- Global presence: tightly-knit network of production facilities, sales subsidiaries and service centers worldwide

The new eMG series: Grundfos relies on product innovation from EagleBurgmann

The EagleBurgmann MG seal has been the standard pump seal for water applications for many years. The elastomer bellows seal has been sold more than 50 million times worldwide. It has also been an important purchased part for Grundfos. "Grundfos is one of our regular customers when it comes to the MG series", Nagelstrasser elaborates. Currently, EagleBurgmann places the improved eMG series on the market as a successor. Marc Weigl, Key Account Manager for Grundfos at EagleBurgmann, is delighted that Grundfos is ready to accompany EagleBurgmann at this important step. "This decision has been made in close coordination with the technical department", he explains. "Our contact persons at Grundfos quickly recognized the technical advantages of the eMG design in comparison with its predecessor and that these can be used as a sales argument. They really want the innovation. Therefore, we were already able to transfer more than 90% of the volume of orders to the eMG in 2020."

Technical improvements and higher standardization

The new eMG series is the result of EagleBurgmann's relentless effort to create real added value for the customer through innovation. For example, the high-performance sliding material eSiC[®]-Q7 is used as standard for the seal faces. "eSiC[®]-Q7 is an allround material that combines several benefits", Nagelstrasser explains. "On the one hand, we create technical improvements through optimized running properties like a prolonged lifetime and enhanced emergency operating features. On the other hand, the material combination is very versatile. The customer is thereby able to standardize and reduce the diversity of variants step by step by more than 50% with corresponding ramifications on stock-keeping, supply chain and the like."



Normal operation

The material forms a liquid reservoir on the surface. The stored lubricant improves the sliding properties and reduces the temperature of the sliding rings.

Emergency operation

In the event of insufficient lubrication or partial dry running, the lubricant is released to the sliding surface.

High-performance sliding material eSiC[®]-Q7

eSiC[®]-Q7 is a sliding material which contains isolated pores within the otherwise dense silicon carbide. During operation, lubricant accumulates in these pores. This lubricant is available as a reserve if, for example, inadequate lubrication or dry running occurs, thus extending the service life of the seal by up to 50%. EagleBurgmann has been participating in the development and testing of the material since 1995. For the finishing of the sliding rings, a specially developed process is applied which ensures the required surface quality. In 2018, eSiC[®]-Q7 was approved for serial use in the eMG and eHJ series.

Quick switchover due to material expertise and transparency

The fact that EagleBurgmann set the impetus for the use of the high-performance sliding material at Grundfos much earlier facilitated the quick realization of the switchover to the eMG.

"I had already discussed the possibility of using the new face material eSiC[®]-Q7/eSiC[®]-Q7 in 2011 with Peter Haselbacher, the former senior expert at EagleBurgmann, Technical Sales Support, who recommended this as a valuable solution for water/glycol mixtures", explains Jens Kaasgaard Kristensen who was responsible for the introduction of the eMG at Grundfos on the technical side. "Immediately after our discussion I began tests in our laboratories in Denmark and discovered that eSiC[®]-Q7/eSiC[®]-Q7 also performed excellently in hot water applications."

Based on these results Grundfos started using eSiC[®]-Q7 successfully in their high-runner MG seals in 2013. "We had a great advantage in that we already knew the eSiC[®]-Q7 material very well. Of course, I could immediately see the additional advantages of the new eMG designs - especially the PEEK/PTFE-Disc", Kristensen explains. The disc which is integrated in the bellow stabilizes and centers the seal on the shaft under various load situations. It provides improved adjustment behavior for axial movements and guarantees maximum reliability for start-stop operation and if the shaft is dirty.

Water is not just water

Speaking of water, most people will automatically think of drinking water. In reality, the medium that is conveyed forms a varied media group. From drinking water to sea water, rain water and industrial process water to waste water with a high content of solids and contaminants. Depending on the purity, dissolved substances, pH value, solid or gas content, the requirements concerning the sealing technology differ. So far, EagleBurgmann has covered applications for highly viscous media as well as high amounts of solid with the HJ series so far. Like with the eMG, Grundfos is planning the switch to the improved eHJ series, the development of which has also incorporated practical experience from the field.

“Grundfos suggested that we should have a look at the behavior of the seal during fast temperature switches. The predecessor suffered from increased leakage rates in these cases until the seal itself had adjusted to the new conditions”, Weigl elucidates. The key to optimization was the manufacturing technique. “For the HJ, the sliding ring was shrink-fitted. The sliding ring for the new eHJ is only inserted loosely and can adjust better and faster”, Weigl explains. This improvement holds additional advantages for the customer: the loosely inserted sliding rings can be changed easily during service and there’s no need to replace the whole unit.

Agility and high supply availability through consistent focus on customer needs

On a market that is as dynamic as the water industry, apart from the technical expertise, agility and a high ability to supply are crucial. To guarantee this, EagleBurgmann relies again on brisk personal contact. “Big customers like Grundfos act globally. A gapless and optimal customer care is ensured by our key account management with a central character. The customer always has a direct, fixed contact person who coordinates projects with the customer as well as internally and moves things forward – worldwide”, Nagelstrasser describes. Furthermore, a few years ago, the division of “Parts Planning” was been founded which is technically assigned to the purchasing department and forms a communication interface between manufacturing, purchasing and stock keeping. The department is directly involved in customer meetings and determines, for example, how much material has to be put in stock so that delivery performance always meets the customer’s requirements. “The demands on our agility are increasing”, as Weigl notes.

Safe products and fast time-to-market through certifications

If products are to be used for the transport of drinking water or within the production of food or pharmaceutical goods, approvals and certifications from several certification authorities are required. EagleBurgmann observes the eligibility of its own products already in the development phase and deploys appropriate materials and designs. Customers can therefore rely on a rapid market approval for individual target markets if they choose to use EagleBurgmann components for their products. Among other things, we offer certified solutions according to the following standards which are common in the water industry:

Federal Environment Agency/KTW guideline (UBA/KTW)

The KTW guideline of the Federal Environment Agency describes test procedures and health standards for plastics that come into contact with drinking water. Certification is required if production is carried out in Germany for the German market.

Attestation de conformité sanitaire (ACS)

The certification includes a hygienic test of materials, for example. It is mandatory for the French market.

Water Regulations Advisory Scheme (WRAS)

WRAS approval (Water Regulations Advisory Scheme) is required in order to introduce products for drinking water installations into the UK market. WRAS is also an international standard that is accepted, for example, in Germany (for production abroad), in France and the USA.

U.S. Food and Drug Administration (FDA)

Sealing materials must meet FDA regulations when used in food or pharmaceutical processing or filling equipment.

Satisfied customers from the future market

"The water business is not only a core issue for us, but also an important component of our future vision for EagleBurgmann", Nagelstrasser explains. "We experience first-hand that our customers in this area are not only concerned about their own products, but that downright philosophical discussions take place in business meetings. The challenges the industry faces as a result of climate change, urbanization, etc. are discussed and visions for the future are developed. It is therefore particularly important to us to support and advance our water

customers in the best possible way." This approach succeeds with projects such as the further developed eMG series. The series sets new standards while at the same time customers can rely on the usual reliability of the MG. "Neither Grundfos nor our other customers have had any complaints since we switched from the MG to the eMG series", explains Weigl.



Cartex series

Our product portfolio for the water industry

Elastomer bellows seals		Pusher seals	Cartridge seals
eMG series	BT-AR, BT-PN	eHJ series	Cartex series
<ul style="list-style-type: none"> • 100% compatible with MG series • High-performance sliding material eSiC®-Q7 for a long service life, chemical resistance and safe emergency operation • Patented PEEK-PTFE Disc for maximum reliability even for start-stop operation • Also suitable for hot media thanks to very good heat dissipation on the sliding ring • Short variant available for tight installation spaces 	<ul style="list-style-type: none"> • Especially suitable for mass production • Short axial installation length • Important material approvals available: KTW, W270, ACS, WRAS, NSF, DM 174/04, FDA • Suitable variants for water and sewage technology, pool and spa applications, household appliances, food and beverages • BT-PN for increased pressures up to 12 bar 	<ul style="list-style-type: none"> • Universally applicable with excellent properties in highly viscous and solids-laden media • For high pressures up to 40 bar • Solid, loosely inserted and easily exchangeable sliding rings • Insensitive to temperature changes • High-performance sliding material eSiC®-Q7 for a long service life, chemical resistance and safe emergency operation 	<ul style="list-style-type: none"> • Single and dual seals • Ideal for standardization • Universally applicable for conversion of packings, retrofit applications or original equipment • Easy and fast installation due to preassembled unit • Additional variants available for ANSI pumps and eccentric screw pumps • Insensitive to solid concentrations of up to 7% without a supply system, up to 25% with a supply system or up to 40% as a double seal

Even more satisfied customers: EagleBurgmann receives Xylem Supplier Award

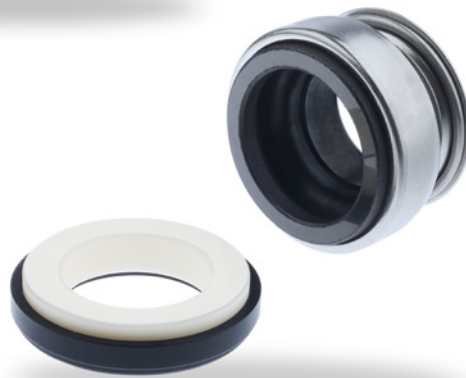
In addition to Grundfos, Xylem is one of the customers from the water sector who have been working with EagleBurgmann for many years. EagleBurgmann is "Preferred Supplier" at Xylem and was just awarded the "Xylem Supplier Award" in 2020. The award was granted based on outstanding product quality, the comprehensive product portfolio, a high level of service orientation and reliability as well as the responsible approach to the environment.



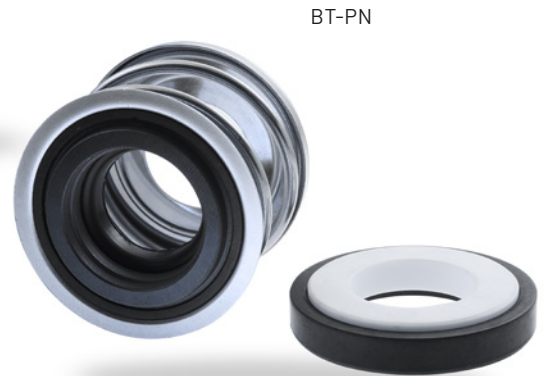
eMG series



eHJ series



BT-AR



BT-PN

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.](#)

