

New generation slurry pump for optimized operations

The AAC industry uses slurry pumps (Figure 1) for decades to pump fresh and return slurry into the slurry tanks and from the tanks into the mixing tower. There are a number of variables in the slurry pump system that are hard to control including the slurry mix (density and homogeneity) and the external sealing. The sealing property is one of the most important factors throughout the life span of the slurry pump. Seals are used in order to prevent leakage which can cause damage to the slurry pump. The challenge here is not to allow large volumes of pressurized slurry to escape, deal with pressure peaks in the system and minimize the entrance of water (used in order to cool the seal) to enter the slurry and cause dilution of the slurry.



Fig. 1: Slurry pumps handle abrasive high-density slurries in every AAC plant

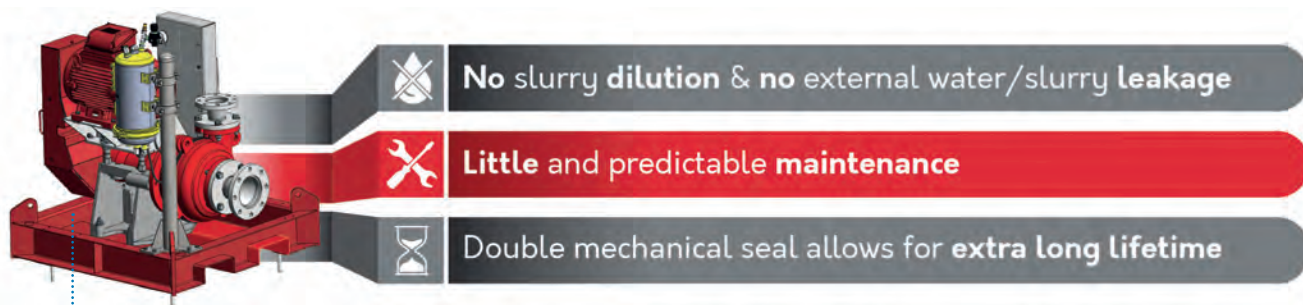


Fig. 2: Benefits of the new generation Aircrete Slurry Pump

Many of the slurry pump arrangements rely on a traditional method of the gland packing seal. But in this method, the friction of the shaft rotating wears away at the packing quickly, which leads to increased leakage until the packing is adjusted or re-packed. In such cases, the slurry escaping from the pump, slowly causes the pump pit or surroundings to flood with slurry.

Besides, the friction of the shaft also means that the packing needs to be flushed with larger volumes of seal water in order to keep it cool. Excess seal water usage causes some other issues quite well-known to the plant operators and managers. These problems can be summarized as slurry dilution, low performance of pumps in sub-zero temperatures and maintaining the correct amount and continuous flow of cool and clean water without slurry.

In order to address all these issues, Aircrete Europe has recently developed a new generation slurry pump for the AAC industry. This new solution has successfully been introduced to the market in 2018, allowing a quick changeover of the pump impeller and mechanical seal that provides easy maintenance with an economical lifetime. The Aircrete Slurry Pump as a total solution results in extended wear life and reliability, bringing the AAC plants the lowest cost of ownership (Figure 2).

A noteworthy development of the Aircrete Slurry Pump is the newly introduced mechanical seal instead of the gland packing seal. Main challenges that comes with the traditional seals are high worn-out frequency, high maintenance costs and variable service patterns due to the reasons explained above. In the new Aircrete Slurry Pump, the conventional graphite stuffing box seals are now replaced with special new quench rings (Figure 3) that circulates the filtered pressure water.

Fig. 3: The new mechanical seals come with quench rings

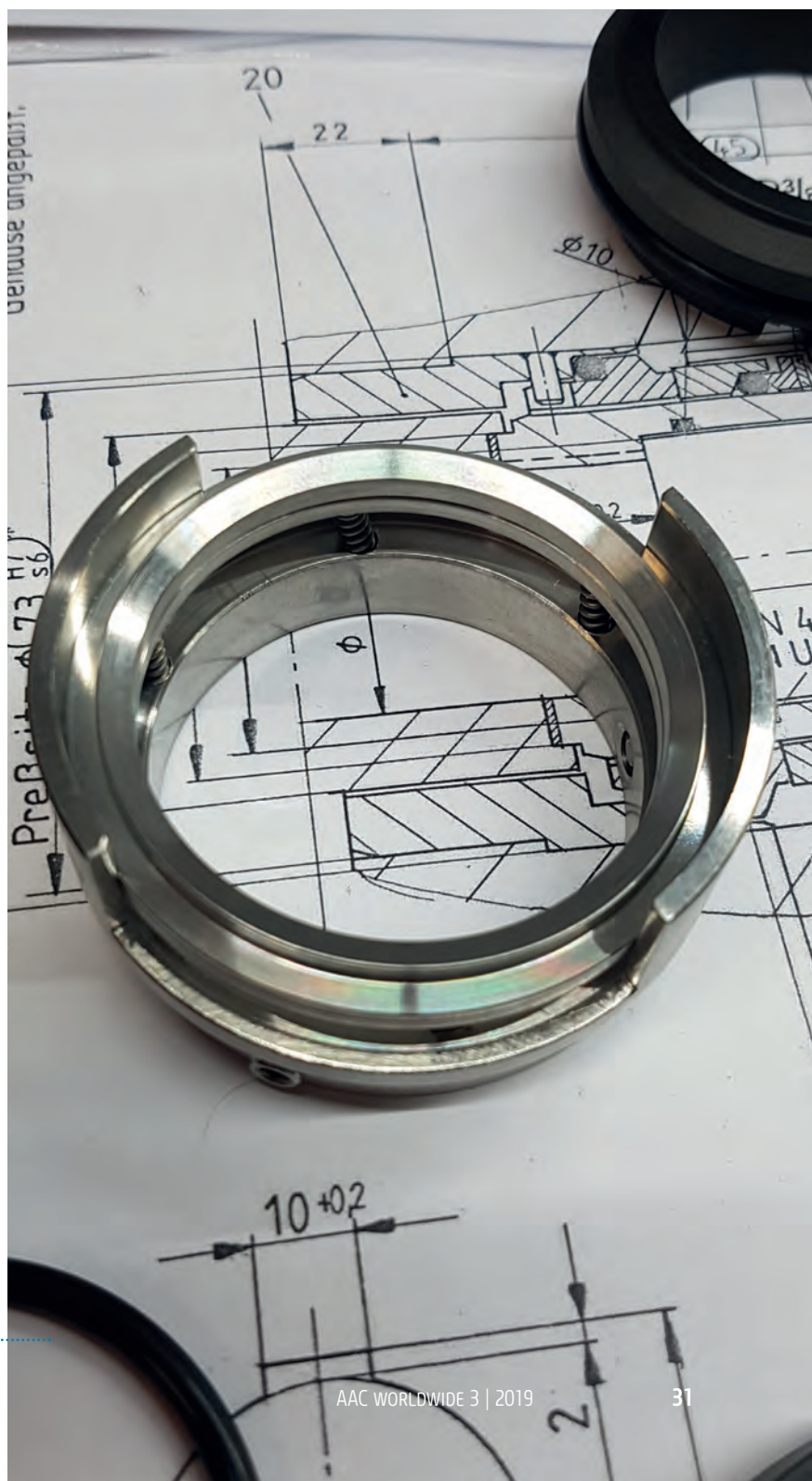




Fig. 4: The slurry pump system can easily be retrofitted into all existing AAC plants

The advantages of the new generation Aircrete Slurry Pump can be summarized as:

- Easy to repair: Fast seal replacement increases the speed of service, reduces costs and down-time.
- Economical to repair: Less frequent seal change and lower cost of the seal itself result in lower ownership costs. Instead of repairing or changing the complete seal, the repair of the wearing ring is enough.
- Designed for handling highly abrasive, high density slurry.
- Multi-stage high pressure operation is possible as the pump is less sensitive to pressure peaks.
- No dry running & no leakage: Springs and hydraulic force push the seal faces together, while the pressure of the seal water between the faces acts to push them apart.

This new generation slurry pump system from Aircrete Europe can easily be retrofitted into all existing AAC plants as it is fully interchangeable with most common slurry pumps design (Figure 4). Both a steel and rubber liner are available on the same type of pump. The steel support structure that in-

tegrates the slurry tank with the existing Aircrete pump is also delivered separately. Upgrade options for the existing slurry pumps from Aircrete Europe is smooth as well, because the seal, the tank and the accessories can quickly be modified.

Decades of experience allows for Aircrete Europe to continuously introduce new and innovative design improvements to the market. The latest new generation slurry pump is just an example of that and resulted in a solution with the lowest total cost of ownership and maintenance in the industry. ●

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