

Sulzer launches next pump generation for desalination

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MSN-RO and A-RO pumps deliver higher efficiency and lower total costs for desalination projects

Global pump specialist Sulzer has expanded its portfolio of high-performance products for the desalination sector. The MSN-RO high pressure pump range combines proven features from existing Sulzer designs with multiple enhancements to optimize both capital and operating costs. In addition, the AHLSTAR range of charge pumps has been extended with increased capacities suitable for modern large-scale desalination projects.

Almost half the world's population lives in regions with significant water shortages.[1] As demand increases, desalination using reverse osmosis (RO) technology is playing an ever-more important role in the delivery of fresh water for agricultural, domestic and industrial applications. The design of RO plants has advanced significantly in recent years, as owners seek to increase output, improve availability and reduce operating costs.

Pumps are a critical equipment category for the desalination industry. They make up a significant part of the capital investment of facilities, while the energy they consume accounts for 60 to 70 percent of the final cost of the water produced. In addition, today's rising energy costs are putting pump efficiency into even sharper

focus. Sulzer has continued to meet market requirements by designing pumps that consume less energy, reducing costs and improving sustainability for operators.

MSN-RO: next generation efficiency

The MSN-RO high-efficiency pump is designed for modern, large-scale desalination applications with large, independent RO trains with capacities up to 35'000 m³/d. The multistage axial split casing pump is based on existing Sulzer designs that have a proven track record in the sector. Its hydraulic section, lubrication system and balancing devices come from the MBN-RO pump. Its axial split casing, designed to simplify maintenance, is derived from the MSD-RO range.

The MSN-RO also incorporates several significant enhancements, designed to improve operating efficiency while reducing capital costs. The diffuser and discharge volute have new high-efficiency designs, optimized through extensive computational fluid dynamics (CFD) analysis. The renewable stationary wear parts within the pump are manufactured from polyetheretherketone (PEEK) engineering polymer, with minimal clearances for the highest efficiency.

The primary bearings of the MSN-RO are also made from PEEK, and are water lubricated. This approach significantly simplifies the operation and maintenance of the pump, by removing the requirement for forced oil lubrication and cooling system, which also eliminates the potential risk of lubricants contaminating process water.

A-RO: capacity boost

Sulzer's AHLSTAR end-suction single-stage centrifugal pumps are already widely used by the desalination industry, both as intermediate pumps for first stage high-pressure feed pumps, and as a primary supply for second pass services. The design

is known for its high efficiency and ability to maintain performance across a wide operating range.

Now Sulzer has extended the AHLSTAR range to higher flow rates and slightly higher heads, to satisfy high efficiency needs along the entire pressure range. These additional sizes are aimed at large modern plants offering cost-effective solutions for a wide range of applications.

Both the A-RO and MSN-RO pumps follow Sulzer's principle of delivering a highly configurable, modular design. In combination with its global manufacturing and engineering support capabilities, this allows Sulzer to offer tailored solutions for the desalination sector's end-to-end pump requirements.

Source: [1] <https://www.unwater.org/water-facts/scarcity/>

Image captions:**Image 1:** AHLSTAR RO End-Suction Pump**Image 2:** MSN-RO Axial Split Multistage Membrane Feed Pump

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Sulzer is a global leader in fluid engineering. We specialize in pumping, agitation, mixing, separation and purification technologies for fluids of all types. Our customers benefit from our commitment to innovation, performance and quality and from our responsive network of 180 world-class production facilities and service centers across the globe. Sulzer has been headquartered in Winterthur, Switzerland, since 1834. In 2021, our 13'800 employees delivered revenues of CHF 3.2 billion. Our shares are traded on the SIX Swiss Exchange (SIX: SUN).

For more information, visit www.sulzer.com

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