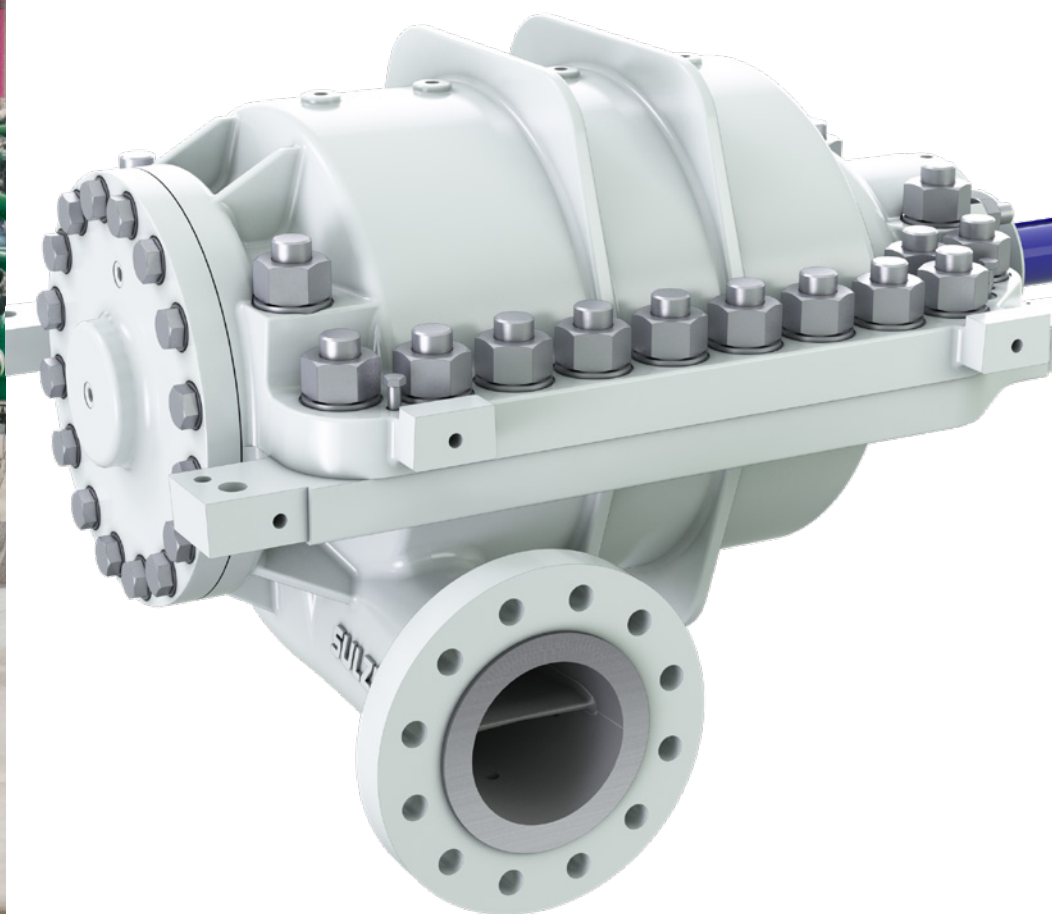


MSN-RO

axial split multistage
membrane feed pump





Main industries and applications

Creating fresh water using reverse osmosis (RO) requires reliable and cost-effective equipment to ensure the local consumers receive an affordable and dependable supply of water.

The MSN-RO membrane feed pumps have a proven, robust design that has been fine-tuned over years of operating in the desalination sector. Engineered to meet the individual requirements of each application, our axial split multistage pumps deliver optimum performance in this challenging environment.

- Purpose-designed for RO applications
- Tailored to your seawater quality specifications
- Suitable for 50 Hz and 60 Hz grid frequency
- Designed for operation with variable frequency drives
- Product-lubricated bearings as standard bearing configuration with self-contained, oil lubricated bearing as an option
- Premium materials for excellent durability

Designed to deliver

The axial split, multistage, high-pressure MSN-RO pumps use a modular design according to Sulzer standards. The materials and components in the pumps are carefully selected for pumping pre-filtered, pre-treated seawater or particle-free liquids with similar corrosive properties up to a temperature of 50°C.

Options to suit every application

We offer a range of options for the MSN-RO pumps to ensure an exact match with your specific application and the surrounding infrastructure.

Flanges can be specified according to ASME B16.5, Class 600 RF, or DIN EN 1092-1, PN100 RF as an option.

Threaded casing connections are the standard specification, but welded casing connections can be selected as an option.

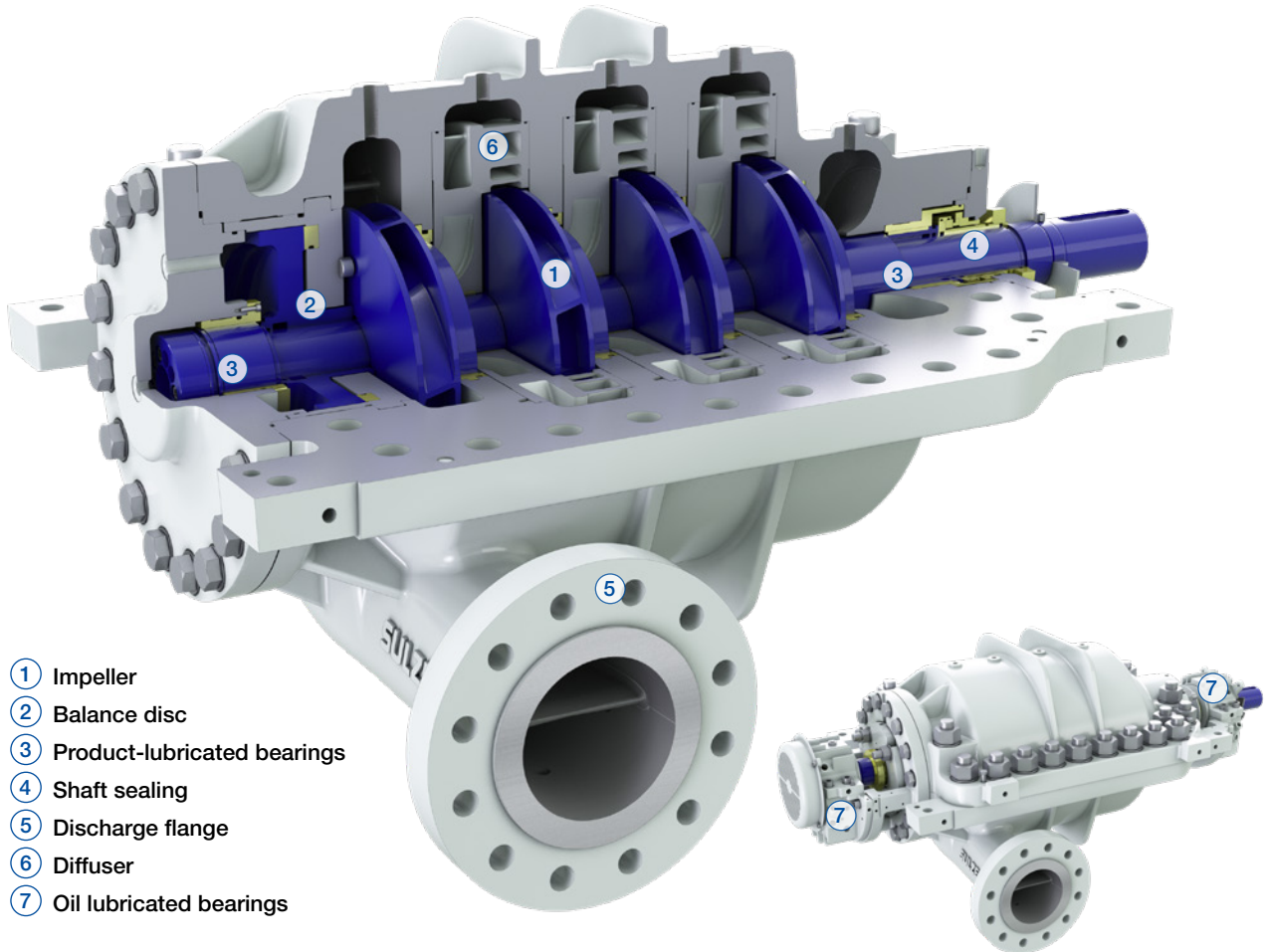
Oil lubricated bearing systems can be specified if required. With product lubricated bearings, shaft sealing is only required on the low-pressure suction side.

The whole package

The MSN-RO is just one of a range of pumps that are specifically designed for the water industry. We can deliver the complete package of pumps, mixers and aerators for your operations. This offers significant advantages in terms of system design and spare parts inventories.

With decades of experience in the industry, Sulzer has the knowledge and engineering expertise to optimize performance and reliability throughout your process.

Features and benefits



- ① Impeller
- ② Balance disc
- ③ Product-lubricated bearings
- ④ Shaft sealing
- ⑤ Discharge flange
- ⑥ Diffuser
- ⑦ Oil lubricated bearings

Industry-leading efficiency

- Optimized pump efficiency
- Reduced energy consumption

Lowest operational costs

- Combination of hydraulic design, optimum efficiency and proven reliability
- Reduced energy consumption
- Minimized costs for maintenance

Optimized design

- Extensive Computational Fluid Dynamics (CFD) to rigorously validate hydraulic design

Seal systems

- Mechanical cartridge seals (Plan 11 or 13)
- Shaft seal can be serviced without disassembling the pump

Maintenance-free bearings

- Product-lubricated bearings as standard
- Continuous uptime
- Long maintenance intervals, with all wear parts easily accessible without disassembling pump connections from pipework
- Requires only one mechanical seal on the drive end
- Smaller pump footprint

Optimum balance

- Balance disc for fully axially balanced rotor
- No axial thrust bearings required

Modular design

- Two to four stages to provide exact membrane feed pressure
- Two hydraulic designs to meet a wider array of flow requirements

Shaft sealing

- With product lubricated bearings, shaft sealing is only required on the low-pressure suction side
- The shaft seal can be serviced without disassembling the pump

Specifications

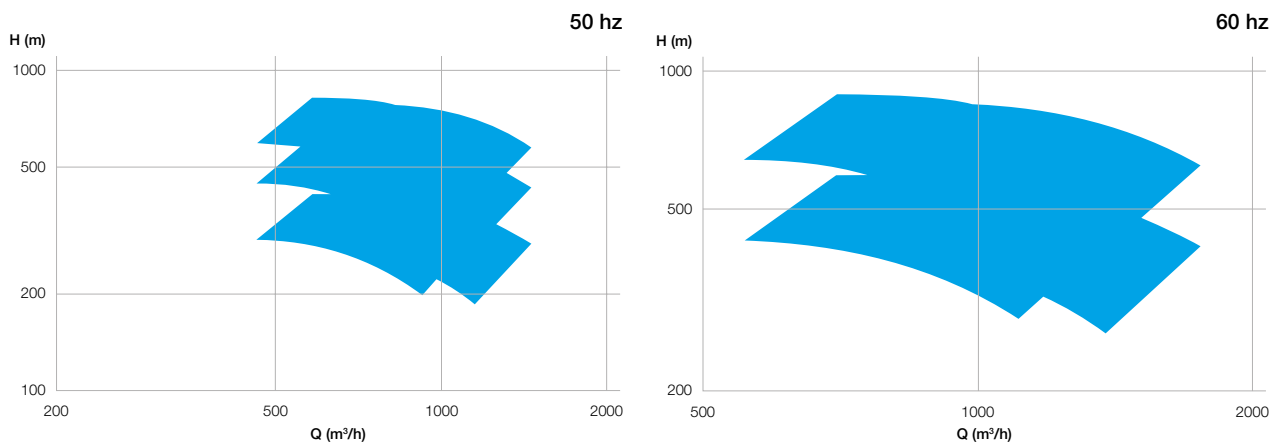
Materials

Pump part	Material
Casing	Super duplex A890 Gr. 5A or 6A
Impeller	Super duplex A890 Gr. 5A
Diffuser	Super duplex A890 Gr. 5A (with PEEK)
Shaft	A276 S32760
Intermediate case / case cover	Super duplex A890 Gr. 5A (with PEEK) / Super duplex A890 Gr. 5A

Operating data

	50 Hz	60 Hz
Pump sizes (discharge)	up to 200 mm	up to 8 in.
Capacities	up to 1'450 m ³ /h	up to 7'680 USgpm
Heads	up to 840 m	up to 2'940 ft.
Pressures	up to 100 bar	up to 1'450 psi
Temperatures	up to 50°C	up to 122°F

Performance range



The Sulzer Flow division keeps your processes flowing. Wherever fluids are treated, pumped, or mixed, we deliver highly innovative and reliable solutions for the most demanding applications.

The Flow division specializes in pumping solutions specifically engineered for the processes of our customers. We provide pumps, agitators, compressors, grinders, screens and filters developed through intensive research and development in fluid dynamics and advanced materials. We are a market leader in pumping solutions for water, oil and gas, power, chemicals and most industrial segments.

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