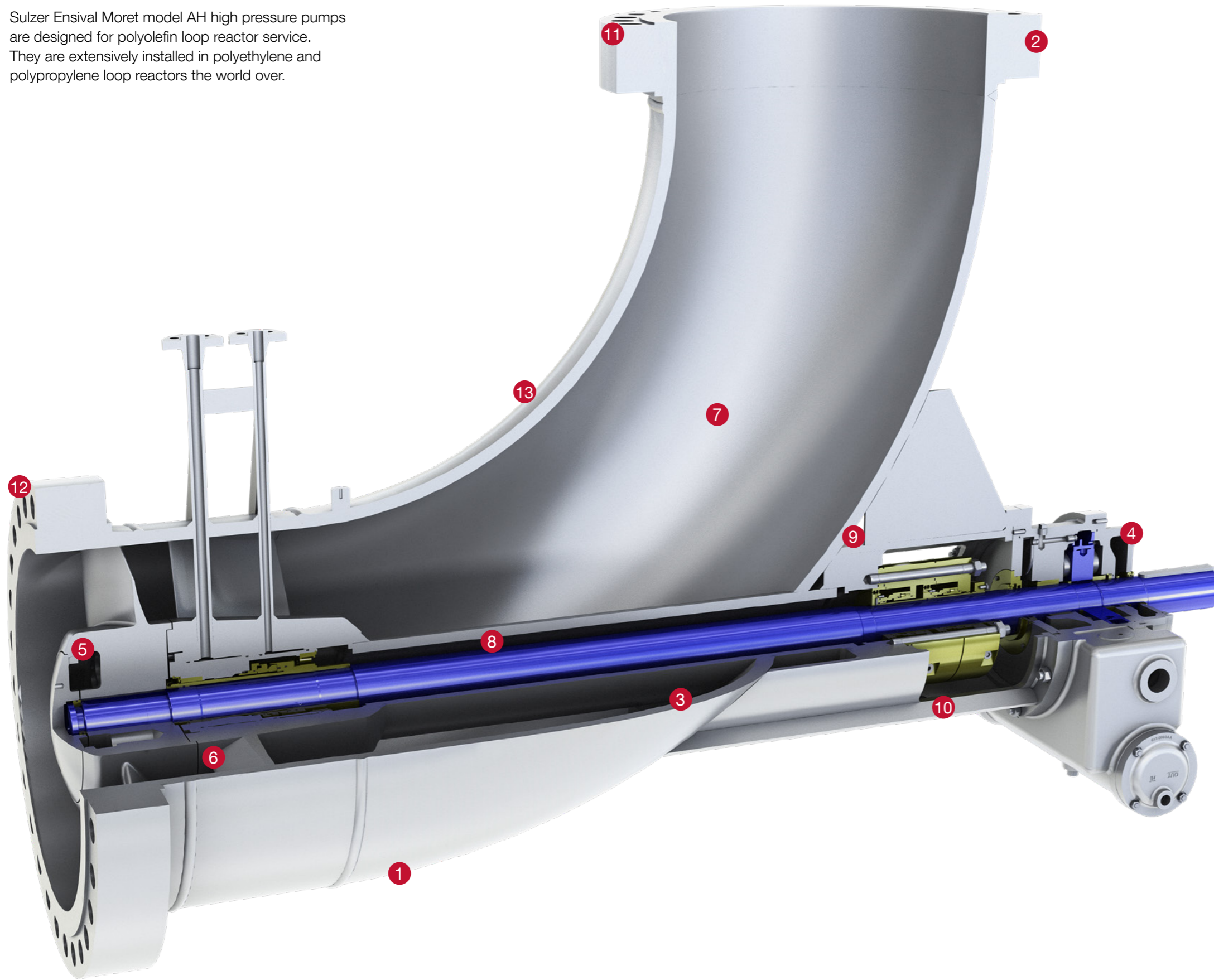


**Sulzer Ensival Moret model AH
axial flow polyolefin loop reactor pump**



Main applications

Sulzer Ensival Moret model AH high pressure pumps are designed for polyolefin loop reactor service. They are extensively installed in polyethylene and polypropylene loop reactors the world over.



Features and benefits

- 1 API 610 design principles
- 2 Flanged casing with optional weld neck design
- 3 Centerline supports as required by API610 for high temperature services
- 4 Oil lubricated antifriction bearings on smaller pumps with pivot shoe thrust bearing and integral cooler on larger pumps
- 5 Two-vane high efficiency propeller
- 6 Precision tolerances and clearances for reliable service
- 7 Hand polished propeller and elbow passageways
- 8 Extra heavy-duty shaft
- 9 Minimum API610 seal chamber dimensions with enhanced dimensions for special sealing systems
- 10 Dual or triple seals with API32+52 or 32+52+53 seal support systems
- 11 Spring mounted baseplate or optional reactor loop piping supported pump
- 12 Nozzle load capacity exceeds API 610 Table 5
- 13 API610 materials with additional special materials to suit process specifications

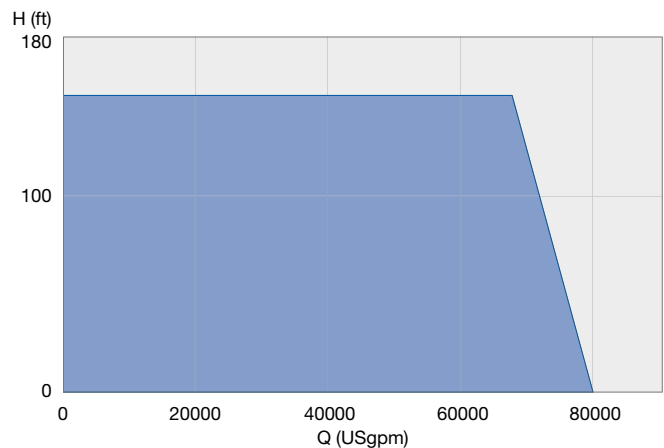
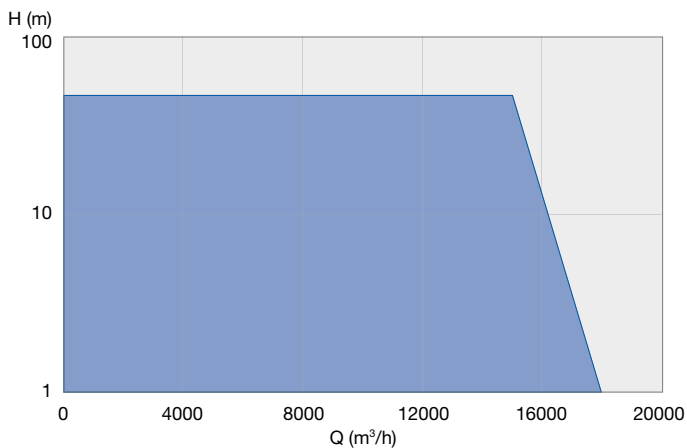
Sulzer Ensival Moret model AH axial flow polyolefin loop reactor pump



Operating data

SI		US
up to 800 mm	Flange sizes	up to 32 in
up to 18'000 m ³ /h	Pump capacity	up to 80'000 USgpm
up to 45 m	Head	up to 150 ft
up to 100 bar	Pressure	up to 1'450 psi
-45°C to +200°C	Temperature	-50°F to +400°F

Performance ranges



Materials

Material code	Material
LCB	Low temperature carbon steel casing and propeller with chrome moly, 304L or duplex stainless steel shaft
304L	304L stainless steel casing, propeller and 304L or duplex stainless steel shaft
316L	316L stainless steel casing, propeller and 316 or duplex stainless steel shaft
Options	Other materials available to meet specifications

Reliability for low total cost of ownership

Our priority is customer satisfaction

Our state-of-the-art engineering and hydraulic design tools, together with quality manufacturing, and global customer support lead to minimum pump life cycle cost, high efficiency and reliability.

Sulzer continually invests on improving our product lines with strong focus on innovation, and research and development.

CFD analysis ensures optimum hydraulic performance and reliability

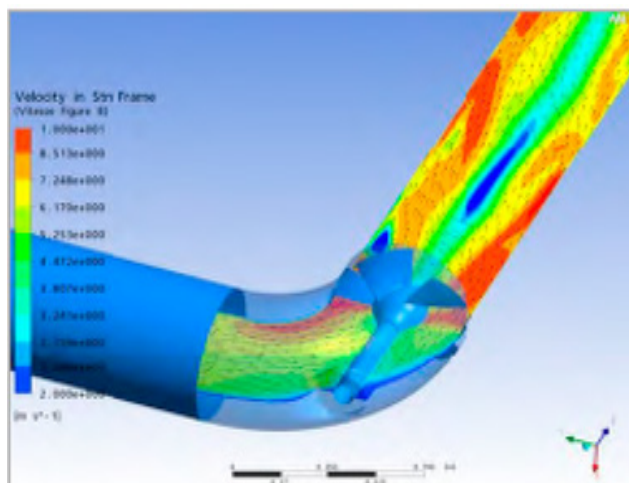
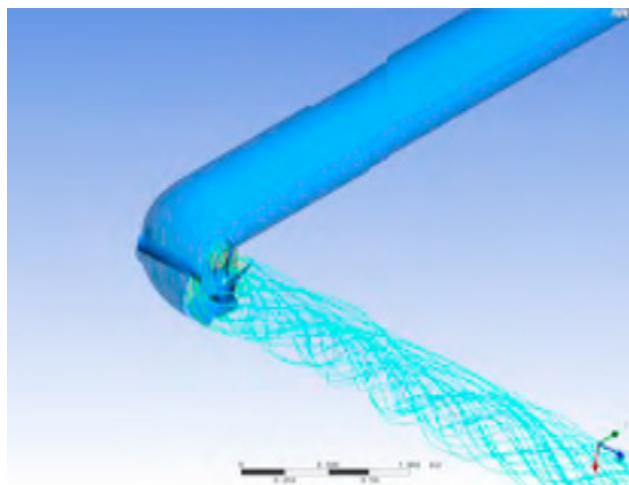
The high pressure AH loop reactor circulation pump is specifically designed for the loop reactor in polyolefin slurry processes.

These critical pumps are well suited to the circulation of slurry due to the large free passage between two adjacent blades.

The influence of solids content on the pump performance is also reduced in comparison with conventional centrifugal pumps.

Our pumps are designed and built to last

Sulzer engineers know that your process needs to be in a constant state of efficiency. As these pumps are critical items in the process and spares cannot easily be installed, we provide axial flow pumps achieving an expected maintenance interval of five years even in severe working conditions.



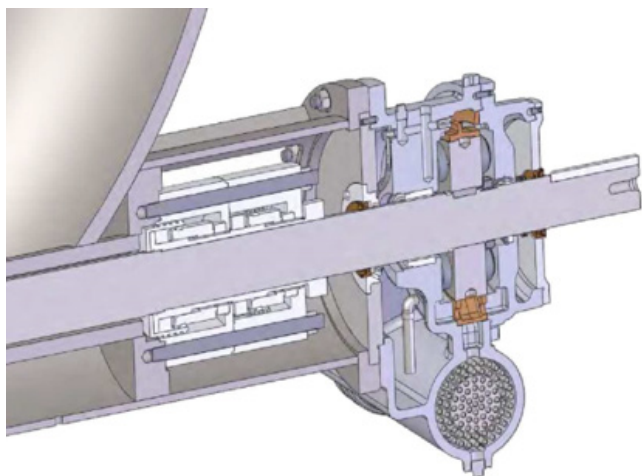
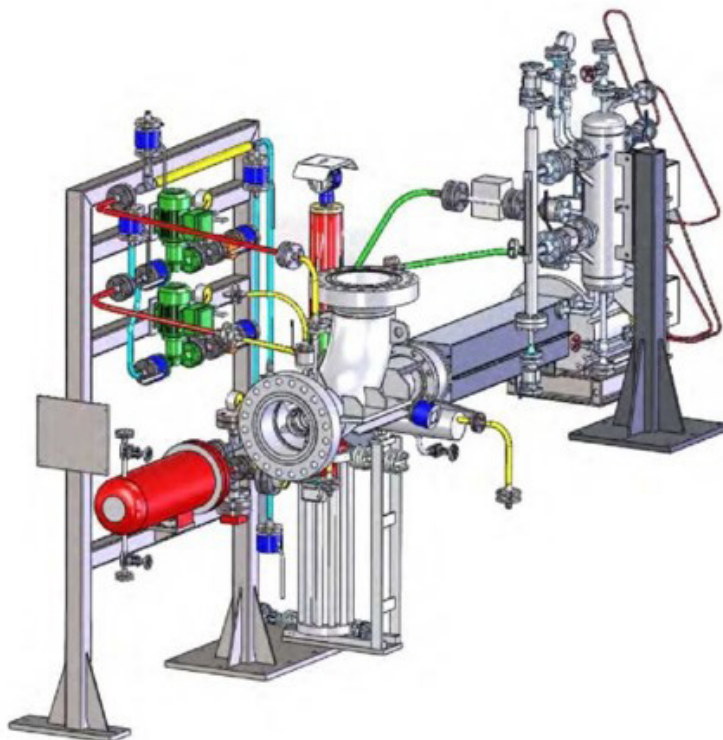
Proven designs for long meantime between maintenance

Sealing solutions

Due to the pressure fluctuations that may occur in the pump, it is essential that the design of the mechanical seal is optimized in order to ensure long term reliability. Sulzer works closely with its suppliers to target minimum service requirements and a five year life expectancy.

The seal configuration is designed in order to provide a high safety level, double or triple mechanical seal design are available with all constructions. All our sealing solutions are designed to handle the system pressure in the event of primary seal failure.

As the pumps are critical items in the process and spares cannot easily be installed, we provide axial flow pumps achieving an expected maintenance interval of five years even in severe working conditions.



Bearing construction

- Ball bearings for pump size < 12 inches
- Thrust bearing by tilting pads with integrated heat exchanger

The thrust bearing includes a bush bearing lined with babbitt (antifriction metal) supporting the shaft radially and a thrust disk rotating between the two sets of babbitt lined tilting pads positioning the pump rotor axially and taking up the high axial thrust.

Illustrated thrust bearing is fitted with an autonomous oil pump, the rotor of which is the thrust disk, while the ring surrounding this thrust disk acts as the stator.

The integrated heat exchanger ensures that the lubricating oil is maintained at the optimum operating temperature.

Sulzer's engineering and application expertise

Sulzer is one of the world leaders in state-of-the-art pumping solutions. Combining engineering and application expertise, our solutions add value and strengthen the competitive position of our customers.

Thanks to a global network of manufacturing facilities, sales offices, service centers and representatives, we can provide fast responses to customer needs.

With over 180 years of pump design and manufacturing experience, Sulzer has become a global supplier of choice in the centrifugal pump market, well respected among customers for its skilled support and expertise in specific pumps and pumping systems.

Constant collaboration with our customers and ability to draw from both Sulzer and Ensival Moret product and process experience, we are able to provide tailor made, high quality, reliable pumping solutions.

Together we are a full-line centrifugal pump supplier and are considered by our customers as a key partner in one of the most critical components in the polyolefin process.



The axial flow circulator pumps for loop reactor



AH product design, manufacturing and testing plant in Belgium



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