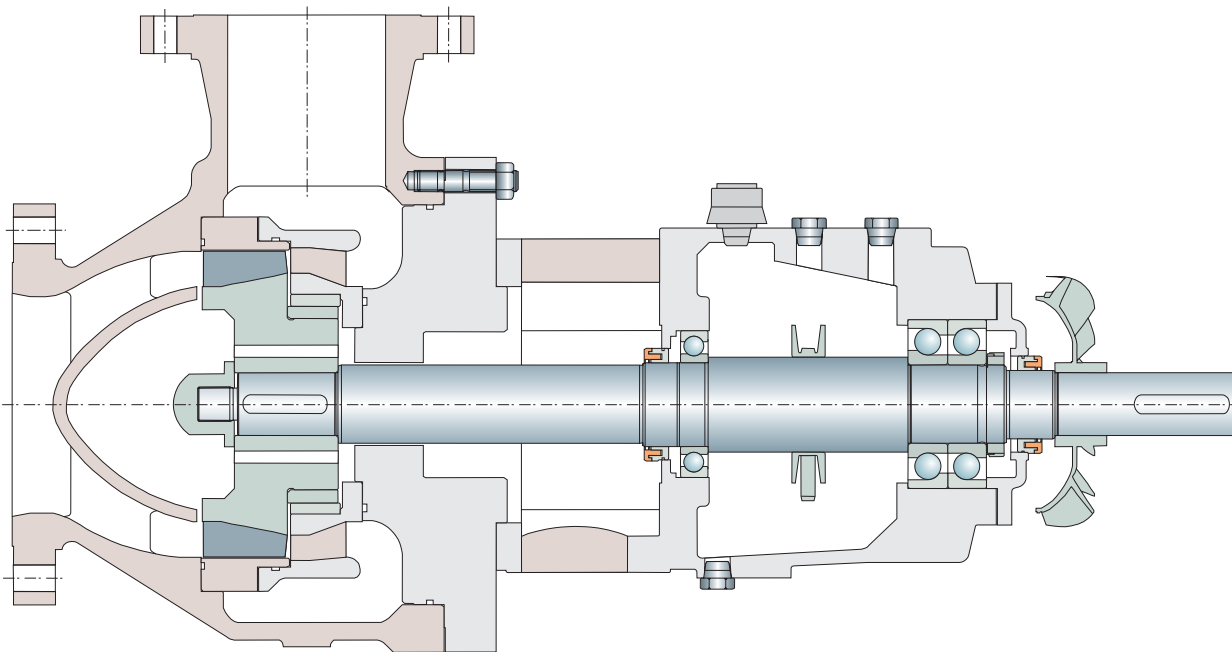


SULZER

LENNTECH
WATER TREATMENT SOLUTIONS

MPP-OHH Single Stage Multiphase Pump ISO 13709



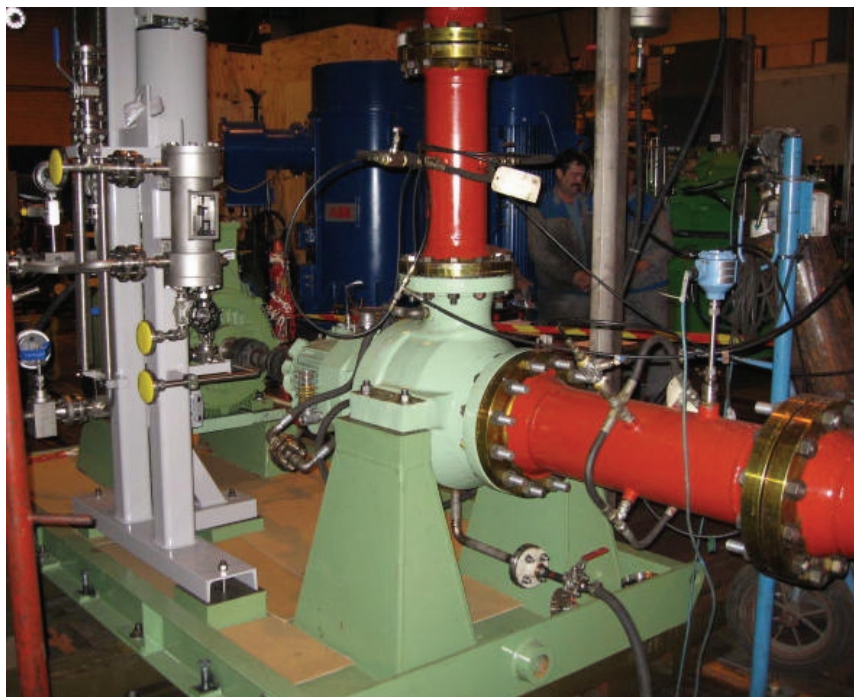
The Heart
of Your
Process

Sulzer Pumps – Striving to Serve You Better

Sulzer Pumps is a leading global supplier of reliable products and innovative pumping solutions for end users. Our active research and development, detailed process and application knowledge together with a comprehensive understanding of market demands keeps us consistently at the leading edge of technical development. Our global network of modern manufacturing and packaging facilities together with sales offices, service centers and representatives located close to major markets provide fast responses to customer needs.

Sulzer Pumps is active serving business partners in the following industries:

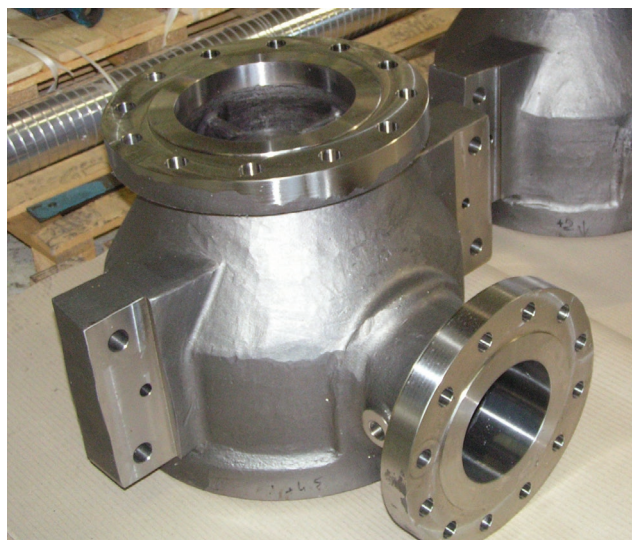
- Oil & Gas
- Hydrocarbon Processing
- Pulp & Paper
- Power Generation
- Food, Metals & Fertilizers
- Water & Wastewater



MPP-OHH pump being performance tested with a multiphase mixture of water and nitrogen



Helico-axial diffuser and impeller



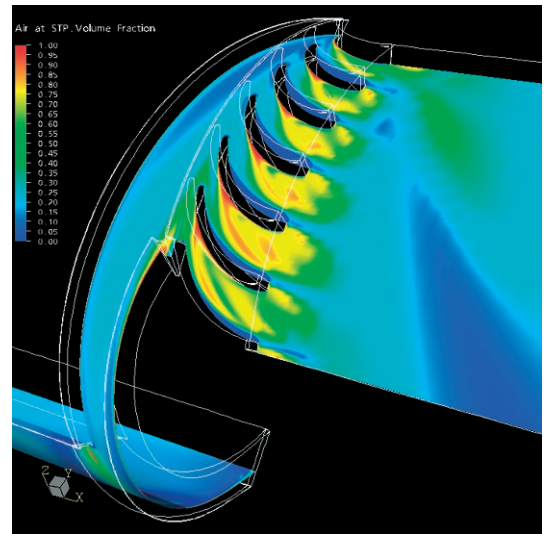
MPP-OHH pump casing

Multiphase Pumping Solutions

Application	Mixtures containing gas (up to 40 %)
Constraint	Separation not possible / not desired
Answer	MPP-OHH
Examples	HPI (circulating pumps in MEG Plants) O&G (low pressure boost applications with low gas content)

Multiphase Pump OH2 Design ISO 13709 (API 610)

- Features: Sulzer OHH pump equipped with field-proven helico-axial hydraulics
- Capable of handling a mixture of liquid and gas
- Actual total flow (at pump inlet) of 600 m³/h (2,500 USgpm)
- Pressure rise of 5 bar (70 psi)
- Power up to 250 kW (330 hP)
- Pump speed from 1,000 to 3,600 rpm
- Complete range developed



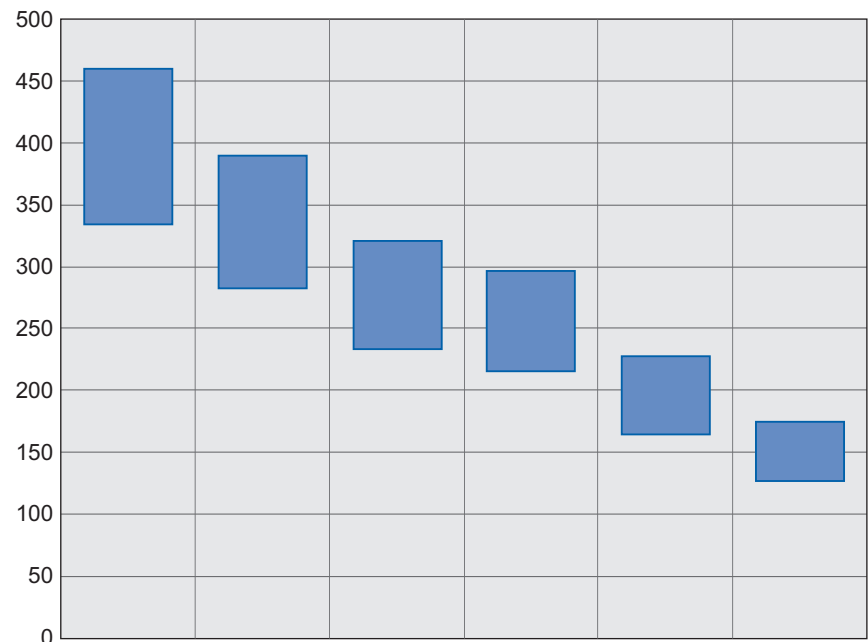
Two phase Navier-Stokes flow calculations

MPP Performance Range

The Sulzer MPP-OHH modular range consists of six standardized frame sizes with a total nominal capacity of up to 600 m³/h (2,500 USgpm) at pump inlet conditions.

The standard range is designed for pressure boost up to five bar. As for any centrifugal pump the pressure boosting capability depends on the density of the fluids being pumped, pump speed and impeller diameter.

Total rated flow at pump inlet (m³/h at 2,000 rpm)



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