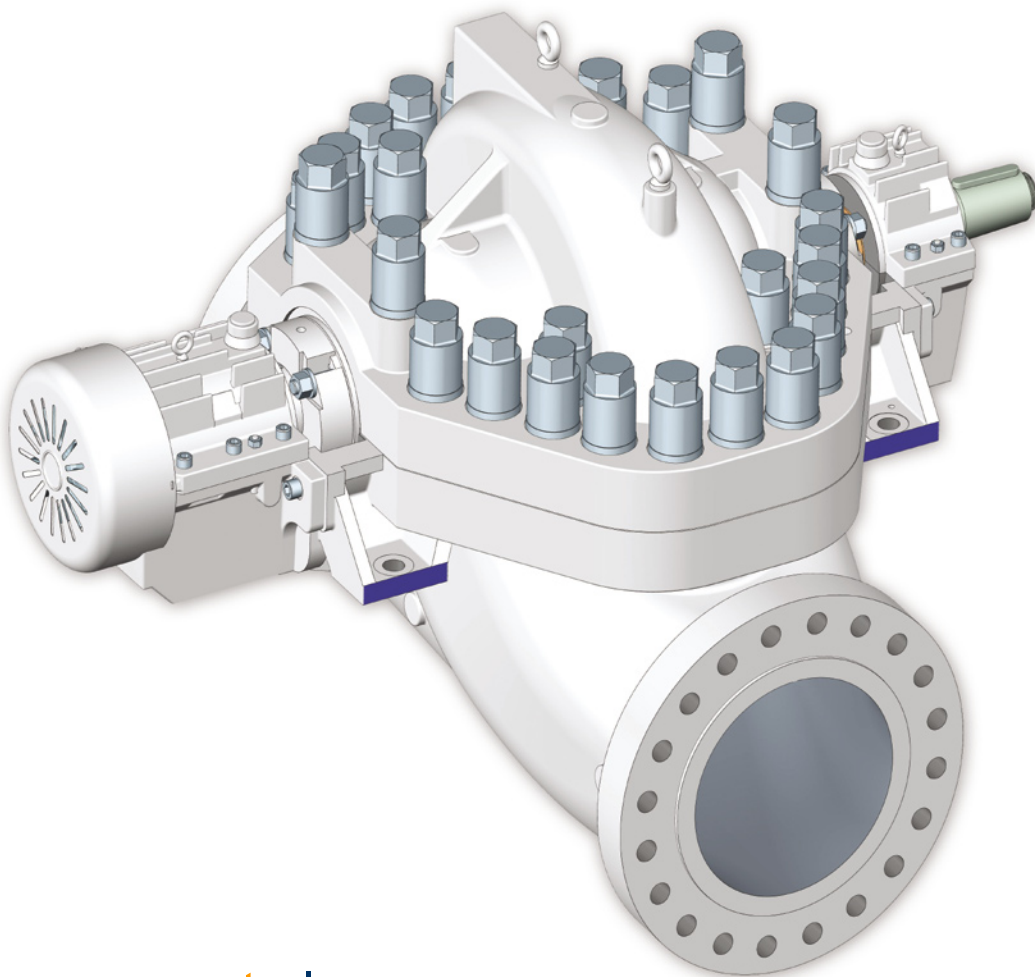


HSB Horizontal Axially Split Single Stage Between Bearing Pump



motralec

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The **Heart**
of Your
Process

Sulzer Pumps – Leader in Pump Technology

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

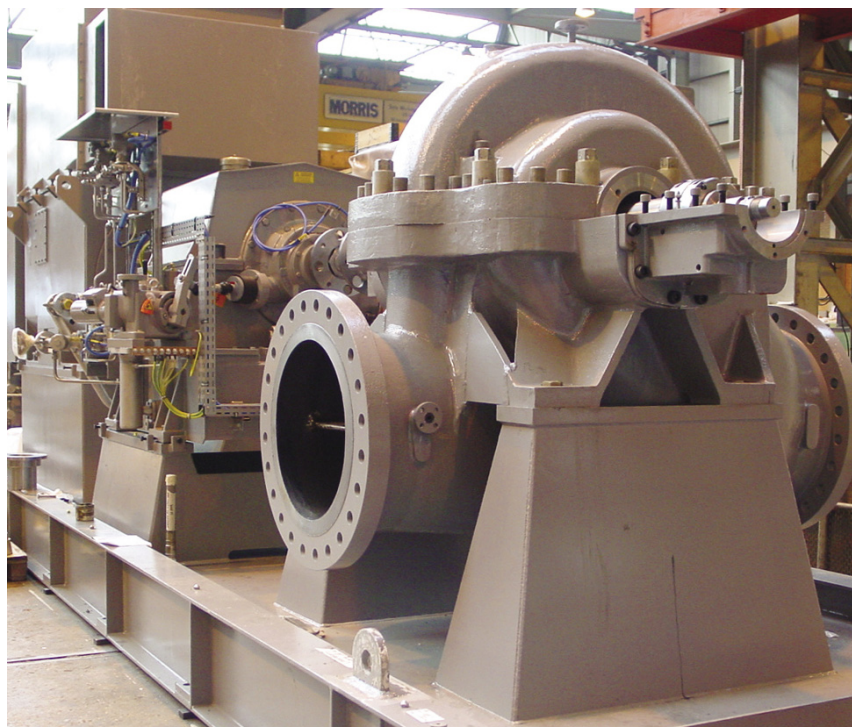
Versatility and Reliability

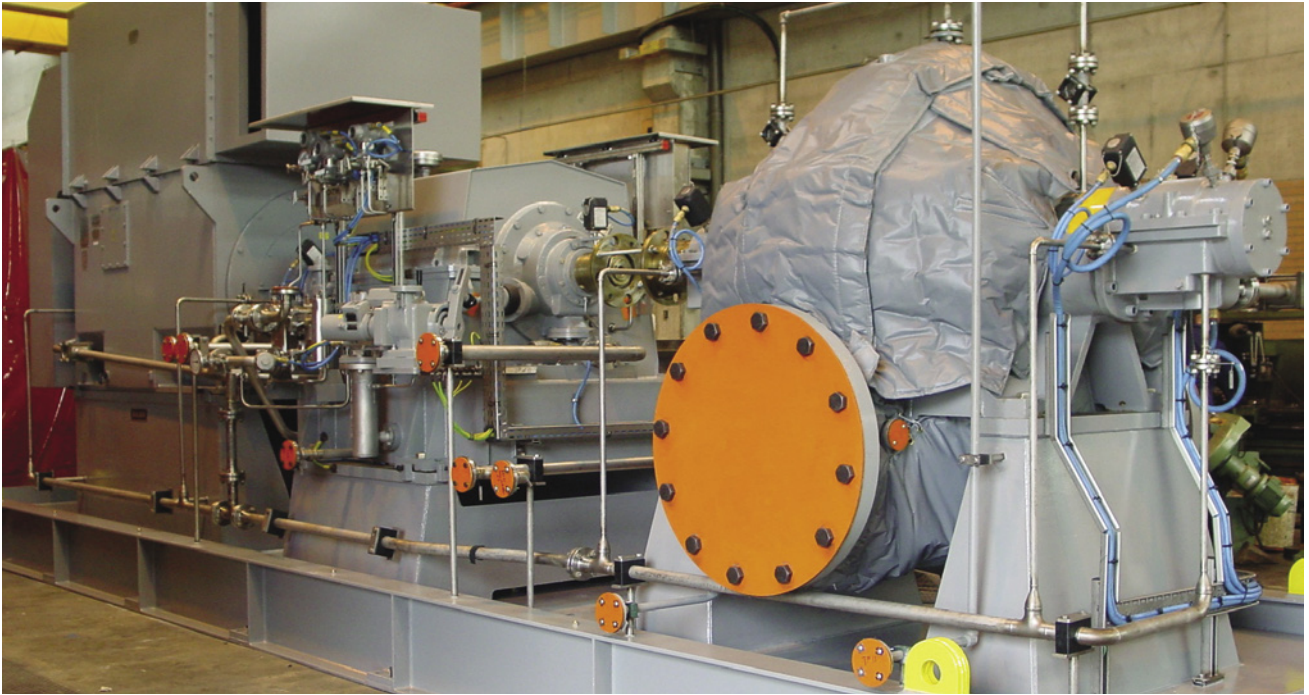
The HSB is a single stage, horizontal axially split, between bearing pump. As a general purpose pump, it is available in a wide range of sizes and material combinations.

The HSB compliant with the latest edition of ISO 1397 (API 610) for type BB1 pumps. It is horizontally split at the shaft centreline for easy removal of the pump's top half casing and rotating element. This allows for inspection and routine maintenance without disturbing pump alignment and nozzle connections.

Integral seal chambers can receive either packing or mechanical seals while operating at suction pressure. The dynamically balanced double suction impeller is positively positioned on the shaft

against a shaft shoulder, retained by a split ring and collar, and keyed. The large, heavy-duty shaft has a short bearing span to minimize deflection and vibration.





Applications

Applications for the HSB pump are primarily services within the Oil and Gas, Hydrocarbon Processing, and Power industries. The HSB is designed for high pressure applications and operation at higher speeds. The HSB can be modified to suit varied working conditions.

HPI

- Synfuels
- Petrochemical applications
- Refining applications

Oil & Gas

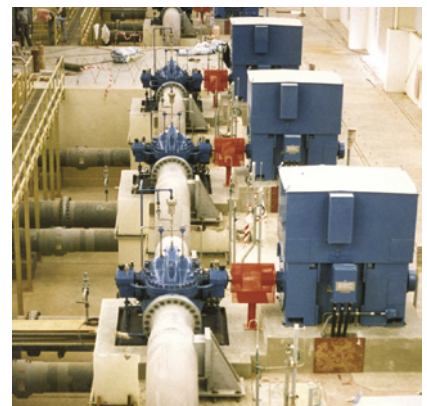
- Oil shipping
- Crude oil
- Transfer
- Unloading
- Pipeline
- Booster

Water & Waste Water

- Water transport
- Water supply
- Seawater

Power

- Essential service water
- Component cooling water
- Containment spray
- Condensate booster
- Steam generated feed booster
- Nuclear boiler feed
- Fossil auxiliaries
- Heater drain
- Essential chilled water

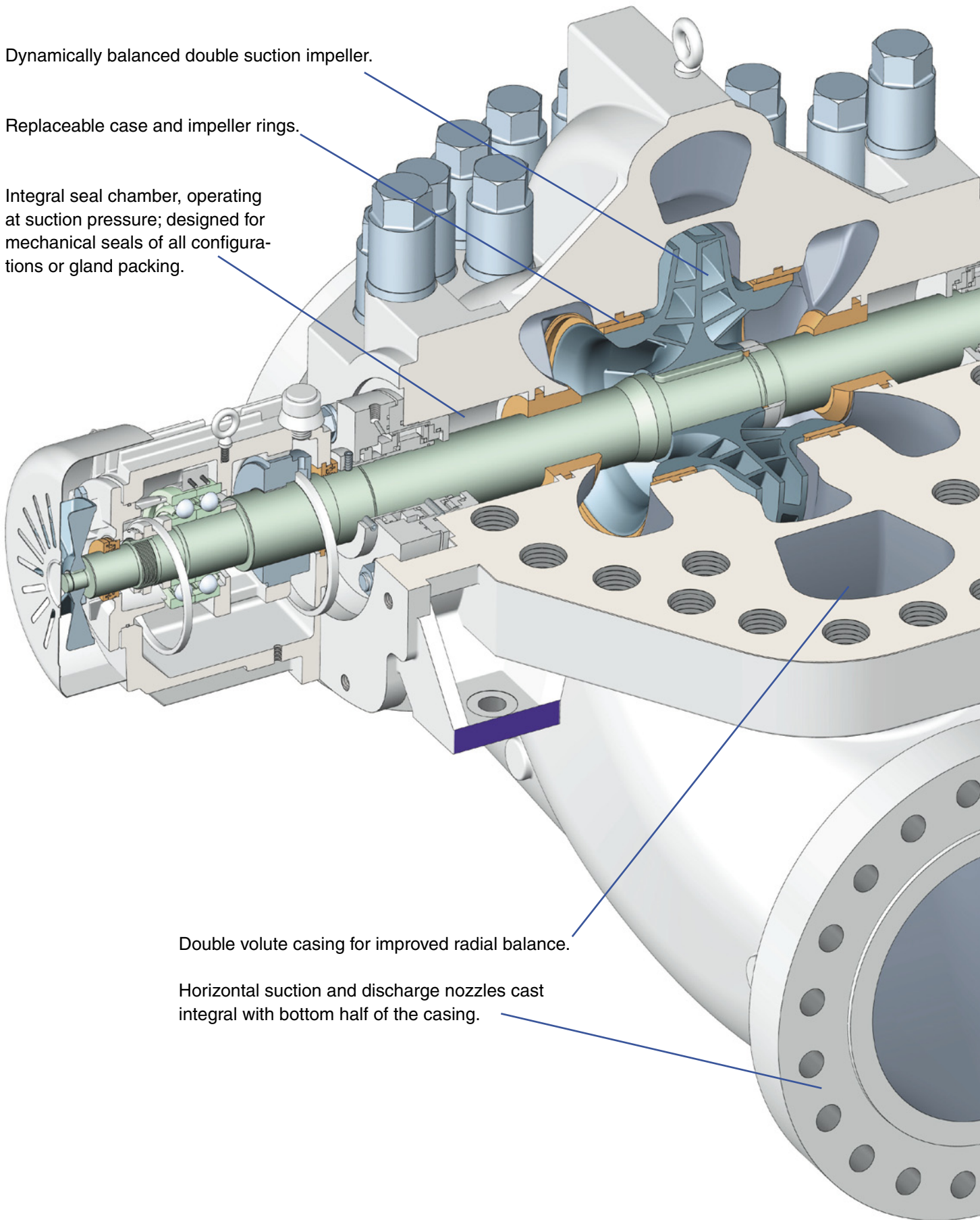


HSB Design Features

Dynamically balanced double suction impeller.

Replaceable case and impeller rings.

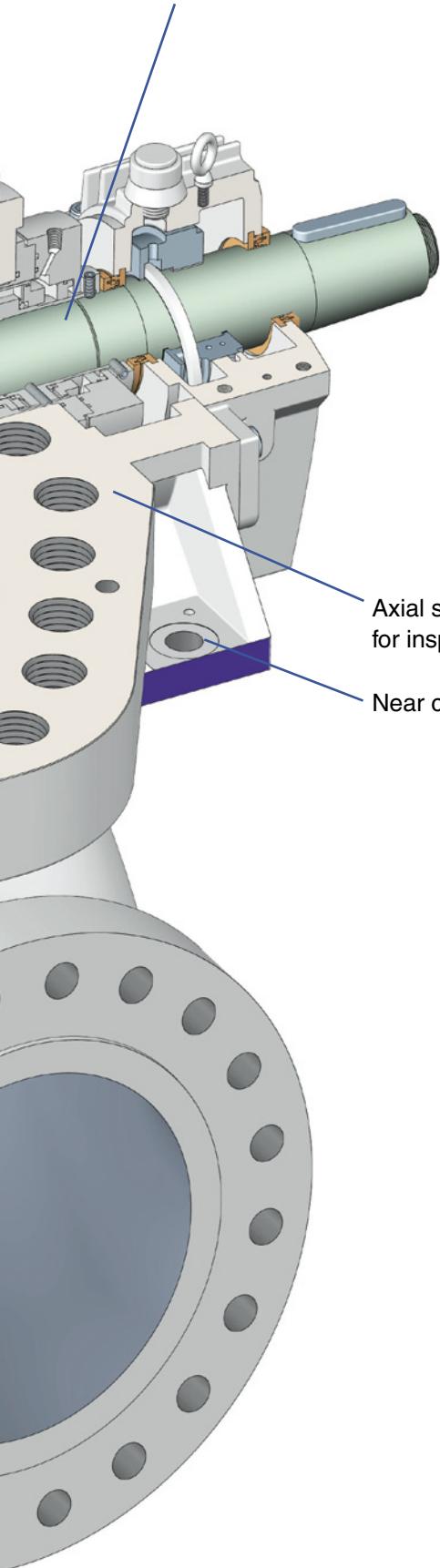
Integral seal chamber, operating at suction pressure; designed for mechanical seals of all configurations or gland packing.



Double volute casing for improved radial balance.

Horizontal suction and discharge nozzles cast integral with bottom half of the casing.

Large shaft diameter with minimum bearing span.



Axial split casing for ease of disassembly, for inspection and maintenance.

Near centerline mounting.



Options

Coupling and shaft

- Tapered shaft extension
- Double shaft extensions to allow for dual drivers

Stuffing box

- Vapor-tight stuffing box covers and NVT

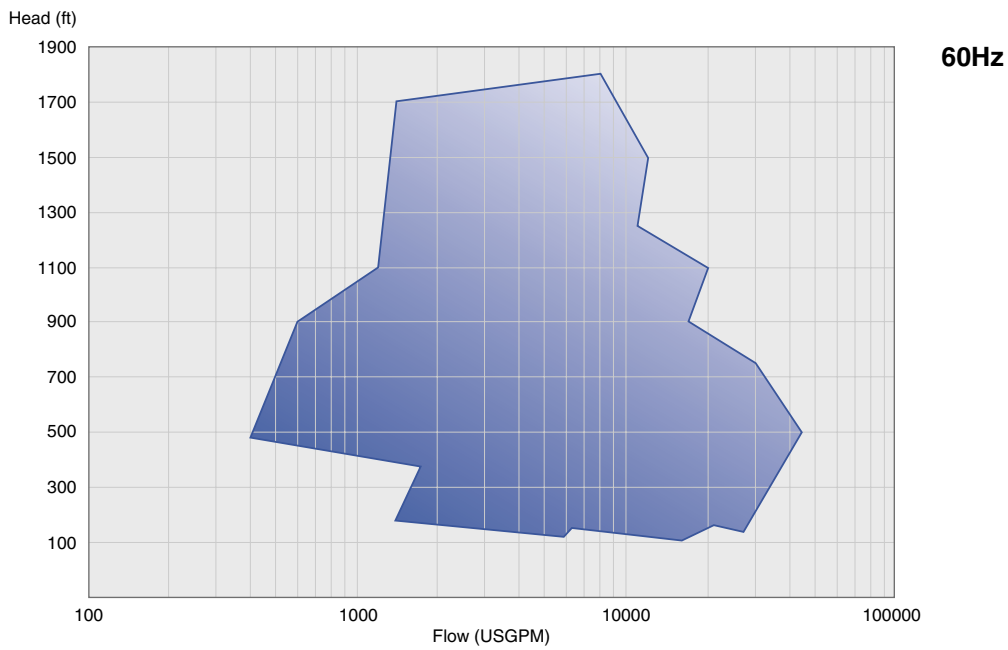
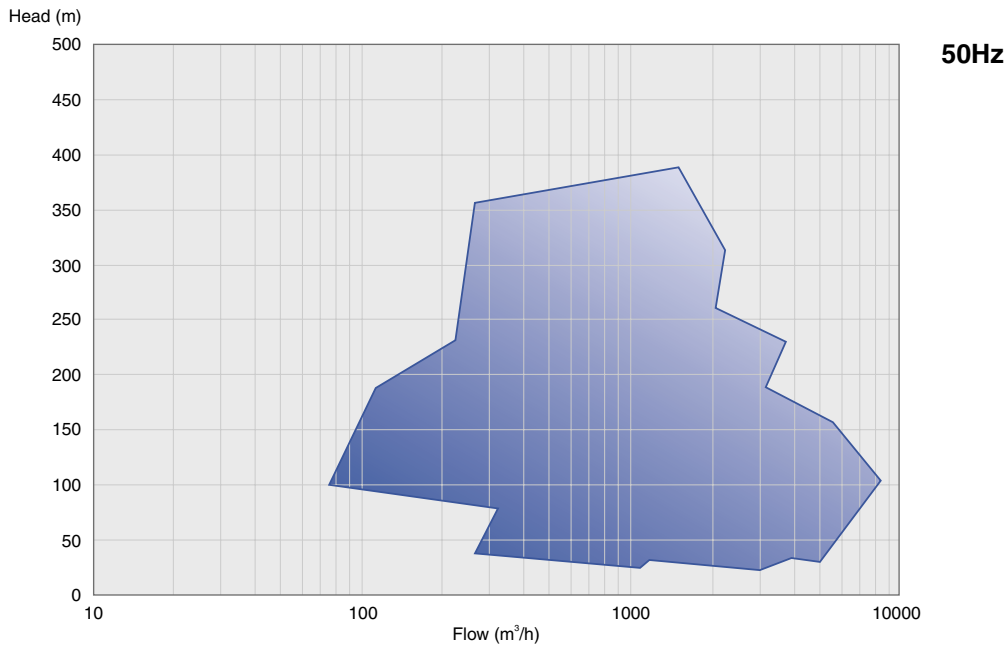
Seal arrangements

- Dual mechanical seal arrangements

Optimum bearing type for specific application

- Sleeve radial and ball thrust
- Sleeve radial and pivot shoe thrust
- Ball radial and thrust

HSB Performance Range



Operating Data

	50 Hz / SI units	60 Hz / US units
Pump sizes	6x8x13 to 30x30x28.5	6x8x13 to 30x30x28.5
Capacities	up to 900 m ³ /h	up to 45,000 gpm
Heads	up to 390 m	up to 1,800 ft
Pressures	150 bar	2,200 psi
Temperatures	up to 205°C	up to 400°F
Speeds	up to 5,000 rpm	up to 5,000 rpm

Striving to Serve You Better

Your Global Partner

Sulzer operates over 20 test facilities worldwide. Our facilities are suitable for horizontal or vertical, open pit, high flow rate/high energy and multiphase testing. We have the ability to perform tests at 50 and 60Hz and, depending on the site, are able to operate using diesel engines, gas engines and gas turbines in addition to conventional electric motors.

A specialty of Sulzer is the ability to fully string test large high-energy pumps to prove the pump package as a whole to our customers. This ability is particularly important for critical offshore applications where on site correction is both expensive and time consuming.

Customer Support Service

Through our worldwide network of over 50 service centers we provide our customers with a full range of services for pumps and other associated equipment. Local 24 hours a day, 7 days a week customer service backed up by our service groups' global solutions, concept development and support team. Applying our unique combination of experience and expertise, we are consistently



able to deliver high quality, value added rotating equipment support. Furthermore, we can also design, deliver and fit high integrity components for non-Sulzer machinery using our in-house reengineering specialists.

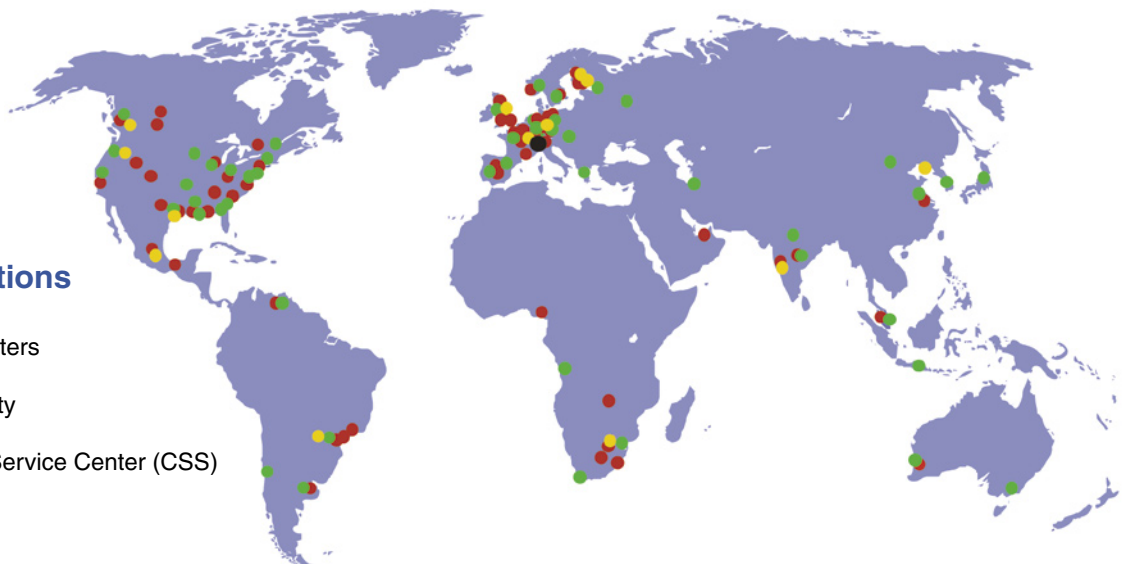
Sulzer Customer Alliances

Sulzer Pumps' business strategy is simply to work closely with our partners to gain an understanding of their requirements and expectations, and provide products and services which meet those expect-

tations better than anyone else. We can look back more than 10 years of alliance experience. Our customer alliance agreements are key to our strategy and represent a mutual long term commitment for the purpose of achieving world class pumping system life cycle cost by maximizing the effectiveness of our partner's and Sulzer's resources. Sulzer currently has agreements with many of the major oil companies focusing on solving problems and simplifying work processes.

Network of Locations

- Divisional Headquarters
- Manufacturing Facility
- Customer Support Service Center (CSS)
- Sales Office



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