



Towards a brighter future

## Heat transfer fluid pumps for parabolic trough concentrated solar power

### About Sulzer

Sulzer is recognized for excellent product quality, performance, reliability and technical innovation required for a wide range of applications in the power generation industry.

As a global leader, our knowhow and competitiveness is based on many years of experience in the manufacturing of pumps.

Sulzer offers products and aftermarket services for all types of power plants:

- Renewables
  - Solar (Concentrated Solar Power)
  - Biomass
  - Geothermal
  - Pumped hydro storage
- Carbon capture and storage
- Nuclear
  - Nuclear island
  - Turbine island
- Fossil-fuel fired
  - Steam (coal and oil)
  - Combined-cycle (gas)

### Heat Transfer Fluid (HTF) circulation pumps

In a parabolic trough plant, mirrors follow the sun throughout the day and focus the sunlight onto an absorber which consists of a pipe surrounded by glass.

Heat transfer fluid (thermal oil) is circulated to/from the solar field and through a heat exchanger, which makes up the conventional steam cycle.

The HTF used in the primary circuit is thermal oil. Its optimum working temperature is around 350°C which generates low rate steam.

The manufacture of HTF pumps for these high-temperatures, thermal transients and sealing of flammable and hazardous fluids under extreme cyclic operating conditions is a demanding design challenge.

Sulzer has this design experience, with a wide product range that caters for both main and auxiliary heat transfer fluid circulation, and has been supplying HTF pumps since 1985.

## HZB-HTF DOUBLE SUCTION VOLUTE PUMP

### FEATURES AND BENEFITS

- Centerline mounting to allow free thermal expansion and high nozzle loads
- Minimum bearing span to minimize shaft deflection
- Single cover casing design to reduce overhaul times
- Carbon steel or chrome steel casing with excellent mechanical properties
- Double mechanical seal provides safer operation

### KEY CHARACTERISTICS

Capacities	4'000 m <sup>3</sup> /h / 17'500 USgpm
Heads	up to 340 m / 1'115 ft
Pressures	up to 48 bar / 700 psi
Temperatures	up to 425°C / 800°F

### APPLICATIONS

- HTF oil main pump



## BBS BETWEEN BEARINGS SINGLE STAGE PUMP ISO 13709 / API 610 BB2

### FEATURES AND BENEFITS

- Centerline support for reduced thermally induced misalignment
- Double suction impeller for low Net Positive Suction Head Required (NPSHR)
- First critical speed is well above operating speed range for smooth operation
- Casing designed for 2 times API 610 nozzle loads for freedom from piping distortions
- Grouted or ungrouted, 1x or 2x nozzle load baseplates for reduced installation cost

### KEY CHARACTERISTICS

Capacities	up to 5'000 m <sup>3</sup> /h / 22'000 USgpm
Heads	up to 450 m / 1'500 ft
Pressures	up to 50 bar / 740 psi
Temperatures	up to 425°C / 800°F

### APPLICATIONS

- HTF oil main pump



## ZE/ZF AND OHH END SUCTION PUMPS

### FEATURES AND BENEFITS

- Designed for hot or cold water medium design pressure applications with relatively low Net Positive Suction Head (NPSH) available
- Modular construction to provide maximum interchangeability of spares

### KEY CHARACTERISTICS

Capacities	up to 2'600 m <sup>3</sup> /h / 11'440 USgpm
Heads	up to 300 m / 1'000 ft
Pressures	up to 100 bar / 1'450 psi
Temperatures	up to 425°C / 800°F

### APPLICATIONS

- HTF oil auxiliary pump



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