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.
APPLICATIONS

• HTF oil main 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

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Values</th>
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</thead>
<tbody>
<tr>
<td>Capacities</td>
<td>4'000 m³/h / 17'500 USgpm</td>
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<tr>
<td>Heads</td>
<td>up to 340 m / 1'115 ft</td>
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<tr>
<td>Pressures</td>
<td>up to 48 bar / 700 psi</td>
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<tr>
<td>Temperatures</td>
<td>up to 425°C / 800°F</td>
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</tbody>
</table>

APPLICATIONS

• HTF oil auxiliary pump

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

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<th>Characteristics</th>
<th>Values</th>
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<tbody>
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<td>Capacities</td>
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<td>Heads</td>
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<td>Pressures</td>
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<td>Temperatures</td>
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For more information, please contact power@sulzer.com