SULZER

Slurry pump type Ensival Moret PLR and CR

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Sulzer, with a long experience acquired over the years and in-depth knowledge of pumping slurries, offers the best solutions for heavy-duty applications. The PLR and CR pump range has been specifically designed to handle liquids with a high solids contents. Optimized design ensures maximum corrosion and abrasion resistance and extended lifetime of the pump.

The PLR pump is designed to be manufactured from very hard materials with a high hardness level thus affording the best anti-abrasion characteristics.

The CR pump is manufactured from stainless steel or other corrosion-resistant alloys to pump aggressive slurries.

Main applications

A specific design combined with a wide range of options makes the PLR and CR pump suitable for highly demanding applications such as:

- Abrasive and corrosive slurries
- Ammonium nitrate
- Froth pumping and self-regulating applications

Features and benefits

Sulzer's PLR and CR slurry pumps offer high reliability and durability. An expanded range of hard materials coupled with advanced technology makes the pumps more reliable and allows us to maximize the value for our customers.

Key customer benefits include:

Maximum abrasion and corrosion resistance

- Wide range of high-quality materials ensures exceptional resistance against wear in all pumping applications for abrasive and corrosive liquids.
- Ample wall thickness and optimized shapes of main wear parts ensure improved corrosion and abrasion resistance and extended pump and spare parts lifetime.
- Erosion minimized due to tangential design

High reliability and durability

- High reliability due to special heavy-duty bearing unit with outer bearing to withstand high radial loads
- Replaceable back wear plates guarantee high durability of the pump

High interchangeability

- Low spare parts cost due to high interchangeability between PLR and CR pumps
- High interchangeability of construction materials between PLR and CR pump range

Maximum adaptability

- Special semi-open or vortex impeller design ensures high adaptability of the pump for most specific duties.
- Heavy-duty or ISO bearing frame available offering maximum suitability for all demanding applications.

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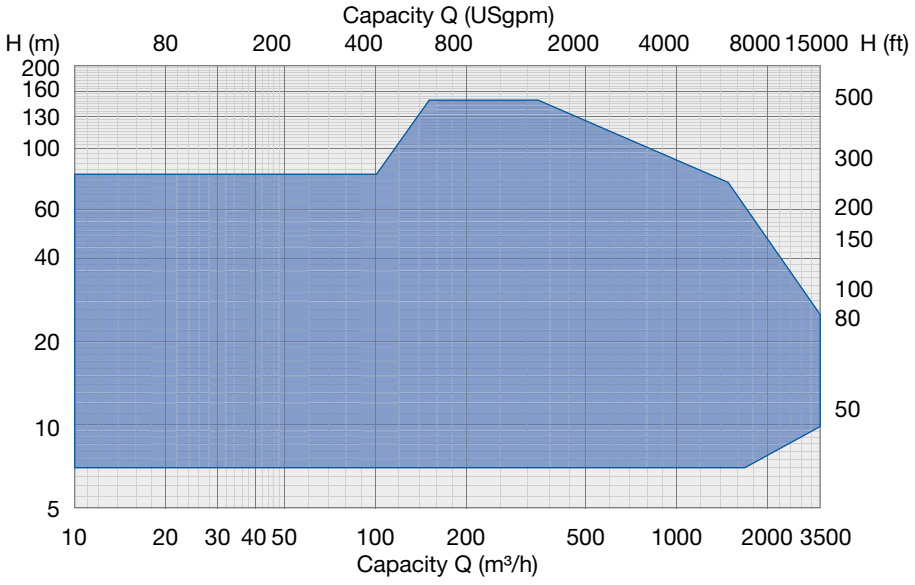
Oil and gas	Hydrocarbon processing	Power generation	Pulp, paper and board	General industry	Chemical process industry	Water and wastewater
			✓	✓	✓	✓

Operating data

50 Hz		60 Hz
up to 3’500 m³/h	Capacities	up to 15’400 USgpm
up to 130 m	Heads	up to 430 ft
up to 50 bar	Pressures	up to 735 psi
up to 150°C	Temperatures	up to 300°F
up to 3’000 rpm	Maximum speed of rotation	up to 3’600 rpm

Higher capacities and heads available upon request.

Performance range



Maximum reliability in solids handling applications

Common features

1 Optimized tangential design
- Case and impeller geometries to limit erosion

2 Wear-resistant closed impeller
- Wear resistant closed impeller with front and back relief vanes

3 Vortex impeller
- For high adaptability to specific duties

4 Back wear plates
- Wear plate fitted on the back of the impeller to limit wear of the pump case and to ensure high durability of the pump

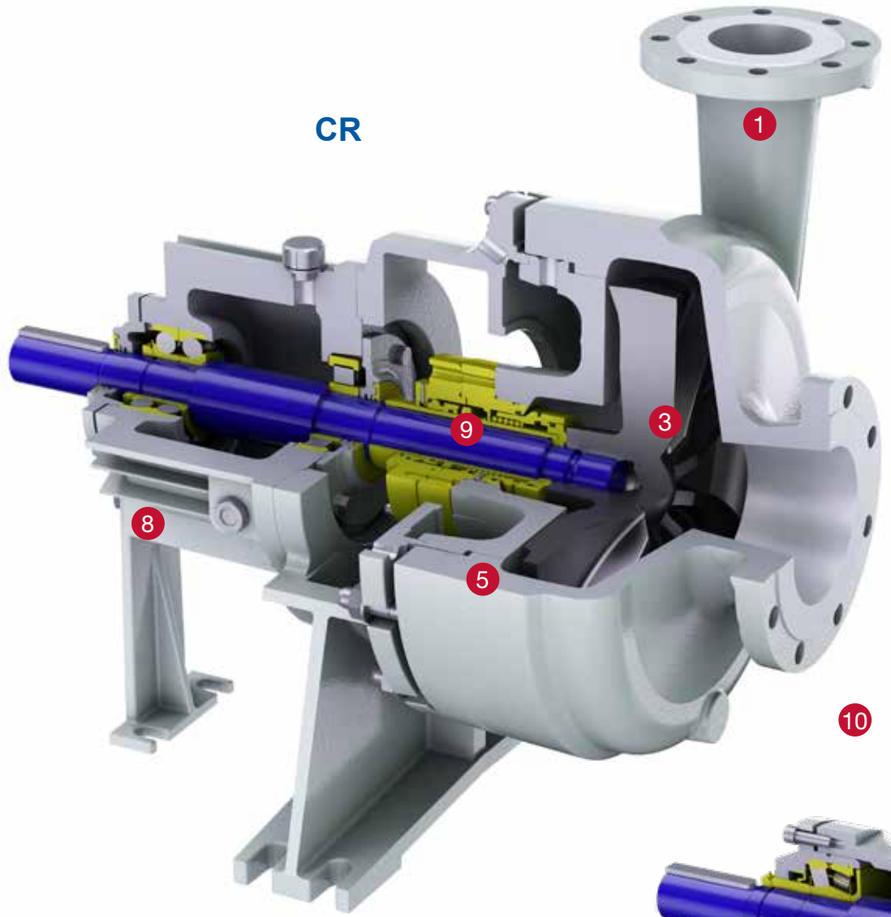
5 Ample wall thickness
- High abrasion resistance due to great wall thickness

6 Dynamic seal with expeller
- Back-up seal with gland packing

7 Heavy-duty bearing unit
- Grease lubrication
- With outer bearing for high radial loads (V-belt drive)

8 ISO bearing unit
- Oil lubrication
- Grease lubrication as option
- For direct drive with back pull-out construction

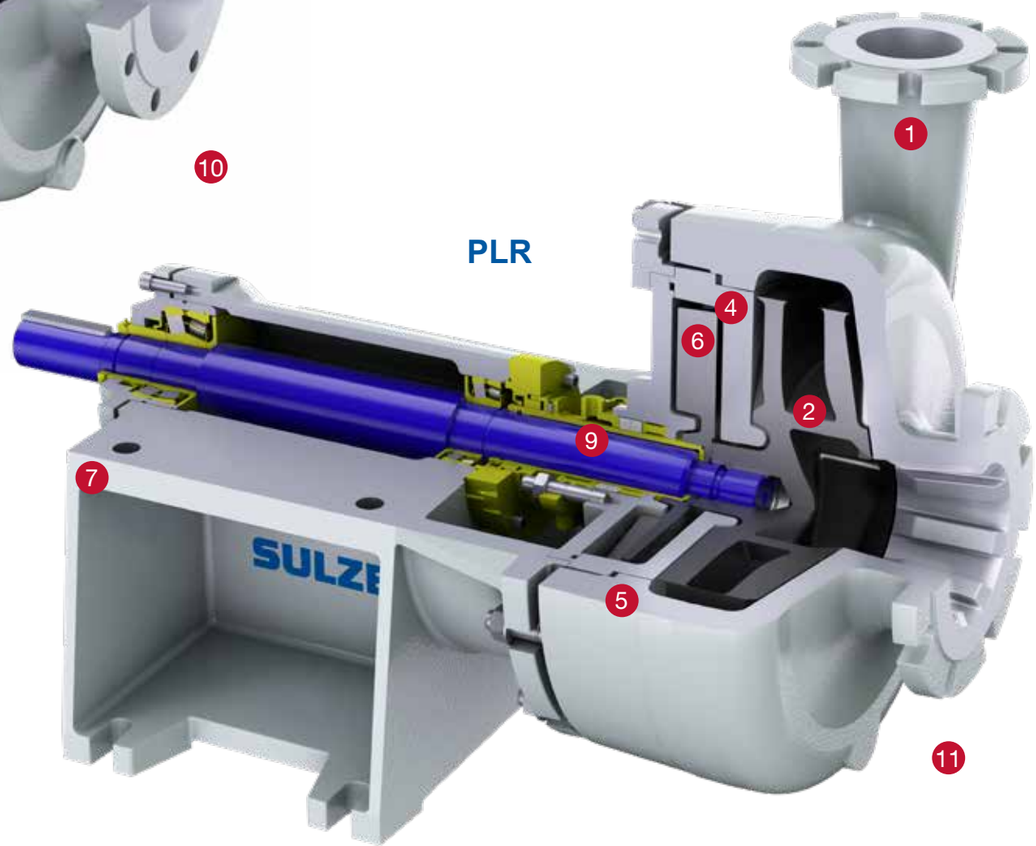
9 Shaft sealing
- Wide range of sealing arrangements for perfect suitability to all applications
  - Gland packing
  - Single mechanical seal
  - Mechanical seal with gland packing
  - Double mechanical seal
  - Other types of shaft seals upon request



Specific design depending on material

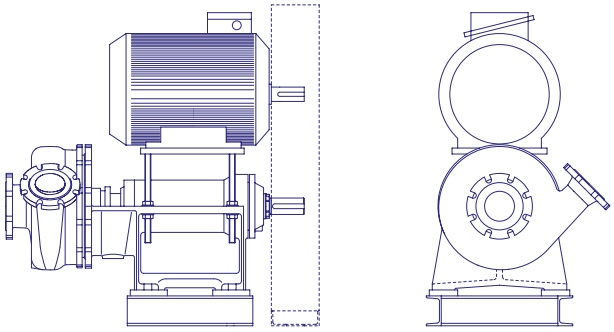
10 CR design with highly corrosion resistant alloys
- To pump highly aggressive slurries

11 PLR design with hard material construction
- To meet the highest anti-abrasion requirements

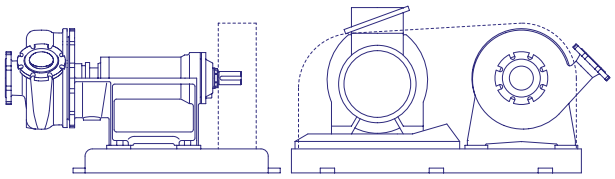


Installation schemes

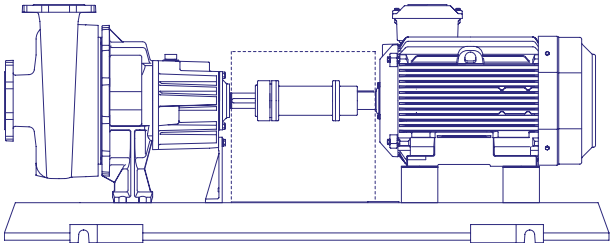
The discharge flange position is adjustable in a pre-defined direction.
Various motor installation schemes are available to accommodate the unit with the plant layout and to ensure maximum flexibility. Typical installation schemes are illustrated below. Other configurations are available upon request.



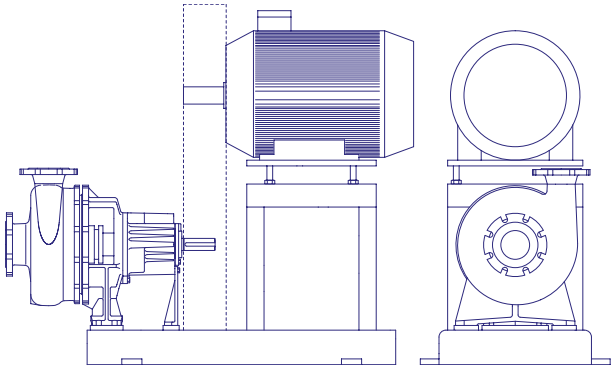
- Pump driven by V-belts
- Motor mounted on pump bearing unit to limit equipment footprint



- Pump driven by V-belts
- Motor on common baseplate on the side of the pump



- Pump driven by direct spacer coupling
- Back pull-out unit can be removed without disturbing pipes and motor



- Pump driven by V-belts
- Motor on elevated support to limit equipment footprint

Materials

Pump type	Material
PLR	ASTM A532 IIIA
	30% Cr + Mo cast iron
	38% Cr cast iron
CR	ASTM A890 1B
	ASTM A743 CN7M

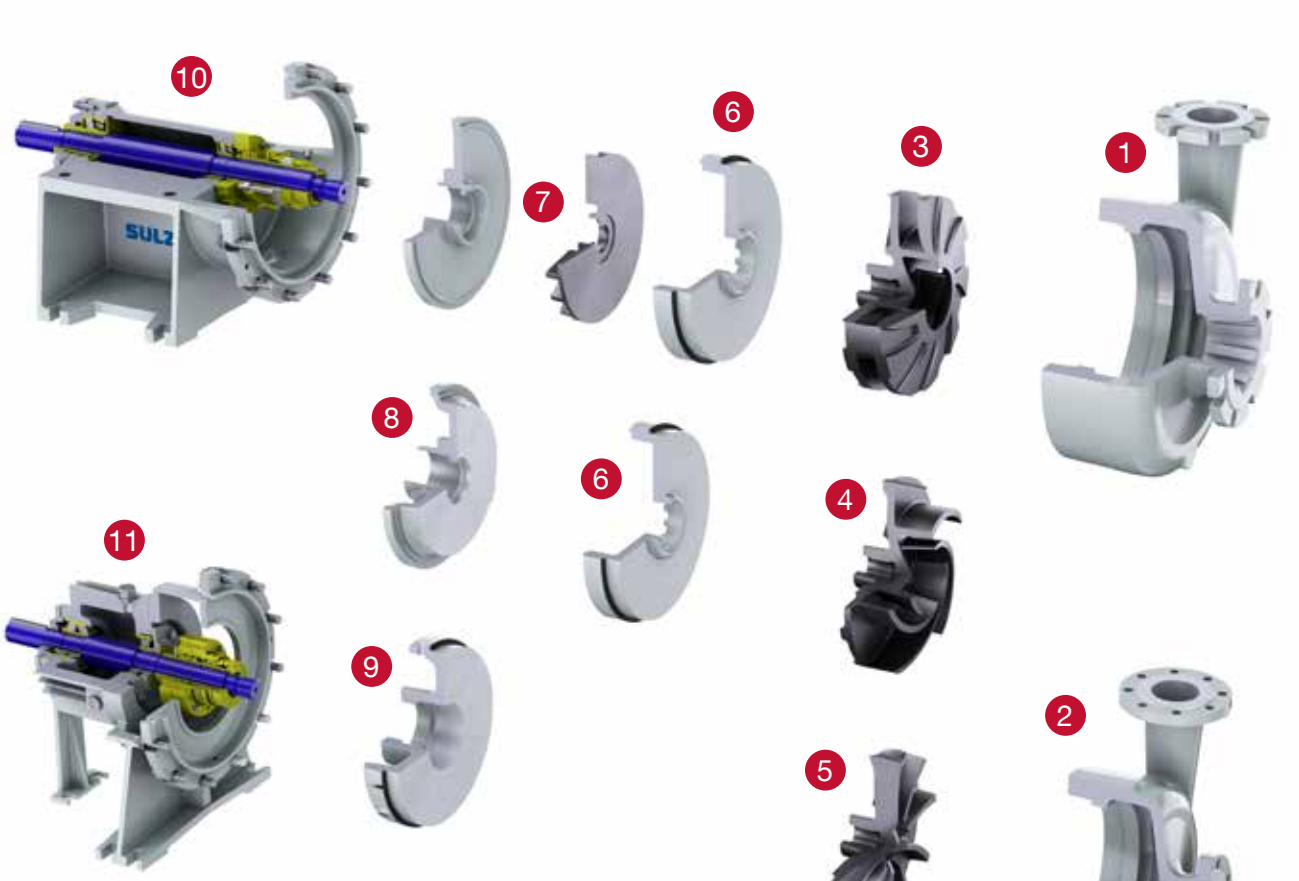
Other materials upon request.

Flexible design to satisfy all industrial schemes

Although Sulzer's PLR and CR slurry pumps have a similar hydraulic design, the PLR pump range, with its hard material construction, meets the highest anti-abrasion requirements. The CR pump range, made of highly corrosion-resistant alloys, has been specially designed to pump highly aggressive slurries.

The PLR and CR pump range offers maximum interchangeability for lower inventory costs and greater process reliability due to common modules and components such as:

- 30 wet end sizes
- 8 sealing units
- 25 impellers
- 5 bearing units



1. PLR hydraulics with clutch design
2. CR hydraulics with drilled design
3. Wear-resistant closed impeller with front and back vanes
4. Semi-open impeller
5. Vortex impeller
6. Back wear plate
7. Expeller with gland packing
8. Closed seal chamber
9. Open seal chamber
10. Heavy-duty bearing unit
11. ISO bearing unit

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