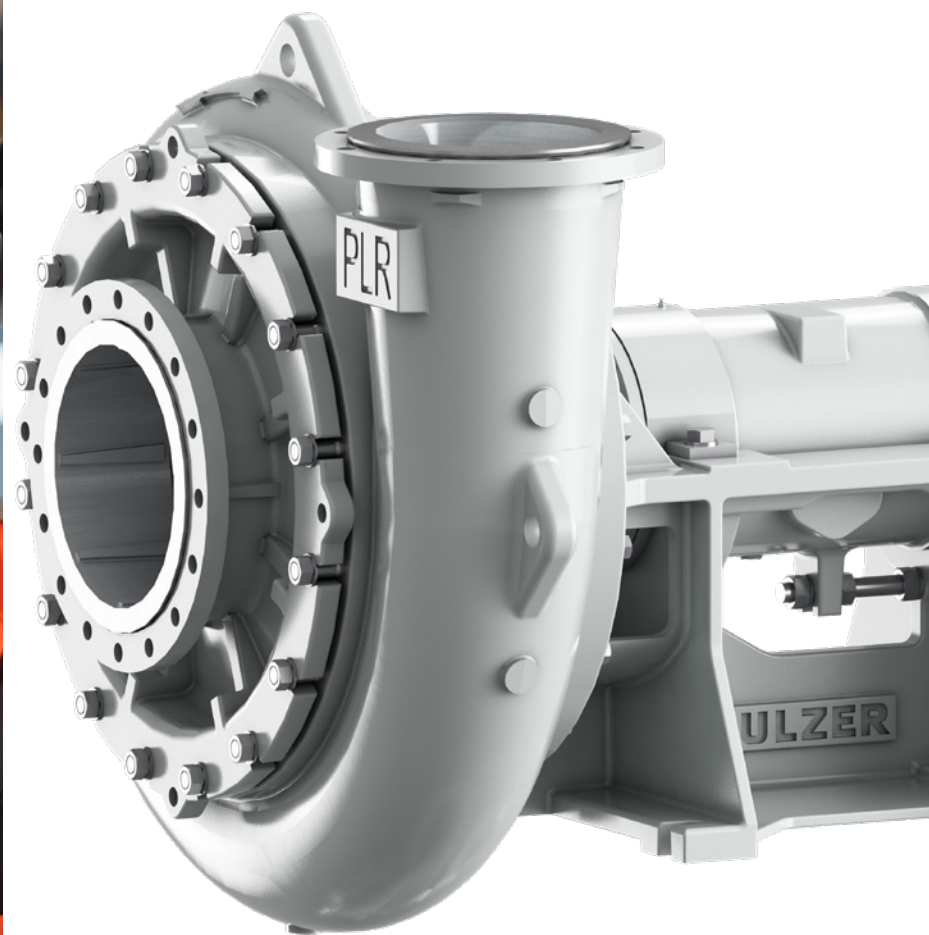


# SULZER

Flow Equipment

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## PLR slurry pump



# Main industries and applications

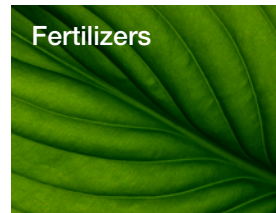
Sulzer, with a long experience acquired over the years and in-depth knowledge of pumping slurries, offers the best solutions for heavy-duty applications. The PLR pump range has been specifically designed to handle liquids with a high solids contents. Optimized design ensures maximum corrosion and abrasion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

Optional materials such as stainless steel or other corrosion-resistant alloys are available for the pumping of aggressive slurries.

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

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



# Features and benefits

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Sulzer's PLR 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

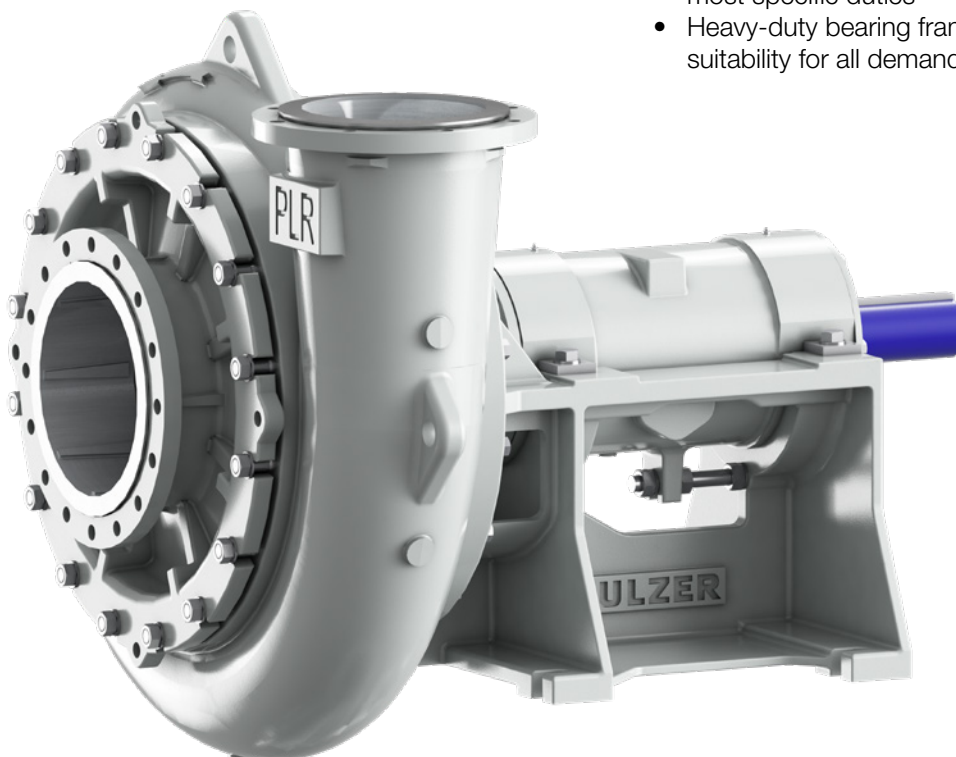
- High reliability due to special heavy-duty bearing unit with outer bearing to withstand high radial loads
- Replaceable back wear plate and wear suction cover guarantee high durability of the pump

## High interchangeability

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

## Maximum adaptability

- Closed, special semi-open and vortex impeller designs ensure high adaptability of the pump for most specific duties
- Heavy-duty bearing frame offers maximum suitability for all demanding applications



# Specifications

## Materials

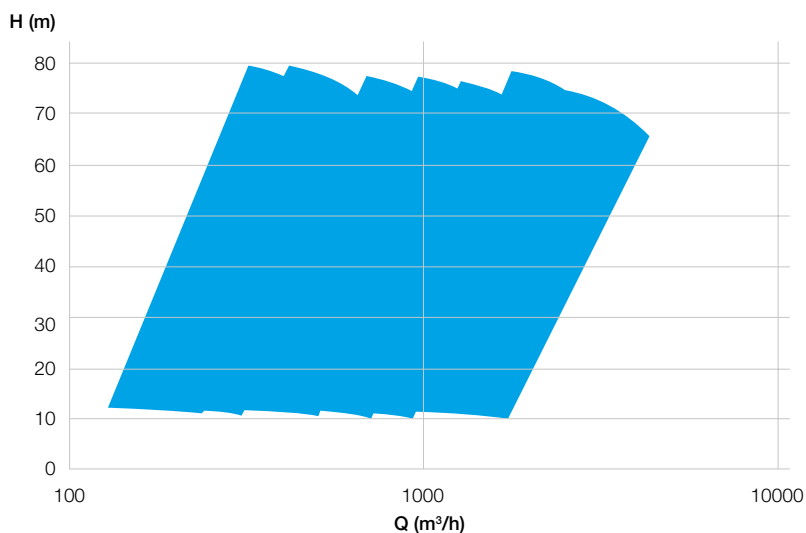
Material	Sulzer code	Specification
Austenitic stainless steel	43 (J0270)	ASTM A743 Grade CN-7M
Duplex stainless steel	4L/U55E02 (J0266) 4T/P5M (J0267)	ASTM A890 Grade 1B ASTM A890 Grade 5A
Wear-resistant chromium iron	EXR (F0207) CRM (F0204) FC1 (F0205)	ASTM A532 IIIA Type A, level 2 Gx100CrMo30-2 Gx160CrNiMo38-5-2

## Operating data

	50 Hz	60 Hz
Capacities	up to 3'900 m <sup>3</sup> /h	up to 17'200 USgpm
Heads	up to 80 m	up to 262 ft.
Pressures	up to 50 bar	up to 735 psi
Temperatures	up to 150°C	up to 300°F
Maximum speed of rotation	up to 2'500 rpm	up to 2'500 rpm

Higher capacities and heads upon request.

## Performance range





# Maximum reliability

## 1 Optimized tangential design

- Case and impeller geometries to limit erosion

## 2 Optimized impeller design for various liquids and applications

- Wear-resistant closed impeller with front and back relief vanes
- Semi-open impeller
- Vortex impeller

## 3 Back wear plate

- Wear plate fitted on the back of the impeller to limit the wear of the pump casing and to ensure high durability of the pump

## 4 Ample wall thickness

- High abrasion resistance due to great wall thickness

## 5 Heavy-duty bearing unit

- Grease lubrication as standard (oil lubrication optional)
- Heavy-duty bearings ensuring long lifetime
- Double tapered roller bearings for V-belt transmission or for direct drive
- Adjustable design to optimize clearances between casing and impeller

## 6 Shaft sealing

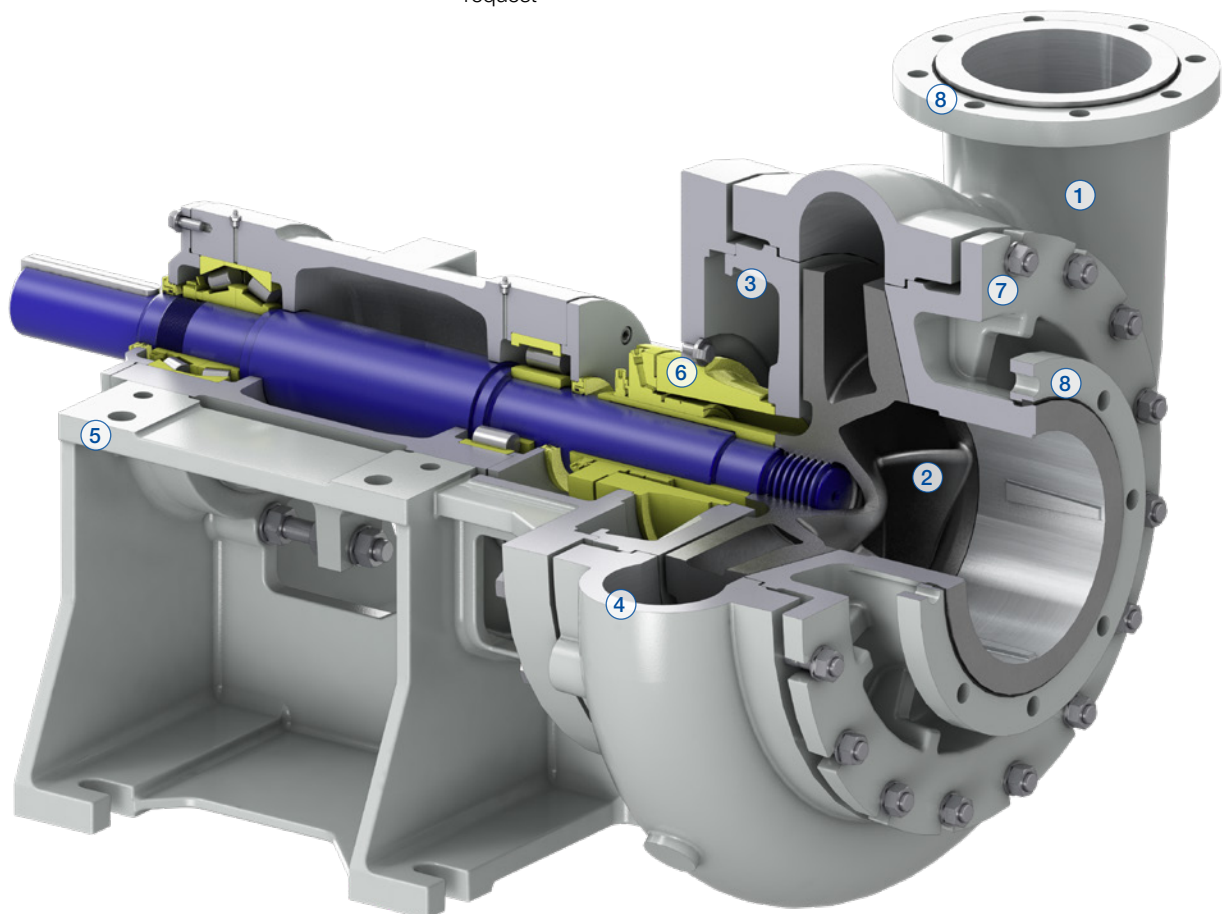
- Wide range of sealing arrangements for perfect suitability to all applications
  - Gland packing
  - Single mechanical seal
  - Mechanical seal with gland packing
  - Double mechanical seal
  - Dynamic seal with expeller
  - Other types of shaft seals upon request

## 7 Wear suction cover

- Removable/replaceable wear suction cover to limit wear on main pump casing and ensure high durability of the pump (available for large hydraulic sizes)

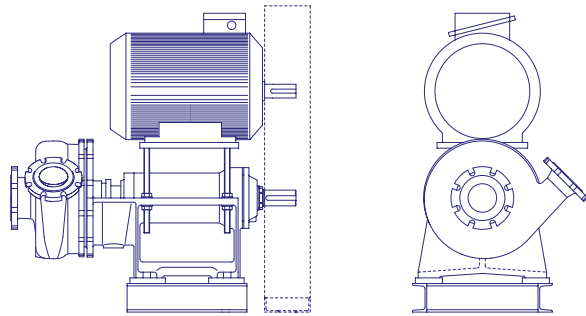
## 8 Floating flange design

- For easy assembly and positive sealing (available for large hydraulic sizes)



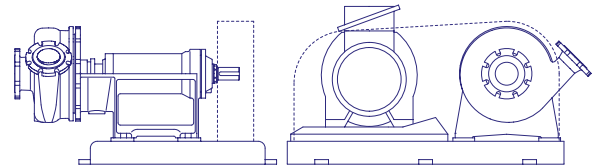
# Installation schemes

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.



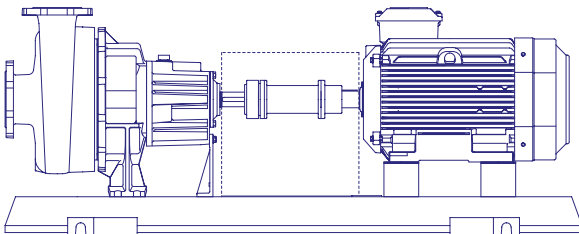
### Pump driven by V-belts

- Motor mounted on pump bearing unit to limit equipment footprint



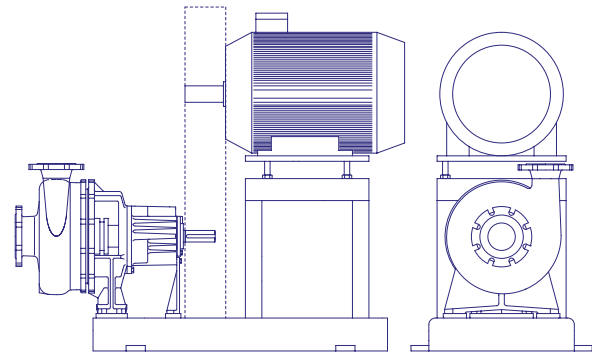
### Pump driven by V-belts

- Motor on common baseplate on the side of the pump



### Pump driven by direct spacer coupling

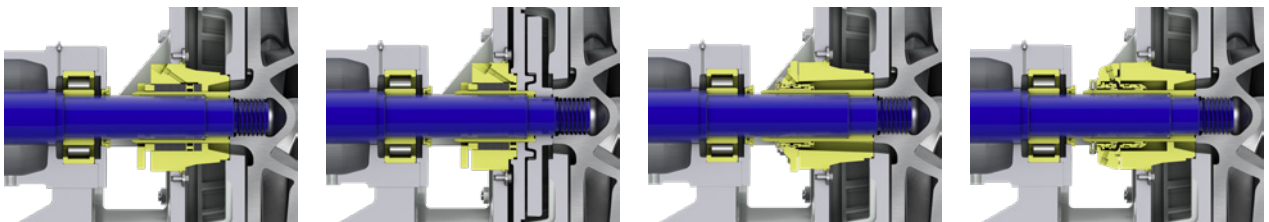
- Back pull-out unit can be removed without disturbing pipes and motor



### Pump driven by V-belts

- Motor on elevated support to limit equipment footprint

Shaft sealing is available with packings, hydrodynamic seal (expeller), single and double mechanical seal, both available with open or closed seal chamber.

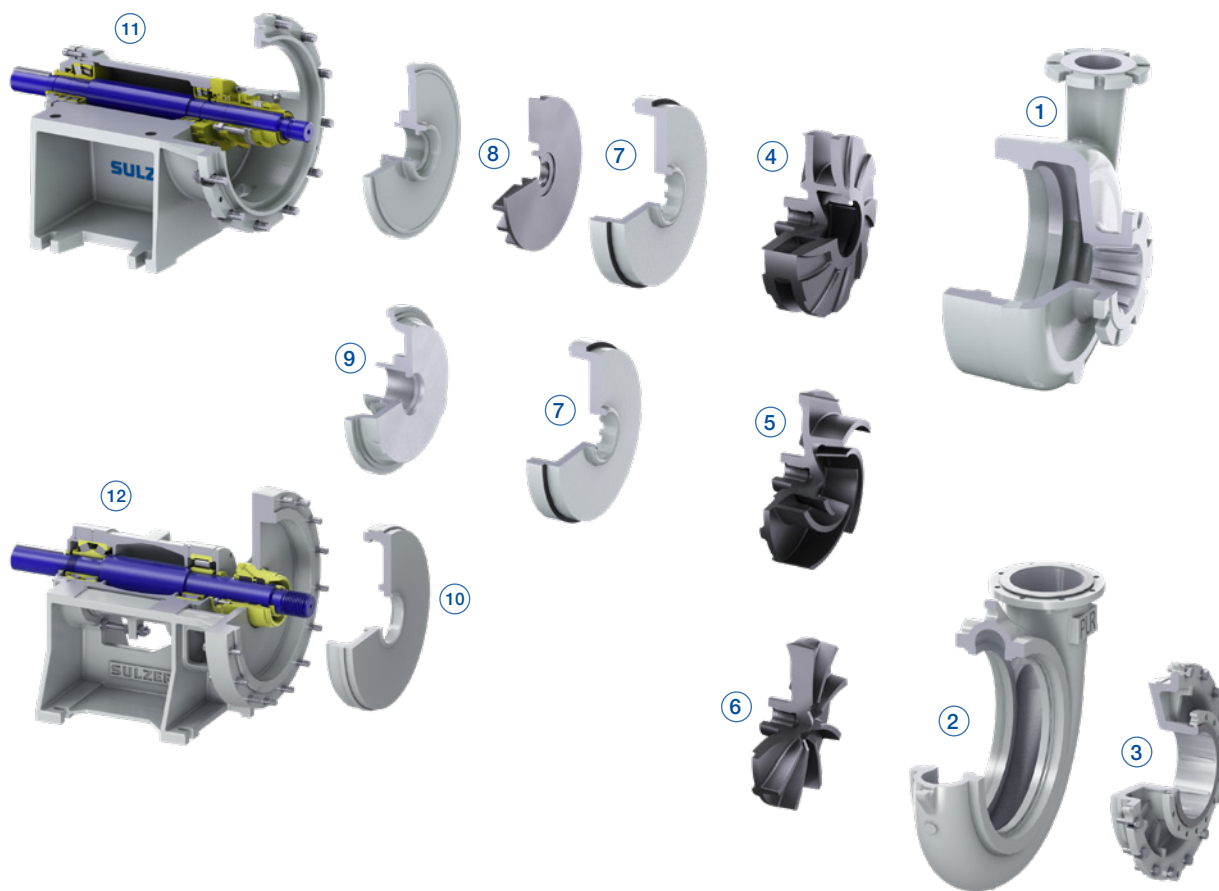


# Flexible design

Sulzer's PLR pump range, with its hard material construction, meets the highest anti-abrasion requirements. Additionally, optional materials made of highly corrosion-resistant alloys have been specially designed for the pumping of highly aggressive slurries.

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

- 23 hydraulic sizes
- 20 sealing units
- 5 bearing units



- |  |  |
|--|--|
| ① Small hydraulic size flanges with clutch design          | ⑦ Back wear plate  |
| ② Large hydraulic size with floating flange design         | ⑧ Expeller with gland packing  |
| ③ Large hydraulic size with wear suction cover             | ⑨ Closed seal chamber  |
| ④ Wear-resistant closed impeller with front and back vanes | ⑩ Open seal chamber  |
| ⑤ Semi-open impeller                                       | ⑪ Heavy-duty bearing unit for small hydraulic sizes                        |
| ⑥ Vortex impeller  | ⑫ Heavy-duty bearing unit for large hydraulic sizes with adjustable design |

**The Sulzer Flow Equipment division keeps your processes flowing. Wherever fluids are treated, pumped, or mixed, we deliver highly innovative and reliable solutions for the most demanding applications.**

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The Flow Equipment division specializes in pumping solutions specifically engineered for the processes of our customers. We provide pumps, agitators, compressors, grinders, screens and filters developed through intensive research and development in fluid dynamics and advanced materials. We are a market leader in pumping solutions for water, oil and gas, power, chemicals and most industrial segments.

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