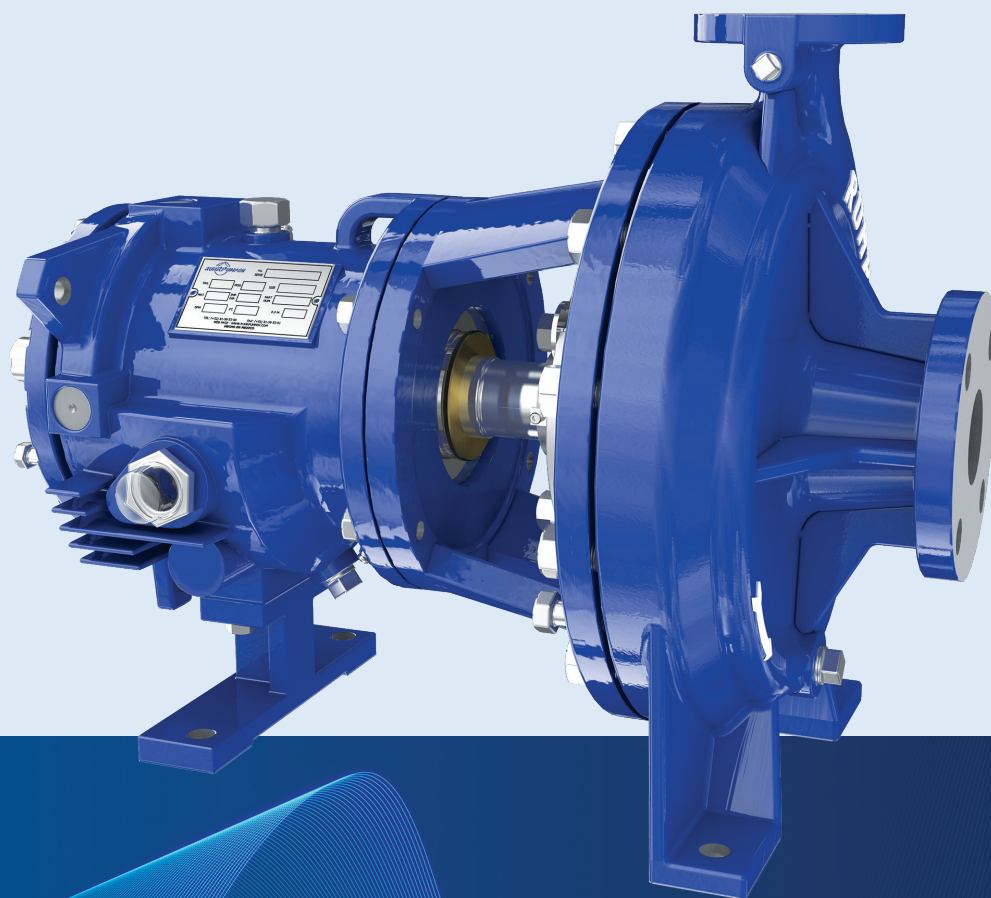




Specialist for Pumping Technology



CPO

**Single Stage, End Suction, ANSI Process Pump
(Semi Open Impeller)**

+75 years developing the pumping technology that drives progress

Ruhrpumpen is an innovative and efficient pump technology company that offers highly engineered, custom made solutions for oil & gas, chemical processing, power generation, industrial applications and water.

Implementation of cutting-edge technology and world-class engineering, combined with our unique vertically integrated structure, allows Ruhrpumpen to design complex technical solutions, creating the most robust and powerful pump systems in the marketplace.

Our broad product line complies with the most demanding quality standards and industry specifications such as **American Petroleum Institute (API)**, **American National Standards Institute (ANSI)**, **Underwriter's Laboratories (UL)**, **Factory Mutual (FM)**, **National Fire Protection Association (NFPA)**, **ISO** and **Hydraulic Institute**.

Products Include:

- Single stage overhung pumps
- Vertical in-line pumps
- Single and multi-stage between bearing pumps
- Multi-stage vertical pumps
- Reciprocating plunger pumps
- Sealless magnetic drive pumps
- Fire protection systems
- Pitot tube pumps
- Hydraulic decoking systems
- Horizontal pumping systems



Ruhrpumpen is your single source supplier

- Original Equipment
- Spare parts
- Installation and startup support
- Repair and maintenance
- Engineering, training and consulting
- Reverse engineering

Benefits of our pumps

- Proven reliability
- High efficiency designs ensure lowest operating cost
- Robust design allows for long system life with minimal maintenance
- Optimized total cost of ownership

CPO ANSI Chemical Process Pump

The CPO line is designed to meet or exceed ASME/ANSI B 73.1 specifications. All CPO pumps are designed to provide superior hydraulic performance superior reliability and low total cost of ownership.

This rugged process pump is designed to operate dependably and even in the toughest industrial applications. The CPO line features 31 hydraulics and an semi open impeller design that covers a wide range of service conditions (including low-flow region) while providing industry-leading low NPSHR performance and high efficiencies.



CPO is designed around a modular concept which allows provision of multiple hydraulics with a small number of power frames. In addition these power frames are interchangeable with models of other common pump manufacturers.

CPO-L

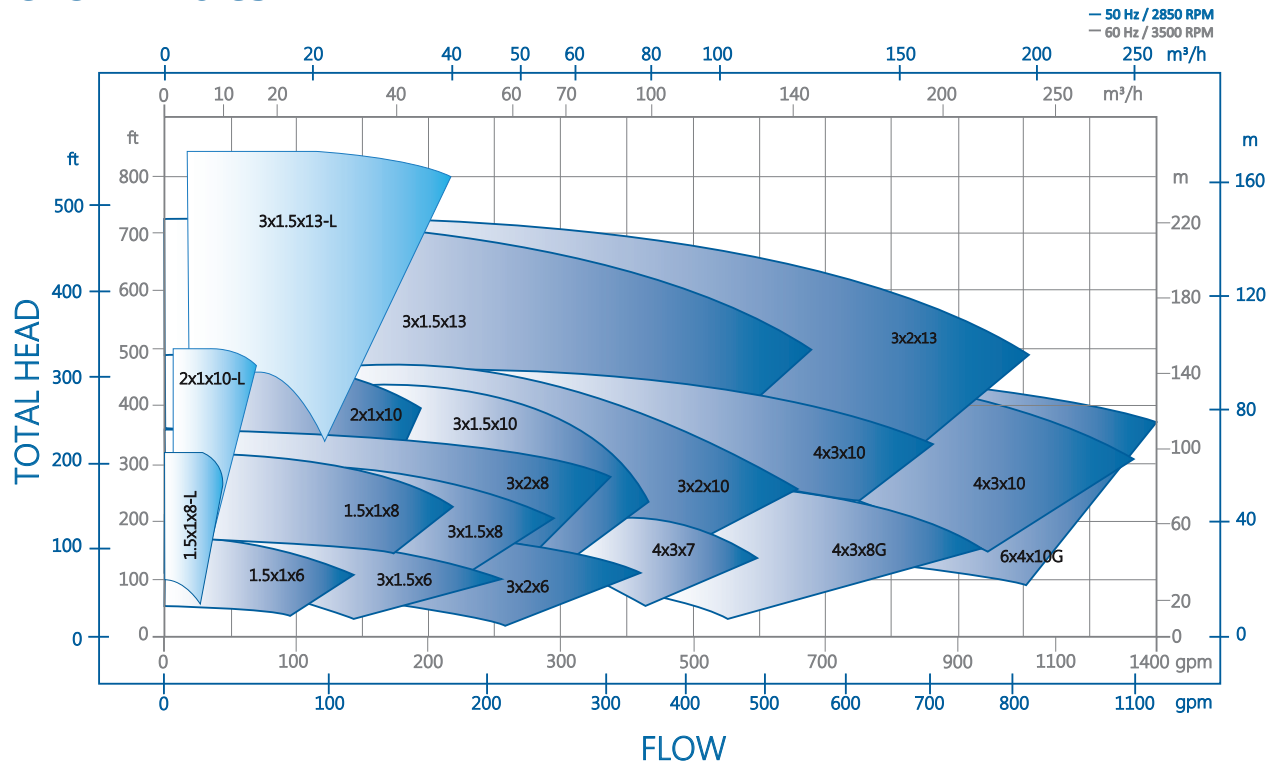
Low Flow, High Head Model

Ruhrpumpen offers its CPO-L Low Flow, High Head pump model. It's radial vane impellers are specially designed to reduce the thrust load and seal chamber pressure normally associated with low flow application and it also complies with the ASME/ANSI B 73.1 Standard.

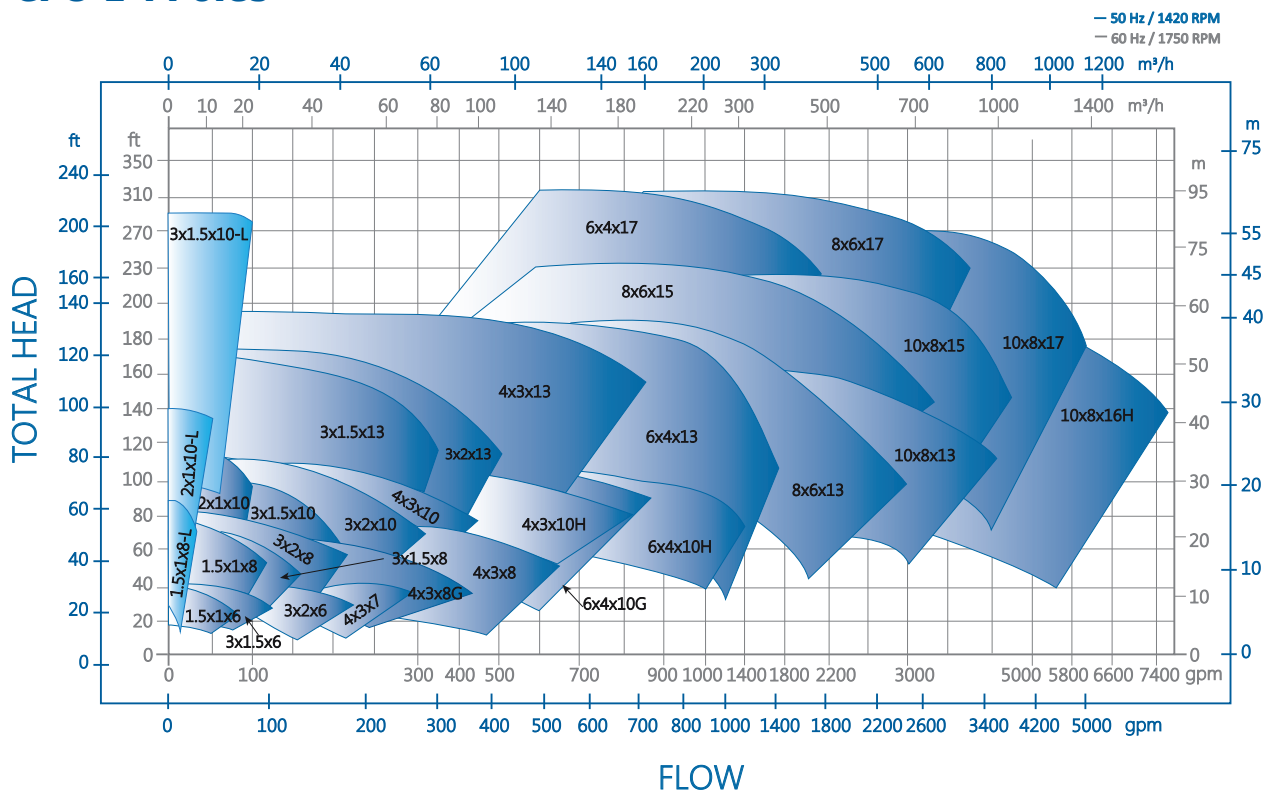
The CPO-L is the low flow option of the CPO product line, designed to fill the gap on the low flow side of the CPO range map. With low flow applications, it is important to reduce the radial load and potential shaft deflection issues. Ruhrpumpen's radial vane impeller and concentric pump casing for the CPO-L are specifically designed to reduce these issues at low flow or throttled operating conditions. The radial vane impeller with balance holes also reduces seal chamber pressures. This will lead to increased seal and bearing life and increased reliability.

Performance Range

CPO / CPO-L 2 Poles

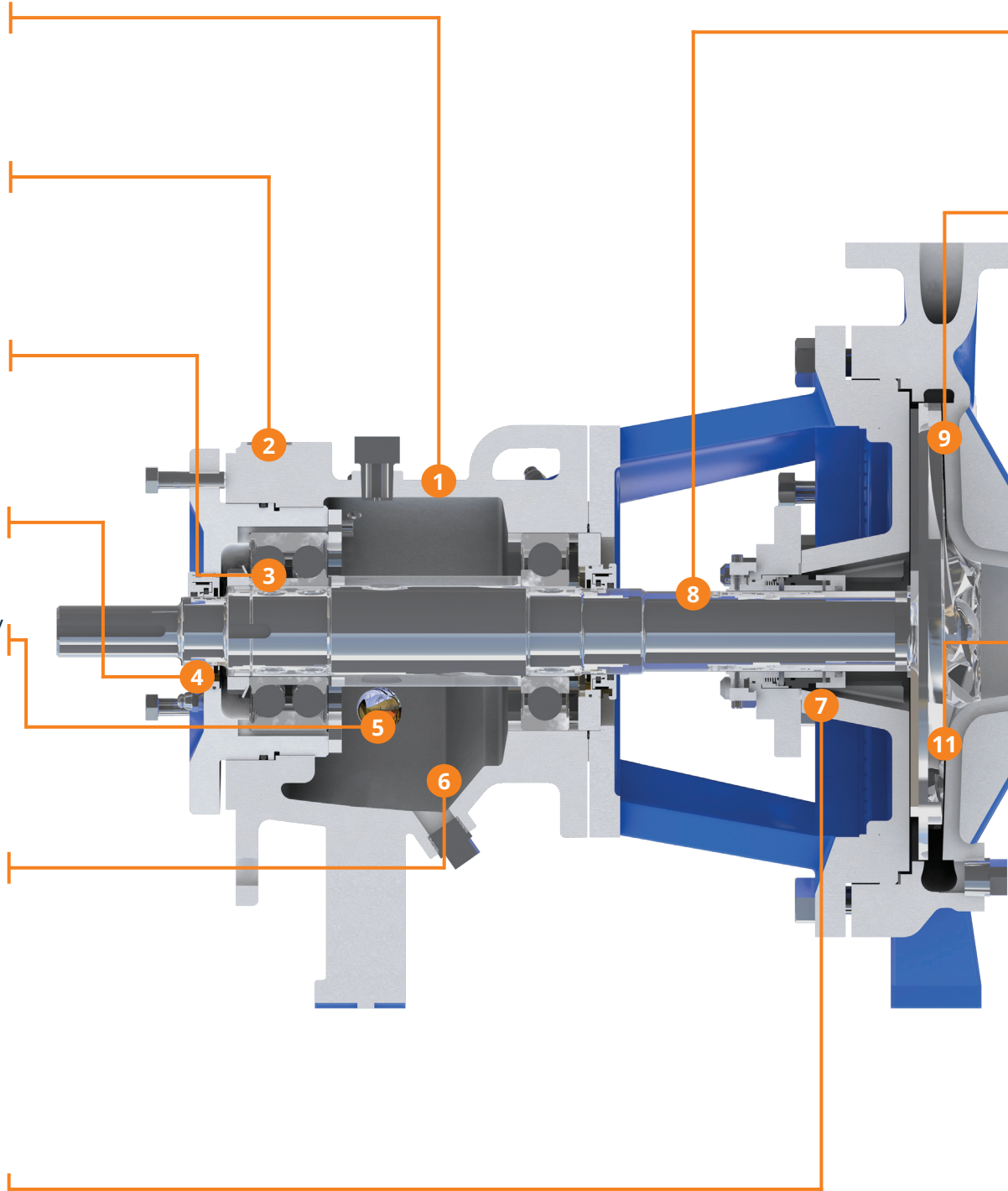


CPO / CPO-L 4 Poles

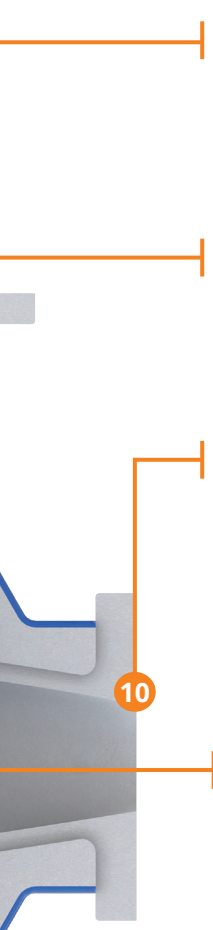


Characteristics

- 1** With only three power ends the CPO offers industry leading interchangeability and reduces inventory requirements.
- 2** Machined flat surface suitable for use with magnetic mount vibration probe.
- 3** Double row, angular contact thrust bearings minimize axial shaft end-play thus maximizing mechanical seal life. Set in place by a heavy duty bearing ring.
- 4** Labyrinth bearing isolators to avoid bearing contamination.
- 5** Oversized 3D oil sight glass. For better visibility Optional constant level oilers available.
- 6** **Lubrication**
 - Oil bath lubrication as standard, with options for grease and oil mist lubrication.
 - Large capacity oil sump and finned housing provide superior cooling.
 - Optional finned oil cooler.
- 7** Engineered seal chambers provide advanced seal flushing and cooling for longer life. A large bore tapered bore with flow modification stuffing box design is standard for better cooling and circulating to the seal faces.



Images for general arrangement use only, not certified for construction.

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- 8** A robust solid shaft with outstanding L3/ D4 for low vibration and increased mechanical seal life (shaft sleeves are available as an option).
 - 9** External impeller adjustment sets impeller quickly and accurately without the need for special tools.
 - 10** ANSI 150 # or 300 # flange drilling is available based on material selection. RF or FF designs are available based on requirements.
 - 11** Semi open impeller design allows handling of solids in suspension. The impellers are locked onto the shaft by threads and sealed with an O-ring. Hydraulic profile specially designed for industry-leading. NPSH performance and high efficiencies.

CPO PERFORMANCE DATA

Capacity	up to 7,000 U.S. gpm	up to 1,590 m³/h
Head	up to 650 ft	up to 198 m
Pressure	up to 375 psi	up to 26 bar
Temperature	-20°F to 572°F	-30°C to 300°C
Dis. Flange Size	1 to 8 in	

CPP-L PERFORMANCE DATA

Capacity	up to 210 U.S. gpm	up to 48 m³/h
Head	up to 920 ft	up to 281 m
Pressure	up to 400 psi	up to 27.5 bar
Temperature	700°F	up to 371°C
Dis. Flange Size	1 to 1.5 in	

Notes:

For pump operations outside this range, please contact a Ruhrpumpen Representative.

DESCRIPTION

Single stage, horizontal centrifugal pump

- Radially split casing with flanged connections (150# -300#).
- Raised Face and Flat Face.
- Horizontal end suction and vertical discharge on the center line.
- Semi open impeller, clockwise rotation (viewed from coupling end).
- Outstanding L3/D4 deflection index.
- Foot mounted.
- Oil lubricated.
- Back pull-out design allows pump disassembly without disturbing pipe connections.
- Standard bore, large bore, or tapered stuffing boxes are available for packing, single or double seals.
- All ANSI flush plans are offered, as needed, in a variety of configurations.
- Dimensional Interchangeability with most common ASME/ANSI B 73.1 pump manufactures.
- Industry leading low NPSHR performance and high efficiencies.
- C-Frame option is also available.
- Optional cooling jacket and cooling coil for high temperature applications.
- Power frames interchangeable with models of other manufacturers.

BROAD APPLICATION RANGE

The Ruhrpumpen CPO is designed for a wide range of industrial, chemical process and municipal applications such as but not limited to:

- Petrochemical
- Oil & Gas
- Steel Industry
- Automotive
- Agriculture
- Tank Farm
- Pulp and Paper
- Chemical
- Semiconductor
- Food Processing
- Power Generation
- Pharmaceuticals
- Water Treatment
- Paper Stock
- Pipeline
- General Industries
- Textile
- Mining

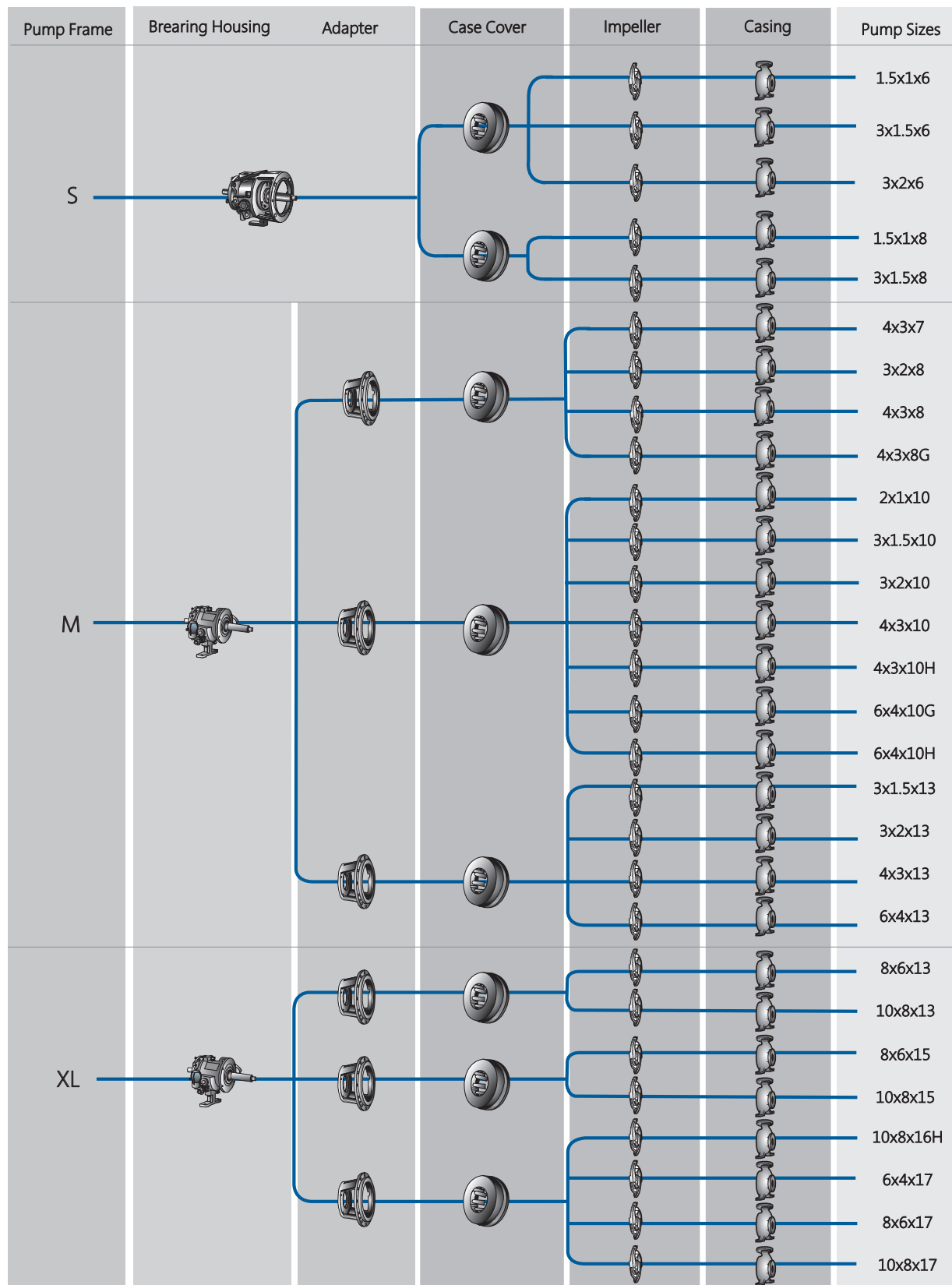
MATERIALS OF CONSTRUCTION

Ruhrpumpen CPO pump is available in many materials such as:

- Ductile Iron / CD4MCuN
- Alloy 20
- Stainless Steel (CF8M)
- Hastelloy C
- CD4MCuN
- Hastelloy B

We cover a large range of material options to satisfy every need, please contact us for more information.

Modular Interchangeability CPO



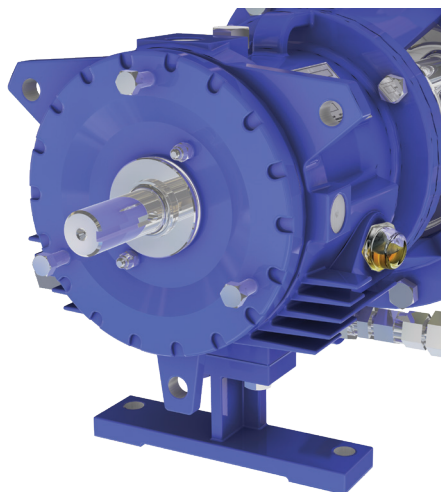
Large Bearings to withstand High Suction Pressure Applications

CPO-BEARINGS DESIGNATION			COMPETITOR - BEARINGS DESIGNATION	
SHAFT SIZE	RADIAL BEARING	AXIAL BEARING	RADIAL BEARING	AXIAL BEARING
S	6208	3307	6207	3306
M	6310	3310	6309	3309
XL	6314	3314	6313	3313

More than 50,000 Hours of Bearing Life.

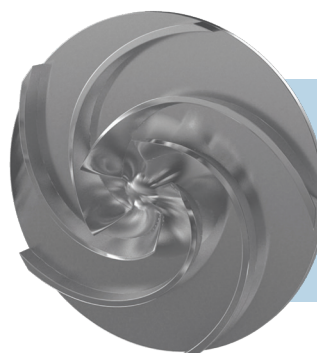
Design Features CPO

IMPELLER ADJUSTMENT FEATURE



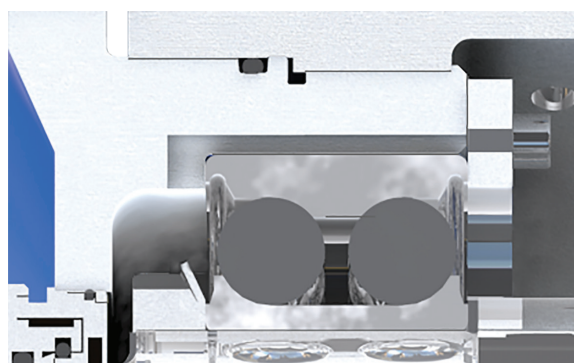
Enables impeller clearance setting in 20 seconds, restoring pump efficiency.

- Superior to Jackscrews.
- Protected with o-rings.



**CPO
IMPELLER**

**Enhanced hydraulic design for low
NPSH requirements**



Double Row Angular Contact outboard and single row, deep roll inboard bearings provide excellent axial and radial load support.

CPO

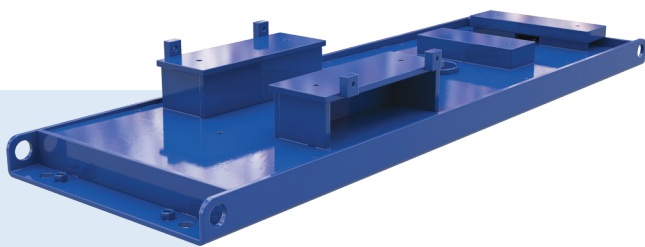
Single Stage, End Suction, ANSI Process Pump (Semi Open Impeller)

- CPO-L utilizes external impeller adjustment to restore pump efficiency and reduce downtime.
- Complies with ASME/ANSI B73.1 Standard, this pump can be used to replace existing equipment without any problem. There will be no need for piping or base changes.
- Ruhrpumpen's CPO-L series is designed with a circular concentric casing together with a radial vane impeller to minimize shaft deflection and reduce excessive radial loads and thus prolonging bearing and seal life.
- The C-Frame adaptor allows to install the motor without alignment process.

Optional Features CPO

BASEPLATE

- Standard ANSI
- PIP
- API 610
- Polymer
- Special designs to meet customer specifications.

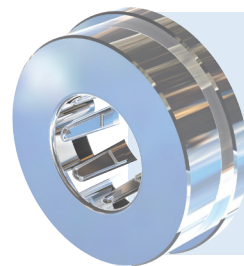


Heavy Duty PIP Baseplate

PIP baseplate can be offered in applications where more heavy-duty and rigid support is required.

SEALING

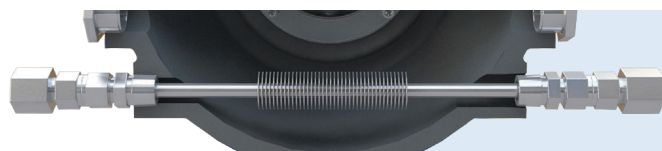
- Large Taper Bore with flow modifiers
- Standard Large & Small Bore
- Cooling/Heating Jacket Designed to control mechanical seal temperature.



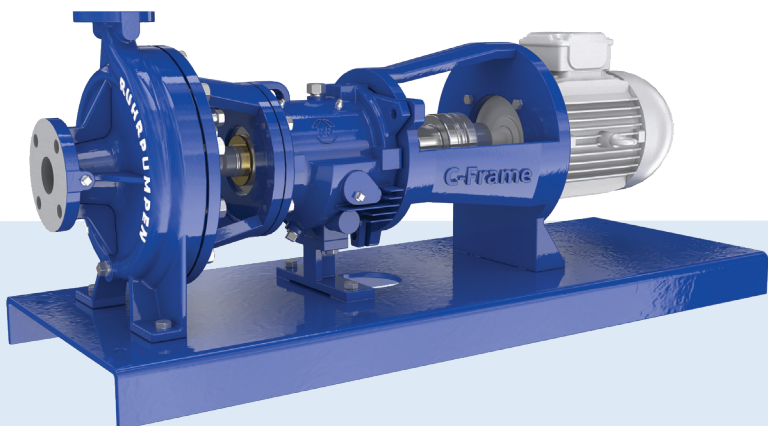
Sealing

COOLING COIL

To maintain proper oil temperature in hot applications.



Cooling Coil



C-FRAME

C - Frame assures easier alignment and longer seal life

Other Ruhrpumpen Products

ANSI Horizontal Process Pump



ZM - Axially split, horizontal single or two stage, double volute casing, double suction, closed impeller. Heavy duty process design according to API 610 latest edition.

Pipeline Service-Mainline and Booster, Oil Extraction, Refinery, Chemical, Petrochemical, Metallurgical Industry, and Power Stations.

Vertical Turbine Pump



VTP - Multistage vertical centrifugal pump with diffuser type bowl, semi-open / enclosed impellers, cast iron bowls, counterclockwise rotation viewed from coupling end.

Deep well and Irrigation, Cooling Tower, Sump, Condensate, Can Pump requirements.

Vertical In-Line Pump Rigid Coupled Pump



IVP - Rigid-coupling, flanged suction and discharge on common centerline, up to 350 psi, fully enclosed, impeller with hydraulic balance which prevents vibration, radially splitcase.

Fire Service, Air Conditioning Systems, Condensed Water, Ice Water, Service Water, Ocean Water, Building Water Supply Systems.

Sump Pump



VSP - Single Stage single suction vertical centrifugal pump, volute type case, flanged and threaded discharge, cast iron casing, flexible coupling.

Sump Drainage, Flood Control, Air Wash Systems, Power Plants, Chemical Industry, Municipal Systems, Water Treatment, Process Plants, Sewage Lift Stations.

Self Priming Solid Handling Pump



SWP - Self Priming Pump, easy maintenance without the need of disconnecting piping, easy access to impeller and seal, availability of mounting above the liquid being pumped, designed to allow up to 3 inch diameter solids.

Steel, Paper Mills, Mining, Food Processing, Power Plant, Automotive, Wineries.

Horizontal Split Case Pump Single Stage



HSD - Single stage double suction horizontal centrifugal pump, foot mounted, oil or grease lubricated bearings.

Dewatering, Mining, Water, Fire service, Cooling Towers, Municipal, Oil Process, Petrochemical, Sugar Industry, Paper Industry, Pipeline, Power Generation.

+75 years creating the pumping technology that moves our world

Ruhrpumpen is an innovative and efficient pump technology company that offers highly-engineered and standard pumping solutions for the oil & gas, power generation, industrial, water and chemical markets. We offer a broad range of centrifugal and reciprocating pumps that meet and exceed the requirements of the most demanding quality specifications and industry standards such as API, ANSI, UL, FM, ISO and Hydraulic Institute.



Ruhrpumpen Plants

-  ARGENTINA, Buenos Aires
-  BRAZIL, Rio de Janeiro
-  CHINA, Changzhou
-  EGYPT, Suez
-  GERMANY, Witten
-  INDIA, Chennai
-  MEXICO, Monterrey
-  UK, Lancing
-  USA, Tulsa

-  Manufacturing plant & service center
-  Service center