

# Stainless Steel Mechanical Seal Centrifugal Pumps

## Massive – Durable – Safe

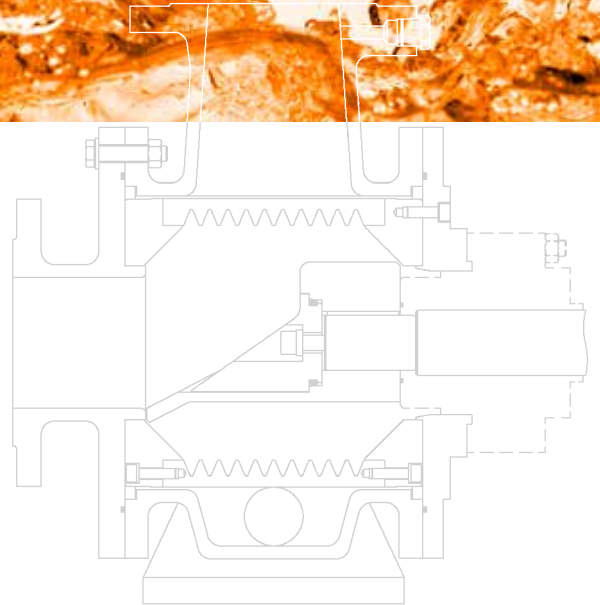


### ZMP

Mechanical seal chemical process grinder pump

Designed to:  
DIN EN ISO 5199

Compliant with:  
EC Machinery Directives  
EC ATEX Directive





Rotor in the ZMP - 3-In-One (crushing, mixing, pumping) mechanical seal chemical process pump



# CP Pump Systems

## Energy Efficiency in Industry

### Our company

CP is a highly innovative Swiss company with a rich tradition. Since 1948, we have specialised in developing and manufacturing premium quality high-tech products and providing services for international customers with the most rigorous requirements.

We produce reliable and innovative centrifugal pumps for the chemical, pharmaceutical, biotechnology, food and beverage, and pulp and paper industries. Through our network of representatives in more than 70 countries, we offer first-class advice and ensure efficient customer service locally, around the world.

Reflecting our deep commitment to energy efficient products and services, we deliver environmentally friendly solutions that always go hand in hand with maximum safety and economy. As a pioneer in this area, we advise and assist customers with a wide range of needs – throughout the value chain.

CP operates a quality management system certified to ISO 9001:2015.

### Energy efficiency in industry

Nowadays, industry is facing increasing demands to improve sustainability and energy efficiency. Pumps are considered to play a key role since two thirds of the energy used in industry is consumed by motor systems. As pumping systems account for around one quarter of this consumption, they offer vast potential to save energy and costs. Already recognising this back in 1999, CP acted accordingly and has become a pioneer in energy-saving pumping equipment.

In recent years, we have continuously enhanced the hydraulic performance of numerous pump systems, increasing their efficiency by up to 30 per cent. At the same time, we have steadily improved pump safety, a mission we have vigorously pursued ever since our company was established in 1948.

We are wholeheartedly committed to promoting sustainable manufacturing in industry around the world: with energy efficient systems and in-depth expertise in all facets and phases of an industrial pumping facility – from planning through production and operation to quality assurance. Our customers benefit from a comprehensive range of bespoke solutions that reduce costs and CO<sub>2</sub> emissions over the long term.

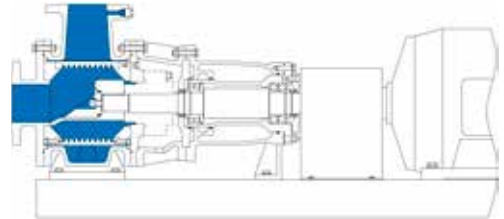
Cleaner pumps, cleaner planet: we firmly believe that sustainable research, thinking and action always pay off for everyone.

# ZMP – 3-In-One (Crushing, Mixing, Pumping) Stainless Steel Mechanical Seal Chemical Process Crushing Pump

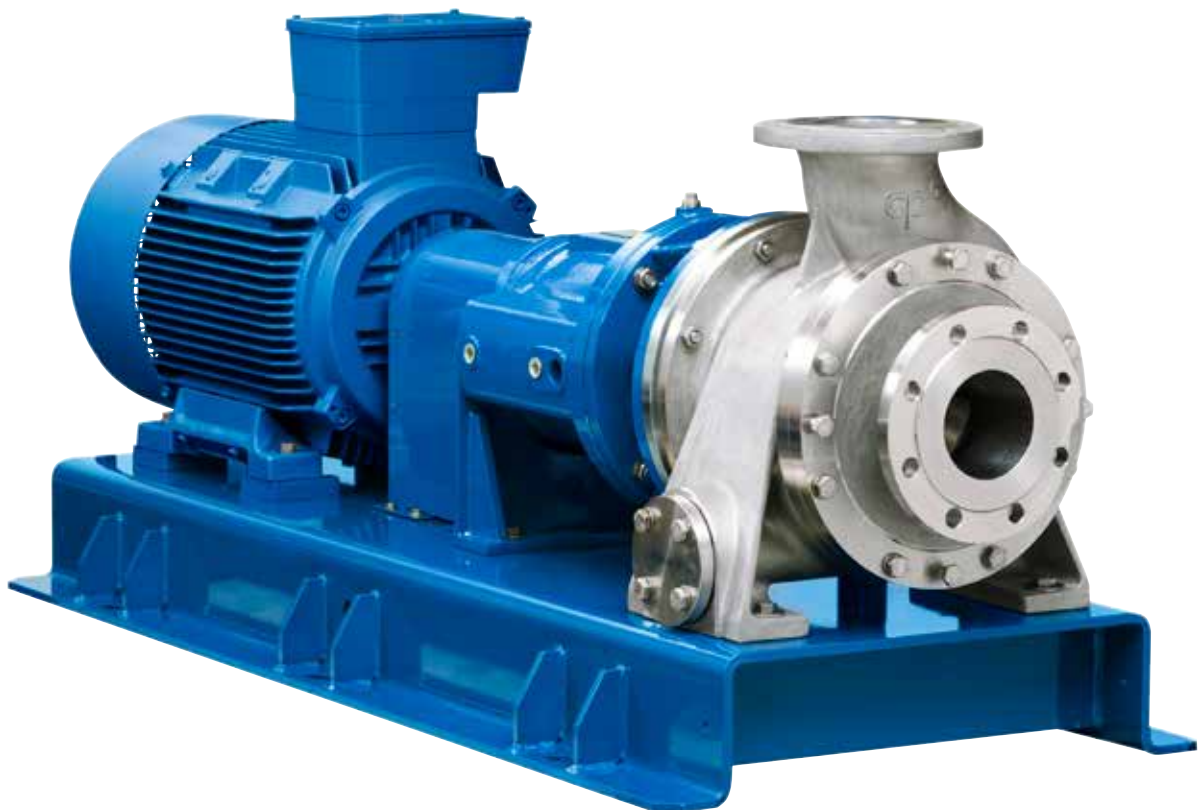
The ZMP crushing pump is ideal to meet the stringent requirements of chemical processing and a multitude of other industries. This highly advanced pump is built for reliability and absolute safety in handling a huge variety of fluids with a high solids content.

Capable of far more than an ordinary feed pump, the ZMP crushes, mixes and pumps multi-phase media simultaneously. The core of the ZMP is the rotor mounted at an oblique angle on the shaft. When the pump is running, the angled rotor creates a tumbling motion that accelerates the medium in both an axial and radial direction, thoroughly mixing the material being pumped. Rotation of the rotor simultaneously generates a centrifugal force that pumps the medium radially through the casing liner and finally discharges it through the outlet.

Teeth on the rotor and casing liner reduce the solids in the medium to a defined maximum particle size. Slots and holes allow both coarse suspensions to be pumped and soft particles to be broken up. Customised casing liners are available to reduce solids to the required size.



**Frame-mounted ZMP**  
-20°C to +180°C



**ZMP with baseplate and motor**  
horizontal frame-mounted (-20°C to +180°C)



### Technical data

Capacities (min./max.) 0.5 to 220 m<sup>3</sup>/h | 2.2 to 968.6 gpm

Heads (min./max.) 2 to 14 m | 6.6 to 45.9 ft

Temperatures (min./max.) -20°C to +180°C | -4 to +356°F

Kinematic viscosities 0.5 to 1000 mm<sup>2</sup>/s | 0.5 to 1000 cSt

Solids handling highly suitable

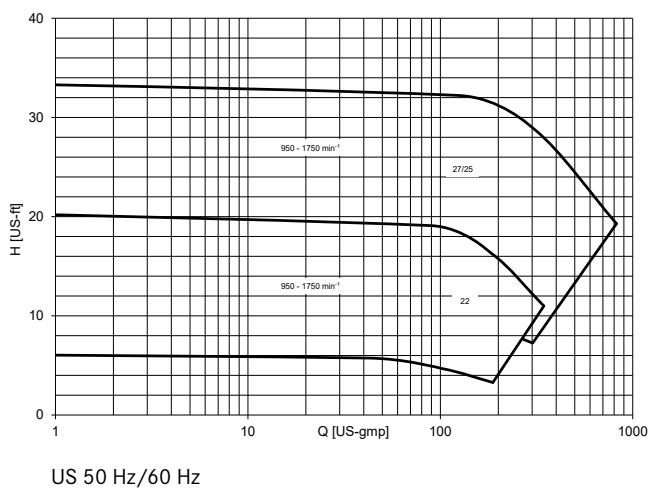
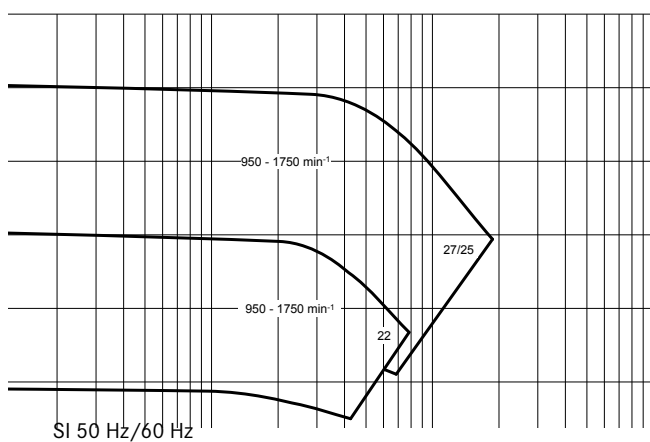
### Directives

EC Machinery Directive

EC ATEX Directive

### Standards

DIN EN ISO 5199





**Slotted casing liner of the ZMP mechanical seal chemical process crushing pump**



**Perforated casing liner of the ZMP mechanical seal chemical process crushing pump**



# Applications

## Versatile – Complex – Special

CP's ZMP grinder pump is engineered to meet the most stringent quality standards and ensure reliability and utmost safety in production operations. Suitable for many different fluids in a variety of industries and processes, it is capable of handling low, medium and high flow volumes. Our ZMP offers tremendous advantages, especially in pumping very sensitive or hazardous substances.

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### Industries

- Chemical processing: basic and fine chemicals (agrochemicals, speciality chemicals)
- Pharmaceuticals
- Petrochemicals
- Biotechnology processing
- Food and beverages

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### Processes

CP's ZMP crushing pump is designed for a wide range of processes, including:

- Carbide sludge treatment
- Granule crushing
- Recycling
- Slaughterhouse residue processing

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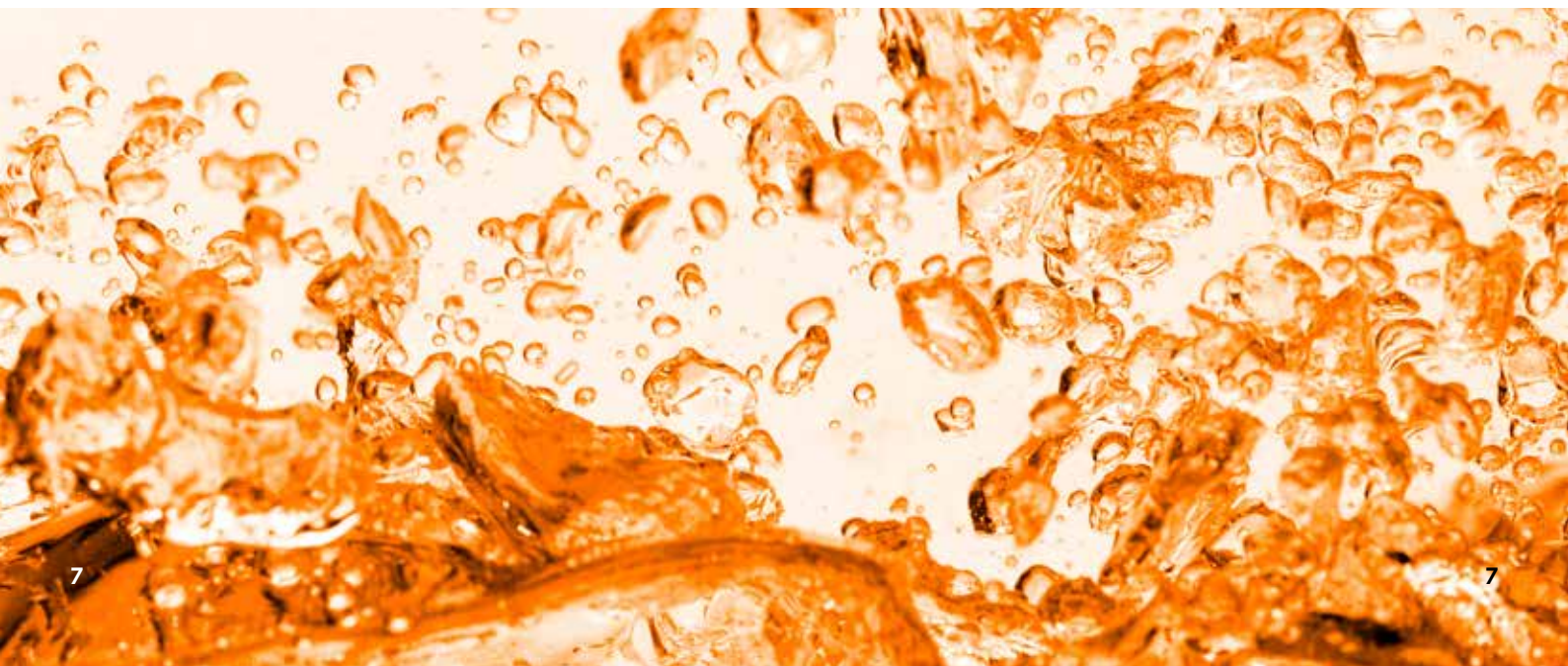
### Fluids

CP's ZMP grinder pump is designed for handling multiphase media.

For example:

- Adhesives
- Bitumen
- Carbide sludge
- Granulated plastics
- Pigments
- Sewage sludge

Our sales staff will be glad to give you personalised advice tailored to your specific needs, industry, processes and fluids.



# Options

## Comprehensive – Individual – Combinable

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### Casing

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#### Materials

- Stainless steel
- Nickel-base alloys, e.g. Hastelloy® B and C
- Titanium

#### Pressure rating

- PN 16 \*

#### Connection flanges

- Flange to EN 1092-1
- Flange drilled to ANSI/ASME B16.5

#### Additional connections

- Casing drain (with or without flange)
- Manometer connection on the casing
- Mechanical seal housing drain/vent

#### Gasket materials

- PTFE-enveloped
- Gylon® blue

#### Plug seal material

- PTFE

#### Plug seal material

- Casing liner with holes
- Casing liner with slots



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### Mechanical seal

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#### Standard double mechanical seal

#### Standard single mechanical seal

#### Gland packing

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### Double mechanical seal barrier/buffer fluid vessel

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#### Vessel

- Cooling coil, manometer, thermometer and sight glass
- Total volume from 3 to 12 l (depending on vessel type)
- Hand refill pump (depending on vessel type)

#### Vessel connections

- Stainless steel braided PTFE hose
- Stainless steel piping

#### Bracket

- Steel
- Stainless steel



\* Maximum, varies depending on the pump size.



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**Pump protection**

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**Barrier/buffer fluid monitoring**

- Level switch
- Pressure switch
- Temperature probe

**Motor load sensor**

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**Mount**

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**Type**

- Baseplate

**Materials**

- Steel
- Stainless steel

**Stilts****Drive belt**

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**Bearing frame**

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**Lubrication**

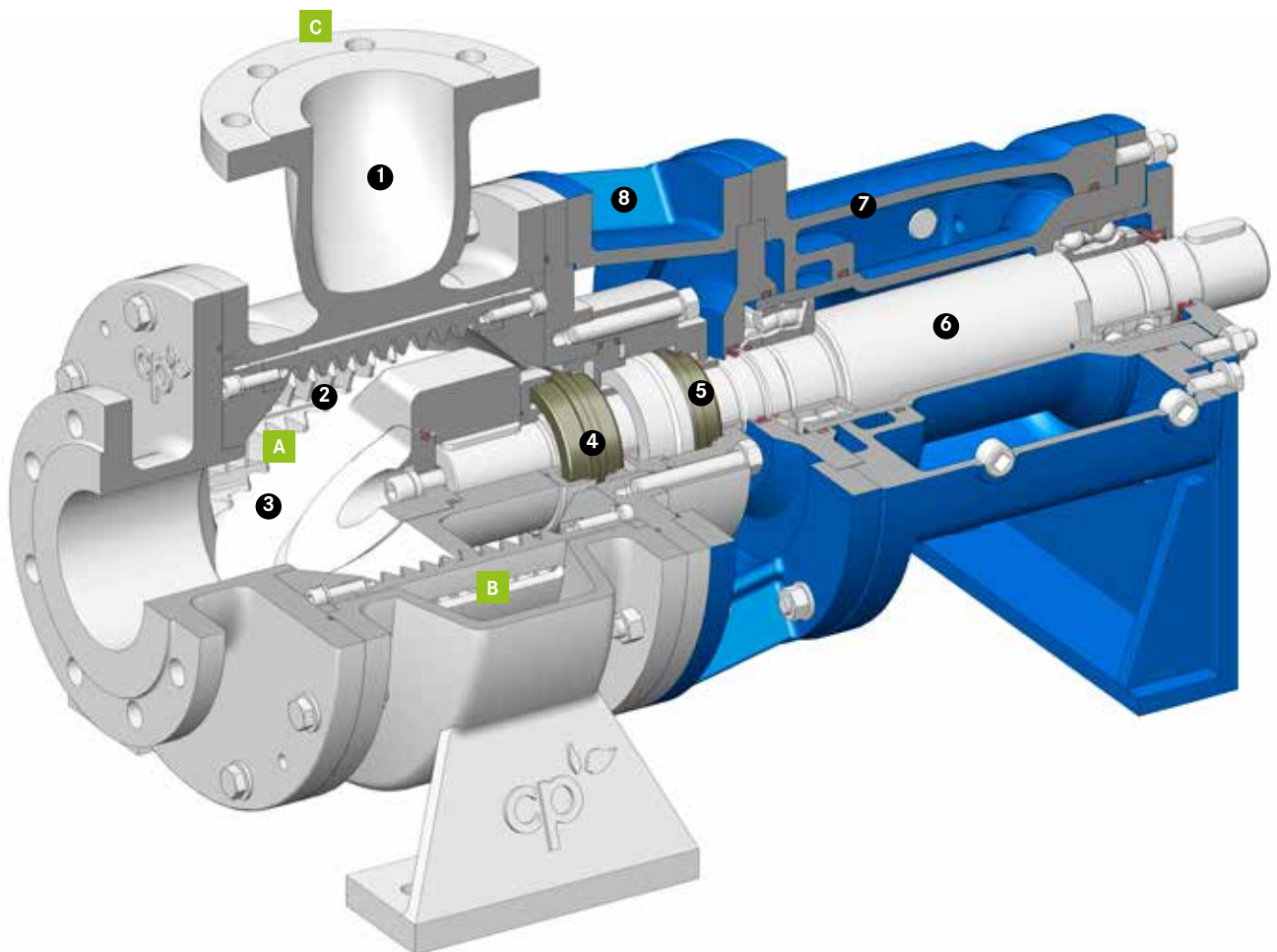
- Grease lubrication

**Safety coupling**

# Sectional View of 3-In-One (Crushing, Mixing, Pumping) Stainless Steel Mechanical Seal Chemical Process Crushing Pump

## ZMP

horizontal frame-mounted (-20°C to +180°C)



- A** Crushing
- B** Mixing
- C** Pumping

- |                                |                                    |
|--------------------------------|------------------------------------|
| 1 Pump casing                  | 5 Seal faces (on atmospheric side) |
| 2 Casing liner                 | 6 Pump shaft                       |
| 3 Rotor                        | 7 Grease-lubricated bearing frame  |
| 4 Seal faces (on product side) | 8 Bearing bracket lantern          |



# CP Pump Systems

## Our Product Portfolio

### Customer service

We offer the highest quality, many years of experience and first-class advice from a single source. Our bespoke pump systems meet a wide range of different requirements.

CP's customers benefit from a full service offering: the fastest availability of genuine spare parts, a complete set of technical documentation, competent and efficient customer support, and a dynamic and flexible repair service. All these services ensure that your pumps will operate faultlessly. Having representatives in more than 40 countries, we can provide local advice and support directly to our customers where required.

### Energy efficiency consulting

As a trend scout specialised in energy efficiency, CP can deliver a wide spectrum of services relating to pumps and motors: comprehensive advice, in-depth system analysis, meticulous planning and design. Our goal is to actively help our customers optimise the energy consumption of their pumping systems and thereby cut costs over the long term.

Backed by our many years of broad experience, we today advise and assist customers in both the private and public sectors. These include owners and operators of fluid processing plants in the chemical, pharmaceutical and diverse other industries.

Are you interested? Do you have any questions? We would be happy to discuss all the different options with you personally.

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#### Stainless steel magnetic drive centrifugal pumps

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##### **MKP**

Magnetic drive chemical process pump

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##### **MKP-S**

Self-priming magnetic drive chemical process pump

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##### **MKTP**

Magnetic drive chemical process sump pump

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##### **MKP-ANSI**

Magnetic drive chemical process pump

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##### **MKPP**

Magnetic drive in-line chemical process peripheral pump

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##### **SZMK**

Magnetic drive in-line chemical process pump

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#### Stainless steel magnetic drive biotech process pump

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##### **MKP-Bio**

Magnetic drive centrifugal pump for sterile processes

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#### PFA lined magnetic drive centrifugal pumps

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##### **MKPL**

Magnetic drive chemical process pump

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##### **MKPL-S**

Self-priming magnetic drive chemical process pump

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#### Solid PTFE magnetic drive centrifugal pumps

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##### **MSKP**

Magnetic drive chemical process pump

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##### **MSKPP**

Magnetic drive chemical process peripheral pump

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##### **MSKS**

Self-priming magnetic drive chemical process side channel pump

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#### Stainless steel mechanical seal centrifugal pumps

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##### **ZMP**

The 3-In-One mechanical seal chemical process pump: crushing, mixing and pumping

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#### PFA lined double mechanical seal centrifugal pump

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##### **EB**

Double mechanical seal chemical process pump

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#### Ceramic lined double mechanical seal centrifugal pump

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##### **ET**

Double mechanical seal chemical process pump

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## Improving Energy Efficiency in Pumping Systems Helps to Create a Cleaner Planet.

### Headquarters

**CP Pumpen AG**  
Switzerland, Zofingen



**SWISS  
MADE**

### Distribution companies

**CP Pumpen GmbH**  
Germany, Mannheim

**CP Pompes SAS**  
France, Strasbourg

**CP Pumps Inc.**  
USA, Birmingham (AL)

**CP Pumps Thailand**  
Thailand, Bangkok

**CP Pump Limited 씨피 펌프 유한회사**  
Republic of Korea, Seoul

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