

# Stainless Steel Magnetic Drive Centrifugal Pumps

efficient – robust – safe



## **MKP**

Magnetic drive chemical process pump

## **MKP-S**

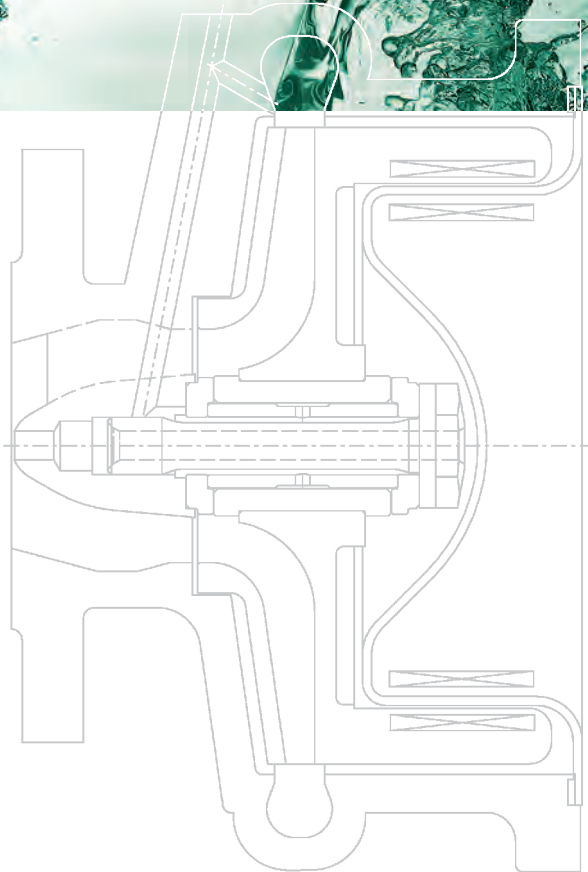
Self-priming magnetic drive chemical process pump

## **MKTP**

Magnetic drive chemical process sump pump

Designed to:  
DIN EN ISO 2858, 5199 and 15783

Compliant with:  
EC Machinery Directive  
EC ATEX Directive





Closed impeller of stainless steel magnetic drive pumps



# CP Pump Systems

## Stainless Steel Magnetic Drive Centrifugal Pumps

### 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 40 countries, we are active in all parts of the world.

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 in accordance with ISO 9001.

### Stainless steel magnetic drive centrifugal pumps

The MKP, MKP-S and MKTP sealless magnetic drive pumps are ideal to meet the stringent requirements of chemical processing and a multitude of other industries. These highly advanced pumps can handle a huge variety of media.

With their special design using an inverted drive arrangement, the MKP, MKP-S and MKTP pumps require no plain bearing carrier. This provides optimum lubrication and cooling of the single, centrally located impeller bearing assembly, also allowing solids-laden and low-boiling liquids to be pumped. Depending on the pumped medium, they can handle temperatures up to 30 per cent with a particle size up to 1 mm.

The pump impeller rotates stably about a stationary axis on the gyroscopic principle, maintaining a perfect hydraulic balance. This minimises bearing loads, increasing the reliability of pump operation.

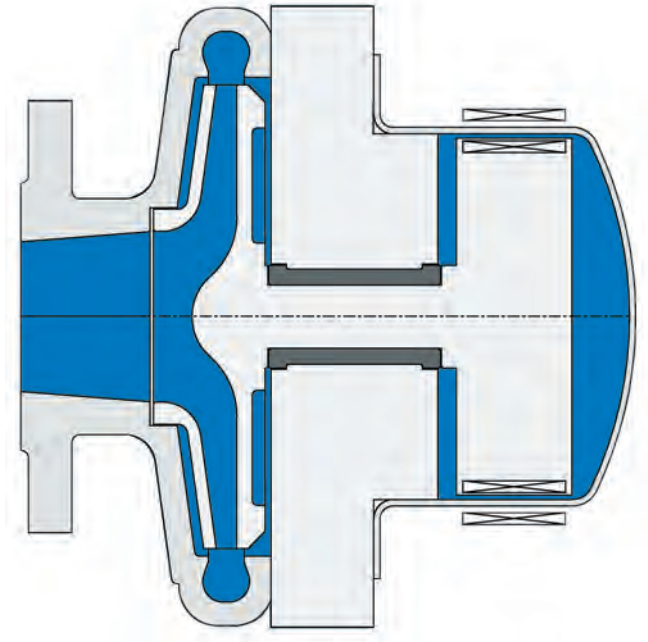
Added to their compact design with virtually no dead areas, the MKP, MKP-S and MKTP pumps are constructed with just a few, robust components. An intelligent modular system facilitates assembly and keeps the costs of spare parts, maintenance and servicing to a minimum.



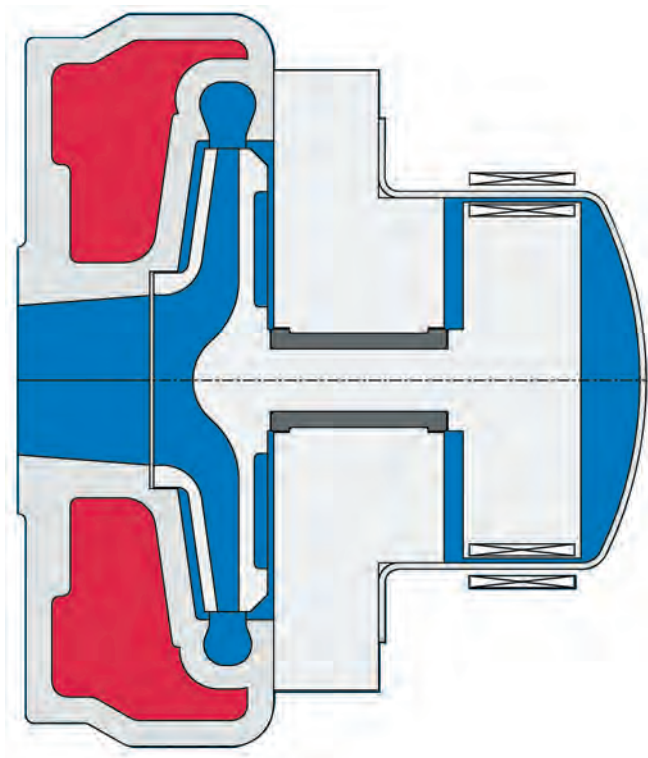
**MKP with baseplate and motor**  
horizontal close-coupled (–100°C to +250°C)



## Conventional Design



Conventional magnetic drive pump design  
without heating jacket

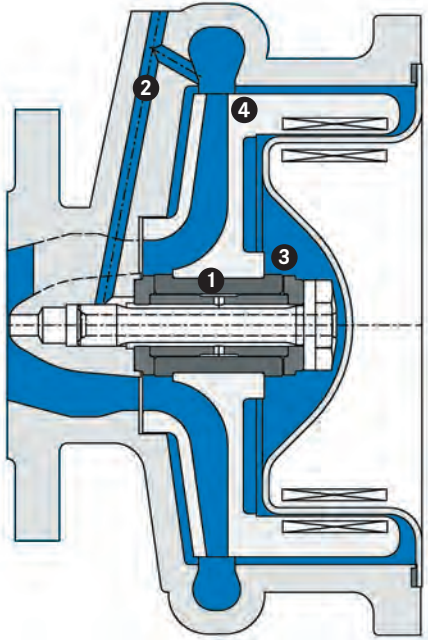


Conventional magnetic drive pump design  
with heating jacket



## CP's MKP with inverted drive configuration

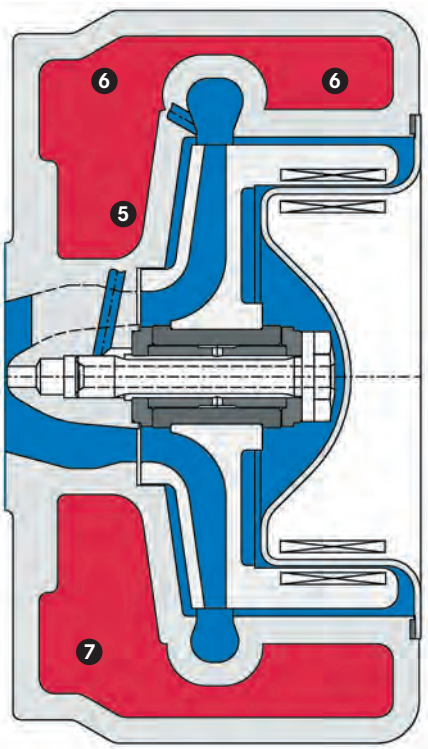
### unique – simple – compact



#### MKP without heating jacket

The MKP's design offers key advantages over conventional pump designs:

- 1 The centrally located bearing assembly, minimal bearing loads and absence of a plain bearing carrier ensure highly reliable operation and allow superior handling of solids-laden and low-
- 2 The pump housing provides excellent lubrication and cooling of the bearing assembly with the pumped
- 3 The compact design with virtually no dead areas means that suspended solids can also be pumped.
- 4 Simple construction and few components make the pump very easy to assemble.



#### MKP with heating jacket

The MKP's design offers key advantages over conventional pump designs:

- 5 Heating the entire pump with a single heating jacket cuts installation costs.
- 6 Excellent heat distribution in the interior of the pump reduces temperature differences and prevents cold zones.
- 7 High heat transfer, with the heating energy delivered, shortens heat-up times.

# MKP

## Stainless Steel Magnetic Drive Chemical Process Pump

Available in a

tions, the MKP

pumping application. Its connection dimensions and performance data conform to DIN EN ISO 2858, making the MKP  
tion to replace old pumps.

### Technical data

Capacities (min./max.)	0.25 to 1300 m <sup>3</sup> /h
Heads (min./max.)	3 to 145 m
Temperatures (min./max.)	-100°C to +350°C
Kinematic viscosities	0.5 to 350 mm <sup>2</sup> /s
Solids concentration	

### Directives

EC Machinery Directive

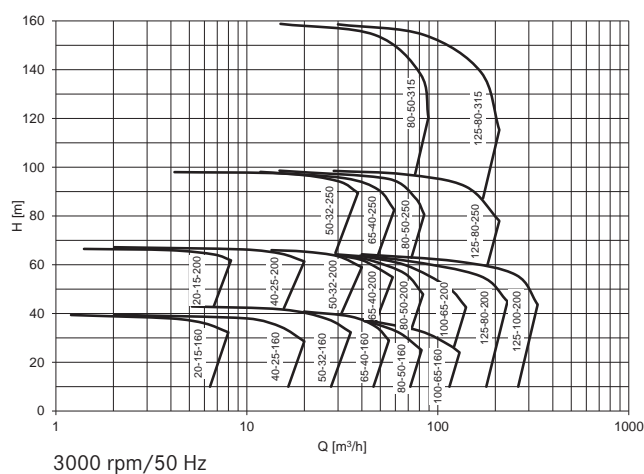
EC ATEX Directive

### Standards

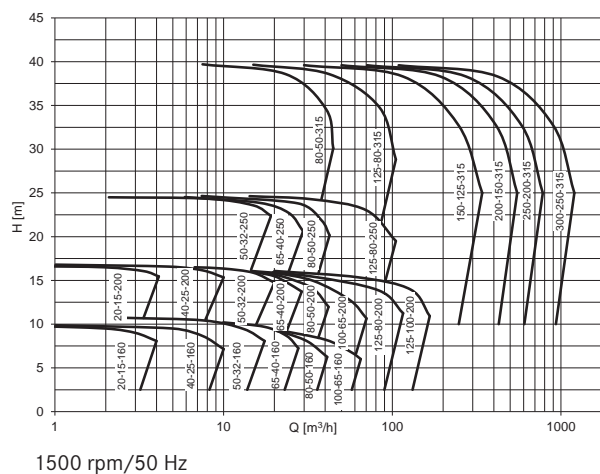
DIN EN ISO 2858

DIN EN ISO 5199

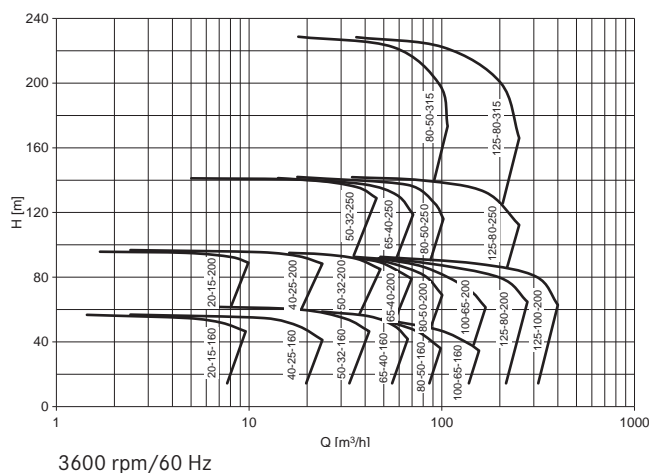
DIN EN ISO 15783



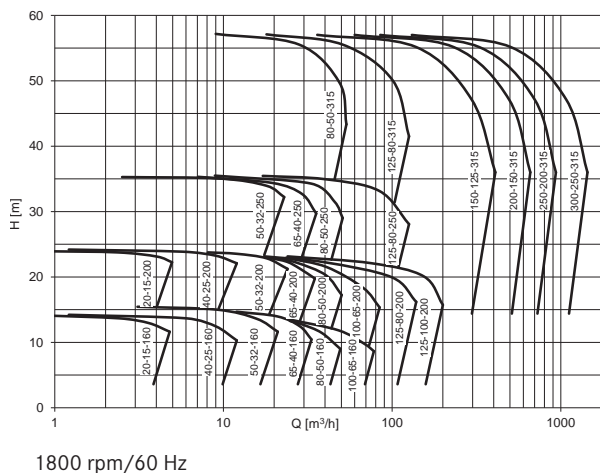
3000 rpm/50 Hz



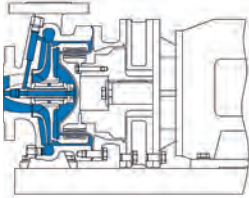
1500 rpm/50 Hz



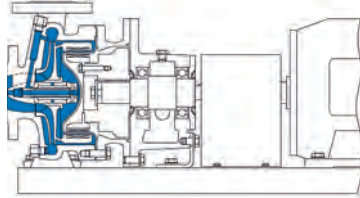
3600 rpm/60 Hz



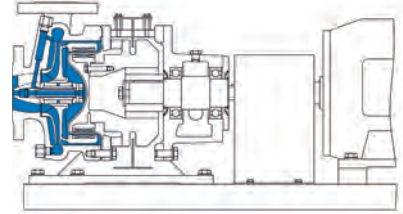
1800 rpm/60 Hz



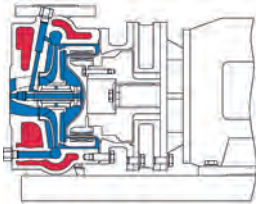
**Close-coupled MKP**  
with baseplate  
-100°C to +250°C



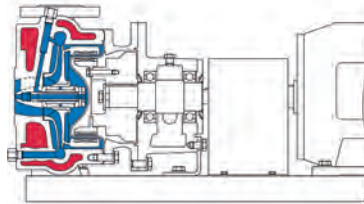
**Frame-mounted MKP**  
with baseplate  
-100°C to +250°C



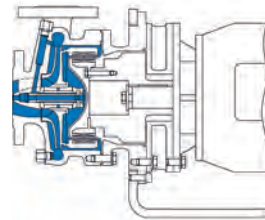
**Frame-mounted MKP HT (high temperature)**  
with centreline support  
-100°C to +350°C



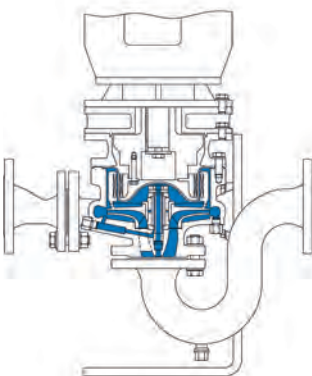
**Close-coupled MKP with heating jacket**  
with baseplate  
-100°C to +250°C



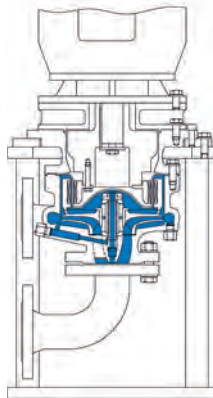
**Frame-mounted MKP with heating jacket**  
with baseplate  
-100°C to +250°C



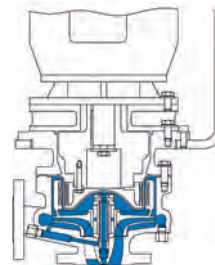
**Close-coupled MKP**  
with bracket  
-100°C to +250°C



**Vertical in-line close-coupled MKP**  
with angle stand  
-100°C to +250°C



**Vertical close-coupled MKP**  
with stand  
-100°C to +250°C



**Vertical close-coupled MKP**  
with bracket  
-100°C to +250°C

# MKP-S

## Stainless Steel Self-Priming Magnetic Drive Chemical Process Pump

The MKP-S features an integral priming chamber in the casing. A separate priming tank is not necessary because the pump evacuates the suction line itself by creating a vacuum. The MKP-S can even readily pump entrained air in the suction line while running, thus increasing reliability of operation. This pump achieves suction lifts up to 8.5 m.

### Technical data

Capacities (min./max.)	1 to 80 m <sup>3</sup> /h
Heads (min./max.)	5 to 60 m
Temperatures (min./max.)	-100°C to +250°C
Kinematic viscosities	0.5 to 350 mm <sup>2</sup> /s
Solids concentration	

### Directives

EC Machinery Directive

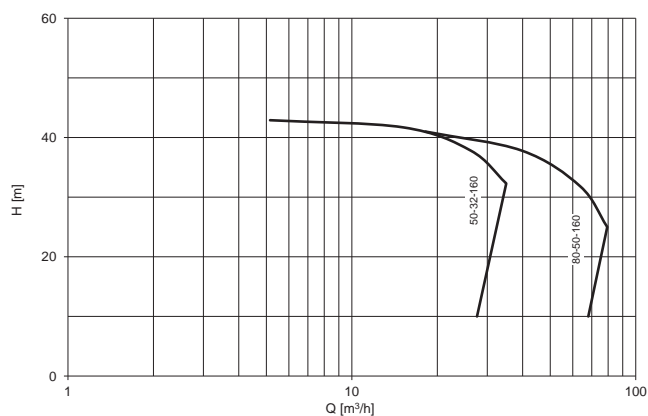
EC ATEX Directive

### Standards

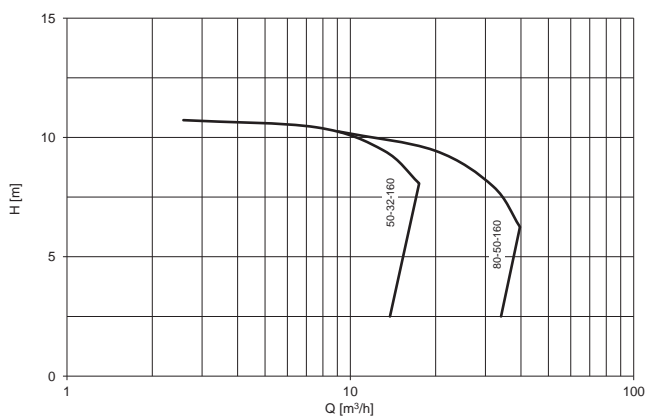
DIN EN ISO 2858

DIN EN ISO 5199

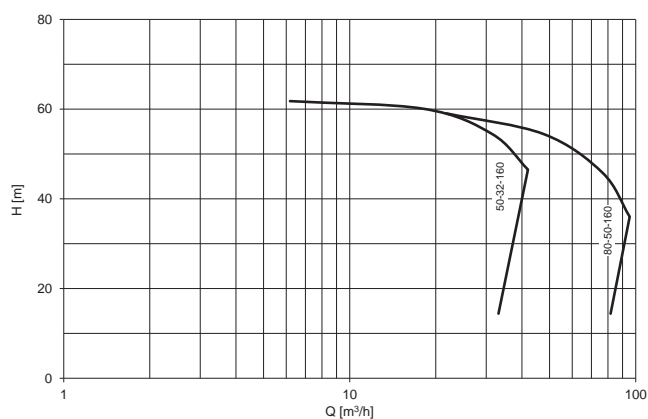
DIN EN ISO 15783



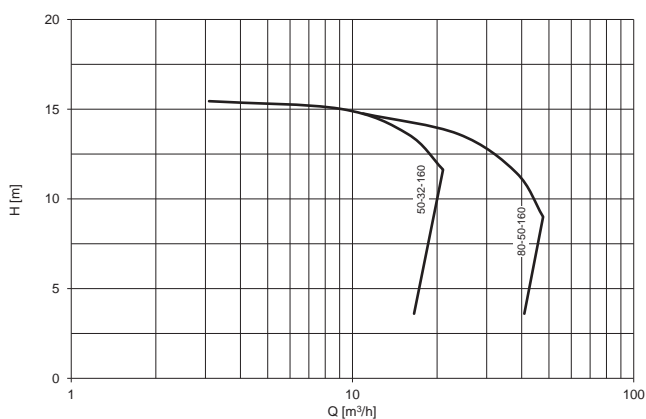
3000 rpm/50 Hz



1500 rpm/50 Hz

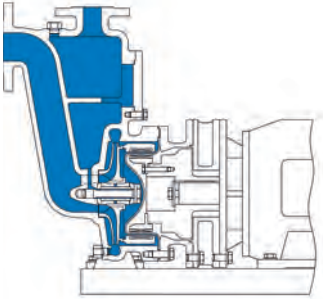


3600 rpm/60 Hz

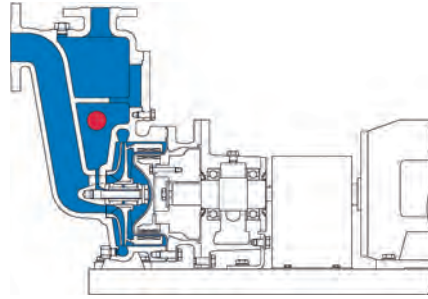


1800 rpm/60 Hz





**Close-coupled MKP-S**  
with baseplate  
-100°C to +250°C



**Frame-mounted MKP-S with heating (heat exchanger)**  
with baseplate  
-100°C to +250°C



**MKP-S with baseplate and motor**  
horizontal close-coupled (-100°C to +250°C)

# MKTP

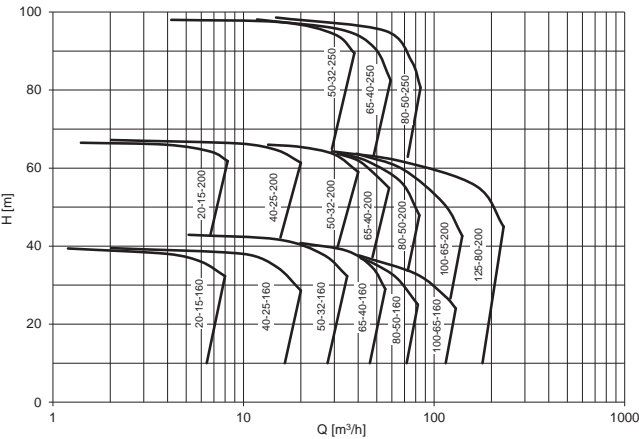
## Stainless Steel Magnetic Drive Chemical Process Sump Pump

It has no bottom drain. It pumps corrosive media absolutely safely, ensuring that vapours emitted can escape into the atmosphere. This pump is available with a column length up to 4 m and can also be supplied with a double-walled jacketed discharge pipe.

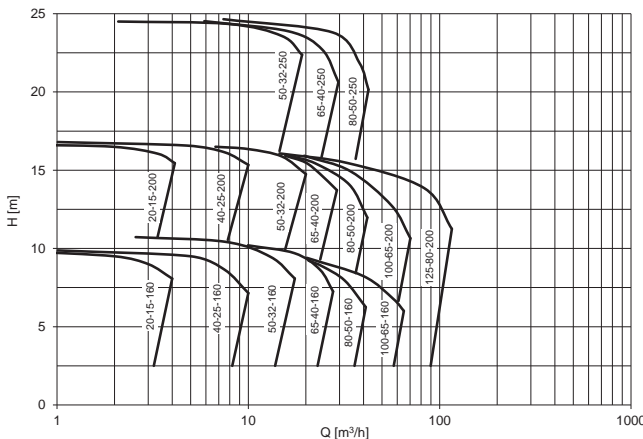
Technical data	
Capacities (min./max.)	0.25 to 250 m³/h
Heads (min./max.)	3 to 100 m
Temperatures (min./max.)	-20°C to +170°C
Kinematic viscosities	0.5 to 350 mm²/s
Solids concentration	

Directives	
EC Machinery Directive	
EC ATEX Directive	

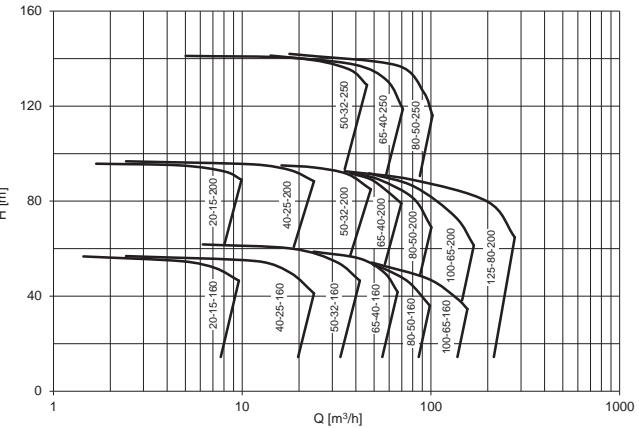
Standards	
DIN EN ISO 2858	
DIN EN ISO 5199	
DIN EN ISO 15783	



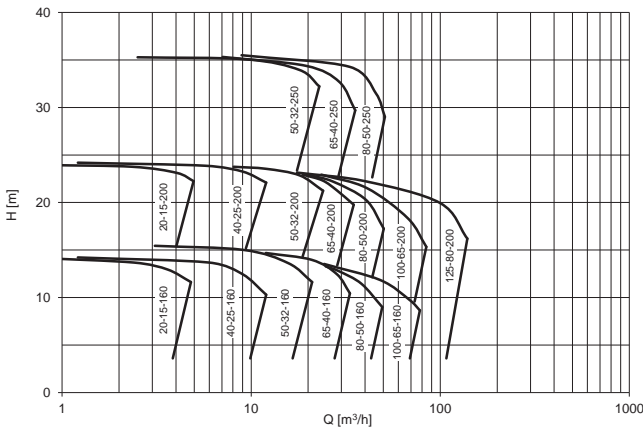
3000 rpm/50 Hz



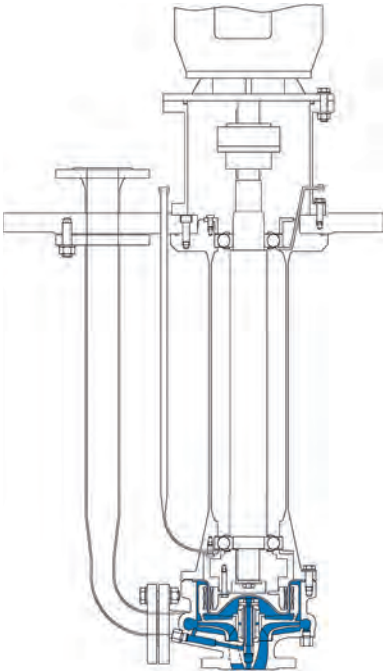
1500 rpm/50 Hz



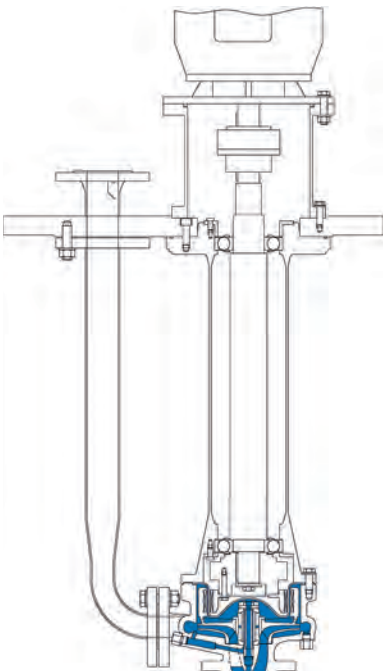
3600 rpm/60 Hz



1800 rpm/60 Hz



**MKTP with regreasable anti-friction bearings**  
vertical frame-mounted  
-20°C to +170°C



**MKTP with greased-for-life anti-friction bearings**  
vertical frame-mounted  
-20°C to +170°C



**MKTP with motor**  
with jacketed discharge pipe  
vertical frame-mounted (-20°C to +170°C)

# Applications

## versatile – complex – special

CP's stainless steel magnetic drive pumps are engineered to meet the most stringent quality standards and ensure reliability and utmost safety in production operations. Suitable variety of industries and processes, they are capable of handling low, medium and high w volumes. CP's magnetic drive pumps offer tremendous advantages, especially in pumping very sensitive or hazardous substances.

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### Industries

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- speciality chemicals)
- Pharmaceuticals
- Biotechnology processing
- Food and beverages
- Pulp and paper

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### Processes

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CP's stainless steel magnetic drive pumps are designed for a wide range of processes, including:

- Aseptic processes
- Chlor-alkali electrolysis
- MDI processes
- Refrigeration and heating cycles
- Tank unloading
- TDI processes

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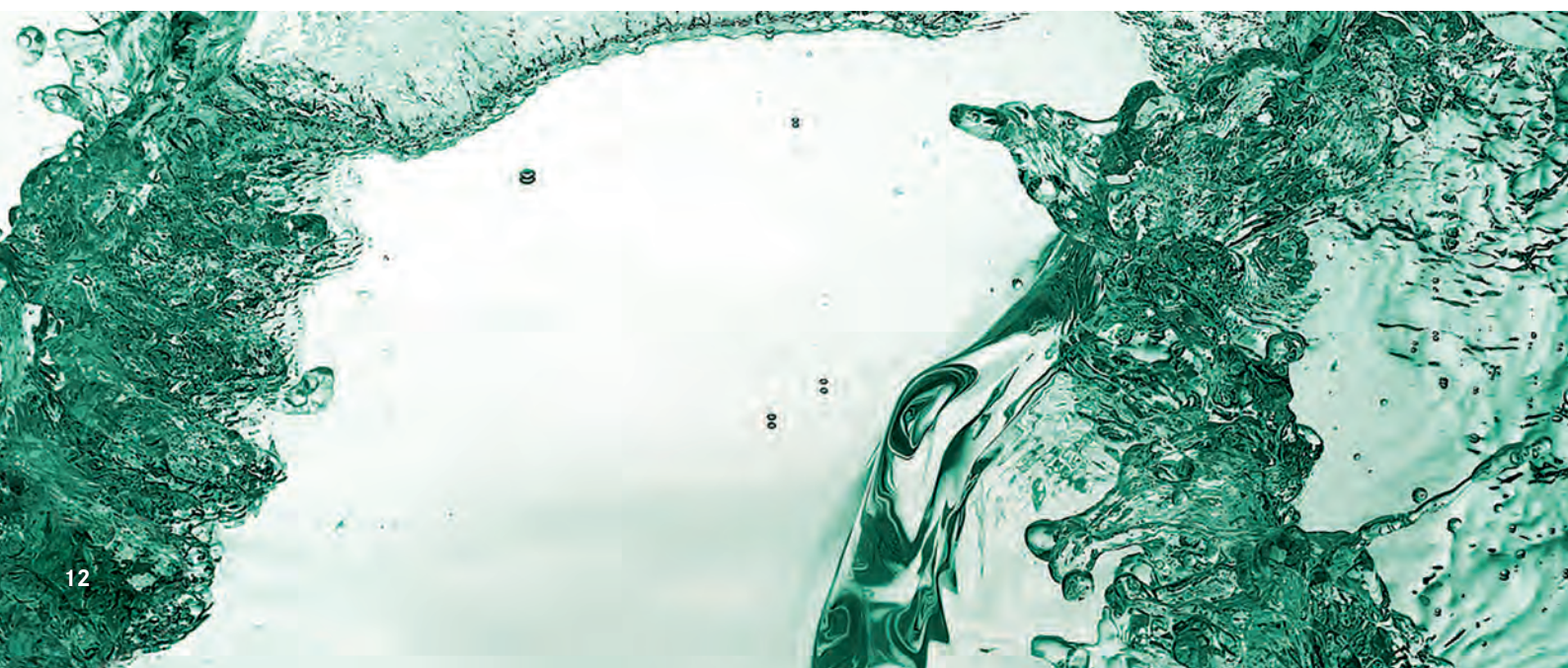
### Fluids

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CP's stainless steel magnetic drive pumps can handle acids, bases, solvents, heated, crystallising and refrigerated liquids, as well as ing solids. For example:

- Hydrogen peroxide
- Molten sulphur
- Nitric acid
- Oleum
- Phosgene
- Phosphoric acid
- Potassium hydroxide solution
- Sodium hydroxide solution
- Sulphuric acid
- Toluene

Our sales staff will be glad to give you personalised advice tailored to y , industry .







# Energy Efficiency in Industrial Processes

## sustainable – responsible – ecological

Nowadays, industry is facing increasing demands to improve 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 efficiency as a key element. From the design to the commissioning of an industrial pumping facility – from planning through production and operation to quality assurance. Our customers benefit from a wide range of bespoke solutions that reduce costs and CO<sub>2</sub> emissions over the long term.

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



# Options

## comprehensive – individual – combinable

### Casing

#### Materials

- Stainless steel\*
- Uranus® B6\*
- Nickel-base alloys, e.g. Hastelloy® B or C\*
- Pure nickel
- Titanium

#### Pressure ratings

- PN 16
- PN 25
- Flange to EN 1092-1
- Flange drilled to ANSI/ASME B16.5

#### Additional connections

- Manometer connection
- and/
- Manometer connection on the casing
- Lantern monitoring connection
- Flange connection for heating jacket\*\*
- Heating jacket connection\*
- Other casing connections to meet customer needs

#### Gasket materials

- PTFE
- Graphite/stainless steel 1.4401
- Graphite/nickel-base alloy 2.4819 (Hastelloy® C-276)
- Sigma 511®/NT-CHEM-beige®

#### Plug seal materials

- PTFE
- Silver-plated nickel

#### Casing wear ring

#### Al<sub>2</sub>O<sub>3</sub> ceramic coating



### Bearing assembly

#### Materials

- SSiC (sintered silicon carbide)
- SSiC with graphite
- SSiC with diamond-like coating (ADLC)
- SSiC with FuturaSafe®
- Nickel-bound tungsten carbide
- Nickel-bound tungsten carbide with diamond-like coating (ADLC)



\* Also available for jacketed casing.

\*\* Available for jacketed casing only.

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### Containment shell

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#### Materials

- Stainless steel
- Hastelloy® C
- Titanium
- Heavy-duty plastic (eliminating eddy current losses)
- Zirconia ceramic (eliminating eddy current losses)

#### Al<sub>2</sub>O<sub>3</sub> ceramic coating

#### Containment shell vortex breaker

#### Containment shell insulation



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### Pump protection

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#### Containment shell thermocouple

#### Pt100 temperature probe

#### Motor load sensor



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### Mounts

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#### Types

- Baseplate
- Bracket
- Stand
- Angle stand
- Centreline support
- Stilt support plate

#### Materials

- Steel
- Stainless steel

#### Stilts

#### Drip pan



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### Bearing frame

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#### Lubrication

- Oil lubrication
- Grease lubrication

#### Oil lubrication options

- Hermetic seal (MagTecta OM™)
- Constant level oiler

#### Coupling

#### Coupling guard

- Steel
- Brass



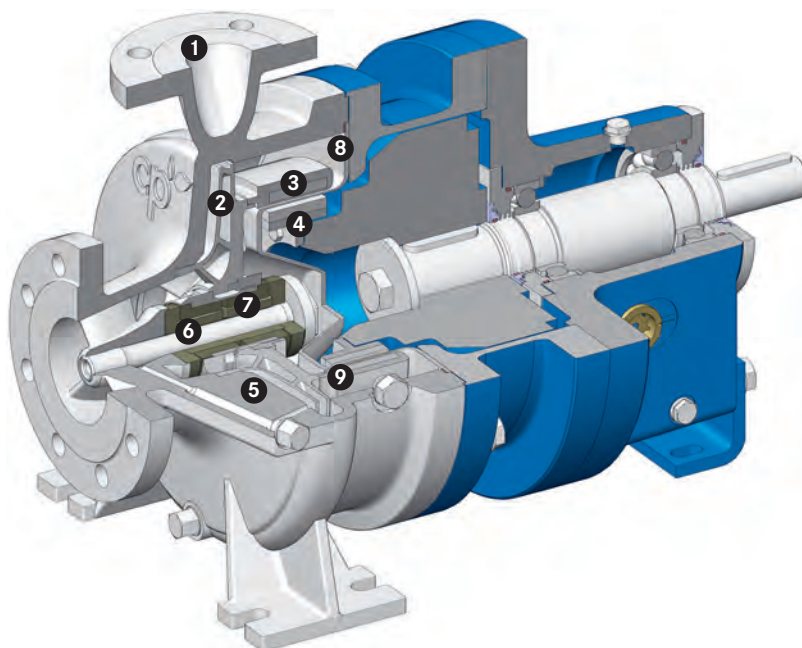
The options vary depending on the pump model.  
Our sales team will be glad to advise you in detail.



## Sectional Views

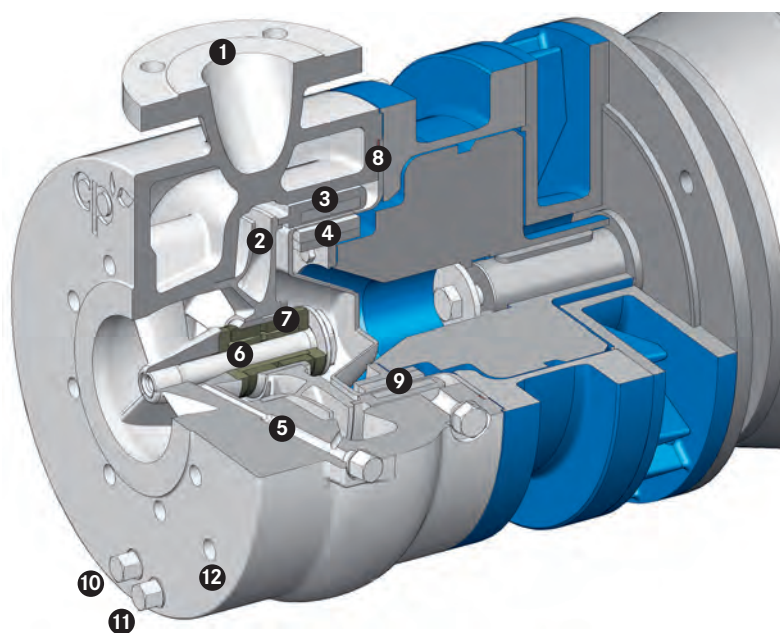
### MKP without heating jacket

horizontal frame-mounted (-100°C to +250°C)



### MKP with heating jacket

horizontal close-coupled (-100°C to +250°C)



- |   |   |
|---|---|
| 1 Pump casing                                 | 7 Plain bearing assembly                |
| 2 Impeller                                    | 8 Hermetically sealed containment shell |
| 3 Driven magnet assembly (on product side)    | 9 Containment shell thermocouple        |
| 4 Drive magnet assembly (on atmospheric side) | 10                                      |
| 5 Internal bearing lubrica                    | 11 Heating jacket drain                 |
| 6 Single impeller locking sleeve              | 12 Cooling or hea                       |





# CP Pump Systems

## Our Product Portfolio

### Customer service

We offer the highest quality, many years of experience and systems meet a wide range of different requirements.

CP' availability of genuine spare parts, a complete set of technical documentation, competent and customer support, 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.

A , 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 operating 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.

### Stainless steel magnetic drive centrifugal pumps

#### MKP

Magnetic drive chemical process pump

#### MKP-S

Self-priming magnetic drive chemical process pump

#### MKTP

Magnetic drive chemical process sump pump

#### MKP-ANSI

Magnetic drive chemical process pump

#### MKPP

Magnetic drive in-line chemical process peripheral pump

#### SZMK

Magnetic drive in-line chemical process pump

#### Mobile centrifugal pump

Mobile magnetic drive chemical process pump

### Stainless steel magnetic drive biotech process pump

#### MKP-Bio

Magnetic drive centrifugal pump for sterile processes

### PFA lined magnetic drive centrifugal pumps

#### MKPL

Magnetic drive chemical process pump

#### MKPL-S

Self-priming magnetic drive chemical process pump

### Solid PTFE magnetic drive centrifugal pumps

#### MSKP

Magnetic drive chemical process pump

#### MSKPP

Magnetic drive chemical process peripheral pump

#### MSKS

Self-priming magnetic drive chemical process side channel pump

### Stainless steel mechanical seal centrifugal pumps

#### ZMP

Mechanical seal chemical process grinder pump

### PFA lined double mechanical seal centrifugal pump

#### EB

Double mechanical seal chemical process pump

### Ceramic lined double mechanical seal centrifugal pump

#### ET

Double mechanical seal chemical process pump



## Improving energy efficiency in pumping systems helps to create a cleaner planet.

Your CP distributor

If empty      our local CP distributor on [www.cp-pumps.com](http://www.cp-pumps.com) or contact CP directly: +41 62 746 85 85/info@cp-pumps.com.

