Magnetic Drive Centrifugal Pump for Sterile Processes
Efficient – Hygienic – EHEDG-Compliant

**MKP-Bio**
Stainless steel magnetic drive biotech process pump

EHEDG-compliant

Designed to:
DIN EN 12462, DIN EN ISO 5199 and 15783

Compliant with:
EC Directives 2006/42/EC (Machinery) and 94/9/EC (ATEX)

EHEDG Cleanability Test for a Centrifugal Pump with Magnetic Drive
Test: No. 10/11.98 CP Pumpen AG, Zofingen, Switzerland
Lehrstuhl für Verfahrenstechnik disperser Systeme (VDS)

EHEDG Sterilisability Test for a Centrifugal Pump with Magnetic Drive
Test: No. 10/11.98 CP Pumpen AG, Zofingen, Switzerland
Lehrstuhl für Verfahrenstechnik disperser Systeme (VDS)
Open impeller of the stainless steel magnetic drive biotech process pump for sterile processes
Our company
CP is a highly innovative Swiss company with a rich tradition. For over 60 years, 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 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 9001:2008.

Energy efficiency in industry
Nowadays, industry is facing increasing demands to improve sustainability and energy efficiency. Pumps are considered to play a key role because they offer vast potential to save energy and costs. Already recognising this back in 1999, CP took action and has become a pioneer in energy-saving pumping systems.

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. Our customers benefit from a comprehensive range of solutions that reduce costs and CO₂ emissions over the long term. Cleaner pumps, cleaner planet: we firmly believe that sustainable research, thinking and action always pay off for everyone.

Stainless steel magnetic drive biotech process pump for sterile processes
The sealless MKP-Bio magnetic drive pump has been engineered especially for sterile fluid handling in the pharmaceutical, biotechnology and food industries. Designed to EHEDG recommendations, the hygienic equipment design criteria of the European Hygienic Engineering & Design Group, the MKP-Bio also complies fully with DIN EN 12462 and 3-A Sanitary Standards.

As the MKP-Bio has no shaft seal, microorganisms cannot penetrate into the pump interior. Torque is transmitted by an inverted magnetic drive coupling. With its special design, the MKP-Bio also does not require a plain bearing carrier. Optimum lubrication and cooling of the single, centrally located impeller bearing assembly with the pumped fluid gives the MKP-Bio excellent running characteristics.

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.

Compact in design, the MKP-Bio pump has no dead areas and its interior is constructed with just a few, robust components. For process validation, the impeller can be removed simply without the use of tools. Mounted vertically, the MKP-Bio is fully self-draining through the suction port without needing additional flush, drain or vent connections. The pump ports provided are suitable for CIP and SIP. Wetted parts have a surface finish of Ra 0.8 or better, inner corners are rounded with a radius of R3, and the surfaces are inclined by at least 3°. All wetted materials are FDA certified.
Technical Information

**Technical data**

- **Capacities (min./max.):** 0.5 to 60 m³/h
- **Heads (min./max.):** 5 to 80 m
- **Temperatures (min./max.):** -20°C to +150°C
- **Kinematic viscosities:** 0.5 to 350 mm²/s

**Directives**

- EC Directive 2006/42/EC (Machinery)
- EC Directive 94/9/EC (ATEX)

**Standards**

- DIN EN 12462
- DIN EN ISO 5199
- DIN EN ISO 15783

**Recommendations**

- EHEDG
Close-coupled MKP-Bio
with tripod
-20°C to +150°C

MKP-Bio with tripod and motor
vertical close-coupled (-20°C to +150°C)
Options
Comprehensive – Individual – Combinable

Casing

Materials
- Stainless steel
- Uranus® B6
- Nickel-base alloys, e.g., Hastelloy® B and C

Pressure rating
- PN 16

Connection flanges
- Flange to DIN 11864
- Flange to DIN 11850
- Flange to EN 1092-1
- SÜDMO flange
- NEUMO flange
- BBS flange
- Flange to ASME BPE (Tri-Clamp)

Additional connections
- Lantern monitoring connection

Gasket materials
- EPDM
- FEP/FKM
- Kalrez®

Bearings

Plain bearings
- SSIC (sintered silicon carbide) with diamond-like coating (ADLC)
- Nickel-bound tungsten carbide with diamond-like coating (ADLC)

Anti-friction bearings
- Si₃N₄ (silicon nitride) ceramic
**Containment shell**

**Materials**
- Hastelloy® C-4
- Hastelloy® C-22

**Containment shell vortex breaker**
**Containment shell insulation**
**Double-walled containment shell with leakage monitoring**

**Pump protection**

**Containment shell thermocouple**
**Double-walled containment shell with leakage monitoring**
**Motor load sensor**

**Mounts**

**Types**
- Tripod with sprung, vibration-damping legs and ball feet
- Angle stand

**Angle stand materials**
- Steel
- Stainless steel

**Stilts**
MKP-Bio
vertical close-coupled (-20 °C to +150 °C)

1 Pump casing
2 Impeller
3 Driven magnet assembly attached to impeller (on product side)
4 Drive magnet assembly (on atmospheric side)
5 Lantern
6 Plain bearing assembly
7 Hermetically sealed containment shell
8 Flywheel
9 Hub
MKP-Bio magnetic drive pump casing with tripod
CP’s magnetic drive centrifugal pump for sterile processes 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. The MKP-Bio magnetic drive pump from CP offers tremendous advantages, especially in pumping very sensitive substances.

**Industries**
- Chemical and fine (speciality) chemical processing
- Pharmaceuticals
- Biotechnology processing
- Food and beverages

**Processes**
CP’s magnetic drive centrifugal pump for sterile processes is designed for a wide range of processes, including:
- Aseptic carbonation
- Beverage filtration
- Cleaning cycles (CIP)
- Cold aseptic filling processes
- Sterile and/or hygienic processes (SIP)
- Textile washing, treatment and dyeing
- Thermal disinfection
- Yeast propagation

**Fluids**
CP’s magnetic drive centrifugal pump for sterile processes can handle acids, bases, solvents and other sensitive fluids. For example:
- 2-Propanol (IPA)
- Alcohols
- Aliphatic compounds
- CIP fluids
- Concentrated nutrient solutions
- Phenethylamines
- Sodium hydroxide solution
- Solvents
- Toluene

Our sales staff will be glad to give you personalised advice tailored to your specific needs, industry, processes and fluids.
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.
Improving energy efficiency in pumping systems helps to create a cleaner planet.