

HMD Kontro Sealless Magnetic Drive Pumps

Since pioneering the sealless magnetic drive pump in the 1940's, HMD Kontro have been at the forefront of the liquid handling industry providing pump products with high performance, superior reliability, increased safety and full industry compliance.

An HMD Kontro sealless pump is a conventional centrifugal pump without mechanical seals. Using modern engineering and technologies developed over decades of experience in the handling of harsh and hazardous fluid applications, HMD Kontro pumps offer numerous benefits:

- Total fluid containment providing better environmental protection & operator safety
- No seals or seal support systems simplifying procurement, installation, operation and maintenance, reducing lifecycle costs
- World class sealless pump technology that offers the highest levels of robustness in the field, increasing
 Mean Time Between Failure (MTBF) and plant uptime
- Compliance to industry standards and global availability



Sealless Safety



Health & Safety is everybody's responsibility. From the production and maintenance staff on site to executive teams and members of the board, safety should be the priority.

Minimising the impact of manufacturing and other operations on both the local and wider environment is an essential, legal and moral obligation.

HMD Kontro pumps are self contained. The pumped product is completely confined to the body of the pump. The containment shell provides a mechanical barrier, preventing leaks, escapes and emissions without any reliance on an external method of leak prevention or sealing system.

Sealless Savings

Time is money. Whether it is the time management of your people, the time taken to bring a new product to market or to progress a new project to completion, all have significant financial implications.

HMD Kontro sealless pumps bring savings in time, resources, skill sets, ongoing maintenance and lost production. They also reduce health and safety risk and potential damage to the environment.

HMD Kontro pumps can achieve the step change savings that are needed from concept to completion of a project and beyond, throughout the life of the pump.

Sealless Standards

HMD Kontro sealless pumps can be supplied to the relevant international design and dimensional standards including API, ASME / ANSI and ISO, with products / processes certified to:

- ISO 9001:2015,
- · ISO 14001:2015
- ISO 45001:2018

- · Machinery Directive 2006/42/EC
- ATEX 2014/34/EU (Group II Cat. 2&3)
- IECEx

Being industry certified means that global standards for design, quality, environment, health and safety are complied with.

HMD Kontro Pump Features & Benefits





Robust Containment Shell

Alloy C276 metallic design with high efficiency non-metallic Zeroloss Shell available on select ranges

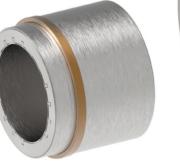
Fully Encapsulated Magnets

Magnets in inner & outer magnet rings are fully protected

Configuration Options

Space-saving closecoupled or separately mounted/long-coupled configurations







Control & Containment Options

Secondary

Optional secondary control and containment systems available on select ranges for enhanced safety

Instrumentation Connections

Connection ports for protective instrumentation such as RTD temperature monitor or liquid level sensor

Magnetic Drive

Optimized magnetic couplings sized for specific application requirements

Corrosion Resistant Metallic Material Design

Liquid-contact material of construction is 316 St St with options available on select ranges for Alloy C276, Alloy 20, Alloy B, Duplex & Titanium



Chemical Service Pump – CSA/CSI

Leading Sealless Pump Performance for the Chemical Industry

The CSA / CSI is HMD Kontro's newest range of chemical service sealless pumps with full compliance to ASME B73.3 and ISO 2858 / 15783 standards. Incorporating latest magnetic drive technology, the range features a simple, modular design with

maximised interchangeability, high efficiency hydraulics and a number of upgrade options to ensure suitability with a wide range of applications.

The CSA / CSI range features different hydraulic sizes that conform to current ASME / ISO dimensional, performance and construction requirements. Close-coupled and separately mounted variants are available along with a wide range of options including secondary control or containment, instrumentation and various bearing isolation and lubrication options. The range is specifically designed for maximum part interchangeability, ease of onsite service and has a wide number of site upgradable features.

Key Design Features:

- Sealless Design: For total product containment, essential for hazardous, aggressive or valuable liquids
- No Seals: Minimises maintenance and all of the associated costs, and eliminates potential leak paths
- **Modular Construction:** With interchangeable components for maximum design coverage, reduced inventory needs and minimised lead times
- **High Efficiency Design:** Providing reduced power consumption through optimised hydraulics and the Zeroloss Containment Shell option.
- **Site Serviceable Design:** Facilitating ease of on-site maintenance activities with removable wear rings, simplified internal bearing replacement with no hot working required, bearing housing oil overfill protection and no requirements for special tools.
- **Robust Design:** Featuring a single fully confined casing gasket, internal and external bump rings, and the Zeroloss containment shell option for increased tolerance to system upsets.
- **Secondary Control and Containment available** as upgrade options across entire CSA / CSI and can be installed in both Close-Coupled and Separately Mounted configurations



CSA/CSIChemical Service
ASME/ISO Pump

Flow Up to 320 m³/h (1408 gpm) **Head**Up to 150 m
(490 ft)

Design Pressure 18.9 bar (275 psi) ASME / 16 bar (232 psi) ISO Process Temp -40 to 260°C (-40 to 500°F)

CSA / CSI Design Features

Interchangeable Metallic and Zeroloss Containment Shell Options

Zeroloss® Shell

- · PEEK Composite design
- Suitable for process temperatures up to 120°C (248°F)
- Uses high power Neodymium magnet coupling
- No induction losses = high energy efficiency
- · No heat into process liquid
- · Provides process upset tolerance
- In-built vortex breaker to reduce risk of erosion



Metallic Shell

- Proven welded construction
- High strength Alloy C276 wall
- Suitable for process temperatures up to 260°C (500°F)
- Uses Samarium Cobalt magnet coupling & sized to suit specific duty requirements
- In-built vortex breaker to reduce risk of erosion

Site Serviceable Design

Ensures maximum uptime and minimum disruption during maintenance or repair



Site replacement Cartridge design comprising all wetted parts (minus casing) in one assembly;

- Impeller
- · Containment Shell
- · Inner Magnet Ring
- Shaft
- Bush Holder

Site serviceable product lubricated bearings & simple design facilitates easy on-site service / overhaul

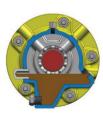
- · No special tools
- No hot working for internal bearing replacement (in-built bush retention)
- · Simple to decontaminate
- · No special motor decontamination needed

External Bearing Assembly

Modular design providing enhanced reliability along with multiple bearing isolator and lubrication system options to suit specific site requirements







- · In-built oil overfill protection
- Large sump capacity
- · Magnetic sump plug
- Bullseye sight glass with constant level oiler options available
- · Various external bearing isolator options
- Oil bath bearing lubrication (standard) with provision for purge and pure oil mist available on request



General Service Pump - GSA/GSI

Engineered ASME / ISO pumps for more challenging pump applications

A versatile range of general service sealless pumps designed to cover a wide duty and application base with maximum interchangeability. The range includes the GSA designed to ASME B73.3 standards and the GSI designed to ISO 2858 / 15783 standards providing an easy upgrade path for existing installations.

The GSA/GSI is offered with a range of engineered options including secondary systems, heating / cooling jackets, filtration and various materials of construction to meet the needs of the most challenging pumping applications.

Key Design Features:

- Sealless Design: For total product containment, essential for hazardous, aggressive or valuable liquids
- No Seals: Minimises maintenance and all of the associated costs and eliminates potential leak paths
- Maximum Flow & Head Coverage: Providing optimum hydraulic performance for a range of pump duties.
- Various Materials of Construction Available:
 316 Stainless Steel as standard with Alloy 20, Alloy C276, Duplex Stainless Steel and other materials available on request to provide optimum levels of corrosion resistance.
- Engineered Options Available: Providing suitability for a range of pumping applications, including jackets, filtration, extended temperature designs and secondary control / containment.

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GSA/GSIEngineered General
Service ASME/ISO Pump

Flow Up to 320 m³/hr (1408 gpm) **Head**Up to 150 m
(490 ft)

Pressure
18.9 bar (275 psi) ASME /
16 bar (232 psi) ISO*

Temperature -100 to 315°C (-148 to 600°F)

^{* 25} bar (360 psi) & 49 bar (710 psi) designs available for selected models



General Transfer Pump - GTA/GTI

A small sealless pump that's big on value

For general transfer duties, GTA / GTI pumps are designed to be compact and cost effective. The GT is based on sub-ASME / sub-ISO dimensions and has a number of benefits, including simplicity of maintenance, interchangeability and a space-saving design. GT pumps are close coupled and can be supplied in standard 316 Stainless Steel materials or alternative Alloy C276 or Alloy 20 designs.

Key Design Features:

- · Low capital cost
- · Compact modular design
- Low running costs
- Minimal downtime
- Available in multiple material options



GIA/GII
Horizontal Metallic
Sealless General Transfer

CTA/CTI

Flow		
Up to 26 m ³ /hr		
(115 apm)		

HeadUp to 38 m
(125 ft)

Pressure
18.9 bar (275 psi) ASME /
16 bar (232 psi) ISO

-40 to 260°C (-40 to 500°F)



High Pressure Pump - HPGS

Integrity under high pressure

Providing robust and reliable performance for high pressure services, the HPGS is the ideal choice for sampling, densitometer and other OEM high system pressure pump applications.

The HPGS's ability to withstand system pressures up to 2680 psi (185 bar) together with it's sealless construction, provide users with a range of benefits through it's simple and easy-to-maintain design, high process uptime and reduced lifecycle costs.

Key Design Features:

- Sealless Design: For total product containment, essential for hazardous, aggressive or valuable liquids
- No Seals: Minimises maintenance and all of the associated costs and eliminates potential leak paths
- High Pressure Design: Capable of handling pressures up to 185 bar / 2680 psi with no ancillaries or support equipment needed
- **Compact Design:** Making it an ideal choice for OEM sampling and densitometer applications



HPGS High Pressure General Service Pump

Flow
Up to 72 m³/hr
(317 gpm)

Head			
Up to 93 m			
(305 ft)			

Pressure
185 bar
(2,680 psi)

-40 to 205°C (-40 to 400°F)



Self Priming Pump - SPGS

Ideal for off-loading liquids especially when containment is crucial

The SPGSA / SPGSI is designed, primarily, for the emptying of sumps and road / rail tankers. Providing self-priming capabilities, the SPGS covers a range of hydraulics and provides suction lift of up to 6 m (19.7 ft) on water. Standard construction is 316 Stainless Steel with options available for Alloy C276 and Alloy 20.

Key Design Features:

- **Self-priming capability** to ensure the safe transfer of liquid.
- Increased efficiency liquid ends for lower running costs.
- Many interchangeable spares with other GS range pumps.
- Ease of installation and on-site maintainability.



SPGSSelf-Priming Pump

Flow Up to 45 m³/hr (200 gpm) **Head**Up to 52 m
(170 ft)

Pressure 10 bar (145 psi) Temperature -40 to 120°C (-40 to 248°F)

HMD Kontro pumps provide safe, efficient and reliable handling of harsh and hazardous chemical and industrial applications:

- Isocyanates / Polyurethane
- · Chlor-Alkali
- · Sulphuric Acid
- Specialty / Inorganic Chemicals
- · Agricultural Chemicals
- Ammonia
- Pharmaceutical
- Food & Beverage
- Pulp & Paper
- Power Generation
- Metals & Mining

- Water Treatment
- Semi-conductors
- Battery Production
- Hydrogen Alkaline Electrolyzers
- Petrochemical



Petrochemical & Petroleum Industry API 685 Pump – GSP





The GSP is a heavy-duty horizontal centre-line mounted sealless magnet drive pump that fully complies with the API 685 standard (sealless equivalent to API 610).

Covering an extensive range of hydraulics and application requirements, the GSP provides all of the benefits associated with its simple, reliable and site serviceable design whilst delivering the highest levels of safety and environmental protection.

The GSP is available in standard 316L Stainless Steel materials as well as alternative metallurgies including Alloy C22 / C276 and Duplex, along with a number of engineered design options to meet the needs of the most challenging of pump applications.

Key Design Features:

- **Fully compliant** to the API 685 sealless centrifugal pump standard.
- Extensive hydraulic coverage and a number of engineered options available to meet a wide range of application needs.
- Total product containment with no leaks or emissions, improving operator safety and environmental protection.
- No seals or seal support systems to maintain, reducing overall lifecycle costs
- **Easy** to install, commission, operate and maintain, with no requirement for special tools.





Vertical API 685 Pump - GSPV

A compact, vertical pump for space optimisation

The vertical in-line GSPV pump provides all of the benefits of a magnetic drive sealless pump in a compact package. Requiring minimum floor space, the GSPV meets all of the requirements of API 685, making it ideal for chemical, petrochemical, and oil and gas applications, including those where space is at a premium, such as in offshore installations. Dimensionally the range conforms to BS4082, thus providing a sealless upgrade solution to existing installations.

Key Design Features:

- Simple sealless upgrade path for existing sealed API 610 pump installations.
- **Fully compliant** to the API 685 sealless centrifugal pump standard.
- Total product containment with no leaks or emissions, improving operator safety and environmental protection.
- No seals or seal support systems to maintain, reducing overall lifecycle costs.
- **Easy** to install, commission, operate and maintain, with no requirement for special tools.





Low-Flow API 685 Pump - GSPLF

Specifically for low flow duties

The GSPLF combines the proven technologies of Sundyne Barske Wheel hydraulics with the HMD Kontro sealless magnetic drive, optimising reliability and efficiency to ensure trouble-free plant operation. The GSPLF meets the requirements of API 685, making it ideal for heavy duty applications in oil and gas, chemical and petrochemical installations. An additional advantage is the flexibility inherent in the GSPLF diffuser and impeller, which can easily be upgraded should the duty need to be changed, without replacing the pressure casing.

Key Design Features:

- Barske Wheel hydraulics for optimum efficiency at low flows.
- Removable diffuser allows for re-rating of pumps to meet different process conditions without costly machining.
- Suction tuned inducers providing optimum performance for low NPSHa conditions.
- **Fully compliant** to the API 685 sealless centrifugal pump standard.
- **Total product containment** with no leaks or emissions, improving operator safety and environmental protection.
- No seals or seal support systems to maintain, reducing overall lifecycle costs.
- **Easy** to install, commission, operate and maintain, with no requirement for special tools.



GSPLF Horizontal OH2 Low-Flow API 685 Pump Flow Up to 86 m³/hr (380 gpm) **Head**Up to 220 m
(720 ft)

Pressure 40 bar (580 psi) **Temperature** -100 to 315°C (-148 to 600°F)





Vertical Low-Flow API 685 Pump – LMV-801S

Specifically for low flow duties

The LMV-801S combines the Sundyne Barske Wheel hydraulics with the HMD Kontro magnetic drive pump technology, providing a safe, reliable and efficient sealless pump solution for low-flow pump applications. It is built to comply with both the API 685 and API 610 standards and is engineered to eliminate product emissions and improve plant personnel safety, whilst delivering optimised low-flow performance with the time-proven Sundyne direct drive hydraulics.

The LMV-801S is dimensionally interchangeable with the traditional mechanically sealed LMV-801, and can be easily dropped into existing pipework – making this sealless upgrade possible without the need to modify piping and foundation layouts. Additionally, a plug-in version of the pump is available, enabling customers to swap out the mechanical seal drive end with the new sealless option without disconnecting the existing LMV-801 casing and diffuser from the piping.

Key Design Features:

- Barske Wheel hydraulics for optimum efficiency at low flows.
- **Compact** vertical in-line design configuration.
- Directly interchangeable with the Sundyne LMV-801 providing an easy sealless upgrade path for existing installations in difficult-to-seal pump applications.
- **Fully compliant** to the API 685 sealless centrifugal pump standard.
- Total product containment with no leaks or emissions, improving operator safety and environmental protection.
- No seals or seal support systems to maintain, reducing overall lifecycle costs.
- **Easy** to install, commission, operate and maintain, with no requirement for special tools.



LMV-801S Vertical OH4 Low-Flow API 685 Pump Flow Up to 86 m³/hr (380 gpm) Head 220 m (720 ft) Pressure 100 bar (1450 psi)

-100 to 205°C (-148 to 400°F)



High Pressure API 685 Pump – HPGSP

Integrity under high pressure

The HPGSP sealless magnetic drive pump provides safe and efficient handling of high system pressures up to 100 bar (1450 psi)* without any auxiliary support systems. Designed to the API 685 standard, the HPGSP is available with a number of engineered options to suit a range of application requirements.

Key Design Features:

- Handles system pressures up to 100 bar (1450 psi) as standard with higher 185 bar (2683 psi) designs available on select models.
- **Fully compliant** to the API 685 sealless centrifugal pump standard.
- **Total product containment** with no leaks or emissions, improving operator safety and environmental protection.
- No seals or seal support systems to maintain, reducing overall lifecycle costs.
- Easy to install, commission, operate and maintain.



HPGSP

High Pressure OH2 API 685 Pump

Flow

Up to 290 m³/hr (1275 gpm)

Head

Up to 150 m (490 ft)

Pressure

185 bar (2683 psi)*

Temperature

-100 to 260°C (-148 to 500°F)

HMD Kontro pumps offer a leak-free and environmentally friendly pumping solution for the following Refining, Petrochemical and Renewable Energy applications:

- Hydrocarbons
- Olefins
- Aromatics
- Ammonia
- Amines
- Alkylation

- Sour Water
- Wash Water
- Feed Pumps
- Booster Pumps
- Bottoms Pumps
- Reflux Pumps

- Condensate Pumps
- Battery Production
- · Renewable Fuels
- Bio-Diesel
- Hydogen Alkaline Electrolyzers

^{*185} bar (2683 psi) designs available on select models

Design Options to Enhance Performance, Safety and Reliability

HMD Kontro offer a range of design options to accommodate different application requirements and to enhance plant safety, environmental protection, pump reliability and performance.

Secondary Control and Containment

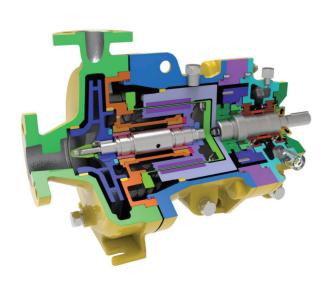
Sealless magnetic drive pumps offer complete containment and eliminate the need for dynamic seals. Their primary benefit is eliminating the risk of releasing hazardous liquids to the atmosphere. But to further guard against the unlikely occurrence of a primary shell leak and to meet increasing safety and environmental regulations on site, secondary control and containment options are available as upgrades on both new and existing HMD Kontro pumps.

Secondary Containment

- Features a dry-running mechanical seal between the rotating drive shaft and static coupling housing, forming a secondary pressure boundary and providing a fully independent secondary containment system.
- Combined with a leak detection device (either a liquid or pressure sensor) in the secondary area.
- In the unlikely event of a primary containment breach, the pump is shut down and secondary containment achieved.
- Any leaked fluid is contained within the secondary containment area, preventing escape to atmosphere.
- Allows for safe removal via the secondary drain and vent connections.

Secondary Control

- Features a leak restriction device between the rotating drive shaft and coupling housing, providing a fully independent secondary control system.
- Combined with a leak detection device (either a liquid or pressure sensor) in the secondary area.
- If primary containment is breached, the pump shuts down and the sealing device minimises leakage to atmosphere.
- Allows for safe removal via the secondary drain and vent connections.





ZeroLoss™ Containment Shell

In certain marginal applications, the additional energy loss from the rotating magnetic coupling could have implications on the process fluid. The Zeroloss® Containment Shell eliminates eddy currents in the containment shell – reducing energy consumption by as much as 20% – and ensures no additional heat is being transferred to the pumped liquid. The reduced power consumption helps lower both running costs and capital costs by enabling smaller motors to be specified.



Constructed from a composite material of poly-ether-ether-ketone (PEEK) and carbon fibre, the ZeroLoss Containment Shell facilitates better handling of volatile and heat sensitive fluids and helps improve reliability.

ZeroLoss Containment is Suitable for

- Volatile liquids with high vapour pressures
- Heat sensitive liquids with low specific heat
- · Sub-zero liquid handling is improved
- Low viscosity and low density hydrocarbons
- Low flow limit near thermo-mechanical minimums
- Operating temperatures from -100 to 120°C (-148 to 248°F)
- Design pressures up to 40 bar (580 psi)

Benefits of ZeroLoss

- Energy efficiency reduces electricity costs
- Environmentally friendly handling of liquefied gases and heat sensitive liquids
- Safety gives operators more time for intervention during system upsets
- Conformance to applicable standards and regulations
- Can be retrofitted to HMD pumps already deployed in the field





High Temperature Torque Ring Drive

Available as an option on selected HMD Kontro pump models, HMD's unique torque ring provides robust performance for high temperature processes, and requires no cooling fluids or heat exchangers during operation. The torque ring design offers a built-in soft start making it ideal for high viscous liquids. Capable of operating up to 350°C (662°F) as standard and up to 450°C (842°F) for select models, the torque ring drive design enables all the benefits of sealless pumps to be achieved in high temperature pump installations.

Pump Protection Instrumentation

Sealless pumps offer the ultimate solution to fugitive emission regulation – but all pumps, over time, can become operationally sensitive to unstable process conditions. Protection is recommended to alert operators to issues such as cavitation, dead heading, low flow or no flow conditions. A range of protection options are available for HMD Kontro Pumps, such as:

- Power Control Monitoring: A microprocessor based, digital load monitor protects against under and overload conditions caused by dry running, low flow, cavitation or magnetic decoupling etc.
- Temperature Monitoring: Containment shell surface temperature measurement with an RTD (PT100) device that is permanently located on the containment shell (outside of the wetted area) to monitor variations of the temperature inside the pump to detect upset conditions.

For pumps supplied with Secondary Control or Containment, either of the following instruments should be installed to detect a breach of the primary containment shell:

- · Liquid Detection Device: to monitor the presence of liquid within the secondary pressure casing
- Pressure Sensing Device: to monitor a sudden change in pressure within the secondary pressure casing

Engineered Pump Solutions

HMD Kontro has a strong reputation for working with users to deliver a safe, reliable and cost effective solution to any pumping problem. A number of engineered / customised features can be offered to tailor the pump to meet specific customer requirements, such as:

- Heating and cooling jackets for the pump casing and coupling housing.
- Various metallurgies including high nickel alloys such as Alloy C22 /C276, Alloy 20 and Alloy B, Duplex & Super Duplex, and Titanium, plus options for NACE compliant materials.
- Different filtration options for applications containing solids, including in-line self-cleaning discharge strainers, external filtration systems and magnetic particle filtration devices.
- Baseplates designed to the relevant standards including ASME, ISO and API, with bespoke dimensions available along with options for grouting and drain pan designs.
- Instrumentation devices for pump protection.
- Instrumentation devices for pump / system protection.

For further details or to discuss HMD Kontro pump solutions, please reach out to your local Sundyne representative.





Backed By Global Support

Sundyne is more than just a manufacturer of high quality pumps, compressors and genuine aftermarket parts. Sundyne's highly-engineered solutions are backed with a full range of global aftermarket services that extend the value of Sundyne equipment far beyond the point of sale. The Sundyne service team is here to provide a trouble-free customer experience at every turn. That's **RELIABILITY REALIZED**.

Sundyne's Aftermarket Programs Include:

- 24 X 7 Global Support
- · Gearbox Exchanges & Upgrades
- · Maintenance Kits
- · Conversion Programs
- On-Site SundSCHOOL
- Field Service Support
- Overhaul and Repair Services
- Site Surveys
- Emergency Expedite Services

Benefits of Using Genuine HMD Kontro Parts	HMD Kontro Genuine Parts	3rd Party Parts
Latest Engineered Parts & Upgrades for Maximum Reliability	~	×
Advanced Manufacturing Processes, Tolerances with Certified Materials	~	×
Parts Made to OEM Specs which Equal or Exceed Industry Standards	~	×
Direct Manufacturer's Service Support	✓	×
Retain Existing Sundyne Warranty	~	×



For more information please visit www.sundyne.com and fill out the Contact Me form.

A Sundyne representative will contact you.



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