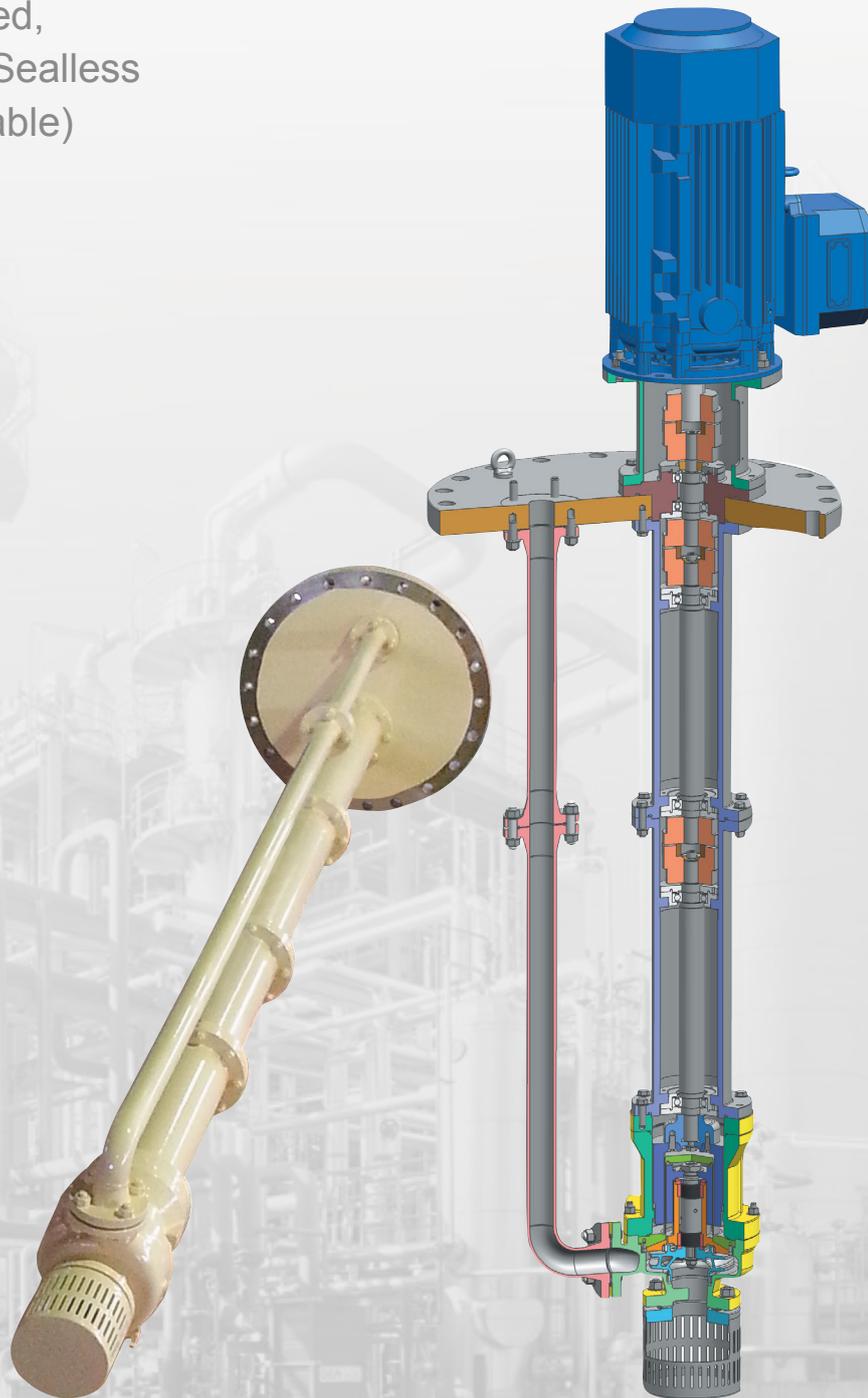


GSPVS Magnetic Drive Sump Pumps

Vertically Suspended,
Line Shaft Driven, Sealless
API 685 (as applicable)



The Sundyne Sealless GSPVS (VS for Vertical Sump) Pump

**All the Sundyne magnetic drive
expertise in a sealless sump pump**



The vertically mounted GSPVS pump provides all of the benefits of a magnetic drive sealless pump in a compact package, using fewer parts with no seal systems for reduced cost operation. The GSPVS meets the requirements of API 685 industrial guidelines and is fully ATEX compliant, making it ideal for tank farms, oil and gas refineries, as well as chemical and petrochemical applications.

The GSPVS is composed of modules that can be joined together in order to reach a total assembly length of up to sixteen feet / five meters. The GSPVS is also mounted on a base that is engineered to meet either ANSI B16.5 specifications or customer-defined requirements, including lift points as standard. The modular construction uses a flexible jaw coupling to drive shafts and absorb misalignment, decreasing vibration and increasing life expectancy.

Greased for life ball bearings are used along the column, removing the need for lubricating or cooling the intermediate sleeve bearings with system fluid. The use of labyrinth bearing seals and a suction strainer avoids external contamination, maximizing seal and lubrication life.

Sundyne has more than twenty-five years of experience in API applications and a sixty-five year heritage in magnetic drive technology. Indeed, Sundyne legacy brand HMD Kontro were the first to develop a sealless pump for use in petroleum, petrochemical and natural gas applications.

With stricter demands for the safety and welfare of both personnel and the environment being imposed worldwide, our sealless pumps are playing an increasingly important role in achieving EH&S goals. We are continuously developing and extending our product range as improved magnet drive technology enables us to build more efficient and powerful pumps, widening the application scope of this versatile pump format.



Vertically Suspended Magnetic Drive Pumps

GSPVS magnetic drive sealless pumps offer substantial advantages and benefits over conventional sealed designs:

- No seals
- No seal support systems
- Complete fluid containment
- Zero emissions
- Zero contamination of pumped liquid
- Cost effective installation
- No ancillary seal support systems to specify and install
- Longer MTBM
- No EPA monitoring required
- Improved operator safety and protection of the environment
- Small footprint

Mechanical seals are widely regarded as the weakest point in any pumping system using them. Over 85% of pump failures involve mechanical seal failure and/or leakage through static seals such as gaskets and/or O-rings and bearing failure.

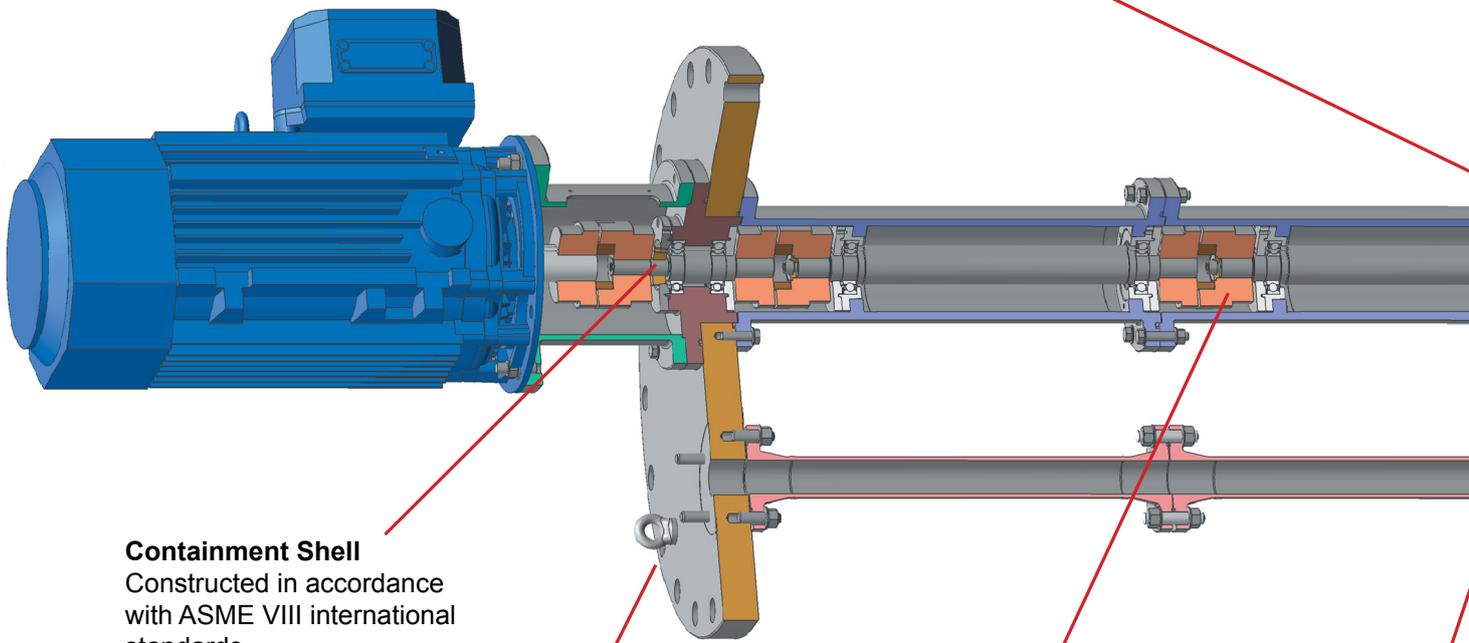
When planning a new pump installation or an upgrade to an existing site, often the financial impact of the mechanical seal support system is considerable. Additional design time, utility provision, installation and commissioning is required. Once such a system is installed, further cost implications are caused by the need for new seals, replacement of barrier fluids and ongoing maintenance. Also, the need to comply with local, regional or national environmental requirements – which often involve monitoring the effectiveness of such a system – is introduced.

By completely eliminating the seal and associated seal support system, the Sundyne GSPVS range of pumps are ideal for handling liquids with the following characteristics:

- Toxic
- Lethal
- Carcinogenic
- Flammable
- Expensive fluids
- Fluids containing dissolved solids (i.e. caustic)
- Fluids containing H₂S (sour water)
- Heat transfer fluids (hot and cold)
- High vapor pressure liquids



KEY			
	Pump Casing		Containment Shell
	Impeller		Magnetic Drive
	Bush Holder		Bump Ring
	Silicon Carbide Bushes		Coupling Housing
	Silicon Carbide Shaft Sleeves and Thrust Washers		



Thrust bearings
Designed for capacity in both directions

Magnetic Couplings
A powerful range of synchronous magnetic couplings

Containment Shell
Constructed in accordance with ASME VIII international standards

Tank Mounting Plate
To ANSI B16.5 flange dimensions (or to client requirements)

Modular Construction
Using flexible jaw couplings to join drive shafts and absorb misalignment

Greased for Life Ball Bearings
Remove need to lubricate/cool the intermediate sleeve bearings using system fluid

*Note: pump rotated 90° for clarity

Grooved Axial & Radial Bearings

For heat removal and particle flushing

Outer Magnets

Fully sheathed to prevent damage during assembly or disassembly

Two Radial Bearings

Provided as standard

Suction Strainer

Ensures no oversize particles enter the pump

Renewable Front & Rear Wear Rings

Located by track welding (locking pins on request)

Impellers

Fully enclosed, single-piece cast with solid hubs; keyed to the shaft

Compression Gasket

Confined controlled compression gasket

Sleeves

Concentrically located bearing sleeves; design compensates for relative thermal expansion; concentrically located with O-Rings

Notes

- Total assembly length up to 16 feet (5 meters).
- Rapid & economical maintenance – shoulders and dowels to facilitate assembly and disassembly.
- Temperature and pressure profiles – heat balance calculations provided.
- Materials – GSPVS pumps are available as standard with stainless steel and carbon steel materials. Other variations are available on request.
- Welding in compliance with ASME section VIII, Div 1, and section IX.
- No special tools required.
- All magnetic couplings feature mechanically retained and bonded magnets.
- Outer magnet rings have non-magnetic metallic sheathing to protect exposed magnets.
- All units feature a non-sparking bump ring to prevent outer magnet ring contacting containment shell in the event of an external bearing assembly failure.

The GSPVS

Pump Range

The GSPVS range comprises pumps based on the Sundyne GS drive, built to comply with API 685 industrial guidelines:

- Vertically mounted design available in five hydraulic sizes
- Large degree of interchangeability
- Commonality minimises spare parts inventory and associated costs
- Vertical suspended design
- Design ensures safe, leak free operation
- Increased efficiency via low operating costs
- Minimal spares holding and maintenance
- No costly seal support systems to specify, install or maintain
- Reduced specification time and installation costs
- Silicon carbide internal bearings
- Various flange options are available as standard
- Wide range of instrumentation systems available
- Suitable for operation at 50hz and 60hz
- Modular construction up to 5m (16ft) total assembly length
- Decreased vibration extends life expectancy
- Greased for life ball bearings remove the need for lubrication
- Fully ATEX compliant
- Suction strainer and labyrinth seals avoid external contamination
- Mounting base includes lift points as standard



Essential HMD Kontro Benefits:

- High efficiency magnet drive
- Zero unplanned maintenance
- Absolutely no leakages
- Environmentally safe
- System pressures up to 274 psi / 18.9 Bar
- Fully encapsulated magnets
- ASME VIII containment shell
- Standard electric motors utilised
- Alpha SiC internal bearings
- Non-sparking bump ring for safety
- Sundyne worldwide service support

Typical Applications Include:

- Tank farms
- Tank fluid transfer
- Chemical processing plants
- Petrochemical processing plants
- Storm water and sour water
- Upstream use – sump + drains
- Drainage
- HPI and CPI
- Industrial waste treatment
- Gas and coal processing
- Utilities



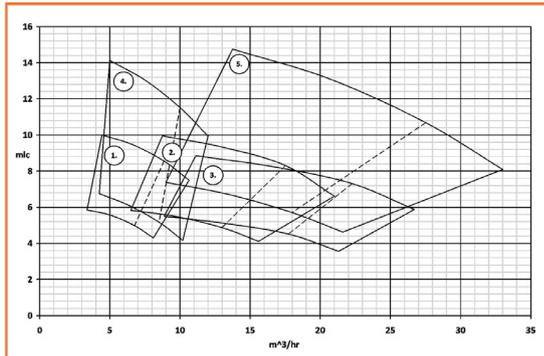
GSPVS Hydraulic Coverage

Head	Flow	Temperature	Design Pressure*
262 ft	308 usgpm	-20 to 210 °F	274 Psi
80 m	70 m ³ /hr	-30 to 100 °C	18.9 Bar

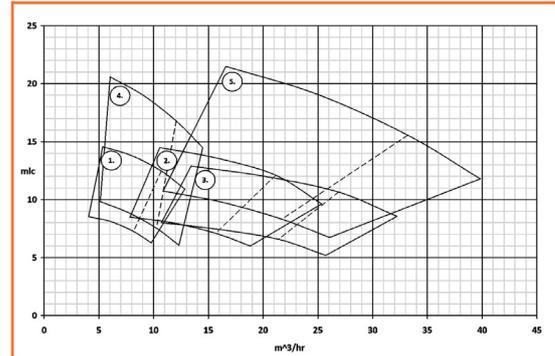
* Design pressures up to 580 psi (40 bar) are available on request.

Internal pressure / temperature profiles available. Optional instrumentation packages available as well.

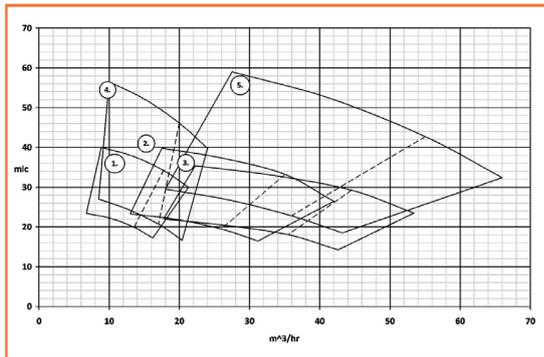
1450 rpm



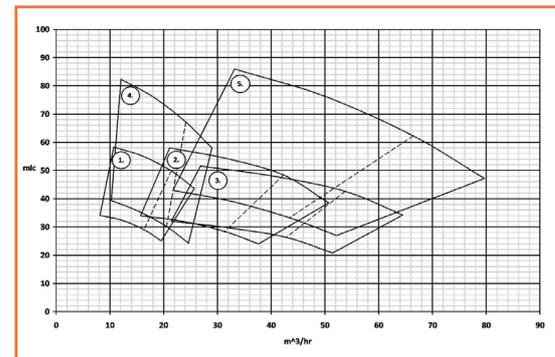
1750 rpm



2900 rpm



3500 rpm



Sealless *Savings*

Specifying sealless magnetic drive pumps can save significant costs both in respects of time and money. Indeed, a major feature is that saving can be made before, during and after installation, thanks to reduced running costs.

Having no seal system to specify or support means that design and engineering time, as well as time for procurement, is significantly reduced. Thanks to the much simpler design of the sealless pump, commissioning is quicker at the time of installation, allowing for faster project completion and fewer time consuming HazOps (Hazard and Operability) studies to undertake.

Once up and running, sealless pumps really come into their own. Reduced downtime, because of less maintenance and no need for seal changes, contributes to much improved plant utilization and profitability. The simple design of a sealless pump, together with a proven track record, provides a 'fit and forget' advantage. Not only is maintenance

much reduced, but there is also less need to keep spare parts on hand. In particular, there are no seals to stock, and the need for skilled labor overhead is greatly reduced.

Sealless *Safety*

With a magnetic drive pump there is no opportunity for leaks or emissions; therefore, your EH&S (Environmental Health & Safety) personnel will appreciate your decision to specify sealless.

Because there are no seals, and thus no leak path to lubricate, risk towards operational personnel is greatly reduced. Additionally, there is no need for EPA monitoring of the seal system. Plus, with no required seal support systems, the likelihood of accidents or unwanted emissions is virtually eliminated. This reduced liability can lead to lower insurance rates.

In sum, sealless pumps represent better operator safety, a cleaner working environment and reduced potential for legislation and litigation, leaving you with reduced overhead and maximized R.O.I.



Sealless *Service*

Although our pumps only require minimal maintenance, that does not mean we don't offer after sales service from Sundyne. Quite the opposite, in fact.

Our own After Sales team, together with our partners around the world, can help to optimize the performance and through life experience of using Sundyne pumps. From assisting with installation and commissioning, including ensuring smooth contract execution and swift provision of all appropriate documentation, through to optimizing your spares inventory and operating efficiency using the benefit of our experience, the Sundyne family is behind you.

Extending MTBM (mean time between maintenance) and providing you with the appropriate parts to effect fast maintenance and quick replacement where necessary will significantly reduce downtime and minimize through life costs, which are already inherently low with Sundyne pumps.

To locate the global representative, distributor or authorized service center nearest you, or for additional information please visit www.sundyne.com

GLOBAL STRENGTH, *powered by people*

COMPRESSORS

PUMPS

GENUINE PARTS

SERVICE



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Sump Pumps Brochure
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