

Pump It With The Sundyne HMD Kontro Product Range



General Transfer GT



ZeroLoss Containment Shell



Vertical GSPV



High Pressure HPGS



Petrochemical API 685 - GSP



Self Priming SPGS



General Service ASME / ISO GS



Low Flow GSPLF



VapourView Gas-In-Liquid Detector



HMD Kontro

HMD Kontro is a Sundyne legacy brand. HMD Kontro are specialists in the provision of magnetic drive centrifugal pumps for industries and applications where performance and environmental integrity are paramount. **Our extensive range of fluid handling solutions is capable of meeting all of your operational needs.**

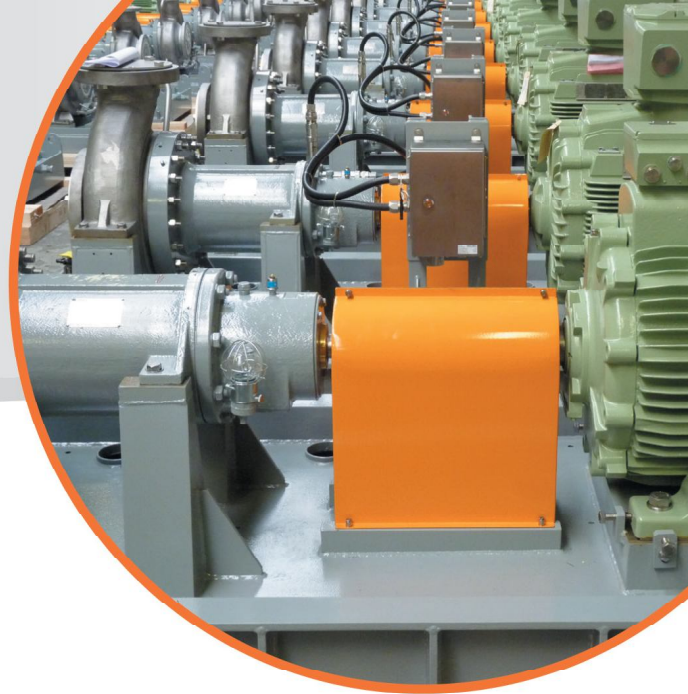
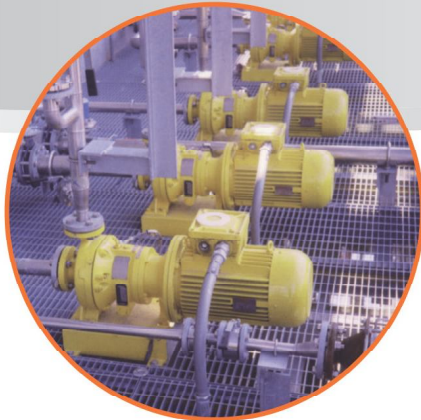
With a magnetic drive sealless pump, there is a greatly reduced danger of emissions or leaks. The pump is completely glandless, as well; so maintenance requirements are minimal. The zero leakage design **also delivers significant health and safety benefits, as well as the ability to be both user and environmentally friendly.**

The lifetime costs of a magnetic drive pump are **significantly lower than those associated with a traditional sealed pump. No seals means low maintenance, equating to significantly reduced operating costs, as there are no seals or seal support systems to specify, install or maintain.** Of course, no seals also means less downtime and less clean up, delivering further savings. Using HMD Kontro state-of-the-art magnetic drive technology, Sundyne is able to offer the widest selection of sealless pumps

on the market. For 60 years, we've been adapting these **technologies to meet our customers' specific operating requirements, crafting custom technology to meet their demanding needs.**

As part of the Accudyne Industries network, Sundyne is a truly international company with a network of channel partners and representatives who are ready to meet your needs anywhere in the world.





Application Information

HMD Kontro pumps are particularly applicable to industries such as petroleum, chemical, gas, pharmaceutical and similar sectors where hazardous, toxic, fine, corrosive or aggressive liquid needs to be pumped and moved. HMD Kontro sealless pumps are ideally suited to environments that are hot or caustic, such as those in petrochemical refineries. However, because of their inherent economy, they are equally suited to many other applications.

Setting the Standard

Over the years, Sundyne has worked alongside the relevant regulatory bodies to ensure that our pumps comply with the international standards you may need to meet. Examples of these include API 610, API 685 and ASME B73.3. Within the HMD factory, all pumps are made under the requirements of ISO 9001:2008.

While we offer a comprehensive range of standard pumps, described in detail here in this catalogue, we particularly specialize in adapting these to meet your exact requirements. Please do not hesitate to contact us for further information and/or assistance.



Key Design Features

- **No seals:** To minimize maintenance, all of the associated costs and eliminate potential leaks.
- **Sealless design:** For total containment, essential for hazardous, aggressive or valuable product.
- **Interchangeability of components:** For maximum convenience and reduced stock holding, operator training etc.
- **High efficiency wet end:** To benefit maximum flow / head coverage.
- **Wide choice of materials:** To allow a choice of various metals in the construction of your pump.
- **Casing gasket fully confined:** Eliminating risk of blowout.
- **Universal connection options:** So that suction and discharge flange connections can be configured to your exact requirements.
- **Modular rotating element cartridge:** Providing the most efficient way to perform replacements and manage your spare parts inventory.
- **International pressure vessel standard:** Designed and manufactured to ASME VIII, EN 13445 codes for confidence in operation.

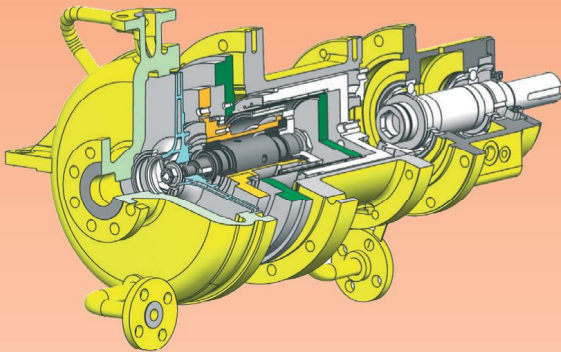
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HMD Kontro Overall Pump Parameters

Since developing the first HMD Kontro sealless magnetic drive pump sixty years ago, Sundyne has continued to invest in its technology and improve its performance.

- ❑ **Temperature – Down to** -80°C / -110°F
- ❑ **Up to (Torque Ring Design)** 450°C / 840°F
- ❑ **Up to (Synchronous Design)** 315°C / 600°F
- ❑ **Flow Rates – Up to** 690m³/h / 3000 USgpm
- ❑ **Heads – Up to** 240m / 790ft
- ❑ **Viscosity** Maximum 200 cSt
- ❑ **Pressure** Up to 185 bar / 2680 psi
- ❑ **Solids** Up to 5%, w/w a particle size of less than 150 microns
Up to 8% and less than 250 microns with filtration
- ❑ **Power (Maximum Motor Size)** 400kw / 530hp
- ❑ **Speed Range** 1450 – 3500 RPM
- ❑ **Full compliance with** ASME / ISO / API685 (API 610)
- ❑ **Available Materials** 316 St St / Alloy 20 / Alloy C / ETFE
Others available on request

► If your operating parameters are higher than those shown or you have a particular requirement, we may well be able to engineer a custom solution for your application. Please contact us to discuss your requirements and we will do our very best to accommodate them.



Sundyne HMD Kontro Options

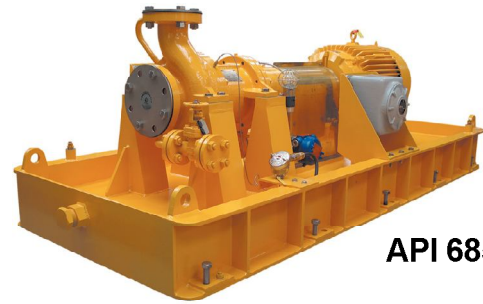
To enhance the performance of our sealless pumps still further, we offer a range of standard options to ensure that our pumps can meet your requirements. Examples of these are as follows:

- Close coupled – Flange-mounted or sub-base design
- Separate mounted – Foot-mounted or baseplate design
- Casing heating jackets
- Coupling housing heating jackets
- ZeroLoss Containment Shell
- VapourView
- Secondary control – Via leakage restriction device and flanged drain
- Secondary containment – Via gas seal
- Solids handling – In-line filter to mono & duplex filters, magnetic filter

If you do not see the facilities or options you require listed here, do not hesitate to contact us directly. Our engineers will rise to the challenge.

Petrochemical Pumps – GSP

Meeting the needs of refineries worldwide



API 685 (API 610)

The GSP is a heavy duty centerline-mounted process pump that complies with API 685 (API 610) refinery applications for sealless pumps. The GSP product covers a hydraulic range that is split between four frame sizes, Frames I, II, III & IV.

The pumps are offered with a range of Synchronous Magnet Drives rated to match prime mover performance. A corresponding range of Torque Ring Drives is available for high temperature operation. Prime mover specifications of all denominations can be accommodated.



- Conforms to API 685 for sealless pumps
- Design ensures safe, leak-free operation
- Increased efficiency, low running costs
- Minimal spares holding and maintenance
- Maximizes on-line process time
- No costly seal support systems to maintain
- Reduced installation costs

Standard materials of construction are A8 and S5, with silicon carbide internal bearings and spiral wound gaskets available. Other material options are available on request, including duplex stainless steel, Alloy 20 and Alloy C276. Various flange options are available as standard.

Options

Casing drains flanged • Jacketed pump casing • Torque ring drive • Secondary control / Secondary containment • Coupling housing drain • Large range of pump protection

Specification (50Hz)

Flow Rate	690m ³ /h / 3000USgpm
Head	240m / 790ft
Minimum Temperature	-40°C / -40°F
Maximum Temperature	350°C / 660°F
Pressure	40bar / 580psi
Viscosity	Max 200cSt
Solids Capability	Maximum of 5% w/w less than 150 microns
Speed Range	1450 - 3500 RPM
Industry Standards	API 685 (API 610)
Max Motor Size	200kW / 270hp
Standard Materials	S-5, A-8, D-1, D-2 (others are listed in Table H.1)
Number of Available Hydraulics	30

Standing Up for API 685

– GSPV

A compact, vertical pump for space optimization



The vertically mounted 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 and petrochemical, 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.

- Modular design based on established GS components
- Designed to retrofit existing sealed designs
- Diffuser design optimizes pump efficiency
- Simple path for sealless upgrade
- Diffuser design optimizes pump efficiency and curve shape
- ASME VIII compliant

Options

Build Options: High efficiency ZeroLoss Containment Shell • Secondary control system • Secondary containment system • NACE compliant materials

Instrumentation Options: Power control monitor • RTD temperature sensing • Secondary housing monitoring (liquid or pressure) • VapourView



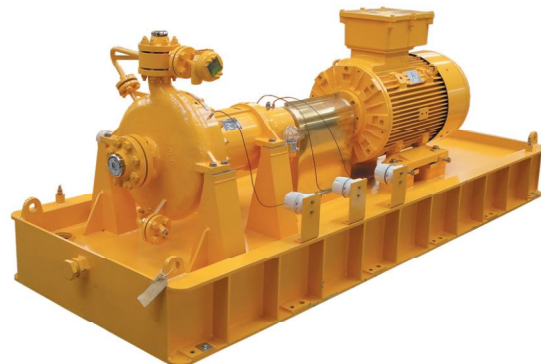
Specification (50Hz)

Flow Rate	235m ³ /h / 1035USgpm
Head	90m / 295ft
Minimum Temperature	-40°C / -40°F
Maximum Temperature	205°C / 400°F
Pressure	40bar / 580psi
Viscosity	Max 200cSt
Solids Capability	Maximum of 5% w/w less than 150 microns
Speed Range	1450 - 3500 RPM
Industry Standards	API 685 (API 610)
Max Motor Size	75kW / 100hp
Standard Materials	S-5, A-8, D-1, D-2
Number of Available Hydraulics	9

High Pressure Peace of Mind

– HPGSP

Reliable and safe under high pressure



The HPGSP magnetic drive sealless pump is at the top end of our range of high pressure pumps for oil and gas, petrochemical and chemical industries. Capable of easily handling system pressures up to 185 bar and higher, dependent upon temperature extremes, these high pressure pumps are exceptionally versatile yet safe and secure. Built to API 685 specification, the separate mounted design is available in eleven hydraulic sizes and two basic frame sizes to suit power requirements.

- A high pressure version of our highly successful GSP pump
- Handles system pressures up to 185 bar
- Higher pressures possible dependent on temperature
- Exceptionally versatile, yet safe and secure
- Modular design based on established GS components

Options

Build Options: Inducers for low NPS • External filtration • Inducers • NACE compliant materials • Vertical (OH5) derivative

Instrumentation Options: Power control monitor • RTD temperature sensing • Secondary housing monitoring (liquid or pressure) • VapourView

Specification (50Hz)

Flow Rate	290m ³ /h / 1275USgpm
Head	150m / 490ft
Minimum Temperature	-100°C / -150°F
Maximum Temperature	260°C / 500°F
Pressure	185bar / 2680psi
Viscosity	Max 200cSt
Solids Capability	Maximum of 5% w/w less than 150 microns
Speed Range	1450 - 3500 RPM
Industry Standards	API 685 (API 610)
Max Motor Size	75kW / 100hp
Standard Materials	S-5, A-8, D-1, D-2
Number of Available Hydraulics	11

Making Low Flow More Efficient – GSPLF

Specifically for low flow duties



The GSPLF combines the proven technologies of Sundyne Barske Wheel hydraulics with the HMD Kontro sealless magnetic drive, optimizing 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 be easily upgraded without the need to replace the pressure casing should the duty need to be changed.

- Barske Wheel hydraulics for optimum efficiency in low specific speed (Ns) applications
- Single basic frame size to suit power requirements
- Barske Wheel design reduces radial and axial bearing loads
- Removable diffuser allows for re-rating of pumps to different process conditions without costly machining
- Suction tuned inducers for low NPSHa conditions

Options

Build Options: Inducers for low NPSH • High efficiency ZeroLoss Containment Shell

- Secondary control system
- Secondary containment system
- NACE compliant materials
- Vertical OH4 derivative (LMV-801 dimensions)



Instrumentation Options: Power control monitor • RTD temperature sensing • Secondary housing monitoring (liquid or pressure) • VapourView

Specification (50Hz)

Flow Rate	4 to 30m ³ /h / 18 to 132USgpm
Head	150m / 490ft
Minimum Temperature	-40°C / -40°F
Maximum Temperature	260°C / 500°F
Pressure	40bar / 580psi
Viscosity	Max 200cSt
Solids Capability	Maximum of 5% w/w less than 150 microns
Speed Range	1450 - 3500 RPM
Industry Standards	API 685 (API 610)
Max Motor Size	75kW / 100hp
Standard Materials	S-5, A-8, D-1, D-2
Number of Available Hydraulics	14

Process Pumps – GSA / GSI

Superior standards count



A versatile range of general service pumps designed to cover a wide duty and application base using the minimum of pump models by maximizing interchangeability of components. Available within the range is the GSA (ASME standard pump) and the GSI (ISO DIN standard pump). A GSL option is available for temperatures down to -150°F / -100°C.

The GSA (ASME) and GSI (ISO) product covers a hydraulic range that is split between three frame sizes; Frames 0, I, & II. The pumps are offered with a range of Synchronous Magnet Drives rated to match prime mover performance, therefore specifications of all denominations can be catered for.

- Sealless design for total product containment
- Ideal for handling hydrocarbons, as well as toxic, aggressive, hot or valuable product
- Conforms to ASME and ISO standards
- Modular high efficiency wet ends
- Designed to ensure maximum flow/head coverage across all ranges
- Choice of various metallic materials of construction
- One fully confined casing/containment shroud/shell joint

Standard construction is stainless steel with silicon carbide internal bearings. Options of Alloy 20, C or B with silicon carbide/carbon bearings and PTFE gaskets are available. Various flange options are available as standard.

Options

Casing drains flanged or screwed • Jacketed pump casing

- Coupling housing drain
- Large range of pump protection
- Secondary control systems

Specification (50Hz)

Flow Rate	320m ³ /h / 1420USgpm
Head	150m / 485ft
Minimum Temperature	-40°C (-100°C on request) / -40°F (-100°F on request)
Maximum Temperature	260°C / 500°F
Pressure	18.9bar / 274psi
Viscosity	Max 200cSt
Solids Capability	Maximum of 5% w/w less than 150 microns
Speed Range	1450 - 3500 RPM
Industry Standards	ASME / ISO
Max Motor Size	55kW / 75hp
Standard Materials	316 St St, Alloy 20, Alloy C
Number of Available Hydraulics	33

High System Pressure – HPGS

Accuracy under high pressure



Original equipment manufacturers worldwide have discovered the benefits of the HPGS pump when checking the density of fluids passed down a high-pressure pipeline. The pump is used on these skids to take a sample of the fluid out of the main product stream. The sample is then passed through the densitometer, which analyzes the fluid, and is afterwards returned to the main pipeline.

The pump's ability to withstand system pressures up to 185 bar / 2680 psi, together with its sealless construction, means that the HPGS eliminates the need for expensive callouts, downtime and repairs associated with mechanical seals.

- Sealless design for total product containment
- Ideal in petrochemical and site utilities
- Modular/interchangeable high efficiency wet end
- Provide maximum flow/head coverage across all product ranges
- High efficiency magnetic couplings
- Various metallic materials of construction available on request
- System pressures up to 185bar / 2680psi
- Ideal sampling unit for densitometer applications

The pumps are offered with a range of Synchronous Magnet Drives rated to match prime mover performance, therefore allowing specifications of all denominations to be catered for. Maximum use has been made of components from our range of ASME and ISO pumps to ensure optimum interchangeability of parts.

Standard construction is stainless steel with silicon carbide internal bearings. Options of other materials are available on request. Various flange options are available as standard.

Options

Large range of pump protection.

Specification (50Hz)

Flow Rate	275m ³ /h / 1210USgpm
Head	145m / 470ft
Minimum Temperature	-40°C / -40°F
Maximum Temperature	260°C / 500°F
Pressure	185bar / 2680psi
Viscosity	Max 200cSt
Solids Capability	Maximum of 5% w/w less than 150 microns
Speed Range	1450 – 3500 RPM
Industry Standards	N/A
Max Motor Size	45kW / 60hp
Standard Materials	316 St St, Duplex St St
Number of Available Hydraulics	18

Self Priming Pumps – SPGS

Ideal for off-loading liquids especially when containment is crucial



This range is designed, primarily, for the emptying of sumps and road/rail tankers. The SPGS product covers a hydraulic range that is split between two frame sizes, Frame 0 and Frame 1.

- Self-priming capability to ensure the safe transfer of liquid
- Increased efficiency liquid ends for lower running costs
- Many compatible spares with other GS range pumps
- Ease of installation and on-site maintainability
- Non-metallic ETFE lined available for corrosive liquids

Standard construction is stainless steel with silicon carbide internal bearings. Options of Alloy 20 or Alloy C with PTFE gaskets are available. Various flange options are available as standard.

Options

Large range of pump protection.

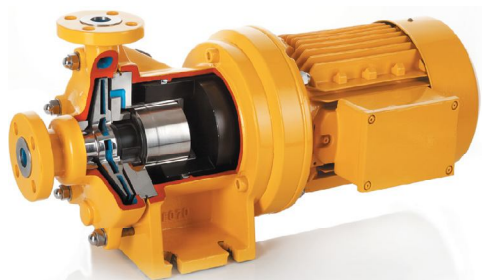


Specification (50Hz)

Flow Rate	45m ³ /h / 200USgpm
Head	50m / 165ft
Minimum Temperature	-40°C / -40°F
Maximum Temperature	120°C / 248°F
Pressure	10bar / 145psi
Viscosity	Max 200cSt
Solids Capability	Maximum of 5% w/w less than 150 microns
Speed Range	1450 – 3500 RPM
Industry Standards	N/A
Max Motor Size	22kW / 30hp
Standard Materials	316 St St, Alloy 20, Alloy C
Number of Available Hydraulics	5

General Transfer Pumps – GT

A small sealless pump that's big on value



For general transfer duties, the GT pump has been specifically designed as a compact, cost-effective and minimum maintenance pump. The GT is sized below ASME/ISO dimensions and has a number of features that make it one of the most highly competitive pumps in its class. Thanks to its simplicity of maintenance, space-saving design and interchangeability, the GT pump proves a very popular choice.

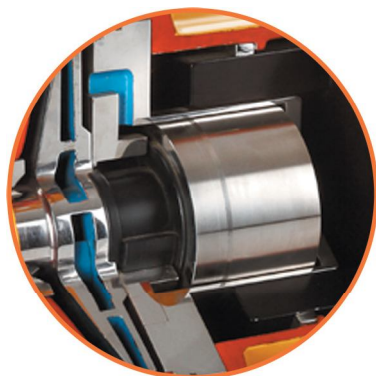
GT pumps are of a close coupled construction and can be supplied free-standing or baseplate-mounted. Prime mover specifications of all denominations can be catered for with a range of Synchronous Magnet Drives rated to match.

- Sealless design for total product containment
- Low capital cost
- Compact modular design
- Low running costs
- Minimal downtime
- Supplied with ASME or ISO flanges

Standard construction is stainless steel with silicon carbide internal bearings. Options of Alloy 20 or Alloy C with PTFE gaskets are available.

Options

- Casing drains flanged or screwed
- Jacketed pump casing
- Large range of pump protection



Specification (50Hz)

Flow Rate	26m ³ /h / 115USgpm
Head	38m / 125ft
Minimum Temperature	-40°C / -40°F
Maximum Temperature	260°C / 500°F
Pressure	18.9bar / 274psi
Viscosity	Max 200cSt
Solids Capability	Maximum of 5% w/w less than 150 microns
Speed Range	1450 – 3500 RPM
Industry Standards	N/A
Max Motor Size	7.5kW / 10hp
Standard Materials	316 St St, Alloy 20, Alloy C
Number of Available Hydraulics	3

Heat Transfer Pumps – CS

A unique solution for hot oil systems



Isolating the pump from the heat source has always been essential in a hot oil system – until now. Thanks to its unique torque ring, the CS pump from Sundyne requires no cooling fluids or heat exchangers during operation. The pump is totally self venting and the magnetic coupling is immersed in the hot oil. Not only that, but the torque ring design offers a built-in soft start for viscous liquids, and the energy created from this process adds to the efficiency of the system.

Simple to operate and maintain, cost-effective to run and capable of operating up to 842°F without cooling – all this makes the HMD Kontro CS pump the ideal choice.

- Ideal for heat transfer liquids
- Sealless design – total product containment
- No product cooling required for temperatures up to 842°F
- One joint casing/containment shell
- Fully confined to eliminate 'blowout' risk
- Torque Ring Drive positively contributes to the efficiency of the hot oil system
- Built-in soft start feature
- Ideal for viscous start up

Standard construction is carbon steel with carbon internal bearings. Options of stainless steel with graphite gaskets are available. Various flange options are available as standard. The pumps are supplied with a range of Torque Ring Drives rated to match prime mover performance and hence all denominations can be catered for.

The Torque Ring (induced) Drive, invented by Sundyne, enables the pumps to operate at high temperatures without cooling. All the pumps covered by this range are particularly suited to handling high temperature mediums.

Options

- Jacketed pump casing
- Secondary control
- Coupling housing drain
- Coupling feed filtration
- Large range of pump protection

Specification (50Hz)

Flow Rate	264m ³ /h / 1163USgpm
Head	105m / 344ft
Minimum Temperature	-80°C / -112°F
Maximum Temperature	450°C / 842°F
Pressure	20bar / 290psi
Viscosity	Max 200cSt
Solids Capability	Maximum of 1.5% w/w less than 100 microns
Speed Range	1450 – 3500 RPM
Industry Standards	N/A
Max Motor Size	90kW / 120hp
Standard Materials	Carbon Steel, 316 St St
Number of Available Hydraulics	26

Non-Metallic Lined – K Series

The perfect pump for highly corrosive fluids



For the handling of corrosive fluids, the benefit of the K Series pump's high-specification roto-molded ETFE lining are easily apparent. The product line covers a hydraulic range that is split between a wide range of pump sizes.



- Sealless design for total product containment
- Ideal for acid and corrosive liquid applications
- Modular/interchangeable high efficiency magnetic couplings
- One joint casing/containment shell design
- Non-metallic liquid contact parts
- Minimal downtime/fast maintenance
- Conforms to ASME and ISO dimensions

Standard construction is ETFE with silicon carbide internal bearings. Various flange options are available as standard.

Options

- Separate mounting
- Pump protection
- Secondary control



Specification (50Hz)

Flow Rate	220m ³ /h / 970USgpm
Head	110m / 350ft
Minimum Temperature	-30°C / -22°F
Maximum Temperature	120°C / 250°F
Pressure	18.9bar / 274psi
Viscosity	Max 200cSt
Solids Capability	Maximum of 5% w/w less than 150 microns
Speed Range	1450 – 3500 RPM
Industry Standards	ASME / ISO
Max Motor Size	55kW / 75hp
Standard Materials	ETFE
Number of Available Hydraulics	18

Reduce Costs with a Sealless Suspended Pump – GSPVS

Magnetic drive expertise in a suspended pump

The GSPVS vertical suspended 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 operating costs. Composed of modules which can be joined to reach a total assembly length up to 16ft/5m, the GSPVS is mounted on a base available to ANSI B16.5 or to customer specific requirements.



- Vertical suspended design
- Provides a sealless upgrade solution to existing installations
- Decreased vibration extends life expectancy
- Greased for life ball bearings eradicates lubrication
- Suction strainer and labyrinth seals avoid contamination

Options

- **Build Options:** NACE compliant materials
- **Instrumentation Options:** Power control monitor



Specification (50Hz)

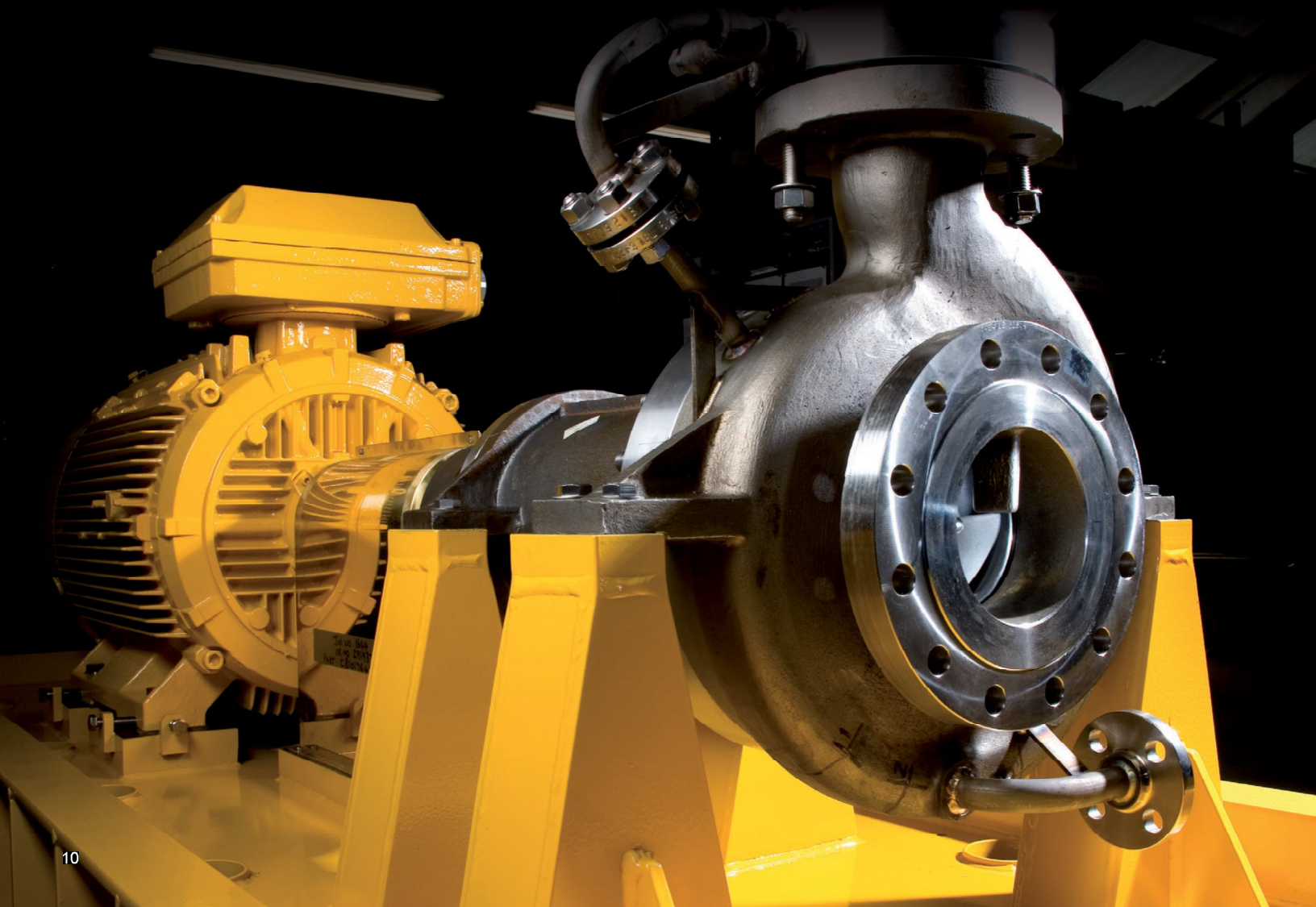
Flow Rate	130m ³ /h / 560USgpm
Head	100m / 330ft
Minimum Temperature	-30°C / -22°F
Maximum Temperature	60°C / 140°F
Pressure	18.9bar / 274psi
Viscosity	Max 200cSt
Solids Capability	Maximum of 5% w/w less than 150 microns
Speed Range	1450 - 3500 RPM
Industry Standards	API 685 (API 610)
Max Motor Size	55kW / 75hp
Standard Materials	S-5, A-8, D-1, D-2
Number of Available Hydraulics	11



Engineered Applications

At Sundyne, we have a strong reputation for working in partnership with our customers to handling solutions.

This reputation is built upon our drive to provide you – the customer – with everything required to make sure that your processes are operating





Cut Your Losses With The New ZeroLoss™ Containment Shell

New ZeroLoss™ Containment Shell
Reduces Power Losses in the Pump to Zero

Please request our dedicated ZeroLoss™ Containment Shell brochure and accompanying technical paper for further details and to see how ZeroLoss technology can

™

™

increase in proportion to the magnetic coupling size and



VapourView™

™

uses an ultrasonic signal to detect the presence



Pumps & Printers

Why Buy Future Expense?

A sealed pump is like a PC printer. You know the scenario: you can buy a printer for your PC at a very low price, but the replacement ink cartridges cost a fortune.

A sealed pump is similar. The capital cost may be low, but the ongoing expense of the replacement seals is very expensive. In addition, you also have to pay for:

- Labor to change the seals
- Inventory costs of the seals
- Maintenance of the seal support system
- Disposal of barrier fluids
- Increased instrumentation
- Higher utility costs



With a sealless pump, there is no consumable. As such, you can expect very minimal future expense associated with through life costs.

Why Buy a Pump That Leaks?

No Seals – No Leaks.

Inherently, a pump that uses seals is designed to leak. It is the action of the pumped liquid that creates the final barrier between the seal and the pump shaft. As a result, there are also inherent problems, including:

- Health and safety issues
- Environmental risks
- Complex seal support systems
- Need to dispose of barrier fluid
- Ongoing purchase of new seals

A sealless pump completely eliminates all of the operational concerns listed above.

Challenge Us

Tell Us Your Pump Problems

While sealless pumps make an economic proposition for many applications, they are particularly suited to harmful and hazardous liquids because the product is completely contained.

Contact us about the applications or existing pump situations that cause you problems or pose a risk to your staff or the wider environment.

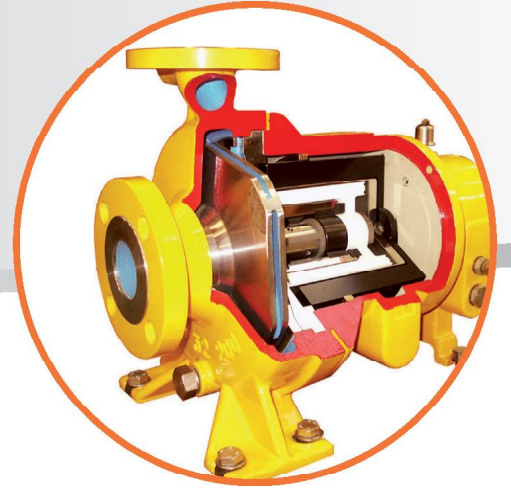
With over 100,000 pumps installed, we have probably handled the product before and can provide a solution. We look forward to hearing from you.

Visit: www.sundyne.com



Pump Protection

Monitoring & Measuring



Peace of Mind

The sealless pump offers the ultimate solution to preventing leakages and fugitive emissions. All pumps, however, can also become operationally sensitive owing to unstable process conditions. Protection is therefore recommended on all applications to alert the operator to system failure conditions, such as cavitation, low flow, dead heading, no flow, empty suction vessel and similar.

Monitoring and measuring the performance of your pump, and reacting to its needs, will prolong its life. The following systems can assist:

- **Power Control Monitoring**
A microprocessor-based digital load monitor that protects against under and overload conditions caused by dry running, low flow, cavitation or magnetic decoupling etc.
- **Temperature Detection**
RTD (PT 100) or thermocouple sensors permanently located at the pressure containment shell, monitoring variations of the temperature inside the magnetic coupling.
- **Flow and Liquid Detection**
Liquid or flow sensor mounted at the suction or discharge connection will prevent pump start-up should the pump not be primed and stop the pump, should the system be allowed to run dry.
- **Pressure Monitoring**
Differential pressure switch piped across the suction and discharge connections.
- **Liquid Sensing Probe**
This instrument is usually installed in conjunction with secondary control. It provides an early warning of containment shell failure before dangerous quantities of spillage can fill the coupling housing.
- **Secondary Control / Containment Systems**
Devices detailed above may be fitted in order to prevent a major failure from happening in the first place. However, for some processes the added benefit of secondary control or containment is regarded as essential. Sundyne is able to provide its pumps with secondary control devices to severely


restrict any leakage into the immediate locality. Mechanical devices are fitted to the drive shaft assembly that are activated in the unlikely event of containment shell failure, together with this the pump coupling housing is fitted with gaskets to eliminate any leakage across the joining faces.

- **Motor Thermistors**
To prevent a damaging temperature build-up in the event of failure of system or pump, thermistors have been embedded in the stator. These can be linked to a control panel where, in the event of a failure, the pump can be automatically switched off or an alarm sounded.
- **Automatic Recirculation Control**
An automatic recirculation valve associated with the pump discharge connection. This will provide a permanent bypass in the event of system flow fluctuations or closed discharge valve, but will not protect against dry running.

VapourView™

The innovative, non-intrusive VapourView™ uses an ultrasonic signal to detect the presence of gas in a liquid stream from outside the confines of the pump pressure boundary. This provides vital information to the end-user on the presence of gases in the pump's internal flow regime and forewarns of adverse conditions. Early intervention by system engineers, who can undertake remedial action, will maximize the operating life of plant equipment.





Sealless Services

- **New Pump Supply**

Sundyne customer service teams are fully trained to provide all the necessary help and assistance in the selection and supply of new pumps. Whatever your needs, we can assist you with all aspects of specifying the right pump for your application.

- **Pump Installation**

Engineers are available to assist with the correct commissioning of your Sundyne pump. All aspects of commissioning are undertaken to ensure that the pump operates at its peak performance and to the specification detailed in the purchase order.

- **Pump Training Plan**

Training schools are regularly provided to assist customers' personnel with understanding all aspects of their Sundyne pumps. These can be held either at the customer's facility, a Sundyne regional center or at a local base. Training can be specifically aimed at the particular needs and requirements of the client / personnel attending.

- **Spare Parts Inventory Control**

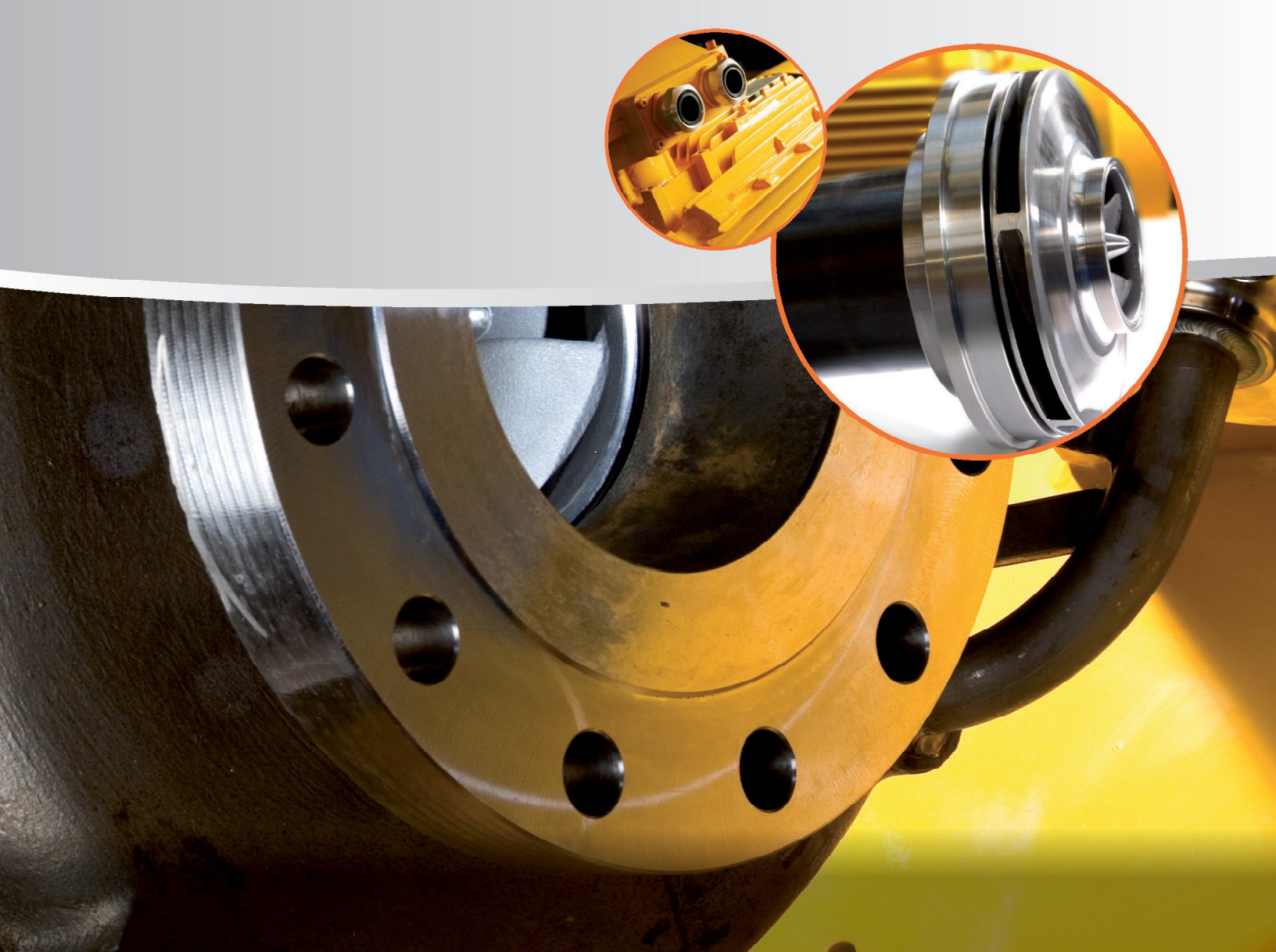
We will be pleased to advise on suitable inventory levels of spare parts for pumps located on any particular plant or location. Sundyne can also hold 'customer specific' spare parts at regional centers worldwide to provide a fast response.

- **Pump Commissioning**

Commissioning a new plant can be a stressful time. Sundyne trained personnel are available to assist the process by carrying out pre start-up checks and monitoring the starting procedure, to ensure that the pump is operating correctly and to specification.

- **Pump Maintenance**

Planned preventative maintenance regimes contribute towards a trouble-free operating life. Our service facilities are available to undertake this work and relieve you of the worry of finding suitable engineers and the time to maintain your Sundyne pumps to their correct standard.



- **Pump Breakdown**

Unfortunately breakdowns do occur, for all sorts of reasons. The Sundyne team of skilled engineers are on hand to get the pump back up and running in the minimum of time and inconvenience. We have fully equipped workshops strategically placed around the world to give the fastest assistance possible. Limiting your downtime and minimizing inconvenience.

- **Root Cause Analysis**

Understanding what has caused a pump to malfunction can be a difficult task. At Sundyne, we have many years experience in establishing the root cause of pump failures. Our skilled personnel are always available to help determine the cause and provide recommendations as to correct remedial actions to prevent repeat problems.

- **Pump Replacement**

Sundyne sealless pumps have a reputation for surviving the test of time. When a pump needs replacing, our trained engineers can advise on a suitable replacement to give the same performance characteristics using the latest in magnet and hydraulic technology, even if your particular model may not still be in production.

For further details on Sundyne pumps and compressors, please visit www.sundyne.com and use our convenient Partner Locator to locate the sales representative nearest you.



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