

## GS High Pressure

Synchronous magnet drive, hydraulic pumps

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 analyses 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.

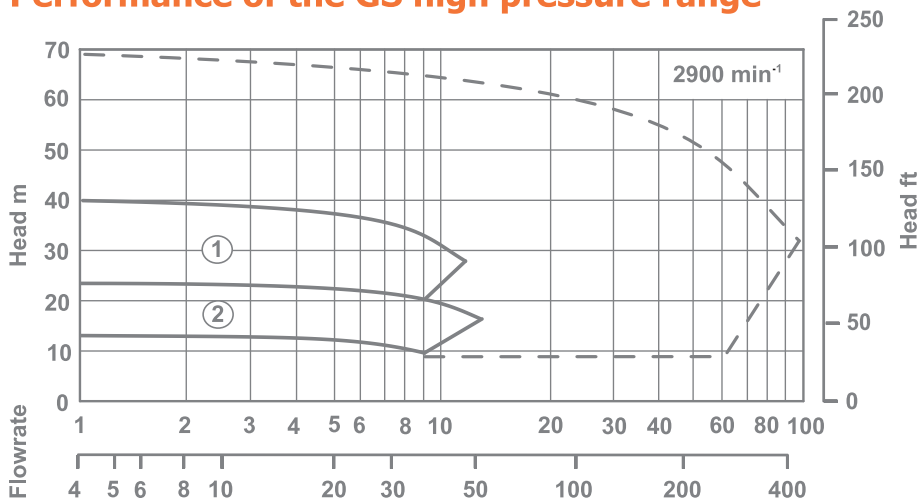
The pumps are offered with a range of Synchronous Magnet Drives rated to match prime mover performance. Prime mover specifications of all denominations can be catered for.

Maximum use has been made of components from our range of ANSI and ISO pumps to ensure optimum interchangeability of parts.

The standard materials of construction are stainless steel with silicon carbide internal bearings.



### Performance of the GS high pressure range



### Pump model

	Imperial	Metric
1	1 x 1 x 5	25-25-125
2	1 x 1 x 6	25-25-160

Pumps are available to cover duties within the outer curve and are built on an "as specified" basis.

### Design range limits

The HPGS pump is designed to operate from -40°C up to +205°C, -40°F up to +400°F without the need for any ancillary cooling medium. Maximum design working pressure is 185 bar, 2680 psi

### Solids handling capability

The unit is capable of handling solids up to 5% w/w with 150 microns.

### Options

Large range of pump protection.

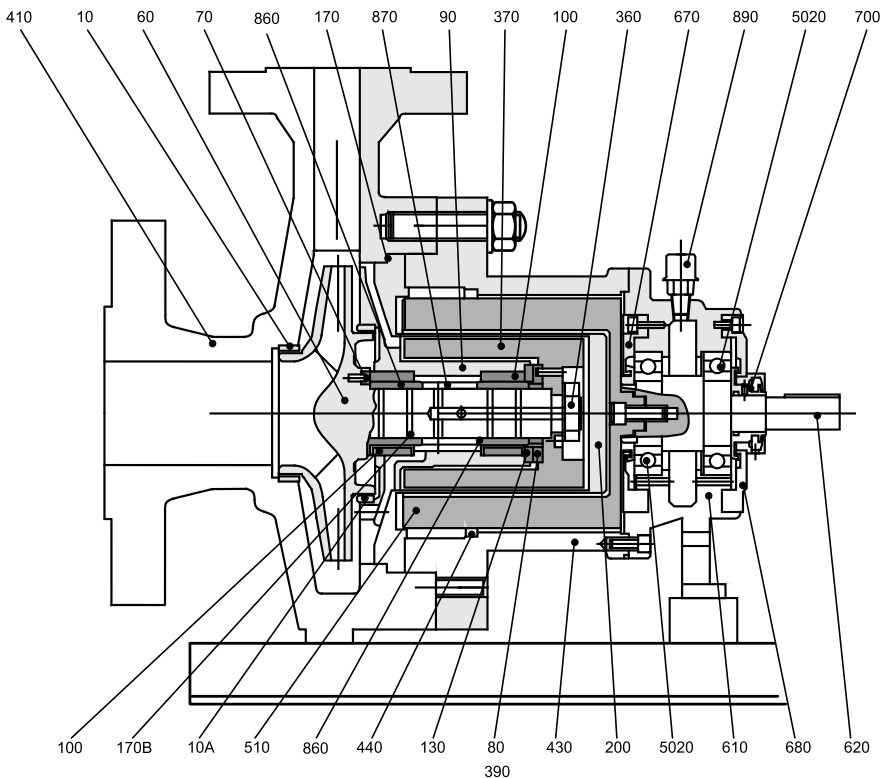
## Key Design Features

- **No seals:** To minimise 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:** So 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 part inventory.

## Benefits of HPGS pump range

- 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 185 bar 2680 psi.
- Ideal sampling unit for densitometer applications.

## Construction of HPGS range



<b>10</b>	Neck Ring (Front)	Stainless Steel
<b>10A</b>	Neck Ring (Back)	Stainless Steel
<b>50</b>	Coupling Washer	Stainless Steel
<b>60</b>	Impeller	Stainless Steel
<b>70</b>	Front Thrust Washer	Alpha SiC
<b>80</b>	Back Thrust Washer	Alpha SiC
<b>90</b>	Bush Holder (150°C/300°F)	Stainless Steel
<b>100</b>	Bush	Alpha SiC
<b>130</b>	Thrust Pad	Alpha SiC
<b>170</b>	Casing Gasket	SS / Graphite
<b>170B</b>	'O' Ring	Viton A
<b>200</b>	Containment Shroud/Shell	SS / Alloy 625
<b>360</b>	Coupling Nut	Stainless Steel
<b>370</b>	Inner Magnet Ring	Stainless Steel
<b>390</b>	Support Gasket	Graphite & Nickel
<b>410</b>	Casing	Stainless Steel
<b>430</b>	Coupling Housing	SG Iron
<b>440</b>	Bump Ring	Phosphor Bronze
<b>510</b>	Outer Magnet Ring	Carbon Steel
<b>610</b>	Bearing Housing	SG Iron
<b>620</b>	Drive Shaft	Carbon Steel
<b>670</b>	Front Cap	Carbon Steel
<b>680</b>	Back Cap	Carbon Steel
<b>700</b>	Labyrinth Seal (Kit)	Brass
<b>860</b>	Shaft Sleeve	Alpha SiC8
<b>70</b>	Shaft Sleeve Spacer	Stainless Steel
<b>890</b>	Breather	Stainless Steel
<b>5020</b>	Race	Steel

Separate mounted model shown

## Flanges and Connections

### Casing

Suction and discharge flanges are designed in accordance with the following relevant standards:

<b>ANSI B16.5 Class 150</b>	Machined with 1.5mm (0.06") high raised face having a continuous spiral groove.
<b>ANSI B16.5 Class 600</b>	Machined with 6.35mm (0.25") high raised face having a continuous spiral groove.
<b>ANSI B16.5 Class 900</b>	Machined with 6.35mm (0.25") high raised face having a continuous spiral groove.
<b>ANSI B16.5 Class 1500</b>	Class 1500 flanges are also available, but maximum pressure will remain as ANSI Class 900 flange.

### Flange Loadings

Allowable flange loadings imposed by pipework are in accordance with Table 4 of API 685 2nd edition and exceed the values in ANSI 5199 Annex C.

### Drain Connections

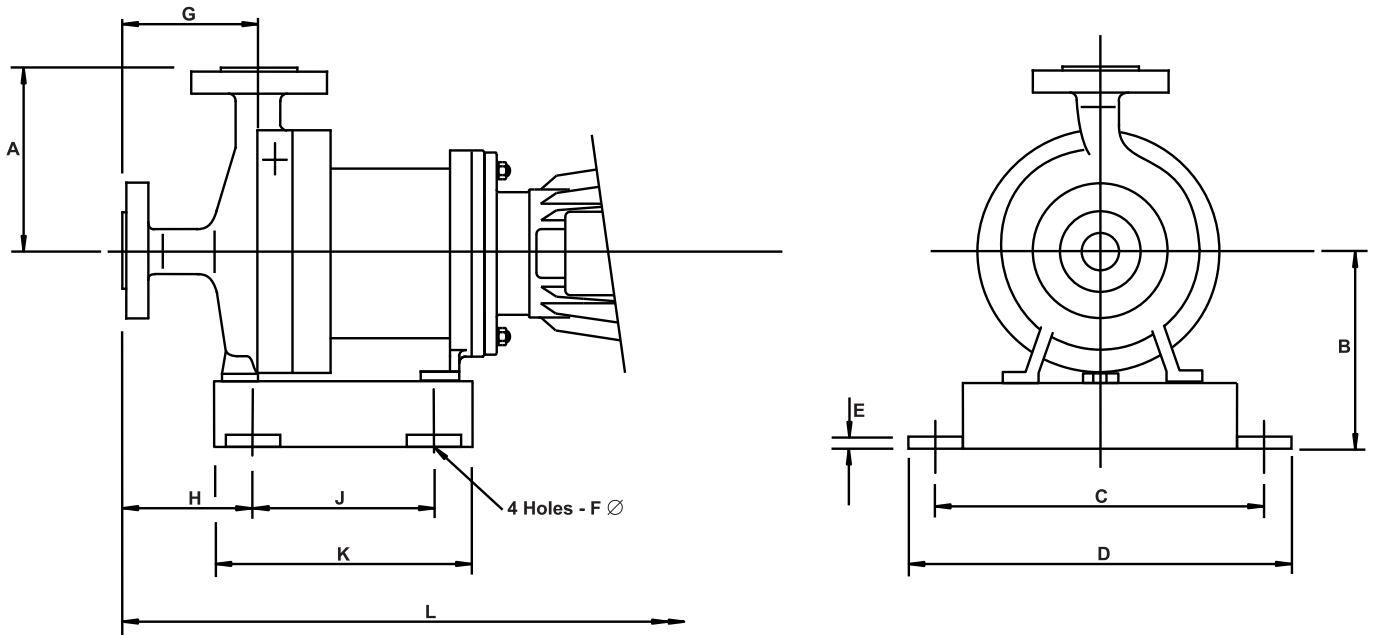
There are no drain options available for these pumps.

### Gauge Connections:

No provision for gauge connections has been made on this range of pumps.

## Dimensions of HPGS range (close coupled)

All dimensions are in millimetres unless stated otherwise



Pump size	A	B	C	D	E	F	G	H	J	K	Motor Frame	L
<b>1x1x5</b>	200/7.9"	239/9.4"	350/13.8"	400/15.7"	12/0.5"	14/0.55"	155/6.1"	106/4.2"	230/9.1"	306/12"	<b>80-90</b>	620/24.4"
<b>1x1x6</b>	200/7.9"	239/9.4"	350/13.8"	400/15.7"	12/0.5"	14/0.55"	155/6.1"	106/4.2"	230/9.1"	306/12"	<b>100-112</b>	685/27"
											<b>132</b>	773/30.4"
<b>25-25-125</b>	200/7.9"	239/9.4"	350/13.8"	400/15.7"	12/0.5"	14/0.55"	155/6.1"	106/4.2"	230/9.1"	306/12"	<b>160</b>	918/36.1"
<b>25-25-160</b>	200/7.9"	239/9.4"	350/13.8"	400/15.7"	12/0.5"	14/0.55"	155/6.1"	106/4.2"	230/9.1"	306/12"	<b>143-145</b>	610/24"
											<b>182-184</b>	686/27"
											<b>213-215</b>	762/30"
											<b>254-256</b>	914/36"

Dimensions shown are metric / imperial (inches).

## Range capabilities

Model	Head	Flow	Temperature	Pressure	Viscosity Cst	Mounting
<b>1x1x5</b>	24 m 78 ft	11 m <sup>3</sup> /h 48 usgpm	-40 to +205°C -40 to +400°F	148.9 bar 2160 psi	200	Close coupled (CC) Separate Mounted (SM)
<b>1x1x6</b>	40 m 131 ft	10.5 m <sup>3</sup> /h 46 usgpm	-40 to +205°C -40 to +400°F	148.9 bar 2160 psi	200	Close coupled (CC) Separate Mounted (SM)



## COMPRESSORS

## PUMPS

## GENUINE PARTS

## SERVICE

## Pressure Limits

All parts are to be rated to the pressures shown below at 38°C / 100°F

### Flange standard

	316 St St
ANSI B16.5 Class 300	4.96 N/mm <sup>2</sup> 719 psi
ANSI B16.5 Class 600	9.93 N/mm <sup>2</sup> 1140 psi
ANSI B16.5 2Class 900	14.89 N/mm <sup>2</sup> 2160 psi

### Component Hydrostatic test values

	316 St St
Casing (ANSI 300)	7.44 N/mm <sup>2</sup> 1100 psi
Casing (ANSI 600)	14.89 N/mm <sup>2</sup> 2160 psi
Casing (ANSI 900)	22.34 N/mm <sup>2</sup> 3950 psi

## Temperature limits

Standard Range	-40°C to 150°C / -40°F to 300°F
Option	205°C / 400°F

For sub zero temperatures a suitable sealing compound (Loctite Multi Gasket or similar) is used to prevent the ingress of moisture into the coupling housing between the containment shroud/shell and motor adaptor assembly interface.

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HMD Kontro HPGS 1.0 5/12 A4 Eng.