

Technical Profile

GSPLF

Low flow, sealless magnetic drive pumps to API 685 (2nd edition)

The GSPLF range comprises pumps based on the HMD Kontro GS drive, built to API 685 specification, suitable for heavy-duty applications.

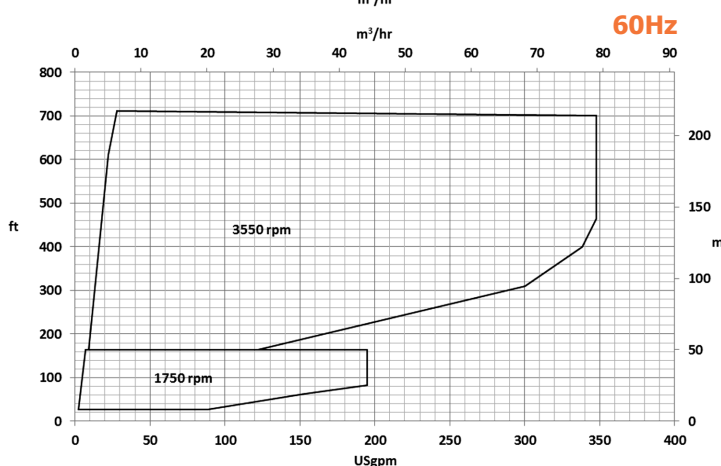
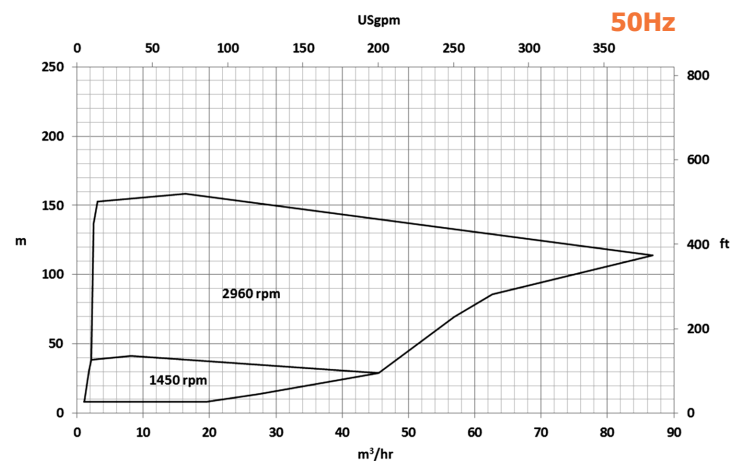
The GSPLF combines the proven technologies of Sundyne Barske Wheel hydraulics with the HMD Kontro sealless magnetic drive, optimising reliability and efficiency to ensure trouble-free plant operation. The GSPLF meets the requirements of API 685 and is explosive atmosphere compliant, making it ideal for oil and gas installations plus chemical and petrochemical applications.

An additional advantage of the GSPLF is the flexibility inherent in the diffuser and impeller, which can easily be upgraded should the duty need to be changed without replacing the pressure casing.

HMD Kontro



Performance of the GSPLF



Design range limits

The GSPLF pump is designed to operate from -40°C up to 260°C / -40°F up to 500°F without the need for any ancillary cooling medium. Design working pressure is 40 bar / 580 psi at ambient temperature.

Solids handling

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

Materials of construction

Standard S-5, A-8, D-1 and D-2
Other variations available on request

Options

- High efficiency ZL containment shell
- Secondary control system
- Secondary containment system
- External filtration
- Inducers
- NACE compliant materials.
- Vertical (OH5) derivative (801 casing dimensions)
- High system pressure derivatives (100 bar)

Pump models

1	3 x 2 x 6 N/W	3	3 x 2 x 8 N/W	5	3 x 2 x 10 N/W
2	3 x 2 x 7 N/W	4	3 x 2 x 9 N/W	6	3 x 2 x 11 N/W

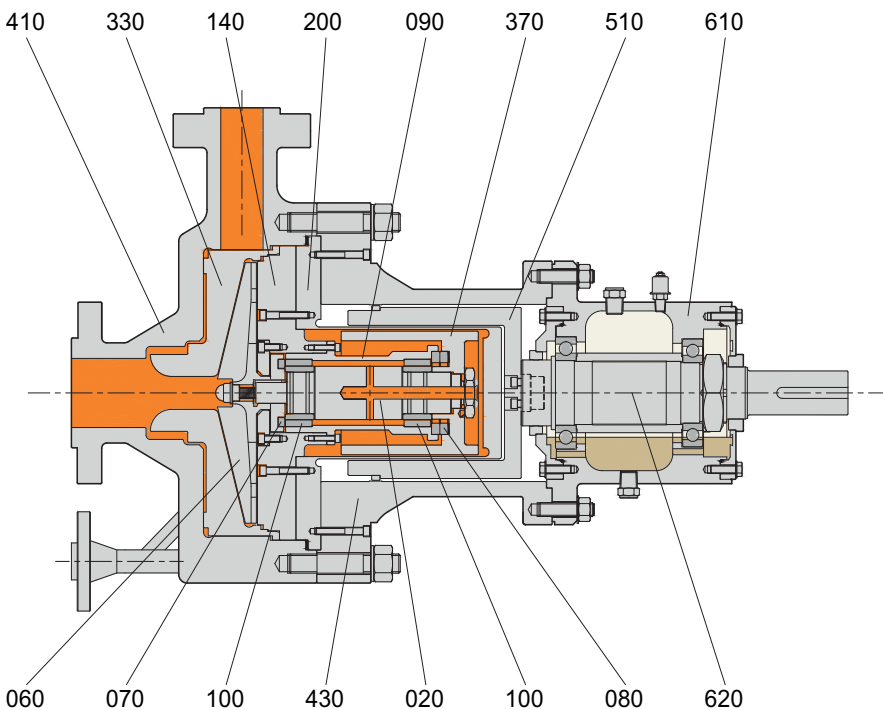
Key Design Features

- **Single Casing Design with Removable Diffuser:** Allows for re-rating of pumps to different process conditions without costly machining. Easily converted on site
- **Generous Clearances:** No wear rings eliminates potential performance degradation sometimes associated with Wear Ring designs. Maintains as-built efficiency
- **Low Specific Speed Best Fit Hydraulics:** Barske Wheel hydraulics for optimum efficiency in low specific speed (Ns) applications. Optimised hardware to fit exact design requirements. Lower end-of-curve power requirements. Maximised efficiency
- **Low Bearing Loads:** Semi-open impeller design reduces radial and axial bearing loads on product lubricated internal bearing system
- **Optional Inducers for low NPSH:** Superior NPSHr performance. Suction designed for cavitation free operation
- **Instrumentation Options:** Power Control Monitor. RTD temperature sensing. Secondary Housing monitoring (Liquid or Pressure). VapourView®

Benefits of the GSPLF

- Barske Wheel hydraulics for optimum efficiency in low specific speed (Ns) applications
- One 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 new castings and/or costly machining
- Available with ZeroLoss™ technology
- Suction tuned inducers for low NPSHa conditions

Construction of GSPLF pumps



020	Pump Shaft
060	Impeller
070	Thrust Washer (Front)
080	Thrust Washer (Back)
090	Bush Holder
100	Bush
140	Casing Plate
200	Shroud
330	Diffuser
370	Inner Magnet Ring
410	Casing
430	Coupling Housing
510	Outer Magnet Ring
610	Bearing Housing
620	Drive Shaft

Flanges and Connections

Casing

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

ANSI B16.5 Class 300 Machined with 1.5mm (0.06") high raised face having a continuous spiral groove.

Flange Loadings

Allowable flange loadings imposed by pipework are in accordance with Table 4 of API 685 2nd edition.

Drain Connections

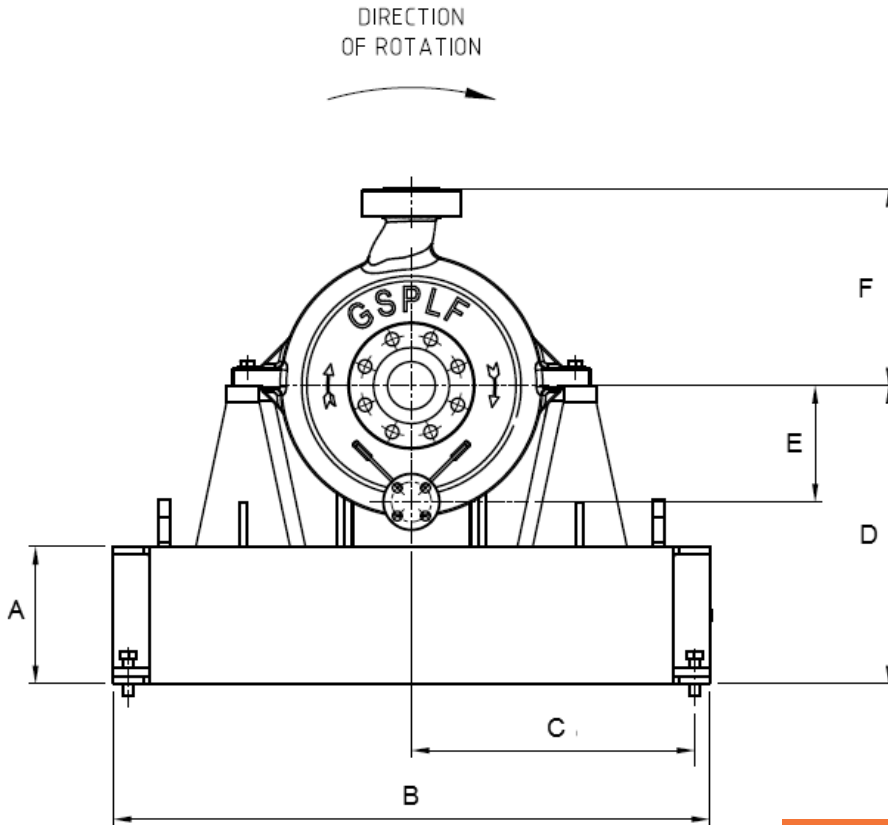
The following drain options are available:

Standard: ¾" Pipe with Weld Neck Flange, gusseted in two planes.

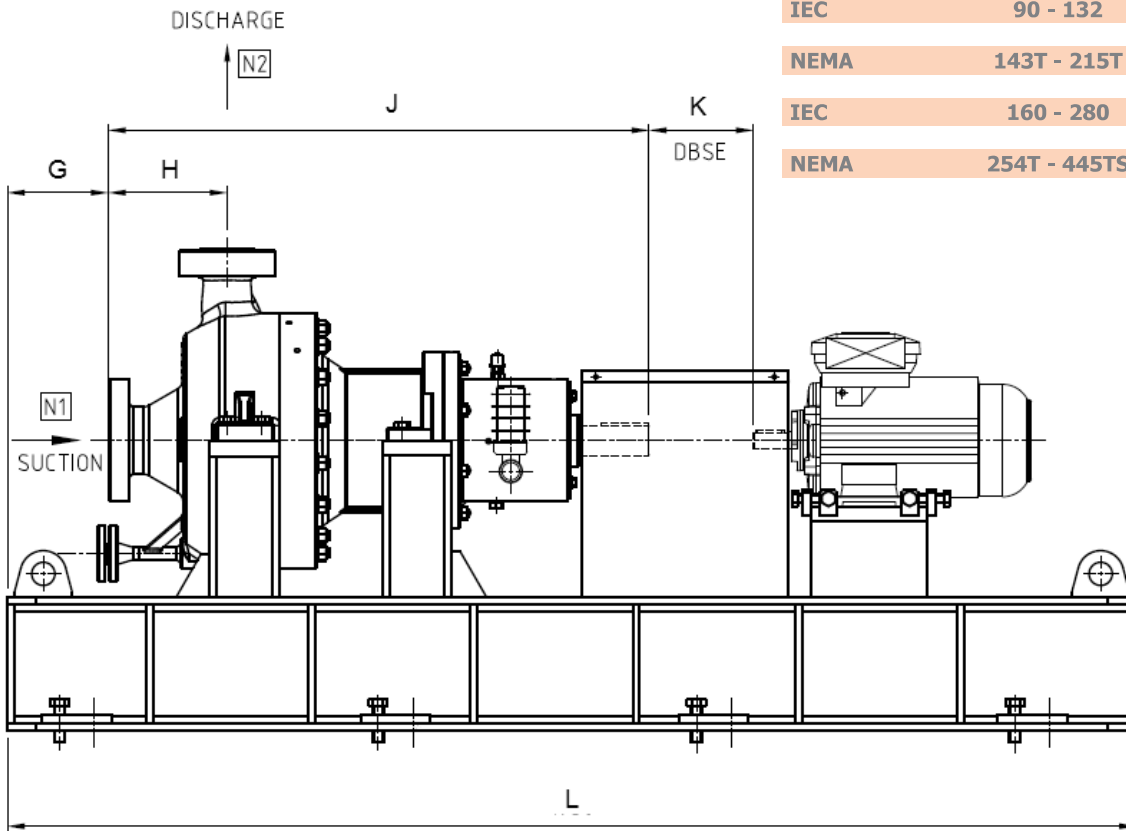
Optional: No Drain.

Dimensions of GSPLF pumps

Dimensions are for guidance only. Do not use for installation purposes.



KEY	mm	inches
A	230	9.1
B	1000	39.4
C	475	18.7
D	500	19.7
E	195	7.7
F	330	13.0
G	174	6.9
H	205	8.1
J	934	36.8
K	180	7.1
L	1950	76.8



Motor Frame	L	mm	inches
IEC	90 - 132	1950	76.8
NEMA	143T - 215T	1950	76.8
IEC	160 - 280	2500	98.4
NEMA	254T - 445TS	2500	98.4

Range Capabilities

Frequency	Head	Flow	Design Temperature	Design Pressure
50 Hz	150 m	4 to 30 m ³ /h	-40 to 260°C	40 bar
60 Hz	720 ft	20 to 160 USgpm	-40 to 500°F	580 psi

Pressure Limits

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

Flange standard	Design pressure			
	S-5	A-8	D-1	D-2
ANSI B16.5 Class 300	4.0 MPa 580 psi	4.0 MPa 580 psi	4.0 MPa 580 psi	4.0 MPa 580 psi
ANSI B16.5 Class 600	10.2 MPa 1480 psi	9.9 MPa 1440 psi	10.3 MPa 1500 psi	10.3 MPa 1500 psi

Component	Hydrostatic test values			
	S-5	A-8	D-1	D-2
Casing Class 300	6.0 MPa 870 psi	6.0 MPa 870 psi	6.0 MPa 870 psi	6.0 MPa 870 psi
Containment Shell Class 300	6.0 MPa 870 psi	6.0 MPa 870 psi	6.0 MPa 870 psi	6.0 MPa 870 psi
Casing Class 600	15.3 MPa 2220 psi	14.9 MPa 2160 ps	15.5 MPa 2150 psii	15.5 MPa 2150 psi
Containment Shell Class 600	15.3 MPa 2220 psi	14.9 MPa 2160 psi	15.5 MPa 2150 psi	15.5 MPa 2150 psi

Temperature Limits

S-5	A-8	D-1	D-2
-29°C to 315°C	-100°C to 315°C	-40°C to 260°C	-40°C to 260°C
(-20°F to 600°F)	(-148°F to 600°F)	(-40°F to 500°F)	(-40°F to 500°F)

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