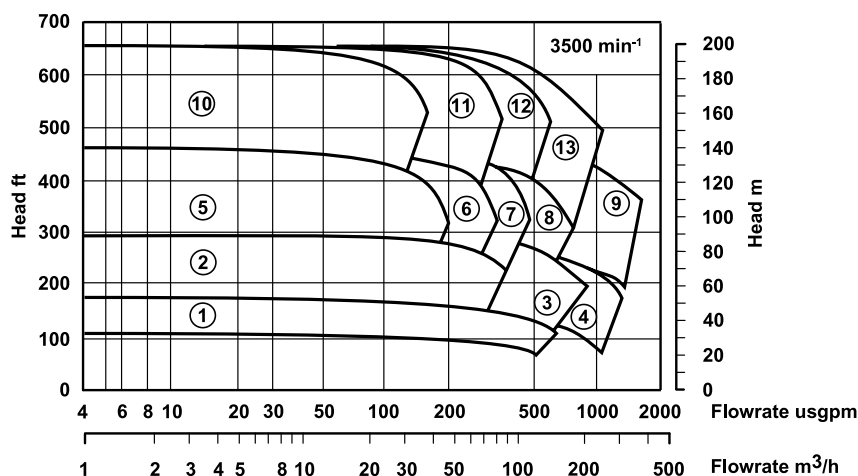


Technical Profile

Magnet drive, end suction, centrifugal pumps
to ISO 2858 / DIN. EN 22858:1993 / ANSI B73.3M



Performance of the GSA/GSI frame II



Pump model

	GSA	GSI		GSA	GSI
1	4 x 3 x 6	100-80-160	8	4 x 3 x 10	100-65-250H
2	3 x 2 x 8	-	9	6 x 4 x 10	125-100-250
3	4 x 3 x 8H	100-65-200H	10	2 x 1 x 13	50-32-315
4	6 x 4 x 8H	125-80-200H	11	3 x 1.5 x 13	65-40-315
5	2 x 1 x 10	50-32-250	12	3 x 2 x 13	80-50-315
6	3 x 1.5 x 10	65-50-250	13	4 x 3 x 13	100-65-315
7	3 x 2 x 10	80-50-250			

Range capabilities

Model	Head	Flow	Temperature	Pressure	Viscosity Cst	Mounting
GSA II	140 m 459 ft	305 m ³ /h 1346 usgpm	-40 to +260°C -40 to +500°F	18.9 bar 275 psi	200	Separate Mounted (SM)
GSI II	140 m 459 ft	305 m ³ /h 1346 usgpm	-40 to +260°C -40 to +500°F	16 bar 232 psi	200	Separate Mounted (SM)

Product overview

The GSA/GSI product covers an hydraulic range that is split between three frame sizes, Frames 0, I, & II. (For frame sizes 0 & I refer to separate Technical profiles).

Technical Profiles are available for the complete range of HMD Kontrö GS based pumps up to frame IV.

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.

This range is based on sizes conforming to ANSI & ISO performance and dimensional standards.

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

Design range limits

The GSA/GSI 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 18.9 bar, 275 psi.

Solids handling capability

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

Options

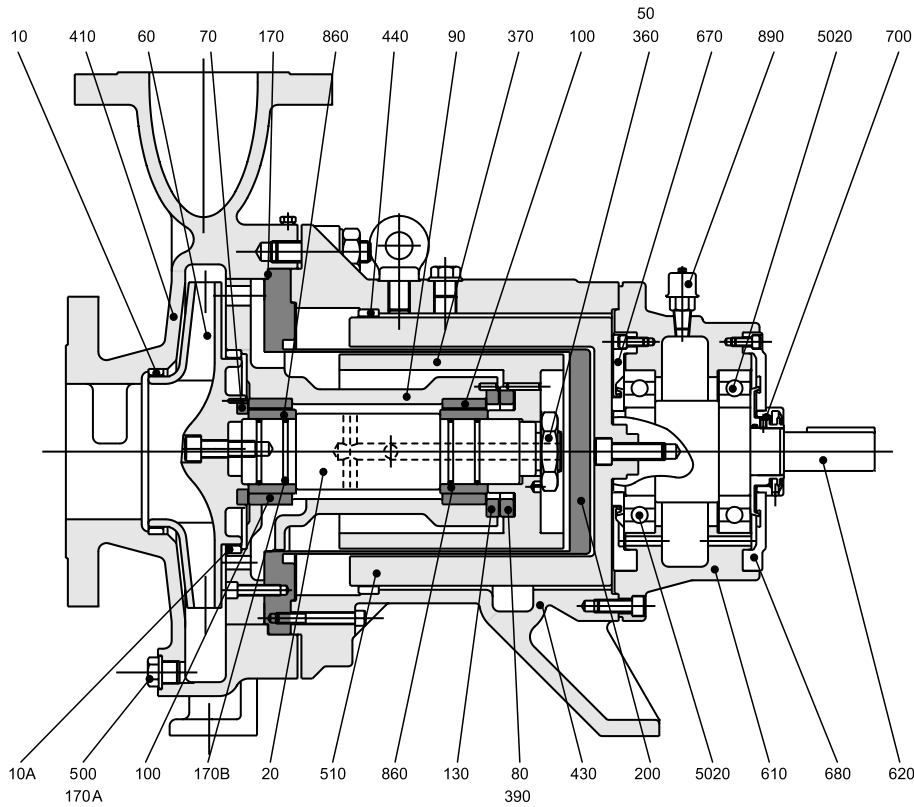
Materials of construction

Wetted parts	Alloy 20, C, B
Product wetted	SiC / Carbon
Gasket	PTFE

Other options

- Casing drains flanged or screwed
- Jacketed pump casing
- Secondary Control
- Coupling housing drain
- Pressure upgrade to 25 bar, 360 psi
- Large range of pump protection

Construction of GSA/GSI frame II



10	Neck Ring [Front]	Stainless Steel
10A	Neck Ring [Back]	Stainless Steel
50	Coupling Washer	Stainless Steel
60	Impeller	Stainless Steel
70	Front Thrust Washer	Alpha SiC
80	Back Thrust Washer	Alpha SiC
90	Bush Holder	Stainless Steel
100	Bush	Alpha SiC
130	Thrust Pad	Alpha SiC
170	Gasket [Casing]	CSF / PTFE
170A	Gasket [Drain]	CSF / PTFE
170B	'O' Ring	Viton A / PFR
200	Containment Shroud/Shell	Alloy C & SS
360	Coupling Nut	Stainless Steel
370	Inner Magnet Ring	Stainless Steel
390	Support Gasket	Exfoliated Graphite & SS
410	Casing	Stainless Steel
430	Coupling Housing	SG Iron
440	Bump Ring	Phosphor Bronze
500	Drain Plug	Stainless Steel
510	Outer Magnet Ring	Carbon Steel
610	Bearing Housing	SG Iron
620	Drive Shaft	Carbon Steel
670	Front Cap	Carbon Steel
680	Back Cap	Carbon Steel
700	Labyrinth Seal [Kit]	Brass
700A	Sec. Containment Seal	Proprietary
860	Shaft Sleeve	Alpha SiC
890	Breather	Stainless Steel
5020	Race	Steel
****	Fixings [Kit]	Various

Flanges and Connections

Casing

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

- ANSI B16.5 Class 150** Machined with 1.5mm (0.06") high raised face having a continuous spiral groove.
- ANSI B16.5 Class 300** Machined with 1.5mm (0.06") high raised face having a continuous spiral groove.
- DIN 2545 PN40** Machined with a 2mm high raised face with a continuous spiral groove. (Note: these flanges are identical to BS 4504 PN40.)

Flange Loadings

Allowable flange loadings imposed by pipework are in accordance with Table 2 of API 610 8th edition and exceed the values in ISO 5199 Annex C.

Drain Connections

The following drain options are available:

- Standard:** 3/8" BSP drain plug fitted with fully trapped gaskets.
- Option 1:** No drain, boss left undrilled.
- Option 2:** 1/2" NPT plug.
- Option 3:** 1/2" flanged drain rated to the casing flanges.

Gauge Connections:

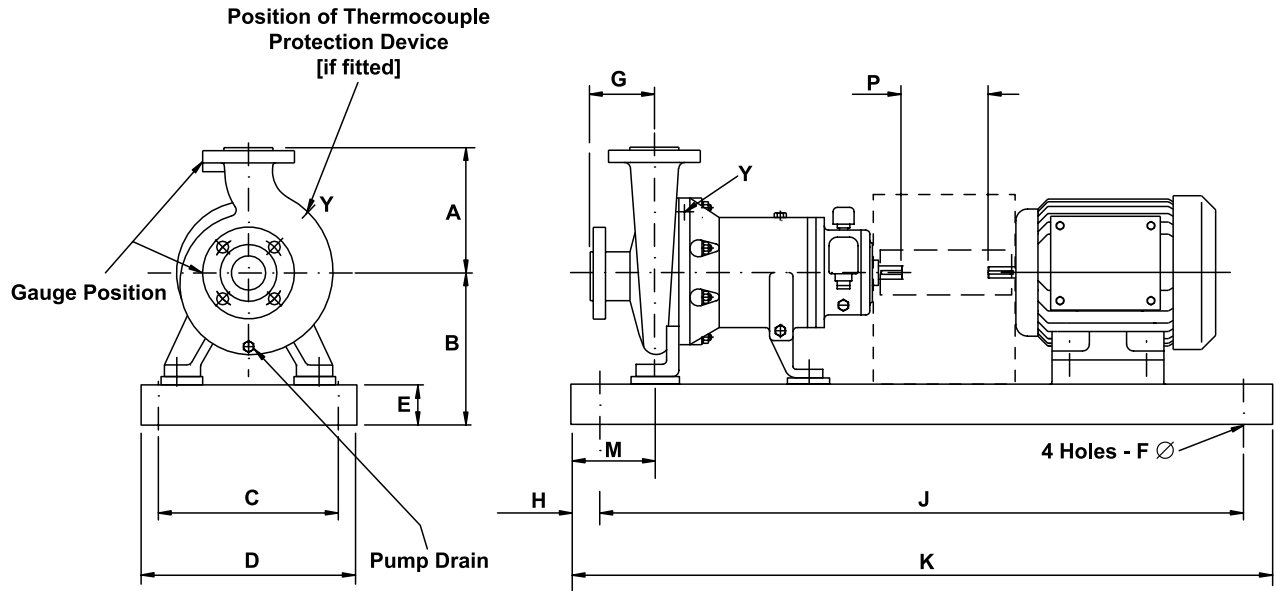
Suction and discharge flanges are fitted with bosses for drilling/tapping: 1/2" NPT

Features and user benefits of the GSA/GSI Pump range

- **Seal/less design** - total product containment - ideal for hydrocarbon, petrochemical, toxic, aggressive, hot, crystallising and valuable product.
- Modular/Interchangeable high efficiency wet end, designed to ensure maximum flow/head coverage across all GS product ranges.
- Modular/Interchangeable high efficiency magnetic couplings.
- Choice of various metallic materials of construction.
- One joint casing/containment shroud/shell design
- Casing gasket fully confined to eliminate 'Blowout' risk.
- Various suction and discharge flange connection options.
- Maximum interchangeability exists between spare parts for the entire range.
- Cartridge assemblies allowing fast replacement of the rotating element.
- Internationally approved pressure vessel standard: ASME VIII code.

Overall benefits to the user

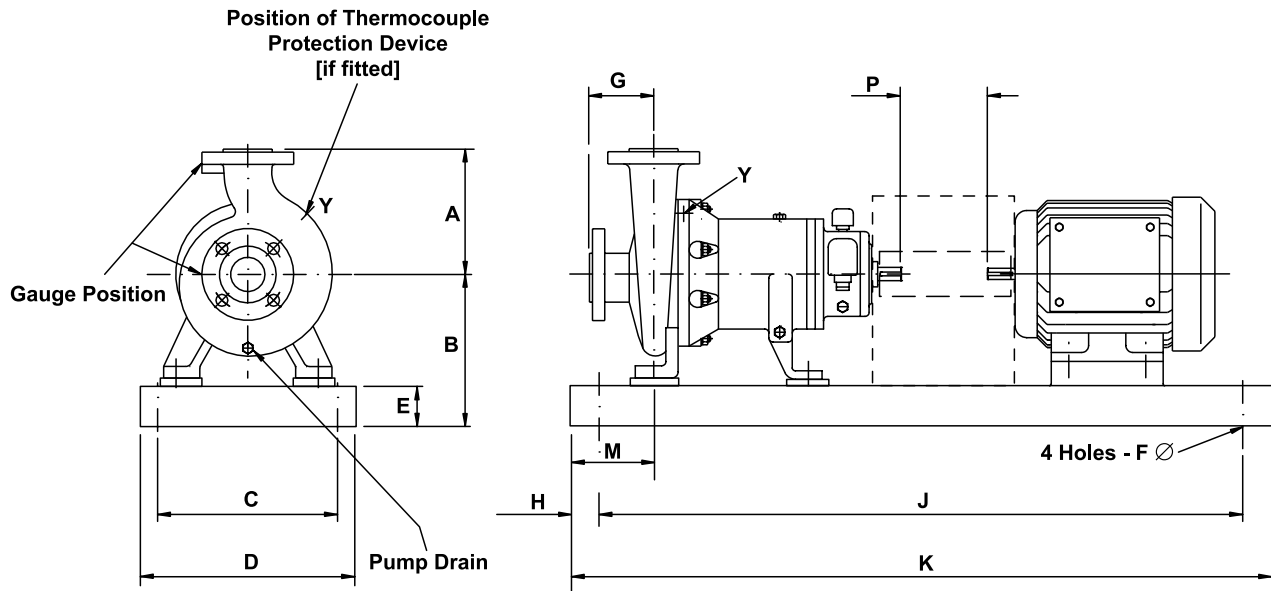
- Ease of application
- Low capital cost
- Design ensures safe, leak free operation
- Low running costs
- Minimal spares holding
- Minimal downtime/fast maintenance
- Maximises on-line process time
- Interchangeable with mechanical seal pumps



Pump size	A	G	M	B1
4x3x6	210/8.25"	101.6/4"	114.3/4.5"	8.25"
3x2x8	241/9.5"	101.6/4"	114.3/4.5"	8.25"
4x3x8H	280/11"	101.6/4"	114.3/4.5"	8.25"
6x4x8H	280/11"	101.6/4"	114.3/4.5"	8.25"
2x1x10	216/8.5"	101.6/4"	114.3/4.5"	8.25"
3x1.5x10	216/8.5"	101.6/4"	114.3/4.5"	8.25"
3x2x10	241/9.5"	101.6/4"	114.3/4.5"	8.25"
4x3x10	280/11"	101.6/4"	114.3/4.5"	8.25"
6x4x10	343/13.5"	101.6/4"	114.3/4.5"	10"
2x1x13	266/10.5"	101.6/4"	114.3/4.5"	10"
3x1.5x13	266/10.5"	101.6/4"	114.3/4.5"	10"
3x2x13	292/11.5"	101.6/4"	114.3/4.5"	10"
4x3x13	318/12.5"	101.6/4"	114.3/4.5"	10"

Dimension P = 25.4/1" for non spacer type & 100/4" for spacer type

Motor Frame	B(B1=8.25")	B(B1=10")	C	D	E	F	H	J	K
90-100-112-132	311/12.25"	355/14"	229/9"	305/12"	90/3.5"	19/0.75"	31.5/1.25"	1080/42.5"	1143/45"
132 (Spacer)	311/12.25"	355/14"	229/9"	305/12"	90/3.5"	19/0.75"	31.5/1.25"	1187/46.5"	1250/49"
160-180	311/12.25"	355/14"	306/12"	381/15"	90/3.5"	19/0.75"	31.5/1.25"	1258/49.5"	1321/52"
200	356/14"	381/15"	380/15"	457/18"	102/4"	25/1"	31.5/1.25"	1472/58"	1535/60.5"
225	356/14"	381/15"	380/15"	457/18"	102/4"	25/1"	31.5/1.25"	1497/59"	1560/61.5"
50	381/15"	381/15"	450/17.7"	550/21.6"	102/4"	25/1"	31.5/1.25"	1637/64.5"	1700/67"
182-184-213-215	311/12.25"	355/14"	229/9"	305/12"	76/3"	19/0.75"	31.5/1.25"	1080/42.5"	1143/45"
254-256-284-286	311/12.25"	355/14"	304/12"	381/15"	90/3.5"	19/0.75"	31.5/1.25"	1258/49.5"	1321/52"
324-326-364-365	355/14"	381/15"	406/16"	457/18"	102/4"	25/1"	31.5/1.25"	1410/55.5"	1473/58"



Baseplate/B	A	G	M	P	132	160	180	200	225	250	280
50-32-250	225/8.8"	100/3.9"	75/2.9"	100/3.9"	5-302/11.9"	6-302/11.9"	6-302/11.9"	7-322/12.7"	-	-	-
50-32-315	250/9.8"	125/4.9"	75/2.9"	100/3.9"	5-322/12.7"	6-322/12.7"	6-322/12.7"	7-322/12.7"	7-346/13.6"	-	-
65-40-250	225/8.8"	100/3.9"	75/2.9"	100/3.9"	5-302/11.9"	6-302/11.9"	6-302/11.9"	7-322/12.7"	-	-	-
65-40-315	250/9.8"	125/4.9"	75/2.9"	100/3.9"	5-322/12.7"	6-322/12.7"	6-322/12.7"	7-322/12.7"	7-346/13.6"	-	-
80-50-250	225/8.8"	125/4.9"	75/2.9"	100/3.9"	5-302/11.9"	6-302/11.9"	6-302/11.9"	7-322/12.7"	7-346/13.6"	-	-
80-50-315	280/11"	125/4.9"	75/2.9"	100/3.9"	5-346/13.6"	6-346/13.6"	6-346/13.6"	7-346/13.6"	7-346/13.6"	8-371/14.6"	9-396/15.6"
100-80-160	200/7.9"	100/3.9"	75/2.9"	100/3.9"	5-282/11.1"	6-282/11.1"	6-302/11.9"	7-322/12.7"	-	-	-
100-65-200H	225/8.8"	100/3.9"	75/2.9"	140/5.5"	5-302/11.9"	6-302/11.9"	6-302/11.9"	7-322/12.7"	7-346/13.6"	-	-
100-65-250H	250/9.8"	125/4.9"	90/3.5"	140/5.5"	5-322/12.7"	6-322/12.7"	6-322/12.7"	7-322/12.7"	7-346/13.6"	8-371/14.6"	9-396/15.6"
100-65-315	280/11"	125/4.9"	90/3.5"	140/5.5"	6-346/13.6"	6-346/13.6"	7-346/13.6"	7-346/13.6"	7-346/13.6"	8-371/14.6"	9-396/15.6"
125-80-200H	250/9.8"	125/4.9"	75/2.9"	140/5.5"	5-302/11.9"	6-302/11.9"	7-302/11.9"	7-322/12.7"	7-346/13.6"	8-371/14.6"	-
125-100-250	280/11"	140/5.5"	90/3.5"	140/5.5"	6-346/13.6"	6-346/13.6"	7-346/13.6"	7-346/13.6"	7-346/13.6"	8-371/14.6"	9-396/15.6"
125-100-315	315/12.4"	140/5.5"	90/3.5"	140/5.5"	6-371/14.6"	6-371/14.6"	7-371/14.6"	7-371/14.6"	7-371/14.6"	8-371/14.6"	9-396/15.6"

First number indicates Baseplate size.

Baseplate	C	D	E	F	H	J	K
5	440/17.2"	490/19.3"	20/0.8"	23/0.9"	190/7.5"	740/29.1"	1120/44"
6	490/19.3"	540/21.3"	20/0.8"	23/0.9"	205/8.1"	840/33"	1250/49"
7	550/21.7"	610/24"	20/0.8"	27/1.1"	230/9"	940/37"	1400/55"
8	600/23.6"	660/26"	20/0.8"	27/1.1"	270/10.6"	1060/41.7"	1600/63"
9	670/26.4"	730/28.7"	20/0.8"	27/1.1"	300/11.8"	1200/47.2"	1800/71"

Dimensions shown are metric/imperial (inches).

Typical liquids pumped

Acids

Acetic Acid
Acrylic Acid
Arsenic Acid
Benzoic Acid
Boric Acid
Carbolic Acid
Carbonic Acid
Chlorosilicic Acid
Citric Acid
Cresylic Acid
Fatty Acids
Fluosilicic Acid
Formic Acid
Hydrobromic Acid
Hydrochloric Acid
Hydrocyanic Acid
Hydrofluoric Acid
Lactic Acid
Maleic Acid
Nitric Acid
Oxalic Acid
Phosphoric Acid
Phthalic Acid
Picric Acid
Sulfuric Acid
Sulfurous Acid
Tannic Acid
Tartaric Acid

Alcohol & glycols

Butanol
Diethyl Glycol
Ethanol
Glycol
Isopropyl Alcohol
Methanol
Propanol
Propylene Glycol

Alkalis

Ammonium Hydroxide
Ferric Hydroxide
Potassium Hydroxide

Halogenides

Anhydrous Chlorine
Carbon Tetrachloride
Fluorocarbon Liquids
Freon
Hydrogen Chloride
Methyl Chloride
Methylene Chloride
Phosgene
Silicon Tetrachloride
Titanium Tetrachloride

Heat transfer fluids

Alkylated Aromatics
Diphenyl / diphenyl oxide
Eutectic Salts
Hydrocarbon Oil
Isometric Triaryldimethanes
Polyalkylene Glycol
Silicone Oils

Hydrocarbons

Acrylic Monomers
Acrylonitrile
Amyl Acetate
Benzene
Butadiene
Butane
Chloroform
Chloroprene
Cyclohexane
Dichlorobenzene
Ethylene
Furfural
Hexane
Kerosene
LPG
MDA
MDI
Methylene Dichloride
Methyl Naphthalene
Naphtha
Naphthalene
Pentane
Phenol
Phthalic Anhydride
Polychlorinated Biphenyls
Pyridine
Pyrogallic Acid
Styrene
TDA
TDI
Toluene
Trichloroethylene
Vinyl Acetate
Vinyl Chloride
Vinyl Chloride Monomer
Various Chlorinated Hydrocarbons
Xylene

Nitrogen & Sulphur compounds

Anhydrous Ammonia
Aniline
Carbon Disulfide
Hydrarine
Sulfur Dioxide

Salts

Aluminium Nitrate
Phosphate
Ammonium Chloride
Ammonium Sulphate
Barium Chloride
Barium Chlorate
Calcium Chloride
Copper Nitrate
Copper Sulfate
Ferrous Sulphate
Phosphorus Trichloride
Phosphorus Oxychloride
Potassium Chlorate
Sodium Carbonate
Sodium Chlorate
Sodium Cyanide
Sodium Nitrate
Sodium Sulphate
Zinc Chloride

Other chemicals

Acetaldehyde
Acetic Anhydride
Acetone
Acrolein
Arcton (Refrigerant)
Detergents
Ethylene Oxide
Ethyl Ether
Formaldehyde
Freon
Hydrogen Peroxide
Lead Acetate
Mercuric Chloride
Methacrylates
Methyl
Monoglycerides
Propylene Oxide
Sorbitol
Sugar Solutions
Syrup
Tallow
Tetraethyl Lead
Tritely Lead
Vegetable Oils
Water, Boiler
Water, Demonized
Water, Demineralized
Water, Heavy

This list is only a sample of the vast array of liquids regularly pumped by the HMD/Kontro products.

For liquids not covered above, please contact HMD/Kontro direct.

Pressure limits

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

Flange standard	Design pressure		
	316 St St	Alloy 20	Alloy C
ANSI B16.5 Class 150	1.89 N/mm2 275 psi	1.59 N/mm2 230 psi	2.00 N/mm2 290 psi
BS 4504 PN 16	1.60 N/mm2 232 psi	1.52 N/mm2 220 psi	1.60 N/mm2 232 psi
DIN 2543	1.60 N/mm2 232 psi	1.52 N/mm2 220 psi	1.60 N/mm2 232 psi

Component	Hydrostatic test value		
	316 St St	Alloy 20	Alloy C
Casing (ANSI 150 lb)	2.93N/mm2 425 psi	2.41 N/mm2 350 psi	3.10 N/mm2 450 psi
Casing (PN 16)	2.40 N/mm2 348 psi	2.30 N/mm2 333 psi	2.40 N/mm2 348 psi
Containment Shroud/Shell	2.93 N/mm2 425 psi	2.41 N/mm2 350 psi	3.10 N/mm2 450 psi

Temperature limits

Standard Range -40°C to +205°C (-40°F to +400°F)

Option -10°C to +260°C (14°F to +500°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.



**HMD
KONTRO**

Sealless Pumps



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