

HORIZONTAL END SUCTION VOLUTE PROCESS PUMP MODEL GSO

TECHNICAL DATA BOOK 50/60Hz



eDYNAMiQ

Eco, Dynamic and Integrated Quality

EBARA CORPORATION

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PERFORMANCE CURVES**50Hz – 2950 min-1**

GSO50-32-125, GSO50-32-160, GSO50-32-200, GSO50-32-250
GSO65-40-125, GSO65-40-160, GSO65-40-200, GSO65-40-250
GSO80-50-125, GSO80-50-160, GSO80-50-200, GSO80-50-250, GSO80-50-315
GSO100-65-160, GSO100-65-200, GSO100-65-250, GSO100-65-315
GSO125-80-160, GSO125-80-200, GSO125-80-250, GSO125-80-315
GSO125-100-200

50Hz – 1450 min-1

GSO50-32-125, GSO50-32-160, GSO50-32-200, GSO50-32-250
GSO65-40-125, GSO65-40-160, GSO65-40-200, GSO65-40-250
GSO80-50-125, GSO80-50-160, GSO80-50-200, GSO80-50-250, GSO80-50-315
GSO100-65-160, GSO100-65-200, GSO100-65-250, GSO100-65-315
GSO125-80-160, GSO125-80-200, GSO125-80-250, GSO125-80-315, GSO125-80-400
GSO125-100-200, GSO125-100-250, GSO125-100-315, GSO125-100-400
GSO150-125-200, GSO150-125-250, GSO150-125-315, GSO150-125-400, GSO150-125-500
GSO200-150-250, GSO200-150-315, GSO200-150-400, GSO200-150-500
GSO250-200-400, GSO250-200-500

60Hz – 3550 min-1

GSO50-32-125, GSO50-32-160, GSO50-32-200, GSO50-32-250
GSO65-40-125, GSO65-40-160, GSO65-40-200, GSO65-40-250
GSO80-50-125, GSO80-50-160, GSO80-50-200, GSO80-50-250
GSO100-65-160, GSO100-65-200, GSO100-65-250
GSO125-80-160, GSO125-80-200, GSO125-80-250

60Hz – 1750 min-1

GSO50-32-125, GSO50-32-160, GSO50-32-200, GSO50-32-250
GSO65-40-125, GSO65-40-160, GSO65-40-200, GSO65-40-250
GSO80-50-125, GSO80-50-160, GSO80-50-200, GSO80-50-250, GSO80-50-315
GSO100-65-160, GSO100-65-200, GSO100-65-250, GSO100-65-315
GSO125-80-160, GSO125-80-200, GSO125-80-250, GSO125-80-315, GSO125-80-400
GSO125-100-200, GSO125-100-250, GSO125-100-315, GSO125-100-400
GSO150-125-200, GSO150-125-250, GSO150-125-315, GSO150-125-400, GSO150-125-500
GSO200-150-250, GSO200-150-315, GSO200-150-400, GSO200-150-500
GSO250-200-400, GSO250-200-500

FOOD INDUSTRY

- Low viscosity (up to 100cP)
- Middle viscosity (up to 400cst)
- Starch, Molasses, Wort
- Filtration pump
- Cleaning in place pump

PAPER AND PULP INDUSTRY

- Material production process (Around digester, Chemical recovery)
- Preparation process (Chemical Pump)
- Paper making process (Pulp pump 0.3% and below)

PETROCHEMICAL INDUSTRY

- Chemical process

INORGANIC CHEMICAL INDUSTRY

- Acid
- Alkali

SEMICONDUCTOR INDUSTRY

- Ultrapure water production line (Pure water pump)

MOTOR VEHICLE INDUSTRY

- Machining line (Coolant centralization)
- Painting line (Chemical conversion treatment, Electrodeposition paint)

STEEL INDUSTRY

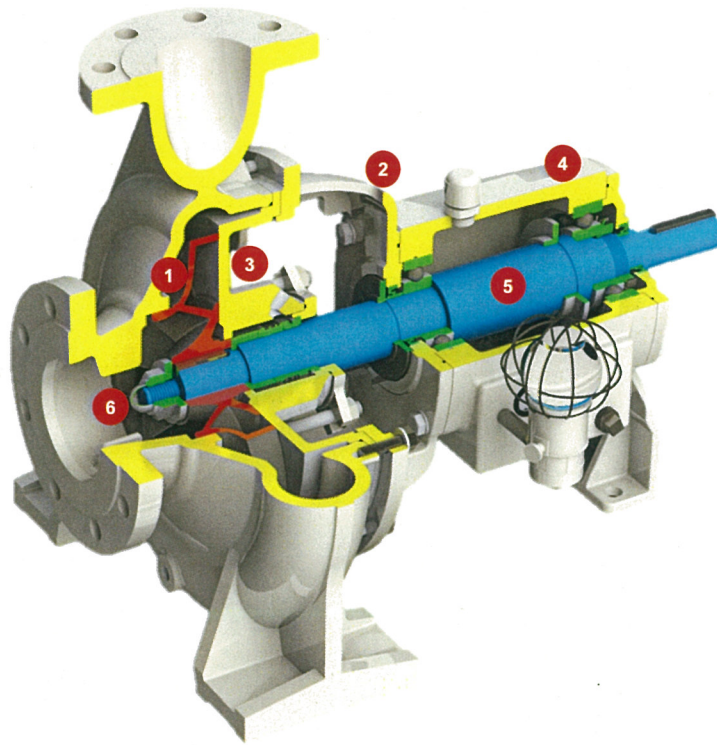
- Rolling facility (Scale pit pump)
- Plating facility

METAL GOODS INDUSTRY

- Plating facility (Degreasing washing, Rinse water drainage)

FISHERIES INDUSTRY

- AQUACULTURE (Seawater)

**1 Impeller with unique reverse open shape**

- Utilizing analysis technology, the following was achieved despite reverse open vanes with no balance holes ;
- Compatible for light slurry liquid with little entry of slurry at back side as well as clean liquid
 - Less axial thrust load
 - Low seal box pressure
 - High efficiency
 - Performance deterioration due to the gap between impeller and stationary side is smaller than front open type.

2 Back pullout construction

- Easy maintenance without disassembling suction and discharge piping

3 Gland cover compatible with various shaft seal types

- Sufficient seal box space enough to support shaft sealing requirements for special applications

4 Heavy duty design of bearing and bearing housing construction

- Low vibration value of 3.0 or 4.5 mm/s as per ISO 5199
- Longer bearing life as per ISO 5199
- Both grease (shield type) and oil lubrication available
- Standard deep groove ball bearings adopted by reducing the axial thrust load. This can reduce the cost of parts.

5 Heavy duty shaft design

- Deflection at shaft seal 50 μ m or less
- Reduction of shaft sealing problems to make maintenance costs lower by small shaft deflection and vibration

6 U-type impeller nut

- Not loosen during operation
- Short assembly time
- Can be used repeatedly

7 High interchangeability of parts

- Minimized maintenance cost and stock parts
- Only 4 sizes of bearing housing frame
- Only 7 type of shaft

8 Energy-saving Design

- World top class pump efficiency
- Due to higher efficiency, energy consumption lower and pump size smaller

9 International Standards

- Pump dimension in accordance with ISO 2858 and EN 22858
- Pump design as per ISO 5199
- Seal chamber dimension in accordance with ISO 3069

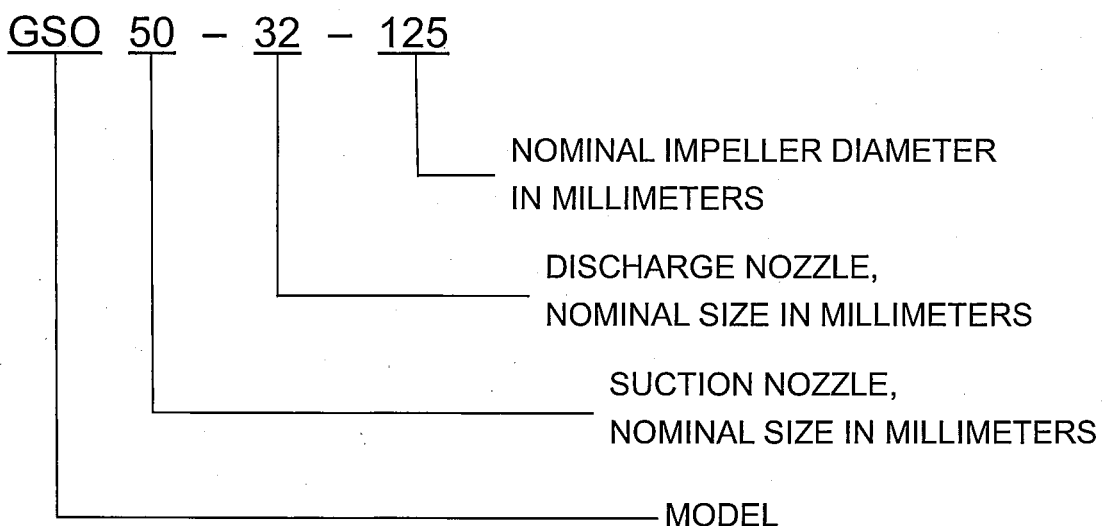
General Description

Capacities	To 1400 m ³ /hr (50Hz)
	To 1400 m ³ /hr (60Hz)
Heads	To 150 m (50Hz)
	To 140 m (60Hz)
Liquid temperatures	-30°C to 150°C
Max.working pressures	Up to 16Bar (1.6MPa)
Materials (*1)	Casing: 304 Stainless Steel Impeller: 304 Stainless Steel
Standards	ISO2858, ISO5199
Rotation	Clockwise viewed from coupling end

(*1) 316 stainless steel can be selected as an option.

Designation

The following designation is system according to ISO 2858.



FEATURES

- Horizontal foot mounting
- Back pull-out design
- Single-stage
- Radially split volute casing

APPLICABLE FLANGE STANDARD

- EN PN16
- JIS 10K

IMPELLER TYPE

- Reversed semi-open impeller with shuriken shroud (except some models), single suction type and without balancing holes to reduce continuous supply of slurry

SHAFT SEAL

- Gland packing
- Single mechanical seal based upon DIN 24960
- Single mechanical seal (Cylindrical type)
- Double mechanical seal (Cylindrical type)

BEARINGS AND LUBRICATION

- Standard : Shield ball bearing (Grease lubrication)
- Optional : Ball bearing (Oil lubrication)
- Optional : Heavy duty ball bearing (Oil lubrication)

PAINTING

1. Outer Surface

• Standard for Casing and Gland Cover

Primer coating	Non painting
Final coating	Non painting

• Standard for Bearing Housing, Bearing Cover, Adapter, Bracket and Stay

Primer coating	Polyurethane resin primer
Final coating	Acrylic urethane resin paint
Finish color	Munsell 2.5PB4/2 (Dark gray)

2. Inner Surface

• Standard for Casing, Gland cover and Impeller

Primer coating	Non painting
Final coating	Non painting

• Standard for Bearing Housing

Primer coating	Polyurethane resin primer
Final coating	Non painting

TECHNICAL DATA – Impeller Diameter

B-1

— Not applicable Model

Unit : in mm

Model	Shaft No.	50Hz				60Hz			
		2P		4P		2P		4P	
		Max	Min	Max	Min	Max	Min	Max	Min
50-32-125	40	142	106	142	106	142	106	142	106
50-32-160	40	169	135	169	135	169	135	169	135
50-32-200	40	209	161	209	161	209	161	209	161
50-32-250	50A	250	198	250	198	250	198	250	198
65-40-125	40	142	105	142	105	142	105	142	105
65-40-160	40	177	134	177	134	177	134	177	134
65-40-200	40	205	161	205	161	205	161	205	161
65-40-250	50A	248	200	248	200	248	200	248	200
80-50-125	40	144	111	144	111	144	111	144	111
80-50-160	40	177	131	177	131	177	131	177	131
80-50-200	40	210	171	210	171	210	171	210	171
80-50-250	50A	258	191	258	191	221	191	258	191
80-50-315	50B	310	254	327	254	-	-	327	254
100-65-160	50A	177	135	177	135	177	135	177	135
100-65-200	50A	219	162	219	162	211	162	219	162
100-65-250	50B	260	208	260	208	260	208	260	208
100-65-315	60	291	243	305	243	-	-	305	243
125-80-160	50A	177	147/127	177	147/127	177	147/127	177	147/127
125-80-200	50B	222	170/159.8	222	170/159.8	222	170/159.8	222	170/159.8
125-80-250	50B	257	220	257	220	247	220	257	220
125-80-315	60	301	243	317	243	—	—	317	243
125-80-400	60	-	-	393	307	—	—	393	307
125-100-200	50B	220	171	220	171	—	—	220	171
125-100-250	60	-	-	266	210	—	—	266	210
125-100-315	60	-	-	303	261	—	—	303	261
125-100-400	60	-	-	392	312	—	—	392	312
150-125-200	60	-	-	224	174	—	—	224	174
150-125-250	60	-	-	274	213	—	—	274	213
150-125-315	60	-	-	334	259	—	—	334	259
150-125-400	60	-	-	416	329	—	—	416	329
150-125-500	75A	-	-	485	396	—	—	459	396
200-150-250	60	-	-	274	213	—	—	274	213
200-150-315	75A	-	-	352	273	—	—	352	273
200-150-400	75A	-	-	411	319	—	—	411	319
200-150-500	75B	-	-	485	396	—	—	485	404
250-200-400	75B	-	-	420	326	—	—	420	326
250-200-500	90	-	-	530	401	—	—	454	401

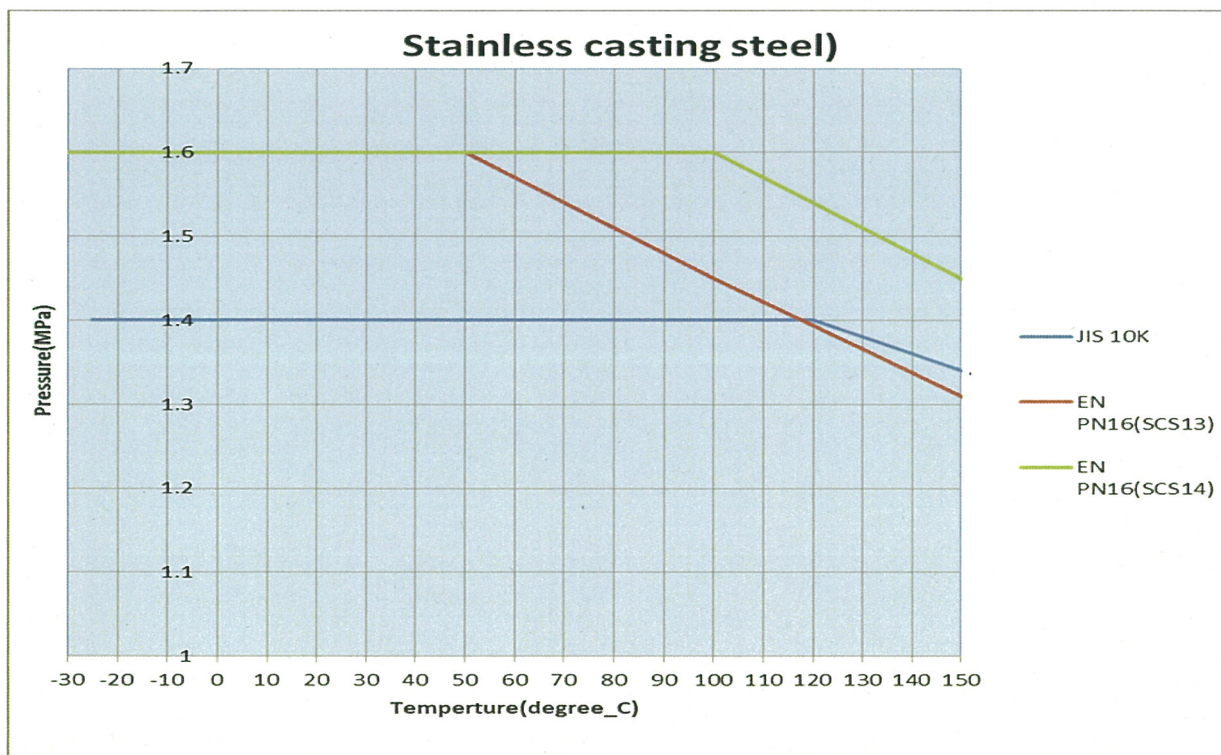
TECHNICAL DATA – Shaft No. and Shaft Diameter

B-2

Model	Shaft No.	At Coupling (mm)	At Radial Bearing (mm)	At Thrust Bearing (mm)	Under Shaft Sleeve (mm)	Sleeve Dia. (For Gland packing) (mm)
50-32-125	40	24	40	40	38	45
50-32-160	40	24	40	40	38	45
50-32-200	40	24	40	40	38	45
50-32-250	50A	32	50	55	48	55
65-40-125	40	24	40	40	38	45
65-40-160	40	24	40	40	38	45
65-40-200	40	24	40	40	38	45
65-40-250	50A	32	50	55	48	55
80-50-125	40	24	40	40	38	45
80-50-160	40	24	40	40	38	45
80-50-200	40	24	40	40	38	45
80-50-250	50A	32	50	55	48	55
80-50-315	50B	32	50	55	48	55
100-65-160	50A	32	50	55	48	55
100-65-200	50A	32	50	55	48	55
100-65-250	50B	32	50	55	48	55
100-65-315	60	42	60	65	55	60
125-80-160	50A	32	50	55	48	55
125-80-200	50B	32	50	55	48	55
125-80-250	50B	32	50	55	48	55
125-80-315	60	42	60	65	55	60
125-80-400	60	42	60	65	55	60
125-100-200	50B	32	50	55	48	55
125-100-250	60	42	60	65	55	60
125-100-315	60	42	60	65	55	60
125-100-400	60	42	60	65	55	60
150-125-200	60	42	60	65	55	60
150-125-250	60	42	60	65	55	60
150-125-315	60	42	60	65	55	60
150-125-400	60	42	60	65	55	60
150-125-500	75A	48	75	80	65	70
200-150-250	60	42	60	65	55	60
200-150-315	75A	48	75	80	65	70
200-150-400	75A	48	75	80	65	70
200-150-500	75B	65	75	80	75	80
250-200-400	75B	65	75	80	75	80
250-200-500	90	75	90	80	80	90

1. Maximum Allowable Working Pressure (MAWP)

Pressure casing material	Liquid temperature	Max. allowable working pressures	Flange standard
Stainless Steel	-30°C to 150°C	16 bar (1.6MPa)	EN PN16
		14bar (1.4MPa)	JIS 10K



2. Maximum Allowable Suction Pressure (MASP)

(1) Mechanical Seal Application

Maximum Allowable Suction Pressure (MASP) must be smaller than the difference between the Maximum Allowable Working Pressure (MAWP) and Pump Shut-off Pressure (PSP), as follows. However, MASP shall not exceed 16 bar.

$$\text{MASP} < \text{MAWP} - \text{PSP}$$

$$[\text{PSP (in bar)} = 0.098 \times \text{Pump Shut-off Head (in m)} \times \text{Liquid Density (in kg/ℓ)}]$$

(2) Gland Packing Application

Maximum Allowable Suction Pressure (MASP) of Gland Packing application is **6 bar** as standard.

TECHNICAL DATA – Interchangeability Chart

B-4

Grease Shield Bearing										for Mechanical Seal				for Gland Packing		
Model	Shaft No.	Impeller	Ball Bearing (M)	Ball Bearing (P)	Deflector	V RING - BG COVER	O-Ring (Gland Cover)	Mech.Seal	O-Ring (Gland Plate)	Packing Sleeve	Gasket (PK Sleeve)	Gland Packing				
50-32-125	40	Depends on each model	A	B	A	A	A	A	A	A	A	A				
50-32-160	40		A	B	A	A	A	A	A	A	A	A	A			
50-32-200	40		A	B	A	A	B	A	A	A	A	A	A			
50-32-250	50A		C	D	B	B	C	B	B	B	B	B	B			
65-40-125	40		A	B	A	A	A	A	A	A	A	A	A			
65-40-160	40		A	B	A	A	A	A	A	A	A	A	A			
65-40-200	40		A	B	A	A	B	A	A	A	A	A	A			
65-40-250	50A		C	D	B	B	C	B	B	B	B	B	B			
80-50-125	40		A	B	A	A	A	A	A	A	A	A	A			
80-50-160	40		A	B	A	A	A	A	A	A	A	A	A			
80-50-200	40		A	B	A	A	B	A	A	A	A	A	A			
80-50-250	50A		C	D	B	B	C	B	B	B	B	B	B			
100-65-160	50A		C	D	B	B	B	A	B	B	B	B	B			
100-65-200	50A		C	D	B	B	B	B	B	B	B	B	B			
100-65-250	50B		C	D	B	B	C	C	B	B	C	B	B			
100-65-315	60		E	F	C	C	C	D	C	C	D	C	C			
125-80-160	50A		C	D	B	B	B	A	B	B	B	B	B			
125-80-200	50B		C	D	B	B	B	C	B	B	C	B	B			
125-80-250	50B		C	D	B	B	C	C	B	B	C	B	B			
125-80-315	60		E	F	C	C	C	D	C	C	D	C	C			
125-80-400	60		E	F	C	C	C	E	C	C	D	C	C			
125-100-200	50B		C	D	B	B	B	B	B	B	C	B	B			
125-100-250	60		E	F	C	C	C	C	C	C	D	C	C			
125-100-315	60		E	F	C	C	C	D	C	C	D	C	C			
125-100-400	60		E	F	C	C	C	E	C	C	D	C	C			
150-125-200	60		E	F	C	C	C	B	C	C	D	C	C			
150-125-250	60		E	F	C	C	C	C	C	C	D	C	C			
150-125-315	60		E	F	C	C	C	D	C	C	D	C	C			
150-125-400	60		E	F	C	C	C	E	C	C	D	C	C			
150-125-500	75A		G	H	D	D	D	F	D	D	E	D	D			
200-150-250	60		E	F	C	C	C	C	C	C	D	C	C			
200-150-315	75A		G	H	D	D	D	D	D	D	E	D	D			
200-150-400	75A		G	H	D	D	D	E	D	D	E	D	D			
200-150-500	75B		G	H	E	E	D	F	E	E	F	E	E			
250-200-400	75B		G	H	E	E	D	E	E	E	F	E	E			
250-200-500	90		G	J	F	F	E	F	F	F	F	F	F			

Note: Materials of every parts should be specified by the section of "Materials of Construction".
The same letters in the same vertical column are interchangeable.

TECHNICAL DATA — Interchangeability Chart

B-5

Oil Lubrication Bearing															for Mechanical Seal			for Gland Packing		
Model	Shaft No.	Impeller	Ball Bearing (M)	Ball Bearing (P)	Deflector	Oil Seal (M)	Oil Seal (P)	O-Ring (Gland Cover)	O-Ring BG Cover (M)	O-Ring BG Cover (P)	Mech. Seal	O-Ring (Gland Plate)	Packing Sleeve	Gasket (PK Sleeve)	Gland Packing					
50-32-125	40	Depends on each model	L	M	A	A	B	A	B	A	A	A	A	A	A					
50-32-160	40		L	M	A	A	B	A	B	A	A	A	A	A	A					
50-32-200	40		L	M	A	A	B	B	A	A	A	A	A	A	A					
50-32-250	50A		N	P	B	A	C	C	D	C	B	B	B	B	B					
65-40-125	40		L	M	A	A	B	A	A	B	A	A	A	A	A	A				
65-40-160	40		L	M	A	A	B	A	A	B	A	A	A	A	A	A				
65-40-200	40		L	M	A	A	B	B	A	B	A	A	A	A	A	A				
65-40-250	50A		N	P	B	A	C	C	D	C	B	B	B	B	B	B				
80-50-125	40		L	M	A	A	B	A	A	B	A	A	A	A	A	A				
80-50-160	40		L	M	A	A	B	B	A	B	A	A	A	A	A	A				
80-50-200	40		L	M	A	A	B	B	A	B	A	A	A	A	A	A				
80-50-250	50A		N	P	B	A	C	C	D	C	C	B	B	B	B	B				
80-50-315	50B		N	P	B	B	C	C	D	D	C	B	B	C	B	B				
100-65-160	50A		N	P	B	B	B	C	A	D	C	B	B	B	B	B				
100-65-200	50A		N	P	B	B	B	C	B	D	C	B	B	B	B	B				
100-65-250	50B		N	P	B	B	B	C	C	D	C	B	B	C	B	B				
100-65-315	60		N	Q	R	C	B	D	D	F	E	C	C	D	C	C				
125-80-160	50A		N	P	B	B	B	C	A	D	C	B	B	B	B	B				
125-80-200	50B		N	P	B	B	B	C	B	D	C	B	B	C	B	B				
125-80-250	50B		N	P	B	B	B	C	C	D	C	B	B	C	B	B				
125-80-315	60	Q	R	C	B	C	D	D	F	E	C	C	D	C	C					
125-80-400	60	Q	R	C	B	C	D	E	F	E	C	C	D	C	C					
125-100-200	50B	N	P	B	B	B	C	B	D	C	B	B	C	B	B					
125-100-250	60	Q	R	C	B	C	D	C	F	E	C	C	D	C	C					
125-100-315	60	Q	R	C	B	C	D	D	F	E	C	C	D	C	C					
125-100-400	60	Q	R	C	B	C	D	E	F	E	C	C	D	C	C					
150-125-200	60	Q	R	C	B	C	D	B	F	E	C	C	D	C	C					
150-125-250	60	Q	R	C	B	C	D	C	F	E	C	C	D	C	C					
150-125-315	60	Q	R	C	B	C	D	D	F	E	C	C	D	C	C					
150-125-400	60	Q	R	C	B	C	D	E	F	E	C	C	D	C	C					
150-125-500	75A	S	T	D	B	E	F	F	H	G	D	D	E	D	D					
200-150-250	60	Q	R	C	B	C	D	C	F	E	C	C	D	C	C					
200-150-315	75A	S	T	D	B	E	F	D	H	G	D	D	E	D	D					
200-150-400	75A	S	T	D	B	E	F	E	H	G	D	D	E	D	D					
200-150-500	75B	S	T	E	B	E	F	F	H	G	E	E	F	E	E					
250-200-400	75B	S	T	E	B	E	F	E	H	G	E	E	F	E	E					
250-200-500	90	S	U	F	G	H	H	F	H	G	F	F	G	F	F					

Note: Materials of every parts should be specified by the section of "Materials of Construction".
The same letters in the same vertical column are interchangeable.

TECHNICAL DATA – The Number of Recommended Spare Parts**The number of recommended spare parts**

Parts name	Used number of parts / unit	Spare parts for 1 year operation		Spare parts for 2 years operation		Remarks
		1 pump	2 and more pumps (*1)	1 pump	2 and more pumps (*1)	
Impeller	1	-	-	1	20%	
Shaft	1	-	-	1	20%	
Ball bearing (M)	1	1	25%	1	40%	
Ball bearing (P)	1	1	25%	1	40%	
Packing sleeve	1	1	30%	1	50%	*2
Coupling consumable parts (if any)	1 set	1 set	30%	1	50%	
Mechanical seal	1 set	1 set	40%	1 sets	70%	*3
Deflector	1	1	40%	1	70%	
V Ring	1	1	40%	1	70%	*5
Oil Flinger	1	1	40%	1	70%	*4
Oil seal (M)	1	1	100%	2	150%	*4
Oil seal (P)	1	1	100%	2	150%	*4
Gland packing	1 set	1 set	100%	2 sets	150%	*2
Gasket-PK sleeve	1	1	100%	2	150%	*2
O-Rings	1	1	100%	2	150%	

*1 It should be noted, the standby pump is also taken into consideration, and the fraction of the calculation result is rounded up.

Calculation example: 3 pumps x 70%, applicable parts = 210% ⇒ Recommend 300% spare parts

*2 for gland packing type

*3 for mechanical seal type

*4 for oil lubrication bearing

*5 for grease shield bearing

Overall Sound Pressure Level

Unit : dB(A)

Model	Shaft No.	50Hz		60Hz	
		2950 mim ⁻¹ (2 Pole)	1450 mim ⁻¹ (4 Pole)	3550 mim ⁻¹ (2 Pole)	1750 mim ⁻¹ (4 Pole)
50-32-125	40	64	54	68	54
50-32-160	40	68	54	70	58
50-32-200	40	72	58	73	62
50-32-250	50A	73	62	77	65
65-40-125	40	66	54	70	54
65-40-160	40	70	58	73	62
65-40-200	40	73	62	77	65
65-40-250	50A	76	63	80	67
80-50-125	40	70	54	72	58
80-50-160	40	72	58	76	63
80-50-200	40	76	63	78	65
80-50-250	50A	80	67	81	69
80-50-315	50B	81	69	—	72
100-65-160	50A	73	62	77	65
100-65-200	50A	77	65	80	69
100-65-250	50B	81	67	81	71
100-65-315	60	84	71	—	72
125-80-160	50A	76	63	80	67
125-80-200	50B	81	67	84	71
125-80-250	50B	83	69	85	72
125-80-315	60	86	74	—	77
125-80-400	60	—	77	—	79
125-100-200	50B	81	69	—	72
125-100-250	60	—	72	—	74
125-100-315	60	—	74	—	77
125-100-400	60	—	77	—	80
150-125-200	60	—	71	—	73
150-125-250	60	—	73	—	77
150-125-315	60	—	77	—	79
150-125-400	60	—	79	—	82
150-125-500	75A	—	81	—	84
200-150-250	60	—	77	—	79
200-150-315	75A	—	79	—	81
200-150-400	75A	—	84	—	84
200-150-500	75B	—	84	—	86
250-200-400	75B	—	85	—	88
250-200-500	90	—	87	—	88

Note : The overall sound pressure level is the value measured 1m away from the pump unit and does not include driver noise.

The following lubricants are used to lubricate pump bearings with an oil lubricated structure.

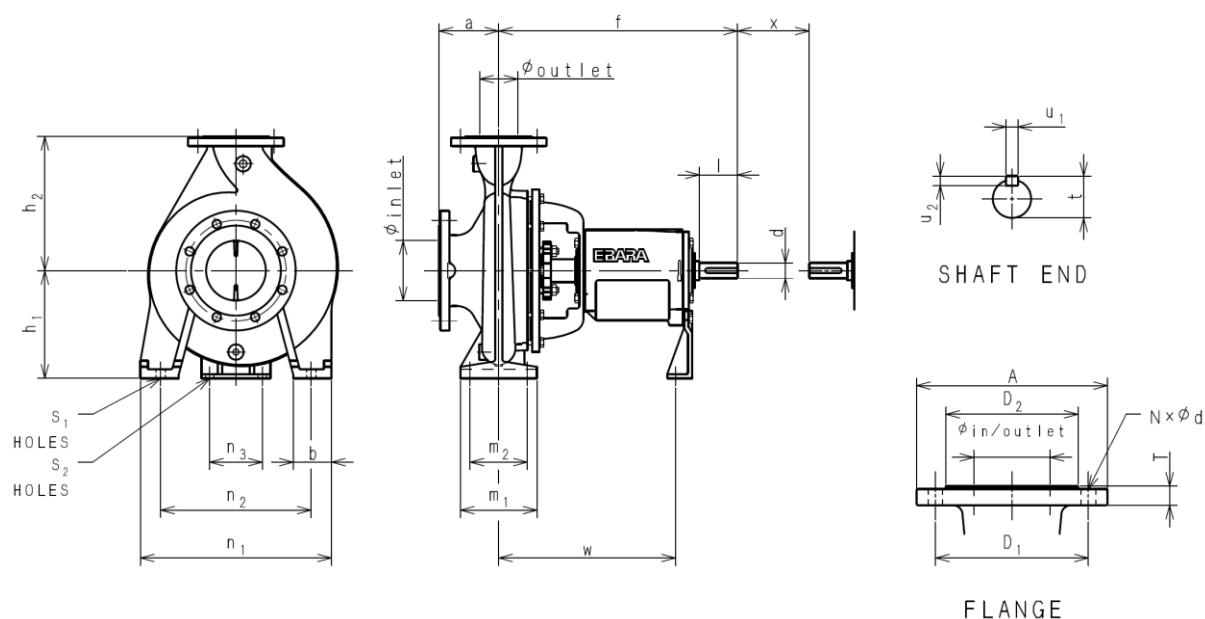
Recommended Lubricants Type	Manufacturer's Brand Name		
	SHELL	EXXON MOBIL	
Turbine Oil ISO VG46	TURBO OIL T46	DTE MEDIUM	TERESSO 46
Turbine Oil ISO VG68 (*1)	TURBO OIL T68	DTE HEAVY MEDIUM	TERESSO 68

Note : (*1) Recommended for the installation at tropical area.

Model	Shaft No.	Model	Shaft No.
50-32-125	40	125-80-250	50B
50-32-160	40	125-80-315	60
50-32-200	40	125-80-400	60
50-32-250	50A	125-100-200	50B
65-40-125	40	125-100-250	60
65-40-160	40	125-100-315	60
65-40-200	40	125-100-400	60
65-40-250	50A	150-125-200	60
80-50-125	40	150-125-250	60
80-50-160	40	150-125-315	60
80-50-200	40	150-125-400	60
80-50-250	50A	150-125-500	75A
80-50-315	50B	200-150-250	60
100-65-160	50A	200-150-315	75A
100-65-200	50A	200-150-400	75A
100-65-250	50B	200-150-500	75B
100-65-315	60	250-200-400	75B
125-80-160	50A	250-200-500	90
125-80-200	50B		

Bearing lubrication shall be changed at least per the following schedule.

Shaft No.	Initial Charge		On and after the Seacond Charge	
	Capacity (Liter)	Interval (Hours)	Capacity (Liter)	Interval (Hours)
40	0.6	300	0.6	4000
50A, 50B	1	300	1	4000
60	1.5	300	1.5	4000
75A, 75B	2	300	2	4000
90	2	300	2	4000

**Flange Dimension****Material : Stainless Steel****Flange Standard : EN PN16**

Unit : mm

Model (suc - dis)	Suction Flange							Discharge Flange						
	Φ_{in}	A	D1	D2	T	N	d	Φ_{out}	A	D1	D2	T	N	d
50-32	50	165	125	102	18	4	18	32	140	100	78	18	4	18
65-40	65	185	145	122	18	4	18	40	150	110	88	18	4	18
80-50	80	200	160	138	20	8	18	50	165	125	102	18	4	18
100-65	100	220	180	158	20	8	18	65	185	145	122	18	4	18
125-80	125	250	210	188	22	8	18	80	200	160	138	20	8	18
125-100	125	250	210	188	22	8	18	100	220	180	158	20	8	18
150-125	150	285	240	212	22	8	22	125	250	210	188	22	8	18
200-150	200	340	295	268	24	12	22	150	285	240	212	22	8	22
250-200	250	405	355	320	26	12	28	200	340	295	268	24	12	22

Flange Standard : JIS 10K

Unit : mm

Model (suc - dis)	Suction Flange							Discharge Flange						
	Φ_{in}	A	D1	D2	T	N	d	Φ_{out}	A	D1	D2	T	N	d
50-32	50	155	120	96	16	4	19	32	135	100	76	16	4	19
65-40	65	175	140	116	18	4	19	40	140	105	81	16	4	19
80-50	80	185	150	126	18	8	19	50	155	120	96	16	4	19
100-65	100	210	175	151	18	8	19	65	175	140	116	18	4	19
125-80	125	250	210	182	20	8	23	80	185	150	126	18	8	19
125-100	125	250	210	182	20	8	23	100	210	175	151	18	8	19
150-125	150	280	240	212	22	8	23	125	250	210	182	20	8	23
200-150	200	330	290	262	22	12	23	150	280	240	212	22	8	23
250-200	250	400	355	324	24	12	25	200	330	290	262	22	12	23

Dimensions of Bare Shaft Pump

Unit : mm

Model	Shaft No.	Nominal Nozzle Diameter		Pump				Support							Holes for bolts		Shaft end					(*1)	Mass (kg)
		φ inlet	φ outlet	a	f	h1	h2	b	m1	m2	n1	n2	n3	w	S1	S2	d	l	t	u1	u2	x	
50-32-125	40	50	32	80	385	112	140	50	100	70	190	140	110	285	M12	M12	24	50	27	8	7	100	46
50-32-160	40	50	32	80	385	132	160	50	100	70	240	190	110	285	M12	M12	24	50	27	8	7	100	46
50-32-200	40	50	32	80	385	160	180	50	100	70	240	190	110	285	M12	M12	24	50	27	8	7	100	52
50-32-250	50A	50	32	100	500	180	225	65	125	95	320	250	110	370	M12	M12	32	80	35	10	8	100	81
65-40-125	40	65	40	80	385	112	140	50	100	70	210	160	110	285	M12	M12	24	50	27	8	7	100	47
65-40-160	40	65	40	80	385	132	160	50	100	70	240	190	110	285	M12	M12	24	50	27	8	7	100	49
65-40-200	40	65	40	100	385	160	180	50	100	70	265	212	110	285	M12	M12	24	50	27	8	7	100	55
65-40-250	50A	65	40	100	500	180	225	65	125	95	320	250	110	370	M12	M12	32	80	35	10	8	100	84
80-50-125	40	80	50	100	385	132	160	50	100	70	240	190	110	285	M12	M12	24	50	27	8	7	100	52
80-50-160	40	80	50	100	385	160	180	50	100	70	265	212	110	285	M12	M12	24	50	27	8	7	100	52
80-50-200	40	80	50	100	385	160	200	50	100	70	265	212	110	285	M12	M12	24	50	27	8	7	100	58
80-50-250	50A	80	50	125	500	180	225	65	125	95	320	250	110	370	M12	M12	32	80	35	10	8	100	86
80-50-315	50B	80	50	125	500	225	280	65	125	95	345	280	110	370	M12	M12	32	80	35	10	8	100	107
100-65-160	50A	100	65	100	500	160	200	65	125	95	280	212	110	370	M12	M12	32	80	35	10	8	100	80
100-65-200	50A	100	65	100	500	180	225	65	125	95	320	250	110	370	M12	M12	32	80	35	10	8	140	83
100-65-250	50B	100	65	125	500	200	250	80	160	120	360	280	110	370	M16	M12	32	80	35	10	8	140	96
100-65-315	60	100	65	125	530	225	280	80	160	120	400	315	110	370	M16	M12	42	110	45	12	8	140	137
125-80-160	50A	125	80	125	500	180	225	65	125	95	320	250	110	370	M12	M12	32	80	35	10	8	140	85
125-80-200	50B	125	80	125	500	180	250	65	125	95	345	280	110	370	M12	M12	32	80	35	10	8	140	92
125-80-250	50B	125	80	125	500	225	280	80	160	120	400	315	110	370	M16	M12	32	80	35	10	8	140	104
125-80-315	60	125	80	125	530	250	315	80	160	120	400	315	110	370	M16	M12	42	110	45	12	8	140	148
125-80-400	60	125	80	125	530	280	355	80	160	120	435	355	110	370	M16	M12	42	110	45	12	8	140	199
125-100-200	50B	125	100	125	500	200	280	80	160	120	360	280	110	370	M16	M12	32	80	35	10	8	140	114
125-100-250	60	125	100	140	530	225	280	80	160	120	400	315	110	370	M16	M12	42	110	45	12	8	140	128
125-100-315	60	125	100	140	530	250	315	80	160	120	400	315	110	370	M16	M12	42	110	45	12	8	140	148
125-100-400	60	125	100	140	530	280	355	100	200	150	500	400	110	370	M20	M12	42	110	45	12	8	140	203
150-125-200	60	150	125	140	530	250	315	80	160	120	400	315	110	370	M16	M12	42	110	45	12	8	140	141
150-125-250	60	150	125	140	530	250	355	80	160	120	400	315	110	370	M16	M12	42	110	45	12	8	140	160
150-125-315	60	150	125	140	530	280	355	100	200	150	500	400	110	370	M20	M12	42	110	45	12	8	140	187
150-125-400	60	150	125	140	530	315	400	100	200	150	500	400	110	370	M20	M12	42	110	45	12	8	140	224
150-125-500	75A	150	125	180	670	375	450	100	200	150	550	450	140	500	M20	M16	48	110	51.5	14	9	180	347
200-150-250	60	200	150	160	530	280	375	100	200	150	500	400	110	370	M20	M12	42	110	45	12	8	180	193
200-150-315	75A	200	150	160	670	315	400	100	200	150	550	450	140	500	M20	M16	48	110	51.5	14	9	180	264
200-150-400	75A	200	150	160	670	315	450	100	200	150	550	450	140	500	M20	M16	48	110	51.5	14	9	180	336
200-150-500	75B	200	150	180	700	375	560	100	200	150	550	450	140	530	M20	M16	65	110	69	18	11	180	456
250-200-400	75B	250	200	180	700	385	560	100	315	250	660	560	140	530	M20	M16	65	110	69	18	11	180	445
250-200-500	90	250	200	200	740	435	630	100	315	250	660	560	140	561	M24	M16	75	110	79.5	20	12	180	534

(*1) Dimension to be considered by the manufacturer in respect of removal of inner parts of the Pump. The dimension X must not be identical with the distance between the shafts of the pump and the driving machine. The given dimension considers the use of flexible shaft couplings with spacer. The gap is necessary for the withdrawal of the rotor toward the driven side.

Fig.-A (for 4 anchor bolts without coupling spacer)

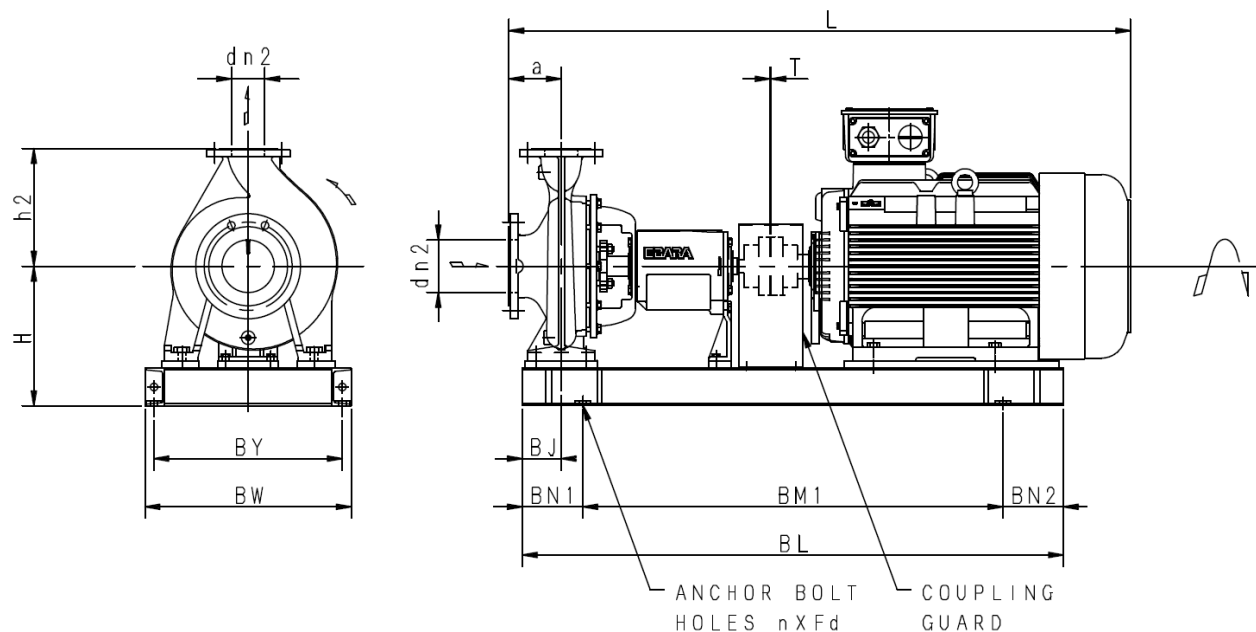
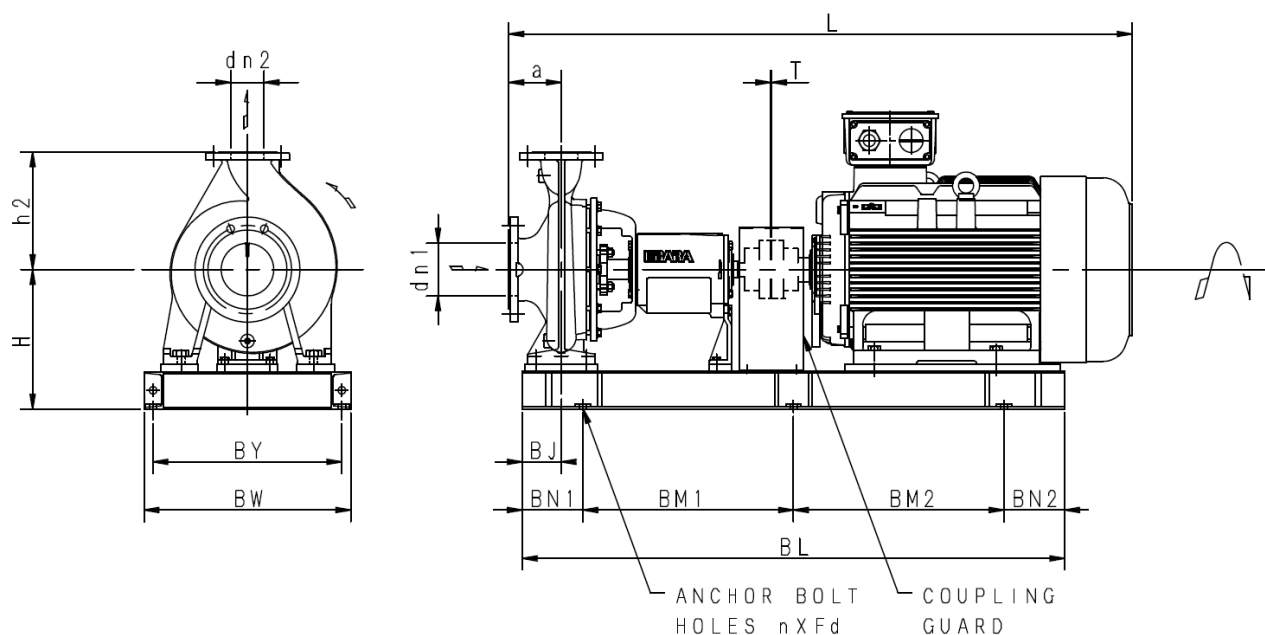


Fig.-B (for 6 anchor bolts without coupling spacer)



DIMENSIONS - Dimensions of Pump with motor (2P)

C-4

GSO - 2 Pole - 50Hz (1/3)

** : Dimension in mm

Model	Power	Fig.	Nozzle		Pump			Motor		BASE														Total (Approx.)		
	kW		dn1 **	dn2 **	a **	h2 **	Mass (kg)	Frame	Mass (kg)	H **	BJ **	BN1 **	BM1 **	BM2 **	BN2 **	BL **	BY **	BW **	T **	n x Fd	Mass (kg)	L **	Mass (kg)			
50-32-125	0.75	A	50	32	80	140	46	80M1	12	195	60	130	540	-	130	800	320	350	3	4 x M12	47	762	105			
	1.1	A						80M2	13	195		130	540	-	130	800	320	350	3		47	762	106			
	1.5	A						90S	23	195		130	540	-	130	800	320	350	3		47	797	116			
	2.2	A						90L	26	195		130	540	-	130	800	320	350	3		48	819	120			
	3	A						100L	34	195		130	540	-	130	800	320	350	3		46	861	126			
	4	A						112M	40	195		130	540	-	130	800	350	380	3		44	876	130			
50-32-160	2.2	A	50	32	80	160	46	90L	25	215	60	130	540	-	130	800	350	380	3	4 x M12	44	819	115			
	3	A						100L	34	215		130	540	-	130	800	350	380	3		54	861	134			
	4	A						112M	40	215		130	540	-	130	800	350	380	3		50	876	136			
	5.5	A						132S1	57	232		150	600	-	150	900	350	380	3		61	913	164			
	7.5	A						132S2	64	232		150	600	-	150	900	350	380	3		55	913	165			
50-32-200	4	A	50	32	80	180	52	112M	40	260	60	130	540	-	130	800	350	380	3	4 x M12	57	876	149			
	5.5	A						132S1	57	260		150	600	-	150	900	350	380	3		66	913	175			
	7.5	A						132S2	64	260		150	600	-	150	900	350	380	3		66	913	182			
	11	A						160M1	110	260		170	660	-	170	1000	400	430	3		66	1052	228			
	15	A						160M2	118	260		170	660	-	170	1000	400	430	3		66	1052	236			
50-32-250	5.5	A	50	32	100	225	81	132S1	57	280	75	190	740	-	190	1120	440	470	3	4 x M12	68	1048	206			
	7.5	A						132S2	64	280		190	740	-	190	1120	440	470	3		68	1048	213			
	11	A						160M1	110	280		190	740	-	190	1120	440	470	3		85	1187	276			
	15	A						160M2	118	280		190	740	-	190	1120	440	470	3		85	1187	284			
	18.5	A						160L	132	300		205	840	-	205	1250	440	480	3	4 x M16	99	1231	312			
65-40-125	1.1	A	65	40	80	140	47	80M2	13	195	60	130	540	-	130	800	320	350	3	4 x M12	47	762	107			
	1.5	A						90S	23	195		130	540	-	130	800	320	350	3		47	797	117			
	2.2	A						90L	26	195		130	540	-	130	800	320	350	3		48	819	121			
	3	A						100L	34	195		130	540	-	130	800	320	350	3		46	861	127			
	4	A						112M	40	195		130	540	-	130	800	350	380	3		44	876	131			
	5.5	A						132S1	57	232		150	600	-	150	900	400	430	3		64	913	168			
65-40-160	2.2	A	65	40	80	160	49	90L	26	215	60	130	540	-	130	800	350	380	3	4 x M12	44	819	119			
	3	A						100L	34	215		130	540	-	130	800	350	380	3		54	861	137			
	4	A						112M	40	215		130	540	-	130	800	350	380	3		50	876	139			
	5.5	A						132S1	57	215		150	600	-	150	900	350	380	3		50	913	156			
	7.5	A						132S2	64	215		150	600	-	150	900	350	380	3		50	913	163			
	11	A						160M1	110	260		170	660	-	170	1000	400	430	3		74	1052	233			
65-40-200	5.5	A	65	40	100	180	55	132S1	57	245	60	150	600	-	150	900	350	380	3	4 x M12	62	933	174			
	7.5	A						132S2	64	245		150	600	-	150	900	350	380	3		62	933	181			
	11	A						160M1	110	260		170	660	-	170	1000	400	430	3		66	1072	231			
	15	A						160M2	118	260		170	660	-	170	1000	400	430	3		66	1072	239			
	18.5	A						160L	132	260		170	660	-	170	1000	400	430	3		76	1116	263			
65-40-250	7.5	A	65	40	100	225	84	132S2	57	280	75	170	660	-	170	1000	400	430	3	4 x M12	63	1048	204			
	11	A						160M1	110	280		190	740	-	190	1120	440	470	3		85	1187	279			
	15	A						160M2	118	280		190	740	-	190	1120	440	470	3		85	1187	287			
	18.5	A						160L	132	280		190	740	-	190	1120	440	470	3		85	1231	301			
	22	A						180M	162	280		190	740	-	190	1120	440	470	3	77	1249	323				
	30	A						200L1	256	320		205	840	-	205	1250	490	530	4	4 x M16	113	1400	453			
80-50-125	2.2	A	80	50	100	160	52	90L	26	215	60	130	540	-	130	800	350	380	3	4 x M12	44	839	122			
	3	A						100L	34	215		130	540	-	130	800	350	380	3		54	881	140			
	4	A						112M	40	215		130	540	-	130	800	350	380	3		50	896	142			
	5.5	A						132S1	57	232		150	600	-	150	900	350	380	3		55	933	164			
	7.5	A						132S2	64	232		150	600	-	150	900	350	380	3		55	933	171			
	11	A						160M1	110	260		170	660	-	170	1000	400	430	3		74	1072	236			
80-50-160	4	A	80	50	100	180	52	112M	40	245	60	130	540	-	130	800	350	380	3	4 x M12	47	896	139			
	5.5	A						132S1	57	260		150	600	-	150	900	350	380	3		66	933	175			
	7.5	A						132S2	64	260		150	600	-	150	900	350	380	3		66	933	182			
	11	A						160M1	110	260		170	660	-	170	1000	400	430	3		66	1072	228			
	15	A						160M2	118	260		170	660	-	170	1000	400	430	3		66	1072	236			

DIMENSIONS - Dimensions of Pump with motor (2P)

C-5

GSO - 2 Pole - 50Hz (2/3)

** : Dimension in mm

Model	Power	Fig.	Nozzle		Pump			Motor		BASE														Total (Approx.)		
	kW		dn **	dn2 **	a **	h2 **	Mass (kg)	Frame	Mass (kg)	H **	BJ **	BN1 **	BM1 **	BM2 **	BN2 **	BL **	BY **	BW **	T **	n x Fd	Mass (kg)	L **	Mass (kg)			
80-50-200	7.5	A	80	50	100	200	58	132S2	64	260	60	150	600	-	150	900	350	380	3	4 x M12	66	933	188			
	11	A						160M1	110	260		170	660	-	170	1000	400	430	3		66	1072	234			
	15	A						160M2	118	260		170	660	-	170	1000	400	430	3		66	1072	242			
	18.5	A						160L	132	260		170	660	-	170	1000	400	430	3		76	1116	266			
	22	A						180M	162	280		170	660	-	170	1000	440	470	3		75	1134	295			
	30	A						200L1	256	300		190	740	-	190	1120	440	470	3		92	1284	406			
80-50-250	11	A	80	50	125	225	86	160M1	110	280	75	190	740	-	190	1120	440	470	3	4 x M12	85	1212	281			
	15	A						160M2	118	280		190	740	-	190	1120	440	470	3		85	1212	289			
	18.5	A						160L	132	280		190	740	-	190	1120	440	470	3		85	1256	303			
	22	A						180M	162	280		190	740	-	190	1120	440	470	3		77	1274	325			
	30	A						200L1	256	320		205	840	-	205	1250	490	530	4	4 x M16	113	1425	455			
	37	A						200L2	276	320		205	840	-	205	1250	490	530	4		113	1425	475			
	45	A						225M	314	345		205	840	-	205	1250	490	530	4		114	1470	514			
	55	B						250M	435	370		230	470	470	230	1400	550	590	4	6 x M16	130	1558	651			
	80-50-315	30						A	80	50		125	280	107	200L1	256	345	75	205	840	-	205	1250	490	530	4
37		A	200L2	276	345	205	840	-			205				1250	490	530		4	127	1425	510				
45		A	225M	314	345	205	840	-			205				1250	490	530		4	107	1470	528				
55		B	250M	435	370	230	470	470			230				1400	550	590		4	6 x M16	126	1558	668			
75		B	280S	571	420	230	470	470			230				1400	600	640		4	6 x M20	149	1636	827			
100-65-160	5.5	A	100	65	100	200	80	132S1	57	260	75	170	660	-	170	1000	400	430	3	4 x M12	73	1048	210			
	7.5	A						132S2	64	260		170	660	-	170	1000	400	430	3		73	1048	217			
	11	A						160M1	110	260		190	740	-	190	1120	400	430	3		72	1187	262			
	15	A						160M2	118	260		190	740	-	190	1120	400	430	3		72	1187	270			
	18.5	A						160L	132	260		190	740	-	190	1120	400	430	3		80	1231	292			
100-65-200	7.5	A	100	65	100	225	83	132S2	64	280	75	170	660	-	170	1000	400	430	3	4 x M12	63	1048	210			
	11	A						160M1	110	280		190	740	-	190	1120	400	430	3		82	1187	275			
	15	A						160M2	118	280		190	740	-	190	1120	400	430	3		82	1187	283			
	18.5	A						160L	132	280		190	740	-	190	1120	400	430	3		82	1231	297			
	22	A						180M	162	280		190	740	-	190	1120	400	430	3	75	1249	320				
	30	A						200L1	256	320		205	840	-	205	1250	490	530	4	4 x M16	113	1400	452			
	37	A						200L2	276	320		205	840	-	205	1250	490	530	4		113	1400	472			
100-65-250	18.5	A	100	65	125	250	96	160L	132	320	90	205	840	-	205	1250	490	530	3	4 x M16	108	1256	336			
	22	A						180M	162	320		205	840	-	205	1250	490	530	3		109	1274	367			
	30	A						200L1	256	320		205	840	-	205	1250	490	530	4		109	1425	461			
	37	A						200L2	79	320		205	840	-	205	1250	490	530	4		109	1425	284			
	45	A						225M	314	345		205	840	-	205	1250	490	530	4	6 x M16	120	1470	530			
	55	B						250M	435	370		230	470	470	230	1400	550	590	4		129	1558	660			
	75	B						280S	571	420		230	470	470	230	1400	600	640	4	6 x M20	157	1636	824			
	100-65-315	30						B	100	65		125	280	137	200L1	256	345	90	230	470	470	230	1400	550	590	4
37		B	200L2	79	345	230	470	470			230				1400	550	590		4	139	1455	355				
45		B	225M	314	345	230	470	470			230				1400	550	590		4	119	1500	570				
55		B	250M	435	370	230	470	470			230				1400	550	590		4	131	1588	703				
75		B	280S	571	420	270	530	530			270				1600	600	640		4	6 x M20	145	1666	853			
90		B	280M	657	420	270	530	530			270				1600	600	640		4		189	1714	983			
110		B	315S	1165	460	270	530	530			270				1600	670	710		4		212	1791	1514			
125-80-160	11	A	125	80	125	225	85	160M1	110	280	75	190	740	-	190	1120	400	430	3	4 x M12	82	1212	277			
	15	A						160M2	118	280		190	740	-	190	1120	400	430	3		82	1212	285			
	18.5	A						160L	132	280		190	740	-	190	1120	400	430	3		82	1256	299			
	22	A						180M	162	280		190	740	-	190	1120	400	430	3		75	1274	322			
	30	A						200L1	256	320		205	840	-	205	1250	440	480	4	4 x M16	109	1425	450			

DIMENSIONS - Dimensions of Pump with motor (2P)

C-6

GSO - 2 Pole - 50Hz (3/3)

** : Dimension in mm

Model	Power	Fig.	Nozzle		Pump			Motor		BASE														Total (Approx.)		
	kW		dn1 **	dn2 **	a **	h2 **	Mass (kg)	Frame	Mass (kg)	H **	BJ **	BN1 **	BM 1 **	BM 2 **	BN2 **	BL **	BY **	BW **	T **	n x Fd	Mass (kg)	L **	Mass (kg)			
125-80-200	15	A	125	80	125	250	92	160M2	118	280	75	190	740	-	190	1120	400	430	3	4 x M12	82	1212	292			
	18.5	A						160L	132	280		190	740	-	190	1120	400	430	3		82	1256	306			
	22	A						180M1	132	280		190	740	-	190	1120	400	430	3		75	1274	299			
	30	A						200L1	256	320		205	840	-	205	1250	440	480	4	4 x M16	109	1425	457			
	37	A						200L2	279	320		205	840	-	205	1250	440	480	4		109	1425	480			
	45	A						225M	314	345		205	840	-	205	1250	550	590	4		119	1470	525			
	55	B						250M	435	370		230	470	470	230	1400	550	590	4	6 x M16	130	1558	657			
	75	B						280S	571	420		230	470	470	230	1400	600	640	4	6 x M20	146	1636	809			
125-80-250	30	A	125	80	125	280	104	200L1	256	345	90	205	840	-	205	1250	440	480	4	4 x M16	126	1425	486			
	37	A						200L2	279	345		205	840	-	205	1250	440	480	4		126	1425	509			
	45	A						225M	314	345		205	840	-	205	1250	550	590	4		114	1470	532			
	55	B						250M	435	370		230	470	470	230	1400	550	590	4	6 x M16	131	1558	670			
	75	B						280S	571	420		230	470	470	230	1400	600	640	4	6 x M20	162	1636	837			
	90	B						280M	657	420		270	530	530	270	1600	600	640	4		181	1684	942			
125-80-315	45	B	125	80	125	315	148	225M	314	370	90	230	470	470	230	1400	550	590	4	6 x M16	141	1500	603			
	55	B						250M	435	370		230	470	470	230	1400	550	590	4		120	1588	703			
	75	B						280S	571	420		270	530	530	270	1600	600	640	4		179	1666	898			
	90	B						280M	657	420		270	530	530	270	1600	600	640	4	6 x M20	181	1714	986			
	110	B						315S	1165	460		270	530	530	270	1600	670	710	4		206	1791	1519			
	132	B						315M	1230	460		300	600	600	300	1800	670	710	4		222	1891	1600			
	160	B						315L1	1345	460		300	600	600	300	1800	670	710	4		222	1891	1715			
125-100-200	22	A	125	100	125	280	114	180M1	132	320	90	205	840	-	205	1250	440	480	3	4 x M16	106	1274	352			
	30	A						200L1	256	320		205	840	-	205	1250	440	480	4		106	1425	476			
	37	A						200L2	279	320		205	840	-	205	1250	440	480	4		106	1425	499			
	45	A						225M	314	345		205	840	-	205	1250	490	530	4	6 x M16	117	1470	545			
	55	B						250M	435	370		230	470	470	230	1400	550	590	4		129	1558	678			
	75	B						280S	571	420		230	470	470	230	1400	600	640	4		6 x M20	145	1636	830		

DIMENSIONS - Dimensions of Pump with motor (4P)

C-7

GSO - 4 Pole - 50Hz (1/4)

** : Dimension in mm

Model	Power	Fig.	Nozzle		Pump			Motor			BASE												Total (Approx.)	
	kW		dn1 **	dn2 **	a **	h2 **	Mass (kg)	Frame	Mass (kg)	H **	BJ **	BN1 **	BM 1 **	BM2 **	BN2 **	BL **	BY **	BW **	T **	n x Fd	Mass (kg)	L **	Mass (kg)	
50-32-125	0.55	A	50	32	80	140	46	80M1	14	195	60	130	540	-	130	800	320	350	3	4 x M12	47	762	107	
50-32-160	0.55	A	50	32	80	160	46	80M1	14	215	60	130	540	-	130	800	320	350	3	4xM12	42	762	102	
	0.75	A						80M2	16	215		130	540	-	130	800	320	350	3		42	762	104	
	1.1	A						90S	23	215		130	540	-	130	800	320	350	3		42	797	111	
50-32-200	0.75	A	50	32	80	180	52	80M2	16	245	60	130	540	-	130	800	320	350	3	4xM12	44	762	112	
	1.1	A						90S	23	245		130	540	-	130	800	320	350	3		44	797	119	
	1.5	A						90L	26	245		130	540	-	130	800	320	350	3		46	819	124	
	2.2	A						100L1	35	245		130	540	-	130	800	320	350	3		46	861	133	
50-32-250	1.1	A	50	32	100	225	81	90S	23	280	75	150	600	-	150	900	350	380	3	4xM12	60	932	176	
	1.5	A						90L	26	280		150	600	-	150	900	350	380	3		60	954	167	
	2.2	A						100L1	35	280		170	660	-	170	1000	400	430	3		64	996	180	
	3	A						100L2	41	280		170	660	-	170	1000	400	430	3		64	996	186	
65-40-125	0.55	A	65	40	80	140	47	80M1	14	195	60	130	540	-	130	800	320	350	3	4xM12	47	762	108	
	0.75	A						80M2	16	195		130	540	-	130	800	320	350	3		47	762	63	
65-40-160	0.75	A	65	40	80	160	49	80M2	16	215	60	130	540	-	130	800	320	350	3	4xM12	42	762	107	
	1.1	A						90S	23	215		130	540	-	130	800	320	350	3		42	797	114	
	1.5	A						90L	26	215		130	540	-	130	800	320	350	3		42	819	117	
65-40-200	0.75	A	65	40	100	180	55	80M2	16	245	60	130	540	-	130	800	320	350	3	4xM12	44	782	115	
	1.1	A						90S	23	245		130	540	-	130	800	320	350	3		44	817	122	
	1.5	A						90L	26	245		130	540	-	130	800	320	350	3		46	839	127	
	2.2	A						100L1	35	245		130	540	-	130	800	320	350	3		46	881	136	
	3	A						100L2	41	245		130	540	-	130	800	320	350	3		46	881	142	
65-40-250	1.1	A	65	40	100	225	84	90S	23	280	75	150	600	-	150	900	350	380	3	4xM12	60	932	167	
	1.5	A						90L	26	280		150	600	-	150	900	350	380	3		60	954	170	
	2.2	A						100L1	35	280		170	660	-	170	1000	400	430	3		64	996	183	
	3	A						100L2	41	280		170	660	-	170	1000	400	430	3		64	996	189	
	4	A						112M	50	280		170	660	-	170	1000	400	430	3		64	1011	198	
80-50-125	0.55	A	80	50	100	160	52	80M1	14	215	60	130	540	-	130	800	320	350	3	4xM12	42	782	108	
	0.75	A						80M2	16	215		130	540	-	130	800	320	350	3		42	782	110	
	1.1	A						90S	23	215		130	540	-	130	800	320	350	3		42	817	117	
80-50-160	0.75	A	80	50	100	180	52	80M2	16	245	60	130	540	-	130	800	320	350	3	4xM12	44	782	112	
	1.1	A						90S	23	245		130	540	-	130	800	320	350	3		44	817	119	
	1.5	A						90L	26	245		130	540	-	130	800	320	350	3		46	839	124	
	2.2	A						100L1	35	245		130	540	-	130	800	320	350	3		46	881	133	
80-50-200	1.1	A	80	50	100	200	58	90S	23	245	60	130	540	-	130	800	320	350	3	4xM12	44	817	125	
	1.5	A						90L	26	245		130	540	-	130	800	320	350	3		46	839	130	
	2.2	A						100L1	35	245		130	540	-	130	800	320	350	3		46	881	139	
	3	A						100L2	41	245		130	540	-	130	800	320	350	3		46	881	145	
	4	A						112M	50	245		130	540	-	130	800	320	350	3		49	896	157	
80-50-250	1.5	A	80	50	125	225	86	90L	26	280	75	150	600	-	150	900	350	380	3	4xM12	60	979	172	
	2.2	A						100L1	35	280		170	660	-	170	1000	400	430	3		64	1021	185	
	3	A						100L2	41	280		170	660	-	170	1000	400	430	3		64	1021	191	
	4	A						112M	50	280		170	660	-	170	1000	400	430	3		64	1036	200	
	5.5	A						132S	70	280		170	660	-	170	1000	400	430	3		63	1073	219	
	7.5	A						132M	77	280		170	660	-	170	1000	400	430	3		64	1111	227	
80-50-315	3	A	80	50	125	280	107	100L2	41	325	75	170	660	-	170	1000	400	430	3	4xM12	68	1021	216	
	4	A						112M	50	325		170	660	-	170	1000	400	430	3		68	1036	225	
	5.5	A						132S	70	325		170	660	-	170	1000	400	430	3		68	1073	245	
	7.5	A						132M	77	325		170	660	-	170	1000	400	430	3		70	1111	254	
100-65-160	0.75	A	100	65	100	200	80	80M2	16	260	75	150	600	-	150	900	350	380	3	4xM12	58	897	154	
	1.1	A						90S	23	260		150	600	-	150	900	350	380	3		59	932	162	
	1.5	A						90L	26	260		150	600	-	150	900	350	380	3		59	954	165	
	2.2	A						100L1	35	260		170	660	-	170	1000	400	430	3		63	996	178	
	3	A						100L2	41	260		170	660	-	170	1000	400	430	3		63	996	184	

DIMENSIONS - Dimensions of Pump with motor (4P)

C-8

GSO - 4 Pole - 50Hz (2/4)

** : Dimension in mm

Model	Power	Fig.	Nozzle		Pump		Motor		BASE													Total (Approx.)		
	kW		dn1 "	dn2 "	a "	h2 "	Mass (kg)	Frame	Mass (kg)	H "	BJ "	BN1 "	BM1 "	BM2 "	BN2 "	BL "	BY "	BW "	T "	n x Fd	Mass (kg)	L "	Mass (kg)	
100-65-200	1.5	A	100	65	100	225	83	90L	26	280	75	150	600	-	150	900	350	380	3	4×M12	60	954	169	
	2.2	A						100L1	35	280		170	660	-	170	1000	400	430	3		64	996	182	
	3	A						100L2	41	280		170	660	-	170	1000	400	430	3		64	996	188	
	4	A						112M	50	280		170	660	-	170	1000	400	430	3		64	1011	197	
	5.5	A						132S	70	280		170	660	-	170	1000	400	430	3		63	1048	216	
100-65-250	2.2	A	100	65	125	250	96	100L1	35	300	90	170	660	-	170	1000	400	430	3	4×M12	68	1021	199	
	3	A						100L2	41	300		170	660	-	170	1000	400	430	3		68	1021	205	
	4	A						112M	50	300		170	660	-	170	1000	400	430	3		68	1036	214	
	5.5	A						132S	70	300		170	660	-	170	1000	400	430	3		66	1073	232	
	7.5	A						132M	77	300		190	740	-	190	1120	400	430	3		71	1111	244	
100-65-315	4	A	100	65	125	280	137	112M	50	325	90	170	660	-	170	1000	440	470	3	4×M12	75	1066	262	
	5.5	A						132S	70	325		170	660	-	170	1000	440	470	3		74	1103	281	
	7.5	A						132M	77	325		190	740	-	190	1120	440	470	3		77	1141	291	
	11	A						160M	121	345		205	840	-	205	1250	490	530	3	97	1242	355		
	15	A						160L	129	345		205	840	-	205	1250	490	530	3	110	1286	376		
125-80-160	1.5	A	125	80	125	225	85	90L	26	280	75	150	600	-	150	900	350	380	3	4×M12	60	979	171	
	2.2	A						100L1	35	280		170	660	-	170	1000	400	430	3		64	1021	184	
	3	A						100L2	41	280		170	660	-	170	1000	400	430	3		64	1021	190	
	4	A						112M	50	280		170	660	-	170	1000	400	430	3		64	1036	199	
125-80-200	2.2	A	125	80	125	250	92	100L1	35	280	75	170	660	-	170	1000	400	430	3	4×M12	64	1021	191	
	3	A						100L2	41	280		170	660	-	170	1000	400	430	3		64	1021	197	
	4	A						112M	50	280		170	660	-	170	1000	400	430	3		64	1036	206	
	5.5	A						132S	70	280		170	660	-	170	1000	400	430	3		63	1073	225	
	7.5	A						132M	77	280		170	660	-	170	1000	400	430	3		64	1111	233	
125-80-250	4	A	125	80	125	280	104	112M	50	325	90	170	660	-	170	1000	440	470	3	4×M12	73	1036	227	
	5.5	A						132S	70	325		170	660	-	170	1000	440	470	3		72	1073	246	
	7.5	A						132M	77	325		190	740	-	190	1120	440	470	3		75	1111	256	
	11	A						160M	121	345		205	840	-	205	1250	490	530	3	97	1212	322		
125-80-315	5.5	A	125	80	125	315	148	132S	70	350	90	170	660	-	170	1000	440	470	3	4×M12	76	1103	294	
	7.5	A						132M	77	350		190	740	-	190	1120	440	470	3		80	1141	305	
	11	A						160M	121	370		205	840	-	205	1250	490	530	3		99	1242	368	
	15	A						160L	129	370		205	840	-	205	1250	490	530	3	113	1286	390		
	18.5	A						180M	173	370		205	840	-	205	1250	490	530	3	103	1304	424		
	22	A						180L	184	370		205	840	-	205	1250	490	530	3	104	1342	436		
	30	B						200L	270	370		230	470	470	230	1400	550	590	4	6 x M16	121	1455	539	
125-80-400	11	A	125	80	125	355	199	160M	121	400	90	205	840	-	205	1250	490	530	3	4×M16	103	1242	423	
	15	A						160L	129	400		205	840	-	205	1250	490	530	3		116	1286	444	
	18.5	A						180M	173	400		205	840	-	205	1250	490	530	3		106	1304	478	
	22	A						180L	184	400		205	840	-	205	1250	490	530	3	107	1342	490		
	30	B						200L	270	400		230	470	470	230	1400	550	590	4	125	1455	594		
	37	B						225S	305	400		230	470	470	230	1400	550	590	4	6 x M16	123	1505	627	
	45	B						225M	355	400		230	470	470	230	1400	550	590	4	6 x M16	130	1530	684	
125-100-200	3	A	125	100	125	280	114	100L2	41	300	90	170	660	-	170	1000	440	470	3	4×M12	71	1021	226	
	4	A						112M	50	300		170	660	-	170	1000	440	470	3		71	1036	235	
	5.5	A						132S	70	300		170	660	-	170	1000	440	470	3		70	1073	254	
	7.5	A						132M	77	300		190	740	-	190	1120	440	470	3		75	1111	266	
	11	A						160M	121	320		205	840	-	205	1250	490	530	3		4×M16	115	1212	350
125-100-250	4	A	125	100	140	280	128	112M	50	325	90	170	660	-	170	1000	440	470	3	4×M12	75	1081	253	
	5.5	A						132S	70	325		170	660	-	170	1000	440	470	3		74	1118	272	
	7.5	A						132M	77	325		190	740	-	190	1120	440	470	3		77	1156	282	
	11	A						160M	121	345		205	840	-	205	1250	490	530	3	97	1257	346		
	15	A						160L	129	345		205	840	-	205	1250	490	530	3	4×M16	110	1301	367	
	18.5	A						180M	173	345		205	840	-	205	1250	490	530	3	99	1319	400		
125-100-315	7.5	A	125	100	140	315	148	132M	77	350	90	190	740	-	190	1120	440	470	3	4×M12	80	1156	305	
	11	A						160M	121	370		205	840	-	205	1250	490	530	3		99	1257	368	
	15	A						160L	129	370		205	840	-	205	1250	490	530	3		113	1301	390	
	18.5	A						180M	173	370		205	840	-	205	1250	490	530	3		103	1319	424	
	22	A						180L	184	370		205	840	-	205	1250	490	530	3		104	1357	436	
	30	B						200L	270	370		230	470	470	230	1400	550	590	4		6×M16	123	1470	541

DIMENSIONS - Dimensions of Pump with motor (4P)

C-9

GSO - 4 Pole - 50Hz (3/4)

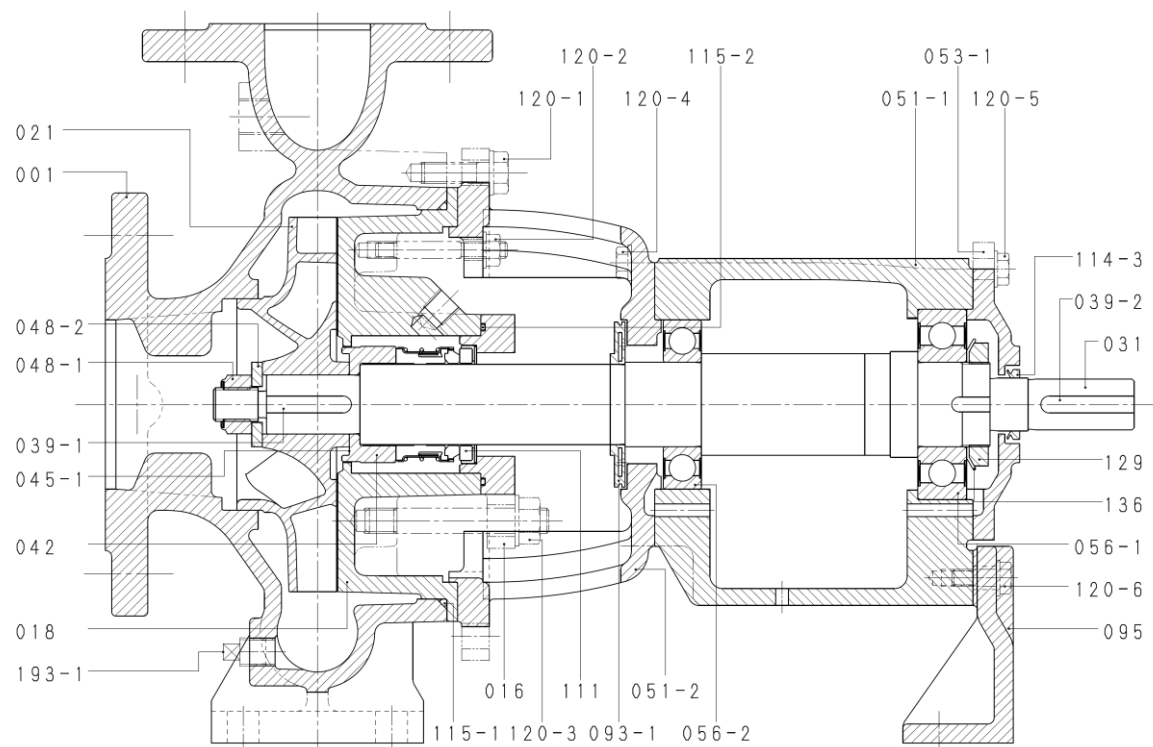
** : Dimension in mm

Model	Power	Fig.	Nozzle		Pump		Motor		BASE														Total (Approx.)		
	kW		dn1 **	dn2 **	a **	h2 **	Mass (kg)	Frame	Mass (kg)	H **	BJ **	BN1 **	BM 1 **	BM2 **	BN2 **	BL **	BY **	BW **	T **	n x Fd	Mass (kg)	L **	Mass (kg)		
125-100-400	11	A	125	100	140	355	203	160M	121	400	110	205	840	-	205	1250	550	590	3	4×M16	110	1257	434		
	15	A						160L	129	400		205	840	-	205	1250	550	590	3		124	1301	456		
	18.5	A						180M	173	400		205	840	-	205	1250	550	590	3		114	1319	490		
	22	B						180L	184	400		230	470	470	230	1400	550	590	3	6×M16	119	1357	506		
	30	B						200L	270	400		230	470	470	230	1400	550	590	4		130	1470	603		
	37	B						225S	305	400		230	470	470	230	1400	550	590	4		127	1520	635		
	45	B						225M	355	400		230	470	470	230	1400	550	590	4		134	1545	692		
150-125-200	5.5	A	150	125	140	315	141	132S	70	350	90	170	660	-	170	1000	440	470	3	4×M12	76	1118	287		
	7.5	A						132M	77	350		190	740	-	190	1120	440	470	3		80	1156	298		
	11	A						160M	121	370		205	840	-	205	1250	490	530	3	4×M16	99	1257	361		
	15	A						160L	129	370		205	840	-	205	1250	490	530	3		113	1301	383		
150-125-250	5.5	A	150	125	140	355	160	132S	70	350	90	170	660	-	170	1000	440	470	3	4×M12	76	1118	306		
	7.5	A						132M	77	350		190	740	-	190	1120	440	470	3		80	1156	317		
	11	A						160M	121	370		205	840	-	205	1250	490	530	3	4×M16	99	1257	380		
	15	A						160L	129	370		205	840	-	205	1250	490	530	3		113	1301	402		
	18.5	A						180M	173	370		205	840	-	205	1250	490	530	3		103	1319	436		
	22	A						180L	184	370		205	840	-	205	1250	490	530	3		104	1357	448		
150-125-315	11	A	150	125	140	355	187	160M	121	400	110	205	840	-	205	1250	550	590	3	4×M16	110	1257	418		
	15	A						160L	129	400		205	840	-	205	1250	550	590	3		130	1301	446		
	18.5	A						180M	173	400		205	840	-	205	1250	550	590	3		124	1319	484		
	22	B						180L	184	400		230	470	470	230	1400	550	590	3	6×M16	134	1357	505		
	30	B						200L	270	400		230	470	470	230	1400	550	590	4		151	1470	608		
	37	B						225S	305	400		230	470	470	230	1400	550	590	4		161	1520	653		
	45	B						225M	355	400		230	470	470	230	1400	550	590	4		165	1545	707		
150-125-400	18.5	A	150	125	140	400	224	180M	173	435	110	205	840	-	205	1250	550	590	3	4×M16	153	1319	550		
	22	B						180L	184	435		230	470	470	230	1400	550	590	3		168	1357	576		
	30	B						200L	270	435		230	470	470	230	1400	550	590	4	6×M16	190	1470	684		
	37	B						225S	305	435		230	470	470	230	1400	550	590	4		198	1520	727		
	45	B						225M	355	435		230	470	470	230	1400	550	590	4		204	1545	783		
	55	B						250M	451	455		270	530	530	270	1600	600	640	4	6×M20	260	1603	935		
75	B	280S	598	455	270	530	530	270	1600	600	640	4	345	1681	1167										
150-125-500	30	B	150	125	180	450	347	200L	270	495	110	270	530	530	270	1600	600	640	4	6×M16	263	1650	880		
	37	B						225S	305	495		270	530	530	270	1600	600	640	4		263	1700	915		
	45	B						225M	355	515		270	530	530	270	1600	600	640	4	6×M20	310	1725	1012		
	55	B						250M	451	515		270	530	530	270	1600	600	640	4		324	1783	1122		
	75	B						280S	598	515		270	530	530	270	1600	600	640	4		359	1861	1304		
	90	B						280M	684	515		300	600	600	300	1800	670	710	4		406	1909	1437		
200-150-250	11	A	200	150	160	375	193	160M	121	400	110	205	840	-	205	1250	550	590	3	4×M16	211	1277	525		
	15	A						160L	129	400		205	840	-	205	1250	550	590	3		268	1321	590		
	18.5	A						180M	173	400		205	840	-	205	1250	550	590	3	6 x M16	223	1339	589		
	22	B						180L	184	400		230	470	470	230	1400	550	590	3		237	1377	614		
	30	B						200L	270	400		230	470	470	230	1400	550	590	4		267	1490	730		
	37	B						225S	305	400		230	470	470	230	1400	550	590	4		270	1540	768		
200-150-315	45	B	225M	355	400	230	470	470	230	1400	550	590	4	6 x M20	275	1565	823								
	18.5	B	180M	173	435	230	470	470	230	1400	600	640	3		6×M16	279	1479	716							
	22	B	180L	184	435	230	470	470	230	1400	600	640	3	302		1517	750								
	30	B	200L	270	435	270	530	530	270	1600	600	640	4	343		1630	877								
	37	B	225S	305	435	270	530	530	270	1600	600	640	4	6 x M20	347	1680	916								
	45	B	225M	355	455	270	530	530	270	1600	600	640	4		393	1705	1012								
55	B	250M	451	455	270	530	530	270	1600	600	640	4	404		1763	1119									
200-150-400	75	B	280S	598	455	270	530	530	270	1600	600	640	4	559	1841	1421									
	30	B	200	150	160	450	336	200L	270	435	110	270	530	530	270	1600	600	640	4	6 x M16	376	1630	982		
	37	B						225S	305	435		270	530	530	270	1600	600	640	4		379	1680	1020		
	45	B						225M	355	455		270	530	530	270	1600	600	640	4	6×M20	427	1705	1118		
	55	B						250M	451	455		270	530	530	270	1600	600	640	4		438	1763	1225		
	75	B						280S	598	455		270	530	530	270	1600	600	640	4		610	1841	1544		
90	B	280M						684	455	270		580	580	270	1700	600	640	4	663		1889	1683			

GSO - 4 Pole - 50Hz (4/4)

** : Dimension in mm

Model	Power	Fig.	Nozzle		Pump		Motor		BASE														Total (Approx.)		
	kW		dn1 **	dn2 **	a **	h2 **	Mass (kg)	Frame	Mass (kg)	H **	BJ **	BN1 **	BM1 **	BM2 **	BN2 **	BL **	BY **	BW **	T **	n x Fd	Mass (kg)	L **	Mass (kg)		
200-150-500	45	B	200	150	180	560	456	225M	355	515	110	270	530	530	270	1600	600	640	4	6xM20	530	1755	1341		
	55	B						250M	451	515		270	530	530	270	1600	600	640	4		553	1813	1460		
	75	B						280S	598	515		270	580	580	270	1700	600	640	4		600	1891	1654		
	90	B						280M	684	515		300	600	600	300	1800	670	710	4		649	1939	1789		
	110	B						315S	1210	515		300	600	600	300	1800	670	710	4		718	2046	2384		
	132	B						315M	1240	515		220	740	740	220	1920	670	710	4		751	2146	2447		
	160	B						315L1	1390	515		220	740	740	220	1920	670	710	4		821	2146	2667		
250-200-400	75	B	250	200	180	560	445	280S	598	530	220	300	600	600	300	1800	680	720	4	6xM20	766	1891	1809		
	90	B						280M	684	530		300	600	600	300	1800	680	720	4		803	1939	1932		
	110	B						315S	1210	530		220	740	740	220	1920	680	720	4		887	2046	2542		
	132	B						315M	1240	530		220	800	800	220	2040	680	720	4		964	2146	2649		
	160	B						315L1	1390	530		220	800	800	220	2040	680	720	4		1003	2146	2838		
	185	B						315L2	1420	530		220	800	800	220	2040	680	720	4		1016	2146	2881		
	200	B						315L3	1440	530		220	800	800	220	2040	680	720	4		1030	2146	2915		
250-200-500	220	B	250	200	200	630	534	355M1	1645	570	220	220	870	870	220	2180	750	800	4	6 x M24	1379	2346	3469		
	90	B						280M	684	580		220	740	740	220	1920	680	720	4	6xM20	1056	1999	2274		
	110	B						315S	1210	580		220	740	740	220	1920	680	720	4		1107	2106	2851		
	132	B						315M	1240	580		220	800	800	220	2040	680	720	4		1214	2206	2988		
	160	B						315L1	1390	580		220	800	800	220	2040	680	720	4		1256	2206	3180		
	185	B						315L2	1420	580		220	800	800	220	2040	680	720	4		1271	2206	3225		
	200	B						315L3	1440	580		220	800	800	220	2040	680	720	4		1289	2206	3263		
	220	B						355M1	1645	620		220	870	870	220	2180	750	800	4	6 x M24	1335	2406	3514		
	250	B						355M2	1665	620		220	870	870	220	2180	750	800	4		1397	2406	3596		
	280	B						355L1	1758	620		220	970	970	220	2380	750	800	4		1567	2576	3859		
	315	B						355L2	1815	620		220	970	970	220	2380	750	800	4		1584	2576	3933		
	355	B						3551	1995	620		220	970	970	220	2380	750	800	4		1645	2616	4174		

Standard feature**Mechanical seal type with grease lubrication bearings**

NO.	NAME OF PART	Q'ty
001	CASING	1
016	SEAL GLAND PLATE	1
018	GLAND COVER	1
021	IMPELLER	1
031	SHAFT	1
039-1	KEY - IMPELLER	1
039-2	KEY - COUPLING	1
042	SEAL SPACER	1
045-1	IMPELLER SHIM	1 set
045-5	BEARING DISTANCE (*1)	1
048-1	IMPELLER NUT	1
048-2	IMPELLER WASHER	1
051-1	BEARING HOUSING	1
051-2	ADAPTER - BG HOUSING (*2)	1
051-3	BRACKET - CASING (*3)	1
053-1	BEARING COVER (M)	1
053-2	BEARING COVER (P) (*4)	1

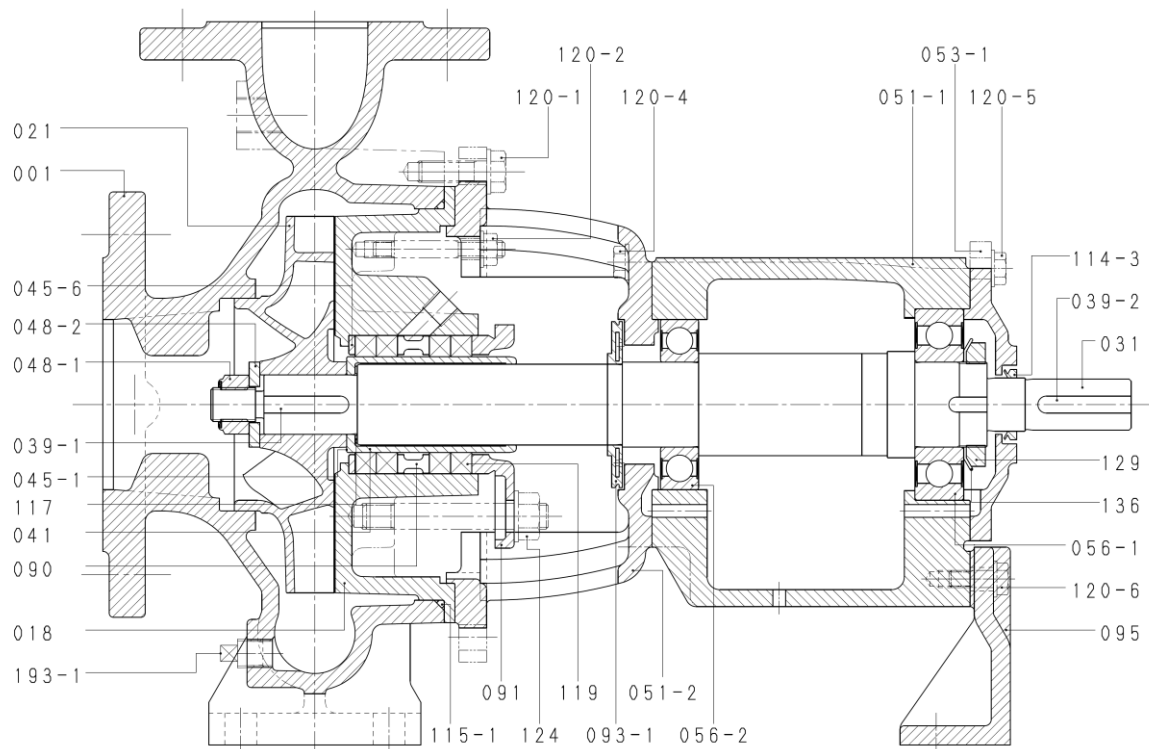
(*1) SHAFT NO. 75AB only

(*2) SHAFT NO. 40, 50, 60 only

(*3) for SHAFT NO. 75AB, 90 except 200-150-315

(*4) SHAFT NO. 75AB, 90 only

NO.	NAME OF PART	Q'ty
056-1	BALL BEARING (M)	1
056-2	BALL BEARING (P)	1
093-1	DEFLECTOR	1
095	STAY	1
111	MECHANICAL SEAL	1 set
114-3	V RING - BG COVER	1
115-1	O-RING - GLAND COVER	1
115-2	O-RING - GLAND PLATE	1
120-1	BOLT - CASING	1 set
120-2	BOLT/NUT - GLAND COVER	1 set
120-3	BOLT/NUT - GLAND PLATE	4
120-4	BOLT - BG HOUSING	4
120-5	BOLT - BG COVER	4
120-6	BOLT - STAY	2
129	BEARING NUT	1
136	BEARING WASHER	1
193-1	PLUG - CASING	1

Standard feature**Gland packing type with grease lubrication bearings**

NO.	NAME OF PART	Q'ty	NO.	NAME OF PART	Q'ty
001	CASING	1	056-2	BALL BEARING (P)	1
018	GLAND COVER	1	90	LANTERN RING	1
021	IMPELLER	1	091	GLAND	1
031	SHAFT	1	093-1	DEFLECTOR	1
039-1	KEY - IMPELLER	1	095	STAY	1
039-2	KEY - COUPLING	1	114-3	V RING - BG COVER	1
041	PACKING SLEEVE	1	115-1	O-RING - GLAND COVER	1
045-1	IMPELLER SHIM	1 set	117	GASKET - PK SLEEVE	1
045-5	BEARING DISTANCE (*1)	1	119	GLAND PACKING	1 set
045-6	SPACER - GPK	1	120-1	BOLT - CASING	1 set
048-1	IMPELLER NUT	1	120-2	BOLT/NUT - GLAND COVER	1 set
048-2	IMPELLER WASHER	1	120-4	BOLT - BG HOUSING	4
051-1	BEARING HOUSING	1	120-5	BOLT - BG COVER	4
051-2	ADAPTER - BG HOUSING (*2)	1	120-6	BOLT - STAY	2
051-3	BRACKET - CASING (*3)	1	124	GLAND BOLT	2
053-1	BEARING COVER (M)	1	129	BEARING NUT	1
053-2	BEARING COVER (P) (*4)	1	136	BEARING WASHER	1
056-1	BALL BEARING (M)	1	193-1	PLUG - CASING	1

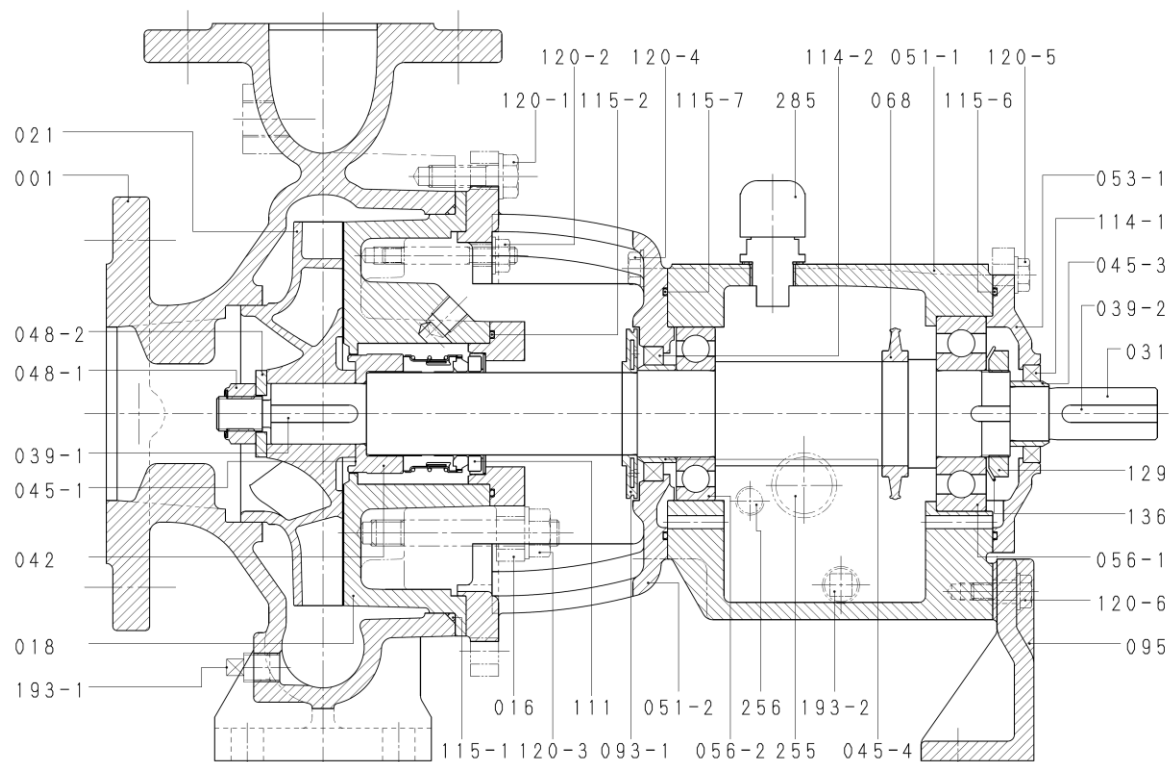
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(*4) SHAFT NO. 75AB, 90 only

Optional feature

Mechanical seal type with oil lubrication bearings

NO.	NAME OF PART	Q'ty
001	CASING	1
016	SEAL GLAND PLATE	1
018	GLAND COVER	1
021	IMPELLER	1
031	SHAFT	1
039-1	KEY - IMPELLER	1
039-2	KEY - COUPLING	1
042	SEAL SPACER	1
045-1	IMPELLER SHIM	1 set
045-3	OIL SEAL SLEEVE (M)	1
045-4	OIL SEAL SLEEVE (P)	1
045-5	BEARING DISTANCE (*1)	1
048-1	IMPELLER NUT	1
048-2	IMPELLER WASHER	1
051-1	BEARING HOUSING	1
051-2	ADAPTER - BG HOUSING (*2)	1
051-3	BRACKET - CASING (*3)	1
053-1	BEARING COVER (M)	1
053-2	BEARING COVER (P) (*4)	1
056-1	BALL BEARING (M)	1
056-2	BALL BEARING (P)	1
068	OIL FLINGER	1

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(*3) for SHAFT NO. 75AB, 90 except 200-150-315

(*4) SHAFT NO. 75AB, 90 only

NO.	NAME OF PART	Q'ty
093-1	DEFLECTOR	1
095	STAY	1
111	MECHANICAL SEAL	1 set
114-1	OIL SEAL (M)	1
114-2	OIL SEAL (P)	1
115-1	O-RING - GLAND COVER	1
115-2	O-RING - GLAND PLATE	1
115-6	O-RING - BG COVER (M)	1
115-7	O-RING - BG COVER (P)	1
120-1	BOLT - CASING	1 set
120-2	BOLT/NUT - GLAND COVER	1 set
120-3	BOLT/NUT - GLAND PLATE	4
120-4	BOLT - BG HOUSING	4
120-5	BOLT - BG COVER	4
120-6	BOLT - STAY	2
129	BEARING NUT	1
136	BEARING WASHER	1
193-1	PLUG - CASING	1
193-2	PLUG - OIL DRAIN (*5)	1
193-3	PLUG - OILER	1
255	OIL LEVEL GAUGE	1
256	CONSTANT LEVEL OILER (*6)	1 set
285	AIR BREATHER	1

(*5) MAGNETIC TYPE

(*6) OPTIONAL

Materials of mechanical seal application with grease(shield) lubrication

No.	Name of part	Material	JIS Material EQ.	ASTM EQ.	Remarks
001	CASING	304 Stainless steel	SCS13	A351-CF8	
		316 Stainless steel	SCS14A	A351-CF8M	
014	HANDHOLE COVER	304 Stainless steel	SCS13	A351-CF8	
		316 Stainless steel	SCS14A	A351-CF8M	
016	SEAL GLAND PLATE	316 Stainless steel	SCS14A	A351-CF8M	
018	GLAND COVER	304 Stainless steel	SCS13	A351-CF8	
		316 Stainless steel	SCS14A	A351-CF8M	
021	IMPELLER	304 Stainless steel	SCS13	A351-CF8	
		316 Stainless steel	SCS14A	A351-CF8M	
031	SHAFT	304 Stainless steel	SUS304	A276-304	
		316 Stainless steel	SUS316	A276-316	
039-1	KEY - IMPELLER	316 Stainless steel	SUS316	A276-316	
039-2	KEY - COUPLING	Carbon steel	S50C	A576-1050	
042	SEAL SPACER	316 Stainless steel	SCS14A	A351-CF8M	
045-1	IMPELLER SHIM	316 Stainless steel	SUS316	A276-316	
045-5	BEARING DISTANCE	Carbon steel	SS400	A283 Gr. D	(*1)
048-1	IMPELLER NUT	316 Stainless steel	SUS316	A276-316	
048-2	IMPELLER WASHER	316 Stainless steel	SUS316	A276-316	
051-1	BEARING HOUSING	Cast iron	FC200	A48-30	
051-2	ADAPTER - BG HOUSING	Cast iron	FC200	A48-30	(*2)
051-3	BRACKET - CASING	Cast iron	FC200	A48-30	(*3)
053-1	BEARING COVER (M)	Cast iron	FC200	A48-30	
053-2	BEARING COVER (P)	Cast iron	FC200	A48-30	(*4)
056-1	BALL BEARING (M)	Steel			(*5)
056-2	BALL BEARING (P)	Steel			(*5)
093-1	DEFLECTOR	EPDM			
095	STAY	Carbon steel or Ductile cast irons	SPHC or FCD400	A569 or A536-60-40-18	
		Sic / carbon / FKM			
		Sic / Sic / FKM			Optional
		Sic / carbon / EPDM			Optional
114-3	V-RING - BG COVER	NBR			
115-1	O-RING - GLAND COVER	FKM			
115-2	O-RING - GLAND PLATE	EPDM			Optional
115-8	O-RING - HANDHOLE COVER	FFKM or PTFE			Optional
120-1	BOLT - CASING	Carbon steel	SS	A283-D	
120-2	BOLT/NUT - GLAND COVER	Carbon steel	SS	A283-D	
120-3	BOLT/NUT - GLAND PLATE	Carbon steel	SS	A283-D	
120-4	BOLT - BG HOUSING	Carbon steel	SS	A283-D	
120-5	BOLT - BG COVER	Carbon steel	SS	A283-D	
120-6	BOLT - STAY	Carbon steel	SS	A283-D	
120-7	BOLT/NUT - HANDHOLE COVER	Carbon steel	SS	A283-D	
129	BEARING NUT	Carbon steel	SS	A283-D	
136	BEARING WASHER	Carbon steel	SS	A283-D	
193-1	PLUG - CASING	316 Stainless steel	SUS316	A276-316	

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(*2) SHAFT NO. 40, 50, 60 only

(*4) SHAFT NO. 75AB, 90 only

(*5) Deep groove ball bearing, single row / Vacuum degassed steel / Grease shield type / NSK ENS grease type eq.

Materials of gland packing application with grease(shield) lubrication (*1)

No.	Name of part	Material	JIS Material EQ.	ASTM EQ.	Remarks
018	GLAND COVER	304 Stainless steel	SCS13	A351-CF8	
		316 Stainless steel	SCS14A	A351-CF8M	
041	PACKING SLEEVE	316 Stainless steel	SUS316	A276-316	
		304 Stainless steel	SUS304	A276-304	
045-6	SPACER - GPK	316 Stainless steel	SUS316	A276-316	
90	LANTERN RING	316 Stainless steel	SUS316	A276-316	
091	GLAND	316 Stainless steel	SCS14	A351-CF8M	
117	GASKET - PK SLEEVE	Graphite w/s. steel sheet			
119	GLAND PACKING	Carbonized fiber packing (P#6501L eq.)			see D-6
124	GLAND BOLT	316 Stainless steel	SUS316	A276-316	

(*1) The components which constitute the gland packing pump are these parts instead of P/N 016, 018, 042, 111, 115-2 and 120-3 of the mechanical seal pump.

Materials of mechanical seal application with oil lubrication (*2)

No.	Name of part	Material	JIS Material EQ.	ASTM EQ.	Remarks
045-3	OIL SEAL SLEEVE (M)	Carbon steel	S50C	A576-1050	
045-4	OIL SEAL SLEEVE (P)	Carbon steel	S50C	A576-1050	
051-1	BEARING HOUSING	Cast iron	FC200	A48-30	
051-2	ADAPTER - BG HOUSING	Cast iron	FC200	A48-30	(*3)
053-1	BEARING COVER (M)	Cast iron	FC200	A48-30	
053-2	BEARING COVER (P)	Cast iron	FC200	A48-30	(*4)
056-1	BALL BEARING (M)	Steel			(*5)
056-2	BALL BEARING (P)	Steel			(*5)
068	OIL FLINGER	NBR			
114-1	OIL SEAL (M)	NBR			
114-2	OIL SEAL (P)	NBR			
115-6	O-RING - BG COVER(M)	NBR			
115-7	O-RING - BG COVER (P)	NBR			
193-2	PLUG - OIL DRAIN	Carbon steel			Magnetic type
193-3	PLUG - OILER	Carbon steel			
255	OIL LEVEL GAUGE	Poly carbonate / NBR			
256	CONSTANT LEVEL OILER	Zinc die-cast and glass			Optional
285	AIR BREATHER	Poly carbonate / NBR			

(*2) The components which constitute the oil lubrication pump are these parts instead of P/N 051-1, 051-2, 053-1, 053-2, 056-1, 056-2 and 114-3 of the grease lubrication pump.

(*3) SHAFT NO. 40, 50, 60 only

(*4) SHAFT NO. 75AB, 90 only

(*5) Deep groove ball bearing, single row / Vacuum degassed steel

1. Mechanical seal lineup (* 1)

Basic style: Unbalanced type, Internal arrangement,
Gland cover non-water-cooled structure

Mechanical seal type (* 3)		without seal sleeve	with seal sleeve
Single (* 2)	EB	Standard	---
	CS	Optional	---
Single cartridge (* 2)	CS	---	Optional
Double (back to back)	EB	Semi-standard	---
Double cartridge	CS	---	Optional

(* 1) For other lineups, please contact the engineering center.

(* 2) With QUENCH is applied as a semi-standard.

(* 3) EB : Mono coil / rubber bellows

CS : Coil spring / O ring

2. Material of mechanical seal (* 4)

(1) Face materials

Standard : Sic / Carbon

Semi-standard : Sic / Sic

(2) Rubber parts material

Standard : FKM

Semi-standard : EPDM

Optional : FFKM

(* 4) Please consult with the engineering center for other materials.

3. Soft packing

(1) Materials

Standard : Carbonized fiber packing (P#6501L EQ.)

Optional : PTFE (P#436 EQ.) or P#4526L EQ

(2) Arrangement

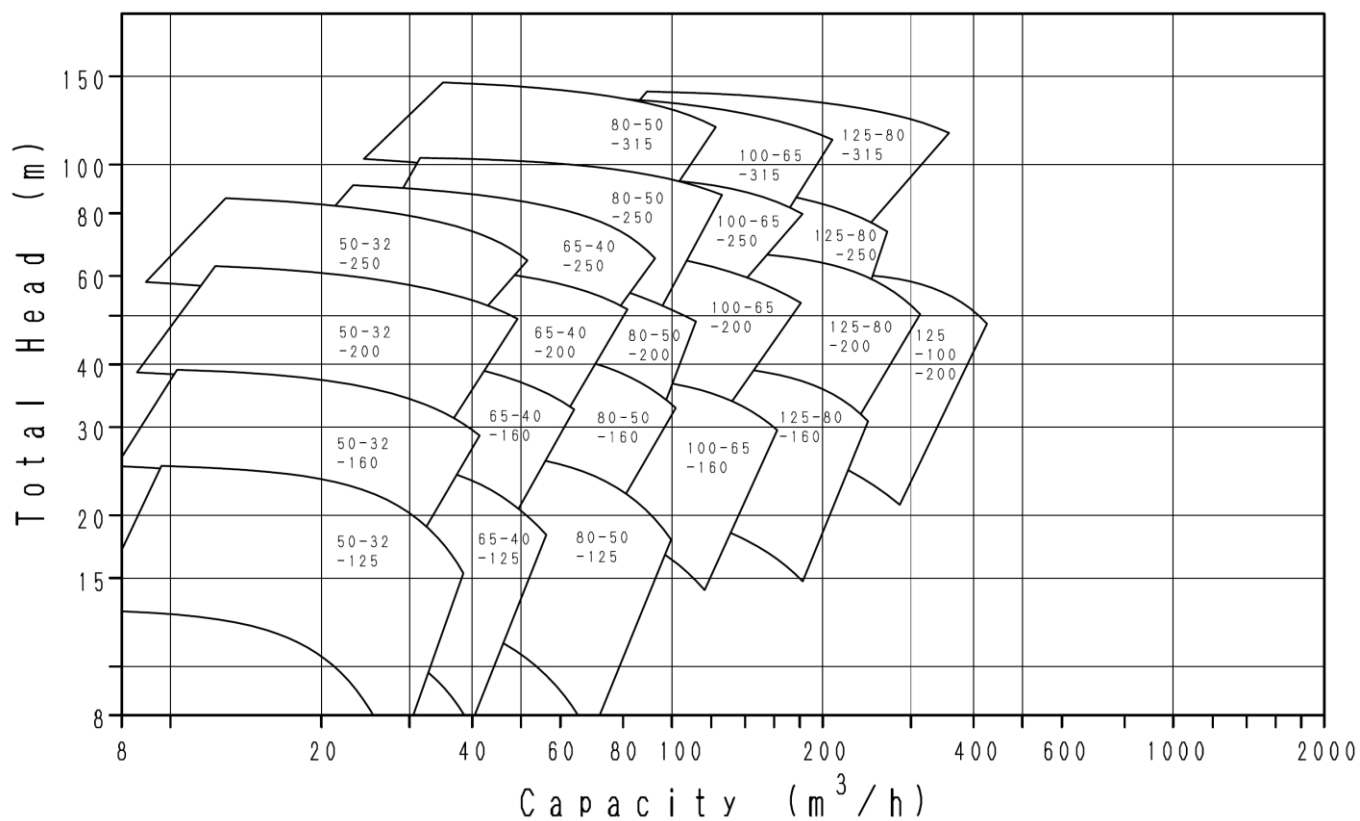
2 soft packing + lantern ring + 2 soft packing

(3) Other

- Depending on suction pressure and box pressure, it may not be possible to adopt a soft packing structure.
- It can not be used for metallic soft packing.
- It can not be used for the soft packing structure for the slurry containing liquid or the liquid where crystals are deposited.
- It does not correspond to the QUENCH structure.
- It does not correspond to the split type gland structure.

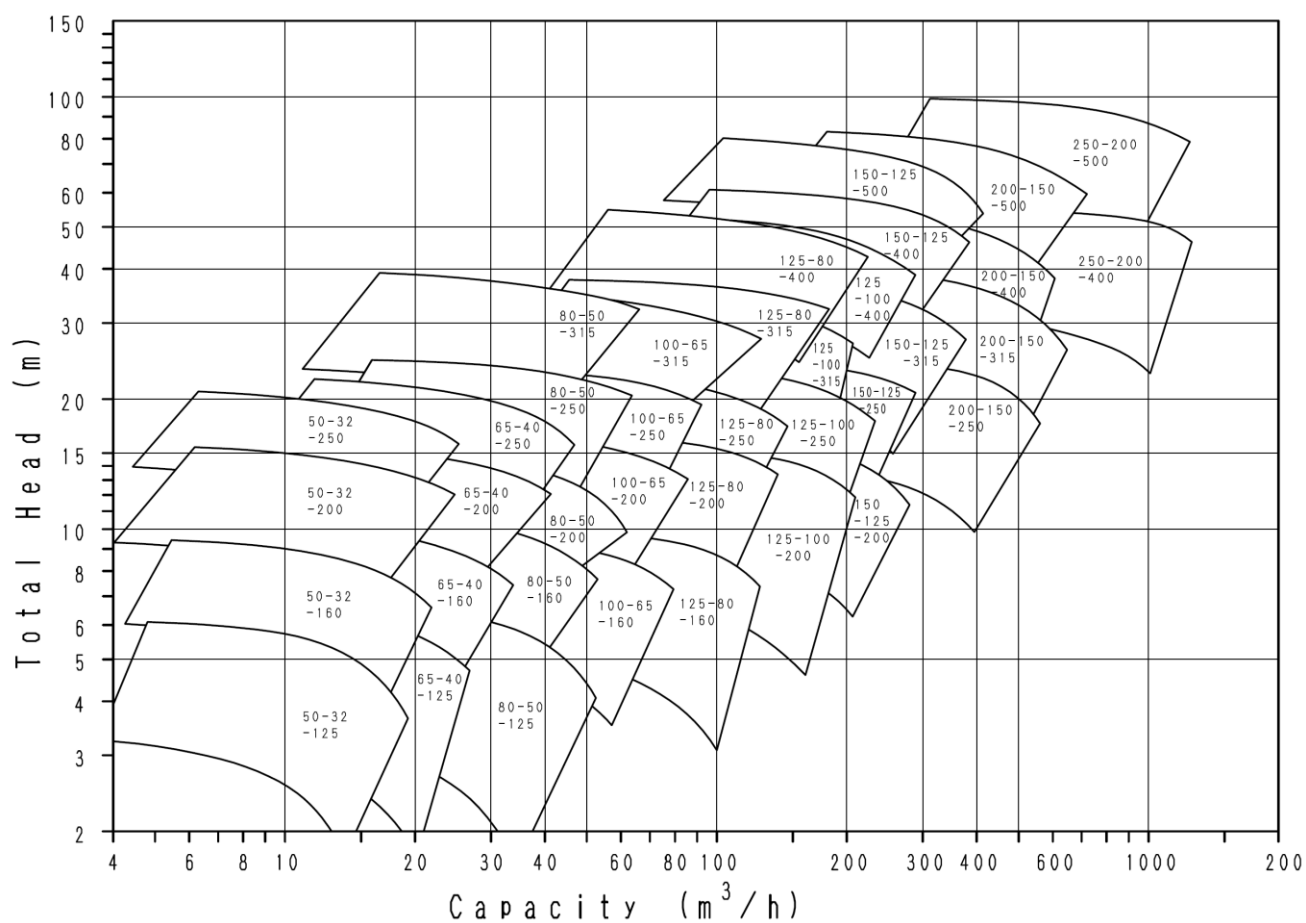
SELECTION CHART

E-1

50Hz – 2950min⁻¹

Note : When selecting a pump , NPSH Av. should have a safety margin of at least 0.5m from NPSH Re.

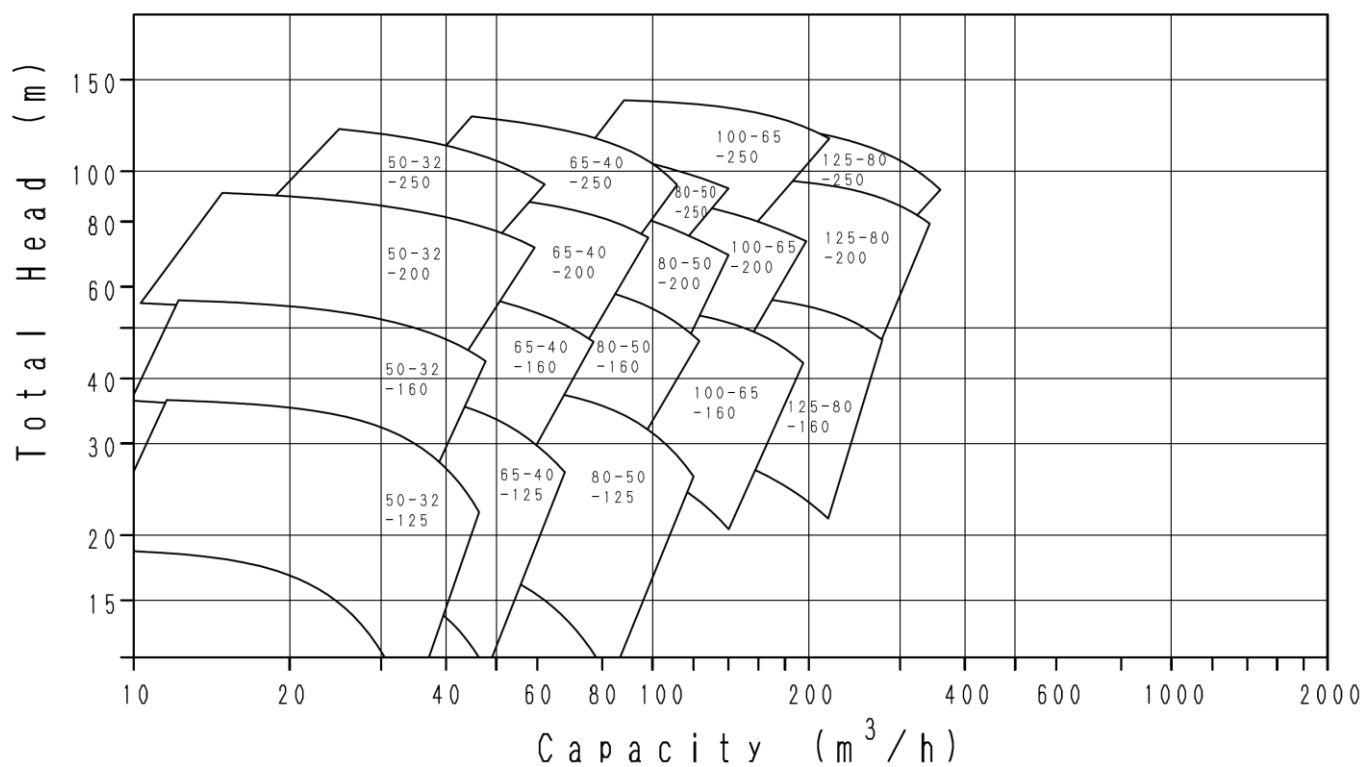
SELECTION CHART

50Hz – 1450min⁻¹

Note : When selecting a pump , NPSH Av. should have a safety margin of at least 0.5m from NPSH Re.

SELECTION CHART

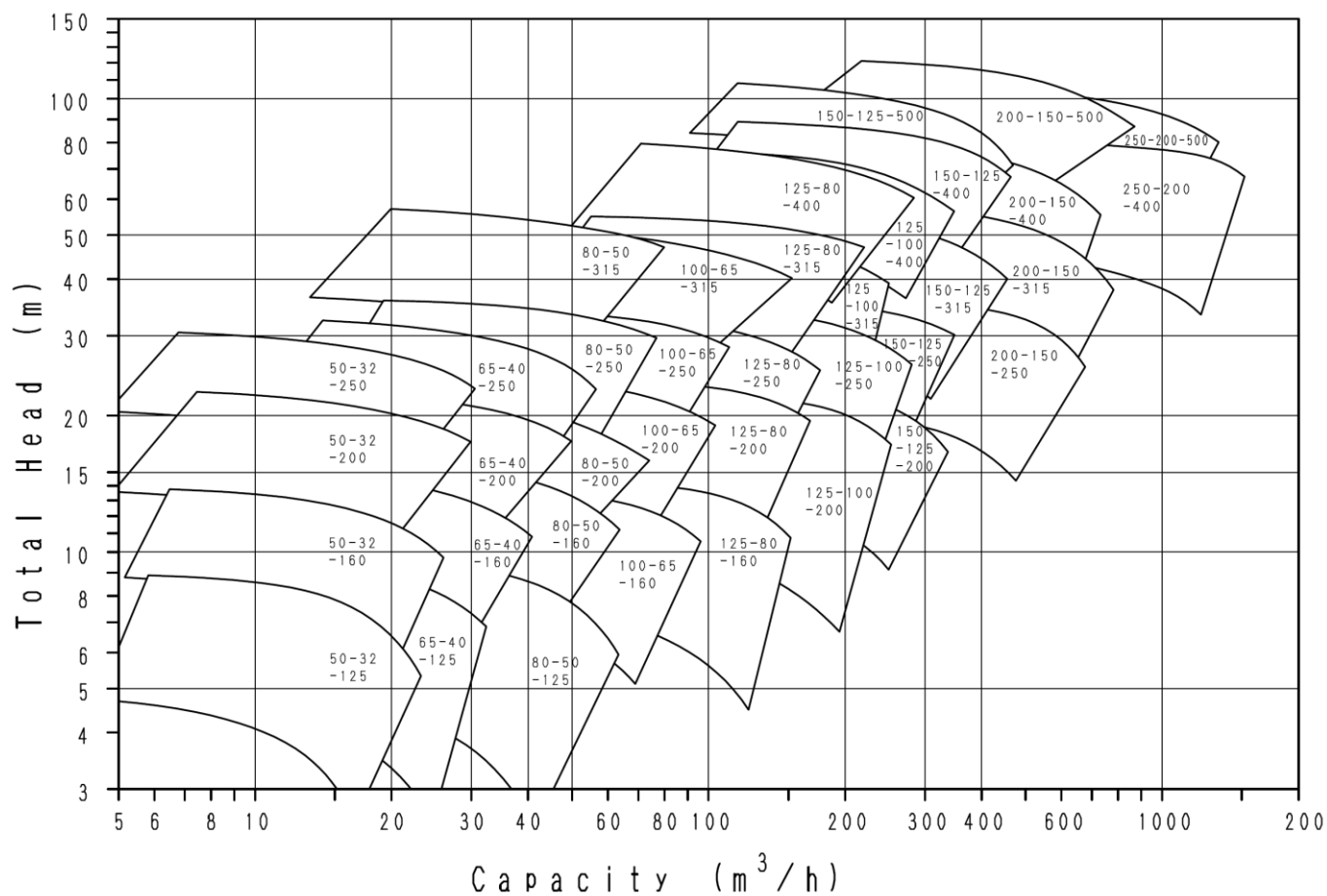
E-3

60Hz – 3550min⁻¹

Note3 : When selecting a pump , NPSH Av. should have a safety margin of at least 0.5m from NPSH Re.

SELECTION CHART

E-4

60Hz – 1750min⁻¹

Note : When selecting a pump , NPSH Av. should have a safety margin of at least 0.5m from NPSH Re.