



Bringing valuable "water" to you



**KAWAMOTO PUMP**

Comfort Earth®

## Sea water pumps

# KAWA HOPE® series

Self priming type

Automatic booster pump unit

Fine bubble generator

Titanium / Plastic / Nylon coating

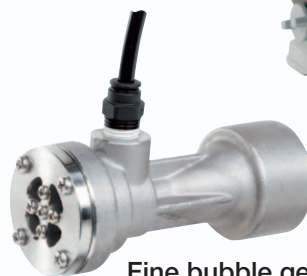
Ver. 1.1



Titanium



Plastic



Fine bubble generator



Automatic booster pump unit



*Kawamoto*





# Sea water pumps

# KAWA HOPE series

**Salty water pool, Fish market, Fisheries experimental station, Marine product processing industry, Aquaculture industry, Fish preserve, Aquarium**  
**Pumps for sea water with superior corrosion resistance.**

**Equipped with a variety of functions. A full line-up characterized by energy saving and a powerful water supply. Select a product which is appropriate for your application.**

**Excellent corrosion resistance.**

**Fastidious material**

•Titanium •Stainless steel •Plastic •Nylon coating

Self-priming automatic booster unit for sea water

P3

GSZB2 type 



It is the industry's first sea water self priming automatic booster pump unit with unique how-how based on our actual achievement of sea water use.

\*Please refer to the figure in the page 4.

**■ Excellent corrosion resistance**  
 (Major portion=Nylon coating)

The major parts contacting liquid, such as the casing, are nylon-coated units with high corrosion resistance.

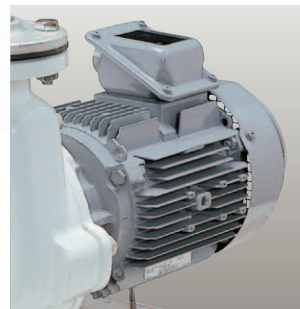
Other parts contacting liquid are made using SUS316 and resins, and are ideal for pumping sea water thanks to their superior corrosion resistance.

**■ Constant pressure water supply**

An operation method with a pressure sensor and a flow sensor has been adopted, so a stable water supply pressure can be achieved, with very little pressure fluctuation during water supply.

**■ Adoption of TEFC electric motor**

Highly Resistant to insulation deterioration due to dust and moisture and has a long machine life.



**■ High reliability**

A special design has been adopted which uses the optimal materials for resistance to sea water in, for example, the pressure sensor and flow sensor, which are the key parts for automatic operation. (\*2)  
 Resistant to corrosion and clogging by foreign objects, and provides a stable water supply. The control panel has a long service life, thanks to a contactless system which means there is no contact abrasion of magnet switches. (Exclude individual operation)


(\*2) Periodical replacement is needed. (Pressure sensor, Flow sensor, Check valve disk, Flexible joint, Accumulator, Mechanical seal)



Pressure sensor (Sea water) Flow sensor (Sea water) Check valve (Resin made valve disk) Accumulator (portion contacting liquid PP, SUS316)

Simple small automatic booster sea water pump 

P6

Marine KAWA ACE  
**NFZ (2) -K type**   
 150W, 250W, 400W, 750W



- The major parts contacting liquid, such as the casing, are highly corrosion-resistant units made from stainless steel and resins. Specially designed parts made using the optimal materials have also been adopted in the other parts contacting liquid, making the pump resistant to corrosion and ideal for pumping sea water.
- A design which makes excellent use of technology from home pumps means a stable water supply can be achieved, through a system which is energy-saving, quiet and provides a constant discharge pressure.

Automatic booster unit for sea water

P7

KZB type



- Excellent corrosion resistance due to adoption of Nylon coating, SUS316 and Resin to major parts contacting liquid.
- A special design has been adopted which uses the optimal materials for resistance to sea water in the pressure sensor and flow sensor, which are the key parts for automatic operation. It is resistant to corrosion and clogging by foreign objects, and can provide a stable water supply.
- The control panel has a long service life, thanks to a contactless system which means there is no contact abrasion of magnet switches.

Titanium submersible pump

P11

WUZ<sub>3</sub>-(G) type



- Long life and high corrosion resistance because titanium adopted.
- As well as excellent performance to pass foreign objects because of vortex type, furthermore, high water pumping performance.
- Easy maintenance due to a fingertip strainer. (0.75kW or less)
- Built-in automatic type and automatic alternative type with float switch are available.
- Double mechanical seal prevents water immersion into motor.
- Various kind of models from 0.15kW to 3.7kW.

Self-priming plastic pump

P15

GSP<sub>4</sub> type 



- Superior corrosion resistance, due to the use of mainly plastics, with nylon coating and stainless steel.
- The adoption of resin materials delivers stable performance over a long period of time, with very little damage due to corrosion.
- Easy maintenance attributed by simple structure and semi-open impeller. Easy installation due to flange type discharge connection.

Nylon coated self-priming sea water pump

P17

GSZ-C type 

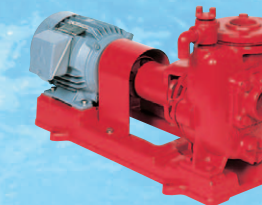


- Superior corrosion resistance according to exclusively designed pump for nylon coating.
- Self-priming pump construction does not require foot valve and makes priming works easier.
- Ideal for use in high pump head sea water intake.

Simple self-priming sea water pump

P19

FSZ/GSZ type 

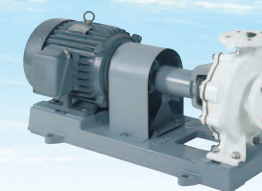


- Self-priming pump construction does not require foot valve and makes priming works easier.
- Sacrificial anode prevent pump from corrosion.
- Various kind of models bore size from 40mm to 150mm.

Nylon coating pump

P21

GEZ-<sub>4</sub>M type



- Superior corrosion resistance according to exclusively designed pump for nylon coating.
- Various kind of models from small bore size to large bore size, and low head.
- Easy maintenance and inspection due to back pull out construction.
- High efficiency, good suction performance, and wide applications for various usages.

Fine bubble generator

P25

BGZ type



- Simple configuration, and easily combined with sea water pumps. A wide range of uses, such as in fish tanks.
- Generation of fine bubbles is possible thanks to an ejector system and needle-shaped protrusions for crushing bubbles (patent pending).
- Easy to maintain, thanks to a removable separator.





GSZB2 type

Please inquire for inverter controlled model.

### Optional accessories

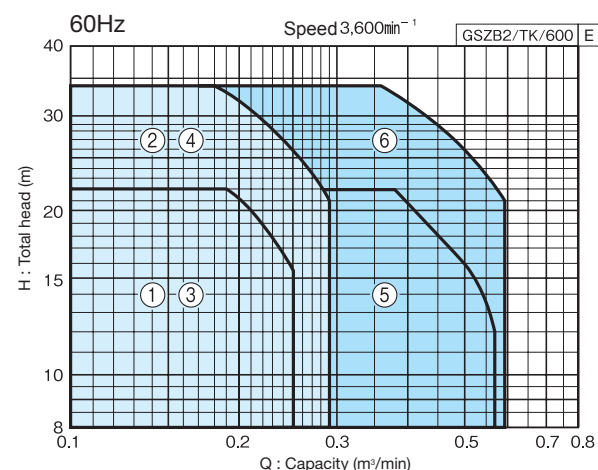
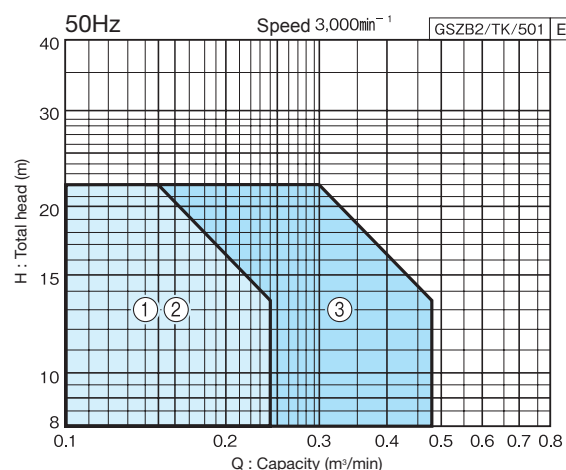
- Vibration proof bed
- Foundation bolt (Recommend foundation bolt size 4-M12×160)
- Float switch for sea water (For fluid level control) EHF5-1 X10S

### Selection chart

Individual operation

Alternate operation

Alternate/Parallel operation



### Specification table

Small water amount stop flow rate 10L/min

Bore d2 mm	Bore d1 mm	Operation method	Ref	Model	Motor kW	Standard specifications				Adjustable range of starting pressure MPa	Accumulated pressure MPa	Noise* dB(A)	Vibration isolator application table
						Q m³/min	H m	Boost-up head m	Suction head m				
40	40	Individual	1	GSZB2-405SE1.5	1.5	0.15	22	16	6	0.1~0.25	0.09	52	PBKV-10070043 or P-JR 310
		Alternate	2	GSZB2-405AE1.5	1.5	0.15	22	16	6	0.1~0.25	0.09	52	PBKV-10070044 or PW-852J191
50	40	Alternate/Parallel	3	GSZB2-405PE1.5	1.5×2	0.3	22	16	6	0.1~0.25	0.09	59	

Bore d2 mm	Bore d1 mm	Operation method	Ref	Model	Motor kW	Standard specifications				Adjustable range of starting pressure MPa	Accumulated pressure MPa	Noise* dB(A)	Vibration isolator application table
						Q m³/min	H m	Boost-up head m	Suction head m				
40	40	Individual	1	GSZB2-406SE1.5	1.5	0.19	22	16	6	0.1~0.25	0.14	56	PBKV-10070043 or P-JR 310
			2	GSZB2-406SE2.2	2.2	0.18	34	28	6	0.2~0.35	0.09	64	
			3	GSZB2-406AE1.5	1.5	0.19	22	16	6	0.1~0.25	0.14	56	
40	40	Alternate	4	GSZB2-406AE2.2	2.2	0.18	34	28	6	0.2~0.35	0.09	64	PBKV-10070044 or PW-852J191
			5	GSZB2-406PE1.5	1.5×2	0.38	22	16	6	0.1~0.25	0.14	59	
50	40	Alternate/Parallel	6	GSZB2-406PE2.2	2.2×2	0.36	34	28	6	0.2~0.35	0.09	67	

(Note 1) When using large amount of flow rate such as a flushing valve, please consult KAWAMOTO PUMP.

(Note 2) Starting pressure is set at standard boost-up head as default.

\*The noise level indicates the maximum value within the specifications at -1 m from the suction

### Standard specifications

Control method	Constant pressure water supply with pressure and flow sensor.
Operation method	Individual, Alternate, Alternate/Parallel
Installation	Indoor
Liquid	Liquid quality : Clean water *1, sea water *2 Liquid temperature : 0~40°C (no freezing)
Pump (Materials)	GSZ-C type Nylon coating self-priming multi-stage turbine pump Impeller : Stainless cast steel (316) Shaft : SUS316 (Casing : Cast iron + Nylon coating)
Motor	TEFC outdoor Speed 50Hz : 3,000min <sup>-1</sup> 60Hz : 3,600min <sup>-1</sup> Efficiency : premium efficiency (IE3)
Suction conditions	Max. suction total head : -6m (20°C)
Power supply	Three phase
Coating color (Munsell No.)	Nylon coating part : White (N-9.5) Accumulator : Gray (10Y5.5/0.5) Others : Gray (2.5PB5.1/0.8)

(Note) When using with a small flow rate, please consult KAWAMOTO PUMP.

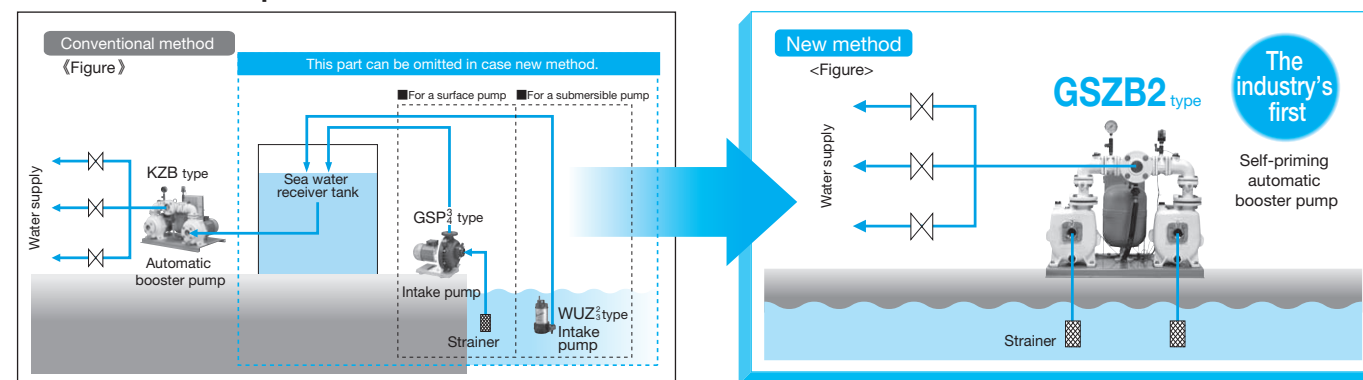
\*1 : pH5.8~8.6 chloride ion concentration 200mg/L or less

\*2 : pH7.8~8.2 chloride ion concentration Approx. 19,000 mg/L Sand content 1000mg/L or less

### Components

Control Panel	ECF5-B type, ECF8 type
Accumulator	○ PTD3-1AS (SPCE, portion contacting liquid PP, SUS316)
Flexible joint	○ (Stainless steel)
Check valve	○ (Resin made valve disk)
Pressure gage	○
Pressure sensor	○ (For sea water)
Flow sensor	○ (For sea water)
Others	Flange

### Installation example



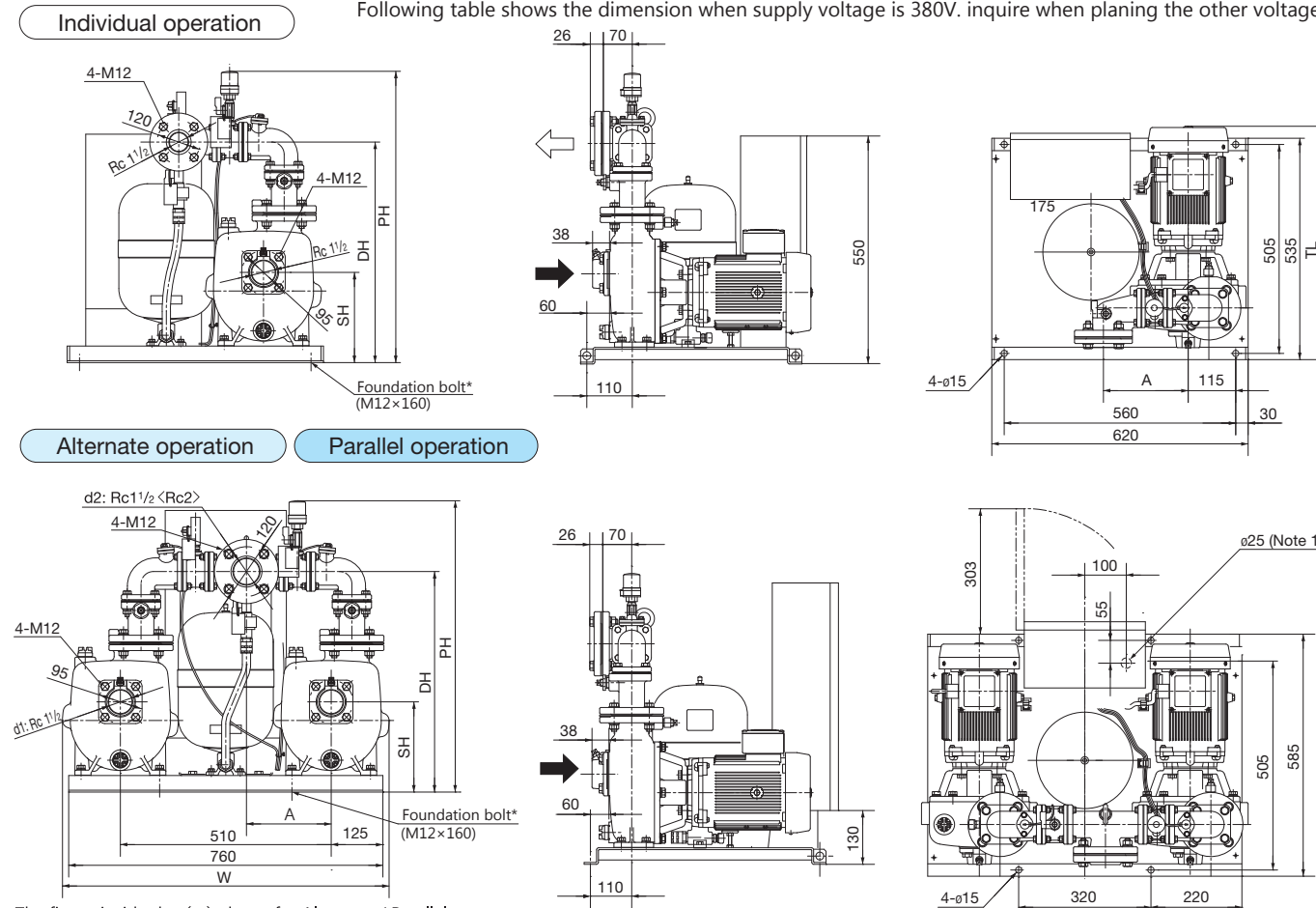
(Note) Separate fluid level control is required to prevent dry running of automatic booster pumps for sea water receiver tanks.

(Precaution for suction piping work)  
Use the pump under conditions in which the total loss for the height from the pump position to the water surface during low tide, etc. and for the suction piping is 6 m or less.

### Outline dimension table

Please request a delivery specification when planning installation.

Following table shows the dimension when supply voltage is 380V. inquire when planing the other voltage.



The figure inside the < > shows for Alternate / Parallel

\* Foundation bolts are optional accessories.

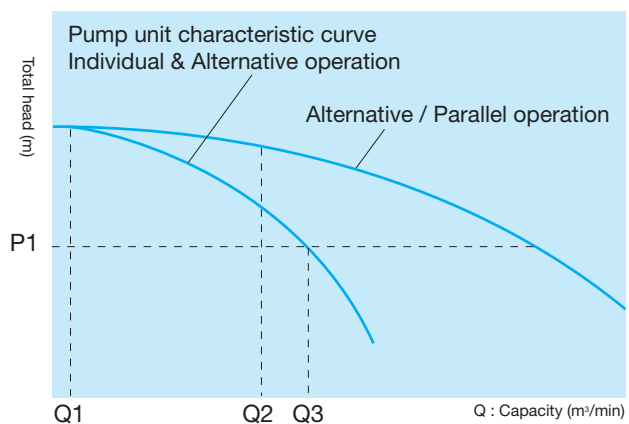
(Note 1) Showing the position on bottom surface of control panel, there is no hole on the base.

(Note 2) W is omitted if W<760, and TL is omitted if TL<535.

Unit : mm

Bore d2 mm	Bore d1 mm	Operation method	Model	Motor kW	Combination					Mass kg	
					SH	DH	PH	W	TL		A
40	40	Individual	GSZB2-405SE1.5	1.5	213	533	704	—	538	205	82
			GSZB2-406SE1.5		193	483	654	—	—	220	73
			GSZB2-406SE2.2		213	533	704	—	555	205	80
40	40	Alternate	GSZB2-405AE1.5	1.5	213	533	704	780	538	205	133
50	40	Alternate/Parallel	GSZB2-405PE1.5		213	533	704	780	538	205	133
40	40	Alternate	GSZB2-406AE1.5	1.5	193	483	654	—	—	220	123
			GSZB2-406AE2.2		213	533	704	780	555	205	138
			GSZB2-406PE1.5		193	483	654	—	—	220	123
50	40	Alternate/Parallel	GSZB2-406PE2.2	2.2	213	533	704	780	555	205	138

### Operational explanation



P1 : Pump starting pressure (Pressure sensor set pressure)  
 Q1 : Stop flow rate (10L/min)  
 Q2 : Parallel-OFF flow rate  
 Q3 : Parallel-ON flow rate

#### Individual & Alternative operation

- When water is consumed while the pump is stopped and the pressure drops to P1, the pump will start running.
- When the flow rate is Q1 or higher, the pump will continue water supply.
- When the used water rate drops to below Q1, the pump will stop.
- Steps 1 to 3 are alternately repeated between the first pump and second pump.

#### Alternative / Parallel operation

- If the flow rate reaches Q3 or higher while one of the pump is running, the pressure will drop to P1, and then, the other pump will start running.
- When the flow rate drops below Q2 during parallel operation, the pump started first will stop, and only one pump will run.
- If the flow rate is less than Q3, alternate operation will take place, else if flow rate is Q3 or more, repeat steps 1 to 2.

### Control panel standard specification

#### Individual operation

(ECF5-B type control panel)



#### Alternate/Parallel operation

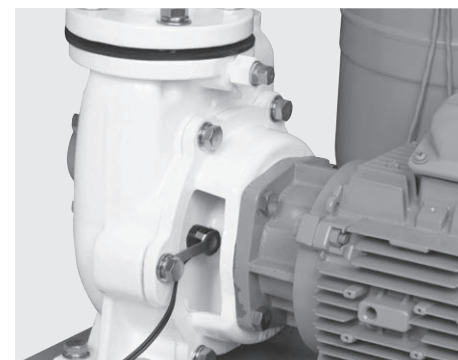
(ECF8 type control panel)



Model	ECF5-B	ECF8-A type	ECF8-P type
Operation method	Individual	Alternate	Alternate/Parallel
Rated voltage	Three phase		
Box material (Box thickness)	Box form : Steel plate (1.0 t)	Box form : Steel plate (1.2 t) door : Resin (2.0 t)	
Installation	Indoor		
Ammeter (Individual)	—	—	○
Motor protection	Thermal relay	—	○ (*1)
Alarm buzzer	—	—	○
Function	—	Start-up frequency automatic adjust. Automatic substitute operation. Discharging trouble retry. Water supply display. (Discharging trouble detection)	Automatic adjust parallel operation ON-OFF
Indicator light	Power supply	○ (White)	○ (Red)
	Operation mode (Manual, Stop, Auto)	—	○ (Red) × 3 pcs
	Pump selection (No.1 - No.2 - No.1 - 2)	—	○ (Red) × 3 pcs
	Operation (Individual)	—	○ (Red) × 2 pcs
	Trouble (Individual)	—	○ (Orange) × 2 pcs
	Discharging (Individual)	—	○ (Red) × 2 pcs
	Operation condition	—	Digital (Power source, Current, Integrated operation time - start times)
External signal (*2)	Water-full, Empty	—	○ (Orange)
	Operation, Trouble (Individual)	—	○
	Water-full, Empty	—	○

(\*1) Protected by software, on the basis of electric current data from the current transformer inside the panel.  
 (\*2) No voltage signal Note) Please inquire about fluid level control of receiver tank.

#### Thermostat (Individual only)



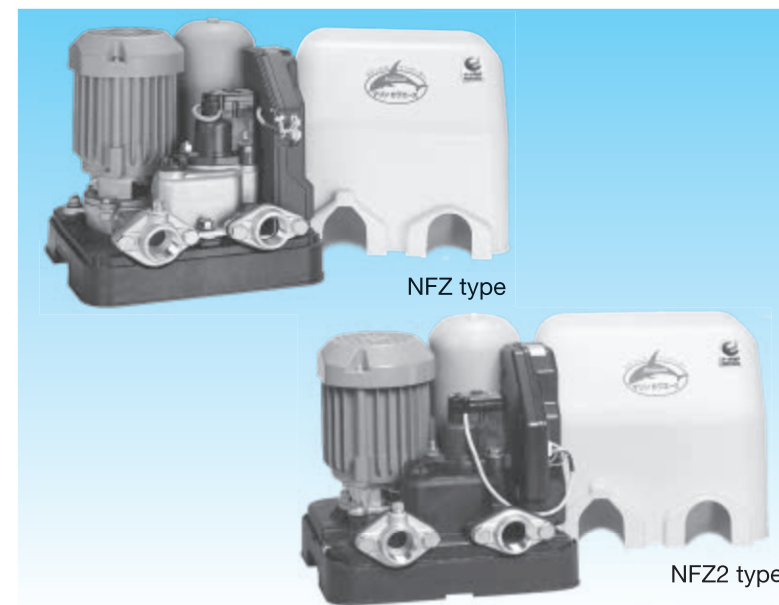
Individual operation model equip thermostat for dry-run preventer.

(Alternate/Parallel operation models are protected from dry-run by control panel detection of discharging error.)

### List of digital display of ECF8-A type

Status	Digital display	Display content
Power ON	0 . 0	When stopped
During operation	0~9 . 0~9	Current In case 9.9A or less
	1~5 . 0~9	In case 10A or more MAX 50A
	2 0	Voltage i.e. in case 200V
Trouble mode (Flashing display)	Current .	Parallel OFF current (Alternate and Parallel operation only) Right end point lit (*)
	0 0	Power supply trouble (S phase missing, Abnormal frequency)
	0 1	Reverse phase at power supply
	1 0	Overload
	1 1	Locking
	2 0	SSC/MC open
Integrated operation time	2 1	SSC/MC short
	3 0	No discharging
	4 0	Flow sensor trouble
	H1 or H2	Unit : hr Max. 6 digit
Integrated start times	C1 or C2	Unit : times Max. 8 digit
Trouble history	E1 or E2	4 times

(\*) Parallel OFF if lit for 3 seconds or more. (If less than 3 seconds, parallel operation continues)



### Standard specifications

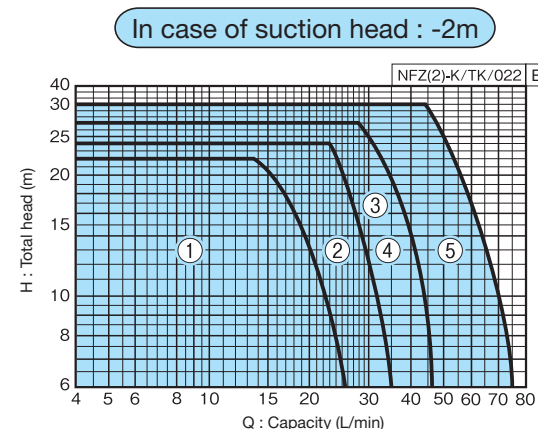
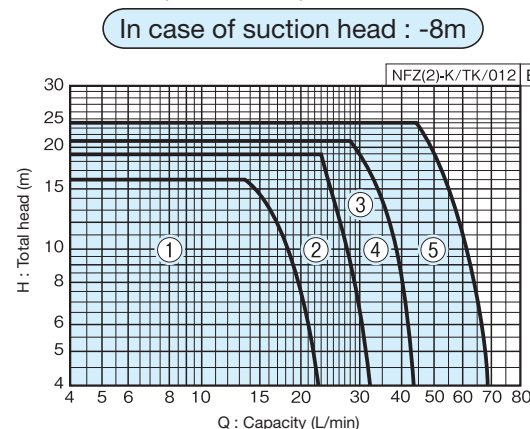
Control method	Water supply with constant discharge pressure with inverter.
Operation method	Individual
Installation	Indoor / Outdoor (altitude 1,000m or less)
Liquid	Liquid quality : Clean water *1, sea water *2 Liquid temperature : 0~40°C (no freezing)
Pump (Materials)	Impeller : Resin Shaft : portion contacting liquid SUS304 Base (Casing) : Resin (150 / 250 W products) Casing : Resin (250W or less), Stainless cast steel (304) (400 W or more)
Motor Power supply	KPM Motor (TEFC indoor) Single phase - Three phase
Power cable	2m
Standard accessory	Ground wire, Strainer

\*1 : pH5.8-8.6 chloride ion concentration 200mg/L or less  
 \*2 : pH7.8-8.2 chloride ion concentration Approx. 19,000 mg/L Sand content 1000mg/L or less

### Suction total head (20°C)

-8m

### Selection chart (50Hz/60Hz)



### Specifications (Stop flow rate 4L/min)

Bore d2	Bore d1	Ref	Model	Motor W	Power supply V	Standard specifications		Operating characteristic *1			S mode Operation head *2	Accumulator Capacity L	Noise dB	
						H m	Q L/min	Suction head m	Operation head m	Q L/min				
20	20	1	NFZ2-150SK	150	Single phase	20	17	8.2	16.22	14.14	12.18	18.24	1	50~53
			2	NFZ2-250SK	250	Single phase	22	25	8.2	18.24	23.23	14.20	21.27	1
25	25	3	NFZ400SK	400	Single phase	25	32	8.2	21.27	28.28	17.23	24.30	1	45~49
			4	NFZ400TK	400	Three phase	25	32	8.2	21.27	28.28	17.23	24.30	1
32	32	5	NFZ750K	750	Three phase	28	48	8.2	24.30	44.44	20.27	27.33	1	53~55

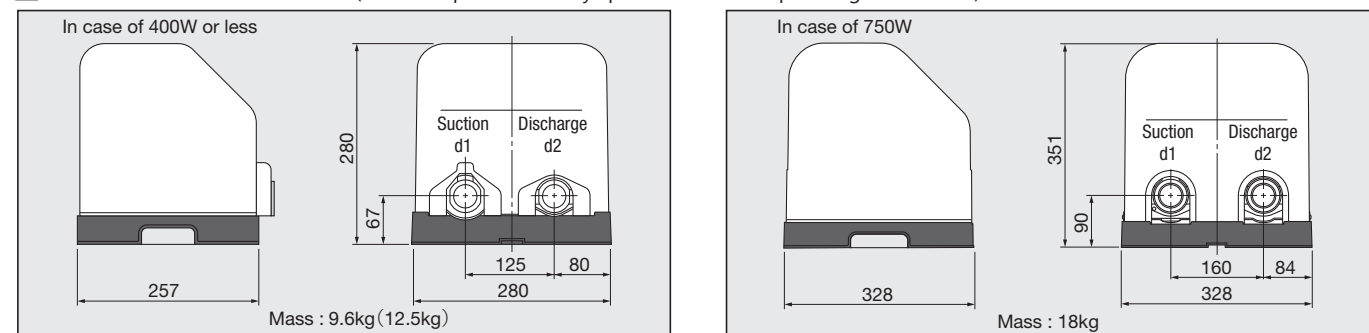
\*1 : Values for operating characteristics in the upper section are for suction head - 8m and in the lower section are for suction head - 2m.

When you use the pump, be sure to adjust the starting pump head to suit the application.

\*2 : Operation head (reference value) at a capacity of 10 L/min. In S mode, the operation head changes in accordance with the flow rate.

Note) When operation mode is set to S mode, operation will not be constant discharge pressure operation. Compared to E mode, the power consumption is greater on the low flow rate side (The operation mode is set to the E mode as the default.)

### Outline dimension table (Please request a delivery specification when planning installation.)



The figure inside the ( ) shows for 400W.





KZB type

### Standard specifications

Control method	Constant pressure water supply with pressure and flow sensor.
Operation method	Individual, Alternate, Alternate/Parallel
Installation	Indoor
Liquid	Liquid quality : Clean water *1, sea water *2 Liquid temperature : 0~40°C (no freezing)
Pump (Materials)	Nylon coating multi-stage turbine pump (Impeller : Stainless cast steel (316) Shaft : SUS316) (Casing : Cast iron + Nylon coating)
Motor	TEFC outdoor (Pump should be in stalled indoor) Speed 50Hz : 3,000min <sup>-1</sup> 60Hz : 3,600min <sup>-1</sup> Efficiency : premium efficiency (IE3)
Power supply	Three phase

\*1 : pH5.8~8.6 chloride ion concentration 200mg/L or less  
\*2 : pH7.8~8.2 chloride ion concentration Approx. 19,000 mg/L sand content 1000mg/L or less

### Standard accessories

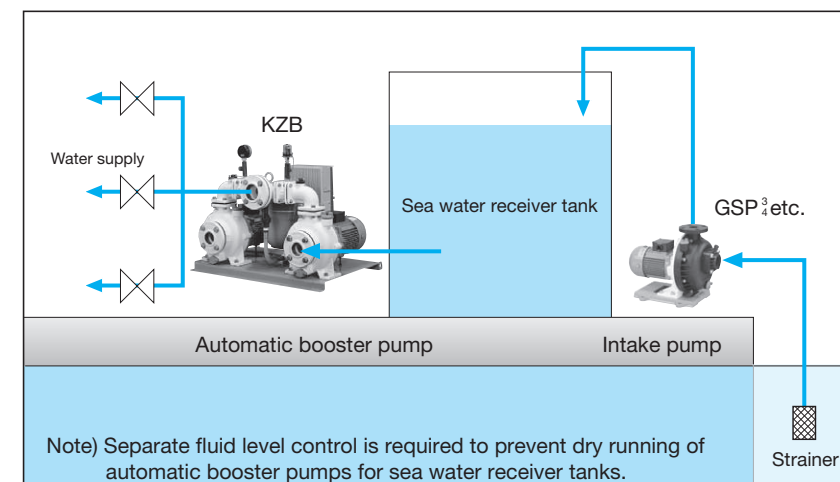
Control panel, Pressure sensor, Flow sensor, Check valve, Accumulator, Base, Companion flanges
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### Optional accessories

- Vibration proof bed
- Component for fluid level control
- Pump cover (Steel plate or Stainless steel) Note) Not possible with a pressure gauge attached
- Foundation bolt
- Level relay (For detecting alternate/parallel water reduction)

\*Please inquire about individual.

### Installation example



Please inquire for inverter controlled model.

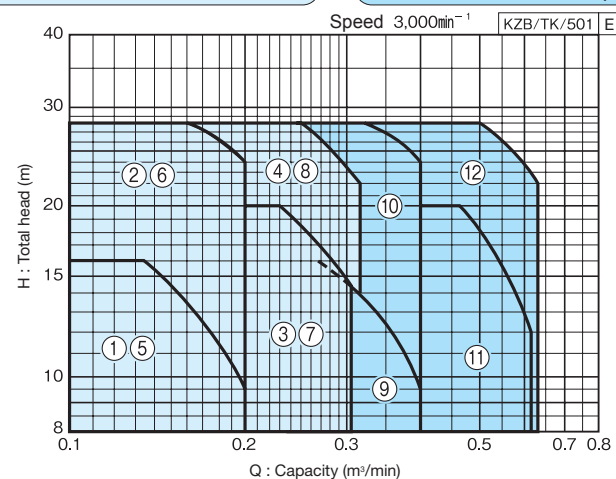
### Suction conditions

Flow : Within 0 to 5 m

### 50Hz Selection chart

(Individual) alternate operation

Alternate / Parallel operation



### 50Hz Specification table

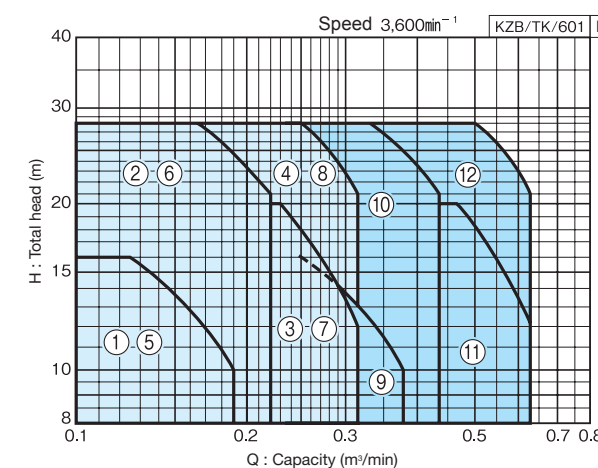
Bore d2	Bore d1	Operation method	Ref	Model	Motor	Standard specifications					Starting pressure selectable range *1	Accumulated pressure	Noise*2	Vibration isolator application table *3
						Q	H	Starting pressure	Stop flow rate	Stopping pressure				
40	40	Individual Alternate	1	KZB405E0.75	0.75	0.135	16	0.16	10	0.23	0.09	0.09	48	(PJR-310, or PBKV-MBP56) PJR-311 or PW-852J181 or PBKV-MBP37
			2	KZB405E1.5	1.5	0.16	28	0.27	10	0.35	0.24	0.20	53	
			3	KZB505E1.5	1.5	0.23	20	0.20	10	0.27	0.14	0.14	50	
			4	KZB505E2.2	2.2	0.25	28	0.27	10	0.37	0.22	0.20	58	
50	40	Alternate/Parallel	9	KZB405PE0.75	0.75x2	0.27	16	0.16	10	0.23	0.09	0.09	50	
			10	KZB405PE1.5	1.5x2	0.32	28	0.27	10	0.35	0.24	0.20	56	
			11	KZB505PE1.5	1.5x2	0.46	20	0.20	10	0.27	0.14	0.14	52	
			12	KZB505PE2.2	2.2x2	0.5	28	0.27	10	0.37	0.22	0.20	61	

\*1 : Minimum starting pressure to which adjustment from the standard starting pressure is possible  
\*2 : Noise indicates the value at a standard specification point.  
\*3 : Please inquire for salt damage resistance specifications for the vibration proof bed.  
Note) When using large amount of flow rate such as a flushing valve, please consult.

### 60Hz Selection chart

(Individual) alternate operation

Alternate / Parallel operation



### 60Hz Specification table

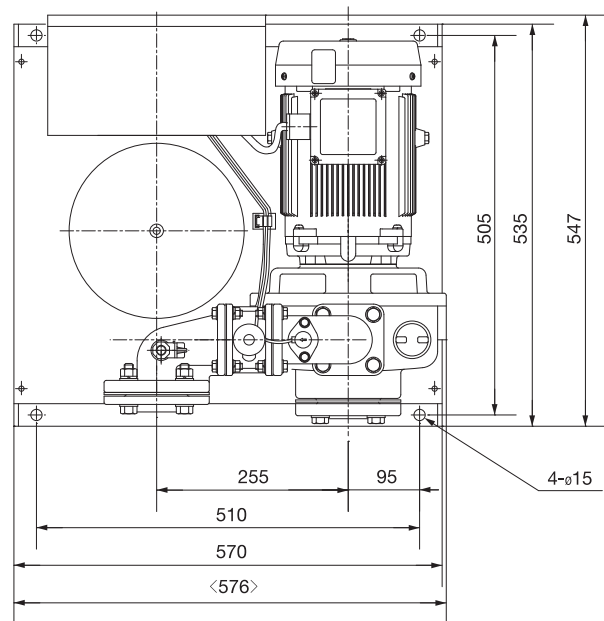
Bore d2	Bore d1	Operation method	Ref	Model	Motor	Standard specifications					Starting pressure selectable range *1	Accumulated pressure	Noise*2	Vibration isolator application table *3
						Q	H	Starting pressure	Stop flow rate	Stopping pressure				
40	40	Individual Alternate	1	KZB406E0.75	0.75	0.125	16	0.16	10	0.23	0.10	0.09	50	(PJR-310 or PBKV-MBP56) PJR-311 or PW-852J181 or PBKV-MBP37
			2	KZB406E1.5	1.5	0.165	28	0.27	10	0.38	0.21	0.20	55	
			3	KZB506E1.5	1.5	0.23	20	0.20	10	0.27	0.14	0.14	52	
			4	KZB506E2.2	2.2	0.25	28	0.27	10	0.37	0.21	0.20	55	
50	40	Alternate/Parallel	9	KZB406PE0.75	0.75x2	0.25	16	0.16	10	0.23	0.10	0.09	53	
			10	KZB406PE1.5	1.5x2	0.33	28	0.27	10	0.38	0.21	0.20	58	
			11	KZB506PE1.5	1.5x2	0.46	20	0.20	10	0.27	0.14	0.14	55	
			12	KZB506PE2.2	2.2x2	0.5	28	0.27	10	0.37	0.21	0.20	58	

1 : Minimum starting pressure to which adjustment from the standard starting pressure is possible  
2 : Noise indicates the value at a standard specification point.  
3 : Please inquire for salt damage resistance specifications for the vibration proof bed.  
Note) When using large amount of flow rate such as a flushing valve, please consult.

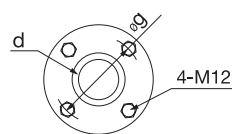


**Outline dimensional table** Please request a delivery specification when planning for an installation. Following table shows the dimension when supply voltage is 380V. inquire when planing the other voltage.

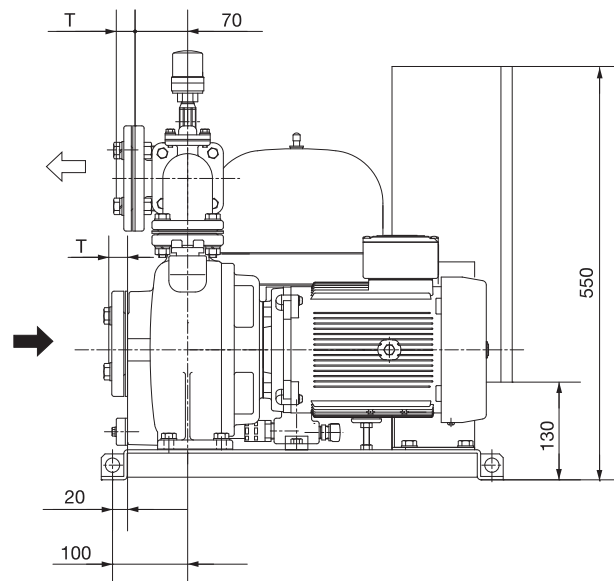
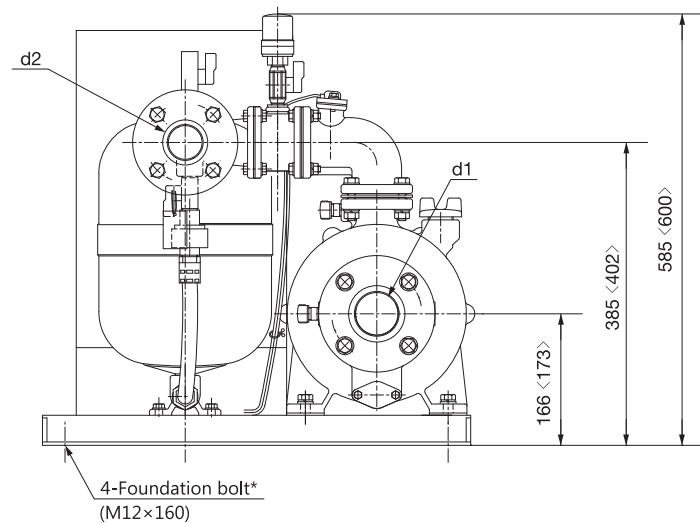
individual operation



● Flange dimension (mm)



Bore	d	g	T
40	Rc1½	105	26
50	Rc2	120	28



The value inside the < > is for the 50mm suction bore model.

\*Remove pressure gage or close the cock when not measuring. also, when attaching pressure gage, total height increased for 30mm.

**50Hz**

Bore d2 mm	Bore d1 mm	Operation method	Model	Motor	Mass
				kW	kg
40	40	Individual	KZB405SE0.75	0.75	71
			KZB405SE1.5	1.5	72
40	50		KZB505SE1.5	1.5	75
			KZB505SE2.2	2.2	87

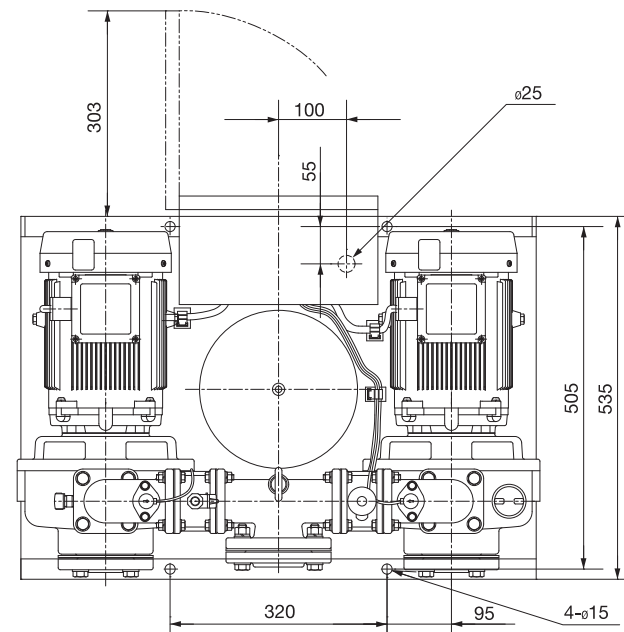
**60Hz**

Bore d2 mm	Bore d1 mm	Operation method	Model	Motor	Mass
				kW	kg
40	40	Individual	KZB406SE0.75	0.75	71
			KZB406SE1.5	1.5	72
40	50		KZB506SE1.5	1.5	75
			KZB506SE2.2	2.2	87

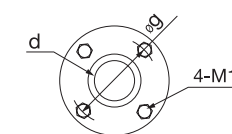
**Outline dimensional table** Please request a delivery specification when planning for an installation. Following table shows the dimension when supply voltage is 380V. inquire when planing the other voltage.

Alternate operation

Alternate and Parallel operation

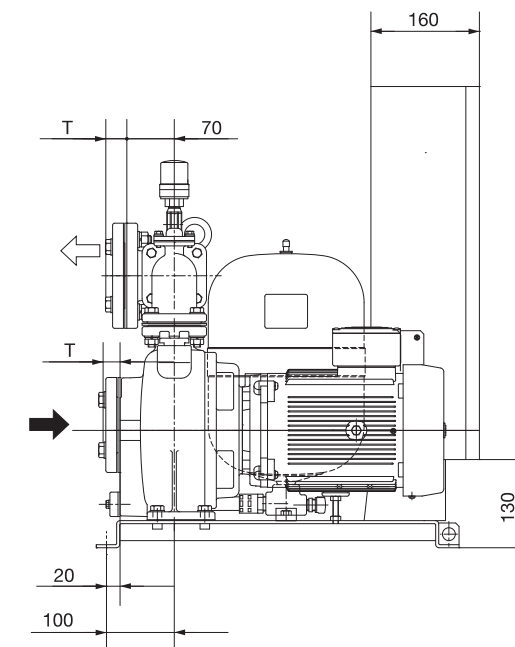
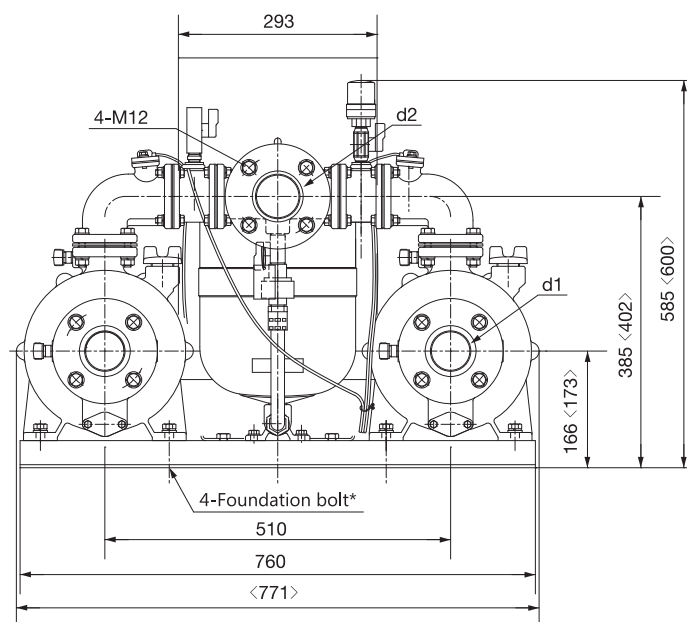


● Flange dimension (mm)



Bore	d	g	T
40	Rc1½	105	26
50	Rc2	120	28
65	Rc1½	120	32

Note) Discharge bore size 40mm and 65mm and Alternate/Parallel operation models have special flange. When attaching directly to the discharge side of a unit using flexible joints, etc. and without using companion flanges, use joints for a bore of 50 mm, regardless of the unit bore.



●Recommend foundation bolt size M12x160

The value inside the < > is for the 50mm suction bore model.

\*Remove pressure gage or close the cock when not measuring. also, when attaching pressure gage, total height increased for 30mm.

**50Hz**

Bore d2 mm	Bore d1 mm	Operation method	Model	Motor	Mass
				kW	kg
40	40	Alternate operation	KZB405AE0.75	0.75	123
			KZB405AE1.5	1.5	125
40	50		KZB505AE1.5	1.5	132
			KZB505AE2.2	2.2	151
50	40	Alternate and Parallel operation	KZB405PE0.75	0.75x2	123
			KZB405PE1.5	1.5x2	125
65	50		KZB505PE1.5	1.5x2	132
			KZB505PE2.2	2.2x2	151

**60Hz**

Bore d2 mm	Bore d1 mm	Operation method	Model	Motor	Mass
				kW	kg
40	40	Alternate operation	KZB406AE0.75	0.75	122
			KZB406AE1.5	1.5	125
40	50		KZB506AE1.5	1.5	132
			KZB506AE2.2	2.2	150
50	40	Alternate and Parallel operation	KZB406PE0.75	0.75x2	122
			KZB406PE1.5	1.5x2	125
65	50		KZB506PE1.5	1.5x2	132
			KZB506PE2.2	2.2x2	150

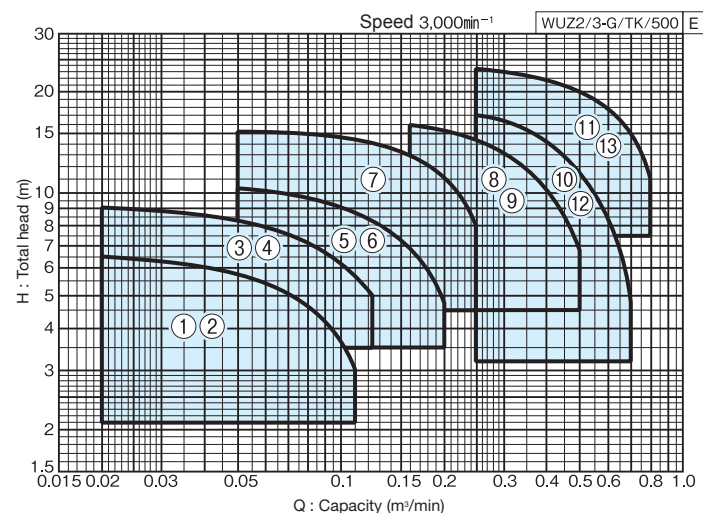


### Ability to pass foreign objects

Motor output	Dia. of foreign object (sphere shape)
0.25kW or less	14mm
0.4, 0.75kW	20mm
1.5kW	35mm
2.2kW	40mm



### 50Hz Selection chart



### 50Hz Specification table

Operation method	Bore mm	Ref	Model	Motor kW	Power supply	Specifications			
						Q m³/min	H m	Q m³/min	H m
Non-automatic	32	1	WUZ3-325-0.15SG	0.15	Single phase	0.02	6.5	0.11	3.2
		2	WUZ3-325-0.15TG	0.15	Three phase	0.02	6.5	0.11	3.2
	40	3	WUZ3-405-0.25SG	0.25	Single phase	0.02	9	0.125	5
		4	WUZ3-405-0.25TG	0.25	Three phase	0.02	9	0.125	5
	50	5	WUZ3-505-0.4SG	0.4	Single phase	0.05	10.2	0.2	4.8
		6	WUZ3-505-0.4TG	0.4	Three phase	0.05	10.2	0.2	4.8
		7	WUZ3-505-0.75G	0.75	Three phase	0.05	15.2	0.25	8
		8	WUZ2-505-1.5 *1	1.5	Three phase	0.16	16	0.5	6.8
	65	9	WUZ2-655-1.5 *1	1.5	Three phase	0.16	16	0.5	6.8
		10	WUZ2-655-2.2 *2	2.2	Three phase	0.25	17	0.7	4.8
		11	WUZ2-655-3.7 *3	3.7	Three phase	0.25	23.5	0.8	11.2
	80	12	WUZ2-805-2.2 *2	2.2	Three phase	0.25	17	0.7	4.8
		13	WUZ2-805-3.7 *3	3.7	Three phase	0.25	23.5	0.8	11.2
Automatic type / Automatic alternative	32	1	WUZ3-325-0.15S <sub>LN</sub> G	0.15	Single phase	0.02	6.5	0.11	3.2
		2	WUZ3-325-0.15T <sub>LN</sub> G	0.15	Three phase	0.02	6.5	0.11	3.2
	40	3	WUZ3-405-0.25S <sub>LN</sub> G	0.25	Single phase	0.02	9	0.125	5
		4	WUZ3-405-0.25T <sub>LN</sub> G	0.25	Three phase	0.02	9	0.125	5
	50	5	WUZ3-505-0.4S <sub>LN</sub> G	0.4	Single phase	0.05	10.2	0.2	4.8
		6	WUZ3-505-0.4T <sub>LN</sub> G	0.4	Three phase	0.05	10.2	0.2	4.8
		7	WUZ3-505-0.75 <sub>LN</sub> G	0.75	Three phase	0.05	15.5	0.25	8
		8	WUZ2-505-1.5 <sub>LN</sub> G	1.5	Three phase	0.16	16	0.5	6.8
	65	9	WUZ2-655-1.5 <sub>LN</sub> G	1.5	Three phase	0.16	16	0.5	6.8
		10	WUZ2-655-2.2 <sub>LN</sub> G	2.2	Three phase	0.25	17	0.7	4.8
		11	WUZ2-655-3.7 <sub>LN</sub> G	3.7	Three phase	0.25	23.5	0.8	11.2
	80	12	WUZ2-805-2.2 <sub>LN</sub> G	2.2	Three phase	0.25	17	0.7	4.8
		13	WUZ2-805-3.7 <sub>LN</sub> G	3.7	Three phase	0.25	23.5	0.8	11.2

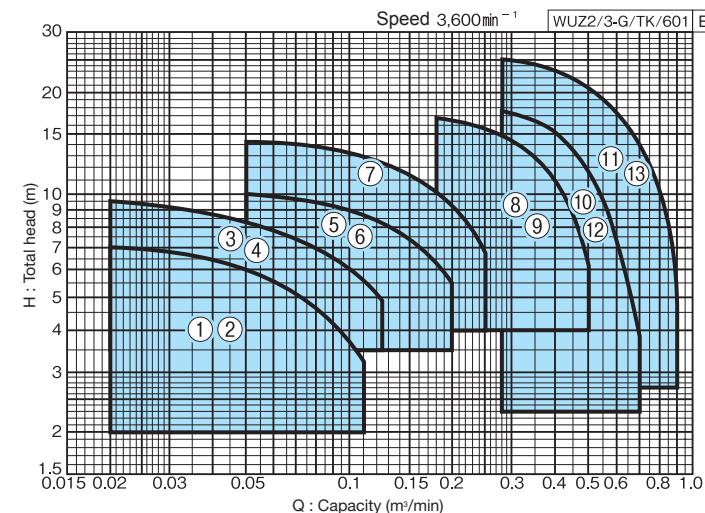
Note) Automatic alternative/parallel operation is available with combination of Automatic type and Automatic alternative type.  
 \*Model names of \*1 to \*3 in the nameplate are as followings (Automatic type has an L at the end of the model number, and Automatic alternative type has LN at the end of the model number.)  
 \*1 WUZ2-505/655-1.5 \*2 WUZ2-655/805-2.2 \*3 WUZ2-655/805-3.7

### Standard specifications

Liquid	Liquid quality Liquid temperature	Clean water*1, Sea water*2 0~40°C (no freezing)
Materials	Impeller Shaft Casing	Resin Titanium (portion contacting liquid) Resin
Motor	Types Power Speed	Dry sealed motor (Built-in auto cut protect) Single phase Three phase 50Hz : 3,000min <sup>-1</sup> 60Hz : 3,600min <sup>-1</sup>
Max. submersing depth		5m
Construction	Impeller Shaft sealing Seal oil Bearing	Vortex type Double mechanical seal (Liquid side : SiC x SiC*3 Motor side : Ceramic x Carbon) Turbine oil (WUZ2), Liquid paraffin (WUZ3) Closed ball bearing

Dia. of solid : Bore 32, 40 is 14mm or less, Bore 50 is 17mm or less  
 \*1 : pH5.8~8.6 chloride ion concentration 200mg/L or less \*3 : WUZ2 model is SiC x carbon.  
 \*2 : pH7.8~8.2 chloride ion concentration Approx. 19,000 mg/L Sand content 1000mg/L or less

### 60Hz Selection chart



### 60Hz Specification table

Operation method	Bore mm	Ref	Model	Motor kW	Power supply	Specifications			
						Q m³/min	H m	Q m³/min	H m
Non-automatic	32	1	WUZ3-326-0.15SG	0.15	Single phase	0.02	7	0.11	3.2
		2	WUZ3-326-0.15TG	0.15	Three phase	0.02	7	0.11	3.2
	40	3	WUZ3-406-0.25SG	0.25	Single phase	0.02	9.5	0.125	4.8
		4	WUZ3-406-0.25TG	0.25	Three phase	0.02	9.5	0.125	4.8
	50	5	WUZ3-506-0.4SG	0.4	Single phase	0.05	11.8	0.2	5.5
		6	WUZ3-506-0.4TG	0.4	Three phase	0.05	11.8	0.2	5.5
		7	WUZ3-506-0.75G	0.75	Three phase	0.05	15.5	0.25	7.2
		8	WUZ2-506-1.5 *1	1.5	Three phase	0.18	16.8	0.5	6
	65	9	WUZ2-656-1.5 *1	1.5	Three phase	0.18	16.8	0.5	6
		10	WUZ2-656-2.2 *2	2.2	Three phase	0.28	17.5	0.7	3.8
		11	WUZ2-656-3.7 *3	3.7	Three phase	0.28	25	0.9	4.5
	80	12	WUZ2-806-2.2 *2	2.2	Three phase	0.28	17.5	0.7	3.8
		13	WUZ2-806-3.7 *3	3.7	Three phase	0.28	25	0.9	4.5
Automatic type / Automatic alternative	32	1	WUZ3-326-0.15S <sub>LN</sub> G	0.15	Single phase	0.02	7	0.11	3.2
		2	WUZ3-326-0.15T <sub>LN</sub> G	0.15	Three phase	0.02	7	0.11	3.2
	40	3	WUZ3-406-0.25S <sub>LN</sub> G	0.25	Single phase	0.02	9.5	0.125	4.8
		4	WUZ3-406-0.25T <sub>LN</sub> G	0.25	Three phase	0.02	9.5	0.125	4.8
	50	5	WUZ3-506-0.4S <sub>LN</sub> G	0.4	Single phase	0.05	11.5	0.2	5.5
		6	WUZ3-506-0.4T <sub>LN</sub> G	0.4	Three phase	0.05	11.5	0.2	5.5
		7	WUZ3-506-0.75 <sub>LN</sub> G	0.75	Three phase	0.05	15.5	0.25	7.2
		8	WUZ2-506-1.5 <sub>LN</sub> G	1.5	Three phase	0.18	16.8	0.5	6
	65	9	WUZ2-656-1.5 <sub>LN</sub> G	1.5	Three phase	0.18	16.8	0.5	6
		10	WUZ2-656-2.2 <sub>LN</sub> G	2.2	Three phase	0.28	17.5	0.7	3.8
		11	WUZ2-656-3.7 <sub>LN</sub> G	3.7	Three phase	0.28	25	0.9	4.5
	80	12	WUZ2-806-2.2 <sub>LN</sub> G	2.2	Three phase	0.28	17.5	0.7	3.8
		13	WUZ2-806-3.7 <sub>LN</sub> G	3.7	Three phase	0.28	25	0.9	4.5

Note) Automatic alternative/parallel operation is available with combination of Automatic type and Automatic alternative type.  
 \*Model names of \*1 to \*3 in the nameplate are as followings (Automatic type has an L at the end of the model number, and Automatic alternative type has LN at the end of the model number.)  
 \*1 WUZ2-506/656-1.5 \*2 WUZ2-656/806-2.2 \*3 WUZ2-656/806-3.7

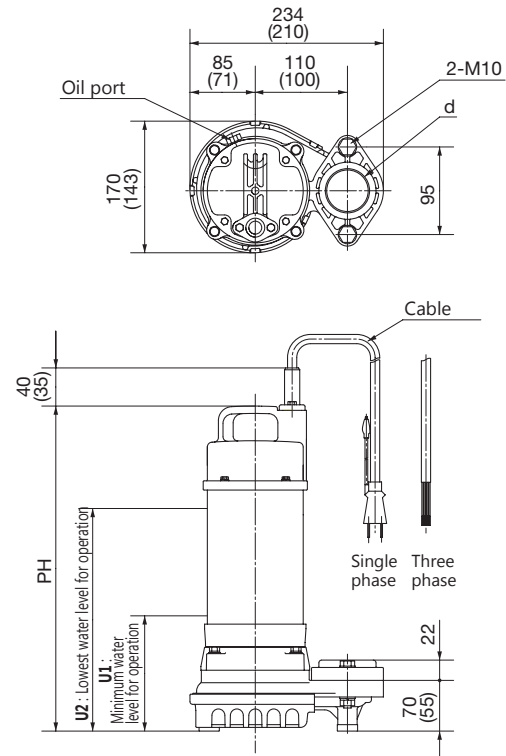


# WUZ<sub>3</sub>-(G) type Titanium submersible pump PAT.



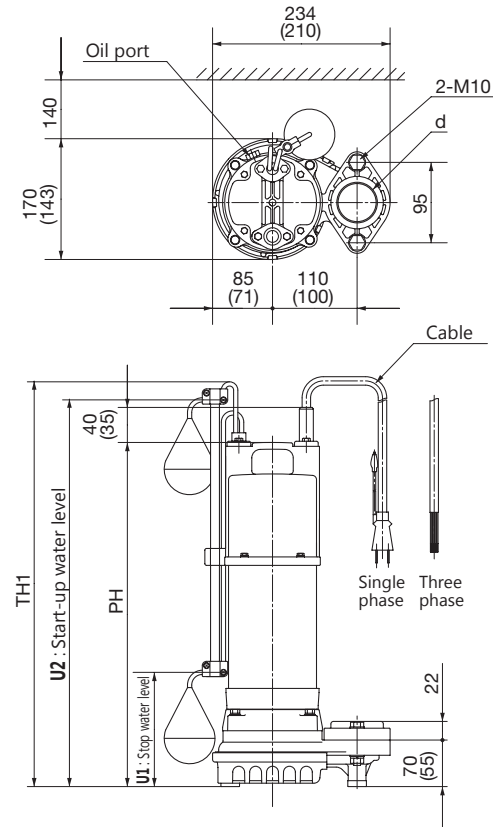
■ **Outline dimensional table** Please request a delivery specification when planning for an installation.  
( ) is less than 0.25 kW model.

## WUZ<sub>3</sub> type / Non-automatic

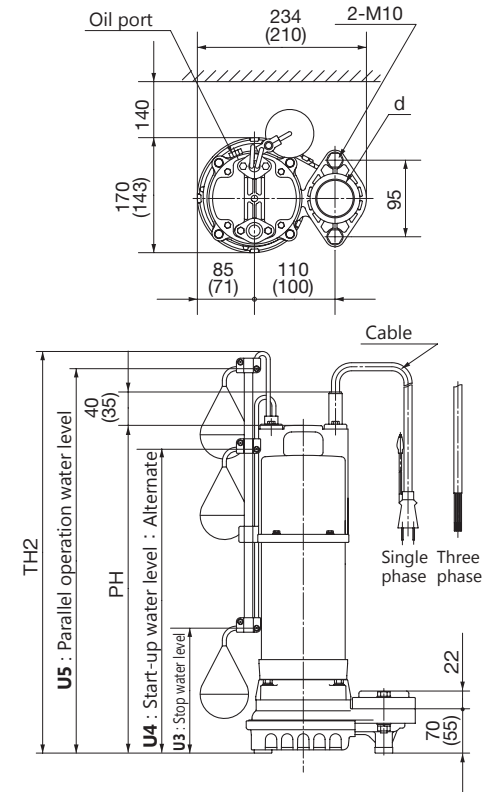


( ) is less than 0.25 kW model.

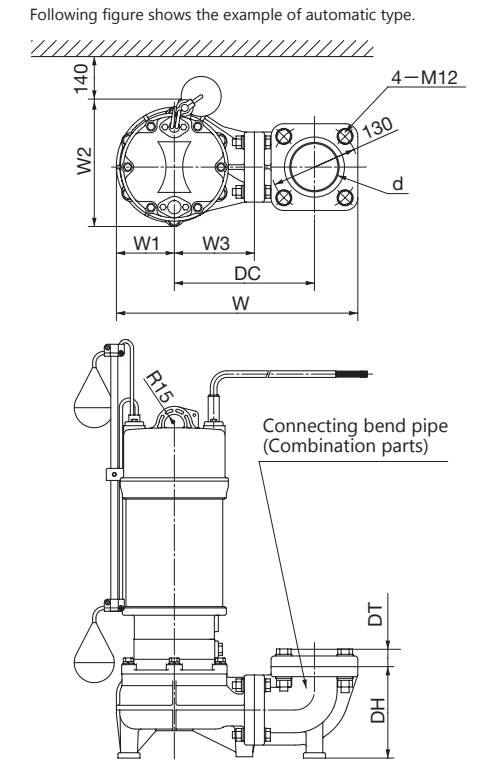
## WUZ<sub>3</sub>-L type / Automatic



## WUZ<sub>3</sub>-LN type / Automatic alternative



## WUZ2-1.5kW or more

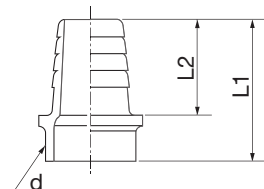


### Non-automatic

Operation method	Bore d	Model	Motor kW	Pump		Water level					Combination dimensions for 1.5kW or more					Mass kg		
				PH	TH1/TH2	U1	U2	U3	U4	U5	DH	DC	W	W1	W2		W3	DT
Non-automatic	32	WUZ3-32 <sub>6</sub> <sup>5</sup> -0.15SG	0.15	345	-	125	241	-	-	-	-	-	-	-	-	-	-	5.5
		WUZ3-32 <sub>6</sub> <sup>5</sup> -0.15TG	0.15	345	-	125	225	-	-	-	-	-	-	-	-	-	-	5.0
	40	WUZ3-40 <sub>6</sub> <sup>5</sup> -0.25SG	0.25	355	-	125	241	-	-	-	-	-	-	-	-	-	-	6.0
		WUZ3-40 <sub>6</sub> <sup>5</sup> -0.25TG	0.25	345	-	125	225	-	-	-	-	-	-	-	-	-	-	5.1
	50	WUZ3-50 <sub>6</sub> <sup>5</sup> -0.4SG	0.4	385	-	140	270	-	-	-	-	-	-	-	-	-	-	8.7
		WUZ3-50 <sub>6</sub> <sup>5</sup> -0.4TG	0.4	370	-	140	250	-	-	-	-	-	-	-	-	-	-	7.5
		WUZ3-50 <sub>6</sub> <sup>5</sup> -0.75G	0.75	390	-	140	270	-	-	-	-	-	-	-	-	-	-	9.0
	65	WUZ2-50 <sub>6</sub> <sup>5</sup> -1.5	1.5	472	-	225	360	-	-	-	137	210	362	87	179	120	26	15.5
		WUZ2-65 <sub>6</sub> <sup>5</sup> -1.5	1.5	472	-	225	360	-	-	-	137	210	362	87	179	120	26	15.5
		WUZ2-65 <sub>6</sub> <sup>5</sup> -2.2	2.2	544	-	225	430	-	-	-	160	210	372	97	216	130	26	20.0
WUZ2-65 <sub>6</sub> <sup>5</sup> -3.7		3.7	581	-	225	470	-	-	-	160	210	372	97	216	130	26	25.8	
WUZ2-80 <sub>6</sub> <sup>5</sup> -2.2		2.2	544	-	225	430	-	-	-	160	210	372	97	216	130	30	20.0	
80	WUZ2-80 <sub>6</sub> <sup>5</sup> -3.7	3.7	581	-	225	470	-	-	-	160	210	372	97	216	130	30	25.8	

### ■ Hose Coupling (0.75kW or less standard accessory)

Bore (d)	L1	L2
32	72	46
40	72	46
50	88	60



### Automatic / Automatic alternative

Operation method	Bore d	Model	Motor kW	Pump			Water level*					Combination dimensions for 1.5kW or more					Mass kg		
				PH	TH1	TH2	U1	U2	U3	U4	U5	DH	DC	W	W1	W2		W3	DT
Automatic / Automatic alternative	32	WUZ3-32 <sub>6</sub> <sup>5</sup> -0.15S <sub>LN</sub> G	0.15	399	535	570	175	497	225	447	547	-	-	-	-	-	-	5.9	
		WUZ3-32 <sub>6</sub> <sup>5</sup> -0.15T <sub>LN</sub> G	0.15	399	519	554	159	481	209	431	531	-	-	-	-	-	-	5.4	
	40	WUZ3-40 <sub>6</sub> <sup>5</sup> -0.25S <sub>LN</sub> G	0.25	409	535	570	175	497	225	447	547	-	-	-	-	-	-	6.4	
		WUZ3-40 <sub>6</sub> <sup>5</sup> -0.25T <sub>LN</sub> G	0.25	399	519	554	159	481	209	431	531	-	-	-	-	-	-	5.5	
	50	WUZ3-50 <sub>6</sub> <sup>5</sup> -0.4S <sub>LN</sub> G	0.4	405	535	570	175	490	225	450	550	-	-	-	-	-	-	8.9	
		WUZ3-50 <sub>6</sub> <sup>5</sup> -0.4T <sub>LN</sub> G	0.4	390	515	550	155	470	205	430	530	-	-	-	-	-	-	7.7	
		WUZ3-50 <sub>6</sub> <sup>5</sup> -0.75 <sub>LN</sub> G	0.75	410	535	570	175	490	225	450	550	-	-	-	-	-	-	9.2	
	65	WUZ2-50 <sub>6</sub> <sup>5</sup> -1.5 <sub>LN</sub> G	1.5	527	645	690	225	607	285	547	667	137	210	362	87	191	120	26	16.3/165
		WUZ2-65 <sub>6</sub> <sup>5</sup> -1.5 <sub>LN</sub> G	1.5	527	645	690	225	607	285	547	667	137	210	362	87	191	120	26	16.3/165
		WUZ2-65 <sub>6</sub> <sup>5</sup> -2.2 <sub>LN</sub> G	2.2	579	795	840	225	757	285	677	817	160	210	372	97	216	130	26	20.8/210
WUZ2-65 <sub>6</sub> <sup>5</sup> -3.7 <sub>LN</sub> G		3.7	616	795	840	225	757	285	677	817	160	210	372	97	216	130	26	26.6/268	
WUZ2-80 <sub>6</sub> <sup>5</sup> -2.2 <sub>LN</sub> G		2.2	579	795	840	225	757	285	677	817	160	210	372	97	216	130	30	20.8/210	
80	WUZ2-80 <sub>6</sub> <sup>5</sup> -3.7 <sub>LN</sub> G	3.7	616	795	840	225	757	285	677	817	160	210	372	97	216	130	30	26.6/268	

(Note) Mass of Automatic type and Automatic alternate type is listed as "Automatic type" / "Automatic alternate"  
\*The values for U2 to U5 for automatic type are the default settings. Starting and Stop water level are adjustable.

### ■ Submersible cable size (VCT) (600V vinyl cab-tire cable)

Motor kW	Power supply	Cable		Motor kW	Power supply	Cable	
		Number of core	Outer Dia. (mm)			Number of core	Outer Dia. (mm)
0.15	Single phase 100	3	9.2	0.4	Single phase 100	3	10.1
0.15	Three phase 200	4	9.9	0.4~2.2	Three phase 200	4	11
0.25	Single phase 100	3	9.2				
0.25	Three phase 200	4	9.9	3.7	Three phase 200	4	11.7

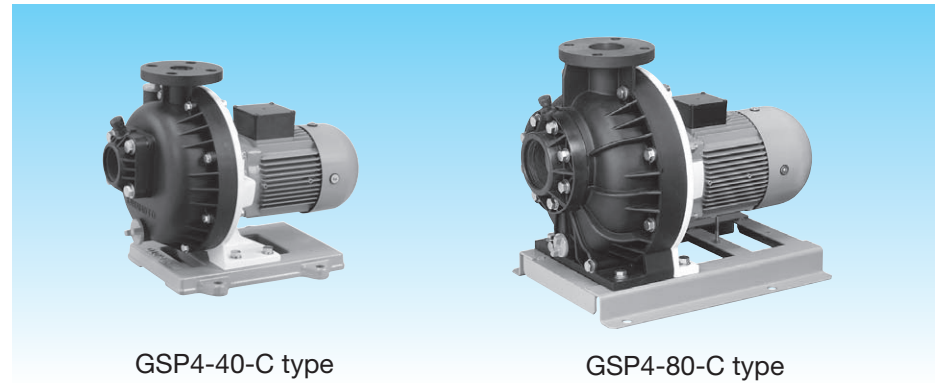
The figure inside the ( ) shows for 0.4kW.





### Suction total head

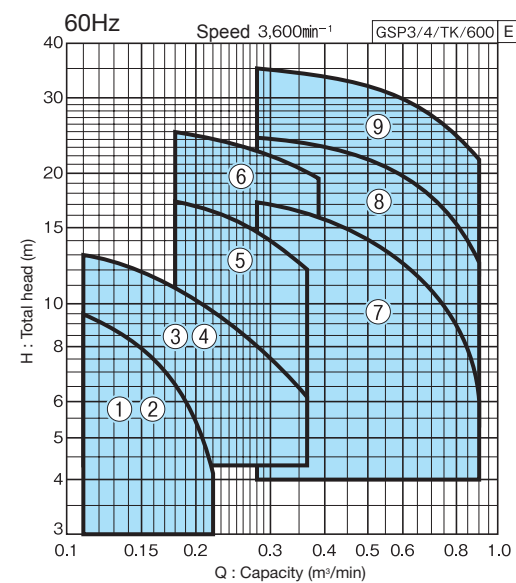
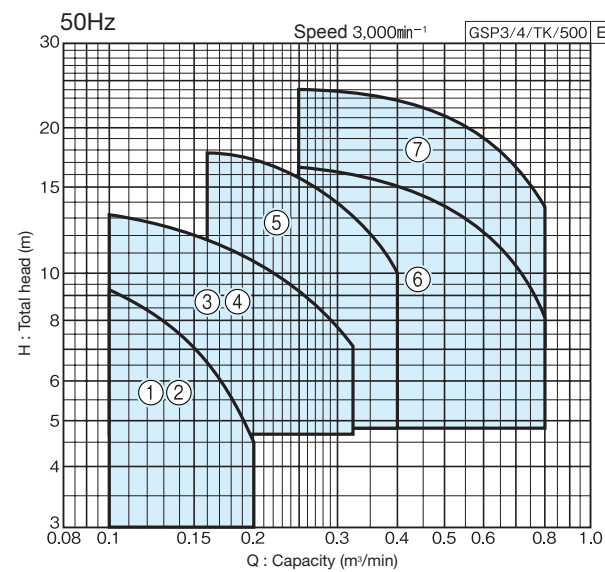
Model	Suction total head (20°C)
GSP3-40	-6m
GSP4- <sup>40</sup> / <sub>50</sub>	-7m
GSP4-80	-6m



GSP4-40-C type

GSP4-80-C type

### Selection chart



### Specification table

50Hz		GSP3/4/SI/500 E								
Bore d1	Bore d2	Ref	Model	Motor kW	Power supply	Standard specifications				Vibration isolator application table
						Q	H	Q	H	
mm	mm					m³/min	m	m³/min	m	
40	40	1	GSP3-405-C0.4S	0.4	Single phase	0.1	9.2	0.2	4.5	QRE-01A PX-60Z
		2	GSP3-405-C0.4T	0.4	Three phase	0.1	9.2	0.2	4.5	
		3	GSP4-405CE0.75	0.75	Three phase	0.1	13.2	0.32	7.0	
50	40	4	GSP4-505CE0.75	0.75	Three phase	0.1	13.2	0.32	7.0	QRE-02A PX-85Z
		5	GSP4-505CE1.5	1.5	Three phase	0.16	17.8	0.4	10.0	
80	65	6	GSP4-805CE2.2	2.2	Three phase	0.25	16.5	0.8	7.8	QRE-02A PX-85Z
		7	GSP4-805CE3.7	3.7	Three phase	0.25	24	0.8	13.5	

60Hz		GSP3/4/SI/600 E								
Bore d1	Bore d2	Ref	Model	Motor kW	Power supply	Standard specifications				Vibration isolator application table
						Q	H	Q	H	
mm	mm					m³/min	m	m³/min	m	
40	40	1	GSP3-406-C0.4S	0.4	Single phase	0.11	9.5	0.22	4.2	QRE-01A PX-60Z
		2	GSP3-406-C0.4T	0.4	Three phase	0.11	9.5	0.22	4.2	
		3	GSP4-406CE0.75	0.75	Three phase	0.11	12.8	0.36	6.2	
50	40	4	GSP4-506CE0.75	0.75	Three phase	0.11	12.8	0.36	6.2	QRE-02A PX-85Z
		5	GSP4-506CE1.5	1.5	Three phase	0.18	17.2	0.36	12.0	
80	65	6	GSP4-806CE2.2	2.2	Three phase	0.18	25.0	0.38	19.5	QRE-02A PX-85Z
		7	GSP4-806CE3.7	3.7	Three phase	0.28	17.2	0.9	6.0	
80	65	8	GSP4-806CE3.7	3.7	Three phase	0.28	24.2	0.9	12.2	QRE-02A PX-85Z
		9	GSP4-806CE5.5	5.5	Three phase	0.28	35.0	0.9	21.5	

### Standard specifications

Liquid	Liquid quality Liquid temperature	Clean water* <sup>1</sup> , Sea water* <sup>2</sup> 0~60°C (no freezing)
Materials	Impeller	Resin
	Shaft	SUS316
	Casing	Resin (METTON <sup>®</sup> )
	Base	Cast iron* <sup>3</sup> (Polyester powder coating)
Motor	Type	TEFC outdoor
	Power supply	Single phase (0.4kW) Three phase
	Speed	50Hz : 3,000min <sup>-1</sup> 60Hz : 3,600min <sup>-1</sup>
	Start-up method	Direct start
	Efficiency	0.75kW or more models are Premium efficiency type. (IE3)
Installation		Indoor/outdoor
Construction	Impeller	Semi-open
	Shaft sealing	Mechanical seal ( Bore size 40mm : Ceramic × Carbon ) Others : SiC × Carbon
	Bearing	Closed ball bearing

• METTON is a registered trademark of Teijin Chemicals Ltd., and RIMTEC has received an exclusive license to use it.

\*1 : pH5.8~8.6 chloride ion concentration 200mg/L or less

\*2 : pH7.8~8.2 chloride ion concentration Approx. 19,000 mg/L Sand content 1000mg/L or less

\*3 : 80 mm bore is for Pickling steel sheet.

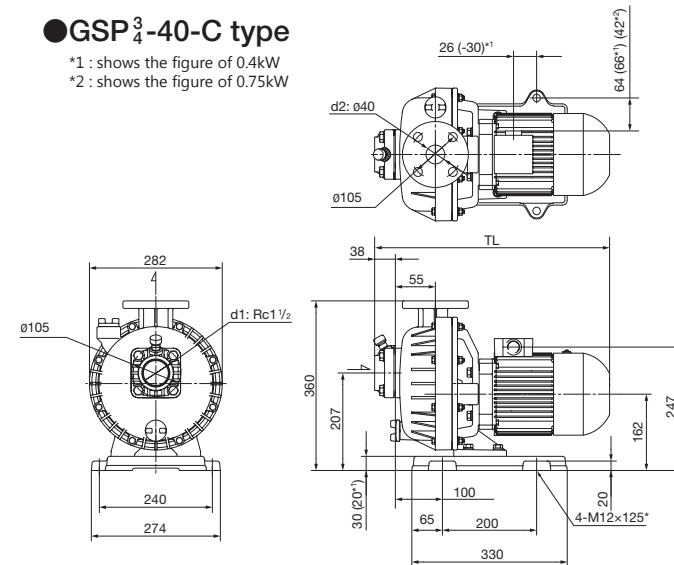
### Outline dimensional drawing

Please request a delivery specification when planning for an installation.

\*Foundation bolts are optional accessories. Please purchase separately.

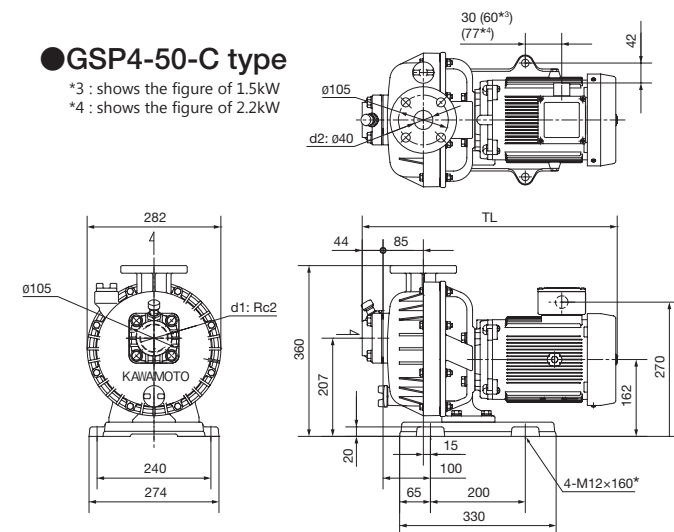
#### ●GSP<sup>3</sup>/<sub>4</sub>-40-C type

\*1 : shows the figure of 0.4kW  
\*2 : shows the figure of 0.75kW



#### ●GSP4-50-C type

\*3 : shows the figure of 1.5kW  
\*4 : shows the figure of 2.2kW



### Standard accessories

• Valve socket	2 pcs (For suction)
• Thermostat (*4)	Automatic restoration type (Except bore 40mm models)

\*Protects the nylon coating of the parts contacting liquid from abnormal temperature rises within the pump as a result of operation when empty, etc. Please use the pump in combination with an ECP type control panel (optional accessory).  
(Note) When carrying our piping works, always use accessory valve socket.  
Don't twist steel pipe directly.

### Optional accessories

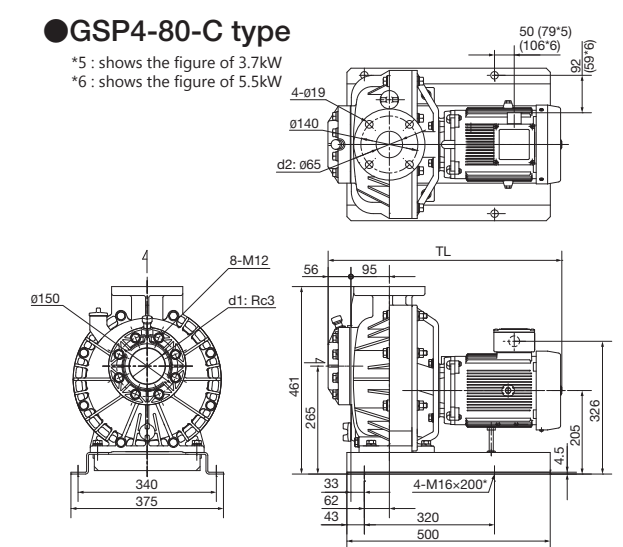
• Control Panel (ECP type)
• Foundation bolt
• Discharging companion flange set (Stainless cast steel (316))
• Discharging companion flange set (PVC)

### Special specification

SCS14 suction side flange with valve seat

#### ●GSP4-80-C type

\*5 : shows the figure of 3.7kW  
\*6 : shows the figure of 5.5kW



Frequency Hz	Bore d1 mm	Ref	Model	Dimensions (mm)		Mass kg
				TL		
50	40	1	GSP3-405-C0.4S	457	28.0	
		2	GSP3-405-C0.4T	457	27.2	
		3	GSP4-405CE0.75	484	32.0	
	50	4	GSP4-505CE0.75	490	32.0	
		5	GSP4-505CE1.5	520	32.0	
		80	6	GSP4-805CE2.2	573	51.0
			7	GSP4-805CE3.7	601	58.0
60	40	8	GSP3-406-C0.4S	457	28.0	
		9	GSP3-406-C0.4T	457	27.2	
		10	GSP4-406CE0.75	484	32.0	
	50	11	GSP4-506CE0.75	490	32.0	
		12	GSP4-506CE1.5	520	32.0	
		13	GSP4-506CE2.2	538	38.0	
	80	14	GSP4-806CE2.2	573	51.0	
		15	GSP4-806CE3.7	601	58.0	
		16	GSP4-806CE5.5	667	89.0	

# GSZ2-C type Nylon coated self-priming sea water pump



GSZ2-C type

### Suction total head (20°C)

-6m

### Optional accessories

- Control panel (ECP type simple outdoor wall mount type)
- Foundation bolt

### Standard specifications

Liquid	Liquid quality	Clean water <sup>*1</sup> , Sea water <sup>*2</sup>
	Liquid temperature	0~45°C (no freezing)
Materials	Impeller	Stainless cast steel (316)
	Shaft	SUS316 (portion contacting liquid)
	Casing	Cast iron + Nylon coating
Motor	Type	TEFC outdoor
	Power supply	Three phase
	Speed	50Hz : 3,000min <sup>-1</sup> / 60Hz : 3,600min <sup>-1</sup>
	Efficiency	Premium efficiency (IE3)
Installation	Indoor	
Companion flanges	Exclusive flange with valve seat (Suction) JIS 10K thin type equivalent (Discharge)	

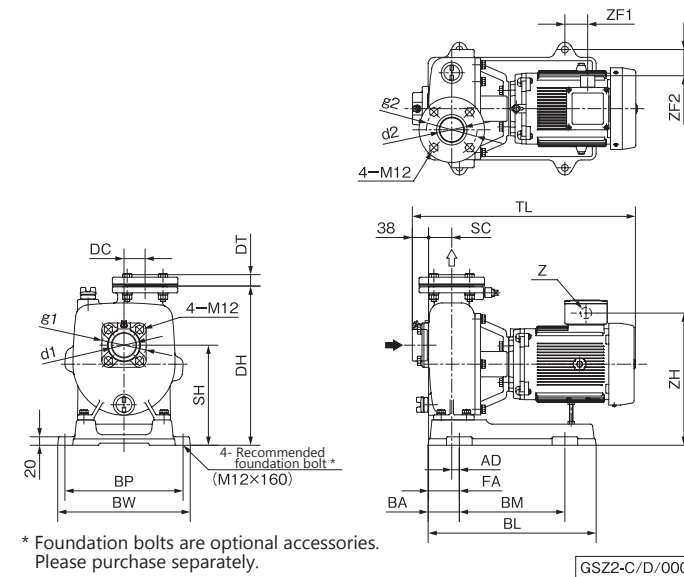
\*1 : pH5.8~8.6 chloride ion concentration 200mg/L or less  
\*2 : pH7.8~8.2 chloride ion concentration Approx. 19,000 mg/L Sand content 1000mg/L or less

### Standard accessories

• Motor	TEFC outdoor
• Base	Cast iron made (Polyester powder coating)
• Companion flanges	1 set (with packing and bolts)
• Priming plug	
• Others	thermostat (with holder)

### Outline dimensional drawing

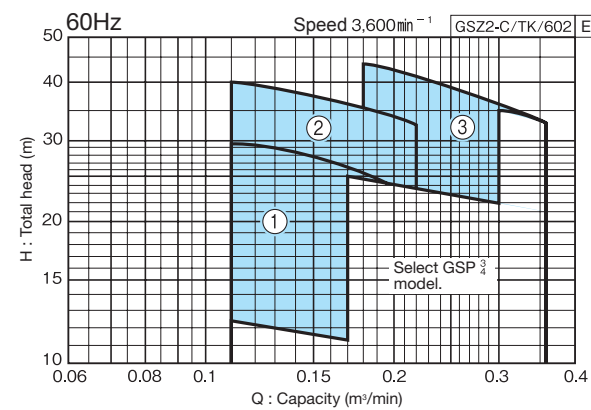
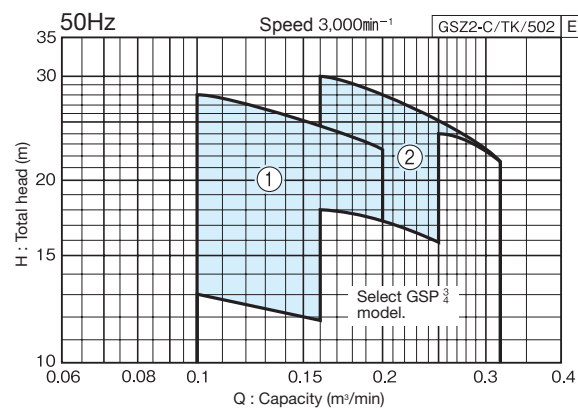
Please request a delivery specification when planning for an installation.



\* Foundation bolts are optional accessories. Please purchase separately.

GSZ2-C/D/000 E

### Selection chart



### Specification table

50Hz GSZ2-C/SI/500 E

Bore mm	Ref	Model	Motor kW	Power supply	Standard specifications				Vibration isolator application table
					Capacity m <sup>3</sup> /min	Total pump head m	Capacity m <sup>3</sup> /min	Total pump head m	
40	1	GSZ2-405CE1.5	1.5	Three phase	0.1	28.0	0.2	22.5	QRE-01A
50	2	GSZ2-505CE2.2	2.2		0.16	30.0	0.32	21.5	

60Hz GSZ2-C/SI/600 E

Bore mm	Ref	Model	Motor kW	Power supply	Standard specifications				Vibration isolator application table
					Capacity m <sup>3</sup> /min	Total pump head m	Capacity m <sup>3</sup> /min	Total pump head m	
40	1	GSZ2-406CE1.5	1.5	Three phase	0.11	29.5	0.22	22.0	QRE-01A
	2	GSZ2-406CE2.2	2.2		0.11	40.0	0.22	32.5	
50	3	GSZ2-506CE3.7	3.7		0.18	43.5	0.36	33.0	

### Outline dimension table

50Hz Unit : mm

Bore mm	Model	Motor kW	Pump			Base				Combinations					
			SC	DC	DT	BL	BA	BM	BW	BP	TL	FA	AD	SH	DH
40	GSZ2-405CE1.5	1.5	50	50	25	398	74	250	314	280	501	63	13	232	377
50	GSZ2-505CE2.2	2.2	55	50	27	398	74	250	314	280	528	73	18	237	377

Flange				Others				Mass
d1	d2	g1	g2	ZF1	ZF2	ZH	Z	kg
Rc1½	Rc1½	95	105	33	62	301	G3/4	51
Rc2	Rc2	105	120	43	62	314	G3/4	56

GSZ2-C/d/500 E

60Hz Unit : mm

Bore mm	Model	Motor kW	Pump			Base				Combinations					
			SC	DC	DT	BL	BA	BM	BW	BP	TL	FA	AD	SH	DH
40	GSZ2-406CE1.5	1.5	55	35	25	357	69	200	284	250	495	57	2	212	327
	GSZ2-406CE2.2	2.2	50	50	25	398	74	250	314	280	518	63	13	232	377
50	GSZ2-506CE3.7	3.7	55	50	27	398	74	250	314	280	558	73	18	237	377

Flange				Others				Mass
d1	d2	g1	g2	ZF1	ZF2	ZH	Z	kg
Rc1½	Rc1½	95	105	83	47	281	G3/4	43
Rc1½	Rc1½	95	105	43	62	314	G3/4	55
Rc2	Rc2	105	120	80	62	314	G3/4	61

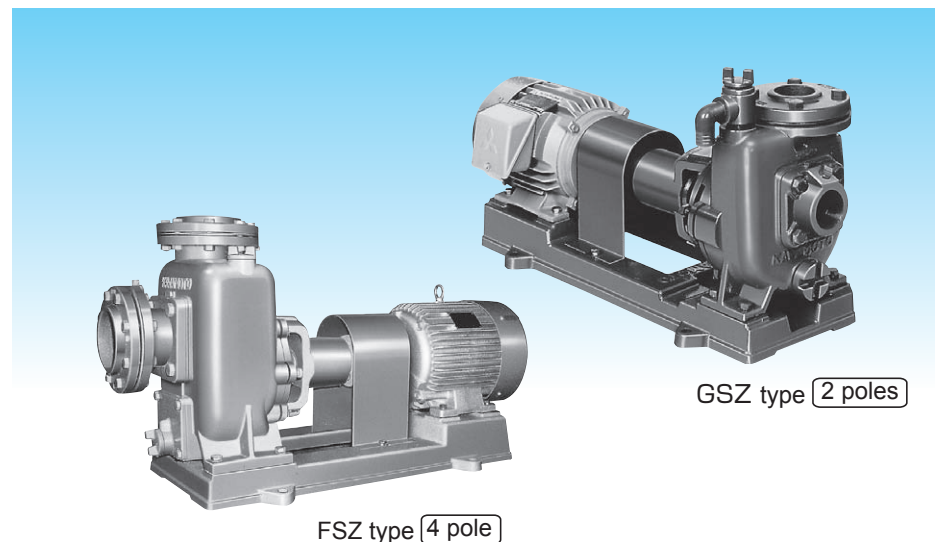
GSZ2-C/d/600 E



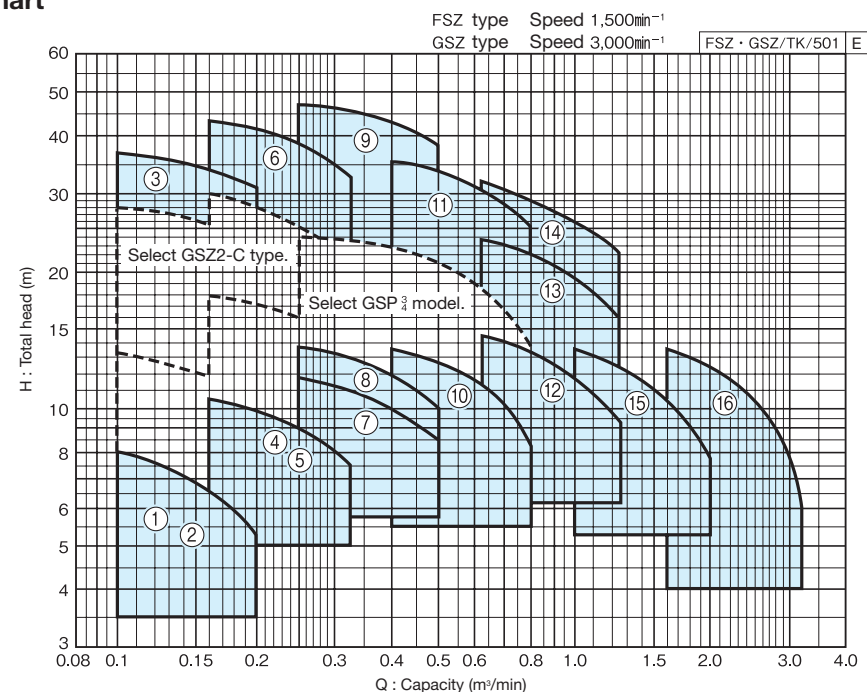


## Suction total head (20°C)

Model	Bore	Suction total head
FSZ	40 • 50 • 65	-5.5m
	80 or more	-6m
GSZ	40	-5m
	50 or more	-6m



## 50Hz Selection chart



## 50Hz Specification table

Bore	Ref	Model	Motor	Performance					
				Q	H	Q	H		
mm			kW	m <sup>3</sup> /min	m	m <sup>3</sup> /min	m		
40	1	FSZ-405-M0.4S	0.4※	0.1	8	0.14	7	0.2	5.2
	2	FSZ-405-M0.4T	0.4	0.1	8	0.14	7	0.2	5.2
	3	GSZ405ME2.2	2.2	0.1	37	0.14	35	0.2	30.5
50	4	FSZ-505-M0.75S	0.75※	0.16	10.5	0.22	9.5	0.32	7.5
	5	FSZ505ME0.75T	0.75	0.16	10.5	0.22	9.5	0.32	7.5
	6	GSZ505ME3.7	3.7	0.16	43	0.22	40	0.32	33.5
65	7	FSZ655ME1.5	1.5	0.25	11.8	0.36	10.5	0.5	8.5
	8	GSZ655ME1.5	1.5	0.25	13.8	0.36	12.5	0.5	10
	9	GSZ655ME5.5	5.5	0.25	47	0.36	44.5	0.5	38.5
80	10	FSZ805ME2.2	2.2	0.4	13.5	0.56	12	0.8	8.2
	11	GSZ805ME5.5	5.5	0.4	35.5	0.56	32	0.8	25
	12	FSZ1005ME3.7	3.7	0.63	14.5	0.9	12.5	1.25	9.2
100	13	GSZ1005ME5.5	5.5	0.63	23.5	0.9	20.5	1.25	16
	14	GSZ1005ME7.5	7.5	0.63	31	0.9	27	1.25	22
	15	FSZ1255ME5.5	5.5	1.0	13.2	1.4	11.5	2.0	7.8
150	16	FSZ1505ME7.5	7.5	1.6	13.5	2.24	11.2	3.15	6

※For single phase 100V. Starting current of this product is over 37A. Refer to the local electric code regarding starting current, and when 37A is over the value limit value in code, always consult with electric utility company before installation.

## Standard specifications

Model	FSZ	GSZ
Liquid	Liquid quality Liquid temperature	Clean water*1, Sea water*2 0~40°C (no freezing)
Materials	Impeller Shaft Casing	Cast iron SUS316 Cast iron
Motor	Type Power supply	TEFC indoor Single phase (50Hz : 0.4kW, 0.75kW) Three phase 50Hz : 1,500min <sup>-1</sup> 50Hz : 3,000min <sup>-1</sup> 60Hz : 1,800min <sup>-1</sup> 60Hz : 3,600min <sup>-1</sup>
	Speed	0.75kW or more models are Premium efficiency type. (IE3)
Installation		Indoor
Construction	Impeller Shaft sealing Bearing	Closed type Gland packing Closed ball bearing

\*1 : pH5.8~8.6 chloride ion concentration 200mg/L or less  
\*2 : pH7.8~8.2 chloride ion concentration Approx. 19,000 mg/L Sand content 1000mg/L or less

## Standard accessories

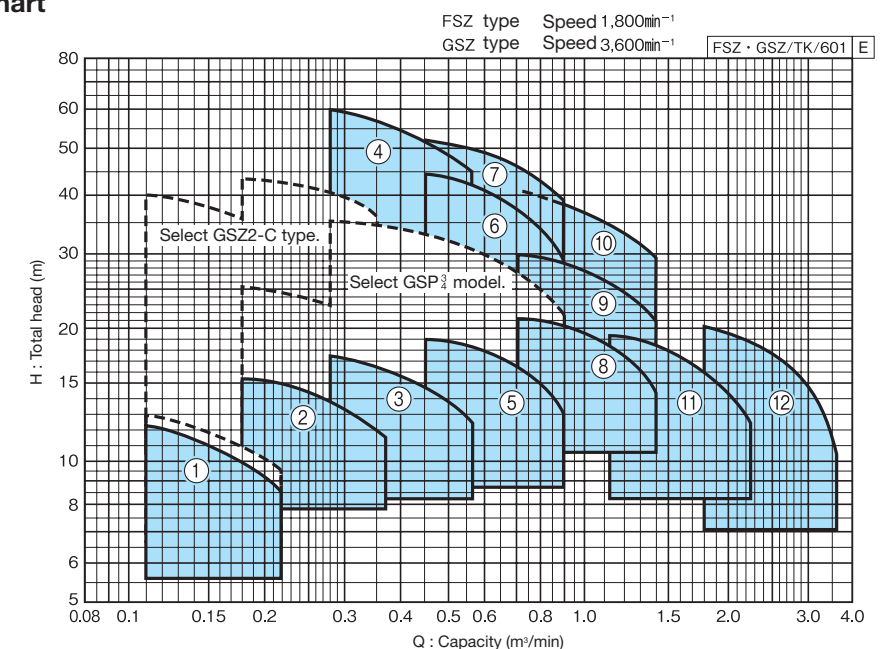
• Motor	TEFC indoor
• Sacrificial anode for corrosion resistance	Aluminum alloy
• Base	Cast iron
• Coupling	with cover
• Strainer	Resin material
• Companion flanges	1 set (with packing and bolts)

## Special specification

- Motor modification (TEFC outdoor : except single phase models)
- Change material (Impeller : made of Bronze\*)
- Equipped with an engine

\*Avoid using this product with living things that are susceptible to copper.

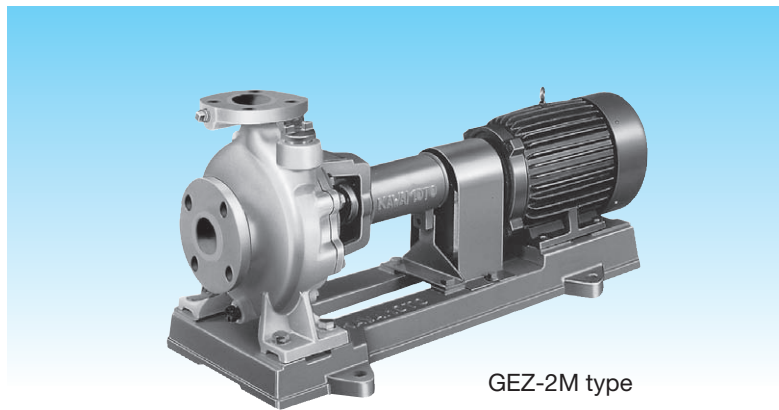
## 60Hz Selection chart



## 60Hz Specification table

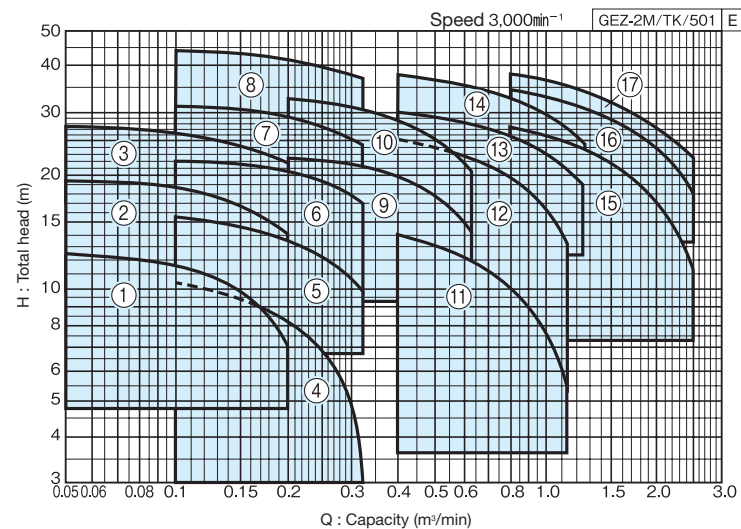
Bore	Ref	Model	Motor	Performance					
				Q	H	Q	H		
mm			kW	m <sup>3</sup> /min	m	m <sup>3</sup> /min	m		
40	1	FSZ406ME0.75	0.75	0.11	12.2	0.16	10.8	0.22	8.5
50	2	FSZ506ME1.5	1.5	0.18	15.5	0.25	14.2	0.36	11.8
	3	FSZ656ME2.2	2.2	0.28	17.2	0.4	15.2	0.56	12.2
65	4	GSZ656ME7.5	7.5	0.28	60	0.4	54.5	0.56	45
	5	FSZ806ME3.7	3.7	0.45	19.2	0.63	17.5	0.9	13
80	6	GSZ806ME7.5	7.5	0.45	44.5	0.63	39.2	0.9	28.5
	7	GSZ806ME11	11	0.45	51.5	0.63	47.8	0.9	37.8
100	8	FSZ1006ME5.5	5.5	0.71	21.5	1.0	19.5	1.4	15.5
	9	GSZ1006ME7.5	7.5	0.71	30	1.0	27	1.4	21
125	10	GSZ1006ME11	11	0.71	41	1.0	36.2	1.4	29.5
150	11	FSZ1256ME7.5	7.5	1.12	19.2	1.6	17	2.24	12.2
	12	FSZ1506ME11	11	1.8	20.2	2.5	17.5	3.55	10.5

# GEZ-2M type Nylon coating 2 pole



GEZ-2M type

## 50Hz Selection chart



## 50Hz Specification table

Bore d1 mm	Bore d2 mm	Ref	Model	Motor kW	Performance						Suction total head m	Maximum back pressure MPa	Vibration isolator application table	
					Q m³/min	H m	Q m³/min	H m	Q m³/min	H m				
40	32	1	GEZ40×325M-2M0.4	0.4	0.05	12.5	0.12	11	0.2	7.2	-4.5	0.84	QRE-01A	PX-60Z
		2	GEZ405-2ME0.75	0.75	0.05	19.5	0.12	17.8	0.2	14.2	-6	0.77	QRE-01A	PX-60Z
		3	GEZ405-2ME1.5	1.5	0.05	27.5	0.12	26	0.2	22	-6	0.67	QRE-02A	PX-85Z
50	40	4	GEZ50×405M-2M0.4	0.4	0.1	10.2	0.2	8.2	0.32	3.2	-0.5	0.86	QRE-01A	PX-60Z
		5	GEZ505-2ME0.75	0.75	0.1	15.5	0.2	13.5	0.32	10.2	-6	0.81	QRE-01A	PX-60Z
		6	GEZ505-2ME1.5	1.5	0.1	22.2	0.2	20.8	0.32	17	-6	0.74	QRE-04D	PX-85Z
		7	GEZ505-2ME2.2	2.2	0.1	31	0.2	29	0.32	24.5	-6	0.67	QRE-04D	PX-85Z
65	50	8	GEZ505-2ME3.7	3.7	0.1	44	0.2	41.5	0.32	37	-6	0.52	QRE-04D	PX-95Z
		9	GEZ655-2ME2.2	2.2	0.2	22.2	0.4	20	0.63	14.2	-6	0.74	QRE-04D	PX-85Z
		10	GEZ655-2ME3.7	3.7	0.2	32.5	0.4	28.5	0.63	21	-6	0.65	QRE-04D	PX-95Z
80	65	11	GEZ805-2ME2.2	2.2	0.4	14	0.8	10	1.12	5.5	-3.5	0.81	QRE-02A	PX-85Z
		12	GEZ805-2ME3.7	3.7	0.4	25	0.8	19.5	1.12	13	-6	0.74	QRE-04D	PX-95Z
		13	GEZ805-2ME5.5	5.5	0.4	30	0.8	25.5	1.25	19	-6	0.66	QRE-05D	PX-95Z
		14	GEZ805-2ME7.5	7.5	0.4	38	0.8	33	1.25	24.5	-6	0.58	QRE-05D	PX-95Z
100	80	15	GEZ1005-2ME7.5	7.5	0.8	27	1.6	20.5	2.5	11.2	-5	0.69	QRE-05D	PX-95Z
		16	GEZ1005-2ME11	11	0.8	34	1.6	28	2.5	18	-5	0.62	QRE-05D	PX-110Z
		17	GEZ1005-2ME15	15	0.8	38	1.6	32	2.5	22.5	-5	0.54	QRE-05D	PX-110Z

d1: Suction Bore d2: Discharge Bore

## Standard specifications

Liquid	Liquid quality Liquid temperature	Clean water*1, Sea water*2 0~40°C (no freezing)
Materials	Impeller	Stainless cast steel (316)
	Shaft	SUS316 (portion contacting liquid)
	Casing	Cast iron + Nylon coating
Motor	Type	TEFC indoor
	Power supply	Three phase
	Speed	50Hz : 3,000min <sup>-1</sup> / 60Hz : 3,600min <sup>-1</sup>
	Efficiency	0.75kW or more models are Premium efficiency type. (IE3)
Installation	Indoor	
Flange	JIS 10K Standard type	

\*1 : pH5.8~8.6 chloride ion concentration 200mg/L or less  
\*2 : pH7.8~8.2 chloride ion concentration Approx. 19,000 mg/L Sand content 1000mg/L or less

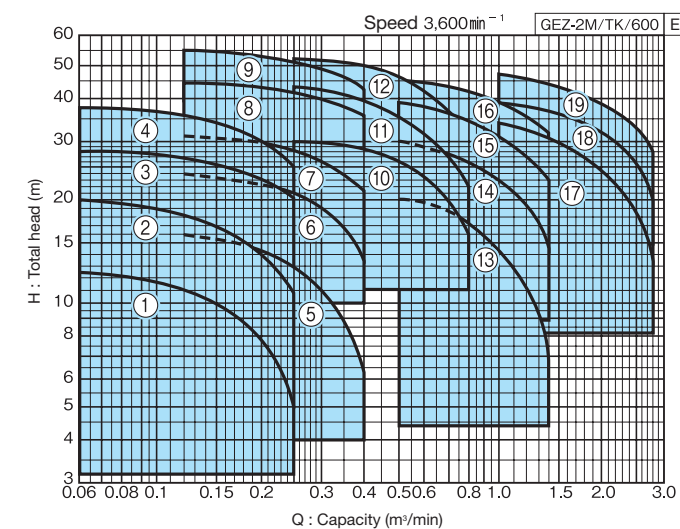
## Standard accessories

• Motor	TEFC indoor
• Base	Cast iron
• Coupling	with cover
• Priming plug	

## Optional accessories

• Priming plug funnel	For bore size 65mm or more models
• Stop valve	Provided, except following 65mm models. (50Hz : 2.2kW or less) (60Hz : 3.7kW or less)
• Bushing for attachment	
• Companion flanges	1 set (with packing and bolts)
• Foundation bolt	

## 60Hz Selection chart



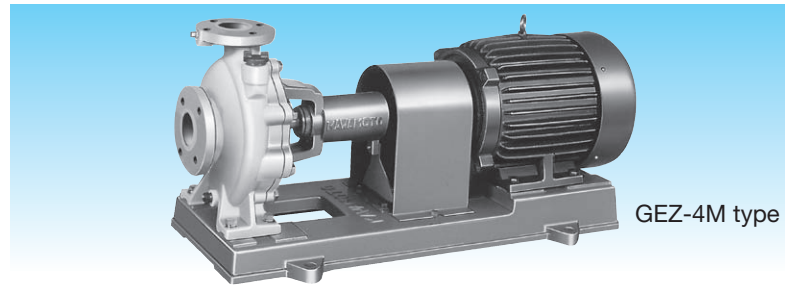
## 60Hz Specification table

Bore d1 mm	Bore d2 mm	Ref	Model	Motor kW	Performance						Suction total head m	Maximum back pressure MPa	Vibration isolator application table	
					Q m³/min	H m	Q m³/min	H m	Q m³/min	H m				
40	32	1	GEZ40×326M-2M0.4	0.4	0.06	12.5	0.16	9.5	0.25	5	-1.2	0.84	QRE-01A	PX-60Z
		2	GEZ406-2ME0.75	0.75	0.06	19.8	0.16	16.2	0.25	10.8	-6	0.77	QRE-01A	PX-60Z
		3	GEZ406-2ME1.5	1.5	0.06	28	0.16	25.2	0.25	20.5	-6	0.68	QRE-02A	PX-75Z
		4	GEZ406-2ME2.2	2.2	0.06	37	0.16	33.5	0.25	25	-6	0.58	QRE-02A	PX-85Z
50	40	5	GEZ506-2ME0.75	0.75	0.12	15.8	0.25	12.8	0.4	6	-3.2	0.80	QRE-01A	PX-60Z
		6	GEZ506-2ME1.5	1.5	0.12	23.5	0.25	21	0.4	15.2	-6	0.74	QRE-02A	PX-75Z
		7	GEZ506-2ME2.2	2.2	0.12	31	0.25	27.8	0.4	21.5	-6	0.67	QRE-04D	PX-85Z
		8	GEZ506-2ME3.7	3.7	0.12	44.5	0.25	41.5	0.4	35.5	-6	0.54	QRE-04D	PX-95Z
65	50	9	GEZ506-2ME5.5	5.5	0.12	57.5	0.25	53.5	0.4	44.5	-6	0.39	QRE-04D	PX-95Z
		10	GEZ656-2ME3.7	3.7	0.25	30	0.5	26	0.8	16	-6	0.66	QRE-04D	PX-95Z
		11	GEZ656-2ME5.5	5.5	0.25	42	0.5	36	0.8	22	-6	0.54	QRE-04D	PX-95Z
80	65	12	GEZ656-2ME7.5	7.5	0.25	52	0.5	46	0.8	32.5	-6	0.43	QRE-04D	PX-95Z
		13	GEZ806-2ME3.7	3.7	0.5	20	1.0	14.2	1.4	6.8	-4	0.74	QRE-02A	PX-85Z
		14	GEZ806-2ME5.5	5.5	0.5	30	1.0	23	1.4	14.5	-5.5	0.66	QRE-05D	PX-95Z
		15	GEZ806-2ME7.5	7.5	0.5	38.5	1.0	30.5	1.4	23	-5.5	0.61	QRE-05D	PX-95Z
100	80	16	GEZ806-2ME11	11	0.5	45	1.0	39	1.4	32	-5.5	0.50	QRE-05D	PX-110Z
		17	GEZ1006-2ME11	11	1.0	34	2.0	24.5	2.8	13.5	-3	0.62	QRE-05D	PX-110Z
		18	GEZ1006-2ME15	15	1.0	39	2.0	32	2.8	20	-3	0.54	QRE-05D	PX-110Z
		19	GEZ1006-2ME18	18.5	1.0	48.5	2.0	39.5	2.8	28	-3	0.46	QRE-08F	PX-120Z

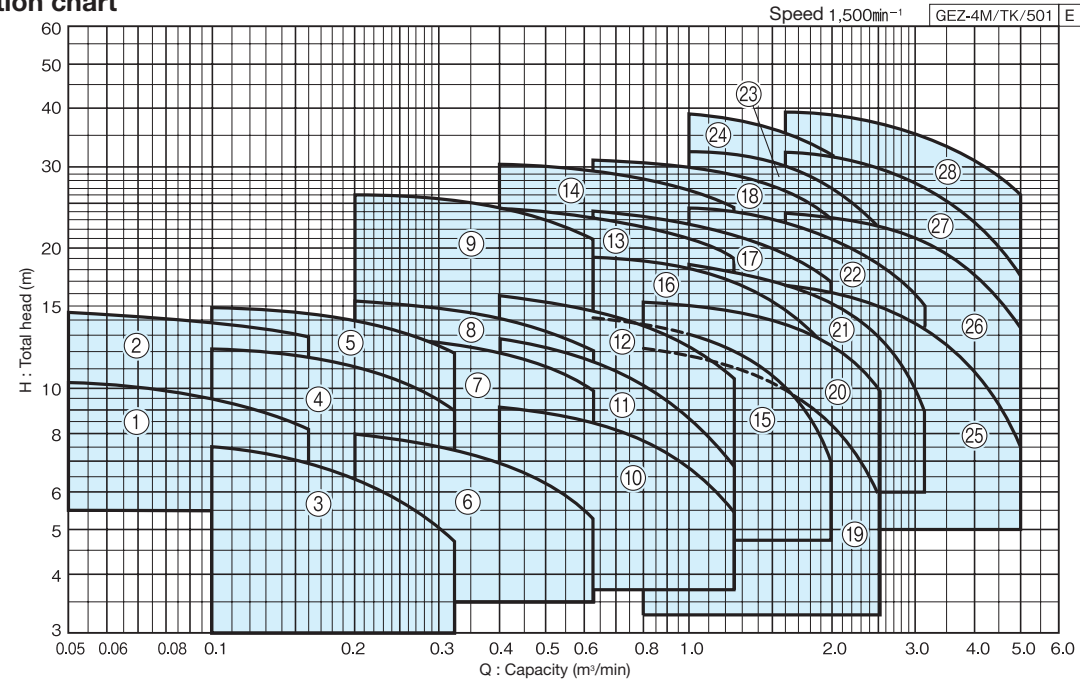
d1: Suction Bore d2: Discharge Bore



# GEZ-4M type Nylon coated 4 poles



## 50Hz Selection chart



## 50Hz Specification table

Bore d1 mm	Bore d2 mm	Ref	Model	Motor kW	Performance								Suction total head m	Maximum back pressure MPa	Vibration isolator application table	
					Q m³/min	H m	Q m³/min	H m	Q m³/min	H m	Q m³/min	H m				
40	32	1	GEZ40x325M-4M0.4	0.4	0.05	10.2	0.1	9.5	0.16	8.2	-5	0.86	QRE-02A	PX-85Z		
		2	GEZ405-4ME0.75	0.75	0.05	14.5	0.1	13.8	0.16	13	-6	0.81	QRE-04D	PX-85Z		
50	40	3	GEZ50x405M-4M0.4	0.4	0.1	7.5	0.2	6.5	0.32	4.8	-5	0.89	-	PX-85Z		
		4	GEZ505-4ME0.75	0.75	0.1	12.2	0.2	11.2	0.32	9	-6	0.84	QRE-04D	PX-85Z		
		5	GEZ505-4ME1.5	1.5	0.1	14.8	0.2	14	0.32	12	-6	0.80	QRE-04D	PX-85Z		
65	50	6	GEZ655-4ME0.75	0.75	0.2	8	0.4	7	0.63	5.2	-4	0.88	QRE-04D	PX-85Z		
		7	GEZ655-4ME1.5	1.5	0.2	13	0.4	12	0.63	10	-6	0.82	QRE-04D	PX-85Z		
		8	GEZ655-4ME2.2	2.2	0.2	15.2	0.4	14.2	0.63	12	-6	0.79	QRE-04D	PX-85Z		
80	65	9	GEZ655-4ME3.7	3.7	0.2	26	0.4	24.5	0.63	21	-6	0.72	QRE-04D	PX-110Z		
		10	GEZ805-4ME1.5	1.5	0.4	9.2	0.8	7.8	1.25	5.5	-4.5	0.86	QRE-04D	PX-85Z		
		11	GEZ805-4ME2.2	2.2	0.4	12.5	0.8	10.2	1.25	6.8	-6	0.83	QRE-04D	PX-110Z		
		12	GEZ805-4ME3.7	3.7	0.4	16	0.8	14	1.25	10.5	-6	0.78	QRE-04D	PX-110Z		
		13	GEZ805-4ME5.5	5.5	0.4	24.2	0.8	22.5	1.25	19.2	-6	0.74	QRE-05D	PX-120Z		
		14	GEZ805-4ME7.5	7.5	0.4	30.5	0.8	28.5	1.25	24.5	-6	0.67	QRE-07F	PX-120Z		
100	80	15	GEZ1005-4ME3.7	3.7	0.63	14.2	1.25	12.2	2.0	7	-6	0.82	QRE-04D	PX-120Z		
		16	GEZ1005-4ME5.5	5.5	0.63	19.2	1.25	17.2	2.0	11.5	-6	0.77	QRE-07F	PX-120Z		
		17	GEZ1005-4ME7.5	7.5	0.63	24	1.25	21.5	2.0	17	-6	0.74	QRE-07F	PX-120Z		
		18	GEZ1005-4ME11	11	0.63	31	1.25	29	2.0	23.5	-6	0.66	QRE-08F	PX-130Z		
125	100	19	GEZ1255-4ME3.7	3.7	0.8	12.2	1.6	10	2.5	6	-5	0.84	QRE-05D	PX-120Z		
		20	GEZ1255-4ME5.5	5.5	0.8	15.5	1.6	13.5	2.5	10	-5	0.81	QRE-05D	PX-120Z		
		21	GEZ1255-4ME7.5	7.5	1.0	18.5	2.0	15.2	3.1	9	-5	0.77	QRE-08F	PX-120Z		
		22	GEZ1255-4ME11	11	1.0	24.5	2.0	21	3.15	15	-5	0.73	QRE-08F	PX-130Z		
		23	GEZ1255-4ME15	15	1.0	32	2.0	27	3.15	16.5	-5	0.63	QRE-09F	PX-130Z		
		24	GEZ1255-4ME18	18	1.0	38	2.0	32	3.15	21.5	-5	0.57	QRE-09F	PX-S146Z		
150	125	25	GEZ1505-4ME11	11	1.6	16.5	3.15	13.2	5.0	7.5	-4	0.81	QRE-08F	PX-130Z		
		26	GEZ1505-4ME15	15	1.6	23.8	3.15	20.8	5.0	13.5	-4	0.74	QRE-09F	PX-130Z		
		27	GEZ1505-4ME22	22	1.6	32	3.15	27.5	5.0	17.5	-6	0.64	QRE-12F	PX-145Z		
		28	GEZ1505-4ME30	30	1.6	39	3.15	35	5.0	26	-6	0.58	QRE-13F	PX-145Z		

d1: Suction Bore d2: Discharge Bore

## Standard specifications

Liquid	Liquid quality Liquid temperature	Clean water*1, Sea water*2 0~40°C (no freezing)
Materials	Impeller	Stainless cast steel (316)
	Shaft	SUS316 (portion contacting liquid)
	Casing	Cast iron + Nylon coating
Shaft sealing	Types	Mechanical seal
Motor	Power supply	TEFC indoor Three phase
	Speed	50Hz : 1,500min <sup>-1</sup> / 60Hz : 1,800min <sup>-1</sup>
	Efficiency	75kW or more models are Premium efficiency type. (IE3)
Installation		Indoor
Flange		JIS 10K Standard type

\*1 : pH5.8~8.6 chloride ion concentration 200mg/L or less  
\*2 : pH7.8~8.2 chloride ion concentration Approx. 19,000 mg/L Sand content 1000mg/L or less

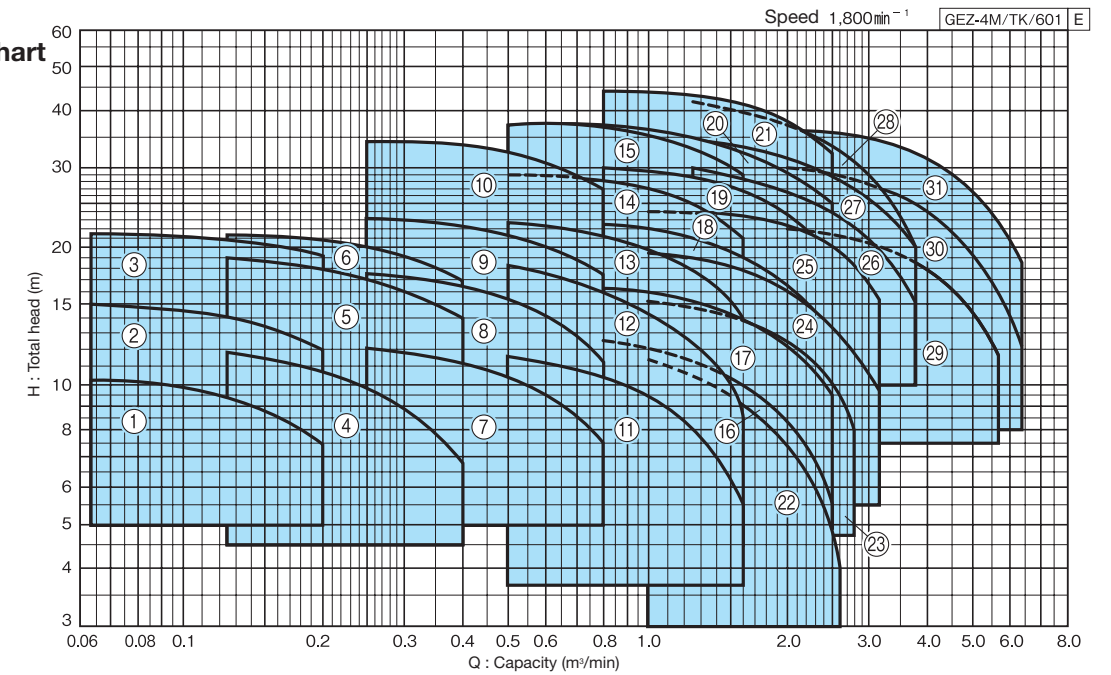
## Standard accessories

• Motor	TEFC indoor
• Base	Cast iron
• Coupling	with cover
• Priming plug	

## Optional accessories

Refer to GEZ-2M type.

## 60Hz Selection chart

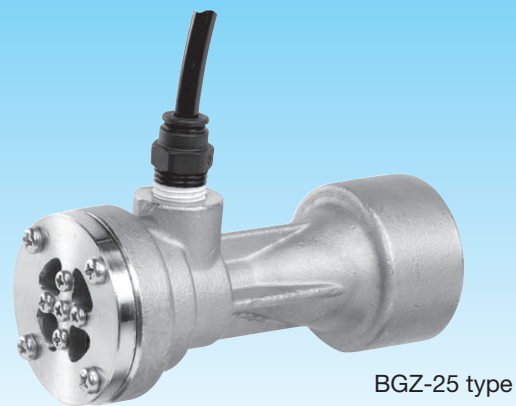


## 60Hz Specification table

Bore d1 mm	Bore d2 mm	Ref	Model	Motor kW	Performance								Suction total head m	Maximum back pressure MPa	Vibration isolator application table	
					Q m³/min	H m	Q m³/min	H m	Q m³/min	H m	Q m³/min	H m				
40	32	1	GEZ40x326M-4M0.4	0.4	0.063	9.8	0.125	9.2	0.2	7.5	-6	0.86	QRE-02A	PX-85Z		
		2	GEZ406-4ME0.75	0.75	0.063	15	0.125	14	0.2	12	-6	0.81	QRE-04D	PX-85Z		
		3	GEZ406-4ME1.5	1.5	0.063	21.5	0.125	20.8	0.2	19.2	-6	0.74	QRE-04D	PX-85Z		
50	40	4	GEZ506-4ME0.75	0.75	0.125	11.8	0.25	10	0.4	6.8	-6	0.84	QRE-04D	PX-85Z		
		5	GEZ506-4ME1.5	1.5	0.125	19	0.25	17.2	0.4	14	-6	0.76	QRE-04D	PX-85Z		
		6	GEZ506-4ME2.2	2.2	0.125	21.5	0.25	20	0.4	17	-6	0.74	QRE-04D	PX-85Z		
65	50	7	GEZ656-4ME1.5	1.5	0.25	12.2	0.5	10.5	0.8	7.5	-6	0.83	QRE-04D	PX-85Z		
		8	GEZ656-4ME2.2	2.2	0.25	17.5	0.5	15.5	0.8	11.2	-6	0.77	QRE-04D	PX-85Z		
		9	GEZ656-4ME3.7	3.7	0.25	23	0.5	21.2	0.8	17.5	-6	0.73	QRE-04D	PX-95Z		
80	65	10	GEZ656-4ME5.5	5.5	0.25	34.5	0.5	32.5	0.8	27	-6	0.64	QRE-05D	PX-110Z		
		11	GEZ806-4ME2.2	2.2	0.5	11.5	1.0	9.5	1.6	5.5	-4	0.84	QRE-04D	PX-95Z		
		12	GEZ806-4ME3.7	3.7	0.5	18.2	1.0	14.5	1.6	8.5	-6	0.76	QRE-04D	PX-110Z		
		13	GEZ806-4ME5.5	5.5	0.5	22.8	1.0	19.8	1.6	14	-6	0.72	QRE-05D	PX-110Z		
		14	GEZ806-4ME7.5	7.5	0.5	29	1.0	27	1.6	21	-6	0.68	QRE-07F	PX-120Z		
		15	GEZ806-4ME11	11	0.5	37.5	1.0	35.5	1.6	29.5	-6	0.60	QRE-08F	PX-130Z		
100	80	16	GEZ1006-4ME3.7	3.7	0.8	12.5	1.6	10	2.5	5.5	-6	0.84	QRE-04D	PX-110Z		
		17	GEZ1006-4ME5.5	5.5	0.8	16.2	1.6	14	2.5	9.5	-6	0.81	QRE-05D	PX-110Z		
		18	GEZ1006-4ME7.5	7.5	0.8	22.5	1.6	19.2	2.5	13	-6	0.75	QRE-07F	PX-120Z		
		19	GEZ1006-4ME11	11	0.8	30	1.6	27	2.5	19	-6	0.66	QRE-08F	PX-130Z		
		20	GEZ1006-4ME15	15	0.8	36.5	1.6	32.5	2.5	25	-6	0.61	QRE-08F	PX-130Z		
		21	GEZ1006-4ME18	18	0.8	44.5	1.6	41	2.5	31.5	-6	0.53	QRE-09F	PX-S146Z		
125	100	22	GEZ1256-4ME3.7	3.7	1.0	11.5	2.0	7.5	2.6	4	-6	0.84	QRE-05D	PX-120Z		
		23	GEZ1256-4ME5.5	5.5	1.0	15.2	2.0	12.2	2.8	8	-6	0.81	QRE-05D	PX-120Z		
		24	GEZ1256-4ME7.5	7.5	1.0	19.5	2.0	16	3.15	9.8	-6	0.77	QRE-08F	PX-120Z		
		25	GEZ1256-4ME11	11	1.0	24.2	2.0	21.5	3.15	15.2	-6	0.73	QRE-08F	PX-130Z		
		26	GEZ1256-4ME15	15	1.25	30	2.5	24	3.8	15	-6	0.64	QRE-08F	PX-130Z		
		27	GEZ1256-4ME18	18	1.25	34.5	2.5	29	3.8	20	-6	0.61	QRE-09F	PX-S146Z		
150	125	28	GEZ1256-4ME22	22	1.25	42	2.5	33	3.8	19.5	-6	0.51	QRE-10F	PX-S146Z		
		29	GEZ1506-4ME15	15	2.0	22	4.0	17.8	5.6	11.5	-5.5	0.75	QRE-09F	PX-130Z		
		30	GEZ1506-4ME22	22	2.0	30	4.0	24	6.3	12.5	-5.5	0.67	QRE-10F	PX-S146Z		
		31	GEZ1506-4ME30	30	2.0	36	4.0	31.5	6.3	18.5	-5.5	0.61	QRE-10F	PX-S146Z		

d1: Suction Bore d2: Discharge Bore

# BGZ type Fine bubble generator



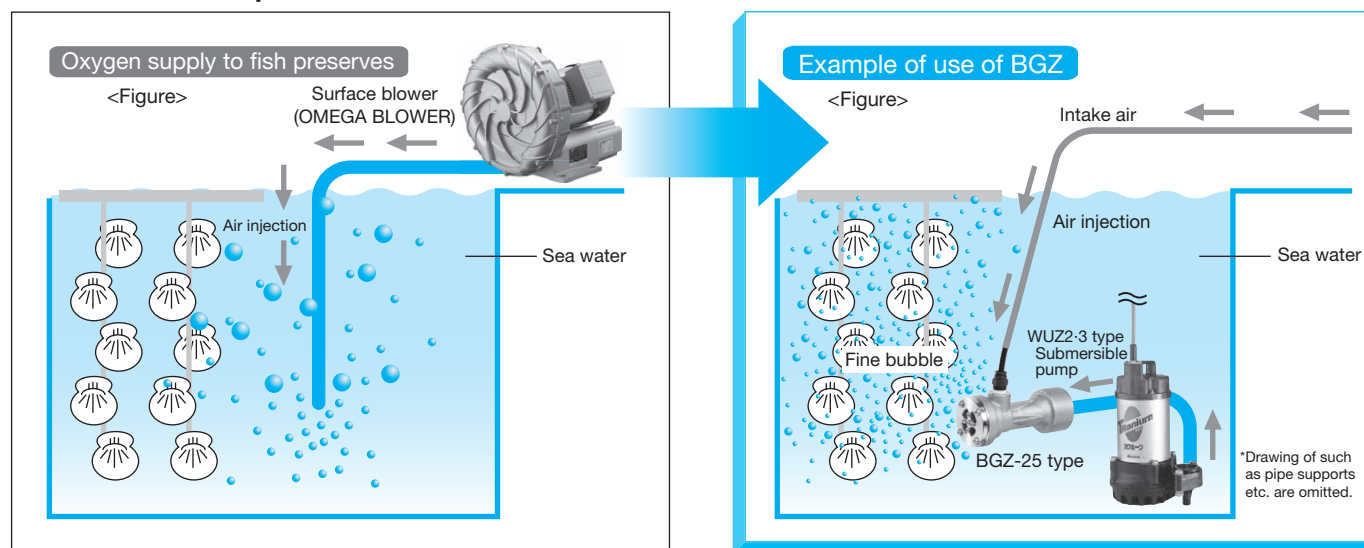
BGZ-25 type

## Standard specifications

Liquid	Quality	Sea water*1 (pH7.8~8.2, chloride ion concentration : Approx. 19,000 mg/L, Solid concentration : Sand content 1,000 mg/L or less, Dia. of solid : 0.3mm or less)				
	Temperature	0~40°C (no freezing)				
Materials		SCS14, SUS316				
Air intake capacity *2	Surface pump	Model	Installation depth	Application pump		Air intake capacity L/min
				Flow rate (L/min or more)	Pump head (m or more)	
		BGZ25	750mm	22	10	0.8
				25	5	0.8
			750mm	35	10	3.0
				55	30	9.0
	BGZ32	1500mm	30	8	0.8	
			40	15	3.0	
		3000mm	40	35	8.0	
			45	20	3.0	
	Submersible pump	Model	Installation depth	Application pump		Air intake capacity L/min
				Flow rate (L/min or more)	Pump head (m or more)	
BGZ25		750mm	In case		0.8	
			WUZ3-326-0.15SG		6.0	
		1500mm			4.0	
			3000mm			0.8

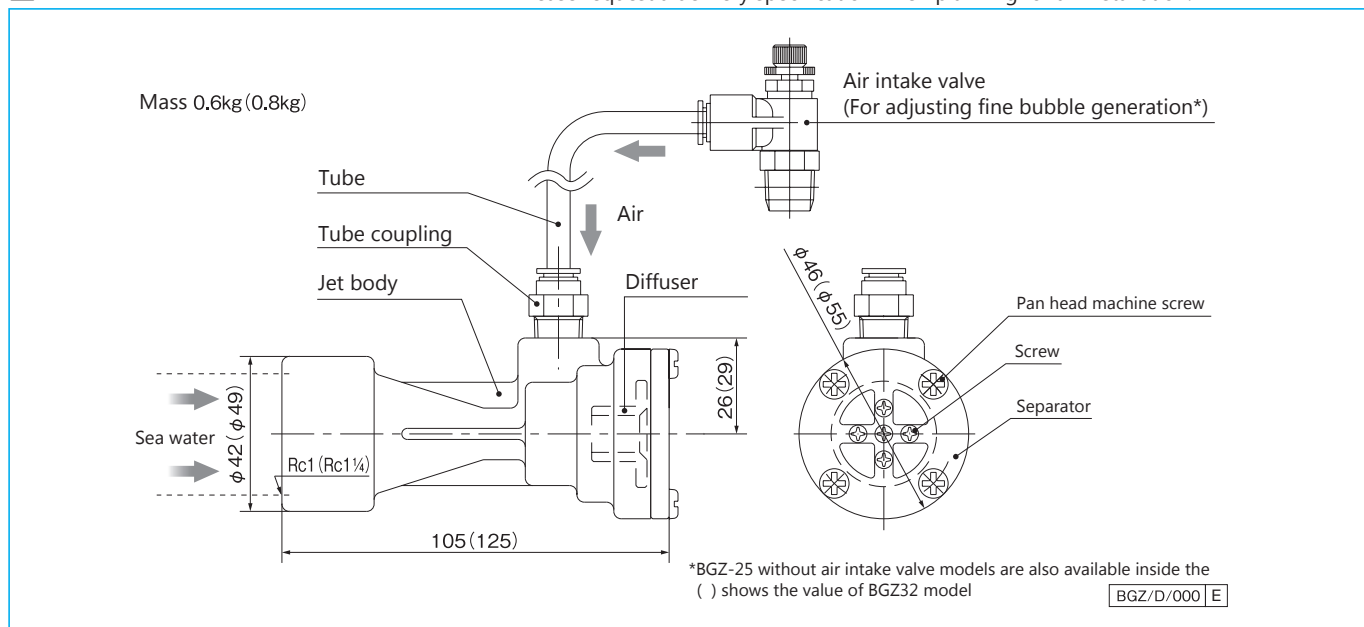
\*1: With a liquid other than sea water, the bubbles will not be made fine.  
 \*2: The air intake capacity will increase or decrease depending on the installation depth, the pump used, the air pressure and the temperature. Use a pump which has capacity to spare.  
 Note) Please install the equipment's main unit at a depth of no more than 750 mm if it is a BGZ-25 type, and no more than 3,000 mm if it is a BGZ32 type.

## Installation example



## Outline dimensional table / Name

Please request a delivery specification when planning for an installation.



\*BGZ-25 without air intake valve models are also available inside the ( ) shows the value of BGZ32 model

BGZ/D/000 E

## ECP type control panel (Optional accessories)

## Features

- Exclusively designed for sea water pumps. (Can also be used as the start-up panel for a general-purpose pump.)
- Automatic operation with pressure switch is possible.
- Equipped with a function to protect pumps from water temperature rises as a result of operation when empty, etc. with nylon coated and resin pumps. (GSP4- series has sensor as standard accessory. Other than GSP4, sensor of optional accessory is necessary.)
- Earth leakage circuit breaker is built-in.
- Outdoor use, wall mount type.

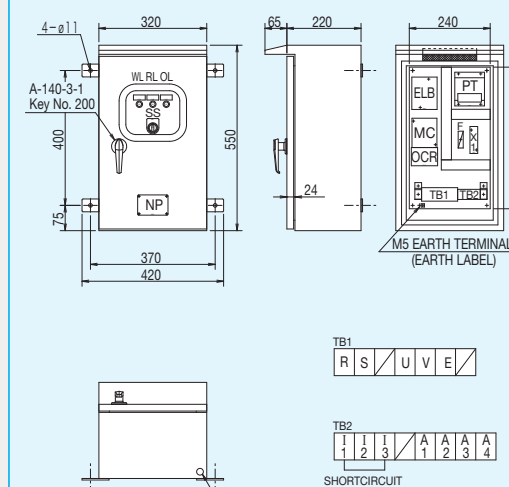
## Standard specifications

Motor output kW	Power supply V	Start-up method	Installation
0.4, 0.75	Single phase 220	Direct start	Indoor / Outdoor (Under eaves)
0.4~7.5	Three phase 380~440		

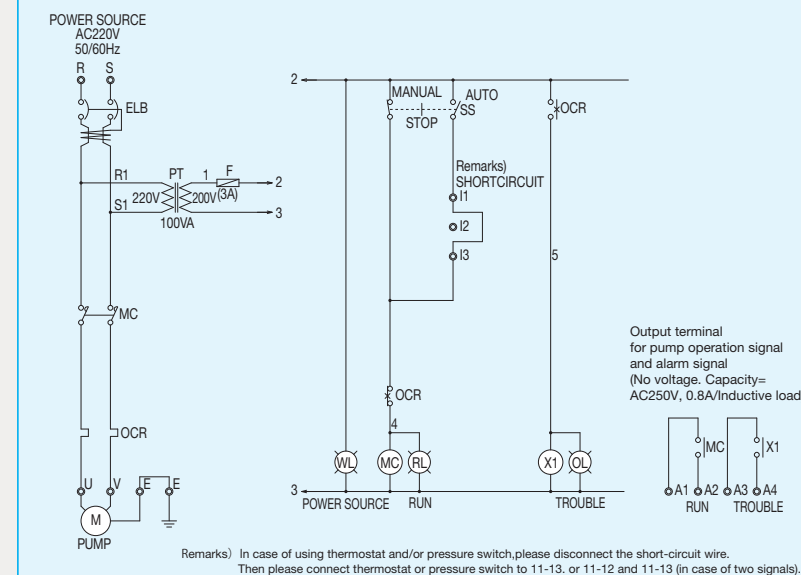
Code	Name	Code	Name
WL	Power indicator light (White)	MC	Electromagnetic contactor
RL	Operation indicator light (Red)	OCR	Overcurrent relay
OL	Fault indicator light (Orange)	TB1	Terminal block
SS	Select switch	TB2	Terminal block
F	Fuse	NP	Name plate
ELB	Electric leakage circuit breaker	SW	Manual-stop auto

## ECP-S

### Outline dimension / Component layout tables

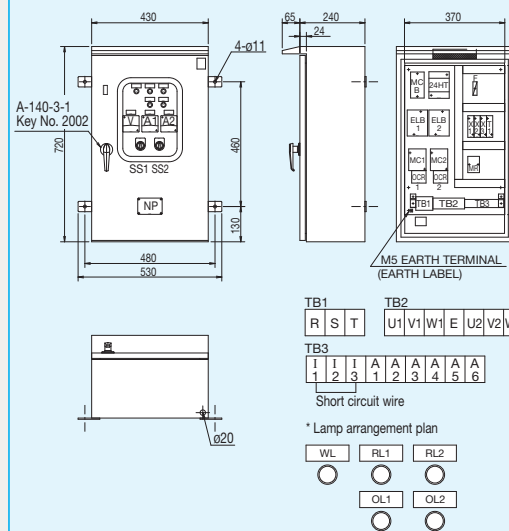


### Example of a connection to the control panel Single phase

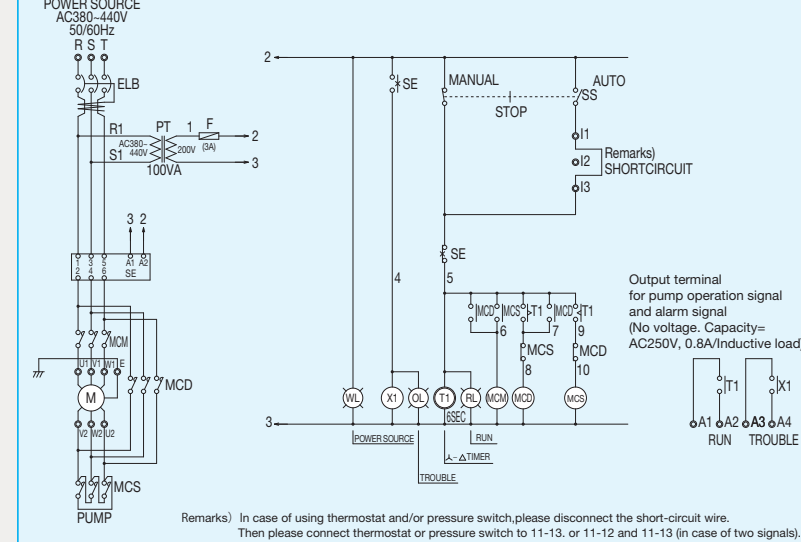


## ECP-A

### Outline dimension / Component layout tables



### Example of a connection to the control panel Three phase



Note 1) When connecting a pressure switch, remove the short circuit wire and connect to I1 - I3.

Note 2) When connecting the two signals thermostat and pressure switch, remove the short circuit wire and connect to I1 - I2 and I2 - I3.





Comfort Earth®

Kawamoto Pump, as a company handling valuable "water", will endeavor as a united force under our slogan "Comfort Earth", and make initiatives for activities to reduce environmental burdens and protect the environment.



Kawamoto products with this mark are products with excellent energy-saving and environmentally friendly features.

## ⚠ Important Safety Precautions

Always read the manual thoroughly and fully comprehend the contents for safe operation before starting use. Precautions for using products safely and for preventing personal injuries or physical damage are given in the manual. \* We bear no responsibility when the above listed precautions are not observed.

- The products are only for use in Japan. It cannot be used overseas, where power supply voltages and frequencies may differ.
- Matters falling under the following may not be covered by the warranty: uses out of the specified scope of application, failure to comply with precautions, improper repairs and alterations, matters arising from natural disasters, matters arising from the installation environment (improper power source, foreign objects, sand etc.), non-compliance with laws and regulations or standards pertaining thereto, accidental or intentional damage or injury, replacement of consumable parts, defects due to resale, etc.
- This product has improved durability against sea water. However, partial rusting due to structural reasons and rusting due to scratches in the nylon coating, etc. may occur. Please note that this product cannot be used for applications where rust is not permissible.
- Do not use the product for applications out of the product specifications. Doing so may cause electric shock, fire, water leakage, etc.
- Apply repair coating at an institute which supports your operating environment. Depending on the operating environment, rust may form on screw parts, processed parts with anti-rust coating, anti-rust coated parts etc. due to high humidity, condensation, getting wet etc., which may lead to unexpected damage.
- Close attention is needed when rusting, corrosion/ elution are not permissible owing to the application or liquid properties. Take into account both the pump and the rest of the equipment when considering and selecting. Especially for circulative use, unexpected damage may arise from condensation of circulating water.
- Select a product which is appropriate for your application. Inappropriate use of products may cause accidents.
- Have spare equipment ready when using pumps for equipment for living things (fish farms, fish tanks, aquariums, etc.) or critical equipment. Pump failure may cause lack of oxygen and water quality deterioration, and may affect the lives of the living things.
- If used to transport food-related items, give due consideration to the materials used.  
Contamination by foreign objects may occur.
- Avoid using for living things which disagrees with copper alloy. It may affect the lives of the living things.
- Do not connect the pump directly to water supply pipes. It is prohibited under the Water Supply Law. Also, water backflow may contaminate tap water.
- Conduct construction in accordance with the applicable laws and regulations (the Technical Standards of Electric Installation, interior wiring regulation, Building Standards Act, Water Supply Law, etc.).Not only does it violate the laws and regulations, but it also may cause injuries due to electric shock, fire, falling and tipping over.
- Do not use in places where people are assumed to get in contact with the product (baths, pools, lakes, etc.). Electric leak may occur and cause electric shock.
- Observe the service life of the pump, install it in a well ventilated place free from corrosive or explosive gases, salt, moisture, water vapor, condensation etc., and avoid exposing it to wind, rain and direct sunlight. In a harsh environment, electric leakage, electric shock or fire may result from deterioration of insulation in the motor or control panel, etc.
- Do not install in places with no drainage or places which have not been waterproofed. Water leaks may cause serious damage. \* We bear no responsibility for any damage arising from lack of drainage or waterproofing.
- Depending on the equipment, attach a filter etc. appropriate for your application on the discharge side before use, perform thorough flushing to check that there is no contamination.Cutting oil, rubber mold releasing agent, foreign objects etc. from the manufacturing line and cutting oil, foreign objects etc. from the pipeline may contaminate the liquid which is to be handled.
- Install buzzers, etc., as an alarm to alert failure to be noticed. Failing to do so may result in serious accidents without noticing a failure.
- Do not operate pumps with a specification of 50Hz at 60Hz.It may cause damage due to overpressure or burn damage of motors etc. due to overload.Do not operate pumps with a specification of 60Hz at 50Hz.Pump performance may be reduced.
- Do not place combustibles near or cover the surroundings of the pump, cable, control panel and inside the pump cover with combustibles. This may cause fires due to heating.
- Only repair technicians may disassemble, repair, modify the product or replace cables.Defects may cause failure, damage, electrification or fire.
- It is recommended that both periodic and daily inspections be performed in order to ensure that the pump will operate reliably for as long as possible.Failure to perform inspections may lead to pump failure, accidents etc. For periodic inspections, please consult your distributor or our nearest sales office.

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Distributor

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460-8650, JAPAN

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E-mail: kawamotobo@kawamoto-oms.com  
<http://www.kawamoto.co.jp>

For any question about pumps, please contact your nearest distributor

Name	Sea water pump
No.	5330 B (E)