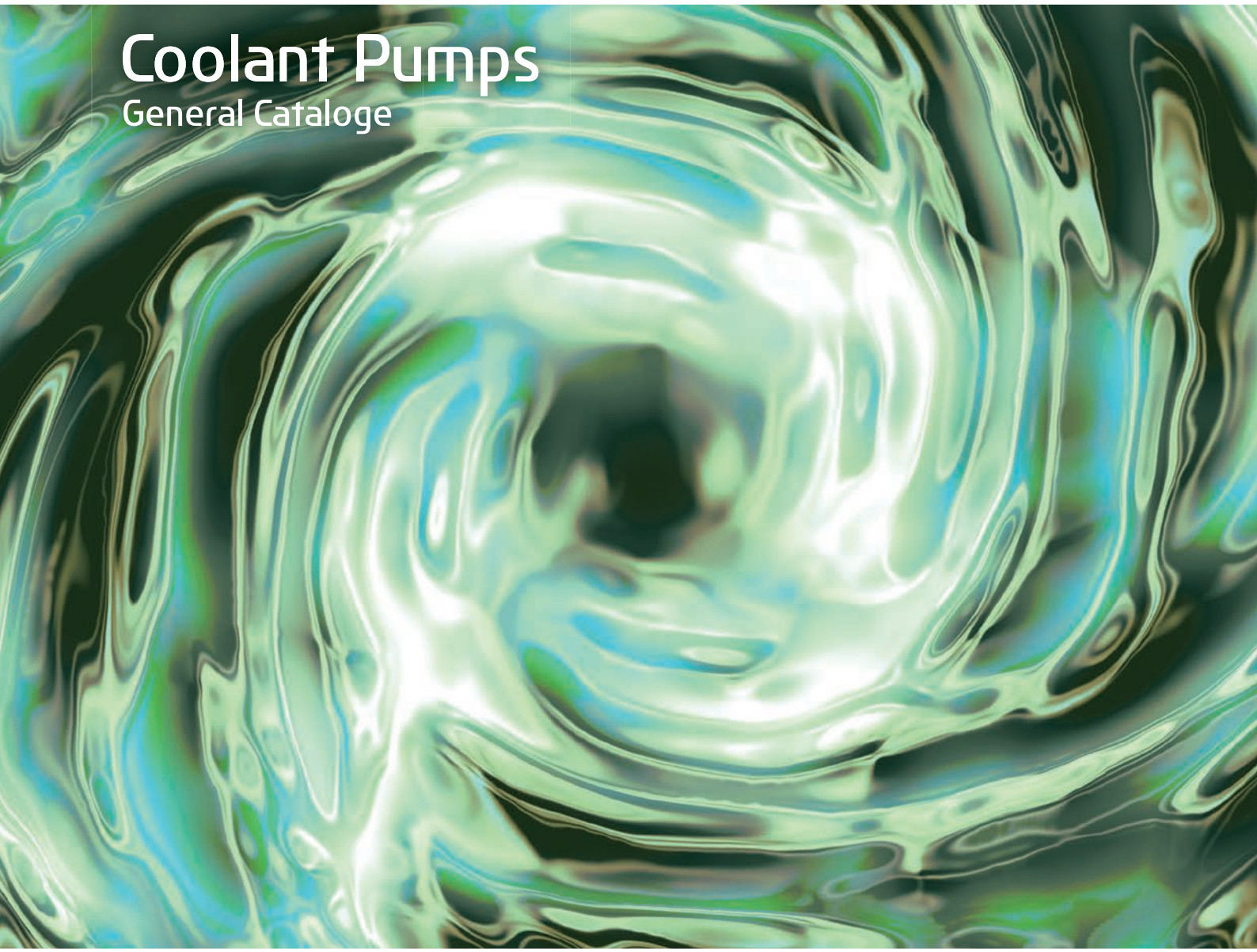
Coolant Pumps General Catalog

TERAL

Triple e series

50Hz/60Hz

TERAL: Maximizing Effectiveness



TERAL INC.

INDEX

Installation model	Flow rate / Head	Low flow rate	Medium flow rate	High flow rate
Immersion type (Non-self-priming)	Low head	VKP model P.12		
		LFE model P.36		
	Medium head	LHW model P.20		
		VKD model P.43		
		VKA model / VKC model P.22		
			LFO model ※Available for dirty liquid P.38	
		LBK model P.32		
			LPW model ※Available for dirty liquid P.49	
	High head	LKW model P.61	VKB model P.65	
		LVS model P.75		
Floor type (Self-priming)	Low head	VKN model P.92		
	Medium head		LPS model P.98	
Immersion type (For cleaning inside tanks)	Low head	SKM model P.104		

※Available for dirty liquid
These are the pumps to use after the primary process through mesh cage, chip conveyor, or magnet separator, etc.

The frame for each unit type is colored by the material of the impeller

- Stainless steel (SUS304)
- Cast iron (FC, FCD)
- Others (Resin, CAC407)

Usage and Table of General Specification

■Usage

- ●Circulation and transfer of coolant for machine tools
  For internal environment of machine tools such as spindle, drill, end mill, etc., or transfer
- ●Circulation and transfer of cleaning liquid
  For washing work, jig, bed, inside of the machine, etc.
  For shower washing and splash gun
- ●For various filtration
- ●For pumping from the tank
- ●Other purposes

■Table of General Specification

Installation type	Priming method	Dirty liquid	Sealing structure	Model		Steps	Immersion type: length below the installed bed※1 Floor type: maximum suction lift	Material			Frequency (Hz)	Representative rate of discharge※2 (L/min)	Max. head※2 (m)	Output※1 (kW)	Allowable dynamic viscosity (mm²/s)	Poles (P)	CE compliance
								Impeller	Discharge casing	Intermediate casing guide vane							
Immersion type	Non-self-priming	—	Non-seal	VKP model		Single step	130~350㎜	Resin or CAC407	FC150	—	50	13 ~ 165	7	0.02 ~ 0.75	300	2	○
											60	19 ~ 285	7	0.02 ~ 0.75	150	2	
		—	Non-seal	VKP-H model		Single step	145~280㎜	Resin or CAC407	FC150	—	50	10 ~ 20	13	0.06 ~ 0.4	37.5	2	○
											60	10 ~ 20	18	0.06 ~ 0.4		2	
		—	Non-seal	LHW model		Multiple steps	200㎜	Resin	FC200	Resin	50	20 ~ 80	50	0.75 ~ 1.1	1	2	
											60	20 ~ 90	73	0.75 ~ 1.1		2	
		—	Mechanical seal	VKA model	AH	Multiple steps	139~259㎜	SUS304	FC150/FC200	SUS304	50	40	63	0.1 ~ 0.9	37.5or75※1	2	○
											60	50	86	0.17 ~ 1.53		2	
		—	Mechanical seal		AQ	Multiple steps	137~333㎜	SUS304	FC150/FC200	SUS304	50	85	39	0.18 ~ 1.1		2	○
											60	100	54	0.3 ~ 1.8		2	
		—	Mechanical seal	VKC model	AH	Multiple steps	139~259㎜	SUS304	SCS14A	SUS304	50	40	48	0.1 ~ 0.7		2	○
											60	50	62	0.17 ~ 1.19		2	
		—	Mechanical seal		AQ	Multiple steps	137~249㎜	SUS304	SCS14A	SUS304	50	85	26	0.18 ~ 0.72		2	○
											60	100	36	0.3 ~ 1.2		2	
		—	Non-seal	LBK model		Multiple steps	207/342㎜	SUS304	FC200	SUS304	50	50	30.2	0.35 ~ 1.1	1	2	○
											60		50.9	0.55 ~ 1.1			
		—	Non-seal	LFE model		Single step	300㎜	FCD450	FC200	—	60	60 ~ 430	8	0.25 ~ 0.75	1	2	
		Available	Non-seal	LFO model		Single step	350/500㎜	FCD450	FC200	—	50	100 ~ 750	24	0.75 ~ 5.5	A:32 B:150	2	
											60	100 ~ 900	36	0.75 ~ 5.5		2	
		—	Non-seal	VKD model		Multiple steps	258~402㎜	FC200	FC200	FC200	50	80 ~ 400	40	0.75 ~ 3.0	75	2	○
											60	100 ~ 500	54	0.75 ~ 3.0		2	
		Available	Non-seal	LPW model		Multiple steps	255~330㎜	FCD450	FC200	FC200	50	50 ~ 700	63	0.75 ~ 7.5	40C:32 40D:150 50A/65A:1	2	
											60	60 ~ 750	64	0.75 ~ 7.5		2	
		—	Non-seal	LKW model		Multiple steps	330(Single)㎜	Resin	FC200	Resin (+SUS304)	50	20 ~ 70	400	2.0 ~ 4.0×2	1	2	
											60	20 ~ 70	400	2.0 ~ 4.0×2		2	
		—	Non-seal	VKB model	H	Multiple steps	300~616㎜	SUS304	FC200	SUS304	50	40	114	0.4~2.6	37.5or75※1 FH/FQ:1	2	○
											60	50	152	0.68~3.57		2	
		—	Non-seal		Q	Multiple steps	291~711㎜	SUS304	FC200	SUS304	50	85	78	0.54~3.96		2	○
											60	100	108	0.9~3.6		2	
Floor type	Self-priming	—	Non-seal	LVS model		Multiple steps	196~979㎜	SUS304	FC200	SUS304	50	10~500	230	0.75~18.5	1	2	○
											60	10~600	260	0.75~18.5		2	
		—	Mechanical seal	VKN model	A	Single step	-0.7m	Resin or CAC407	FC150	—	50	13 ~ 230	7	0.04 ~ 0.75	200	2	○
											60	16 ~ 320	7	0.04 ~ 0.75	75	2	
		—	Mechanical seal		H	Single step	-0.7m	Resin or CAC407	FC150	—	50	10 ~ 20	12	0.06 ~ 0.4	37.5	2	○
											60	10 ~ 20	17	0.06 ~ 0.4		2	
		—	Non-seal	LPS model		Multiple steps	-0.7m	FCD450	FC200	FC200	50	50 ~ 650	62	0.75 ~ 7.5	40C:32 40D:150 50A/65A:1	2	
											60	50 ~ 700	64	0.75~ 7.5		2	
Immersion type	Non-self-priming	—	Non-seal	SKM model		Single step	257㎜	SUS304	FC150	—	50	50	6	0.25	1	2	
											60	50	9	0 25		2	

※1：The value depends on the type. Please refer to the specification table of each unit type.
※2：They are a central value. Please refer to the selection diagram and the specification table for the detailed performance of each unit type.

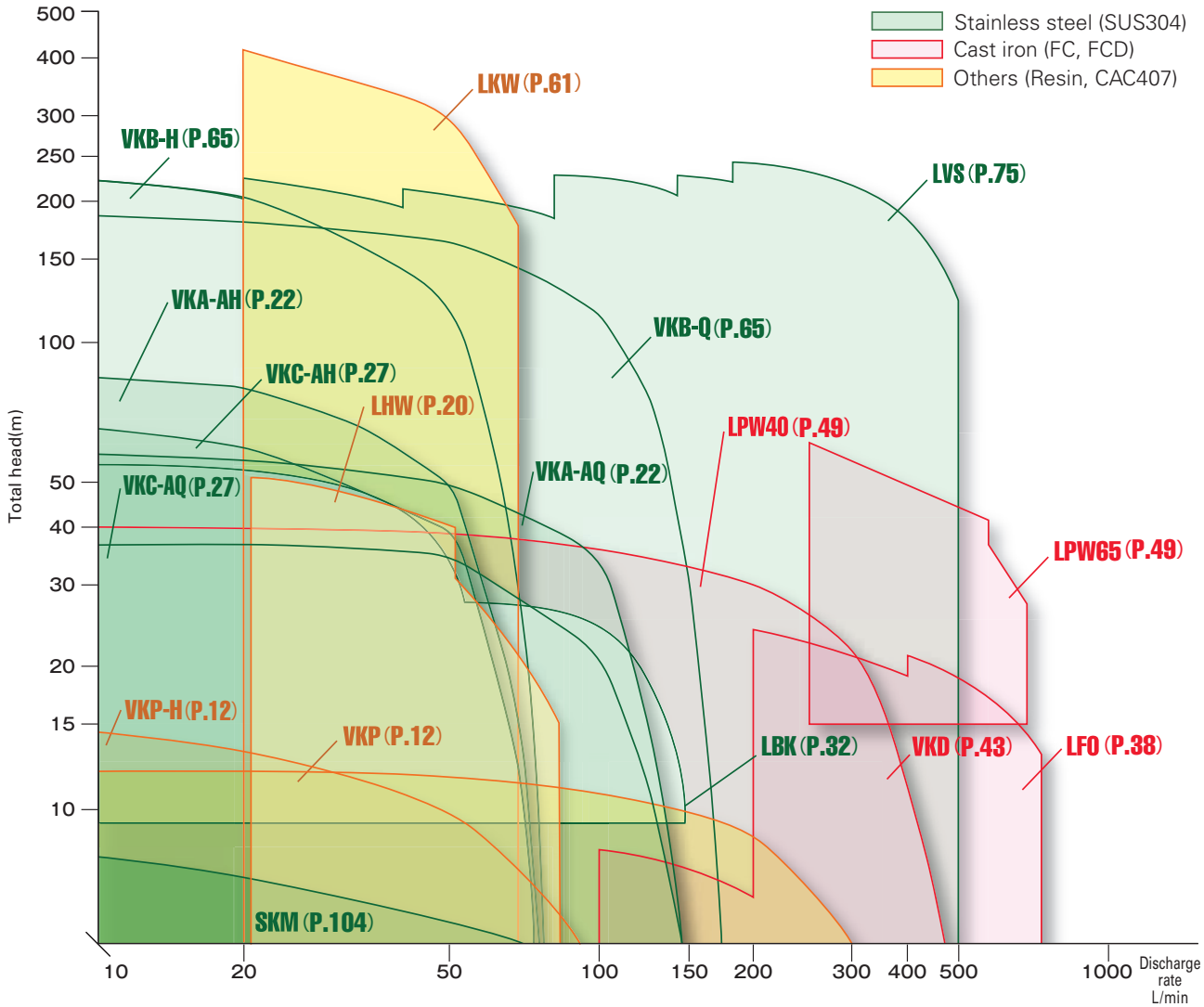
General Concept Chart for Use in Selecting Products

50Hz

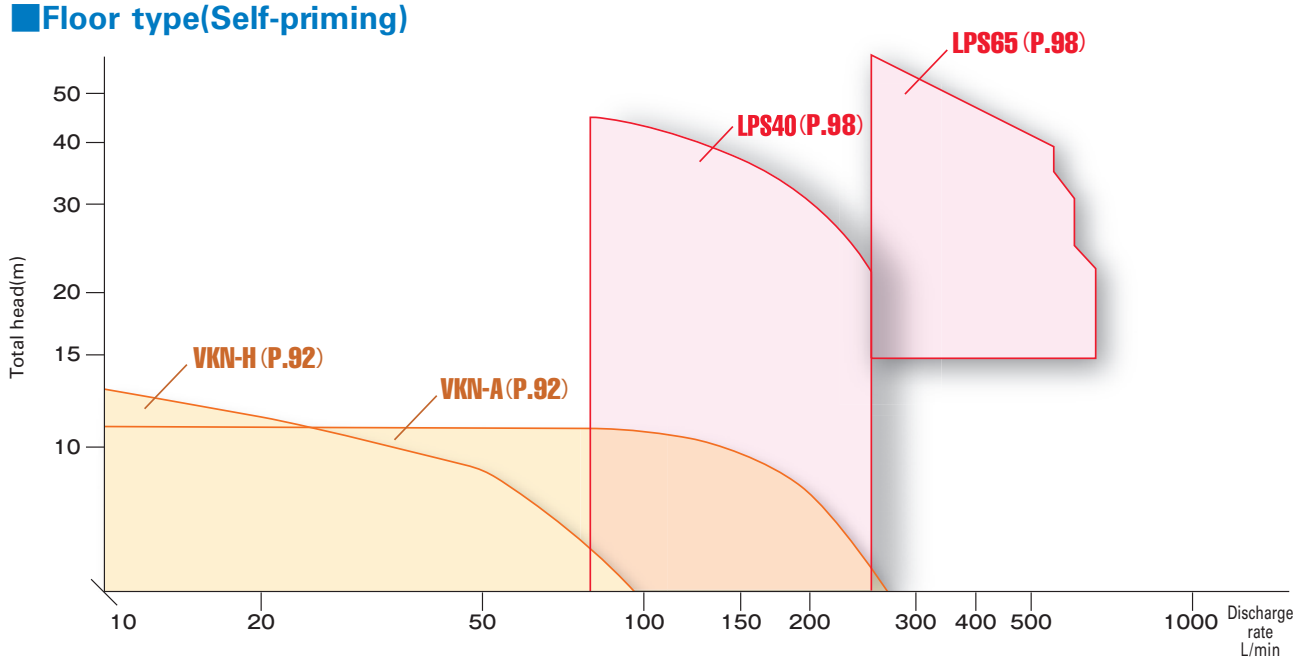
Immersion type

Figures in the selection diagrams are colored by the material of impellers.

- Stainless steel (SUS304)
- Cast iron (FC, FCD)
- Others (Resin, CAC407)



Floor type(Self-priming)



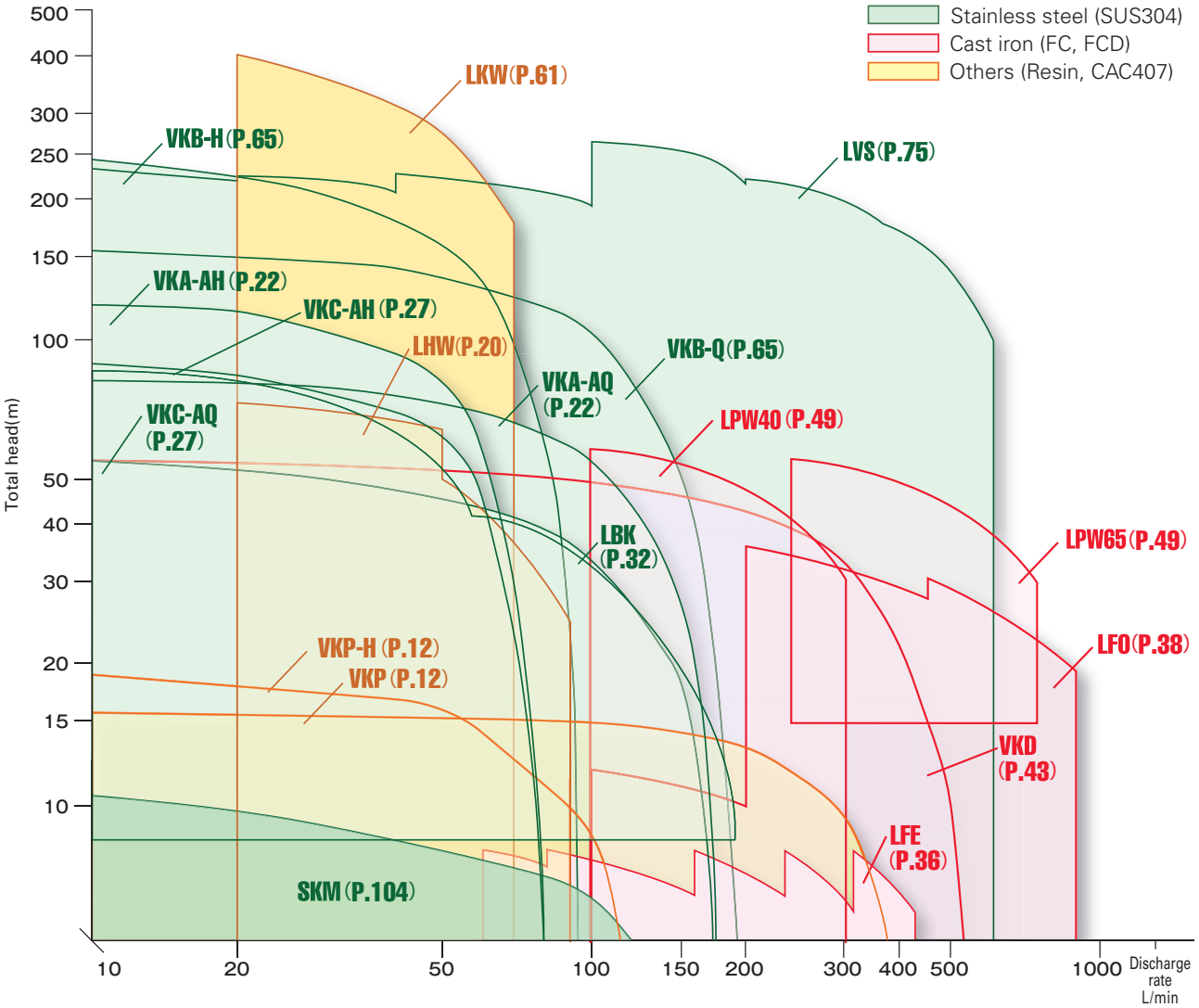
Please refer to the page of each unit type for the choices.

60Hz

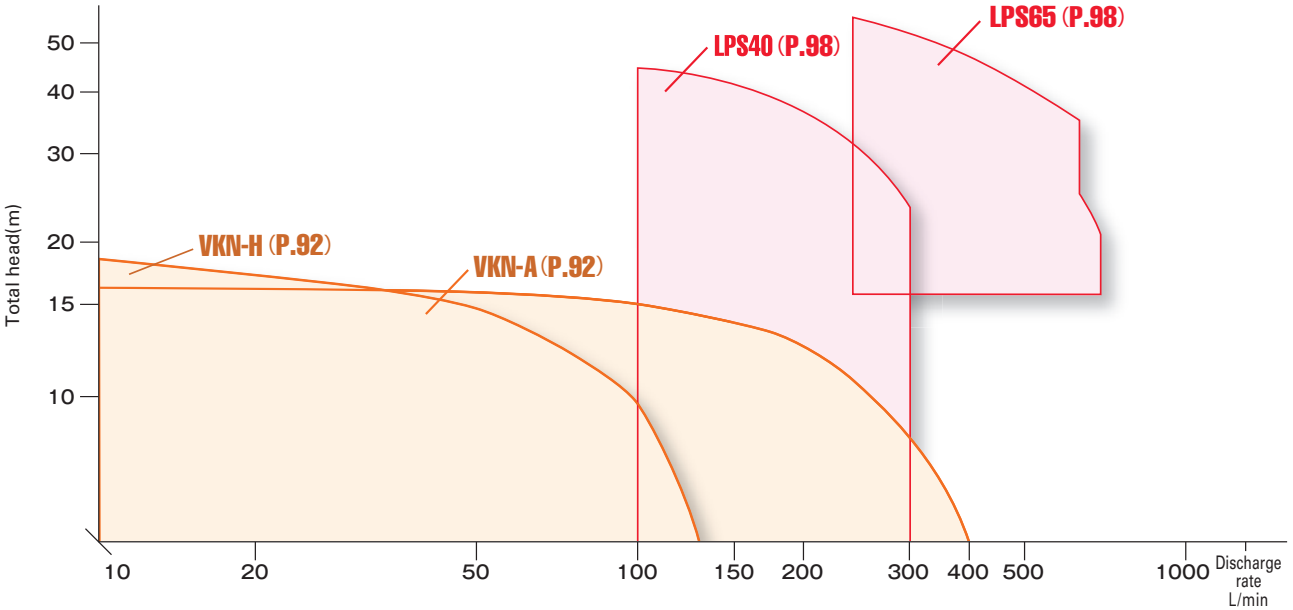
Immersion type

Figures in the selection diagrams are colored by the material of impellers.

- Stainless steel (SUS304)
- Cast iron (FC, FCD)
- Others (Resin, CAC407)



Floor type(Self-priming)



Please refer to the page of each unit type for the choices.

Coolant pump by Teral

We have continued improvements reflecting our longtime experience and customers' opinions.

Rich variation

●Installation method

Immersion type


VKP type


LFO type


LPW type etc…

Floor type (Self-priming)


VKN type


LPS type etc…

For cleaning inside tanks


SKM type

●Shaft seal structure

Mechanical seal type (VKA type, VKC type, VKN type)
It is highly efficient because there is no leak in the shaft seal.

Non-seal (mechanical seal-less) type
- Resistant to sludge, they are usable for dirty liquid (some types).
- There are other features including following:

TERAL' s original non-seal structure allows coolant to flow from a narrow clearance without using a seal between the pump section and motor section.

Many advantages that only non-seal pumps can provide

1 No coolant leakage or other problems. ↓ Helps cut down running costs.

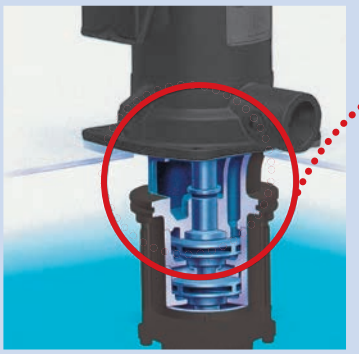
2 No need for a safety valve, escape piping, or a three-way valve. ↓ Helps cut down initial costs.

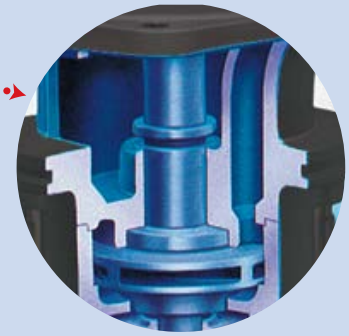
3 Prevents air accumulation. ↓ Reduces initial trouble.

4 Capable of serial running (LKW-D model) ↓ A series of volute pumps can generate up to 3.92MPa (40kgf/cm²).

5 Not easily affected by small quantity of liquid or shut-off operation. ↓ Build the pump system you want.

6 Not easily affected by chips ↓ Can be used for dirty coolants. (some types)





※What is the non-seal structure?
This structure releases coolant by depressurizing through a narrow clearance. No mechanical seal is used.

●Others

[Material of the impeller and casing] Stainless steel, cast iron, resin, etc.

[Performance] Low – high flow rate, low – high head

[Length of the dipped part] There are alternatives (some types)

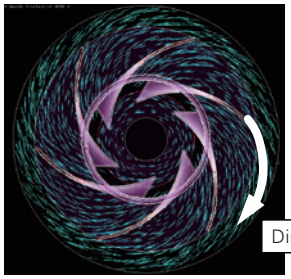
You can make a choice according to the various uses.

High Durability, Abrasion Resistant

●High Efficiency is realized with 3-dimensional fluid analysis & structural analysis (LVS-e type)

●Energy conserving by enhancing the efficiency of pumps
●Life cycle cost saving by non-seal structure

Example of fluid analysis in impellers



The flow of the fluid in the impeller is simulated with computers to optimize the shape of the impellers. Each line in the figure shows the flow of the fluid.

●High durability is demonstrated with our reliability test (VKB type)

●Reduction of characteristic value is within 10%
●No leak,no abnormal vibration or sound.
●No abnormal abrasion of parts

※Validated with the operation test (accelerated life test) of 2 years (about 17,500 hours, switching on/off 4.2 million times)

A tank containing sludge
(slurry content is about 10wt%)

Scene of the testing

※It is the result of the internal test. Durable life of pumps and their parts differ by liquid and operation circumstances.

●Abrasion resistance of main shafts and impellers is demonstrated in the test comparing with other company's product of similar class (VKA type)

●with higher durability than competing products in the same class

※ In the on/off operation test with liquid containing sludge

※It is the result of the internal test. Durable life of pumps and their parts differ by liquid and operation circumstance.

They comply with Top Runner Standard (IE3) and other overseas standards (depending on type)

●Top Runner Energy Efficiency Standard (corresponding to IE3) Compliant

Their Top Runner Efficiency, with motors complying with Top Runner Regulation (corresponding to IE3), saves energy (some types are excluded).

Pumps with motors with top runner efficiency (corresponding to IE3) have "-e" at the end of their typed ID. Additionally, they have "Triple e" seals on them (see below)

●Complying with the UL Standard of USA

(Those with power of 0.75 kW or more comply with NEMA premium)

Enabled model: VKP-7W, VKD-7W, LPW-7W, VKN-7W

●Complying with the Chinese Energy Efficiency Label Regulation (grade GB3)

Enabled model: VKP, VKA, VKD, LPW, VKB, VKN

●Complying with EU Directive (CE Marking), EU legislation RoHS directive 6 Environmentally Hazardous Materials

Enabled model: VKP-e, VKA-e, LBK-e, VKD-e, VKB-e, LVS-e, VKN-e

CE RoHS

With energy conservation needs rising on a global scale, Teral is working with the corporate concept of "Triple e."

Triple e series

Mind of "Triple e": High efficiency products realize saving energy and preserving the Earth environment

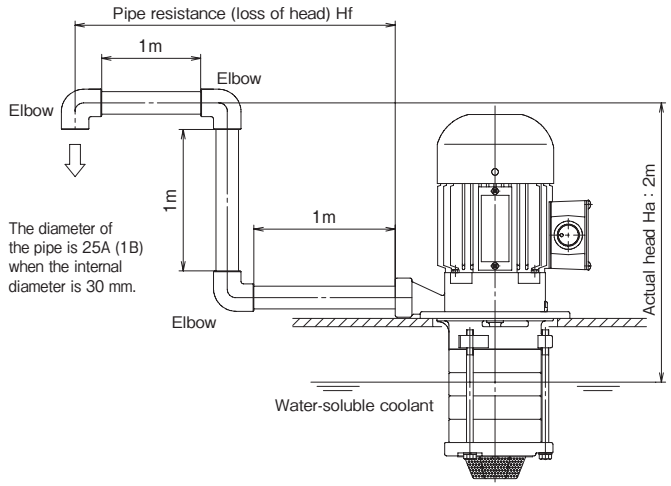
This mindset is directly connected to the feelings expressed in the name "TERAL," our slogan and Corporate Vision: "To create the future with water and air."

How to choose pumps

Pumps are very influenced by the state of their lining (piping length, kinds of coupling joints, their numbers, etc.). Therefore please make the piping as short as possible, and make bends, such as elbows, joints, and valves as few as possible. When you select pumps, specifications including usage, processed liquid, flow rate, and total lifespan need to be fully considered. Calculation of the total head is shown below. Please use it as a reference.

How to calculate Total Lift

Figure 1



Necessary total head is calculated assuming the flow rate of 50 L/min in the piping state shown in Figure 1.

Total head is computed as follows:
Total Head **Ht[m] = Actual Head Ha[m] + Loss of Head Hf[m]**

In the case shown in Figure 1:
Actual head **Ha: 2 m, Loss of Head Hf: 0.79 m** ※1
From the above formula,
Total head is **2 m + 0.79 m = 2.79 m.**

Therefore, pumps that satisfy total head 2.79 m or above should be selected. (Figure 2)
[Note]
The above calculation is for a case of water-soluble coolant (dynamic viscosity 1 mm^2/s). There are some cases that the loss of head is very different, depending on type and viscosity of liquid used, piping conditions, etc.

Figure 2 Pump characteristic curve

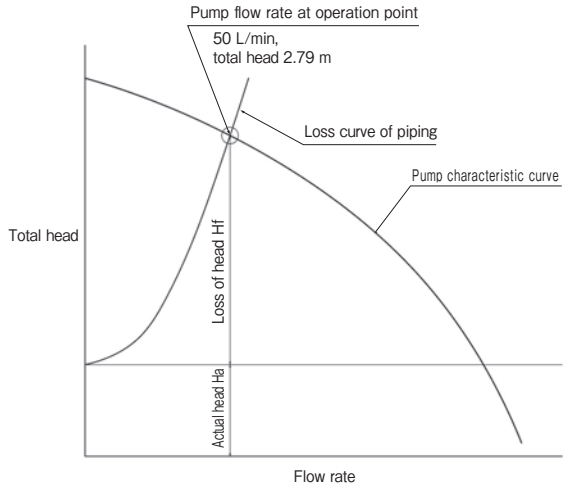


Table 1 Table of approximate equivalent length of straight pipes for elbows, etc. [m]

Nominal diameter	Inlet part	Outlet part	90-degree elbow	Ball valve
8A (¼B)	0.3	0.6	0.7	6.4
10A (⅜B)	0.4	0.8	0.9	6.7
15A (½B)	0.6	1.2	1.1	6.7
20A (¾B)	0.8	1.6	1.3	7.3
25A (1B)	1.1	2.2	1.6	8.8
40A (1½B)	1.9	3.2	2.3	12.8

※1 How to compute loss of head

Loss of head is calculated as follows:
Loss of head **Hf[m] = f × (L/d) × V^2/2g [m]**
L: equivalent length of straight pipes [m] V : flow velocity [m/s]
d : internal diameter of the pipe [m] g : gravitational acceleration 9.8 [m/s^2]
f : coefficient of loss

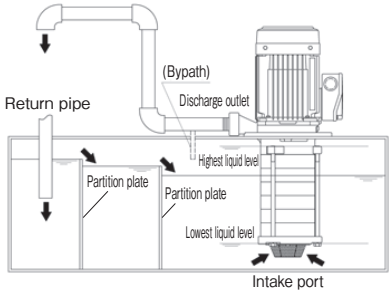
In the case shown in Figure 1:
Equivalent length of straight pipes, L: 11.1 m ※2
Flow velocity, V: 1.18 m/s
Internal diameter of the pipe, d: 0.03 m
From the above formula,
Loss of head Hf= 0.03 × (11.1/0.03) × 1.18^2/(2 × 9.8) = 0.79 m
[Note]
Coefficient of loss is the value assuming that the aqueous solution is 0.03. Please note that the coefficient differs greatly for oily liquids.

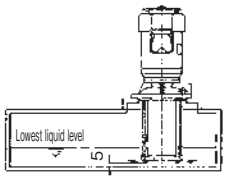
※2 How to calculate equivalent length of straight pipes

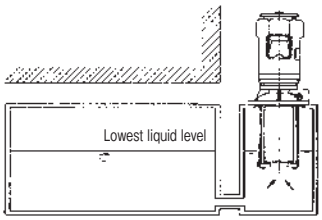
"Equivalent length of straight pipes" is the measurement of loss generated by elbows, valves, etc., expressed by the length of a straight pipe with the same diameter causing the same amount of pressure loss.

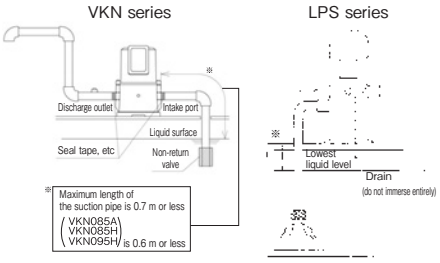
In the case shown in Figure 1:
Straight part: 1 m + 1 m + 1 m
Elbow: 1.6 m × 3 = 4.8 m
Inlet: 1.1 m, outlet: 2.2 m
Equivalent length of straight pipes, L =
3 m + 4.8 m + 1.1 m + 2.2 m = 11.1 m
[Note]
Please refer to Table 1 for gross equivalent length of straight pipes of elbow, etc.

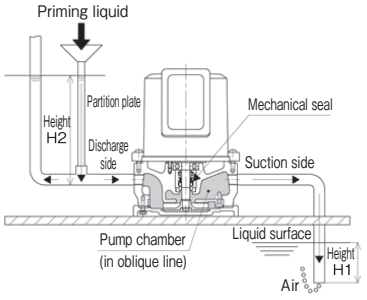
Precautions concerning storage handling

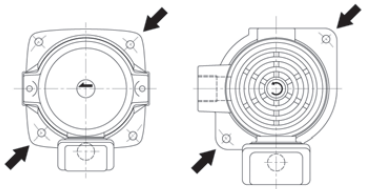
<table>
<tr><th>Item</th><th>Type</th><th colspan="2">Content</th></tr>
<tr><td rowspan="2">Installation</td><td>Immersion type</td><td>


▲Standard installation


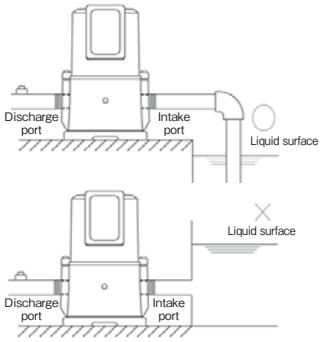
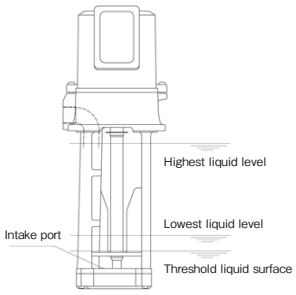
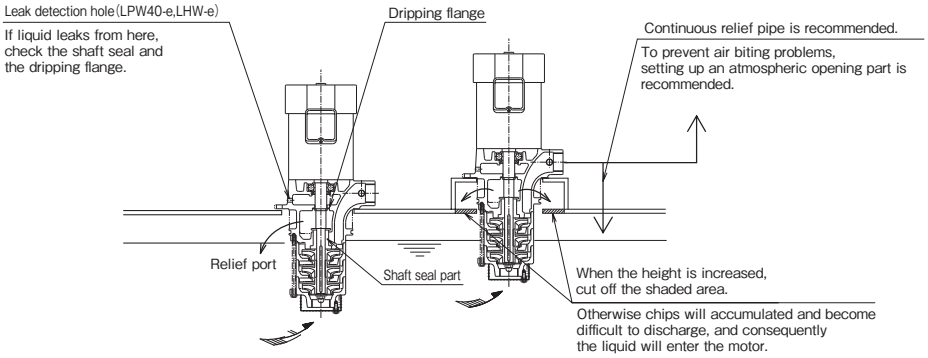
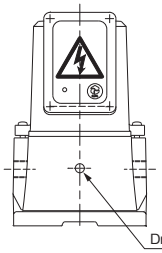
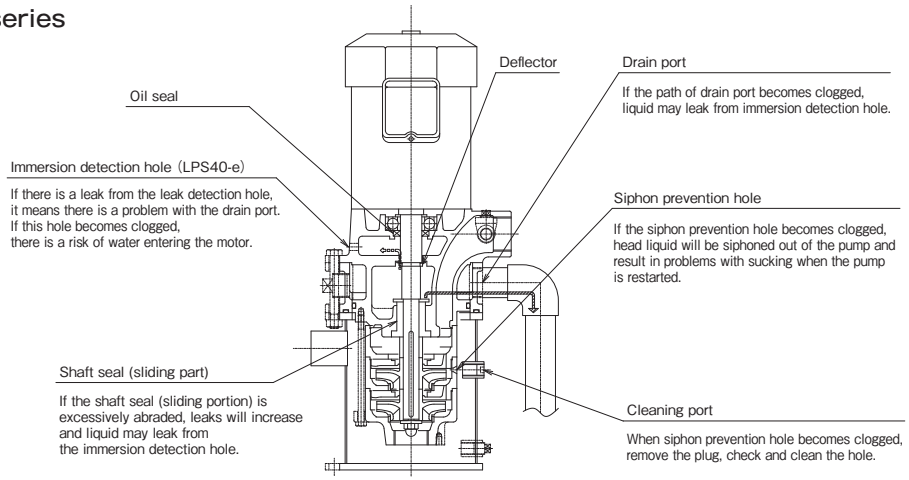
▲Installation in a shallow tank


▲Installation in the case of a height limitation</td><td>
● Make the piping as short as possible, and make the corners like elbow, joints, and valves, etc., as few as possible. Additionally, please use pipes with standard diameter. Please note that sometimes discharge becomes low if the pipe is thin or there are many corners.
● Support the piping sufficiently so that the pump does not take the load of pipes.
● Do not screw pipes into pumps forcefully. Joint may be damaged.
● Roll on the screw thread of pipes with seal tape, etc., so that liquid or gas does not leak. Additionally, roll the seal tape securely so that the tape does not block the pipe.
● Tank (oil tank) should be as large as possible.
※Recommended capacity is 3 times as much as the quantity of discharge per minute. If the capacity is too small, there can be some faults, such as a rise in liquid temperature, early clogging of strainer with chip powder, etc., and the reduction of discharge caused by air bubbles.
※When the liquid is poured into pumps, pour calmly so that they do not catch air bubbles.
● Be careful that chip powder or dust does not enter inside the pumps.
※Filter the liquid with mesh cages, chip conveyors, magnet separators, etc., before pumping the liquid. The number of necessary processes differs by type.
● Take appropriate measures, such as setting up a bypass after the discharge outlet of the pump, if there can be a water hammer.
● If the liquid surface is too low, discharge will be reduced or sometimes it becomes unable to lift liquid because of air inside. The liquid surface shall be higher than the lowest liquid level shown in the dimensional outline drawing. Note that the lowest surface differs by dynamic viscosity or the state of the surface. Please give a sufficient margin of height for safety. Additionally, if the surface is too high, liquid might enter inside the motor from the drain hole, consequently causing the motor to be out of order. Make the surface lower than the highest liquid level shown in the dimensional outline drawing.
</td></tr>
<tr><td>Self-priming type</td><td>


</td><td>
● Install them close to the tank (oil tank) so that the suction pipe may be as short as possible. Length of the biggest suction pipe shall be 0.7 m (0.6 m for VKN085A, VKN085H, VKN095H) or less. If a suction pipe must be longer for some reason, install a non-return valve in the pipe on the suction side. Additionally, seal on the screw thread of the pipe with seal tape, etc., to avoid leak of liquid or air. Especially if there is an air leak, the flow rate will be reduced or it will run short of lift liquid.
</td></tr>
<tr><td>Priming liquid</td><td>Self-priming type</td><td>


</td><td>
●In the first operation after the installation, or long after the last operation, the pump chamber (oblique line in the figure below) might be filled with air. Because of this, venting the air with priming liquid is necessary. Air in the pump chamber can cause the pump to suck insufficiently/have pump characteristics insufficiently exerted (short of flow rate or pressure). Additionally, if the pump is operated for long time in a state of insufficient capacity, it might damage the mechanical seal, etc.
[How to prime]
VKN series
●Priming liquid should be poured until the air in the pump chamber is entirely exhausted (until air stops bubbling from the tip of the suction pipe) from the discharge. If the height from the outlet to the inlet of the priming H2 is lower than the length of the suction pipe below the surface H1, priming may not sufficiently fill the pump. In this case, install an air vent in the suction pipe or make the inlet for the priming sufficiently high.
LPS-e series
●Pour the priming liquid in the priming inlet in the pump discharge until water comes out from the suction pipe.
</td></tr>
<tr><td>Installation</td><td>VKN
VKP</td><td>

Mounting hole for VKN / VKP series
Arrows point at the dimension in JEM standard.
</td><td>
● The VKN / VKP series have four mounting holes (excluding some types), but they are for enlarging the range of usage. Two diagonal holes are enough for actual mounting. (Two holes comply with the dimensions of the JEM standard, the other two holes are proprietary.)
</td></tr>
</table>

Precautions concerning storage handling

<table>
<tr><th>Item</th><th>Model</th><th colspan="2">Content</th></tr>
<tr><td rowspan="2">Level of the liquid surface</td><td>VKN</td><td> 
</td><td>●Make the liquid surface level of VKN series lower than the suction inlet of the pump.
If the surface is higher than the suction inlet, liquid can leak from mechanical seal.</td></tr>
<tr><td>VKP</td><td> 
</td><td>●Figures of upper suction type VKP series machines are shown at “lowest liquid surface,” “highest liquid surface,” and “threshold liquid surface” in the outline drawing.
“Lowest liquid surface”
It shows the range where the amount of discharge is about the same as the rated value, and there is no air biting.
“Threshold liquid surface”
It shows the range where the amount of discharge becomes about half of the rated value and there is air biting.
“Highest liquid surface”
Make it a distance from the pump flange surface by at least 20 mm.</td></tr>
<tr><td>Prevention of problems for immersion type</td><td colspan="3"> 
</td></tr>
<tr><td rowspan="2">Prevention of problems in the suction type</td><td>VKN</td><td colspan="2"> 
</td></tr>
<tr><td>LPS</td><td colspan="2">LPS40 series
 

Note) Although the structure of LPS65-e is different from the above figure, notes about shaft seal (sliding portion), drain port, siphon prevention hole, and cleaning connection are applicable.</td></tr>
</table>

Item	Content
General	●Before using (installing, carrying, maintaining, etc.) the product, be sure to read the manual thoroughly. Be sure to use the machine after completely understanding the information on machines, safety, and cautions. Appropriate handling in each step from beginning to actual operation, as well as maintenance after the initial operation, is necessary to make the most out of the coolant pump, preventing accidents, and continuing good operation for long time. ●Do not handle the machine when it is operating. Be sure to turn off the power before handing it. ●In the case of a power outage, be sure to turn off the power switch. ●If there is any problem, please stop operations and turn off the power switch. ●Bury the earth terminal securely. ●The piping and cable lining shall comply with electronic facility standards and internal line standards. ●A protection device is not included in the package. It is required by law to install an overcurrent protective device. It is highly recommended to install other protection devices (earth leakage circuit breaker, etc.). ●Take sufficient measures for dust proofing and dew proofing in order to prevent cut powder or coolant entering from lining hole into terminal box. Additionally, do not remove grommets from unused terminal holes. ●Note that motor might be burned or thermal relay might trip if the voltage is volatile. ●Do not use the products in an explosive atmosphere. ●Never place any combustibles near the product. ●We cannot produce machinery with increased safety or explosion proof. ●Volatile liquids, such as kerosene or gasoline, cannot be used. ●While operating, never touch nr get close to rotating parts (external fan, impellers, etc.). ●Do not put any material or fingers into the aperture of the product (fan cover, discharge opening, suction opening, drain hole, etc.). ●Never climb the machinery. ●Products become considerably hot while operating. Do not touch with your hand or any part of the body. ●Do not restrict ventilation around the product. ●Put it in a convenient location for maintenance operation (avoid narrow spaces). ●Place it on a flat surface and anchor it so that it will not shake. ●Select a rigid surface to install the product on so that vibrations will not be amplified in operation. ●When it is run with inverters, the frequency shall not exceed 60 Hz. Avoid a frequency with which resonance occurs, Otherwise resonance may occur depending on installation conditions. ●If the dynamic viscosity of the liquid is too high, the life of the motors might be shortened, or burn out. Be sure to use the liquid within the threshold dynamic viscosity [mm^2/s] shown in the specifications. ●They are designed as pumps for liquid containing fine powder or fine chips. But for the pumps using the mechanical seal (VKA/VKC/VKN), the life of the mechanical seal might be shortened if hard sludge. such as polishing powder, abrasive grain, or diamond power, are contained in the liquid, the life of the mechanical seal might be shortened. Then install filters (magnetic filter or paper filter, etc.). Additionally, please note that special liquids, such as printing liquid or acid liquid cannot be used. Please inquire about other special liquids (e.g. ceramics). ●Check the direction of rotation before connecting the machine. ●For pumps with air fled valves, half open the valve and check if liquid is discharged when starting the operation. After it is confirmed, close the air fled valve securely. ●Because it is a centrifugal pump, flow rate can be adjusted by adjusting the valve on the discharge side. Additionally, the motor will not be overloaded even if the valve is closed. Since the temperature of the liquid becomes high if it is operated with the valve closed, keep some flow rate, or stop the pump if it is not in use. ●Repair, dismantling, or modification shall be done by experts. ●If the product is modified by customers, it is not our responsibility. Then we cannot assume any responsibility. ●If it is disposed of, treat it as an industrial waste. ●Other than the products listed in the catalog, products for different voltages, etc. are also produced. Please inquire about them. Because a product with motors of Top Runner Efficiency (corresponding to IE3) tends to consume more current than the ones with standard motors (IE1), it requires installation of earth leakage circuit breaker and overload protecting device when the pump is changed from the ones with standard motor.

Things to discuss before placing an order

Specification must be discussed thoroughly to produce a reliable product which perfectly satisfies your requirements. Things to confirm when submitting a quote and placing an order are as follows:

(1) Usage : If the machine is used for special purposes
(2) Liquid : Type, dynamic viscosity, temperature, acidity, inclusion of sediments
(3) Pump specification : Total head, amount of discharge, suction head (self-priming height)
(4) Motor specification : Power, voltage, frequency, number of phases
(5) Use circumstances : Ventilation, circumstance temperature, humidity
(6) Terminal : Terminal marking, number of terminals, structure of the terminal box, etc.
(7) Piping : Piping diagram
(8) Installation method : Self-priming / Immersion type
(9) Type : VKA166AQ-e, etc.
(10) Standards for compliance
(11) Others : Specification on noise, vibration, or letters on the plate, etc.

Low-Medium flow / Low head / Single-stage immersion type

VKP model

Features

①Non-seal (mechanical-seal-less) structure is adopted.
②There are 3 types to choose for the length below the fitting bed.
③They comply with European RoHS directive environmental load 6 materials.
④They comply with the EU directives (CE marking).
⑤We have the lineup of products corresponding to each efficiency standard:
VKP type : with a motor complying with standard efficiency (IE1)
VKP-e type : with a motor complying with Top runner efficiency (corresponding to IE3) (VKP115A)
VKP-7W type : with motor authenticated to United States UL standard efficiency (750W is NEMA premium efficiency)
VKP-G/GS type: Equipped with a Chinese energy standard regulation (GB18613-2012)efficiency (grade GB3) motor * (VKP115A).
⑥It can be upgraded to environmentally-tolerant (mist, etc.)
⑦With the lineup of VKP-A type (flow rate type) and VKP-H type (pressure type), the range of head and flow rate can be expanded.The VKP-H model offers approximately 30% more pressure than the VKP-A type.

Note) * VKP-G type is equipped with a high efficiency motor that meets grade GB3 efficiency.
(This is not certified as it is a non-regulated pump.)

Please note that the coating, etc. of actual machines are sometimes different from photos.

Description of types

VKP 08 5 A F ___
① ② ③ ④ ⑤ ⑥

①Model
②Output code (03:20W, 04: 40W, 05:60W, 06:100W, 07: 180W, 08: 250W, 09: 400W, 11: 750W)
③Series No.
④Phase, Features (L: 3-phase(cabtire lead method), A, J[NOTE]: 3-phase, flow rate type, H: 3-phase, pressure type)
Note) VKP□□□J and VKP115A(-□) have suction inlets in the lower part
⑤Length below the installation bed (F:180mm, H: 250mm, K: 350mm)
⑥Compliance to the Regulation of Efficiency, Voltage
no mark: standard efficiency(IE1) with motor installed, standard voltage
-e : with motor complying with Top runner efficiency (corresponding to IE3) standard voltage
-4Z : with motor complying with standard efficiency (IE1), different voltage (-e-4Z:Top runner efficiency (corresponding to IE3))
-7W: with motor authenticated to United States UL standard efficiency (750W is NEMA premium efficiency)
-G* : Equipped with a Chinese energy label regulation (GB18613-2012) efficiency equivalent (grade GB3) motor・50Hz, 200V.
-GS : Equipped with a Chinese energy label regulation (GB18613-2012) efficiency-compliant (grade GB3) motor・50Hz, 220/380V

Note) * VKP-G type is equipped with a high efficiency motor that meets grade GB3 efficiency.
(This is not certified as it is a non-regulated pump.)

Standard Specification

Used liquid	Property of liquid	Grinding liquid, cutting liquid, etc※1.
	Temperature	40 degree C or below (no dewing)
	Allowable dynamic viscosity	VKP-A 50Hz:300mm²/s 60Hz:150mm²/s
		VKP-H 50/60Hz:37.5mm²/s
Installation site		Indoor Circumstance temperature: -20 to 40 degrees C, below 85%RH (no dewing) Height is lower than 1000 m, with no direct sunlight There is no corroding , explosive gas or vapor
Material	Pump legs Casing	FC150
	Impeller	CAC407 or special resins Refer to the list of impeller materials
	Main shaft of motor	S45C
Sealing structure		Non-seal (mechanical-seal-less)
Motor	Power source	3 phase 50/60/60 Hz, 200/200/220 V※2
	Type	Totally enclosed fan cooled, indoor type
	Protection method	Refer to specification table
	Class of heat resistance	Refer to specification table
	Rated value	Continuous
	Number of poles	2P
	Standard	IEC60034-1 CE Marking※3
Paint color		Munsell N1

※1 Please note that it cannot handle special fluid such as water, printing liquid, acidic medium.
※2 -4Z type: 50/50/50/60/60Hz 380/400/415/400/440V, -7W type: 60Hz 208/230/460V, -G type: 50Hz 200V, -GS type: 50Hz 380V
※3 -7W/G/GS type and the ones with the end of the type ID is "L" are excluded.

Table of Consumable Parts

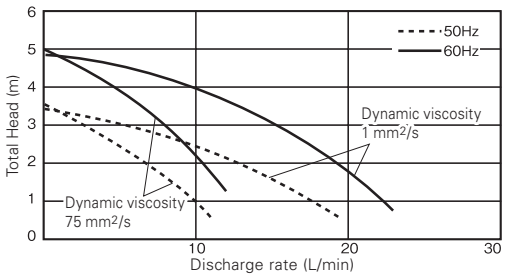
Type	Bearing	
	Load side	Unload side
VKP035L	6200ZZ	6200ZZ
VKP045A(L/-4Z/7W)	6200ZZ	6200ZZ
VKP055A(-4Z/7W)	6200ZZ	6200ZZ
VKP065A(-4Z/7W)	6200ZZ	6200ZZ
VKP075A(-4Z/7W)	6202ZZ	6200ZZ
VKP075AH(-7W)	6204ZZ	6200ZZ
VKP075AK(-7W)	6206ZZ	6200ZZAC
VKP075J(-7W)	6202ZZ	6200ZZ
VKP085A(-4Z/7W)	6204ZZ	6200ZZ
VKP085AF(-7W)	6204ZZ	6200ZZ
VKP085AK(-7W)	6206ZZ	6200ZZAC
VKP085J(-7W)	6202ZZ	6200ZZ
VKP095A(-4Z/7W)	6204ZZ	6202ZZ
VKP095AF(-7W)	6204ZZ	6202ZZ
VKP095AK(-7W)	6206ZZ	6202ZZAC
VKP095J(-7W)	6204ZZ	6202ZZ
VKP115A(-7W)	6305ZZ	6203ZZ
VKP115A(-e/4Z/7W/G/GS)	6305ZZ	6203ZZ
VKP055H	6200ZZ	6200ZZ
VKP065H(-7W)	6200ZZ	6200ZZ
VKP075H(-7W)	6303ZZ	6200ZZ
VKP085H	6204ZZ	6200ZZ
VKP095H(-7W)	6204ZZ	6202ZZ

Selection chart

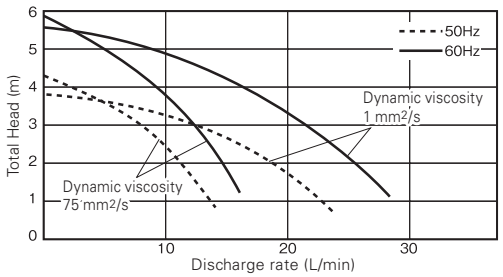
Synchronous rotating speed 50Hz : 3000min^{-1}
60Hz : 3600min^{-1}

VKP-A type

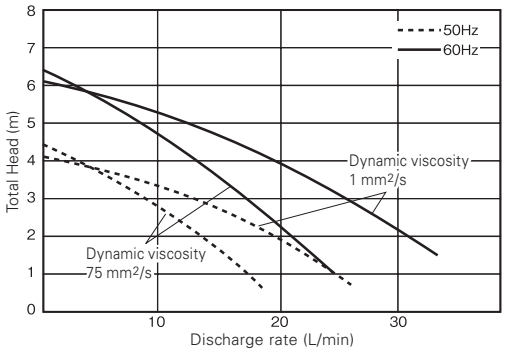
●VKP035L



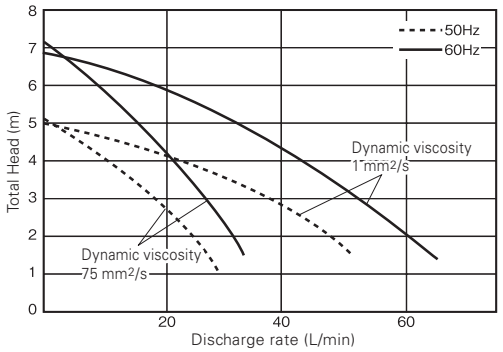
●VKP045A (L)



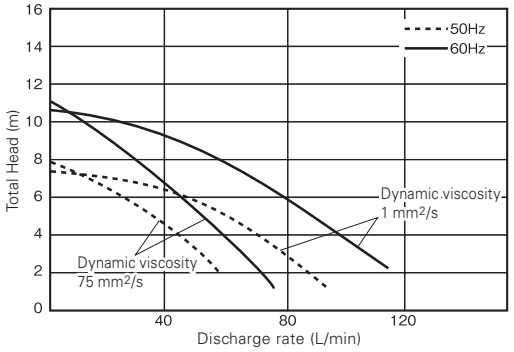
●VKP055A



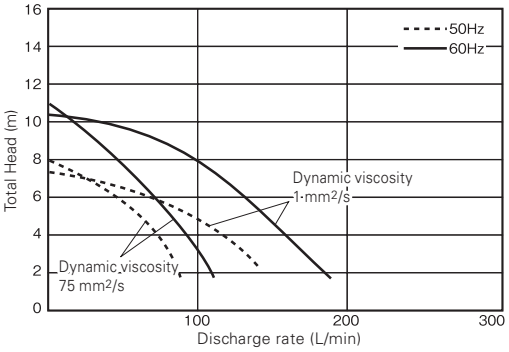
●VKP065A



●VKP075A (AH/AK/J)



●VKP085A (AF/AK/J)



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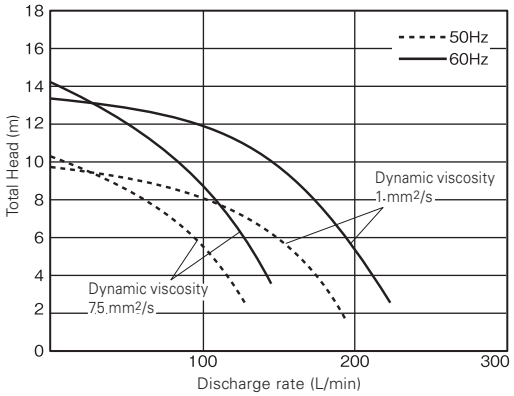
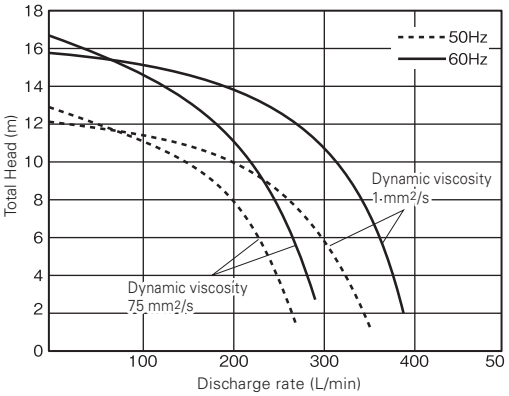


●VKP115A



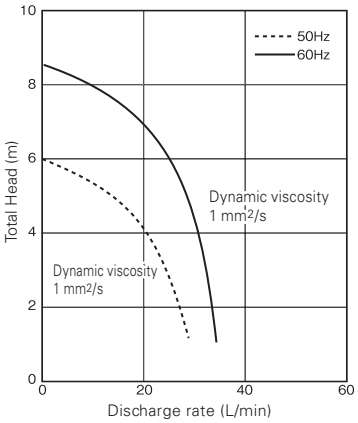
※ The same figure applies to –e/4Z/7W/G/GS

Notes) 1. The discharge rate will vary significantly depending on the type of liquid circulated and the liquid's viscosity.
2. There is virtually no change in characteristics according to leg length (LH130 to 350mm).

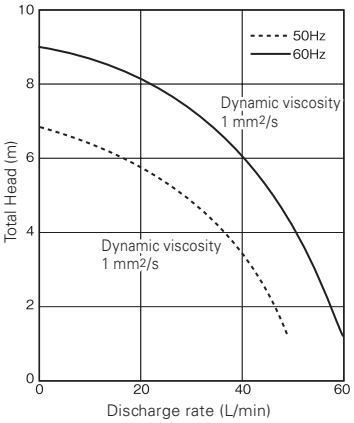
VKP-H type

Synchronous rotating speed 50Hz : 3000min^{-1}
60Hz : 3600min^{-1}

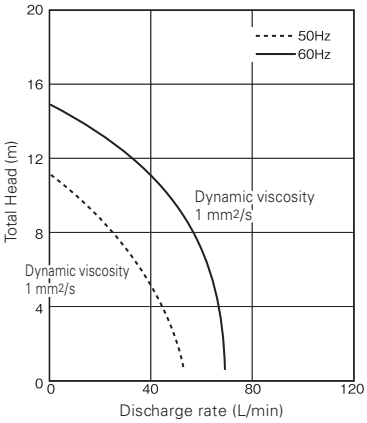
●VKP055H



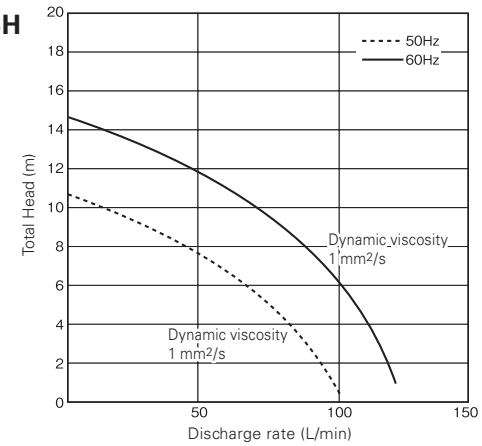
●VKP065H



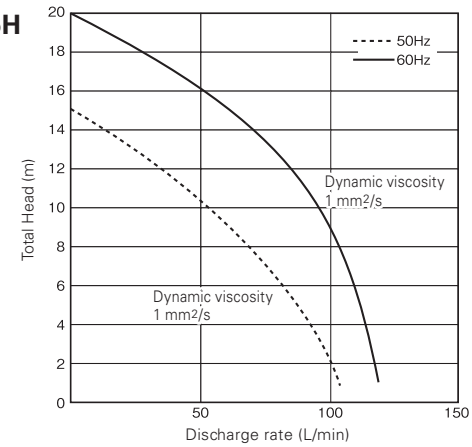
●VKP075H



●VKP085H



●VKP095H



※ The same figure applies to –7W

Note 1) Please note that discharge amount differs considerably by kind and dynamic viscosity of liquid.

Specification table

VKP-A type

Caliber (Rp)	Type	Output (W)	50Hz					60Hz					Protection system	Class of heat resistance
			Rated voltage (V)	Rated current (A)	Starting current (A)	Discharge (L/min)	Total head (m)	Rated voltage (V)	Rated current (A)	Starting current (A)	Discharge (L/min)	Total head (m)		
1/4	VKP035L*	20	200	0.18	0.67	13	2	200/220	0.2/0.2	0.62/0.68	19	2	IP23	B
	VKP045L* VKP045A	40	200	0.32	1.38	19	1.5	200/220	0.31/0.31	1.24/1.36	25	1.5	IP54	
	VKP045A-4Z		380/400/415	0.16/0.16/0.17	0.6/0.7/0.7			400/440	0.16/0.16	0.6/0.7				
	VKP045A-7W							208/230/460	0.28/0.29/0.15	1.3/1.5/0.75				
3/8	VKP055A	60	200	0.4	1.73	20	2	200/220	0.35/035	1.52/1.67	30	2		
	VKP055A-4Z		380/400/415	0.19/0.20/0.22	0.8/0.9/0.9			400/440	0.18/0.18	0.7/0.8				
	VKP055A-7W							208/230/460	0.39/0.38/0.19	1.8/2.0/1.0				
	VKP065A	100	200	0.55	2.67	45	2	200/220	0.5/0.5	2.33/2.56	60	2		
	VKP065A-4Z		380/400/415	0.28/0.28/0.29	1.2/1.3/1.3			400/440	0.25/0.25	1.1/1.3				
	VKP065A-7W							208/230/460	0.56/0.55/0.28	3/3.3/1.7				
1/2	VKP075A VKP075AH VKP075AK	180	200	0.85	5.86	75	3	200/220	1.0/1.0	5.52/6.08	100	3		
	VKP075J		200	0.85	5.86			200/220	1.0/1.0	5.52/6.08	95			
	VKP075A-4Z		380/400/415	0.44/0.43/0.42	2.0/2.1/2.1			400/440	0.5/0.5	1.9/2.1	100			
	VKP075A-7W							208/230/460	1.0/0.95/0.48	5.4/6/3				
3/4	VKP085A VKP085AF VKP085AK	250	200	1.2	8.79	110	4	200/220	1.5/1.5	8.26/9.09	160	4		
	VKP085J		200	1.2	8.79			200/220	1.5/1.5	8.26/9.09	145			
	VKP085A-4Z		380/400/415	0.65/0.6/0.6	2.9/3.1/3.2			400/440	0.75/0.75	2.9/3.2	160			
	VKP085A-7W							208/230/460	1.4/1.3/0.65	10.1/10.7/5.4				
1	VKP095A VKP095AF VKP095AK	400	200	2.4	11.0	140	5	200/220	2.5/2.4	10.0/11.0	200	5		
	VKP095J		200	2.4	11.0	155		200/220	2.5/2.4	10.0/11.0				
	VKP095A-4Z		380/400/415	1.2/1.2/1.2	5.2/5.5/5.7	140		400/440	1.3/1.2	5.0/5.5				
	VKP095A-7W							208/230/460	2.3/2.2/1.1	13.4/15.2/7.6				F
2	VKP115A	750	200	3.3	25.7	165	7	200/220	3.7/3.6	23.3/25.7	285	7		B
	VKP115A-e		200	3.3	34.0			200/220	3.7/3.6	32.5/36.0				F
	VKP115A-4Z		380/400/415	1.7/1.7/1.7	11.1/11.7/12.1			400/440	1.9/1.8	10.6/11.6				B
	VKP115A-4Z-e		380/400/415	1.7/1.7/1.7	13.5/14.5/15.3			400/440	1.9/1.9	14.0/15.0				F
	VKP115A-7W							208/230/460	3.7/3.6/1.9	33.9/38/19				
	VKP115A-G		200	3.3	25.7	165	7						IP44	B
	VKP115A-GS		220/380	3.1/1.8	28.2/16.3									

Note 1) *(tail of the type code) L is in cabtire lead method, so it does not comply with CE Marking. Additionally, protection system is IP23.
Note 2) Discharge and total head are the value tested with the liquid with dynamic viscosity 1 mm^2/s (water at normal temperature). Please note that the pump cannot use water.
Note 3) VKP □□□ J, VKP115A (-e/4Z/7W/G/GS) have suction inlets at the lower part.
Note 4) The rated current described above (current value printed on the plate of pumps) is recommended current setting of the protection device.

VKP-H type

Caliber (Rp)	Type	Output (W)	50Hz					60Hz					Protection system	Class of heat resistance
			Rated voltage (V)	Rated current (A)	Starting current (A)	Discharge (L/min)	Total head (m)	Rated voltage (V)	Rated current (A)	Starting current (A)	Discharge (L/min)	Total head (m)		
3/8	VKP055H	60	200	0.42	1.73	10	5	200/220	0.55/0.52	1.52/1.67	10	7.5	IP54	B
	VKP065H	100	200	0.55	2.67	10	5.5	200/220	0.6/0.6	2.33/2.56		8		
	VKP065H-7W							208/230/460	0.56/0.55/0.28	3/3.3/1.7				
1/2	VKP075H	180	200	0.9	5.86	20	9	200/220	1.2/1.1	5.52/6.08	20	13		
	VKP075H-7W							208/230/460	1/0.95/0.48	5.4/6/3				
3/4	VKP085H	250	200	1.2	8.79	20	9	200/220	1.5/1.5	8.26/9.09				
1	VKP095H	400	200	2.4	11.0	20	13	200/220	2.5/2.4	10.0/11.0		8		
	VKP095H-7W							208/230/460	2.3/2.2/1.1	13.4/15.2/7.6				F

Note 1) Discharge and total head are the value tested with the liquid with dynamic viscosity 1 mm^2/s (water at normal temperature). Please note that the pump cannot use water.
Note 2) The rated current described above (current value printed on the plate of pumps) is recommended current setting of the protection device.

Dimensional outline drawing

Fig.1

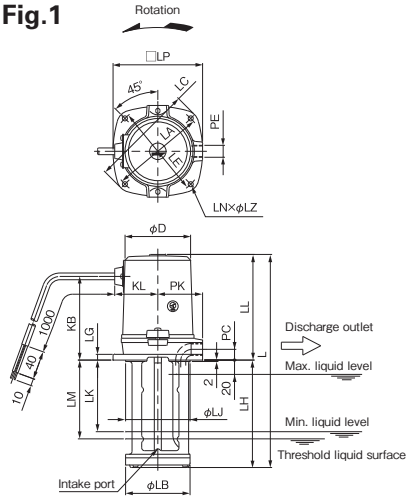


Fig.2

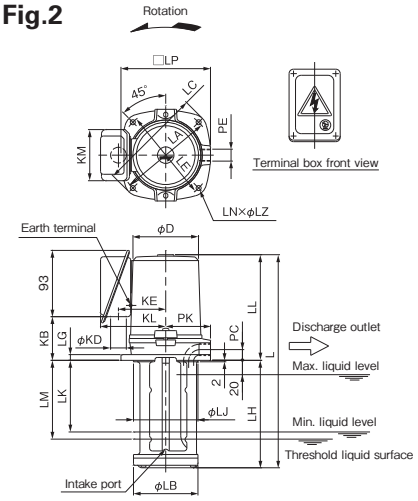


Fig.3

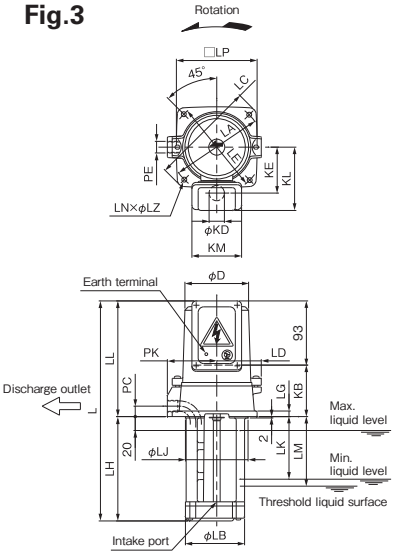


Fig.4

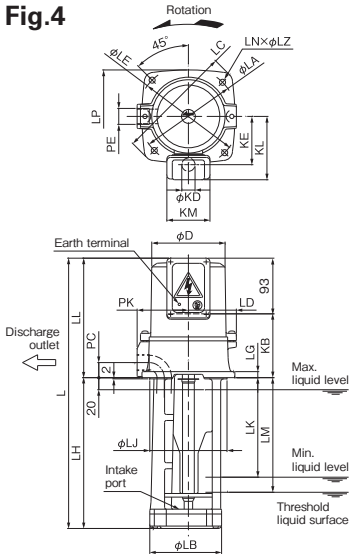


Fig.5

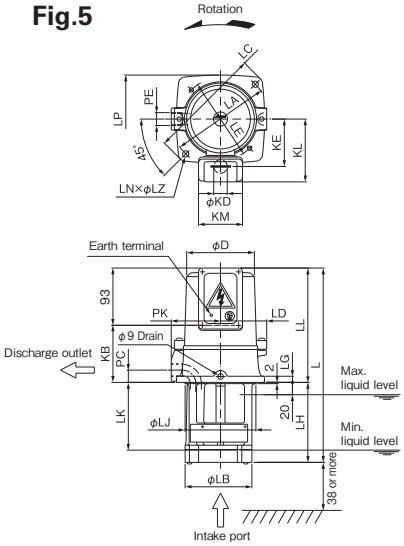


Fig.6

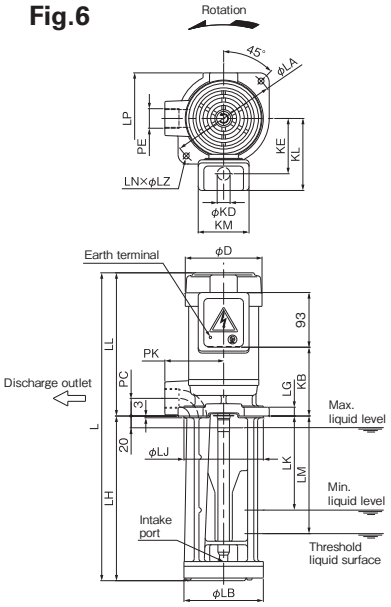


Fig.7

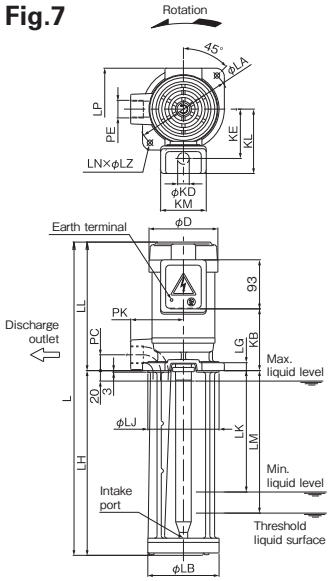


Fig.8

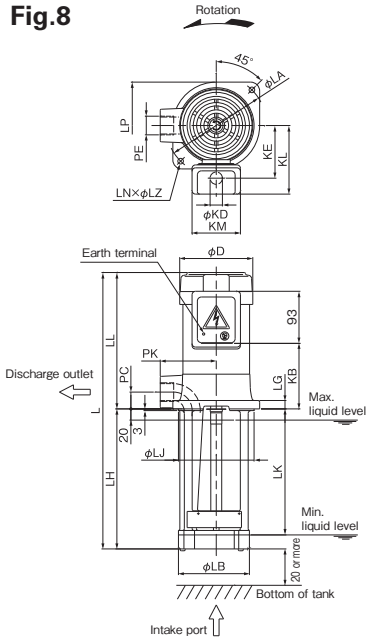


Fig.9

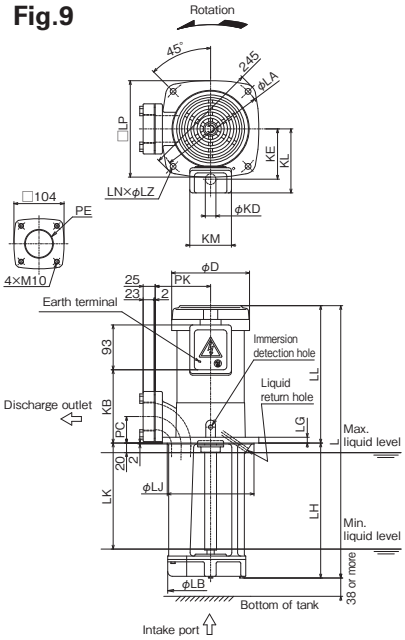


Fig.10

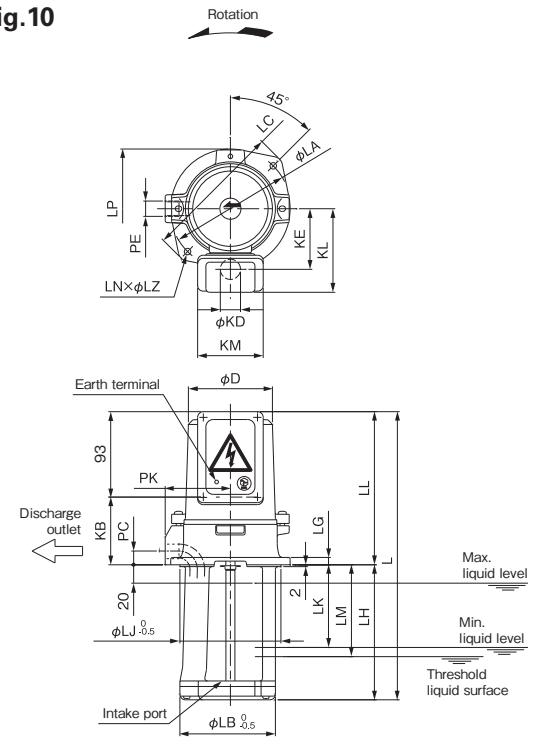
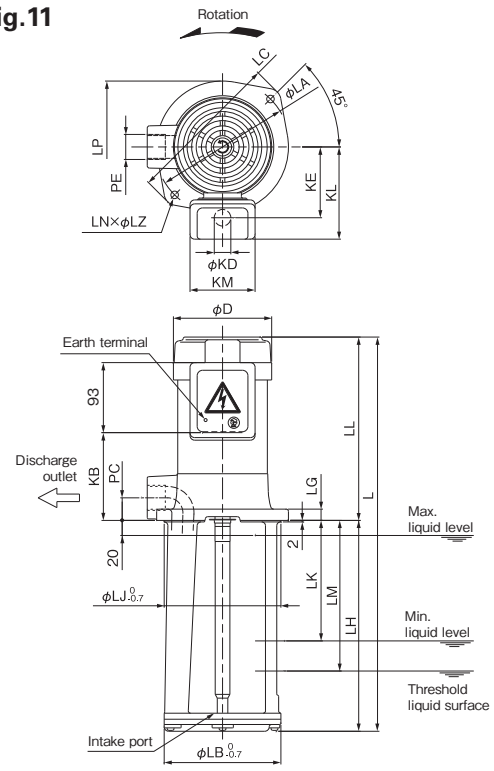


Fig.11



Dimensions

VKP-A type

〈Unit : mm〉

Type	Fig.	D	KB	KD	KE	KL	KM	L	LA	LB	LC	LD	LE	LG	LH	LJ	LK	LL	LM	LN	LP	LZ	PC	PE	PK	Approx. mass (kg)
VKP035L	1	92	115.5	—	—	61	—	296	130	90 0 -0.5	143	—	130	8	148	90 0 -0.5	105	148	115	4	125	7	15	Rp 1/4	62.5	5.5
VKP045L	1	92	115.5	—	—	61	—	298	130	90 0 -0.5	143	—	130	8	150	90 0 -0.5	100	148	110	4	125	7	15	Rp 1/4	62.5	5.5
VKP045A (-4Z/7W)	2	92	60.5	22	67	93	73	298※	130	90 0 -0.5	145	—	130	8	150	90 0 -0.5	100	148※	110	4	125	7	15	Rp 1/4	62.5	5.5
VKP055A (-4Z/7W)	3	92	74	22	67	93	73	317	132	90 0 -0.5	152	64	130	8	150	90 0 -0.5	100	167	110	4	116	7	15	Rp 3/8	71	6.0
VKP065A (-4Z/7W)	3	92	74	22	67	93	73	317	132	90 0 -0.5	152	64	134	8	150	90 0 -0.5	90	167	100	4	116	7	15	Rp 3/8	71	6.5
VKP075A (-4Z/7W)	3	111	94	22	78	104	73	367	160	115 0 -0.5	184	75	134	10	180	115 0 -0.5	105	187	130	2 2	143	10 7	20	Rp 1/2	80	10.0
VKP075J (-7W)	5	111	94	22	78	104	73	317	160	115 0 -0.5	184	75	134	10	130	115 0 -0.5	110	187	110	2 2	143	10 7	20	Rp 1/2	80	11.0
VKP075AH (-7W)	3	111	94	22	78	104	73	437	160	115 0 -0.5	184	75	134	10	250	115 0 -0.5	175	187	200	2 2	143	10 7	20	Rp 1/2	80	10.0
VKP075AK (-7W)	3	111	107	22	78	104	73	550	160	115 0 -0.5	184	75	134	10	350	115 0 -0.5	275	200	300	2 2	143	10 7	20	Rp 1/2	80	11.0
VKP085A (-4Z/7W)	4	122	106	22	81	107	73	449	160	128 0 -0.5	194	80	170	10	250	128 0 -0.5	165	199	190	4	154	10	25	Rp 3/4	85	15.0
VKP085J (-7W)	5	122	106	22	81	107	73	329	160	128 0 -0.5	194	80	170	10	130	128 0 -0.5	105	199	—	4	154	10	25	Rp 3/4	85	16.0
VKP085AF (-7W)	3	122	106	22	81	107	73	379	160	128 0 -0.5	194	80	170	10	180	128 0 -0.5	95	199	120	4	154	10	25	Rp 3/4	85	15.0
VKP085AK (-7W)	3	122	116	22	81	107	73	559	160	128 0 -0.5	194	80	170	10	350	128 0 -0.5	265	209	290	4	154	10	25	Rp 3/4	85	16.0
VKP095A (-4Z/7W)	6	131	117	22	94	122	87	524	180	135 0 -0.7	—	—	—	15	280	135 0 -0.7	160	244	200	2	155	10	30	Rp1	100	16.5
VKP095J (-7W)	8	131	117	22	94	122	87	494	180	135 0 -0.7	—	—	—	15	250	135 0 -0.7	225	244	—	2	155	10	30	Rp1	100	17.0
VKP095AF (-7W)	7	131	117	22	94	122	87	424	180	135 0 -0.7	—	—	—	15	180	135 0 -0.7	60	244	100	2	155	10	30	Rp1	100	17.0
VKP095AK (-7W)	7	131	117	22	94	122	87	594	180	135 0 -0.7	—	—	—	15	350	135 0 -0.7	230	244	270	2	155	10	30	Rp1	100	18.0
VKP115A (-4Z)	9	162	152	22	105	133	87	565	220	180 0 -0.7	—	—	—	12	280	180 0 -0.7	220	285	—	4	200	12	55	Rp2	115	27.0
VKP115A-e (-4Z/7W)	9	162	152	22	105	133	87	565	220	180 0 -0.7	—	—	—	12	280	180 0 -0.7	220	285	—	4	200	12	55	Rp2	115	28.0
VKP115A-G	9	162	152	22	105	133	87	565	220	180	—	—	—	12	280	180 0 -0.7	220	285	—	4	200	12	55	Rp2	115	29.0
VKP115A-GS	9	162	152	27	108	146	94	565	220	180	—	—	—	12	280	180 0 -0.7	220	285	—	4	200	12	55	Rp2	115	29.0

※-7W type: L:296 LL:146

VKP-H type

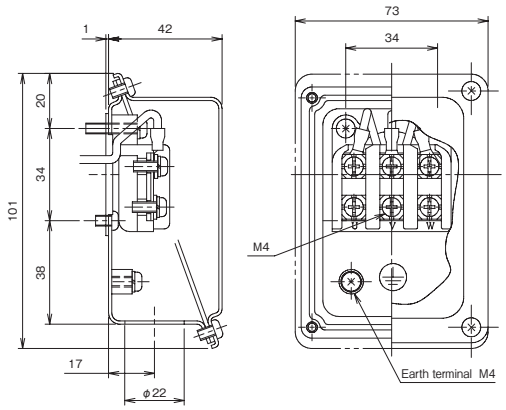
〈Unit : mm〉

Type	Fig.	D	KB	KD	KE	KL	KM	L	LA	LB	LC	LG	LH	LJ	LK	LL	LM	LN	LP	LZ	PC	PE	PK	Approx. mass (kg)
VKP055H	10	92	74	22	67	93	73	312	132	110	152	8	145	110	90	167	100	2	130	7	15	Rp 3/8	71	6.0
VKP065H (-7W)		92	74	22	67	93	73	317	132	110	152	8	147	110	100	167	110	2	130	7	15	Rp 3/8	71	6.5
VKP075H (-7W)		111	94	22	78	104	73	367	160	135	180	10	180	135	105	187	130	2	154	10	20	Rp 1/2	80	10.0
VKP085H		122	106	22	81	107	73	449	160	135	180	10	250	135	165	199	190	2	154	10	25	Rp 3/4	85	15.0
VKP095H (-7W)	11	131	117	22	94	122	87	524	180	155	206	15	280	155	160	244	200	2	175	10	30	Rp1	—	16.5

■Detailed drawing of the terminal box

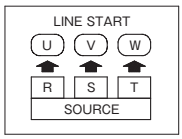
●VKP045A～085A (-4Z)
VKP055H～085H

■Dimensional outline drawing



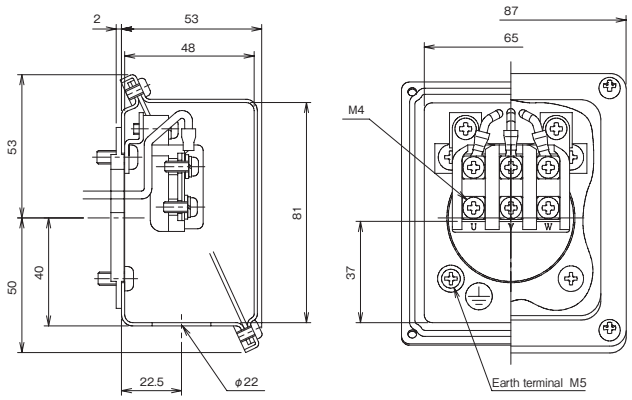
※ If the last character of the type ID is L, it is along cabtire lead method.

■Connection diagram

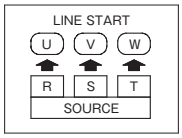


●VKP095□ (-4Z), 115A (-e/4Z)

■Dimensional outline drawing

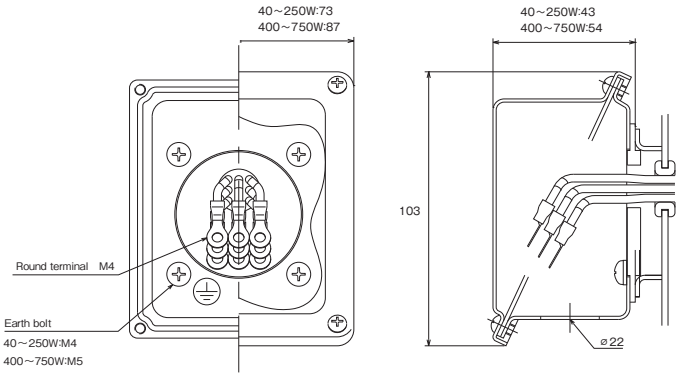


■Connection diagram



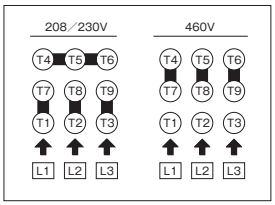
● VKP-7W

■Dimensional outline drawing



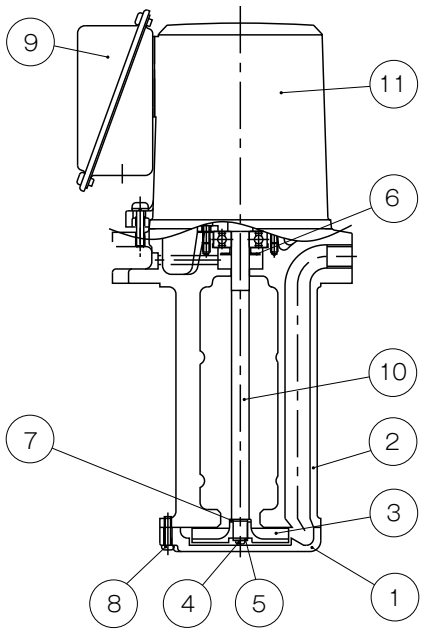
※ Please contact us for the -G/GS type

■Connection diagram



Sectional drawing

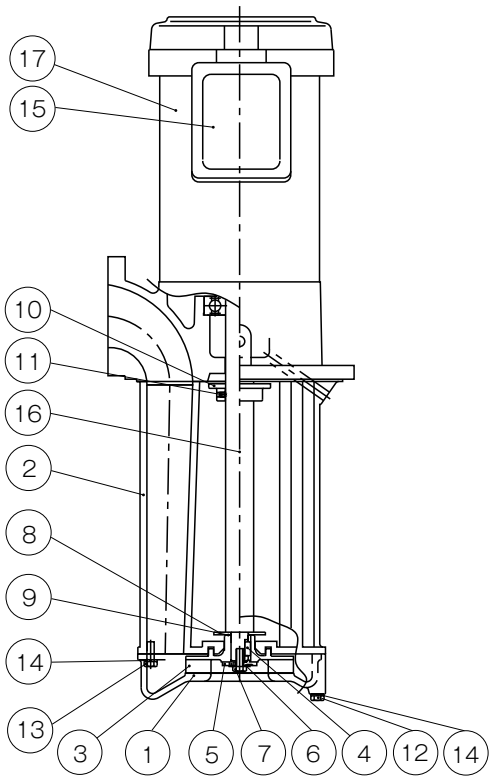
● **VKP035A (L) ～ 085A □ (-4Z/7W)**
VKP065H ～ 085H



No.	Part name	Material	No.	Part name	Material
1	Spiral box	FC150	7	Adjust chip	BsP3–1/2H
2	Pump leg	FC150	8	Small pan head screw	SU1S302
3	Impeller	Material of impeller Refer to the table	9	Terminal box	SPCC
4	Small pan head screw	SS	10	Main shaft of motor	S45C
5	Toothed washer	SK5	11	Motor	–
6	Oil strainer	SPCC			

※ If the last character on the ID is L, it uses the cabtyre lead method.
※ Structural drawings, etc. may be changed without notice.

● **VKP115A (-e/4Z/7W/G/GS)**



No.	Part name	Material	No.	Part name	Material
1	Spiral box	FC150	10	Collar	FC150
2	Pump leg	FC150	11	Hexagon socket set screw	SS
3	Impeller	CAC407	12	Bolt with hexagon socket	SUS302
4	Key	S45C	13	Bolt with hexagon socke	SUS302
5	Press washer	SPCC	14	Spring washer	SUS302
6	Clawed washer	SPCC	15	Terminal box	SPCC
7	Impeller fixing bolt	SS	16	Main shaft of motor	S45C
8	Oil strainer	SPHC	17	Motor	–
9	Adjust chip	BsP3–1/2H Phosphor bronze			

Table of Materials of impeller

VKP-A type

Type	Material of impeller
VKP035L	CAC407
VKP045L	CAC407
VKP045A(-4Z/7W)	CAC407
VKP055A(-4Z/7W)	CAC407
VKP065A(-4Z/7W)	CAC407
VKP075A(-4Z/7W)	Special resins
VKP075AH(-7W)	Special resins
VKP075AK(-7W)	Special resins
VKP075J(-7W)	CAC407
VKP085A(-4Z/7W)	Special resins
VKP085AF(-7W)	Special resins
VKP085AK(-7W)	Special resins
VKP085J(-7W)	CAC407
VKP095A(-4Z/7W)	Special resins
VKP095AF(-7W)	Special resins
VKP095AK(-7W)	Special resins
VKP095J(-7W)	CAC407
VKP115A(-e/4Z/7W/G/GS)	CAC407

VKP-H type

Type	Material of impeller
VKP055H	CAC407
VKP065H(-7W)	CAC407
VKP075H(-7W)	CAC407
VKP085H	CAC407
VKP095H(-7W)	CAC407

Low-Medium flow / Medium head / Multi-stage immersion type

LHW model

Features

①It is an energy-saving pump with a motor complying with Top Runner efficiency (equivalent to IE3).
②Though it is small, it is specified for high-pressure.
③With a non-seal (mechanical-seal-less) structure, it is highly durable.
④Special reliable resin is used in the main part of the pump.
⑤Its mounting dimension is compatible with conventional pumps.

Description of types

LHW 20 3 A 0.75 -e
① ② ③ ④ ⑤ ⑥

①Model
②Bore
③Number of impellers
④Viscosity type of the liquid (A: for low viscosity liquid)
⑤Output
⑥With a motor complying with Top Runner efficiency (equivalent to IE3)

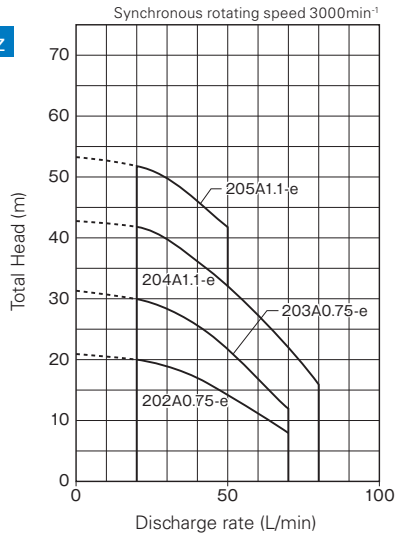
Standard Specification

Used liquid	Property of liquid	Water-soluble coolant, cleaning liquid (weak alkaline)
	Temperature	0-60 degrees C (No frozen liquid)
	Allowable dynamic viscosity	1mm²/s
Installation site		Indoor Recommended temperature: -20 to 40 degrees C, below 85% RH (no dewing) Altitude should be below 1000 m, with no direct sunlight There is no corroding, explosive gas or vapors.
Material	Suction/ Discharge casing	FC200
	Intermediate casing	ARLS (Special polyamide resin reinforced with glass fiber, etc.)
	Impeller	
	Shaft	equivalent to SUS420J2
Sealing structure		Non-seal (mechanical-seal-less)
Motor	Power source	3 phase 50/60/60Hz 200/200/220V
	Type	Totally enclosed fan cooled, indoor type
	Protection method	IP44
	Class of heat resistance	F
	Rated value	Continuous
	Number of poles	2P
Paint color		Munsell N1.5

Selection chart

(Values for normal temperature, fresh water, with specific weight 1)

50Hz



60Hz

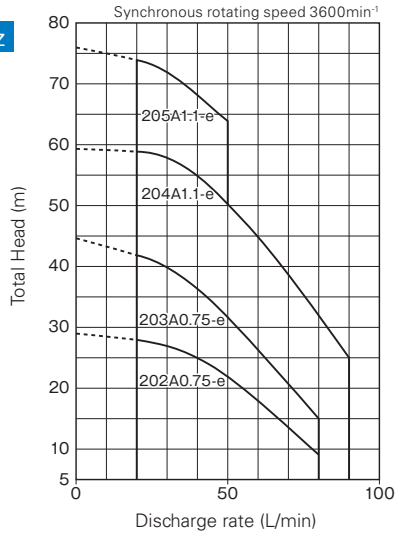


Table of Consumable Parts

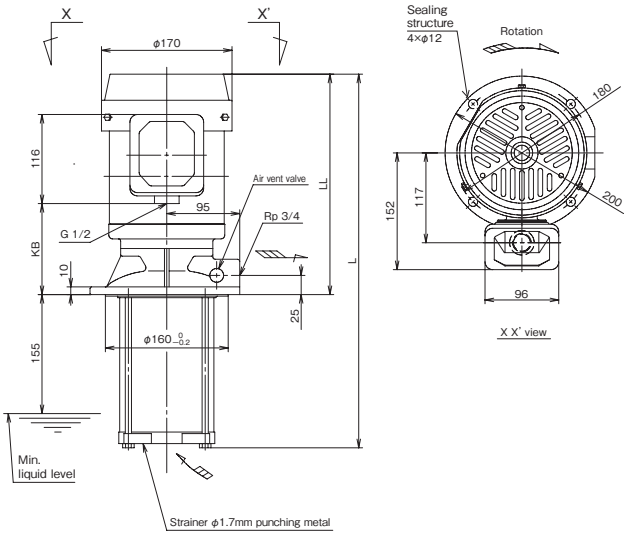
Output (kW)	Bearing		Oil seal	V ring	O-ring (for outer cylinder)	O-ring (for discharge casing)
	Load side	Unload side				
0.75	AC6205 ZZ C3	AC6204 ZZ C3	D20387	VR20A	G115	G110
1.1						

Specification table

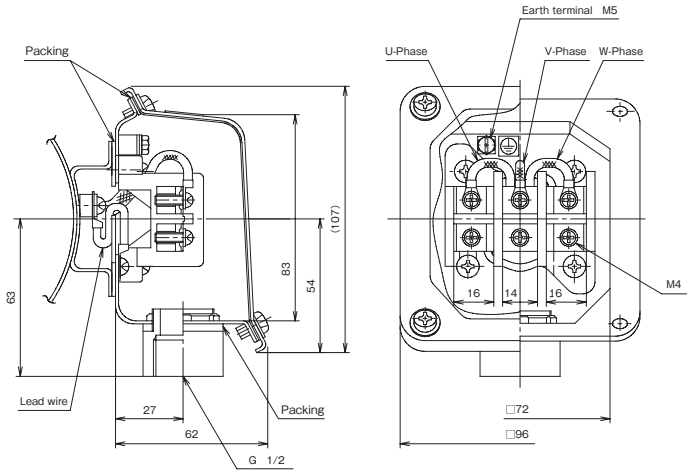
Frequency (Hz)	Bore (mm)	Type	Rated voltage (V)	Output (kW)	Rated current (A)	Starting current (A)	Amount of discharge (L/min)	Total head (m)
50	20	LHW202A0.75-e	200	0.75	3.2	20.4	20～70	20～8
		LHW203A0.75-e		0.75	3.2	20.4	20～70	30～12
		LHW204A1.1-e		1.1	4.4	38.6	20～80	42～16
		LHW205A1.1-e		1.1	4.4	38.6	30	50
60	20	LHW202A0.75-e	200/220	0.75	3.3/3,1	19.0/20.9	20～80	28～9
		LHW203A0.75-e		0.75	3.3/3,1	19.0/20.9	20～80	42～15
		LHW204A1.1-e		1.1	5.1/4.8	34.6/38.1	20～90	59～25
		LHW205A1.1-e		1.1	5.1/4.8	34.6/38.1	30	73

※The rated current (current value printed on the plate of pumps) is the recommended current setting of the protection device.

Dimensional outline drawing



Detailed Drawing of the Terminal Box

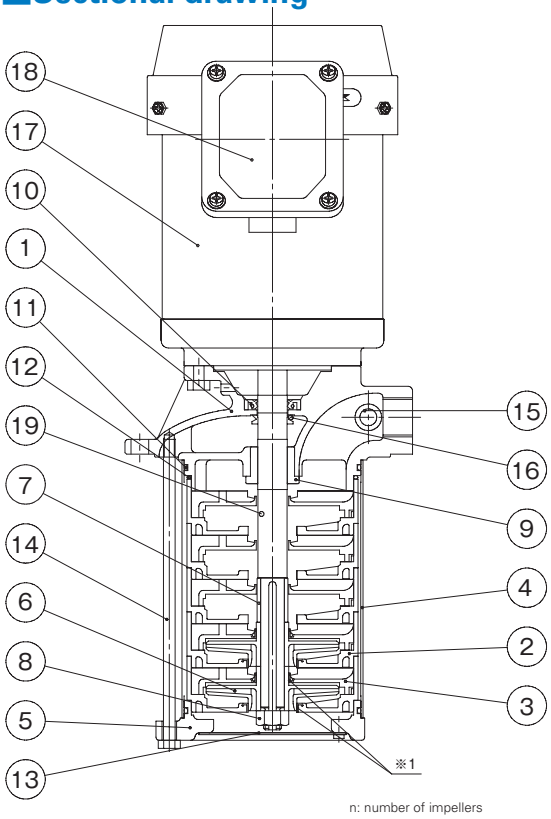


Dimensions

〈Unit : mm〉

Bore	Type	KB	L	LL	Approx. mass(kg)
20	LHW202A0.75-e	151	491	291	25
	LHW203A0.75-e	151	491	291	25
	LHW204A1.1-e	178	509	309	28
	LHW205A1.1-e	178	509	309	28

Sectional drawing



n: number of impellers
a: number of spacers
n=2, 4 → a=1
n=3, 5 → a=0

No.	Part name	Qty	Material
1	Discharge casing	1	FC200
2	Intermediate casing	5	ARLS
3	Guide blade	5	ARLS
4	External cylinder	1	SUS304
5	Suction cover	1	FC200
6	Impeller	n	ARLS
7	Spacer	a	SUS304
8	Impeller nut	1	SUS304
9	Discharge bush	1	FCD450
10	Oil seal	1	NBR
11	O-ring	2	NBR
12	O-ring	1	NBR
13	Strainer	1	SUS304
14	Through bolt	4	SS400
15	Air vent valve	1	C3604B
16	V ring	2	NBR
17	Motor	1	
18	Terminal box	1	SECC
19	Main shaft of motor	1	SUS420J2※1

※1 The guide vane and intermediate casing in which the impeller is not fitted has no stainless steel ring.
※2 The stated motor shaft material is an equivalent material.

Low-Medium flow / Medium head / Multi-stage immersion type VKA model

Features

① Energy-saving pump equipped with a top-runner efficiency (equivalent to IE3) motor (VKA-e).

② A high-durability mechanical seal is adopted.

● With high abrasion resistance, made of special structured sic/porous sic, with low adsorption

③ EU RoHS Directive (Restriction of Hazardous Substances directive) compliant.

④ EU Directive for CE marking compliant.

⑤ The lineup includes the models that meet the efficiency standards of various regulations:

VKA type(0.4kW): Equipped with a standard efficiency (equivalent to IE1) motor
VKA-e type : Equipped with a top-runner efficiency (equivalent to IE3) motor
VKA-G*/GS type : Equipped with a Chinese energy standard regulation(GB18613-2012) efficiency (grade GB3)motor.

⑥ Enhanced protection against mist and other environmental elements are available.

● Inter national -level protection grade IP54 ● Oil seal is used in the motor

⑦ Capable of energy-saving operation with the inverter (flow rate adjusting, etc.)(200V class).

⑧ The lineup that include both VKA-AH(pressure type) and VKA-AQ(flow rate type), the range of head and flow rate can be expanded.

Note)* VKA-G type has a high-efficiency motor satisfying grade GB3 efficiency.
(It is not certified because it is a non-regulated pump.)

Please note that the coating, etc. of actual machines are sometimes different from photos.

Description of types

VKA 9 9 6 A H _
① ② ③ ④ ⑤ ⑥ ⑦

① Model
② Number of impellers
③ Number of casing steps
④ Series number
⑤ Phase (A: 3-phase)
⑥ Characteristic (H: pressure type, Q: flow rate type)
⑦ Compliance to the Regulation of Efficiency, Voltage

No mark : standard efficiency (IE1) with a motor installed, standard voltage
-e : with a motor complying with Top Runner efficiency (corresponding to IE3) standard voltage
-G* : Equipped with a Chinese energy label regulation (GB18613-2012) efficiency equivalent (grade GB3) motor・50Hz, 200V
-GS : Equipped with a Chinese energy label regulation (GB18613-2012) efficiency-compliant (grade GB3) motor・50Hz, 220/380V

Note) * VKA-G type is equipped with a high efficiency motor that meets grade GB3 efficiency. (This is not certified as it is a non-regulated pump.)

Standard Specification

Used liquid	Property of liquid	Grinding liquid, cutting liquid, etc. after secondary treatment ※1		
	Temperature	-20 to 40 degrees C (no condensation)		
	Allowable dynamic viscosity	Type	Operation at 50 Hz	Operation at 60 Hz
		VKA4□6AH-e、VKA7□6AH-e VKA4□6AQ-e、VKA6□6AQ-e	75mm²/s	37.5mm²/s
		Others	75mm/s	75mm²/s
Installation site		Indoor Recommended temperature: -20 to 40 degrees C, below 85% RH (no dewing) Altitude should be below 1000 m, with no direct sunlight. There is no corroding, explosive gas or vapors.		
Material	Pump legs	FC150		
	Casing	SUS304		
	Suction chamber	FC200		
	Impeller	SUS304		
	Main shaft of motor	S35C+SUS403		
Sealing structure		Mechanical seal		
Motor	Type	Totally enclosed fan cooled indoor type		
	Protection method	IP54		
	Power source ※2	3 phase 50/60/60Hz 200/200/220V		
	Class of heat resistance	F		
	Number of poles	2P		
	Standard	IEC60034-1		
Paint color	Pump	Munsell N1		
	Motor	Black		

※1 If the liquid contains hard sludge, such as abrasion powder, ground powder, or ground diamond powder, please set up a filter (magnet filter or paper filter, etc.) because service life might be shortened. Additionally, please note that special liquid such as water, printing liquid or acid liquid cannot be used. Please enquire with us separately about using other kinds of special liquid (pure water, alkali-acid liquid, ceramic, etc.).

※2 -G type：50Hz 200V, -GS type：50Hz 380V

Special specification

Changing motor	Changing voltage, changing position of terminal box, changing direction of terminal box

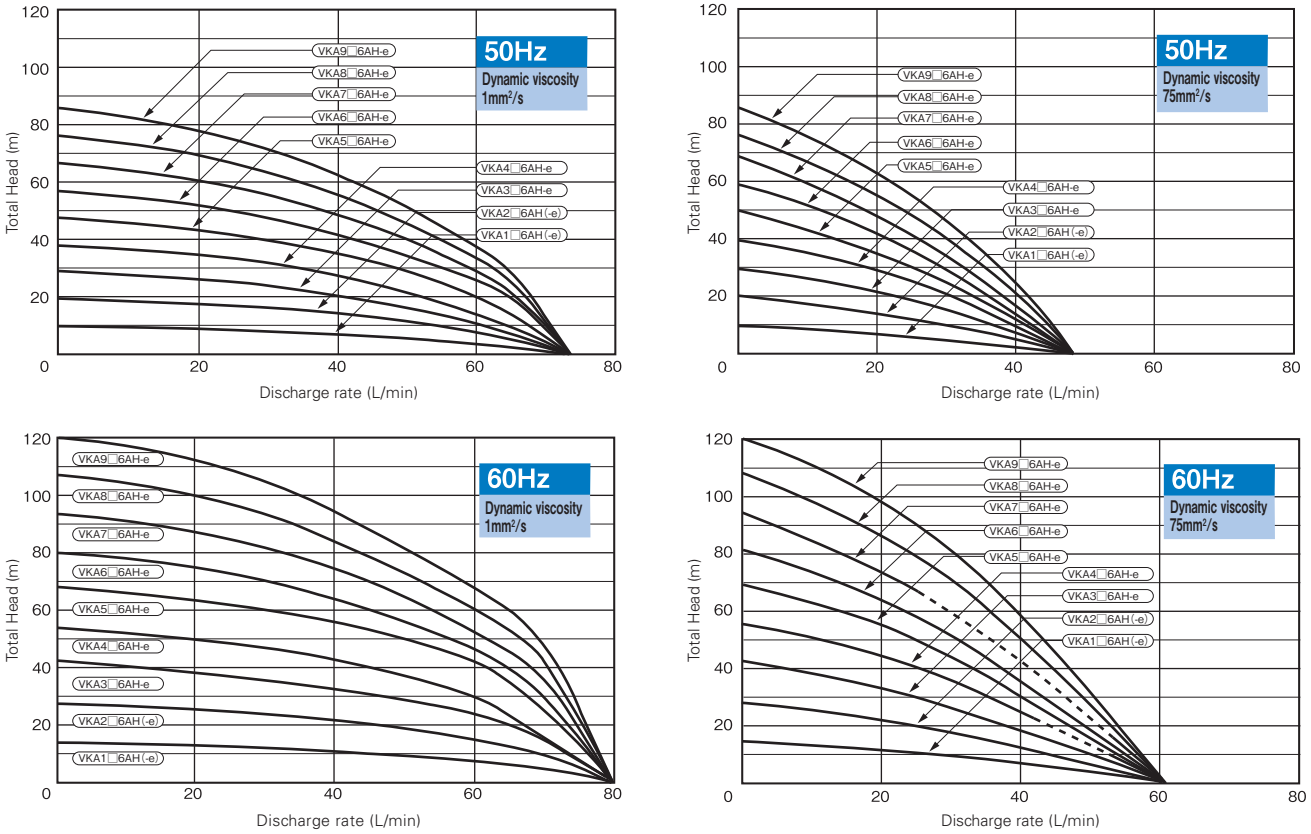
Table of Consumable Parts

Type	Bearing		Oil seal			O-ring (Companion flange) material: FKM
	Load side	Unload side	Load side (pump)	Load side (bearing)	Unload side	
VKA1□6AH(-e)～VKA4□6AH-e	6304ZZC3	6203ZZC3	DS17355	DS20325	DS20305	—
VKA1□6AQ(-e)～VKA2□6AQ-e						—
VKA5□6AH-e～VKA7□6AH-e	6306ZZC3	6303ZZC3				—
VKA3□6AQ-e～VKA4□6AQ-e						—
VKA8□6AH-e～VKA9□2AH-e	6307ZZC3	6303ZZC3	DS17355	VC20356	DS20305	G50
VKA5□6AQ-e～VKA6□6AQ-e						G50

Selection chart

Synchronous rotating speed 50Hz : 3000min^{-1}
60Hz : 3600min^{-1}

●VKA-AH/VKA-AH-e



Note 1) Please note that the discharge rate differs considerably by the type of liquid and viscosity.
Note 2) Please note that the dotted lines in the above diagrams show the range where it cannot be continuously operated at the oil viscosity of 75 mm²/s.
Note 3) The condition in the above charts has a viscosity of 75 mm²/s, and a specific weight of 0.86. It cannot be operated depending on the relation between viscosity and specific weight.

Specification table

●VKA-AH/VKA-AH-e

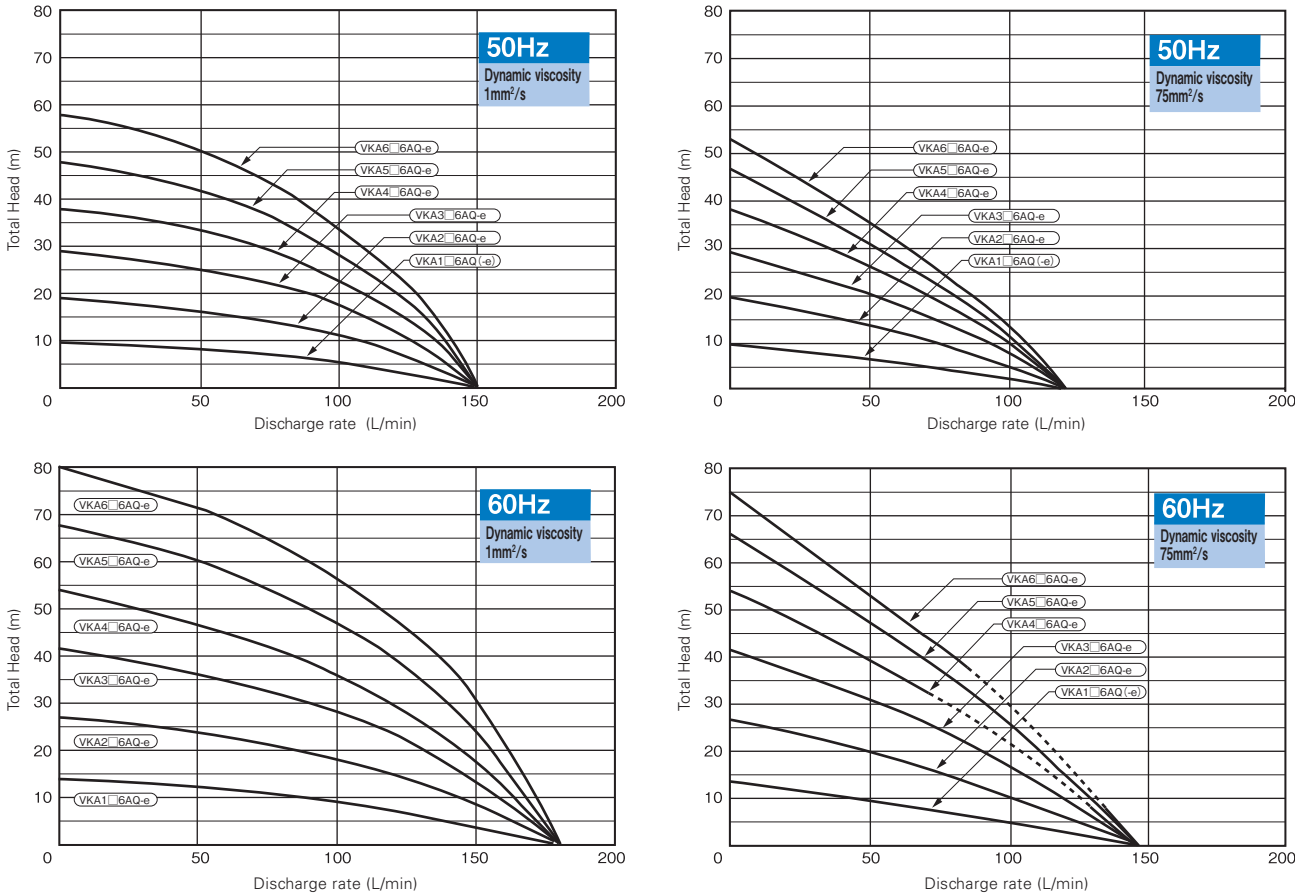
Type	50Hz							60Hz						
	Rated voltage (V)	Nominal output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)	Allowable dynamic viscosity (mm²/s)	Rated voltage (V)	Nominal output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)	Allowable dynamic viscosity (mm²/s)
VKA1 □ 6AH	200	0.1	2.0	11.0	40	7		200/220	0.17	1.9/1.9	9.0/10	50	9	
VKA1 □ 6AH-e	200	0.1	2.0	11.5	40	7		200/220	0.17	1.9/1.9	10.1/11.1	50	9	
VKA2 □ 6AH	200	0.2	2.7	11.0	40	13		200/220	0.34	2.6/2.4	9.0/10	50	18	75
VKA2 □ 6AH-e	200	0.2	2.6	11.5	40	13		200/220	0.34	2.3/2.3	10.1/11.1	50	18	
VKA3 □ 6AH-e	200	0.3	3.5	20.8	40	20		200/220	0.51	3.5/3.5	18.3/20.1	50	28	
VKA4 □ 6AH-e	200	0.4	4.0	20.8	40	27	75	200/220	0.68	4.0/4.0	18.3/20.1	50	37	37.5
VKA5 □ 6AH-e	200	0.5	5.5	42.1	40	33		200/220	0.85	5.6/5.4	38.6/42.5	50	46	75
VKA6 □ 6AH-e	200	0.6	5.9	42.1	40	40		200/220	1.02	6.0/5.8	38.6/42.5	50	55	
VKA7 □ 6AH-e	200	0.7	6.4	42.1	40	48		200/220	1.19	6.0/5.8	38.6/42.5	50	62	37.5
VKA8 □ 6AH-e	200	0.8	7.0	64.0	40	56		200/220	1.36	8.4/7.9	54.0/59.0	50	77	75
VKA9 □ 6AH-e	200	0.9	7.6	64.0	40	63		200/220	1.53	9.6/8.8	54.0/59.0	50	86	

Note 1) The discharge rate and total head values are obtained in tests with a liquid viscosity of 1mm²/s(same as fresh water at normal tem perature.)
Note 2) The pump rated current (current value printed on the pump plate) is the recommended current setting for protection devices.
※ Please contact us for –G/GS type.
(VKA1 □ 6AH, VKA2 □ 6AH types are not applicable.)

Selection chart

Synchronous rotating speed 50Hz : 3000min^{-1}
60Hz : 3600min^{-1}

●VKA-AQ/VKA-AQ-e



Note 1) Please note that the discharge rate differs considerably by the type of liquid and viscosity.
Note 2) Please note that the dotted lines in the above diagrams show the range where it cannot be continuously operated at the oil viscosity of 75 mm^2/s.
Note 3) The condition in the above charts has a viscosity of 75 mm^2/s, and a specific weight of 0.86. It cannot be operated depending on the relation between viscosity and specific weight.

Specification table

●VKA-AQ/VKA-AQ-e

Type	50Hz							60Hz						
	Rated voltage (V)	Nominal output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)	Allowable dynamic viscosity (mm^2/s)	Rated voltage (V)	Nominal output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)	Allowable dynamic viscosity (mm^2/s)
VKA1 □ 6AQ	200	0.18	2.3	11.0	85	6	75	200/220	0.3	2.4/2.3	9.0/10.0	100	8	75
VKA1 □ 6AQ-e	200	0.18	2.4	11.5	85	6		200/220	0.3	2.2/2.2	10.1/11.1	100	8	
VKA2 □ 6AQ-e	200	0.36	3.6	20.8	85	13		200/220	0.6	4.0/4.0	18.3/20.1	100	18	
VKA3 □ 6AQ-e	200	0.54	5.5	42.1	85	19		200/220	0.9	6.0/5.8	38.6/42.5	100	28	
VKA4 □ 6AQ-e	200	0.72	6.4	42.1	85	26		200/220	1.2	6.0/5.8	38.6/42.5	100	36	37.5
VKA5 □ 6AQ-e	200	0.9	7.4	64.0	85	33		200/220	1.5	9.6/8.8	54.0/59.0	100	46	75
VKA6 □ 6AQ-e	200	1.1	8.5	64.0	85	39		200/220	1.8	10/9.1	54.0/59.0	100	54	37.5

Note 1) The discharge rate and total head values are obtained in tests with a liquid viscosity of 1mm^2/s(same as fresh water at normal tem perature.)
Note 2) The pump rated current (current value printed on the pump plate) is the recommended current setting for protection devices.
※ Please contact us for –G/GS type.
(VKA1 □ 6AQ is not applicable.)

■Dimensional outline drawing

Fig.1

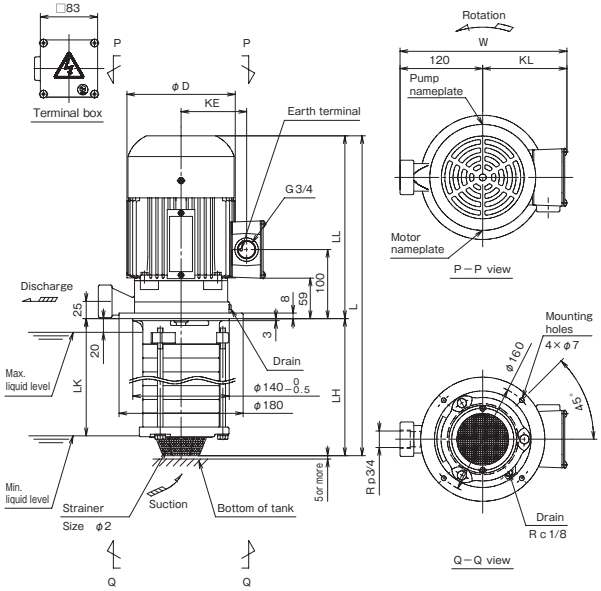
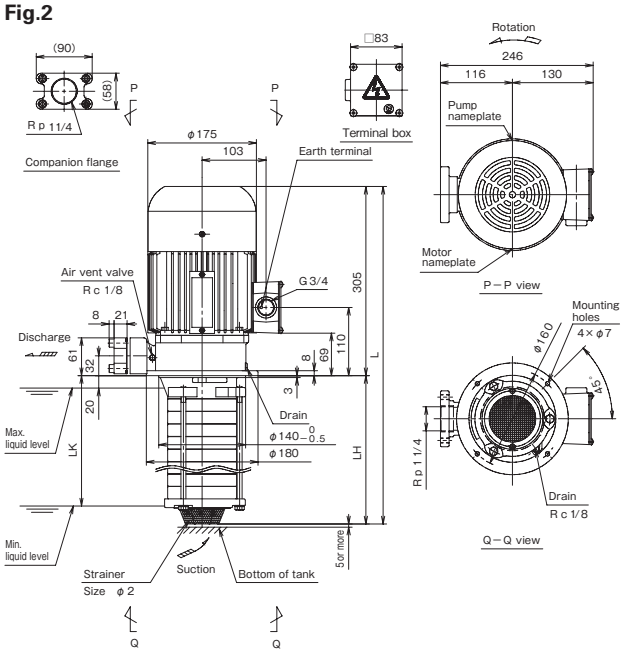
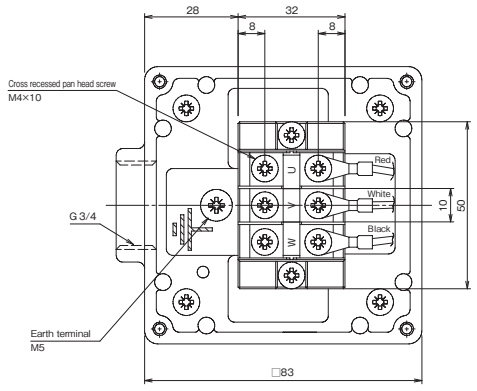


Fig.2



■Detailed drawing of the terminal box



※ Please contact us for −G/GS type.

■Dimensions

●VKA-AH-e 〈Unit : mm〉

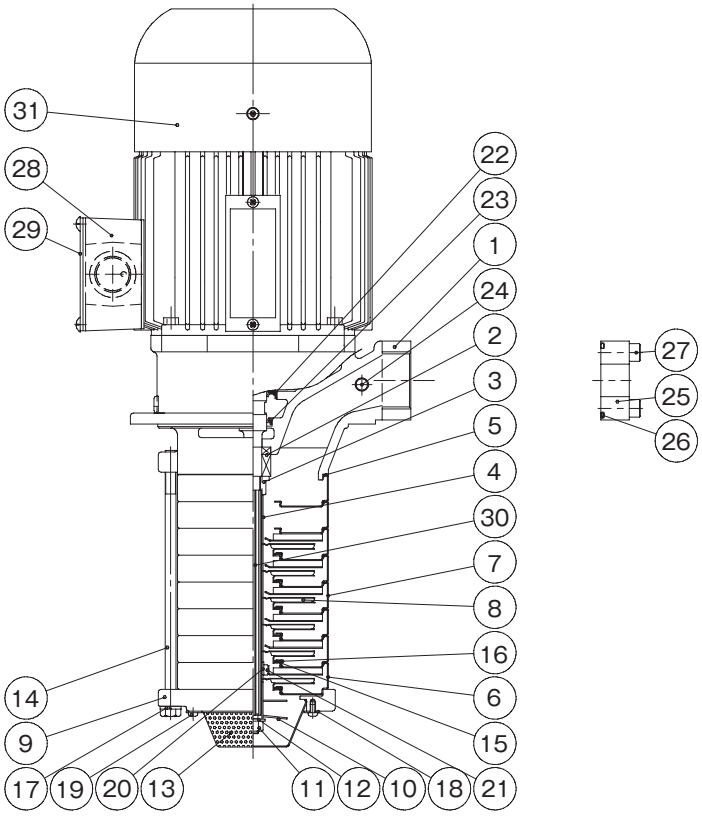
Type	Fig.	D	KE	KL	L	LH	LK	LL	W	Approx. mass(kg)
VKA136AH (-e)	1	140	88	115	384	139	110	245	235	15
VKA146AH (-e)		140	88	115	404	159	130	245	235	15
VKA156AH (-e)		140	88	115	424	179	150	245	235	15
VKA166AH (-e)		140	88	115	444	199	170	245	235	15
VKA236AH (-e)		140	88	115	384	139	110	245	235	15
VKA246AH (-e)		140	88	115	404	159	130	245	235	15
VKA256AH (-e)		140	88	115	424	179	150	245	235	15
VKA266AH (-e)		140	88	115	444	199	170	245	235	16
VKA276AH (-e)		140	88	115	464	219	190	245	235	16
VKA286AH (-e)		140	88	115	484	239	210	245	235	16
VKA296AH (-e)		140	88	115	504	259	230	245	235	16
VKA336AH-e		140	88	115	384	139	110	245	235	14
VKA346AH-e		140	88	115	404	159	130	245	235	14
VKA356AH-e		140	88	115	424	179	150	245	235	14
VKA366AH-e		140	88	115	444	199	170	245	235	15
VKA376AH-e		140	88	115	464	219	190	245	235	15
VKA386AH-e		140	88	115	484	239	210	245	235	15
VKA396AH-e		140	88	115	504	259	230	245	235	15
VKA446AH-e		140	88	115	404	159	130	245	235	14
VKA456AH-e		140	88	115	424	179	150	245	235	14
VKA466AH-e		140	88	115	444	199	170	245	235	15
VKA476AH-e		140	88	115	464	219	190	245	235	15
VKA486AH-e		140	88	115	484	239	210	245	235	15
VKA496AH-e		140	88	115	504	259	230	245	235	15
VKA556AH-e		157	95	122	444	179	150	265	242	19
VKA566AH-e		157	95	122	464	199	170	265	242	19
VKA576AH-e		157	95	122	484	219	190	265	242	19
VKA586AH-e		157	95	122	504	239	210	265	242	19
VKA596AH-e		157	95	122	524	259	230	265	242	20
VKA666AH-e		157	95	122	464	199	170	265	242	19
VKA676AH-e		157	95	122	484	219	190	265	242	19
VKA686AH-e		157	95	122	504	239	210	265	242	20
VKA696AH-e		157	95	122	524	259	230	265	242	20
VKA776AH-e		157	95	122	484	219	190	265	242	19
VKA786AH-e		157	95	122	504	239	210	265	242	20
VKA796AH-e		157	95	122	524	259	230	265	242	20
VKA886AH-e	2	—	—	—	544	239	210	—	—	25
VKA896AH-e		—	—	—	564	259	230	—	—	25
VKA996AH-e		—	—	—	564	259	230	—	—	25

●VKA-AQ-e 〈Unit : mm〉

Type	Fig.	D	KE	KL	L	LH	LK	LL	W	Approx. mass(kg)
VKA126AQ (-e)	1	140	88	115	382	137	108	245	235	15
VKA136AQ (-e)		140	88	115	410	165	138	245	235	15
VKA146AQ (-e)		140	88	115	438	193	164	245	235	15
VKA156AQ (-e)		140	88	115	466	221	192	245	235	15
VKA166AQ (-e)		140	88	115	494	249	220	245	235	16
VKA226AQ-e		140	88	115	382	137	108	245	235	14
VKA236AQ-e		140	88	115	410	165	136	245	235	14
VKA246AQ-e		140	88	115	438	193	164	245	235	14
VKA256AQ-e		140	88	115	466	221	192	245	235	14
VKA266AQ-e		140	88	115	494	249	220	245	235	15
VKA276AQ-e		140	88	115	522	277	248	245	235	15
VKA286AQ-e		140	88	115	550	305	276	245	235	15
VKA296AQ-e		140	88	115	578	333	304	245	235	15
VKA336AQ-e		157	95	122	430	165	136	265	242	18
VKA346AQ-e		157	95	122	458	193	164	265	242	19
VKA356AQ-e		157	95	122	486	221	192	265	242	19
VKA366AQ-e		157	95	122	514	249	220	265	242	19
VKA446AQ-e		157	95	122	458	193	164	265	242	19
VKA456AQ-e		157	95	122	486	221	192	265	242	19
VKA466AQ-e		157	95	122	514	249	220	265	242	19
VKA476AQ-e		157	95	122	542	277	248	265	242	19
VKA486AQ-e		157	95	122	570	305	276	265	242	20
VKA496AQ-e		157	95	122	598	333	304	265	242	20
VKA556AQ-e	2	—	—	—	526	221	192	—	—	24
VKA566AQ-e		—	—	—	554	249	220	—	—	24
VKA666AQ-e		—	—	—	554	249	220	—	—	25
VKA676AQ-e		—	—	—	582	277	248	—	—	25
VKA686AQ-e		—	—	—	610	305	276	—	—	25
VKA696AQ-e		—	—	—	638	333	304	—	—	25

Sectional drawing

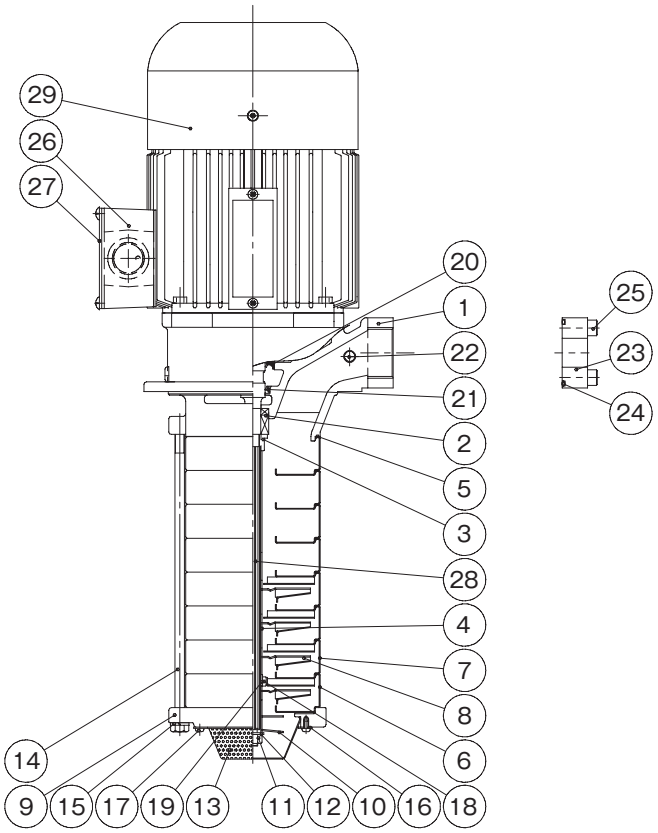
●VKA-AH/VKA-AH-e



No.	Part name	Material
1	Pump leg	FC150
2	Mechanical seal	SIC/SIC
3	Washer	SUS304
4	Collar	SUS304
5	Teflon packing	PTFE
6	Casing (without guide impeller)	SUS304
7	Casing (with guide impeller)	SUS304
8	Impeller	SUS304
9	Suction chamber	FC150
10	Screw	SUS304
11	U-nut	SUS304
12	Washer	SUS304
13	Wide strainer	SUS304
14	Fastening bolt	SUS304
15	Seal ring	PTFE
16	Hold metal	SUS304
17	Spring washer	SUS304
18	Strainer holding metal	SUS304
19	Cross recessed pan head screw	SUS304
20	Sleeve note1	WC
21	Bearing ring note1	Ceramic
22	Oil seal	NBR
23	Oil seal	NBR
24	Air fled valve note2	Brass
25	Companion flauge note2	FC150
26	O-ring note2	FKM
27	Hex socket head bolt	SCM
28	Terminal box	ADC
29	Lid of terminal box	SS400
30	Main shaft of motor	S35C+SUS403
31	Motor	—

Parts of Note1) are not used in pumps with 6 or fewer steps.
Parts of Note2) are not used in VKA1□6AH(-e)~VKA7□6AH-e.
Note) The structure and other details are subject to change without notice.

●VKA-AQ/VKA-AQ-e



No.	Part name	Material
1	Pump leg	FC150
2	Mechanical seal	SIC/SIC
3	Washer	SUS304
4	Collar	SUS304
5	Teflon packing	PTFE
6	Casing (without guide impeller)	SUS304
7	Casing (with guide impeller)	SUS304
8	Impeller	SUS304
9	Suction chamber	FC200
10	Screw	SUS304
11	U-nut	SUS304
12	Washer	SUS304
13	Wide strainer	SUS304
14	Fastening bolt	SUS304
15	Spring washer	SUS304
16	Strainer holding metal	SUS304
17	Cross recessed pan head screw	SUS304
18	Bearing ring note1	Ceramic
19	Sleeve note1	WC
20	Oil seal	NBR
21	Oil seal	NBR
22	Air fled valve note2	Brass
23	Companion flauge note2	FC150
24	O-ring note2	FKM
25	Hex socket head bolt	SCM
26	Terminal box	ADC
27	Lid of terminal box	SS400
28	Main shaft of motor	S35C+SUS403
29	Motor	—

Parts of Note 1) are not used in pumps with 5 or fewer steps.
Parts of Note 2) are not used in VKA1 6AQ(-e)~VKA7 6AQ-e.
Note) The structure and other details are subject to change without notice.

Features

① This is an energy-saving pump with a motor of Top Runner efficiency (equivalent to IE3) efficiency (VKC-e type).
② All-stainless parts are used in wetted parts.
③ It can be used with the liquid temperature -20 degrees C to +90 degrees C (No frozen liquid is allowed.).
④ A highly durable mechanical seal is adopted.
●It is made of sic/porous sic, which is highly abrasion-resistant, with low adsorption, and a special structure.
⑤ It complies with EU RoHS Directive Environmental Burden 6 Materials.
⑥ It complies with EU directive (CE Marking).
⑦ Energy-saving operation with inverter (flow rate adjust, etc.) is possible (200 V class).
⑧ With the lineup of VKC-AH (pressure type) and VKC-AQ (flow rate type), a wide range of choices of head and flow rate is available.

Please note that the coating, etc. of actual machines are sometimes different from photos.

Description of types

VKC 7 9 6 A H -e
① ② ③ ④ ⑤ ⑥ ⑦

① Model
② Number of impellers
③ Number of casing steps
④ Series number
⑤ Phase (A: 3 phase)
⑥ Characteristic (H: pressure type, Q: flow rate type)
⑦ Efficiency of motors
No mark : standard efficiency (IE1) with motor installed, standard voltage
-e : Top Runner efficiency (equivalent to IE3)

Usage

Chilled and hot water circulation system/washing equipment/feed water supply system
Apparatus for adjusting mold temperature/lens smoothing and polishing machine/wet-blast device

Usable liquid

Clear water, cleaning solvent, hot water, etc.

Standard Specification

Used liquid	Property of liquid	Grinding liquid, cutting liquid, etc. after secondary treatment ※1		
	Temperature	-20 to 90 degrees C (no condensation)		
	Allowable dynamic viscosity	Type	Operation at 50 Hz	Operation at 60 Hz
		VKC4□6AH-e, VKC7□6AH-e VKC4□6AQ-e	75㎟/s	37.5㎟/s
		Others	75㎟/s	75㎟/s
Installation site		Indoor Recommended temperature: -20 to 40 degrees C, below 85% RH (no dewing) Altitude should be below 1000 m, with no direct sunlight. There is no corroding, explosive gas or vapors.		
Material	Pump legs	SCS14A		
	Casing	SUS304		
	Suction chamber	SCS14A		
	Impeller	SUS304		
	Main shaft of motor	S35C+SUS403		
Sealing structure		Mechanical seal		
Motor	Type	Totally enclosed fan cooled indoor type		
	Protection method	IP54		
	Power source ※2	3 phase 50/60/60Hz 200/200/220V		
	Class of heat resistance	F		
	Number of poles	2P		
	Standard	IEC60034-1		
Paint color	Pump	Munsell N1		
	Motor	Black		

※1 If the liquid contains hard sludge, such as abrasion powder, ground powder, or ground diamond powder, please set up a filter (magnet filter or paper filter, etc.) because service life might be shortened. Additionally, please note that special liquid such as water, printing liquid or acid liquid cannot be used. Please enquire with us separately about using other kinds of special liquid (pure water, alkali-acid liquid, ceramic, etc.).
※2 -G type：50Hz 200V, -GS type：50Hz 380V

Special specification

Changing motor	Changing voltage, changing position of terminal box, changing direction of terminal box

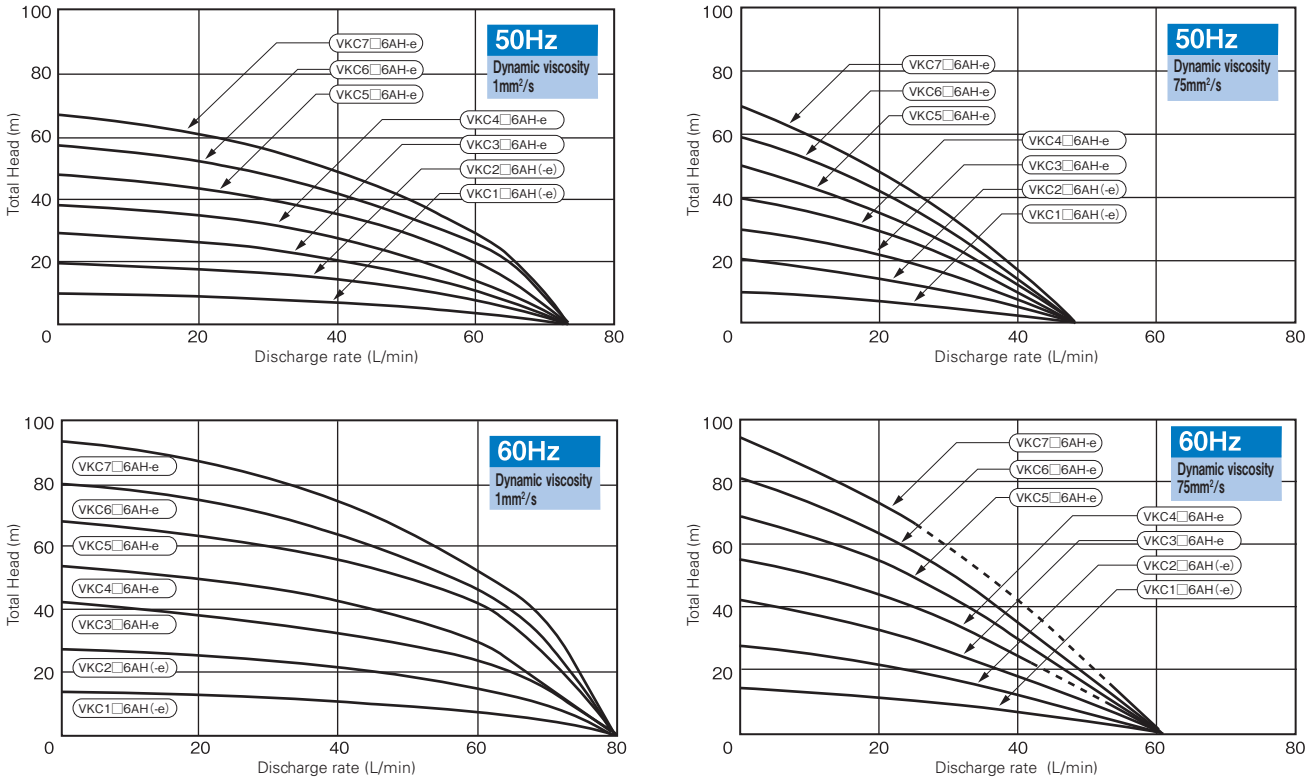
Table of Consumable Parts

Type	Bearing		Oil seal			O-ring
	Load side	Unload side	Load side (pump)	Load side (bearing)	Unload side	(Companion flange) material: FKM
VKC1□6AH(-e)～VKC4□6AH-e	6304ZZ C3	6203ZZ C3	DS17355	DS20325	DS20305	P32
VKC1□6AQ(-e)～VKC2□6AQ-e						
VKC5□6AH-e～VKC7□6AH-e,	6306ZZ C3	6303ZZ C3				
VKC3□6AQ-e～VKC4□6AQ-e						

Selection chart

Synchronous rotating speed 50Hz : 3000min^{-1}
60Hz : 3600min^{-1}

●VKC-AH/VKC-AH-e



Note 1) Please note that the discharge rate differs considerably by the type of liquid and viscosity.
Note 2) Please note that the dotted lines in the above diagrams show the range where it cannot be continuously operated at the oil viscosity of 75 mm^2/s.
Note 3) The condition in the above charts has a viscosity of 75 mm^2/s, and a specific weight of 0.86. It cannot be operated depending on the relation between viscosity and specific weight.

Specification table

●VKC-AH/VKC-AH-e

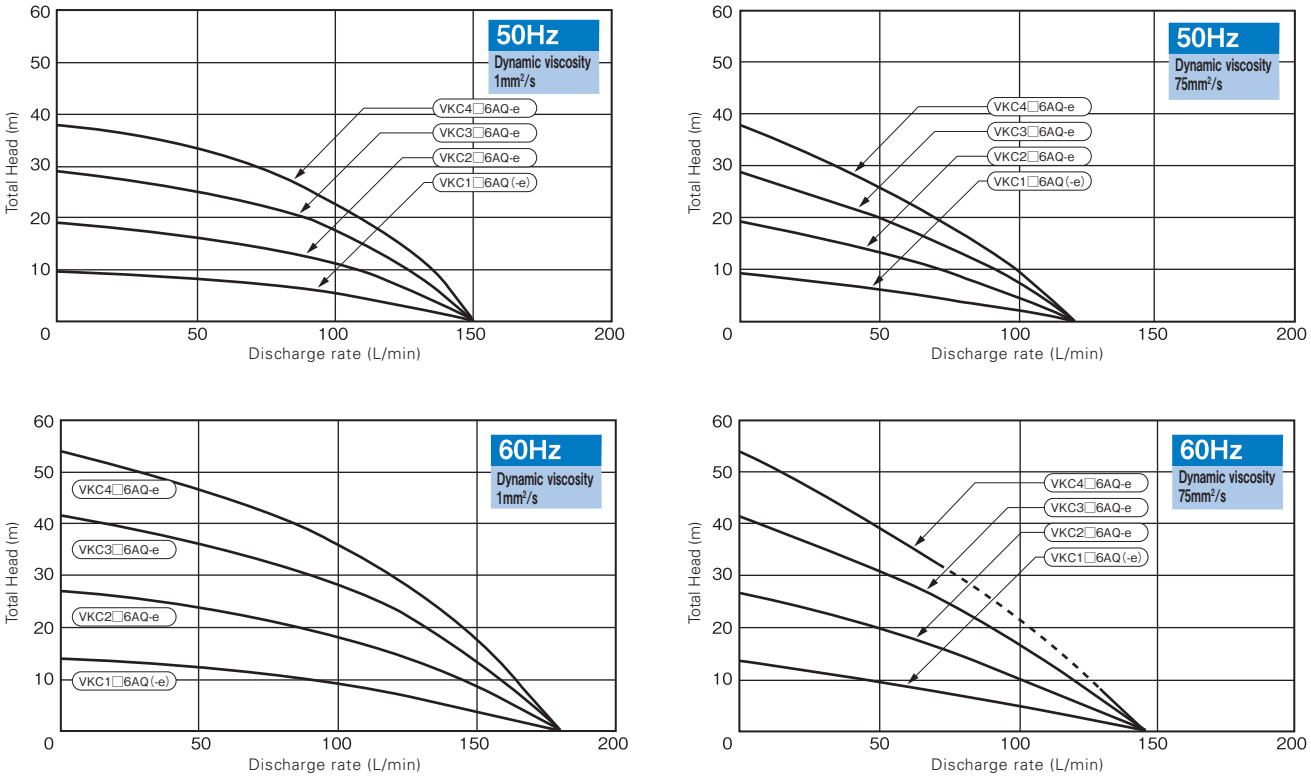
Type	50Hz							60Hz						
	Rated voltage (V)	Nominal output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)	Allowable dynamic viscosity (mm^2/s)	Rated voltage (V)	Nominal output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)	Allowable dynamic viscosity (mm^2/s)
VKC1 □ 6AH	200	0.1	2.0	11.0	40	7		200/220	kW	1.9/1.9	9.0/10.0	50	9	
VKC1 □ 6AH-e	200	0.1	2.0	11.5	40	7		200/220	0.17	1.9/1.9	10.1/11.1	50	9	
VKC2 □ 6AH	200	0.2	2.7	11.0	40	13		200/220	0.34	2.6/2.4	9.0/10.0	50	18	75
VKC2 □ 6AH-e	200	0.2	2.6	11.5	40	13		200/220	0.34	2.3/2.3	10.1/11.1	50	18	
VKC3 □ 6AH-e	200	0.3	3.5	20.8	40	20	75	200/220	0.51	3.5/3.5	18.3/20.1	50	28	
VKC4 □ 6AH-e	200	0.4	4.0	20.8	40	27		200/220	0.68	4.0/4.0	18.3/20.1	50	37	37.5
VKC5 □ 6AH-e	200	0.5	5.5	42.1	40	33		200/220	0.85	5.6/5.4	38.6/42.5	50	46	75
VKC6 □ 6AH-e	200	0.6	5.9	42.1	40	40		200/220	1.02	6.0/5.8	38.6/42.5	50	55	
VKC7 □ 6AH-e	200	0.7	6.4	42.1	40	48		200/220	1.19	6.0/5.8	38.6/42.5	50	62	37.5

Note 1) The discharge rate and total head values are obtained in tests with a liquid viscosity of 1mm^2/s(same as clear water at normal tem perature.)
Note 2) The pump rated current (current value printed on the pump plate) is the recommended current setting for protection devices.

Selection chart

Synchronous rotating speed 50Hz : 3000min^{-1}
60Hz : 3600min^{-1}

●VKC-AQ/VKC-AQ-e



Note 1) Please note that the discharge rate differs considerably by the type of liquid and viscosity.
Note 2) Please note that the dotted lines in the above diagrams show the range where it cannot be continuously operated at the oil viscosity of 75 mm^2/s.
Note 3) The condition in the above charts has a viscosity of 75 mm^2/s, and a specific weight of 0.86. It cannot be operated depending on the relation between viscosity and specific weight.

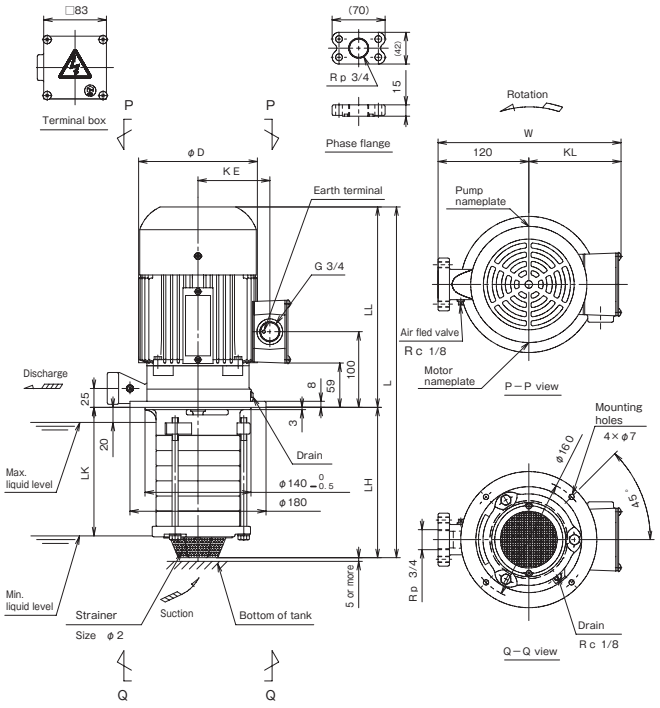
Specification table

● VKC-AQ/VKC-AQ-e

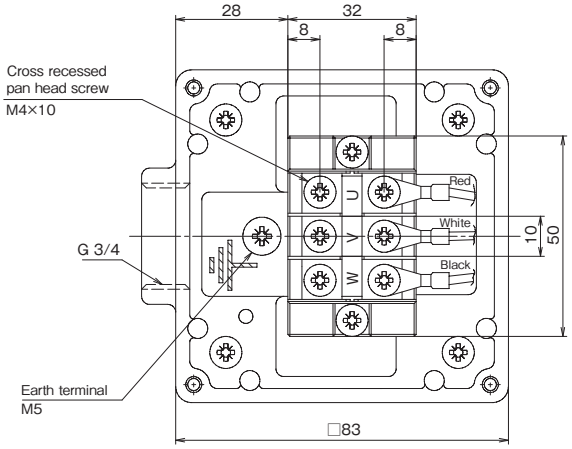
Type	50Hz							60Hz						
	Rated voltage (V)	Nominal output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)	Allowable dynamic viscosity (mm^2/s)	Rated voltage (V)	Nominal output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)	Allowable dynamic viscosity (mm^2/s)
VKC1 □ 6AQ	200	0.18	2.3	11.0	85	6	75	200/220	0.3	2.4/2.3	9.0/10.0	100	8	75
VKC1 □ 6AQ-e	200	0.18	2.4	11.5	85	6		200/220	0.3	2.2/2.2	10.1/11.1	100	8	
VKC2 □ 6AQ-e	200	0.36	3.6	20.8	85	13		200/220	0.6	4.0/4.0	18.3/20.1	100	18	
VKC3 □ 6AQ-e	200	0.54	5.5	42.1	85	19		200/220	0.9	6.0/5.8	38.6/42.5	100	28	
VKC4 □ 6AQ-e	200	0.72	6.4	42.1	85	26		200/220	1.2	6.0/5.8	38.6/42.5	100	36	37.5

Note 1) The discharge rate and total head values are obtained in tests with a liquid viscosity of 1mm^2/s(same as clear water at normal tem perature.)
Note 2) The pump rated current (current value printed on the pump plate) is the recommended current setting for protection devices.

Dimensional outline drawing



Detailed drawing of the terminal box



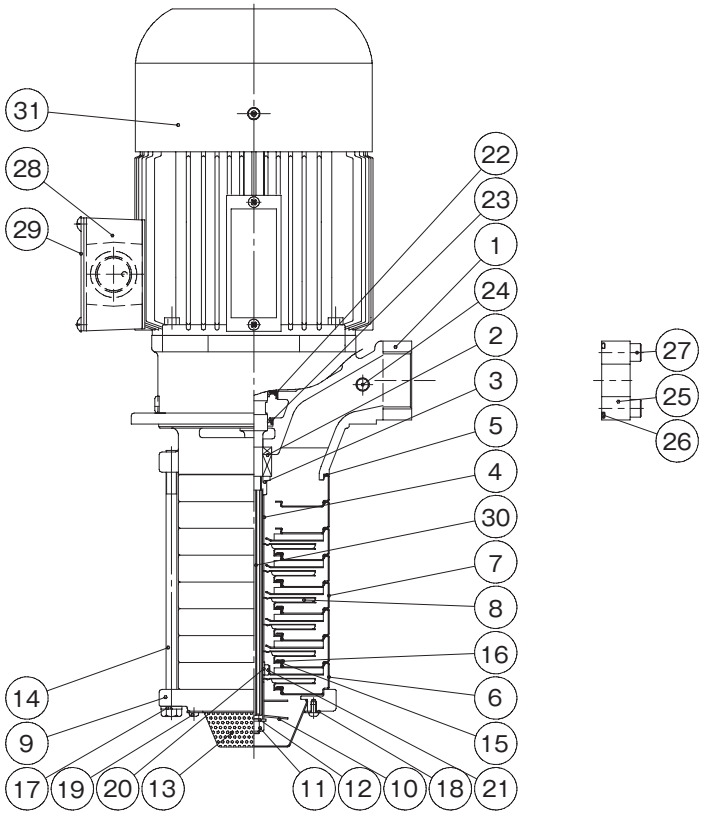
Dimensions

〈Unit : mm〉

Type	D	KE	KL	L	LH	LK	LL	W	Approx. mass(kg)
VKC136AH (-e)	140	88	115	384	139	110	245	235	15
VKC146AH (-e)	140	88	115	404	159	130	245	235	15
VKC156AH (-e)	140	88	115	424	179	150	245	235	15
VKC166AH (-e)	140	88	115	444	199	170	245	235	15
VKC236AH (-e)	140	88	115	384	139	110	245	235	15
VKC246AH (-e)	140	88	115	404	159	130	245	235	15
VKC256AH (-e)	140	88	115	424	179	150	245	235	15
VKC266AH (-e)	140	88	115	444	199	170	245	235	16
VKC276AH (-e)	140	88	115	464	219	190	245	235	16
VKC286AH (-e)	140	88	115	484	239	210	245	235	16
VKC296AH (-e)	140	88	115	504	259	230	245	235	16
VKC336AH-e	140	88	115	384	139	110	245	235	14
VKC346AH-e	140	88	115	404	159	130	245	235	14
VKC356AH-e	140	88	115	424	179	150	245	235	14
VKC366AH-e	140	88	115	444	199	170	245	235	15
VKC376AH-e	140	88	115	464	219	190	245	235	15
VKC386AH-e	140	88	115	484	239	210	245	235	15
VKC396AH-e	140	88	115	504	259	230	245	235	15
VKC446AH-e	140	88	115	404	159	130	245	235	14
VKC456AH-e	140	88	115	424	179	150	245	235	14
VKC466AH-e	140	88	115	444	199	170	245	235	15
VKC476AH-e	140	88	115	464	219	190	245	235	15
VKC486AH-e	140	88	115	484	239	210	245	235	15
VKC496AH-e	140	88	115	504	259	230	245	235	15
VKC556AH-e	157	95	122	444	179	150	265	242	19
VKC566AH-e	157	95	122	464	199	170	265	242	19
VKC576AH-e	157	95	122	484	219	190	265	242	19
VKC586AH-e	157	95	122	504	239	210	265	242	19
VKC596AH-e	157	95	122	524	259	230	265	242	20
VKC666AH-e	157	95	122	464	199	170	265	242	19
VKC676AH-e	157	95	122	484	219	190	265	242	19
VKC686AH-e	157	95	122	504	239	210	265	242	20
VKC696AH-e	157	95	122	524	259	230	265	242	20
VKC776AH-e	157	95	122	484	219	190	265	242	19
VKC786AH-e	157	95	122	504	239	210	265	242	20
VKC796AH-e	157	95	122	524	259	230	265	242	20
VKC126AQ (-e)	140	88	115	382	137	108	245	235	15
VKC136AQ (-e)	140	88	115	410	165	138	245	235	15
VKC146AQ (-e)	140	88	115	438	193	164	245	235	15
VKC156AQ (-e)	140	88	115	466	221	192	245	235	15
VKC166AQ (-e)	140	88	115	494	249	220	245	235	16
VKC226AQ-e	140	88	115	382	137	108	245	235	14
VKC236AQ-e	140	88	115	410	165	136	245	235	14
VKC246AQ-e	140	88	115	438	193	164	245	235	14
VKC256AQ-e	140	88	115	466	221	192	245	235	14
VKC266AQ-e	140	88	115	494	249	220	245	235	15
VKC336AQ-e	157	95	122	430	165	136	265	242	18
VKC346AQ-e	157	95	122	458	193	164	265	242	19
VKC356AQ-e	157	95	122	486	221	192	265	242	19
VKC366AQ-e	157	95	122	514	249	220	265	242	19
VKC446AQ-e	157	95	122	458	193	164	265	242	19
VKC456AQ-e	157	95	122	486	221	192	265	242	19
VKC466AQ-e	157	95	122	514	249	220	265	242	19

Sectional drawing

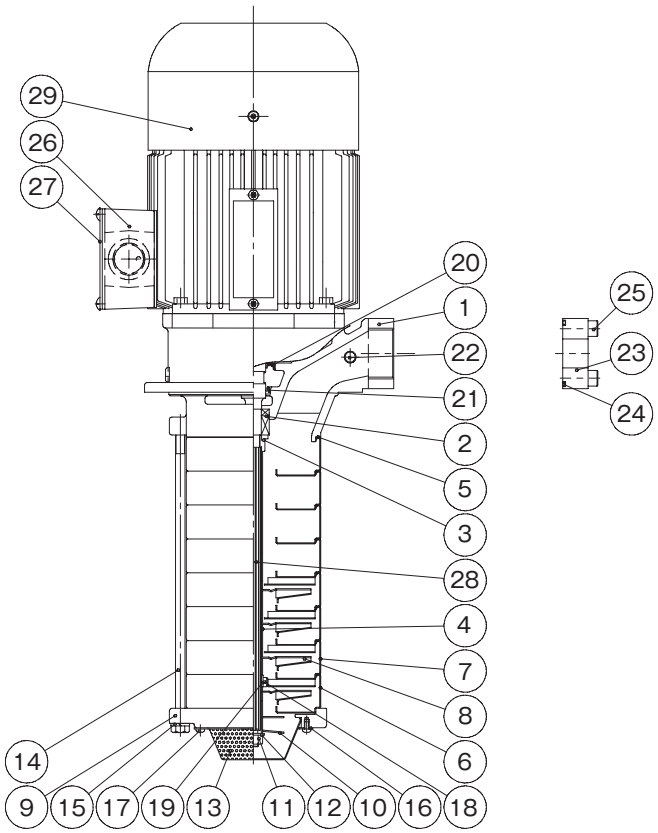
●VKC-AH/VKC-AH-e



No.	Part name	Material
1	Pump leg	SCS14A
2	Mechanical seal	SIC/SIC
3	Washer	SUS304
4	Collar	SUS304
5	Teflon packing	PTFE
6	Casing (without guide vane)	SUS304
7	Casing (with guide vane)	SUS304
8	Impeller	SUS304
9	Suction chamber	SCS14A
10	Screw	SUS304
11	U-nut	SUS304
12	Washer	SUS304
13	Wide strainer	SUS304
14	Fastening bolt	SUS304
15	Seal ring	PTFE
16	Hold metal	SUS304
17	Spring washer	SUS304
18	Strainer holding metal	SUS304
19	Cross recessed pan head screw	SUS304
20	Sleeve*	WC
21	Bearing ring *	Ceramic
22	Oil seal	NBR
23	Oil seal	NBR
24	Air fled valve	SUS304
25	Companion flauge	SCS16A
26	O-ring	FKM
27	Hex socket head bolt	SUS304
28	Terminal box	ADC
29	Lid of terminal box	SS400
30	Main shaft of motor	S35C+SUS403
31	Motor	—

Parts of * are not used in pumps with 6 or fewer steps.
Note) The structure and other details are subject to change without notice.

●VKC-AQ/VKC-AQ-e



No.	Part name	Material
1	Pump leg	SCS14A
2	Mechanical seal	SIC/SIC
3	Washer	SUS304
4	Collar	SUS304
5	Teflon packing	PTFE
6	Casing (without guide vane)	SUS304
7	Casing (with guide vane)	SUS304
8	Impeller	SUS304
9	Suction chamber	SCS14A
10	Screw	SUS304
11	U-nut	SUS304
12	Washer	SUS304
13	Wide strainer	SUS304
14	Fastening bolt	SUS304
15	Spring washer	SUS304
16	Strainer holding metal	SUS304
17	Cross recessed pan head screw	SUS304
18	Bearing ring *	Ceramic
19	Sleeve *	WC
20	Oil seal	NBR
21	Oil seal	NBR
22	Air fled valve	SUS304
23	Companion flauge	SCS16A
24	O-ring	FKM
25	Hex socket head bolt	SUS304
26	Terminal box	ADC
27	Lid of terminal box	SS400
28	Main shaft of motor	S35C+SUS403
29	Motor	—

Parts of * are not used in pumps with 5 or fewer steps.
Note) The structure and other details are subject to change without notice.

Low-Medium flow / Medium head / Multi-stage immersion type LBK model

Features

① This is an energy-saving pump with a high efficiency impeller and a motor with IE3 efficiency.
② With a non-seal (mechanical-seal-less) structure, it is easy to maintain.
③ Stainless steel is used in suction parts and highly abrasion-resistant SiC bearing is adopted in the pump bearing.
④ Motors were made to be compact (compared with our product: height of the motor is reduced by 20 mm)
⑤ The structure for coping with air biting caused by the lowering of liquid surface is adopted.
⑥ An energy-saving operation with an inverter is enabled.
⑦ There is a lineup of products complying with various efficiency and regulations
Japan : Top Runner efficiency
Europe: IE3 efficiency, CE Marking (EU directive)
RoHS (EU RoHS Directive 6 Environmental Burden materials)
USA : NEMA Premium efficiency (pending)
UL standard (pending)
Korea : KC standard (pending)

Please note that the coating, etc. of actual machines are sometimes different from photos.

Description of types

LBK 2 - 60 / 3 -e
① ② ③ ④ ⑤

① Model
② Nominal flow rate [m^3/h]
③ Number of casing steps×10
④ Number of impellers
⑤ With a motor with premium efficiency (equivalent to IE3)

Standard Specification

Used liquid	Property of liquid	Grinding liquid, cutting liquid, etc. after secondary treatment ※
	Temperature	-10 to 90 degrees C (no condensation)
Installation site		Indoor Recommended temperature: -20 to 40 degrees C, below 85% RH (no dewing) Altitude should be below 1000 m, with no direct sunlight. There is no corroding, explosive gas or vapors.
Material	Discharge casing	FC200
	Casing Outer sleeve	SUS304
	Suction casing	SUS304
	Impeller	SUS304
	Main shaft (Motor/Pump)	S45C/SUS431
Sealing structure		Non-seal (mechanical-seal-less)
Motor	Type	Totally enclosed fan cooled indoor type
	Protection method	IP54
	Power source	3 phase 50/60/60Hz 200/200/220V
	Class of heat resistance	F
	Number of poles	2P
Paint color	Pump	Munsell N1
	Motor	Black

※ If the liquid contains hard sludge, such as abrasion powder, ground powder, or ground diamond powder, please set up a filter (magnet filter or paper filter, etc.) because service life might be shortened. Additionally, please note that special liquid such as water, printing liquid or acid liquid cannot be used. Please enquire with us separately about using other kinds of special liquid (pure water, alkali-acid liquid, ceramic, etc.).

Special specification

Changing motor	Conversion of the location of terminal box

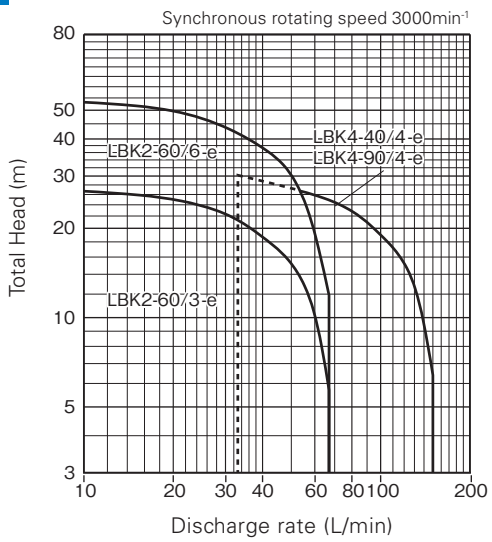
Table of Consumable Parts

Type	Bearing		Oil seal
	Load side	Unload side	Pump part
All types	6303ZZC3	6201ZZC3	IS12257

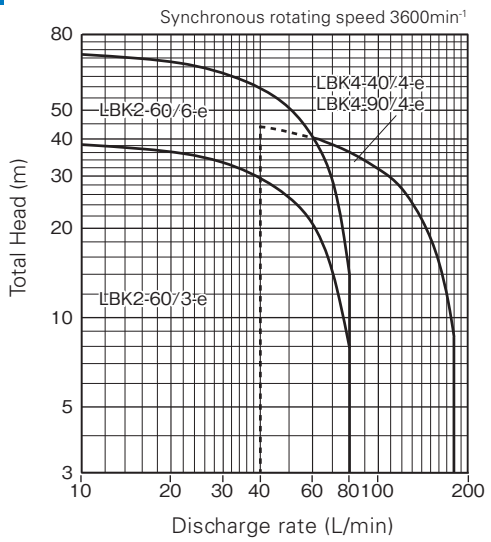
Selection chart

(Values for normal temperature, fresh water, with specific weight 1)

50Hz



60Hz



Specification table

Type	50Hz						60Hz					
	Rated voltage (V)	Nominal output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)	Rated voltage (V)	Nominal output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)
LBK2-60/3-e	200	0.35	3.5	17.5	50	15.2	200/220	0.55	3.5/3.5	16.3/18.0	50	25.4
LBK2-60/6-e	200	0.8	6.3	40	50	30.2	200/220	1.1	6.0/6.0	38.8/42.9	50	50.9
LBK4-40/4-e	200	0.8	6.3	40	100	19	200/220	1.1	6.0/6.0	38.8/42.9	100	31.7
LBK4-90/4-e	200	0.8	6.3	40	100	19	200/220	1.1	6.0/6.0	38.8/42.9	100	31.7

■Dimensional outline drawing

Fig.1

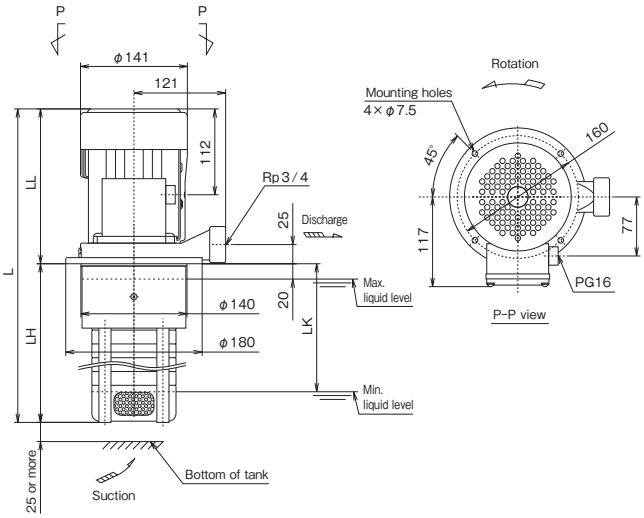
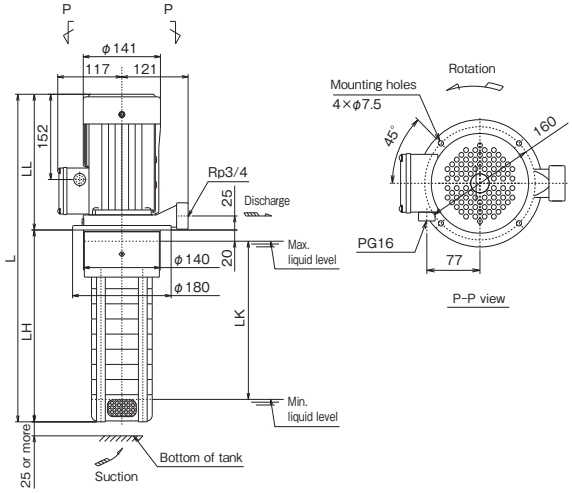


Fig.2



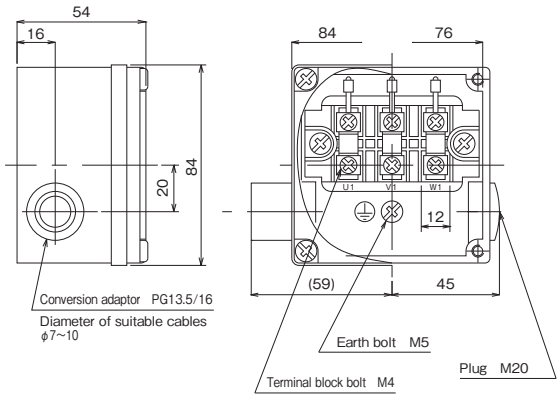
■Dimensions

〈Unit : mm〉

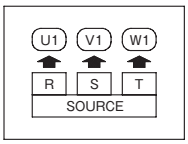
Type	Fig.	L	LL	LH	LK	Approx. mass(kg)
LBK2-60/3-e	1	409	202	207	167	15
LBK2-60/6-e	1	449	242	207	167	15
LBK4-40/4-e	1	449	242	207	167	15
LBK4-90/4-e	2	584	242	342	282	16

■Detailed drawing of the terminal box

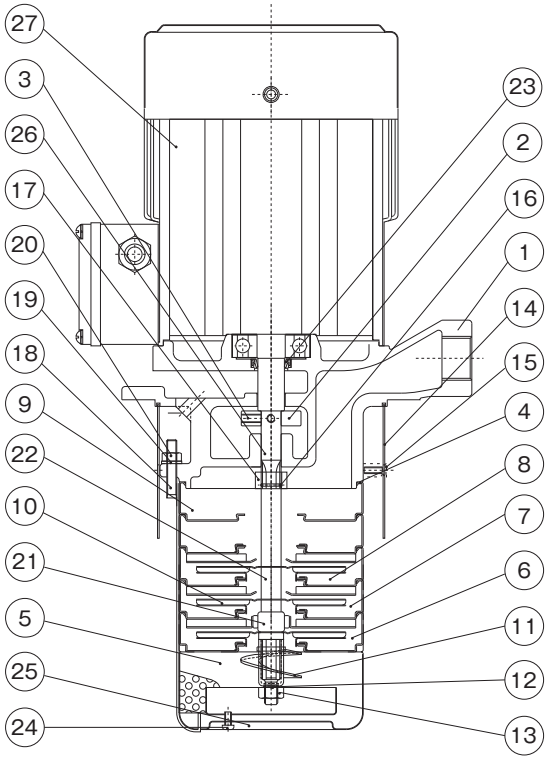
■Dimensional outline drawing



■Connection diagram



■Sectional drawing



No.	Part name	Material
1	Discharge casing	FC200
2	Slinger	SUS304
3	Set screw	SCM435
4	Gasket	—
5	Suction casing	SUS304
6	Intermediate casing (initial step)	SUS304
7	Bearing casing	SUS304+SiC
8	Intermediate casing	SUS304
9	Intermediate casing (last step)	SUS304
10	Impeller	SUS304
11	Screw	SUS304
12	Washer	SUS304
13	Impeller nut	SUS304
14	Outer sleeve	SUS304
15	Cross recessed couthersunk head screw	SUS304
16	Shaft ring	SUS316
17	Shaft pushing	SUS304
18	Bolt for fastening plate	SUS304
19	Washer	SUS304
20	Hexagon nut	SUS304
21	Bearing	SiC
22	Sleeve	SUS304
23	Oil seal	NBR
24	Cross recessed pan head screw	SUS304
25	Strainer	SUS304
26	Main shaft of motor	S45C+SUS431
27	Motor	—

Note: The materials in the table above are equivalents.

Medium-High flow / Low head / Single-stage immersion type

LFE model

Features

① The LFE-e model is an energy-saving pump with a top runner efficiency (equivalent to IE3) motor. (Compatible with connecting dimensions of the conventional LFE model)
② High-efficiency pumps designed for energy-saving coolant piping
③ Non-seal (mechanical seal-less) structure to provide better durability

Description of types

LFE 32 A - 0.25 - 300 -e
① ② ③ ④ ⑤ ⑥

① Model
② Bore diameter
③ Level of viscosity to be used with (A: For low viscosity)
④ Output
⑤ Length below the mounting bed (300 mm)
⑥ Motor efficiency
Non-seal: standard efficiency (equivalent to IE2)
-e: Top runner efficiency (equivalent to IE3)

Standard Specification

Model		LFE	LFE-e
Used liquid	Property of liquid	Water-soluble coolant, cleaning liquid	
	Temperature	0-60 degrees C (No frozen liquid)	
	Allowable dynamic viscosity	1mm²/s	
Installation site		Indoor Recommended temperature: 0 to 40 degrees C, below 85% RH (no dewing) Altitude should be below 1000 m, with no direct sunlight There is no corroding, explosive gas or vapors.	
Material	Soction/Discharge casing	FC200	
	Impeller	FCD450	
	Main shaft of motor	S35C	
Sealing structure		Non-seal (mechanical-seal-less)	
Motor	Source	3 phase 60Hz 200/220V	
	Output	0.25～0.4kW	0.6～0.75kW
	Class	Totally enclosed self-cooling motor	Totally enclosed fan cooled, indoor
	Method of protection	IP43	IP44
	Insulation class	F	
	Rating	Continuous	
	Number of poles	2P	
Paint color		MunsellN1.5	

Table of Consumable Parts

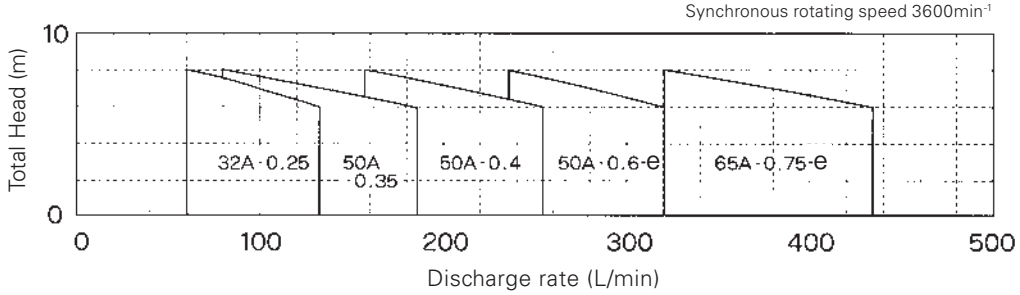
Type	O-ring			Bearing		Oil seal
	For discharge bush	For wearing ring	For companion flange	Load side	Unload side	
LFE32A-0.25-300	G35	G65	G50	6205ZZC3	6303ZZC3	G25355
LFE50A-0.35-300		G75	G75			
LFE50A-0.4-300						
LFE50A-0.6-300-e						
LFE65A-0.75-300-e		G80	G90			

Selection chart

(Values for normal temperature, fresh water, with specific weight 1)

60Hz only

Synchronous rotating speed 3600min⁻¹

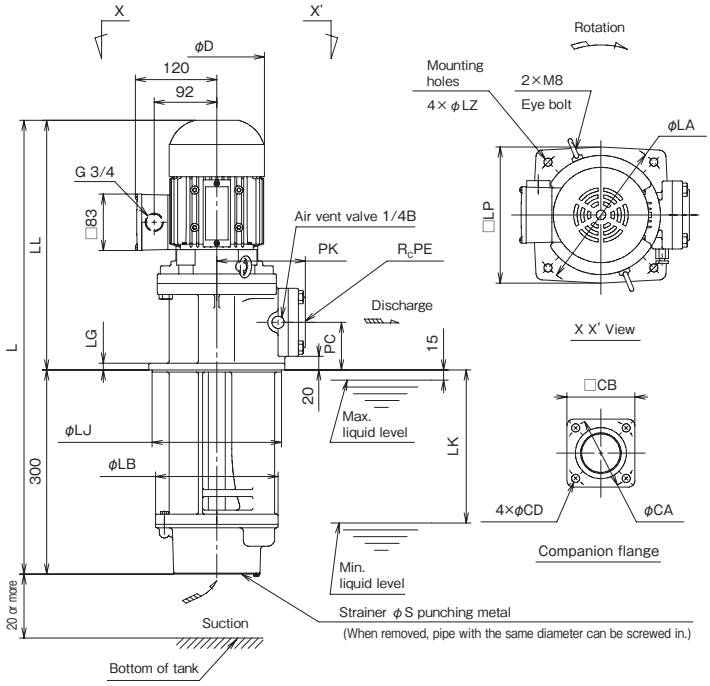


Specification table

Bore (mm)	Frequency (Hz)	Type	Rated voltage (V)	Output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)
32	60	LFE32A-0.25-300	200/220	0.25	1.16/1.10	7.2/7.9	60～130	8～6
50		LFE50A-0.35-300		0.35	1.90/1.82	13.0/14.0	80～185	
		LFE50A-0.4-300		0.4	1.90/1.82	13.0/14.0	160～255	
		LFE50A-0.6-300-e		0.6	3.5/3.5	18.3/20.1	235～320	
65		LFE65A-0.75-300-e		0.75	3.5/3.5	18.3/20.1	320～430	

※ The rated current (current value printed on the plate of pumps) is the recommended current setting of the protection device.

Dimensional outline drawing

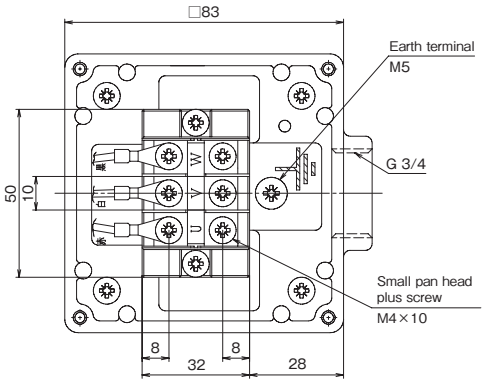


Dimensions

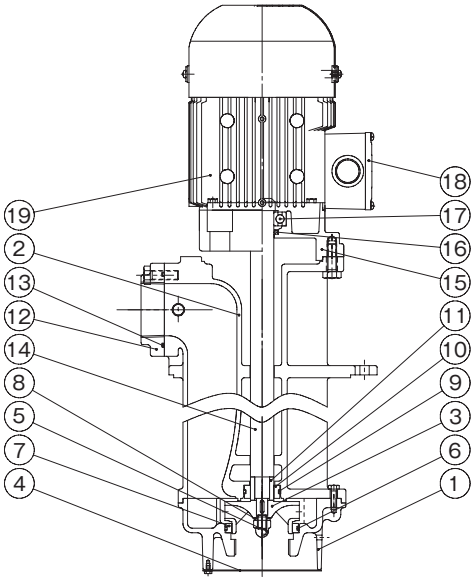
〈Unit : mm〉

Bore	Type	PE	D	L	LL	LK	LJ	LB	LG	PK	PC	LP	LZ	LA	S	CA	CB	CD	Approx. mass(kg)
32	LFE32A-0.25-300	1 1/4	157	625.5	325.5	240	160	150	10	120	55	180	10	200	7	70	70	10	29
50	LFE50A-0.35-300	2	157	659.5	359.5	225	190	180	10	130	70	200	12	220	7	105	100	12	34
	LFE50A-0.4-300	2	157	659.5	359.5	225	190	180	10	130	70	200	12	220	7	105	100	12	34
	LFE50A-0.6-300-e	2	140	667	367	225	190	180	10	130	70	200	12	220	7	105	100	12	35
65	LFE65A-0.75-300-e	2 1/2	140	692	392	200	220	210	12	150	80	230	15	250	8	125	120	15	42

Detailed drawing of the terminal box



Sectional drawing



No.	Part name	Qty	Material
1	Suction casing	1	FC200
2	Discharge casing	1	FC200
3	Impeller	1	FCD450
4	Strainer	1	SUS304※
5	Impeller nut	1	SUS304
6	O-ring	1	NBR
7	Wearing ring	1	PTFE
8	Washer	1	SUS304
9	O-ring	1	NBR
10	Discharge bush	1	PTFE
11	Shaft sleeve	1	SUS304
12	Phase flange	1	FC200
13	O-ring	1	NBR
14	Main shaft of motor	1	S35C
15	Motor bracket	1	FC200
16	Oil seal	1	NBR
17	Load-side bearing	1	SUJ2
18	Terminal box	1	ADC
19	Motor	1	

※LFE65-e is SS400 for LFE65-e.

Medium-High flow / Medium head / Single-stage immersion type LFO model

Features

① An energy-saving pump with a top runner efficiency (equivalent to IE3) motor.
② Strong and tough enough to resist dirty coolants.
③ The impeller is made of FCD and is highly durable.
④ Long and short-leg types are available to suit various tank depths.
⑤ Can be used for highly viscous coolants (LFO□□B-e model).
⑥ High resistance due to non-seal (mechanical seal-less) structure.
⑦ Mounting dimensions are compatible with conventional pumps.

Description of types

LFO ① 50 ② A ③ - 0.75 ④ - 35 ⑤ -e ⑥

① Model
② Bore diameter
③ Level of viscosity to be used with (A: For low viscosity, B: For high viscosity)
④ Output
⑤ Length below the mounting bed (35: 350 mm, 50: 500 mm)
⑥ Mounted with a top runner efficiency (equivalent to IE3) motor.

Standard Specification

Used liquid	Property of liquid	Liquids containing additives (anticorrosive, etc.), for water-soluble and water-insoluble coolants※
	Temperature	0 to 60°C (No frozen liquid)
	Allowable dynamic viscosity	LFO-A：32mm²/s LFO-B：150mm²/s
Installation site		Indoor Recommended temperature: 0 to 40 degrees C, below 85% RH (no dewing) Altitude should be below 1000 m, with no direct sunlight There is no corroding, explosive gas or vapors.
Material	Casing	FC200
	Discharge pipe	SGP + SS
	Impeller	FCD450
	Shaft	2.2 kW or less：S35C 3.7 kW and above：S45C
Sealing structure		Non-seal (mechanical seal-less)
Motor	Power source	3 phase 50/60/60Hz 200/200/220V
	Type	Totally enclosed fan cooled indoor type
	Protection method	IP44
	Class of heat resistance	F
	Rating	Continuous
	Number of poles	2P
Paint color		Munsell N1.5

※Do not use with freshwater.

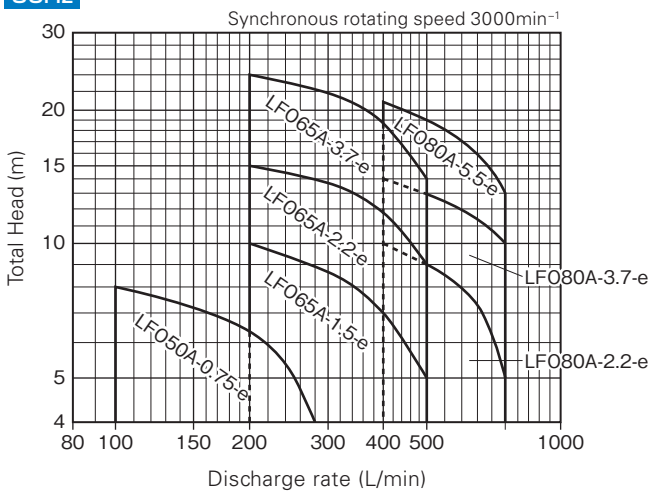
Table of Consumable Parts

Output (kW)	Bore diameter (mm)	Bearing		Oil seal	O-ring (for discharge pipes)
		Load side	Unload side		
0.75	50	6205ZZC3	6203ZZC3	G25355	G60
1.5	50	6306ZZC3	6303ZZC3	G30456	G60
	65				G75
2.2	65	6306ZZC3	6303ZZC3	G30456	G75
	80				G90
3.7	65	6208ZZC3	6205ZZC3	VC40586	G75
	80				G90
5.5	80	6210ZZC3	6206ZZC3	VC50687	G90

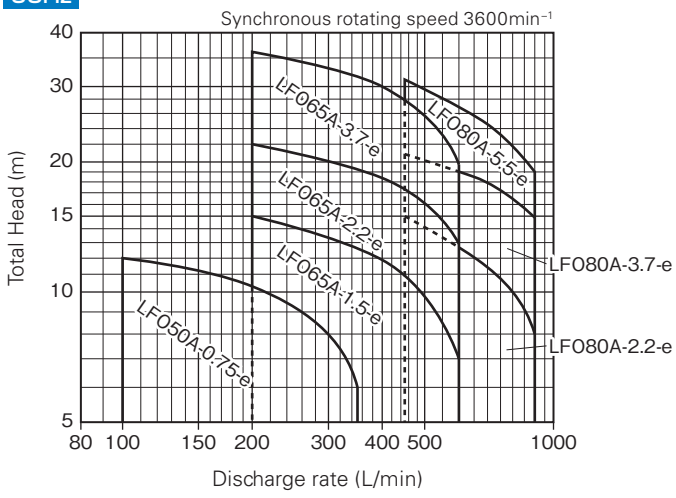
Selection chart

●**For low viscosity liquid** (Value at fresh water at normal temperature, specific gravity 1)

50Hz



60Hz



※Might not be used depending on liquid viscosity and specific gravity.
※Use pumps within the selection range. Do not operate with water below the selection range.

Specification table

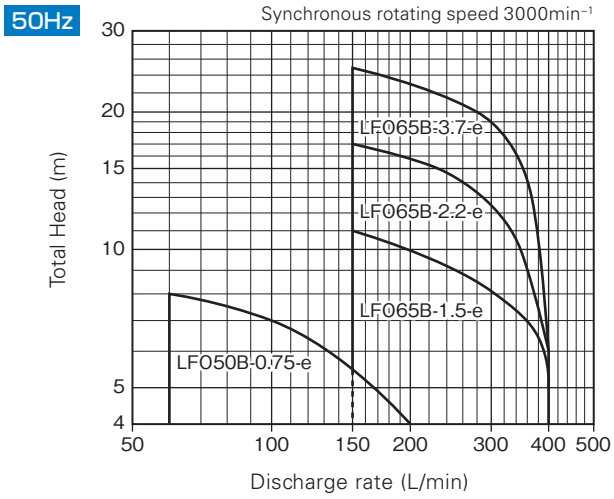
●For low viscosity liquid

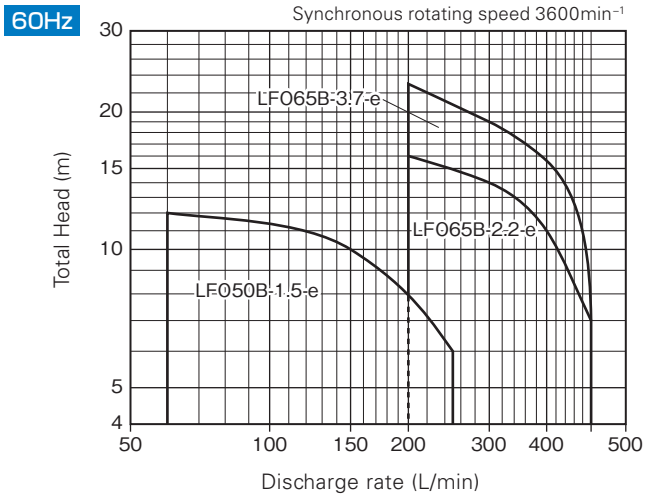
Bore diameter (mm)	Frequency (Hz)	Type	Rated voltage (V)	Output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)
50	50	LFO50A-0.75-35(50)-e	200	0.75	4.0	20.8	100 ~ 280	8 ~ 4
65		LFO65A-1.5-35(50)-e		1.5	6.5	44.1	200 ~ 500	10 ~ 5
		LFO65A-2.2-35(50)-e		2.2	9.3	64.5		15 ~ 9
		LFO65A-3.7-35(50)-e		3.7	14.7	134		24 ~ 14
80		LFO80A-2.2-35(50)-e		2.2	9.3	44.1	400 ~ 750	10 ~ 5
		LFO80A-3.7-35(50)-e		3.7	14.7	134		14 ~ 10
		LFO80A-5.5-35(50)-e		5.5	22.9	155		21 ~ 13
50	60	LFO50A-0.75-35(50)-e	200/220	0.75	3.5/3.5	18.3/20.1	100 ~ 350	12 ~ 6
65		LFO65A-1.5-35(50)-e		1.5	6.3/5.8	38.6/42.5	200 ~ 600	15 ~ 7
		LFO65A-2.2-35(50)-e		2.2	8.4/7.9	55.5/61.1		22 ~ 13
		LFO65A-3.7-35(50)-e		3.7	13.7/12.9	116/130		36 ~ 20
80		LFO80A-2.2-35(50)-e		2.2	8.4/7.9	55.5/61.1	450 ~ 900	15 ~ 8
		LFO80A-3.7-35(50)-e		3.7	13.7/12.9	116/130		21 ~ 15
		LFO80A-5.5-35(50)-e		5.5	20.9/19.6	128/144		31 ~ 19

Note 1) The rated current (current value printed on the plate of pumps) is the recommended current setting of the protection device.

Selection chart

●For high-viscosity liquid (Value at 150 mm^2/s kinematic viscosity, specific gravity 1)





※Use pumps within the selection range. Do not operate with water below the selection range.

Specification table

●For high-viscosity liquid

Bore diameter (mm)	Frequency (Hz)	Type	Rated voltage (V)	Output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)
50	50	LFO50B-0.75-35(50)-e	200	0.75	4.0	20.8	60 ~ 200	8 ~ 4
65		LFO65B-1.5-35(50)-e		1.5	6.5	44.1	150 ~ 400	11 ~ 5
		LFO65B-2.2-35(50)-e		2.2	9.3	64.5		17 ~ 6
		LFO65B-3.7-35(50)-e		3.7	14.7	116/130		25 ~ 6
50	60	LFO50B-1.5-35(50)-e	200/220	1.5	6.3/5.8	38.6/42.5	60 ~ 250	12 ~ 6
65		LFO65B-2.2-35(50)-e		2.2	8.4/7.9	55.5/61.1	200 ~ 500	16 ~ 7
		LFO65B-3.7-35(50)-e		3.7	13.7/12.9	116/130		23 ~ 8

Note 1) The rated current (current value printed on the plate of pumps) is the recommended current setting of the protection device.

Dimensional outline drawing

Note 1) 3.7/5.5 kW motor wiring holes are shown in Figure 2
Note 2) For 80 mm bore diameter, the outlet is a square flange (to be screwed-in) as shown in Figur

Fig.1

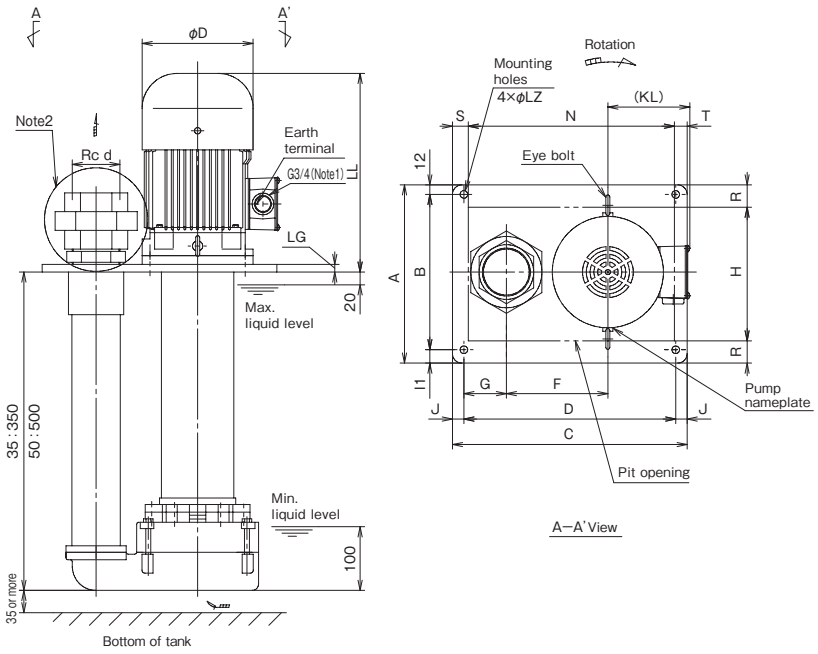


Fig.2

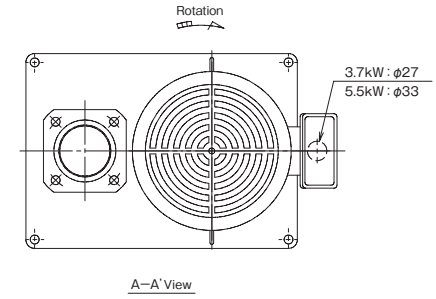
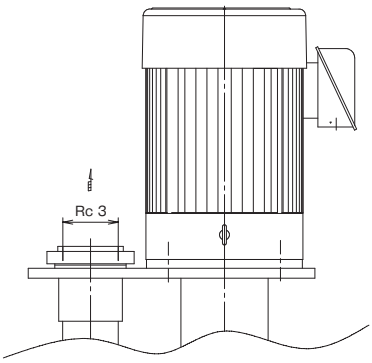


Fig.3



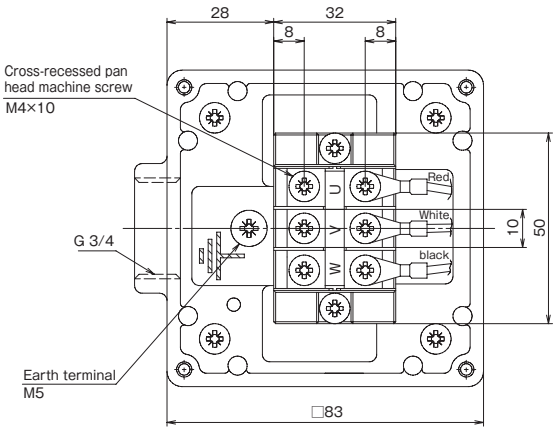
Dimensions

〈Unit : mm〉

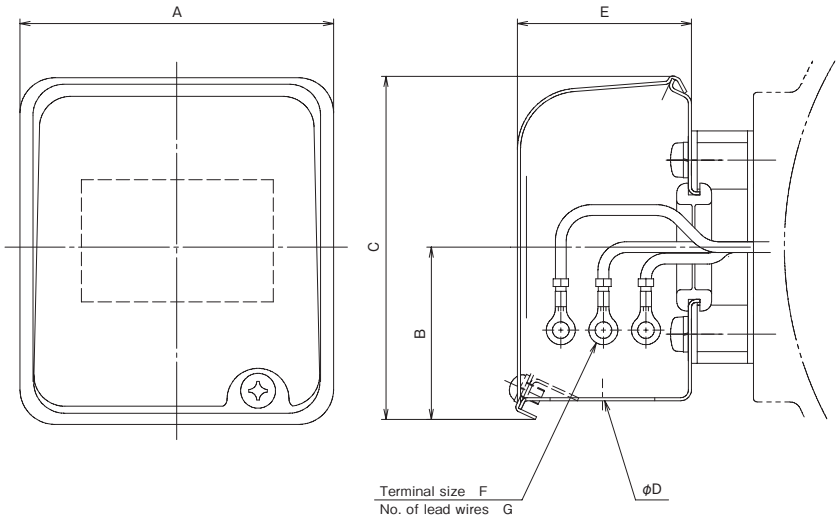
Viscosity	Bore diameter	Type	d	A	B	C	D	F	G	H	I1	I2	J	LG	LL	KL	N	D	LZ	R	S	T	Approx. mass(kg)
For low viscosity	50	LFO50A-0.75- 35/50 -e	2	260	224	300	264	145	37	170	18	18	18	12	252	115	270	140	12	45	10	20	34/35
	65	LFO65A-1.5- 35/50 -e	2 1/2	280	244	370	334	160	67	210	21	15	18	12	312	130	315	175	12	35	15	40	50/52
		LFO65A-2.2- 35/50 -e	2 1/2	310	280	420	390	180	85	250	15	15	15	12	312	130	360	175	15	30	30	30	56/58
		LFO65A-3.7- 35/50 -e	2 1/2	310	280	420	390	180	85	250	15	15	15	12	363	171	360	235	15	30	30	30	81/83
	80	LFO80A-2.2- 35/50 -e	3	310	280	430	400	190	85	250	15	15	15	12	312	130	370	175	15	30	30	30	56/58
		LFO80A-3.7- 35/50 -e	3	310	280	430	400	190	85	250	15	15	15	12	363	171	370	235	15	30	30	30	82/84
		LFO80A-5.5- 35/50 -e	3	330	300	460	430	215	85	270	15	15	15	16	434	212	400	264	15	30	30	30	109/112
For high viscosity	50	LFO50B-0.75- 35/50 -e	2	260	224	300	264	145	37	170	18	18	18	12	252	115	270	140	12	45	10	20	34/35
		LFO50B-1.5- 35/50 -e	2	260	224	300	264	145	37	170	18	18	18	12	312	130	270	175	12	45	10	22	40/42
	65	LFO65B-1.5- 35/50 -e	2 1/2	280	244	370	334	160	67	210	21	15	18	12	312	130	315	175	12	35	15	40	50/52
		LFO65B-2.2- 35/50 -e	2 1/2	310	420	420	390	180	85	250	15	15	15	12	312	130	360	175	15	30	30	30	56/58
		LFO65B-3.7- 35/50 -e	2 1/2	310	420	420	390	180	85	250	15	15	15	12	363	171	360	235	15	30	30	30	81/83

Detailed drawing of the terminal box

●Output 2.2 kW or less



●Output 3.7 kW and above

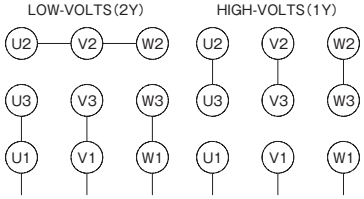


Terminal box

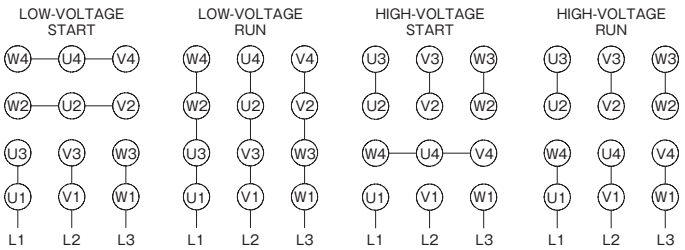
Output (kW)	A	B	C	D	E	F	G
3.7	82	45	89	27	46	1.25-4	9
5.5	126	68	133	33	60	2-5	12

Connection diagram

●Output 3.7 kW

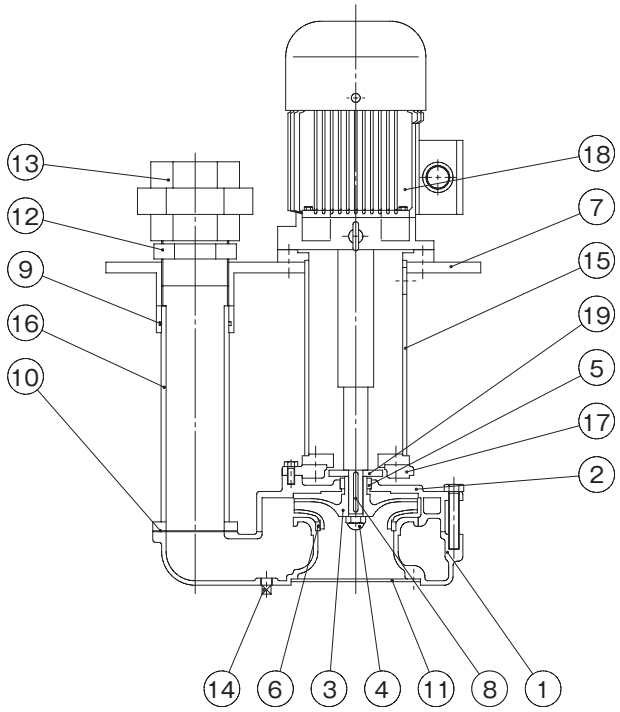


●Output 5.5 kW



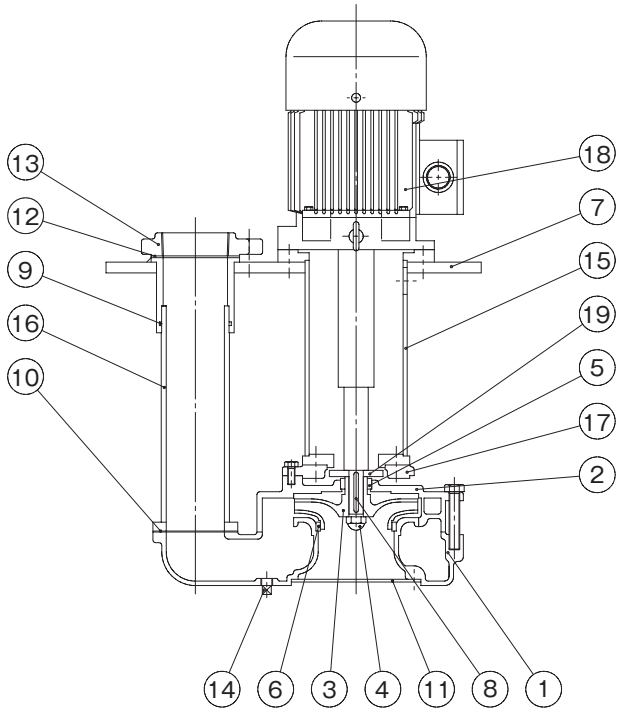
Sectional drawing

●LFO50-e, LFO65-e



No.	Part name	Qty	Material
1	Casing	1	FC200
2	Casing cover	1	FC200
3	Impeller	1	FCD450
4	Impeller nut	1	SUS304
5	Discharge bush	1	SUS304
6	Wearing ring	1	SUS304
7	Common bed	1	SS400
8	Key	1	S35C
9	O-ring	1	NBR
10	Sheet packing	1	Three sheet
11	Strainer	1	SS400
12	Nipple	1	FC
13	Union	1	FC
14	Plug	1	SS400
15	Protection pipe	1	SGP + SS
16	Discharge pipe	1	SGP + SS
17	Connection flange	1	FC200
18	Motor	1	
19	Deflector	1	SS400

●LFO80-e



No.	Part name	Qty	Material
1	Casing	1	FC200
2	Casing cover	1	FC200
3	Impeller	1	FCD450
4	Impeller nut	1	SUS304
5	Discharge bush	1	SUS304
6	Wearing ring	1	SUS304
7	Common bed	1	SS400
8	Key	1	S35C
9	O-ring	1	NBR
10	Sheet packing	1	Three sheet
11	Strainer	1	SS400
12	Sheet packing	1	Three sheet
13	Phase flange	1	FC200
14	Plug	1	SS400
15	Protection pipe	1	SGP + SS
16	Discharge pipe	1	SGP + SS
17	Connection flange	1	FC200
18	Motor	1	
19	Deflector	1	SS400

Features

① Strong and tough with high wear resistant structure and material.
② Non-seal (mechanical seal-less) structure.
③ High-pressure, large-capacity (Max. 500 L/min) pump allows expanded selection of head and discharge rate.
④ EU RoHS Directive (Restriction of Hazardous Substances Directive) compliant.
⑤ Meets the EU Directive for CE marking.
⑥ Diverse lineup compatible with various efficiencies.
VKD type : Mounted with a standard efficiency (equivalent to IE1) motor.
VKD-e type : Mounted with a top-runner efficiency (equivalent to IE3) motor.
VKD-7W type : Mounted with a U.S. UL-approved motor (NEMA premium efficiency).
VKD-G/GS type: Equipped with a Chinese energy standard regulation (GB18613-2012)efficiency (grade GB3) motor *.
⑦ 2 options for length below the mounting bed are available (excluding VKD111AA-□).

Note) * VKD-G type is equipped with a high efficiency motor that meets grade GB3 efficiency. (This is not certified as it is a non-regulated pump.)

Please note that the coating, etc. of actual machines are sometimes different from photos.

Description of types

VKD 15 1 A D -e
① ② ③ ④ ⑤ ⑥

① Model
② Output code(11: 0.75kW, 13: 1.5kW, 14: 2.2kW, 15: 3.0kW)
③ Series number
④ Phases (A: three phases)
⑤ Number of impellers, length below mounting bed [standard leg: 260mm (2.2kW or less) /300 mm(3.0kW), Long leg: 400mm]
(A: 1 unit/standard leg, B: 2 units/standard leg, C: 3 units/standard leg, D: 4 units/standard leg, F: 2 units/long leg, G: 3 units/long leg, H: 4 units/long leg)
⑥ Efficiency regulation-compliant
No mark: Mounted with a standard efficiency (equivalent to IE1) motor.
-e : Mounted with a top-runner efficiency (equivalent to IE3) motor (-e-4Z: top-runner efficiency (equivalent to IE3)).
-7W : Mounted with a U.S. UL-approved motor (NEMA premium efficiency).
-G* : Equipped with a Chinese energy label regulation (GB18613-2012) efficiency equivalent (grade GB3) motor・50Hz, 200V.
-GS : Equipped with a Chinese energy label regulation (GB18613-2012) efficiency-compliant (grade GB3) motor・50Hz, 220/380V.

Note) * VKD-G type is equipped with a high efficiency motor that meets grade GB3 efficiency. (This is not certified as it is a non-regulated pump.)

Standard Specification

Used liquid	Property of liquid	Grinding fluid, cutting fluid, etc., after primary treatment※1
	Temperature	–20 to 40°C (No frozen liquid)
	Allowable dynamic viscosity	75mm²/s
Installation site		Indoor Ambient temperature: –20 to 40°C, 85% RH or less (no condensation) Place at altitude of 1000 m or less. Do not place in direct sunlight. Place in an area free of corrosive or explosive gas or vapors.
Material	Pump leg	FC200
	Casing	FC200
	Impeller	FC200
	Motor shaft	S45C
Sealing structure		Non-seal (mechanical seal-less)
Motor	Motor	Three phase 50/60/60Hz 200/200/220V※2
	Category	Totally enclosed fan cooled, indoor
	Method of protection	IP54 (-G/GS : IP44)
	Insulation class	F
	Rating	Continuous
	Number of poles	2P
	Standard	IEC60034-1 CE Marking
Paint color		Munsell N1

※1 The unit is not used for water and special liquids such as printing and acidic liquids. Contact us when using the unit for other special liquids (e.g. ceramic).
※2 -7W type: 60Hz 208/230/460V, -G type: 50Hz 200V, -GS type: 50Hz 380V

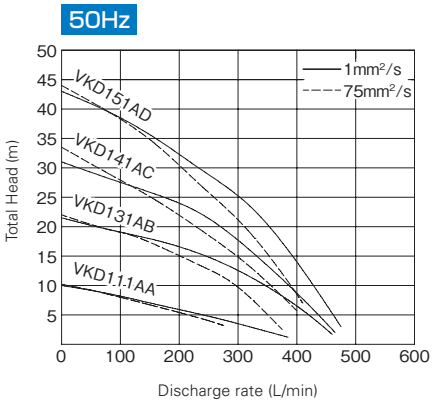
Table of Consumable Parts

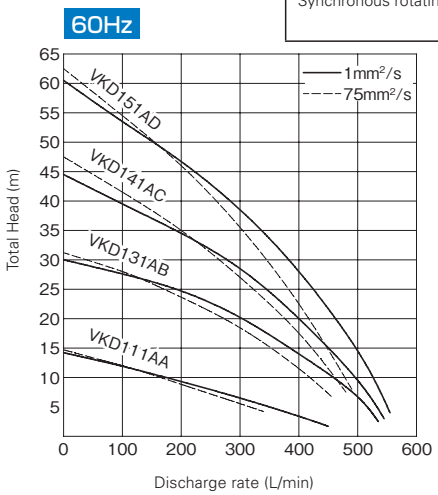
Type	Bearing		Oil seal		O-ring oil thrower
	Load side	Unload side	Load side	Unload side	
VKD111AA-□	6305ZZ	6203ZZ	SC30457	HM25385	P25
VKD131AB-□	6306ZZ	6205ZZ			P30
VKD141AC-□					
VKD151AD-□	6307ZZ				
VKD131AF-□					
VKD141AG-□					
VKD151AH-□					

Selection chart

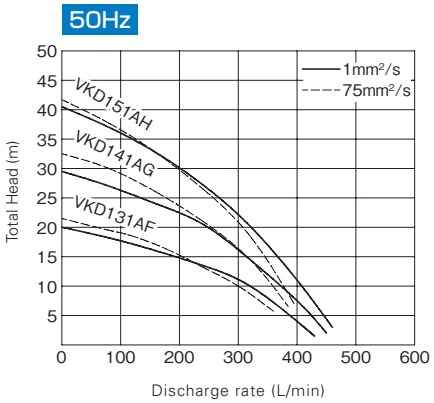
Synchronous rotating speed 50Hz : 3000min^{-1}
60Hz : 3600min^{-1}

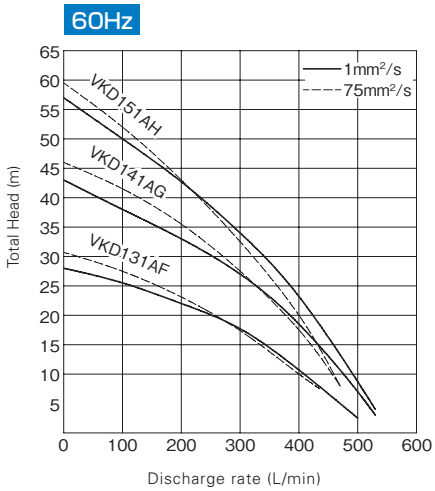
●Standard leg





●Long leg





※ -e/7W/G/GS model is the same.
Note) The discharge rate will vary significantly depending on the type of liquid circulated and its viscosity.

Specification table

Length below the mounting bed	Type	Output (kW)	50Hz					60Hz				
			Rated voltage (V)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)	Rated voltage (V)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)
Standard leg	VKD111AA	0.75	200	4.7	33.8	80 ~ 300	8 ~ 4	200/220	5.0/4.9	31.1/34.1	100 ~ 400	12 ~ 4
	VKD111AA-e			4.7	34				5.0/4.9	32.5/36.0		
	VKD111AA-G			4	25.7							
	VKD111AA-GS		220/380	3.6/2.1	28.2/16.3							
	VKD131AB	1.5	200	7.6	51.4	80 ~ 400	20 ~ 7	200/220	10/9.2	45/49.6	80 ~ 400	28 ~ 7
	VKD131AB-e			7.6	49				9.1/7.9	45.5/50.0		
	VKD131AB-7W							208/230/460	8.7/8.0/4.0	47.3/52.0/26.0		
	VKD131AB-G		200	6.9	40.5							
	VKD131AB-GS		220/380	6.9/4.0	44.5/25.7							
	VKD141AC	2.2	200	13.7	92.6	80 ~ 400	29 ~ 9	200/220	13.6/13.2	80.7/88.8	100 ~ 500	40 ~ 9
	VKD141AC-e			12	78				12.1/10.7	72.0/79.0		
	VKD141AC-G			10.6	58.8							
	VKD141AC-GS		220/380	10.6/6.2	64.6/37.3							
	VKD151AD	3.0	200	16	92.5	80 ~ 400	40 ~ 14	200/220	17.3/16	80.7/88.9	100 ~ 500	54 ~ 14
	VKD151AD-e			14.5	120				16.2/14.6	115/126		
	VKD151AD-7W							208/230/460	15.3/14.0/7.0	119.4/130/65.0		
	VKD151AD-G		200	13.3	99							
	VKD151AD-GS		220/380	12/6.9	89.0/51.4							
Long leg	VKD131AF	1.5	200	7.6	51.4	80 ~ 400	18 ~ 4	200/220	10/9.2	45/49.6	100 ~ 500	25 ~ 2
	VKD131AF-e			7.6	49				9.1/7.9	45.5/50		
	VKD131AF-7W							208/230/460	8.7/8.0/4.0	47.3/52.0/26.0		
	VKD131AF-G		200	6.9	40.5							
	VKD131AF-GS		220/380	6.9/4.0	44.5/25.7							
	VKD141AG	2.2	200	13.7	92.6	80 ~ 400	27 ~ 7	200/220	13.6/13.2	80.7/88.8	100 ~ 500	38 ~ 7
	VKD141AG-e			12	78				12.1/10.7	72/79		
	VKD141AG-G			10.6	58.8							
	VKD141AG-GS		220/380	10.6/6.2	64.6/37.3							
	VKD151AH	3.0	200	16	92.5	80 ~ 400	37 ~ 11	200/220	17.3/16	80.7/88.9	100 ~ 500	50 ~ 8
	VKD151AH-e			14.5	120				16.2/14.6	115/126		
	VKD151AH-7W							208/230/460	15.3/14.0/7.0	119.4/130/65.0		
	VKD151AH-G		200	13.3	99							
	VKD151AH-GS		220/380	12/6.9	89.0/51.4							

Note 1) The discharge rate and total head values were obtained in tests with a kinematic viscosity of 1 mm^2/s (the same as fresh water at normal temperature). Note that the pumps cannot be used with water.
Note 2) The rated current in the above table (current value listed on the pump nameplate) is the recommended current value setting of the protection unit.

■Dimensional outline drawing

●Standard leg

Fig.1

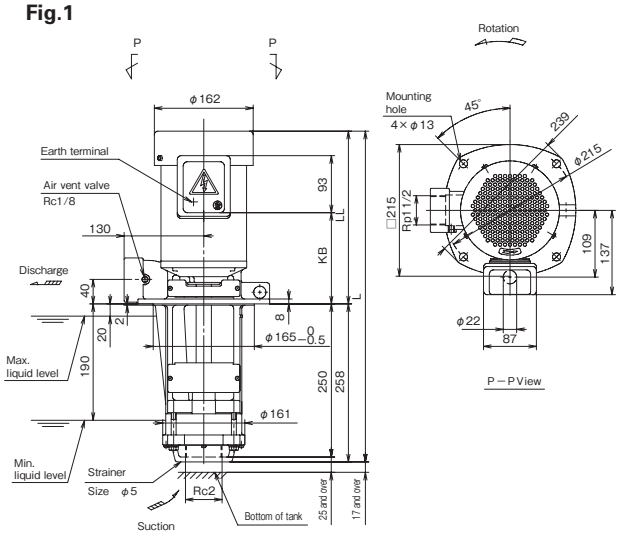


Fig.2

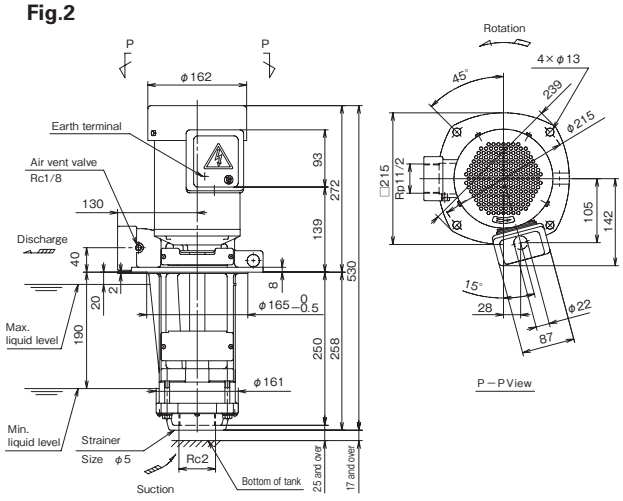


Fig.3

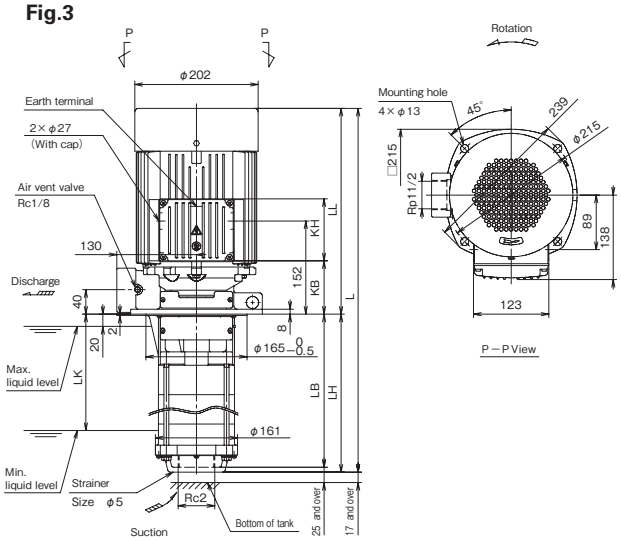
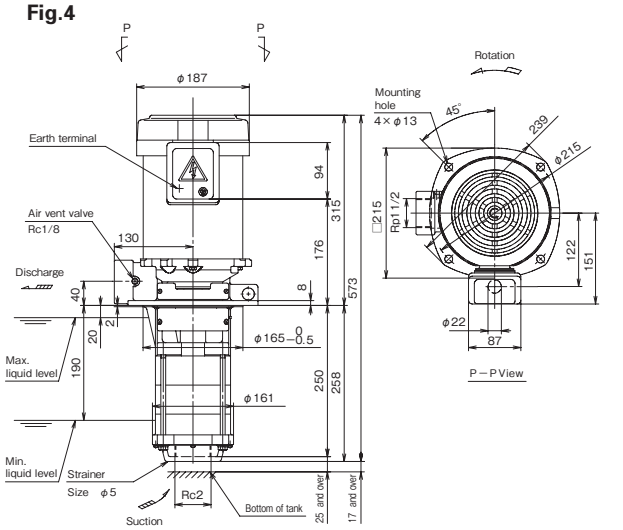


Fig.4



●Long leg

Fig.5

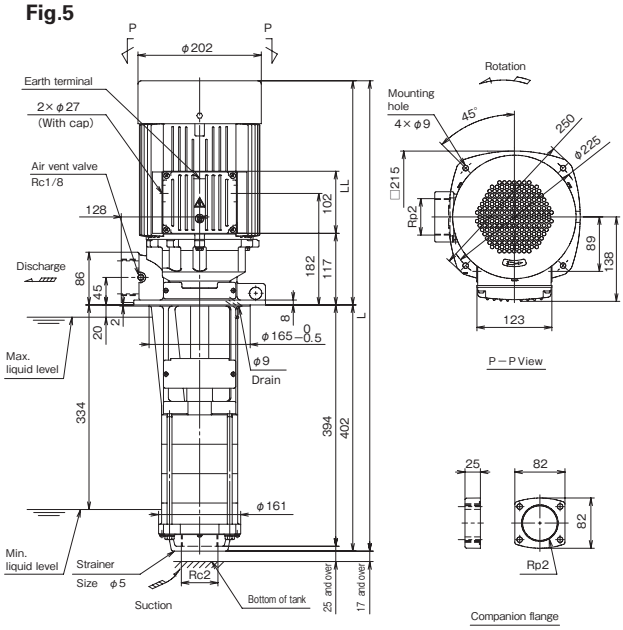
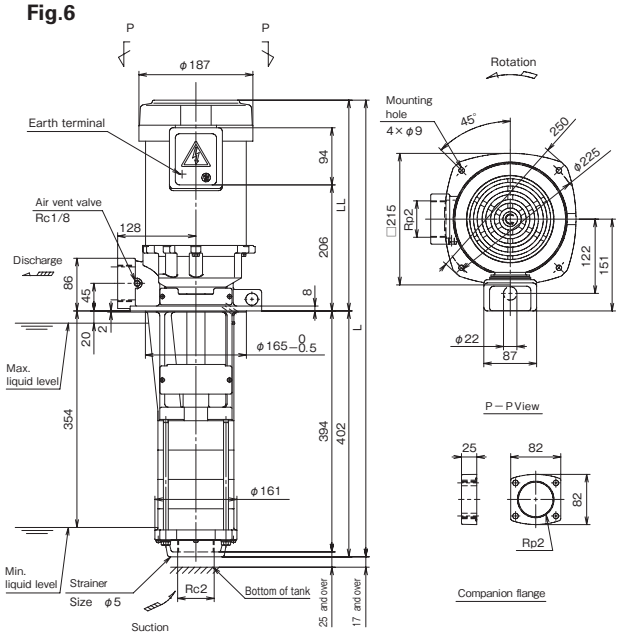


Fig.6



Dimensions

●**Standard leg** 〈Unit : mm〉

Type	Fig.	KB	KH	LB	LH	LK	LL	L	Approx. mass(kg)
VKD111AA	1	139					272	530	24
VKD111AA-e	1	149					282	540	25
VKD111AA-G (-GS)	2								24
VKD131AB	3	87	102	250	258	190	336	594	34
VKD131AB-e (-7W)	3	87	102	250	258	190	336	594	35
VKD131AB-G (-GS)	4								34
VKD141AC	3	87	102	250	258	190	336	594	36
VKD141AC-e	3	87	102	250	258	190	336	594	37
VKD141AC-G (-GS)	3	87	102	250	258	190	336	594	36
VKD151AD	3	87	102	298	306	238	336	642	39
VKD151AD-e (-7W)	3	87	102	298	306	238	364	670	45
VKD151AD-G (-GS)	3	87	102	298	306	238	336	642	39

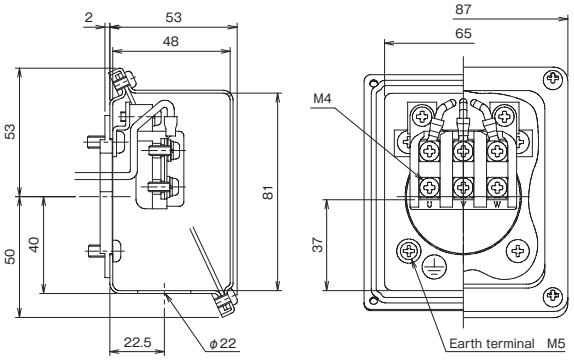
●**Long leg** 〈Unit : mm〉

Type	Fig.	LL	L	Approx. mass(kg)
VKD131AF	5	366	768	40
VKD131AF-e (-7W)	5	366	768	41
VKD131AF-G (-GS)	6	345	747	40
VKD141AG	5	366	768	43
VKD141AG-e	5	366	768	44
VKD141AG-G (-GS)	5	366	768	43
VKD151AH	5	366	768	44
VKD151AH-e (-7W)	5	394	796	50
VKD151AH-G (-GS)	5	366	768	44

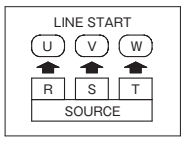
Detailed drawing of the terminal box

●**111AA (-e)**

■**Dimensional outline drawing**

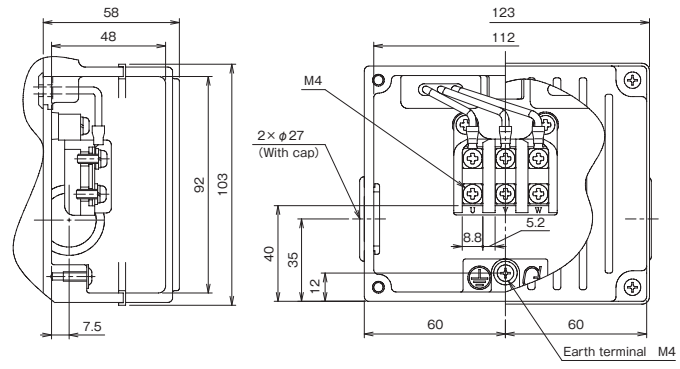


■**Connection diagram**

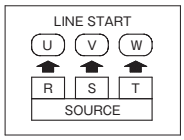


●**131AB (-e) /141AC (-e) /151AD (-e)**
●**131AF (-e) /141AG (-e) /151AH (-e)**

■**Dimensional outline drawing**



■**Connection diagram**

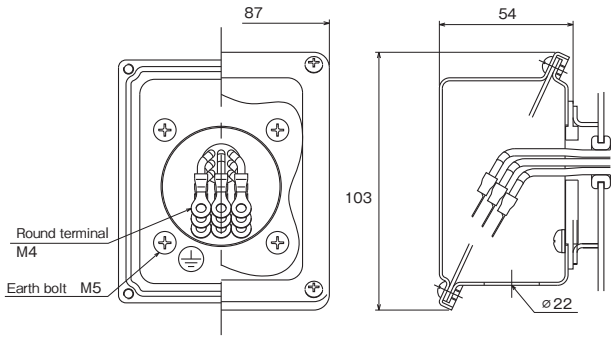


※ Please contact us for -G/GS type.

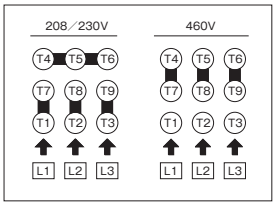
Detailed drawing of the terminal box

●VKD-7W 0.75kW

■Dimensional outline drawing

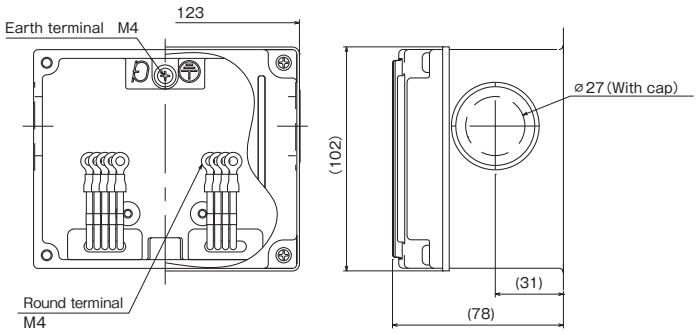


■Connection diagram

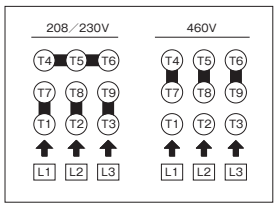


●VKD-7W 1.5kW and above

■Dimensional outline drawing

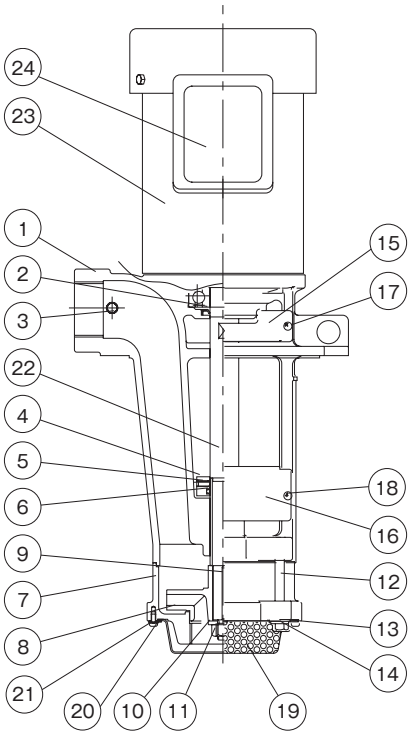


■Connection diagram



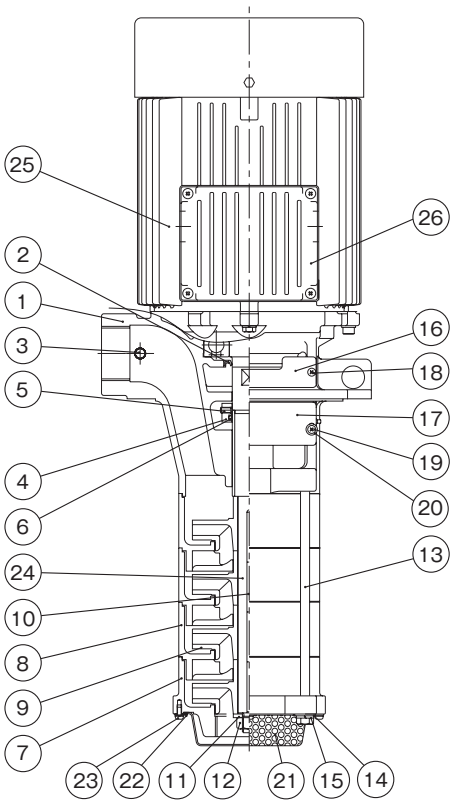
Sectional drawing

●**VKD111AA (- □)**

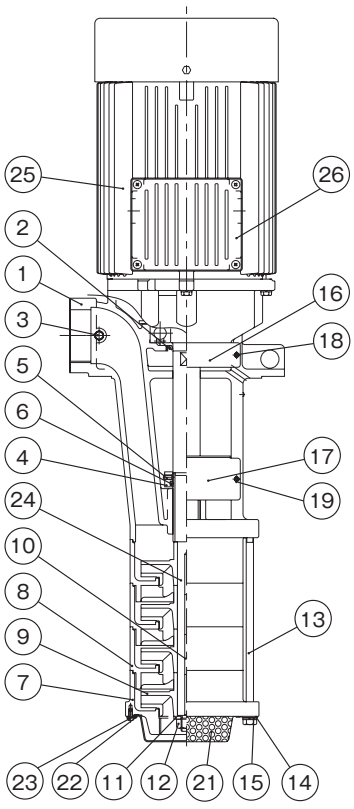


No.	Part name	Material
1	Pump leg	FC200
2	Oil seal	NBR
3	Air fled valve	SUS
4	Slinger	SUS304
5	Hexagon socket set screw	SCM435
6	O-ring	FPM
7	Casing	FC200
8	Impeller	FC200
9	Key	S45C-D
10	Plain washer	SPCC
11	Hexagon nut	SS
12	Fastening bolt	SS
13	Plain washer	SPCC
14	Spring washer	SWRH62
15	Side plate	SPCC
16	Side plate	SPCC
17	Pan head screw	SS
18	Pan head screw	SS
19	Strainer	SPCC
20	Presser plate	SPCC
21	Cross-recessed pan head machine screw	SS
22	Motor shaft	S45C-D
23	Motor	—
24	Terminal box	SPCC

●**VKD131AB (-□) / VKD141AC (-□) / VKD151AD (-□)**



●**VKD131AF (-□) / VKD141AG (-□) / VKD151AH (-□)**



No.	Part name	Material
1	Pump leg	FC200
2	Oil seal	NBR
3	Air fled valve	SUS
4	Slinger	SUS304
5	Hexagon socket set screw	SCM435
6	O-ring	FPM
7	Casing	FC200
8	Casing	FC200
9	Impeller	FC200
10	Key	S45C-D
11	Plain washer	SPCC
12	Hexagon nut	SS
13	Fastening bolt	SS
14	Plain washer	SPCC
15	Spring washer	SWRH62
16	Side plate	SPCC
17	Side plate	SPCC
18	Pan head screw	SS
19	Pan head screw	SS
20	Plain washer	SPCC
21	Strainer	SPCC
22	Presser plate	SPCC
23	Cross-recessed pan head machine screw	SS
24	Motor shaft	S45C-D
25	Motor	—
26	Terminal box	ADC12

Features

① An energy-saving pump with a top-runner efficiency (equivalent to IE3) motor (LPW-e).
② Strong and tough enough to resist dirty coolants.
③ Highly durable due to FCD, the impeller's material and the non-seal (mechanical seal-less) structure.
④ Mounting the inlet piping allows you to freely set the operating water level (LPW40-e/LPW65-e).
⑤ Can be used for high viscosity coolants (LPW40-e/LPW65-e).
⑥ Diverse lineup compatible with various efficiencies.
LPW-e type: Mounted with a top-runner efficiency (equivalent to IE3) motor.
LPW-7W type: Mounted with a U.S. UL-approved motor (NEMA premium efficiency) (3.0kW or less).
LPW-G/GS type: Equipped with a Chinese energy standard regulation (GB18613-2012) efficiency (grade GB3) motor *.

Note) * LPW-G type is equipped with a high efficiency motor that meets grade GB3 efficiency. (This is not certified as it is a non-regulated pump.)

Description of types

LPW 65 3 /2 A - 6 5.5 L -e
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Model
② Bore diameter
③ Number of casing stages
④ Number of impellers (none if number is equal to number of casing stages)
⑤ Level of viscosity to be used with (A, C: for low viscosity, D: for high viscosity)
⑥ Frequency (5: 50Hz, 6: 60Hz, no mark: for both 50/60Hz)
⑦ Output
⑧ Identification mark
⑨ Efficiency regulation-compliant
-e : Mounted with a top-runner efficiency (equivalent to IE3) motor.
-7W: Mounted with a U.S. UL-approved motor (NEMA premium efficiency) (3.0kW or less).
-G*: Equipped with a Chinese energy label regulation (GB18613-2012) efficiency equivalent (grade GB3) motor・50Hz, 200V.
-GS: Equipped with a Chinese energy label regulation (GB18613-2012) efficiency-compliant (grade GB3) motor・50Hz,380V.

Note) * LPW-G type is equipped with a high efficiency motor that meets grade GB3 efficiency. (This is not certified as it is a non-regulated pump.)

Standard Specification

Diameter		40mm	50mm	65mm
Used liquid	Property liquid	Coolants of the kinematic viscosity equivalent to that of water-soluble coolants or water containing an additive (anticorrosive, etc.) ※1	Water-soluble coolant liquid ※1	
	Temperature	0 to 60°C (No frozen liquid)		
	Allowable dynamic viscosity	40C：32mm²/s 40D：150mm²/s	1mm²/s	
Installation site		Indoor Ambient temperature: 0 to 40°C, 85% RH or less (no condensation) Place at altitude of 1000 m or less. Do not place in direct sunlight. Place in an area free of corrosive or explosive gas or vapor.		
Material	Casing (Suction Discharge Intermediate)	FC200		
	Impeller	FCD450		
	Shaft	S45C		
Sealing structure		Non-seal (mechanical-seal-less)		
Motor	Power source ※2	3 phase 50/60/60Hz 200/200/220V		
	Type	Totally enclosed fan cooled, indoor		Totally enclosed fan cooled type, outdoor ※3
	Protection method ※4	IP44		IP55
	Class of heat resistance	F		
	Rated value	IP44		
	Number of poles	2P		
Paint color		Munsell N1.5		

※1 The unit is not used for water and special liquids such as printing and acidic liquids. Contact us when using the unit for other special liquids (e.g. ceramic).
※2 -7W type: 60Hz 208/230/460V, -G type: 50Hz 200V, -GS type: 50Hz 380V
※3 We cannot set the pump outside. –G/GS type has a totally enclosed fan cooled, indoor
※4 -7W type: IP54, -G/GS type: IP43 under 3.0kW
-G/GS type: Please contact us 5.5kW and above.

Special specification

Shaft structure change (wear resistance improvement)

Table of Consumable Parts

Output (kW)	Specification	Bearing		Oil seal	
		Load side	Unload side	Load side	Unload side
0.75	-e/G/GS	6306ZZC3	6203ZZC3	VC30508	—
1.5		6306ZZC3	6303ZZC3		
2.2		6306ZZC3	6303ZZC3		
3.0		6307ZZC3	6205ZZC3		
5.5	-e	6309ZZC3	6306ZZC3	VC45628	VC30528
7.5		6309ZZC3	6306ZZC3		
0.75	-7W	6306ZZC3	6203ZZCM	SC30457	HM25385
1.5		6306ZZC3	6205ZZCM		
2.2		6306ZZC3	6205ZZCM		
3.0		6307ZZC3	6205ZZCM		

※ Please contact us for -G/GS model 5.5 kW and above

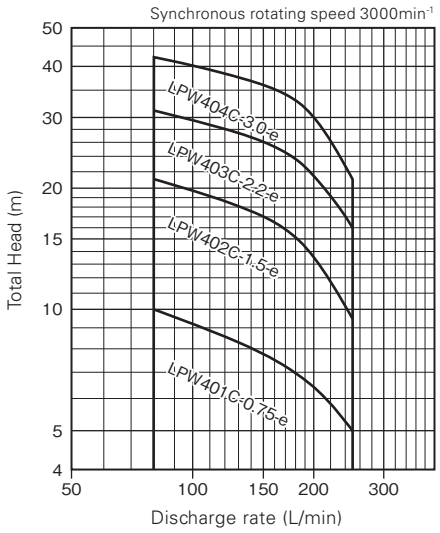
Bore diameter (mm)	O-ring (for companion flange)	O-ring (for water seal plate)
50	S67	—
65	—	S56

Selection chart

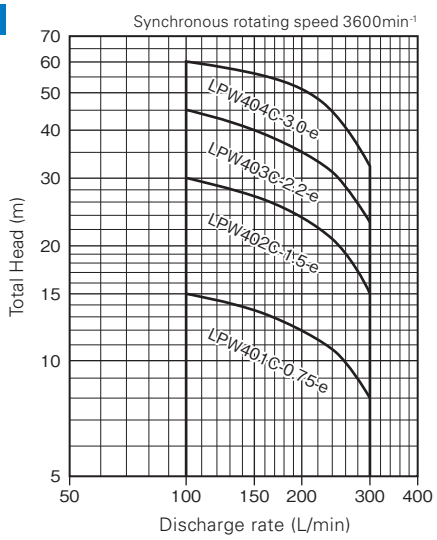
● **LPW40**

● **For low viscosity liquid** (Values for normal temperature, fresh water, with specific weight 1)

50Hz

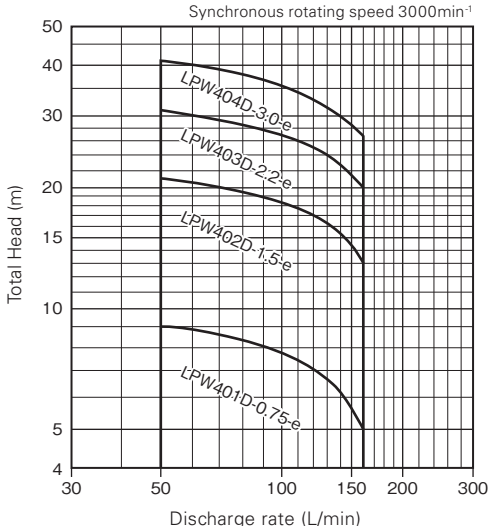


60Hz

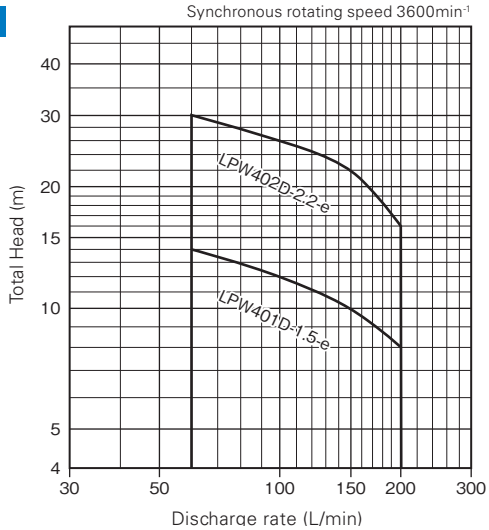


● **For high-viscosity liquid** (Value at 150 mm^2/s kinematic viscosity, specific gravity 1)

50Hz



60Hz



※ 7W/G/GS type is the same as the above selection chart.

Specification table

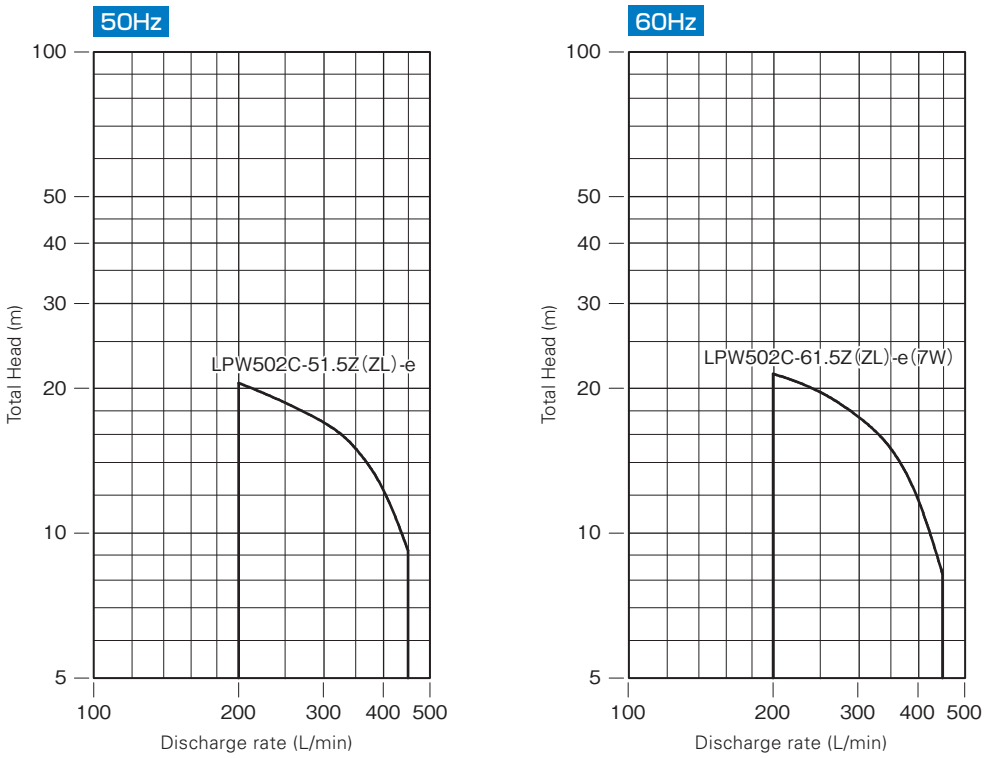
● **LPW40**

Bore diameter (mm)	Frequency (Hz)	Used liquids	Output (kW)	Type	Rated voltage (V)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)
40	50	For low viscosity liquid	0.75	LPW401C-0.75-e	200	3.5	20.5	80 ~ 250	10 ~ 5
				LPW401C-0.75-G	200	3.8	22.2		
				LPW401C-0.75-GS	380	2.0	12.0		
			1.5	LPW402C-1.5-e	200	5.6	45.0		21 ~ 9.5
				LPW402C-1.5-G	200	6.1	34.0		
				LPW402C-1.5-GS	380	3.3	18.8		
			2.2	LPW403C-2.2-e	200	8.0	64.0		31 ~ 16
				LPW403C-2.2-G	200	8.9	49.0		
				LPW403C-2.2-GS	380	5.2	26.0		
			3.0	LPW404C-3.0-e	200	13.0	107		42 ~ 21
				LPW404C-3.0-G	200	14.3	98.0		
				LPW404C-3.0-GS	380	7.5	52.0		
		For high-viscosity liquid	0.75	LPW401D-0.75-e	200	4.0	20.5	50 ~ 160	9 ~ 5
			1.5	LPW402D-1.5-e	200	6.6	45.0		21 ~ 13
			2.2	LPW403D-2.2-e	200	9.5	64.0		31 ~ 20
			3.0	LPW404D-3.0-e	200	14.8	107		41 ~ 27
	60	For low viscosity liquid	0.75	LPW401C-0.75-e	200/220	3.8/3.8	18.1/19.9	100 ~ 300	15 ~ 8
				LPW401C-0.75-7W	208/230/460	4.0/3.9/2.0	33.9/38.0/19.0		
			1.5	LPW402C-1.5-e	200/220	6.5/6.0	38.0/42.0		30 ~ 15
				LPW402C-1.5-7W	208/230/460	6.5/6.0/3.1	47.3/52.0/26.0		
			2.2	LPW403C-2.2-e	200/220	9.0/8.4	54.0/59.0		45 ~ 23
				LPW403C-2.2-7W	208/230/460	8.9/8.5/4.3	74.8/83.0/41.5		
			3.0	LPW404C-3.0-e	200/220	13.0/13.0	88.0/97.0		64 ~ 32
				LPW404C-3.0-7W	208/230/460	12.5/11.8/6.0	119.4/130/65.0		
		For high-viscosity liquid	1.5	LPW401D-1.5-e	200/220	6.5/6.0	38.0/42.0	60 ~ 200	14 ~ 8
				LPW401D-1.5-7W	208/230/460	6.5/6.0/3.1	47.3/52.0/26.0		
			2.2	LPW402D-2.2-e	200/220	9.0/8.4	54.0/59.0		30 ~ 16
				LPW402D-2.2-7W	208/230/460	8.9/8.5/4.3	74.8/83.0/41.5		

Note 1) The discharge rate and total head values were obtained in tests with kinematic viscosity of 1 mm^2/s (the same as tap water at normal temperature).
Note 2) The rated current in the above table (current value listed on the pump nameplate) is the recommended current value setting of the protection unit.
Note 3) Please contact us for –G/GS type high viscosity liquids.

Selection chart

● **LPW50**



Specification table

● **LPW50**

Inlet diameter (mm)	Frequency (Hz)	Output (kW)	Type	Rated voltage (V)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)
50	50	1.5	LPW502C-51.5Z-e	200	6.6	45.0	200 ~ 450	20.5 ~ 9
			LPW502C-51.5ZL-e					
	60		LPW502C-61.5Z-e	200/220	6.5/6.0	38.0/42.0	200 ~ 450	21 ~ 8
			LPW502C-61.5ZL-e					
			LPW502C-61.5ZL-7W	208/230/460	8.7/8.0/4.0	47.3/52.0/26.0		

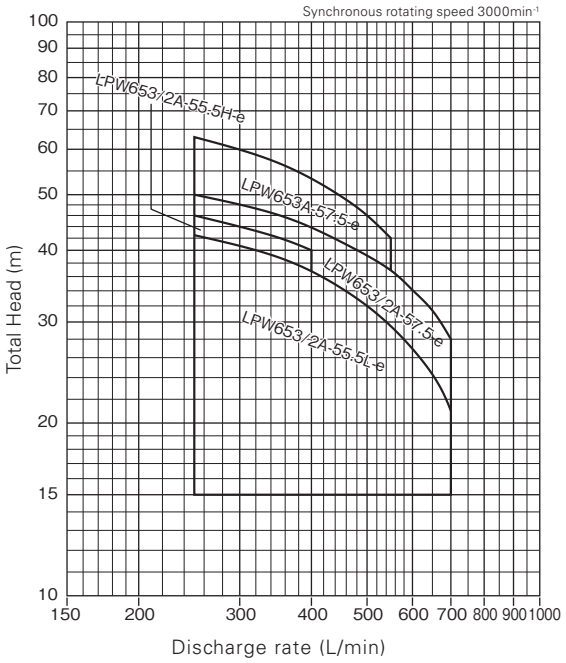
Note) The rated current (current value printed on the plate of pumps) is the recommended current setting of the protection device.

Selection chart

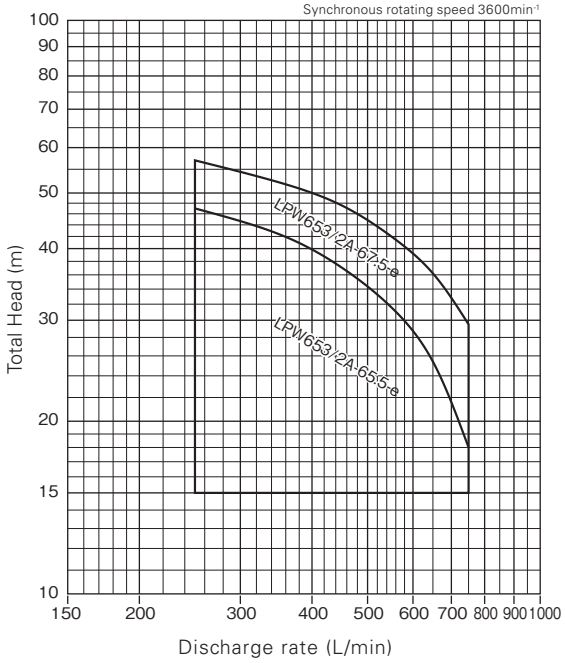
●**LPW65**

●**For low viscosity liquid** (value at fresh water at normal temperature, specific gravity 1)

50Hz



60Hz



※-G/GS type is the same as the above selection chart.

Specification table

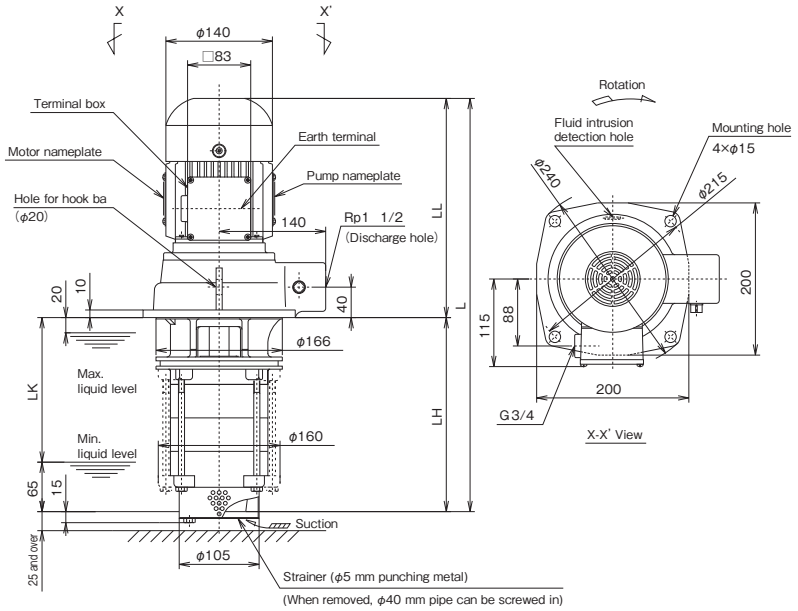
● **LPW65**

Inlet diameter (mm)	Frequency (Hz)	Output (kW)	Type	Rated voltage (V)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)
65	50	5.5	LPW653/2A-55.5L-e	200	20.3	204	250 ~ 700	42.5 ~ 21
		5.5	LPW653/2A-55.5H-e		20.3	204	250 ~ 400	46 ~ 40
		7.5	LPW653/2A-57.5-e		27.2	288	250 ~ 700	50 ~ 28
		7.5	LPW653A-57.5-e-e		27.2	288	250 ~ 550	63 ~ 42
	60	5.5	LPW653/2A-65.5-e	200/220	19.8/18.3	178/197	250 ~ 750	47 ~ 18
		7.5	LPW653/2A-67.5-e		26.5/24.4	254/282	250 ~ 750	57 ~ 29.5

Note 1) The rated current in the above table (current value listed on the pump nameplate) is the recommended current value setting of the protection unit.
Note 2) Please contact us for –G/GS types

Dimensional outline drawing

●LPW40-e/G/GS



Dimensions

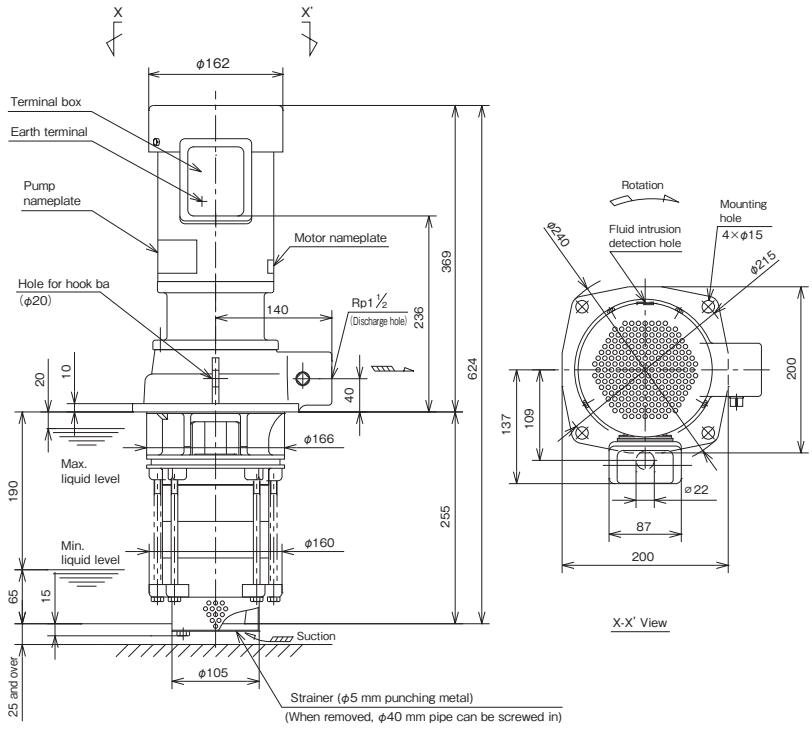
●LPW40-e/G/GS

〈Unit : mm〉

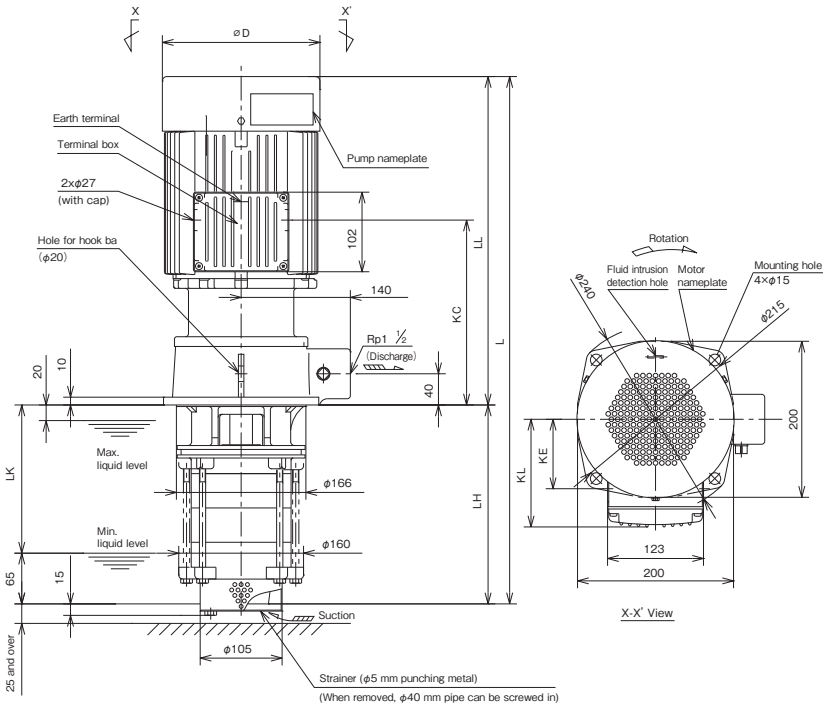
Bore	Used liquids	Frequency (Hz)	Type	D	KB	KC	KE	KL	L	LH	LK	LL	Approx. mass(kg)
40	For low viscosity	50/60	LPW401C-0.75-e	140	102	143	88	115	543	255	190	288	28
			LPW402C-1.5-e	175	106	146	103	130	588	255	190	333	35
			LPW403C-2.2-e	175	106	146	103	130	588	255	190	333	42
			LPW404C-3.0-e	195	108	148	113	140	663	299	234	364	49
		50	LPW401C-0.75-G (GS)	140	102	143	88	115	543	255	190	288	33
			LPW402C-1.5-G (GS)	175	102	143	103	130	588	255	190	333	37
			LPW403C-2.2-G (GS)	175	102	143	103	130	588	255	190	333	45
			LPW404C-3.0-G (GS)	195	103	145	113	140	663	299	234	364	57
	For high viscosity		LPW401D-0.75-e	140	102	143	88	115	543	255	190	288	28
			LPW402D-1.5-e	175	106	146	103	130	588	255	190	333	35
			LPW403D-2.2-e	175	106	146	103	130	588	255	190	333	42
			LPW404D-3.0-e	195	108	148	113	140	663	299	234	364	49
		60	LPW401D-1.5-e	175	106	146	103	130	588	255	190	333	34
			LPW402D-2.2-e	175	106	146	103	130	588	255	190	333	41

Dimensional outline drawing

●LPW40-7W 0.75kW



●LPW40-7W 1.5kW and over



Dimensions

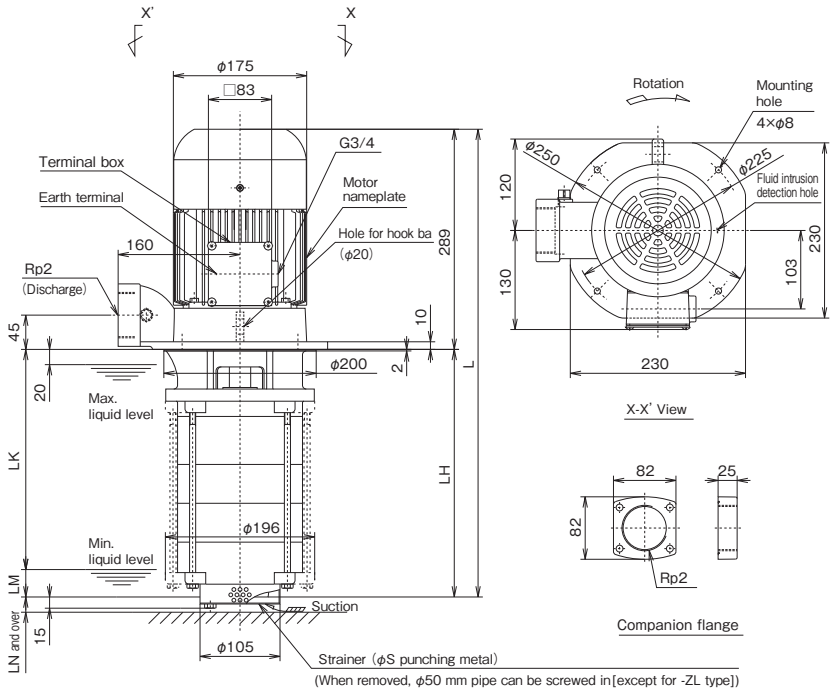
●LPW40-7W 1.5kW and above

〈Unit : mm〉

Bore	Used liquids	Frequency (Hz)	Type	KC	L	LH	LK	LL	Approx. mass(kg)
40	For low viscosity	60	LPW402C-1.5-7W	237	676	255	190	421	45
			LPW403C-2.2-7W	237	676	255	190	421	52
			LPW404C-3.0-7W	240	751	299	234	452	59
	For high viscosity		LPW401D-1.5-7W	237	676	255	190	421	44
			LPW402D-2.2-7W	237	676	255	190	421	51

Dimensional outline drawing

●LPW50-e



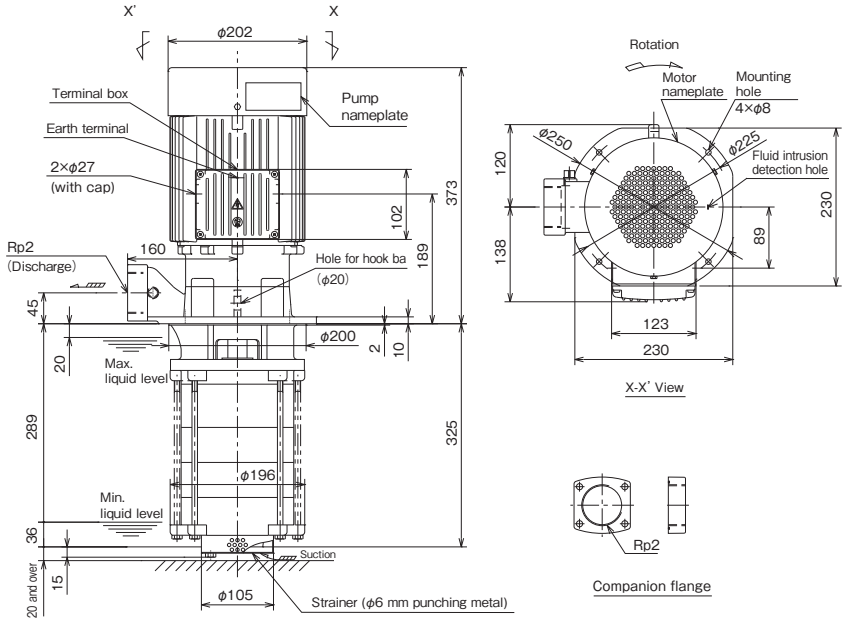
Dimensions

●LPW50-e

〈Unit : mm〉

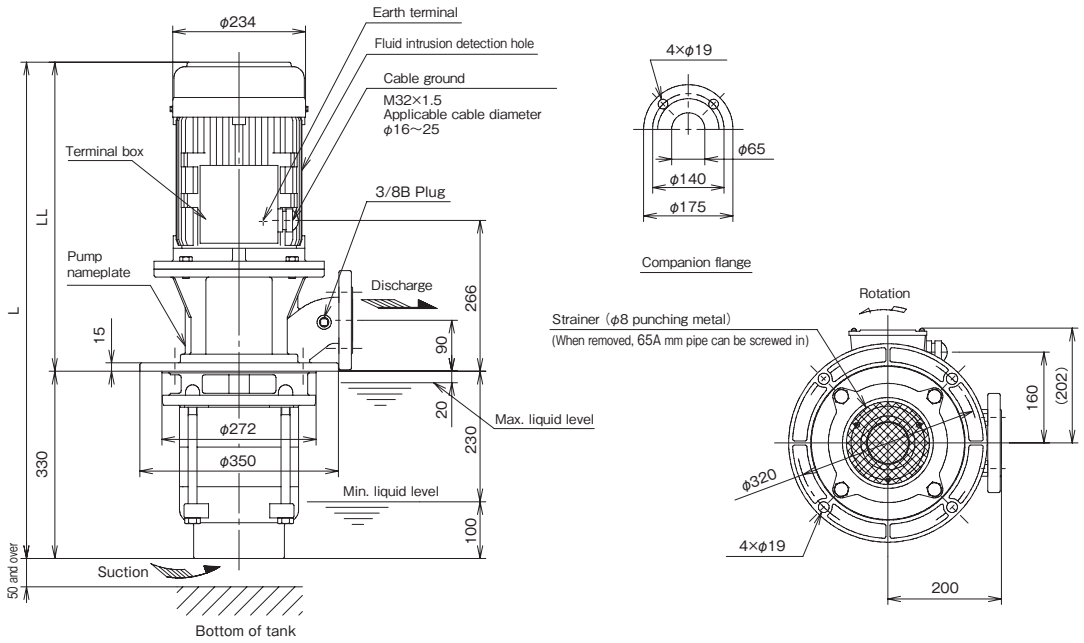
Bore	Frequency (Hz)	Type	LH	LK	LM	LN	L	S	Approx. mass(kg)
50	50	LPW502C-51.5Z-e	219	168	51	25	508	5	40
	60	LPW502C-61.5Z-e							
	50	LPW502C-51.5ZL-e	325	289	36	20	614	6	45
	60	LPW502C-61.5ZL-e							

●LPW502C-61.5ZL-7W



■Dimensional outline drawing

●LPW65-e



■Dimensions

●LPW65-e

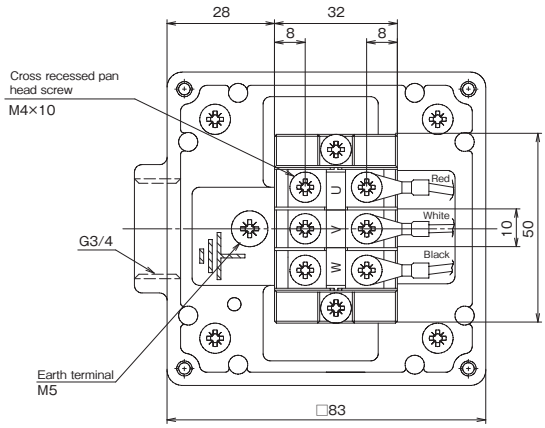
〈Unit : mm〉

Bore	Frequency (Hz)	Type	LL	L	Approx. mass(kg)
65	50	LPW653/2A-55.5L-e	545	875	97
		LPW653/2A-55.5H-e			97
		LPW653/2A-57.5-e	585	915	100
		LPW653A-57.5-e			102
	60	LPW653/2A-65.5-e	545	875	97
		LPW653/2A-67.5-e	585	875	100

■Detailed drawing of the terminal box

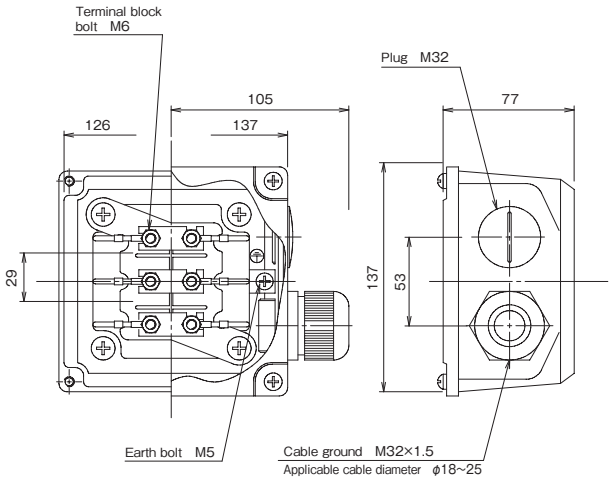
● LPW40-e, LPW50-e

■Dimensional outline drawing



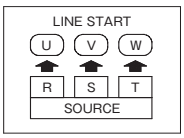
●LPW65-e

■Dimensional outline drawing



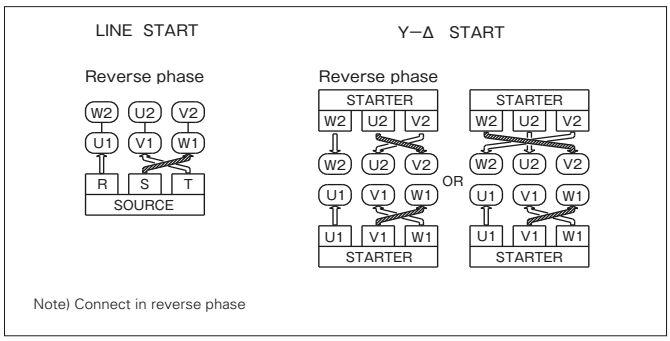
● LPW40-e, LPW50-e

■Connection diagram



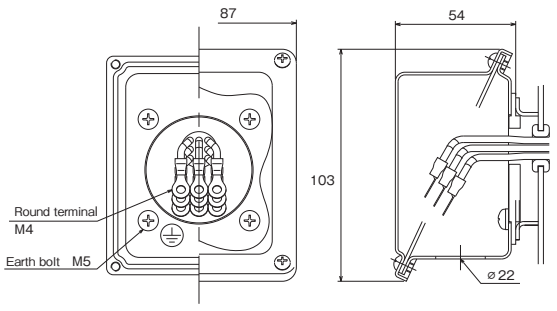
●LPW65-e

■Connection diagram



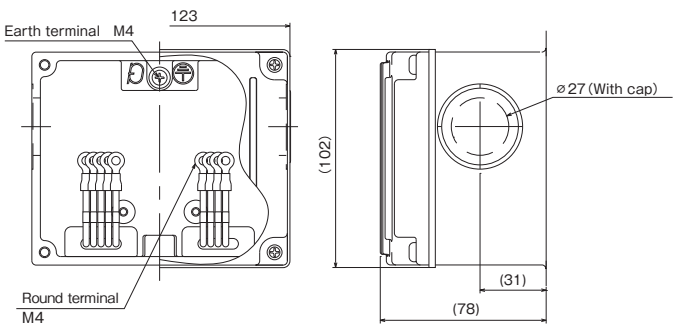
● LPW-7W 0.75kW

■Dimensional outline drawing



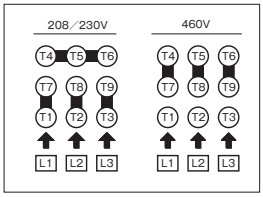
●LPW-7W 1.5kW and above

■Dimensional outline drawing



● LPW-7W Full output

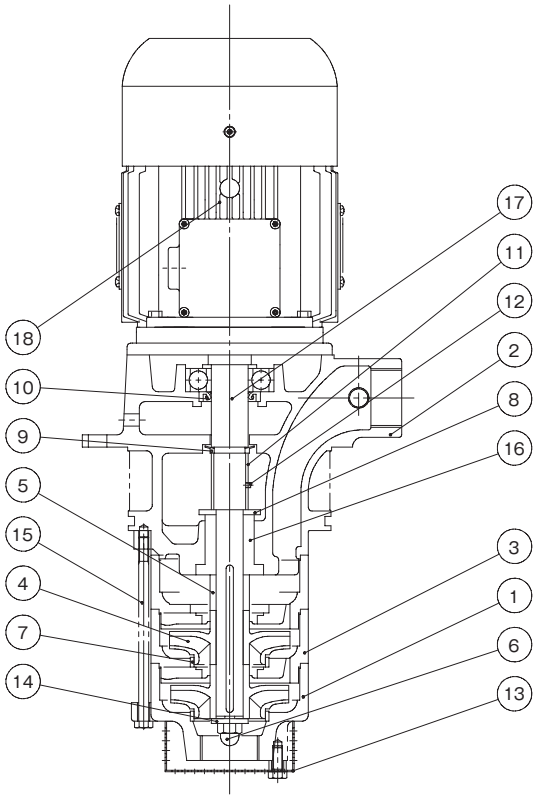
■Connection diagram



※ Please contact us for -G/GS type.

■Sectional drawing

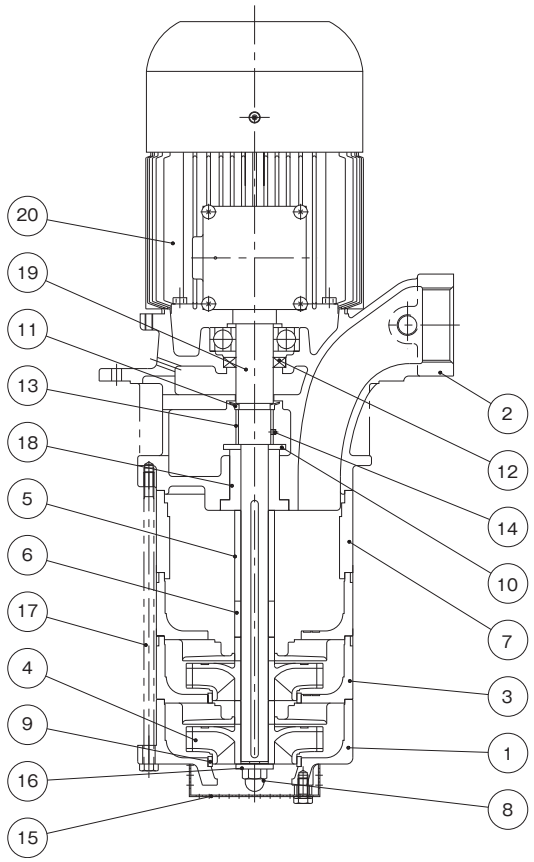
●LPW40



No.	Part Name	Qty	Material
1	Suction casing	1	FC200
2	Discharge casing	1	FC200
3	Intermediate casing	2	FC200
4	Impeller	2	FCD450
5	Shaft spacer	1	STS
6	Impeller nut	1	SUS304
7	Wearing ring	2	SUS304
8	Deflector	1	SS400
9	Deflector	1	NBR
10	Oil seal	1	NBR
11	Collar	1	STKM
12	Hexagon socket set screw	1	SCM435
13	Strainer	1	SPCC
14	Washer	1	SUS420J1
15	Tie bolt	4	SS400
16	Shaft sleeve	1	FCD450
17	Shaft	1	S35C
18	Motor	1	

Applicable models : LPW402C-1.5-□, LPW402D-1.5-□, LPW402D-2.2-□

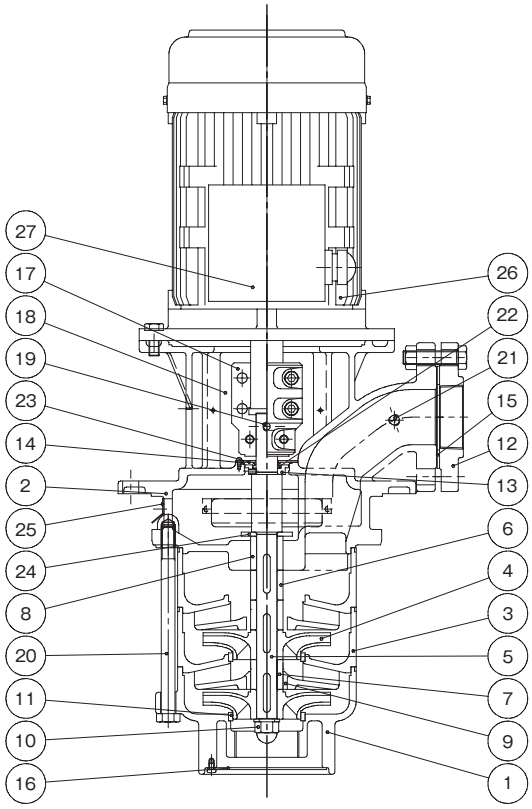
●LPW50-ZL



No.	Part Name	Qty	Material
1	Suction casing	1	FC200
2	Discharge casing	1	FC200
3	Intermediate casing	2	FC200
4	Impeller	2	FCD450
5	Shaft spacer	1	STS
6	Shaft spacer	1	STS
7	Intermediate spacer	1	STKM13A
8	Impeller nut	1	SUS304
9	Wearing ring	2	SUS304
10	Deflector	1	SS400
11	Deflector	1	NBR
12	Oil seal	1	NBR
13	Collar	1	STKM
14	Hexagon socket set screw	1	SCM435
15	Strainer	1	SS400
16	Washer	1	SUS420J1
17	Tie bolt	4	SS400
18	Shaft sleeve	1	FCD450
19	Shaft	1	S35C
20	Motor	1	

Sectional drawing

●LPW65



No.	Part Name	Qty	Material
1	Suction casing	1	FC200
2	Discharge casing	1	FC200
3	Intermediate casing	2	FC200
4	Impeller	2	FCD450
5	Shaft	1	S45C
6	Shaft sleeve A	2	SUS304
7	Shaft sleeve B	1	SiC
8	Shaft sleeve C	1	SUS304
9	Intermediate bush	1	SiC
10	Impeller nut	1	SUS304
11	Wearing ring	2	SUS304
12	Companion flange	1	FC200
13	Deflector	1	C3604B
14	O-ring	1	NBR
15	Sheet packing	1	NBR
16	Strainer	1	SPCC
17	Coupling	1	FC200
18	Coupling cover	2	SUS304
19	Hexagon socket set screw	1	SCM435
20	Tie bolt	4	SS400
21	Plug	1	SS400
22	V-ring	1	FKM
23	Coolant sealing plate	1	SUS304
24	Deflector	1	SUS304
25	Cover	3	SUS304
26	Motor	1	
27	Terminal box	1	SPCC

Applicable models : 50Hz LPW653/2A-55.5L-□, LPW653/2A-55.5H-□, LPW653/2A-57.5-□
60Hz LPW653/2A-65.5-□, LPW653/2A-67.5-□

Features

① Energy-saving pump equipped with a top-runner efficiency (equivalent to IE3) motor.
② As the length below the mounting bed is as short as 330mm in all models, tank depths can be reduced.
③ Serial operation allows generating up to 3.92 MPa (40 kgf/cm^2).*
④ The fluid level during operation can be adjusted as preferred by connecting the intake piping.
⑤ As a non-seal (mechanical seal-less) structure is adopted, the pump is highly durable.
⑥ Stainless steel and special resin with high reliability are used in the pump's main unit.
⑦ The connecting dimensions are compatible with those of conventional pumps.

*Figures marked with asterisks are for reference only.

Description of types

LKW 20 09 -6 3.0 D -e
① ② ③ ④ ⑤ ⑥ ⑦

① Model
② Bore diameter
③ Number of impellers
④ Frequency (5: 50Hz, 6: 60Hz)
⑤ Output
⑥ Operating method (No description: independent operation, D: serial operation)
⑦ Equipped with a top-runner efficiency (equivalent to IE3) motor

Standard Specification

Used liquid	Property liquid	Water-soluble coolant liquid
	Temperature	0 to 60°C (No frozen liquid)
	Allowable dynamic viscosity	1mm^2/s
Installation location		Indoor Ambient temperature: 0 to 40°C, 85% RH or below (without condensation) Place at altitude of 1000 m or less. Do not place in direct sunlight. Place in an area free of corrosive or explosive gas or vapor.
Material	Suction cover · Discharge casing	FC200
	Intermediate casing	ARLS※+SUS304
	Impeller	ARLS※
	Shaft	S35C
Shaft seal structure		Non-seal (mechanical seal-less)
Motor	Power	3 phases 50/60/60 Hz, 200/200/220 V
	Type	Totally enclosed fan cooled type, indoor
	Method of protection	IP44
	Insulation class	F
	Rating	Continuous
	Number of poles	2P
Paint color		Munsell N1.5

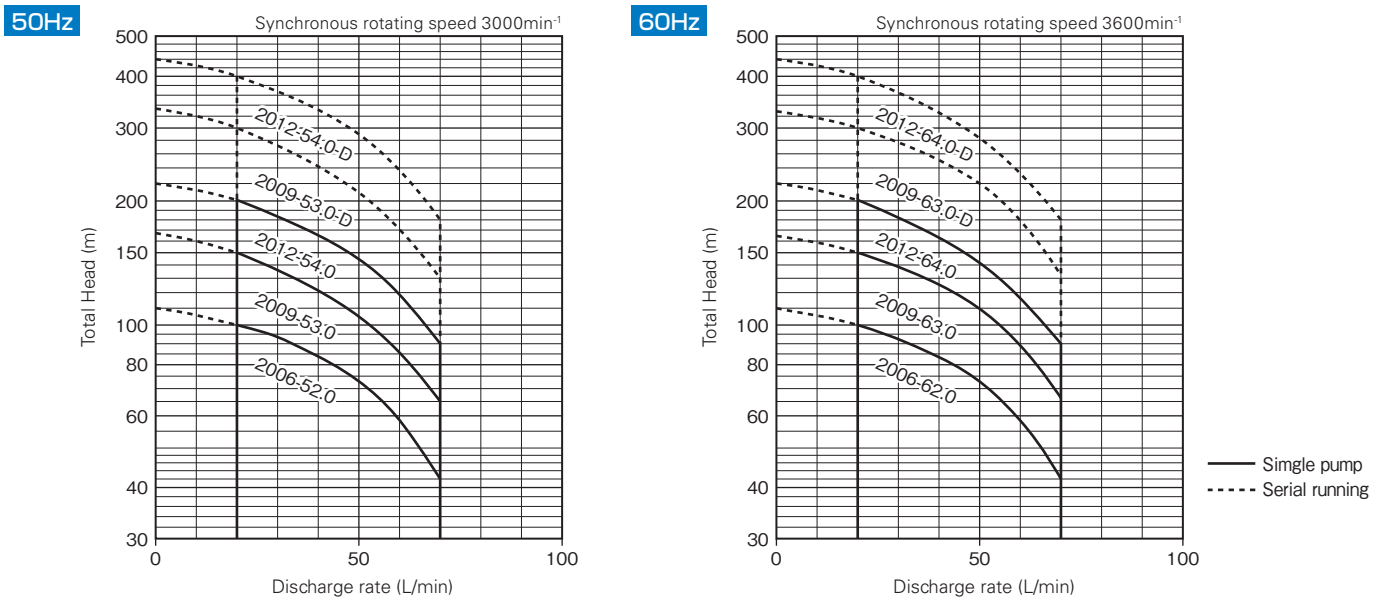
※ Special polyamide resin reinforced with glass fiber, etc.

Table of Consumable Parts

Output (kW)	Bearing		Oil seal	O-ring (For intermediate casing and spacer.)
	Load side	Unload side		
2.2	Non-load side	6303ZZC3	VC30456	G135
3.0	6308ZZC3	6205ZZC3	VC40586	
4.0	6308ZZC3	6205ZZC3	VC40586	

Selection chart

(Values for normal temperature, fresh water, with specific weight 1)



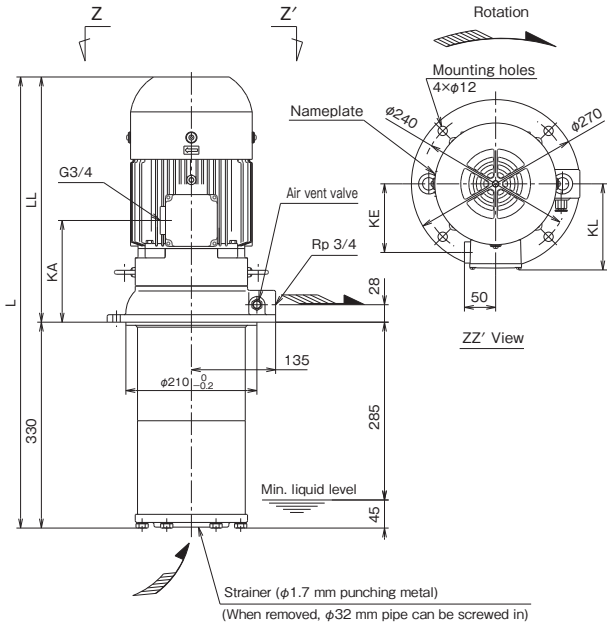
Specification table

Bore (mm)	Frequency (Hz)	Type	Rated voltage (V)	Output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)
20	50	LKW2006-52.0-e	200	2.2	9.3	64.5	20 ~ 70	100 ~ 42
		LKW2009-53.0-e		3.0	14.8	108	20 ~ 70	150 ~ 65
		LKW2012-54.0-e		4.0	16.0	128	20 ~ 70	200 ~ 90
		LKW2009-53.0-D-e		3.0	14.8	108	20 ~ 70	300 ~ 130
		LKW2012-54.0-D-e		4.0	16.0	128	20 ~ 70	400 ~ 180
20	60	LKW2006-62.0-e	200/220	2.2	8.4/7.9	55.5/61.1	20 ~ 70	100 ~ 43
		LKW2009-63.0-e		3.0	12.0/12.1	88.0/97.0	20 ~ 70	150 ~ 67
		LKW2012-64.0-e		4.0	15.0/14.0	108/119	20 ~ 70	200 ~ 90
		LKW2009-63.0-D-e		3.0	12.0/12.1	88.0/97.0	20 ~ 70	300 ~ 134
		LKW2012-64.0-D-e		4.0	15.0/14.0	108/119	20 ~ 70	400 ~ 180

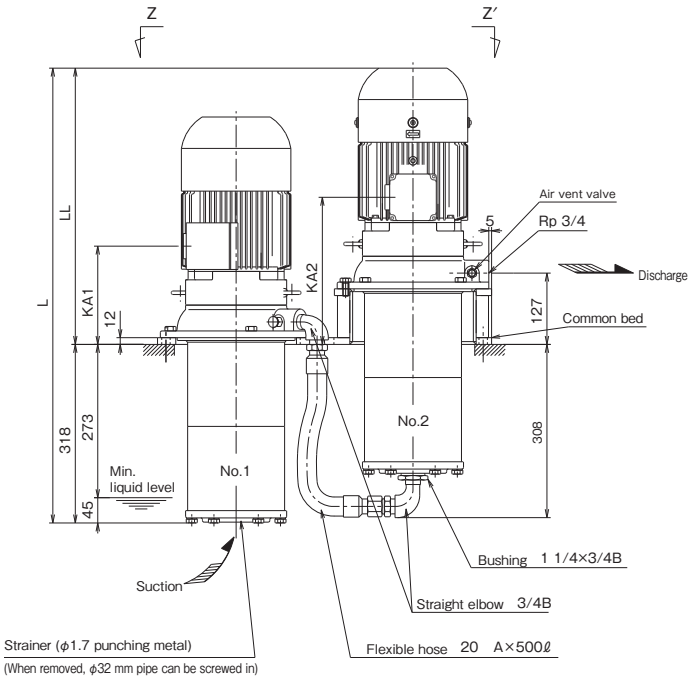
Notes 1) The rated current in the table above (the current value written on the pump's nameplate) is the recommended setting for the current value of the protective device.
Notes 2) The rated current and the striking current value in the table above are the values per unit.

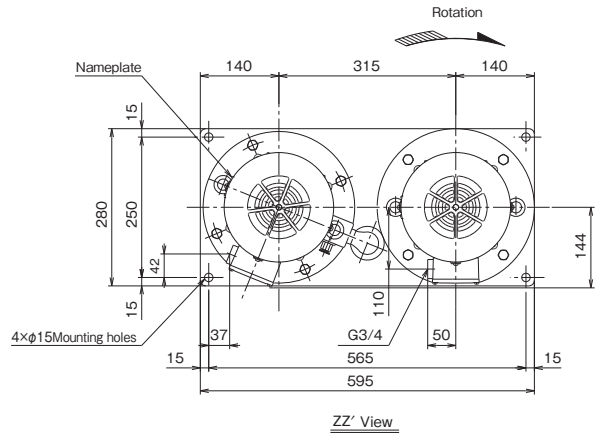
Dimensional outline drawing

Independent operation



Series running





Dimensions

Independent operation

〈Unit：mm〉

Bore (mm)	Frequency (Hz)	Type	L	LL	KA	KE	KL	Approx. mass(kg)
20	50	LKW2006-52.0-e	693	363	158	100	128	47
		LKW2009-53.0-e	723	393	163	110	138	55
		LKW2012-54.0-e	736	406	176	110	138	68
	60	LKW2006-62.0-e	693	363	158	100	128	47
		LKW2009-63.0-e	723	393	163	110	138	55
		LKW2012-64.0-e	736	406	176	110	138	68

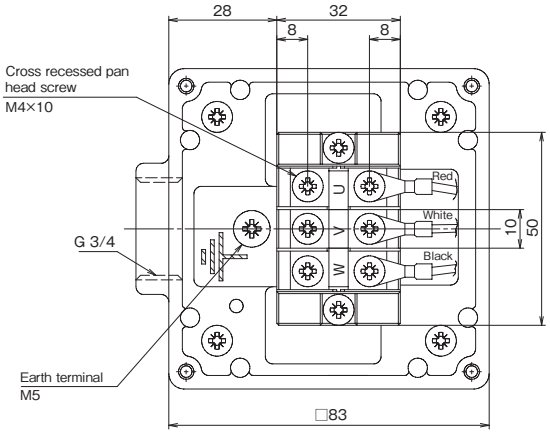
Series running

〈Unit：mm〉

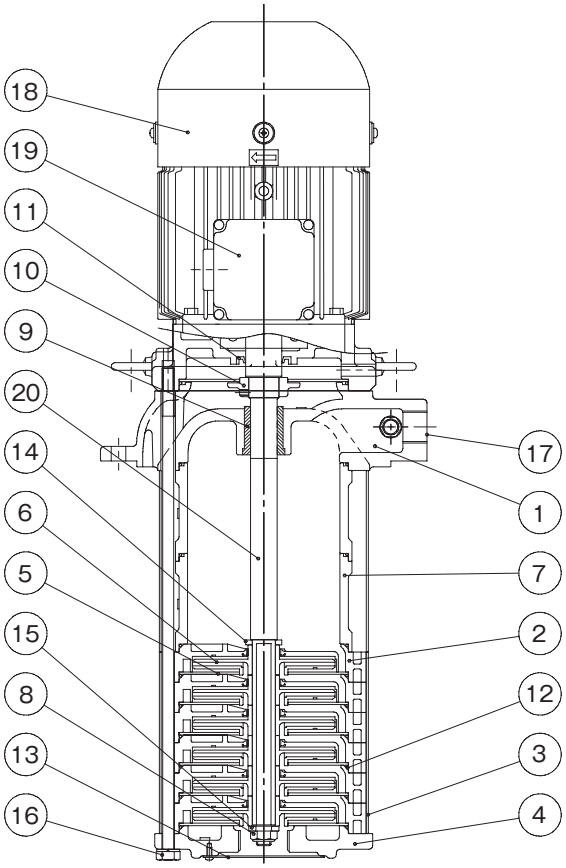
Bore (mm)	Frequency (Hz)	Type	KA1	KA2	LL	L	Approx. mass(kg)
20	50	LKW2009-53.0-D-e	175	188	492	810	128
		LKW2012-54.0-D-e	262	275	505	823	152
	60	LKW2009-63.0-D-e	175	188	492	810	128
		LKW2012-64.0-D-e	262	275	505	823	152

In the case of serial running, we ship the pumps and the accompanying components in separate packages. Please assemble them at your site.

Detailed drawing of the terminal box



■Sectional drawing



n: Number of stages

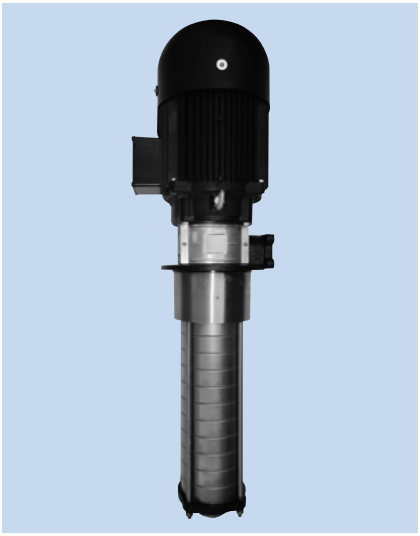
No.	Part Name	Qty	Material
1	Discharge casing	1	FC200
2	Intermediate casing	n	ARLS※1 + (SUS304)
3	Outer casing	2	SUS304
4	Suction cover	1	FC200
5	Casing cover	n + 1	SUS304
6	Impeller	n	ARLS
7	Intermediate spacer	※2	FC200
8	Impeller nut	1	SUS304
9	Discharge bush	1	SUS420J2
10	Deflector	1	FC200
11	Oil seal	1	NBR
12	O-ring	※3	NBR
13	Strainer	1	SUS304
14	Supporter ring	1	SUS403
15	Washer	1	SUS403
16	Tie bolt	6	SS400
17	Air vent valve	1	C3604BD
18	Motor	1	ADC
19	Terminal box	1	ADC (※4)
20	Motor bearing	1	S35C

※1 Special polyamide resin reinforced with glass fiber, etc.
※2 2.2kW: 2, 3.0kW: 1, 4.0kW: 0
※3 2.2kW: 10, 3.0kW: 12, 4.0kW: 14
※4 Terminal box cover is SECE.

Features

① Energy-saving pump equipped with a top-runner efficiency (equivalent to IE3) motor (VKB-e).
② Non-seal (mechanical seal-less) structure is adopted.
③ EU RoHS Directive (Restriction of Hazardous Substances Directive) compliant.
④ EU Directive for CE marking compliant.
⑤ The lineup includes the models that meet the efficiency standards of various regulations:
VKB-e type : Equipped with a top-runner efficiency (equivalent to IE3) motor.
VKB-G/GS types: Equipped with a Chinese energy standard regulation (GB18613-2012) efficiency (grade GB3) motor *1.
⑥ Enhanced protection against mist and other environmental elements are available.
⑦ Impeller designed for high-frequency operation is adopted.
⑧ Capable of energy-saving operation with the inverter (flow rate adjusting, etc.) (200V class) *2.
⑨ The lineup that includes both VKB-H type (pressure type) and VKB-Q type (standard type) broadens the scope of choices of heads and flow rates.

Note) ＊1 VKB-G type is equipped with a high efficiency motor that meets grade GB3 efficiency. (This is not certified as it is a non-regulated pump.)
＊2 Resonance may occur arbitrarily when the unit is operated at variable speeds using the inverter. Operate the unit avoiding the resonance points.



Take note that the actual unit and its paint color, etc., may partially differ from the photo.

Description of types

VKB 19 26 2 A H -e
① ② ③ ④ ⑤ ⑥ ⑦

① Model
② Number of impellers
③ Number of stages
④ Series number
⑤ Number of phases · Frequency (A: 3 phases, 50/60Hz; F: 3 phases, 50Hz)
⑥ Characteristics (H: pressure type, Q: standard type)
⑦ Efficiency regulation compliant.
-e : Equipped with a top-runner efficiency (equivalent to IE3) motor.
-G * : Equipped with a Chinese energy label regulation (GB18613-2012) efficiency equivalent (grade GB3) motor･50Hz, 200V.
-GS : Equipped with a Chinese energy label regulation (GB18613-2012) efficiency-compliant (grade GB3) motor･50Hz, 220/380V.

Note) ＊ VKB-G type is equipped with a high efficiency motor that meets grade GB3 efficiency. (This is not certified as it is a non-regulated pump.)

Standard Specification

Used liquid	Property liquid	Grinding and cutting fluids after secondary treatment ※1		
	Temperature	−20 to 90°C (No frozen liquid)		
	Allowable dynamic viscosity	Model type	At 50 Hz	At 60 Hz
		VKB07 □□ 2AH-e,VKB04 □□ 2AQ-e VKB06 □□ 2AQ-e,VKB12 □□ 2AQ-e	75㎟/s	37.5㎟/s
		VKB □□□□ 2F □ -e (50 Hz exclusive unit)	1㎟/s	—
		Models other than the above	75㎟/s	75㎟/s
Installation location		Indoor Ambient temperature: −20 to 40°C, 85% RH or below (without condensation) Place at altitude of 1000 m or less. Do not place in direct sunlight. Place in an area free of corrosive or explosive gas or vapor.		
Material	Pump leg	FC200		
	Casing･ Outer casing	SUS304		
	Suction chamber	FC150		
	Impeller	SUS304		
	Motor shaft (Motor/Pump)	Pump bearing: SUS316 Motor bearing: S35C		
Shaft seal structure		Non-seal (mechanical seal-less)		
Motor	Type	Totally enclosed fan cooled type, indoor		
	Method of protection	IP54		
	Power *2	A: 3 phases 50/60/60Hz 200/200/220V F: 3 phases 50Hz 200V		
	Insulation class	F		
	Number of poles	2P		
	Standard	IEC60034-1		
Paint color	Pump	Munsell N1		
	Motor	Black		

※1 Take note that the unit is not used for water and special liquids such as printing and acidic liquids. Contact us when using the unit for other special liquids (ceramic, etc.).
※2 −G type: 50Hz 200V, -GS type: 50Hz 380V

Special specification

Motor modifications	Change in voltage, change in position of terminal box, change in direction of terminal box
Change of structure	Stainless steel suction chamber ※

※ The pump is not 100% made of stainless steel. Pump legs and companion flanges are made of cast iron. "-SU" is added to the model type as a suffix.

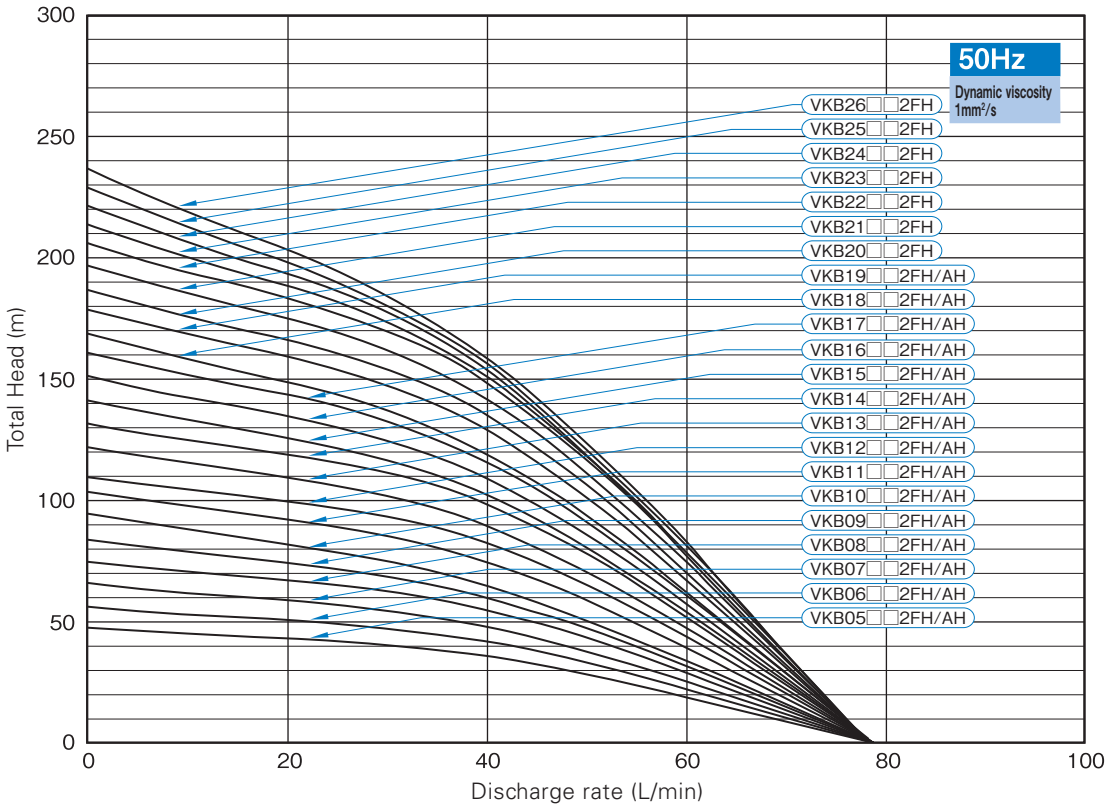
Table of Consumable Parts

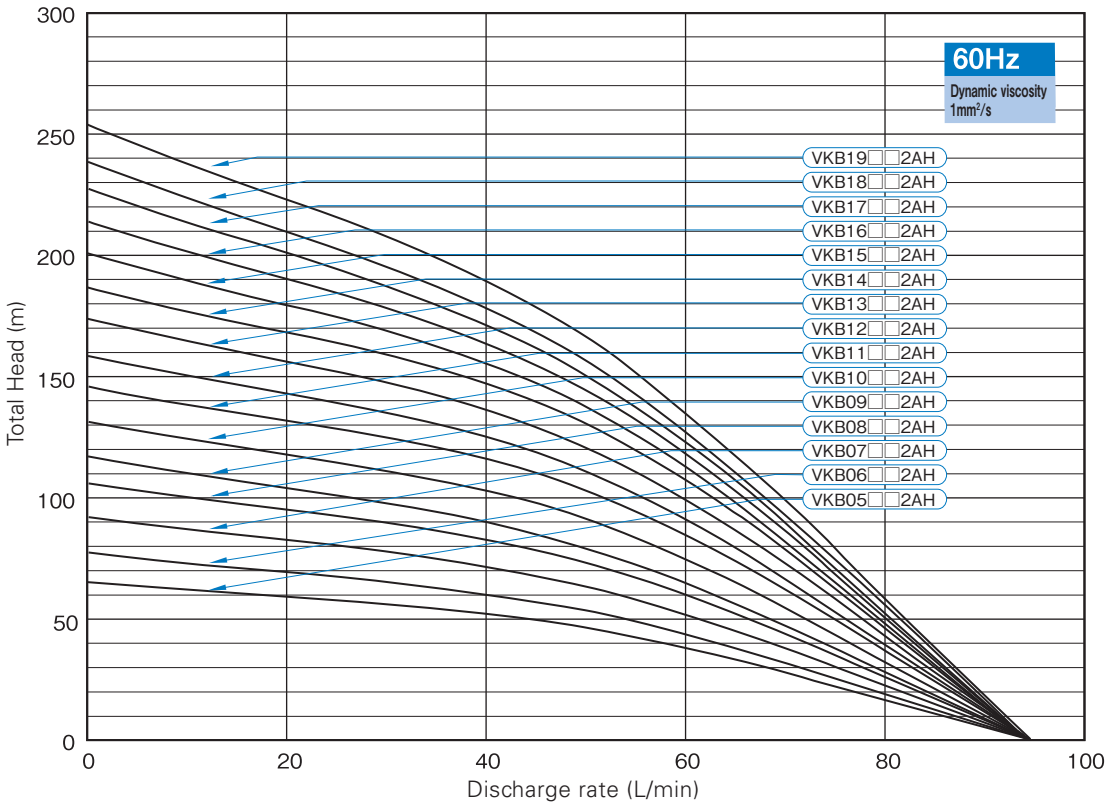
Type	Bearings		Oil seal			O-ring (Companion flange) Material: FKM
	Load side	Unload side	Load side (Pump section)	Load side (earings section)	Unload side	
VKB05 □□ 2FH-e ~ VKB07 □□ 2FH-e	6305ZZC3	6203ZZC3	IS12257	DS17355	VC24406	G50
VKB04 □□ 2FQ-e						
VKB05 □□ 2AH-e ~ VKB09 □□ 2AH-e	6307ZZC3	6303ZZC3				
VKB08 □□ 2FH-e ~ VKB19 □□ 2FH-e						
VKB04 □□ 2AQ-e ~ VKB06 □□ 2AQ-e						
VKB05 □□ 2FQ-e ~ VKB10 □□ 2FQ-e						
VKB10 □□ 2AH-e ~ VKB19 □□ 2AH-e	6309ZZC3	6205ZZC3		VC25455	VC24406	
VKB20 □□ 2FH-e ~ VKB26 □□ 2FH-e						
VKB07 □□ 2AQ-e ~ VKB12 □□ 2AQ-e						
VKB13 □□ 2FQ-e ~ VKB22 □□ 2FQ-e						

Selection chart

Synchronous rotating speed 50Hz : 3000min^{-1}
60Hz : 3600min^{-1}

●VKB-H



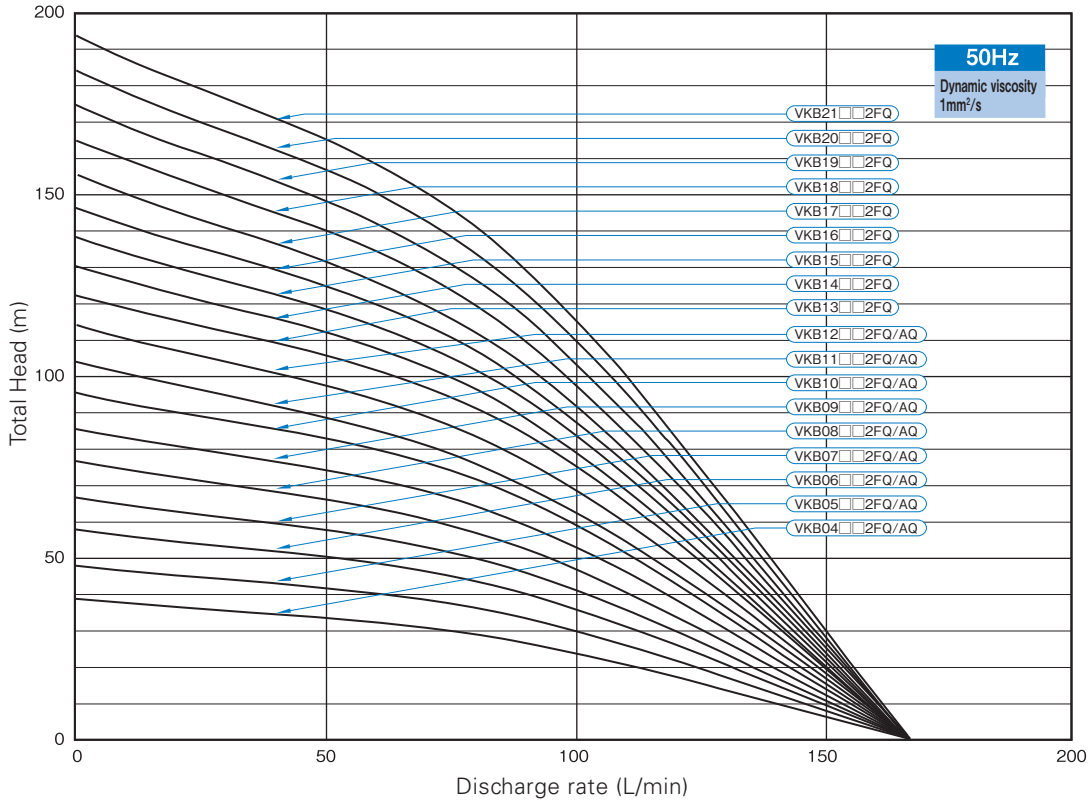


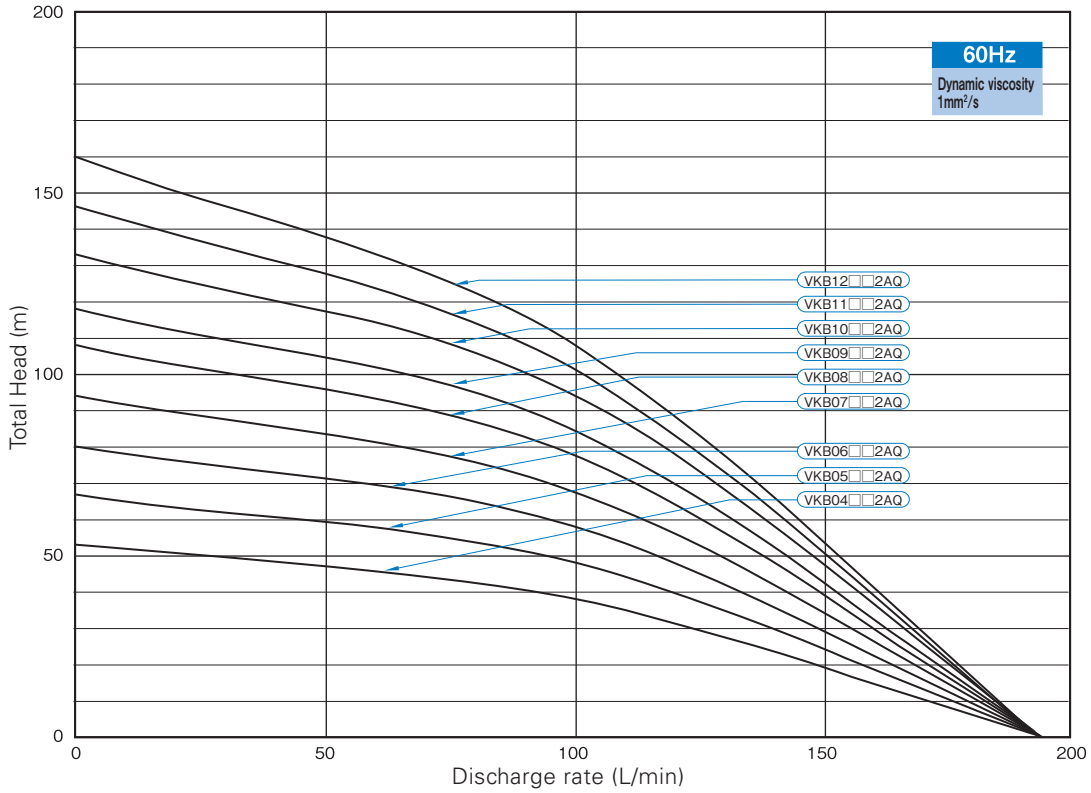
Note 1) The above characteristic curves reflect the full impeller condition of the units. The total head may be decreased depending on the flow rate if empty casings are involved because of pressure loss at the empty casings.
Note 2) Take note that the performance significantly varies according to the type of liquid circulated and the liquid' s viscosity. Depending on the kinematic viscosity or specific weight, some types of liquid cannot be used.

Selection chart

Synchronous rotating speed 50Hz : 3000min^{-1}
60Hz : 3600min^{-1}

●VKB-Q





Note 1) The above characteristic curves reflect the full impeller condition of the units. The total head may be decreased depending on the flow rate if empty casings are involved because of pressure loss in the empty casings.

Note 2) Take note that the performance significantly varies according to the type of liquid circulated and the liquid's viscosity. Depending on the kinematic viscosity or specific weight, some types of liquid cannot be used.

Specification table

●VKB-H

・VKB-AH-e

Type	50Hz							60Hz						
	Rated voltage (V)	Nominal output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)	Allowable dynamic viscosity (mm^2/s)	Rated voltage (V)	Nominal output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)	Allowable dynamic viscosity (mm^2/s)
VKB05 □□ 2AH-e	200	0.5	5.4	42.1	40	30	75	200/220	0.85	5.8/5.6	38.6/42.5	50	40	75
VKB06 □□ 2AH-e		0.6	5.9	42.1	40	36			1.02	6.0/5.8	38.6/42.5	50	48	
VKB07 □□ 2AH-e		0.7	6.2	42.1	40	42			1.19	6.0/5.8	38.6/42.5	50	56	37.5
VKB08 □□ 2AH-e		0.8	6.9	64.0	40	48			1.36	8.8/8.3	54.0/59.0	50	64	75
VKB09 □□ 2AH-e		0.9	7.4	64.0	40	54			1.53	10.0/9.1	54.0/59.0	50	72	
VKB10 □□ 2AH-e		1	12.0	113	40	60			1.7	10.3/10.6	92.0/101	50	80	
VKB11 □□ 2AH-e		1.1	12.3	113	40	66			1.87	11.1/11.3	92.0/101	50	88	
VKB12 □□ 2AH-e		1.2	12.5	113	40	72			2.04	11.7/11.8	92.0/101	50	96	
VKB13 □□ 2AH-e		1.3	12.9	113	40	78			2.21	12.7/12.6	92.0/101	50	104	
VKB14 □□ 2AH-e		1.4	13.1	113	40	84			2.38	13.5/13.2	92.0/101	50	112	
VKB15 □□ 2AH-e		1.5	13.6	113	40	90			2.55	14.4/13.9	92.0/101	50	120	
VKB16 □□ 2AH-e		1.6	14.0	113	40	96			2.72	15.3/14.6	92.0/101	50	128	
VKB17 □□ 2AH-e		1.7	14.5	113	40	102			2.89	16.2/15.3	92.0/101	50	136	
VKB18 □□ 2AH-e		1.8	15.2	113	40	108			3.06	16.2/15.3	92.0/101	50	144	
VKB19 □□ 2AH-e		1.9	15.7	113	40	114			3.23	16.2/15.3	92.0/101	50	152	

Note) The rated current in the table above (the current value written on the pump's nameplate) is the recommended setting for the current value of the protective device.

・VKB-FH-e

Type	50H						
	Rated voltage (V)	Nominal output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)	Allowable dynamic viscosity (mm^2/s)
VKB05 □□ 2FH-e	200	0.5	3.6	20.5	40	30	1
VKB06 □□ 2FH-e		0.6	4.0	20.5	40	36	
VKB07 □□ 2FH-e		0.7	4.4	20.5	40	42	
VKB08 □□ 2FH-e		0.8	5.8	42.1	40	48	
VKB09 □□ 2FH-e		0.9	6.3	42.1	40	54	
VKB10 □□ 2FH-e		1	6.4	42.1	40	60	
VKB11 □□ 2FH-e		1.1	6.9	64.0	40	66	
VKB12 □□ 2FH-e		1.2	7.2	64.0	40	72	
VKB13 □□ 2FH-e		1.3	7.6	64.0	40	78	
VKB14 □□ 2FH-e		1.4	8.0	64.0	40	84	
VKB15 □□ 2FH-e		1.5	8.5	64.0	40	90	
VKB16 □□ 2FH-e		1.6	9.0	64.0	40	96	
VKB17 □□ 2FH-e		1.7	9.4	64.0	40	102	
VKB18 □□ 2FH-e		1.8	10.0	64.0	40	108	
VKB19 □□ 2FH-e		1.9	10.5	64.0	40	114	
VKB20 □□ 2FH-e		2	13.3	113	40	120	
VKB21 □□ 2FH-e		2.1	13.5	113	40	126	
VKB22 □□ 2FH-e		2.2	13.8	113	40	132	
VKB23 □□ 2FH-e		2.3	14.1	113	40	138	
VKB24 □□ 2FH-e		2.4	14.5	113	40	144	
VKB25 □□ 2FH-e		2.5	14.9	113	40	150	
VKB26 □□ 2FH-e		2.6	15.4	113	40	156	

※ Please contact us for -G/GS type.

Note 1) The 50 Hz exclusive units are for use with water-soluble coolant liquids ($1mm^2/s$ kinematic viscosity) only. Contact us when your applications involve oil-based coolant liquids.
Note 2) The rated current in the table above (the current value written on the pump's nameplate) is the recommended setting for the current value of the protective device.

●VKB-Q

・VKB-AQ-e

Type	50Hz							60Hz						
	Rated voltage (V)	Nominal output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)	Allowable dynamic viscosity (mm^2/s)	Rated voltage (V)	Nominal output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)	Allowable dynamic viscosity (mm^2/s)
VKB04 □□ 2AQ-e	200	0.72	6.0	42.1	85	26	75	200/220	1.2	6.0/5.8	38.6/42.5	100	36	37.5
VKB05 □□ 2AQ-e		0.9	7.0	64.0	85	33			1.5	8.8/8.3	54.0/59.0	100	46	75
VKB06 □□ 2AQ-e		1.08	7.8	64.0	85	39			1.8	10.0/9.1	54.0/59.0	100	54	37.5
VKB07 □□ 2AQ-e		1.26	12.4	113	85	45			2.1	11.3/11.4	92.0/101	100	63	75
VKB08 □□ 2AQ-e		1.44	12.9	113	85	52			2.4	12.7/12.6	92.0/101	100	72	
VKB09 □□ 2AQ-e		1.62	13.6	113	85	58			2.7	14.0/13.5	92.0/101	100	81	
VKB10 □□ 2AQ-e		1.8	14.3	113	85	65			3	15.5/14.8	92.0/101	100	90	
VKB11 □□ 2AQ-e		1.98	15.3	113	85	71			3.3	16.2/15.3	92.0/101	100	99	
VKB12 □□ 2AQ-e		2.16	16.3	113	85	78			3.6	16.2/15.3	92.0/101	100	108	37.5

Note) The rated current in the table above (the current value written on the pump's nameplate) is the recommended setting for the current value of the protective device.

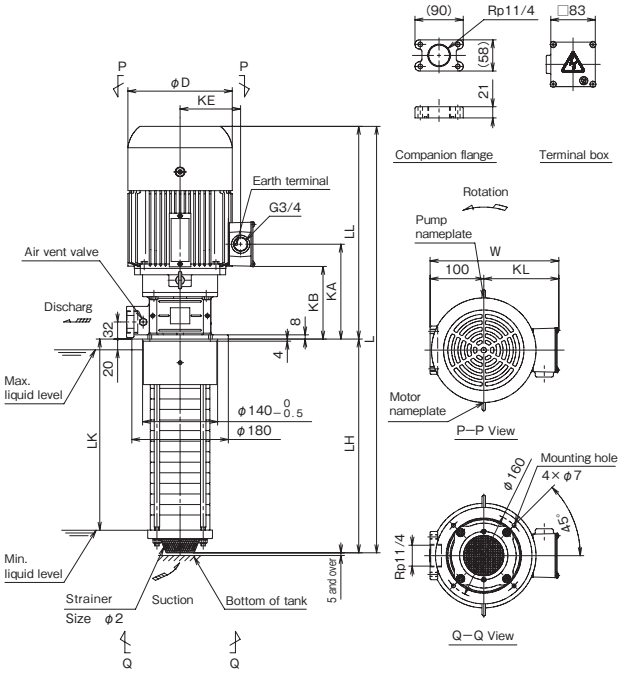
・VKB-FQ-e

Type	50Hz						
	Rated voltage (V)	Nominal output (kW)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)	Allowable dynamic viscosity (mm^2/s)
VKB04 □□ 2FQ-e	200	0.72	4.4	20.5	85	26	1
VKB05 □□ 2FQ-e		0.9	6.0	42.1	85	33	
VKB06 □□ 2FQ-e		1.08	6.4	42.1	85	39	
VKB07 □□ 2FQ-e		1.26	6.8	64.0	85	45	
VKB08 □□ 2FQ-e		1.44	7.6	64.0	85	52	
VKB09 □□ 2FQ-e		1.62	8.4	64.0	85	58	
VKB10 □□ 2FQ-e		1.8	9.2	64.0	85	65	
VKB13 □□ 2FQ-e		2.34	13.7	113	85	84	
VKB14 □□ 2FQ-e		2.52	14.2	113	85	91	
VKB15 □□ 2FQ-e		2.7	14.8	113	85	97	
VKB16 □□ 2FQ-e		2.88	15.6	113	85	104	
VKB17 □□ 2FQ-e		3.06	16.3	113	85	110	
VKB18 □□ 2FQ-e		3.24	16.9	113	85	117	
VKB19 □□ 2FQ-e		3.42	17.4	113	85	123	
VKB20 □□ 2FQ-e		3.6	17.4	113	85	130	
VKB21 □□ 2FQ-e		3.78	17.4	113	85	136	

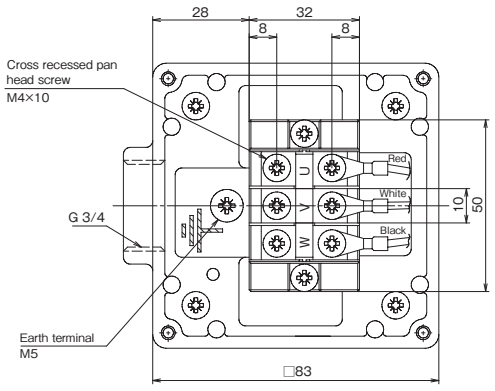
※ Please contact us for -G/GS type.

Note 1) The 50Hz exclusive units are for use with water-soluble coolant liquids ($1mm^2/s$ kinematic viscosity) only. Contact us when your applications involve oil-based coolant liquids.
Note 2) The rated current in the table above (the current value written on the pump's nameplate) is the recommended setting for the current value of the protective device.

■Dimensional outline drawing



■Detailed drawing of the terminal box



※ Please contact us for -G/GS type.

Dimensions

●VKB-H

・VKB-AH-e

〈Unit : mm〉

Type	L	LH	LK	Approx.mass (kg)
VKB05102AH-e	632	300	258	25
VKB05112AH-e	652	320	278	25
VKB05132AH-e	692	360	318	25
VKB05152AH-e	731	399	357	26
VKB05172AH-e	770	438	396	26
VKB05182AH-e	790	458	416	26
VKB06102AH-e	632	300	258	25
VKB06112AH-e	652	320	278	25
VKB06132AH-e	692	360	318	25
VKB06152AH-e	731	399	357	26
VKB06172AH-e	770	438	396	26
VKB06182AH-e	790	458	416	26
VKB07102AH-e	632	300	258	25
VKB07112AH-e	652	320	278	25
VKB07132AH-e	692	360	318	25
VKB07152AH-e	731	399	357	26
VKB07172AH-e	770	438	396	26
VKB07182AH-e	790	458	416	26
VKB08102AH-e	657	300	258	30
VKB08112AH-e	677	320	278	30
VKB08132AH-e	717	360	318	30
VKB08152AH-e	756	399	357	31
VKB08172AH-e	795	438	396	31
VKB08182AH-e	815	458	416	31
VKB08212AH-e	874	517	475	32
VKB08222AH-e	894	537	495	32
VKB08262AH-e	973	616	574	33
VKB09102AH-e	657	300	258	30
VKB09112AH-e	677	320	278	30
VKB09132AH-e	717	360	318	30
VKB09152AH-e	756	399	357	31
VKB09172AH-e	795	438	396	31
VKB09182AH-e	815	458	416	32
VKB09212AH-e	874	517	475	32
VKB09222AH-e	894	537	495	32
VKB09262AH-e	973	616	574	33
VKB10102AH-e	697	300	258	37
VKB10112AH-e	717	320	278	37
VKB10132AH-e	757	360	318	38
VKB10152AH-e	796	399	357	38
VKB10172AH-e	835	438	396	39
VKB10182AH-e	855	458	416	39
VKB10212AH-e	914	517	475	39
VKB10222AH-e	934	537	495	40
VKB10262AH-e	1013	616	574	41
VKB11112AH-e	717	320	278	37
VKB11132AH-e	757	360	318	38
VKB11152AH-e	796	399	357	38
VKB11172AH-e	835	438	396	39
VKB11182AH-e	855	458	416	39
VKB11212AH-e	914	517	475	39
VKB11222AH-e	934	537	495	40
VKB11262AH-e	1013	616	574	41

〈Unit : mm〉

Type	L	LH	LK	Approx.mass (kg)
VKB12122AH-e	737	340	298	38
VKB12132AH-e	757	360	318	38
VKB12152AH-e	796	399	357	38
VKB12172AH-e	835	438	396	39
VKB12182AH-e	855	458	416	39
VKB12202AH-e	894	497	455	39
VKB12222AH-e	934	537	495	40
VKB12262AH-e	1013	616	574	41
VKB13132AH-e	757	360	318	38
VKB13152AH-e	796	399	357	38
VKB13182AH-e	855	458	416	39
VKB13202AH-e	894	497	455	39
VKB13222AH-e	934	537	495	40
VKB13262AH-e	1013	616	574	41
VKB14142AH-e	776	379	337	38
VKB14152AH-e	796	399	357	38
VKB14182AH-e	855	458	416	39
VKB14192AH-e	875	478	436	39
VKB14202AH-e	894	497	455	39
VKB14222AH-e	934	537	495	40
VKB14262AH-e	1013	616	574	41
VKB15152AH-e	796	399	357	38
VKB15182AH-e	855	458	416	39
VKB15202AH-e	894	497	455	40
VKB15222AH-e	934	537	495	40
VKB15262AH-e	1013	616	574	41
VKB16162AH-e	816	419	377	39
VKB16182AH-e	855	458	416	39
VKB16202AH-e	894	497	455	40
VKB16222AH-e	934	537	495	40
VKB16262AH-e	1013	616	574	41
VKB17172AH-e	835	438	396	39
VKB17182AH-e	855	458	416	39
VKB17202AH-e	894	497	455	40
VKB17212AH-e	914	517	475	40
VKB17222AH-e	934	537	495	40
VKB17262AH-e	1013	616	574	41
VKB18182AH-e	855	458	416	39
VKB18202AH-e	894	497	455	40
VKB18212AH-e	914	517	475	40
VKB18222AH-e	934	537	495	40
VKB18242AH-e	973	576	534	41
VKB18252AH-e	993	596	554	41
VKB18262AH-e	1013	616	574	41
VKB19212AH-e	914	517	475	40
VKB19262AH-e	1013	616	574	41

〈Unit : mm〉

Number of impellers	D	KA	KB	KE	KL	LL	W
05 ~ 07	157	167	125	95	122	332	222
08 ~ 09	175	167	125	103	130	357	230
10 ~ 11	195	177	135	113	140	397	240

• VKB-FH-e

〈Unit : mm〉

Type	L	LH	LK	Approx.mass (kg)
VKB05102FH-e	612	300	258	21
VKB05112FH-e	632	320	278	20
VKB05132FH-e	672	360	318	21
VKB05152FH-e	711	399	357	21
VKB05182FH-e	770	458	416	22
VKB06102FH-e	612	300	258	21
VKB06112FH-e	632	320	278	21
VKB06132FH-e	672	360	318	21
VKB06152FH-e	711	399	357	21
VKB06182FH-e	770	458	416	22
VKB07102FH-e	612	300	258	21
VKB07112FH-e	632	320	278	21
VKB07132FH-e	672	360	318	21
VKB07152FH-e	711	399	357	22
VKB07172FH-e	750	438	396	22
VKB07182FH-e	770	458	416	22
VKB07222FH-e	849	537	495	23
VKB07262FH-e	928	616	574	24
VKB08102FH-e	632	300	258	25
VKB08112FH-e	652	320	278	25
VKB08132FH-e	692	360	318	25
VKB08152FH-e	731	399	357	26
VKB08172FH-e	770	438	396	26
VKB08182FH-e	790	458	416	27
VKB08212FH-e	849	517	475	27
VKB08222FH-e	869	537	495	27
VKB08262FH-e	948	616	574	28
VKB09102FH-e	632	300	258	25
VKB09112FH-e	652	320	278	25
VKB09132FH-e	692	360	318	26
VKB09152FH-e	731	399	357	26
VKB09172FH-e	770	438	396	26
VKB09182FH-e	790	458	416	27
VKB09212FH-e	849	517	475	27
VKB09222FH-e	869	537	495	28
VKB09262FH-e	948	616	574	28
VKB10102FH-e	632	300	258	25
VKB10112FH-e	652	320	278	25
VKB10132FH-e	692	360	318	26
VKB10152FH-e	731	399	357	26
VKB10172FH-e	770	438	396	26
VKB10182FH-e	790	458	416	27
VKB10212FH-e	849	517	475	27
VKB10222FH-e	869	537	495	28
VKB10262FH-e	948	616	574	28
VKB11112FH-e	677	320	278	30
VKB11132FH-e	717	360	318	31
VKB11152FH-e	756	399	357	31
VKB11172FH-e	795	438	396	31
VKB11182FH-e	815	458	416	32
VKB11212FH-e	874	517	475	32
VKB11222FH-e	894	537	495	33
VKB11262FH-e	973	616	574	33
VKB12122FH-e	697	340	298	30
VKB12132FH-e	717	360	318	31
VKB12152FH-e	756	399	357	31
VKB12172FH-e	795	438	396	32
VKB12182FH-e	815	458	416	32
VKB12212FH-e	854	497	455	32
VKB12222FH-e	894	537	495	33
VKB12262FH-e	973	616	574	34

〈Unit : mm〉

Type	L	LH	LK	Approx.mass (kg)
VKB13132FH-e	717	360	318	31
VKB13152FH-e	756	399	357	31
VKB13172FH-e	795	438	396	32
VKB13182FH-e	815	458	416	32
VKB13212FH-e	854	497	455	32
VKB13222FH-e	894	537	495	33
VKB13262FH-e	973	616	574	34
VKB14142FH-e	736	379	337	31
VKB14152FH-e	756	399	357	31
VKB14182FH-e	815	458	416	32
VKB14212FH-e	854	497	455	33
VKB14222FH-e	894	537	495	33
VKB14262FH-e	973	616	574	34
VKB15152FH-e	756	399	357	31
VKB15162FH-e	776	419	377	32
VKB15172FH-e	795	438	396	32
VKB15182FH-e	815	458	416	32
VKB15212FH-e	854	497	455	33
VKB15222FH-e	894	537	495	33
VKB15262FH-e	973	616	574	34
VKB16162FH-e	776	419	377	32
VKB16172FH-e	795	438	396	32
VKB16182FH-e	815	458	416	32
VKB16212FH-e	854	497	455	33
VKB16222FH-e	894	537	495	33
VKB16262FH-e	973	616	574	34
VKB17172FH-e	795	438	396	32
VKB17182FH-e	815	458	416	32
VKB17212FH-e	874	517	475	33
VKB17222FH-e	894	537	495	33
VKB17262FH-e	973	616	574	34
VKB18182FH-e	815	458	416	32
VKB18212FH-e	874	517	475	33
VKB18222FH-e	894	537	495	33
VKB18232FH-e	933	576	534	33
VKB18262FH-e	973	616	574	34
VKB19192FH-e	835	478	436	33
VKB19212FH-e	874	517	475	33
VKB19222FH-e	894	537	495	33
VKB19262FH-e	973	616	574	34
VKB20202FH-e	894	497	455	40
VKB20212FH-e	914	517	475	40
VKB20222FH-e	934	537	495	40
VKB20262FH-e	1013	616	574	41
VKB21212FH-e	914	517	475	40
VKB21222FH-e	934	537	495	41
VKB21262FH-e	1013	616	574	41
VKB22222FH-e	934	537	495	41
VKB22242FH-e	973	576	534	41
VKB22262FH-e	1013	616	574	41
VKB23232FH-e	953	556	514	41
VKB23262FH-e	1013	616	574	42
VKB24242FH-e	973	576	534	41
VKB24262FH-e	1013	616	574	42
VKB25252FH-e	993	596	554	41
VKB25262FH-e	1013	616	574	42
VKB26262FH-e	1013	616	574	42

〈Unit : mm〉

Number of impellers	D	KA	KB	KE	KL	LL	W
05 ~ 07	140	167	125	88	115	312	215
08 ~ 10	157	167	125	95	122	332	222
11 ~ 19	175	167	125	103	130	357	230
20 ~ 26	195	177	135	113	140	397	240

●VKB-Q

・VKB-AQ-e

〈Unit : mm〉

Type	L	LH	LK	Approx.mass (kg)
VKB04072AQ-e	623	291	249	24
VKB04082AQ-e	651	319	277	24
VKB04092AQ-e	679	347	305	24
VKB04102AQ-e	707	375	333	25
VKB04122AQ-e	763	431	389	25
VKB04142AQ-e	819	487	445	26
VKB04152AQ-e	847	515	473	26
VKB04162AQ-e	875	543	501	26
VKB04192AQ-e	959	627	585	27
VKB04222AQ-e	1043	711	669	28
VKB05072AQ-e	648	291	249	29
VKB05082AQ-e	676	319	277	29
VKB05092AQ-e	704	347	305	29
VKB05102AQ-e	732	375	333	30
VKB05122AQ-e	788	431	389	30
VKB05142AQ-e	844	487	445	31
VKB05152AQ-e	872	515	473	31
VKB05162AQ-e	900	543	501	31
VKB05192AQ-e	984	627	585	32
VKB05222AQ-e	1068	711	669	33
VKB06072AQ-e	648	291	249	29
VKB06082AQ-e	676	319	277	29
VKB06092AQ-e	704	347	305	30
VKB06102AQ-e	732	375	333	30
VKB06122AQ-e	788	431	389	30
VKB06142AQ-e	844	487	445	31
VKB06152AQ-e	872	515	473	31
VKB06162AQ-e	900	543	501	31
VKB06192AQ-e	984	627	585	32
VKB06222AQ-e	1068	711	669	33
VKB07072AQ-e	688	291	249	36
VKB07082AQ-e	716	319	277	37
VKB07092AQ-e	744	347	305	37
VKB07102AQ-e	772	375	333	37
VKB07122AQ-e	828	431	389	37
VKB07142AQ-e	884	487	445	38
VKB07152AQ-e	912	515	473	38
VKB07162AQ-e	940	543	501	38
VKB07192AQ-e	1024	627	585	39

〈Unit : mm〉

Type	L	LH	LK	Approx.mass (kg)
VKB07222AQ-e	1108	711	669	40
VKB08082AQ-e	716	319	277	37
VKB08092AQ-e	744	347	305	37
VKB08102AQ-e	772	375	333	37
VKB08122AQ-e	828	431	389	38
VKB08142AQ-e	884	487	445	38
VKB08152AQ-e	912	515	473	38
VKB08162AQ-e	940	543	501	39
VKB08192AQ-e	1024	627	585	39
VKB08222AQ-e	1108	711	669	40
VKB09092AQ-e	744	347	305	37
VKB09102AQ-e	772	375	333	37
VKB09122AQ-e	828	431	389	38
VKB09142AQ-e	884	487	445	38
VKB09152AQ-e	912	515	473	38
VKB09162AQ-e	940	543	501	39
VKB09192AQ-e	1024	627	585	39
VKB09222AQ-e	1108	711	669	40
VKB10102AQ-e	772	375	333	37
VKB10122AQ-e	828	431	389	38
VKB10142AQ-e	884	487	445	38
VKB10152AQ-e	912	515	473	39
VKB10162AQ-e	940	543	501	39
VKB10192AQ-e	1024	627	585	39
VKB10222AQ-e	1108	711	669	40
VKB11112AQ-e	800	403	361	38
VKB11122AQ-e	828	431	389	38
VKB11142AQ-e	884	487	445	38
VKB11152AQ-e	912	515	473	39
VKB11162AQ-e	940	543	501	39
VKB11192AQ-e	1024	627	585	40
VKB11222AQ-e	1108	711	669	40
VKB12122AQ-e	828	431	389	38
VKB12142AQ-e	884	487	445	38
VKB12152AQ-e	912	515	473	39
VKB12162AQ-e	940	543	501	39
VKB12192AQ-e	1024	627	585	40
VKB12222AQ-e	1108	711	669	40

〈Unit : mm〉

Number of impellers	D	KA	KB	KE	KL	LL	W
04	157	167	125	95	122	332	222
05 ~ 06	175	167	125	103	130	357	230
07 ~ 12	195	177	135	113	140	397	240

• VKB-FQ-e

〈Unit : mm〉

Type	L	LH	LK	Approx.mass (kg)
VKB04072FQ-e	603	291	249	20
VKB04082FQ-e	631	319	277	20
VKB04102FQ-e	687	375	333	20
VKB04122FQ-e	743	431	389	21
VKB04142FQ-e	799	487	445	21
VKB04162FQ-e	855	543	501	22
VKB04192FQ-e	939	627	585	23
VKB04222FQ-e	1023	711	669	23
VKB05072FQ-e	623	291	249	24
VKB05082FQ-e	651	319	277	24
VKB05102FQ-e	707	375	333	25
VKB05122FQ-e	763	431	389	25
VKB05142FQ-e	819	487	445	26
VKB05162FQ-e	875	543	501	26
VKB05192FQ-e	959	627	585	27
VKB05222FQ-e	1043	711	669	28
VKB06072FQ-e	623	291	249	24
VKB06082FQ-e	651	319	277	24
VKB06102FQ-e	707	375	333	25
VKB06122FQ-e	763	431	389	25
VKB06142FQ-e	819	487	445	26
VKB06162FQ-e	875	543	501	26
VKB06192FQ-e	959	627	585	27
VKB06222FQ-e	1043	711	669	28
VKB07072FQ-e	648	291	249	29
VKB07082FQ-e	676	319	277	29
VKB07102FQ-e	732	375	333	30
VKB07122FQ-e	788	431	389	30
VKB07142FQ-e	844	487	445	31
VKB07162FQ-e	900	543	501	31
VKB07192FQ-e	984	627	585	32
VKB07222FQ-e	1068	711	669	33
VKB08082FQ-e	676	319	277	30
VKB08102FQ-e	732	375	333	30
VKB08122FQ-e	788	431	389	30
VKB08142FQ-e	844	487	445	31
VKB08162FQ-e	900	543	501	31
VKB08192FQ-e	984	627	585	32
VKB08222FQ-e	1068	711	669	33
VKB09092FQ-e	704	347	305	30
VKB09102FQ-e	732	375	333	30

〈Unit : mm〉

Type	L	LH	LK	Approx.mass (kg)
VKB09122FQ-e	788	431	389	31
VKB09142FQ-e	844	487	445	31
VKB09162FQ-e	900	543	501	32
VKB09192FQ-e	984	627	585	32
VKB09222FQ-e	1068	711	669	33
VKB10102FQ-e	732	375	333	30
VKB10122FQ-e	788	431	389	31
VKB10142FQ-e	844	487	445	31
VKB10162FQ-e	984	627	585	32
VKB10192FQ-e	1012	655	613	32
VKB10222FQ-e	1068	711	669	33
VKB13132FQ-e	856	459	417	38
VKB13142FQ-e	884	487	445	39
VKB13162FQ-e	940	543	501	39
VKB13192FQ-e	1024	627	585	40
VKB13202FQ-e	1052	655	613	40
VKB13222FQ-e	1108	711	669	41
VKB14142FQ-e	884	487	445	39
VKB14162FQ-e	940	543	501	39
VKB14192FQ-e	1024	627	585	40
VKB14222FQ-e	1108	711	669	41
VKB15152FQ-e	912	515	473	39
VKB15162FQ-e	940	543	501	39
VKB15192FQ-e	1024	627	585	40
VKB15222FQ-e	1108	711	669	41
VKB16162FQ-e	940	543	501	39
VKB16192FQ-e	1024	627	585	40
VKB16222FQ-e	1108	711	669	41
VKB17172FQ-e	968	571	529	40
VKB17192FQ-e	1024	627	585	40
VKB17222FQ-e	1108	711	669	41
VKB18182FQ-e	996	599	557	40
VKB18192FQ-e	1024	627	585	40
VKB18222FQ-e	1108	711	669	41
VKB19192FQ-e	1024	627	585	40
VKB19222FQ-e	1108	711	669	41
VKB20202FQ-e	1052	655	613	41
VKB20222FQ-e	1108	711	669	41
VKB21212FQ-e	1080	683	641	41
VKB21222FQ-e	1108	711	669	41

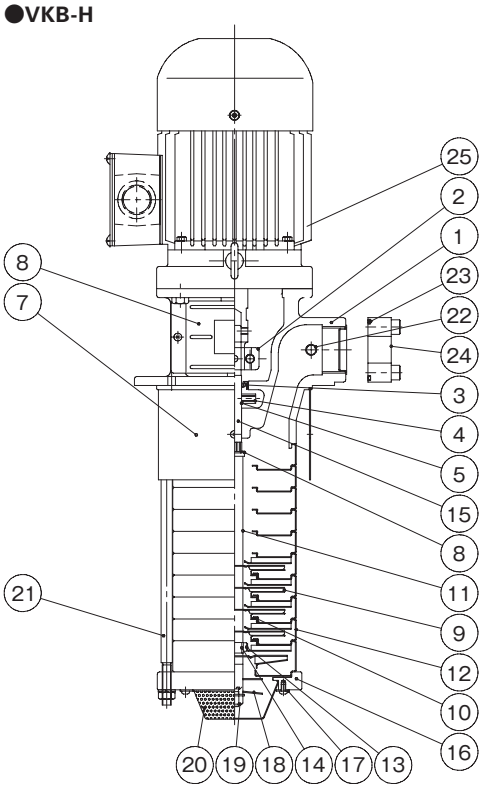
〈Unit : mm〉

Number of impellers	D	KA	KB	KE	KL	LL	W
04	140	167	125	88	115	312	215
05 ~ 06	157	167	125	95	122	332	222
07 ~ 10	175	167	125	103	130	357	230
13 ~ 21	195	177	135	113	140	397	240

※ As for China energy label regulation (GB18613-2012)-efficiency compliant pump (grade GB3) and equivalent (grade GB3), contact us separately.

Sectional drawing

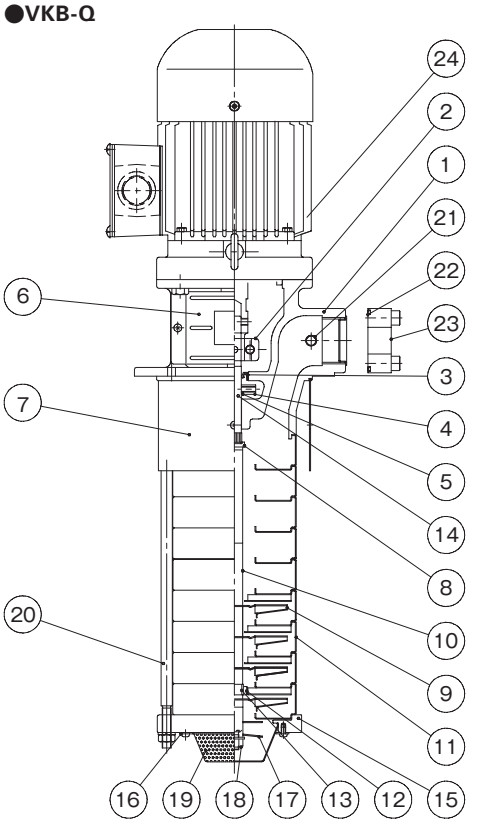
●VKB-H



No.	Part Name	Material
1	Pump leg	FC200
2	Coupling	S45C
3	Oil seal	NBR
4	Oil thrower	SUS304
5	O-ring	FKM
6	Coupling guard	SUS304
7	Outer casing	SUS304
8	Washer	SUS403
9	Impeller	SUS304
10	Seal ring	PTFE
11	Collar	SUS304
12	Casing	SUS304
13	Bearing ring	CERAMIC
14	Sleeve	WC
15	Shaft	SUS316
16	Suction chamber	FC200
17	Strainer retainer plate	SUS304
18	Screw	SUS304
19	U-nut	SUS304
20	Wide strainer	SUS304
21	Fastening bolt	SUS304
22	Air vent valve	BRASS
23	O-ring	FKM
24	Companion flange	FC150
25	Motor	—

Note) Structure and other details are subject to change without notice.

●VKB-Q

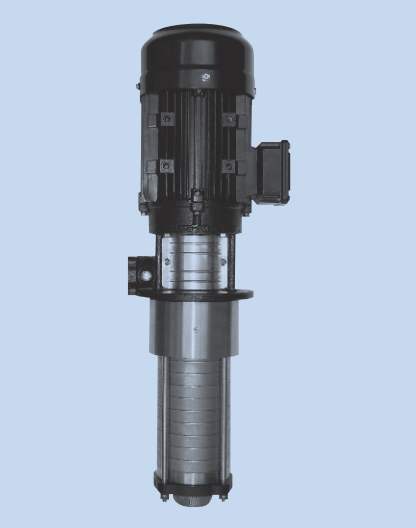


No.	Part Name	Material
1	Pump leg	FC200
2	Coupling	S45C
3	Oil seal	NBR
4	Oil thrower	SUS304
5	O-ring	FKM
6	Coupling guard	SUS304
7	Outer casing	SUS304
8	Washer	SUS403
9	Impeller	SUS304
10	Collar	SUS304
11	Casing	SUS304
12	Bearing ring	CERAMIC
13	Sleeve	WC
14	Shaft	SUS316
15	Suction chamber	FC200
16	Strainer retainer plate	SUS304
17	Screw	SUS304
18	U-nut	SUS304
19	Wide strainer	SUS304
20	Fastening bolt	SUS304
21	Air vent valve	BRASS
22	O-ring	FKM
23	Companion flange	FC150
24	Motor	—

Note) Structure and other details are subject to change without notice.

Features

① Energy-saving pump equipped with a top-runner efficiency (equivalent to IE3) motor.
② Non-seal (mechanical seal) structure is adopted.
③ Stainless steel is used in the pump's main unit and SiC bearings with increased wear resistance are adopted.
④ Measures against air suction into the pump are taken when the fluid level lowers.
⑤ EU RoHS Directive (Restriction of Hazardous Substances Directive) compliant.
Output range for standard specification: 0.75 to 7.5kW. (Special specification to be taken for output range of 11kW or more.)
⑥ EU Directive for CE marking compliant.
⑦ Energy saving by high efficiency impeller!
Power consumption decreases by 20% compared to conventional models!
⑧ Diverse lineup offers a wider choice according to your applications:
Discharge quantity 50 Hz: 10 to 500L/min, 60Hz: 10 to 600L/min
Total head 50Hz: Maximum 230m, 60Hz: Maximum 260m
Output: 0.75 to 18.5kW
⑨ The connecting dimensions are compatible with those of conventional pumps.



Non-seal structure

TERAL's original non-seal structure allows coolant to flow from a narrow clearance without using a seal between the pump section and the motor section.

There are many advantages of a non-seal pump.

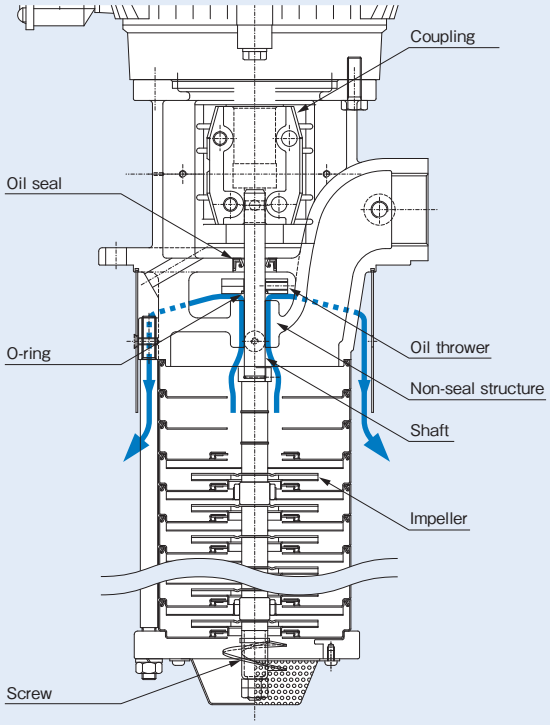
1 **No problems such as coolant leaks.**
Helps to decrease running costs.

2 **Prevents air accumulation.**
Reduces initial problems.

3 **Not easily affected by a small quantity of liquid or shut-off operations.**
Enables a flexible operation system.

※What is the non-seal structure?

This structure inwardly releases coolant by depressurization through a narrow clearance without the use of a mechanical seal.



Description of types

50 LVS 10 - 20 / 12 - 6 7.5 -e
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Discharge diameter
② Model
③ Nominal flow rate (m^3/h) (1, 3, 5, 10, 15, 20)
④ Number of stages
⑤ Number of impellers
⑥ Frequency (5: 50 Hz, 6: 60 Hz)
⑦ Output
⑧ Equipped with a top-runner efficiency (equivalent to IE3) motor.

Standard Specification

Used liquid	Property liquid	Water soluble coolants (e.g. grinding and cutting fluids after secondary treatment) ※1
	Temperature	0 to 90°C (No frozen liquid)
	Allowable dynamic viscosity	1mm²/s
Installation location		Indoor Ambient temperature: 0 to 40°C, 85% RH or below (without condensation) Place at altitude of 1000 m or less. Do not place in direct sunlight. Place in an area free of corrosive or explosive gas or vapor.
Material	Suction/Discharge casing	FC200
	Intermediate casing	SUS304
	Impeller	SUS304
	Shaft	SUS420J2
Shaft seal structure		Non-seal (mechanical seal-less)
Motor	Type	Totally enclosed fan cooled type, outdoor ※2
	Method of protection	IP55
	Power	3 phases 50/60/60 Hz, 200/200/220 V
	Insulation class	F
	Number of poles	2P
	Standard	IEC60034-1
Paint color	Pump	Munsell N1
	Motor	Black

※1 The life of the product will be considerably reduced if hard sludge such as grinding powder, abrasives and diamond grains, is present in the liquids. Install suitable filters (magnet or paper filters, etc.). Take note that the unit is not used for water and special liquids such as printing and acidic liquids. Contact us when using the unit for oil-based coolant liquids or other special liquids (e.g. demineralized water, alkali/acidic liquids, ceramic).
※2 The pump cannot be installed outside.

Special specification

Motor modifications	Change in voltage※1, change in position of terminal box※2, change in direction of terminal box※3
Change of structure	Stainless steel suction casing※4

※ 1 Different voltages (50Hz/400V, 60Hz/400V, 440V), different voltage (50Hz/380V), Applicable: 7.5kW or less
※ 2 Change of terminal box position (every 90° seen from above)
※ 3 Terminal box direction (every 90° seen from the front), Applicable: 1.5 kW to 18.5 kW
※ 4 The model shall be changed. The suffix is "-SU."
Note: The pump is not 100% made of stainless steel. Discharge casings and companion flanges are made of cast iron.

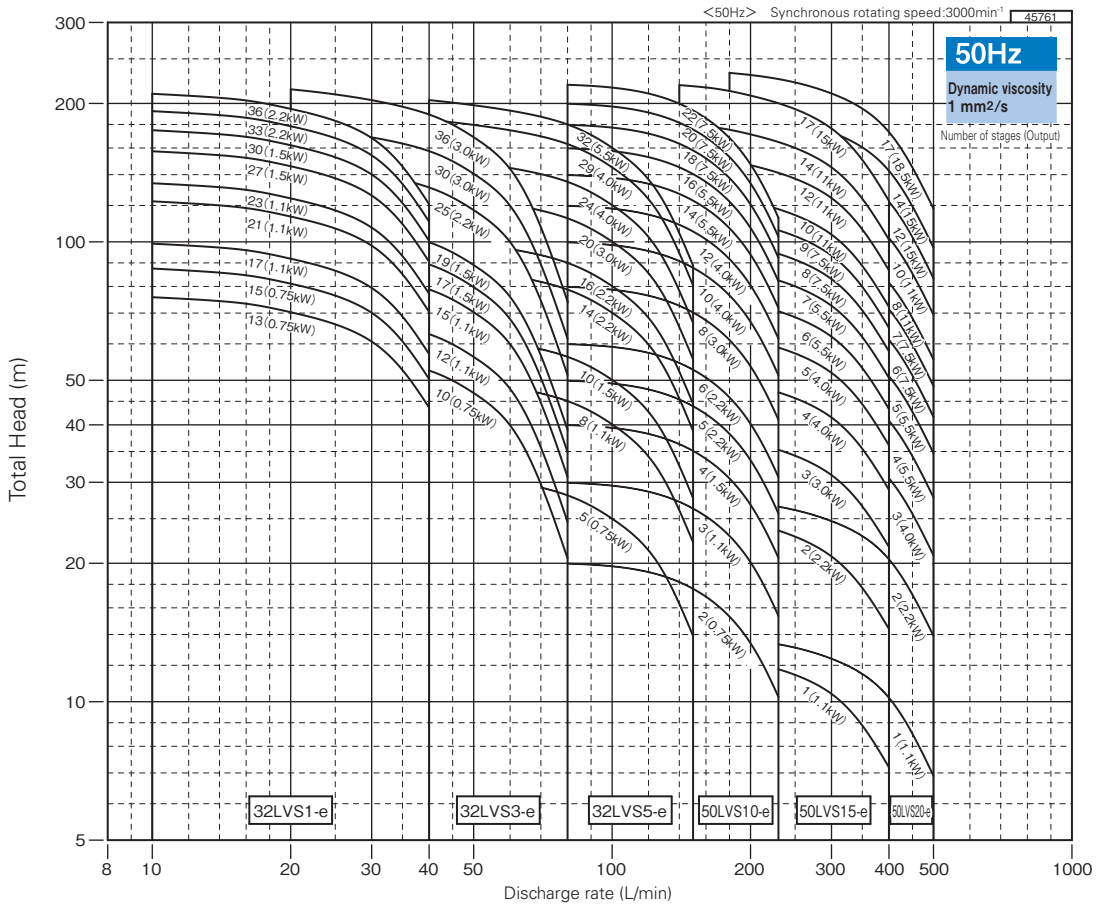
Special accessory

Companion flange (Inlet diameter 32 mm)

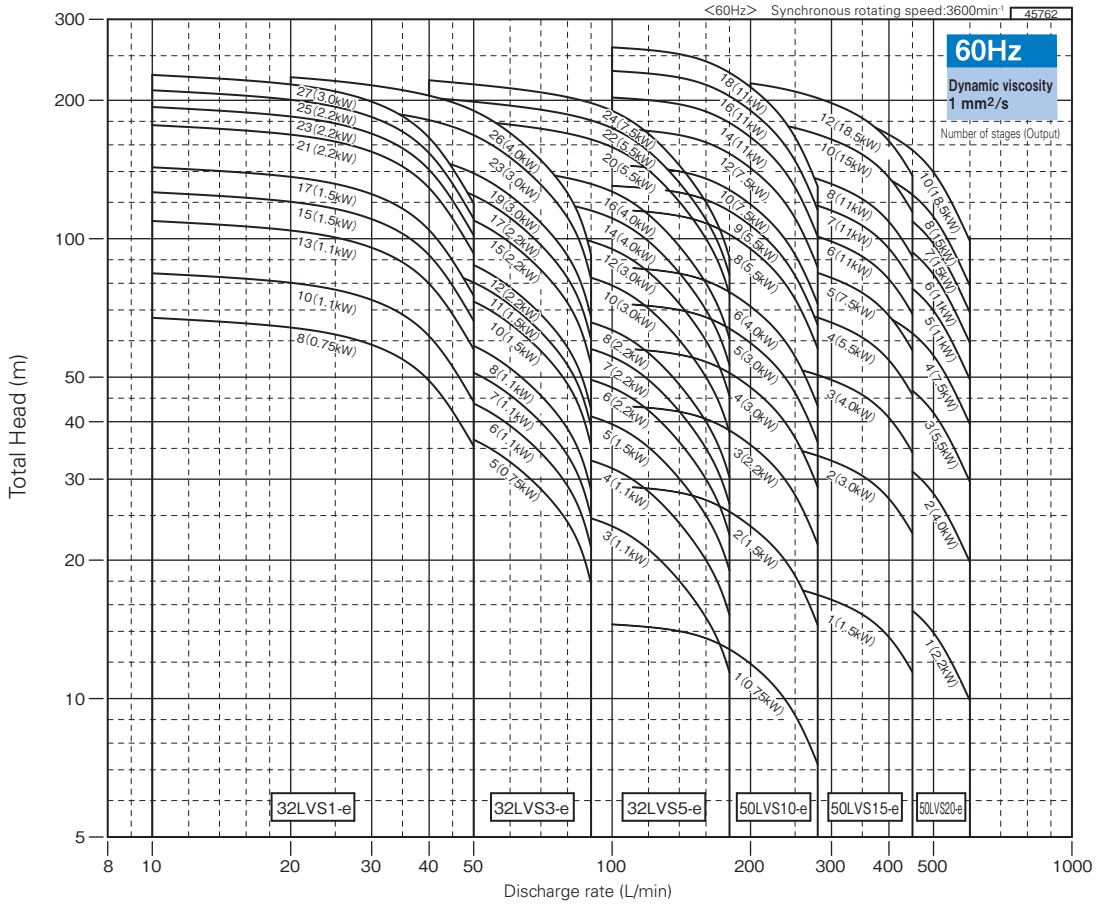
Table of Consumable Parts

<table>
<tr><th rowspan="3">Output (kW)</th><th colspan="2">Bearing</th><th colspan="3">Oil seal</th><th colspan="2" rowspan="2">O-ring
(For oil thrower)
Material: FKM</th></tr>
<tr><th rowspan="2">Load side</th><th rowspan="2">Unload side</th><th rowspan="2">Load side
(Bearing side)</th><th rowspan="2">Unload side</th><th colspan="2">Load side
(Pump side)</th></tr>
<tr><th>Diameter 32</th><th>Diameter 50</th><th>Diameter 32</th><th>Diameter 50</th></tr>
<tr><td>0.75</td><td rowspan="2">6204ZZC3</td><td>6201ZZC3</td><td>—</td><td>—</td><td rowspan="12">IS12257</td><td rowspan="12">SC16328</td><td rowspan="12">S12</td><td rowspan="12">S16</td></tr>
<tr><td>1.1</td><td rowspan="3">6304ZZC3</td><td>—</td><td rowspan="3">VC20407</td></tr>
<tr><td>1.5</td><td rowspan="2">6205ZZC3</td><td rowspan="2">VC25407</td></tr>
<tr><td>2.2</td></tr>
<tr><td>3.0</td><td rowspan="2">6307ZZC3</td><td rowspan="2">6305ZZC3</td><td>VC35557</td><td>VC25477</td></tr>
<tr><td>4.0</td><td>VC35527</td><td>VC25407</td></tr>
<tr><td>5.5</td><td rowspan="2">6309ZZC3</td><td rowspan="2">6306ZZC3</td><td rowspan="2">VC45628</td><td rowspan="2">VC30528</td></tr>
<tr><td>7.5</td></tr>
<tr><td>11</td><td rowspan="3">7309B</td><td rowspan="3">6309ZZC3</td><td colspan="2" rowspan="3">Please contact us</td></tr>
<tr><td>15</td></tr>
<tr><td>18.5</td></tr>
</table>

Selection chart



Note 1) The above selection chart reflects the full impeller condition of the units. The total head may be decreased depending on the flow rate if empty casings are involved because of pressure loss in the empty casings.

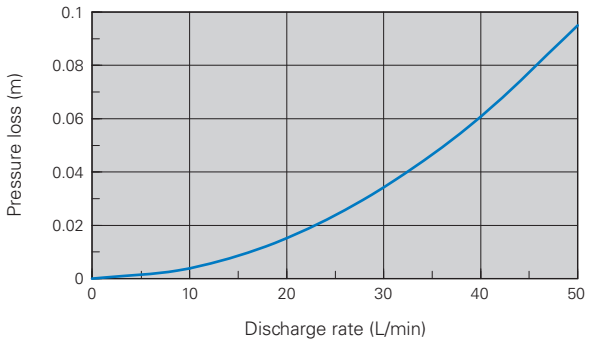


Note 1) The above selection chart reflects the full impeller condition of the units. The total head may be decreased depending on the flow rate if empty casings are involved because of pressure loss in the empty casings.

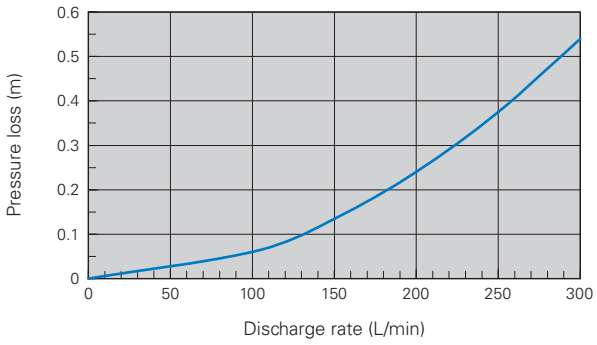
Pressure loss in the empty casings (50 Hz/60 Hz)

Pressure loss for 1 stage of empty casing is as follows:

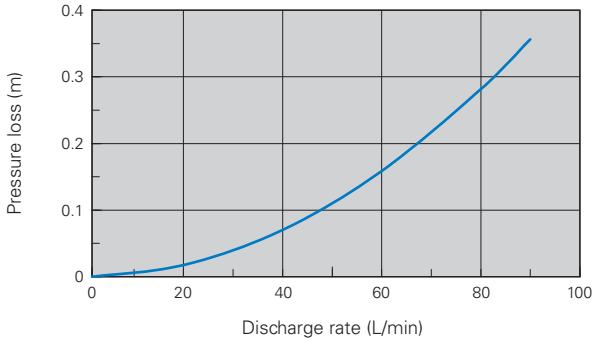
LVS1-e



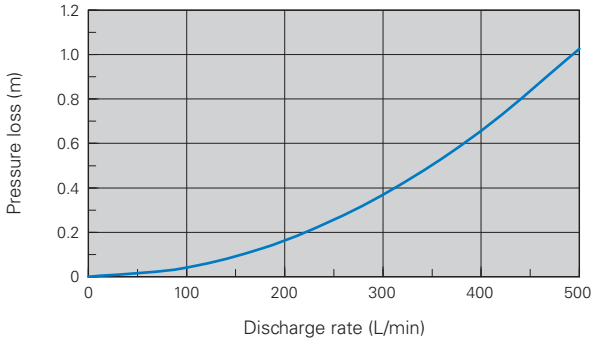
LVS10-e



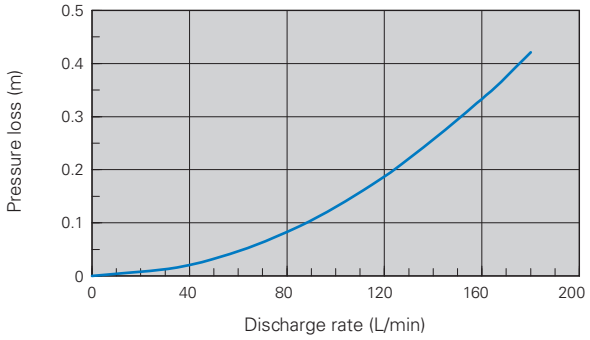
LVS3-e



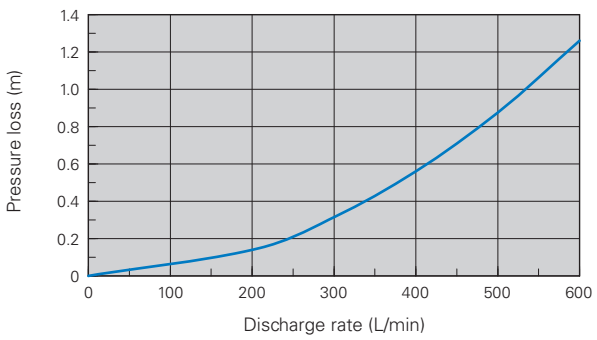
LVS15-e



LVS5-e



LVS20-e



The selection chart is a performance chart of the full-impeller model (all casings are equipped with impeller). A pump with empty casings (without impeller) will have some influence on the total head of the pump depending on the flow rate due to its pressure loss.
The pressure loss per 1 stage of empty casing of each model is as shown in the graph above.
In the case of a pump with many stages of empty casings, the maximum flow rate may slightly decrease.
For details, refer to the characteristic curve chart.

● Calculation example of total pump head in consideration of pressure loss of empty casing

- Pump type : 32LVS5-20/5-5.75-e
- Specification flow rate: 100L/min
- Specification total head: 20m
- The number of stages: 20
- Number of impellers: 5

From the graph above, the pressure loss per 1 stage of empty casing is 0.13 m for a flow rate of 100L/min
The number of stages of the empty casing is 20 -15 = 15 stages.
Total pressure loss = 0.13 × 15 ≒ 2.0m
From the selection chart, the total head is 25 m for a flow rate of 100L/min.
The pressure loss is subtracted from the total head.
Total head = 25 – 2.0 = 23.0m
Therefore, the total head of 32LVS5-20/5-5.75-e is 23.0 m for a flow rate of 100 L/min.

Specification table

50Hz

Bore (mm)	Frequency (m^3/h)	Type	Output (kW)	Rated voltage (V)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total Head (m)
32	1	32LVS1-□/13-5.75-e	0.75	200	3.4	26.4	10 ~ 40	75.5 ~ 43.5
		32LVS1-□/15-5.75-e						87 ~ 50
		32LVS1-□/17-51.1-e	1.1		4.7	34.1		99 ~ 56.5
		32LVS1-□/21-51.1-e						122 ~ 70
		32LVS1-□/23-51.1-e						134 ~ 77
		32LVS1-□/27-51.5-e	1.5		6.2	47.1		157 ~ 90
		32LVS1-□/30-51.5-e						174.5 ~ 100.5
		32LVS1-□/33-52.2-e	2.2		8.7	79.3		192 ~ 110.5
		32LVS1-36/36-52.2-e						209.5 ~ 120.5
	3	32LVS3-□/10-5.75-e	0.75		3.4	26.4	20 ~ 80	59.5 ~ 20.5
		32LVS3-□/12-51.1-e	1.1		4.7	34.1		71.5 ~ 24.5
		32LVS3-□/15-51.1-e						89 ~ 30.5
		32LVS3-□/17-51.5-e	1.5		6.2	47.1		101 ~ 34.5
		32LVS3-□/19-51.5-e						113 ~ 38.5
		32LVS3-□/25-52.2-e	2.2		8.7	79.3		149 ~ 51
		32LVS3-□/30-53.0-e	3.0		11.6	116.4		178.5 ~ 61.5
		32LVS3-36/36-53.0-e						214.5 ~ 73.5
	5	32LVS5-□/5-5.75-e	0.75		3.4	26.4	40 ~ 150	31.5 ~ 13.5
		32LVS5-□/8-51.1-e	1.1		4.7	34.1		50.5 ~ 22
		32LVS5-□/10-51.5-e	1.5		6.2	47.1		63 ~ 27.5
		32LVS5-□/14-52.2-e	2.2		8.7	79.3		88.5 ~ 38.5
		32LVS5-□/16-52.2-e						101 ~ 44
		32LVS5-□/20-53.0-e	3.0		11.6	116.4		126.5 ~ 55
		32LVS5-□/24-54.0-e	4.0		14.7	145		152 ~ 66.5
		32LVS5-□/29-54.0-e						183.5 ~ 80
		32LVS5-32/32-55.5-e	5.5		20.3	204.3		202.5 ~ 88.5
50	10	50LVS10-□/2-5.75-e	0.75		3.4	26.4	80 ~ 230	19.5 ~ 9
		50LVS10-□/3-51.1-e	1.1		4.7	34.1		29.5 ~ 15
		50LVS10-□/4-51.5-e	1.5		6.2	47.1		39.5 ~ 20.5
		50LVS10-□/5-52.2-e	2.2		8.7	79.3		49.5 ~ 26
		50LVS10-□/6-52.2-e						59.5 ~ 31
		50LVS10-□/8-53.0-e	3.0		11.6	116.4		79.5 ~ 41.5
		50LVS10-□/10-54.0-e	4.0		14.7	145		99.5 ~ 52
		50LVS10-□/12-54.0-e						119.5 ~ 62.5
		50LVS10-□/14-55.5-e	5.5		20.3	204.3		139.5 ~ 73
		50LVS10-□/16-55.5-e						159.5 ~ 83.5
		50LVS10-□/18-57.5-e	7.5		27.2	288.5		179.5 ~ 94
		50LVS10-□/20-57.5-e						199.5 ~ 104.5
		50LVS10-22/22-57.5-e						219 ~ 114.5
	15	50LVS15-□/1-51.1-e	1.1		4.7	34.1	140 ~ 400	12.5 ~ 5.5
		50LVS15-□/2-52.2-e	2.2		8.7	79.3		25.5 ~ 13.5
		50LVS15-□/3-53.0-e	3.0		11.6	116.4		38.5 ~ 21.5
		50LVS15-□/4-54.0-e	4.0		14.7	145		51.5 ~ 28.5
		50LVS15-□/5-54.0-e						64.5 ~ 36
		50LVS15-□/6-55.5-e	5.5		20.3	204.3		77 ~ 43
		50LVS15-□/7-55.5-e						90 ~ 50.5
		50LVS15-□/8-57.5-e	7.5		27.2	288.5		103 ~ 57.5
		50LVS15-□/9-57.5-e						116 ~ 65
		50LVS15-□/10-511-e	11		40.5	361.0		129 ~ 72
		50LVS15-□/12-511-e						154.5 ~ 86.5
		50LVS15-□/14-511-e						180.5 ~ 101
		50LVS15-17/17-515-e	15		54.0	484.0		219 ~ 122.5
	20	50LVS20-□/1-51.1-e	1.1		4.7	34.1	180 ~ 500	13 ~ 5
		50LVS20-□/2-52.2-e	2.2		8.7	79.3		27 ~ 13
		50LVS20-□/3-54.0-e	4.0		14.7	145		41 ~ 20.5
		50LVS20-□/4-55.5-e	5.5		20.3	204.3		54.5 ~ 27.5
		50LVS20-□/5-55.5-e						68.5 ~ 34.5
		50LVS20-□/6-57.5-e	7.5		27.2	288.5		82 ~ 41.5
		50LVS20-□/7-57.5-e						95.5 ~ 48.5
		50LVS20-□/8-511-e	11		40.5	361.0		109.5 ~ 55.5
		50LVS20-□/10-511-e						137 ~ 69
		50LVS20-□/12-515-e	15		54.0	484.0		163 ~ 83
		50LVS20-□/14-515-e						191.5 ~ 97
		50LVS20-17/17-518-e	18.5		66.0	563.0		232.5 ~ 117.5

Notes 1) Contact us when your applications involve oil-based coolant liquids or special liquids (e.g. demineralized water, alkali/acidic liquids).
Notes 2) The rated current in the table above is the recommended setting for the current value of the protective device.

Specification table

60Hz

Bore (mm)	Frequency (m^3/h)	Type	Output (kW)	Rated voltage (V)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total Head (m)
32	1	32LVS1-□/8-6.75-e	0.75	200/220	3.2/3.1	25.1/27.4	10 ~ 50	67 ~ 35
		32LVS1-□/10-61.1-e	1.1		4.4/4.1	32.7/36.2		84 ~ 44
		32LVS1-□/13-61.1-e						109 ~ 57
		32LVS1-□/15-61.5-e	1.5		5.9/5.5	41.4/45.6		126 ~ 66
		32LVS1-□/17-61.5-e						142.5 ~ 75
		32LVS1-□/21-62.2-e	2.2		8.4/7.8	68.4/75.2		176.5 ~ 92.5
		32LVS1-□/23-62.2-e						193 ~ 101.5
		32LVS1-□/25-62.2-e						210 ~ 110.5
		32LVS1-□/27-63.0-e	3.0		11.3/10.6	103.4/118		227 ~ 119
	3	32LVS3-□/5-6.75-e	0.75		3.2/3.1	25.1/27.4	20 ~ 90	43 ~ 17.5
		32LVS3-□/6-61.1-e	1.1		4.4/4.1	32.7/36.2		51.5 ~ 21
		32LVS3-□/7-61.1-e						60 ~ 24.5
		32LVS3-□/8-61.1-e						69 ~ 28
		32LVS3-□/10-61.5-e	1.5		5.9/5.5	41.4/45.6		86 ~ 35.5
		32LVS3-□/11-61.5-e						94.5 ~ 39
		32LVS3-□/12-62.2-e	2.2		8.4/7.8	68.4/75.2		103.5 ~ 42.5
		32LVS3-□/15-62.2-e						129.5 ~ 53
		32LVS3-□/17-62.2-e						146.5 ~ 60
		32LVS3-□/19-63.0-e	3.0		11.3/10.6	103.4/118		164 ~ 67
		32LVS3-□/23-63.0-e						198.5 ~ 81.5
		32LVS3-□/26-64.0-e	4.0		14.3/13.2	131.8/145.1		224.5 ~ 92
	5	32LVS5-□/3-61.1-e	1.1		4.4/4.1	32.7/36.2	40 ~ 180	27.5 ~ 11
		32LVS5-□/4-61.1-e						36.5 ~ 15
		32LVS5-□/5-61.5-e	1.5		5.9/5.5	41.4/45.6		46 ~ 18.5
		32LVS5-□/6-62.2-e	2.2		8.4/7.8	68.4/75.2		55 ~ 22.5
		32LVS5-□/7-62.2-e						64 ~ 26.5
		32LVS5-□/8-62.2-e						73.5 ~ 30
		32LVS5-□/10-63.0-e	3.0		11.3/10.6	103.4/118		92 ~ 37.5
		32LVS5-□/12-63.0-e						110.5 ~ 45
		32LVS5-□/14-64.0-e	4.0		14.3/13.2	131.8/145.1		128.5 ~ 53
		32LVS5-□/16-64.0-e						147 ~ 60.5
		32LVS5-□/20-65.5-e	5.5		19.8/18.3	178/197.1		184 ~ 75.5
		32LVS5-□/22-65.5-e						202.5 ~ 83
		32LVS5-□/24-67.5-e	7.5		26.5/24.4	253.7/281.9		221 ~ 90.5
50	10	50LVS10-□/1-6.75-e	0.75		3.2/3.1	25.1/27.4	100 ~ 280	14 ~ 5
		50LVS10-□/2-61.5-e	1.5		5.9/5.5	41.4/45.6		28.5 ~ 13
		50LVS10-□/3-62.2-e	2.2		8.4/7.8	68.4/75.2		43 ~ 21
		50LVS10-□/4-63.0-e	3.0		11.3/10.6	103.4/118		57.5 ~ 28.5
		50LVS10-□/5-63.0-e						72 ~ 36.5
		50LVS10-□/6-64.0-e	4.0		14.3/13.2	131.8/145.1		86.5 ~ 44
		50LVS10-□/8-65.5-e	5.5		19.8/18.3	178/197.1		115.5 ~ 58.5
		50LVS10-□/9-65.5-e						130 ~ 66
		50LVS10-□/10-67.5-e	7.5		26.5/24.4	253.7/281.9		144.5 ~ 73
		50LVS10-□/12-67.5-e						173.5 ~ 88
		50LVS10-□/14-611-e	11		39.5/36.5	296.0/333.0		202.5 ~ 102.5
		50LVS10-□/16-611-e						231.5 ~ 117
		50LVS10-□/18-611-e						260.5 ~ 132
	15	50LVS15-□/1-61.5-e	1.5		5.9/5.5	41.4/45.6	160 ~ 450	18 ~ 9.5
		50LVS15-□/2-63.0-e	3.0		11.3/10.6	103.4/118		37 ~ 22
		50LVS15-□/3-64.0-e	4.0		14.3/13.2	131.8/145.1		55.5 ~ 34.5
		50LVS15-□/4-65.5-e	5.5		19.8/18.3	178/197.1		74 ~ 46
		50LVS15-□/5-67.5-e	7.5		26.5/24.4	253.7/281.9		92.5 ~ 57.5
		50LVS15-□/6-611-e	11		39.5/36.5	296.0/333.0		111 ~ 69
		50LVS15-□/7-611-e						130 ~ 81
		50LVS15-□/8-611-e						148.5 ~ 92.5
		50LVS15-□/10-615-e	15		53.0/49.0	397.0/447.0		185.5 ~ 115.5
		50LVS15-□/12-618-e	18.5		65.0/59.0	456.0/515.0		222.5 ~ 138.5
	20	50LVS20-□/1-62.2-e	2.2		8.4/7.8	68.4/75.2	220 ~ 600	19 ~ 7
		50LVS20-□/2-64.0-e	4.0		14.3/13.2	131.8/145.1		39 ~ 18
		50LVS20-□/3-65.5-e	5.5		19.8/18.3	178/197.1		58.5 ~ 29.5
		50LVS20-□/4-67.5-e	7.5		26.5/24.4	253.7/281.9		78 ~ 39.5
		50LVS20-□/5-611-e	11		39.5/36.5	296.0/333.0		98 ~ 49
		50LVS20-□/6-611-e						117.5 ~ 59
		50LVS20-□/7-615-e	15		53.0/49.0	397.0/447.0		137 ~ 69
		50LVS20-□/8-615-e						156.5 ~ 79
		50LVS20-□/10-618-e	18.5		65.0/59.0	456.0/515.0		196 ~ 98.5

Notes 1) Contact us when your applications involve oil-based coolant liquids or special liquids (e.g. demineralized water, alkali/acidic liquids).
2) The rated current in the table above is the recommended setting for the current value of the protective device.

Dimensional outline drawing

●Discharge diameter:32mm

Diagram : 1

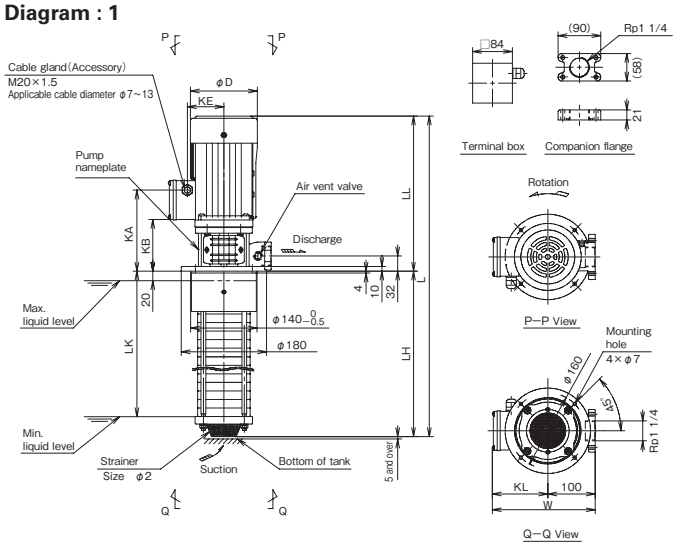


Diagram : 2

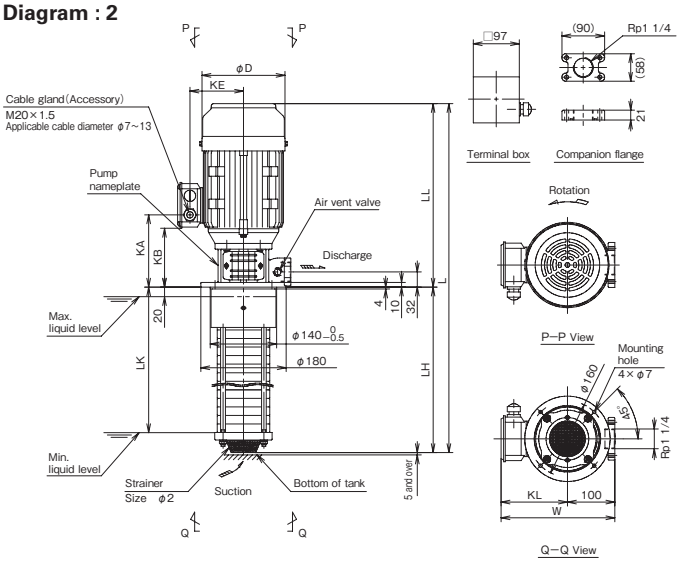
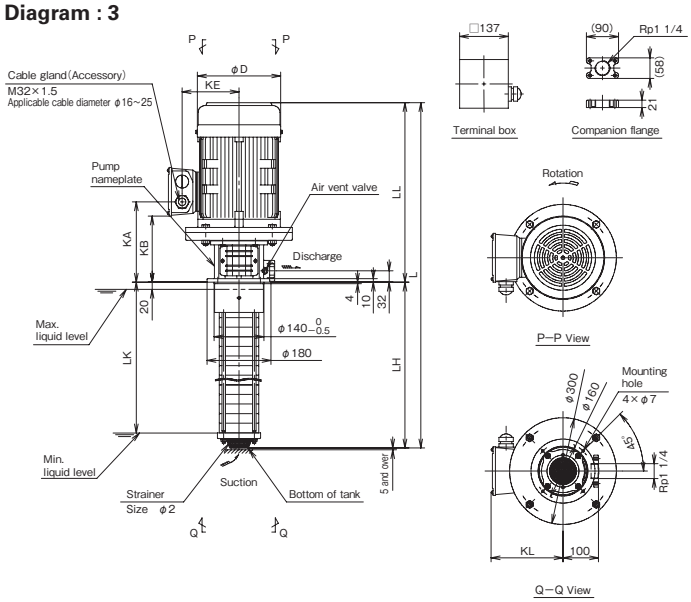


Diagram : 3



Dimensions

●Discharge diameter:32mm

〈Unit : mm〉

Output (kW)	Fig.	D	KA	KB	KE	KL	LL	W
0.75	1	141	171	109	77	117	327	217
1.1	2	175	153	124	113	140	387	240
1.5/2.2		175	168	139	113	140	402	240
3.0		196	178	149	125	152	437	252
4.0		219	183	154	134	161	442	—
5.5	3	234	226	186	160	202	505	—
7.5		234	226	186	160	202	540	—

Dimensions

●Discharge diameter: 32mm, Nominal flow rate: 1m³/h

50Hz

〈Unit : mm〉

Type	Fig.	L	LH	LK	Approx. mass(kg)
32LVS1-13/13-5.75-e	1	676	349	307	21
32LVS1-15/13-5.75-e		712	385	343	22
32LVS1-17/13-5.75-e		748	421	379	22
32LVS1-21/13-5.75-e		820	493	451	23
32LVS1-25/13-5.75-e		892	565	523	24
32LVS1-15/15-5.75-e		712	385	343	22
32LVS1-17/15-5.75-e		748	421	379	22
32LVS1-21/15-5.75-e		820	493	451	23
32LVS1-25/15-5.75-e		892	565	523	24
32LVS1-17/17-51.1-e	2	808	421	379	27
32LVS1-21/17-51.1-e		880	493	451	27
32LVS1-25/17-51.1-e		952	565	523	28
32LVS1-30/17-51.1-e		1042	655	613	30
32LVS1-21/21-51.1-e		880	493	451	28
32LVS1-25/21-51.1-e		952	565	523	29
32LVS1-30/21-51.1-e		1042	655	613	30
32LVS1-33/21-51.1-e		1096	709	667	30
32LVS1-23/23-51.1-e		916	529	487	28
32LVS1-25/23-51.1-e		952	565	523	29
32LVS1-30/23-51.1-e		1042	655	613	30
32LVS1-33/23-51.1-e		1096	709	667	31
32LVS1-36/23-51.1-e		1150	763	721	31
32LVS1-27/27-51.5-e		1003	601	559	34
32LVS1-33/27-51.5-e		1111	709	667	35
32LVS1-36/27-51.5-e		1165	763	721	36
32LVS1-30/30-51.5-e		1057	655	613	34
32LVS1-33/30-51.5-e		1111	709	667	35
32LVS1-36/30-51.5-e		1165	763	721	36
32LVS1-33/33-52.2-e		1111	709	667	39
32LVS1-36/33-52.2-e		1165	763	721	39
32LVS1-36/36-52.2-e		1165	763	721	39

60Hz

〈Unit : mm〉

Type	Fig.	L	LH	LK	Approx. mass(kg)
32LVS1-8/8-6.75-e	1	586	259	217	20
32LVS1-10/8-6.75-e		622	295	253	20
32LVS1-13/8-6.75-e		676	349	307	21
32LVS1-15/8-6.75-e		712	385	343	22
32LVS1-17/8-6.75-e		748	421	379	22
32LVS1-21/8-6.75-e		820	493	451	23
32LVS1-25/8-6.75-e		892	565	523	24
32LVS1-10/10-61.1-e	2	682	295	253	25
32LVS1-13/10-61.1-e		736	349	307	25
32LVS1-15/10-61.1-e		772	385	343	26
32LVS1-17/10-61.1-e		808	421	379	26
32LVS1-21/10-61.1-e		880	493	451	27
32LVS1-25/10-61.1-e		952	565	523	28
32LVS1-13/13-61.1-e		736	349	307	25
32LVS1-15/13-61.1-e		772	385	343	26
32LVS1-17/13-61.1-e		808	421	379	26
32LVS1-21/13-61.1-e		880	493	451	27
32LVS1-25/13-61.1-e		952	565	523	28
32LVS1-15/15-61.5-e		787	385	343	30
32LVS1-17/15-61.5-e		823	421	379	31
32LVS1-21/15-61.5-e		895	493	451	31
32LVS1-25/15-61.5-e		967	565	523	32
32LVS1-30/15-61.5-e		1057	655	613	34
32LVS1-17/17-61.5-e		823	421	379	31
32LVS1-21/17-61.5-e		895	493	451	32
32LVS1-25/17-61.5-e		967	565	523	33
32LVS1-30/17-61.5-e		1057	655	613	34
32LVS1-33/17-61.5-e		1111	709	667	34
32LVS1-21/21-62.2-e		895	493	451	35
32LVS1-25/21-62.2-e		967	565	523	36
32LVS1-30/21-62.2-e		1057	655	613	37
32LVS1-33/21-62.2-e		1111	709	667	38
32LVS1-36/21-62.2-e		1165	763	721	39
32LVS1-23/23-62.2-e		931	529	487	36
32LVS1-27/23-62.2-e		1003	601	559	37
32LVS1-30/23-62.2-e		1057	655	613	37
32LVS1-33/23-62.2-e		1111	709	667	38
32LVS1-36/23-62.2-e		1165	763	721	39
32LVS1-25/25-62.2-e		967	565	523	36
32LVS1-27/25-62.2-e		1003	601	559	37
32LVS1-30/25-62.2-e		1057	655	613	38
32LVS1-33/25-62.2-e		1111	709	667	38
32LVS1-36/25-62.2-e		1165	763	721	39
32LVS1-27/27-63.0-e		1038	601	559	45
32LVS1-30/27-63.0-e		1092	655	613	46
32LVS1-33/27-63.0-e		1146	709	667	46
32LVS1-36/27-63.0-e		1200	763	721	47

●Discharge diameter: 32mm, Nominal flow rate: 3m³/h

50Hz

〈Unit : mm〉

Type	Fig.	L	LH	LK	Approx. mass(kg)
32LVS3-10/10-5.75-e	1	622	295	253	20
32LVS3-12/10-5.75-e		658	331	289	21
32LVS3-15/10-5.75-e		712	385	343	22
32LVS3-19/10-5.75-e		784	457	415	23
32LVS3-23/10-5.75-e		856	529	487	23
32LVS3-12/12-51.1-e	2	718	331	289	25
32LVS3-15/12-51.1-e		772	385	343	26
32LVS3-19/12-51.1-e		844	457	415	27
32LVS3-23/12-51.1-e		916	529	487	28
32LVS3-15/15-51.1-e		772	385	343	26
32LVS3-19/15-51.1-e		844	457	415	27
32LVS3-23/15-51.1-e		916	529	487	28
32LVS3-17/17-51.5-e		823	421	379	31
32LVS3-23/17-51.5-e		931	529	487	32
32LVS3-26/17-51.5-e		985	583	541	33
32LVS3-19/19-51.5-e		859	457	415	31
32LVS3-23/19-51.5-e		931	529	487	32
32LVS3-26/19-51.5-e		985	583	541	33
32LVS3-30/19-51.5-e		1057	655	613	34
32LVS3-25/25-52.2-e		967	565	523	36
32LVS3-30/25-52.2-e		1057	655	613	38
32LVS3-36/25-52.2-e		1165	763	721	39
32LVS3-30/30-53.0-e		1092	655	613	46
32LVS3-36/30-53.0-e		1200	763	721	47
32LVS3-36/36-53.0-e		1200	763	721	47

60Hz

〈Unit : mm〉

Type	Fig.	L	LH	LK	Approx. mass(kg)
32LVS3-5/5-6.75-e	1	532	205	163	19
32LVS3-7/5-6.75-e		568	241	199	19
32LVS3-10/5-6.75-e		622	295	253	20
32LVS3-12/5-6.75-e		658	331	289	21
32LVS3-15/5-6.75-e		712	385	343	21
32LVS3-19/5-6.75-e		784	457	415	22
32LVS3-23/5-6.75-e		856	529	487	23
32LVS3-6/6-61.1-e	2	610	223	181	23
32LVS3-10/6-61.1-e		682	295	253	24
32LVS3-12/6-61.1-e		718	331	289	25
32LVS3-15/6-61.1-e		772	385	343	26
32LVS3-19/6-61.1-e		844	457	415	26
32LVS3-23/6-61.1-e		916	529	487	27
32LVS3-7/7-61.1-e		628	241	199	24
32LVS3-10/7-61.1-e		682	295	253	24
32LVS3-12/7-61.1-e		718	331	289	25
32LVS3-15/7-61.1-e		772	385	343	26
32LVS3-19/7-61.1-e		844	457	415	26
32LVS3-23/7-61.1-e		916	529	487	27
32LVS3-8/8-61.1-e		646	259	217	24
32LVS3-10/8-61.1-e		682	295	253	24
32LVS3-12/8-61.1-e		718	331	289	25
32LVS3-15/8-61.1-e		772	385	343	26
32LVS3-19/8-61.1-e		844	457	415	27
32LVS3-23/8-61.1-e		916	529	487	27
32LVS3-10/10-61.5-e		697	295	253	29
32LVS3-12/10-61.5-e		733	331	289	29
32LVS3-15/10-61.5-e		787	385	343	30
32LVS3-19/10-61.5-e		859	457	415	31
32LVS3-23/10-61.5-e		931	529	487	32
32LVS3-11/11-61.5-e		715	313	271	29
32LVS3-15/11-61.5-e		787	385	343	30
32LVS3-19/11-61.5-e		859	457	415	31
32LVS3-23/11-61.5-e		931	529	487	32
32LVS3-12/12-62.2-e		733	331	289	33
32LVS3-15/12-62.2-e		787	385	343	33
32LVS3-19/12-62.2-e		859	457	415	34
32LVS3-23/12-62.2-e		931	529	487	35
32LVS3-15/15-62.2-e		787	385	343	34
32LVS3-19/15-62.2-e		859	457	415	34
32LVS3-23/15-62.2-e		931	529	487	35
32LVS3-26/15-62.2-e		985	583	541	36
32LVS3-17/17-62.2-e		823	421	379	34
32LVS3-23/17-62.2-e		931	529	487	35
32LVS3-26/17-62.2-e		985	583	541	36
32LVS3-30/17-62.2-e		1057	655	613	37
32LVS3-19/19-63.0-e		894	457	415	43
32LVS3-23/19-63.0-e		966	529	487	43
32LVS3-26/19-63.0-e		1020	583	541	44
32LVS3-30/19-63.0-e		1092	655	613	45
32LVS3-36/19-63.0-e		1200	763	721	46
32LVS3-23/23-63.0-e		966	529	487	44
32LVS3-26/23-63.0-e		1020	583	541	44
32LVS3-30/23-63.0-e		1092	655	613	45
32LVS3-36/23-63.0-e		1200	763	721	47
32LVS3-26/26-64.0-e		1025	583	541	50
32LVS3-30/26-64.0-e		1097	655	613	51
32LVS3-36/26-64.0-e		1205	763	721	52

●Discharge diameter: 32mm, Nominal flow rate: 5m³/h

50Hz

〈Unit : mm〉

Type	Fig.	L	LH	LK	Approx. mass(kg)
32LVS5-5/5-5.75-e	1	577	250	208	20
32LVS5-7/5-5.75-e		631	304	262	20
32LVS5-10/5-5.75-e		712	385	343	21
32LVS5-14/5-5.75-e		820	493	451	22
32LVS5-16/5-5.75-e		874	547	505	23
32LVS5-20/5-5.75-e		982	655	613	24
32LVS5-8/8-51.1-e	2	658	331	289	25
32LVS5-10/8-51.1-e		772	385	343	25
32LVS5-14/8-51.1-e		880	493	451	27
32LVS5-16/8-51.1-e		934	547	505	27
32LVS5-20/8-51.1-e		1042	655	613	29
32LVS5-10/10-51.5-e		787	385	343	30
32LVS5-14/10-51.5-e		895	493	451	31
32LVS5-16/10-51.5-e		949	547	505	32
32LVS5-20/10-51.5-e		1057	655	613	33
32LVS5-14/14-52.2-e		895	493	451	35
32LVS5-16/14-52.2-e		949	547	505	35
32LVS5-20/14-52.2-e		1057	655	613	37
32LVS5-24/14-52.2-e		1165	763	721	38
32LVS5-16/16-52.2-e		949	547	505	35
32LVS5-20/16-52.2-e		1057	655	613	37
32LVS5-24/16-52.2-e		1165	763	721	38
32LVS5-29/16-52.2-e		1300	898	856	39
32LVS5-20/20-53.0-e		1092	655	613	45
32LVS5-24/20-53.0-e		1200	763	721	46
32LVS5-29/20-53.0-e		1335	898	856	48
32LVS5-32/20-53.0-e		1416	979	937	49
32LVS5-24/24-54.0-e		1205	763	721	52
32LVS5-29/24-54.0-e		1340	898	856	53
32LVS5-32/24-54.0-e		1421	979	937	54
32LVS5-29/29-54.0-e		1340	898	856	53
32LVS5-32/29-54.0-e		1421	979	937	54
32LVS5-32/32-55.5-e	3	1484	979	937	82

60Hz

〈Unit : mm〉

Type	Fig.	L	LH	LK	Approx. mass(kg)
32LVS5-3/3-61.1-e	2	583	196	154	23
32LVS5-5/3-61.1-e		637	250	208	24
32LVS5-7/3-61.1-e		691	304	262	24
32LVS5-10/3-61.1-e		772	385	343	25
32LVS5-14/3-61.1-e		880	493	451	26
32LVS5-16/3-61.1-e		934	547	505	27
32LVS5-20/3-61.1-e		1042	655	613	28
32LVS5-4/4-61.1-e		610	223	181	23
32LVS5-6/4-61.1-e		664	277	235	24
32LVS5-8/4-61.1-e		718	331	289	24
32LVS5-10/4-61.1-e		772	385	343	25
32LVS5-14/4-61.1-e		880	493	451	27
32LVS5-16/4-61.1-e		934	547	505	28
32LVS5-20/4-61.1-e		1042	655	613	29
32LVS5-5/5-61.5-e		652	250	208	28
32LVS5-7/5-61.5-e		706	304	262	28
32LVS5-10/5-61.5-e		787	385	343	29
32LVS5-14/5-61.5-e		895	493	451	31
32LVS5-16/5-61.5-e		949	547	505	31
32LVS5-20/5-61.5-e		1057	655	613	33
32LVS5-6/6-62.2-e		679	277	235	32
32LVS5-8/6-62.2-e		733	331	289	32
32LVS5-10/6-62.2-e		787	385	343	33
32LVS5-14/6-62.2-e		895	493	451	34
32LVS5-16/6-62.2-e		949	547	505	35
32LVS5-20/6-62.2-e		1057	655	613	36
32LVS5-7/7-62.2-e		706	304	262	32
32LVS5-10/7-62.2-e		787	385	343	33
32LVS5-14/7-62.2-e		895	493	451	34
32LVS5-16/7-62.2-e		949	547	505	35
32LVS5-20/7-62.2-e		1057	655	613	36
32LVS5-8/8-62.2-e		733	331	289	32
32LVS5-10/8-62.2-e		787	385	343	33
32LVS5-14/8-62.2-e		895	493	451	34
32LVS5-16/8-62.2-e		949	547	505	35
32LVS5-20/8-62.2-e		1057	655	613	36
32LVS5-10/10-63.0-e		822	385	343	41
32LVS5-14/10-63.0-e		930	493	451	42
32LVS5-16/10-63.0-e		984	547	505	43
32LVS5-20/10-63.0-e		1092	655	613	44
32LVS5-12/12-63.0-e		876	439	397	42
32LVS5-14/12-63.0-e		930	493	451	42
32LVS5-16/12-63.0-e		984	547	505	43
32LVS5-20/12-63.0-e		1092	655	613	44
32LVS5-24/12-63.0-e		1200	763	721	45
32LVS5-14/14-64.0-e		935	493	451	48
32LVS5-16/14-64.0-e		989	547	505	49
32LVS5-20/14-64.0-e		1097	655	613	50
32LVS5-24/14-64.0-e		1205	763	721	51
32LVS5-29/14-64.0-e		1340	898	856	53
32LVS5-16/16-64.0-e		989	547	505	49
32LVS5-20/16-64.0-e		1097	655	613	50
32LVS5-24/16-64.0-e		1205	763	721	51
32LVS5-29/16-64.0-e		1340	898	856	53
32LVS5-32/16-64.0-e		1421	979	937	54
32LVS5-20/20-65.5-e	3	1160	655	613	78
32LVS5-24/20-65.5-e		1268	763	721	79
32LVS5-29/20-65.5-e		1403	898	856	80
32LVS5-32/20-65.5-e		1484	979	937	81
32LVS5-22/22-65.5-e		1214	709	667	78
32LVS5-24/22-65.5-e		1268	763	721	79
32LVS5-29/22-65.5-e		1403	898	856	80
32LVS5-32/22-65.5-e		1484	979	937	81
32LVS5-24/24-67.5-e		1303	763	721	86
32LVS5-29/24-67.5-e		1438	898	856	87
32LVS5-32/24-67.5-e		1519	979	937	88

Dimensional outline drawing

●Discharge diameter:50mm

Diagram : 1

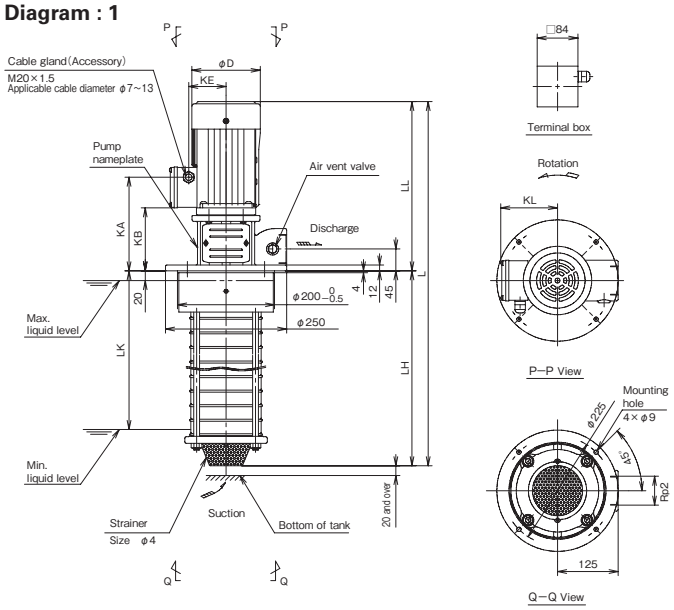


Diagram : 2

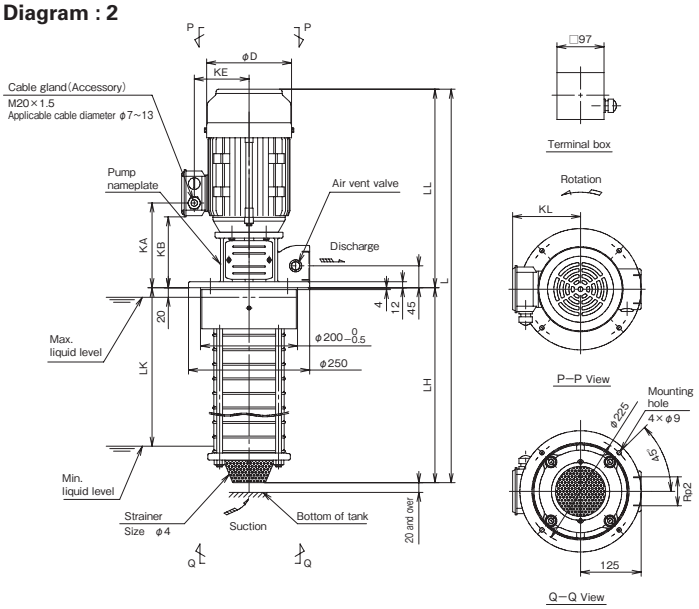


Diagram : 3

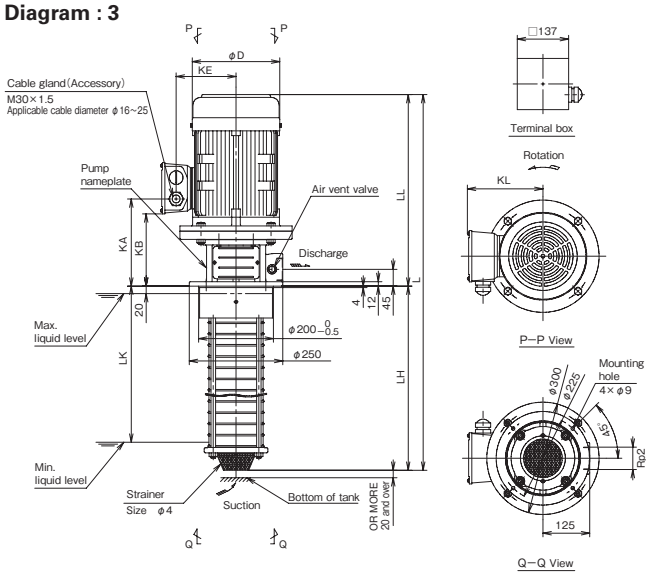
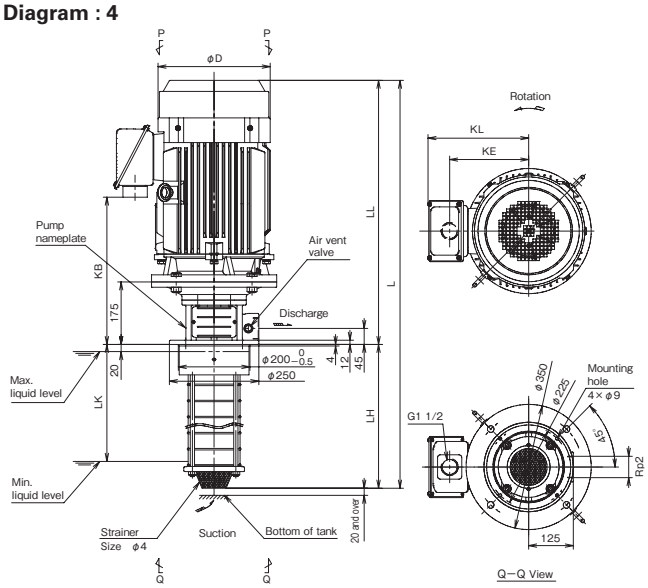


Diagram : 4



Dimensions

●Discharge diameter:50mm

〈Unit : mm〉

Output (kW)	Fig.	D	KA	KB	KE	KL	LL
0.75	1	141	193	130	77	117	349
1.1	2	175	175	146	113	140	409
1.5/2.2		175	175	146	113	140	409
3.0		196	185	156	125	152	444
4.0		219	190	161	134	161	449
5.5	3	234	233	193	160	202	512
7.5		234	233	193	160	202	547
11/15	4	314	—	382	221	282	709
18.5		314	—	412	221	282	739

Dimensions

●Discharge diameter: 50mm, Nominal flow rate: 10m³/h

50Hz

〈Unit : mm〉

Type	Fig.	L	LH	LK	Approx. mass(kg)
50LVS10-5/2-5.75-e	1	631	282	207	28
50LVS10-6/2-5.75-e		661	312	237	28
50LVS10-8/2-5.75-e		721	372	297	30
50LVS10-10/2-5.75-e		781	432	357	31
50LVS10-12/2-5.75-e		841	492	417	32
50LVS10-14/2-5.75-e		901	552	477	34
50LVS10-16/2-5.75-e		961	612	537	35
50LVS10-18/2-5.75-e		1021	672	597	36
50LVS10-20/2-5.75-e		1081	732	657	38
50LVS10-22/2-5.75-e		1141	792	717	39
50LVS10-5/3-51.1-e	2	691	282	207	32
50LVS10-6/3-51.1-e		721	312	237	33
50LVS10-8/3-51.1-e		781	372	297	34
50LVS10-10/3-51.1-e		841	432	357	35
50LVS10-12/3-51.1-e		901	492	417	37
50LVS10-14/3-51.1-e		961	552	477	38
50LVS10-16/3-51.1-e		1021	612	537	39
50LVS10-18/3-51.1-e		1081	672	597	40
50LVS10-20/3-51.1-e		1141	732	657	42
50LVS10-22/3-51.1-e		1201	792	717	43
50LVS10-5/4-51.5-e		691	282	207	36
50LVS10-6/4-51.5-e		721	312	237	36
50LVS10-8/4-51.5-e		781	372	297	38
50LVS10-10/4-51.5-e		841	432	357	39
50LVS10-12/4-51.5-e		901	492	417	40
50LVS10-14/4-51.5-e		961	552	477	42
50LVS10-16/4-51.5-e		1021	612	537	43
50LVS10-18/4-51.5-e		1081	672	597	44
50LVS10-20/4-51.5-e		1141	732	657	46
50LVS10-22/4-51.5-e		1201	792	717	47
50LVS10-5/5-52.2-e		691	282	207	39
50LVS10-6/5-52.2-e		721	312	237	40
50LVS10-8/5-52.2-e		781	372	297	41
50LVS10-10/5-52.2-e		841	432	357	43
50LVS10-12/5-52.2-e		901	492	417	44
50LVS10-14/5-52.2-e		961	552	477	45
50LVS10-16/5-52.2-e		1021	612	537	47
50LVS10-18/5-52.2-e		1081	672	597	48
50LVS10-20/5-52.2-e		1141	732	657	49
50LVS10-22/5-52.2-e		1201	792	717	51
50LVS10-6/6-52.2-e		721	312	237	40
50LVS10-8/6-52.2-e		781	372	297	41
50LVS10-10/6-52.2-e		841	432	357	43
50LVS10-12/6-52.2-e		901	492	417	44
50LVS10-14/6-52.2-e		961	552	477	45
50LVS10-16/6-52.2-e		1021	612	537	47
50LVS10-18/6-52.2-e		1081	672	597	48
50LVS10-20/6-52.2-e		1141	732	657	49
50LVS10-22/6-52.2-e		1201	792	717	51

〈Unit : mm〉

Type	Fig.	L	LH	LK	Approx. mass(kg)
50LVS10-8/8-53.0-e	2	816	372	297	51
50LVS10-10/8-53.0-e		876	432	357	52
50LVS10-12/8-53.0-e		936	492	417	53
50LVS10-14/8-53.0-e		996	552	477	55
50LVS10-16/8-53.0-e		1056	612	537	56
50LVS10-18/8-53.0-e		1116	672	597	57
50LVS10-20/8-53.0-e		1176	732	657	59
50LVS10-22/8-53.0-e		1236	792	717	60
50LVS10-10/10-54.0-e		881	432	357	58
50LVS10-12/10-54.0-e		941	492	417	59
50LVS10-14/10-54.0-e		1001	552	477	60
50LVS10-16/10-54.0-e		1061	612	537	62
50LVS10-18/10-54.0-e		1121	672	597	63
50LVS10-20/10-54.0-e		1181	732	657	64
50LVS10-22/10-54.0-e		1241	792	717	66
50LVS10-12/12-54.0-e		941	492	417	59
50LVS10-14/12-54.0-e		1001	552	477	60
50LVS10-16/12-54.0-e		1061	612	537	62
50LVS10-18/12-54.0-e		1121	672	597	63
50LVS10-20/12-54.0-e		1181	732	657	64
50LVS10-22/12-54.0-e		1241	792	717	66
50LVS10-14/14-55.5-e	3	1064	552	477	88
50LVS10-16/14-55.5-e		1124	612	537	89
50LVS10-18/14-55.5-e		1184	672	597	91
50LVS10-20/14-55.5-e		1244	732	657	92
50LVS10-22/14-55.5-e		1304	792	717	93
50LVS10-16/16-55.5-e		1124	612	537	90
50LVS10-18/16-55.5-e		1184	672	597	91
50LVS10-20/16-55.5-e		1244	732	657	92
50LVS10-22/16-55.5-e		1304	792	717	93
50LVS10-18/18-57.5-e		1219	672	597	98
50LVS10-20/18-57.5-e		1279	732	657	99
50LVS10-22/18-57.5-e		1339	792	717	100
50LVS10-20/20-57.5-e		1279	732	657	99
50LVS10-22/20-57.5-e		1339	792	717	100
50LVS10-22/22-57.5-e		1339	792	717	101

●Discharge diameter: 50mm, Nominal flow rate: 10m³/h

60Hz

〈Unit : mm〉

Type	Fig.	L	LH	LK	Approx. mass(kg)
50LVS10-5/1-6.75-e	1	631	282	207	28
50LVS10-6/1-6.75-e		661	312	237	28
50LVS10-8/1-6.75-e		721	372	297	30
50LVS10-10/1-6.75-e		781	432	357	31
50LVS10-12/1-6.75-e		841	492	417	32
50LVS10-5/2-61.5-e	2	691	282	207	36
50LVS10-6/2-61.5-e		721	312	237	36
50LVS10-8/2-61.5-e		781	372	297	38
50LVS10-10/2-61.5-e		841	432	357	39
50LVS10-12/2-61.5-e		901	492	417	40
50LVS10-14/2-61.5-e		961	552	477	42
50LVS10-16/2-61.5-e		1021	612	537	43
50LVS10-18/2-61.5-e		1081	672	597	44
50LVS10-20/2-61.5-e		1141	732	657	46
50LVS10-22/2-61.5-e		1201	792	717	47
50LVS10-5/3-62.2-e		691	282	207	39
50LVS10-6/3-62.2-e		721	312	237	40
50LVS10-8/3-62.2-e		781	372	297	41
50LVS10-10/3-62.2-e		841	432	357	42
50LVS10-12/3-62.2-e		901	492	417	44
50LVS10-14/3-62.2-e		961	552	477	45
50LVS10-16/3-62.2-e		1021	612	537	46
50LVS10-18/3-62.2-e		1081	672	597	48
50LVS10-20/3-62.2-e		1141	732	657	49
50LVS10-22/3-62.2-e		1201	792	717	50
50LVS10-5/4-63.0-e		726	282	207	48
50LVS10-6/4-63.0-e		756	312	237	49
50LVS10-8/4-63.0-e		816	372	297	50
50LVS10-10/4-63.0-e		876	432	357	52
50LVS10-12/4-63.0-e		936	492	417	53
50LVS10-14/4-63.0-e		996	552	477	54
50LVS10-16/4-63.0-e		1056	612	537	56
50LVS10-18/4-63.0-e		1116	672	597	57
50LVS10-20/4-63.0-e		1176	732	657	58
50LVS10-22/4-63.0-e		1236	792	717	60
50LVS10-5/5-63.0-e		726	282	207	48
50LVS10-6/5-63.0-e		756	312	237	49
50LVS10-8/5-63.0-e		816	372	297	50
50LVS10-10/5-63.0-e		876	432	357	52
50LVS10-12/5-63.0-e		936	492	417	53
50LVS10-14/5-63.0-e		996	552	477	54
50LVS10-16/5-63.0-e		1056	612	537	56
50LVS10-18/5-63.0-e		1116	672	597	57
50LVS10-20/5-63.0-e		1176	732	657	58
50LVS10-22/5-63.0-e		1236	792	717	60
50LVS10-6/6-64.0-e		761	312	237	55
50LVS10-8/6-64.0-e		821	372	297	56
50LVS10-10/6-64.0-e		881	432	357	57
50LVS10-12/6-64.0-e		941	492	417	59
50LVS10-14/6-64.0-e		1001	552	477	60
50LVS10-16/6-64.0-e		1061	612	537	61
50LVS10-18/6-64.0-e		1121	672	597	63
50LVS10-20/6-64.0-e		1181	732	657	64
50LVS10-22/6-64.0-e		1241	792	717	65

〈Unit : mm〉

Type	Fig.	L	LH	LK	Approx. mass(kg)
50LVS10-8/8-65.5-e	3	884	372	297	83
50LVS10-10/8-65.5-e		944	432	357	85
50LVS10-12/8-65.5-e		1004	492	417	86
50LVS10-14/8-65.5-e		1064	552	477	87
50LVS10-16/8-65.5-e		1124	612	537	89
50LVS10-18/8-65.5-e		1184	672	597	90
50LVS10-20/8-65.5-e		1244	732	657	91
50LVS10-22/8-65.5-e		1304	792	717	93
50LVS10-9/9-65.5-e		914	402	327	84
50LVS10-12/9-65.5-e		1004	492	417	86
50LVS10-14/9-65.5-e		1064	552	477	88
50LVS10-16/9-65.5-e		1124	612	537	89
50LVS10-18/9-65.5-e		1184	672	597	90
50LVS10-20/9-65.5-e		1244	732	657	91
50LVS10-22/9-65.5-e		1304	792	717	93
50LVS10-10/10-67.5-e		979	432	357	92
50LVS10-12/10-67.5-e		1039	492	417	93
50LVS10-14/10-67.5-e		1099	552	477	94
50LVS10-16/10-67.5-e		1159	612	537	96
50LVS10-18/10-67.5-e		1219	672	597	97
50LVS10-20/10-67.5-e		1279	732	657	98
50LVS10-22/10-67.5-e		1339	792	717	100
50LVS10-12/12-67.5-e		1039	492	417	93
50LVS10-14/12-67.5-e		1099	552	477	94
50LVS10-16/12-67.5-e		1159	612	537	96
50LVS10-18/12-67.5-e		1219	672	597	97
50LVS10-20/12-67.5-e		1279	732	657	98
50LVS10-22/12-67.5-e		1339	792	717	100
50LVS10-14/14-611-e	4	1261	552	477	169
50LVS10-16/14-611-e		1321	612	537	170
50LVS10-18/14-611-e		1381	672	597	172
50LVS10-20/14-611-e		1441	732	657	173
50LVS10-22/14-611-e		1501	792	717	174
50LVS10-16/16-611-e		1321	612	537	170
50LVS10-18/16-611-e		1381	672	597	172
50LVS10-20/16-611-e		1441	732	657	173
50LVS10-22/16-611-e		1501	792	717	174
50LVS10-18/18-611-e		1381	672	597	172
50LVS10-20/18-611-e		1441	732	657	173
50LVS10-22/18-611-e		1501	792	717	175

●**Discharge diameter: 50mm, Nominal flow rate: 15m³/h**

50Hz

〈Unit : mm〉

Type	Fig.	L	LH	LK	Approx. mass(kg)
50LVS15-3/1-51.1-e	2	676	267	192	31
50LVS15-4/1-51.1-e		721	312	237	32
50LVS15-5/1-51.1-e		766	357	282	33
50LVS15-6/1-51.1-e		811	402	327	34
50LVS15-7/1-51.1-e		856	447	372	35
50LVS15-8/1-51.1-e		901	492	417	36
50LVS15-3/2-52.2-e		676	267	192	39
50LVS15-4/2-52.2-e		721	312	237	39
50LVS15-5/2-52.2-e		766	357	282	40
50LVS15-6/2-52.2-e		811	402	327	41
50LVS15-7/2-52.2-e		856	447	372	42
50LVS15-8/2-52.2-e		901	492	417	43
50LVS15-10/2-52.2-e		991	582	507	44
50LVS15-12/2-52.2-e		1081	672	597	46
50LVS15-14/2-52.2-e		1171	762	687	48
50LVS15-3/3-53.0-e		711	267	192	48
50LVS15-4/3-53.0-e		756	312	237	48
50LVS15-5/3-53.0-e		801	357	282	49
50LVS15-6/3-53.0-e		846	402	327	50
50LVS15-7/3-53.0-e		891	447	372	51
50LVS15-8/3-53.0-e		936	492	417	52
50LVS15-10/3-53.0-e		1026	582	507	54
50LVS15-12/3-53.0-e		1116	672	597	55
50LVS15-14/3-53.0-e		1206	762	687	57
50LVS15-17/3-53.0-e		1341	897	822	59
50LVS15-4/4-54.0-e		761	312	237	54
50LVS15-5/4-54.0-e		806	357	282	55
50LVS15-6/4-54.0-e		851	402	327	56
50LVS15-7/4-54.0-e		896	447	372	57
50LVS15-8/4-54.0-e		941	492	417	58
50LVS15-10/4-54.0-e		1031	582	507	59
50LVS15-12/4-54.0-e		1121	672	597	61
50LVS15-14/4-54.0-e		1211	762	687	63
50LVS15-17/4-54.0-e		1346	897	822	65
50LVS15-5/5-54.0-e		806	357	282	55
50LVS15-6/5-54.0-e		851	402	327	56
50LVS15-7/5-54.0-e		896	447	372	57
50LVS15-8/5-54.0-e		941	492	417	58
50LVS15-10/5-54.0-e		1031	582	507	59
50LVS15-12/5-54.0-e		1121	672	597	61
50LVS15-14/5-54.0-e		1211	762	687	63
50LVS15-17/5-54.0-e		1346	897	822	65
50LVS15-6/6-55.5-e	3	914	402	327	84
50LVS15-7/6-55.5-e		959	447	372	84
50LVS15-8/6-55.5-e		1004	492	417	85
50LVS15-10/6-55.5-e		1094	582	507	87
50LVS15-12/6-55.5-e		1184	672	597	89
50LVS15-14/6-55.5-e		1274	762	687	90
50LVS15-17/6-55.5-e		1409	897	822	93
50LVS15-7/7-55.5-e		959	447	372	85
50LVS15-8/7-55.5-e		1004	492	417	85
50LVS15-10/7-55.5-e		1094	582	507	87
50LVS15-12/7-55.5-e		1184	672	597	89
50LVS15-14/7-55.5-e		1274	762	687	90
50LVS15-17/7-55.5-e		1409	897	822	93
50LVS15-8/8-57.5-e		1039	492	417	92
50LVS15-10/8-57.5-e		1129	582	507	94
50LVS15-12/8-57.5-e		1219	672	597	96
50LVS15-14/8-57.5-e		1309	762	687	97
50LVS15-17/8-57.5-e		1444	897	822	100
50LVS15-9/9-57.5-e		1084	537	462	93
50LVS15-12/9-57.5-e		1219	672	597	96
50LVS15-14/9-57.5-e		1309	762	687	97
50LVS15-17/9-57.5-e		1444	897	822	100
50LVS15-10/10-511-e	4	1291	582	507	169
50LVS15-12/10-511-e		1381	672	597	170
50LVS15-14/10-511-e		1471	762	687	172
50LVS15-17/10-511-e		1606	897	822	174
50LVS15-12/12-511-e		1381	672	597	171
50LVS15-14/12-511-e		1471	762	687	172
50LVS15-17/12-511-e		1606	897	822	175
50LVS15-14/14-511-e		1471	762	687	173
50LVS15-17/14-511-e		1606	897	822	175
50LVS15-17/17-515-e		1606	897	822	187

60Hz

〈Unit : mm〉

Type	Fig.	L	LH	LK	Approx. mass(kg)
50LVS15-3/1-61.5-e	2	676	267	192	35
50LVS15-4/1-61.5-e		721	312	237	36
50LVS15-5/1-61.5-e		766	357	282	37
50LVS15-6/1-61.5-e		811	402	327	38
50LVS15-7/1-61.5-e		856	447	372	38
50LVS15-8/1-61.5-e		901	492	417	39
50LVS15-10/1-61.5-e		991	582	507	41
50LVS15-3/2-63.0-e		711	267	192	48
50LVS15-4/2-63.0-e		756	312	237	48
50LVS15-5/2-63.0-e		801	357	282	49
50LVS15-6/2-63.0-e		846	402	327	50
50LVS15-7/2-63.0-e		891	447	372	51
50LVS15-8/2-63.0-e		936	492	417	52
50LVS15-10/2-63.0-e		1026	582	507	54
50LVS15-12/2-63.0-e		1116	672	597	55
50LVS15-14/2-63.0-e		1206	762	687	57
50LVS15-17/2-63.0-e		1341	897	822	59
50LVS15-3/3-64.0-e		716	267	192	53
50LVS15-4/3-64.0-e		761	312	237	54
50LVS15-5/3-64.0-e		806	357	282	55
50LVS15-6/3-64.0-e		851	402	327	56
50LVS15-7/3-64.0-e		896	447	372	56
50LVS15-8/3-64.0-e		941	492	417	57
50LVS15-10/3-64.0-e		1031	582	507	59
50LVS15-12/3-64.0-e		1121	672	597	61
50LVS15-14/3-64.0-e		1211	762	687	62
50LVS15-17/3-64.0-e		1346	897	822	65
50LVS15-4/4-65.5-e	3	824	312	237	81
50LVS15-5/4-65.5-e		869	357	282	82
50LVS15-6/4-65.5-e		914	402	327	83
50LVS15-7/4-65.5-e		959	447	372	84
50LVS15-8/4-65.5-e		1004	492	417	85
50LVS15-10/4-65.5-e		1094	582	507	87
50LVS15-12/4-65.5-e		1184	672	597	88
50LVS15-14/4-65.5-e		1274	762	687	90
50LVS15-17/4-65.5-e		1409	897	822	92
50LVS15-5/5-67.5-e		904	357	282	89
50LVS15-6/5-67.5-e		949	402	327	90
50LVS15-7/5-67.5-e		994	447	372	91
50LVS15-8/5-67.5-e		1039	492	417	92
50LVS15-10/5-67.5-e		1129	582	507	93
50LVS15-12/5-67.5-e		1219	672	597	95
50LVS15-14/5-67.5-e		1309	762	687	97
50LVS15-17/5-67.5-e		1444	897	822	99
50LVS15-6/6-611-e	4	1111	402	327	164
50LVS15-7/6-611-e		1156	447	372	165
50LVS15-8/6-611-e		1201	492	417	166
50LVS15-10/6-611-e		1291	582	507	168
50LVS15-12/6-611-e		1381	672	597	169
50LVS15-14/6-611-e		1471	762	687	171
50LVS15-17/6-611-e		1606	897	822	174
50LVS15-7/7-611-e		1156	447	372	165
50LVS15-8/7-611-e		1201	492	417	166
50LVS15-10/7-611-e		1291	582	507	168
50LVS15-12/7-611-e		1381	672	597	170
50LVS15-14/7-611-e		1471	762	687	171
50LVS15-17/7-611-e		1606	897	822	174
50LVS15-8/8-611-e		1201	492	417	167
50LVS15-10/8-611-e		1291	582	507	168
50LVS15-12/8-611-e		1381	672	597	170
50LVS15-14/8-611-e		1471	762	687	172
50LVS15-17/8-611-e		1606	897	822	174
50LVS15-10/10-615-e		1291	582	507	180
50LVS15-12/10-615-e		1381	672	597	181
50LVS15-14/10-615-e		1471	762	687	183
50LVS15-17/10-615-e		1606	897	822	185
50LVS15-12/12-618-e		1411	672	597	198
50LVS15-14/12-618-e		1501	762	687	199
50LVS15-17/12-618-e		1636	897	822	202

●**Discharge diameter: 50mm, Nominal flow rate: 20m³/h**

50Hz

〈Unit : mm〉

Type	Fig.	L	LH	LK	Approx. mass(kg)
50LVS20-3/1-51.1-e	2	676	267	192	31
50LVS20-4/1-51.1-e		721	312	237	32
50LVS20-5/1-51.1-e		766	357	282	33
50LVS20-6/1-51.1-e		811	402	327	34
50LVS20-3/2-52.2-e		676	267	192	39
50LVS20-4/2-52.2-e		721	312	237	39
50LVS20-5/2-52.2-e		766	357	282	40
50LVS20-6/2-52.2-e		811	402	327	41
50LVS20-7/2-52.2-e		856	447	372	42
50LVS20-8/2-52.2-e		901	492	417	43
50LVS20-10/2-52.2-e		991	582	507	44
50LVS20-12/2-52.2-e		1081	672	597	46
50LVS20-3/3-54.0-e		716	267	192	53
50LVS20-4/3-54.0-e		761	312	237	54
50LVS20-5/3-54.0-e		806	357	282	55
50LVS20-6/3-54.0-e		851	402	327	56
50LVS20-7/3-54.0-e		896	447	372	56
50LVS20-8/3-54.0-e		941	492	417	57
50LVS20-10/3-54.0-e		1031	582	507	59
50LVS20-12/3-54.0-e		1121	672	597	61
50LVS20-14/3-54.0-e		1211	762	687	62
50LVS20-17/3-54.0-e		1346	897	822	65
50LVS20-4/4-55.5-e	3	824	312	237	81
50LVS20-5/4-55.5-e		869	357	282	82
50LVS20-6/4-55.5-e		914	402	327	83
50LVS20-7/4-55.5-e		959	447	372	84
50LVS20-8/4-55.5-e		1004	492	417	85
50LVS20-10/4-55.5-e		1094	582	507	87
50LVS20-12/4-55.5-e		1184	672	597	88
50LVS20-14/4-55.5-e		1274	762	687	90
50LVS20-17/4-55.5-e		1409	897	822	92
50LVS20-5/5-55.5-e		869	357	282	83
50LVS20-6/5-55.5-e		914	402	327	83
50LVS20-7/5-55.5-e		959	447	372	84
50LVS20-8/5-55.5-e		1004	492	417	85
50LVS20-10/5-55.5-e		1094	582	507	87
50LVS20-12/5-55.5-e		1184	672	597	88
50LVS20-14/5-55.5-e		1274	762	687	90
50LVS20-17/5-55.5-e		1409	897	822	93
50LVS20-6/6-57.5-e		949	402	327	90
50LVS20-7/6-57.5-e		994	447	372	91
50LVS20-8/6-57.5-e		1039	492	417	92
50LVS20-10/6-57.5-e		1129	582	507	94
50LVS20-12/6-57.5-e		1219	672	597	95
50LVS20-14/6-57.5-e		1309	762	687	97
50LVS20-17/6-57.5-e		1444	897	822	99
50LVS20-7/7-57.5-e		994	447	372	91
50LVS20-8/7-57.5-e		1039	492	417	92
50LVS20-10/7-57.5-e		1129	582	507	94
50LVS20-12/7-57.5-e		1219	672	597	95
50LVS20-14/7-57.5-e		1309	762	687	97
50LVS20-17/7-57.5-e		1444	897	822	100
50LVS20-8/8-511-e	4	1201	492	417	167
50LVS20-10/8-511-e		1291	582	507	168
50LVS20-12/8-511-e		1381	672	597	170
50LVS20-14/8-511-e		1471	762	687	172
50LVS20-17/8-511-e		1606	897	822	174
50LVS20-10/10-511-e		1291	582	507	168
50LVS20-12/10-511-e		1381	672	597	170
50LVS20-14/10-511-e		1471	762	687	172
50LVS20-17/10-511-e		1606	897	822	174
50LVS20-12/12-515-e		1381	672	597	182
50LVS20-14/12-515-e		1471	762	687	183
50LVS20-17/12-515-e		1606	897	822	186
50LVS20-14/14-515-e		1471	762	687	183
50LVS20-17/14-515-e		1606	897	822	186
50LVS20-17/17-518-e		1636	897	822	203

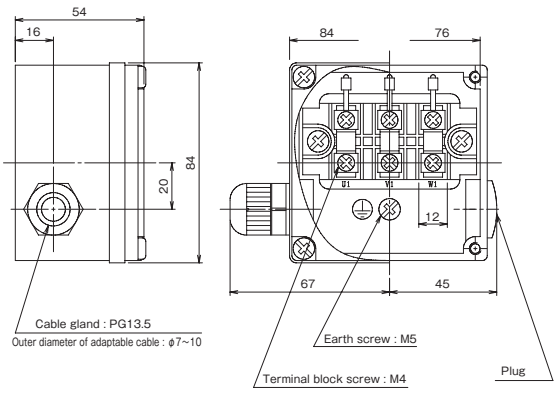
60Hz

〈Unit : mm〉

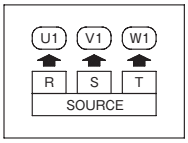
Type	Fig.	L	LH	LK	Approx. mass(kg)
50LVS20-3/1-62.2-e	2	676	267	192	39
50LVS20-4/1-62.2-e		721	312	237	39
50LVS20-5/1-62.2-e		766	357	282	40
50LVS20-6/1-62.2-e		811	402	327	41
50LVS20-7/1-62.2-e		856	447	372	42
50LVS20-3/2-64.0-e		716	267	192	53
50LVS20-4/2-64.0-e		761	312	237	54
50LVS20-5/2-64.0-e		806	357	282	55
50LVS20-6/2-64.0-e		851	402	327	56
50LVS20-7/2-64.0-e		896	447	372	56
50LVS20-8/2-64.0-e		941	492	417	57
50LVS20-10/2-64.0-e		1031	582	507	59
50LVS20-12/2-64.0-e		1121	672	597	61
50LVS20-3/3-65.5-e	3	779	267	192	80
50LVS20-4/3-65.5-e		824	312	237	81
50LVS20-5/3-65.5-e		869	357	282	82
50LVS20-6/3-65.5-e		914	402	327	83
50LVS20-7/3-65.5-e		959	447	372	84
50LVS20-8/3-65.5-e		1004	492	417	85
50LVS20-10/3-65.5-e		1094	582	507	86
50LVS20-12/3-65.5-e		1184	672	597	88
50LVS20-14/3-65.5-e		1274	762	687	90
50LVS20-17/3-65.5-e		1409	897	822	92
50LVS20-4/4-67.5-e		859	312	237	88
50LVS20-5/4-67.5-e		904	357	282	89
50LVS20-6/4-67.5-e		949	402	327	90
50LVS20-7/4-67.5-e		994	447	372	91
50LVS20-8/4-67.5-e		1039	492	417	91
50LVS20-10/4-67.5-e		1129	582	507	93
50LVS20-12/4-67.5-e		1219	672	597	95
50LVS20-14/4-67.5-e		1309	762	687	96
50LVS20-17/4-67.5-e		1444	897	822	99
50LVS20-5/5-611-e	4	1066	357	282	163
50LVS20-6/5-611-e		1111	402	327	164
50LVS20-7/5-611-e		1156	447	372	165
50LVS20-8/5-611-e		1201	492	417	166
50LVS20-10/5-611-e		1291	582	507	168
50LVS20-12/5-611-e		1381	672	597	169
50LVS20-14/5-611-e		1471	762	687	171
50LVS20-17/5-611-e		1606	897	822	173
50LVS20-6/6-611-e		1111	402	327	164
50LVS20-7/6-611-e		1156	447	372	165
50LVS20-8/6-611-e		1201	492	417	166
50LVS20-10/6-611-e		1291	582	507	168
50LVS20-12/6-611-e		1381	672	597	169
50LVS20-14/6-611-e		1471	762	687	171
50LVS20-17/6-611-e		1606	897	822	174
50LVS20-7/7-615-e		1156	447	372	176
50LVS20-8/7-615-e		1201	492	417	177
50LVS20-10/7-615-e		1291	582	507	179
50LVS20-12/7-615-e		1381	672	597	181
50LVS20-14/7-615-e		1471	762	687	182
50LVS20-17/7-615-e		1606	897	822	185
50LVS20-8/8-615-e		1201	492	417	177
50LVS20-10/8-615-e		1291	582	507	179
50LVS20-12/8-615-e		1381	672	597	181
50LVS20-14/8-615-e		1471	762	687	182
50LVS20-17/8-615-e		1606	897	822	185
50LVS20-10/10-618-e		1321	582	507	196
50LVS20-12/10-618-e		1411	672	597	197
50LVS20-14/10-618-e		1501	762	687	199
50LVS20-17/10-618-e		1636	897	822	201

●Output 0.75 kW

■Dimensional outline drawing

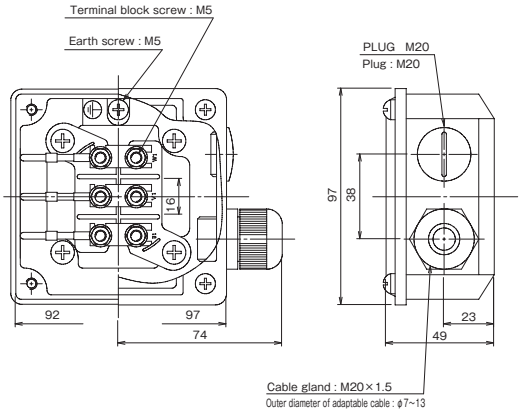


■Connection diagram

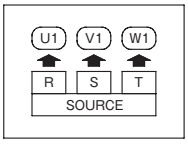


●Output 1.1 ～ 4.0 kW

■Dimensional outline drawing

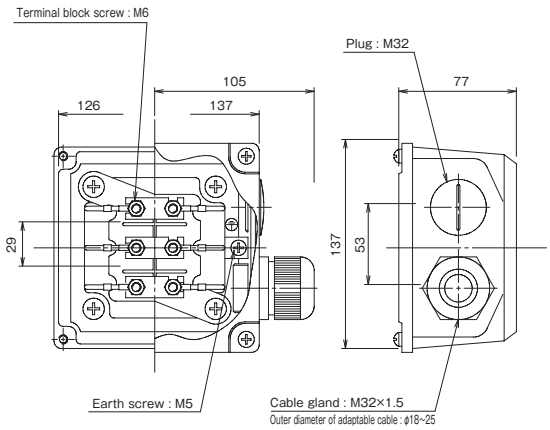


■Connection diagram

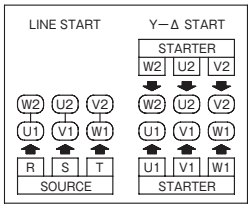


●Output 5.5, 7.5 kW

■Dimensional outline drawing

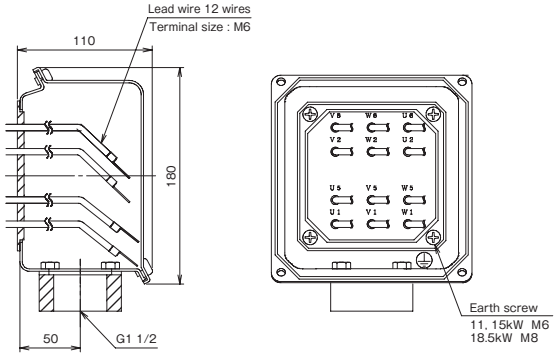


■Connection diagram

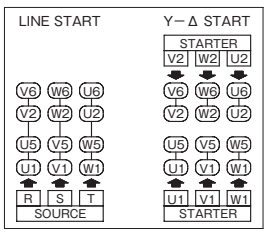


●Output 11 ～ 18.5 kW

■Dimensional outline drawing

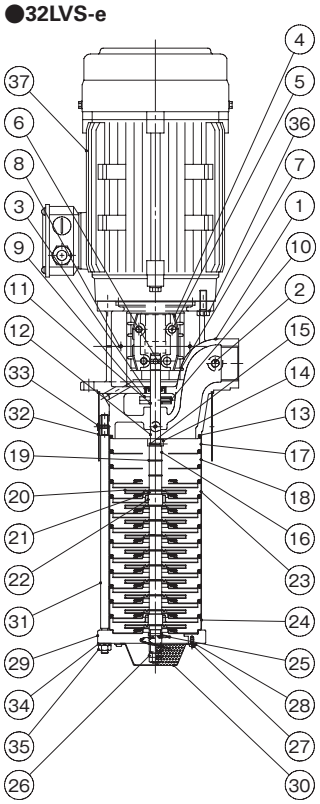


■Connection diagram



Sectional drawing

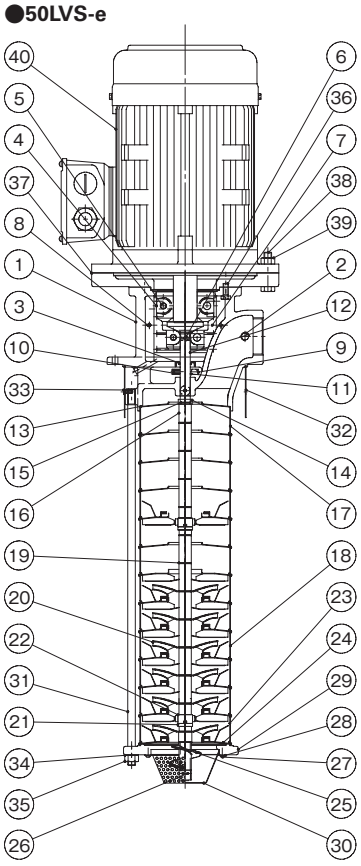
●32LVS-e



No.	Part Name	Material
1	Discharge casing	FC200
2	Air vent valve	BRASS
3	Oil seal	NBR
4	Coupling	FC0205
5	Hexagon socket head bolt	SCM435
6	Shaft pin	SUS316
7	Coupling cover	SUS304
8	Cross-recessed pan head screw	SUS304
9	Oil thrower	SUS304
10	Set screw	SCM435
11	O-ring	FKM
12	Shaft	SUS420J2
13	Gasket	—
14	Shaft bushing	SUS304
15	Shaft ring	SUS316
16	Sleeve	SUS304
17	Intermediate casing (Final stage)	SUS304
18	Intermediate casing	SUS304
19	Shim	SUS304
20	Impeller	SUS304
21	Baffle	SUS304
22	Bearings	SiC
23	Bearing casing	SUS304+SiC
24	Intermediate casing (First stage)	SUS304
25	Screw	SUS304
26	Hardlock nut	SUS304
27	Cross-recessed pan head screw	SUS304
28	Protection plate	SUS304
29	Suction casing	FC200
30	Strainer	SUS304
31	Tie bolt	SUS304
32	Outer sleeve	SUS304
33	Cross-recessed flat head screw	SUS304
34	Spring washer	SUS304
35	Hexagon nut	SUS304
36	Hexagon bolt	SUS304
37	Motor	—

Notes 1) The materials in the table above are equivalents.
Notes 2) Structure and other details are subject to change without notice.

●50LVS-e



No.	Part Name	Material
1	Discharge casing	FC200
2	Air vent valve	BRASS
3	Oil seal	NBR
4	Coupling	FC0205
5	Hexagon socket head bolt	SCM435
6	Shaft pin	SUS316
7	Coupling cover	SUS304
8	Cross-recessed pan head screw	SUS304
9	Oil thrower	SUS304
10	Set screw	SCM435
11	O-ring	FKM
12	Shaft	SUS420J2
13	Gasket	—
14	Shaft bushing	SUS304
15	Shaft ring	SUS316
16	Sleeve	SUS304
17	Intermediate casing (Final stage)	SUS304
18	Intermediate casing	SUS304
19	Shim	SUS304
20	Impeller	SUS304
21	Baffle	SUS304
22	Bearings	SiC
23	Bearing casing	SUS304+SiC
24	Intermediate casing (First stage)	SUS304
25	Screw	SUS304
26	Hardlock nut	SUS304
27	Cross-recessed pan head screw	SUS304
28	Protection plate	SUS304
29	Suction casing	FCD450
30	Strainer	SUS304
31	Tie bolt	SUS304
32	Outer sleeve	SUS304
33	Cross-recessed flat head screw	SUS304
34	Plain washer	SUS304
35	Hexagon nut	SUS304
36	Hexagon bolt	SUS304
37	Frame spacer	FCD450
38	Hexagon bolt	SUS304
39	Hexagon nut	SUS304
40	Motor	—

Notes 1) The materials in the table above are equivalents.
Notes 2) Structure and other details are subject to change without notice.

Low-Medium flow / Low head / Single-stage self-priming type

VKN model

Features

① The motor and the pump are integrated for smaller sizes and lighter weights.
② The self-priming function and floor mount offer a wider choice of installation locations, not limited to the top of tank.
③ EU RoHS Directive (Restriction of Hazardous Substances Directive) compliant.
④ EU Directive for CE marking compliant.
⑤ The lineup includes the models that meet efficiency of the various regulations:
VKN type : Equipped with a standard efficiency (IE1) motor.
VKN-e type : Equipped with a top-runner efficiency (equivalent to IE3) motor (VKN115A).
VKN-7W type : Equipped with a U.S. UL approved motor. (750W is NEMA premium efficiency.)
VKN-G/GS types: Equipped with a Chinese energy standard regulation (GB18613-2012) efficiency (grade GB3) motor * (VKN115A).
⑥ Enhanced protection against mist and other environmental elements is available.
⑦ The lineup that includes both VKN-A type (standard type) and VKN-H type (pressure type) broadens the scope of choices of heads and flow rates. VKN-H type offers approximately 30% more pressure than VKN-A type.

Note) * VKN-G type is equipped with a high efficiency motor that meets grade GB3 efficiency. (This is not certified as it is a non-regulated pump.)

Take note that the actual unit and its paint color, etc., may partially differ from the photo.

Description of types

VKN 07 5 A _
① ② ③ ④ ⑤

① Model
② Output code (04: 40W, 05: 60W, 06: 100W, 07: 180W, 08: 250W, 09: 400W, 11: 750W)
③ Series number
④ Number of phases · Characteristics (L: 3 phases (cabtyre leads), A: 3 phases ·standard type, H: 3 phases· pressure type)
⑤ Efficiency regulation-compliant and voltage
No description: Equipped with a standard efficiency (IE1) and standard voltage motor.
-e : Equipped with a top-runner efficiency (equivalent to IE3) and standard voltage motor.
-4Z : Equipped with a standard efficiency (IE1) and different voltage motor (-e-4Z: top-runner efficiency (equivalent to IE3)).
-7W : Equipped with a U.S. UL approved motor (750W is NEMA premium efficiency.).
-G* : Equipped with a Chinese energy label regulation (GB18613-2012) efficiency equivalent (grade GB3) motor· 50Hz, 200V.
-GS : Equipped with a Chinese energy label regulation (GB18613-2012) efficiency-compliant (grade GB3) motor · 50Hz, 220V/380V.

Note) * VKN-G type is equipped with a high efficiency motor that meets grade GB3 efficiency. (This is not certified as it is a non-regulated pump.)

Standard Specification

Used liquid	Property liquid	Grinding and cutting fluids*1
	Temperature	40°C or below (No frozen liquid)
	Allowable dynamic viscosity	VKN-A 50Hz：200mm²/s 60Hz：75mm²/s VKN-H 50/60Hz：37.5mm²/s
Installation location		Indoor Ambient temperature: 0 to 40°C, 85% RH or below (without condensation) Place at altitude of 1000 m or less. Do not place in direct sunlight. Place in an area free of corrosive or explosive gas or vapor.
Material	Casing	FC150
	Impeller	CAC407 or Special resins Refer to the list of impeller materials.
	Motor shaft	S45C
Shaft seal structure		Mechanical seal
Motor	Power	3 phases 50/60/60 Hz, 200/200/220 V*2
	Type	Totally enclosed fan cooled type, indoor
	Method of protection	Refer to the specifications.
	Insulation classification	Refer to the specifications.
	Rating	Continuous
	Number of poles	2P
	Standard	IEC60034-1 CE marking*3
Paint color		Munsell N1

※1 Take note that the unit is not used for water and special liquids such as printing and acidic liquids. Contact us when using the unit for other special liquids (ceramic, etc.).
※2 -4Z type: 50/50/50/60/60Hz, 380/400/415/400/440V, -7W type: 60Hz, 208/230/460V, -G type: 50Hz, 200V, -GStype: 50Hz, 380V
※3 Except for -7W/G/GS types and the models whose model number has a suffix L.

List of Consumable Parts

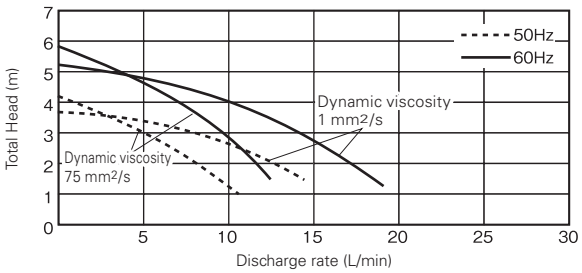
Type	Bearing		O-ring for casing
	Load side	Unload side	
VKN045L	6200ZZ	6200ZZ	—
VKN045A (-4Z/7W)	6200ZZ	6200ZZ	—
VKN055A (-4Z/7W)	6200ZZ	6200ZZ	—
VKN065A (-4Z/7W)	6200ZZ	6200ZZ	—
VKN075A (-4Z/7W)	6202ZZ	6200ZZ	—
VKN085A (-4Z/7W)	6202ZZ	6200ZZ	—
VKN095A (-4Z/7W)	6203ZZ	6202ZZ	—
VKN115A (-e/4Z/7W/G/GS)	6305ZZ	6203ZZ	G165-N
VKN055H (-7W)	6200ZZ	6200ZZ	—
VKN065H (-7W)	6200ZZ	6200ZZ	—
VKN075H (-7W)	6202ZZ	6200ZZ	—
VKN085H (-7W)	6202ZZ	6200ZZ	—
VKN095H (-7W)	6203ZZ	6202ZZ	—

Selection chart

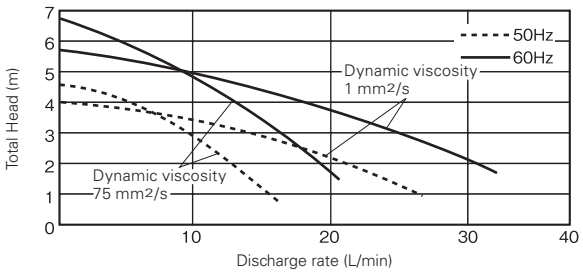
Synchronous rotating speed 50Hz : 3000min^{-1}
60Hz : 3600min^{-1}

●VKN-A

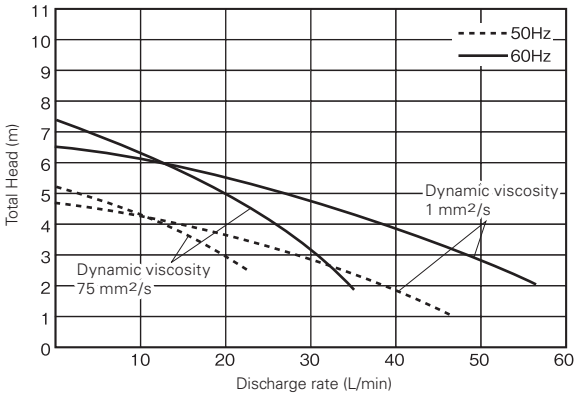
VKN045A (L)



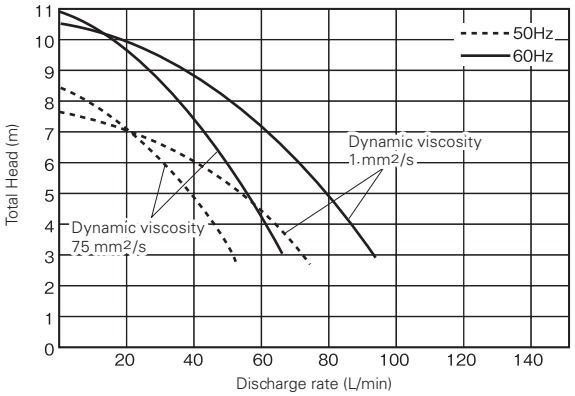
VKN055A



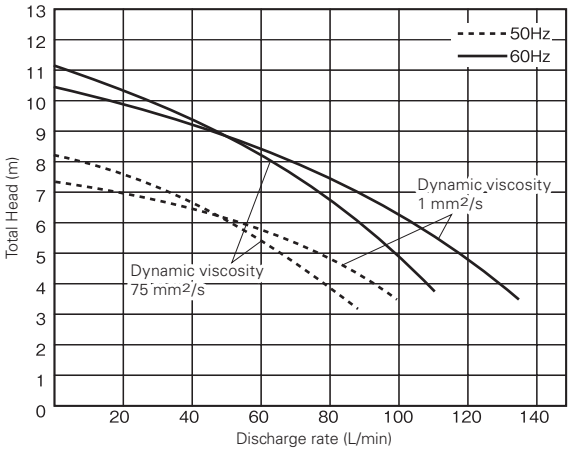
VKN065A



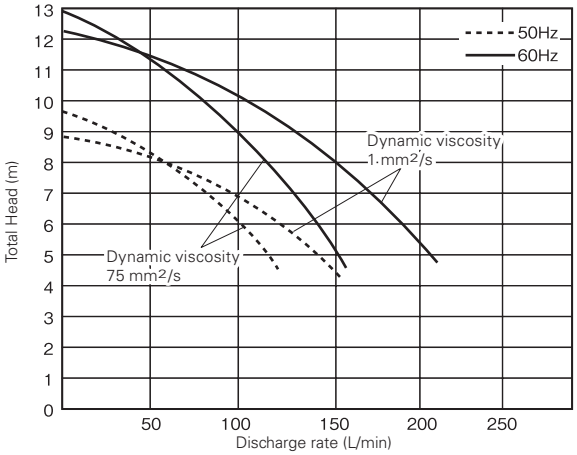
VKN075A



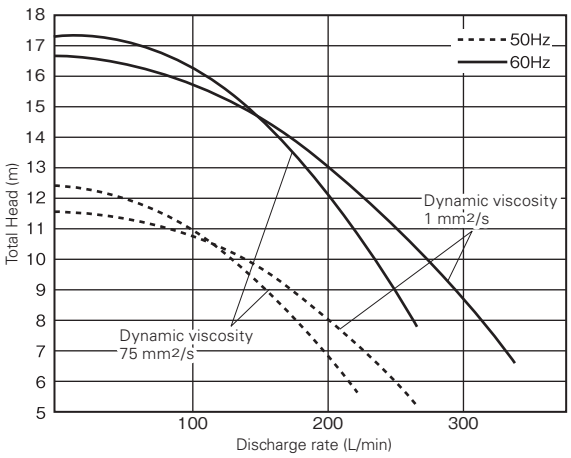
VKN085A



VKN095A



VKN115A



※ Same for the -e/4Z/7W/G/GS types.

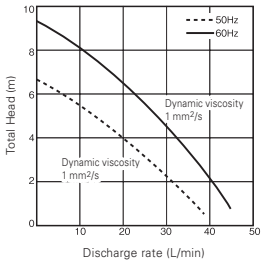
Note) Take note that the discharge rate will vary significantly depending on the type of liquid circulated and the liquid's kinematic viscosity.

Selection chart

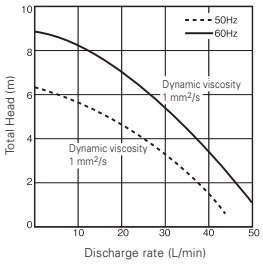
Synchronous rotating speed 50Hz : 3000min^{-1}
60Hz : 3600min^{-1}

●VKN-H

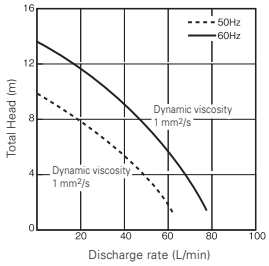
VKN055H



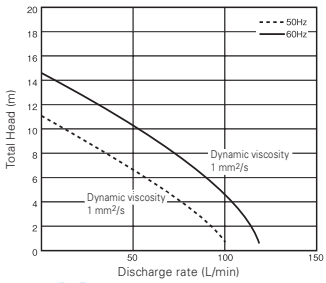
VKN065H



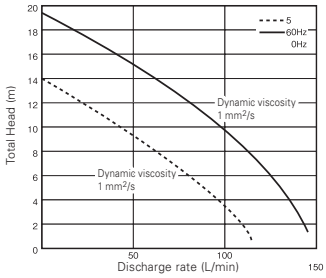
VKN075H



VKN085H



VKN095H



※ Same for the -7W type.
Note) Take note that the discharge rate will vary significantly depending on the type of liquid circulated and the liquid's kinematic viscosity.

Specification table

●VKN-A

Bore (Rp)	Type	Output (W)	50Hz					60Hz					Protection methool	Imsolation class
			Rated voltage (V)	Rated current (A)	Discharge current (A)	Discharge rate (L/min)	Total Head (m)	Rated voltage (V)	Rated current (A)	Discharge current (A)	Discharge rate (L/min)	Total Head (m)		
1/4	VKN045L★ VKN045A	40	200	0.32	1.38	13	1.5	200/220	0.31/0.31	1.24/1.36	16	1.5	IP23	B
	VKN045A-4Z		380/400/415	0.16/0.16/0.17	0.6/0.7/0.7			400/440	0.16/0.16	0.6/0.7			IP54	
	VKN045A-7W							208/230/460	0.28/0.29/0.15	1.3/1.5/0.75				
3/8	VKN055A	60	200	0.4	1.73	16	2	200/220	0.35/035	1.75/1.67	24	2		
	VKN055A-4Z		380/400/415	0.19/0.20/0.22	0.8/0.9/0.9			400/440	0.18/0.18	0.7/0.8				
	VKN055A-7W							208/230/460	0.39/0.38/0.19	1.8/2.0/1.0				
	VKN065A	100	200	0.55	2.67	39	2	200/220	0.5/0.5	2.33/2.56	50	2		
	VKN065A-4Z		380/400/415	0.28/0.28/0.29	1.2/1.3/1.3			400/440	0.25/0.25	1.1/1.3				
	VKN065A-7W							208/230/460	0.56/0.55/0.28	3.0/3.3/1.7				
1/2	VKN075A	180	200	0.85	5.86	50	3	200/220	1.0/1.0	5.52/6.08	67	3		
	VKN075A-4Z		380/400/415	0.44/0.43/0.42	2.0/2.1/2.1			400/440	0.5/0.5	1.9/2.1				
	VKN075A-7W							208/230/460	1.0/0.95/0.48	5.4/6.0/3.0				
3/4	VKN085A	250	200	1.2	8.79	95	4	200/220	1.5/1.5	8.26/9.09	130	4		
	VKN085A-4Z		380/400/415	0.65/0.6/0.6	2.9/3.1/3.2			400/440	0.75/0.75	2.9/3.2				
	VKN085A-7W							208/230/460	1.4/1.3/0.65	10.1/10.7/5.4				
1	VKN095A	400	200	2.4	11.0	140	5	200/220	2.5/2.4	10.0/11.0	200	5		
	VKN095A-4Z		380/400/415	1.2/1.2/1.2	5.2/5.5/5.7			400/440	1.3/1.2	5.0/5.5				
	VKN095A-7W							208/230/460	2.3/2.2/1.1	13.4/15.2/7.6				F
1 1/2	VKN115A	750	200	3.3	25.7	230	7	200/220	4.5/4.2	23.3/25.7	320	7		B
	VKN115A-e		200	3.3	34.0			200/220	4.5/4.2	32.5/36.0				F
	VKN115A-4Z		380/400/415	1.7/1.7/1.7	11.1/11.7/12.1			400/440	2.3/2.1	11.1/12.7				B
	VKN115A-4Z-e		380/400/415	1.7/1.7/1.7	13.5/14.5/15.3			400/440	2.3/2.3	14.0/15.0				F
	VKN115A-7W							208/230/460	4.2/3.9/1.9	33.9/38.0/19.0				
	VKN115A-G		200	3.3	25.7	230	7						IP44	B
	VKN115A-GS		220/380	3.1/1.8	28.2/16.3									

Notes 1) As the pump whose model number has a suffix L (marked with ★) has cabtyre leads, it does not conform to CE marking and its degree of protection is IP23.
Notes 2) The discharge rate and total head values were obtained in tests with a liquid kinematic viscosity of 1 mm^2/s (same as tap water at normal temperature). Take note that the pumps cannot be used with water.

●VKN-H

Bore (Rp)	Type	Output (W)	50Hz					60Hz					Protection methool	Imsolation class
			Rated voltage (V)	Rated current (A)	Discharge current (A)	Discharge rate (L/min)	Total Head (m)	Rated voltage (V)	Rated current (A)	Discharge current (A)	Discharge rate (L/min)	Total Head (m)		
3/8	VKN055H	60	200	0.42	1.73	10	4.5	200/220	0.55/0.52	1.75/1.67	10	7	IP54	B
	VKN065H	100	200	0.55	5.86	10	5	200/220	0.6/0.6	5.52/6.08		7.5		
	VKN065H-7W							208/230/460	0.56/0.55/0.28	3.0/3.3/1.7				
1/2	VKN075H	180	200	0.9	8.79	20	7	200/220	1.2/1.1	8.26/9.09	20	11		
3/4	VKN085H	250	200	1.2	8.79	20	8	200/220	1.5/1.5	8.26/9.09		12		
1	VKN095H	400	200	2.4	11.0	20	12	200/220	2.5/2.4	10.0/11.0		17		
	VKN095H-7W							208/230/460	2.3/2.2/1.1	13.4/15.2/7.6				F

Note) The discharge rate and total head values were obtained in tests with a liquid kinematic viscosity of 1 mm^2/s (same as tap water at normal temperature). Take note that the pumps cannot be used with water.

■Dimensional outline drawing

Fig.1

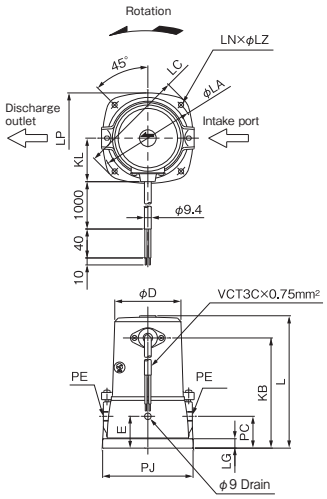


Fig.2

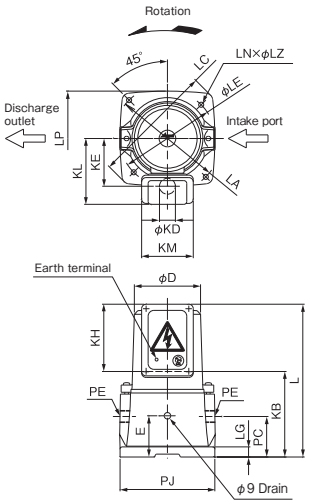


Fig.3

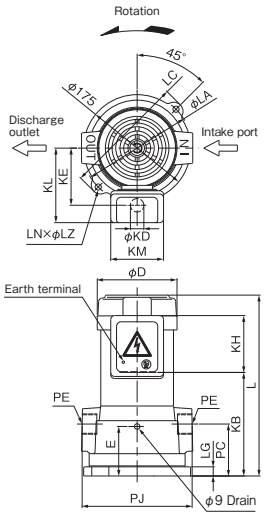


Fig.4

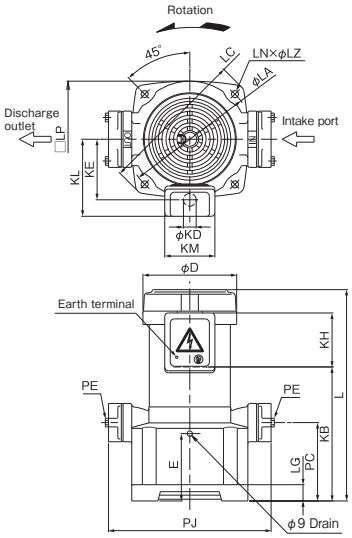
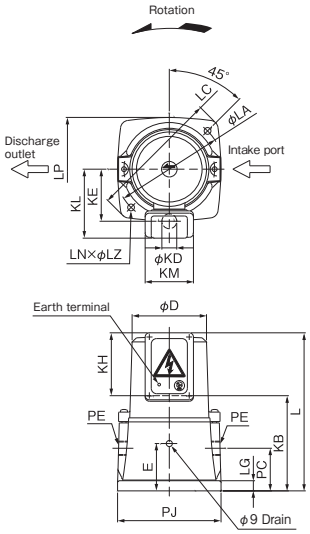


Fig.5



■Dimensions

●VKN-A

〈Unit : mm〉

Type	Fig.	D	E	KB	KD	KE	KH	KL	KM	L	LA	LC	LE	LG	LN	LP	LZ	PC	PE	PJ	Approx. mass(kg)
VKN045L	1	92	44	151	—	—	—	61	—	183	130	145	—	13	4	125	7	44	Rp1/4	123	4.5
VKN045A(-4Z/7W)	2	92	44	96	22	67	93	93	73	189	130	145	—	13	4	125	7	44	Rp1/4	125	4.5
VKN055A(-4Z/7W)	2	92	57	119	22	67	93	93	73	212	130	169	132	14	4	131	7	56	Rp3/8	132	6.5
VKN065A(-4Z/7W)	2	92	56	119	22	67	93	93	73	212	150	169	132	14	4	131	7	56	Rp3/8	132	7.5
VKN075A(-4Z/7W)	2	111	63	143	22	78	93	104	73	236	164	194	160	15	4	153	10	63	Rp1/2	150	11.0
VKN085A(-4Z/7W)	2	122	71	157	22	81	93	107	73	250	170	194	160	15	4	153	10	71	Rp3/4	160	12.5
VKN095A(-4Z/7W)	3	131	81	169	22	94	93	122	87	296	180	200	—	15	2	—	10	85	Rp1	180	14.0
VKN115A(-4Z)	4	162	116	231	22	105	93	133	87	364	220	253	—	28	4	200	12	135	Rp1 1/2	280	23.0
VKN115A-e(-4Z/7W)	4	162	116	231	22	105	93	133	87	364	220	253	—	28	4	200	12	135	Rp1 1/2	280	24.0
VKN115A-G	4	162	116	231	22	105	93	133	87	364	220	253	—	28	4	200	12	135	Rp1 1/2	280	29.0
VKN115A-GS	4	162	116	231	27	108	93	146	94	364	220	253	—	28	4	200	12	135	Rp1 1/2	280	29.0

●VKN-H

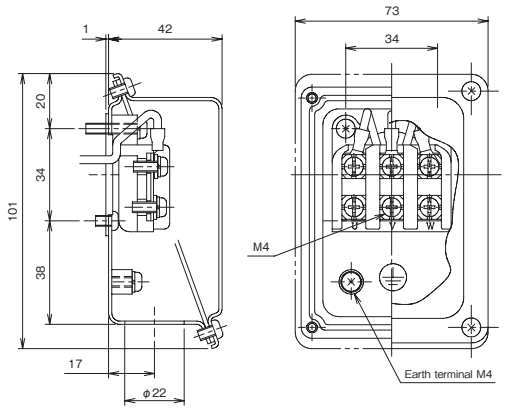
〈Unit : mm〉

Type	Fig.	D	E	KB	KD	KE	KH	KL	KM	L	LA	LC	LG	LN	LP	LZ	PC	PE	PJ	Approx. mass(kg)
VKN055H	5	92	57	119	22	67	93	93	73	212	132	169	14	2	131	7	56	Rp3/8	132	6.5
VKN065H(-7W)	5	92	57	119	22	67	93	93	73	212	132	169	14	2	131	7	56	Rp3/8	132	7.5
VKN075H	5	111	70	143	22	78	93	104	73	236	160	194	15	2	153	10	63	Rp1/2	150	11.0
VKN085H	5	122	73	157	22	81	93	107	73	250	160	194	15	2	153	10	71	Rp3/4	160	12.5
VKN095H(-7W)	3	131	81	169	22	94	93	122	87	296	180	200	15	2	—	10	85	Rp1	180	14.0

■Detailed drawing of the terminal box

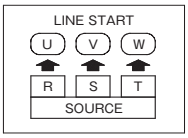
●VKN045A～85A (-4Z/7W),
VKN055H～85H (-7W)

■Dimensional outline drawing



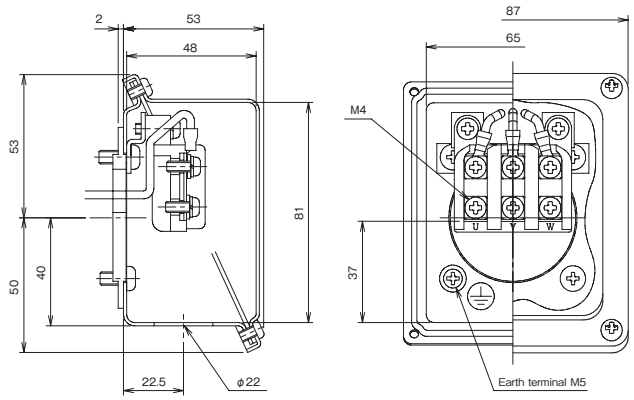
※ The pump whose model number has a suffix L has cabtyre leads.

■Connection diagram

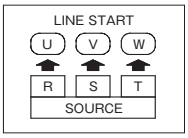


●VKN095□ (-4Z), 115A (-e/4Z)

■Dimensional outline drawing

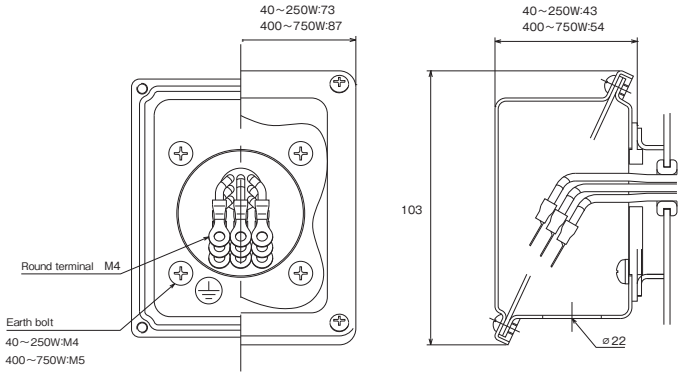


■Connection diagram



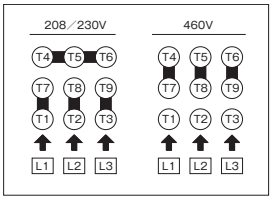
●VKN-7W

■Dimensional outline drawing



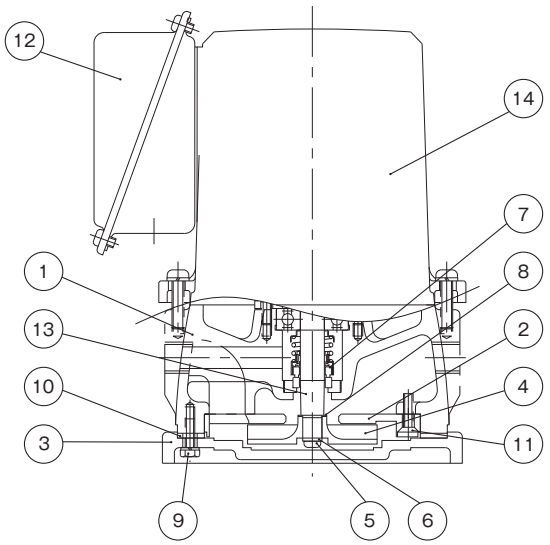
※ Please contact us for G/GS type.

■Connection diagram



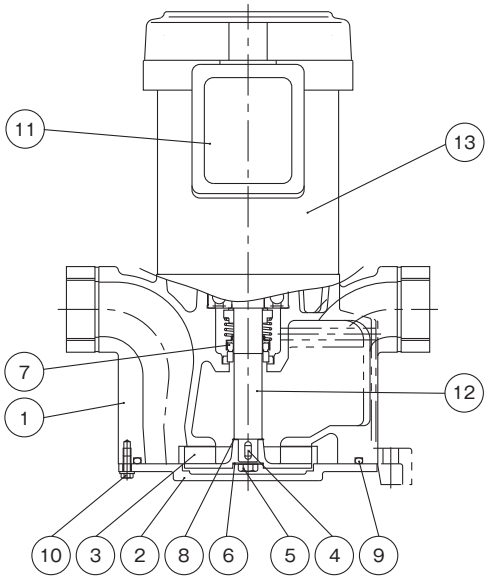
Sectional drawing

●VKN045L, VKN045A～85A (-4Z/7W), VKN055H～85H (-7W)



No.	Part Name	Material	No.	Part Name	Material
1	Casing	FC150	8	Adjusting piece	BsP3–1/2H
2	Eddy box	FC150	9	Washer integrated hexagon bolt	SUS302
3	Bottom plate	FC150	10	Packing	NBR
4	Impeller	Material of impeller Refer to the list	11	Flat head screw	SS
5	Pan head machine screw	SS	12	Terminal box	SPCC
6	Toothed washer	SK5	13	Motor bearing	S45C
7	Mechanical seal	Ceramic to carbon	14	Motor	–

●VKN115A (-e/4Z/7W/G/GS)



No.	Part Name	Material	No.	Part Name	Material
1	Casing	FC150	8	Adjusting piece	BsP3–1/2H
2	Bottom plate	FC150			Phosphor bronze
3	Impeller	CAC407	9	O ring	NBR
4	Key	S45C	10	Washer integrated hexagon bolt	SUS302
5	Hexagon bolt	SS	11	Terminal box	SPCC
6	Toothed washer	SK5	12	Motor bearing	S45C
7	Mechanical seal	Ceramic to carbon	13	Motor	–

※ VKN045L has cabtyre leads.
※ Structure drawing and other details are subject to change without notice.

Table of Materials of impeller

●VKN-A

Type	Materials of impeller
VKN045L	CAC407
VKN045A (-4Z/7W)	CAC407
VKN055A (-4Z/7W)	CAC407
VKN065A (-4Z/7W)	CAC407
VKN075A (-4Z/7W)	Special resins
VKN085A (-4Z/7W)	Special resins
VKN095A (-4Z/7W)	Special resins
VKN115A (-e/4Z/7W/G/GS)	CAC407

●VKN-H

Type	Materials of impeller
VKN055H	CAC407
VKN065H (-7W)	CAC407
VKN075H	CAC407
VKN085H	CAC407
VKN095H (-7W)	CAC407

Medium-High flow / Medium head / Multi-stage self-priming type LPS model

Features

① Energy-saving pump equipped with a top-runner efficiency (equivalent to IE3) motor (LPS-e).
② The structure and materials are not easily affected by dirty coolants.
③ As impeller is made of FCD and non-seal (mechanical seal-less) structure is adopted, the pump is highly durable.
④ The self-priming function and floor mount offer a wider choice of installation location, not limited to the top of the tank.
⑤ Can be used for highly viscous coolants. (LPS40D-e)
⑥ The lineup includes the models that meet the efficiency of the various regulations:
LPS-e type : Equipped with a top-runner efficiency (equivalent to IE3) motor.
LPS-G/GS type : Equipped with a Chinese energy standard regulation (GB18613-2012) efficiency (grade GB3) motor *.

Note) * LPS-G type is equipped with a high efficiency motor that meets grade GB3 efficiency. (This is not certified as it is a non-regulated pump.)

Description of types

LPS 40 3 C - 3.0 T -e
① ② ③ ④ ⑤ ⑥ ⑦

① Model
② Bore diameter
③ Number of impellers
④ Level of viscosity to be used with (C: For low viscosity, D: For lhigh viscosity)
⑤ Output
⑥ ID code
⑦ Compliance with energy efficiency regulation
-e : Equipped with a top-runner efficiency (equivalent to IE3) motor.
-G*: Equipped with a Chinese energy label regulation (GB18613-2012) efficiency equivalent (grade GB3) motor・50Hz, 200V.
-GS: Equipped with a Chinese energy label regulation (GB18613-2012) efficiency-compliant (grade GB3) motor・50Hz, 380V.

Note) * LPS-G type is equipped with a high efficiency motor that meets grade GB3 efficiency. (This is not certified as it is a non-regulated pump.)

Standard Specification

Diameter		40mm	65mm
Used liquid	Property liquid	Coolants of the kinematic viscosity equivalent to that of water-soluble coolants or water containing an additive (anticorrosive, etc.) ※1	Water-soluble coolant liquid
	Temperature	0 to 60°C (No frozen liquid)	
	Allowable dynamic viscosity	40C : 32mm²/s 40D : 150mm²/s	1mm²/s
Installation location		Indoor Ambient temperature: 0 to 40°C, 85% RH or below (without condensation) Place at altitude of 1000 m or less. Do not place in direct sunlight. Place in an area free of corrosive or explosive gas or vapor.	
Max. intake piping length		0.7m ※2	
Material	Casing (Suction・Discharge・Intermediate)	FC200	
	Impeller	FCD450	
	Shaft	S45C	
Shaft seal structure		Non-seal (mechanical seal-less)	
Motor	Power ※3	3 phases 50/60/60Hz 200/200/220V	
	Type	Totally enclosed fan cooled type, indoor	Totally enclosed fan cooled type, outdoor ※4
	Method of protection	IP44	IP55
	Insulation class	F	
	Rating	Continuous	
	Number of poles	2P	
Paint color		Munsell N1.5	

※1 Avoid using the pump with water. Contact us when using the unit for coolant containing foreign substances with high hardness or a large amount of foreign substances including chips.
※2 Intake piping should be as short as possible and the number of bends and fittings as few as possible.
※3 –G type: 50Hz 200V, -GS type: 50Hz 380V
※4 The pump cannot be installed outdoors. –G type and –GS type are totally enclosed fan cooled indoor types.

Special specification

Shaft seal structure is modified (to improve abrasion resistance).

Table of Consumable Parts

Output (kW)	Bearing		Oil seal	
	Load side	Unload side	Load side	Unload side
0.75	6306ZZC3	6203ZZC3	VC30508	—
1.5	6306ZZC3	6303ZZC3	VC30508	—
2.2	6306ZZC3	6303ZZC3	VC30508	—
3.0	6307ZZC3	6205ZZC3	VC30508	—
5.5	6309ZZC3	6306ZZC3	VC45628	VC30528
7.5	6309ZZC3	6306ZZC3	VC45628	VC30528

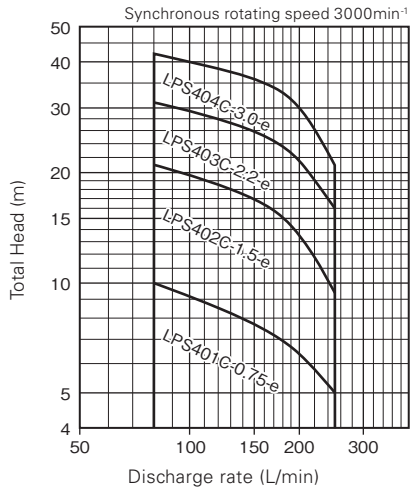
Diameter (mm)	O-ring (For discharge casing)	O-ring (For suction spacer)	O-ring (For interior surface of suction spacer)	O-ring (For bottom surface of suction spacer)	O-ring (For coolant sealing plate)
40	G155	G175	—	—	—
65	—	—	G270	G280	S56

Selection chart

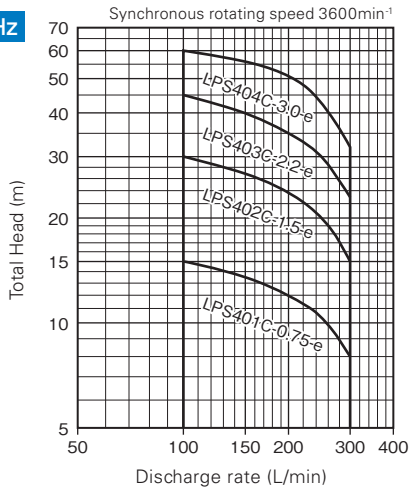
●**LPS40**

●**For low viscosity liquid** (Values for normal temperature, fresh water, with specific weight 1)

50Hz

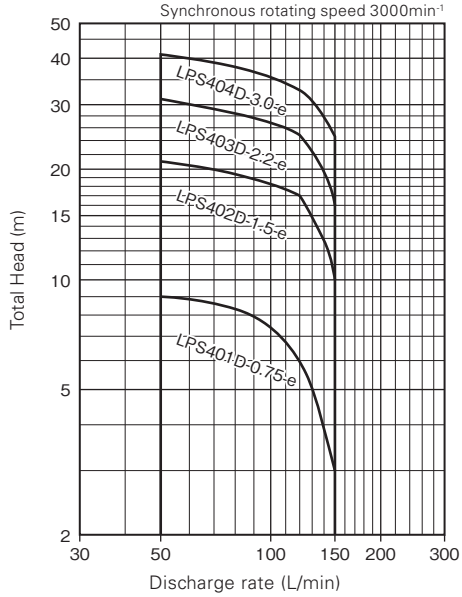


60Hz

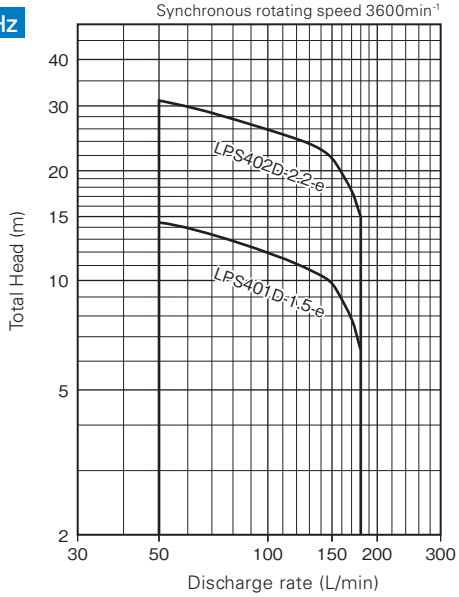


●**For high-viscosity liquid** (Value at 150 mm^2/s kinematic viscosity, specific gravity 1)

50Hz



60Hz



※ -G/-GS type is the same as the above selection chart.

Specification table

●**LPS40**

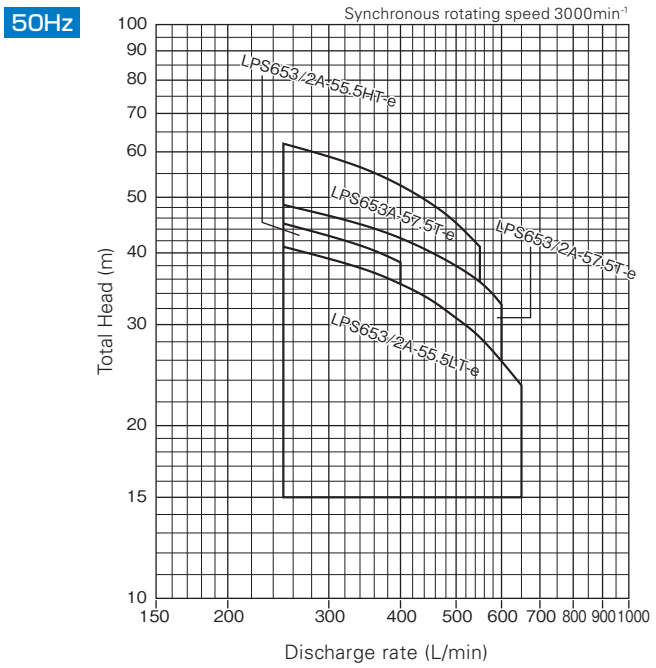
Bore (mm)	Used liquids	Frequency (Hz)	Type	Output (kW)	Rated voltage (V)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)
40	For low viscosity liquid	50	LPS401C-0.75T-e	0.75	200	3.5	20.5	80 ~ 250	10 ~ 5
			LPS401C-0.75T-G			3.8	22.2		
			LPS401C-0.75T-GS		380	2.0	12.0		
			LPS402C-1.5T-e	1.5	200	5.6	45.0		21 ~ 9.5
			LPS402C-1.5T-G			6.1	34.0		
			LPS402C-1.5T-GS		380	3.3	18.8		
			LPS403C-2.2T-e	2.2	200	8.0	64.0		31 ~ 16
			LPS403C-2.2T-G			8.9	49.0		
			LPS403C-2.2T-GS		380	5.2	26.0		
			LPS404C-3.0T-e	3.0	200	13.0	107		42 ~ 21
			LPS404C-3.0T-G			14.3	98.0		
			LPS404C-3.0T-GS		380	7.5	52.0		
	For high-viscosity liquid		LPS401D-0.75T-e	0.75	200	4.0	20.5	50 ~ 150	9 ~ 3
			LPS402D-1.5T-e	1.5		6.6	45.0		21 ~ 10
			LPS403D-2.2T-e	2.2		9.5	64.0		31 ~ 16
			LPS404D-3.0T-e	3.0		14.8	107		41 ~ 25
	For low viscosity liquid	60	LPS401C-0.75T-e	0.75	200/220	3.8/3.8	18.1/19.9	100 ~ 300	15 ~ 8
			LPS402C-1.5T-e	1.5		6.5/6.0	38.0/42.0		30 ~ 15
			LPS403C-2.2T-e	2.2		9.0/8.4	54.0/59.0		45 ~ 23
			LPS404C-3.0T-e	3.0		13.0/13.0	88.0/97.0		60 ~ 32
	For high-viscosity liquid		LPS401D-1.5T-e	1.5		6.5/6.0	38.0/42.0	50 ~ 180	14 ~ 4
			LPS402D-2.2T-e	2.2		9.0/8.4	54.0/59.0		31 ~ 13

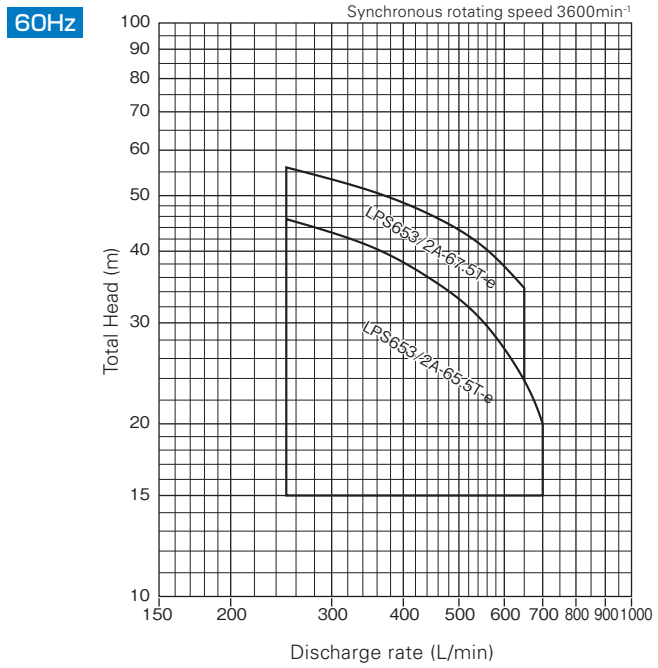
Note 1) The discharge rate and total head values were obtained in tests with a kinematic viscosity of 1 mm^2/s (the same as starting current at normal temperature).
Note 2) The rated current in the table above (the current value written on the pump nameplate) is the recommended setting current value of the protective device.
Note 3) With G/GS models for high viscosity coolants, contact us for additional details.

Selection chart

●**LPS65**

●**For low viscosity liquid** (values of starting current at normal temperature, specific weight of 1)





※ -G/-GS type is the same as the above selection chart.

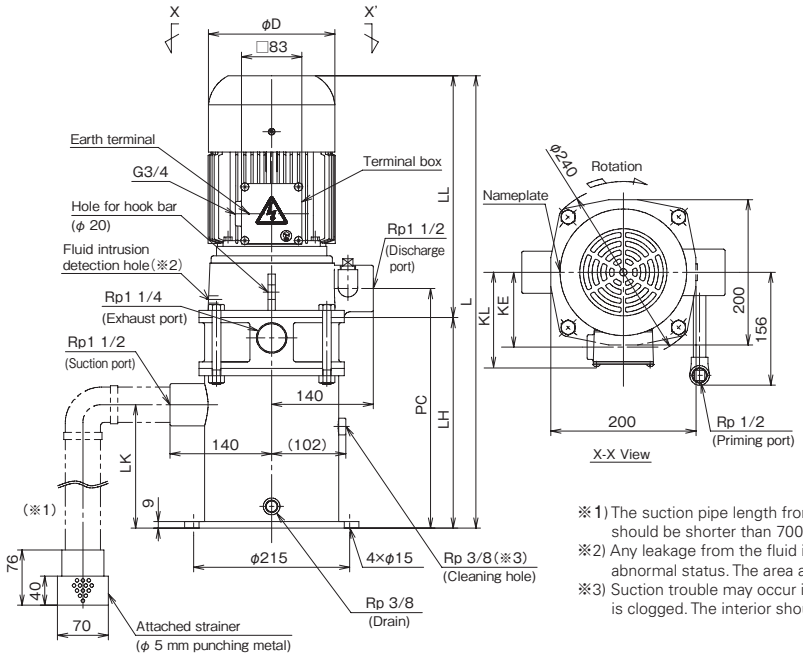
Specification table

●**LPS65**

Bore (mm)	Frequency (Hz)	Type	Output (kW)	Rated voltage (V)	Rated current (A)	Starting current (A)	Discharge rate (L/min)	Total head (m)
65	50	LPS653/2A-55.5LT-e	5.5	200	20.3	204	250 ~ 650	41 ~ 23.5
		LPS653/2A-55.5HT-e	5.5		20.3	204	250 ~ 400	45 ~ 38.5
		LPS653/2A-57.5T-e	7.5		27.2	288	250 ~ 600	48.5 ~ 32.5
		LPS653A-57.5T-e	7.5		27.2	288	250 ~ 550	62 ~ 41
	60	LPS653/2A-65.5T-e	5.5	200/220	19.8/18.3	178/197	250 ~ 700	45.5 ~ 20
		LPS653/2A-67.5T-e	7.5		26.5/24.4	254/282	250 ~ 650	56 ~ 34.5

Dimensional outline drawing

●LPS40



※1) The suction pipe length from the liquid surface to the suction port should be shorter than 700 mm.
※2) Any leakage from the fluid intrusion detection hole indicates an abnormal status. The area around the exhaust port should be inspected.
※3) Suction trouble may occur if the siphon prevention hole inside the pump is clogged. The interior should be inspected via the cleaning hole.

Dimensions

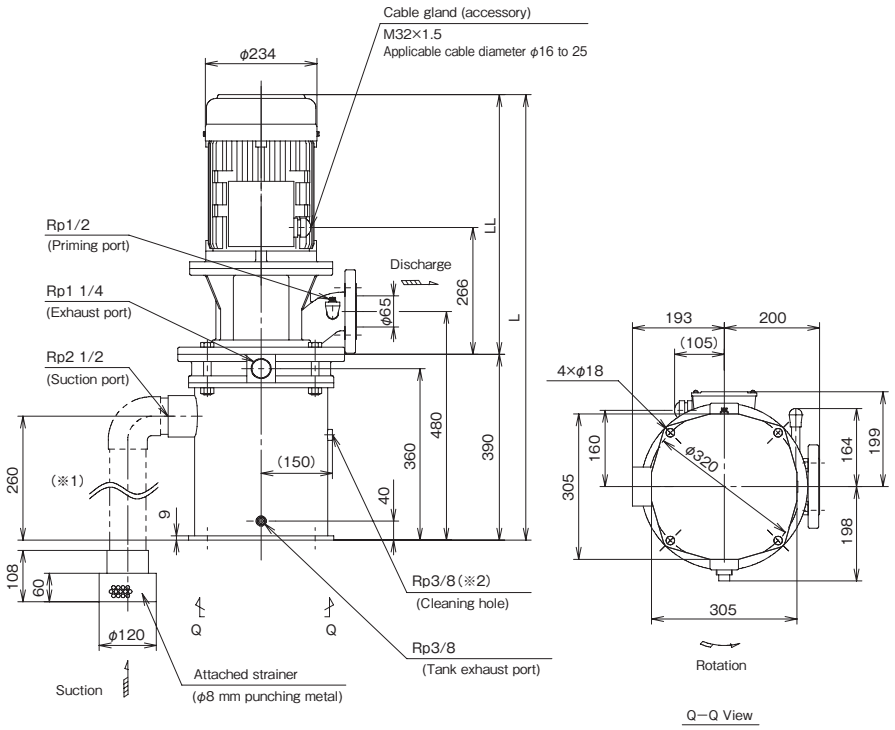
●LPS40

〈Unit：mm〉

Bore (mm)	Used liquids	Frequency (Hz)	Type	D	KE	KL	L	LH	LK	LL	PC	Approx. mass(kg)
40	For low viscosity liquid	50/60	LPS401C-0.75T-e	140	88	112	578	290	170	288	330	37
			LPS402C-1.5T-e	175	103	130	623	290	170	333	330	43
			LPS403C-2.2T-e	175	103	130	623	290	170	333	330	51
			LPS404C-3.0T-e	195	113	140	699	335	215	364	375	58
		50	LPS401C-0.75T-G (GS) -e	140	88	—	578	290	170	288	330	40
			LPS402D-1.5T-G (GS) -e	175	103	—	623	290	170	333	330	43
			LPS403D-2.2T-G (GS) -e	175	103	—	623	290	170	333	330	52
			LPS404D-3.0T-G (GS) -e	195	113	—	699	335	215	364	375	64
	For high-viscosity liquid		LPS401D-0.75T-e	140	88	112	578	290	170	288	330	37
			LPS402D-1.5T-e	175	103	130	623	290	170	333	330	43
			LPS403D-2.2T-e	175	103	130	623	290	170	333	330	51
			LPS404D-3.0T-e	195	113	140	699	335	215	364	375	58
		60	LPS401D-1.5T-e	175	103	130	623	290	170	333	330	42
			LPS402D-2.2T-e	175	103	130	623	290	170	333	330	50

Dimensional outline drawing

●LPS65



※1) The length of suction pipe from the liquid surface to the suction port should be shorter than 700 mm.
※2) Suction trouble may occur if the siphon prevention hole inside the pump is clogged. The interior should be inspected via the cleaning hole. A companion Flange JIS 10K normal type is supplied.

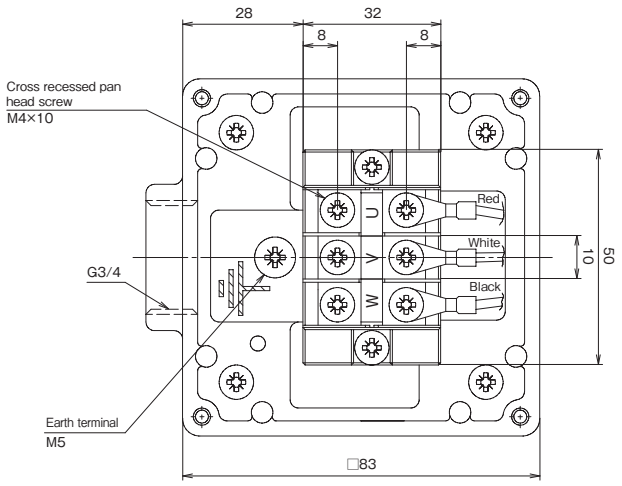
Dimensions

●LPS65

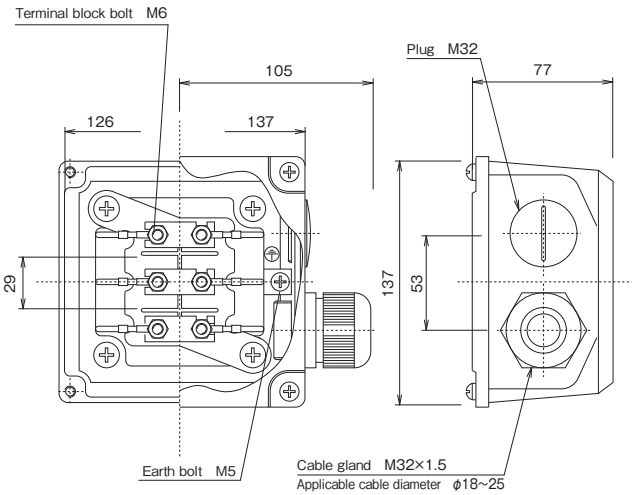
Bore	Frequency (Hz)	Type	L	LL	Approx. mass(kg)
65	50	LPS653/2A-55.5LT-e	935	545	135
		LPS653/2A-55.5HT-e			135
		LPS653/2A-57.5T-e	970	580	141
		LPS653A-57.5T-e			143
	60	LPS653/2A-65.5T-e	935	545	135
		LPS653/2A-67.5T-e			141

Detailed drawing of the terminal box

●LPS40-e



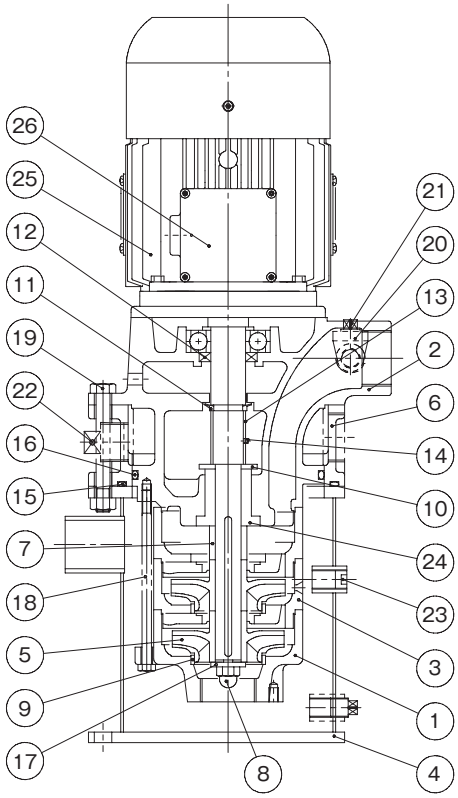
●LPS65-e



※ Please contact us for -G/GS type.

Sectional drawing

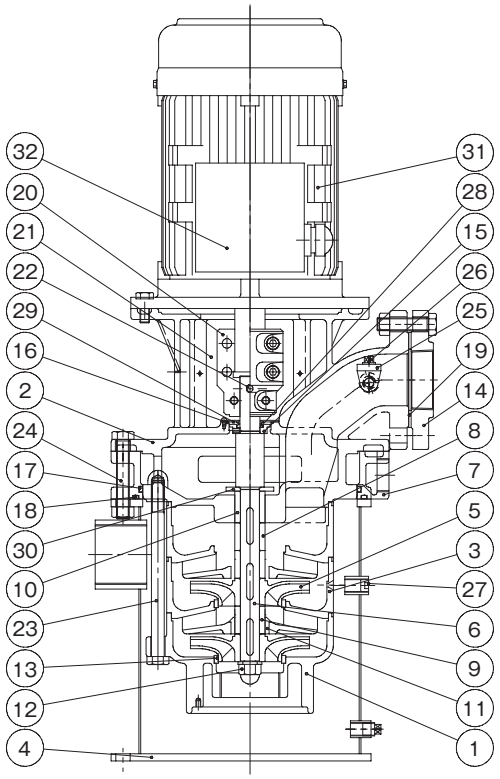
●LPS40



No.	Part Name	Qty	Material
1	Suction casing	1	FC200
2	Discharge casing	1	FC200
3	Intermediate casing	2	FC200
4	Suction pipe	1	SS400
5	Impeller	2	FCD450
6	Suction spacer	1	FC200
7	Shaft spacer	1	STS
8	Impeller nut	1	SUS304
9	Wearing ring	2	SUS304
10	Deflector	1	SS400
11	Deflector	1	NBR
12	Oil seal	1	NBR
13	Collar	1	STKM
14	Hexagon socket set screw	1	SCM435
15	O-ring	1	NBR
16	O-ring	1	NBR
17	Washer	1	SUS420J1
18	Tie bolt	4	SS400
19	Tie bolt	4	SS400
20	Elbow	1	FCMB
21	Plug	1	SS400
22	Plug	1	FCMB
23	Hexagonal socket sunk plug	1	SS400
24	Shaft sleeve	1	FCD450
25	Motor	1	
26	Terminal box	1	SECC

Applicable models : LPS402C-1.5T-□・LPS402D-1.5T-□・LPS402D-2.2T-□

●LPS65



No.	Part Name	Qty	Material
1	Suction casing	1	FC200
2	Discharge casing	1	FC200
3	Intermediate casing	2	FC200
4	Suction pipe	1	SS400
5	Impeller	2	FCD450
6	Shaft	1	S45C
7	Suction spacer	1	FC200
8	Shaft sleeve A	2	SUS304
9	Shaft sleeve B	1	SiC
10	Shaft sleeve C	1	SUS304
11	Intermediate bush	1	SiC
12	Impeller nut	1	SUS304
13	Wearing ring	2	SUS304
14	Companion flange	1	FC200
15	Deflector	1	C3604B
16	O-ring	1	NBR
17	O-ring	1	NBR
18	O-ring	1	NBR
19	Sheet packing	1	NBR
20	Coupling	1	FC200
21	Coupling cover	2	SUS304
22	Hexagon socket set screw	1	SCM435
23	Tie bolt	4	SS400
24	Tie bolt	4	SS400
25	Elbow	1	FCMB
26	Plug	1	SS400
27	Hexagonal socket sunk plug	1	SS400
28	V-ring	1	FKM
29	Coolant sealing plate	1	SUS304
30	Deflector	1	SUS304
31	Motor	1	
32	Terminal box	1	SPCC

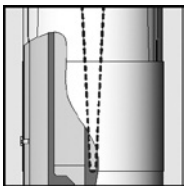
Applicable models : 50Hz LPS653/2A-55.5LT-□, LPS653/2A-55.5HT-□,
LPS653/2A-57.5T-□
60Hz LPS653/2A-65.5T-□, LPS653/2A-67.5T-□

Low flow / Low head /
Single-stage immersion type (for cleaning of coolant tank)

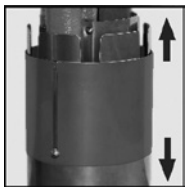
SKM model

Features

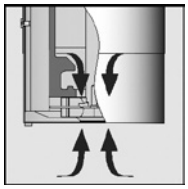
① Bubbles and chips floating on the liquid surface can be suctioned continuously.
② Complete exhaust structure to prevent air lock (patented).
③ V-shaped inlet allowing suction even when fluid level fluctuates (patented).

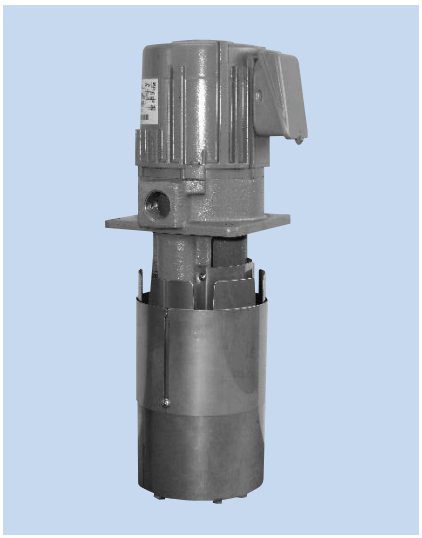


④ The sliding mechanism that allows for manual adjustment of inlet to achieve the best suction conditions according to the liquid level during operation (patent pending).



⑤ Impeller allowing simultaneous suction from both above and below is adopted (patented).





The SKM Series resolves device failures caused by chips floating in the tank and the problems of fluid replacement and quality deterioration due to decayed sludge-like precipitate containing chips!

Effects generated from cleaning the coolant liquids:

- **Improved processing accuracy**
- **Reduced manufacturing defects** ➡ Increased productivity ➡ Cost reduction
- **Reduced frequency of fluid replacement** ➡ Reduced frequency of disposal of oil waste ➡ Environmental protection and cost reduction
  ➡ Reduced amount of new oil to replace ➡ Cost reduction
- **Prevention of fluid decay** ➡ Improved work environment

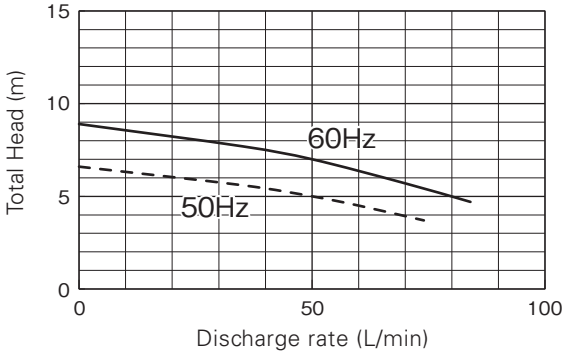
Description of types

SKM-C 50 - L
① ② ③

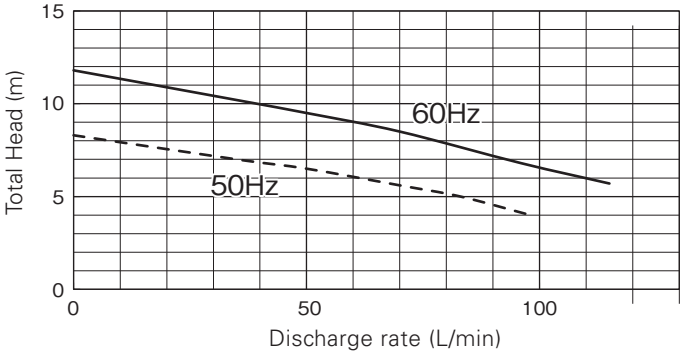
① Model
② Discharge rate (L/min)
③ Head category

Selection chart

●SKM-C50-L



●SKM-C50-M

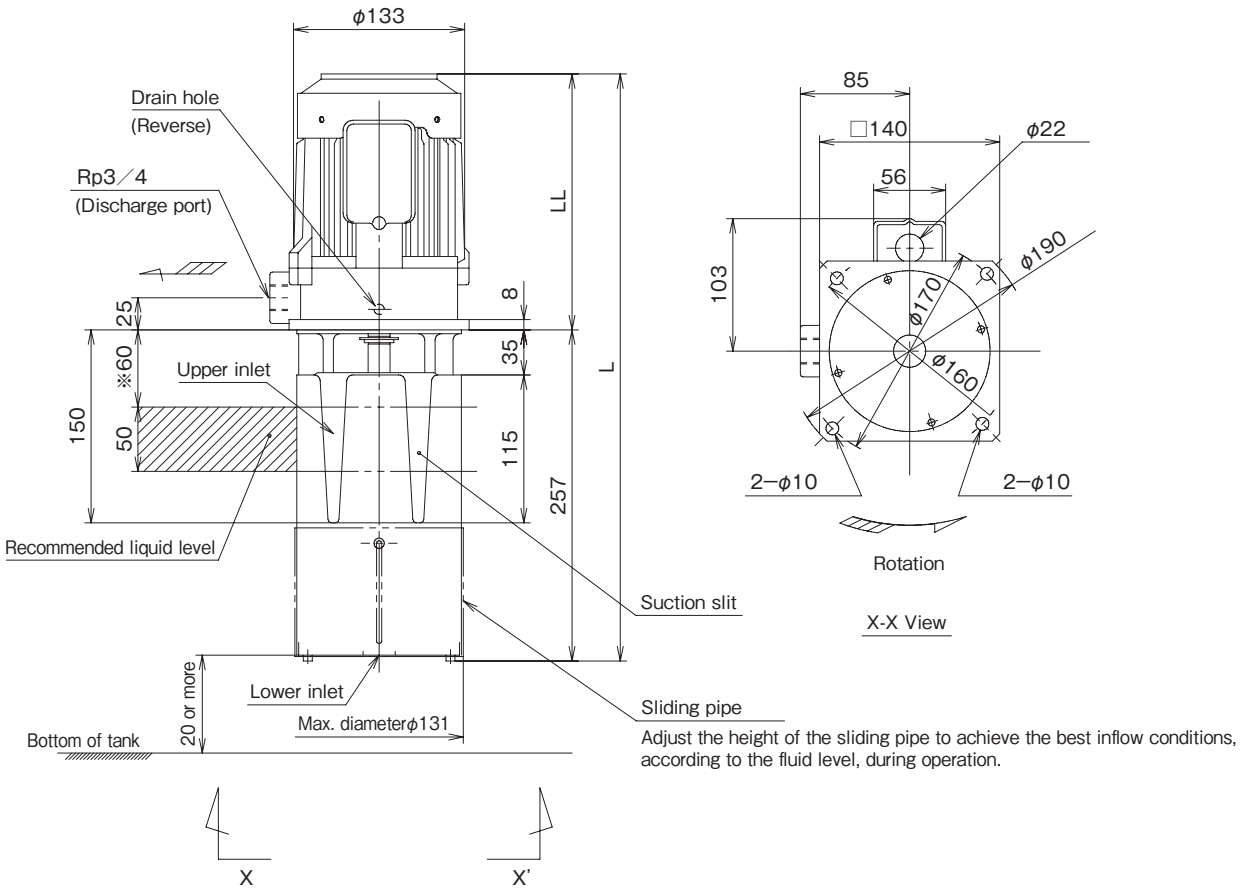


Note 1: The performance of the pump represents the performance when used with the recommended surface level.
Note 2: The performance of the pump may change depending on the fluid level during operation.
Note 3: If the liquid level during operation is high or discharge is low, suction of the surface water will decrease.
Note 4: The pump should be installed in a place where the surface water is stable.
Note 5: The pump should be used at a level higher than the minimum fluid level.
Note 6: Suction is only carried out from the lower inlet if the fluid level is lower than the suction slit.

Specification table

	Type		SKM-C50-L		SKM-C50-M	
Pump	Diameter	(mm)	20			
	Discharge quantity	(L/min)	50	50	50	50
	Head category	(m)	5	7	6.5	9.5
	Max. kinematic viscosity allowed	(mm^2/s)	1			
	Liquid filtration accuracy		Medium filtration accuracy (Max. chip size allowed within the pump: 4 mm)			
	Materials		Casing FC Impeller SUS304 Shaft S35C			
Motor	Phases		3			
	Number of poles	(P)	2			
	Output	(kW)	0.18		0.25	
	Voltage	(V)	200	200/220	200	200/220
	Rated current	(A)	1.0	1.1/1.0	1.6	1.7/1.6
	Frequency	(Hz)	50	60	50	60
	Synchronous rate of rotation	(min^{-1})	3000	3600	3000	3600
	Insulation class		B			
	Recommended temperature	(℃)	0~40			
	Rating		Continuous			
	Method of protection		Totally enclosed self-cooling type, indoor		Totally enclosed fan cooled type, indoor	
	Bearing Load side		6203ZZ			
	Bearing Unload side		6201ZZAC			
	Paint color		Munsell N5.5			

Dimensional outline drawing



Adjust the height of the sliding pipe to achieve the best inflow conditions, according to the fluid level, during operation.

Dimensions

Type	L	LL	Approx. mass(kg)
SKM-C50-L	428	171	14.5
SKM-C50-M	456	199	15.0

※ When the fluid level during operation reaches 120mm or more below the base, the pump switches to the air suction operation.
When the rated discharge quantity is exceeded, the pump also switches to the air suction operation.

MEMO

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Your Dealer

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