

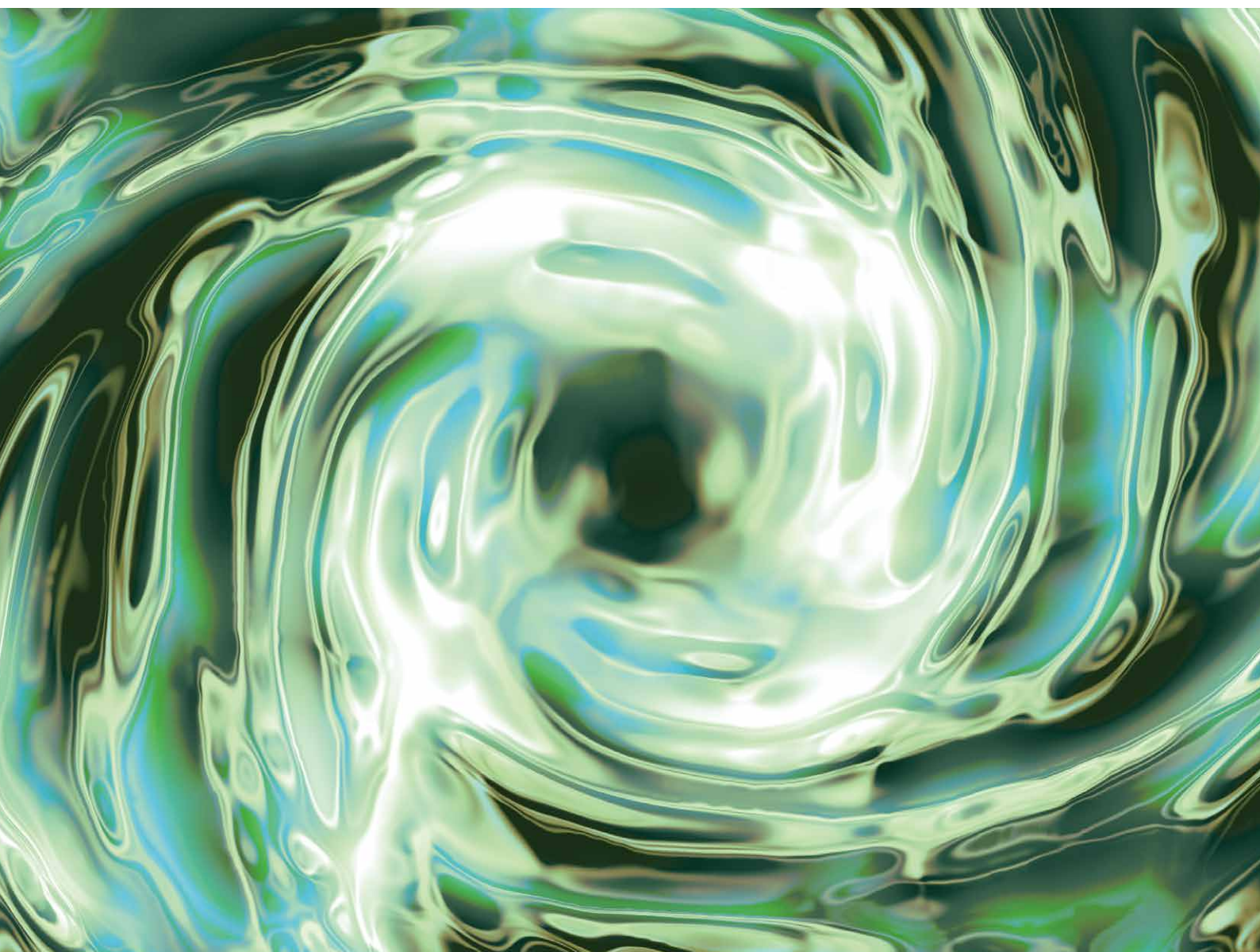
# Coolant Pumps General Catalog

**TERAL**



**TERAL: Maximizing Effectiveness**

50Hz/60Hz



**TERAL INC.**

| Document for selection                        |                   | Usage and Table of General Specification                                                                                                                  | General Concept Chart for Use in Selecting Products                                                    | Features                                                                                                                                        | How to choose pumps | Handling precautions<br>Notes on ordering |
|-----------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------------------------------|
|                                               |                   | P.3                                                                                                                                                       | P.4                                                                                                    | P.6                                                                                                                                             | P.8                 | P.9                                       |
| Installation type                             | Flow rate<br>Head | Low flow rate                                                                                                                                             |                                                                                                        | Medium flow rate                                                                                                                                |                     | High flow rate                            |
| Immersion type<br>(Non-self-priming)          | Low head          | <b>VKP</b><br>P.12                                                       |                                                                                                        |                                                                                                                                                 |                     |                                           |
|                                               |                   | <b>LFE</b><br>P.20                                                       |                                                                                                        |                                                                                                                                                 |                     |                                           |
|                                               | Medium head       | <b>LHW</b><br>P.22                                                       |                                                                                                        |                                                                                                                                                 |                     |                                           |
|                                               |                   | <b>VKD</b><br>P.24                                                       |                                                                                                        | <b>LFO</b><br>※Available for dirty liquid<br>P.31             |                     |                                           |
|                                               |                   | <b>LBK</b><br>P.36                                                     |                                                                                                        |                                                                                                                                                 |                     |                                           |
|                                               |                   | <b>LPWE / LPW</b><br>※Available for dirty liquid<br>P.47      P.52    |                                                                                                        |                                                                                                                                                 |                     |                                           |
|                                               | High head         | <b>LKW</b><br>P.62                                                     | <b>VKB</b><br>P.66  |                                                                                                                                                 |                     |                                           |
|                                               |                   | <b>LVS / LVSS</b><br>P.76      P.97                                    |                                                                                                        |                                                                                                                                                 |                     |                                           |
| Floor type<br>(Self-priming)                  | Low head          | <b>VKN</b><br>P.117                                                    |                                                                                                        |                                                                                                                                                 |                     |                                           |
|                                               | Medium head       | <b>LPSE / LPS</b><br>※Available for dirty liquid<br>P.123      P.128  |                                                                                                        |                                                                                                                                                 |                     |                                           |
| Immersion type<br>(For cleaning inside tanks) | Low head          | <b>SKM</b><br>P.132                                                    |                                                                                                        | ※Available for dirty liquid<br>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                                                                                   |                                                                                                        |                                                                                                                                                 |                     |                                           |
|                                               |                   | <div><div></div>Stainless steel (SUS304)</div> <div><div></div>Cast iron (FC, FCD)</div> <div><div></div>Others (Resin, CAC40Z)</div>                     |                                                                                                        |                                                                                                                                                 |                     |                                           |

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

- 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 | Stage    | Immersion type:<br>Immersion depth <sup>※1</sup><br>Floor type:<br>maximum suction lift | Material        |                  |                                | Frequency (Hz) | Representative discharge rate <sup>※2</sup> (L/min) | Max. head <sup>※2</sup> (m) | Output <sup>※1</sup> (kW) | Allowable kinematic viscosity (mm <sup>2</sup> /s) | Poles (P)                           | CE marking |   |
|-------------------|------------------|--------------|-------------------|-------|----------|-----------------------------------------------------------------------------------------|-----------------|------------------|--------------------------------|----------------|-----------------------------------------------------|-----------------------------|---------------------------|----------------------------------------------------|-------------------------------------|------------|---|
|                   |                  |              |                   |       |          |                                                                                         | Impeller        | Discharge casing | Intermediate casing guide vane |                |                                                     |                             |                           |                                                    |                                     |            |   |
| Immersion type    | Non-self-priming | —            | Non-seal          | VKP   | Single   | 130-350mm                                                                               | 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 | Single   | 145-280mm                                                                               | 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   | Multiple | 200mm                                                                                   | Resin           | FC200            | Resin                          | 50             | 20-80                                               | 50                          | 0.75-1.1                  | 1                                                  | 2                                   |            |   |
|                   |                  |              |                   |       |          |                                                                                         |                 |                  |                                | 60             | 20-90                                               | 73                          | 0.75-1.1                  |                                                    | 2                                   |            |   |
|                   |                  | —            | Non-seal          | LBK   | 2        | Multiple                                                                                | 153-297mm       | SUS304           | FC200                          | SUS304         | 50                                                  | 25-42                       | 66                        | 0.35-1.8                                           | 75                                  | 2          | ○ |
|                   |                  |              |                   |       |          |                                                                                         |                 |                  |                                |                | 60                                                  | 30-50                       | 88.9                      | 0.55-2.2                                           |                                     | 2          |   |
|                   |                  |              |                   |       | 4        | Multiple                                                                                | 153-342mm       | SUS304           | FC200                          | SUS304         | 50                                                  | 85                          | 32.9                      | 0.35-1.8                                           |                                     | 2          | ○ |
|                   |                  |              |                   |       |          |                                                                                         |                 |                  |                                |                | 60                                                  | 100                         | 47.6                      | 0.55-2.2                                           |                                     | 2          |   |
|                   |                  | —            | Non-seal          | LFE   | Single   | 300mm                                                                                   | FCD450          | FC200            | —                              | 60             | 60-430                                              | 8                           | 0.25-0.75                 | 1                                                  | 2                                   |            |   |
|                   |                  | Available    | Non-seal          | LFO   | Single   | 350/500mm                                                                               | FCD450          | FC200            | —                              | 50             | 100-750                                             | 24                          | 0.75-5.5                  | A:32<br>B:150                                      | 2                                   |            |   |
|                   |                  |              |                   |       |          |                                                                                         |                 |                  |                                | 60             | 100-900                                             | 36                          | 0.75-5.5                  |                                                    | 2                                   |            |   |
|                   |                  | —            | Non-seal          | VKD   | Multiple | 258-402mm                                                                               | 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          | LPWE  | Multiple | 255-299mm                                                                               | FCD450          | FC200            | FC200                          | 50             | 50-400                                              | 40                          | 0.75-3.0                  | A:32<br>B:150                                      | 2                                   | ○          |   |
|                   |                  |              |                   |       |          |                                                                                         |                 |                  |                                | 60             | 50-450                                              | 56.4                        | 0.75-3.0                  |                                                    | 2                                   |            |   |
|                   |                  | Available    | Non-seal          | LPW   | Multiple | 255-330mm                                                                               | FCD450          | FC200            | FC200                          | 50             | 200-700                                             | 63                          | 1.5-7.5                   | 40C:32<br>40D:150<br>50A/65A:1                     | 2                                   |            |   |
|                   |                  |              |                   |       |          |                                                                                         |                 |                  |                                | 60             | 60-750                                              | 64                          | 0.75-7.5                  |                                                    | 2                                   |            |   |
|                   |                  | —            | Non-seal          | LKW   | Multiple | 330(Single)mm                                                                           | 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   | H        | Multiple                                                                                | 300-616mm       | SUS304           | FC200                          | SUS304         | 50                                                  | 40                          | 114                       | 0.4-2.6                                            | 37.5 or 75 <sup>※1</sup><br>FH/FQ:1 | 2          | ○ |
|                   |                  |              |                   |       |          |                                                                                         |                 |                  |                                |                | 60                                                  | 50                          | 152                       | 0.68-3.57                                          |                                     | 2          |   |
|                   |                  | —            | Non-seal          |       | Q        | Multiple                                                                                | 291-711mm       | SUS304           | FC200                          | SUS304         | 50                                                  | 85                          | 78                        | 0.54-3.96                                          |                                     | 2          | ○ |
|                   |                  |              |                   |       |          |                                                                                         |                 |                  |                                |                | 60                                                  | 100                         | 108                       | 0.9-3.6                                            |                                     | 2          |   |
|                   |                  | —            | Non-seal          | LVS   | Multiple | 196-979mm                                                                               | SUS304          | FC200            | SUS304                         | 50             | 10-500                                              | 230                         | 0.75-18.5                 | 1                                                  | 2                                   | ○          |   |
|                   |                  |              |                   |       |          |                                                                                         |                 |                  |                                | 60             | 10-600                                              | 260                         | 0.75-18.5                 |                                                    | 2                                   |            |   |
|                   |                  | —            | Non-seal          | LVSS  | Multiple | 196-979mm                                                                               | SUS304          | SCS13            | SUS304                         | 50             | 10-500                                              | 230                         | 0.75-18.5                 | 1                                                  | 2                                   | ○          |   |
|                   |                  |              |                   |       |          |                                                                                         |                 |                  |                                | 60             | 10-600                                              | 260                         | 0.75-18.5                 |                                                    | 2                                   |            |   |
| Floor type        | Self-priming     | —            | Mechanical seal   | VKN   | A        | Single                                                                                  | -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                                                                                  | -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          |   |
|                   |                  | Available    | Non-seal          | LPSE  | Multiple | -0.7m                                                                                   | FCD450          | FC200            | FC200                          | 50             | 50-350                                              | 38.7                        | 0.75-3.0                  | A:32<br>B:150                                      | 2                                   | ○          |   |
|                   |                  |              |                   |       |          |                                                                                         |                 |                  |                                | 60             | 50-400                                              | 34                          | 0.75-3.0                  |                                                    | 2                                   |            |   |
|                   |                  | Available    | Non-seal          | LPS   | Multiple | -0.7m                                                                                   | FCD450          | FC200            | FC200                          | 50             | 250-650                                             | 62                          | 5.5-7.5                   | 1                                                  | 2                                   |            |   |
|                   |                  |              |                   |       |          |                                                                                         |                 |                  |                                | 60             | 250-700                                             | 56                          | 5.5-7.5                   |                                                    | 2                                   |            |   |
| Immersion type    | Non-self-priming | —            | Non-seal          | SKM   | Single   | 257mm                                                                                   | 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.

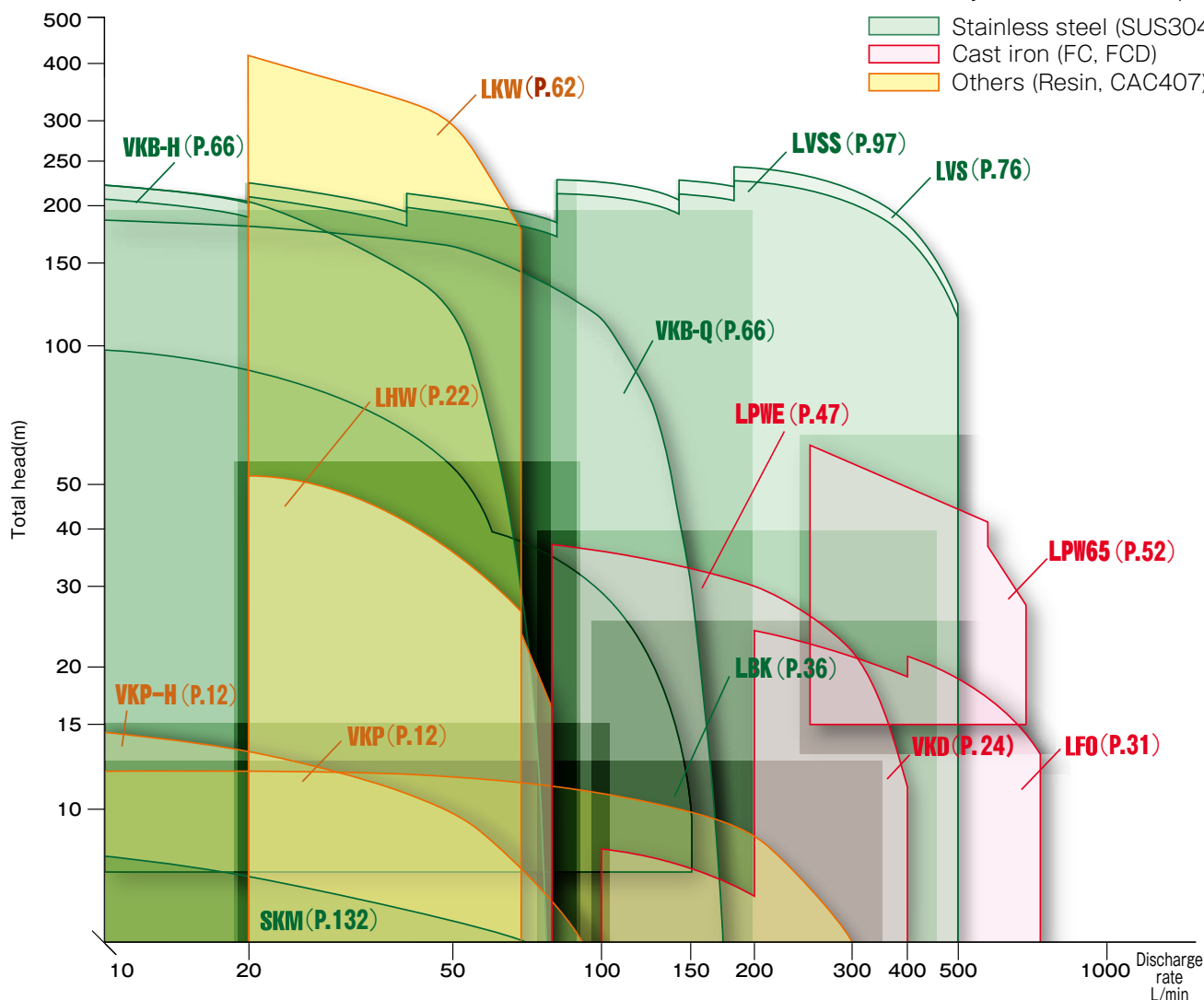
※2 : The value is a typical performance value. Please refer to selection chart and specification table for detailed performance of each model.

50Hz

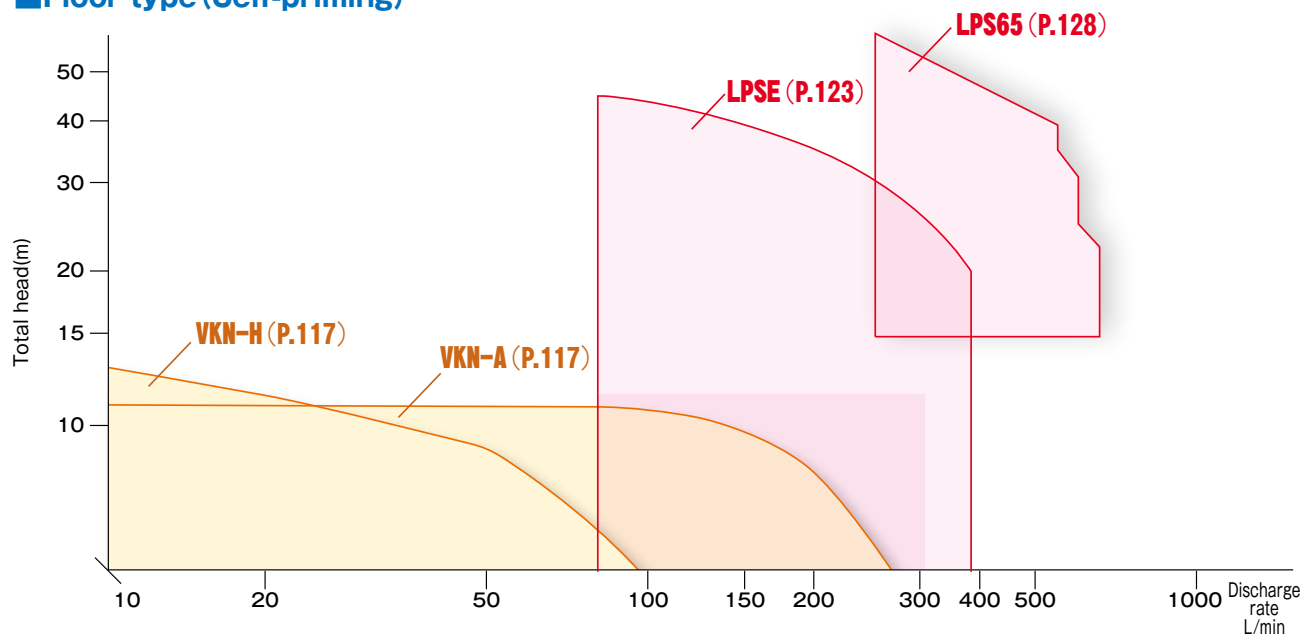
## ■ Immersion type

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

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



## ■ Floor type (Self-priming)



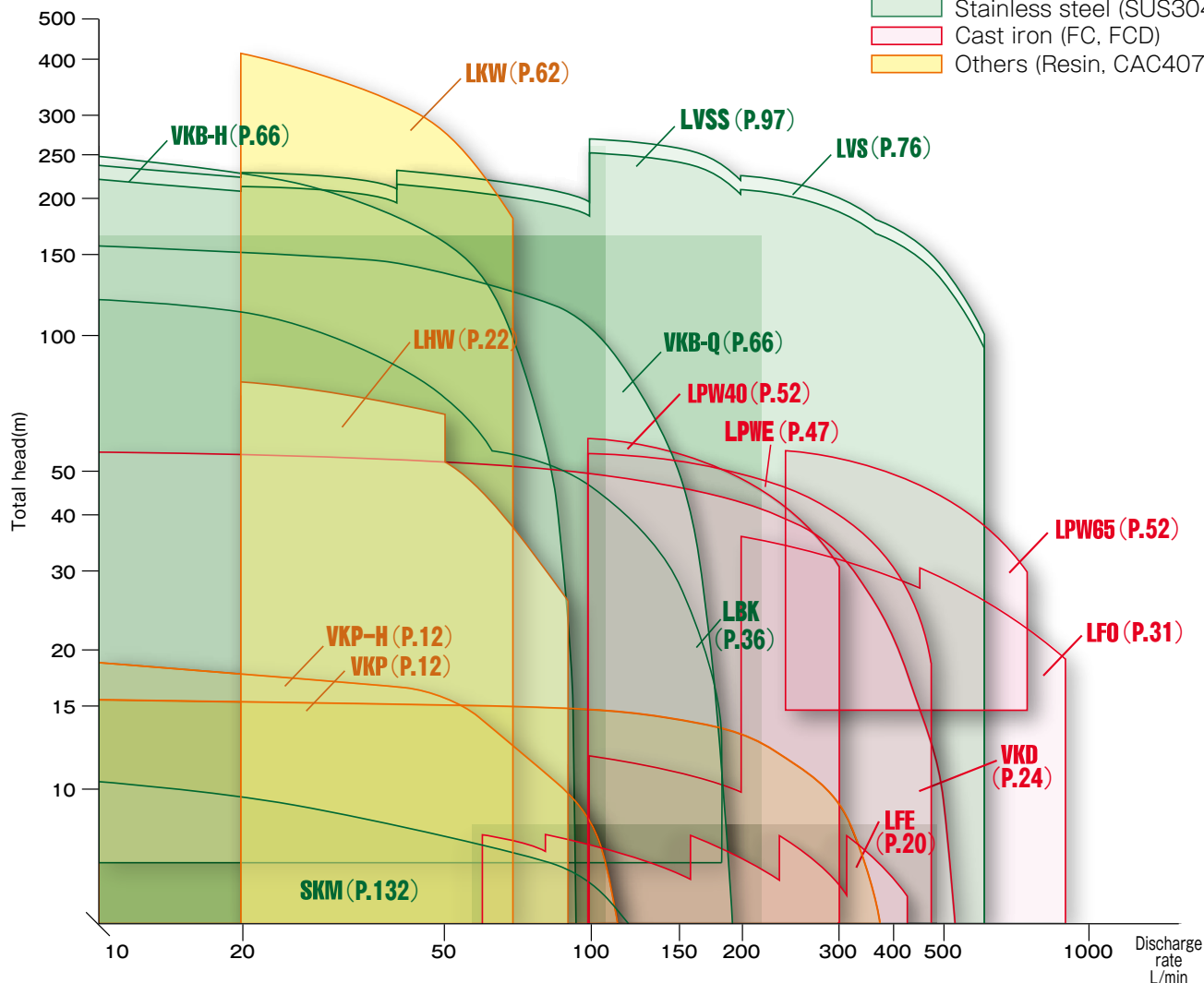
Please refer to the page of each unit type for the choices.

60Hz

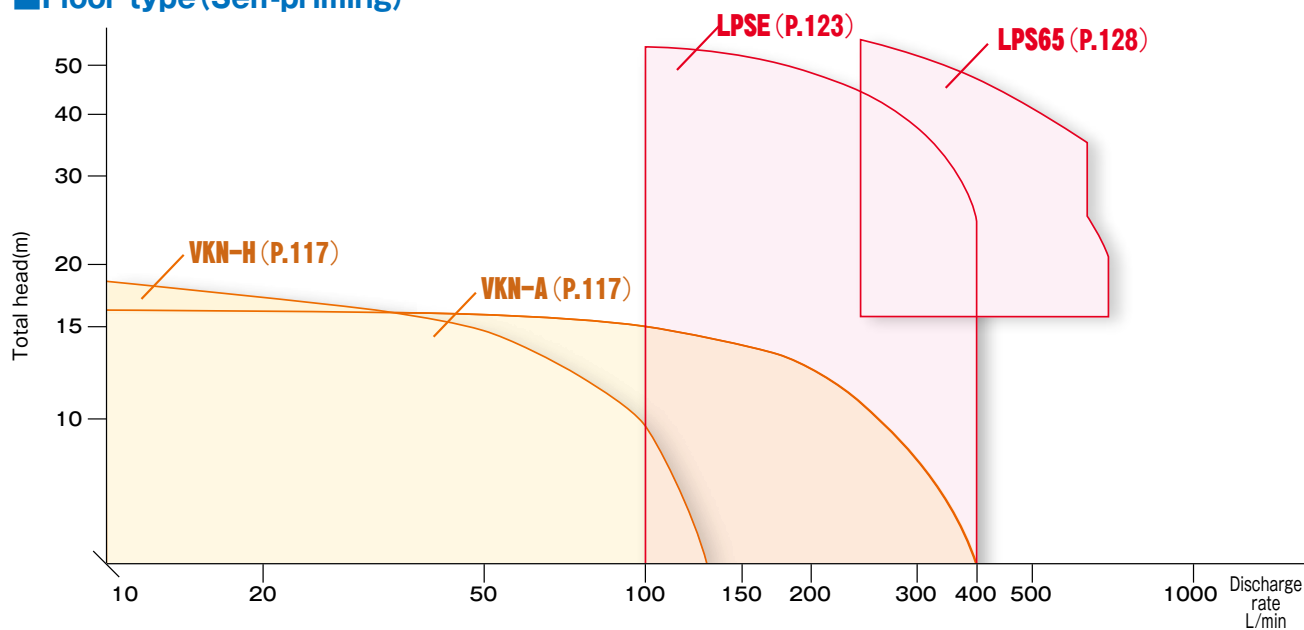
### ■ Immersion type

Figures in the selection chart 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.

## TERAL Coolant Pump

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

### Wide variation

#### ● Installation method

##### Immersion type



##### Floor type (Self-priming)



##### For cleaning inside tanks



#### ● Shaft seal structure

##### Mechanical seal type (VKC, VKN)

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 the motor section.**

Many advantages  
that only non-seal pumps  
can provide

**1** No coolant leakage  
or other problems.

Helps cut down  
running costs.

**2** Prevents  
air accumulation.

Reduces initial trouble.

**3**

Capable of  
serial running  
(LKW-D model)

A series of volute pumps  
can generate up to  
3.92MPa

**4**

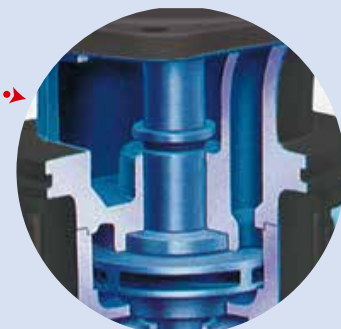
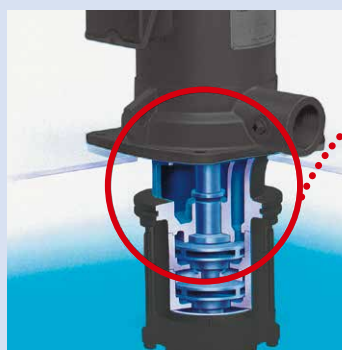
Not easily affected  
by small quantity of liquid  
or shut-off operation.

Build the pump system  
you want.

**5**

Not easily  
affected by chips

Can be used for  
dirty coolants.  
(some types)



##### ※What is non-seal structure?

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

#### ●Others

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

**[Performance]**  
Low - high flow rate, low - high head

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

You can make a choice according to the various uses.

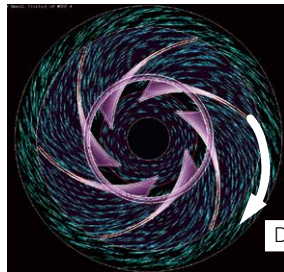
### High Durability, Abrasion Resistant

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

- 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.

Direction of the flow

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

- 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.

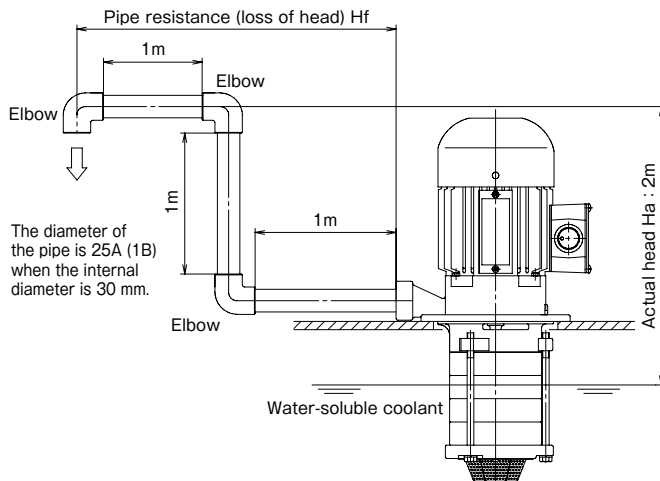
### List of obtained certifications

| Model | USA  | CANADA  | EU  | CHINA  | KOREA  |
|-------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
|       | UL&NEMA Premium                                                                         | CSA                                                                                        | CE/RoHS                                                                                | GB3                                                                                         | KC                                                                                          |
| VKP   | ○                                                                                       |                                                                                            | ○                                                                                      | ○                                                                                           |                                                                                             |
| VKD   | ○                                                                                       |                                                                                            | ○                                                                                      | ○                                                                                           | ○                                                                                           |
| LFO   |                                                                                         |                                                                                            |                                                                                        | ○                                                                                           |                                                                                             |
| LBK   | ○                                                                                       | ○                                                                                          | ○                                                                                      | ○                                                                                           | ○                                                                                           |
| LPWE  |                                                                                         |                                                                                            | ○                                                                                      | ○                                                                                           |                                                                                             |
| LPW   | ○                                                                                       |                                                                                            |                                                                                        |                                                                                             |                                                                                             |
| VKB   |                                                                                         |                                                                                            | ○                                                                                      | ○                                                                                           |                                                                                             |
| LVS   | ○                                                                                       | ○                                                                                          | ○                                                                                      | ○                                                                                           | ○                                                                                           |
| LVSS  | ○                                                                                       | ○                                                                                          | ○                                                                                      |                                                                                             | ○                                                                                           |
| VKN   | ○                                                                                       |                                                                                            | ○                                                                                      | ○                                                                                           |                                                                                             |
| LPSE  |                                                                                         |                                                                                            | ○                                                                                      | ○                                                                                           |                                                                                             |

Pumps are very influenced by the state of their piping (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 Head

**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:

$$\text{Total Head } H_t[m] = \text{Actual Head } H_a[m] + \text{Loss of Head } H_f[m]$$

In the case shown in Figure 1:

Actual head  $H_a$ : 2 m, Loss of Head  $H_f$ : 0.79 m <sup>※1</sup>

From the above formula,

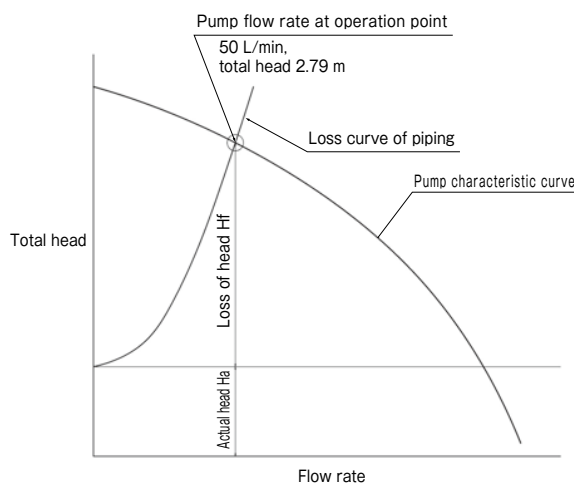
Total head is 2 m + 0.79 m = 2.79 m.

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 (kinematic viscosity 1 mm<sup>2</sup>/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



### ※1 How to compute loss of head

Loss of head is calculated as follows:

$$\text{Loss of head } H_f[m] = f \times (L/d) \times V^2/2g [m]$$

$L$ : 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<sup>2</sup>]

$f$ : coefficient of loss

In the case shown in Figure 1:

Equivalent length of straight pipes,  $L$ : 11.1 m <sup>※2</sup>

Flow velocity,  $V$ : 1.18 m/s

Internal diameter of the pipe,  $d$ : 0.03 m

From the above formula,

$$\text{Loss of head } H_f = 0.03 \times (11.1/0.03) \times 1.18^2/(2 \times 9.8) = 0.79 \text{ m}$$

[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.

**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       |

### ※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

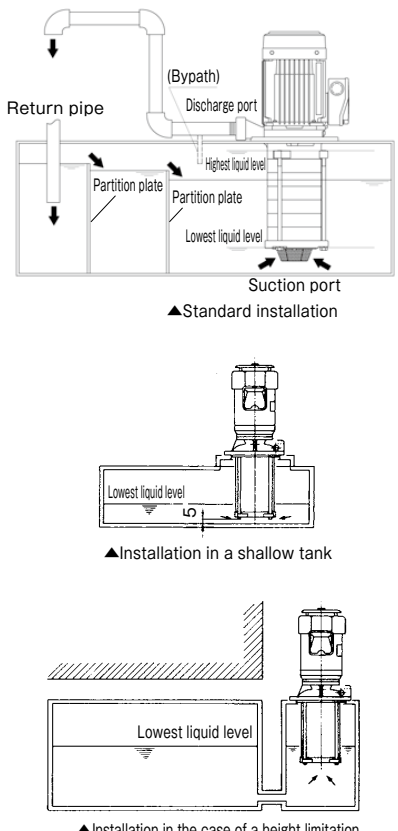
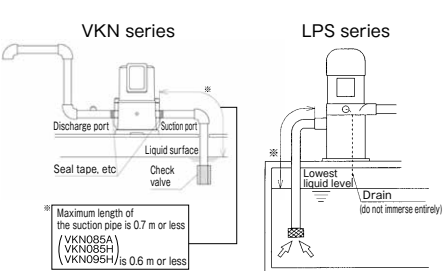
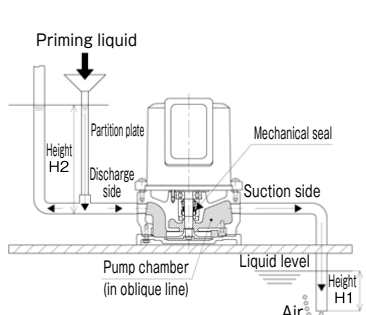
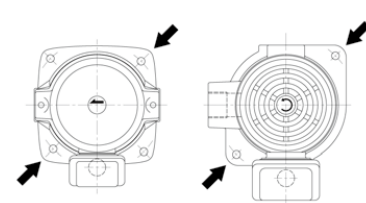
Elbow: 1.6 m × 3 = 4.8 m

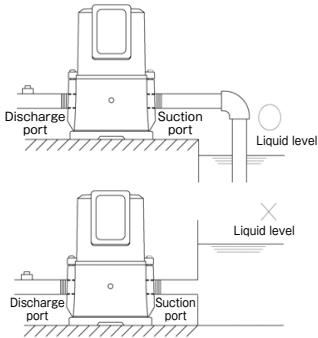
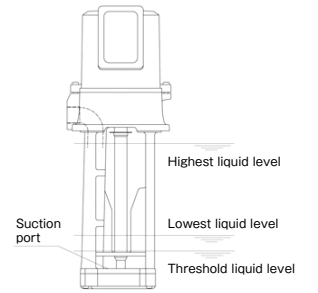
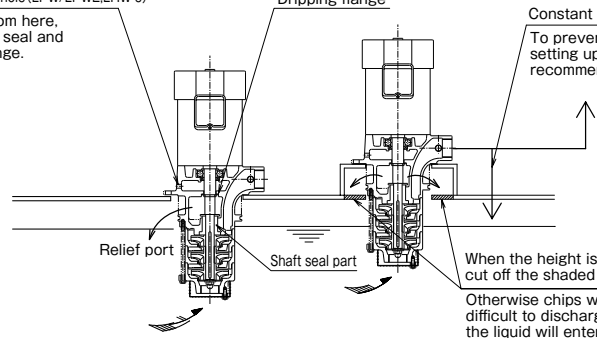
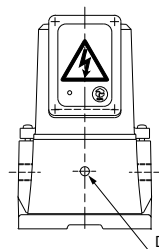
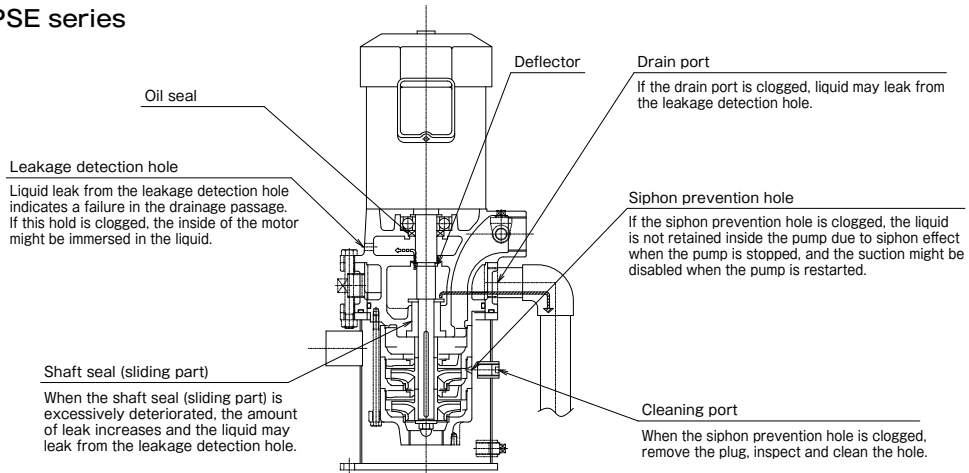
Inlet: 1.1 m, outlet: 2.2 m

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.

| Item           | Model             | Content                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Installation   | Immersion type    |  <p>▲Standard installation</p> <p>▲Installation in a shallow tank</p> <p>▲Installation in the case of a height limitation</p>                                                                                          | <ul style="list-style-type: none"> <li>● 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.</li> <li>● Support the piping sufficiently so that the pump does not take the load of pipes.</li> <li>● Do not screw pipes into pumps forcefully. Joint may be damaged.</li> <li>● 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.</li> <li>● Tank (oil tank) should be as large as possible. <ul style="list-style-type: none"> <li>※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.</li> <li>※When the liquid is poured into pumps, pour calmly so that they do not catch air bubbles.</li> </ul> </li> <li>● Be careful that chip powder or dust does not enter inside the pumps. <ul style="list-style-type: none"> <li>※Filter the liquid with mesh cages, chip conveyors, magnet separators, etc., before pumping the liquid. The number of necessary processes differs by type.</li> </ul> </li> <li>● Take appropriate measures, such as setting up a bypass after the discharge outlet of the pump, if there can be a water hammer.</li> <li>● If the liquid level is too low, discharge will be reduced or sometimes it becomes unable to lift liquid because of air inside. The liquid level shall be higher than the lowest liquid level shown in the assembly drawing. Note that the lowest liquid level differs by kinematic viscosity or the state of the surface. Please give a sufficient margin of height for safety. Additionally, if the liquid level is too high, liquid might enter inside the motor from the drain hole, consequently causing the motor to be out of order. Make the liquid level lower than the highest liquid level shown in the assembly drawing.</li> </ul> |
|                | Self-priming type |  <p>VKN series</p> <p>LPS series</p> <p>Maximum length of the suction pipe is 0.7 m or less (VKN085A, VKN085H, VKN095H) or 0.6 m or less</p>                                                                          | <ul style="list-style-type: none"> <li>● Install them close to the tank (oil tank) so that the suction pipe may be as short as possible. Maximum length of the 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 check 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.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Priming liquid | Self-priming type |  <p>Priming liquid</p> <p>Height H2</p> <p>Partition plate</p> <p>Mechanical seal</p> <p>Discharge side</p> <p>Suction side</p> <p>Pump chamber (in oblique line)</p> <p>Liquid level</p> <p>Air</p> <p>Height H1</p> | <ul style="list-style-type: none"> <li>● 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.</li> </ul> <p>[How to prime]</p> <p>VKN series</p> <ul style="list-style-type: none"> <li>● 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.</li> </ul> <p>LPS-e series</p> <ul style="list-style-type: none"> <li>● Pour the priming liquid in the priming inlet in the pump discharge until water comes out from the suction pipe.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Installation   | VKN<br>VKP        |  <p>Mounting hole for VKN / VKP series</p> <p>Arrows point at the dimension in JEM standard.</p>                                                                                                                      | <ul style="list-style-type: none"> <li>● 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.)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Item                                       | Model    | Content                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
|--------------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Level of the liquid surface                | VKN      |  <p>● Make the liquid level of VKN series lower than the suction port of the pump.<br/>If the surface is higher than the suction inlet, liquid can leak from mechanical seal.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |
|                                            | VKP      |  <p>● Figures of upper suction type VKP series machines are shown at "lowest liquid level," "highest liquid level," and "threshold liquid level" in the outline drawing.</p> <p>"Lowest liquid level"<br/>It shows the range where the amount of discharge is about the same as the rated value, and there is no air biting.</p> <p>"Threshold liquid level"<br/>It shows the range where the amount of discharge becomes about half of the rated value and there is air biting.</p> <p>"Highest liquid level"<br/>Make it a distance from the pump flange surface by at least 20 mm.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |
| Prevention of problems for immersion type  |          |  <p>Leakage detection hole (LPW/LPWE/LHW-e)<br/>If liquid leaks from here, check the shaft seal and the dripping flange.</p> <p>Dripping flange</p> <p>Constant relief pipe is recommended.<br/>To prevent air entrainment problems, setting up an atmospheric opening part is recommended.</p> <p>Relief port</p> <p>Shaft seal part</p> <p>When the height is increased, cut off the shaded area.<br/>Otherwise chips will accumulated and become difficult to discharge, and consequently the liquid will enter the motor.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| Prevention of problems in the suction type | VKN      |  <p>Drain</p> <p>A leak from the drain is caused by problems with the mechanical seal</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |
|                                            | LPS/LPSE | <p><b>LPS/LPSE series</b></p>  <p>Oil seal</p> <p>Leakage detection hole<br/>Liquid leak from the leakage detection hole indicates a failure in the drainage passage. If this hold is clogged, the inside of the motor might be immersed in the liquid.</p> <p>Shaft seal (sliding part)<br/>When the shaft seal (sliding part) is excessively deteriorated, the amount of leak increases and the liquid may leak from the leakage detection hole.</p> <p>Deflector</p> <p>Drain port<br/>If the drain port is clogged, liquid may leak from the leakage detection hole.</p> <p>Siphon prevention hole<br/>If the siphon prevention hole is clogged, the liquid is not retained inside the pump due to siphon effect when the pump is stopped, and the suction might be disabled when the pump is restarted.</p> <p>Cleaning port<br/>When the siphon prevention hole is clogged, remove the plug, inspect and clean the hole.</p> <p>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.</p> |  |

| Item    | Content                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General | <ul style="list-style-type: none"> <li>● 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.</li> <li>● Do not handle the machine when it is operating. Be sure to turn off the power before handing it.</li> <li>● In the case of a power outage, be sure to turn off the power switch.</li> <li>● If there is any problem, please stop operations and turn off the power switch.</li> <li>● Bury the earth terminal securely.</li> <li>● The piping and cable lining shall comply with electronic facility standards and internal line standards.</li> <li>● 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.).</li> <li>● 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.</li> <li>● Note that motor might be burned or thermal relay might trip if the voltage is volatile.</li> <li>● Do not use the products in an explosive atmosphere.</li> <li>● Never place any combustibles near the product.</li> <li>● We cannot produce machinery with increased safety or explosion proof.</li> <li>● Volatile liquids, such as kerosene or gasoline, cannot be used.</li> <li>● While operating, never touch or get close to rotating parts (external fan, impellers, etc.).</li> <li>● Do not put any material or fingers into the aperture of the product (fan cover, discharge opening, suction opening, drain hole, etc.).</li> <li>● Never climb the machinery.</li> <li>● Products become considerably hot while operating. Do not touch with your hand or any part of the body.</li> <li>● Do not restrict ventilation around the product.</li> <li>● Put it in a convenient location for maintenance operation (avoid narrow spaces).</li> <li>● Place it on a flat surface and anchor it so that it will not shake.</li> <li>● Select a rigid surface to install the product on so that vibrations will not be amplified in operation.</li> <li>● 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.</li> <li>● If the kinematic 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 kinematic viscosity [mm<sup>2</sup>/s] shown in the specifications.</li> <li>● They are designed as pumps for liquid containing fine powder or fine chips. But for the pumps using the mechanical seal (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).</li> <li>● Check the direction of rotation before connecting the machine.</li> <li>● 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.</li> <li>● 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.</li> <li>● Repair, dismantling, or modification shall be done by experts.</li> <li>● If the product is modified by customers, it is not our responsibility. Then we cannot assume any responsibility.</li> <li>● If it is disposed of, treat it as an industrial waste.</li> <li>● Other than the products listed in the catalog, products for different voltages, etc. are also produced. Please inquire about them with us.</li> </ul> <div> <p>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.</p> </div> |

## Notes on ordering

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, kinematic 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 : LBK4-60/1-e, etc.
- (10) Standards for compliance
- (11) Others : Specification on noise, vibration, or letters on the plate, etc.

## Features

- ① Non-seal (mechanical-seal-less) structure is adopted.
- ② There are 3 types to choose for the immersion depth.
- ③ The lineup including the models complying with global standards by supporting efficiency and other regulations.  
Japan : Top Runner efficiency  
Europe : IE3 efficiency, CE marking (EU Directive)  
RoHS Directive (2011/65/EU) , 10 substances restricted\*  
USA : NEMA Premium efficiency (IE3 efficiency), UL standards (safety)  
China : GB3 (GB18613-2020 )
- ④ With the lineup of VKP-A type (flow type) and VKP-H type (pressure type), a wide range of choices of head and flow rate is available. The VKP-H model offers approximately 30% more pressure than the VKP-A type.  
※Excluding the types that end with "L."



Please note that the paint color, etc. of the actual unit may partially differ from the photo.

## Description of types

### VKP 08 5 A F

① ② ③ ④ ⑤ ⑥

- ① Model
- ② Output 03:20W, 04: 40W, 05:60W, 06:100W, 07: 180W, 08: 250W, 09: 400W, 11: 750W
- ③ Series No.
- ④ Phase, Features (L: 3-phase(cabtyre cable used), A, J<sup>NOTE</sup>: 3-phase, flow type, H: 3-phase, pressure type)  
Note) VKP□□□J and VKP115A(-□) are bottom suction type.
- ⑤ Immersion depth F : 180mm  
H : 250m  
K : 350mm
- ⑥ Motor efficiency/ voltage  
None : Standard efficiency (equivalent to IE1) / Standard voltage  
-e : Top Runner efficiency (equivalent to IE3) / Standard voltage  
-4Z : Standard efficiency (equivalent to IE1) / Different voltage  
-4Z-e : Top Runner efficiency (equivalent to IE3) / Different voltage  
-7W : UL approved motor (750W is NEMA Premium efficiency)

## Global standards

| Type   | Standards/Regulations                  | Output          |      |      |
|--------|----------------------------------------|-----------------|------|------|
|        |                                        | 20W-250W        | 400W | 750W |
| VKP    | IE1 equivalent                         | ●               | ●    | ●    |
|        | CE Marking                             | ● <sup>※1</sup> | ●    | ●    |
|        | EU energy efficiency                   | —               | ●    | ●    |
|        | GB3(GB18613-2020)                      | —               | ●    | —    |
| VKP-e  | Top Runner efficiency (IE3 equivalent) | —               |      |      |
|        | CE Marking                             |                 |      |      |
|        | EU energy efficiency                   |                 |      |      |
|        | GB3(GB18613-2020)                      |                 |      |      |
| VKP-7W | NEMA Premium efficiency                | —               | —    | ●    |
|        | UL Standards (safety)                  | ●               | ●    | ●    |

※1 Excluding the types that end with "L."

※2 GB certification label is attached as exclusive for GB standard. — : Ineligible

● : Compliant

## Standard Specification

|                       |                               |                                                                                                                                                                                                                                   |
|-----------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Used liquid           | Property of liquid            | Grinding liquid, cutting liquid, etc <sup>※1</sup> .                                                                                                                                                                              |
|                       | Temperature                   | 40°C or below (no frozen liquid)                                                                                                                                                                                                  |
|                       | Allowable kinematic viscosity | VKP-A 50Hz:300mm <sup>2</sup> /s 60Hz:150mm <sup>2</sup> /s<br>VKP-H 50/60Hz:37.5mm <sup>2</sup> /s                                                                                                                               |
| Installation location |                               | Indoor<br>Ambient temperature: -20 to 40 °C, RH 85% or below (no condensation), Height above sea level : 1000m or less,<br>Place not exposed to direct sunlight,<br>Place in an area free of corrosive or explosive gas or vapor. |
| Material              | Pump legs Casing              | FC150                                                                                                                                                                                                                             |
|                       | Impeller                      | CAC407 or special resins<br>Refer to the table of impeller materials                                                                                                                                                              |
|                       | Main shaft                    | S45C                                                                                                                                                                                                                              |
| Shaft seal structure  |                               | Non-seal (mechanical seal-less)                                                                                                                                                                                                   |
| Motor                 | Power source                  | 3-phase 50/60/60 Hz, 200/200/220 V <sup>※2</sup>                                                                                                                                                                                  |
|                       | Type                          | Output 0.25kW or less: Totally enclosed self-cooled type<br>Output 0.4kW or more: Totally enclosed fan-cooled indoor type                                                                                                         |
|                       | Protection method             | Refer to specification table                                                                                                                                                                                                      |
|                       | Thermal class                 | Refer to specification table                                                                                                                                                                                                      |
|                       | Rating                        | Continuous                                                                                                                                                                                                                        |
|                       | Number of poles               | 2P                                                                                                                                                                                                                                |
| Paint color           |                               | IEC60034-1 CE Marking <sup>※3</sup><br>Munsell N1                                                                                                                                                                                 |

※1 Take note that special liquid such as water, printing liquid or acid liquid cannot be used.  
Contact us for other special liquid (ceramic, etc.).

※2 (Standard specification) different voltage: 50/50/50/60/60Hz 380/400/415/400/440V,  
NEMA Premium efficiency (IE3), UL Standards (safety): 60Hz 208/230/460V,  
GB18613-2020: 3-phase 50Hz 200V, 50Hz 380V

※3 Excluding -7W type and the types that end with "L."

## 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(-4Z/-7W)        | 6305ZZ    | 6203ZZ      |
| VKP115A(-e/4Z/7W/-4Z-e) | 6305ZZ    | 6203ZZ      |
| VKP055H                 | 6200ZZ    | 6200ZZ      |
| VKP065H(-7W)            | 6200ZZ    | 6200ZZ      |
| VKP075H(-7W)            | 6303ZZ    | 6200ZZ      |
| VKP085H                 | 6204ZZ    | 6200ZZ      |
| VKP095H(-7W)            | 6204ZZ    | 6202ZZ      |

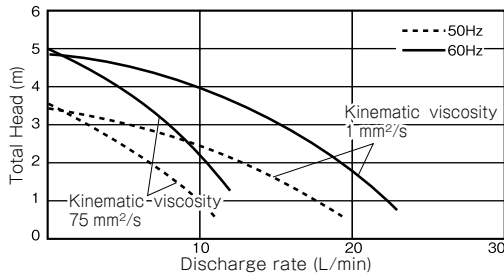
### Selection chart

#### VKP-A type

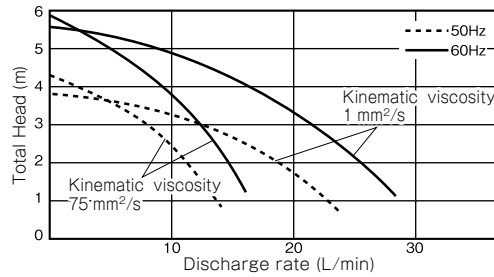
(Values at kinematic viscosity 1mm<sup>2</sup>/s, specific gravity 1)  
(Values at kinematic viscosity 75mm<sup>2</sup>/s, specific gravity 1)

Synchronous rotating speed 50Hz : 3000min<sup>-1</sup>  
60Hz : 3600min<sup>-1</sup>

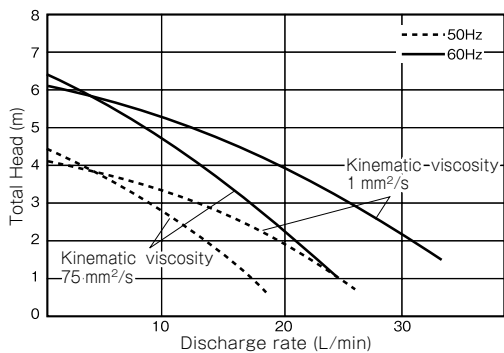
#### ●VKP035L



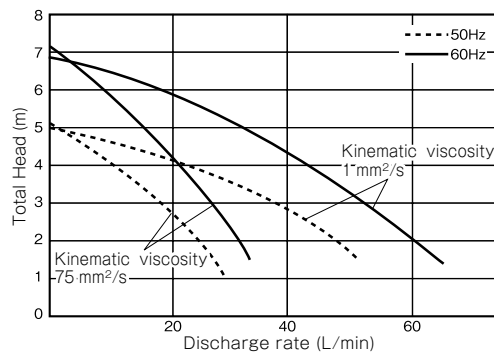
#### ●VKP045A(L)



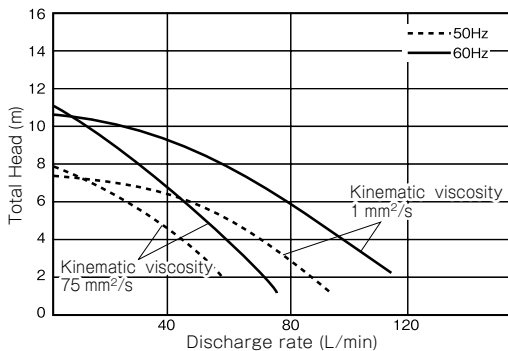
#### ●VKP055A



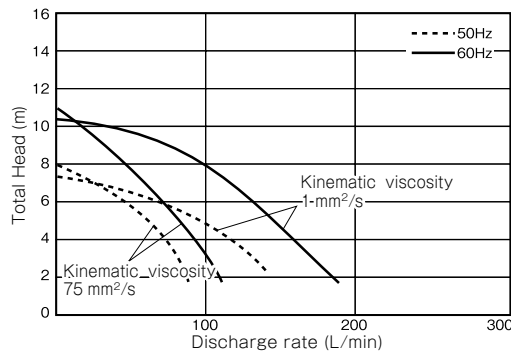
#### ●VKP065A



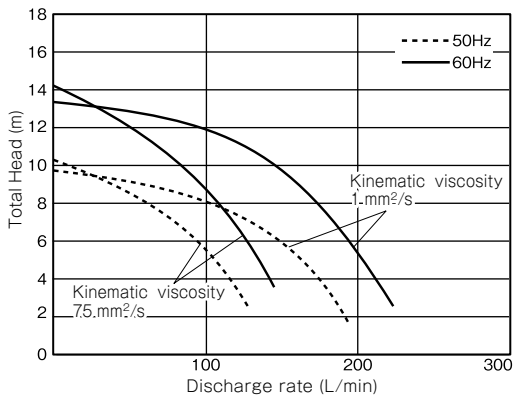
#### ●VKP075A(AH/AK/J)



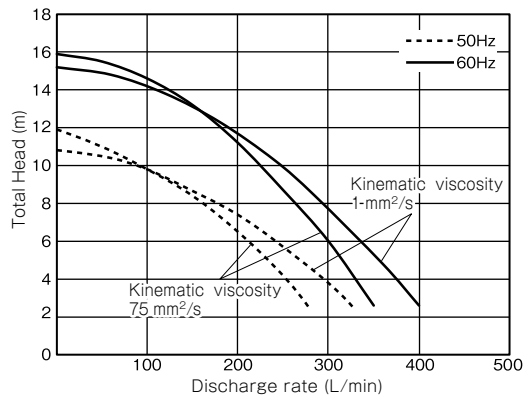
#### ●VKP085A(AF/AK/J)



#### ●VKP095A(AF/AK/J)



#### ●VKP115A



※ Above selection chart is also available for -e/-4Z/-7W type.

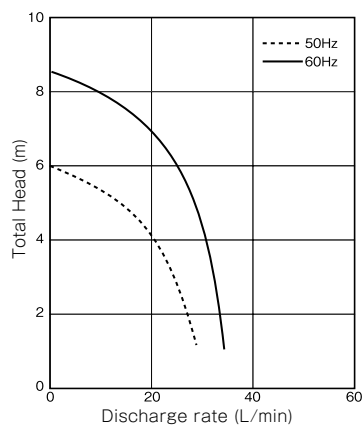
Note 1) Take note that discharge rate varies considerably depending on the type and kinematic viscosity of liquid.

Note 2) There is virtually no change in characteristics according to leg length (LH130 to 350mm).

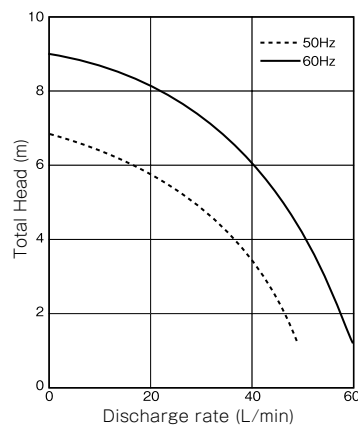
## VKP-H type

(Values at kinematic viscosity  $1\text{mm}^2/\text{s}$ , specific gravity 1)Synchronous rotating speed 50Hz :  $3000\text{min}^{-1}$   
60Hz :  $3600\text{min}^{-1}$ 

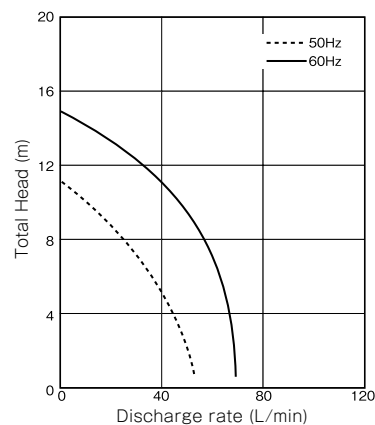
## ●VKP055H



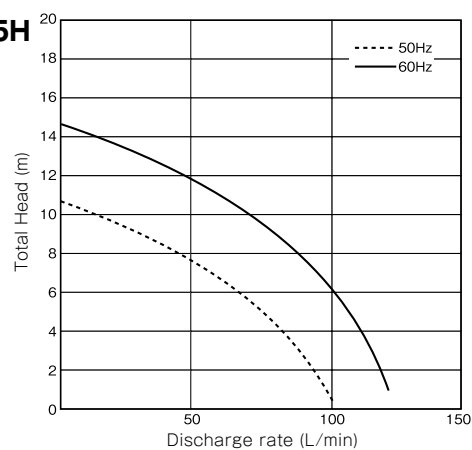
## ●VKP065H



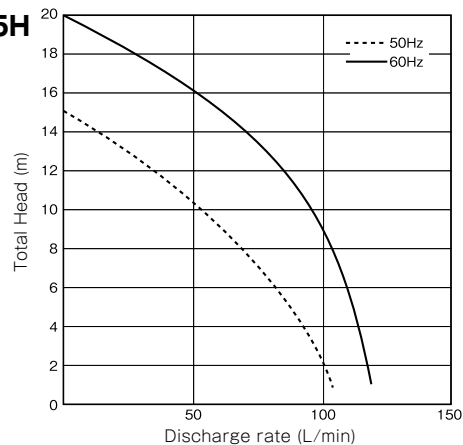
## ●VKP075H



## ●VKP085H



## ●VKP095H



\* Above selection chart is also available for -7W type.

Note 1) Please note that discharge rate varies considerably depending on the type and kinematic viscosity of liquid.

## Specification table

### VKP-A type

| Bore diameter (Rp) | Type         | Output (W) | 50Hz              |                   |                      |                   |                | 60Hz              |                   |                      |                   |                | Protection method | Thermal class |  |
|--------------------|--------------|------------|-------------------|-------------------|----------------------|-------------------|----------------|-------------------|-------------------|----------------------|-------------------|----------------|-------------------|---------------|--|
|                    |              |            | 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*     | 40         | 200               | 0.32              | 1.38                 | 19                | 1.5            | 200/220           | 0.31/0.31         | 1.24/1.36            | 25                | 1.5            |                   |               |  |
|                    | VKP045A      |            | 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-4Z   |            |                   |                   |                      |                   |                | 208/230/460       | 0.28/0.29/0.15    | 1.3/1.5/0.75         |                   |                |                   |               |  |
| 3/8                | VKP045A-7W   | 60         | 200               | 0.4               | 1.73                 | 20                | 2              | 200/220           | 0.35/0.35         | 1.52/1.67            | 30                | 2              | IP54              |               |  |
|                    | VKP055A      |            | 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-4Z   |            |                   |                   |                      |                   |                | 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              |                   |               |  |
|                    | VKP055A-7W   |            | 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-4Z   |            |                   |                   |                      |                   |                | 208/230/460       | 0.56/0.55/0.28    | 3/3.3/1.7            |                   |                |                   |               |  |
| 1/2                | VKP065A-7W   |            |                   |                   |                      |                   | 208/230/460    | 0.56/0.55/0.28    | 3/3.3/1.7         |                      |                   |                |                   |               |  |
|                    | VKP075A      | 180        | 200               | 0.85              | 5.86                 | 75                | 3              | 200/220           | 1.0/1.0           | 5.52/6.08            | 100               | 3              |                   |               |  |
|                    | VKP075AH     |            | 200               | 0.85              | 5.86                 |                   |                | 200/220           | 1.0/1.0           | 5.52/6.08            | 95                |                |                   |               |  |
|                    | VKP075AK     |            | 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               |                |                   |               |  |
| VKP075J            |              |            |                   |                   |                      |                   |                | 208/230/460       | 1.0/0.95/0.48     | 5.4/6/3              |                   |                |                   |               |  |
| 3/4                | VKP075A-4Z   |            |                   |                   |                      |                   | 208/230/460    | 1.0/0.95/0.48     | 5.4/6/3           |                      |                   |                |                   |               |  |
|                    | VKP085A      | 250        | 200               | 1.2               | 8.79                 | 110               | 4              | 200/220           | 1.5/1.5           | 8.26/9.09            | 160               | 4              |                   |               |  |
|                    | VKP085AF     |            | 200               | 1.2               | 8.79                 |                   |                | 200/220           | 1.5/1.5           | 8.26/9.09            | 145               |                |                   |               |  |
|                    | VKP085AK     |            | 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               |                |                   |               |  |
| VKP085J            |              |            |                   |                   |                      |                   |                | 208/230/460       | 1.4/1.3/0.65      | 10.1/10.7/5.4        |                   |                |                   |               |  |
| 1                  | VKP085A-4Z   |            |                   |                   |                      |                   | 208/230/460    | 1.4/1.3/0.65      | 10.1/10.7/5.4     |                      |                   |                |                   |               |  |
|                    | VKP085A-7W   |            |                   |                   |                      |                   | 208/230/460    | 1.4/1.3/0.65      | 10.1/10.7/5.4     |                      |                   |                |                   |               |  |
|                    | VKP095A      | 400        | 200               | 2.4               | 11.0                 | 140               | 5              | 200/220           | 2.5/2.4           | 10.0/11.0            | 200               | 5              |                   |               |  |
|                    | VKP095AF     |            | 200               | 2.4               | 11.0                 | 155               |                | 200/220           | 2.5/2.4           | 10.0/11.0            |                   |                |                   |               |  |
| VKP095AK           | 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           |                      |                   |                |                   |               |  |
| VKP095J            |              |            |                   |                   |                      | 208/230/460       |                | 2.3/2.2/1.1       | 13.4/15.2/7.6     |                      |                   |                |                   |               |  |
| 2                  | VKP095A-4Z   | 750        | 200               | 3.3               | 25.7                 | 165               | 7              | 200/220           | 3.7/3.6           | 23.3/25.7            | 285               | 7              | F                 |               |  |
|                    | VKP095A-7W   |            |                   |                   |                      |                   |                | 208/230/460       | 2.3/2.2/1.1       | 13.4/15.2/7.6        |                   |                | B                 |               |  |
|                    | VKP115A      |            | 200               | 3.3               | 29.0                 |                   |                | 200/220           | 3.7/3.6           | 28.0/30.0            |                   |                | F                 |               |  |
|                    | VKP115A-e    |            | 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   |            | 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-4Z-e |            |                   |                   |                      |                   |                | 208/230/460       | 3.7/3.6/1.9       | 28.8/32.0/16.0       |                   |                |                   |               |  |

Note 1) Since VKP035L and VKP045L have cable, they do not comply with CE Marking. In addition they do not comply with RoHS Directive (2011/65/EU), which restricting 10 substances. The protection method is IP23.

Note 2) Discharge rate and total head are the values obtained in the tests with a liquid kinematic viscosity of 1mm<sup>2</sup>/s (same as fresh water at normal temperature). Take note that the pump cannot be used with water.

Note 3) VKP □□□ J, VKP115A(-□□) are bottom suction type.

Note 4) The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for the protection device.

### VKP-H type

| Bore diameter (Rp) | Type       | Output (W) | 50Hz              |                   |                      |                        |                | 60Hz              |                   |                      |                        |                | Protection method | Thermal class |
|--------------------|------------|------------|-------------------|-------------------|----------------------|------------------------|----------------|-------------------|-------------------|----------------------|------------------------|----------------|-------------------|---------------|
|                    |            |            | 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) |                   |               |
| 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            |                        | 8              |                   |               |
| 1/2                | VKP075H    | 180        | 200               | 0.9               | 5.86                 | 20                     | 9              | 200/220           | 1.2/1.1           | 5.52/6.08            | 20                     | 13             | IP54              | B             |
|                    | VKP075H-7W |            |                   |                   |                      |                        |                | 208/230/460       | 1/0.95/0.48       | 5.4/6/3              |                        | 13             |                   |               |
| 3/4                | VKP085H    | 250        | 200               | 1.2               | 8.79                 | 20                     | 9              | 200/220           | 1.5/1.5           | 8.26/9.09            | 20                     | 8              | IP54              | B             |
| 1                  | VKP095H    | 400        | 200               | 2.4               | 11.0                 | 20                     | 13             | 200/220           | 2.5/2.4           | 10.0/11.0            |                        |                |                   |               |
|                    | VKP095H-7W |            |                   |                   |                      |                        |                | 208/230/460       | 2.3/2.2/1.1       | 13.4/15.2/7.6        |                        | 8              |                   | F             |

Note 1) Discharge rate and total head are the values obtained in the tests with a liquid viscosity of 1mm<sup>2</sup>/s (same as fresh water at normal temperature). Please note that the pump cannot use water.

Note 2) The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for protection device.

## ■ Assembly drawing

Fig.1

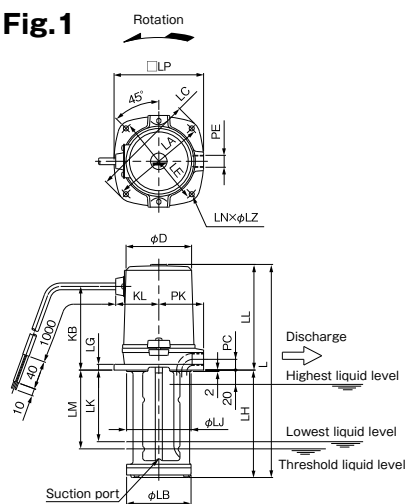


Fig.2

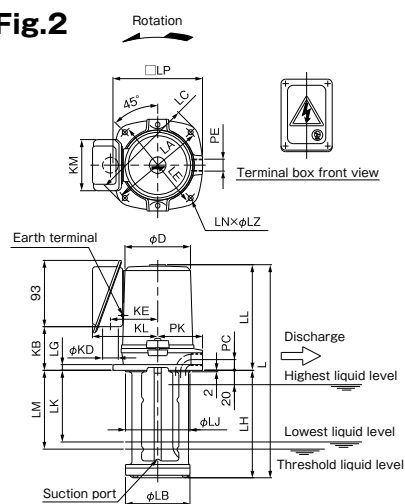


Fig.3

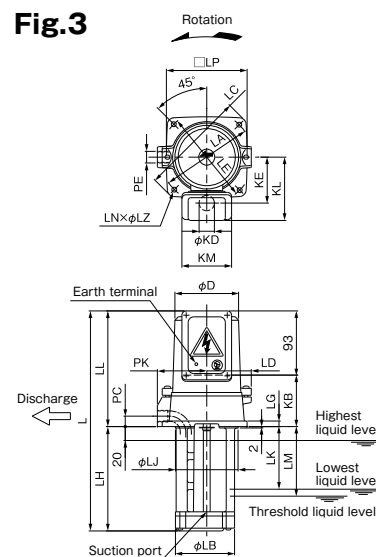


Fig.4

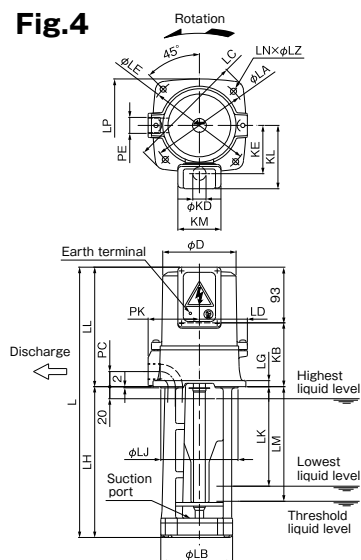


Fig.5

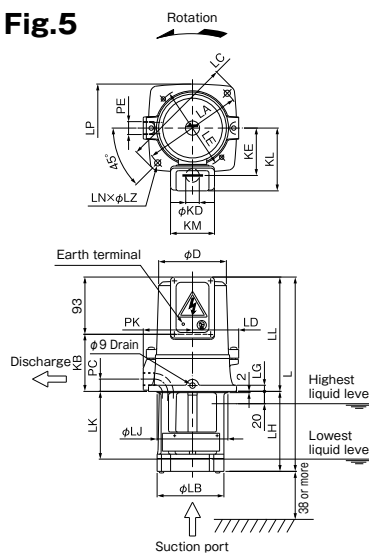


Fig.6

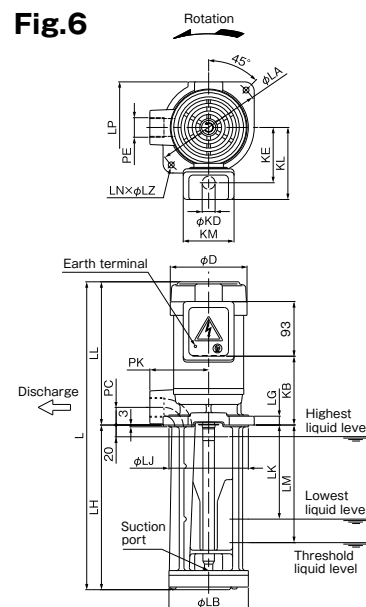


Fig.7

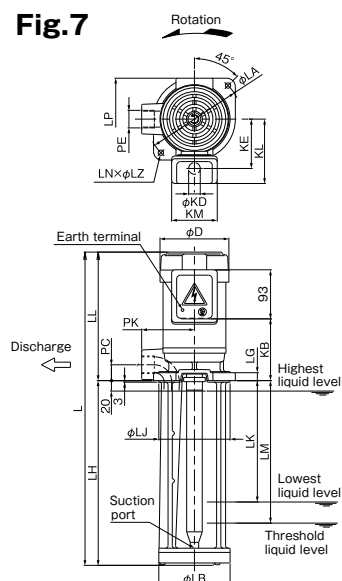


Fig.8

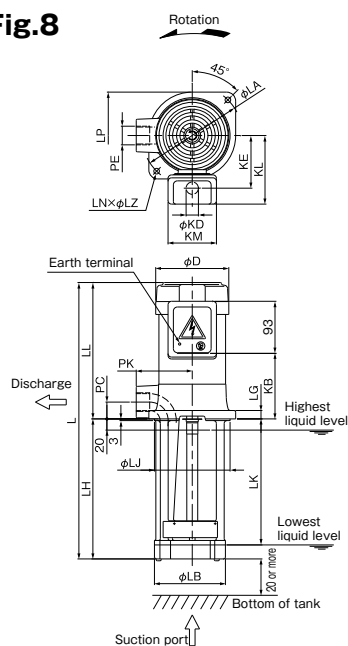


Fig.9

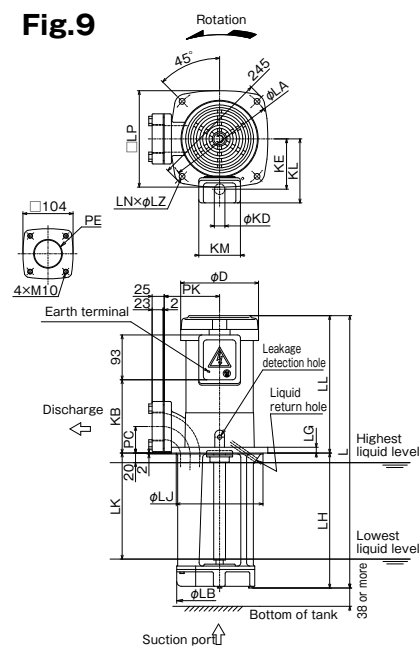


Fig.10

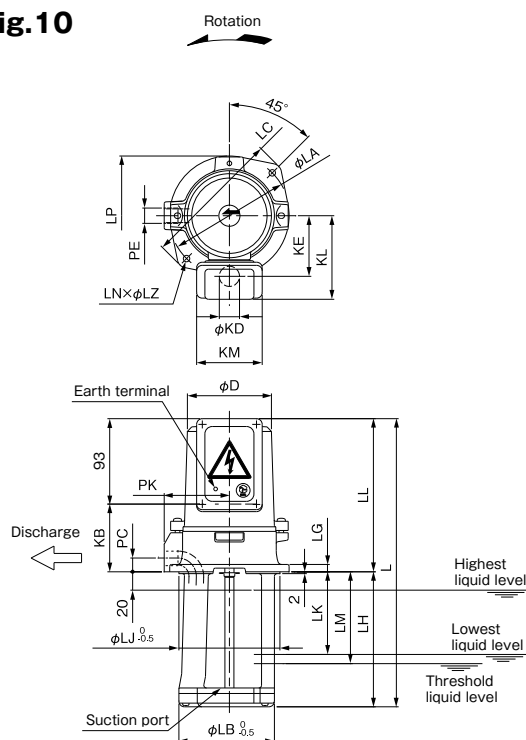
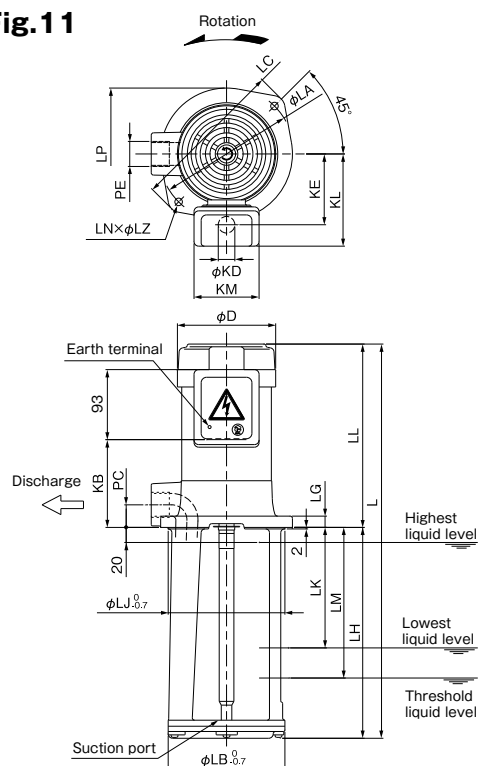


Fig.11



## 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 <sup>0.05</sup>  | 143 | —  | 130 | 8  | 148 | 90 <sup>0.05</sup>  | 105 | 148  | 115 | 4  | 125 | 7  | 15 | Rp 1/4 | 62.5 | 5.3               |
| VKP045L           | 1    | 92  | 115.5 | —  | —   | 61  | —  | 298  | 130 | 90 <sup>0.05</sup>  | 143 | —  | 130 | 8  | 150 | 90 <sup>0.05</sup>  | 100 | 148  | 110 | 4  | 125 | 7  | 15 | Rp 1/4 | 62.5 | 5.3               |
| VKP045A(-4Z/7W)   | 2    | 92  | 60.5  | 22 | 67  | 93  | 73 | 298* | 130 | 90 <sup>0.05</sup>  | 145 | —  | 130 | 8  | 150 | 90 <sup>0.05</sup>  | 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 <sup>0.05</sup>  | 152 | 64 | 130 | 8  | 150 | 90 <sup>0.05</sup>  | 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 <sup>0.05</sup>  | 152 | 64 | 134 | 8  | 150 | 90 <sup>0.05</sup>  | 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 <sup>0.05</sup> | 184 | 75 | 134 | 10 | 180 | 115 <sup>0.05</sup> | 105 | 187  | 130 | 2  | 143 | 19 | 20 | Rp 1/2 | 80   | 10.0              |
| VKP075J(-7W)      | 5    | 111 | 94    | 22 | 78  | 104 | 73 | 317  | 160 | 115 <sup>0.05</sup> | 184 | 75 | 134 | 10 | 130 | 115 <sup>0.05</sup> | 110 | 187  | 110 | 2  | 143 | 19 | 20 | Rp 1/2 | 80   | 11.0              |
| VKP075AH(-7W)     | 3    | 111 | 94    | 22 | 78  | 104 | 73 | 437  | 160 | 115 <sup>0.05</sup> | 184 | 75 | 134 | 10 | 250 | 115 <sup>0.05</sup> | 175 | 187  | 200 | 2  | 143 | 19 | 20 | Rp 1/2 | 80   | 10.0              |
| VKP075AK(-7W)     | 3    | 111 | 107   | 22 | 78  | 104 | 73 | 550  | 160 | 115 <sup>0.05</sup> | 184 | 75 | 134 | 10 | 350 | 115 <sup>0.05</sup> | 275 | 200  | 300 | 2  | 143 | 19 | 20 | Rp 1/2 | 80   | 11.0              |
| VKP085A(-4Z/7W)   | 4    | 122 | 106   | 22 | 81  | 107 | 73 | 449  | 160 | 128 <sup>0.05</sup> | 194 | 80 | 170 | 10 | 250 | 128 <sup>0.05</sup> | 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 <sup>0.05</sup> | 194 | 80 | 170 | 10 | 130 | 128 <sup>0.05</sup> | 105 | 199  | —   | 4  | 154 | 10 | 25 | Rp 3/4 | 85   | 16.0              |
| VKP085AF(-7W)     | 3    | 122 | 106   | 22 | 81  | 107 | 73 | 379  | 160 | 128 <sup>0.05</sup> | 194 | 80 | 170 | 10 | 180 | 128 <sup>0.05</sup> | 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 <sup>0.05</sup> | 194 | 80 | 170 | 10 | 350 | 128 <sup>0.05</sup> | 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 <sup>0.07</sup> | —   | —  | —   | 15 | 280 | 135 <sup>0.07</sup> | 160 | 244  | 200 | 2  | 155 | 10 | 30 | Rp1    | 100  | 16.5              |
| VKP095J(-7W)      | 8    | 131 | 117   | 22 | 94  | 122 | 87 | 494  | 180 | 135 <sup>0.07</sup> | —   | —  | —   | 15 | 250 | 135 <sup>0.07</sup> | 225 | 244  | —   | 2  | 155 | 10 | 30 | Rp1    | 100  | 17.0              |
| VKP095AF(-7W)     | 7    | 131 | 117   | 22 | 94  | 122 | 87 | 424  | 180 | 135 <sup>0.07</sup> | —   | —  | —   | 15 | 180 | 135 <sup>0.07</sup> | 60  | 244  | 100 | 2  | 155 | 10 | 30 | Rp1    | 100  | 17.0              |
| VKP095AK(-7W)     | 7    | 131 | 117   | 22 | 94  | 122 | 87 | 594  | 180 | 135 <sup>0.07</sup> | —   | —  | —   | 15 | 350 | 135 <sup>0.07</sup> | 230 | 244  | 270 | 2  | 155 | 10 | 30 | Rp1    | 100  | 18.0              |
| VKP115A(-4Z)      | 9    | 162 | 152   | 22 | 105 | 133 | 87 | 565  | 220 | 180 <sup>0.07</sup> | —   | —  | —   | 12 | 280 | 180 <sup>0.07</sup> | 220 | 285  | —   | 4  | 200 | 12 | 55 | Rp2    | 115  | 27.0              |
| VKP115A-e(-4Z/7W) | 9    | 162 | 152   | 22 | 105 | 133 | 87 | 565  | 220 | 180 <sup>0.07</sup> | —   | —  | —   | 12 | 280 | 180 <sup>0.07</sup> | 220 | 285  | —   | 4  | 200 | 12 | 55 | Rp2    | 115  | 28.0              |

\* -7W type: L:296 LL:146

### VKP-H type

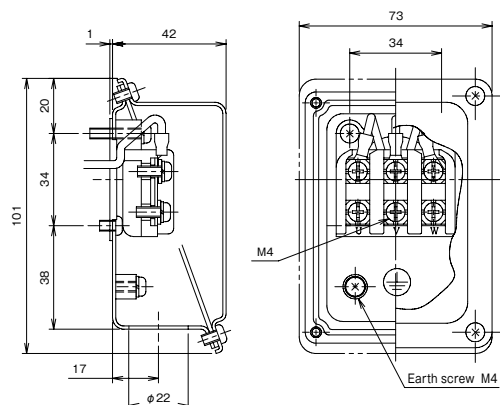
(Unit : mm)

| 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 | 100 | 167 | 110 | 2  | 130 | 7  | 15 | Rp 3/8 | 71 | 6.0               |
| VKP065H (-7W) |      | 92  | 74  | 22 | 67 | 93  | 73 | 317 | 132 | 110 | 152 | 8  | 150 | 110 | 90  | 167 | 100 | 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

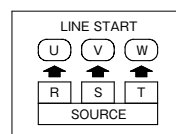
### ●VKP045A-085A (-4Z) VKP055H-085H

#### ■Assembly drawing



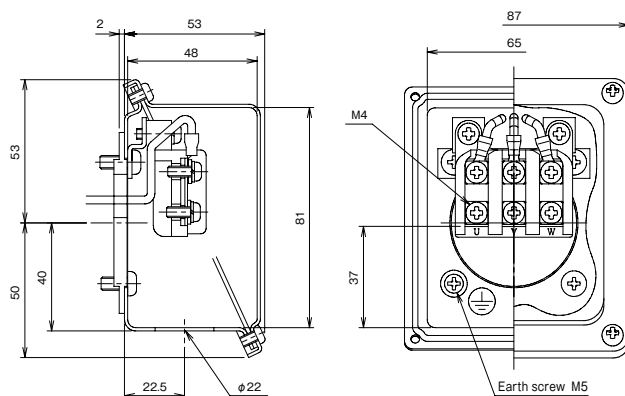
※ For the types that end with "L," cabtyre cable is used.

#### ■Connection diagram

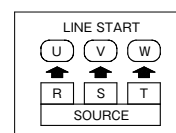


### ●VKP095□ (-4Z), 115A (-e/4Z)

#### ■Assembly drawing

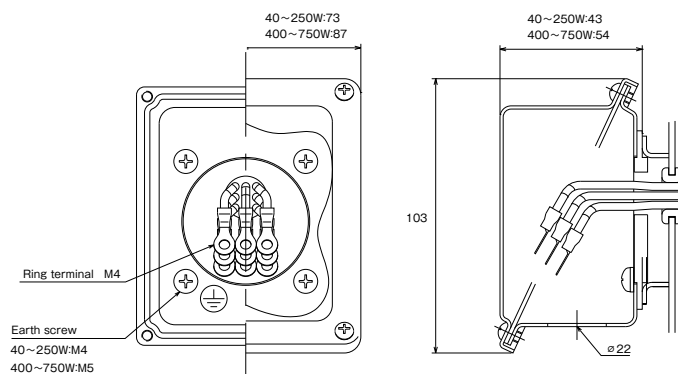


#### ■Connection diagram

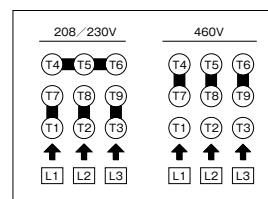


### ●VKP-7W

#### ■Assembly drawing

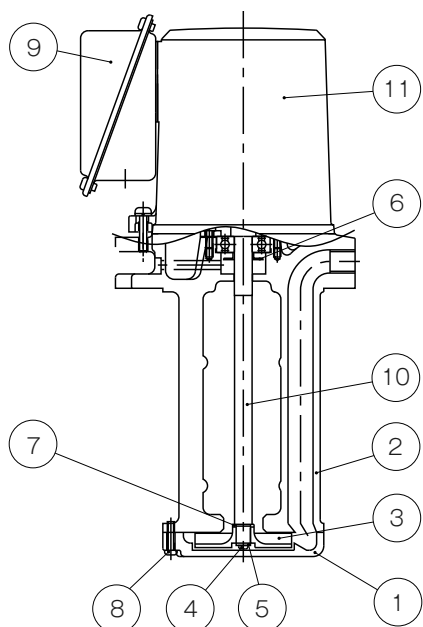


#### ■Connection diagram



## Sectional drawing

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



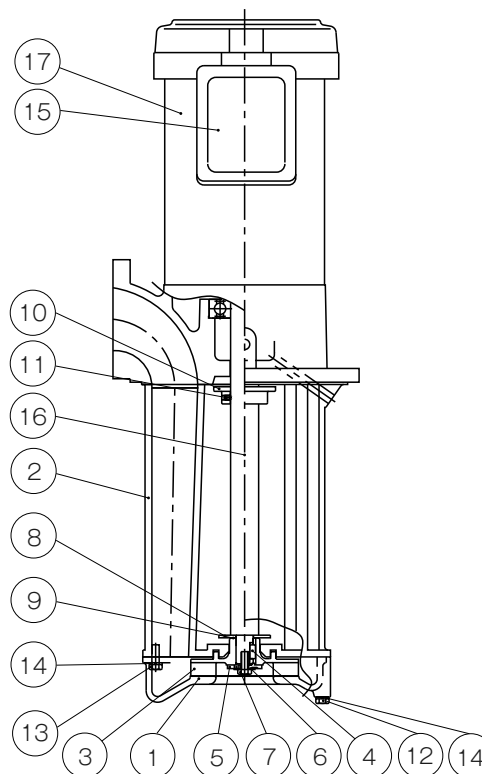
| No. | Part name            | Material                 | No. | Part name            | Material  |
|-----|----------------------|--------------------------|-----|----------------------|-----------|
| 1   | Inner casing         | FC150                    | 7   | Adjust seal          | BsP3-1/2H |
| 2   | Pump leg             | FC150                    | 8   | Small pan head screw | SU1S302   |
| 3   | Impeller             | Refer to the table below | 9   | Terminal box         | SPCC      |
| 4   | Small pan head screw | SS                       | 10  | Main shaft           | S45C      |
| 5   | Toothed washer       | SK5                      | 11  | Motor                | —         |
| 6   | Oil thrower          | SPCC                     |     |                      |           |

Note 1) For the types that end with "L," cabtyre cable is used.

Note 2) The materials in the table above are equivalents.

Note 3) Structure and other details are subject to change without notice.

### ● VKP115A (-e/4Z/7W)



| No. | Part name            | Material                     | No. | Part name                | Material |
|-----|----------------------|------------------------------|-----|--------------------------|----------|
| 1   | Inner casing         | FC150                        | 10  | Collar                   | FC150    |
| 2   | Pump leg             | FC150                        | 11  | Hexagon socket set screw | SS       |
| 3   | Impeller             | CAC407                       | 12  | Hexagon head bolt        | SUS302   |
| 4   | Key                  | S45C                         | 13  | Hexagon head bolt        | 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               | S45C     |
| 8   | Oil thrower          | SPHC                         | 17  | Motor                    | —        |
| 9   | Adjust seal          | BsP3-1/2H<br>Phosphor bronze |     |                          |          |

Note 1) The materials in the table above are equivalents.

Note 2) Structure and other details are subject to change without notice.

## Table of impeller materials

### VKP-A type

| Type              | Impeller material |
|-------------------|-------------------|
| 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) | CAC407            |

### VKP-H type

| Type         | Impeller material |
|--------------|-------------------|
| VKP055H      | CAC407            |
| VKP065H(-7W) | CAC407            |
| VKP075H(-7W) | CAC407            |
| VKP085H      | CAC407            |
| VKP095H(-7W) | CAC407            |

## Features

- ① The LFE-e model is an energy-saving pump with a Top Runner (equivalent to IE3) motor.  
(The mounting dimension is compatible with conventional models.)
- ② High-efficiency pumps designed for energy-saving coolant piping
- ③ Non-seal (mechanical seal-less) structure is adopted for excellent durability.

## Description of types

**LFE 32 A - 0.25 - 300 -e**

①

②

③

④

⑤

⑥

- ① Model
- ② Bore diameter
- ③ Viscosity of liquid:  
A: for low viscosity liquid
- ④ Output
- ⑤ Immersion depth
- ⑥ Motor efficiency  
None: Standard efficiency (equivalent to IE1)  
-e : Top Runner efficiency (equivalent to IE3)



Please note that the paint color, etc. of the actual unit may partially differ from the photo.

## Standard Specification

| Model                 |                               | LFE                                                                                                                                                                                                                                | LFE-e                                   |
|-----------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Used liquid           | Property of liquid            | Water-soluble coolant                                                                                                                                                                                                              |                                         |
|                       | Temperature                   | 0-60 °C (No frozen liquid)                                                                                                                                                                                                         |                                         |
|                       | Allowable kinematic viscosity | 1mm <sup>2</sup> /s                                                                                                                                                                                                                |                                         |
| Installation location |                               | Indoor<br>Ambient temperature: 0 to 40 °C, RH 85% or below<br>(no condensation). Height above sea level : 1000m or less.<br>Place not exposed to direct sunlight,<br>Place in an area free of corrosive or explosive gas or vapor. |                                         |
| Material              | Section/Discharge casing      | FC200                                                                                                                                                                                                                              |                                         |
|                       | Impeller                      | FCD450                                                                                                                                                                                                                             |                                         |
|                       | Main shaft                    | S35C                                                                                                                                                                                                                               |                                         |
| Shaft seal structure  |                               | Non-seal (mechanical seal-less)                                                                                                                                                                                                    |                                         |
| Motor                 | Power source                  | 3-phase 60Hz 200/220V                                                                                                                                                                                                              |                                         |
|                       | Output                        | 0.25~0.4kW                                                                                                                                                                                                                         | 0.6~0.75kW                              |
|                       | Type                          | Totally enclosed self-cooling motor                                                                                                                                                                                                | Totally enclosed fan-cooled indoor type |
|                       | Protection method             | IP43                                                                                                                                                                                                                               | IP44                                    |
|                       | Thermal class                 | F                                                                                                                                                                                                                                  |                                         |
|                       | Rating                        | Continuous                                                                                                                                                                                                                         |                                         |
|                       | Number of poles               | 2P                                                                                                                                                                                                                                 |                                         |
| Paint color           |                               | Munsell N1.5                                                                                                                                                                                                                       |                                         |

## Table of Consumable Parts

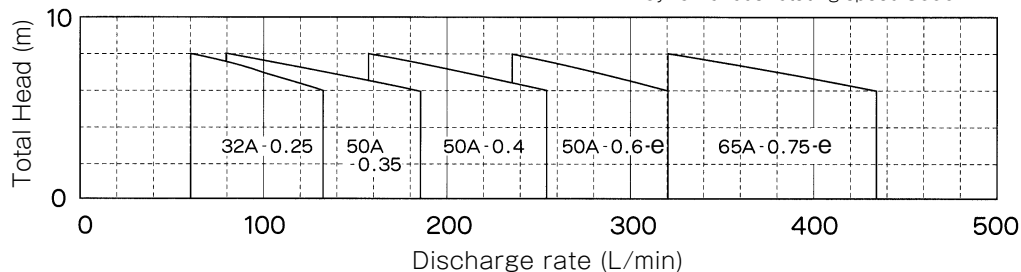
| Type              | O-ring                |                |                      | Bearing   |             | Oil seal |  |  |  |
|-------------------|-----------------------|----------------|----------------------|-----------|-------------|----------|--|--|--|
|                   | For discharge bushing | For liner ring | For companion flange | Load side | Unload side |          |  |  |  |
| LFE32A-0.25-300   | G35                   | G65            | G50                  | 6205ZZC3  | 6203ZZC3    | G25355   |  |  |  |
| LFE50A-0.35-300   |                       | G75            |                      |           |             |          |  |  |  |
| LFE50A-0.4-300    |                       |                |                      |           |             |          |  |  |  |
| LFE50A-0.6-300-e  |                       |                |                      |           |             |          |  |  |  |
| LFE65A-0.75-300-e |                       | G80            | G90                  |           |             |          |  |  |  |

## Selection chart

(Values at kinematic viscosity 1mm<sup>2</sup>/s, specific gravity 1)

60Hz only

Synchronous rotating speed 3600min<sup>-1</sup>

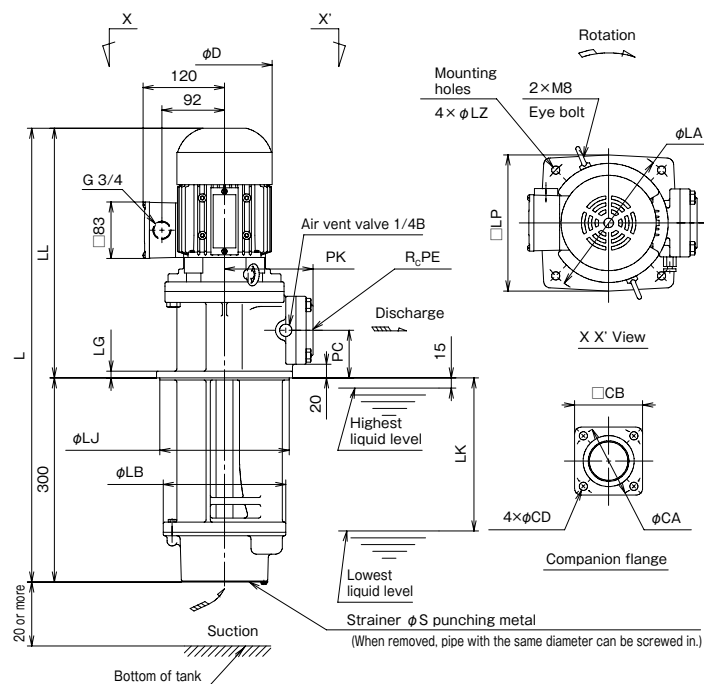


## Specification table

| Bore diameter (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           | 29.0/32.0            | 235-320                |                |
| 65                 |                | LFE65A-0.75-300-e |                   | 0.75        | 3.5/3.5           | 29.0/32.0            | 320-430                |                |

※ The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for protection device.

## ■ Assembly drawing

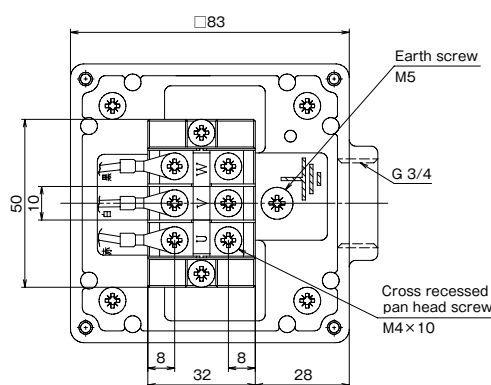


## ■ Dimensions

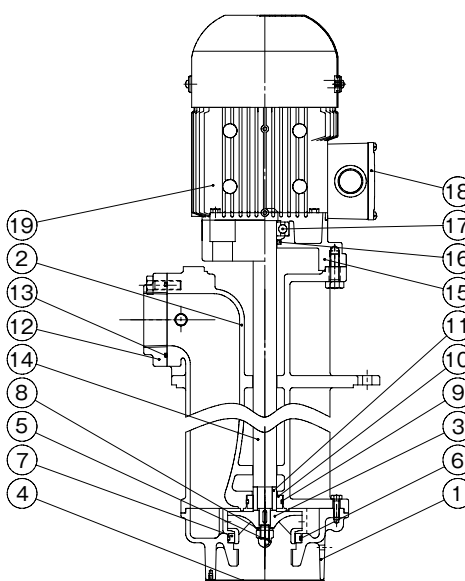
(Unit : mm)

| Bore diameter | 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 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   | Liner ring        | 1   | PTFE     |
| 8   | Washer            | 1   | SUS304   |
| 9   | O-ring            | 1   | NBR      |
| 10  | Discharge bushing | 1   | PTFE     |
| 11  | Shaft sleeve      | 1   | SUS304   |
| 12  | Companion flange  | 1   | FC200    |
| 13  | O-ring            | 1   | NBR      |
| 14  | Main shaft        | 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   |          |

\* SS400 for LFE65-e.

Note 1) The materials in the table above are equivalents.

Note 2) Structure and other details are subject to change without notice.

## Features

- ① Energy-saving pump with a Top Runner (equivalent to IE3) motor.
- ② Though it is small, it is specified for high-pressure.
- ③ Non-seal structure (mechanical seal-less) is adopted for excellent durability.
- ④ Special reliable resin is used in the main part of the pump.
- ⑤ The mounting dimension is compatible with conventional models.

## Description of types

**LHW 20 3 A 0.75 T -e**

①

②

③

④

⑤

⑥

⑦

- ① Model
- ② Bore diameter
- ③ Number of impellers
- ④ Viscosity of the liquid  
A : for low viscosity liquid
- ⑤ Output
- ⑥ ID code
- ⑦ Top Runner efficiency (equivalent to IE3)



Please note that the paint color, etc. of the actual unit may partially differ from the photo.

## Standard Specification

|                       |                                 |                                                                                                                                                                                                                           |
|-----------------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Used liquid           | Property of liquid              | Water-soluble coolant, cleaning liquid (weak alkaline)                                                                                                                                                                    |
|                       | Temperature                     | 0-60 °C (No frozen liquid)                                                                                                                                                                                                |
|                       | Allowable kinematic viscosity   | 1mm <sup>2</sup> /s                                                                                                                                                                                                       |
| Installation location |                                 | Indoor<br>Ambient temperature: 0 to 40 °C, RH 85% or below (no condensation), Height above sea level : 1000m or less. Place not exposed to direct sunlight. Place in an area free of corrosive or explosive gas or vapor. |
| Material              | Suction cover/ Discharge casing | FC200                                                                                                                                                                                                                     |
|                       | Intermediate casing             | ARLS                                                                                                                                                                                                                      |
|                       | Impeller                        | (Special polyamide resin reinforced with glass fiber, etc.)                                                                                                                                                               |
| Main shaft            |                                 | equivalent to SUS420J2                                                                                                                                                                                                    |
| Shaft seal 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                                                                                                                                                                                                                      |
|                       | Thermal class                   | B                                                                                                                                                                                                                         |
|                       | Rating                          | Continuous                                                                                                                                                                                                                |
| Number of poles       |                                 | 2P                                                                                                                                                                                                                        |
| Paint color           |                                 | Munsell N1 or N1.5                                                                                                                                                                                                        |

## 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        | 6205ZZC3  | 6203CXZZC3  | D20387   | VR20A  | G115                        | G110                          |
| 1.1         |           |             |          |        |                             |                               |

※ A set of replacement parts is available. Please contact the nearest sales office.

## Specification table

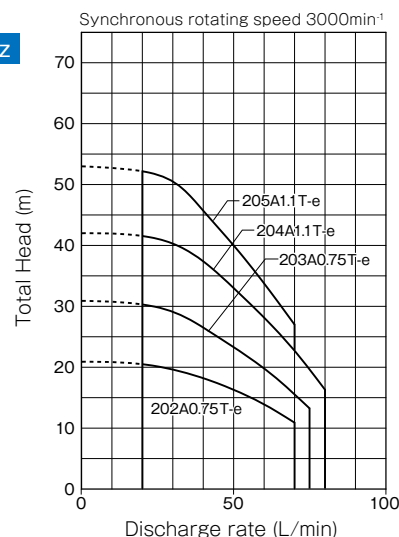
| Frequency (Hz) | Bore diameter (A) | Type           | Rated voltage (V) | Output (kW) | Rated current (A) | Starting current (A) | Discharge rate (L/min) | Total head (m) |
|----------------|-------------------|----------------|-------------------|-------------|-------------------|----------------------|------------------------|----------------|
| 50             | 20                | LHW202A0.75T-e | 200               | 0.75        | 3.2               | 24.6                 | 20-70                  | 20.4-10.8      |
|                |                   | LHW203A0.75T-e |                   | 0.75        | 3.2               | 24.6                 | 20-70                  | 30.2-15.3      |
|                |                   | LHW204A1.1T-e  |                   | 1.1         | 4.4               | 38.4                 | 20-80                  | 40.7-14.3      |
|                |                   | LHW205A1.1T-e  |                   | 1.1         | 4.4               | 38.4                 | 20-70                  | 50.2-25.6      |
| 60             | 20                | LHW202A0.75T-e | 200/220           | 0.75        | 3.3/3.1           | 23.4/28.3            | 20-80                  | 29.1-16.5      |
|                |                   | LHW203A0.75T-e |                   | 0.75        | 3.3/3.1           | 23.4/28.3            | 20-80                  | 42.6-22.4      |
|                |                   | LHW204A1.1T-e  |                   | 1.1         | 5.1/4.8           | 36.8/40.6            | 20-90                  | 57.6-23.4      |
|                |                   | LHW205A1.1T-e  |                   | 1.1         | 5.1/4.8           | 36.8/40.6            | 20-50                  | 70.8-59.7      |

※ The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for protection device.

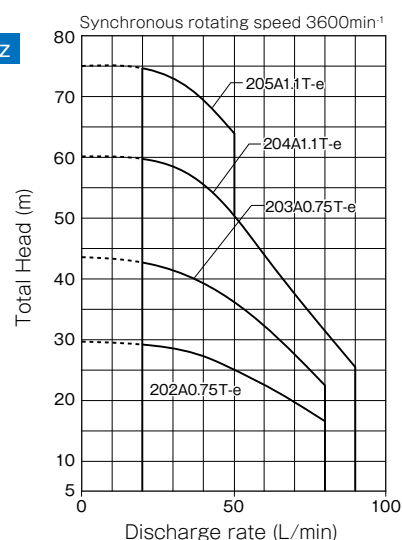
## Selection chart

(Values at kinematic viscosity 1mm<sup>2</sup>/s, specific gravity 1)  
(Based on JIS B 8301:2018 Grade 3B)

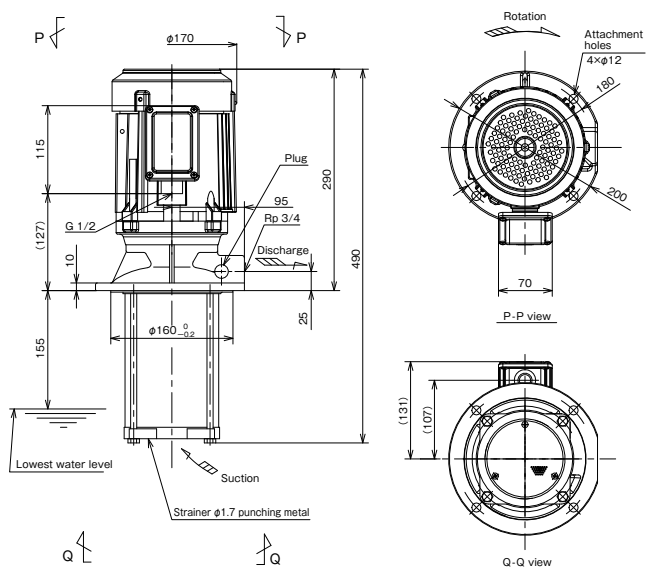
50Hz



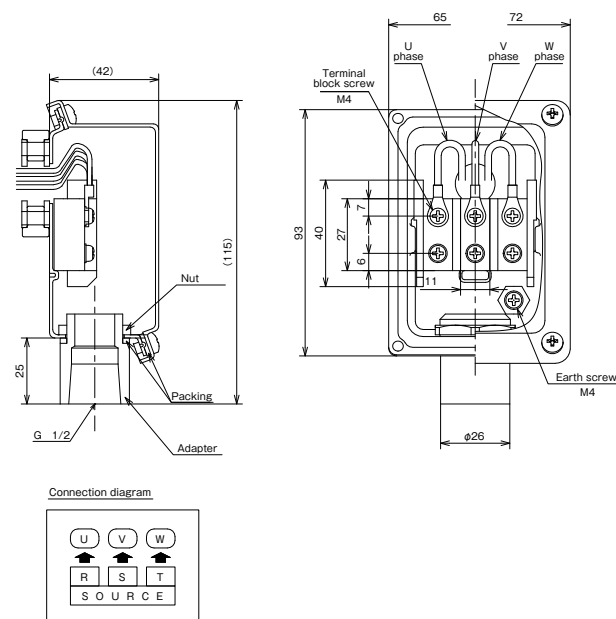
60Hz



## ■ Assembly drawing



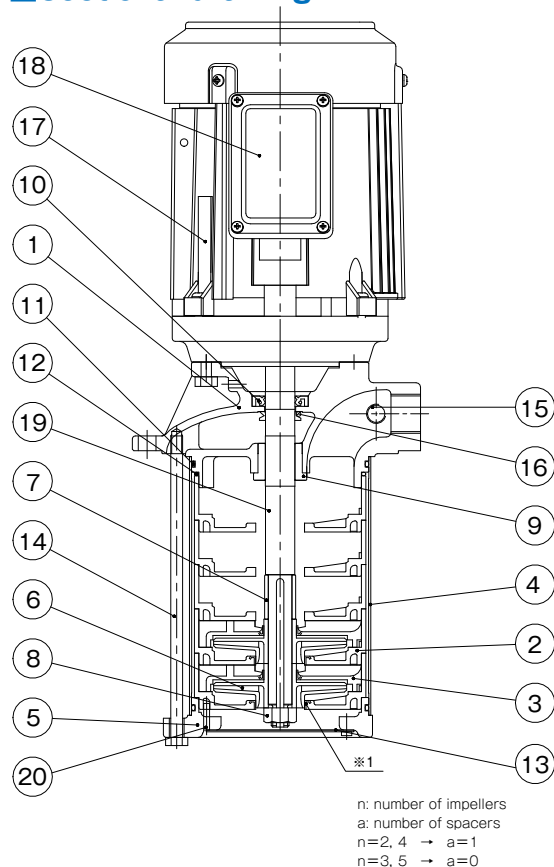
### ■ Detailed drawing of the Terminal Box



## ■ Dimensions

| Bore diameter | Type           | Approx. mass(kg) |
|---------------|----------------|------------------|
| 20            | LHW202A0.75T-e | 21               |
|               | LHW203A0.75T-e | 21               |
|               | LHW204A1.1T-e  | 22               |
|               | LHW205A1.1T-e  | 22               |

## ■ Sectional drawing



| No. | Part name           | Qty | Material        |
|-----|---------------------|-----|-----------------|
| 1   | Discharge casing    | 1   | FC200           |
| 2   | Intermediate casing | 5   | ARLS            |
| 3   | Guide vane          | n   | 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 bushing   | 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  | Plug                | 1   | SWCH            |
| 16  | V ring              | 1   | NBR             |
| 17  | Motor               | 1   | S35C + SUS420J2 |
| 18  | Terminal box        | 1   |                 |
| 19  | Motor shaft         | 1   |                 |
| 20  | Spring pin          | 1   |                 |

※1 The intermediate casing without an impeller does not come with a stainless steel ring.

Note 1) The materials in the table above are equivalents.

Note 2) Structure and other details are subject to change without notice.

## Features

- ① Strong and tough with high wear resistant structure and material.
- ② Non-seal (mechanical seal-less) structure is adopted.
- ③ High-pressure, large-capacity (Max. 500 L/min) pump allows expanded selection of head and discharge rate.
- ④ The lineup including the models complying with global standards by supporting efficiency and other regulations.  
 Japan : Top Runner efficiency  
 Europe : IE3 efficiency, CE marking (EU Directive)  
           RoHS Directive (2011/65/EU) , 10 substances restricted  
 USA : NEMA Premium efficiency (IE3 efficiency), UL standards (safety)  
 China : GB3 (GB18613-2020)  
 Korea : Energy Efficiency Label and Standard Program (IE3)
- ⑤ 2 options for immersion length are available (excluding VKD111AA-□).



Please note that the paint color, etc. of the actual unit may partially differ from the photo.

## Description of types

### VKD 15 2 A D -e

①      ②      ③      ④      ⑤      ⑥

- ① Model
- ② Output 11:0.75kW, 13:1.5kW, 14:2.2kW, 15:3.0kW
- ③ Series number 1 : Standard leg, long leg  
2 : Standard leg (shaft seal structure changed)
- ④ Phase A : 3-phase
- ⑤ Number of impellers, immersion length [standard leg: 260mm (2.2kW or less) /300 mm(3.0kW), Long leg: 400mm]  
 (A: 1 impeller/standard leg, B: 2 impellers/standard leg,  
 C: 3 impellers/standard leg, D: 4 impellers/standard leg,  
 G: 3 impellers/long leg, H: 4 impellers/long leg)
- ⑥ Motor efficiency/ voltage  
 None : Standard efficiency (equivalent to IE1) / Standard voltage  
 -e : Top Runner efficiency (equivalent to IE3) / Standard voltage  
 -4Z : Standard efficiency (equivalent to IE1) / Different voltage  
 -4Z-e : Top Runner efficiency (equivalent to IE3) / Different voltage  
 -7W : UL approved motor (NEMA Premium efficiency)  
 -KS : Equipped with Korea Efficiency Label and Standard Program compliant motor (equivalent to IE3)

## Global standards

| Type   | Standards/Regulations                                 | Output       |
|--------|-------------------------------------------------------|--------------|
|        |                                                       | 0.75kW-3.0kW |
| VKD    | IE1 equivalent                                        | ●            |
|        | CE Marking<br>EU energy efficiency                    | ●            |
| VKD-e  | Top Runner Efficiency<br>(IE3 equivalent)             | ●            |
|        | CE Marking<br>EU energy efficiency                    | ●            |
|        | GB3(GB18613-2020)                                     | ●※1          |
| VKD-7W | UL Standards (safety)<br>NEMA Premium efficiency      | ●            |
| VKD-KS | Energy Efficiency Label and<br>Standard Program (IE3) | ●            |

※1 GB certification label is attached as exclusive for GB standard. ● : Compliant

## Standard Specification

|                       |                               |                                                                                                                                                                                                                              |
|-----------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Used liquid           | Property of liquid            | Grinding liquid, cutting liquid, etc., after primary treatment※1                                                                                                                                                             |
|                       | Temperature                   | -20 to 40 ° C (No frozen liquid)                                                                                                                                                                                             |
|                       | Allowable kinematic viscosity | 75mm <sup>2</sup> /s※2                                                                                                                                                                                                       |
| Installation location |                               | Indoor<br>Ambient temperature: -20 to 40 ° C, RH 85% or below (no condensation). Height above sea level : 1000m or less. Place not exposed to direct sunlight. Place in an area free of corrosive or explosive gas or vapor. |
| Material              | Pump leg                      | FC200                                                                                                                                                                                                                        |
|                       | Casing                        | FC200                                                                                                                                                                                                                        |
|                       | Impeller                      | FC200                                                                                                                                                                                                                        |
|                       | Main shaft                    | S45C                                                                                                                                                                                                                         |
| Shaft seal structure  |                               | Non-seal (mechanical seal-less)                                                                                                                                                                                              |
| Motor                 | Power source                  | 3-phase 50/60/60Hz 200/200/220V※3                                                                                                                                                                                            |
|                       | Type                          | Totally enclosed fan-cooled indoor type                                                                                                                                                                                      |
|                       | Protection method             | IP54                                                                                                                                                                                                                         |
|                       | Thermal class                 | F※4                                                                                                                                                                                                                          |
|                       | Rating                        | Continuous                                                                                                                                                                                                                   |
|                       | Number of poles               | 2P                                                                                                                                                                                                                           |
| Standard              |                               | IEC60034-1 CE Marking※5                                                                                                                                                                                                      |
| Paint color           |                               | Munsell N1                                                                                                                                                                                                                   |

※1 Take note that special liquid such as water, printing liquid or acid liquid cannot be used. Contact us for other special liquid (ceramic, etc.).

※2 -7W type is 1mm<sup>2</sup>/s. In case of using the liquid with kinematic viscosity exceeding 1mm<sup>2</sup>/s, please contact us separately.

※3 NEMA Premium efficiency (IE3), UL Standards (safety): 60Hz 208/230/460V Korea Energy Efficiency Label and Standard Program (IE3): 60Hz 220/380V, GB18613-2020: 3-phase 50Hz 200V, 50Hz 380V

※4 Thermal class of -7W type is class A.  
VKD111AA(equivalent to IE1) and VKD132AB(131AF) is class B.

※5 Excluding -7W and -KS types.

## Table of Consumable Parts

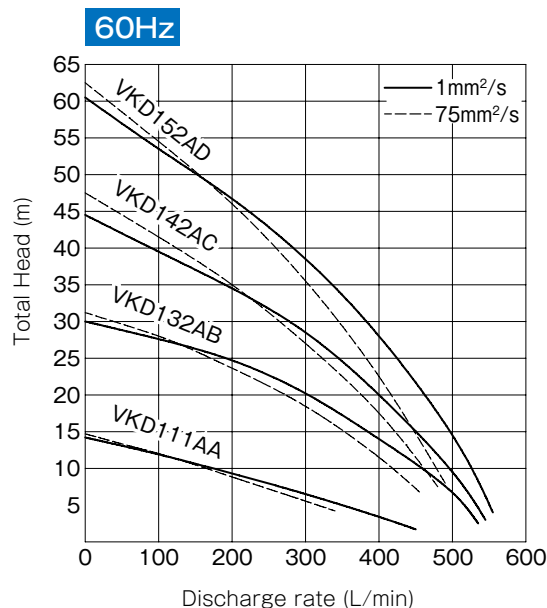
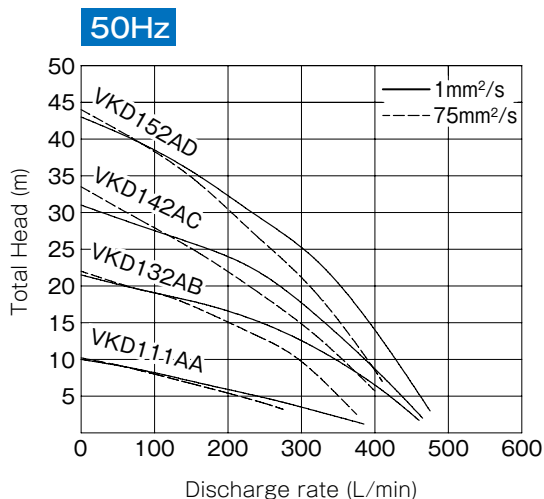
| Type        | Bearing   |             | Oil seal  |             | O-ring<br>oil thrower |
|-------------|-----------|-------------|-----------|-------------|-----------------------|
|             | Load side | Unload side | Load side | Unload side |                       |
| VKD111AA- □ | 6305ZZ    | 6203ZZ      | SC30457   | HM25385     | P25                   |
| VKD132AB- □ | 6306ZZ    | 6205ZZ      |           |             | P30                   |
| VKD142AC- □ |           |             |           |             |                       |
| VKD152AD- □ | 6307ZZ    |             |           |             |                       |
| VKD131AF- □ |           |             |           |             |                       |
| VKD141AG- □ |           |             |           |             |                       |
| VKD151AH- □ |           |             |           |             |                       |

### Selection chart

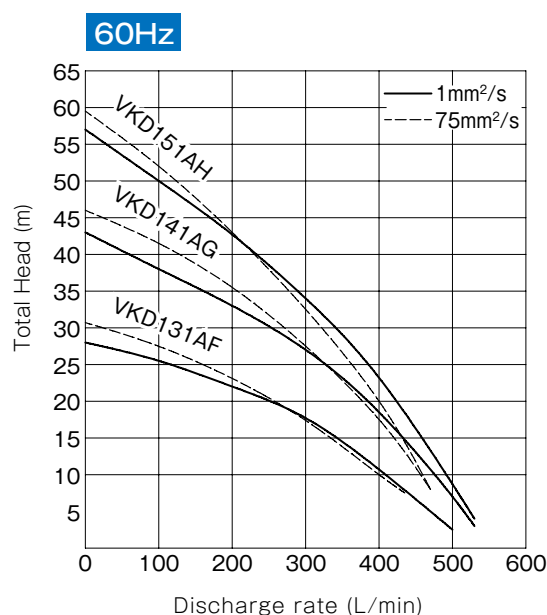
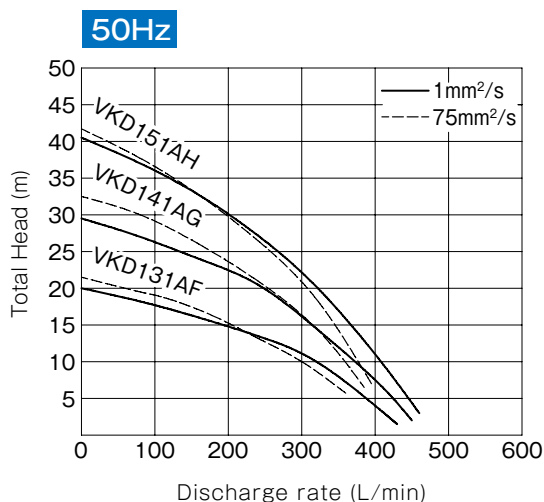
(Values at kinematic viscosity  $1\text{mm}^2/\text{s}$ , specific gravity 1)  
(Values at kinematic viscosity  $75\text{mm}^2/\text{s}$ , specific gravity 1)

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

#### ●Standard leg



#### ●Long leg



※ Above selection chart is also available for -e/-7W/-KS type, but the allowable kinematic viscosity for -7W type is  $1\text{mm}^2/\text{s}$ .  
In case of using the liquid with kinematic viscosity exceeding  $1\text{mm}^2/\text{s}$ , please contact us.  
Note) Take note that discharge rate varies considerably depending on the type and kinematic viscosity of liquid.

## ■ Specification table

| Immersion depth | 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-4Z   |             | 380/400/415       | 2.5/2.4/2.4       | 18.0/17.3/17.3       |                        |                | 400/440           | 2.5/2.5           | 15.6/17.4            |                        |                |  |  |
|                 | VKD111AA-e    |             | 200               | 4.7               | 34.0                 |                        |                | 200/220           | 5.0/4.9           | 32.5/36.0            |                        |                |  |  |
|                 | VKD111AA-4Z-e |             | 380/400/415       | 2.4/2.4/2.4       | 16.0/17.0/17.5       |                        |                | 400/440           | 2.5/2.5           | 16.3/18.0            |                        |                |  |  |
|                 | VKD111AA-7W   |             |                   |                   |                      |                        |                | 208/230/460       | 4.3/4.0/2.0       | 33.9/38.0/19.0       |                        |                |  |  |
|                 | VKD111AA-KS   |             |                   |                   |                      |                        |                | 220/380           | 5.2/3.0           | 31.5/18.2            |                        |                |  |  |
|                 | VKD132AB      | 1.5         | 200               | 7.6               | 51.4                 | 80-400                 | 20-7           | 200/220           | 10/9.2            | 45/49.6              | 100-500                | 28-7           |  |  |
|                 | VKD132AB-4Z   |             | 380/400/415       | 4.0/3.8/3.7       | 27.1/25.7/25.0       |                        |                | 400/440           | 5.0/4.6           | 22.5/24.8            |                        |                |  |  |
|                 | VKD132AB-e    |             | 200               | 7.6               | 49.0                 |                        |                | 200/220           | 9.1/7.9           | 45.5/50.0            |                        |                |  |  |
|                 | VKD132AB-4Z-e |             | 380/400/415       | 3.8/3.8/3.8       | 23.0/24.5/25.0       |                        |                | 400/440           | 4.6/4.6           | 22.8/25.0            |                        |                |  |  |
|                 | VKD132AB-7W   |             |                   |                   |                      |                        |                | 208/230/460       | 8.7/8.0/4.0       | 47.3/52.0/26.0       |                        |                |  |  |
|                 | VKD132AB-KS   |             |                   |                   |                      |                        |                | 220/380           | 9.0/5.2           | 45.7/26.4            |                        |                |  |  |
|                 | VKD142AC      | 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           |  |  |
|                 | VKD142AC-4Z   |             | 380/400/415       | 7.3/6.9/6.7       | 49.3/46.6/45.3       |                        |                | 400/440           | 6.8/6.6           | 40.4/44.4            |                        |                |  |  |
|                 | VKD142AC-e    |             | 200               | 12.0              | 78.0                 |                        |                | 200/220           | 12.1/10.7         | 72.0/79.0            |                        |                |  |  |
|                 | VKD142AC-4Z-e |             | 380/400/415       | 6.0/6.0/6.0       | 37.5/39.0/40.5       |                        |                | 400/440           | 6.1/6.1           | 36.0/39.5            |                        |                |  |  |
|                 | VKD142AC-7W   |             |                   |                   |                      |                        |                | 208/230/460       | 11.7/10.7/5.3     | 74.8/83.0/41.5       |                        |                |  |  |
|                 | VKD142AC-KS   |             |                   |                   |                      |                        |                | 220/380           | 12/6.9            | 75/43.3              |                        |                |  |  |
|                 | VKD152AD      | 3.0         | 200               | 16                | 92.5                 | 80-400                 | 40-14          | 200/220           | 17.3/16           | 80.7/88.9            | 100-500                | 54-14          |  |  |
|                 | VKD152AD-4Z   |             | 380/400/415       | 8.3/8.0/7.9       | 48.0/46.3/45.7       |                        |                | 400/440           | 8.7/8.0           | 40.6/44.5            |                        |                |  |  |
|                 | VKD152AD-e    |             | 200               | 14.5              | 120                  |                        |                | 200/220           | 16.2/14.6         | 115/126              |                        |                |  |  |
|                 | VKD152AD-4Z-e |             | 380/400/415       | 7.3/7.3/7.3       | 58.0/60.0/62.0       |                        |                | 400/440           | 8.1/8.1           | 57.5/63.0            |                        |                |  |  |
|                 | VKD152AD-7W   |             |                   |                   |                      |                        |                | 208/230/460       | 15.3/14.0/7.0     | 119/130/65.0         |                        |                |  |  |
|                 | VKD152AD-KS   |             |                   |                   |                      |                        |                | 220/380           | 16/9.2            | 117/67.3             |                        |                |  |  |
| 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-4Z   |             | 380/400/415       | 4.0/3.8/3.7       | 27.1/25.7/25.0       |                        |                | 400/440           | 5.0/4.6           | 22.5/24.8            |                        |                |  |  |
|                 | VKD131AF-e    |             | 200               | 7.6               | 49.0                 |                        |                | 200/220           | 9.1/7.9           | 45.5/50              |                        |                |  |  |
|                 | VKD131AF-4Z-e |             | 380/400/415       | 3.8/3.8/3.8       | 23.0/24.5/25.0       |                        |                | 400/440           | 4.6/4.6           | 22.8/25.0            |                        |                |  |  |
|                 | VKD131AF-7W   |             |                   |                   |                      |                        |                | 208/230/460       | 8.7/8.0/4.0       | 47.3/52.0/26.0       |                        |                |  |  |
|                 | VKD131AF-KS   |             |                   |                   |                      |                        |                | 220/380           | 9.0/5.2           | 45.7/26.4            |                        |                |  |  |
|                 | 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-4Z   |             | 380/400/415       | 7.3/6.9/6.7       | 49.3/46.6/45.3       |                        |                | 400/440           | 6.8/6.6           | 40.4/44.4            |                        |                |  |  |
|                 | VKD141AG-e    |             | 200               | 12                | 78.0                 |                        |                | 200/220           | 12.1/10.7         | 72.0/79.0            |                        |                |  |  |
|                 | VKD141AG-4Z-e |             | 380/400/415       | 6.0/6.0/6.0       | 37.5/39.0/40.5       |                        |                | 400/440           | 6.1/6.1           | 36.0/39.5            |                        |                |  |  |
|                 | VKD141AG-7W   |             |                   |                   |                      |                        |                | 208/230/460       | 11.7/10.7/5.3     | 74.8/83.0/41.5       |                        |                |  |  |
|                 | VKD141AG-KS   |             |                   |                   |                      |                        |                | 220/380           | 12/6.9            | 75.0/43.3            |                        |                |  |  |
|                 | 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-4Z   |             | 380/400/415       | 8.3/8.0/7.9       | 48.0/46.3/45.7       |                        |                | 400/440           | 8.7/8.0           | 40.6/44.5            |                        |                |  |  |
|                 | VKD151AH-e    |             | 200               | 14.5              | 120                  |                        |                | 200/220           | 16.2/14.6         | 115/126              |                        |                |  |  |
|                 | VKD151AH-4Z-e |             | 380/400/415       | 7.3/7.3/7.3       | 58.0/60.0/62.0       |                        |                | 400/440           | 8.1/8.1           | 57.5/63.0            |                        |                |  |  |
|                 | VKD151AH-7W   |             |                   |                   |                      |                        |                | 208/230/460       | 15.3/14.0/7.0     | 119/130/65.0         |                        |                |  |  |
|                 | VKD151AH-KS   |             |                   |                   |                      |                        |                | 220/380           | 16/9.2            | 117/67.3             |                        |                |  |  |

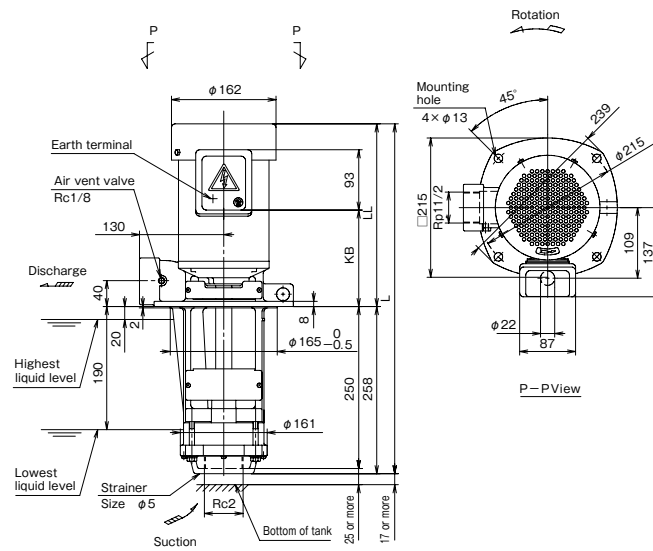
Note 1) Discharge rate and total head are the values obtained in the tests with a liquid viscosity of 1mm<sup>2</sup>/s (same as fresh water at normal temperature). Note that the pumps cannot be used with water.

Note 2) The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for protection device.

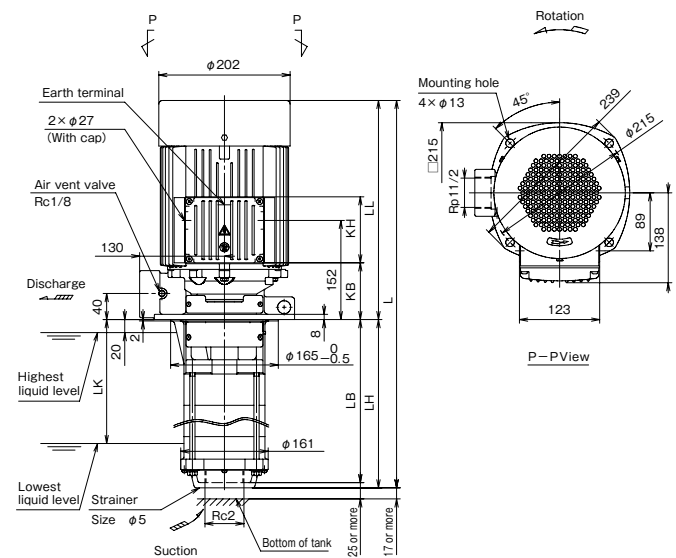
## ■ Assembly drawing

● **Standard leg**

**Fig.1**

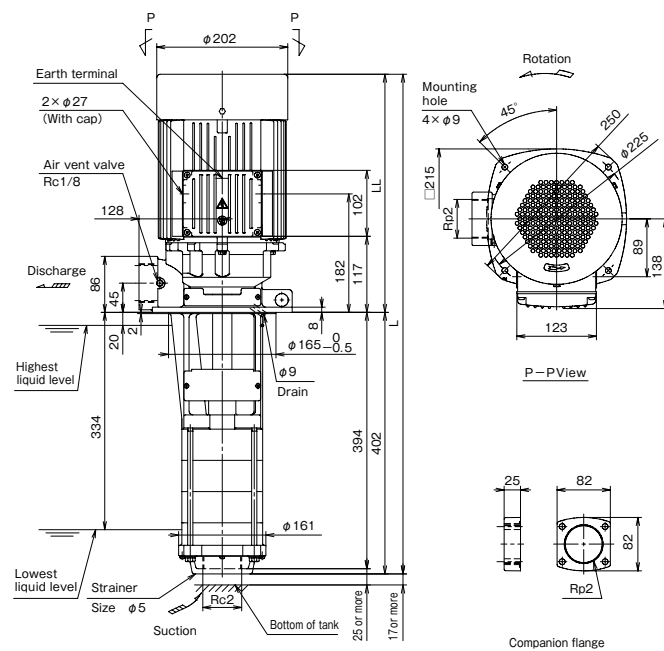


**Fig.2**



- Long leg

**Fig.3**



## ■ 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(-7W/-KS) | 1    | 149 |     |     |     |     | 282 | 540 | 25               |
| VKD132AB            | 2    | 87  | 102 | 250 | 258 | 190 | 336 | 594 | 34               |
| VKD132AB-e(-7W/-KS) | 2    | 87  | 102 | 250 | 258 | 190 | 336 | 594 | 35               |
| VKD142AC            | 2    | 87  | 102 | 250 | 258 | 190 | 336 | 594 | 36               |
| VKD142AC-e(-7W/-KS) | 2    | 87  | 102 | 250 | 258 | 190 | 336 | 594 | 37               |
| VKD152AD            | 2    | 87  | 102 | 298 | 306 | 238 | 336 | 642 | 39               |
| VKD152AD-e(-7W/-KS) | 2    | 87  | 102 | 298 | 306 | 238 | 356 | 662 | 45               |

※ Above specification is also available for different specification.

### ●Long leg

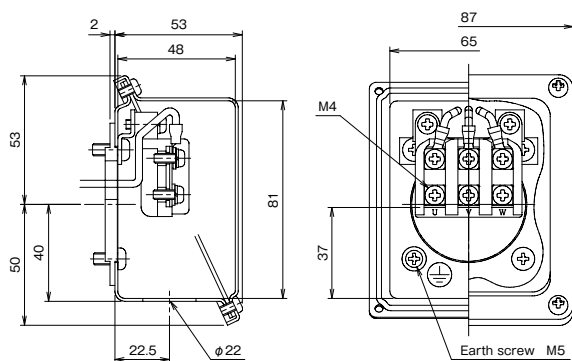
(Unit : mm)

| Type                | Fig. | LL  | L   | Approx. mass(kg) |
|---------------------|------|-----|-----|------------------|
| VKD131AF            | 3    | 366 | 768 | 40               |
| VKD131AF-e(-7W/-KS) | 3    | 366 | 768 | 41               |
| VKD141AG            | 3    | 366 | 768 | 43               |
| VKD141AG-e(-7W/-KS) | 3    | 366 | 768 | 44               |
| VKD151AH            | 3    | 366 | 768 | 44               |
| VKD151AH-e(-7W/-KS) | 3    | 386 | 788 | 50               |

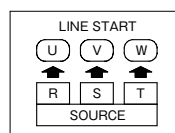
## ■ Detailed drawing of terminal box

### ●VKD111AA(-e)

#### ■Assembly drawing



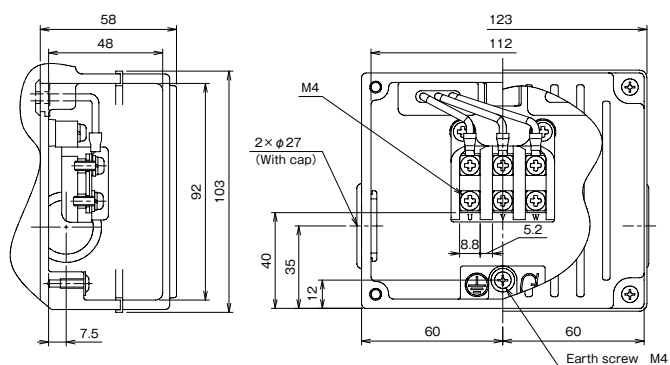
#### ■Connection diagram



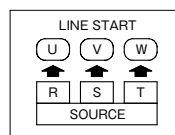
### ●VKD132AB(-e)/142AC(-e)/152AD(-e)

### ●VKD131AF(-e)/141AG(-e)/151AH(-e)

#### ■Assembly drawing



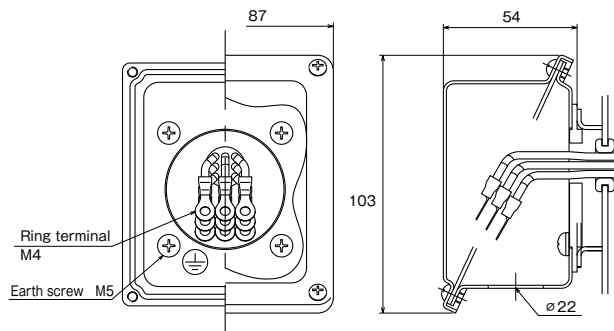
#### ■Connection diagram



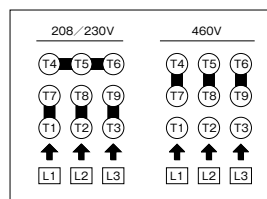
### ■ Detailed drawing of terminal box

#### ●VKD-7W 0.75kW

#### ■ Assembly drawing

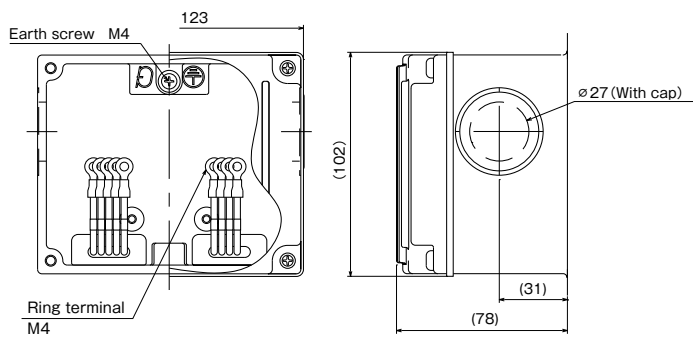


#### ■ Connection diagram

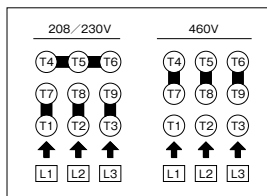


#### ●VKD-7W 1.5kW and above

#### ■ Assembly drawing

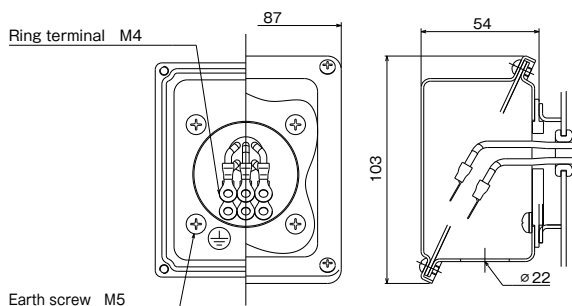


#### ■ Connection diagram

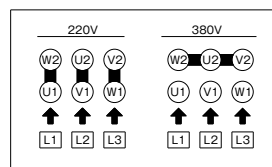


#### ●VKD-KS 0.75kW

#### ■ Assembly drawing

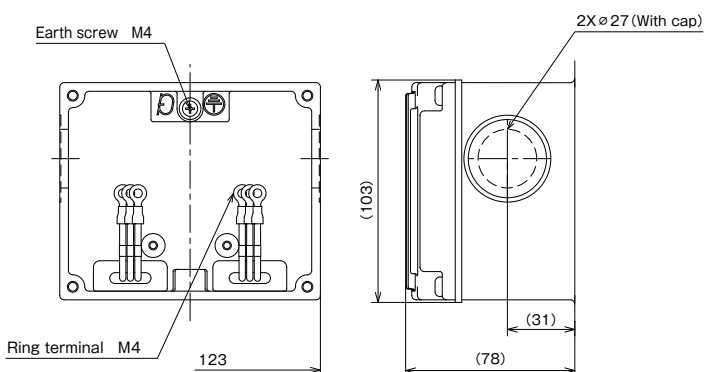


#### ■ Connection diagram

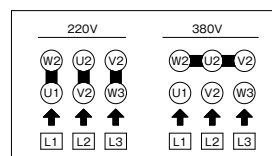


#### ●VKD-7W 1.5kW and above

#### ■ Assembly drawing

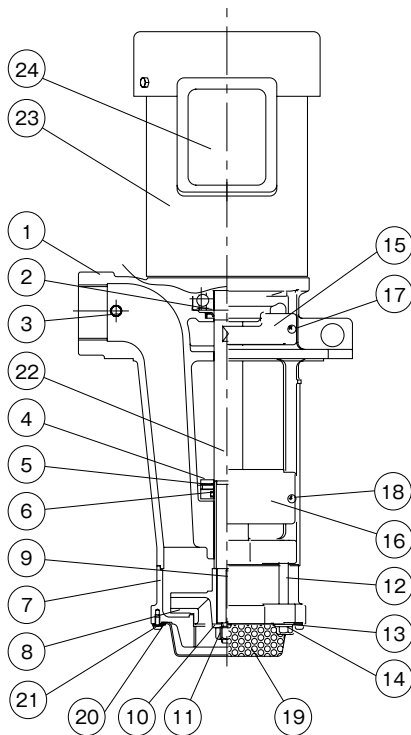


#### ■ Connection diagram



## Sectional drawing

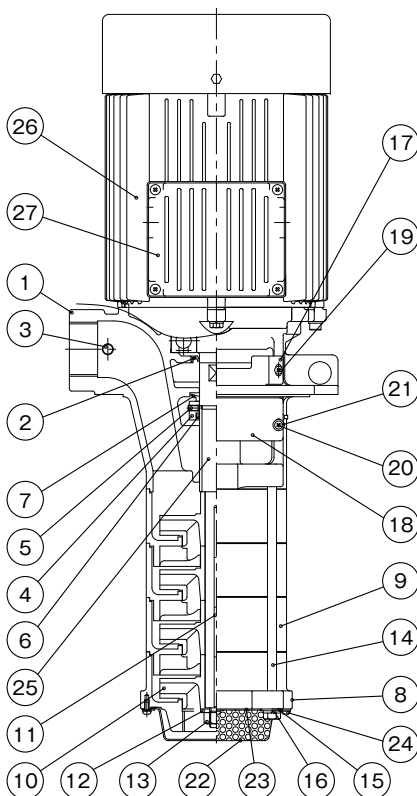
### ●VKD111AA (-□)



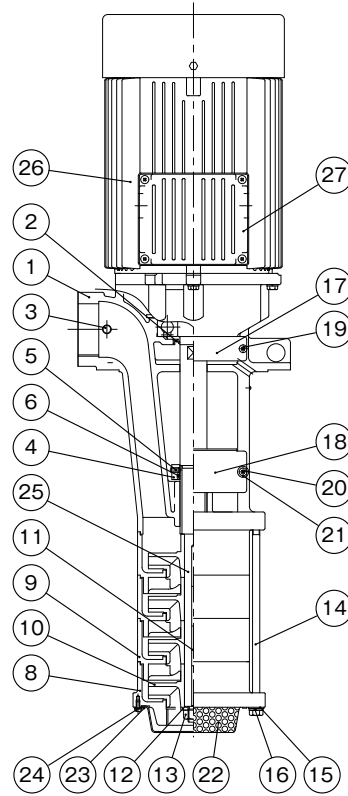
| No. | Part name                          | Material |
|-----|------------------------------------|----------|
| 1   | Pump leg                           | FC200    |
| 2   | Oil seal                           | NBR      |
| 3   | Air vent valve                     | SUS      |
| 4   | Oil thrower                        | 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  | Holding metal                      | SPCC     |
| 21  | Pan head screw with captive washer | SS       |
| 22  | Main shaft                         | S45C     |
| 23  | Motor                              | —        |
| 24  | Terminal box                       | SPCC     |

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

### ●VKD132AB (-□) / VKD142AC (-□) / VKD152AD (-□)



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



| No. | Part name                          | Material |
|-----|------------------------------------|----------|
| 1   | Pump leg                           | FC200    |
| 2   | Oil seal                           | NBR      |
| 3   | Air vent valve                     | SUS      |
| 4   | Oil thrower                        | SUS304   |
| 5   | Hexagon socket set screw           | SCM435   |
| 6   | O-ring                             | FPM      |
| 7   | Deflector <sup>Note 1</sup>        | NBR      |
| 8   | Casing                             | FC200    |
| 9   | Casing                             | FC200    |
| 10  | Impeller                           | FC200    |
| 11  | Key                                | S45C-D   |
| 12  | Plain washer                       | SPCC     |
| 13  | Hexagon nut                        | SS       |
| 14  | Fastening bolt                     | SS       |
| 15  | Plain washer                       | SPCC     |
| 16  | Spring washer                      | SWRH62   |
| 17  | Side plate                         | SPCC     |
| 18  | Side plate                         | SPCC     |
| 19  | Pan head screw                     | SS       |
| 20  | Pan head screw                     | SS       |
| 21  | Plain washer                       | SPCC     |
| 22  | Strainer                           | SPCC     |
| 23  | Holding metal                      | SPCC     |
| 24  | Pan head screw with captive washer | SS       |
| 25  | Main shaft                         | S45C-D   |
| 26  | Motor                              | —        |
| 27  | Terminal box                       | ADC12    |

Note 1) VKD132AB(-□), VKD142AC(-□), and VKD152AD(-□) only.

Note 2) The materials in the table above are equivalents.

Note 3) Structure and other details are subject to change without notice.

## Features

- ① An energy-saving pump with a Top Runner (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 types of immersion depth are available to suit various tank depths.
- ⑤ Can be used for high viscosity coolants (LFO□□B-e model).
- ⑥ Non-seal (mechanical seal-less) structure is adopted for excellent durability.
- ⑦ The lineup including the models complying with global standards by supporting efficiency and other regulations.  
Japan : Top Runner efficiency  
China : GB3 (GB18613-2020)
- ⑧ Mounting dimensions are compatible with conventional pumps.

## Description of types

### LFO 50 A - 0.75 - 35 -e

① ② ③ ④ ⑤ ⑥

- ① Model
- ② Bore diameter
- ③ Viscosity of the liquid A : for low viscosity liquid B : for high viscosity liquid
- ④ Output
- ⑤ Immersion depth 35:350mm 50:500mm
- ⑥ Motor efficiency Top Runner efficiency (equivalent to IE3)



Please note that the paint color, etc. of the actual unit may partially differ from the photo.

## 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 kinematic viscosity | LFO-A : 32mm <sup>2</sup> /s<br>LFO-B : 150mm <sup>2</sup> /s                                                                                                                                                                |
| Installation location |                               | Indoor<br>Ambient temperature: 0 to 40° C, RH 85% or below (no condensation).<br>Height above sea level : 1000m or less. Place not exposed to direct sunlight. Place in an area free of corrosive or explosive gas or vapor. |
| Material              | Casing                        | FC200                                                                                                                                                                                                                        |
|                       | Discharge pipe                | SGP + SS                                                                                                                                                                                                                     |
|                       | Impeller                      | FCD450                                                                                                                                                                                                                       |
|                       | Main shaft                    | 2.2 kW or less : S35C<br>3.7 kW or more : S45C                                                                                                                                                                               |
| Shaft seal structure  |                               | Non-seal (mechanical seal-less)                                                                                                                                                                                              |
| Motor                 | Power source                  | 3-phase 50/60/60Hz 200/200/220V 0.75~2.2kW<br>3-phase 50/60/60Hz 200/200/220V 3.7~5.5kW<br>3-phase 50/60/60Hz 400/400/440V                                                                                                   |
|                       | Type                          | Totally enclosed fan-cooled indoor type                                                                                                                                                                                      |
|                       | Protection method             | IP44                                                                                                                                                                                                                         |
|                       | Thermal class                 | F                                                                                                                                                                                                                            |
|                       | Rating                        | Continuous                                                                                                                                                                                                                   |
|                       | Number of poles               | 2P                                                                                                                                                                                                                           |
| Paint color           |                               | Munsell N1.5                                                                                                                                                                                                                 |

\*Do not use with freshwater.

## Global standards

| Type  | Standards/Regulations                  | Output       |
|-------|----------------------------------------|--------------|
|       |                                        | 0.75kW-5.5kW |
| LFO-e | Top Runner efficiency (IE3 equivalent) | ●            |
|       | GB3(GB18613-2020)                      | ●※1          |

※1 GB certification label is attached as exclusive for GB standard. ● : Compliant

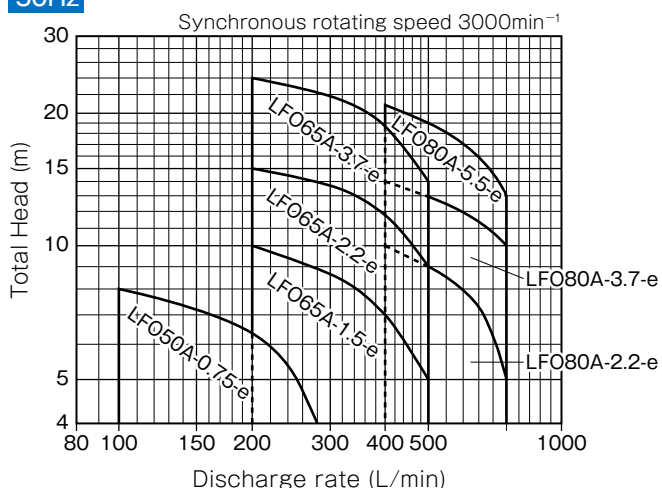
## Table of Consumable Parts

| 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   |                              |
|             | 65                 |           |             |          |                              |
| 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                          |

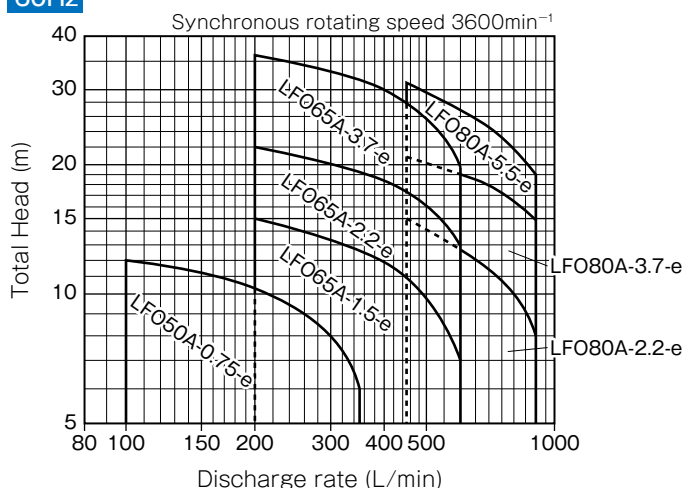
## Selection chart

●For low viscosity liquid (Values at kinematic viscosity 1mm<sup>2</sup>/s, specific gravity 1)

50Hz



60Hz



※Above selection chart may not be used depending on the kinematic viscosity and specific gravity of the liquid.  
※Use pumps within the selection range. Do not operate with flow rate below the selection range.

## Specification table

### ●For low viscosity liquid

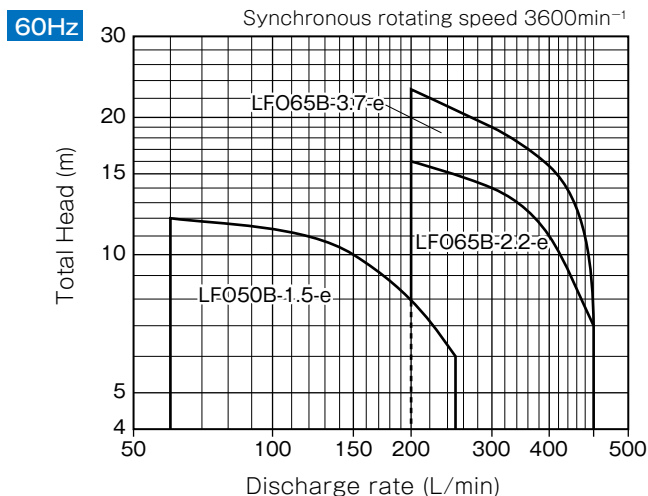
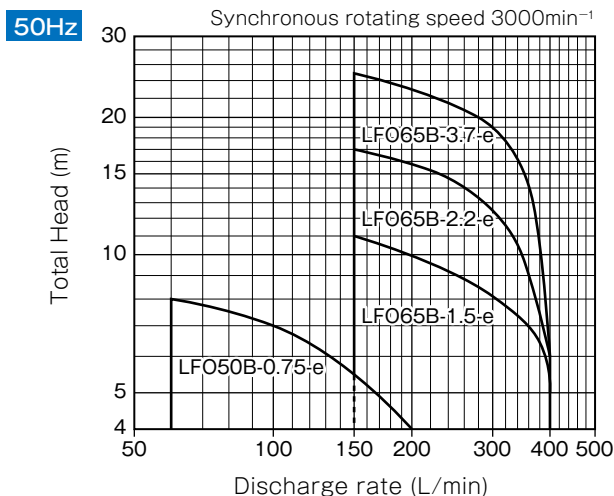
| Bore diameter (mm) | Frequency (Hz) | Type                 | Rated voltage (V)  | Output (kW) | Rated current (A)     | Starting current (A) | Discharge rate (L/min) | Total head (m) |
|--------------------|----------------|----------------------|--------------------|-------------|-----------------------|----------------------|------------------------|----------------|
| 50                 | 50             | LFO50A-0.75-35(50)-e | 200                | 0.75        | 4.0                   | 30                   | 100-280                | 8-4            |
| 65                 |                | LFO65A-1.5-35(50)-e  |                    | 1.5         | 6.5                   | 66                   | 200-500                | 10-5           |
|                    |                | LFO65A-2.2-35(50)-e  |                    | 2.2         | 9.3                   | 84                   |                        | 15-9           |
|                    |                | LFO65A-3.7-35(50)-e  | 200/400            | 3.7         | 14.7/7.3              | 134/67               |                        | 24-14          |
| 80                 |                | LFO80A-2.2-35(50)-e  | 200                | 2.2         | 9.3                   | 84                   | 400-750                | 10-5           |
|                    |                | LFO80A-3.7-35(50)-e  | 200/400            | 3.7         | 14.7/7.3              | 134/67               |                        | 14-10          |
|                    |                | LFO80A-5.5-35(50)-e  |                    | 5.5         | 22.0/11.5             | 155/77               |                        | 21-13          |
| 50                 | 60             | LFO50A-0.75-35(50)-e | 200/220            | 0.75        | 3.5/3.5               | 29/32                | 100-350                | 12-6           |
| 65                 |                | LFO65A-1.5-35(50)-e  |                    | 1.5         | 6.3/5.8               | 64/70                | 200-600                | 15-7           |
|                    |                | LFO65A-2.2-35(50)-e  |                    | 2.2         | 8.4/7.9               | 73/80                |                        | 22-13          |
|                    |                | LFO65A-3.7-35(50)-e  | 200/220<br>400/440 | 3.7         | 13.7/12.9<br>6.8/6.5  | 116/130<br>58/65     |                        | 36-20          |
| 80                 |                | LFO80A-2.2-35(50)-e  | 200/220            | 2.2         | 8.4/7.9               | 73/80                | 450-900                | 15-8           |
|                    |                | LFO80A-3.7-35(50)-e  | 200/220<br>400/440 | 3.7         | 13.7/12.9<br>6.8/6.5  | 116/130<br>58/65     |                        | 21-15          |
|                    |                | LFO80A-5.5-35(50)-e  |                    | 5.5         | 21.0/19.6<br>10.5/9.8 | 128/144<br>64/72     |                        | 31-19          |

Note 1) The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for protection device.

※Please inquire separately for China GB3 (GB18613-2020) compliant products.

## Selection chart

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



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

## Specification table

### ●For high-viscosity liquid

| Bore diameter<br>(mm) | Frequency<br>(Hz) | Type                 | Rated voltage<br>(V) | Output<br>(kW) | Rated current<br>(A) | Starting current<br>(A) | Discharge rate<br>(L/min) | Total head<br>(m) |
|-----------------------|-------------------|----------------------|----------------------|----------------|----------------------|-------------------------|---------------------------|-------------------|
| 50                    | 50                | LFO50B-0.75-35(50)-e | 200                  | 0.75           | 4.0                  | 30                      | 60-200                    | 8-4               |
| 65                    |                   | LFO65B-1.5-35(50)-e  |                      | 1.5            | 6.5                  | 66                      | 150-400                   | 11-5              |
|                       |                   | LFO65B-2.2-35(50)-e  |                      | 2.2            | 9.3                  | 84                      |                           | 17-6              |
|                       |                   | LFO65B-3.7-35(50)-e  | 200/400              | 3.7            | 14.7/7.3             | 134/67                  |                           | 25-6              |
| 50                    | 60                | LFO50B-1.5-35(50)-e  | 200/220              | 1.5            | 6.3/5.8              | 64/70                   | 60-250                    | 12-6              |
| 65                    |                   | LFO65B-2.2-35(50)-e  |                      | 2.2            | 8.4/7.9              | 73/80                   | 200-500                   | 16-7              |
|                       |                   | LFO65B-3.7-35(50)-e  | 200/220<br>400/440   | 3.7            | 13.7/12.9<br>6.8/6.5 | 116/130<br>58/65        |                           | 23-8              |

Note 1) The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for protection device.

※Please inquire separately for China GB3 (GB18613-2020) compliant products.

## ■ Assembly 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 Figure 2 and 3.

Fig.2

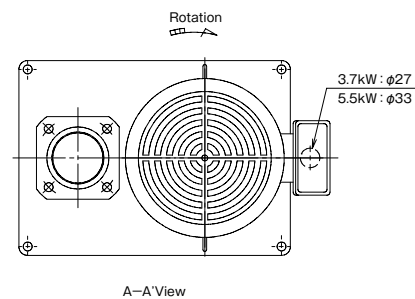


Fig.3

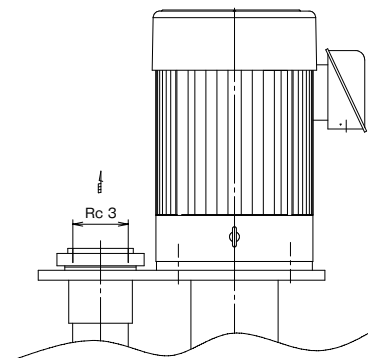
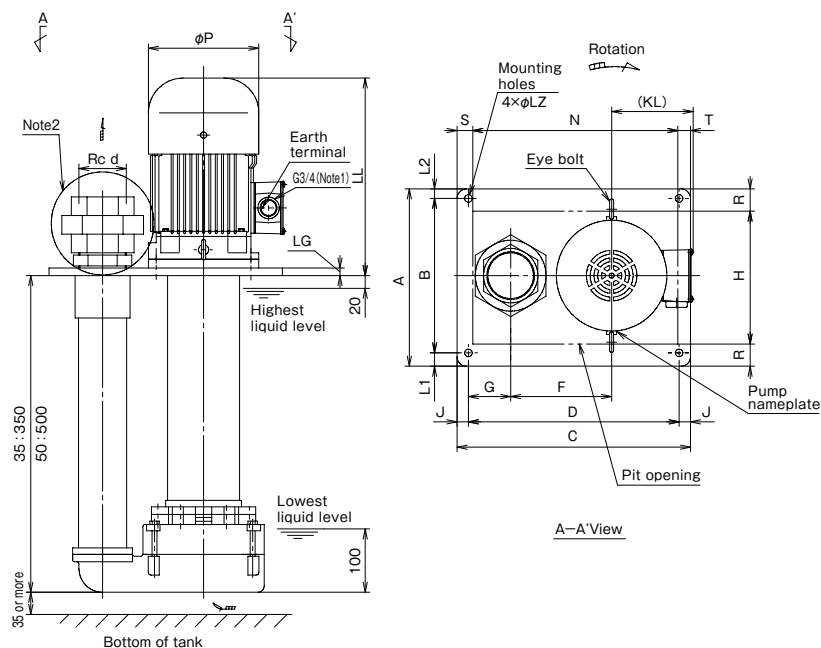


Fig.1



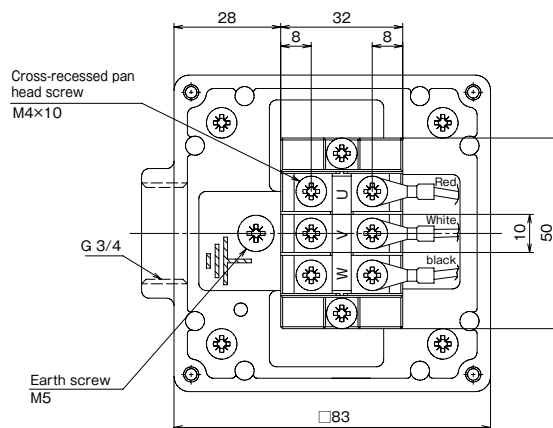
## ■ Dimensions

(Unit : mm)

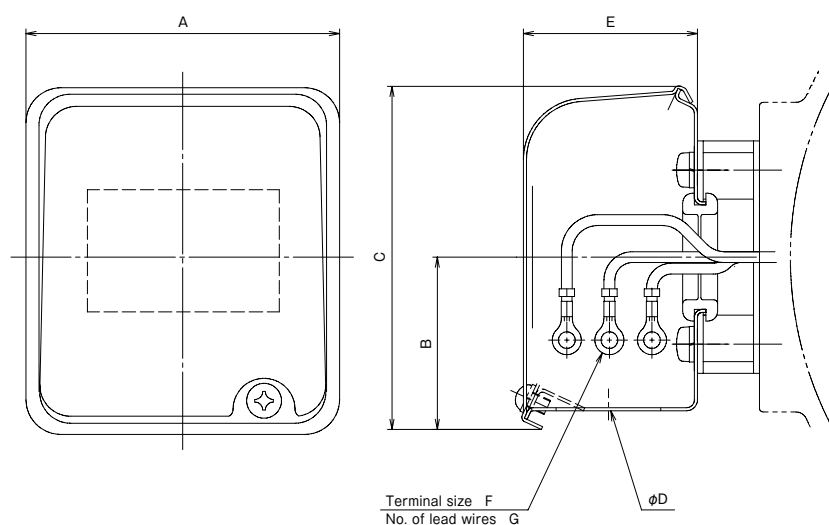
| Viscosity         | Frequency (Hz)    | Bore diameter      | Type               | d                 | A                  | B   | C   | D   | F   | G   | H   | L1  | L2  | J  | LG  | LL  | KL  | N   | P   | LZ  | R   | S  | T    | Approx. mass(kg) |
|-------------------|-------------------|--------------------|--------------------|-------------------|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|----|------|------------------|
| For low viscosity | 50/60             | 50                 | LFO50A-0.75-3550-e | 2                 | 260                | 224 | 300 | 264 | 145 | 37  | 170 | 18  | 18  | 18 | 12  | 252 | 115 | 270 | 140 | 12  | 45  | 10 | 20   | 3435             |
|                   |                   | 65                 | LFO65A-1.5-3550-e  | 2 1/2             | 280                | 244 | 370 | 334 | 160 | 67  | 210 | 18  | 18  | 18 | 12  | 312 | 130 | 325 | 175 | 12  | 35  | 25 | 20   | 5052             |
|                   |                   |                    | LFO65A-2.2-3550-e  | 2 1/2             | 310                | 280 | 420 | 390 | 180 | 85  | 250 | 15  | 15  | 15 | 12  | 312 | 130 | 360 | 175 | 15  | 30  | 30 | 30   | 5658             |
|                   |                   |                    | LFO65A-3.7-3550-e  | 2 1/2             | 310                | 280 | 420 | 390 | 180 | 85  | 250 | 15  | 15  | 15 | 12  | 377 | 165 | 360 | 235 | 15  | 30  | 30 | 30   | 8183             |
|                   |                   |                    | 80                 | LFO80A-2.2-3550-e | 3                  | 310 | 280 | 430 | 400 | 190 | 85  | 250 | 15  | 15 | 15  | 12  | 312 | 130 | 370 | 175 | 15  | 30 | 30   | 30               |
|                   |                   | LFO80A-3.7-3550-e  |                    | 3                 | 310                | 280 | 430 | 400 | 190 | 85  | 250 | 15  | 15  | 15 | 12  | 377 | 165 | 370 | 235 | 15  | 30  | 30 | 30   | 8284             |
|                   |                   | LFO80A-5.5-3550-e  |                    | 3                 | 330                | 300 | 460 | 430 | 215 | 85  | 270 | 15  | 15  | 15 | 16  | 434 | 212 | 400 | 264 | 15  | 30  | 30 | 30   | 109112           |
|                   |                   | For high viscosity | 50                 | 50                | LFO50B-0.75-3550-e | 2   | 260 | 224 | 300 | 264 | 145 | 37  | 170 | 18 | 18  | 18  | 12  | 252 | 115 | 270 | 140 | 12 | 45   | 10               |
| 60                | LFO50B-1.5-3550-e |                    | 2                  |                   | 260                | 224 | 300 | 264 | 145 | 37  | 170 | 18  | 18  | 18 | 12  | 312 | 130 | 270 | 175 | 12  | 45  | 10 | 22   | 4042             |
| 50                | 65                |                    | LFO65B-1.5-3550-e  | 2 1/2             | 280                | 244 | 370 | 334 | 160 | 67  | 210 | 18  | 18  | 18 | 12  | 312 | 130 | 325 | 175 | 12  | 35  | 25 | 20   | 5052             |
|                   |                   |                    | LFO65B-2.2-3550-e  | 2 1/2             | 310                | 280 | 420 | 390 | 180 | 85  | 250 | 15  | 15  | 15 | 12  | 312 | 130 | 360 | 175 | 15  | 30  | 30 | 30   | 5658             |
|                   |                   |                    | LFO65B-2.2-3550-e  | 2 1/2             | 280                | 244 | 370 | 334 | 160 | 67  | 210 | 18  | 18  | 18 | 12  | 312 | 130 | 325 | 175 | 12  | 35  | 25 | 20   | 5153             |
| 60                | 50/60             |                    | LFO65B-2.2-3550-e  | 2 1/2             | 280                | 244 | 370 | 334 | 160 | 67  | 210 | 18  | 18  | 18 | 12  | 312 | 130 | 325 | 175 | 12  | 35  | 25 | 20   | 5153             |
| LFO65B-3.7-3550-e |                   |                    | 2 1/2              | 310               | 280                | 420 | 390 | 180 | 85  | 250 | 15  | 15  | 15  | 12 | 377 | 165 | 360 | 235 | 15  | 30  | 30  | 30 | 8183 |                  |

## Detailed drawing of the terminal box

### ●Output 2.2 kW or less



### ●Output 3.7 kW or more

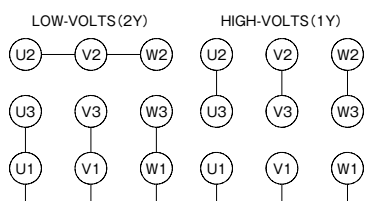


## Terminal box

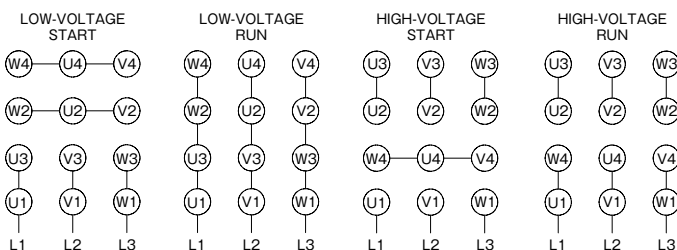
| Output (kW) | A   | B  | C   | D  | E  | F      | G  |
|-------------|-----|----|-----|----|----|--------|----|
| 3.7         | 82  | 45 | 89  | 27 | 46 | 1.25-4 | 9  |
| 5.5         | 126 | 68 | 133 | 33 | 60 | 2-5    | 12 |

## Connection diagram

### ●Output 3.7 kW

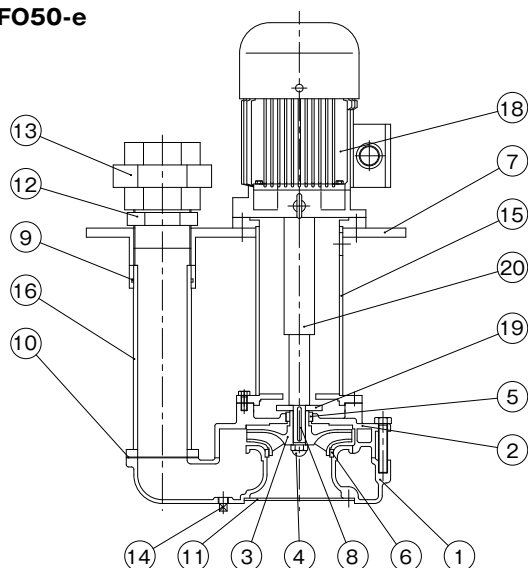


### ●Output 5.5 kW

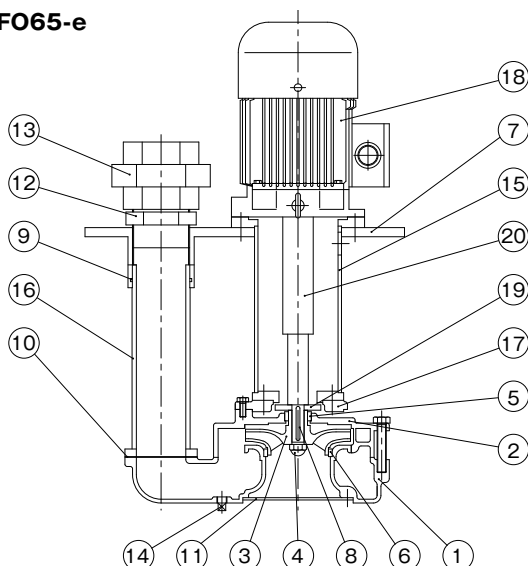


## Sectional drawing

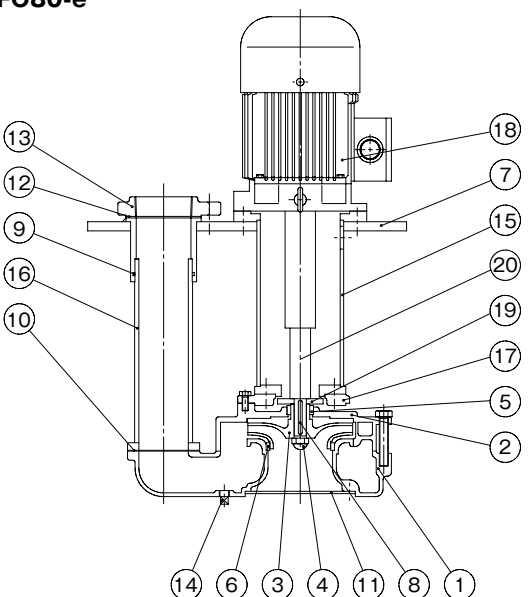
### ●LFO50-e



### ●LFO65-e



### ●LFO80-e



### ●LFO50-e/65-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 bushing                   | 1   | SUS304                                      |
| 6   | Liner 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 <sup>Note 1</sup> | 1   | FC200                                       |
| 18  | Motor                               | 1   |                                             |
| 19  | Deflector                           | 1   | SS400                                       |
| 20  | Main shaft                          | 1   | S35C(2.2kW or less)/<br>S45C(3.7kW or more) |

Note 1) LFO-65-e only.

Note 2) The materials in the table above are equivalents.

Note 3) Structure and other details are subject to change without notice.

### ●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 bushing | 1   | SUS304                                      |
| 6   | Liner 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  | Companion 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                                       |
| 20  | Main shaft        | 1   | S35C(2.2kW or less)/<br>S45C(3.7kW or more) |

Note 1) The materials in the table above are equivalents.

Note 2) Structure and other details are subject to change without notice.

## Features

- ① With a non-seal (mechanical seal-less) structure, it is easy to maintain.
- ② A motor is highly compact and light weight!!  
(Compared with our product: height of the motor is reduced by 20 mm).
- ③ The lineup including the models complying with global standards by supporting efficiency and other regulations.  
 Japan : Top Runner efficiency  
 Europe : IE3 efficiency, CE marking (EU Directive)  
           RoHS Directive (2011/65/EU), 10 restricted substances.  
 USA : NEMA Premium efficiency (IE3 efficiency), UL standards (safety)  
 Korea : Energy Efficiency Label and Standard Program (KC Standards, IE3)  
 Canada : CSA standard (efficiency), CSA standard (safety)  
 China : GB3 (GB18613-2020)
- ④ These are energy saving pumps with high efficiency impellers and IE3 efficiency motors.
- ⑤ Highly abrasion-resistant SiC bearings are adopted in the pump bearings.
- ⑥ Measures against air suction into the pump are taken when the liquid level lowers.
- ⑦ Energy-saving operation by inverter control (flow rate adjustment etc.,) is possible.



Please note that the paint color, etc. of the actual unit may partially differ from the photo.

## 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.

### The advantages of a non-seal pump

**1 No trouble such as coolant leaks.**

Helps cut down on running costs.

**2 Prevents air entrainment.**

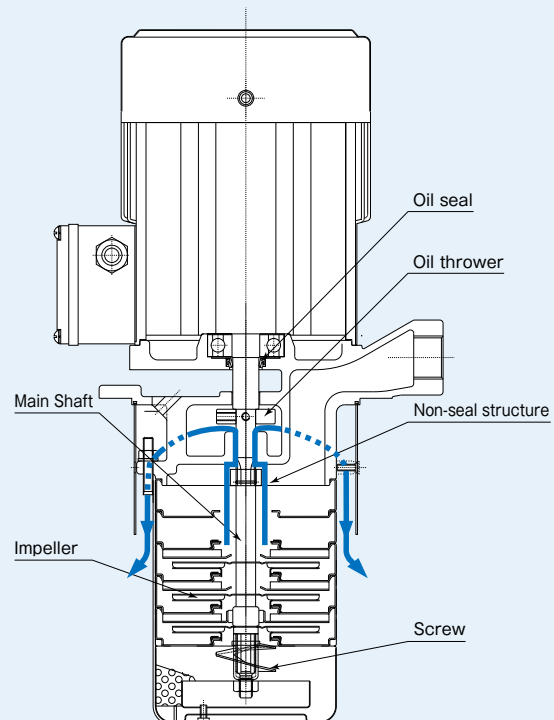
Reduces initial problems.

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

Enables a flexible operation system.

### ※What is non-seal structure?

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



## ■ Description of types

**LBK 2 - 60 / 3 -F -e**

① ② ③ ④ ⑤ ⑥

- ① Model  
 ② Nominal flow rate [m<sup>3</sup>/h]  
 ③ Number of casings ×10  
 ④ Number of impellers  
 ⑤ ID code H: available for high viscous liquid (models with 8 impellers only)  
 (\*Other models than the above can be used for high viscous liquid as standard.)  
 F: exclusive for 50Hz  
 None: Models other than the above  
 ⑥ Motor efficiency  
 -e : Top Runner efficiency (equivalent to IE3)  
 -7W: Equipped with NEMA Premium efficiency, UL/CSA certified motor (Output less than 0.75kW complies to safety standards only)  
 -KS: Equipped with Korea Energy Efficiency Label and Standard Program compliant motor (IE3)

## ■ Global standards

| Type   | Standards/Regulations                              | Output            |                 |        |                  |
|--------|----------------------------------------------------|-------------------|-----------------|--------|------------------|
|        |                                                    | 50Hz              |                 | 60Hz   |                  |
|        |                                                    | 0.35kW<br>-0.55kW | 0.8kW<br>-1.8kW | 0.55kW | 0.75kW<br>-2.2kW |
| LBK-e  | Top Runner efficiency (IE3 equivalent)             | —                 | ●               | —      | ●                |
|        | CE Marking                                         | ●                 | ●               | ●      | ●                |
|        | GB3(GB18613-2020)                                  | ●                 | ●※1             | X      |                  |
| LBK-7W | NEMA Premium efficiency                            | X                 |                 | —      | ●                |
|        | UL Standards (safety)                              |                   |                 | ●      | ●                |
|        | Canada CSA standard (efficiency)                   |                   |                 | —      | ●                |
|        | Canada CSA standard (safety)                       |                   |                 | ●      | ●                |
| LBK-KS | Energy Efficiency Label and Standard Program (IE3) | X                 |                 | —      | ●                |

※1 GB certification label is attached as exclusive for GB standard. ● : Compliant  
 — : Ineligible

## ■ Standard Specification

| Used liquid                     | Property of liquid                | Grinding liquid, cutting liquid, etc. after secondary treatment※1                                                                                                                                                               |
|---------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | Temperature                       | -10 to 90 ° C (no frozen liquid)                                                                                                                                                                                                |
| Allowable kinematic viscosity※2 |                                   | 75mm <sup>2</sup> /S                                                                                                                                                                                                            |
| Installation location           |                                   | Indoor<br>Ambient temperature: -20 to 40 ° C, RH 85% or below (no condensation).<br>Height above sea level : 1000m or less. Place not exposed to direct sunlight. Place in an area free of corrosive or explosive gas or vapor. |
| Material                        | Discharge casing                  | FC200                                                                                                                                                                                                                           |
|                                 | Casing Outer sleeve               | SUS304                                                                                                                                                                                                                          |
|                                 | Suction casing                    | SUS304                                                                                                                                                                                                                          |
|                                 | Impeller                          | SUS304                                                                                                                                                                                                                          |
|                                 | Main shaft (motor side+pump side) | S45C+SUS431                                                                                                                                                                                                                     |
| Shaft seal structure            |                                   | Non-seal (mechanical seal-less)                                                                                                                                                                                                 |
| Motor                           | Type                              | Totally enclosed fan-cooled indoor type                                                                                                                                                                                         |
|                                 | Protection method                 | IP54                                                                                                                                                                                                                            |
|                                 | Power source                      | 3-phase 50/60/60Hz 200/200/230V※3                                                                                                                                                                                               |
|                                 | Thermal class                     | F※4                                                                                                                                                                                                                             |
|                                 | Number of poles                   | 2P                                                                                                                                                                                                                              |
| Paint color                     | Pump                              | Munsell N1                                                                                                                                                                                                                      |
|                                 | Motor                             | Black                                                                                                                                                                                                                           |

- ※1 If the liquid contains hard sludge, such as abrasive powder, ground powder, or ground diamond grains, the service life might be shortened. Please set up a filter (magnet filter or paper filter, etc.). Take note that special liquid such as water, printing liquid or acid liquid cannot be used. Contact us for other special liquid (pure water, alkali-acid liquid, ceramic, etc.).  
 ※2 Allowable kinematic viscosity for LBK2- □ /8-e is 1mm<sup>2</sup>/s.  
 Allowable kinematic viscosity of -7W type is 1mm<sup>2</sup>/s.  
 ※3 Korea Energy Efficiency Label and Standard Program / NEMA Premium efficiency (IE3 ), UL Standards (safety) : 3-phase 60Hz 200V-230V  
 GB18613-2020: 3-phase 50Hz 200V, 50Hz 380V  
 ※4 Thermal class of -7W type is class A.

## ■ Table of Consumable Parts

## ●-e type

| Frequency<br>[Hz] | Output<br>[kW] | Bearing   |             | Oil seal  |             |
|-------------------|----------------|-----------|-------------|-----------|-------------|
|                   |                | Load side | Unload side | Load side | Unload side |
| 50/60             | 0.35/0.55      | 6303ZZC3  | 6201ZZC3    | VC16244   | -           |
| 50/60             | 0.55/0.75      |           |             |           |             |
| 50/60             | 0.8/1.1        |           |             |           |             |
| 50                | 1.1            |           |             |           |             |
| 50/60             | 1.2/1.5        | 6205ZZC3  | 6304ZZC3    |           | VC20407     |
| 50/60             | 1.8/2.2        |           |             |           |             |

## ●-7W type

| Frequency<br>[Hz] | Output<br>[kW] | Bearing   |             | Oil seal  |             |
|-------------------|----------------|-----------|-------------|-----------|-------------|
|                   |                | Load side | Unload side | Load side | Unload side |
| 60                | 0.55           | 6303ZZC3  | 6201ZZC3    | VC16244   | -           |
| 60                | 0.75           |           |             |           |             |
| 60                | 1.1            |           |             |           |             |
| 60                | 1.5            | 6205ZZC3  | 6304ZZC3    |           | VC20407     |
| 60                | 2.2            |           |             |           |             |

## ●-KS type

| Frequency<br>[Hz] | Output<br>[kW] | Bearing   |             | Oil seal  |             |
|-------------------|----------------|-----------|-------------|-----------|-------------|
|                   |                | Load side | Unload side | Load side | Unload side |
| 60                | 0.75           | 6303ZZC3  | 6201ZZC3    | VC16244   | -           |
| 60                | 1.1            |           |             |           |             |
| 60                | 1.5            | 6205ZZC3  | 6304ZZC3    |           | VC20407     |
| 60                | 2.2            |           |             |           |             |

## ■ Special specification

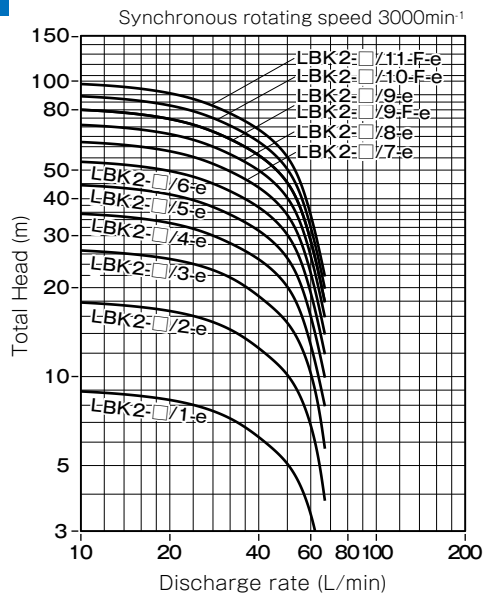
|                     |                                 |
|---------------------|---------------------------------|
| Motor modifications | Change of terminal box position |
|---------------------|---------------------------------|

## Selection chart

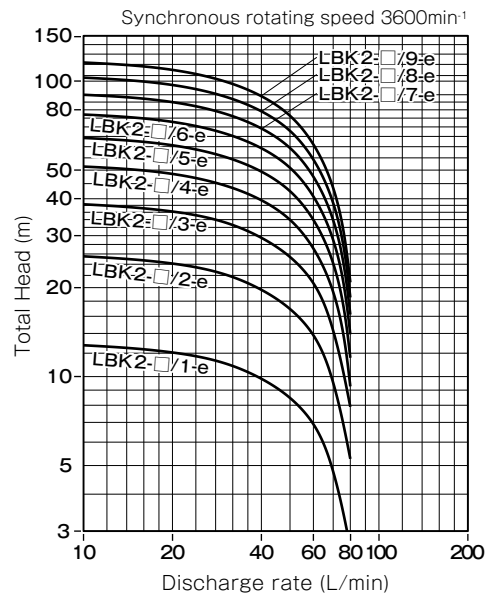
(Values at kinematic viscosity  $1\text{mm}^2/\text{s}$ , specific gravity 1)

### ●Pressure type LBK2

50Hz

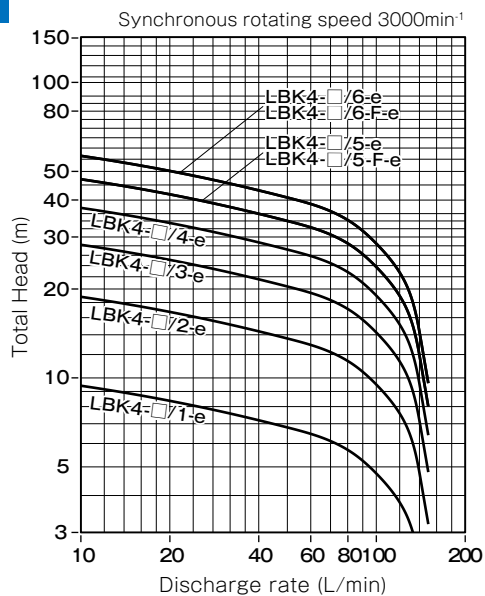


60Hz

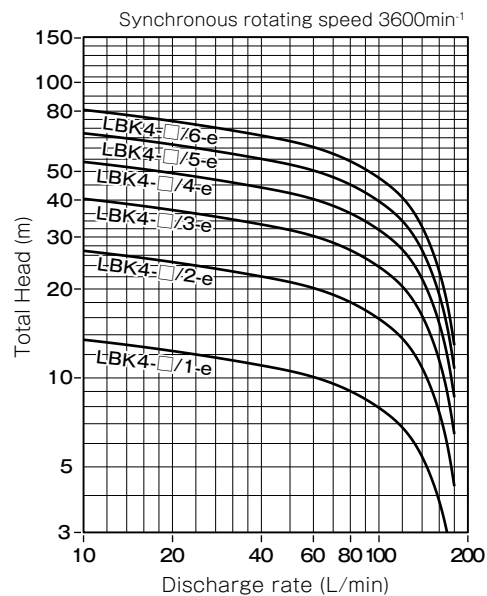


### ●Flow type LBK4

50Hz



60Hz



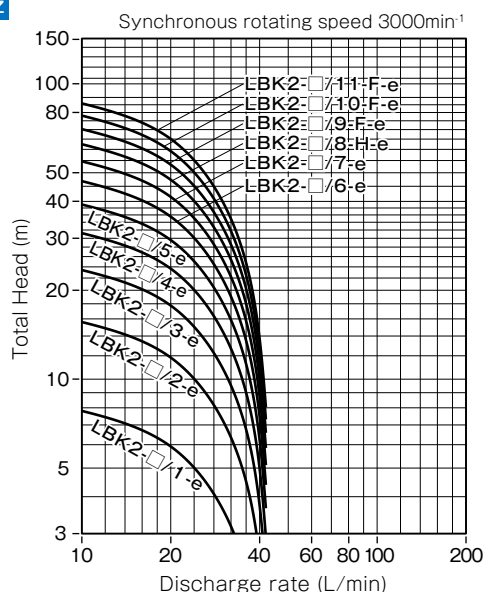
※ The specified flow may not be achieved in the large water volume range depending on the discharge pipe diameter.  
 ※ Above selection chart (-e) is also available for -KS/-7W type.

### Selection chart

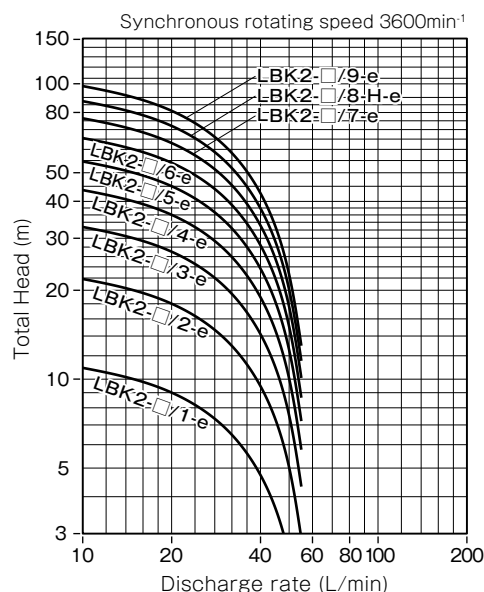
(Values at kinematic viscosity 75mm<sup>2</sup>/s, specific gravity 0.86)

#### ●Pressure type LBK2

50Hz

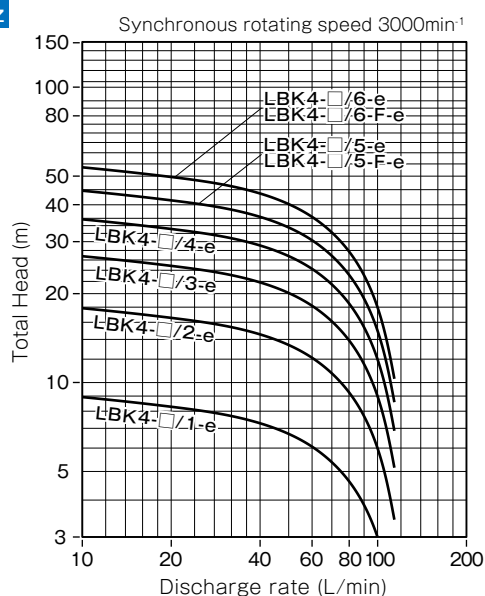


60Hz

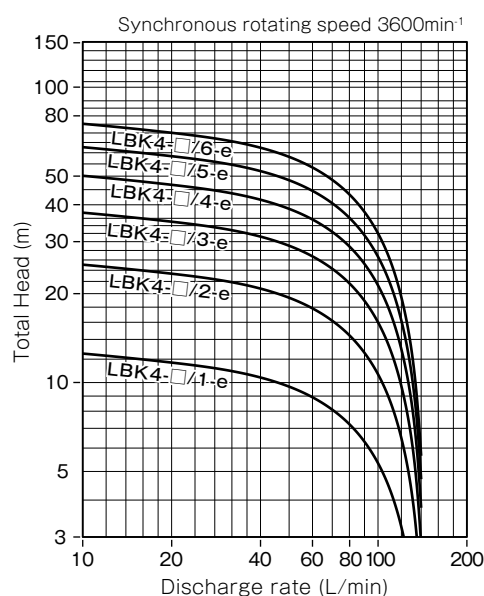


#### ●Flow type LBK4

50Hz



60Hz



※ The specified flow may not be achieved in the large water volume range depending on the discharge pipe diameter.

※ Above selection chart (-e) is also available for -KS/-7W type.

## ■ Specification table

### ●-e type

| Type          | 50Hz              |             |                   |                      |                        |                | 60Hz              |             |                   |                      |                        |                |
|---------------|-------------------|-------------|-------------------|----------------------|------------------------|----------------|-------------------|-------------|-------------------|----------------------|------------------------|----------------|
|               | Rated voltage (V) | Output (kW) | Rated current (A) | Starting current (A) | Discharge rate (L/min) | Total head (m) | Rated voltage (V) | Output (kW) | Rated current (A) | Starting current (A) | Discharge rate (L/min) | Total head (m) |
| LBK2-□/1-e    | 200               | 0.35        | 3.5               | 16.4                 | 42                     | 6              | 200/230           | 0.55        | 3.5/3.5           | 15.5/17.9            | 50                     | 8.4            |
| LBK2-□/2-e    | 200               | 0.35        | 3.5               | 16.4                 | 42                     | 12             | 200/230           | 0.55        | 3.5/3.5           | 15.5/17.9            | 50                     | 16.9           |
| LBK2-□/3-e    | 200               | 0.35        | 3.5               | 16.4                 | 42                     | 18             | 200/230           | 0.55        | 3.5/3.5           | 15.5/17.9            | 50                     | 25.4           |
| LBK2-□/4-e    | 200               | 0.55        | 3.9               | 26                   | 42                     | 24             | 200/230           | 0.75        | 4.1/4.1           | 25.0/28.5            | 50                     | 33.9           |
| LBK2-□/5-e    | 200               | 0.55        | 3.9               | 26                   | 42                     | 30             | 200/230           | 0.75        | 4.1/4.1           | 25.0/28.5            | 50                     | 42.4           |
| LBK2-□/6-e    | 200               | 0.8         | 6.3               | 37.9                 | 42                     | 36             | 200/230           | 1.1         | 6.0/6.0           | 35.3/40.6            | 50                     | 50.9           |
| LBK2-□/7-e    | 200               | 0.8         | 6.3               | 37.9                 | 42                     | 42             | 200/230           | 1.1         | 6.0/6.0           | 35.3/40.6            | 50                     | 59.3           |
| LBK2-□/8-e    | 200               | 0.8         | 6.3               | 37.9                 | 25                     | 62.5           | 200/230           | 1.1         | 6.0/6.0           | 35.3/40.6            | 30                     | 88.9           |
| LBK2-□/8-H-e  | 200               | 1.2         | 6.2               | 47                   | 42                     | 48             | 200/230           | 1.5         | 7.8/7.0           | 41.0/47.6            | 50                     | 67.8           |
| LBK2-□/9-e    | 200               | 1.2         | 6.2               | 47                   | 42                     | 54             | 200/230           | 1.5         | 7.8/7.0           | 41.0/47.6            | 50                     | 76.3           |
| LBK2-□/9-F-e  | 200               | 1.1         | 6.2               | 35                   | 42                     | 54             | -                 | -           | -                 | -                    | -                      | -              |
| LBK2-□/10-F-e | 200               | 1.1         | 6.2               | 35                   | 42                     | 60             | -                 | -           | -                 | -                    | -                      | -              |
| LBK2-□/11-F-e | 200               | 1.1         | 6.2               | 35                   | 42                     | 66             | -                 | -           | -                 | -                    | -                      | -              |
| LBK4-□/1-e    | 200               | 0.35        | 3.5               | 16.4                 | 85                     | 5.5            | 200/230           | 0.55        | 3.5/3.5           | 15.5/17.9            | 100                    | 7.9            |
| LBK4-□/2-e    | 200               | 0.35        | 3.5               | 16.4                 | 85                     | 11             | 200/230           | 0.55        | 3.5/3.5           | 15.5/17.9            | 100                    | 15.9           |
| LBK4-□/3-e    | 200               | 0.55        | 3.9               | 26                   | 85                     | 16.5           | 200/230           | 0.75        | 4.1/4.1           | 25.0/28.5            | 100                    | 23.8           |
| LBK4-□/4-e    | 200               | 0.8         | 6.3               | 37.9                 | 85                     | 21.9           | 200/230           | 1.1         | 6.0/6.0           | 35.3/40.6            | 100                    | 31.7           |
| LBK4-□/5-e    | 200               | 1.2         | 6.2               | 47                   | 85                     | 27.4           | 200/230           | 1.5         | 7.8/7.0           | 41.0/47.6            | 100                    | 39.6           |
| LBK4-□/6-e    | 200               | 1.8         | 7.4               | 83                   | 85                     | 32.9           | 200/230           | 2.2         | 10.5/9.7          | 78.0/82.6            | 100                    | 47.6           |
| LBK4-□/5-F-e  | 200               | 1.1         | 6.2               | 35                   | 85                     | 27.4           | -                 | -           | -                 | -                    | -                      | -              |
| LBK4-□/6-F-e  | 200               | 1.1         | 6.2               | 35                   | 85                     | 32.9           | -                 | -           | -                 | -                    | -                      | -              |

Note 1) Discharge rate and total head are the values obtained in the test with a liquid viscosity of 1mm<sup>2</sup>/s (same as fresh water at normal temperature).

Note 2) The pump's current (current value listed on the pump nameplate) is the recommended current setting for protection device.

### ●-e (50Hz 380V)

| Type          | 50Hz              |             |                   |                      |                        |                |
|---------------|-------------------|-------------|-------------------|----------------------|------------------------|----------------|
|               | Rated voltage (V) | Output (kW) | Rated current (A) | Starting current (A) | Discharge rate (L/min) | Total head (m) |
| LBK2-□/1-e    | 380               | 0.35        | 1.7               | 9.1                  | 42                     | 6              |
| LBK2-□/2-e    | 380               | 0.35        | 1.7               | 9.1                  | 42                     | 12             |
| LBK2-□/3-e    | 380               | 0.35        | 1.7               | 9.1                  | 42                     | 18             |
| LBK2-□/4-e    | 380               | 0.55        | 2.2               | 14                   | 42                     | 24             |
| LBK2-□/5-e    | 380               | 0.55        | 2.2               | 14                   | 42                     | 30             |
| LBK2-□/6-e    | 380               | 0.8         | 2.9               | 17.2                 | 42                     | 36             |
| LBK2-□/7-e    | 380               | 0.8         | 2.9               | 17.2                 | 42                     | 42             |
| LBK2-□/8-e    | 380               | 0.8         | 2.9               | 17.2                 | 25                     | 62.5           |
| LBK2-□/8-H-e  | 380               | 1.2         | 3.6               | 31.9                 | 42                     | 48             |
| LBK2-□/9-e    | 380               | 1.2         | 3.6               | 31.9                 | 42                     | 54             |
| LBK2-□/9-F-e  | 380               | 1.1         | 3.6               | 19.6                 | 42                     | 54             |
| LBK2-□/10-F-e | 380               | 1.1         | 3.6               | 19.6                 | 42                     | 60             |
| LBK2-□/11-F-e | 380               | 1.1         | 3.6               | 19.6                 | 42                     | 66             |
| LBK4-□/1-e    | 380               | 0.35        | 1.7               | 9.1                  | 85                     | 5.5            |
| LBK4-□/2-e    | 380               | 0.35        | 1.7               | 9.1                  | 85                     | 11             |
| LBK4-□/3-e    | 380               | 0.55        | 2.2               | 14                   | 85                     | 16.5           |
| LBK4-□/4-e    | 380               | 0.8         | 2.9               | 17.2                 | 85                     | 21.9           |
| LBK4-□/5-e    | 380               | 1.2         | 3.6               | 31.9                 | 85                     | 27.4           |
| LBK4-□/6-e    | 380               | 1.8         | 4.1               | 42.7                 | 85                     | 32.9           |
| LBK4-□/5-F-e  | 380               | 1.1         | 3.6               | 19.6                 | 85                     | 27.4           |
| LBK4-□/6-F-e  | 380               | 1.1         | 3.6               | 19.6                 | 85                     | 32.9           |

Note 1) Discharge rate and total head are the values obtained in the test with a liquid viscosity of 1mm<sup>2</sup>/s (same as fresh water at normal temperature).

Note 2) The pump's current (current value listed on the pump nameplate) is the recommended current setting for protection device.

## ●-7W type

| Type          | 60Hz              |             |                   |                      |                        |                |
|---------------|-------------------|-------------|-------------------|----------------------|------------------------|----------------|
|               | Rated voltage (V) | Output (kW) | Rated current (A) | Starting current (A) | Discharge rate (L-min) | Total head (m) |
| LBK2-□-1-7W   | 200-230           | 0.55        | 3.1-3.1           | 15.5-17.9            | 50                     | 8.4            |
| LBK2-□-2-7W   | 200-230           | 0.55        | 3.1-3.1           | 15.5-17.9            | 50                     | 16.9           |
| LBK2-□-3-7W   | 200-230           | 0.55        | 3.1-3.1           | 15.5-17.9            | 50                     | 25.4           |
| LBK2-□-4-7W   | 200-230           | 0.75        | 4.0-4.0           | 25.0/28.5            | 50                     | 33.9           |
| LBK2-□-5-7W   | 200-230           | 0.75        | 4.0-4.0           | 25.0/28.5            | 50                     | 42.4           |
| LBK2-□-6-7W   | 200-230           | 1.1         | 5.9-5.9           | 35.3/40.6            | 50                     | 50.9           |
| LBK2-□-7-7W   | 200-230           | 1.1         | 5.9-5.9           | 35.3/40.6            | 50                     | 59.3           |
| LBK2-□-8-7W   | 200-230           | 1.1         | 5.9-5.9           | 35.3/40.6            | 30                     | 88.9           |
| LBK2-□-8-H-7W | 200-230           | 1.5         | 6.4-5.8           | 41.0-47.6            | 50                     | 67.8           |
| LBK2-□-9-7W   | 200-230           | 1.5         | 6.4-5.8           | 41.0-47.6            | 50                     | 76.3           |
| LBK4-□-1-7W   | 200-230           | 0.55        | 3.1-3.1           | 15.5-17.9            | 100                    | 7.9            |
| LBK4-□-2-7W   | 200-230           | 0.55        | 3.1-3.1           | 15.5-17.9            | 100                    | 15.9           |
| LBK4-□-3-7W   | 200-230           | 0.75        | 4.0-4.0           | 25.0/28.5            | 100                    | 23.8           |
| LBK4-□-4-7W   | 200-230           | 1.1         | 5.9-5.9           | 35.3/40.6            | 100                    | 31.7           |
| LBK4-□-5-7W   | 200-230           | 1.5         | 6.4-5.8           | 41.0-47.6            | 100                    | 39.6           |
| LBK4-□-6-7W   | 200-230           | 2.2         | 9.1-8.5           | 78.0-82.6            | 100                    | 47.6           |

Note 1) Discharge rate and total head are the values obtained in the test with a liquid viscosity of 1mm<sup>2</sup>/s (same as fresh water at normal temperature).

Note 2) The pump's current (current value listed on the pump nameplate) is the recommended current setting for protection device.

## ●-KS type

| Type          | 60Hz              |             |                   |                      |                        |                |
|---------------|-------------------|-------------|-------------------|----------------------|------------------------|----------------|
|               | Rated voltage (V) | Output (kW) | Rated current (A) | Starting current (A) | Discharge rate (L-min) | Total head (m) |
| LBK2-□-4-KS   | 200-230           | 0.75        | 4.1-4.1           | 25.0-28.5            | 50                     | 33.9           |
| LBK2-□-5-KS   | 200-230           | 0.75        | 4.1-4.1           | 25.0-28.5            | 50                     | 42.4           |
| LBK2-□-6-KS   | 200-230           | 1.1         | 6.0-6.0           | 35.3-40.6            | 50                     | 50.9           |
| LBK2-□-7-KS   | 200-230           | 1.1         | 6.0-6.0           | 35.3-40.6            | 50                     | 59.3           |
| LBK2-□-8-KS   | 200-230           | 1.1         | 6.0-6.0           | 35.3-40.6            | 30                     | 88.9           |
| LBK2-□-8-H-KS | 200-230           | 1.5         | 7.8-7.0           | 41.0-47.6            | 50                     | 67.8           |
| LBK2-□-9-KS   | 200-230           | 1.5         | 7.8-7.0           | 41.0-47.6            | 50                     | 76.3           |
| LBK4-□-3-KS   | 200-230           | 0.75        | 4.1-4.1           | 25.0-28.5            | 100                    | 23.8           |
| LBK4-□-4-KS   | 200-230           | 1.1         | 6.0-6.0           | 35.3-40.6            | 100                    | 31.7           |
| LBK4-□-5-KS   | 200-230           | 1.5         | 7.8-7.0           | 41.0-47.6            | 100                    | 39.6           |
| LBK4-□-6-KS   | 200-230           | 2.2         | 10.5-9.7          | 78.0-82.6            | 100                    | 47.6           |

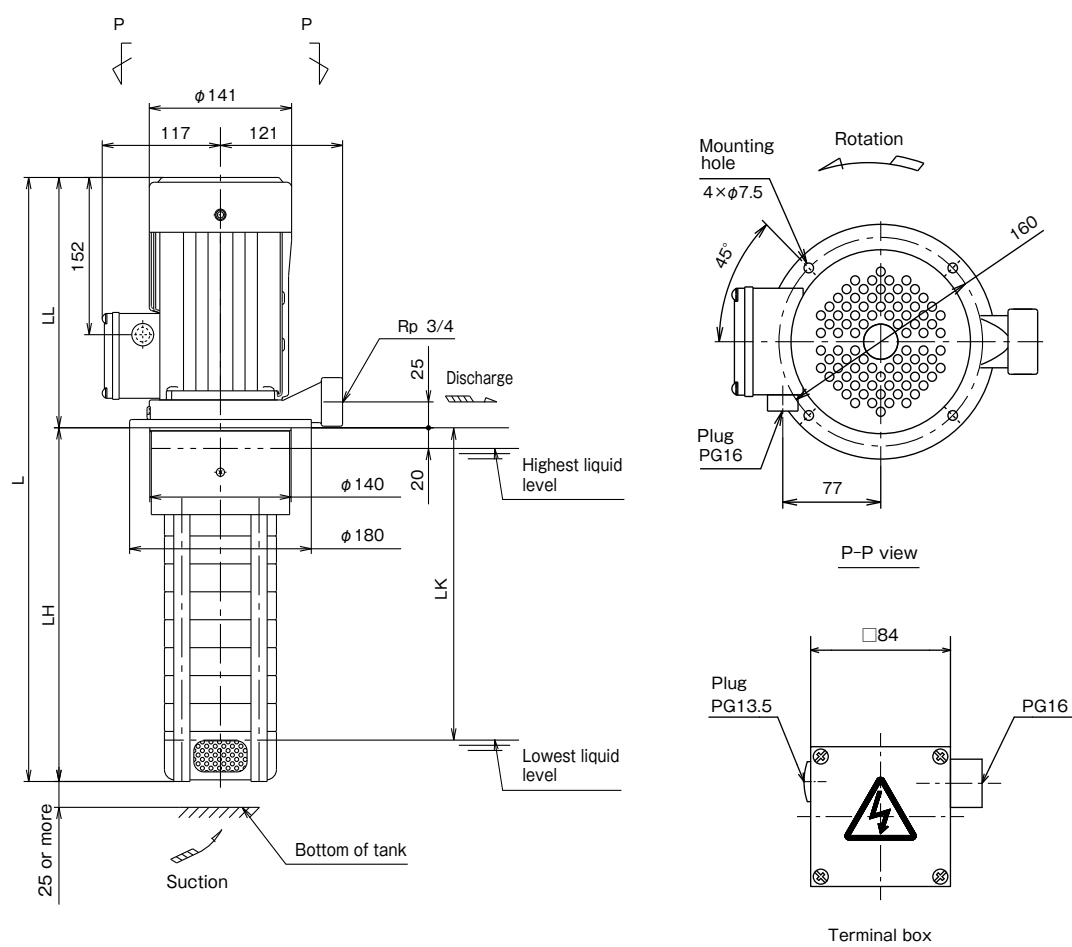
Note 1) Discharge rate and total head are the values obtained in the test with a liquid viscosity of 1mm<sup>2</sup>/s (same as fresh water at normal temperature).

Note 2) The pump's current (current value listed on the pump nameplate) is the recommended current setting for protection device.

## ■ Assembly drawing

**Fig.1**

●Output: 1.1kW (50/60Hz) or less



## ■ Dimensions

(Unit : mm)

| Type            | Fig. | L   | LL  | LH  | LK  | Approx.<br>mass (kg) |
|-----------------|------|-----|-----|-----|-----|----------------------|
| LBK2-30/1-□     | 1    | 354 | 201 | 153 | 113 | 15                   |
| LBK2-40/1-□     | 1    | 372 | 201 | 171 | 131 | 15                   |
| LBK2-50/1-□     | 1    | 390 | 201 | 189 | 149 | 15                   |
| LBK2-60/1-□     | 1    | 408 | 201 | 207 | 167 | 15                   |
| LBK2-30/2-□     | 1    | 354 | 201 | 153 | 113 | 15                   |
| LBK2-40/2-□     | 1    | 372 | 201 | 171 | 131 | 15                   |
| LBK2-50/2-□     | 1    | 390 | 201 | 189 | 149 | 15                   |
| LBK2-60/2-□     | 1    | 408 | 201 | 207 | 167 | 15                   |
| LBK2-70/2-□     | 1    | 426 | 201 | 225 | 185 | 15                   |
| LBK2-80/2-□     | 1    | 444 | 201 | 243 | 203 | 16                   |
| LBK2-90/2-□     | 1    | 462 | 201 | 261 | 221 | 16                   |
| LBK2-100/2-□    | 1    | 480 | 201 | 279 | 239 | 16                   |
| LBK2-110/2-□    | 1    | 498 | 201 | 297 | 257 | 16                   |
| LBK2-30/3-□     | 1    | 354 | 201 | 153 | 113 | 15                   |
| LBK2-40/3-□     | 1    | 372 | 201 | 171 | 131 | 15                   |
| LBK2-50/3-□     | 1    | 390 | 201 | 189 | 149 | 15                   |
| LBK2-60/3-□     | 1    | 408 | 201 | 207 | 167 | 15                   |
| LBK2-70/3-□     | 1    | 426 | 201 | 225 | 185 | 15                   |
| LBK2-80/3-□     | 1    | 444 | 201 | 243 | 203 | 16                   |
| LBK2-90/3-□     | 1    | 462 | 201 | 261 | 221 | 16                   |
| LBK2-100/3-□    | 1    | 480 | 201 | 279 | 239 | 16                   |
| LBK2-110/3-□    | 1    | 498 | 201 | 297 | 257 | 16                   |
| LBK2-40/4-■     | 1    | 412 | 241 | 171 | 131 | 15                   |
| LBK2-50/4-■     | 1    | 430 | 241 | 189 | 149 | 15                   |
| LBK2-60/4-■     | 1    | 448 | 241 | 207 | 167 | 15                   |
| LBK2-70/4-■     | 1    | 466 | 241 | 225 | 185 | 15                   |
| LBK2-80/4-■     | 1    | 484 | 241 | 243 | 203 | 16                   |
| LBK2-90/4-■     | 1    | 502 | 241 | 261 | 221 | 16                   |
| LBK2-100/4-■    | 1    | 520 | 241 | 279 | 239 | 16                   |
| LBK2-110/4-■    | 1    | 538 | 241 | 297 | 257 | 16                   |
| LBK2-50/5-■     | 1    | 430 | 241 | 189 | 149 | 15                   |
| LBK2-60/5-■     | 1    | 448 | 241 | 207 | 167 | 15                   |
| LBK2-70/5-■     | 1    | 466 | 241 | 225 | 185 | 16                   |
| LBK2-80/5-■     | 1    | 484 | 241 | 243 | 203 | 16                   |
| LBK2-90/5-■     | 1    | 502 | 241 | 261 | 221 | 16                   |
| LBK2-100/5-■    | 1    | 520 | 241 | 279 | 239 | 16                   |
| LBK2-110/5-■    | 1    | 538 | 241 | 297 | 257 | 16                   |
| LBK2-60/6-■     | 1    | 448 | 241 | 207 | 167 | 15                   |
| LBK2-70/6-■     | 1    | 466 | 241 | 225 | 185 | 16                   |
| LBK2-80/6-■     | 1    | 484 | 241 | 243 | 203 | 16                   |
| LBK2-90/6-■     | 1    | 502 | 241 | 261 | 221 | 16                   |
| LBK2-100/6-■    | 1    | 520 | 241 | 279 | 239 | 16                   |
| LBK2-110/6-■    | 1    | 538 | 241 | 297 | 257 | 16                   |
| LBK2-70/7-■     | 1    | 466 | 241 | 225 | 185 | 16                   |
| LBK2-80/7-■     | 1    | 484 | 241 | 243 | 203 | 16                   |
| LBK2-90/7-■     | 1    | 502 | 241 | 261 | 221 | 16                   |
| LBK2-100/7-■    | 1    | 520 | 241 | 279 | 239 | 16                   |
| LBK2-110/7-■    | 1    | 538 | 241 | 297 | 257 | 16                   |
| LBK2-80/8-■     | 1    | 484 | 241 | 243 | 203 | 16                   |
| LBK2-90/8-■     | 1    | 502 | 241 | 261 | 221 | 16                   |
| LBK2-100/8-■    | 1    | 520 | 241 | 279 | 239 | 16                   |
| LBK2-110/8-■    | 1    | 538 | 241 | 297 | 257 | 16                   |
| LBK2-90/9-F-e   | 1    | 502 | 241 | 261 | 221 | 16                   |
| LBK2-100/9-F-e  | 1    | 520 | 241 | 279 | 239 | 16                   |
| LBK2-110/9-F-e  | 1    | 538 | 241 | 297 | 257 | 17                   |
| LBK2-100/10-F-e | 1    | 520 | 241 | 279 | 239 | 16                   |
| LBK2-110/10-F-e | 1    | 538 | 241 | 297 | 257 | 17                   |
| LBK2-110/11-F-e | 1    | 538 | 241 | 297 | 257 | 17                   |

(Unit : mm)

| Type          | Fig. | L   | LL  | LH  | LK  | Approx.<br>mass (kg) |
|---------------|------|-----|-----|-----|-----|----------------------|
| LBK4-20/1-□   | 1    | 354 | 201 | 153 | 113 | 14                   |
| LBK4-30/1-□   | 1    | 381 | 201 | 180 | 140 | 14                   |
| LBK4-40/1-□   | 1    | 408 | 201 | 207 | 167 | 14                   |
| LBK4-50/1-□   | 1    | 435 | 201 | 234 | 194 | 15                   |
| LBK4-60/1-□   | 1    | 462 | 201 | 261 | 221 | 15                   |
| LBK4-20/2-□   | 1    | 354 | 201 | 153 | 113 | 14                   |
| LBK4-30/2-□   | 1    | 381 | 201 | 180 | 140 | 14                   |
| LBK4-40/2-□   | 1    | 408 | 201 | 207 | 167 | 15                   |
| LBK4-50/2-□   | 1    | 435 | 201 | 234 | 194 | 15                   |
| LBK4-60/2-□   | 1    | 462 | 201 | 261 | 221 | 15                   |
| LBK4-70/2-□   | 1    | 489 | 201 | 288 | 248 | 15                   |
| LBK4-80/2-□   | 1    | 516 | 201 | 315 | 275 | 15                   |
| LBK4-90/2-□   | 1    | 543 | 201 | 342 | 302 | 16                   |
| LBK4-30/3-■   | 1    | 421 | 241 | 180 | 140 | 14                   |
| LBK4-40/3-■   | 1    | 448 | 241 | 207 | 167 | 15                   |
| LBK4-50/3-■   | 1    | 475 | 241 | 234 | 194 | 15                   |
| LBK4-60/3-■   | 1    | 502 | 241 | 261 | 221 | 15                   |
| LBK4-70/3-■   | 1    | 529 | 241 | 288 | 248 | 15                   |
| LBK4-80/3-■   | 1    | 556 | 241 | 315 | 275 | 16                   |
| LBK4-40/4-■   | 1    | 448 | 241 | 207 | 167 | 15                   |
| LBK4-50/4-■   | 1    | 475 | 241 | 234 | 194 | 15                   |
| LBK4-60/4-■   | 1    | 502 | 241 | 261 | 221 | 15                   |
| LBK4-70/4-■   | 1    | 529 | 241 | 288 | 248 | 15                   |
| LBK4-80/4-■   | 1    | 556 | 241 | 315 | 275 | 16                   |
| LBK4-90/4-■   | 1    | 583 | 241 | 342 | 302 | 16                   |
| LBK4-50/5-F-e | 1    | 475 | 241 | 234 | 194 | 15                   |
| LBK4-60/5-F-e | 1    | 502 | 241 | 261 | 221 | 15                   |
| LBK4-70/5-F-e | 1    | 529 | 241 | 288 | 248 | 16                   |
| LBK4-80/5-F-e | 1    | 556 | 241 | 315 | 275 | 16                   |
| LBK4-60/6-F-e | 1    | 502 | 241 | 261 | 221 | 15                   |
| LBK4-70/6-F-e | 1    | 529 | 241 | 288 | 248 | 16                   |
| LBK4-80/6-F-e | 1    | 556 | 241 | 315 | 275 | 16                   |

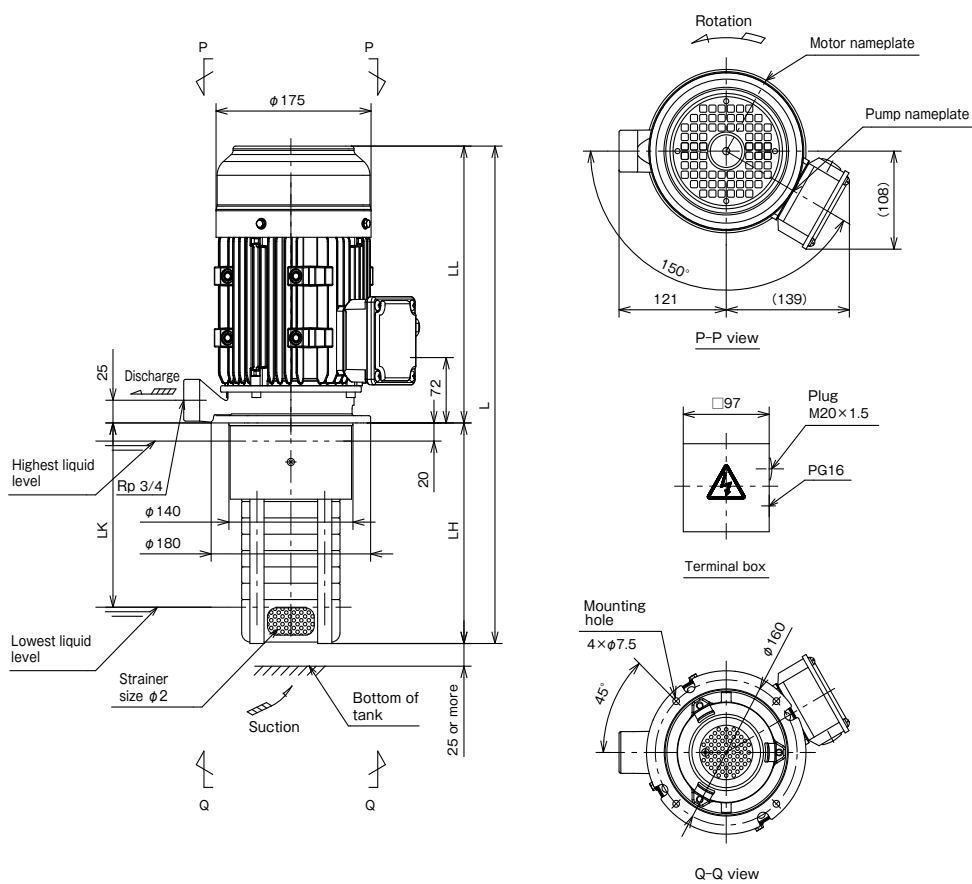
Note 1) "□" in pump type can be -e/-7W.

Note 2) "■" in pump type can be -e/-KS/-7W.

## ■ Assembly drawing

Fig.2

●Output: 1.2kW (50Hz), 1.5kW (60Hz) or more



## ■ Dimensions

(Unit : mm)

| Type          | Fig. | L   | LL  | LH  | LK  | Approx. mass (kg) |
|---------------|------|-----|-----|-----|-----|-------------------|
| LBK2-80/8-H-■ | 2    | 548 | 305 | 243 | 203 | 23                |
| LBK2-90/8-H-■ | 2    | 566 | 305 | 261 | 221 | 23                |
| LBK2-90/9-■   | 2    | 566 | 305 | 261 | 221 | 23                |

(Unit : mm)

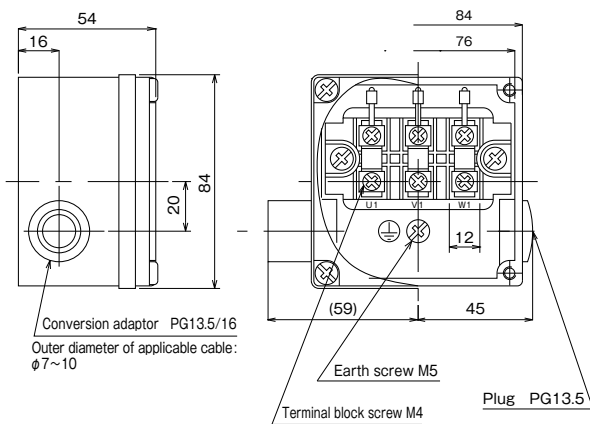
| Type        | Fig. | L   | LL  | LH  | LK  | Approx. mass (kg) |
|-------------|------|-----|-----|-----|-----|-------------------|
| LBK4-50/5-■ | 2    | 539 | 305 | 234 | 194 | 22                |
| LBK4-60/5-■ | 2    | 566 | 305 | 261 | 221 | 22                |
| LBK4-60/6-■ | 2    | 566 | 305 | 261 | 221 | 25                |
| LBK4-70/6-■ | 2    | 593 | 305 | 288 | 248 | 26                |
| LBK4-80/6-■ | 2    | 620 | 305 | 315 | 275 | 26                |
| LBK4-90/6-■ | 2    | 647 | 305 | 342 | 302 | 26                |

Note 1) "■" in pump type can be any one of -e/-KS/-7W.

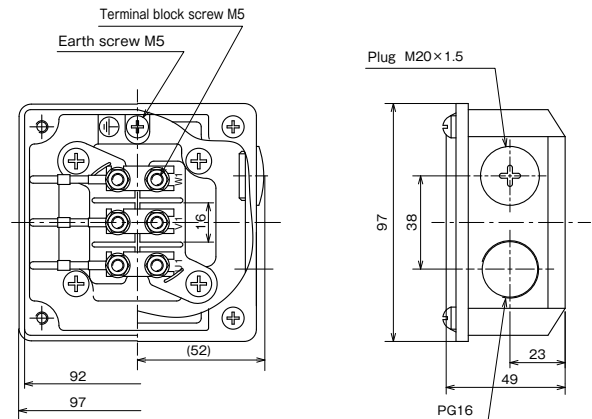
## Detailed drawing of the terminal box

### Assembly drawing (-e/-KS type)

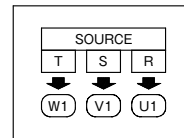
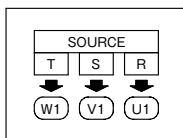
●Output: 1.1kW (50/60Hz) or less



●Output: 1.2kW (50Hz), 1.5kW (60Hz) or more

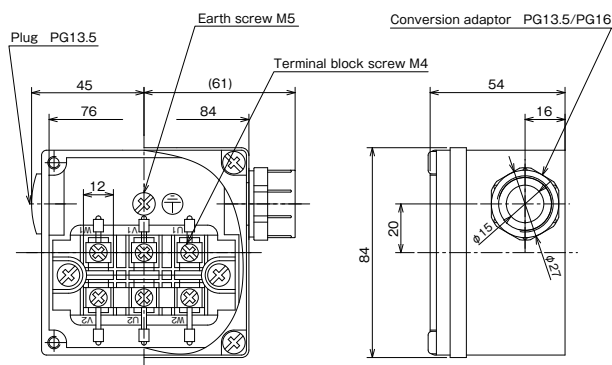


### Connection diagram

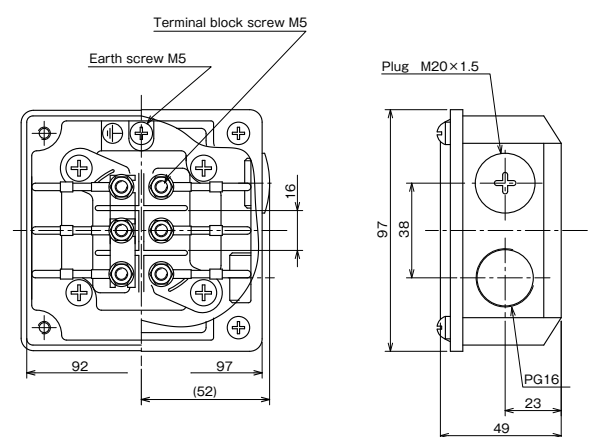


### Assembly drawing -e (50Hz 380V)

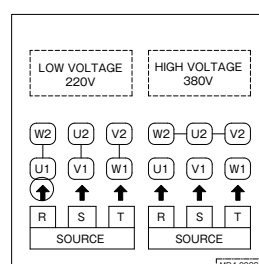
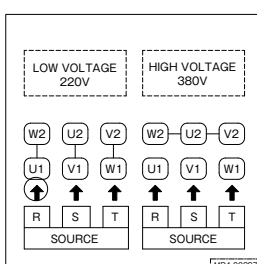
●Output: 1.1kW or less



●1.2kW or more

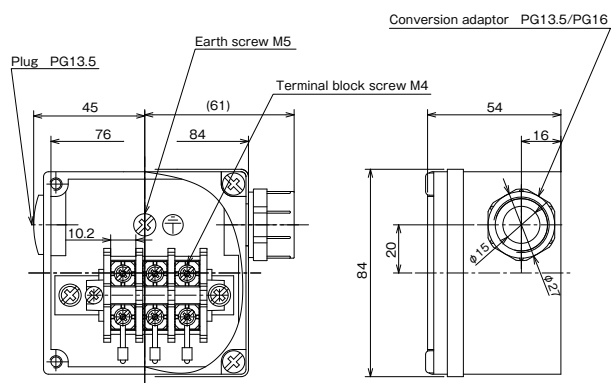


### Connectin diagram

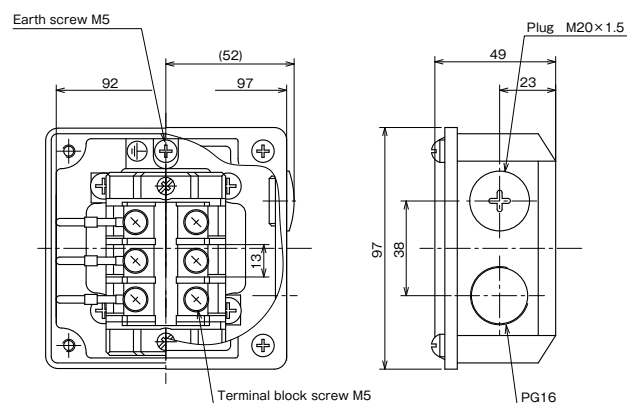


## Assembly drawing (-7W type)

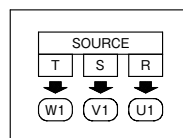
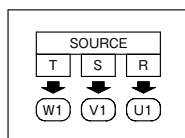
●Output: 1.1kW or less



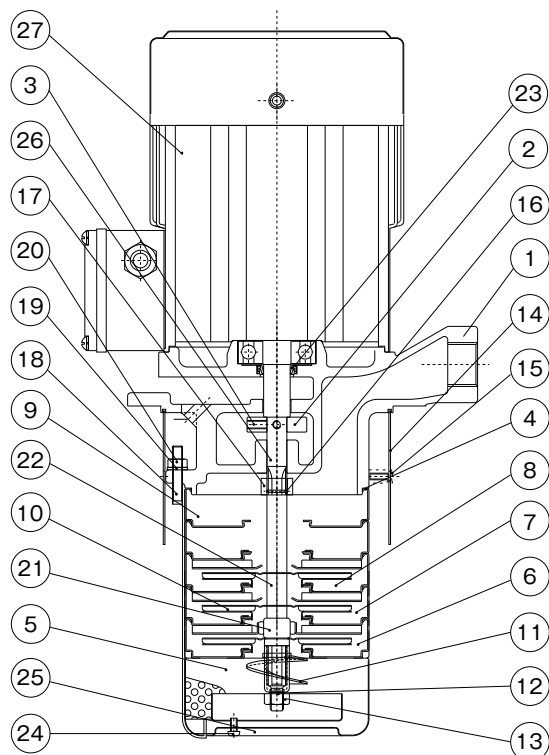
●1.5kW or more



## ■Connection diagram



## ■Sectional drawing



| No. | Part name                         | Material    |
|-----|-----------------------------------|-------------|
| 1   | Discharge casing                  | FC200       |
| 2   | Oil thrower                       | SUS304      |
| 3   | Set screw                         | SCM435      |
| 4   | Gasket                            | —           |
| 5   | Suction casing                    | SUS304      |
| 6   | Intermediate casing (First stage) | SUS304      |
| 7   | Bearing casing                    | SUS304+SiC  |
| 8   | Intermediate casing               | SUS304      |
| 9   | Intermediate casing (Last stage)  | SUS304      |
| 10  | Impeller                          | SUS304      |
| 11  | Screw                             | SUS304      |
| 12  | Washer                            | SUS304      |
| 13  | Impeller nut                      | SUS304      |
| 14  | Outer sleeve                      | SUS304      |
| 15  | Cross recessed flat 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 (motor side+pump side) | S45C+SUS431 |
| 27  | Motor                             | —           |

Note 1) The materials in the table above are equivalents.

Note 2) Structure and other details are subject to change without notice.

### Features

- ① Strong and tough enough to resist dirty coolants.
- ② The impeller made of FCD material and non-seal (mechanical seal-less) structure is adopted for excellent durability.
- ③ Mounting the inlet piping allows you to freely set the operating water level.
- ④ Can be used for high viscosity coolants.
- ⑤ The lineup including the models complying with global standards by supporting efficiency and other regulations.

Japan : Top Runner efficiency

Europe : IE3 efficiency, CE marking (EU Directive)

RoHS Directive (2011/65/EU) , 10 substances restricted

China : GB3 (GB18613-2020 GB3)



Please note that the paint color, etc. of the actual unit may partially differ from the photo.

### Description of types

#### LPWE 40 4 A - 3.0 -e

① ② ③ ④ ⑤ ⑥

- ① Model
- ② Bore diameter
- ③ Number of casings
- ④ Viscosity of liquid
  - A : for low viscosity liquid
  - B : for high viscosity liquid
- ⑤ Output
- ⑥ Motor efficiency
  - e : Top Runner efficiency (equivalent to IE3)

### Global standards

| Type   | Standards/Regulations                  | Output          |
|--------|----------------------------------------|-----------------|
|        |                                        | 0.75kW-3.0kW    |
| LPWE-e | Top Runner efficiency (IE3 equivalent) | ●               |
|        | CE Marking EU energy efficiency        | ●               |
|        | GB3(GB18613-2020)                      | ● <sup>*1</sup> |

※1 GB certification label is attached as exclusive for GB standard. ● : Compliant

### Standard Specification

|                               |                                   |                                                                                                                                 |
|-------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Bore diameter [A]             |                                   | 40                                                                                                                              |
| Used liquid                   | Property of liquid                | Water soluble coolant, liquids of similar viscosity to water containing additives (anti-rust agents) and the like <sup>*1</sup> |
|                               | Temperature                       | 0 to 60° C (No frozen liquid is allowed.)                                                                                       |
| Allowable kinematic viscosity |                                   | 40A: 32 mm <sup>2</sup> /s or less<br>40B: 150 mm <sup>2</sup> /s or less                                                       |
| Installation location         |                                   | Indoors                                                                                                                         |
|                               |                                   | Ambient temperature: 0 to 40° C; humidity:85% RH or less (no condensation)                                                      |
|                               |                                   | Height above sea level: 1,000 m or less; place not exposed to direct sunlight                                                   |
|                               |                                   | Place without any corrosive gas, explosive gas, or vapor in the atmosphere                                                      |
| Material                      | Casing (suction/discharge/middle) | FC200                                                                                                                           |
|                               | Impeller                          | FCD450                                                                                                                          |
|                               | Main shaft                        | S45C                                                                                                                            |
| Shaft sealig structure        |                                   | Sealless structure (without mechanical seal)                                                                                    |
| Motor                         | Type                              | Totally-enclosed fan-cooled indoor type                                                                                         |
|                               | Protection method                 | IP44                                                                                                                            |
|                               | Power source <sup>*2</sup>        | 3-phase 50/60Hz 200/200-220V                                                                                                    |
|                               | Thermal class                     | B                                                                                                                               |
|                               | Rating                            | Continuous (S1)                                                                                                                 |
|                               | Number of poles                   | 2P                                                                                                                              |
|                               | Terminal box position             | 90° with the discharge port facing the front                                                                                    |
|                               | Wiring inlet direction            | Bottom                                                                                                                          |
| Paint color                   |                                   | Munsell N1.5                                                                                                                    |

※1 Note that the product cannot be used for water. If the liquid contains hard foreign matters or large amount of foreign matters (cutting chips), contact TERAL.

※2 GB18613-2020 : 3-phase 50Hz 200V, 50Hz 380V

### Special specification

Voltage change<sup>\*1</sup>, change of terminal box position<sup>\*2</sup>, change of terminal box direction<sup>\*3</sup>, With cable inlet adapter for terminal box<sup>\*4</sup>

※1 50Hz : 210V/220V/380V/400V/415V, 60Hz 400V/440V

※2 Terminal box position change(Every 90° with the discharge port facing the front)

※3 Terminal box orientation (with the terminal box facing the front): wire inlet port is right or left.

※4 G3/4 conduit can be attached

### Special accessories

Companion flange ..... With O-ring, bolts and nuts  
Eye bolt ..... 2 pcs  
Strainer for extension pipe<sup>\*1</sup>

※1 Extension pipe is not included. Available pipe diameter : 50A.

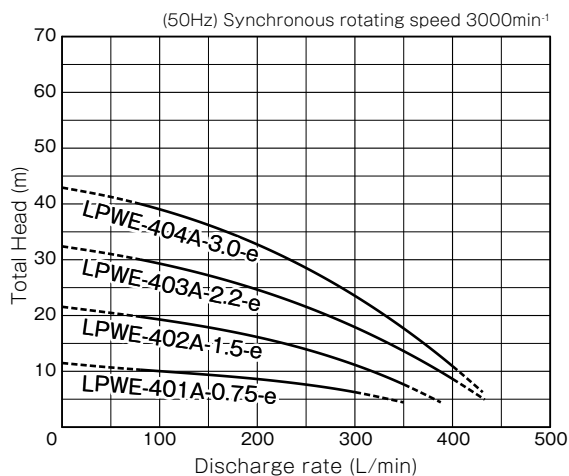
### Table of Consumable Parts

| Output (kW) | Bearing   |                         | Oil seal |
|-------------|-----------|-------------------------|----------|
|             | Load side | Unload side             |          |
| 0.75        | 6306ZZC3  | 6203CXZZC3 (Anti-creep) | AG1705E  |
| 1.5         |           | 6204CXZZC3 (Anti-creep) |          |
| 2.2         |           |                         |          |
| 3.0         |           |                         |          |

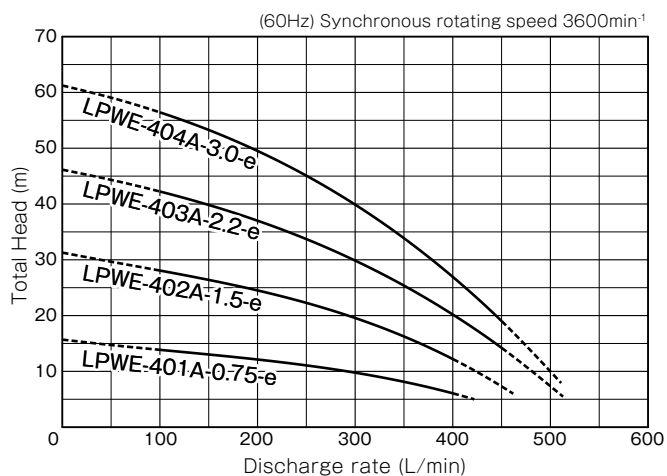
## Selection chart

● **For low viscosity liquid** (Values at kinematic viscosity  $1\text{mm}^2/\text{s}$ , specific gravity 1)

50Hz

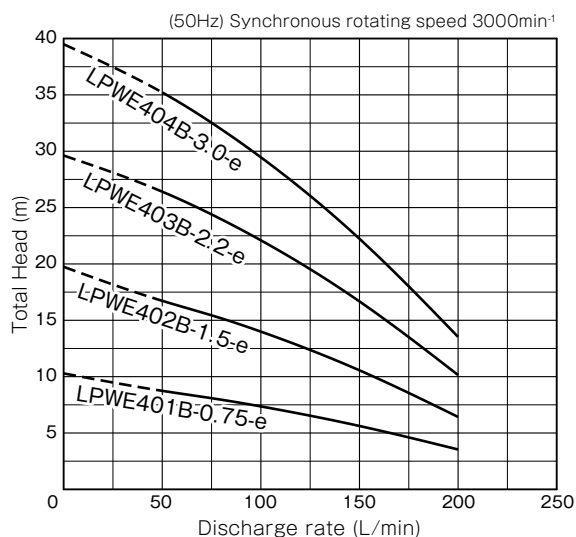


60Hz

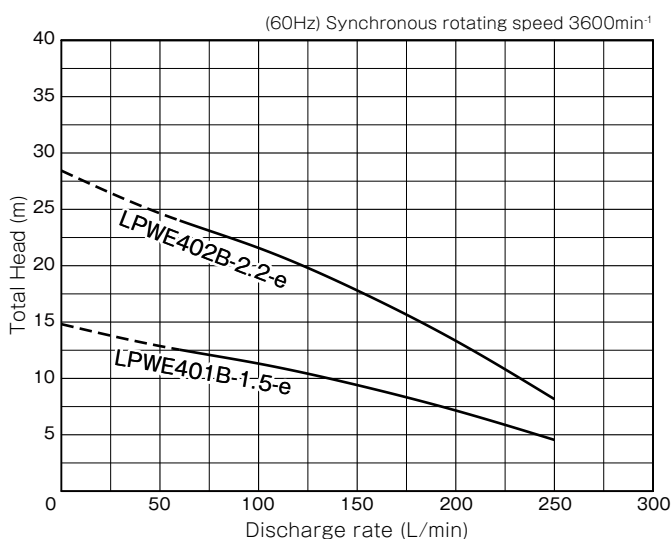


● **For high-viscosity liquid** (Value at  $150\text{mm}^2/\text{s}$  kinematic viscosity, specific gravity 1)

50Hz



60Hz



## Specification table

### ● LPWE-e

| Bore diameter (mm) | Frequency (Hz) | Used liquid               | Output (kW) | Type            | Rated voltage (V) | Rated current (A) | Starting current (A) | Allowable ampacity (A) | Standard specification        |                |
|--------------------|----------------|---------------------------|-------------|-----------------|-------------------|-------------------|----------------------|------------------------|-------------------------------|----------------|
|                    |                |                           |             |                 |                   |                   |                      |                        | Applied flow rate range L/min | Total head (m) |
| 40                 | 50             | For low viscosity liquid  | 0.75        | LPWE401A-0.75-e | 200               | 3.6               | 28                   | 4.0                    | 80-300                        | 10.3-6.3       |
|                    |                |                           | 1.5         | LPWE402A-1.5-e  | 200               | 6.1               | 64                   | 7.8                    | 80-350                        | 19.8-7.6       |
|                    |                |                           | 2.2         | LPWE403A-2.2-e  | 200               | 8.6               | 86                   | 10.0                   | 80-400                        | 30.0-8.6       |
|                    |                |                           | 3           | LPWE404A-3.0-e  | 200               | 12.6              | 164                  | 16.0                   |                               | 40.0-10.9      |
|                    |                | For high-viscosity liquid | 0.75        | LPWE401B-0.75-e | 200               | 3.5               | 28                   | 4.0                    | 50-200                        | 8.7-3.5        |
|                    |                |                           | 1.5         | LPWE402B-1.5-e  | 200               | 6.2               | 64                   | 7.8                    |                               | 16.7-6.4       |
|                    |                |                           | 2.2         | LPWE403B-2.2-e  | 200               | 9.0               | 86                   | 10.0                   |                               | 26.4-10.1      |
|                    |                |                           | 3           | LPWE404B-3.0-e  | 200               | 12.5              | 164                  | 16.0                   |                               | 35.2-13.5      |
|                    | 60             | For low viscosity liquid  | 0.75        | LPWE401A-0.75-e | 200/220           | 4.0               | 27/29                | 4.0                    | 100-400                       | 13.9-6.1       |
|                    |                |                           | 1.5         | LPWE402A-1.5-e  | 200/220           | 7.5               | 61/68                | 7.8                    |                               | 28.1-12.2      |
|                    |                |                           | 2.2         | LPWE403A-2.2-e  | 200/220           | 10.0              | 79/87                | 10.0                   | 100-450                       | 42.2-14.2      |
|                    |                |                           | 3           | LPWE404A-3.0-e  | 200/220           | 14.0              | 129/144              | 16.0                   |                               | 56.4-19.0      |
|                    |                | For high-viscosity liquid | 1.5         | LPWE401B-1.5-e  | 200/220           | 6.0               | 61/68                | 7.8                    | 50-250                        | 12.5-4.5       |
|                    |                |                           | 2.2         | LPWE402B-2.2-e  | 200/220           | 8.4               | 79/87                | 10.0                   |                               | 24.0-8.2       |

Note 1) The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for protection device.

Note 2) The allowable ampacities (current value listed on the pump nameplate) in the table above are the maximum current that a motor can safely carry without overheating. When changing the thermal relay setting value based on the compatibility of the protective device employed (quick acting type, for example) or the operational environment (ambient temperature, power supply devices etc.), keep the current value below the allowable ampacity.

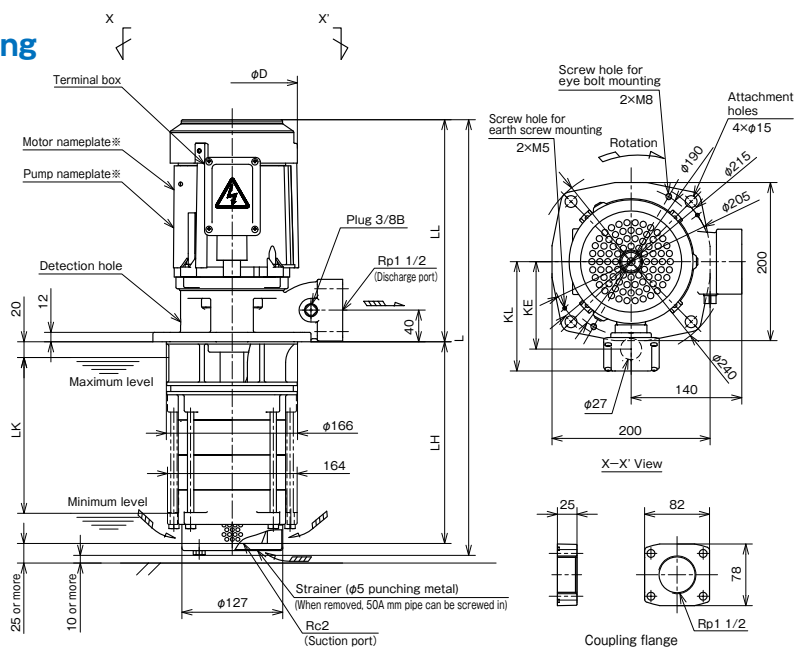
### ● LPWE-e (50Hz 380V)

| Bore diameter (mm) | Frequency (Hz) | Used liquid               | Output (kW) | Type            | Rated voltage (V) | Rated current (A) | Starting current (A) | Allowable ampacity (A) | Standard specification        |                |
|--------------------|----------------|---------------------------|-------------|-----------------|-------------------|-------------------|----------------------|------------------------|-------------------------------|----------------|
|                    |                |                           |             |                 |                   |                   |                      |                        | Applied flow rate range L/min | Total head (m) |
| 40                 | 50             | For low viscosity liquid  | 0.75        | LPWE401A-0.75-e | 380               | 2.0               | 13                   | 2.2                    | 80-300                        | 10.3-6.3       |
|                    |                |                           | 1.5         | LPWE402A-1.5-e  | 380               | 3.1               | 33                   | 4.5                    | 80-350                        | 19.8-7.6       |
|                    |                |                           | 2.2         | LPWE403A-2.2-e  | 380               | 5.0               | 43                   | 5.0                    | 80-400                        | 30.0-8.6       |
|                    |                |                           | 3           | LPWE404A-3.0-e  | 380               | 6.0               | 73                   | 8.0                    |                               | 40.0-10.9      |
|                    |                | For high-viscosity liquid | 0.75        | LPWE401B-0.75-e | 380               | 2.0               | 13                   | 2.2                    | 50-200                        | 8.7-3.5        |
|                    |                |                           | 1.5         | LPWE402B-1.5-e  | 380               | 3.1               | 33                   | 4.5                    |                               | 16.7-6.4       |
|                    |                |                           | 2.2         | LPWE403B-2.2-e  | 380               | 5.0               | 43                   | 5.0                    |                               | 26.4-10.1      |
|                    |                |                           | 3           | LPWE404B-3.0-e  | 380               | 6.2               | 73                   | 8.0                    |                               | 35.2-13.5      |

Note 1) The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for protection device.

Note 2) The allowable ampacities (current value listed on the pump nameplate) in the table above are the maximum current that a motor can safely carry without overheating. When changing the thermal relay setting value based on the compatibility of the protective device employed (quick acting type, for example) or the operational environment (ambient temperature, power supply devices etc.), keep the current value below the allowable ampacity.

## ■ Assembly drawing



※ The product with GB3 motor has an additional certification nameplate and the nameplate position is different.

## ■ Dimensions

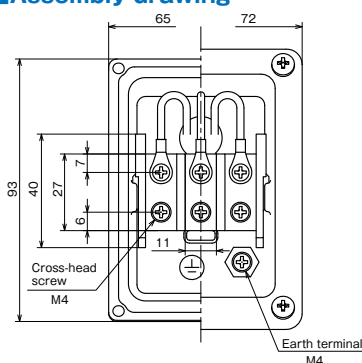
(Unit : mm)

| Bore diameter (mm) | Frequency (Hz) | Used liquid               | Type            | $\phi D$ | KL  | KE  | L   | LH  | LK  | LL  | Approx. mass (kg) |
|--------------------|----------------|---------------------------|-----------------|----------|-----|-----|-----|-----|-----|-----|-------------------|
| 40                 | 50             | For low viscosity liquid  | LPWE401A-0.75-e | 170      | 139 | 111 | 551 | 255 | 197 | 281 | 31                |
|                    |                |                           | LPWE402A-1.5-e  | 195      | 145 | 117 | 584 | 255 | 197 | 314 | 38                |
|                    |                |                           | LPWE403A-2.2-e  | 195      | 145 | 117 | 594 | 255 | 197 | 324 | 48                |
|                    |                |                           | LPWE404A-3.0-e  | 195      | 145 | 117 | 668 | 299 | 241 | 354 | 52                |
|                    |                | For high-viscosity liquid | LPWE401B-0.75-e | 170      | 139 | 111 | 551 | 255 | 197 | 281 | 31                |
|                    |                |                           | LPWE402B-1.5-e  | 195      | 145 | 117 | 584 | 255 | 197 | 314 | 38                |
|                    |                |                           | LPWE403B-2.2-e  | 195      | 145 | 117 | 594 | 255 | 197 | 324 | 48                |
|                    |                |                           | LPWE404B-3.0-e  | 195      | 145 | 117 | 668 | 299 | 241 | 354 | 52                |
|                    | 60             | For low viscosity liquid  | LPWE401A-0.75-e | 170      | 139 | 111 | 551 | 255 | 197 | 281 | 31                |
|                    |                |                           | LPWE402A-1.5-e  | 195      | 145 | 117 | 584 | 255 | 197 | 314 | 38                |
|                    |                |                           | LPWE403A-2.2-e  | 195      | 145 | 117 | 594 | 255 | 197 | 324 | 48                |
|                    |                |                           | LPWE404A-3.0-e  | 195      | 145 | 117 | 668 | 299 | 241 | 354 | 52                |
|                    |                | For high-viscosity liquid | LPWE401B-1.5-e  | 195      | 145 | 117 | 584 | 255 | 197 | 314 | 37                |
|                    |                |                           | LPWE402B-2.2-e  | 195      | 145 | 117 | 594 | 255 | 197 | 324 | 47                |

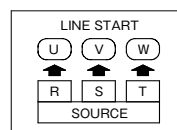
※ Above specification is also available for different voltage specification.

## ■ Detailed drawing of the terminal box

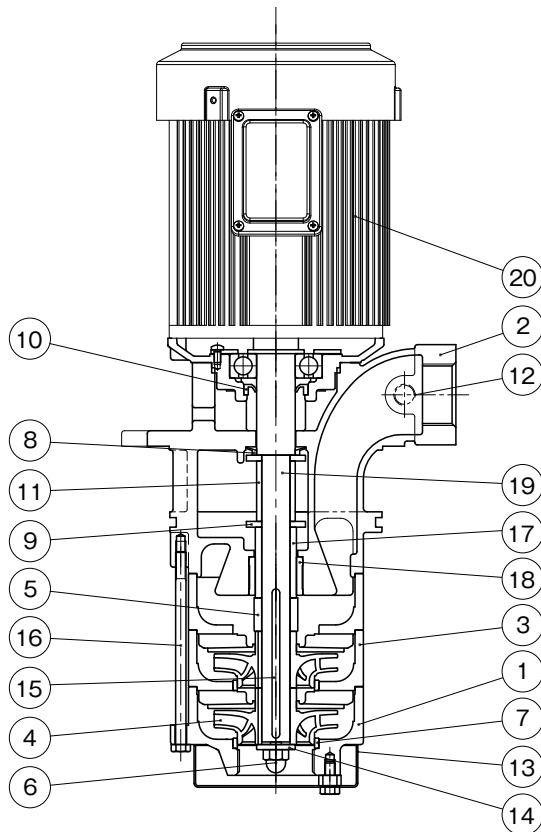
## ■ Assembly drawing



## ■ Connection diagram



■ Sectional drawing



| 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   | STKM     |
| 6   | Impeller nut        | 1   | SUS304   |
| 7   | Liner ring          | 2   | SUS304   |
| 8   | Deflector           | 1   | NBR      |
| 9   | Deflector           | 2   | SPHC     |
| 10  | Oil seal            | 1   | NBR      |
| 11  | Collar              | 1   | STKM     |
| 12  | Plug                | 1   | SWCH     |
| 13  | Strainer            | 1   | SS400    |
| 14  | Washer              | 1   | SUS304   |
| 15  | Key                 | 1   | SUS403   |
| 16  | Through bolt        | 4   | SS400    |
| 17  | Shaft sleeve        | 1   | SUS440C  |
| 18  | Discharge bushing   | 1   | SKD11    |
| 19  | Motor shaft         | 1   | S45C     |
| 20  | Motor               | 1   | —        |

Note 1) The materials in the table above are equivalents.

Note 2) Structure and other details are subject to change without notice.

Applicable models : LPWE402A(B)-1.5-e・LPWE402B-2.2-e

## Features

- ① Strong and tough enough to resist dirty coolants.
- ② The impeller made of FCD material and non-seal (mechanical seal-less) structure is adopted for excellent durability.
- ③ Mounting the inlet piping allows you to freely set the operating water level (LPW65-e).
- ④ Can be used for high viscosity coolants (LPW40-7W/LPW65-e).
- ⑤ The lineup including the models complying with global standards by supporting efficiency and other regulations.

Japan : Top Runner efficiency

USA : NEMA Premium efficiency (IE3 efficiency), UL standards (safety)



Please note that the paint color, etc. of the actual unit may partially differ from the photo.

## Description of types

Bore diameter 40mm

**LPW 40 1 C - 0.75 -7W**

① ② ③ ⑤ ⑦ ⑨

Bore diameter 50/65mm

**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 casings

④ Number of impellers

(blank if number is equal to number of casings)

⑤ Viscosity of liquid

A,C : for low viscosity liquid

D : for high viscosity liquid

⑥ Frequency 5:50Hz 6:60Hz

⑦ Output

⑧ ID code

⑨ Motor efficiency

-e : Top Runner efficiency (equivalent to IE3)

-7W : UL approved motor (3.0kW or less is NEMA Premium efficiency)

## Standard Specification

| Bore diameter         |                                              | 40mm                                                                                                                                                                                                                       | 50mm                | 65mm                                                   |
|-----------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------------------|
| Used liquid           | Property of liquid                           | Coolants of the kinematic viscosity equivalent to that of water-soluble coolants or water containing an additive (anticorrosive, etc.) <sup>*1</sup>                                                                       |                     | Water-soluble coolant liquid <sup>*1</sup>             |
|                       | Temperature                                  | 0 to 60° C (No frozen liquid)                                                                                                                                                                                              |                     |                                                        |
|                       | Allowable kinematic viscosity                | 40C : 32mm <sup>2</sup> /s<br>40D : 150mm <sup>2</sup> /s                                                                                                                                                                  | 1mm <sup>2</sup> /s |                                                        |
| Installation location |                                              | Indoor<br>Ambient temperature: 0 to 40 ° C, RH 85% or below (no condensation), Height above sea level : 1000m or less, Place not exposed to direct sunlight, Place in an area free of corrosive or explosive gas or vapor. |                     |                                                        |
| Material              | Casing<br>Suction · Discharge · Intermediate | FC200                                                                                                                                                                                                                      |                     |                                                        |
|                       | Impeller                                     | FCD450                                                                                                                                                                                                                     |                     |                                                        |
|                       | Shaft                                        | S35C                                                                                                                                                                                                                       |                     | S45C                                                   |
| Shaft seal structure  |                                              | Non-seal (mechanical seal-less)                                                                                                                                                                                            |                     |                                                        |
| Motor                 | Power source                                 | 3-phase 50/60/60Hz 200/200/220V <sup>*2</sup> <sup>*3</sup>                                                                                                                                                                |                     |                                                        |
|                       | Type                                         | Totally enclosed fan-cooled indoor type                                                                                                                                                                                    |                     | Totally enclosed fan-cooled outdoor type <sup>*4</sup> |
|                       | Protection method                            | IP54                                                                                                                                                                                                                       | IP44                | IP55                                                   |
|                       | Thermal class                                | F                                                                                                                                                                                                                          |                     |                                                        |
|                       | Rating                                       | Continuous                                                                                                                                                                                                                 |                     |                                                        |
|                       | Number of poles                              | 2P                                                                                                                                                                                                                         |                     |                                                        |
| Paint color           |                                              | Munsell N1.5                                                                                                                                                                                                               |                     |                                                        |

<sup>\*1</sup> 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.

<sup>\*2</sup> NEMA Premium efficiency (IE3), UL Standards (safety) : 60Hz 208/230/460V

<sup>\*3</sup> LPW65-e: 3-phase 50/60/60Hz 200/200/230V

<sup>\*4</sup> The pump cannot be used outdoors.

## Special specification

Shaft seal structure change (wear resistance improvement)

## Table of Consumable Parts

| Output (kW) | Specification | Bearing   |             | Oil seal  |             |
|-------------|---------------|-----------|-------------|-----------|-------------|
|             |               | Load side | Unload side | Load side | Unload side |
| 1.5         | -e            | 6306ZZC3  | 6303ZZC3    | VC30508   | —           |
| 5.5         |               | 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    |           |             |

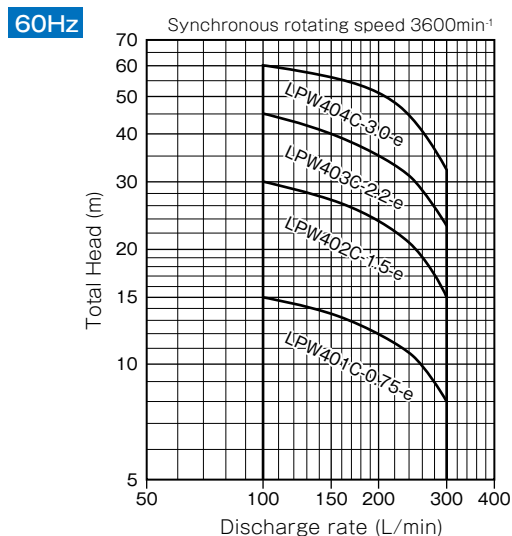
| Bore diameter (mm) | O-ring (for companion flange) | O-ring (for water seal plate) |
|--------------------|-------------------------------|-------------------------------|
| 50                 | S67                           | —                             |
| 65                 | —               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

### Selection chart

#### ● LPW40-7W

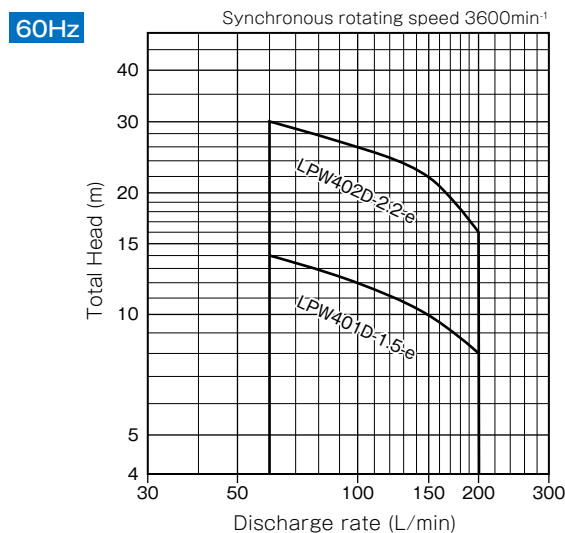
##### ● For low viscosity liquid

(Values at kinematic viscosity 1mm<sup>2</sup>/s, specific gravity 1)



##### ● For high-viscosity liquid

(Value at 150 mm<sup>2</sup>/s kinematic viscosity, specific gravity 1)



### Specification table

#### ● LPW40-7W

| Bore diameter (mm) | Frequency (Hz) | Used liquid               | Output (kW) | Type            | Rated voltage (V) | Rated current (A) | Starting current (A) | Discharge rate (L/min) | Total head (m) |
|--------------------|----------------|---------------------------|-------------|-----------------|-------------------|-------------------|----------------------|------------------------|----------------|
| 40                 | 60             | For low viscosity liquid  | 0.75        | LPW401C-0.75-7W | 208/230/460       | 4.0/3.9/2.0       | 33.9/38.0/19.0       | 100-300                | 15-8           |
|                    |                |                           | 1.5         | LPW402C-1.5-7W  | 208/230/460       | 6.5/6.0/3.1       | 47.3/52.0/26.0       |                        | 30-15          |
|                    |                |                           | 2.2         | LPW403C-2.2-7W  | 208/230/460       | 8.9/8.5/4.3       | 74.8/83.0/41.5       |                        | 45-23          |
|                    |                |                           | 3.0         | LPW404C-3.0-7W  | 208/230/460       | 12.5/11.8/6.0     | 119.4/130/65.0       |                        | 64-32          |
|                    |                | For high-viscosity liquid | 1.5         | LPW401D-1.5-7W  | 208/230/460       | 6.5/6.0/3.1       | 47.3/52.0/26.0       | 60-200                 | 14-8           |
|                    |                |                           | 2.2         | LPW402D-2.2-7W  | 208/230/460       | 8.9/8.5/4.3       | 74.8/83.0/41.5       |                        | 30-16          |

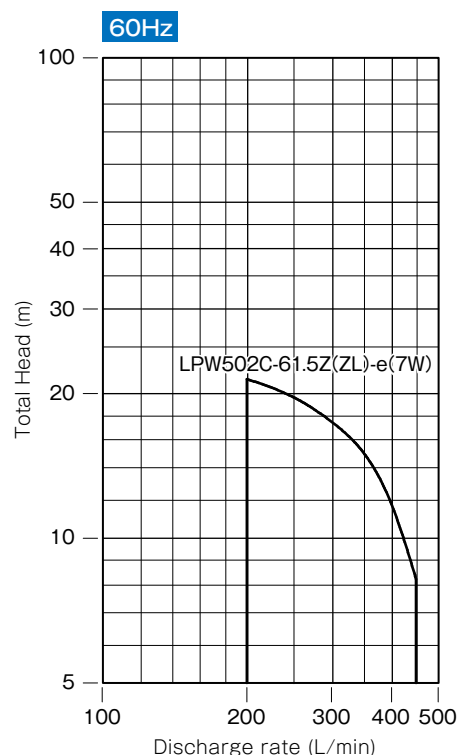
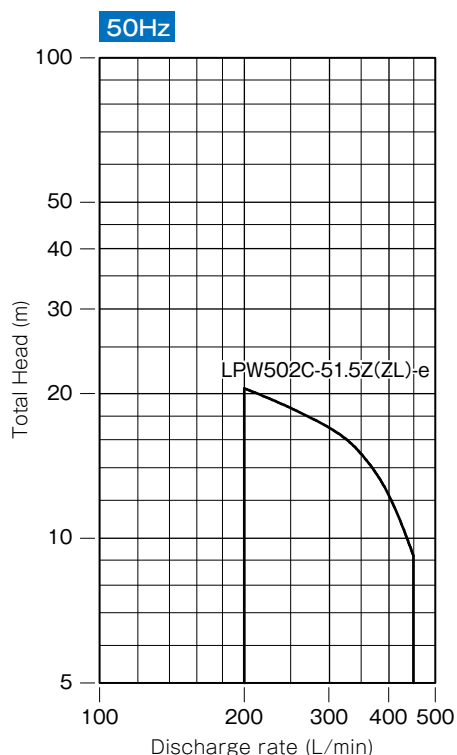
Note 1) Discharge rate and total head are the values obtained in the tests with a liquid viscosity of 1mm<sup>2</sup>/s (same as fresh water at normal temperature).

Note 2) The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for protection device.

## Selection chart

### ● LPW50

(Values at kinematic viscosity 1mm<sup>2</sup>/s, specific gravity 1)



## Specification table

### ● LPW50

| Bore 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               | 66.0                 | 200-450                | 20.5-9         |
|                    |                |             | LPW502C-51.5ZL-e  |                   |                   |                      |                        |                |
|                    | 60             |             | LPW502C-61.5Z-e   | 200/220           | 6.5/6.0           | 64.0/70.0            | 200-450                | 21-8           |
|                    |                |             | LPW502C-61.5ZL-e  |                   |                   |                      |                        |                |
|                    |                |             | LPW502C-61.5ZL-7W | 208/230/460       | 6.5/6.0/3.1       | 47.3/52.0/26.0       |                        |                |

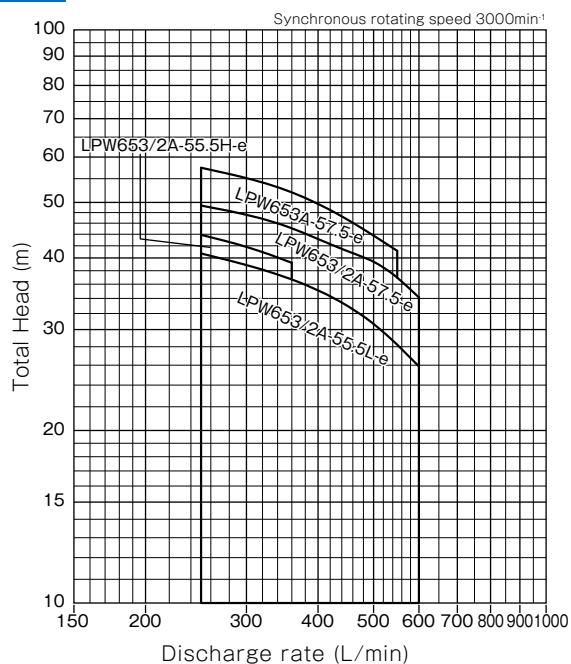
Note) The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for protection device.

## Selection chart

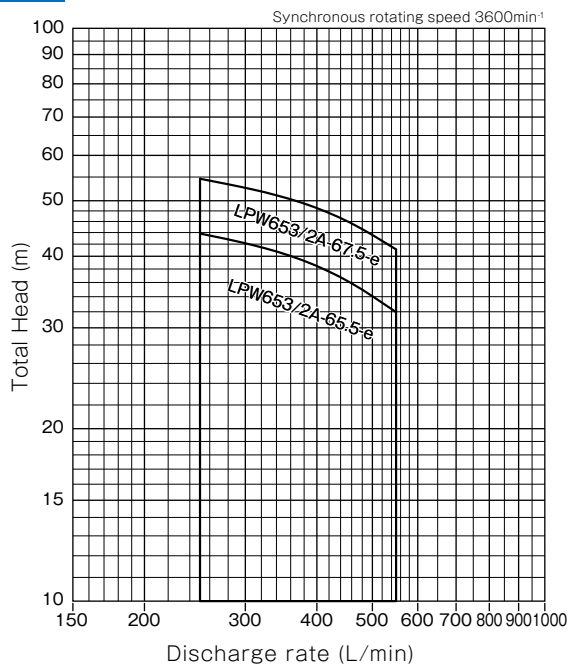
### ●LPW65

●For low viscosity liquid (Values at kinematic viscosity  $1\text{mm}^2/\text{s}$ , specific gravity 1)

#### 50Hz



#### 60Hz



## Specification table

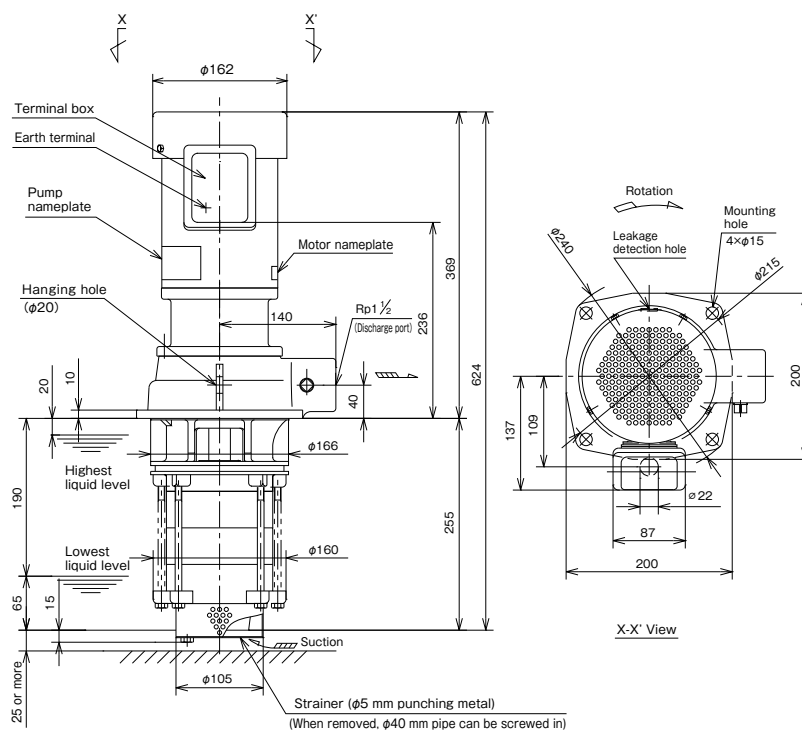
### ●LPW65

| Bore 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                  | 250-600                | 40.7-25.9      |
|                    |                | 5.5         | LPW653/2A-55.5H-e |                   | 20.3              | 204                  | 250-360                | 43.9-39.2      |
|                    |                | 7.5         | LPW653/2A-57.5-e  |                   | 27.2              | 288                  | 250-600                | 49.4-34.1      |
|                    |                | 7.5         | LPW653A-57.5-e    |                   | 27.2              | 288                  | 250-550                | 57.5-41.2      |
|                    | 60             | 5.5         | LPW653/2A-65.5-e  | 200/230           | 19.8/17.8         | 178/206              | 250-550                | 43.8-32.0      |
|                    |                | 7.5         | LPW653/2A-67.5-e  |                   | 26.5/23.7         | 254/295              | 250-550                | 54.6-41.1      |

(Note) The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for protection device.

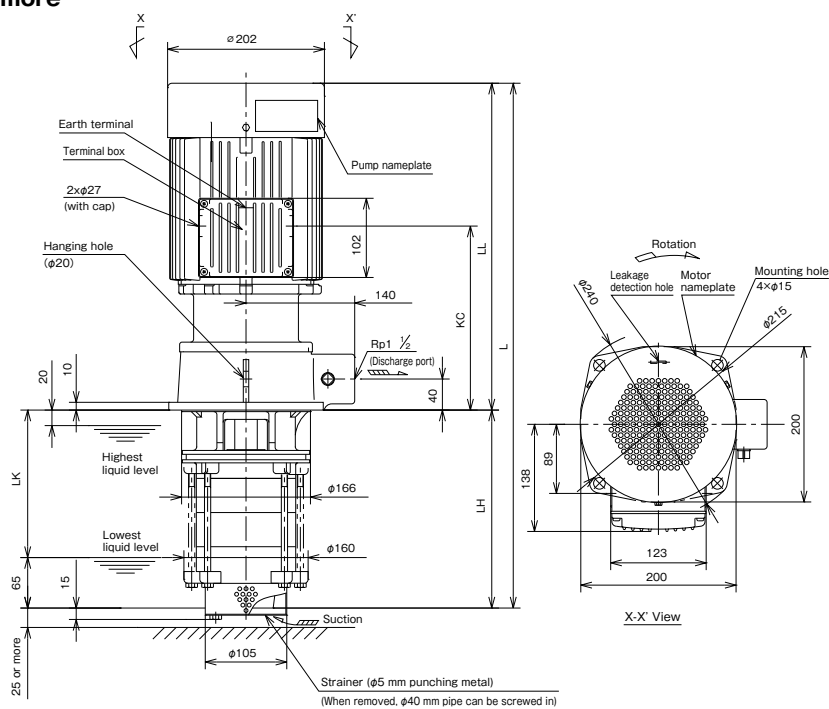
## Assembly drawing

### ●LPW40-7W 0.75kW



Approx.mass 35Kg

### ●LPW40-7W 1.5kW or more



## Dimensions

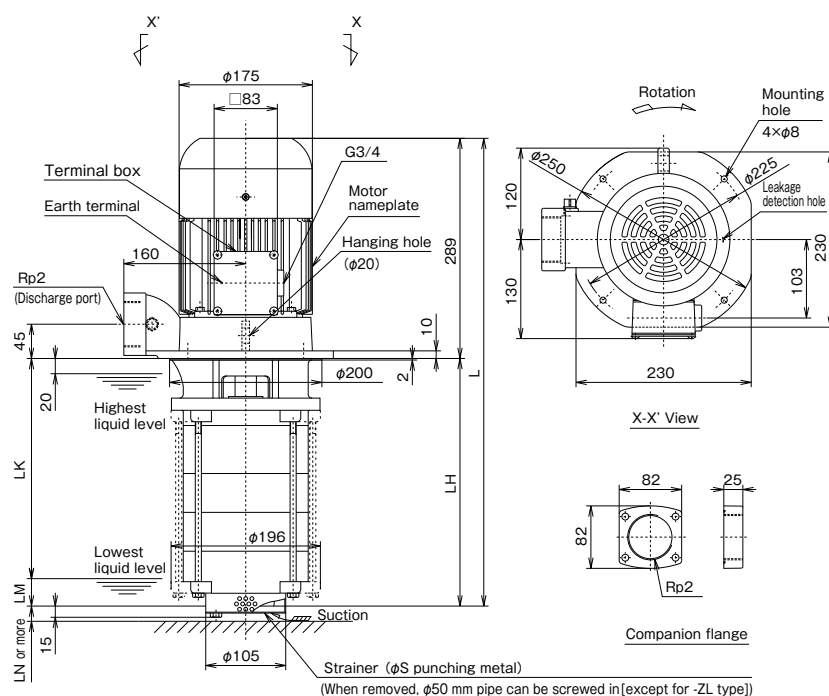
### ●LPW40-7W 1.5kW or more

(Unit : mm)

| Bore diameter | Frequency (Hz) | Used liquid        | Type           | KC  | L   | LH  | LK  | LL  | Approx. mass(kg) |
|---------------|----------------|--------------------|----------------|-----|-----|-----|-----|-----|------------------|
| 40            | 60             | For low viscosity  | 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 | 743 | 299 | 234 | 444 | 59               |
|               |                | For high viscosity | LPW401D-1.5-7W | 237 | 676 | 255 | 190 | 421 | 44               |
|               |                |                    | LPW402D-2.2-7W | 237 | 676 | 255 | 190 | 421 | 51               |

## Assembly drawing

### ●LPW50-e



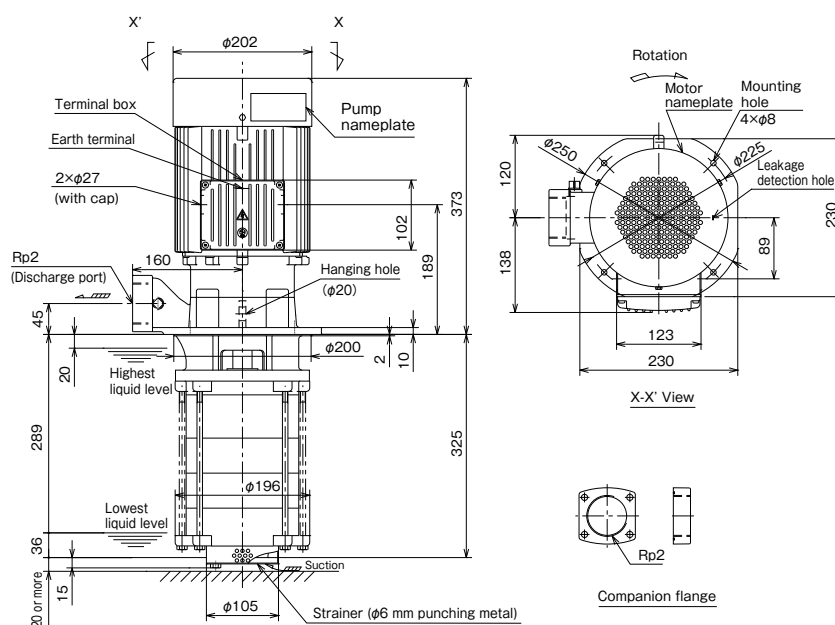
## Dimensions

### ●LPW50-e

(Unit : mm)

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

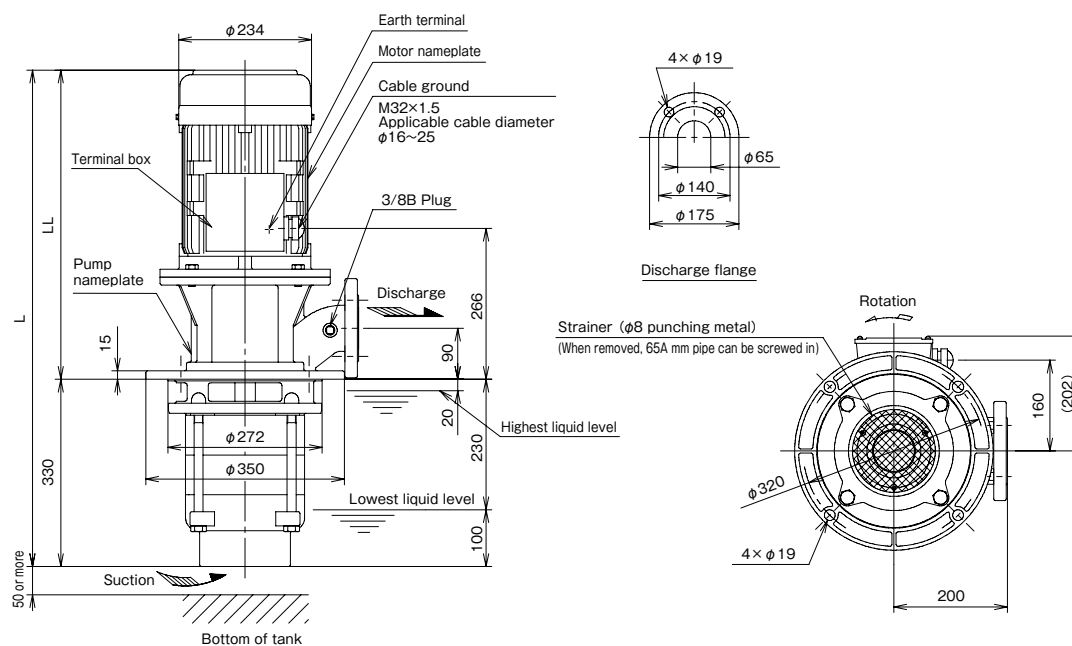
### ●LPW502C-61.5ZL-7W



Approx.mass 55Kg

## Assembly drawing

### ●LPW65-e



## Dimensions

### ●LPW65-e

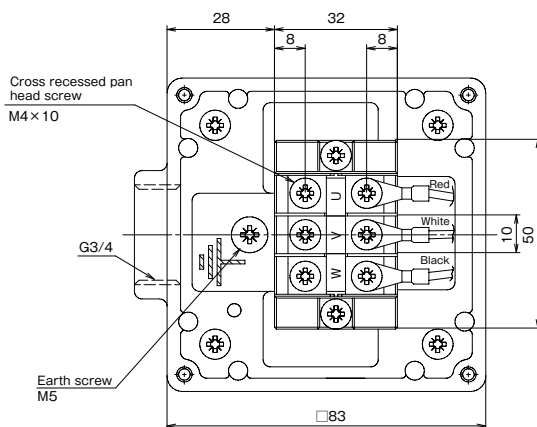
〈Unit : mm〉

| Bore diameter | 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 | 915 | 100              |

## Detailed drawing of the terminal box

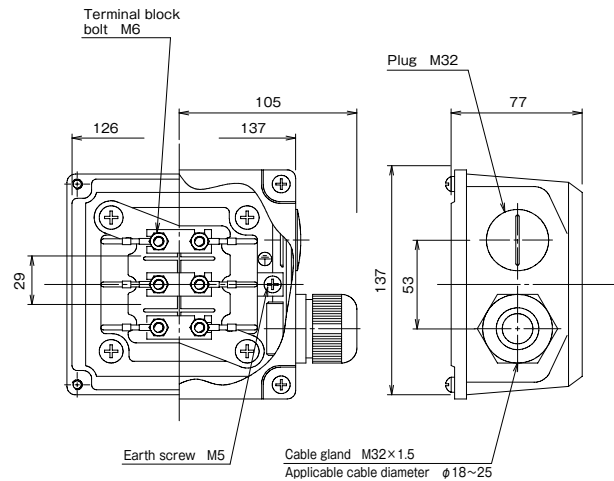
### ● LPW50-e

#### ■ Assembly drawing



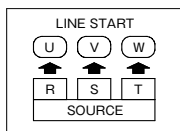
### ● LPW65-e

#### ■ Assembly drawing



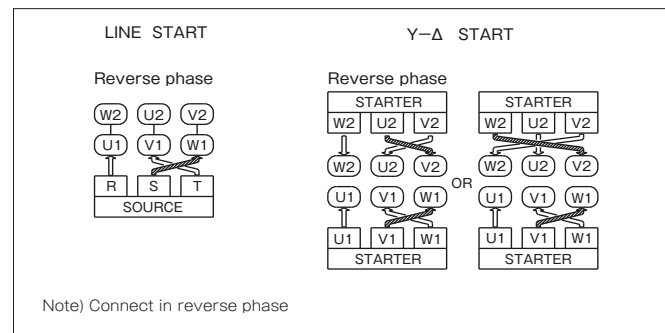
### ● LPW50-e

#### ■ Connection diagram



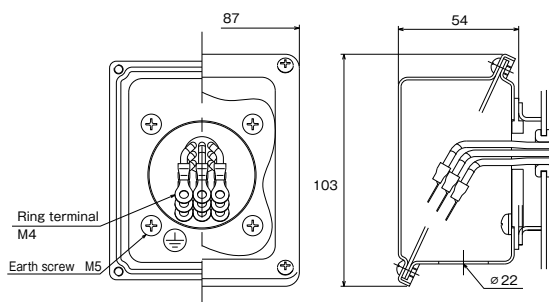
### ● LPW65-e

#### ■ Connection diagram



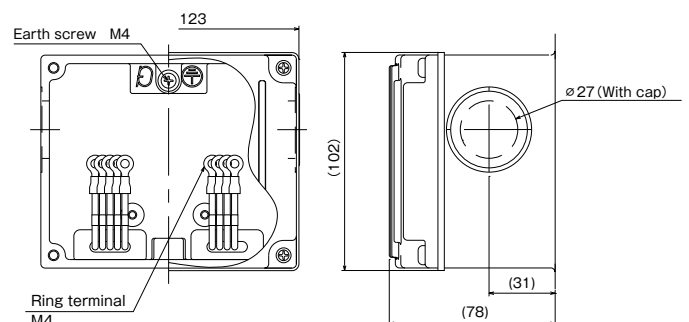
### ● LPW-7W 0.75kW

#### ■ Assembly drawing



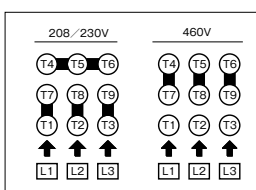
### ● LPW-7W 1.5kW or more

#### ■ Assembly drawing



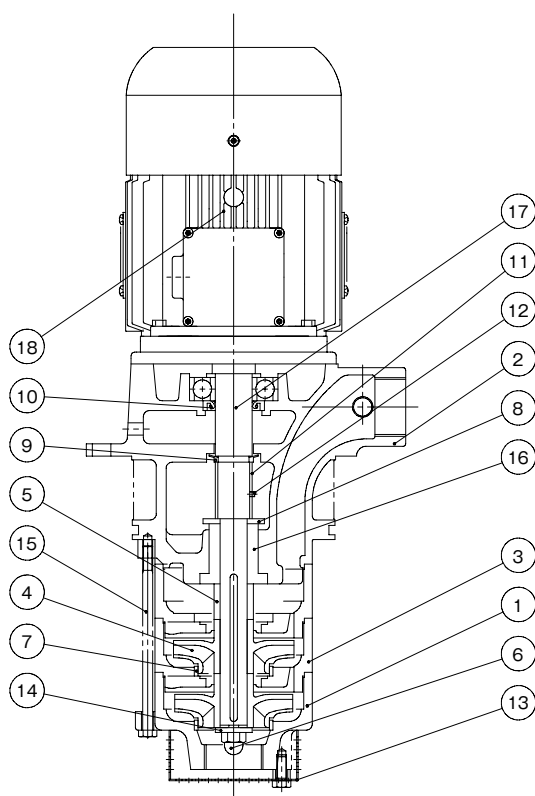
### ● LPW-7W Full output

#### ■ Connection diagram



## ■ Sectional drawing

## ●LPW40-7W

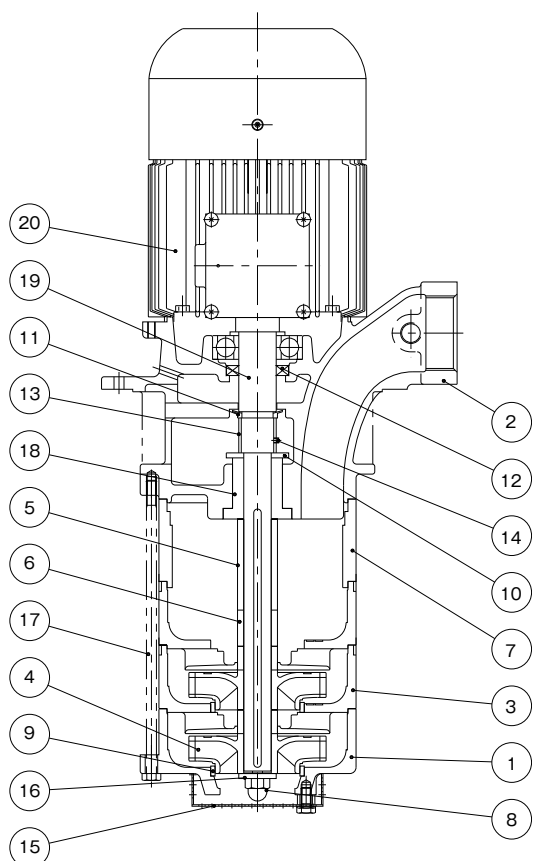


| No. | Part name                | Qty | Material |
|-----|--------------------------|-----|----------|
| 1   | Suction casing           | 1   | FC200    |
| 2   | Discharge casing         | 1   | FC200    |
| 3   | Intermediate casing      | 2   | FC200    |
| 4   | Impeller                 | 2   | FCD450   |
| 5   | Shaft spacer             | 1   | STKM     |
| 6   | Impeller nut             | 1   | SUS304   |
| 7   | Liner 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  | Through bolt             | 4   | SS400    |
| 16  | Shaft sleeve             | 1   | FCD450   |
| 17  | Main shaft               | 1   | S35C     |
| 18  | Motor                    | 1   |          |

Note 1) The materials in the table above are equivalents.

Note 2) Structure and other details are subject to change without notice.

## ●LPW50-ZL



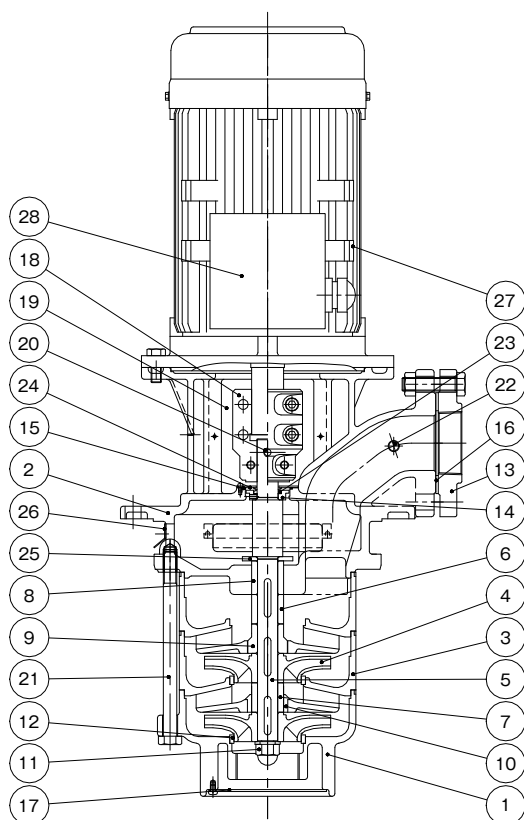
| No. | Part name                | Qty | Material |
|-----|--------------------------|-----|----------|
| 1   | Suction casing           | 1   | FC200    |
| 2   | Discharge casing         | 1   | FC200    |
| 3   | Intermediate casing      | 2   | FC200    |
| 4   | Impeller                 | 2   | FCD450   |
| 5   | Shaft spacer             | 1   | STKM     |
| 6   | Shaft spacer             | 1   | STKM     |
| 7   | Intermediate spacer      | 1   | STKM     |
| 8   | Impeller nut             | 1   | SUS304   |
| 9   | Liner 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  | Through bolt             | 4   | SS400    |
| 18  | Shaft sleeve             | 1   | FCD450   |
| 19  | Main shaft               | 1   | S35C     |
| 20  | Motor                    | 1   |          |

Note 1) The materials in the table above are equivalents.

Note 2) Structure and other details are subject to change without notice.

■ 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   | Main shaft               | 1   | S45C     |
| 6   | Shaft sleeve A           | 1   | SUS304   |
| 7   | Shaft sleeve B           | 1   | SiC      |
| 8   | Shaft sleeve C           | 1   | SUS304   |
| 9   | Shaft sleeve D           | 1   | SUS304   |
| 10  | Intermediate bushing     | 1   | SiC      |
| 11  | Impeller nut             | 1   | SUS304   |
| 12  | Liner ring               | 2   | SUS304   |
| 13  | Companion flange         | 1   | FC200    |
| 14  | Deflector                | 1   | C3604B   |
| 15  | O-ring                   | 1   | NBR      |
| 16  | Sheet packing            | 1   | NBR      |
| 17  | Strainer                 | 1   | SPCC     |
| 18  | Coupling                 | 1   | FC200    |
| 19  | Coupling cover           | 2   | SUS304   |
| 20  | Hexagon socket set screw | 1   | SCM435   |
| 21  | Through bolt             | 4   | SS400    |
| 22  | Plug                     | 1   | SS400    |
| 23  | V-ring                   | 1   | FKM      |
| 24  | Coolant sealing plate    | 1   | SUS304   |
| 25  | Deflector                | 1   | SUS304   |
| 26  | Cover                    | 3   | SUS304   |
| 27  | Motor                    | 1   |          |
| 28  | Terminal box             | 1   | ADC12    |

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

Note 1) The materials in the table above are equivalents.

Note 2) Structure and other details are subject to change without notice.

## Features

- ① Energy-saving pump equipped with a Top Runner (equivalent to IE3) motor.
- ② As the immersion length is as short as 330mm in all models, tank depths can be reduced.
- ③ Serial operation allows generating up to 3.92 MPa.\*
- ④ The fluid level during operation can be adjusted as preferred by connecting the intake piping.
- ⑤ Non-seal (mechanical seal-less) structure is adopted for excellent durability.
- ⑥ Stainless steel and special resin with high reliability are used in the pump's main unit.
- ⑦ The mounting dimension is compatible with conventional models.

\*The value is for reference only.

## Description of types

### LKW 20 09 -6 3.0 D -e

①      ②      ③      ④      ⑤      ⑥      ⑦

- |                             |                                                   |
|-----------------------------|---------------------------------------------------|
| ① Model                     | ⑥ Operating method                                |
| ② Bore diameter             | None : single operation                           |
| ③ Number of impellers       | D : series operation                              |
| ④ Frequency 5: 50Hz 6: 60Hz | ⑦ Motor efficiency Top Runner (equivalent to IE3) |
| ⑤ Output                    |                                                   |



Please note that the paint color, etc. of the actual unit may partially differ from the photo.

## Standard Specification

|                       |                                  |                                                                                                                                                                                                                            |
|-----------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Used liquid           | Property of liquid               | Water-soluble coolant liquid                                                                                                                                                                                               |
|                       | Temperature                      | 0 to 60° C (No frozen liquid)                                                                                                                                                                                              |
|                       | Allowable kinematic viscosity    | 1mm <sup>2</sup> /s                                                                                                                                                                                                        |
| Installation location |                                  | Indoor<br>Ambient temperature: 0 to 40 ° C, RH 85% or below (no condensation). Height above sea level : 1000m or less. Place not exposed to 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 source                     | 3-phase 50/60/60 Hz, 200/200/220 V                                                                                                                                                                                         |
|                       | Type                             | Totally enclosed fan-cooled indoor type                                                                                                                                                                                    |
|                       | Protection method                | IP44                                                                                                                                                                                                                       |
|                       | Thermal class                    | F                                                                                                                                                                                                                          |
|                       | Rating                           | Continuous                                                                                                                                                                                                                 |
|                       | Number of poles                  | 2P                                                                                                                                                                                                                         |
| Paint color           |                                  | Munsell N1.5                                                                                                                                                                                                               |

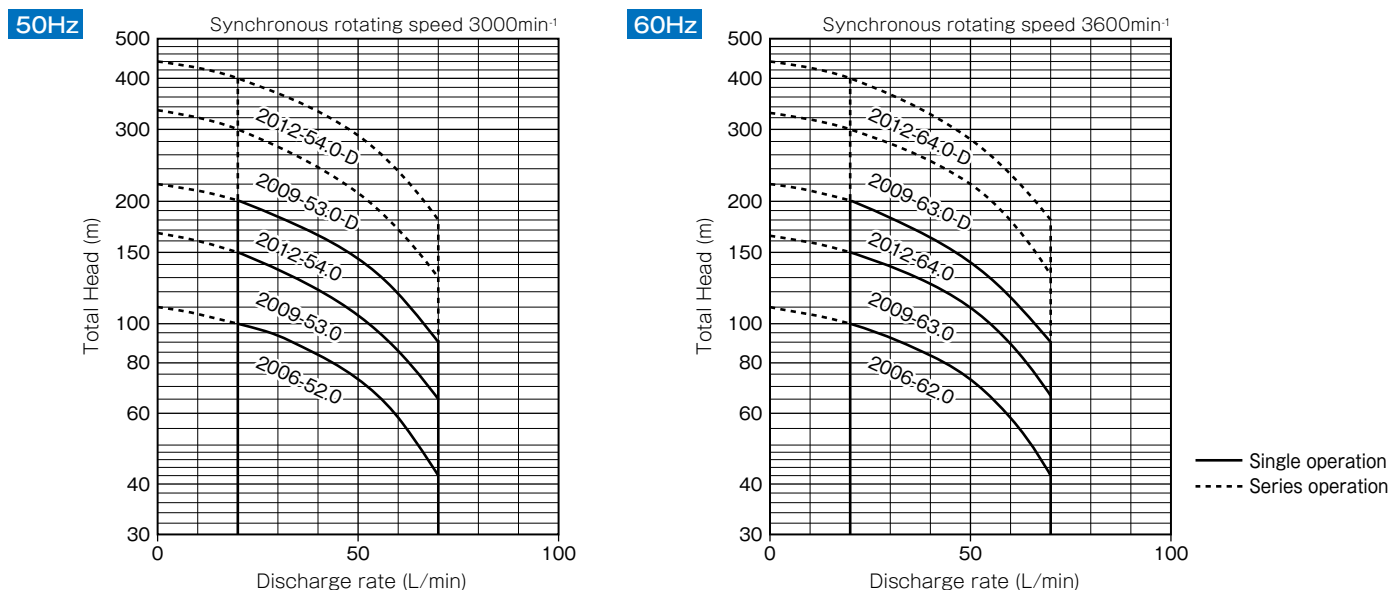
※ Special polyamide resin reinforced with glass fiber, etc.

## Table of Consumable Parts

| Output (kW) | Bearing   |             | Oil seal | O-ring<br>(For intermediate casing and spacer.) |
|-------------|-----------|-------------|----------|-------------------------------------------------|
|             | Load side | Unload side |          |                                                 |
| 2.2         | 6306ZZC3  | 6303ZZC3    | VC30456  | G135                                            |
| 3.0         | 6308ZZC3  | 6205ZZC3    | VC40586  |                                                 |
| 4.0         | 6308ZZC3  | 6205ZZC3    | VC40586  |                                                 |

## Selection chart

(Values at kinematic viscosity 1mm<sup>2</sup>/s, specific gravity 1)



## Specification table

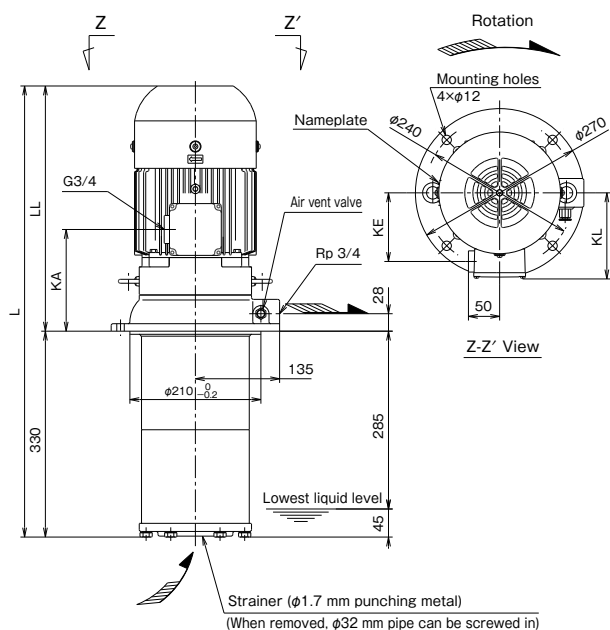
| Bore diameter (mm) | Frequency (Hz) | Type             | Rated voltage (V) | Output (kW) | Rated current (A) | Starting current (A) | Discharge rate (L/min) | Total head (m) |
|--------------------|----------------|------------------|-------------------|-------------|-------------------|----------------------|------------------------|----------------|
| 20                 | 50             | LKW2006-52.0-e   | 200               | 2.2         | 9.3               | 84                   | 20-70                  | 100-42         |
|                    |                | LKW2009-53.0-e   |                   | 3.0         | 14.8              | 180                  | 20-70                  | 150-65         |
|                    |                | LKW2012-54.0-e   |                   | 4.0         | 16.0              | 179                  | 20-70                  | 200-90         |
|                    |                | LKW2009-53.0-D-e |                   | 3.0         | 14.8              | 180                  | 20-70                  | 300-130        |
|                    |                | LKW2012-54.0-D-e |                   | 4.0         | 16.0              | 179                  | 20-70                  | 400-180        |
|                    | 60             | LKW2006-62.0-e   | 200/220           | 2.2         | 8.4/7.9           | 73/80                | 20-70                  | 100-43         |
|                    |                | LKW2009-63.0-e   |                   | 3.0         | 12.0/12.1         | 152/167              | 20-70                  | 150-67         |
|                    |                | LKW2012-64.0-e   |                   | 4.0         | 15.0/14.0         | 152/173              | 20-70                  | 200-90         |
|                    |                | LKW2009-63.0-D-e |                   | 3.0         | 12.0/12.1         | 152/167              | 20-70                  | 300-134        |
|                    |                | LKW2012-64.0-D-e |                   | 4.0         | 15.0/14.0         | 152/173              | 20-70                  | 400-180        |

Notes 1) The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for protection device.

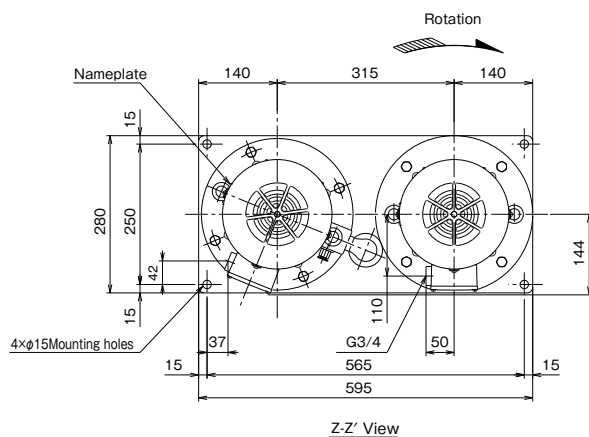
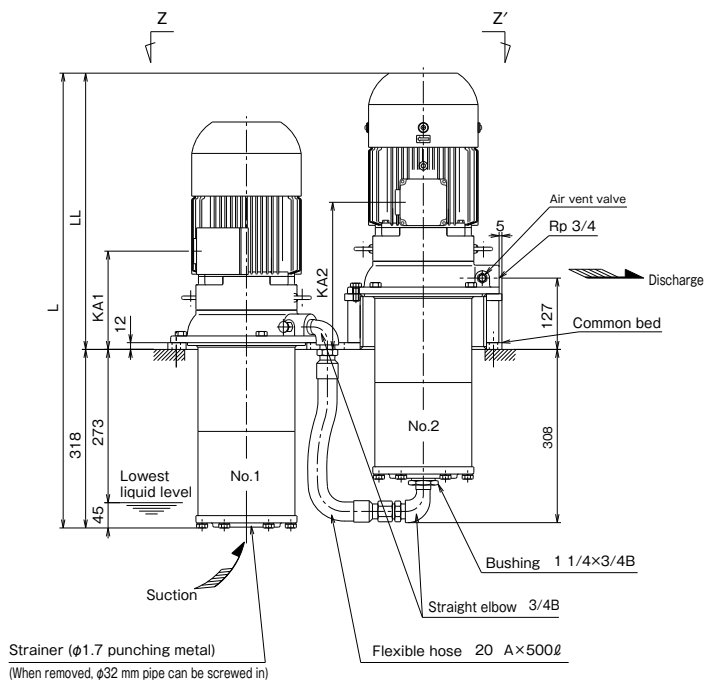
Notes 2) The rated current and the starting current value in the table above are the values per unit.

## ■ Assembly drawing

### ●Single operation



## ●Series operation



## ■ Dimensions

### ●Single operation

〈Unit : mm〉

| Bore diameter | 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               |

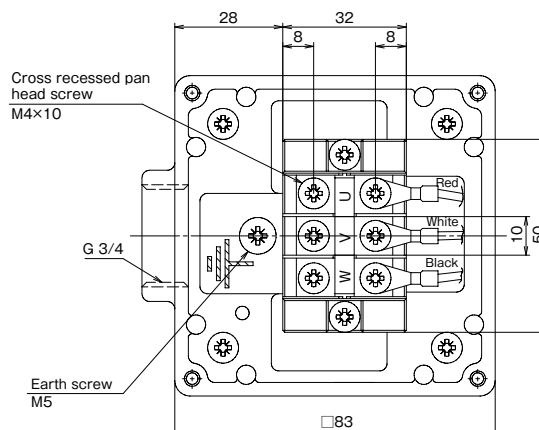
## ●Series operation

&lt;Unit : mm&gt;

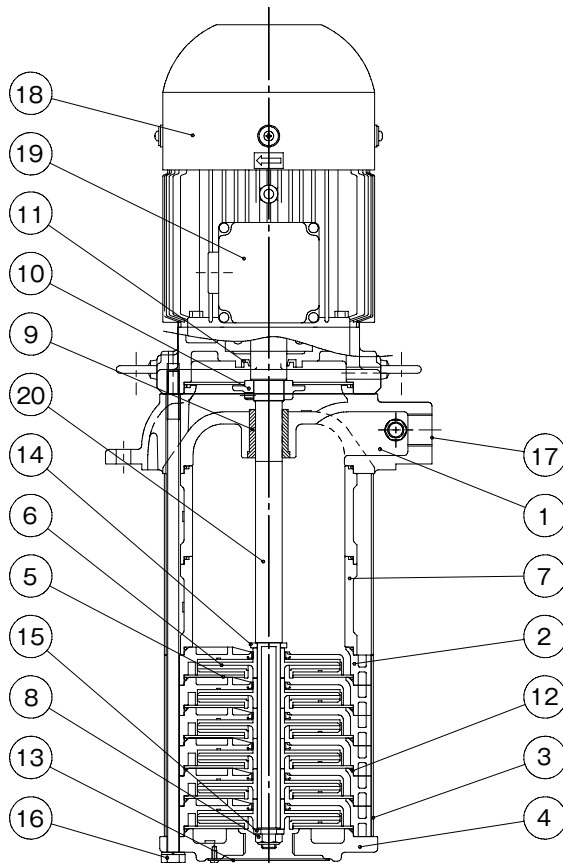
| Bore diameter | Frequency (Hz) | Type             | KA1 | KA2 | LL  | L   | Approx. mass[kg] |
|---------------|----------------|------------------|-----|-----|-----|-----|------------------|
| 20            | 50             | LKW2009-53.0-D-e | 175 | 188 | 492 | 810 | 128              |
|               |                | 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 series operation, 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 <sup>※1</sup> (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 bushing   | 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  | Through bolt        | 6     | SS400                       |
| 17  | Air vent valve      | 1     | C3604BD                     |
| 18  | Motor               | 1     | ADC                         |
| 19  | Terminal box        | 1     | ADC (※4)                    |
| 20  | Main shaft          | 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

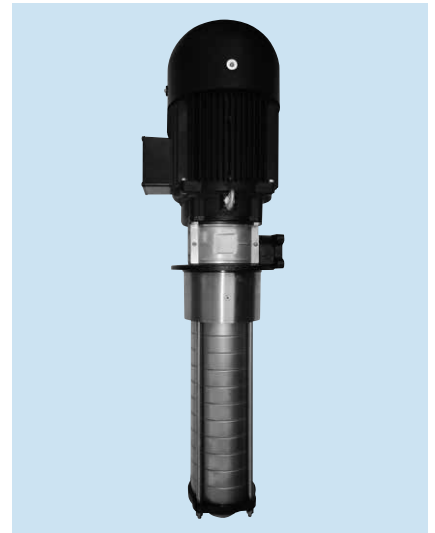
※4 Terminal box cover is SECE.

Note 1) The materials in the table above are equivalents.

Note 2) Structure and other details are subject to change without notice.

## Features

- ① Non-seal (mechanical seal-less) structure is adopted.
- ② Energy-saving pump with a Top Runner (equivalent to IE3) motor.
- ③ Stainless steel is used in the pump's main liquid contact part.
- ④ Measures against air suction into the pump are taken when the fluid level lowers.
- ⑤ The lineup that includes both VKB-H type (pressure type) and VKB-Q type (flow type) broadens the scope of choices of heads and flow rates.
- ⑥ The lineup including the models complying with global standards by supporting efficiency and other regulations.  
 Japan : Top Runner efficiency  
 Europe : IE3 efficiency, CE marking (EU Directive)  
 RoHS Directive (2011/65/EU) , 10 substances restricted  
 China : GB3 (GB18613-2020)



Please note that the paint color, etc. of the actual unit may partially differ from the photo.

## Description of types

### VKB 19 26 2 A H -e

- ① Model
- ② Number of impellers
- ③ Number of stages
- ④ Series number
- ⑤ Frequency A: 50/60Hz  
F: 50Hz
- ⑥ Characteristics H: Pressure type  
Q: Flow type
- ⑦ Motor efficiency Top Runner efficiency equivalent to IE3

## Global standards

| Type  | Standards/Regulations                  | Output |
|-------|----------------------------------------|--------|
| VKB-e | Top Runner efficiency (IE3 equivalent) | ●      |
|       | CE Marking EU energy efficiency        | ●      |
|       | GB3(GB18613-2020)                      | ●※1    |

※1 GB certification label is attached as exclusive for GB standard. ● : Compliant

## Standard Specification

|                             |                                     |                                                                                                                                                                                                                             |                      |                        |
|-----------------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------------|
| Used liquid                 | Property of liquid                  | Grinding liquid, cutting liquid, etc., after secondary treatment *1.                                                                                                                                                        |                      |                        |
|                             | Temperature                         | -20 to 90° C (No frozen liquid)                                                                                                                                                                                             |                      |                        |
|                             | Allowable kinematic viscosity       | Model type                                                                                                                                                                                                                  | At 50 Hz             | At 60 Hz               |
|                             |                                     | VKB07□□2AH-e,VKB04□□2AQ-e<br>VKB06□□2AQ-e,VKB12□□2AQ-e                                                                                                                                                                      | 75mm <sup>2</sup> /s | 37.5mm <sup>2</sup> /s |
|                             |                                     | VKB □□□□2F □ -e<br>(50 Hz exclusive unit)                                                                                                                                                                                   | 1mm <sup>2</sup> /s  | —                      |
| Models other than the above |                                     | 75mm <sup>2</sup> /s                                                                                                                                                                                                        | 75mm <sup>2</sup> /s |                        |
| Installation location       |                                     | Indoor<br>Ambient temperature: -20 to 40 ° C, RH 85% or below (no condensation),Height above sea level : 1000m or less, Place not exposed to 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                                                                                                                                                                                                                      |                      |                        |
|                             | Main shaft (motor side + pump side) | S35C+SUS316                                                                                                                                                                                                                 |                      |                        |
| Shaft seal structure        |                                     | Non-seal (mechanical seal-less)                                                                                                                                                                                             |                      |                        |
| Motor                       | Type                                | Totally enclosed fan-cooled indoor type                                                                                                                                                                                     |                      |                        |
|                             | Protection method                   | IP54                                                                                                                                                                                                                        |                      |                        |
|                             | Power source                        | A: 3-phase 50/60/60Hz 200/200/220V<br>F: 3-phase 50Hz 200V                                                                                                                                                                  |                      |                        |
|                             | Thermal class                       | F                                                                                                                                                                                                                           |                      |                        |
|                             | Number of poles                     | 2P                                                                                                                                                                                                                          |                      |                        |
|                             | Standard                            | IEC60034-1 CE Marking                                                                                                                                                                                                       |                      |                        |
| Paint color                 | Pump                                | Munsell N1                                                                                                                                                                                                                  |                      |                        |
|                             | Motor                               | Black                                                                                                                                                                                                                       |                      |                        |

※1 Take note that special liquid such as water, printing liquid or acid liquid cannot be used. Contact us for other special liquid (ceramic, etc.).

## Special specification

|                     |                                                                                   |
|---------------------|-----------------------------------------------------------------------------------|
| Motor modifications | Voltage change, change of terminal box position, change of terminal box direction |
| 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

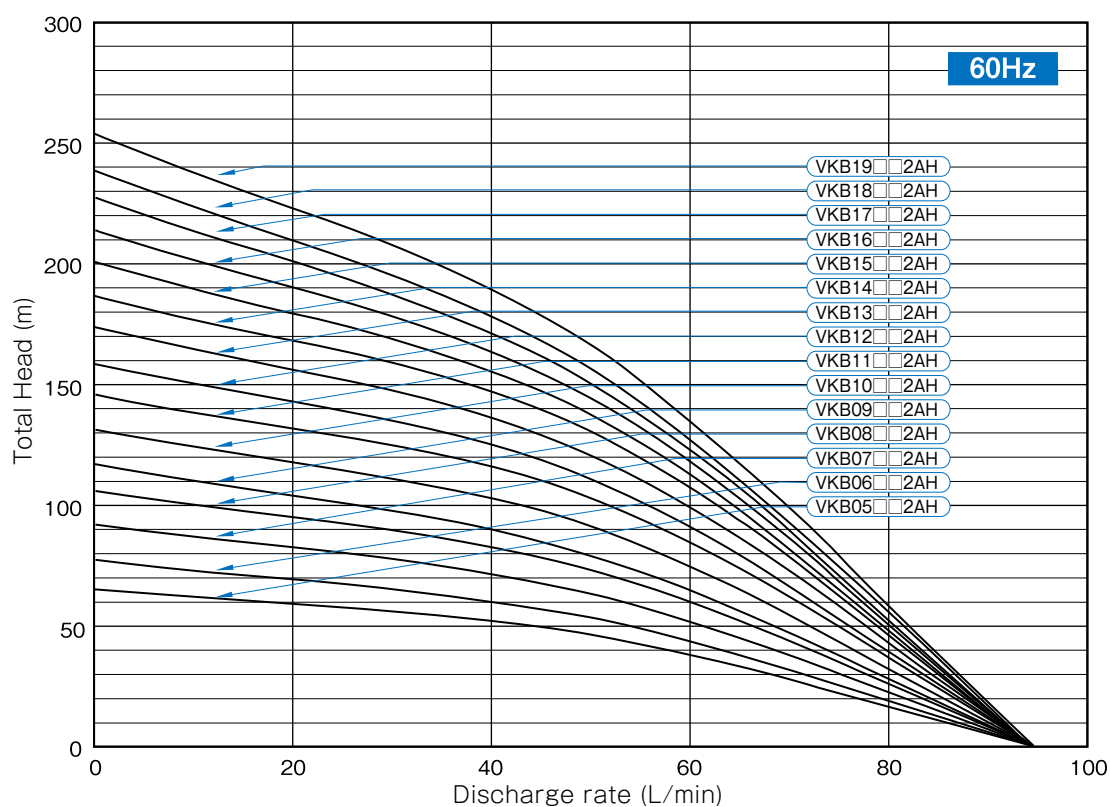
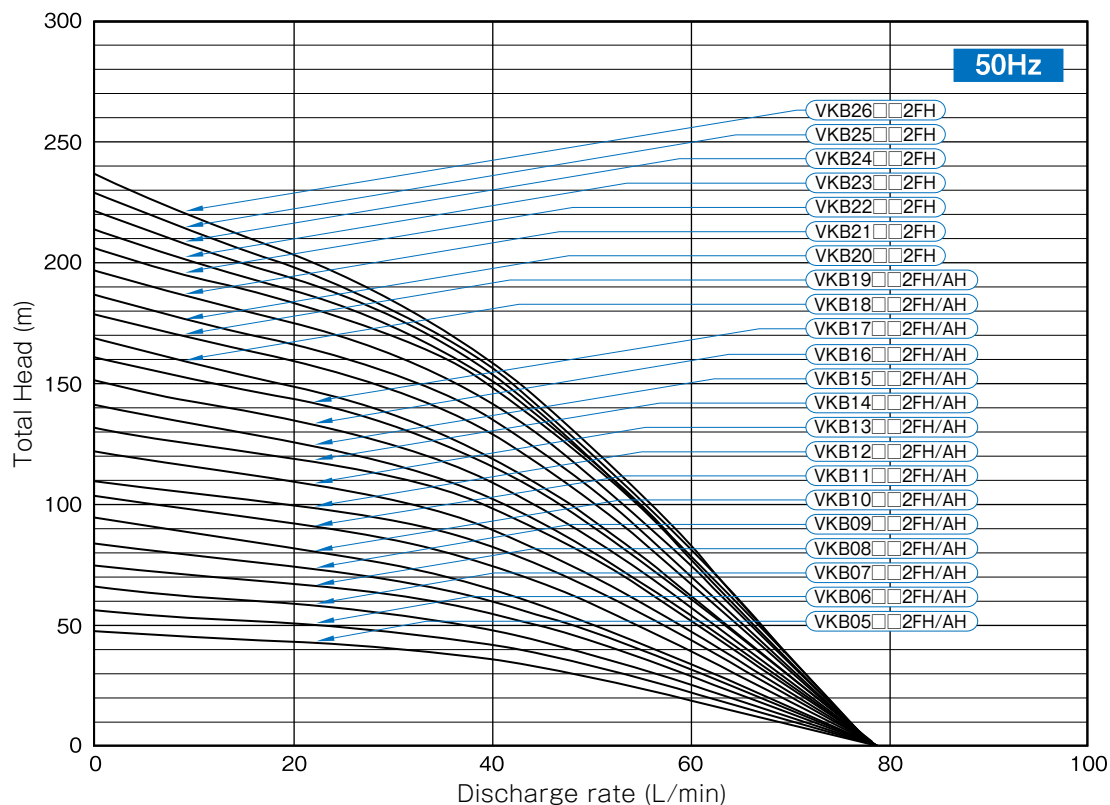
| Type                                                                                                                                             | Bearings  |             | Oil seal                 |                             |             | O-ring<br>(Companion flange)<br>Material: FKM |
|---------------------------------------------------------------------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

### Selection chart

#### ●VKB-H

(Values at kinematic viscosity 1mm<sup>2</sup>/s, specific gravity 1)

Synchronous rotating speed 50Hz : 3000min<sup>-1</sup>  
60Hz : 3600min<sup>-1</sup>

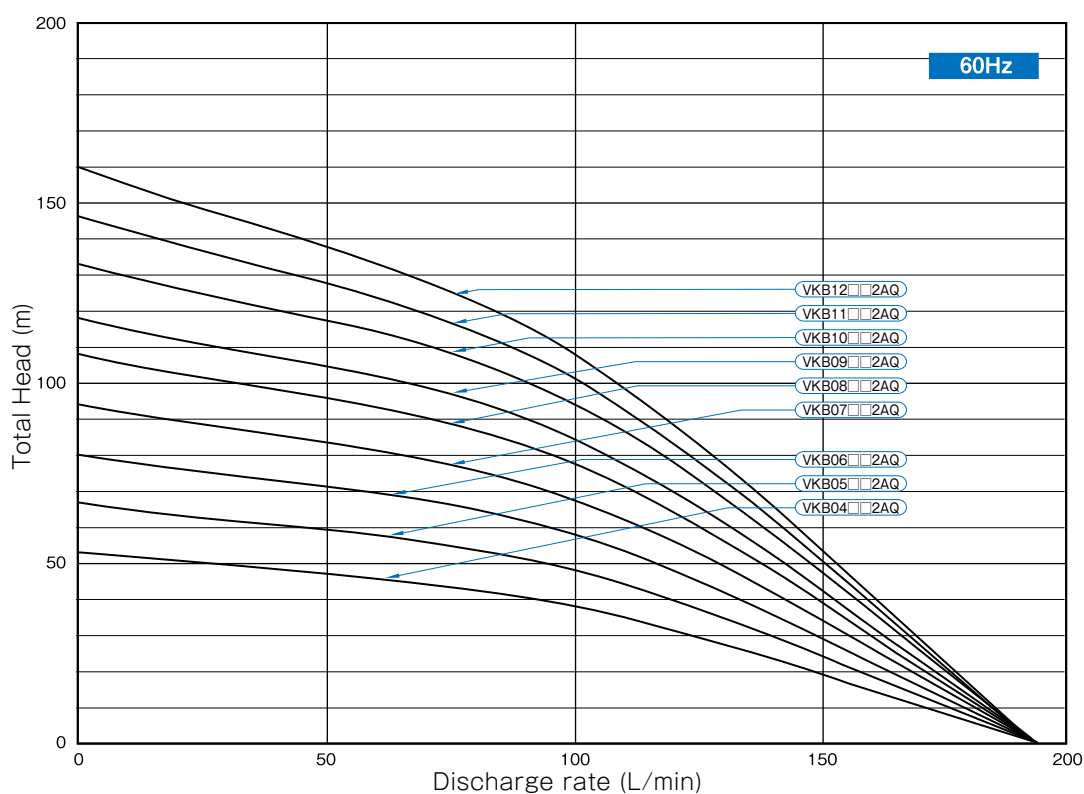
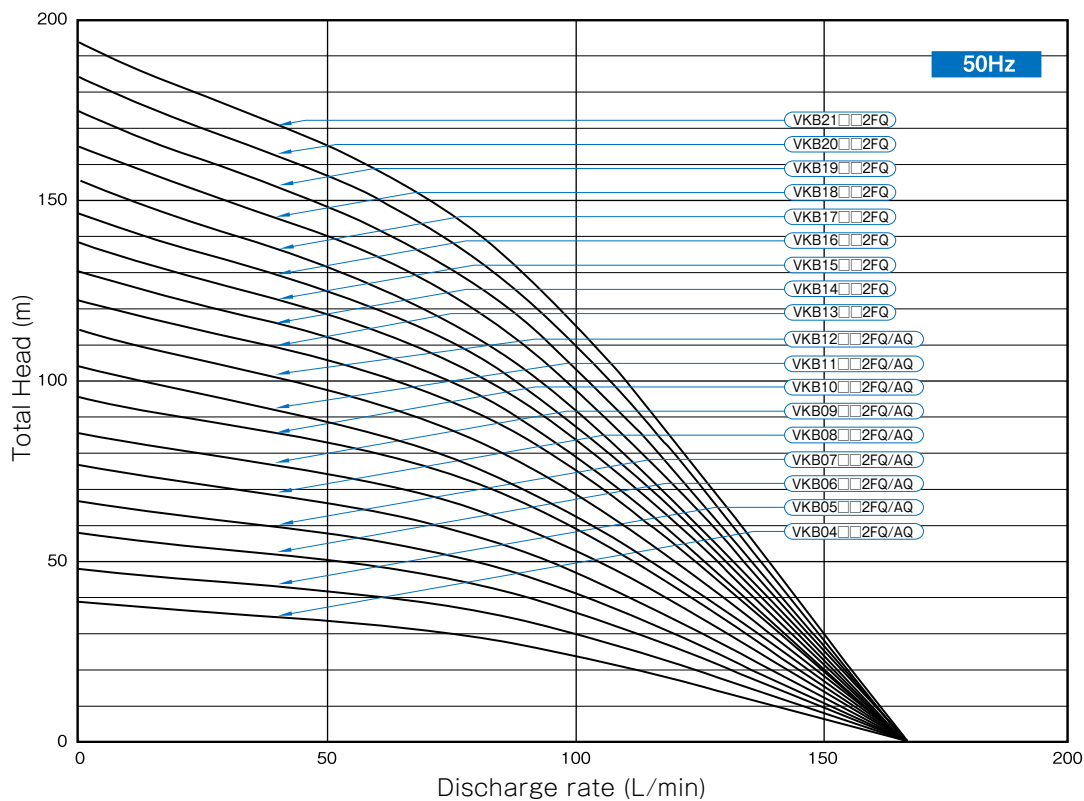


Note 1) The above characteristic curves reflect the full impeller condition of the units. The total head may be decreased depending on the flow rate if empty casings are involved because of pressure loss at the empty casings.

Note 2) Take note that discharge rate varies considerably depending on the type and kinematic viscosity of liquid.  
Above selection chart may not be used depending on the kinematic viscosity and specific gravity of the liquid.

## ■ Selection chart

## ● VKB-Q

(Values at kinematic viscosity  $1\text{mm}^2/\text{s}$ , specific gravity 1)Synchronous rotating speed 50Hz :  $3000\text{min}^{-1}$   
60Hz :  $3600\text{min}^{-1}$ 

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 discharge rate varies considerably depending on the type and kinematic viscosity of liquid. Above selection chart may not be used depending on the kinematic viscosity and specific gravity of the liquid.

### ■ 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 kinematic viscosity (mm <sup>2</sup> /s) | Rated voltage (V) | Nominal output (kW) | Rated current (A) | Starting current (A) | Discharge rate (L/min) | Total head (m) | Allowable kinematic viscosity (mm <sup>2</sup> /s) |
| VKB05□□2AH-e | 200               | 0.5                 | 5.4               | 56                   | 40                     | 30             | 75                                                 | 200/220           | 0.85                | 5.8/5.6           | 55/60                | 50                     | 40             | 75                                                 |
| VKB06□□2AH-e |                   | 0.6                 | 5.9               | 56                   | 40                     | 36             |                                                    |                   | 1.02                | 6.0/5.8           | 55/60                | 50                     | 48             |                                                    |
| VKB07□□2AH-e |                   | 0.7                 | 6.2               | 56                   | 40                     | 42             |                                                    |                   | 1.19                | 6.0/5.8           | 55/60                | 50                     | 56             |                                                    |
| VKB08□□2AH-e |                   | 0.8                 | 6.9               | 84                   | 40                     | 48             |                                                    |                   | 1.36                | 8.8/8.3           | 73/80                | 50                     | 64             | 75                                                 |
| VKB09□□2AH-e |                   | 0.9                 | 7.4               | 84                   | 40                     | 54             |                                                    |                   | 1.53                | 10.0/9.1          | 73/80                | 50                     | 72             |                                                    |
| VKB10□□2AH-e |                   | 1                   | 12.0              | 180                  | 40                     | 60             |                                                    |                   | 1.7                 | 10.3/10.6         | 152/167              | 50                     | 80             |                                                    |
| VKB11□□2AH-e |                   | 1.1                 | 12.3              | 180                  | 40                     | 66             |                                                    |                   | 1.87                | 11.1/11.3         | 152/167              | 50                     | 88             |                                                    |
| VKB12□□2AH-e |                   | 1.2                 | 12.5              | 180                  | 40                     | 72             |                                                    |                   | 2.04                | 11.7/11.8         | 152/167              | 50                     | 96             |                                                    |
| VKB13□□2AH-e |                   | 1.3                 | 12.9              | 180                  | 40                     | 78             |                                                    |                   | 2.21                | 12.7/12.6         | 152/167              | 50                     | 104            |                                                    |
| VKB14□□2AH-e |                   | 1.4                 | 13.1              | 180                  | 40                     | 84             |                                                    |                   | 2.38                | 13.5/13.2         | 152/167              | 50                     | 112            |                                                    |
| VKB15□□2AH-e |                   | 1.5                 | 13.6              | 180                  | 40                     | 90             |                                                    |                   | 2.55                | 14.4/13.9         | 152/167              | 50                     | 120            |                                                    |
| VKB16□□2AH-e |                   | 1.6                 | 14.0              | 180                  | 40                     | 96             |                                                    |                   | 2.72                | 15.3/14.6         | 152/167              | 50                     | 128            |                                                    |
| VKB17□□2AH-e |                   | 1.7                 | 14.5              | 180                  | 40                     | 102            |                                                    |                   | 2.89                | 16.2/15.3         | 152/167              | 50                     | 136            |                                                    |
| VKB18□□2AH-e |                   | 1.8                 | 15.2              | 180                  | 40                     | 108            |                                                    |                   | 3.06                | 16.2/15.3         | 152/167              | 50                     | 144            |                                                    |
| VKB19□□2AH-e |                   | 1.9                 | 15.7              | 180                  | 40                     | 114            |                                                    |                   | 3.23                | 16.2/15.3         | 152/167              | 50                     | 152            |                                                    |

Note) The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for protection 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 kinematic viscosity (mm <sup>2</sup> /s) |
| VKB05□□2FH-e | 200               | 0.5                 | 3.6               | 30                   | 40                     | 30             | 1                                                  |
| VKB06□□2FH-e |                   | 0.6                 | 4.0               | 30                   | 40                     | 36             |                                                    |
| VKB07□□2FH-e |                   | 0.7                 | 4.4               | 30                   | 40                     | 42             |                                                    |
| VKB08□□2FH-e |                   | 0.8                 | 5.8               | 56                   | 40                     | 48             |                                                    |
| VKB09□□2FH-e |                   | 0.9                 | 6.3               | 56                   | 40                     | 54             |                                                    |
| VKB10□□2FH-e |                   | 1                   | 6.4               | 56                   | 40                     | 60             |                                                    |
| VKB11□□2FH-e |                   | 1.1                 | 6.9               | 84                   | 40                     | 66             |                                                    |
| VKB12□□2FH-e |                   | 1.2                 | 7.2               | 84                   | 40                     | 72             |                                                    |
| VKB13□□2FH-e |                   | 1.3                 | 7.6               | 84                   | 40                     | 78             |                                                    |
| VKB14□□2FH-e |                   | 1.4                 | 8.0               | 84                   | 40                     | 84             |                                                    |
| VKB15□□2FH-e |                   | 1.5                 | 8.5               | 84                   | 40                     | 90             |                                                    |
| VKB16□□2FH-e |                   | 1.6                 | 9.0               | 84                   | 40                     | 96             |                                                    |
| VKB17□□2FH-e |                   | 1.7                 | 9.4               | 84                   | 40                     | 102            |                                                    |
| VKB18□□2FH-e |                   | 1.8                 | 10.0              | 84                   | 40                     | 108            |                                                    |
| VKB19□□2FH-e |                   | 1.9                 | 10.5              | 84                   | 40                     | 114            |                                                    |
| VKB20□□2FH-e |                   | 2                   | 13.3              | 180                  | 40                     | 120            |                                                    |
| VKB21□□2FH-e |                   | 2.1                 | 13.5              | 180                  | 40                     | 126            |                                                    |
| VKB22□□2FH-e |                   | 2.2                 | 13.8              | 180                  | 40                     | 132            |                                                    |
| VKB23□□2FH-e |                   | 2.3                 | 14.1              | 180                  | 40                     | 138            |                                                    |
| VKB24□□2FH-e |                   | 2.4                 | 14.5              | 180                  | 40                     | 144            |                                                    |
| VKB25□□2FH-e |                   | 2.5                 | 14.9              | 180                  | 40                     | 150            |                                                    |
| VKB26□□2FH-e |                   | 2.6                 | 15.4              | 180                  | 40                     | 156            |                                                    |

Note 1) The 50 Hz exclusive units are for use with water-soluble coolant liquids (1mm<sup>2</sup>/s kinematic viscosity) only. Contact us when your applications involve oil-based coolant liquids.

Note 2) The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for protection device.

※ Please inquire separately for China GB3 (GB18613-2020) compliant products.

## ●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 kinematic viscosity (mm <sup>2</sup> /s) | Rated voltage (V) | Nominal output (kW) | Rated current (A) | Starting current (A) | Discharge rate (L/min) | Total head (m) | Allowable kinematic viscosity (mm <sup>2</sup> /s) |
| VKB04□□2AQ-e | 200               | 0.72                | 6.0               | 56                   | 85                     | 26             | 75                                                 | 200/220           | 1.2                 | 6.0/5.8           | 55/60                | 100                    | 36             | 37.5                                               |
| VKB05□□2AQ-e |                   | 0.9                 | 7.0               | 84                   | 85                     | 33             |                                                    |                   | 1.5                 | 8.8/8.3           | 73/80                | 100                    | 46             | 75                                                 |
| VKB06□□2AQ-e |                   | 1.08                | 7.8               | 84                   | 85                     | 39             |                                                    |                   | 1.8                 | 10.0/9.1          | 73/80                | 100                    | 54             | 37.5                                               |
| VKB07□□2AQ-e |                   | 1.26                | 12.4              | 180                  | 85                     | 45             |                                                    |                   | 2.1                 | 11.3/11.4         | 152/167              | 100                    | 63             | 75                                                 |
| VKB08□□2AQ-e |                   | 1.44                | 12.9              | 180                  | 85                     | 52             |                                                    |                   | 2.4                 | 12.7/12.6         | 152/167              | 100                    | 72             |                                                    |
| VKB09□□2AQ-e |                   | 1.62                | 13.6              | 180                  | 85                     | 58             |                                                    |                   | 2.7                 | 14.0/13.5         | 152/167              | 100                    | 81             |                                                    |
| VKB10□□2AQ-e |                   | 1.8                 | 14.3              | 180                  | 85                     | 65             |                                                    |                   | 3                   | 15.5/14.8         | 152/167              | 100                    | 90             |                                                    |
| VKB11□□2AQ-e |                   | 1.98                | 15.3              | 180                  | 85                     | 71             |                                                    |                   | 3.3                 | 16.2/15.3         | 152/167              | 100                    | 99             |                                                    |
| VKB12□□2AQ-e |                   | 2.16                | 16.3              | 180                  | 85                     | 78             |                                                    |                   | 3.6                 | 16.2/15.3         | 152/167              | 100                    | 108            | 37.5                                               |

Note) The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for protection device.

## • VKB-FQ-e

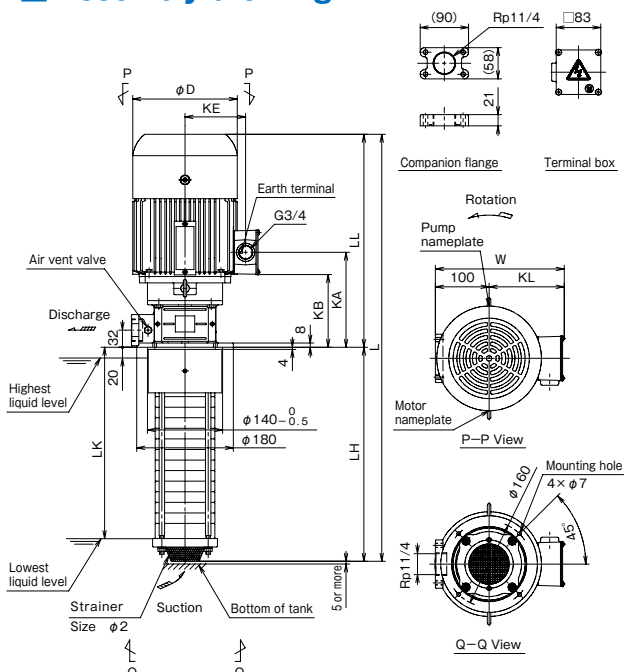
| Type         | 50Hz              |                     |                   |                      |                        |                |                                                    |
|--------------|-------------------|---------------------|-------------------|----------------------|------------------------|----------------|----------------------------------------------------|
|              | Rated voltage (V) | Nominal output (kW) | Rated current (A) | Starting current (A) | Discharge rate (L/min) | Total head (m) | Allowable kinematic viscosity (mm <sup>2</sup> /s) |
| VKB04□□2FQ-e | 200               | 0.72                | 4.4               | 30                   | 85                     | 26             | 1                                                  |
| VKB05□□2FQ-e |                   | 0.9                 | 6.0               | 56                   | 85                     | 33             |                                                    |
| VKB06□□2FQ-e |                   | 1.08                | 6.4               | 56                   | 85                     | 39             |                                                    |
| VKB07□□2FQ-e |                   | 1.26                | 6.8               | 84                   | 85                     | 45             |                                                    |
| VKB08□□2FQ-e |                   | 1.44                | 7.6               | 84                   | 85                     | 52             |                                                    |
| VKB09□□2FQ-e |                   | 1.62                | 8.4               | 84                   | 85                     | 58             |                                                    |
| VKB10□□2FQ-e |                   | 1.8                 | 9.2               | 84                   | 85                     | 65             |                                                    |
| VKB13□□2FQ-e |                   | 2.34                | 13.7              | 180                  | 85                     | 84             |                                                    |
| VKB14□□2FQ-e |                   | 2.52                | 14.2              | 180                  | 85                     | 91             |                                                    |
| VKB15□□2FQ-e |                   | 2.7                 | 14.8              | 180                  | 85                     | 97             |                                                    |
| VKB16□□2FQ-e |                   | 2.88                | 15.6              | 180                  | 85                     | 104            |                                                    |
| VKB17□□2FQ-e |                   | 3.06                | 16.3              | 180                  | 85                     | 110            |                                                    |
| VKB18□□2FQ-e |                   | 3.24                | 16.9              | 180                  | 85                     | 117            |                                                    |
| VKB19□□2FQ-e |                   | 3.42                | 17.4              | 180                  | 85                     | 123            |                                                    |
| VKB20□□2FQ-e |                   | 3.6                 | 17.4              | 180                  | 85                     | 130            |                                                    |
| VKB21□□2FQ-e |                   | 3.78                | 17.4              | 180                  | 85                     | 136            |                                                    |

Note 1) The 50Hz exclusive units are for use with water-soluble coolant liquids (1mm<sup>2</sup>/s kinematic viscosity) only. Contact us when your applications involve oil-based coolant liquids.

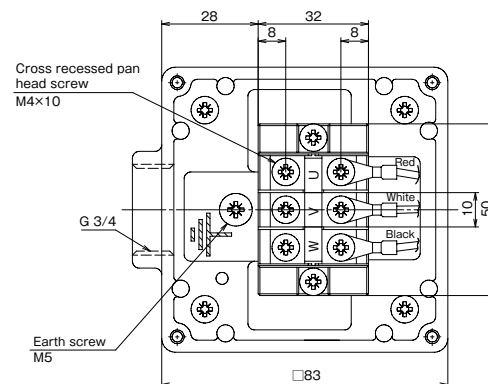
Note 2) The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for protection device.

※ Please inquire separately for China GB3 (GB18613-2020) compliant products.

## ■ Assembly drawing



## ■ Detailed drawing of the terminal box



### ■ Dimensions

#### ●VKB-H

• VKB-AH-e

(Unit : mm)

| Type         | L    | LH  | LK  | Approx.mass<br>(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<br>(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 |
| 10~19               | 195 | 177 | 135 | 113 | 140 | 397 | 240 |

• VKB-FH-e

(Unit : mm)

| Type         | L   | LH  | LK  | Approx.mass<br>(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<br>(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<br>(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)

| 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 |

(Unit : mm)

| Type         | L    | LH  | LK  | Approx.mass<br>(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                  |

• VKB-FQ-e

(Unit : mm)

| Type         | L    | LH  | LK  | Approx.mass<br>(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)

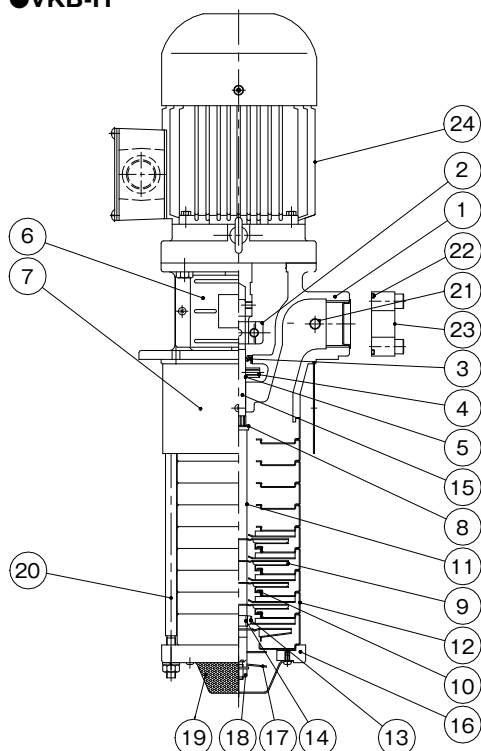
| Type         | L    | LH  | LK  | Approx.mass<br>(kg) |
|--------------|------|-----|-----|---------------------|
| VKB09122FQ-e | 788  | 431 | 389 | 31                  |
| VKB09142FQ-e | 844  | 487 | 445 | 31                  |
| VKB09162FQ-e | 900  | 543 | 501 | 32                  |
| VKB09192FQ-e | 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 |

### Sectional drawing

#### ●VKB-H

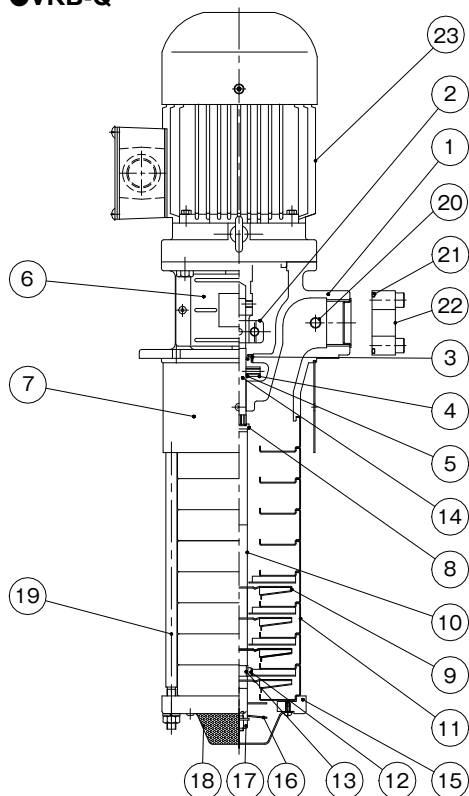


| No. | Part name                         | Material    |
|-----|-----------------------------------|-------------|
| 1   | Pump leg                          | FC200       |
| 2   | Coupling                          | S45C        |
| 3   | Oil seal                          | NBR         |
| 4   | Oil 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  | Main shaft (motor side+pump side) | S35C+SUS316 |
| 16  | Suction chamber                   | FC200       |
| 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 1) The materials in the table above are equivalents.

Note 2) 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  | Main shaft (motor side+pump side) | S35C+SUS316 |
| 15  | Suction chamber                   | FC200       |
| 16  | Screw                             | SUS304      |
| 17  | U-nut                             | SUS304      |
| 18  | Wide strainer                     | SUS304      |
| 19  | Fastening bolt                    | SUS304      |
| 20  | Air vent valve                    | BRASS       |
| 21  | O-ring                            | FKM         |
| 22  | Companion flange                  | FC150       |
| 23  | Motor                             | —           |

Note 1) The materials in the table above are equivalents.

Note 2) Structure and other details are subject to change without notice.

## Features

- ① Non-seal (mechanical seal-less) structure is adopted.
- ② Stainless steel is used in the pump's main liquid contact part and SiC bearings with increased wear resistance are adopted.
- ③ Measures against air suction into the pump are taken when the fluid level lowers.
- ④ Energy saving by high efficiency impeller!  
Power consumption decreases by 20% compared to conventional models!
- ⑤ The lineup including the models complying with global standards by supporting efficiency and other regulations.  
 Japan : Top Runner efficiency  
 Europe : IE3 efficiency, CE marking(EU Directive)  
           RoHS Directive (2011/65/EU), 10 restricted substances  
 USA : NEMA Premium efficiency (IE3 efficiency), UL standards (safety)  
 Korea : Energy Efficiency Label and Standard Program (IE3)  
 Canada : CSA standard (efficiency), CSA standard (safety)  
 China : GB3 (GB18613-2020)
- ⑥ The mounting dimension is compatible with conventional models.



Please note that the paint color, etc. of the actual unit may partially differ from the photo.

## 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.

### The advantages of a non-seal pump

1

**No trouble such as coolant leaks.**

Helps cut down on running costs.

2

**Prevents air entrainment.**

Reduces initial problems.

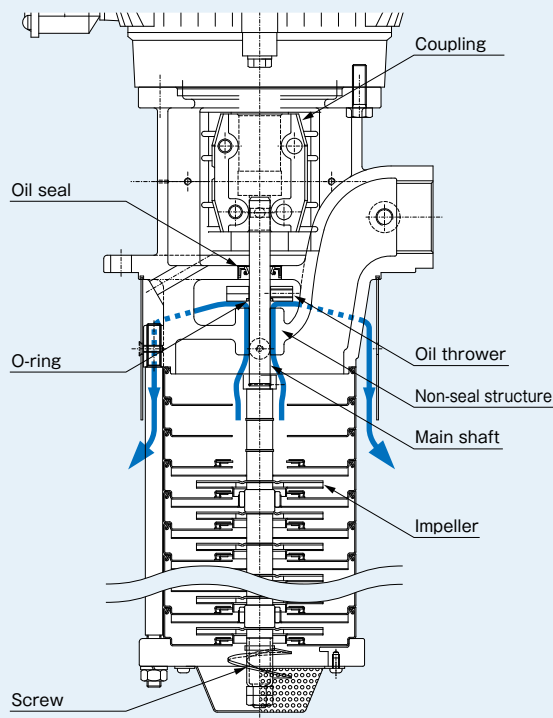
3

**Not easily affected by a small quantity of liquid or shut-off operations.**

Enables a flexible operation system.

### ※What is non-seal structure?

This structure inwardly releases coolant by depressurizing 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<sup>3</sup>/h)
- ④ Number of casings
- ⑤ Number of impellers
- ⑥ Frequency 5 : 50Hz 6 : 60Hz
- ⑦ Output
- ⑧ Motor efficiency
  - e : Top Runner efficiency (equivalent to IE3)
  - 7W: Equipped with NEMA Premium efficiency, UL/CSA certified motor (Output less than 0.75kW complies to safety standards only)
  - KS : Equipped with Korea Energy Efficiency Label and Standard Program compliant motor (IE3)

## Global standards

| Type   | Standards/Regulations                              | Output       |             |
|--------|----------------------------------------------------|--------------|-------------|
|        |                                                    | 0.75kW-7.5kW | 11kW-18.5kW |
| LVS-e  | Top Runner efficiency (IE3 equivalent)             | ●            | ●           |
|        | CE Marking                                         | ●            |             |
|        | EU energy efficiency GB3(GB18613-2020)             | ●※1          |             |
| LVS-7W | UL Standards (safety)                              | ●            |             |
|        | NEMA Premium efficiency                            | ●            |             |
| LVS-KS | Canada CSA standard (efficiency, safety)           | ●            |             |
|        | Energy Efficiency Label and Standard Program (IE3) | ●            |             |

※1 GB certification label is attached as exclusive for GB standard. ● : Compliant

## Standard Specification

|                       |                               |                                                                                                                                                                                                                              |
|-----------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Used liquid           | Property of liquid            | Water soluble coolants (e.g. grinding liquid, cutting liquid after secondary treatment) *1                                                                                                                                   |
|                       | Temperature                   | 0 to 90° C (No frozen liquid)                                                                                                                                                                                                |
|                       | Allowable kinematic viscosity | 1mm <sup>2</sup> /s                                                                                                                                                                                                          |
| Installation location |                               | Indoor<br>Ambient temperature: 0 to 40° C. RH 85% or below (no condensation).<br>Height above sea level : 1000m or less. Place not exposed to direct sunlight. Place in an area free of corrosive or explosive gas or vapor. |
| Material              | Suction/Discharge casing      | FC200                                                                                                                                                                                                                        |
|                       | Intermediate casing           | SUS304                                                                                                                                                                                                                       |
|                       | Impeller                      | SUS304                                                                                                                                                                                                                       |
|                       | Main shaft                    | SUS420J2                                                                                                                                                                                                                     |
| Shaft seal structure  |                               | Non-seal (mechanical seal-less)                                                                                                                                                                                              |
| Motor                 | Type                          | Totally enclosed fan-cooled outdoor type *2                                                                                                                                                                                  |
|                       | Protection method             | IP55                                                                                                                                                                                                                         |
|                       | Power source                  | 3-phase 50/60/60Hz, 200/200/230V 0.75~7.5kW *3<br>3-phase 50/60/60Hz, 200/200/220V 11~18.5kW                                                                                                                                 |
|                       | Thermal class                 | F *4                                                                                                                                                                                                                         |
|                       | Number of poles               | 2P                                                                                                                                                                                                                           |
|                       | Standard                      | IEC60034-1                                                                                                                                                                                                                   |
| Paint color           | Pump                          | Munsell N1                                                                                                                                                                                                                   |
|                       | Motor                         | Black                                                                                                                                                                                                                        |

\*1 If the liquid contains hard sludge, such as abrasive powder, ground powder, or ground diamond grains, the service life might be shortened. Please set up a filter (magnet filter or paper filter, etc.). Take note that water cannot be used. Contact us for other special liquid (pure water, alkali-acid liquid, ceramic, etc.).

\*2 The pump cannot be installed outside.

\*3 Korea Energy Efficiency Label and Standard Program (IE3)/NEMA Premium efficiency (IE3), UL Standards (safety) : 3-phase 60Hz 200V-230V, GB18613-2020: 3-phase 50Hz 200V, 50Hz 380V

\*4 Thermal class of -7W type is class A.

## Special specification

|                     |                                                                                            |
|---------------------|--------------------------------------------------------------------------------------------|
| Motor modifications | Voltage change *1, change of terminal box position *2, change of terminal box direction *3 |
| Change of structure | Stainless steel suction casing *4                                                          |

\*1 7.5kW or less (50Hz/380V,400V 60Hz/400V 460V)

11kW or more(50Hz/380V,400V,415V,420V,440V 60Hz/400V,440V,460V,480V)

\*2 Change of terminal box position (every 90° when viewed from above)

\*3 Terminal box direction (every 90° when viewed from front), Applicable: 1.5 kW to 18.5 kW

\*4 "-SU" is appended to the end of model type.

Note: The pump is not 100% made of stainless steel. Discharge casings and companion flanges are made of cast iron.

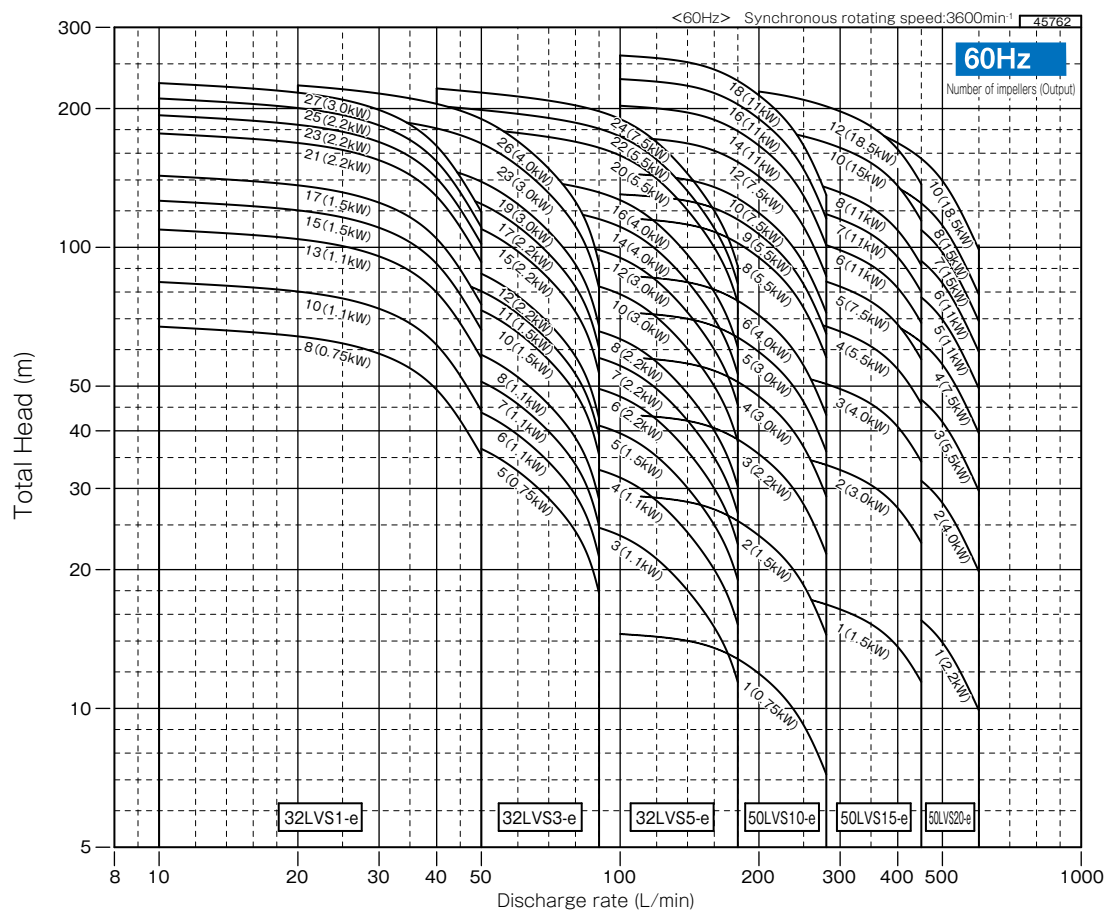
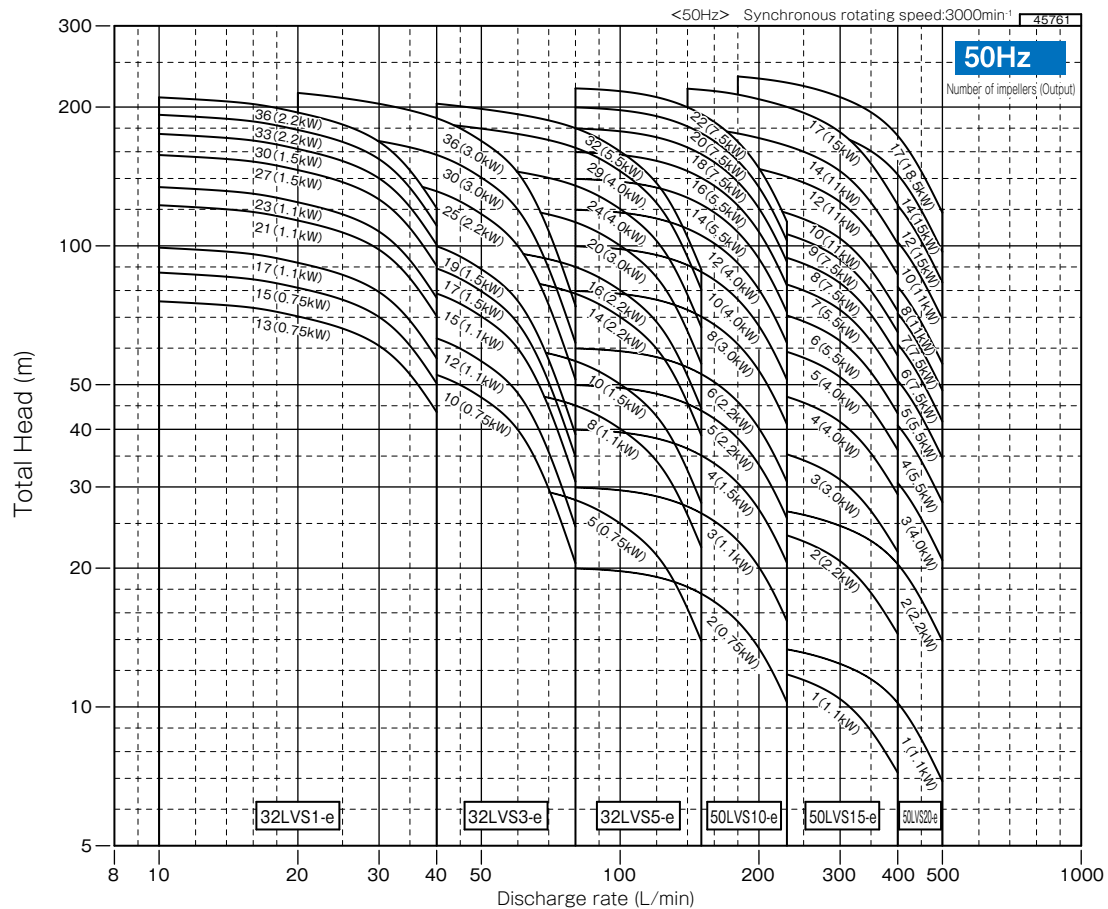
## Special accessory

Companion flange (discharge diameter 32 mm)

## Table of Consumable Parts

| Output<br>(kW) | Bearing   |             | Oil seal                    |             |                  |                  | O-ring<br>(For oil thrower)<br>Material: FKM |                  |
|----------------|-----------|-------------|-----------------------------|-------------|------------------|------------------|----------------------------------------------|------------------|
|                | Load side | Unload side | Motor                       |             | Discharge casing |                  |                                              |                  |
|                |           |             | Load side<br>(Bearing side) | Unload side | Bore diameter 32 | Bore diameter 50 |                                              |                  |
|                |           |             |                             |             |                  |                  | Bore diameter 32                             | Bore diameter 50 |
| 0.75           | 6204ZZC3  | 6201ZZC3    | —                           | —           | IS12257          | SC16328          | S12                                          | S16              |
| 1.1            |           | 6304ZZC3    | —                           | VC20407     |                  |                  |                                              |                  |
| 1.5            | 6205ZZC3  |             | VC25407                     |             |                  |                  |                                              |                  |
| 2.2            |           |             |                             |             |                  |                  |                                              |                  |
| 3.0            | 6307ZZC3  | 6305ZZC3    | VC35557                     | VC25477     |                  |                  |                                              |                  |
| 4.0            |           |             | VC35527                     | VC25407     |                  |                  |                                              |                  |
| 5.5            | 6309ZZC3  | 6306ZZC3    | VC45628                     | VC30528     |                  |                  |                                              |                  |
| 7.5            |           |             |                             |             |                  |                  |                                              |                  |
| 11             | 7309B     | 6309ZZC3    | Please contact us           |             |                  |                  |                                              |                  |
| 15             |           |             |                             |             |                  |                  |                                              |                  |
| 18.5           |           |             |                             |             |                  |                  |                                              |                  |

## ■ Selection chart

(Values at kinematic viscosity 1mm<sup>2</sup>/s, specific gravity 1)

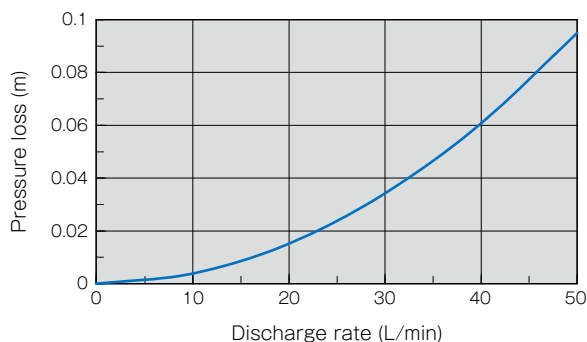
Note 1) The selection chart reflects the full impeller condition of the units. The total head may be decreased depending on the flow rate if empty casings are involved because of pressure loss in the empty casings.

※ Above selection chart (-e) is also available for -KS/-7W type.

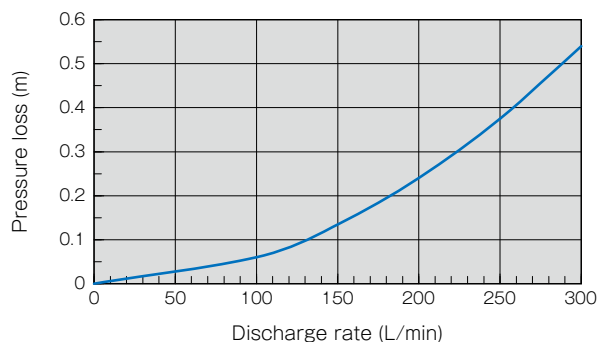
### ■ Pressure loss in the empty casings (50 Hz/60 Hz)

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

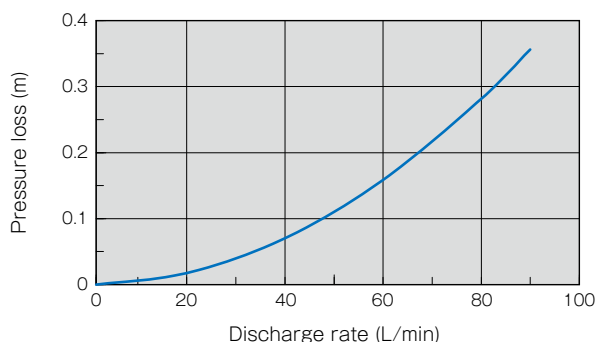
LVS1



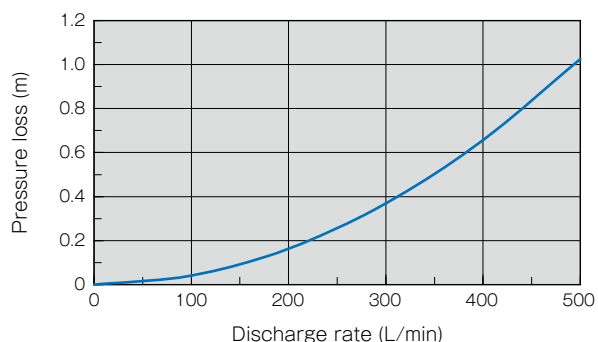
LVS10



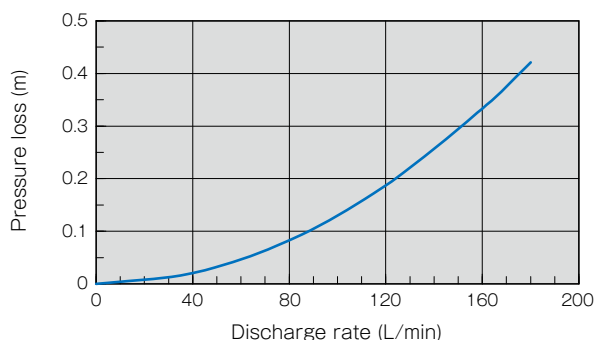
LVS3



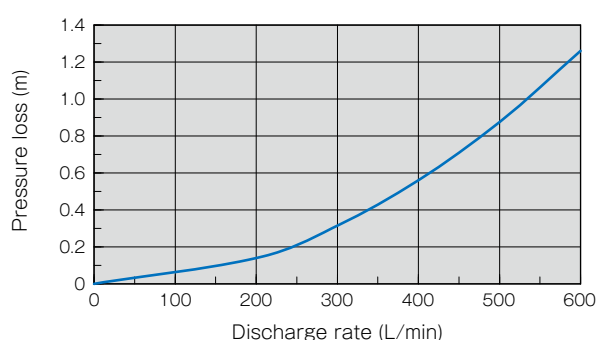
LVS15



LVS5



LVS20



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 - 5 = 15 stages.

Total pressure loss =  $0.13 \times 15 \div 2.0\text{m}$

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 =  $25 - 2.0 = 23.0\text{m}$

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

## ●-e type

## 50Hz

| Bore diameter (mm)   | Nominal flow rate (m³/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                   | 10-40                  | 75.5 - 43.5    |             |
|                      |                          | 32LVS1-□/15-5.75-e  |                    |                   |                   |                      |                        | 87 - 50        |             |
|                      |                          | 32LVS1-□/17-51.1-e  | 1.1                |                   | 4.7               | 34                   |                        | 99 - 56.5      |             |
|                      |                          | 32LVS1-□/21-51.1-e  |                    |                   |                   |                      |                        | 122 - 70       |             |
|                      |                          | 32LVS1-□/23-51.1-e  | 1.5                |                   | 6.2               | 47                   |                        | 134 - 77       |             |
|                      |                          | 32LVS1-□/27-51.5-e  |                    |                   |                   |                      |                        | 157 - 90       |             |
|                      |                          | 32LVS1-□/30-51.5-e  | 2.2                |                   | 8.7               | 83                   |                        | 174.5 - 100.5  |             |
|                      |                          | 32LVS1-□/33-52.2-e  |                    |                   |                   |                      |                        | 192 - 110.5    |             |
|                      | 32LVS1-36/36-52.2-e      |                     |                    |                   |                   | 209.5 - 120.5        |                        |                |             |
|                      | 3                        | 32LVS3-□/10-5.75-e  | 0.75               |                   | 3.4               | 26                   | 20-80                  | 59.5 - 20.5    |             |
|                      |                          | 32LVS3-□/12-51.1-e  | 1.1                |                   | 4.7               | 34                   |                        | 71.5 - 24.5    |             |
|                      |                          | 32LVS3-□/15-51.1-e  |                    |                   |                   |                      |                        | 89 - 30.5      |             |
|                      |                          | 32LVS3-□/17-51.5-e  | 1.5                |                   | 6.2               | 47                   |                        | 101 - 34.5     |             |
|                      |                          | 32LVS3-□/19-51.5-e  |                    |                   |                   |                      |                        | 113 - 38.5     |             |
|                      |                          | 32LVS3-□/25-52.2-e  | 2.2                |                   | 8.7               | 83                   |                        | 149 - 51       |             |
|                      |                          | 32LVS3-□/30-53.0-e  | 3.0                |                   | 12.2              | 129                  |                        | 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                   | 40-150                 | 31.5 - 13.5    |             |
|                      |                          | 32LVS5-□/8-51.1-e   | 1.1                |                   | 4.7               | 34                   |                        | 50.5 - 22      |             |
|                      |                          | 32LVS5-□/10-51.5-e  | 1.5                |                   | 6.2               | 47                   |                        | 63 - 27.5      |             |
|                      |                          | 32LVS5-□/14-52.2-e  | 2.2                |                   | 8.7               | 83                   |                        | 88.5 - 38.5    |             |
|                      |                          | 32LVS5-□/16-52.2-e  |                    |                   |                   |                      |                        | 101 - 44       |             |
|                      |                          | 32LVS5-□/20-53.0-e  | 3.0                |                   | 12.2              | 129                  |                        | 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               | 202.5 - 88.5         |                        |                |             |
|                      | 50                       | 10                  | 50LVS10-□/2-5.75-e |                   | 0.75              | 3.4                  | 26                     | 80-230         | 19.5 - 9    |
|                      |                          |                     | 50LVS10-□/3-51.1-e |                   | 1.1               | 4.7                  | 34                     |                | 29.5 - 15   |
|                      |                          |                     | 50LVS10-□/4-51.5-e |                   | 1.5               | 6.2                  | 47                     |                | 39.5 - 20.5 |
|                      |                          |                     | 50LVS10-□/5-52.2-e |                   | 2.2               | 8.7                  | 83                     |                | 49.5 - 26   |
|                      |                          |                     | 50LVS10-□/6-52.2-e |                   |                   |                      |                        |                | 59.5 - 31   |
|                      |                          |                     | 50LVS10-□/8-53.0-e |                   | 3.0               | 12.2                 | 129                    |                | 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               | 139.5 - 73           |                        |                |             |
| 50LVS10-□/16-55.5-e  |                          |                     |                    |                   |                   | 159.5 - 83.5         |                        |                |             |
| 50LVS10-□/18-57.5-e  |                          |                     | 7.5                | 27.2              | 290               | 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                | 140-400              | 12.5 - 5.5             |                |             |
|                      |                          | 50LVS15-□/2-52.2-e  | 2.2                | 8.7               | 83                |                      | 25.5 - 13.5            |                |             |
|                      |                          | 50LVS15-□/3-53.0-e  | 3.0                | 12.2              | 129               |                      | 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               |                      | 77 - 43                |                |             |
|                      |                          | 50LVS15-□/7-55.5-e  |                    |                   |                   |                      | 90 - 50.5              |                |             |
|                      |                          | 50LVS15-□/8-57.5-e  | 7.5                | 27.2              | 290               |                      | 103 - 57.5             |                |             |
|                      |                          | 50LVS15-□/9-57.5-e  |                    |                   |                   |                      | 116 - 65               |                |             |
|                      |                          | 50LVS15-□/10-511-e  | 11                 | 40.5              | 361               |                      | 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               | 219 - 122.5       |                      |                        |                |             |
| 20                   |                          | 50LVS20-□/1-51.1-e  | 1.1                | 4.7               | 34                | 180-500              | 13 - 5                 |                |             |
|                      |                          | 50LVS20-□/2-52.2-e  | 2.2                | 8.7               | 83                |                      | 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               |                      | 54.5 - 27.5            |                |             |
|                      |                          | 50LVS20-□/5-55.5-e  |                    |                   |                   |                      | 68.5 - 34.5            |                |             |
|                      |                          | 50LVS20-□/6-57.5-e  | 7.5                | 27.2              | 290               |                      | 82 - 41.5              |                |             |
|                      | 50LVS20-□/7-57.5-e       | 95.9 - 48.5         |                    |                   |                   |                      |                        |                |             |
|                      | 50LVS20-□/8-511-e        | 11                  | 40.5               | 361               | 109.5 - 55.5      |                      |                        |                |             |
|                      | 50LVS20-□/10-511-e       |                     |                    |                   | 137 - 69          |                      |                        |                |             |
|                      | 50LVS20-□/12-515-e       | 15                  | 54.0               | 484               | 163 - 83          |                      |                        |                |             |
|                      | 50LVS20-□/14-515-e       |                     |                    |                   | 191.5 - 97        |                      |                        |                |             |
|                      | 50LVS20-17/17-518-e      | 18.5                | 66.0               | 563               | 232.5 - 117.5     |                      |                        |                |             |

Note) The rated current in the table above is the recommended setting for the current value of the protective device.

●-e (380V)

50Hz

| Bore diameter (mm) | Nominal flow rate (m³/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              | 380               | 1.7               | 12.5                 | 10-40                  | 75.5 - 43.5    |
|                    |                          | 32LVS1-□/15-5.75-e   |                   |                   |                   |                      |                        | 87 - 50        |
|                    |                          | 32LVS1-□/17-51.1-e   |                   |                   |                   |                      |                        | 1.1            |
|                    |                          | 32LVS1-□/21-51.1-e   | 122 - 70          |                   |                   |                      |                        |                |
|                    |                          | 32LVS1-□/23-51.1-e   | 134 - 77          |                   |                   |                      |                        |                |
|                    |                          | 32LVS1-□/27-51.5-e   | 1.5               |                   | 3.2               | 22.4                 |                        | 157 - 90       |
|                    |                          | 32LVS1-□/30-51.5-e   |                   |                   |                   |                      |                        | 174.5 - 100.5  |
|                    |                          | 32LVS1-□/33-52.2-e   |                   |                   |                   |                      |                        | 192 - 110.5    |
|                    |                          | 32LVS1-36/36-52.2-e  | 2.2               |                   | 4.5               | 38                   |                        | 209.5 - 120.5  |
|                    | 3                        | 32LVS3-□/10-5.75-e   | 0.75              |                   | 1.7               | 12.5                 | 20-80                  | 59.5 - 20.5    |
|                    |                          | 32LVS3-□/12-51.1-e   | 1.1               |                   | 2.4               | 16.3                 |                        | 71.5 - 24.5    |
|                    |                          | 32LVS3-□/15-51.1-e   |                   |                   |                   |                      |                        | 89 - 30.5      |
|                    |                          | 32LVS3-□/17-51.5-e   |                   |                   |                   |                      |                        | 101 - 34.5     |
|                    |                          | 32LVS3-□/19-51.5-e   | 1.5               |                   | 3.2               | 22.4                 |                        | 113 - 38.5     |
|                    |                          | 32LVS3-□/25-52.2-e   |                   |                   |                   |                      |                        | 149 - 51       |
|                    |                          | 32LVS3-□/30-53.0-e   |                   |                   |                   |                      |                        | 178.5 - 61.5   |
|                    |                          | 32LVS3-36/36-53.0-e  | 3.0               |                   | 6.3               | 60.5                 |                        | 214.5 - 73.5   |
|                    |                          | 5                    | 32LVS5-□/5-5.75-e |                   | 0.75              | 1.7                  |                        | 12.5           |
|                    | 32LVS5-□/8-51.1-e        |                      | 1.1               |                   | 2.4               | 16.3                 | 50.5 - 22              |                |
|                    | 32LVS5-□/10-51.5-e       |                      | 1.5               |                   | 3.2               | 22.4                 | 63 - 27.5              |                |
|                    | 32LVS5-□/14-52.2-e       |                      | 2.2               |                   | 4.5               | 38                   | 88.5 - 38.5            |                |
|                    | 32LVS5-□/16-52.2-e       |                      |                   |                   |                   |                      | 101 - 44               |                |
|                    | 32LVS5-□/20-53.0-e       |                      |                   |                   |                   |                      | 126.5 - 55             |                |
|                    | 32LVS5-□/24-54.0-e       |                      | 4.0               |                   | 7.7               | 69                   | 152 - 66.5             |                |
|                    | 32LVS5-□/29-54.0-e       |                      |                   |                   |                   |                      | 183.5 - 80             |                |
|                    | 32LVS5-32/32-55.5-e      |                      |                   |                   |                   |                      | 5.5                    | 10.6           |
| 50                 | 10                       | 50LVS10-□/2-5.75-e   | 0.75              | 1.7               | 12.5              | 80-230               | 19.5 - 9               |                |
|                    |                          | 50LVS10-□/3-51.1-e   | 1.1               | 2.4               | 16.3              |                      | 29.5 - 15              |                |
|                    |                          | 50LVS10-□/4-51.5-e   | 1.5               | 3.2               | 22.4              |                      | 39.5 - 20.5            |                |
|                    |                          | 50LVS10-□/5-52.2-e   | 2.2               | 4.5               | 38                |                      | 49.5 - 26              |                |
|                    |                          | 50LVS10-□/6-52.2-e   |                   |                   |                   |                      | 59.5 - 31              |                |
|                    |                          | 50LVS10-□/8-53.0-e   |                   |                   |                   |                      | 79.5 - 41.5            |                |
|                    |                          | 50LVS10-□/10-54.0-e  | 4.0               | 6.3               | 60.5              |                      | 99.5 - 52              |                |
|                    |                          | 50LVS10-□/12-54.0-e  |                   |                   |                   |                      | 119.5 - 62.5           |                |
|                    |                          | 50LVS10-□/14-55.5-e  |                   |                   |                   |                      | 139.5 - 73             |                |
|                    |                          | 50LVS10-□/16-55.5-e  | 5.5               | 10.6              | 96.5              |                      | 159.5 - 83.5           |                |
|                    |                          | 50LVS10-□/18-57.5-e  |                   |                   |                   |                      | 179.5 - 94             |                |
|                    |                          | 50LVS10-□/20-57.5-e  |                   |                   |                   |                      | 199.5 - 104.5          |                |
|                    |                          | 50LVS10-22/22-57.5-e | 7.5               | 14.2              | 137               |                      | 219 - 114.5            |                |
|                    | 15                       | 50LVS15-□/1-51.1-e   | 1.1               | 2.4               | 16.3              | 140-400              | 12.5 - 5.5             |                |
|                    |                          | 50LVS15-□/2-52.2-e   | 2.2               | 4.5               | 38                |                      | 25.5 - 13.5            |                |
|                    |                          | 50LVS15-□/3-53.0-e   | 3.0               | 6.3               | 60.5              |                      | 38.5 - 21.5            |                |
|                    |                          | 50LVS15-□/4-54.0-e   | 4.0               | 7.7               | 69                |                      | 51.5 - 28.5            |                |
|                    |                          | 50LVS15-□/5-54.0-e   |                   |                   |                   |                      | 64.5 - 36              |                |
|                    |                          | 50LVS15-□/6-55.5-e   |                   |                   |                   |                      | 77 - 43                |                |
|                    |                          | 50LVS15-□/7-55.5-e   | 5.5               | 10.6              | 96.5              |                      | 90 - 50.5              |                |
|                    |                          | 50LVS15-□/8-57.5-e   |                   |                   |                   |                      | 103 - 57.5             |                |
|                    |                          | 50LVS15-□/9-57.5-e   |                   |                   |                   |                      | 116 - 65               |                |
|                    | 20                       | 50LVS20-□/1-51.1-e   | 1.1               | 2.4               | 16.3              | 180-500              | 13 - 5                 |                |
|                    |                          | 50LVS20-□/2-52.2-e   | 2.2               | 4.5               | 38                |                      | 27 - 13                |                |
|                    |                          | 50LVS20-□/3-54.0-e   | 4.0               | 7.7               | 69                |                      | 41 - 20.5              |                |
|                    |                          | 50LVS20-□/4-55.5-e   | 5.5               | 10.6              | 96.5              |                      | 54.5 - 27.5            |                |
|                    |                          | 50LVS20-□/5-55.5-e   |                   |                   |                   |                      | 68.5 - 34.5            |                |
|                    |                          | 50LVS20-□/6-57.5-e   |                   |                   |                   |                      | 82 - 41.5              |                |
|                    |                          | 50LVS20-□/7-57.5-e   | 7.5               | 14.2              | 137               |                      | 95.5 - 48.5            |                |

Note 1) Contact us when your applications involve oil-based coolant liquid or special liquid (e.g. pure water, alkaline/acidic liquids).

Note 2) The rated current is the recommended current setting for the protection device.

## ●-e type

60Hz

| Bore diameter (mm) | Nominal flow rate (m³/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        | 200/230           | 3.2/3.1           | 25.0/28.5            | 10-50                  | 67 - 35        |
|                    |                          | 32LVS1-□ /10-61.1-e  | 1.1         |                   | 4.4/4.1           | 32.5/37.0            |                        | 84 - 44        |
|                    |                          | 32LVS1-□ /13-61.1-e  |             |                   |                   |                      |                        | 109 - 57       |
|                    |                          | 32LVS1-□ /15-61.5-e  | 1.5         |                   | 5.9/5.4           | 41.0/47.6            |                        | 126 - 66       |
|                    |                          | 32LVS1-□ /17-61.5-e  |             |                   |                   |                      |                        | 142.5 - 75     |
|                    |                          | 32LVS1-□ /21-62.2-e  | 2.2         |                   | 8.4/7.6           | 78.0/82.6            |                        | 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         |                   | 11.5/10.8         | 115/135              |                        | 227 - 119      |
|                    | 3                        | 32LVS3-□ /5-6.75-e   | 0.75        |                   | 3.2/3.1           | 25.0/28.5            | 20-90                  | 43 - 17.5      |
|                    |                          | 32LVS3-□ /6-61.1-e   | 1.1         |                   | 4.4/4.1           | 32.5/37.0            |                        | 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         |                   | 5.9/5.4           | 41.0/47.6            |                        | 86 - 35.5      |
|                    |                          | 32LVS3-□ /11-61.5-e  |             |                   |                   |                      |                        | 94.5 - 39      |
|                    |                          | 32LVS3-□ /12-62.2-e  | 2.2         |                   | 8.4/7.6           | 78.0/82.6            |                        | 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         |                   | 11.5/10.8         | 115/135              |                        | 164 - 67       |
|                    |                          | 32LVS3-□ /23-63.0-e  |             |                   |                   |                      |                        | 198.5 - 81.5   |
|                    |                          | 32LVS3-□ /26-64.0-e  | 4.0         |                   | 14.3/12.8         | 132/151              |                        | 224.5 - 92     |
|                    | 5                        | 32LVS5-□ /3-61.1-e   | 1.1         |                   | 4.4/4.1           | 32.5/37.0            | 40-180                 | 27.5 - 11      |
|                    |                          | 32LVS5-□ /4-61.1-e   |             |                   |                   |                      |                        | 36.5 - 15      |
|                    |                          | 32LVS5-□ /5-61.5-e   | 1.5         |                   | 5.9/5.4           | 41.0/47.6            |                        | 46 - 18.5      |
|                    |                          | 32LVS5-□ /6-62.2-e   |             |                   |                   |                      |                        | 55 - 22.5      |
|                    |                          | 32LVS5-□ /7-62.2-e   |             |                   |                   |                      |                        | 64 - 26.5      |
|                    |                          | 32LVS5-□ /8-62.2-e   | 2.2         |                   | 8.4/7.6           | 78.0/82.6            |                        | 73.5 - 30      |
|                    |                          | 32LVS5-□ /10-63.0-e  |             |                   |                   |                      |                        | 92 - 37.5      |
|                    |                          | 32LVS5-□ /12-63.0-e  |             |                   |                   |                      |                        | 110.5 - 45     |
|                    |                          | 32LVS5-□ /14-64.0-e  | 4.0         |                   | 14.3/12.8         | 132/151              |                        | 128.5 - 53     |
|                    |                          | 32LVS5-□ /16-64.0-e  |             |                   |                   |                      |                        | 147 - 60.5     |
|                    |                          | 32LVS5-□ /20-65.5-e  |             |                   |                   |                      |                        | 184 - 75.5     |
|                    |                          | 32LVS5-□ /22-65.5-e  | 5.5         |                   | 19.8/17.8         | 178/206              |                        | 202.5 - 83     |
|                    |                          | 32LVS5-□ /24-67.5-e  |             |                   |                   |                      |                        | 221 - 90.5     |
| 50                 | 10                       | 50LVS10-□ /1-6.75-e  | 0.75        | 200/220           | 3.2/3.1           | 25.0/28.5            | 100-280                | 14 - 5         |
|                    |                          | 50LVS10-□ /2-61.5-e  | 1.5         |                   | 5.9/5.4           | 41.0/47.6            |                        | 28.5 - 13      |
|                    |                          | 50LVS10-□ /3-62.2-e  | 2.2         |                   | 8.4/7.6           | 78.0/82.6            |                        | 43 - 21        |
|                    |                          | 50LVS10-□ /4-63.0-e  | 3.0         |                   | 11.5/10.8         | 115/135              |                        | 57.5 - 28.5    |
|                    |                          | 50LVS10-□ /5-63.0-e  |             |                   |                   |                      |                        | 72 - 36.5      |
|                    |                          | 50LVS10-□ /6-64.0-e  | 4.0         |                   | 14.3/12.8         | 132/151              |                        | 86.5 - 44      |
|                    |                          | 50LVS10-□ /8-65.5-e  | 5.5         |                   | 19.8/17.8         | 178/206              |                        | 115.5 - 58.5   |
|                    |                          | 50LVS10-□ /9-65.5-e  |             |                   |                   |                      |                        | 130 - 66       |
|                    |                          | 50LVS10-□ /10-67.5-e | 7.5         |                   | 26.5/23.7         | 254/295              |                        | 144.5 - 73     |
|                    |                          | 50LVS10-□ /12-67.5-e |             |                   |                   |                      |                        | 173.5 - 88     |
|                    |                          | 50LVS10-□ /14-611-e  | 11          |                   | 38.3/34.8         | 296/333              |                        | 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         | 200/230           | 5.9/5.4           | 41.0/47.6            | 160-450                | 18 - 9.5       |
|                    |                          | 50LVS15-□ /2-63.0-e  | 3.0         |                   | 11.5/10.8         | 115/135              |                        | 37 - 22        |
|                    |                          | 50LVS15-□ /3-64.0-e  | 4.0         |                   | 14.3/12.8         | 132/151              |                        | 55.5 - 34.5    |
|                    |                          | 50LVS15-□ /4-65.5-e  | 5.5         |                   | 19.8/17.8         | 178/206              |                        | 74 - 46        |
|                    |                          | 50LVS15-□ /5-67.5-e  | 7.5         |                   | 26.5/23.7         | 254/295              |                        | 92.5 - 57.5    |
|                    |                          | 50LVS15-□ /6-611-e   | 11          | 200/220           | 38.3/34.8         | 296/333              |                        | 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         | 397/447              |                        | 185.5 - 115.5  |
|                    |                          | 50LVS15-□ /12-618-e  | 18.5        |                   | 65.0/59.0         | 456/515              |                        | 222.5 - 138.5  |
|                    | 20                       | 50LVS20-□ /1-62.2-e  | 2.2         | 200/230           | 8.4/7.6           | 78.0/82.6            | 220-600                | 19 - 7         |
|                    |                          | 50LVS20-□ /2-64.0-e  | 4.0         |                   | 14.3/12.8         | 132/151              |                        | 39 - 18        |
|                    |                          | 50LVS20-□ /3-65.5-e  | 5.5         |                   | 19.8/17.8         | 178/206              |                        | 58.5 - 29.5    |
|                    |                          | 50LVS20-□ /4-67.5-e  | 7.5         |                   | 26.5/23.7         | 254/295              |                        | 78 - 39.5      |
|                    |                          | 50LVS20-□ /5-611-e   | 11          | 200/220           | 38.3/34.8         | 296/333              |                        | 98 - 49        |
|                    |                          | 50LVS20-□ /6-611-e   |             |                   |                   |                      |                        | 117.5 - 59     |
|                    |                          | 50LVS20-□ /7-615-e   |             |                   |                   |                      |                        | 137 - 69       |
|                    |                          | 50LVS20-□ /8-615-e   | 15          |                   | 53.0/49.0         | 397/447              |                        | 156.5 - 79     |
|                    |                          | 50LVS20-□ /10-618-e  | 18.5        |                   | 65.0/59.0         | 456/515              |                        | 196 - 98.5     |

(Note) The rated current in the table above is the recommended setting for the current value of the protective device.

## ●-7W type

60Hz

| Bore diameter (mm) | Nominal flow rate (m³/h) | Type                 | Output (kW) | Rated voltage (V) | Rated current (A) | Starting current (A) | Discharge rate (L/min) | Total Head (m) |
|--------------------|--------------------------|----------------------|-------------|-------------------|-------------------|----------------------|------------------------|----------------|
| 32                 | 1                        | 32LVS1-□/8-6.75-7W   | 0.75        | 200-230           | 3.2-3.1           | 25.0-28.5            | 10-50                  | 67 - 35        |
|                    |                          | 32LVS1-□/10-61.1-7W  | 1.1         |                   | 4.4-4.1           | 32.5-37.0            |                        | 84 - 44        |
|                    |                          | 32LVS1-□/13-61.1-7W  |             |                   | 109 - 57          |                      |                        |                |
|                    |                          | 32LVS1-□/15-61.5-7W  | 1.5         |                   | 5.9-5.4           | 41.0-47.6            |                        | 126 - 66       |
|                    |                          | 32LVS1-□/17-61.5-7W  |             |                   | 142.5 - 75        |                      |                        |                |
|                    |                          | 32LVS1-□/21-62.2-7W  | 2.2         |                   | 8.4-7.6           | 78.0-82.6            |                        | 176.5 - 92.5   |
|                    |                          | 32LVS1-□/23-62.2-7W  |             |                   |                   |                      |                        | 193 - 101.5    |
|                    |                          | 32LVS1-□/25-62.2-7W  |             |                   |                   |                      |                        | 210 - 110.5    |
|                    |                          | 32LVS1-□/27-63.0-7W  |             |                   |                   |                      |                        | 227 - 119      |
|                    | 3                        | 32LVS3-□/5-6.75-7W   | 0.75        |                   | 3.2-3.1           | 25.0-28.5            | 20-90                  | 43 - 17.5      |
|                    |                          | 32LVS3-□/6-61.1-7W   | 1.1         |                   | 4.4-4.1           | 32.5-37.0            |                        | 51.5 - 21      |
|                    |                          | 32LVS3-□/7-61.1-7W   |             |                   |                   |                      |                        | 60 - 24.5      |
|                    |                          | 32LVS3-□/8-61.1-7W   |             |                   |                   |                      |                        | 69 - 28        |
|                    |                          | 32LVS3-□/10-61.5-7W  | 1.5         |                   | 5.9-5.4           | 41.0-47.6            |                        | 86 - 35.5      |
|                    |                          | 32LVS3-□/11-61.5-7W  |             |                   |                   |                      |                        | 94.5 - 39      |
|                    |                          | 32LVS3-□/12-62.2-7W  |             |                   |                   |                      |                        | 103.5 - 42.5   |
|                    |                          | 32LVS3-□/15-62.2-7W  | 2.2         |                   | 8.4-7.6           | 78.0-82.6            |                        | 129.5 - 53     |
|                    |                          | 32LVS3-□/17-62.2-7W  |             |                   |                   |                      |                        | 146.5 - 60     |
|                    |                          | 32LVS3-□/19-63.0-7W  |             |                   |                   |                      |                        | 164 - 67       |
|                    |                          | 32LVS3-□/23-63.0-7W  | 3.0         |                   | 11.5-10.8         | 115-135              |                        | 198.5 - 81.5   |
|                    |                          | 32LVS3-□/26-64.0-7W  | 4.0         |                   | 14.3-12.8         | 132-151              |                        | 224.5 - 92     |
|                    | 5                        | 32LVS5-□/3-61.1-7W   | 1.1         |                   | 4.4-4.1           | 32.5-37.0            | 40-180                 | 27.5 - 11      |
|                    |                          | 32LVS5-□/4-61.1-7W   |             |                   |                   |                      |                        | 36.5 - 15      |
|                    |                          | 32LVS5-□/5-61.5-7W   | 1.5         |                   | 5.9-5.4           | 41.0-47.6            |                        | 46 - 18.5      |
|                    |                          | 32LVS5-□/6-62.2-7W   | 2.2         |                   | 8.4-7.6           | 78.0-82.6            |                        | 55 - 22.5      |
|                    |                          | 32LVS5-□/7-62.2-7W   |             |                   |                   |                      |                        | 64 - 26.5      |
|                    |                          | 32LVS5-□/8-62.2-7W   |             |                   |                   |                      |                        | 73.5 - 30      |
|                    |                          | 32LVS5-□/10-63.0-7W  | 3.0         |                   | 11.5-10.8         | 115-135              |                        | 92 - 37.5      |
|                    |                          | 32LVS5-□/12-63.0-7W  |             |                   |                   |                      |                        | 110.5 - 45     |
|                    |                          | 32LVS5-□/14-64.0-7W  | 4.0         |                   | 14.3-12.8         | 132-151              |                        | 128.5 - 53     |
|                    |                          | 32LVS5-□/16-64.0-7W  |             |                   |                   |                      |                        | 147 - 60.5     |
|                    |                          | 32LVS5-□/20-65.5-7W  | 5.5         |                   | 19.8-17.8         | 178-206              |                        | 184 - 75.5     |
|                    |                          | 32LVS5-□/22-65.5-7W  |             |                   |                   |                      |                        | 202.5 - 83     |
|                    |                          | 32LVS5-□/24-67.5-7W  | 7.5         |                   | 26.5-23.7         | 254-295              |                        | 221 - 90.5     |
| 50                 | 10                       | 50LVS10-□/1-6.75-7W  | 0.75        | 3.2-3.1           | 25.0-28.5         | 100-280              | 14 - 5                 |                |
|                    |                          | 50LVS10-□/2-61.5-7W  | 1.5         | 5.9-5.4           | 41.0-47.6         |                      | 28.5 - 13              |                |
|                    |                          | 50LVS10-□/3-62.2-7W  | 2.2         | 8.4-7.6           | 78.0-82.6         |                      | 43 - 21                |                |
|                    |                          | 50LVS10-□/4-63.0-7W  | 3.0         | 11.5-10.8         | 115-135           |                      | 57.5 - 28.5            |                |
|                    |                          | 50LVS10-□/5-63.0-7W  |             |                   |                   |                      | 72 - 36.5              |                |
|                    |                          | 50LVS10-□/6-64.0-7W  | 4.0         | 14.3-12.8         | 132-151           |                      | 86.5 - 44              |                |
|                    |                          | 50LVS10-□/8-65.5-7W  | 5.5         | 19.8-17.8         | 178-206           |                      | 115.5 - 58.5           |                |
|                    |                          | 50LVS10-□/9-65.5-7W  |             |                   |                   |                      | 130 - 66               |                |
|                    |                          | 50LVS10-□/10-67.5-7W | 7.5         | 26.5-23.7         | 254-295           |                      | 144.5 - 73             |                |
|                    |                          | 50LVS10-□/12-67.5-7W |             |                   |                   |                      | 173.5 - 88             |                |
|                    | 15                       | 50LVS15-□/1-61.5-7W  | 1.5         | 5.9-5.4           | 41.0-47.6         | 160-450              | 18 - 9.5               |                |
|                    |                          | 50LVS15-□/2-63.0-7W  | 3.0         | 11.5-10.8         | 115-135           |                      | 37 - 22                |                |
|                    |                          | 50LVS15-□/3-64.0-7W  | 4.0         | 14.3-12.8         | 132-151           |                      | 55.5 - 34.5            |                |
|                    |                          | 50LVS15-□/4-65.5-7W  | 5.5         | 19.8-17.8         | 178-206           |                      | 74 - 46                |                |
|                    |                          | 50LVS15-□/5-67.5-7W  | 7.5         | 26.5-23.7         | 254-295           |                      | 92.5 - 57.5            |                |
|                    | 20                       | 50LVS20-□/1-62.2-7W  | 2.2         | 8.4-7.6           | 78.0-82.6         | 220-600              | 19 - 7                 |                |
|                    |                          | 50LVS20-□/2-64.0-7W  | 4.0         | 14.3-12.8         | 132-151           |                      | 39 - 18                |                |
|                    |                          | 50LVS20-□/3-65.5-7W  | 5.5         | 19.8-17.8         | 178-206           |                      | 58.5 - 29.5            |                |
|                    |                          | 50LVS20-□/4-67.5-7W  | 7.5         | 26.5-23.7         | 254-295           |                      | 78 - 39.5              |                |

Note 1) Contact us when your applications involve oil-based coolant liquid or special liquid (e.g. pure water, alkaline/acidic liquids).

Note 2) The rated current is the recommended current setting for the protection device.

## ●-KS type

60Hz

| Bore diameter (mm) | Nominal flow rate (m³/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-KS   | 0.75        | 200-230           | 3.2-3.1           | 25.0-28.5            | 10-50                  | 67 - 35        |
|                    |                          | 32LVS1-□/10-61.1-KS  | 1.1         |                   | 4.4-4.1           | 32.5-37.0            |                        | 84 - 44        |
|                    |                          | 32LVS1-□/13-61.1-KS  |             |                   | 109 - 57          |                      |                        |                |
|                    |                          | 32LVS1-□/15-61.5-KS  | 1.5         |                   | 5.9-5.4           | 41.0-47.6            |                        | 126 - 66       |
|                    |                          | 32LVS1-□/17-61.5-KS  |             |                   |                   |                      |                        | 142.5 - 75     |
|                    |                          | 32LVS1-□/21-62.2-KS  | 2.2         |                   | 8.4-7.6           | 78.0-82.6            |                        | 176.5 - 92.5   |
|                    |                          | 32LVS1-□/23-62.2-KS  |             |                   |                   |                      |                        | 193 - 101.5    |
|                    |                          | 32LVS1-□/25-62.2-KS  |             |                   |                   |                      |                        | 210 - 110.5    |
|                    |                          | 32LVS1-□/27-63.0-KS  |             |                   |                   |                      |                        | 227 - 119      |
|                    | 3                        | 32LVS3-□/5-6.75-KS   | 0.75        |                   | 3.2-3.1           | 25.0-28.5            | 20-90                  | 43 - 17.5      |
|                    |                          | 32LVS3-□/6-61.1-KS   | 1.1         |                   | 4.4-4.1           | 32.5-37.0            |                        | 51.5 - 21      |
|                    |                          | 32LVS3-□/7-61.1-KS   |             |                   |                   |                      |                        | 60 - 24.5      |
|                    |                          | 32LVS3-□/8-61.1-KS   |             |                   |                   |                      |                        | 69 - 28        |
|                    |                          | 32LVS3-□/10-61.5-KS  | 1.5         |                   | 5.9-5.4           | 41.0-47.6            |                        | 86 - 35.5      |
|                    |                          | 32LVS3-□/11-61.5-KS  |             |                   |                   |                      |                        | 94.5 - 39      |
|                    |                          | 32LVS3-□/12-62.2-KS  |             |                   |                   |                      |                        | 103.5 - 42.5   |
|                    |                          | 32LVS3-□/15-62.2-KS  | 2.2         |                   | 8.4-7.6           | 78.0-82.6            |                        | 129.5 - 53     |
|                    |                          | 32LVS3-□/17-62.2-KS  |             |                   |                   |                      |                        | 146.5 - 60     |
|                    |                          | 32LVS3-□/19-63.0-KS  |             |                   |                   |                      |                        | 164 - 67       |
|                    |                          | 32LVS3-□/23-63.0-KS  | 3.0         |                   | 11.5-10.8         | 115-135              |                        | 198.5 - 81.5   |
|                    |                          | 32LVS3-□/26-64.0-KS  | 4.0         |                   | 14.3-12.8         | 132-151              |                        | 224.5 - 92     |
|                    | 5                        | 32LVS5-□/3-61.1-KS   | 1.1         |                   | 4.4-4.1           | 32.5-37.0            | 40-180                 | 27.5 - 11      |
|                    |                          | 32LVS5-□/4-61.1-KS   |             |                   |                   |                      |                        | 36.5 - 15      |
|                    |                          | 32LVS5-□/5-61.5-KS   | 1.5         |                   | 5.9-5.4           | 41.0-47.6            |                        | 46 - 18.5      |
|                    |                          | 32LVS5-□/6-62.2-KS   | 2.2         |                   | 8.4-7.6           | 78.0-82.6            |                        | 55 - 22.5      |
|                    |                          | 32LVS5-□/7-62.2-KS   |             |                   |                   |                      |                        | 64 - 26.5      |
|                    |                          | 32LVS5-□/8-62.2-KS   |             |                   |                   |                      |                        | 73.5 - 30      |
|                    |                          | 32LVS5-□/10-63.0-KS  | 3.0         |                   | 11.5-10.8         | 115-135              |                        | 92 - 37.5      |
|                    |                          | 32LVS5-□/12-63.0-KS  |             |                   |                   |                      |                        | 110.5 - 45     |
|                    |                          | 32LVS5-□/14-64.0-KS  | 4.0         |                   | 14.3-12.8         | 132-151              |                        | 128.5 - 53     |
|                    |                          | 32LVS5-□/16-64.0-KS  |             |                   |                   |                      |                        | 147 - 60.5     |
|                    |                          | 32LVS5-□/20-65.5-KS  | 5.5         |                   | 19.8-17.8         | 178-206              |                        | 184 - 75.5     |
|                    |                          | 32LVS5-□/22-65.5-KS  |             |                   |                   |                      |                        | 202.5 - 83     |
|                    |                          | 32LVS5-□/24-67.5-KS  | 7.5         |                   | 26.5-23.7         | 254-295              |                        | 221 - 90.5     |
| 50                 | 10                       | 50LVS10-□/1-6.75-KS  | 0.75        | 3.2-3.1           | 25.0-28.5         | 100-280              | 14 - 5                 |                |
|                    |                          | 50LVS10-□/2-61.5-KS  | 1.5         | 5.9-5.4           | 41.0-47.6         |                      | 28.5 - 13              |                |
|                    |                          | 50LVS10-□/3-62.2-KS  | 2.2         | 8.4-7.6           | 78.0-82.6         |                      | 43 - 21                |                |
|                    |                          | 50LVS10-□/4-63.0-KS  | 3.0         | 11.5-10.8         | 115-135           |                      | 57.5 - 28.5            |                |
|                    |                          | 50LVS10-□/5-63.0-KS  |             |                   |                   |                      | 72 - 36.5              |                |
|                    |                          | 50LVS10-□/6-64.0-KS  | 4.0         | 14.3-12.8         | 132-151           |                      | 86.5 - 44              |                |
|                    |                          | 50LVS10-□/8-65.5-KS  | 5.5         | 19.8-17.8         | 178-206           |                      | 115.5 - 58.5           |                |
|                    |                          | 50LVS10-□/9-65.5-KS  |             |                   |                   |                      | 130 - 66               |                |
|                    |                          | 50LVS10-□/10-67.5-KS | 7.5         | 26.5-23.7         | 254-295           |                      | 144.5 - 73             |                |
|                    |                          | 50LVS10-□/12-67.5-KS |             |                   |                   |                      | 173.5 - 88             |                |
|                    | 15                       | 50LVS15-□/1-61.5-KS  | 1.5         | 5.9-5.4           | 41.0-47.6         | 160-450              | 18 - 9.5               |                |
|                    |                          | 50LVS15-□/2-63.0-KS  | 3.0         | 11.5-10.8         | 115-135           |                      | 37 - 22                |                |
|                    |                          | 50LVS15-□/3-64.0-KS  | 4.0         | 14.3-12.8         | 132-151           |                      | 55.5 - 34.5            |                |
|                    |                          | 50LVS15-□/4-65.5-KS  | 5.5         | 19.8-17.8         | 178-206           |                      | 74 - 46                |                |
|                    |                          | 50LVS15-□/5-67.5-KS  | 7.5         | 26.5-23.7         | 254-295           |                      | 92.5 - 57.5            |                |
|                    | 20                       | 50LVS20-□/1-62.2-KS  | 2.2         | 8.4-7.6           | 78.0-82.6         | 220-600              | 19 - 7                 |                |
|                    |                          | 50LVS20-□/2-64.0-KS  | 4.0         | 14.3-12.8         | 132-151           |                      | 39 - 18                |                |
|                    |                          | 50LVS20-□/3-65.5-KS  | 5.5         | 19.8-17.8         | 178-206           |                      | 58.5 - 29.5            |                |
|                    |                          | 50LVS20-□/4-67.5-KS  | 7.5         | 26.5-23.7         | 254-295           |                      | 78 - 39.5              |                |

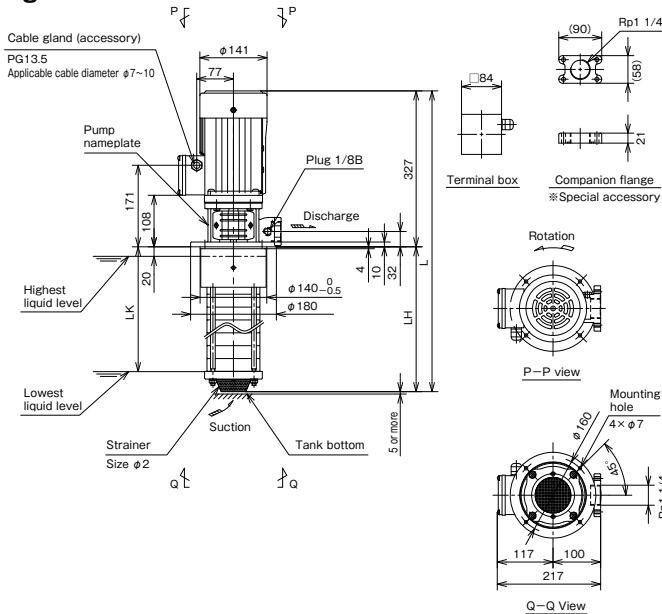
Note 1) Contact us when your applications involve oil-based coolant liquid or special liquid (e.g. pure water, alkaline/acidic liquids).

Note 2) The rated current is the recommended current setting for the protection device.

### Assembly drawing

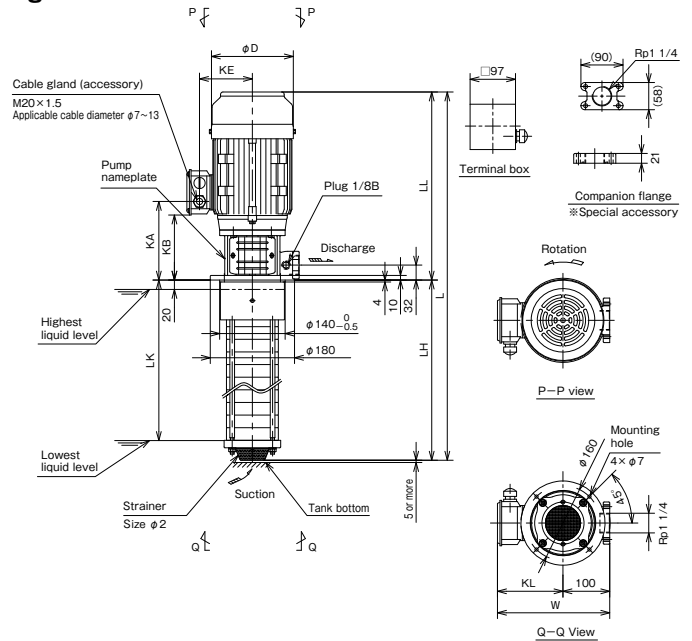
●Discharge diameter : 32mm

Fig.1



※Output 0.75kW

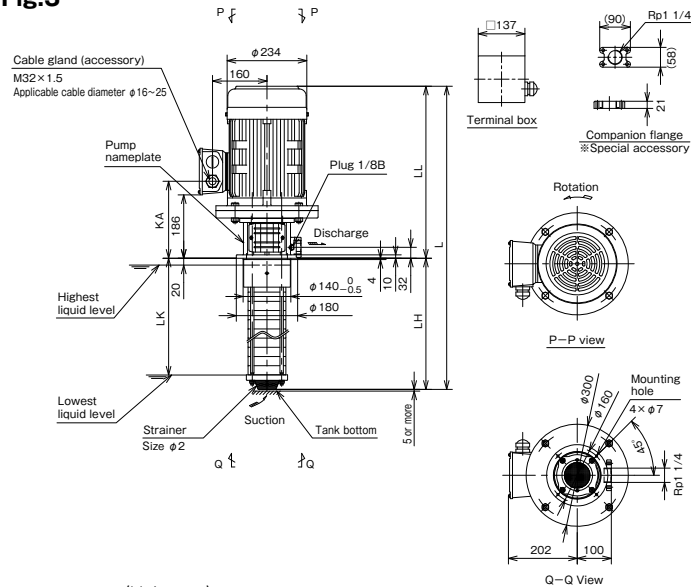
Fig.2



(Unit : mm)

| Output kW | D   | KA  | KB  | KE  | KL  | LL  | W   |
|-----------|-----|-----|-----|-----|-----|-----|-----|
| 1.1       | 175 | 147 | 118 | 113 | 140 | 381 | 240 |
| 1.5/2.2   | 175 | 168 | 139 | 113 | 140 | 402 | 240 |
| 3.0       | 196 | 179 | 149 | 125 | 152 | 435 | 252 |
| 4.0       | 219 | 183 | 154 | 134 | 161 | 442 | —   |

Fig.3



(Unit : mm)

| Output kW | LL  | KA  |
|-----------|-----|-----|
| 5.5       | 505 | 226 |
| 7.5       | 545 | 227 |

## ■ Dimensions

● Discharge diameter : 32mm, Nominal flow rate : 1m<sup>3</sup>/h

## 50Hz

(Unit : mm)

| Type                | Fig. | L    | LH  | LK  | Approx.<br>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 |      | 802  | 421 | 379 | 27                  |
| 32LVS1-21/17-51.1-e | 2    | 874  | 493 | 451 | 27                  |
| 32LVS1-25/17-51.1-e |      | 946  | 565 | 523 | 28                  |
| 32LVS1-30/17-51.1-e |      | 1036 | 655 | 613 | 30                  |
| 32LVS1-21/21-51.1-e |      | 874  | 493 | 451 | 28                  |
| 32LVS1-25/21-51.1-e |      | 946  | 565 | 523 | 29                  |
| 32LVS1-30/21-51.1-e |      | 1036 | 655 | 613 | 30                  |
| 32LVS1-33/21-51.1-e |      | 1090 | 709 | 667 | 30                  |
| 32LVS1-23/23-51.1-e |      | 910  | 529 | 487 | 28                  |
| 32LVS1-25/23-51.1-e |      | 946  | 565 | 523 | 29                  |
| 32LVS1-30/23-51.1-e |      | 1036 | 655 | 613 | 30                  |
| 32LVS1-33/23-51.1-e |      | 1090 | 709 | 667 | 31                  |
| 32LVS1-36/23-51.1-e |      | 1144 | 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.<br>mass(kg) |
|---------------------|------|------|-----|-----|---------------------|
| 32LVS1-8/8-6.75-□   | 1    | 586  | 259 | 217 | 20                  |
| 32LVS1-10/8-6.75-□  |      | 622  | 295 | 253 | 20                  |
| 32LVS1-13/8-6.75-□  |      | 676  | 349 | 307 | 21                  |
| 32LVS1-15/8-6.75-□  |      | 712  | 385 | 343 | 22                  |
| 32LVS1-17/8-6.75-□  |      | 748  | 421 | 379 | 22                  |
| 32LVS1-21/8-6.75-□  |      | 820  | 493 | 451 | 23                  |
| 32LVS1-25/8-6.75-□  |      | 892  | 565 | 523 | 24                  |
| 32LVS1-10/10-61.1-□ | 2    | 676  | 295 | 253 | 25                  |
| 32LVS1-13/10-61.1-□ |      | 730  | 349 | 307 | 25                  |
| 32LVS1-15/10-61.1-□ |      | 766  | 385 | 343 | 26                  |
| 32LVS1-17/10-61.1-□ |      | 802  | 421 | 379 | 26                  |
| 32LVS1-21/10-61.1-□ |      | 874  | 493 | 451 | 27                  |
| 32LVS1-25/10-61.1-□ |      | 946  | 565 | 523 | 28                  |
| 32LVS1-13/13-61.1-□ |      | 730  | 349 | 307 | 25                  |
| 32LVS1-15/13-61.1-□ |      | 766  | 385 | 343 | 26                  |
| 32LVS1-17/13-61.1-□ |      | 802  | 421 | 379 | 26                  |
| 32LVS1-21/13-61.1-□ |      | 874  | 493 | 451 | 27                  |
| 32LVS1-25/13-61.1-□ |      | 946  | 565 | 523 | 28                  |
| 32LVS1-15/15-61.5-□ |      | 787  | 385 | 343 | 30                  |
| 32LVS1-17/15-61.5-□ |      | 823  | 421 | 379 | 31                  |
| 32LVS1-21/15-61.5-□ |      | 895  | 493 | 451 | 31                  |
| 32LVS1-25/15-61.5-□ |      | 967  | 565 | 523 | 32                  |
| 32LVS1-30/15-61.5-□ |      | 1057 | 655 | 613 | 34                  |
| 32LVS1-17/17-61.5-□ |      | 823  | 421 | 379 | 31                  |
| 32LVS1-21/17-61.5-□ |      | 895  | 493 | 451 | 32                  |
| 32LVS1-25/17-61.5-□ |      | 967  | 565 | 523 | 33                  |
| 32LVS1-30/17-61.5-□ |      | 1057 | 655 | 613 | 34                  |
| 32LVS1-33/17-61.5-□ |      | 1111 | 709 | 667 | 34                  |
| 32LVS1-21/21-62.2-□ |      | 895  | 493 | 451 | 35                  |
| 32LVS1-25/21-62.2-□ |      | 967  | 565 | 523 | 36                  |
| 32LVS1-30/21-62.2-□ |      | 1057 | 655 | 613 | 37                  |
| 32LVS1-33/21-62.2-□ |      | 1111 | 709 | 667 | 38                  |
| 32LVS1-36/21-62.2-□ |      | 1165 | 763 | 721 | 39                  |
| 32LVS1-23/23-62.2-□ |      | 931  | 529 | 487 | 36                  |
| 32LVS1-27/23-62.2-□ |      | 1003 | 601 | 559 | 37                  |
| 32LVS1-30/23-62.2-□ |      | 1057 | 655 | 613 | 37                  |
| 32LVS1-33/23-62.2-□ |      | 1111 | 709 | 667 | 38                  |
| 32LVS1-36/23-62.2-□ |      | 1165 | 763 | 721 | 39                  |
| 32LVS1-25/25-62.2-□ |      | 967  | 565 | 523 | 36                  |
| 32LVS1-27/25-62.2-□ |      | 1003 | 601 | 559 | 37                  |
| 32LVS1-30/25-62.2-□ |      | 1057 | 655 | 613 | 38                  |
| 32LVS1-33/25-62.2-□ |      | 1111 | 709 | 667 | 38                  |
| 32LVS1-36/25-62.2-□ |      | 1165 | 763 | 721 | 39                  |
| 32LVS1-27/27-63.0-□ |      | 1036 | 601 | 559 | 45                  |
| 32LVS1-30/27-63.0-□ |      | 1090 | 655 | 613 | 46                  |
| 32LVS1-33/27-63.0-□ |      | 1144 | 709 | 667 | 46                  |
| 32LVS1-36/27-63.0-□ |      | 1198 | 763 | 721 | 47                  |

Note 1) "□" in pump type can be any one of -e/-KS/-7W.

●Discharge diameter : 32mm, Nominal flow rate : 3m<sup>3</sup>/h

## 50Hz

(Unit : mm)

| Type                | Fig. | L    | LH  | LK  | Approx.<br>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    | 712  | 331 | 289 | 25                  |
| 32LVS3-15/12-51.1-e |      | 766  | 385 | 343 | 26                  |
| 32LVS3-19/12-51.1-e |      | 838  | 457 | 415 | 27                  |
| 32LVS3-23/12-51.1-e |      | 910  | 529 | 487 | 28                  |
| 32LVS3-15/15-51.1-e |      | 766  | 385 | 343 | 26                  |
| 32LVS3-19/15-51.1-e |      | 838  | 457 | 415 | 27                  |
| 32LVS3-23/15-51.1-e |      | 910  | 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 |      | 1090 | 655 | 613 | 46                  |
| 32LVS3-36/30-53.0-e |      | 1198 | 763 | 721 | 47                  |
| 32LVS3-36/36-53.0-e |      | 1198 | 763 | 721 | 47                  |

## 60Hz

(Unit : mm)

| Type                | Fig. | L    | LH  | LK  | Approx.<br>mass(kg) |
|---------------------|------|------|-----|-----|---------------------|
| 32LVS3-5/5-6.75-□   | 1    | 532  | 205 | 163 | 19                  |
| 32LVS3-7/5-6.75-□   |      | 568  | 241 | 199 | 19                  |
| 32LVS3-10/5-6.75-□  |      | 622  | 295 | 253 | 20                  |
| 32LVS3-12/5-6.75-□  |      | 658  | 331 | 289 | 21                  |
| 32LVS3-15/5-6.75-□  |      | 712  | 385 | 343 | 21                  |
| 32LVS3-19/5-6.75-□  | 2    | 784  | 457 | 415 | 22                  |
| 32LVS3-23/5-6.75-□  |      | 856  | 529 | 487 | 23                  |
| 32LVS3-6/6-61.1-□   |      | 604  | 223 | 181 | 23                  |
| 32LVS3-10/6-61.1-□  |      | 676  | 295 | 253 | 24                  |
| 32LVS3-12/6-61.1-□  |      | 712  | 331 | 289 | 25                  |
| 32LVS3-15/6-61.1-□  |      | 766  | 385 | 343 | 26                  |
| 32LVS3-19/6-61.1-□  |      | 838  | 457 | 415 | 26                  |
| 32LVS3-23/6-61.1-□  |      | 910  | 529 | 487 | 27                  |
| 32LVS3-7/7-61.1-□   |      | 622  | 241 | 199 | 24                  |
| 32LVS3-10/7-61.1-□  |      | 676  | 295 | 253 | 24                  |
| 32LVS3-12/7-61.1-□  |      | 712  | 331 | 289 | 25                  |
| 32LVS3-15/7-61.1-□  |      | 766  | 385 | 343 | 26                  |
| 32LVS3-19/7-61.1-□  |      | 838  | 457 | 415 | 26                  |
| 32LVS3-23/7-61.1-□  |      | 910  | 529 | 487 | 27                  |
| 32LVS3-8/8-61.1-□   |      | 640  | 259 | 217 | 24                  |
| 32LVS3-10/8-61.1-□  |      | 676  | 295 | 253 | 24                  |
| 32LVS3-12/8-61.1-□  |      | 712  | 331 | 289 | 25                  |
| 32LVS3-15/8-61.1-□  |      | 766  | 385 | 343 | 26                  |
| 32LVS3-19/8-61.1-□  |      | 838  | 457 | 415 | 27                  |
| 32LVS3-23/8-61.1-□  |      | 910  | 529 | 487 | 27                  |
| 32LVS3-10/10-61.5-□ |      | 697  | 295 | 253 | 29                  |
| 32LVS3-12/10-61.5-□ |      | 733  | 331 | 289 | 29                  |
| 32LVS3-15/10-61.5-□ |      | 787  | 385 | 343 | 30                  |
| 32LVS3-19/10-61.5-□ |      | 859  | 457 | 415 | 31                  |
| 32LVS3-23/10-61.5-□ |      | 931  | 529 | 487 | 32                  |
| 32LVS3-11/11-61.5-□ |      | 715  | 313 | 271 | 29                  |
| 32LVS3-15/11-61.5-□ |      | 787  | 385 | 343 | 30                  |
| 32LVS3-19/11-61.5-□ |      | 859  | 457 | 415 | 31                  |
| 32LVS3-23/11-61.5-□ |      | 931  | 529 | 487 | 32                  |
| 32LVS3-12/12-62.2-□ |      | 733  | 331 | 289 | 33                  |
| 32LVS3-15/12-62.2-□ |      | 787  | 385 | 343 | 33                  |
| 32LVS3-19/12-62.2-□ |      | 859  | 457 | 415 | 34                  |
| 32LVS3-23/12-62.2-□ |      | 931  | 529 | 487 | 35                  |
| 32LVS3-15/15-62.2-□ |      | 787  | 385 | 343 | 34                  |
| 32LVS3-19/15-62.2-□ |      | 859  | 457 | 415 | 34                  |
| 32LVS3-23/15-62.2-□ |      | 931  | 529 | 487 | 35                  |
| 32LVS3-26/15-62.2-□ |      | 985  | 583 | 541 | 36                  |
| 32LVS3-17/17-62.2-□ |      | 823  | 421 | 379 | 34                  |
| 32LVS3-23/17-62.2-□ |      | 931  | 529 | 487 | 35                  |
| 32LVS3-26/17-62.2-□ |      | 985  | 583 | 541 | 36                  |
| 32LVS3-30/17-62.2-□ |      | 1057 | 655 | 613 | 37                  |
| 32LVS3-19/19-63.0-□ |      | 892  | 457 | 415 | 43                  |
| 32LVS3-23/19-63.0-□ |      | 964  | 529 | 487 | 43                  |
| 32LVS3-26/19-63.0-□ |      | 1018 | 583 | 541 | 44                  |
| 32LVS3-30/19-63.0-□ |      | 1090 | 655 | 613 | 45                  |
| 32LVS3-36/19-63.0-□ |      | 1198 | 763 | 721 | 46                  |
| 32LVS3-23/23-63.0-□ |      | 964  | 529 | 487 | 44                  |
| 32LVS3-26/23-63.0-□ |      | 1018 | 583 | 541 | 44                  |
| 32LVS3-30/23-63.0-□ |      | 1090 | 655 | 613 | 45                  |
| 32LVS3-36/23-63.0-□ |      | 1198 | 763 | 721 | 47                  |
| 32LVS3-26/26-64.0-□ |      | 1025 | 583 | 541 | 50                  |
| 32LVS3-30/26-64.0-□ |      | 1097 | 655 | 613 | 51                  |
| 32LVS3-36/26-64.0-□ |      | 1205 | 763 | 721 | 52                  |

Note 1) "□" in pump type can be any one of -e/-KS/-7W.

●Discharge diameter : 32mm, Nominal flow rate : 5m<sup>3</sup>/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  | 2    | 982  | 655 | 613 | 24               |
| 32LVS5-8/8-51.1-e   |      | 652  | 331 | 289 | 25               |
| 32LVS5-10/8-51.1-e  |      | 766  | 385 | 343 | 25               |
| 32LVS5-14/8-51.1-e  |      | 874  | 493 | 451 | 27               |
| 32LVS5-16/8-51.1-e  |      | 928  | 547 | 505 | 27               |
| 32LVS5-20/8-51.1-e  |      | 1036 | 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 |      | 1090 | 655 | 613 | 45               |
| 32LVS5-24/20-53.0-e |      | 1198 | 763 | 721 | 46               |
| 32LVS5-29/20-53.0-e |      | 1333 | 898 | 856 | 48               |
| 32LVS5-32/20-53.0-e |      | 1414 | 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)

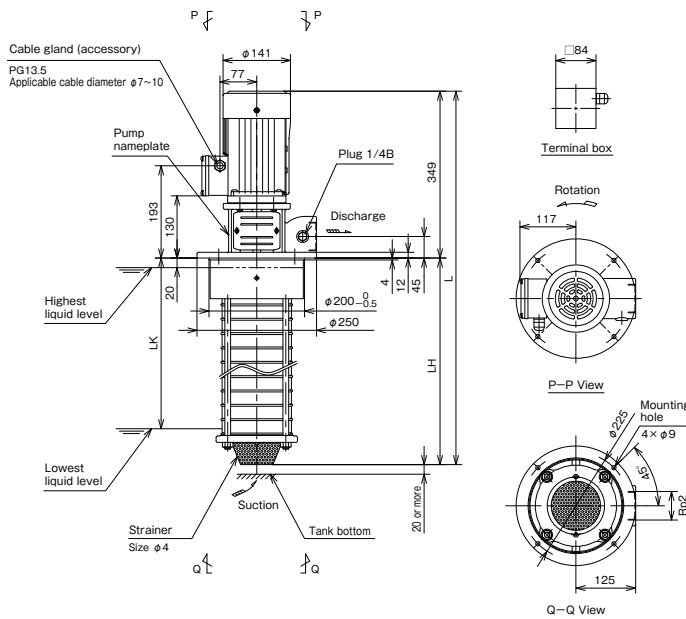
| Type                | Fig. | L    | LH  | LK  | Approx. mass(kg) |
|---------------------|------|------|-----|-----|------------------|
| 32LVS5-3/3-61.1-□   | 2    | 577  | 196 | 154 | 23               |
| 32LVS5-5/3-61.1-□   |      | 631  | 250 | 208 | 24               |
| 32LVS5-7/3-61.1-□   |      | 685  | 304 | 262 | 24               |
| 32LVS5-10/3-61.1-□  |      | 766  | 385 | 343 | 25               |
| 32LVS5-14/3-61.1-□  |      | 874  | 493 | 451 | 26               |
| 32LVS5-16/3-61.1-□  |      | 928  | 547 | 505 | 27               |
| 32LVS5-20/3-61.1-□  |      | 1036 | 655 | 613 | 28               |
| 32LVS5-4/4-61.1-□   |      | 604  | 223 | 181 | 23               |
| 32LVS5-6/4-61.1-□   |      | 658  | 277 | 235 | 24               |
| 32LVS5-8/4-61.1-□   |      | 712  | 331 | 289 | 24               |
| 32LVS5-10/4-61.1-□  |      | 766  | 385 | 343 | 25               |
| 32LVS5-14/4-61.1-□  |      | 874  | 493 | 451 | 27               |
| 32LVS5-16/4-61.1-□  |      | 928  | 547 | 505 | 28               |
| 32LVS5-20/4-61.1-□  |      | 1036 | 655 | 613 | 29               |
| 32LVS5-5/5-61.5-□   |      | 652  | 250 | 208 | 28               |
| 32LVS5-7/5-61.5-□   |      | 706  | 304 | 262 | 28               |
| 32LVS5-10/5-61.5-□  |      | 787  | 385 | 343 | 29               |
| 32LVS5-14/5-61.5-□  |      | 895  | 493 | 451 | 31               |
| 32LVS5-16/5-61.5-□  |      | 949  | 547 | 505 | 31               |
| 32LVS5-20/5-61.5-□  |      | 1057 | 655 | 613 | 33               |
| 32LVS5-6/6-62.2-□   |      | 679  | 277 | 235 | 32               |
| 32LVS5-8/6-62.2-□   |      | 733  | 331 | 289 | 32               |
| 32LVS5-10/6-62.2-□  |      | 787  | 385 | 343 | 33               |
| 32LVS5-14/6-62.2-□  |      | 895  | 493 | 451 | 34               |
| 32LVS5-16/6-62.2-□  |      | 949  | 547 | 505 | 35               |
| 32LVS5-20/6-62.2-□  |      | 1057 | 655 | 613 | 36               |
| 32LVS5-7/7-62.2-□   | 3    | 706  | 304 | 262 | 32               |
| 32LVS5-10/7-62.2-□  |      | 787  | 385 | 343 | 33               |
| 32LVS5-14/7-62.2-□  |      | 895  | 493 | 451 | 34               |
| 32LVS5-16/7-62.2-□  |      | 949  | 547 | 505 | 35               |
| 32LVS5-20/7-62.2-□  |      | 1057 | 655 | 613 | 36               |
| 32LVS5-8/8-62.2-□   |      | 733  | 331 | 289 | 32               |
| 32LVS5-10/8-62.2-□  |      | 787  | 385 | 343 | 33               |
| 32LVS5-14/8-62.2-□  |      | 895  | 493 | 451 | 34               |
| 32LVS5-16/8-62.2-□  |      | 949  | 547 | 505 | 35               |
| 32LVS5-20/8-62.2-□  |      | 1057 | 655 | 613 | 36               |
| 32LVS5-10/10-63.0-□ |      | 820  | 385 | 343 | 41               |
| 32LVS5-14/10-63.0-□ |      | 928  | 493 | 451 | 42               |
| 32LVS5-16/10-63.0-□ |      | 982  | 547 | 505 | 43               |
| 32LVS5-20/10-63.0-□ |      | 1090 | 655 | 613 | 44               |
| 32LVS5-12/12-63.0-□ |      | 874  | 439 | 397 | 42               |
| 32LVS5-14/12-63.0-□ |      | 928  | 493 | 451 | 42               |
| 32LVS5-16/12-63.0-□ |      | 982  | 547 | 505 | 43               |
| 32LVS5-20/12-63.0-□ |      | 1090 | 655 | 613 | 44               |
| 32LVS5-24/12-63.0-□ |      | 1198 | 763 | 721 | 45               |
| 32LVS5-14/14-64.0-□ |      | 935  | 493 | 451 | 48               |
| 32LVS5-16/14-64.0-□ |      | 989  | 547 | 505 | 49               |
| 32LVS5-20/14-64.0-□ |      | 1097 | 655 | 613 | 50               |
| 32LVS5-24/14-64.0-□ |      | 1205 | 763 | 721 | 51               |
| 32LVS5-29/14-64.0-□ |      | 1340 | 898 | 856 | 53               |
| 32LVS5-16/16-64.0-□ |      | 989  | 547 | 505 | 49               |
| 32LVS5-20/16-64.0-□ |      | 1097 | 655 | 613 | 50               |
| 32LVS5-24/16-64.0-□ |      | 1205 | 763 | 721 | 51               |
| 32LVS5-29/16-64.0-□ |      | 1340 | 898 | 856 | 53               |
| 32LVS5-32/16-64.0-□ |      | 1421 | 979 | 937 | 54               |
| 32LVS5-20/20-65.5-□ | 3    | 1160 | 655 | 613 | 78               |
| 32LVS5-24/20-65.5-□ |      | 1268 | 763 | 721 | 79               |
| 32LVS5-29/20-65.5-□ |      | 1403 | 898 | 856 | 80               |
| 32LVS5-32/20-65.5-□ |      | 1484 | 979 | 937 | 81               |
| 32LVS5-22/22-65.5-□ |      | 1214 | 709 | 667 | 78               |
| 32LVS5-24/22-65.5-□ |      | 1268 | 763 | 721 | 79               |
| 32LVS5-29/22-65.5-□ |      | 1403 | 898 | 856 | 80               |
| 32LVS5-32/22-65.5-□ |      | 1484 | 979 | 937 | 81               |
| 32LVS5-24/24-67.5-□ |      | 1308 | 763 | 721 | 86               |
| 32LVS5-29/24-67.5-□ |      | 1443 | 898 | 856 | 87               |
| 32LVS5-32/24-67.5-□ |      | 1524 | 979 | 937 | 88               |

Note 1) "□" in pump type can be any one of -e/-KS/-7W.

### Assembly drawing

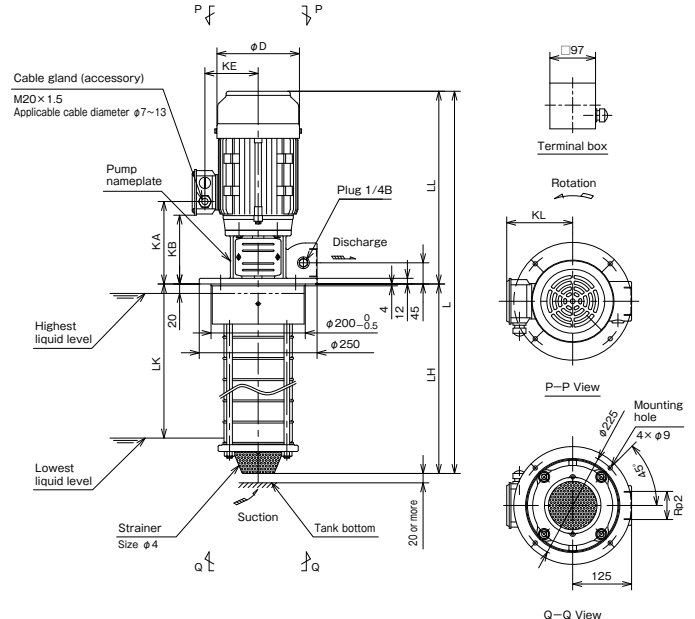
●Discharge diameter : 50mm

Fig.1



※Output 0.75kW

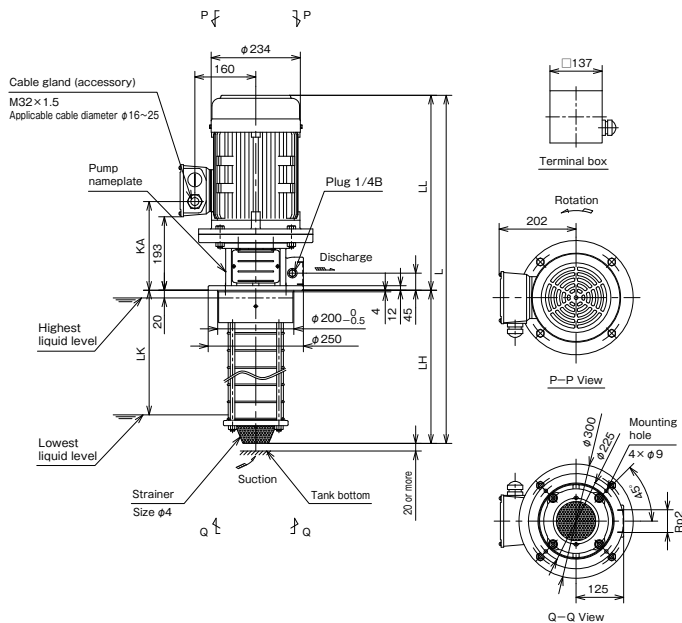
Fig.2



(Unit : mm)

| Output kW | D   | KA  | KB  | KE  | KL  | LL  |
|-----------|-----|-----|-----|-----|-----|-----|
| 1.1       | 175 | 169 | 140 | 113 | 140 | 403 |
| 1.5/2.2   | 175 | 175 | 146 | 113 | 140 | 409 |
| 3.0       | 196 | 186 | 156 | 125 | 152 | 442 |
| 4.0       | 219 | 190 | 161 | 134 | 161 | 449 |

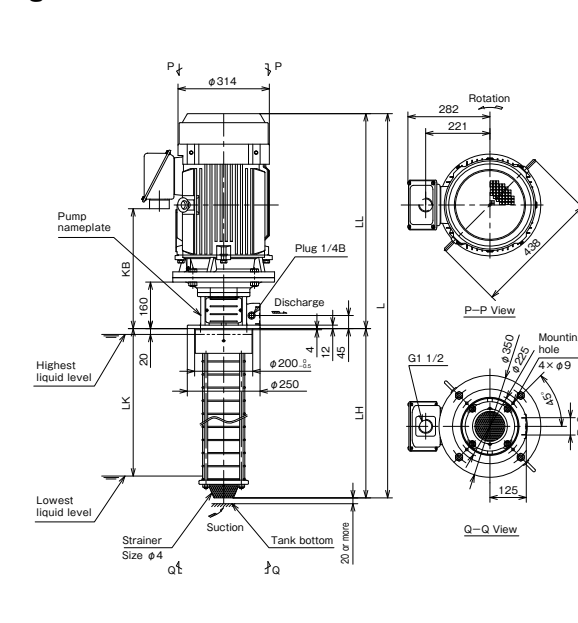
Fig.3



(Unit : mm)

| Output kW | LL  | KA  |
|-----------|-----|-----|
| 5.5       | 512 | 233 |
| 7.5       | 552 | 234 |

Fig.4



(Unit : mm)

| Output kW | KB  | LL  |
|-----------|-----|-----|
| 11/15     | 382 | 689 |
| 18.5      | 412 | 719 |

## ■ Dimensions

●Discharge diameter :50mm, Nominal flow rate : 10m<sup>3</sup>/h

50Hz

(Unit : mm)

| Type                | Fig. | L    | LH  | LK  | Approx.<br>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    | 685  | 282 | 207 | 32                  |
| 50LVS10-6/3-51.1-e  |      | 715  | 312 | 237 | 33                  |
| 50LVS10-8/3-51.1-e  |      | 775  | 372 | 297 | 34                  |
| 50LVS10-10/3-51.1-e |      | 835  | 432 | 357 | 35                  |
| 50LVS10-12/3-51.1-e |      | 895  | 492 | 417 | 37                  |
| 50LVS10-14/3-51.1-e |      | 955  | 552 | 477 | 38                  |
| 50LVS10-16/3-51.1-e |      | 1015 | 612 | 537 | 39                  |
| 50LVS10-18/3-51.1-e |      | 1075 | 672 | 597 | 40                  |
| 50LVS10-20/3-51.1-e |      | 1135 | 732 | 657 | 42                  |
| 50LVS10-22/3-51.1-e |      | 1195 | 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.<br>mass(kg) |
|----------------------|------|------|-----|-----|---------------------|
| 50LVS10-8/8-53.0-e   | 2    | 814  | 372 | 297 | 51                  |
| 50LVS10-10/8-53.0-e  |      | 874  | 432 | 357 | 52                  |
| 50LVS10-12/8-53.0-e  |      | 934  | 492 | 417 | 53                  |
| 50LVS10-14/8-53.0-e  |      | 994  | 552 | 477 | 55                  |
| 50LVS10-16/8-53.0-e  |      | 1054 | 612 | 537 | 56                  |
| 50LVS10-18/8-53.0-e  |      | 1114 | 672 | 597 | 57                  |
| 50LVS10-20/8-53.0-e  |      | 1174 | 732 | 657 | 59                  |
| 50LVS10-22/8-53.0-e  |      | 1234 | 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 |      | 1224 | 672 | 597 | 98                  |
| 50LVS10-20/18-57.5-e |      | 1284 | 732 | 657 | 99                  |
| 50LVS10-22/18-57.5-e |      | 1344 | 792 | 717 | 100                 |
| 50LVS10-20/20-57.5-e |      | 1284 | 732 | 657 | 99                  |
| 50LVS10-22/20-57.5-e |      | 1344 | 792 | 717 | 100                 |
| 50LVS10-22/22-57.5-e |      | 1344 | 792 | 717 | 101                 |

●Discharge diameter : 50mm, Nominal flow rate : 10m<sup>3</sup>/h

60Hz

(Unit : mm)

| Type                | Fig. | L    | LH  | LK  | Approx. mass(kg) |
|---------------------|------|------|-----|-----|------------------|
| 50LVS10-5/1-6.75-□  | 1    | 631  | 282 | 207 | 28               |
| 50LVS10-6/1-6.75-□  |      | 661  | 312 | 237 | 28               |
| 50LVS10-8/1-6.75-□  |      | 721  | 372 | 297 | 30               |
| 50LVS10-10/1-6.75-□ |      | 781  | 432 | 357 | 31               |
| 50LVS10-12/1-6.75-□ |      | 841  | 492 | 417 | 32               |
| 50LVS10-5/2-61.5-□  | 2    | 691  | 282 | 207 | 36               |
| 50LVS10-6/2-61.5-□  |      | 721  | 312 | 237 | 36               |
| 50LVS10-8/2-61.5-□  |      | 781  | 372 | 297 | 38               |
| 50LVS10-10/2-61.5-□ |      | 841  | 432 | 357 | 39               |
| 50LVS10-12/2-61.5-□ |      | 901  | 492 | 417 | 40               |
| 50LVS10-14/2-61.5-□ |      | 961  | 552 | 477 | 42               |
| 50LVS10-16/2-61.5-□ |      | 1021 | 612 | 537 | 43               |
| 50LVS10-18/2-61.5-□ |      | 1081 | 672 | 597 | 44               |
| 50LVS10-20/2-61.5-□ |      | 1141 | 732 | 657 | 46               |
| 50LVS10-22/2-61.5-□ |      | 1201 | 792 | 717 | 47               |
| 50LVS10-5/3-62.2-□  |      | 691  | 282 | 207 | 39               |
| 50LVS10-6/3-62.2-□  |      | 721  | 312 | 237 | 40               |
| 50LVS10-8/3-62.2-□  |      | 781  | 372 | 297 | 41               |
| 50LVS10-10/3-62.2-□ |      | 841  | 432 | 357 | 42               |
| 50LVS10-12/3-62.2-□ |      | 901  | 492 | 417 | 44               |
| 50LVS10-14/3-62.2-□ |      | 961  | 552 | 477 | 45               |
| 50LVS10-16/3-62.2-□ |      | 1021 | 612 | 537 | 46               |
| 50LVS10-18/3-62.2-□ |      | 1081 | 672 | 597 | 48               |
| 50LVS10-20/3-62.2-□ |      | 1141 | 732 | 657 | 49               |
| 50LVS10-22/3-62.2-□ |      | 1201 | 792 | 717 | 50               |
| 50LVS10-5/4-63.0-□  |      | 724  | 282 | 207 | 48               |
| 50LVS10-6/4-63.0-□  |      | 754  | 312 | 237 | 49               |
| 50LVS10-8/4-63.0-□  |      | 814  | 372 | 297 | 50               |
| 50LVS10-10/4-63.0-□ |      | 874  | 432 | 357 | 52               |
| 50LVS10-12/4-63.0-□ |      | 934  | 492 | 417 | 53               |
| 50LVS10-14/4-63.0-□ |      | 994  | 552 | 477 | 54               |
| 50LVS10-16/4-63.0-□ |      | 1054 | 612 | 537 | 56               |
| 50LVS10-18/4-63.0-□ |      | 1114 | 672 | 597 | 57               |
| 50LVS10-20/4-63.0-□ |      | 1174 | 732 | 657 | 58               |
| 50LVS10-22/4-63.0-□ |      | 1234 | 792 | 717 | 60               |
| 50LVS10-5/5-63.0-□  |      | 724  | 282 | 207 | 48               |
| 50LVS10-6/5-63.0-□  |      | 754  | 312 | 237 | 49               |
| 50LVS10-8/5-63.0-□  |      | 814  | 372 | 297 | 50               |
| 50LVS10-10/5-63.0-□ |      | 874  | 432 | 357 | 52               |
| 50LVS10-12/5-63.0-□ |      | 934  | 492 | 417 | 53               |
| 50LVS10-14/5-63.0-□ |      | 994  | 552 | 477 | 54               |
| 50LVS10-16/5-63.0-□ |      | 1054 | 612 | 537 | 56               |
| 50LVS10-18/5-63.0-□ |      | 1114 | 672 | 597 | 57               |
| 50LVS10-20/5-63.0-□ |      | 1174 | 732 | 657 | 58               |
| 50LVS10-22/5-63.0-□ |      | 1234 | 792 | 717 | 60               |
| 50LVS10-6/6-64.0-□  |      | 761  | 312 | 237 | 55               |
| 50LVS10-8/6-64.0-□  |      | 821  | 372 | 297 | 56               |
| 50LVS10-10/6-64.0-□ |      | 881  | 432 | 357 | 57               |
| 50LVS10-12/6-64.0-□ |      | 941  | 492 | 417 | 59               |
| 50LVS10-14/6-64.0-□ |      | 1001 | 552 | 477 | 60               |
| 50LVS10-16/6-64.0-□ |      | 1061 | 612 | 537 | 61               |
| 50LVS10-18/6-64.0-□ |      | 1121 | 672 | 597 | 63               |
| 50LVS10-20/6-64.0-□ |      | 1181 | 732 | 657 | 64               |
| 50LVS10-22/6-64.0-□ |      | 1241 | 792 | 717 | 65               |

Note 1) "□" in pump type can be any one of -e/-KS/-7W.

(Unit : mm)

| Type                 | Fig. | L    | LH  | LK  | Approx. mass(kg) |
|----------------------|------|------|-----|-----|------------------|
| 50LVS10-8/8-65.5-□   | 3    | 884  | 372 | 297 | 83               |
| 50LVS10-10/8-65.5-□  |      | 944  | 432 | 357 | 85               |
| 50LVS10-12/8-65.5-□  |      | 1004 | 492 | 417 | 86               |
| 50LVS10-14/8-65.5-□  |      | 1064 | 552 | 477 | 87               |
| 50LVS10-16/8-65.5-□  |      | 1124 | 612 | 537 | 89               |
| 50LVS10-18/8-65.5-□  |      | 1184 | 672 | 597 | 90               |
| 50LVS10-20/8-65.5-□  |      | 1244 | 732 | 657 | 91               |
| 50LVS10-22/8-65.5-□  |      | 1304 | 792 | 717 | 93               |
| 50LVS10-9/9-65.5-□   |      | 914  | 402 | 327 | 84               |
| 50LVS10-12/9-65.5-□  |      | 1004 | 492 | 417 | 86               |
| 50LVS10-14/9-65.5-□  |      | 1064 | 552 | 477 | 88               |
| 50LVS10-16/9-65.5-□  |      | 1124 | 612 | 537 | 89               |
| 50LVS10-18/9-65.5-□  |      | 1184 | 672 | 597 | 90               |
| 50LVS10-20/9-65.5-□  |      | 1244 | 732 | 657 | 91               |
| 50LVS10-22/9-65.5-□  |      | 1304 | 792 | 717 | 93               |
| 50LVS10-10/10-67.5-□ |      | 984  | 432 | 357 | 92               |
| 50LVS10-12/10-67.5-□ |      | 1044 | 492 | 417 | 93               |
| 50LVS10-14/10-67.5-□ |      | 1104 | 552 | 477 | 94               |
| 50LVS10-16/10-67.5-□ |      | 1164 | 612 | 537 | 96               |
| 50LVS10-18/10-67.5-□ |      | 1224 | 672 | 597 | 97               |
| 50LVS10-20/10-67.5-□ |      | 1284 | 732 | 657 | 98               |
| 50LVS10-22/10-67.5-□ |      | 1344 | 792 | 717 | 100              |
| 50LVS10-12/12-67.5-□ |      | 1044 | 492 | 417 | 93               |
| 50LVS10-14/12-67.5-□ |      | 1104 | 552 | 477 | 94               |
| 50LVS10-16/12-67.5-□ |      | 1164 | 612 | 537 | 96               |
| 50LVS10-18/12-67.5-□ |      | 1224 | 672 | 597 | 97               |
| 50LVS10-20/12-67.5-□ |      | 1284 | 732 | 657 | 98               |
| 50LVS10-22/12-67.5-□ |      | 1344 | 792 | 717 | 100              |
| 50LVS10-14/14-611-e  | 4    | 1241 | 552 | 477 | 169              |
| 50LVS10-16/14-611-e  |      | 1301 | 612 | 537 | 170              |
| 50LVS10-18/14-611-e  |      | 1361 | 672 | 597 | 172              |
| 50LVS10-20/14-611-e  |      | 1421 | 732 | 657 | 173              |
| 50LVS10-22/14-611-e  |      | 1481 | 792 | 717 | 174              |
| 50LVS10-16/16-611-e  |      | 1301 | 612 | 537 | 170              |
| 50LVS10-18/16-611-e  |      | 1361 | 672 | 597 | 172              |
| 50LVS10-20/16-611-e  |      | 1421 | 732 | 657 | 173              |
| 50LVS10-22/16-611-e  |      | 1481 | 792 | 717 | 174              |
| 50LVS10-18/18-611-e  |      | 1361 | 672 | 597 | 172              |
| 50LVS10-20/18-611-e  |      | 1421 | 732 | 657 | 173              |
| 50LVS10-22/18-611-e  |      | 1481 | 792 | 717 | 175              |

Note 1) "□" in pump type can be any one of -e/-KS/-7W.

●Discharge diameter : 50mm, Nominal flow rate : 15m<sup>3</sup>/h

50Hz

(Unit : mm)

| Type                | Fig. | L    | LH  | LK  | Approx. mass(kg) |
|---------------------|------|------|-----|-----|------------------|
| 50LVS15-3/1-51.1-e  | 2    | 670  | 267 | 192 | 31               |
| 50LVS15-4/1-51.1-e  |      | 715  | 312 | 237 | 32               |
| 50LVS15-5/1-51.1-e  |      | 760  | 357 | 282 | 33               |
| 50LVS15-6/1-51.1-e  |      | 805  | 402 | 327 | 34               |
| 50LVS15-7/1-51.1-e  |      | 850  | 447 | 372 | 35               |
| 50LVS15-8/1-51.1-e  |      | 895  | 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  |      | 709  | 267 | 192 | 48               |
| 50LVS15-4/3-53.0-e  |      | 754  | 312 | 237 | 48               |
| 50LVS15-5/3-53.0-e  |      | 799  | 357 | 282 | 49               |
| 50LVS15-6/3-53.0-e  |      | 844  | 402 | 327 | 50               |
| 50LVS15-7/3-53.0-e  |      | 889  | 447 | 372 | 51               |
| 50LVS15-8/3-53.0-e  |      | 934  | 492 | 417 | 52               |
| 50LVS15-10/3-53.0-e |      | 1024 | 582 | 507 | 54               |
| 50LVS15-12/3-53.0-e |      | 1114 | 672 | 597 | 55               |
| 50LVS15-14/3-53.0-e |      | 1204 | 762 | 687 | 57               |
| 50LVS15-17/3-53.0-e |      | 1339 | 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  | 3    | 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  |      | 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  |      | 1044 | 492 | 417 | 92               |
| 50LVS15-10/8-57.5-e |      | 1134 | 582 | 507 | 94               |
| 50LVS15-12/8-57.5-e |      | 1224 | 672 | 597 | 96               |
| 50LVS15-14/8-57.5-e |      | 1314 | 762 | 687 | 97               |
| 50LVS15-17/8-57.5-e |      | 1449 | 897 | 822 | 100              |
| 50LVS15-9/9-57.5-e  |      | 1089 | 537 | 462 | 93               |
| 50LVS15-12/9-57.5-e |      | 1224 | 672 | 597 | 96               |
| 50LVS15-14/9-57.5-e |      | 1314 | 762 | 687 | 97               |
| 50LVS15-17/9-57.5-e |      | 1449 | 897 | 822 | 100              |
| 50LVS15-10/10-511-e | 4    | 1271 | 582 | 507 | 169              |
| 50LVS15-12/10-511-e |      | 1361 | 672 | 597 | 170              |
| 50LVS15-14/10-511-e |      | 1451 | 762 | 687 | 172              |
| 50LVS15-17/10-511-e |      | 1586 | 897 | 822 | 174              |
| 50LVS15-12/12-511-e |      | 1361 | 672 | 597 | 171              |
| 50LVS15-14/12-511-e |      | 1451 | 762 | 687 | 172              |
| 50LVS15-17/12-511-e |      | 1586 | 897 | 822 | 175              |
| 50LVS15-14/14-511-e |      | 1451 | 762 | 687 | 173              |
| 50LVS15-17/14-511-e |      | 1586 | 897 | 822 | 175              |
| 50LVS15-17/17-515-e |      | 1586 | 897 | 822 | 187              |

60Hz

(Unit : mm)

| Type                | Fig. | L    | LH  | LK  | Approx. mass(kg) |
|---------------------|------|------|-----|-----|------------------|
| 50LVS15-3/1-61.5-□  | 2    | 676  | 267 | 192 | 35               |
| 50LVS15-4/1-61.5-□  |      | 721  | 312 | 237 | 36               |
| 50LVS15-5/1-61.5-□  |      | 766  | 357 | 282 | 37               |
| 50LVS15-6/1-61.5-□  |      | 811  | 402 | 327 | 38               |
| 50LVS15-7/1-61.5-□  |      | 856  | 447 | 372 | 38               |
| 50LVS15-8/1-61.5-□  |      | 901  | 492 | 417 | 39               |
| 50LVS15-10/1-61.5-□ |      | 991  | 582 | 507 | 41               |
| 50LVS15-3/2-63.0-□  |      | 709  | 267 | 192 | 48               |
| 50LVS15-4/2-63.0-□  |      | 754  | 312 | 237 | 48               |
| 50LVS15-5/2-63.0-□  |      | 799  | 357 | 282 | 49               |
| 50LVS15-6/2-63.0-□  |      | 844  | 402 | 327 | 50               |
| 50LVS15-7/2-63.0-□  |      | 889  | 447 | 372 | 51               |
| 50LVS15-8/2-63.0-□  |      | 934  | 492 | 417 | 52               |
| 50LVS15-10/2-63.0-□ |      | 1024 | 582 | 507 | 54               |
| 50LVS15-12/2-63.0-□ |      | 1114 | 672 | 597 | 55               |
| 50LVS15-14/2-63.0-□ |      | 1204 | 762 | 687 | 57               |
| 50LVS15-17/2-63.0-□ |      | 1339 | 897 | 822 | 60               |
| 50LVS15-3/3-64.0-□  |      | 716  | 267 | 192 | 53               |
| 50LVS15-4/3-64.0-□  |      | 761  | 312 | 237 | 54               |
| 50LVS15-5/3-64.0-□  |      | 806  | 357 | 282 | 55               |
| 50LVS15-6/3-64.0-□  |      | 851  | 402 | 327 | 56               |
| 50LVS15-7/3-64.0-□  |      | 896  | 447 | 372 | 56               |
| 50LVS15-8/3-64.0-□  |      | 941  | 492 | 417 | 57               |
| 50LVS15-10/3-64.0-□ |      | 1031 | 582 | 507 | 59               |
| 50LVS15-12/3-64.0-□ |      | 1121 | 672 | 597 | 61               |
| 50LVS15-14/3-64.0-□ |      | 1211 | 762 | 687 | 62               |
| 50LVS15-17/3-64.0-□ |      | 1346 | 897 | 822 | 65               |
| 50LVS15-4/4-65.5-□  | 3    | 824  | 312 | 237 | 81               |
| 50LVS15-5/4-65.5-□  |      | 869  | 357 | 282 | 82               |
| 50LVS15-6/4-65.5-□  |      | 914  | 402 | 327 | 83               |
| 50LVS15-7/4-65.5-□  |      | 959  | 447 | 372 | 84               |
| 50LVS15-8/4-65.5-□  |      | 1004 | 492 | 417 | 85               |
| 50LVS15-10/4-65.5-□ |      | 1094 | 582 | 507 | 87               |
| 50LVS15-12/4-65.5-□ |      | 1184 | 672 | 597 | 88               |
| 50LVS15-14/4-65.5-□ |      | 1274 | 762 | 687 | 90               |
| 50LVS15-17/4-65.5-□ |      | 1409 | 897 | 822 | 92               |
| 50LVS15-5/5-67.5-□  |      | 909  | 357 | 282 | 89               |
| 50LVS15-6/5-67.5-□  |      | 954  | 402 | 327 | 90               |
| 50LVS15-7/5-67.5-□  |      | 999  | 447 | 372 | 91               |
| 50LVS15-8/5-67.5-□  |      | 1044 | 492 | 417 | 92               |
| 50LVS15-10/5-67.5-□ |      | 1134 | 582 | 507 | 93               |
| 50LVS15-12/5-67.5-□ |      | 1224 | 672 | 597 | 95               |
| 50LVS15-14/5-67.5-□ |      | 1314 | 762 | 687 | 97               |
| 50LVS15-17/5-67.5-□ |      | 1449 | 897 | 822 | 99               |
| 50LVS15-6/6-611-e   |      | 1091 | 402 | 327 | 164              |
| 50LVS15-7/6-611-e   |      | 1136 | 447 | 372 | 165              |
| 50LVS15-8/6-611-e   |      | 1181 | 492 | 417 | 166              |
| 50LVS15-10/6-611-e  |      | 1271 | 582 | 507 | 168              |
| 50LVS15-12/6-611-e  |      | 1361 | 672 | 597 | 169              |
| 50LVS15-14/6-611-e  |      | 1451 | 762 | 687 | 171              |
| 50LVS15-17/6-611-e  |      | 1586 | 897 | 822 | 174              |
| 50LVS15-7/7-611-e   |      | 1136 | 447 | 372 | 165              |
| 50LVS15-8/7-611-e   |      | 1181 | 492 | 417 | 166              |
| 50LVS15-10/7-611-e  |      | 1271 | 582 | 507 | 168              |
| 50LVS15-12/7-611-e  |      | 1361 | 672 | 597 | 170              |
| 50LVS15-14/7-611-e  |      | 1451 | 762 | 687 | 171              |
| 50LVS15-17/7-611-e  |      | 1586 | 897 | 822 | 174              |
| 50LVS15-8/8-611-e   | 4    | 1181 | 492 | 417 | 167              |
| 50LVS15-10/8-611-e  |      | 1271 | 582 | 507 | 168              |
| 50LVS15-12/8-611-e  |      | 1361 | 672 | 597 | 170              |
| 50LVS15-14/8-611-e  |      | 1451 | 762 | 687 | 172              |
| 50LVS15-17/8-611-e  |      | 1586 | 897 | 822 | 174              |
| 50LVS15-10/10-615-e |      | 1271 | 582 | 507 | 180              |
| 50LVS15-12/10-615-e |      | 1361 | 672 | 597 | 181              |
| 50LVS15-14/10-615-e |      | 1451 | 762 | 687 | 183              |
| 50LVS15-17/10-615-e |      | 1586 | 897 | 822 | 185              |
| 50LVS15-12/12-618-e |      | 1391 | 672 | 597 | 198              |
| 50LVS15-14/12-618-e |      | 1481 | 762 | 687 | 199              |
| 50LVS15-17/12-618-e |      | 1616 | 897 | 822 | 202              |

Note 1) "□" in pump type can be any one of -e/-KS/-7W.

●Discharge diameter : 50mm, Nominal flow rate : 20m<sup>3</sup>/h

50Hz

(Unit : mm)

| Type                | Fig. | L    | LH  | LK  | Approx. mass(kg) |
|---------------------|------|------|-----|-----|------------------|
| 50LVS20-3/1-51.1-e  | 2    | 670  | 267 | 192 | 31               |
| 50LVS20-4/1-51.1-e  |      | 715  | 312 | 237 | 32               |
| 50LVS20-5/1-51.1-e  |      | 760  | 357 | 282 | 33               |
| 50LVS20-6/1-51.1-e  |      | 805  | 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  |      | 954  | 402 | 327 | 90               |
| 50LVS20-7/6-57.5-e  |      | 999  | 447 | 372 | 91               |
| 50LVS20-8/6-57.5-e  |      | 1044 | 492 | 417 | 92               |
| 50LVS20-10/6-57.5-e |      | 1134 | 582 | 507 | 94               |
| 50LVS20-12/6-57.5-e | 4    | 1224 | 672 | 597 | 95               |
| 50LVS20-14/6-57.5-e |      | 1314 | 762 | 687 | 97               |
| 50LVS20-17/6-57.5-e |      | 1449 | 897 | 822 | 99               |
| 50LVS20-7/7-57.5-e  |      | 999  | 447 | 372 | 91               |
| 50LVS20-8/7-57.5-e  |      | 1044 | 492 | 417 | 92               |
| 50LVS20-10/7-57.5-e |      | 1134 | 582 | 507 | 94               |
| 50LVS20-12/7-57.5-e |      | 1224 | 672 | 597 | 95               |
| 50LVS20-14/7-57.5-e |      | 1314 | 762 | 687 | 97               |
| 50LVS20-17/7-57.5-e |      | 1449 | 897 | 822 | 100              |
| 50LVS20-8/8-511-e   |      | 1181 | 492 | 417 | 167              |
| 50LVS20-10/8-511-e  |      | 1271 | 582 | 507 | 168              |
| 50LVS20-12/8-511-e  |      | 1361 | 672 | 597 | 170              |
| 50LVS20-14/8-511-e  |      | 1451 | 762 | 687 | 172              |
| 50LVS20-17/8-511-e  |      | 1586 | 897 | 822 | 174              |
| 50LVS20-10/10-511-e |      | 1271 | 582 | 507 | 168              |
| 50LVS20-12/10-511-e |      | 1361 | 672 | 597 | 170              |
| 50LVS20-14/10-511-e |      | 1451 | 762 | 687 | 172              |
| 50LVS20-17/10-511-e |      | 1586 | 897 | 822 | 174              |
| 50LVS20-12/12-515-e |      | 1361 | 672 | 597 | 182              |
| 50LVS20-14/12-515-e |      | 1451 | 762 | 687 | 183              |
| 50LVS20-17/12-515-e |      | 1586 | 897 | 822 | 186              |
| 50LVS20-14/14-515-e |      | 1451 | 762 | 687 | 183              |
| 50LVS20-17/14-515-e |      | 1586 | 897 | 822 | 186              |
| 50LVS20-17/17-518-e |      | 1616 | 897 | 822 | 203              |

60Hz

(Unit : mm)

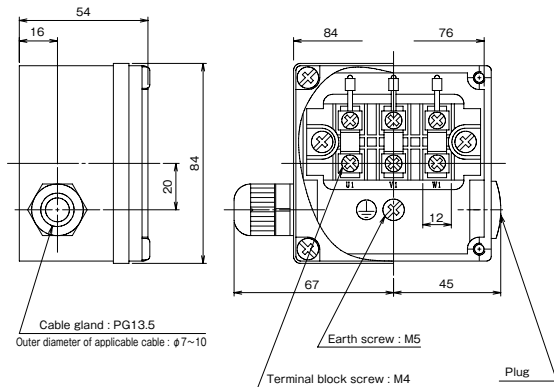
| Type                | Fig. | L    | LH  | LK  | Approx. mass(kg) |
|---------------------|------|------|-----|-----|------------------|
| 50LVS20-3/1-62.2-□  | 2    | 676  | 267 | 192 | 39               |
| 50LVS20-4/1-62.2-□  |      | 721  | 312 | 237 | 39               |
| 50LVS20-5/1-62.2-□  |      | 766  | 357 | 282 | 40               |
| 50LVS20-6/1-62.2-□  |      | 811  | 402 | 327 | 41               |
| 50LVS20-7/1-62.2-□  |      | 856  | 447 | 372 | 42               |
| 50LVS20-3/2-64.0-□  |      | 716  | 267 | 192 | 53               |
| 50LVS20-4/2-64.0-□  |      | 761  | 312 | 237 | 54               |
| 50LVS20-5/2-64.0-□  |      | 806  | 357 | 282 | 55               |
| 50LVS20-6/2-64.0-□  |      | 851  | 402 | 327 | 56               |
| 50LVS20-7/2-64.0-□  |      | 896  | 447 | 372 | 56               |
| 50LVS20-8/2-64.0-□  |      | 941  | 492 | 417 | 57               |
| 50LVS20-10/2-64.0-□ |      | 1031 | 582 | 507 | 59               |
| 50LVS20-12/2-64.0-□ |      | 1121 | 672 | 597 | 61               |
| 50LVS20-3/3-65.5-□  | 3    | 779  | 267 | 192 | 80               |
| 50LVS20-4/3-65.5-□  |      | 824  | 312 | 237 | 81               |
| 50LVS20-5/3-65.5-□  |      | 869  | 357 | 282 | 82               |
| 50LVS20-6/3-65.5-□  |      | 914  | 402 | 327 | 83               |
| 50LVS20-7/3-65.5-□  |      | 959  | 447 | 372 | 84               |
| 50LVS20-8/3-65.5-□  |      | 1004 | 492 | 417 | 85               |
| 50LVS20-10/3-65.5-□ |      | 1094 | 582 | 507 | 86               |
| 50LVS20-12/3-65.5-□ |      | 1184 | 672 | 597 | 88               |
| 50LVS20-14/3-65.5-□ |      | 1274 | 762 | 687 | 90               |
| 50LVS20-17/3-65.5-□ |      | 1409 | 897 | 822 | 92               |
| 50LVS20-4/4-67.5-□  |      | 864  | 312 | 237 | 88               |
| 50LVS20-5/4-67.5-□  |      | 909  | 357 | 282 | 89               |
| 50LVS20-6/4-67.5-□  |      | 954  | 402 | 327 | 90               |
| 50LVS20-7/4-67.5-□  |      | 999  | 447 | 372 | 91               |
| 50LVS20-8/4-67.5-□  |      | 1044 | 492 | 417 | 91               |
| 50LVS20-10/4-67.5-□ |      | 1134 | 582 | 507 | 93               |
| 50LVS20-12/4-67.5-□ |      | 1224 | 672 | 597 | 95               |
| 50LVS20-14/4-67.5-□ |      | 1314 | 762 | 687 | 96               |
| 50LVS20-17/4-67.5-□ |      | 1449 | 897 | 822 | 99               |
| 50LVS20-5/5-611-e   | 4    | 1046 | 357 | 282 | 163              |
| 50LVS20-6/5-611-e   |      | 1091 | 402 | 327 | 164              |
| 50LVS20-7/5-611-e   |      | 1136 | 447 | 372 | 165              |
| 50LVS20-8/5-611-e   |      | 1181 | 492 | 417 | 166              |
| 50LVS20-10/5-611-e  |      | 1271 | 582 | 507 | 168              |
| 50LVS20-12/5-611-e  |      | 1361 | 672 | 597 | 169              |
| 50LVS20-14/5-611-e  |      | 1451 | 762 | 687 | 171              |
| 50LVS20-17/5-611-e  |      | 1586 | 897 | 822 | 173              |
| 50LVS20-6/6-611-e   |      | 1091 | 402 | 327 | 164              |
| 50LVS20-7/6-611-e   |      | 1136 | 447 | 372 | 165              |
| 50LVS20-8/6-611-e   |      | 1181 | 492 | 417 | 166              |
| 50LVS20-10/6-611-e  |      | 1271 | 582 | 507 | 168              |
| 50LVS20-12/6-611-e  |      | 1361 | 672 | 597 | 169              |
| 50LVS20-14/6-611-e  |      | 1451 | 762 | 687 | 171              |
| 50LVS20-17/6-611-e  |      | 1586 | 897 | 822 | 174              |
| 50LVS20-7/7-615-e   |      | 1136 | 447 | 372 | 176              |
| 50LVS20-8/7-615-e   |      | 1181 | 492 | 417 | 177              |
| 50LVS20-10/7-615-e  |      | 1271 | 582 | 507 | 179              |
| 50LVS20-12/7-615-e  |      | 1361 | 672 | 597 | 181              |
| 50LVS20-14/7-615-e  |      | 1451 | 762 | 687 | 182              |
| 50LVS20-17/7-615-e  |      | 1586 | 897 | 822 | 185              |
| 50LVS20-8/8-615-e   |      | 1181 | 492 | 417 | 177              |
| 50LVS20-10/8-615-e  |      | 1271 | 582 | 507 | 179              |
| 50LVS20-12/8-615-e  |      | 1361 | 672 | 597 | 181              |
| 50LVS20-14/8-615-e  |      | 1451 | 762 | 687 | 182              |
| 50LVS20-17/8-615-e  |      | 1586 | 897 | 822 | 185              |
| 50LVS20-10/10-618-e |      | 1301 | 582 | 507 | 196              |
| 50LVS20-12/10-618-e |      | 1391 | 672 | 597 | 197              |
| 50LVS20-14/10-618-e |      | 1481 | 762 | 687 | 199              |
| 50LVS20-17/10-618-e |      | 1616 | 897 | 822 | 201              |

Note 1) "□" in pump type can be any one of -e/-KS/-7W.

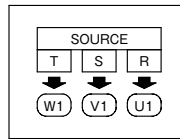
## Detailed drawing of the terminal box

### Assembly drawing (-e/-KS type)

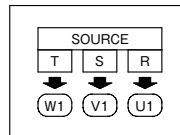
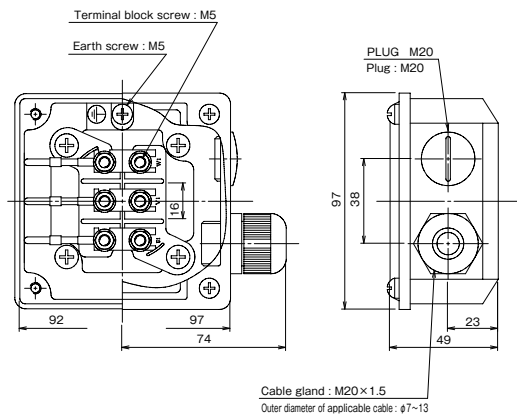
#### ●Output 0.75kW



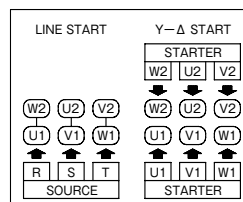
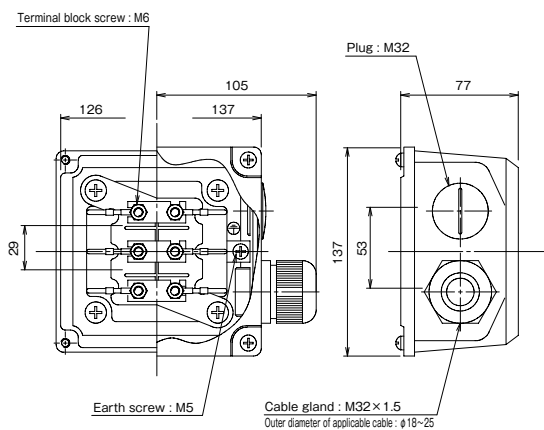
### Connection diagram



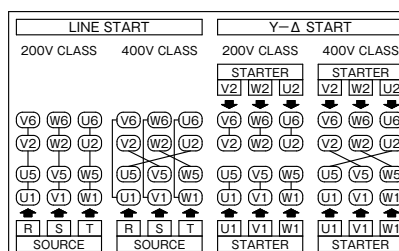
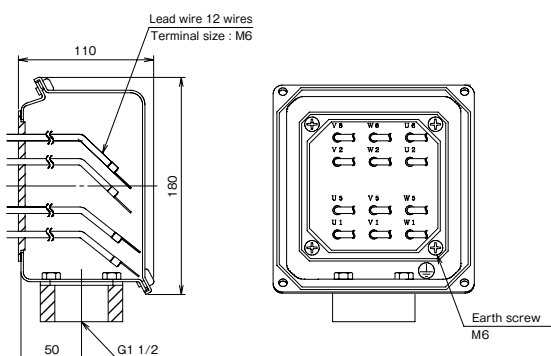
#### ●Output 1.1-4.0 kW



#### ●Output 5.5, 7.5 kW

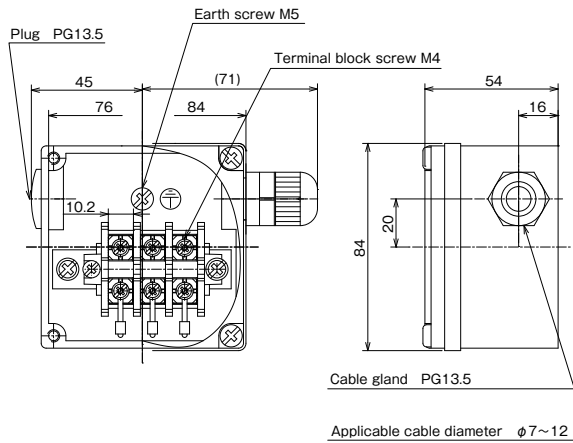


#### ●Output 11-18.5 kW (-e type)

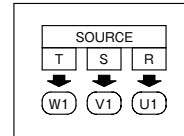


### ■Assembly drawing (-7W type)

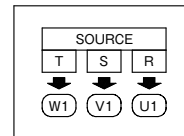
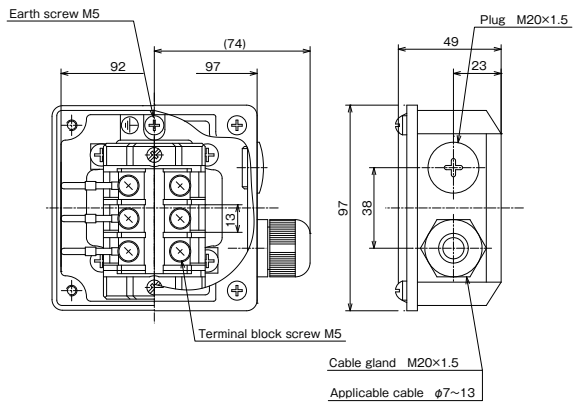
#### ●Output 0.75kW



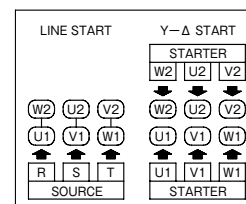
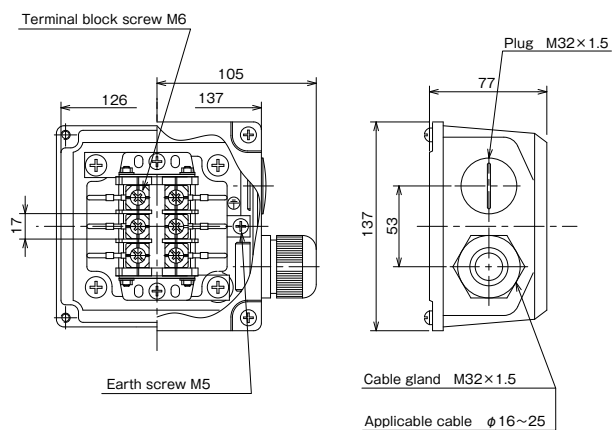
### ■Connection diagram



#### ●Output 1.1-4.0kW

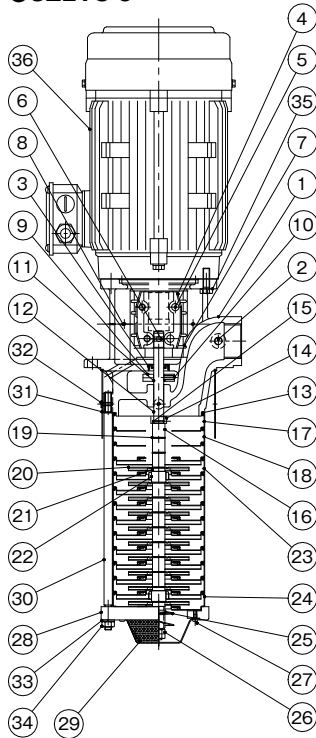


#### ●Output 5.5kW, 7.5kW



## ■ Sectional drawing

●32LVS-e

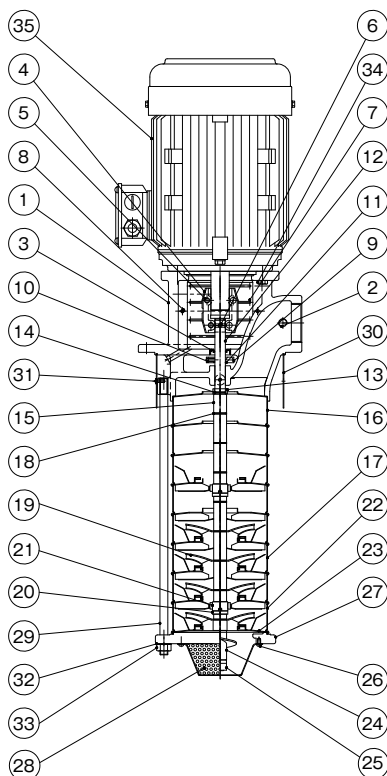


| No. | Part name                         | Material   |
|-----|-----------------------------------|------------|
| 1   | Discharge casing                  | FC200      |
| 2   | Plug                              | SWCH       |
| 3   | Oil seal                          | NBR        |
| 4   | Coupling                          | 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  | Main 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  | Suction casing                    | FC200      |
| 29  | Strainer                          | SUS304     |
| 30  | Through bolt                      | SUS304     |
| 31  | Outer sleeve                      | SUS304     |
| 32  | Cross-recessed flat head screw    | SUS304     |
| 33  | Spring washer                     | SUS304     |
| 34  | Hexagon nut                       | SUS304     |
| 35  | Hexagon bolt                      | SUS304     |
| 36  | Motor                             | —          |

Note 1) The materials in the table above are equivalents.

Note 2) Structure and other details are subject to change without notice.

●50LVS-e



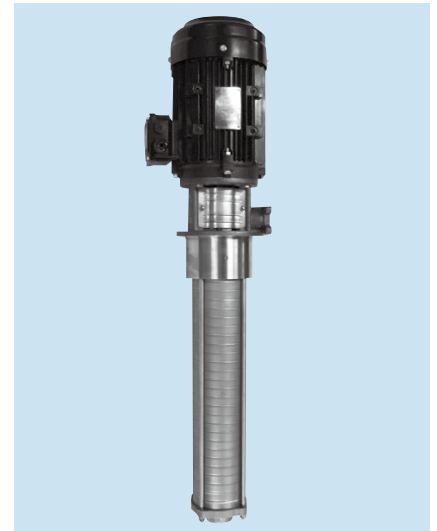
| No. | Part name                         | Material   |
|-----|-----------------------------------|------------|
| 1   | Discharge casing                  | FC200      |
| 2   | Plug                              | SWCH       |
| 3   | Oil seal                          | NBR        |
| 4   | Coupling                          | 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  | Main shaft                        | SUS420J2   |
| 13  | Shaft bushing                     | SUS304     |
| 14  | Shaft ring                        | SUS316     |
| 15  | Sleeve                            | SUS304     |
| 16  | Intermediate casing (Final stage) | SUS304     |
| 17  | Intermediate casing               | SUS304     |
| 18  | Shim                              | SUS304     |
| 19  | Impeller                          | SUS304     |
| 20  | Baffle                            | SUS304     |
| 21  | Bearings                          | SiC        |
| 22  | Bearing casing                    | SUS304+SiC |
| 23  | Intermediate casing (First stage) | SUS304     |
| 24  | Screw                             | SUS304     |
| 25  | Hardlock nut                      | SUS304     |
| 26  | Cross-recessed pan head screw     | SUS304     |
| 27  | Suction casing                    | FCD450     |
| 28  | Strainer                          | SUS304     |
| 29  | Through bolt                      | SUS304     |
| 30  | Outer sleeve                      | SUS304     |
| 31  | Cross-recessed flat head screw    | SUS304     |
| 32  | Plain washer                      | SUS304     |
| 33  | Hexagon nut                       | SUS304     |
| 34  | Hexagon bolt                      | SUS304     |
| 35  | Motor                             | —          |

Note 1) The materials in the table above are equivalents.

Note 2) Structure and other details are subject to change without notice.

### Features

- ① Non-seal (mechanical seal-less) structure is adopted.
  - ② Stainless steel is used in the pump's main liquid contact part and SiC bearings with increased wear resistance are adopted.
  - ③ Measures against air suction into the pump are taken when the fluid level lowers.
  - ④ Energy saving by high efficiency impeller!
  - ⑤ The lineup including the models complying with global standards by supporting efficiency and other regulations.
- Japan : Top Runner efficiency  
 Europe : IE3 efficiency, CE marking(EU Directive)  
 RoHS Directive (2011/65/EU), 10 restricted substances  
 USA : NEMA Premium efficiency (IE3 efficiency), UL standards (safety)  
 Korea : Energy Efficiency Label and Standard Program (KC Standards, IE3)  
 Canada : CSA standard (efficiency), CSA standard (safety)



Please note that the paint color, etc. of the actual unit may partially differ from the photo.

### Non-seal structure

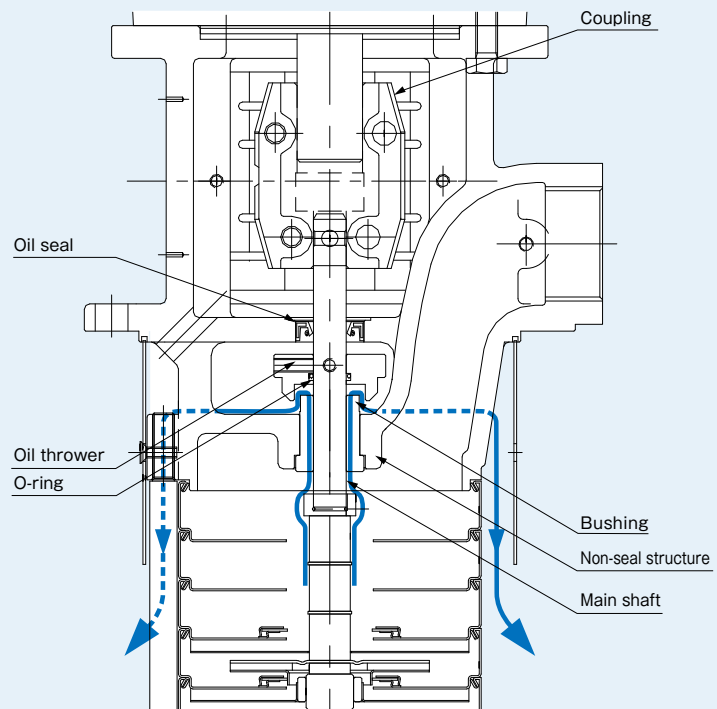
TERAL's original "non-seal" structure allows coolant to flow from a narrow clearance without using a seal between the pump section and the motor section.

#### The advantages of a non-seal pump

- 1 No trouble such as coolant leaks.**  
Helps cut down on running costs.
- 2 Prevents air entrainment.**  
Reduces initial problems.
- 3 Not easily affected by a small quantity of liquid or shut-off operations.**  
Enables a flexible operation system.

#### ※What is non-seal structure?

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



### Description of types

**50 LVSS 10 - 20 / 12 - 6 7.5 -e**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- |                                         |                                                                                                                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| ① Discharge diameter                    | ⑧ Motor efficiency -e : Top Runner efficiency(equivalent to IE3)                                                                |
| ② Model                                 | -KS : Equipped with Korea Energy Efficiency Label and Standard Program compliant motor (IE3)                                    |
| ③ Nominal flow rate (m <sup>3</sup> /h) | -7W : Equipped with NEMA Premium efficiency, UL/CSA certified motor (Output less than 0.75kW complies to safety standards only) |
| ④ Number of casings                     |                                                                                                                                 |
| ⑤ Number of impellers                   |                                                                                                                                 |
| ⑥ Frequency 5:50Hz 6:60Hz               |                                                                                                                                 |
| ⑦ Output                                |                                                                                                                                 |

## Standard Specification

|                       |                               |                                                                                                                                                                                                                              |
|-----------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Used liquid           | Property of liquid            | Fresh water, Cleaning liquid and Water soluble coolants (e.g. grinding liquid, cutting liquid after secondary treatment) *1                                                                                                  |
|                       | Temperature                   | 0 to 90° C (No frozen liquid)                                                                                                                                                                                                |
|                       | Allowable kinematic viscosity | 1mm <sup>2</sup> /s                                                                                                                                                                                                          |
| Installation location |                               | Indoor<br>Ambient temperature: 0 to 40° C, RH 85% or below (no condensation),<br>Height above sea level : 1000m or less, Place not exposed to direct sunlight, Place in an area free of corrosive or explosive gas or vapor. |
| Material              | Suction casing                | Bore diameter 32: SCS14A, Bore diameter 50: SCS13                                                                                                                                                                            |
|                       | Discharge casing              | SCS13+SUS430                                                                                                                                                                                                                 |
|                       | Intermediate casing           | SUS304                                                                                                                                                                                                                       |
|                       | Impeller                      | SUS304                                                                                                                                                                                                                       |
|                       | Main shaft                    | SUS420J2                                                                                                                                                                                                                     |
| Shaft seal structure  |                               | Non-seal (mechanical seal-less)                                                                                                                                                                                              |
| Motor                 | Type                          | Totally enclosed fan-cooled outdoor type *2                                                                                                                                                                                  |
|                       | Protection method             | IP55                                                                                                                                                                                                                         |
|                       | Power source                  | 3-phase 50/60/60Hz, 200/200/230V 0.75~7.5kW *3<br>3-phase 50/60/60Hz, 200/200/220V 11~18.5kW                                                                                                                                 |
|                       | Thermal class                 | F *4                                                                                                                                                                                                                         |
|                       | Number of poles               | 2P                                                                                                                                                                                                                           |
|                       | Standard                      | IEC60034-1                                                                                                                                                                                                                   |
| Paint color           | Pump                          | Munsell N1 (Frame spacer for 5.5kW or more)                                                                                                                                                                                  |
|                       | Motor                         | Black                                                                                                                                                                                                                        |

\*1 If the liquid contains hard sludge, such as abrasive powder, ground powder, or ground diamond grains, the service life might be shortened. Please set up a filter (magnet filter or paper filter, etc.).

\*2 The pump cannot be installed outside.

\*3 -KS/-7W:3-phase 60Hz 200V-230V

\*4 Thermal class of -7W type is class A.

## Special specification

|                     |                                                                                            |
|---------------------|--------------------------------------------------------------------------------------------|
| Motor modifications | Voltage change *1, change of terminal box position *2, change of terminal box direction *3 |
|---------------------|--------------------------------------------------------------------------------------------|

\*1 7.5kW or less (50Hz/380V,400V 60Hz/400V 460V)

11kW or more(50Hz/380V,400V,415V,420V,440V 60Hz/400V,440V,460V 480V)

\*2 Change of terminal box position (every 90° when viewed from above)

\*3 Terminal box direction (every 90° when viewed from front), Applicable: 1.5 kW to 18.5 kW

## Special accessory

|                                               |
|-----------------------------------------------|
| Companion flange (discharge diameter 32 mm) * |
|-----------------------------------------------|

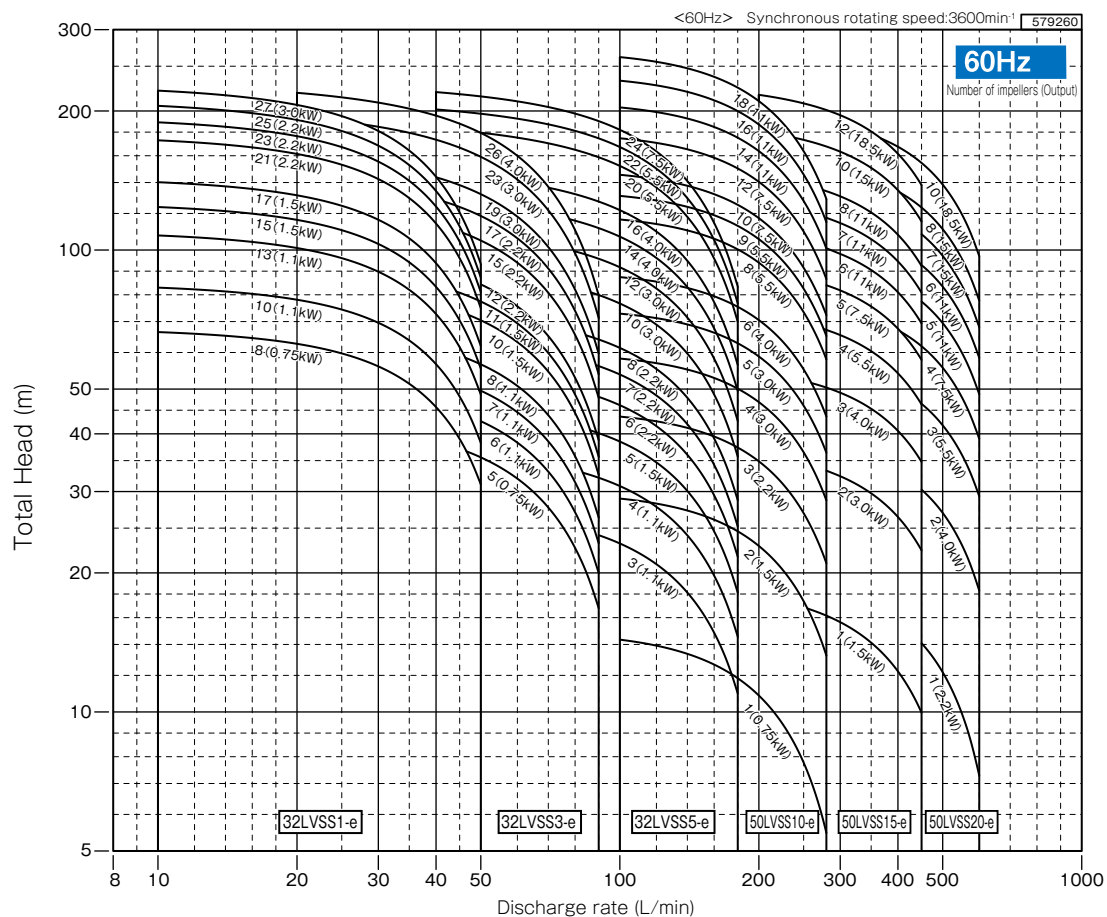
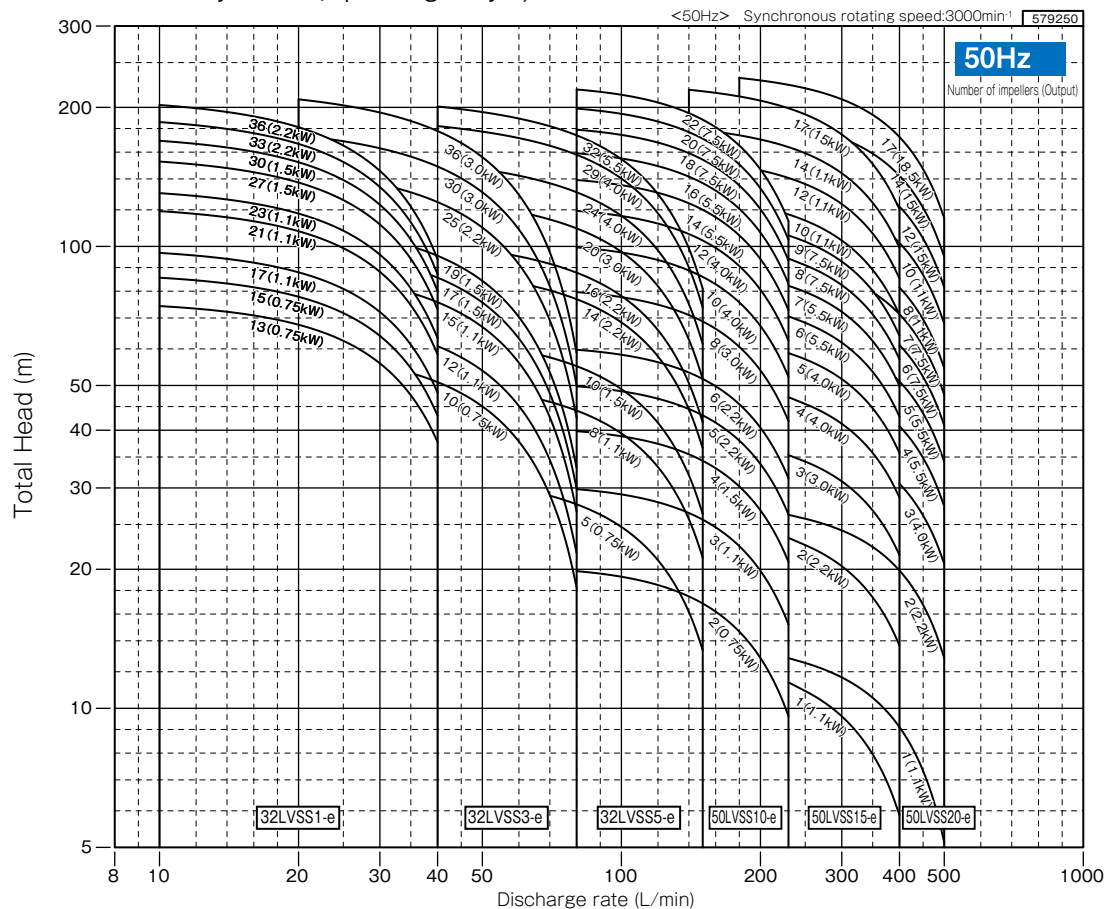
\* The material is SCS13.

## Table of Consumable Parts

| Output<br>(kW) | Bearing   |             | Oil seal                    |             |                  |                  | O-ring<br>(For oil thrower)<br>Material: FKM |                  |
|----------------|-----------|-------------|-----------------------------|-------------|------------------|------------------|----------------------------------------------|------------------|
|                | Load side | Unload side | Motor                       |             | Discharge casing |                  |                                              |                  |
|                |           |             | Load side<br>(Bearing side) | Unload side |                  |                  | Bore diameter 32                             | Bore diameter 50 |
|                |           |             |                             |             | Bore diameter 32 | Bore diameter 50 |                                              |                  |
| 0.75           | 6204ZZC3  | 6201ZZC3    | —                           | —           | IS12257          | SC16328          | S12                                          | S16              |
| 1.1            |           | 6304ZZC3    | —                           | VC20407     |                  |                  |                                              |                  |
| 1.5            | 6205ZZC3  |             | VC25407                     |             |                  |                  |                                              |                  |
| 2.2            |           |             |                             |             |                  |                  |                                              |                  |
| 3.0            | 6307ZZC3  | 6305ZZC3    | VC35557                     | VC25477     |                  |                  |                                              |                  |
| 4.0            |           |             | VC35527                     | VC25407     |                  |                  |                                              |                  |
| 5.5            | 6309ZZC3  | 6306ZZC3    | VC45628                     | VC30528     |                  |                  |                                              |                  |
| 7.5            |           |             |                             |             |                  |                  |                                              |                  |
| 11             | 7309B     | 6309ZZC3    | Please contact us           |             |                  |                  |                                              |                  |
| 15             |           |             |                             |             |                  |                  |                                              |                  |
| 18.5           |           |             |                             |             |                  |                  |                                              |                  |

### Selection chart

(Values at kinematic viscosity  $1\text{mm}^2/\text{s}$ , specific gravity 1)



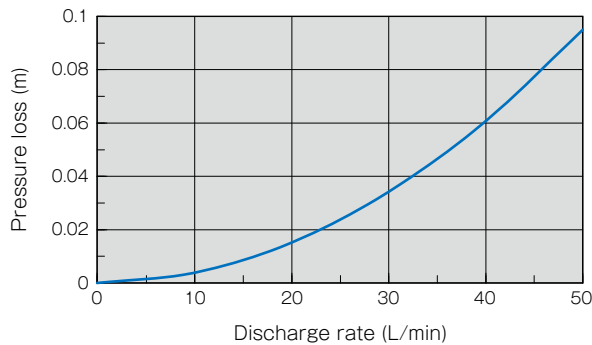
Note 1) The selection chart reflects the full impeller condition of the units. The total head may be decreased depending on the flow rate if empty casings are involved because of pressure loss in the empty casings.

\* Above selection chart (-e) is also available for -KS/-7W type.

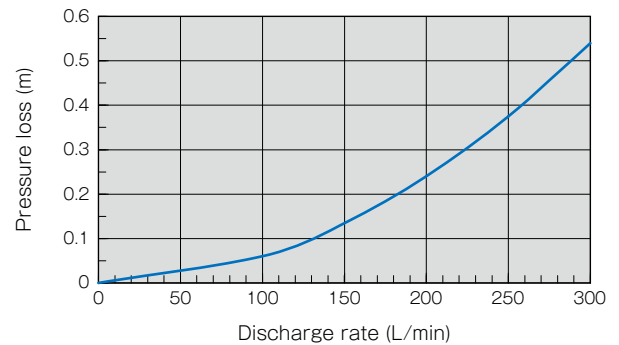
## ■ Pressure loss in the empty casings (50 Hz/60 Hz)

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

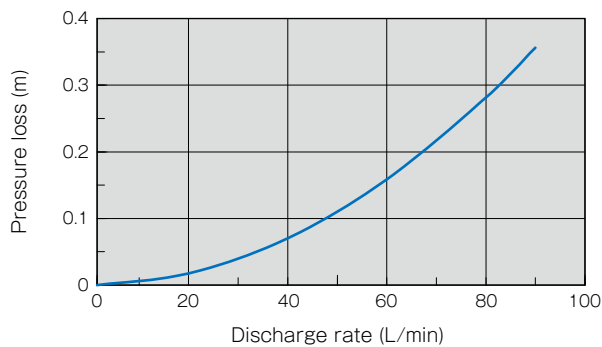
LVSS1



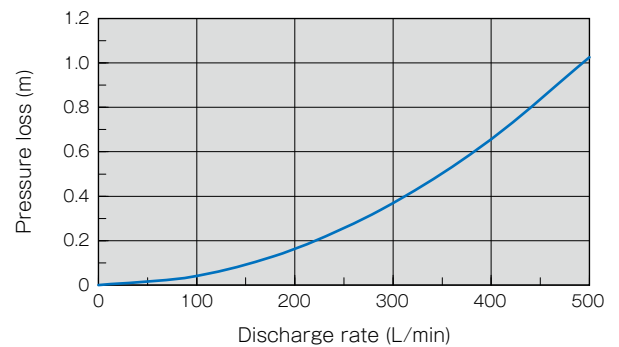
LVSS10



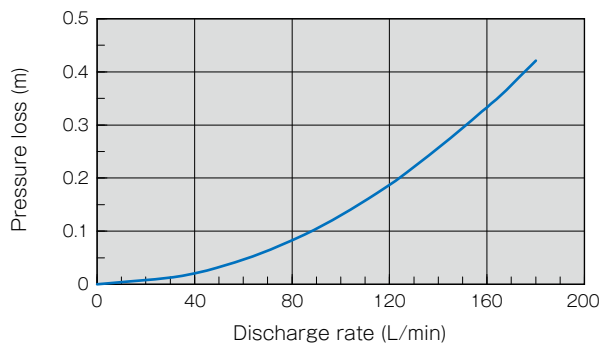
LVSS3



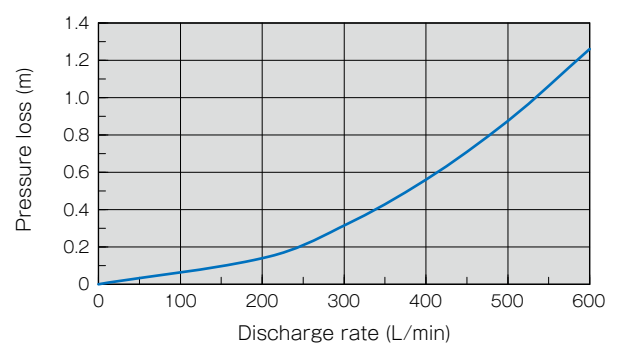
LVSS15



LVSS5



LVSS20



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 : 32LVSS5-20/5-5.75-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  $20 - 5 = 15$  stages.

Total pressure loss =  $0.13 \times 15 \div 2.0\text{m}$

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 =  $25 - 2.0 = 23.0\text{m}$

Therefore, the total head of 32LVSS5-20/5-5.75-e is 23.0 m for a flow rate of 100 L/min.

## ■ Specification table

## ●-e type

## 50Hz

| Bore diameter (mm)   | Nominal flow rate (m³/h) | Type                   | Output (kW) | Rated voltage (V) | Rated current (A) | Starting current (A) | Discharge rate (L/min) | Total Head (m) |              |
|----------------------|--------------------------|------------------------|-------------|-------------------|-------------------|----------------------|------------------------|----------------|--------------|
| 32                   | 1                        | 32LVSS1-□ / 13-5.75-e  | 0.75        | 200               | 3.4               | 26                   | 10-40                  | 74.3 - 37.7    |              |
|                      |                          | 32LVSS1-□ / 15-5.75-e  |             |                   |                   |                      |                        | 85.6 - 43.0    |              |
|                      |                          | 32LVSS1-□ / 17-51.1-e  | 1.1         |                   | 4.7               | 34                   |                        | 10-40          | 96.8 - 48.2  |
|                      |                          | 32LVSS1-□ / 21-51.1-e  |             |                   |                   |                      |                        |                | 119.3 - 58.4 |
|                      |                          | 32LVSS1-□ / 23-51.1-e  | 1.5         |                   | 6.2               | 47                   |                        | 10-40          | 130.4 - 63.3 |
|                      |                          | 32LVSS1-□ / 27-51.5-e  |             |                   |                   |                      |                        |                | 152.7 - 73.0 |
|                      |                          | 32LVSS1-□ / 30-51.5-e  |             |                   |                   |                      |                        |                | 169.3 - 80.1 |
|                      |                          | 32LVSS1-□ / 33-52.2-e  |             |                   |                   |                      |                        |                | 185.9 - 87.0 |
|                      | 32LVSS1-36/36-52.2-e     | 2.2                    | 8.7         |                   | 83                | 10-40                | 202.4 - 93.8           |                |              |
|                      | 3                        | 32LVSS3-□ / 10-5.75-e  | 0.75        |                   | 3.4               | 26                   | 20-80                  | 58.7 - 18.2    |              |
|                      |                          | 32LVSS3-□ / 12-51.1-e  | 1.1         |                   | 4.7               | 34                   |                        | 70.3 - 21.6    |              |
|                      |                          | 32LVSS3-□ / 15-51.1-e  |             |                   |                   |                      |                        | 87.7 - 26.6    |              |
|                      |                          | 32LVSS3-□ / 17-51.5-e  | 1.5         |                   | 6.2               | 47                   |                        | 99.3 - 29.9    |              |
|                      |                          | 32LVSS3-□ / 19-51.5-e  |             |                   |                   |                      |                        | 110.9 - 33.1   |              |
|                      |                          | 32LVSS3-□ / 25-52.2-e  | 2.2         |                   | 8.7               | 83                   |                        | 145.4 - 42.5   |              |
|                      |                          | 32LVSS3-□ / 30-53.0-e  | 3.0         |                   | 12.2              | 129                  |                        | 174.0 - 50.0   |              |
|                      |                          | 32LVSS3-36/36-53.0-e   |             |                   |                   |                      |                        | 208.2 - 58.8   |              |
|                      | 5                        | 32LVSS5-□ / 5-5.75-e   | 0.75        |                   | 3.4               | 26                   | 40-150                 | 31.6 - 13.3    |              |
|                      |                          | 32LVSS5-□ / 8-51.1-e   | 1.1         |                   | 4.7               | 34                   |                        | 50.6 - 21.1    |              |
|                      |                          | 32LVSS5-□ / 10-51.5-e  | 1.5         |                   | 6.2               | 47                   |                        | 63.2 - 26.3    |              |
|                      |                          | 32LVSS5-□ / 14-52.2-e  | 2.2         |                   | 8.7               | 83                   |                        | 88.3 - 36.5    |              |
|                      |                          | 32LVSS5-□ / 16-52.2-e  |             |                   |                   |                      |                        | 100.9 - 41.6   |              |
|                      |                          | 32LVSS5-□ / 20-53.0-e  | 3.0         |                   | 12.2              | 129                  |                        | 126.0 - 51.6   |              |
|                      |                          | 32LVSS5-□ / 24-54.0-e  | 4.0         |                   | 14.7              | 145                  |                        | 151.0 - 61.5   |              |
|                      |                          | 32LVSS5-□ / 29-54.0-e  |             |                   |                   |                      |                        | 182.2 - 73.7   |              |
| 32LVSS5-32/32-55.5-e | 5.5                      | 20.3                   | 204         | 200.9 - 81.0      |                   |                      |                        |                |              |
| 50                   | 10                       | 50LVSS10-□ / 2-5.75-e  | 0.75        | 3.4               | 26                | 80-230               | 19.8 - 9.6             |                |              |
|                      |                          | 50LVSS10-□ / 3-51.1-e  | 1.1         | 4.7               | 34                |                      | 29.8 - 15.1            |                |              |
|                      |                          | 50LVSS10-□ / 4-51.5-e  | 1.5         | 6.2               | 47                |                      | 39.8 - 20.7            |                |              |
|                      |                          | 50LVSS10-□ / 5-52.2-e  | 2.2         | 8.7               | 83                |                      | 49.8 - 26.2            |                |              |
|                      |                          | 50LVSS10-□ / 6-52.2-e  |             |                   |                   |                      | 59.7 - 31.4            |                |              |
|                      |                          | 50LVSS10-□ / 8-53.0-e  | 3.0         | 12.2              | 129               |                      | 79.6 - 41.8            |                |              |
|                      |                          | 50LVSS10-□ / 10-54.0-e | 4.0         | 14.7              | 145               |                      | 99.5 - 52.1            |                |              |
|                      |                          | 50LVSS10-□ / 12-54.0-e |             |                   |                   |                      | 119.4 - 62.4           |                |              |
|                      |                          | 50LVSS10-□ / 14-55.5-e | 5.5         | 20.3              | 204               |                      | 139.3 - 72.7           |                |              |
|                      |                          | 50LVSS10-□ / 16-55.5-e |             |                   |                   |                      | 159.1 - 82.9           |                |              |
|                      |                          | 50LVSS10-□ / 18-57.5-e | 7.5         | 27.2              | 290               |                      | 179.0 - 93.2           |                |              |
|                      |                          | 50LVSS10-□ / 20-57.5-e |             |                   |                   |                      | 198.9 - 103.3          |                |              |
|                      |                          | 50LVSS10-22/22-57.5-e  |             |                   |                   |                      | 218.7 - 113.5          |                |              |
|                      | 15                       | 50LVSS15-□ / 1-51.1-e  | 1.1         | 4.7               | 34                | 140-400              | 12.7 - 5.8             |                |              |
|                      |                          | 50LVSS15-□ / 2-52.2-e  | 2.2         | 8.7               | 83                |                      | 25.6 - 13.6            |                |              |
|                      |                          | 50LVSS15-□ / 3-53.0-e  | 3.0         | 12.2              | 129               |                      | 38.6 - 21.4            |                |              |
|                      |                          | 50LVSS15-□ / 4-54.0-e  | 4.0         | 14.7              | 145               |                      | 51.4 - 28.6            |                |              |
|                      |                          | 50LVSS15-□ / 5-54.0-e  |             |                   |                   |                      | 64.3 - 35.7            |                |              |
|                      |                          | 50LVSS15-□ / 6-55.5-e  | 5.5         | 20.3              | 204               |                      | 77.2 - 42.8            |                |              |
|                      |                          | 50LVSS15-□ / 7-55.5-e  |             |                   |                   |                      | 90.0 - 49.9            |                |              |
|                      |                          | 50LVSS15-□ / 8-57.5-e  | 7.5         | 27.2              | 290               |                      | 102.9 - 57.0           |                |              |
|                      |                          | 50LVSS15-□ / 9-57.5-e  |             |                   |                   |                      | 115.7 - 64.1           |                |              |
|                      |                          | 50LVSS15-□ / 10-511-e  | 11          | 40.5              | 361               |                      | 128.5 - 71.1           |                |              |
|                      |                          | 50LVSS15-□ / 12-511-e  |             |                   |                   |                      | 154.2 - 85.2           |                |              |
|                      |                          | 50LVSS15-□ / 14-511-e  | 15          | 52.4              | 484               |                      | 179.9 - 99.3           |                |              |
|                      |                          | 50LVSS15-17/17-515-e   |             |                   |                   |                      | 218.4 - 120.4          |                |              |
|                      | 20                       | 50LVSS20-□ / 1-51.1-e  | 1.1         | 4.7               | 34                | 180-500              | 13.4 - 5.1             |                |              |
|                      |                          | 50LVSS20-□ / 2-52.2-e  | 2.2         | 8.7               | 83                |                      | 27.1 - 12.8            |                |              |
|                      |                          | 50LVSS20-□ / 3-54.0-e  | 4.0         | 14.7              | 145               |                      | 40.9 - 20.5            |                |              |
|                      |                          | 50LVSS20-□ / 4-55.5-e  | 5.5         | 20.3              | 204               |                      | 54.6 - 27.3            |                |              |
|                      |                          | 50LVSS20-□ / 5-55.5-e  |             |                   |                   |                      | 68.2 - 34.1            |                |              |
|                      |                          | 50LVSS20-□ / 6-57.5-e  | 7.5         | 27.2              | 290               |                      | 81.8 - 40.9            |                |              |
|                      |                          | 50LVSS20-□ / 7-57.5-e  |             |                   |                   |                      | 95.5 - 47.7            |                |              |
|                      |                          | 50LVSS20-□ / 8-511-e   | 11          | 40.5              | 361               |                      | 109.1 - 54.5           |                |              |
|                      |                          | 50LVSS20-□ / 10-511-e  |             |                   |                   |                      | 136.4 - 68.0           |                |              |
|                      |                          | 50LVSS20-□ / 12-515-e  | 15          | 54.0              | 484               |                      | 163.6 - 81.5           |                |              |
|                      |                          | 50LVSS20-□ / 14-515-e  |             |                   |                   |                      | 190.8 - 95.0           |                |              |
|                      |                          | 50LVSS20-17/17-518-e   | 18.5        | 66.0              | 563               |                      | 231.7 - 115.1          |                |              |

Note) The rated current in the table above is the recommended setting for the current value of the protective device.

## ●-e type

60Hz

| Bore diameter (mm)   | Nominal flow rate (m³/h) | Type                | Output (kW) | Rated voltage (V) | Rated current (A)   | Starting current (A) | Discharge rate (L/min) | Total Head (m) |
|----------------------|--------------------------|---------------------|-------------|-------------------|---------------------|----------------------|------------------------|----------------|
| 32                   | 1                        | 32LVSS1-□/8-6.75-e  | 0.75        | 200/230           | 3.2/3.1             | 25.0/28.5            | 10-50                  | 66.4 - 31.1    |
|                      |                          | 32LVSS1-□/10-61.1-e | 1.1         |                   | 4.4/4.1             | 32.5/37.0            |                        | 82.9 - 38.2    |
|                      |                          | 32LVSS1-□/13-61.1-e |             |                   |                     |                      |                        | 107.6 - 48.6   |
|                      |                          | 32LVSS1-□/15-61.5-e | 1.5         |                   | 5.9/5.4             | 41.0/47.6            |                        | 123.9 - 55.4   |
|                      |                          | 32LVSS1-□/17-61.5-e |             |                   |                     |                      |                        | 140.3 - 62.0   |
|                      |                          | 32LVSS1-□/21-62.2-e | 2.2         |                   | 8.4/7.6             | 78.0/82.6            |                        | 172.8 - 74.8   |
|                      |                          | 32LVSS1-□/23-62.2-e |             |                   |                     |                      |                        | 189.1 - 81.1   |
|                      |                          | 32LVSS1-□/25-62.2-e |             |                   |                     |                      |                        | 205.3 - 87.2   |
|                      |                          | 32LVSS1-□/27-63.0-e | 3.0         |                   | 11.5/10.8           | 115/135              |                        | 221.4 - 93.2   |
|                      | 3                        | 32LVSS3-□/5-6.75-e  | 0.75        |                   | 3.2/3.1             | 25.0/28.5            | 20-90                  | 42.7 - 16.7    |
|                      |                          | 32LVSS3-□/6-61.1-e  | 1.1         |                   | 4.4/4.1             | 32.5/37.0            |                        | 51.2 - 20.0    |
|                      |                          | 32LVSS3-□/7-61.1-e  |             |                   |                     |                      |                        | 59.7 - 23.1    |
|                      |                          | 32LVSS3-□/8-61.1-e  |             |                   |                     |                      |                        | 68.1 - 26.3    |
|                      |                          | 32LVSS3-□/10-61.5-e | 1.5         |                   | 5.9/5.4             | 41.0/47.6            |                        | 85.0 - 32.6    |
|                      |                          | 32LVSS3-□/11-61.5-e |             |                   |                     |                      |                        | 93.5 - 35.7    |
|                      |                          | 32LVSS3-□/12-62.2-e | 2.2         |                   | 8.4/7.6             | 78.0/82.6            |                        | 101.9 - 38.7   |
|                      |                          | 32LVSS3-□/15-62.2-e |             |                   |                     |                      |                        | 127.1 - 47.8   |
|                      |                          | 32LVSS3-□/17-62.2-e |             |                   |                     |                      |                        | 143.9 - 53.8   |
|                      |                          | 32LVSS3-□/19-63.0-e | 3.0         |                   | 11.5/10.8           | 115/135              |                        | 160.7 - 59.6   |
|                      |                          | 32LVSS3-□/23-63.0-e |             |                   |                     |                      |                        | 194.1 - 71.2   |
|                      |                          | 32LVSS3-□/26-64.0-e | 4.0         |                   | 14.3/12.8           | 132/151              |                        | 219.0 - 79.7   |
|                      | 5                        | 32LVSS5-□/3-61.1-e  | 1.1         |                   | 4.4/4.1             | 32.5/37.0            | 40-180                 | 27.7 - 10.9    |
|                      |                          | 32LVSS5-□/4-61.1-e  |             |                   |                     |                      |                        | 36.9 - 14.5    |
|                      |                          | 32LVSS5-□/5-61.5-e  | 1.5         |                   | 5.9/5.4             | 41.0/47.6            |                        | 46.1 - 18.1    |
|                      |                          | 32LVSS5-□/6-62.2-e  |             |                   |                     |                      |                        | 55.3 - 21.6    |
|                      |                          | 32LVSS5-□/7-62.2-e  |             |                   | 8.4/7.6             | 78.0/82.6            |                        | 64.4 - 25.2    |
|                      |                          | 32LVSS5-□/8-62.2-e  | 2.2         |                   |                     |                      |                        | 73.6 - 28.7    |
|                      |                          | 32LVSS5-□/10-63.0-e |             |                   | 11.5/10.8           | 115/135              |                        | 92.0 - 35.7    |
|                      |                          | 32LVSS5-□/12-63.0-e |             |                   |                     |                      |                        | 110.3 - 42.6   |
|                      |                          | 32LVSS5-□/14-64.0-e | 4.0         |                   | 14.3/12.8           | 132/151              |                        | 128.6 - 49.5   |
|                      |                          | 32LVSS5-□/16-64.0-e |             |                   |                     |                      |                        | 146.9 - 56.4   |
|                      |                          | 32LVSS5-□/20-65.5-e | 5.5         |                   | 19.8/17.8           | 178/206              |                        | 183.4 - 69.9   |
|                      |                          | 32LVSS5-□/22-65.5-e |             |                   |                     |                      |                        | 201.6 - 76.6   |
|                      |                          | 32LVSS5-□/24-67.5-e |             |                   | 26.5/23.7           | 254/295              |                        | 219.8 - 83.3   |
|                      |                          | 50                  | 10          |                   | 50LVSS10-□/1-6.75-e | 0.75                 |                        | 200/220        |
| 50LVSS10-□/2-61.5-e  | 1.5                      |                     |             | 5.9/5.4           | 41.0/47.6           | 28.9 - 13.2          |                        |                |
| 50LVSS10-□/3-62.2-e  | 2.2                      |                     |             | 8.4/7.6           | 78.0/82.6           | 43.6 - 20.9          |                        |                |
| 50LVSS10-□/4-63.0-e  | 3.0                      |                     |             | 11.5/10.8         | 115/135             | 58.2 - 28.7          |                        |                |
| 50LVSS10-□/5-63.0-e  |                          |                     |             |                   |                     | 72.8 - 36.4          |                        |                |
| 50LVSS10-□/6-64.0-e  | 4.0                      |                     |             | 14.3/12.8         | 132/151             | 87.4 - 43.6          |                        |                |
| 50LVSS10-□/8-65.5-e  | 5.5                      |                     |             | 19.8/17.8         | 178/206             | 116.5 - 57.9         |                        |                |
| 50LVSS10-□/9-65.5-e  |                          |                     |             |                   |                     | 131.0 - 65.1         |                        |                |
| 50LVSS10-□/10-67.5-e | 7.5                      |                     |             | 26.5/23.7         | 254/295             | 145.5 - 72.2         |                        |                |
| 50LVSS10-□/12-67.5-e |                          |                     |             |                   |                     | 174.6 - 86.5         |                        |                |
| 50LVSS10-□/14-611-e  | 11                       |                     |             |                   |                     | 203.7 - 100.7        |                        |                |
| 50LVSS10-□/16-611-e  |                          |                     |             | 39.5/36.5         | 296/333             | 232.7 - 114.8        |                        |                |
| 50LVSS10-□/18-611-e  |                          |                     |             |                   |                     | 261.7 - 129.0        |                        |                |
| 15                   | 50LVSS15-□/1-61.5-e      |                     | 1.5         | 200/230           | 5.9/5.4             | 41.0/47.6            | 160-450                | 18.3 - 9.9     |
|                      | 50LVSS15-□/2-63.0-e      |                     | 3.0         |                   | 11.5/10.8           | 115/135              |                        | 37.0 - 22.3    |
|                      | 50LVSS15-□/3-64.0-e      |                     | 4.0         |                   | 14.3/12.8           | 132/151              |                        | 55.6 - 34.7    |
|                      | 50LVSS15-□/4-65.5-e      |                     | 5.5         |                   | 19.8/17.8           | 178/206              |                        | 74.2 - 46.3    |
|                      | 50LVSS15-□/5-67.5-e      |                     | 7.5         |                   | 26.5/23.7           | 254/295              |                        | 92.7 - 57.8    |
|                      | 50LVSS15-□/6-611-e       |                     | 11          | 200/220           | 39.5/36.5           | 296/333              |                        | 111.2 - 69.3   |
|                      | 50LVSS15-□/7-611-e       |                     |             |                   |                     |                      |                        | 129.8 - 80.8   |
|                      | 50LVSS15-□/8-611-e       |                     |             |                   |                     |                      |                        | 148.3 - 92.3   |
|                      | 50LVSS15-□/10-615-e      |                     |             |                   | 53.0/49.0           | 397/447              |                        | 185.3 - 115.3  |
|                      | 50LVSS15-□/12-618-e      |                     | 18.5        |                   | 65.0/59.0           | 456/515              |                        | 222.4 - 138.2  |
| 20                   | 50LVSS20-□/1-62.2-e      |                     | 2.2         | 200/230           | 8.4/7.8             | 78.0/82.6            | 220-600                | 19.2 - 7.2     |
|                      | 50LVSS20-□/2-64.0-e      |                     | 4.0         |                   | 14.3/12.8           | 132/151              |                        | 39.0 - 18.3    |
|                      | 50LVSS20-□/3-65.5-e      |                     | 5.5         |                   | 19.8/17.8           | 178/206              |                        | 58.8 - 29.3    |
|                      | 50LVSS20-□/4-67.5-e      |                     | 7.5         |                   | 26.5/23.7           | 254/295              |                        | 78.4 - 39.0    |
|                      | 50LVSS20-□/5-611-e       |                     | 11          | 200/220           | 39.5/36.5           | 296/333              |                        | 98.0 - 48.7    |
|                      | 50LVSS20-□/6-611-e       |                     |             |                   |                     |                      |                        | 117.6 - 58.4   |
|                      | 50LVSS20-□/7-615-e       |                     |             |                   |                     |                      |                        | 137.2 - 68.1   |
|                      | 50LVSS20-□/8-615-e       |                     | 15          |                   | 53.0/49.0           | 397/447              |                        | 156.8 - 77.7   |
|                      | 50LVSS20-□/10-618-e      |                     |             |                   | 65.0/59.0           | 456/515              |                        | 195.9 - 97.0   |

Note) The rated current in the table above is the recommended setting for the current value of the protective device.

## ●-7W type

60Hz

| Bore diameter (mm) | Nominal flow rate (m³/h) | Type                    | Output (kW) | Rated voltage (V) | Rated current (A) | Starting current (A) | Discharge rate (L/min) | Total Head (m) |
|--------------------|--------------------------|-------------------------|-------------|-------------------|-------------------|----------------------|------------------------|----------------|
| 32                 | 1                        | 32LVSS1- □ /8-6.75-7W   | 0.75        | 200-230           | 3.2-3.1           | 25.0-28.5            | 10-50                  | 66.4 - 31.1    |
|                    |                          | 32LVSS1- □ /10-61.1-7W  | 1.1         |                   | 4.4-4.1           | 32.5-37.0            |                        | 82.9 - 38.2    |
|                    |                          | 32LVSS1- □ /13-61.1-7W  |             |                   |                   |                      |                        | 107.6 - 48.6   |
|                    |                          | 32LVSS1- □ /15-61.5-7W  | 1.5         |                   | 5.9-5.4           | 41.0-47.6            |                        | 123.9 - 55.4   |
|                    |                          | 32LVSS1- □ /17-61.5-7W  |             |                   |                   |                      |                        | 140.3 - 62.0   |
|                    |                          | 32LVSS1- □ /21-62.2-7W  | 2.2         |                   | 8.4-7.6           | 78.0-82.6            |                        | 172.8 - 74.8   |
|                    |                          | 32LVSS1- □ /23-62.2-7W  |             |                   |                   |                      |                        | 189.1 - 81.1   |
|                    |                          | 32LVSS1- □ /25-62.2-7W  |             |                   |                   |                      |                        | 205.3 - 87.2   |
|                    |                          | 32LVSS1- □ /27-63.0-7W  | 3.0         |                   | 11.5-10.8         | 115-135              |                        | 221.4 - 93.2   |
|                    | 3                        | 32LVSS3- □ /5-6.75-7W   | 0.75        |                   | 3.2-3.1           | 25.0-28.5            | 20-90                  | 42.7 - 16.7    |
|                    |                          | 32LVSS3- □ /6-61.1-7W   | 1.1         |                   | 4.4-4.1           | 32.5-37.0            |                        | 51.2 - 20.0    |
|                    |                          | 32LVSS3- □ /7-61.1-7W   |             |                   |                   |                      |                        | 59.7 - 23.1    |
|                    |                          | 32LVSS3- □ /8-61.1-7W   |             |                   |                   |                      |                        | 68.1 - 26.3    |
|                    |                          | 32LVSS3- □ /10-61.5-7W  | 1.5         |                   | 5.9-5.4           | 41.0-47.6            |                        | 85.0 - 32.6    |
|                    |                          | 32LVSS3- □ /11-61.5-7W  |             |                   |                   |                      |                        | 93.5 - 35.7    |
|                    |                          | 32LVSS3- □ /12-62.2-7W  |             |                   |                   |                      |                        | 101.9 - 38.7   |
|                    |                          | 32LVSS3- □ /15-62.2-7W  | 2.2         |                   | 8.4-7.6           | 78.0-82.6            |                        | 127.1 - 47.8   |
|                    |                          | 32LVSS3- □ /17-62.2-7W  |             |                   |                   |                      |                        | 143.9 - 53.8   |
|                    |                          | 32LVSS3- □ /19-63.0-7W  |             |                   |                   |                      |                        | 160.7 - 59.6   |
|                    |                          | 32LVSS3- □ /23-63.0-7W  | 3.0         |                   | 11.5-10.8         | 115-135              |                        | 194.1 - 71.2   |
|                    |                          | 32LVSS3- □ /26-64.0-7W  | 4.0         |                   | 14.3-12.8         | 132-151              |                        | 219.0 - 79.7   |
|                    | 5                        | 32LVSS5- □ /3-61.1-7W   | 1.1         |                   | 4.4-4.1           | 32.5-37.0            | 40-180                 | 27.7 - 10.9    |
|                    |                          | 32LVSS5- □ /4-61.1-7W   |             |                   |                   |                      |                        | 36.9 - 14.5    |
|                    |                          | 32LVSS5- □ /5-61.5-7W   | 1.5         |                   | 5.9-5.4           | 41.0-47.6            |                        | 46.1 - 18.1    |
|                    |                          | 32LVSS5- □ /6-62.2-7W   | 2.2         |                   | 8.4-7.6           | 78.0-82.6            |                        | 55.3 - 21.6    |
|                    |                          | 32LVSS5- □ /7-62.2-7W   |             |                   |                   |                      |                        | 64.4 - 25.2    |
|                    |                          | 32LVSS5- □ /8-62.2-7W   |             |                   |                   |                      |                        | 73.6 - 28.7    |
|                    |                          | 32LVSS5- □ /10-63.0-7W  | 3.0         |                   | 11.3-10.6         | 115-135              |                        | 92.0 - 35.7    |
|                    |                          | 32LVSS5- □ /12-63.0-7W  |             |                   |                   |                      |                        | 110.3 - 42.6   |
|                    |                          | 32LVSS5- □ /14-64.0-7W  | 4.0         |                   | 14.3-12.8         | 132-151              |                        | 128.6 - 49.5   |
|                    |                          | 32LVSS5- □ /16-64.0-7W  |             |                   |                   |                      |                        | 146.9 - 56.4   |
|                    |                          | 32LVSS5- □ /20-65.5-7W  | 5.5         |                   | 19.8-17.8         | 178-206              |                        | 183.4 - 69.9   |
|                    |                          | 32LVSS5- □ /22-65.5-7W  |             |                   |                   |                      |                        | 201.6 - 76.6   |
|                    |                          | 32LVSS5- □ /24-67.5-7W  | 7.5         |                   | 26.5-23.7         | 254-295              |                        | 219.8 - 83.3   |
| 50                 | 10                       | 50LVSS10- □ /1-6.75-7W  | 0.75        | 3.2-3.1           | 25.0-28.5         | 100-280              | 14.3 - 5.4             |                |
|                    |                          | 50LVSS10- □ /2-61.5-7W  | 1.5         | 5.9-5.4           | 41.0-47.6         |                      | 28.9 - 13.2            |                |
|                    |                          | 50LVSS10- □ /3-62.2-7W  | 2.2         | 8.4-7.6           | 78.0-82.6         |                      | 43.6 - 20.9            |                |
|                    |                          | 50LVSS10- □ /4-63.0-7W  | 3.0         | 11.3-10.6         | 115-135           |                      | 58.2 - 28.7            |                |
|                    |                          | 50LVSS10- □ /5-63.0-7W  |             |                   |                   |                      | 72.8 - 36.4            |                |
|                    |                          | 50LVSS10- □ /6-64.0-7W  | 4.0         | 14.3-12.8         | 132-151           |                      | 87.4 - 43.6            |                |
|                    |                          | 50LVSS10- □ /8-65.5-7W  | 5.5         | 19.8-17.8         | 178-206           |                      | 116.5 - 57.9           |                |
|                    |                          | 50LVSS10- □ /9-65.5-7W  |             |                   |                   |                      | 131.0 - 65.1           |                |
|                    |                          | 50LVSS10- □ /10-67.5-7W | 7.5         | 26.5-23.7         | 254-295           |                      | 145.5 - 72.2           |                |
|                    |                          | 50LVSS10- □ /12-67.5-7W |             |                   |                   |                      | 174.6 - 86.5           |                |
|                    | 15                       | 50LVSS15- □ /1-61.5-7W  | 1.5         | 5.9-5.4           | 41.0-47.6         | 160-450              | 18.3 - 9.9             |                |
|                    |                          | 50LVSS15- □ /2-63.0-7W  | 3.0         | 11.3-10.6         | 115-135           |                      | 37.0 - 22.3            |                |
|                    |                          | 50LVSS15- □ /3-64.0-7W  | 4.0         | 14.3-12.8         | 132-151           |                      | 55.6 - 34.7            |                |
|                    |                          | 50LVSS15- □ /4-65.5-7W  | 5.5         | 19.8-17.8         | 178-206           |                      | 74.2 - 46.3            |                |
|                    |                          | 50LVSS15- □ /5-67.5-7W  | 7.5         | 26.5-23.7         | 254-295           |                      | 92.7 - 57.8            |                |
|                    | 20                       | 50LVSS20- □ /1-62.2-7W  | 2.2         | 8.4-7.8           | 78.0-82.6         | 220-600              | 19.2 - 7.2             |                |
|                    |                          | 50LVSS20- □ /2-64.0-7W  | 4.0         | 14.3-12.8         | 132-151           |                      | 39.0 - 18.3            |                |
|                    |                          | 50LVSS20- □ /3-65.5-7W  | 5.5         | 19.8-17.8         | 178-206           |                      | 58.8 - 29.3            |                |
|                    |                          | 50LVSS20- □ /4-67.5-7W  | 7.5         | 26.5-23.7         | 254-295           |                      | 78.4 - 39.0            |                |

Note 1) The rated current is the recommended current setting for the protection device.

## ●-KS type

60Hz

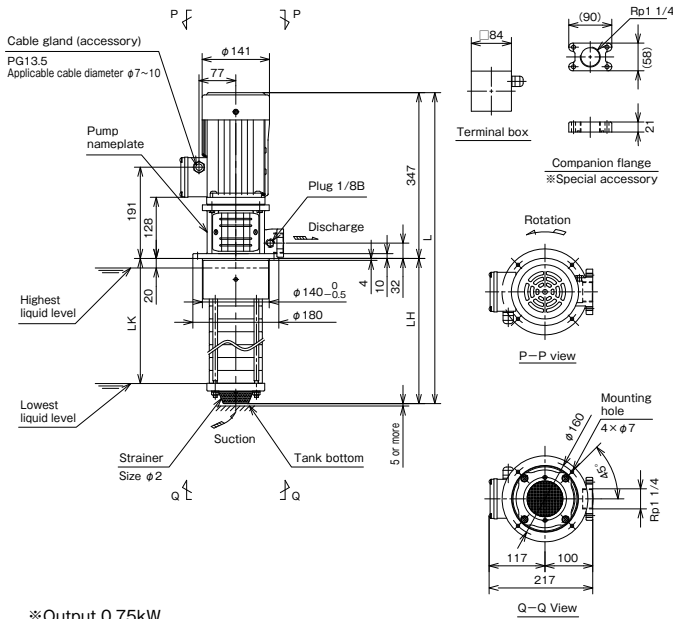
| Bore diameter (mm) | Nominal flow rate (m³/h) | Type                  | Output (kW) | Rated voltage (V) | Rated current (A) | Starting current (A) | Discharge rate (L/min) | Total Head (m) |
|--------------------|--------------------------|-----------------------|-------------|-------------------|-------------------|----------------------|------------------------|----------------|
| 32                 | 1                        | 32LVSS1-□/8-6.75-KS   | 0.75        | 200-230           | 3.2-3.1           | 25.0-28.5            | 10-50                  | 66.4 - 31.1    |
|                    |                          | 32LVSS1-□/10-61.1-KS  | 1.1         |                   | 4.4-4.1           | 32.5-37.0            |                        | 82.9 - 38.2    |
|                    |                          | 32LVSS1-□/13-61.1-KS  |             |                   |                   |                      |                        | 107.6 - 48.6   |
|                    |                          | 32LVSS1-□/15-61.5-KS  | 1.5         |                   | 5.9-5.4           | 41.0-47.6            |                        | 123.9 - 55.4   |
|                    |                          | 32LVSS1-□/17-61.5-KS  |             |                   |                   |                      |                        | 140.3 - 62.0   |
|                    |                          | 32LVSS1-□/21-62.2-KS  | 2.2         |                   | 8.4-7.6           | 78.0-82.6            |                        | 172.8 - 74.8   |
|                    |                          | 32LVSS1-□/23-62.2-KS  |             |                   |                   |                      |                        | 189.1 - 81.1   |
|                    |                          | 32LVSS1-□/25-62.2-KS  |             |                   |                   |                      |                        | 205.3 - 87.2   |
|                    |                          | 32LVSS1-□/27-63.0-KS  | 3.0         |                   | 11.5-10.8         | 115-135              |                        | 221.4 - 93.2   |
|                    | 3                        | 32LVSS3-□/5-6.75-KS   | 0.75        |                   | 3.2-3.1           | 25.0-28.5            | 20-90                  | 42.7 - 16.7    |
|                    |                          | 32LVSS3-□/6-61.1-KS   | 1.1         |                   | 4.4-4.1           | 32.5-37.0            |                        | 51.2 - 20.0    |
|                    |                          | 32LVSS3-□/7-61.1-KS   |             |                   |                   |                      |                        | 59.7 - 23.1    |
|                    |                          | 32LVSS3-□/8-61.1-KS   |             |                   |                   |                      |                        | 68.1 - 26.3    |
|                    |                          | 32LVSS3-□/10-61.5-KS  | 1.5         |                   | 5.9-5.4           | 41.0-47.6            |                        | 85.0 - 32.6    |
|                    |                          | 32LVSS3-□/11-61.5-KS  |             |                   |                   |                      |                        | 93.5 - 35.7    |
|                    |                          | 32LVSS3-□/12-62.2-KS  |             |                   |                   |                      |                        | 101.9 - 38.7   |
|                    |                          | 32LVSS3-□/15-62.2-KS  | 2.2         |                   | 8.4-7.6           | 78.0-82.6            |                        | 127.1 - 47.8   |
|                    |                          | 32LVSS3-□/17-62.2-KS  |             |                   |                   |                      |                        | 143.9 - 53.8   |
|                    |                          | 32LVSS3-□/19-63.0-KS  |             |                   |                   |                      |                        | 160.7 - 59.6   |
|                    |                          | 32LVSS3-□/23-63.0-KS  | 3.0         |                   | 11.5-10.8         | 115-135              |                        | 194.1 - 71.2   |
|                    |                          | 32LVSS3-□/26-64.0-KS  | 4.0         |                   | 14.3-12.8         | 132-151              |                        | 219.0 - 79.7   |
|                    | 5                        | 32LVSS5-□/3-61.1-KS   | 1.1         |                   | 4.4-4.1           | 32.5-37.0            | 40-180                 | 27.7 - 10.9    |
|                    |                          | 32LVSS5-□/4-61.1-KS   |             |                   |                   |                      |                        | 36.9 - 14.5    |
|                    |                          | 32LVSS5-□/5-61.5-KS   | 1.5         |                   | 5.9-5.4           | 41.0-47.6            |                        | 46.1 - 18.1    |
|                    |                          | 32LVSS5-□/6-62.2-KS   | 2.2         |                   | 8.4-7.6           | 78.0-82.6            |                        | 55.3 - 21.6    |
|                    |                          | 32LVSS5-□/7-62.2-KS   |             |                   |                   |                      |                        | 64.4 - 25.2    |
|                    |                          | 32LVSS5-□/8-62.2-KS   |             |                   |                   |                      |                        | 73.6 - 28.7    |
|                    |                          | 32LVSS5-□/10-63.0-KS  | 3.0         |                   | 11.3-10.6         | 115-135              |                        | 92.0 - 35.7    |
|                    |                          | 32LVSS5-□/12-63.0-KS  |             |                   |                   |                      |                        | 110.3 - 42.6   |
|                    |                          | 32LVSS5-□/14-64.0-KS  | 4.0         |                   | 14.3-12.8         | 132-151              |                        | 128.6 - 49.5   |
|                    |                          | 32LVSS5-□/16-64.0-KS  |             |                   |                   |                      |                        | 146.9 - 56.4   |
|                    |                          | 32LVSS5-□/20-65.5-KS  | 5.5         |                   | 19.8-17.8         | 178-206              |                        | 183.4 - 69.9   |
|                    |                          | 32LVSS5-□/22-65.5-KS  |             |                   |                   |                      |                        | 201.6 - 76.6   |
|                    |                          | 32LVSS5-□/24-67.5-KS  | 7.5         |                   | 26.5-23.7         | 254-295              |                        | 219.8 - 83.3   |
| 50                 | 10                       | 50LVSS10-□/1-6.75-KS  | 0.75        | 3.2-3.1           | 25.0-28.5         | 100-280              | 14.3 - 5.4             |                |
|                    |                          | 50LVSS10-□/2-61.5-KS  | 1.5         | 5.9-5.4           | 41.0-47.6         |                      | 28.9 - 13.2            |                |
|                    |                          | 50LVSS10-□/3-62.2-KS  | 2.2         | 8.4-7.6           | 78.0-82.6         |                      | 43.6 - 20.9            |                |
|                    |                          | 50LVSS10-□/4-63.0-KS  | 3.0         | 11.3-10.6         | 115-135           |                      | 58.2 - 28.7            |                |
|                    |                          | 50LVSS10-□/5-63.0-KS  |             |                   |                   |                      | 72.8 - 36.4            |                |
|                    |                          | 50LVSS10-□/6-64.0-KS  | 4.0         | 14.3-12.8         | 132-151           |                      | 87.4 - 43.6            |                |
|                    |                          | 50LVSS10-□/8-65.5-KS  | 5.5         | 19.8-17.8         | 178-206           |                      | 116.5 - 57.9           |                |
|                    |                          | 50LVSS10-□/9-65.5-KS  |             |                   |                   |                      | 131.0 - 65.1           |                |
|                    |                          | 50LVSS10-□/10-67.5-KS | 7.5         | 26.5-23.7         | 254-295           |                      | 145.5 - 72.2           |                |
|                    |                          | 50LVSS10-□/12-67.5-KS |             |                   |                   |                      | 174.6 - 86.5           |                |
|                    | 15                       | 50LVSS15-□/1-61.5-KS  | 1.5         | 5.9-5.4           | 41.0-47.6         | 160-450              | 18.3 - 9.9             |                |
|                    |                          | 50LVSS15-□/2-63.0-KS  | 3.0         | 11.3-10.6         | 115-135           |                      | 37.0 - 22.3            |                |
|                    |                          | 50LVSS15-□/3-64.0-KS  | 4.0         | 14.3-12.8         | 132-151           |                      | 55.6 - 34.7            |                |
|                    |                          | 50LVSS15-□/4-65.5-KS  | 5.5         | 19.8-17.8         | 178-206           |                      | 74.2 - 46.3            |                |
|                    |                          | 50LVSS15-□/5-67.5-KS  | 7.5         | 26.5-23.7         | 254-295           |                      | 92.7 - 57.8            |                |
|                    | 20                       | 50LVSS20-□/1-62.2-KS  | 2.2         | 8.4-7.8           | 78.0-82.6         | 220-600              | 19.2 - 7.2             |                |
|                    |                          | 50LVSS20-□/2-64.0-KS  | 4.0         | 14.3-12.8         | 132-151           |                      | 39.0 - 18.3            |                |
|                    |                          | 50LVSS20-□/3-65.5-KS  | 5.5         | 19.8-17.8         | 178-206           |                      | 58.8 - 29.3            |                |
|                    |                          | 50LVSS20-□/4-67.5-KS  | 7.5         | 26.5-23.7         | 254-295           |                      | 78.4 - 39.0            |                |

Note 1) The rated current is the recommended current setting for the protection device.

### Assembly drawing

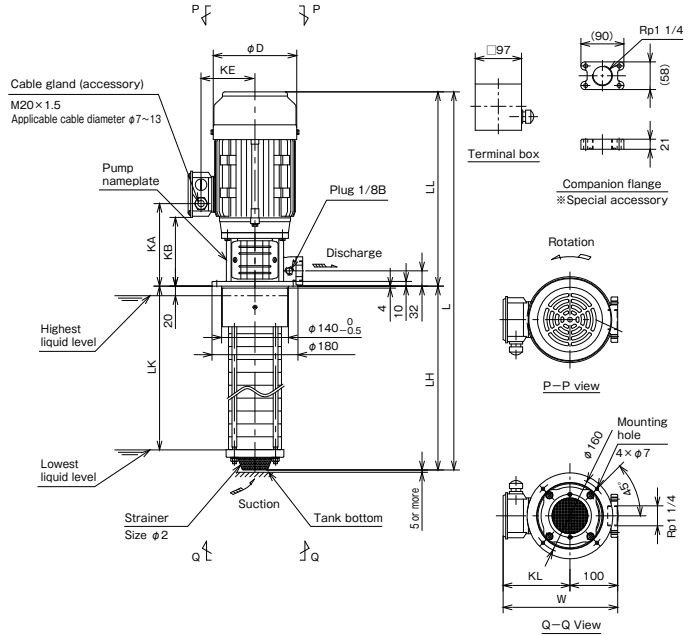
●Discharge diameter: 32mm

Fig.1



※Output 0.75kW

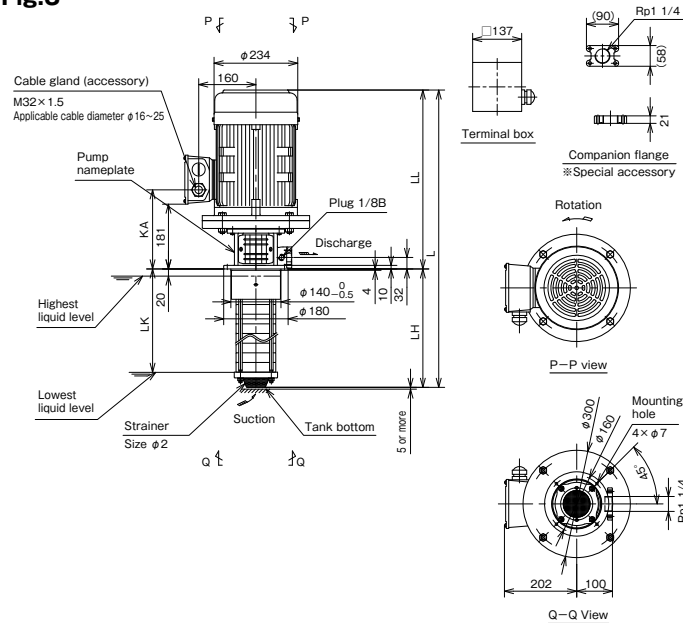
Fig.2



(Unit : mm)

| Output kW | D   | KA  | KB  | KE  | KL  | LL  | W   |
|-----------|-----|-----|-----|-----|-----|-----|-----|
| 1.1       | 175 | 167 | 138 | 113 | 140 | 401 | 240 |
| 1.5/2.2   | 175 | 173 | 144 | 113 | 140 | 407 | 240 |
| 3.0       | 196 | 174 | 144 | 125 | 152 | 430 | 252 |
| 4.0       | 219 | 178 | 149 | 134 | 161 | 437 | —   |

Fig.3



(Unit : mm)

| Output kW | LL  | KA  |
|-----------|-----|-----|
| 5.5       | 500 | 221 |
| 7.5       | 540 | 222 |

## ■ Dimensions

●Discharge diameter : 32mm, Nominal flow rate : 1m<sup>3</sup>/h

## 50Hz

(Unit : mm)

| Type                  | Fig. | L    | LH  | LK  | Approx.<br>mass(kg) |
|-----------------------|------|------|-----|-----|---------------------|
| 32LVSS1-13/13-5.75-e  | 1    | 696  | 349 | 307 | 23                  |
| 32LVSS1-15/13-5.75-e  |      | 732  | 385 | 343 | 24                  |
| 32LVSS1-17/13-5.75-e  |      | 768  | 421 | 379 | 24                  |
| 32LVSS1-21/13-5.75-e  |      | 840  | 493 | 451 | 25                  |
| 32LVSS1-25/13-5.75-e  |      | 912  | 565 | 523 | 26                  |
| 32LVSS1-15/15-5.75-e  |      | 732  | 385 | 343 | 24                  |
| 32LVSS1-17/15-5.75-e  |      | 768  | 421 | 379 | 24                  |
| 32LVSS1-21/15-5.75-e  |      | 840  | 493 | 451 | 25                  |
| 32LVSS1-25/15-5.75-e  |      | 912  | 565 | 523 | 26                  |
| 32LVSS1-17/17-5.1.1-e |      | 822  | 421 | 379 | 29.5                |
| 32LVSS1-21/17-5.1.1-e | 2    | 894  | 493 | 451 | 29.5                |
| 32LVSS1-25/17-5.1.1-e |      | 966  | 565 | 523 | 30.5                |
| 32LVSS1-30/17-5.1.1-e |      | 1056 | 655 | 613 | 32.5                |
| 32LVSS1-21/21-5.1.1-e |      | 894  | 493 | 451 | 30.5                |
| 32LVSS1-25/21-5.1.1-e |      | 966  | 565 | 523 | 31.5                |
| 32LVSS1-30/21-5.1.1-e |      | 1056 | 655 | 613 | 32.5                |
| 32LVSS1-33/21-5.1.1-e |      | 1110 | 709 | 667 | 32.5                |
| 32LVSS1-23/23-5.1.1-e |      | 930  | 529 | 487 | 30.5                |
| 32LVSS1-25/23-5.1.1-e |      | 966  | 565 | 523 | 31.5                |
| 32LVSS1-30/23-5.1.1-e |      | 1056 | 655 | 613 | 32.5                |
| 32LVSS1-33/23-5.1.1-e |      | 1110 | 709 | 667 | 33.5                |
| 32LVSS1-36/23-5.1.1-e |      | 1164 | 763 | 721 | 33.5                |
| 32LVSS1-27/27-5.1.5-e |      | 1008 | 601 | 559 | 36                  |
| 32LVSS1-33/27-5.1.5-e |      | 1116 | 709 | 667 | 37                  |
| 32LVSS1-36/27-5.1.5-e |      | 1170 | 763 | 721 | 38                  |
| 32LVSS1-30/30-5.1.5-e |      | 1062 | 655 | 613 | 36                  |
| 32LVSS1-33/30-5.1.5-e |      | 1116 | 709 | 667 | 37                  |
| 32LVSS1-36/30-5.1.5-e |      | 1170 | 763 | 721 | 38                  |
| 32LVSS1-33/33-5.2.2-e |      | 1116 | 709 | 667 | 41                  |
| 32LVSS1-36/33-5.2.2-e |      | 1170 | 763 | 721 | 41                  |
| 32LVSS1-36/36-5.2.2-e |      | 1170 | 763 | 721 | 41                  |

## 60Hz

(Unit : mm)

| Type                  | Fig. | L    | LH  | LK  | Approx.<br>mass(kg) |
|-----------------------|------|------|-----|-----|---------------------|
| 32LVSS1-8/8-6.75-□    | 1    | 606  | 259 | 217 | 22                  |
| 32LVSS1-10/8-6.75-□   |      | 642  | 295 | 253 | 22                  |
| 32LVSS1-13/8-6.75-□   |      | 696  | 349 | 307 | 23                  |
| 32LVSS1-15/8-6.75-□   |      | 732  | 385 | 343 | 24                  |
| 32LVSS1-17/8-6.75-□   |      | 768  | 421 | 379 | 24                  |
| 32LVSS1-21/8-6.75-□   |      | 840  | 493 | 451 | 25                  |
| 32LVSS1-25/8-6.75-□   |      | 912  | 565 | 523 | 26                  |
| 32LVSS1-10/10-6.1.1-□ | 2    | 696  | 295 | 253 | 27.5                |
| 32LVSS1-13/10-6.1.1-□ |      | 750  | 349 | 307 | 27.5                |
| 32LVSS1-15/10-6.1.1-□ |      | 786  | 385 | 343 | 28.5                |
| 32LVSS1-17/10-6.1.1-□ |      | 822  | 421 | 379 | 28.5                |
| 32LVSS1-21/10-6.1.1-□ |      | 894  | 493 | 451 | 29.5                |
| 32LVSS1-25/10-6.1.1-□ |      | 966  | 565 | 523 | 30.5                |
| 32LVSS1-13/13-6.1.1-□ |      | 750  | 349 | 307 | 27.5                |
| 32LVSS1-15/13-6.1.1-□ |      | 786  | 385 | 343 | 28.5                |
| 32LVSS1-17/13-6.1.1-□ |      | 822  | 421 | 379 | 28.5                |
| 32LVSS1-21/13-6.1.1-□ |      | 894  | 493 | 451 | 29.5                |
| 32LVSS1-25/13-6.1.1-□ |      | 966  | 565 | 523 | 30.5                |
| 32LVSS1-15/15-6.1.5-□ |      | 792  | 385 | 343 | 32                  |
| 32LVSS1-17/15-6.1.5-□ |      | 828  | 421 | 379 | 33                  |
| 32LVSS1-21/15-6.1.5-□ |      | 900  | 493 | 451 | 33                  |
| 32LVSS1-25/15-6.1.5-□ |      | 972  | 565 | 523 | 34                  |
| 32LVSS1-30/15-6.1.5-□ |      | 1062 | 655 | 613 | 36                  |
| 32LVSS1-17/17-6.1.5-□ |      | 828  | 421 | 379 | 33                  |
| 32LVSS1-21/17-6.1.5-□ |      | 900  | 493 | 451 | 34                  |
| 32LVSS1-25/17-6.1.5-□ |      | 972  | 565 | 523 | 35                  |
| 32LVSS1-30/17-6.1.5-□ |      | 1062 | 655 | 613 | 36                  |
| 32LVSS1-33/17-6.1.5-□ |      | 1116 | 709 | 667 | 36                  |
| 32LVSS1-21/21-6.2.2-□ |      | 900  | 493 | 451 | 37                  |
| 32LVSS1-25/21-6.2.2-□ |      | 972  | 565 | 523 | 38                  |
| 32LVSS1-30/21-6.2.2-□ |      | 1062 | 655 | 613 | 39                  |
| 32LVSS1-33/21-6.2.2-□ |      | 1116 | 709 | 667 | 40                  |
| 32LVSS1-36/21-6.2.2-□ |      | 1170 | 763 | 721 | 41                  |
| 32LVSS1-23/23-6.2.2-□ |      | 936  | 529 | 487 | 38                  |
| 32LVSS1-27/23-6.2.2-□ |      | 1008 | 601 | 559 | 39                  |
| 32LVSS1-30/23-6.2.2-□ |      | 1062 | 655 | 613 | 39                  |
| 32LVSS1-33/23-6.2.2-□ |      | 1116 | 709 | 667 | 40                  |
| 32LVSS1-36/23-6.2.2-□ |      | 1170 | 763 | 721 | 41                  |
| 32LVSS1-25/25-6.2.2-□ |      | 972  | 565 | 523 | 38                  |
| 32LVSS1-27/25-6.2.2-□ |      | 1008 | 601 | 559 | 39                  |
| 32LVSS1-30/25-6.2.2-□ |      | 1062 | 655 | 613 | 40                  |
| 32LVSS1-33/25-6.2.2-□ |      | 1116 | 709 | 667 | 40                  |
| 32LVSS1-36/25-6.2.2-□ |      | 1170 | 763 | 721 | 41                  |
| 32LVSS1-27/27-6.3.0-□ |      | 1031 | 601 | 559 | 46                  |
| 32LVSS1-30/27-6.3.0-□ |      | 1085 | 655 | 613 | 47                  |
| 32LVSS1-33/27-6.3.0-□ |      | 1139 | 709 | 667 | 47                  |
| 32LVSS1-36/27-6.3.0-□ |      | 1193 | 763 | 721 | 48                  |

Note 1) "□" in pump type can be any one of -e/-KS/-7W.

●Discharge diameter : 32mm, Nominal flow rate : 3m<sup>3</sup>/h

## 50Hz

(Unit : mm)

| Type                 | Fig. | L    | LH  | LK  | Approx.<br>mass(kg) |
|----------------------|------|------|-----|-----|---------------------|
| 32LVSS3-10/10-5.75-e | 1    | 642  | 295 | 253 | 22                  |
| 32LVSS3-12/10-5.75-e |      | 678  | 331 | 289 | 23                  |
| 32LVSS3-15/10-5.75-e |      | 732  | 385 | 343 | 24                  |
| 32LVSS3-19/10-5.75-e |      | 804  | 457 | 415 | 25                  |
| 32LVSS3-23/10-5.75-e |      | 876  | 529 | 487 | 25                  |
| 32LVSS3-12/12-51.1-e | 2    | 732  | 331 | 289 | 28.5                |
| 32LVSS3-15/12-51.1-e |      | 786  | 385 | 343 | 28.5                |
| 32LVSS3-19/12-51.1-e |      | 858  | 457 | 415 | 29.5                |
| 32LVSS3-23/12-51.1-e |      | 930  | 529 | 487 | 30.5                |
| 32LVSS3-15/15-51.1-e |      | 786  | 385 | 343 | 28.5                |
| 32LVSS3-19/15-51.1-e |      | 858  | 457 | 415 | 29.5                |
| 32LVSS3-23/15-51.1-e |      | 930  | 529 | 487 | 30.5                |
| 32LVSS3-17/17-51.5-e |      | 828  | 421 | 379 | 33                  |
| 32LVSS3-23/17-51.5-e |      | 936  | 529 | 487 | 34                  |
| 32LVSS3-26/17-51.5-e |      | 990  | 583 | 541 | 35                  |
| 32LVSS3-19/19-51.5-e |      | 864  | 457 | 415 | 33                  |
| 32LVSS3-23/19-51.5-e |      | 936  | 529 | 487 | 34                  |
| 32LVSS3-26/19-51.5-e |      | 990  | 583 | 541 | 35                  |
| 32LVSS3-30/19-51.5-e |      | 1062 | 655 | 613 | 36                  |
| 32LVSS3-25/25-52.2-e |      | 972  | 565 | 523 | 38                  |
| 32LVSS3-30/25-52.2-e |      | 1062 | 655 | 613 | 40                  |
| 32LVSS3-36/25-52.2-e |      | 1170 | 763 | 721 | 41                  |
| 32LVSS3-30/30-53.0-e |      | 1085 | 655 | 613 | 47                  |
| 32LVSS3-36/30-53.0-e |      | 1193 | 763 | 721 | 48                  |
| 32LVSS3-36/36-53.0-e |      | 1193 | 763 | 721 | 48                  |

## 60Hz

(Unit : mm)

| Type                 | Fig. | L    | LH  | LK  | Approx.<br>mass(kg) |
|----------------------|------|------|-----|-----|---------------------|
| 32LVSS3-5/5-6.75-□   | 1    | 552  | 205 | 163 | 21                  |
| 32LVSS3-7/5-6.75-□   |      | 588  | 241 | 199 | 21                  |
| 32LVSS3-10/5-6.75-□  |      | 642  | 295 | 253 | 22                  |
| 32LVSS3-12/5-6.75-□  |      | 678  | 331 | 289 | 23                  |
| 32LVSS3-15/5-6.75-□  |      | 732  | 385 | 343 | 23                  |
| 32LVSS3-19/5-6.75-□  |      | 804  | 457 | 415 | 24                  |
| 32LVSS3-23/5-6.75-□  |      | 876  | 529 | 487 | 25                  |
| 32LVSS3-6/6-61.1-□   | 2    | 624  | 223 | 181 | 25.5                |
| 32LVSS3-10/6-61.1-□  |      | 696  | 295 | 253 | 26.5                |
| 32LVSS3-12/6-61.1-□  |      | 732  | 331 | 289 | 27.5                |
| 32LVSS3-15/6-61.1-□  |      | 786  | 385 | 343 | 28.5                |
| 32LVSS3-19/6-61.1-□  |      | 858  | 457 | 415 | 28.5                |
| 32LVSS3-23/6-61.1-□  |      | 930  | 529 | 487 | 29.5                |
| 32LVSS3-7/7-61.1-□   |      | 642  | 241 | 199 | 26.5                |
| 32LVSS3-10/7-61.1-□  |      | 696  | 295 | 253 | 26.5                |
| 32LVSS3-12/7-61.1-□  |      | 732  | 331 | 289 | 27.5                |
| 32LVSS3-15/7-61.1-□  |      | 786  | 385 | 343 | 28.5                |
| 32LVSS3-19/7-61.1-□  |      | 858  | 457 | 415 | 28.5                |
| 32LVSS3-23/7-61.1-□  |      | 930  | 529 | 487 | 29.5                |
| 32LVSS3-8/8-61.1-□   |      | 660  | 259 | 217 | 26.5                |
| 32LVSS3-10/8-61.1-□  |      | 696  | 295 | 253 | 26.5                |
| 32LVSS3-12/8-61.1-□  |      | 732  | 331 | 289 | 27.5                |
| 32LVSS3-15/8-61.1-□  |      | 786  | 385 | 343 | 28.5                |
| 32LVSS3-19/8-61.1-□  |      | 858  | 457 | 415 | 29.5                |
| 32LVSS3-23/8-61.1-□  |      | 930  | 529 | 487 | 29.5                |
| 32LVSS3-10/10-61.5-□ | 2    | 702  | 295 | 253 | 31                  |
| 32LVSS3-12/10-61.5-□ |      | 738  | 331 | 289 | 31                  |
| 32LVSS3-15/10-61.5-□ |      | 792  | 385 | 343 | 32                  |
| 32LVSS3-19/10-61.5-□ |      | 864  | 457 | 415 | 33                  |
| 32LVSS3-23/10-61.5-□ |      | 936  | 529 | 487 | 34                  |
| 32LVSS3-11/11-61.5-□ |      | 720  | 313 | 271 | 31                  |
| 32LVSS3-15/11-61.5-□ |      | 792  | 385 | 343 | 32                  |
| 32LVSS3-19/11-61.5-□ |      | 864  | 457 | 415 | 33                  |
| 32LVSS3-23/11-61.5-□ |      | 936  | 529 | 487 | 34                  |
| 32LVSS3-12/12-62.2-□ |      | 738  | 331 | 289 | 35                  |
| 32LVSS3-15/12-62.2-□ |      | 792  | 385 | 343 | 35                  |
| 32LVSS3-19/12-62.2-□ |      | 864  | 457 | 415 | 36                  |
| 32LVSS3-23/12-62.2-□ |      | 936  | 529 | 487 | 37                  |
| 32LVSS3-15/15-62.2-□ |      | 792  | 385 | 343 | 36                  |
| 32LVSS3-19/15-62.2-□ |      | 864  | 457 | 415 | 36                  |
| 32LVSS3-23/15-62.2-□ |      | 936  | 529 | 487 | 37                  |
| 32LVSS3-26/15-62.2-□ |      | 990  | 583 | 541 | 38                  |
| 32LVSS3-17/17-62.2-□ |      | 828  | 421 | 379 | 36                  |
| 32LVSS3-23/17-62.2-□ |      | 936  | 529 | 487 | 37                  |
| 32LVSS3-26/17-62.2-□ |      | 990  | 583 | 541 | 38                  |
| 32LVSS3-30/17-62.2-□ |      | 1062 | 655 | 613 | 39                  |
| 32LVSS3-19/19-63.0-□ | 2    | 887  | 457 | 415 | 44                  |
| 32LVSS3-23/19-63.0-□ |      | 959  | 529 | 487 | 44                  |
| 32LVSS3-26/19-63.0-□ |      | 1013 | 583 | 541 | 45                  |
| 32LVSS3-30/19-63.0-□ |      | 1085 | 655 | 613 | 46                  |
| 32LVSS3-36/19-63.0-□ |      | 1193 | 763 | 721 | 47                  |
| 32LVSS3-23/23-63.0-□ |      | 959  | 529 | 487 | 45                  |
| 32LVSS3-26/23-63.0-□ |      | 1013 | 583 | 541 | 45                  |
| 32LVSS3-30/23-63.0-□ |      | 1085 | 655 | 613 | 46                  |
| 32LVSS3-36/23-63.0-□ |      | 1193 | 763 | 721 | 48                  |
| 32LVSS3-26/26-64.0-□ |      | 1020 | 583 | 541 | 51                  |
| 32LVSS3-30/26-64.0-□ | 2    | 1092 | 655 | 613 | 52                  |
| 32LVSS3-36/26-64.0-□ |      | 1200 | 763 | 721 | 53                  |

Note 1) "□" in pump type can be any one of -e/-KS/-7W.

●Discharge diameter : 32mm, Nominal flow rate : 5m<sup>3</sup>/h

## 50Hz

(Unit : mm)

| Type                 | Fig. | L    | LH  | LK  | Approx.<br>mass(kg) |
|----------------------|------|------|-----|-----|---------------------|
| 32LVSS5-5/5-5.75-e   | 1    | 597  | 250 | 208 | 22                  |
| 32LVSS5-7/5-5.75-e   |      | 651  | 304 | 262 | 22                  |
| 32LVSS5-10/5-5.75-e  |      | 732  | 385 | 343 | 23                  |
| 32LVSS5-14/5-5.75-e  |      | 840  | 493 | 451 | 24                  |
| 32LVSS5-16/5-5.75-e  |      | 894  | 547 | 505 | 25                  |
| 32LVSS5-20/5-5.75-e  |      | 1002 | 655 | 613 | 26                  |
| 32LVSS5-8/8-51.1-e   | 2    | 732  | 331 | 289 | 27.5                |
| 32LVSS5-10/8-51.1-e  |      | 786  | 385 | 343 | 27.5                |
| 32LVSS5-14/8-51.1-e  |      | 894  | 493 | 451 | 29.5                |
| 32LVSS5-16/8-51.1-e  |      | 948  | 547 | 505 | 29.5                |
| 32LVSS5-10/10-51.5-e |      | 1056 | 655 | 613 | 31.5                |
| 32LVSS5-10/10-51.5-e |      | 792  | 385 | 343 | 32                  |
| 32LVSS5-14/10-51.5-e |      | 900  | 493 | 451 | 33                  |
| 32LVSS5-16/10-51.5-e |      | 954  | 547 | 505 | 34                  |
| 32LVSS5-20/10-51.5-e |      | 1062 | 655 | 613 | 35                  |
| 32LVSS5-14/14-52.2-e |      | 900  | 493 | 451 | 37                  |
| 32LVSS5-16/14-52.2-e |      | 954  | 547 | 505 | 37                  |
| 32LVSS5-20/14-52.2-e |      | 1062 | 655 | 613 | 39                  |
| 32LVSS5-24/14-52.2-e |      | 1170 | 763 | 721 | 40                  |
| 32LVSS5-16/16-52.2-e |      | 954  | 547 | 505 | 37                  |
| 32LVSS5-20/16-52.2-e |      | 1062 | 655 | 613 | 39                  |
| 32LVSS5-24/16-52.2-e |      | 1170 | 763 | 721 | 40                  |
| 32LVSS5-29/16-52.2-e |      | 1305 | 898 | 856 | 41                  |
| 32LVSS5-20/20-53.0-e |      | 1085 | 655 | 613 | 46                  |
| 32LVSS5-24/20-53.0-e |      | 1193 | 763 | 721 | 47                  |
| 32LVSS5-29/20-53.0-e |      | 1328 | 898 | 856 | 49                  |
| 32LVSS5-32/20-53.0-e |      | 1409 | 979 | 937 | 50                  |
| 32LVSS5-24/24-54.0-e |      | 1200 | 763 | 721 | 53                  |
| 32LVSS5-29/24-54.0-e |      | 1335 | 898 | 856 | 54                  |
| 32LVSS5-32/24-54.0-e |      | 1416 | 979 | 937 | 55                  |
| 32LVSS5-29/29-54.0-e |      | 1335 | 898 | 856 | 54                  |
| 32LVSS5-32/29-54.0-e |      | 1416 | 979 | 937 | 55                  |
| 32LVSS5-32/32-55.5-e | 3    | 1479 | 979 | 937 | 83                  |

## 60Hz

(Unit : mm)

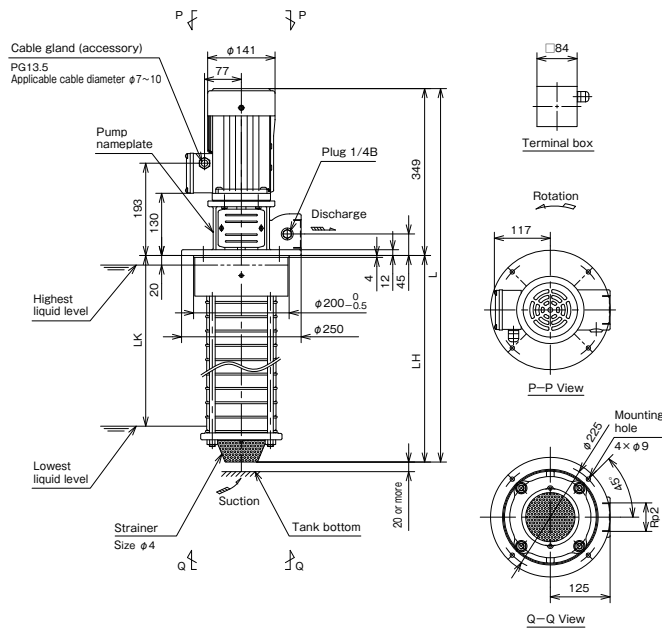
| Type                 | Fig. | L    | LH  | LK  | Approx.<br>mass(kg) |
|----------------------|------|------|-----|-----|---------------------|
| 32LVSS5-3/3-61.1-□   | 1    | 597  | 196 | 154 | 25.5                |
| 32LVSS5-5/3-61.1-□   |      | 651  | 250 | 208 | 26.5                |
| 32LVSS5-7/3-61.1-□   |      | 705  | 304 | 262 | 26.5                |
| 32LVSS5-10/3-61.1-□  |      | 786  | 385 | 343 | 27.5                |
| 32LVSS5-14/3-61.1-□  |      | 894  | 493 | 451 | 28.5                |
| 32LVSS5-16/3-61.1-□  |      | 948  | 547 | 505 | 29.5                |
| 32LVSS5-20/3-61.1-□  |      | 1056 | 655 | 613 | 30.5                |
| 32LVSS5-4/4-61.1-□   |      | 624  | 223 | 181 | 25.5                |
| 32LVSS5-6/4-61.1-□   |      | 678  | 277 | 235 | 26.5                |
| 32LVSS5-8/4-61.1-□   |      | 732  | 331 | 289 | 26.5                |
| 32LVSS5-10/4-61.1-□  |      | 786  | 385 | 343 | 27.5                |
| 32LVSS5-14/4-61.1-□  |      | 894  | 493 | 451 | 29.5                |
| 32LVSS5-16/4-61.1-□  |      | 948  | 547 | 505 | 30.5                |
| 32LVSS5-20/4-61.1-□  |      | 1056 | 655 | 613 | 31.5                |
| 32LVSS5-5/5-61.5-□   |      | 657  | 250 | 208 | 30                  |
| 32LVSS5-7/5-61.5-□   |      | 711  | 304 | 262 | 30                  |
| 32LVSS5-10/5-61.5-□  |      | 792  | 385 | 343 | 31                  |
| 32LVSS5-14/5-61.5-□  |      | 900  | 493 | 451 | 33                  |
| 32LVSS5-16/5-61.5-□  |      | 954  | 547 | 505 | 33                  |
| 32LVSS5-20/5-61.5-□  |      | 1062 | 655 | 613 | 35                  |
| 32LVSS5-6/6-62.2-□   |      | 684  | 277 | 235 | 34                  |
| 32LVSS5-8/6-62.2-□   |      | 738  | 331 | 289 | 34                  |
| 32LVSS5-10/6-62.2-□  |      | 792  | 385 | 343 | 35                  |
| 32LVSS5-14/6-62.2-□  |      | 900  | 493 | 451 | 36                  |
| 32LVSS5-16/6-62.2-□  |      | 954  | 547 | 505 | 37                  |
| 32LVSS5-20/6-62.2-□  |      | 1062 | 655 | 613 | 38                  |
| 32LVSS5-7/7-62.2-□   | 2    | 711  | 304 | 262 | 34                  |
| 32LVSS5-10/7-62.2-□  |      | 792  | 385 | 343 | 35                  |
| 32LVSS5-14/7-62.2-□  |      | 900  | 493 | 451 | 36                  |
| 32LVSS5-16/7-62.2-□  |      | 954  | 547 | 505 | 37                  |
| 32LVSS5-20/7-62.2-□  |      | 1062 | 655 | 613 | 38                  |
| 32LVSS5-8/8-62.2-□   |      | 738  | 331 | 289 | 34                  |
| 32LVSS5-10/8-62.2-□  |      | 792  | 385 | 343 | 35                  |
| 32LVSS5-14/8-62.2-□  |      | 900  | 493 | 451 | 36                  |
| 32LVSS5-16/8-62.2-□  |      | 954  | 547 | 505 | 37                  |
| 32LVSS5-20/8-62.2-□  |      | 1062 | 655 | 613 | 38                  |
| 32LVSS5-10/10-63.0-□ |      | 815  | 385 | 343 | 42                  |
| 32LVSS5-14/10-63.0-□ |      | 923  | 493 | 451 | 43                  |
| 32LVSS5-16/10-63.0-□ |      | 977  | 547 | 505 | 44                  |
| 32LVSS5-20/10-63.0-□ |      | 1085 | 655 | 613 | 45                  |
| 32LVSS5-12/12-63.0-□ |      | 869  | 439 | 397 | 43                  |
| 32LVSS5-14/12-63.0-□ |      | 923  | 493 | 451 | 43                  |
| 32LVSS5-16/12-63.0-□ |      | 977  | 547 | 505 | 44                  |
| 32LVSS5-20/12-63.0-□ |      | 1085 | 655 | 613 | 45                  |
| 32LVSS5-24/12-63.0-□ |      | 1193 | 763 | 721 | 46                  |
| 32LVSS5-14/14-64.0-□ |      | 930  | 493 | 451 | 49                  |
| 32LVSS5-16/14-64.0-□ |      | 984  | 547 | 505 | 50                  |
| 32LVSS5-20/14-64.0-□ |      | 1092 | 655 | 613 | 51                  |
| 32LVSS5-24/14-64.0-□ |      | 1200 | 763 | 721 | 52                  |
| 32LVSS5-29/14-64.0-□ |      | 1335 | 898 | 856 | 54                  |
| 32LVSS5-16/16-64.0-□ |      | 984  | 547 | 505 | 50                  |
| 32LVSS5-20/16-64.0-□ |      | 1092 | 655 | 613 | 51                  |
| 32LVSS5-24/16-64.0-□ |      | 1200 | 763 | 721 | 52                  |
| 32LVSS5-29/16-64.0-□ |      | 1335 | 898 | 856 | 54                  |
| 32LVSS5-32/16-64.0-□ |      | 1416 | 979 | 937 | 55                  |
| 32LVSS5-20/20-65.5-□ | 3    | 1155 | 655 | 613 | 79                  |
| 32LVSS5-24/20-65.5-□ |      | 1263 | 763 | 721 | 80                  |
| 32LVSS5-29/20-65.5-□ |      | 1398 | 898 | 856 | 81                  |
| 32LVSS5-32/20-65.5-□ |      | 1479 | 979 | 937 | 82                  |
| 32LVSS5-22/22-65.5-□ |      | 1209 | 709 | 667 | 79                  |
| 32LVSS5-24/22-65.5-□ |      | 1263 | 763 | 721 | 80                  |
| 32LVSS5-29/22-65.5-□ |      | 1398 | 898 | 856 | 81                  |
| 32LVSS5-32/22-65.5-□ |      | 1479 | 979 | 937 | 82                  |
| 32LVSS5-24/24-67.5-□ |      | 1303 | 763 | 721 | 87                  |
| 32LVSS5-29/24-67.5-□ |      | 1438 | 898 | 856 | 88                  |
| 32LVSS5-32/24-67.5-□ |      | 1519 | 979 | 937 | 89                  |

Note 1) "□" in pump type can be any one of -e/-KS/-7W.

### Assembly drawing

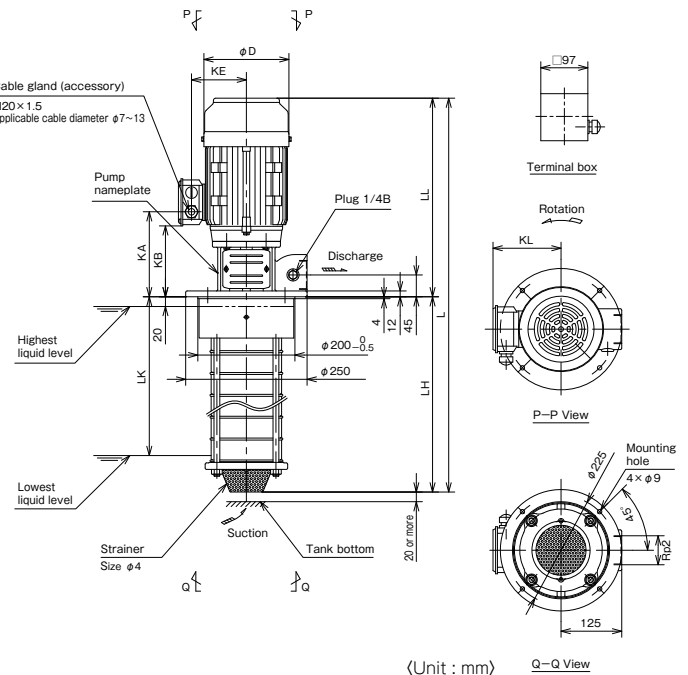
●Discharge diameter: 50mm

Fig.1



※Output 0.75kW

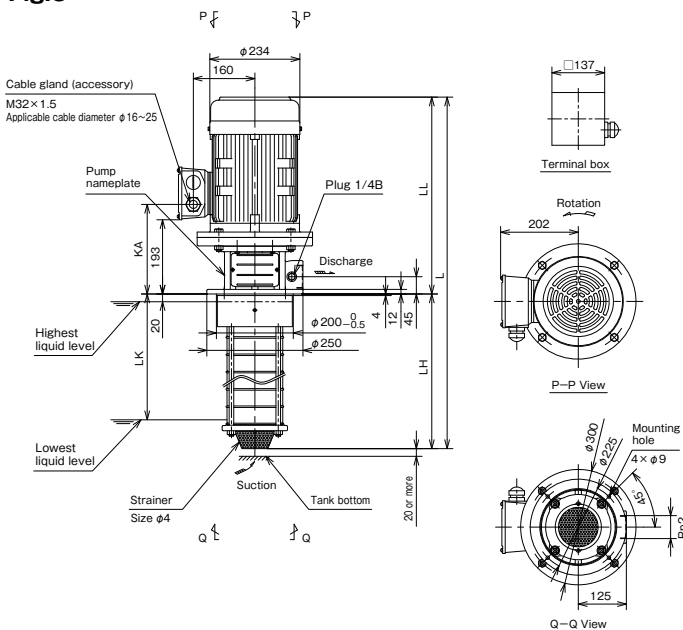
Fig.2



(Unit : mm)

| Output kW | D   | KA  | KB  | KE  | KL  | LL  |
|-----------|-----|-----|-----|-----|-----|-----|
| 1.1       | 175 | 169 | 140 | 113 | 140 | 403 |
| 1.5/2.2   | 175 | 175 | 146 | 113 | 140 | 409 |
| 3.0       | 196 | 186 | 156 | 125 | 152 | 442 |
| 4.0       | 219 | 190 | 161 | 134 | 161 | 449 |

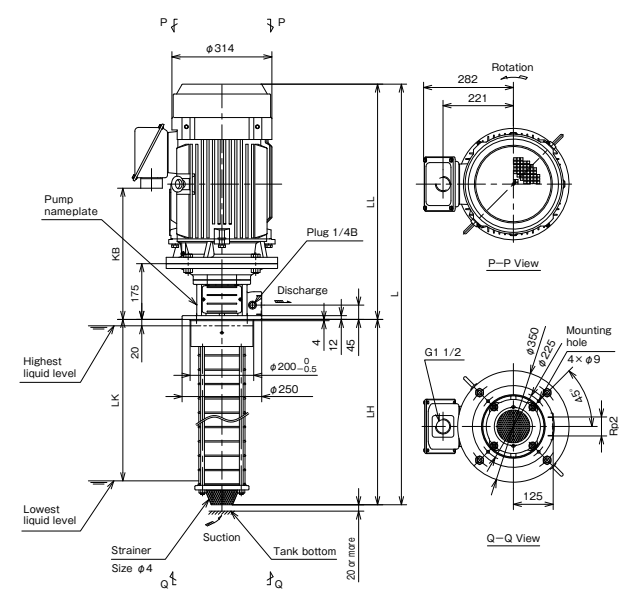
Fig.3



(Unit : mm)

| Output kW | LL  | KA  |
|-----------|-----|-----|
| 5.5       | 512 | 233 |
| 7.5       | 552 | 234 |

Fig.4



(Unit : mm)

| Output kW | KB  | LL  |
|-----------|-----|-----|
| 11/15     | 382 | 689 |
| 18.5      | 412 | 719 |

## ■ Dimensions

●Discharge diameter :50mm, Nominal flow rate : 10m<sup>3</sup>/h

50Hz

(Unit : mm)

| Type                 | Fig. | L    | LH  | LK  | Approx.<br>mass(kg) |
|----------------------|------|------|-----|-----|---------------------|
| 50LVSS10-5/2-5.75-e  | 1    | 631  | 282 | 207 | 30                  |
| 50LVSS10-6/2-5.75-e  |      | 661  | 312 | 237 | 30                  |
| 50LVSS10-8/2-5.75-e  |      | 721  | 372 | 297 | 32                  |
| 50LVSS10-10/2-5.75-e |      | 781  | 432 | 357 | 33                  |
| 50LVSS10-12/2-5.75-e |      | 841  | 492 | 417 | 34                  |
| 50LVSS10-14/2-5.75-e |      | 901  | 552 | 477 | 36                  |
| 50LVSS10-16/2-5.75-e |      | 961  | 612 | 537 | 37                  |
| 50LVSS10-18/2-5.75-e |      | 1021 | 672 | 597 | 38                  |
| 50LVSS10-20/2-5.75-e |      | 1081 | 732 | 657 | 40                  |
| 50LVSS10-22/2-5.75-e |      | 1141 | 792 | 717 | 41                  |
| 50LVSS10-5/3-51.1-e  | 2    | 685  | 282 | 207 | 34.5                |
| 50LVSS10-6/3-51.1-e  |      | 715  | 312 | 237 | 35.5                |
| 50LVSS10-8/3-51.1-e  |      | 775  | 372 | 297 | 36.5                |
| 50LVSS10-10/3-51.1-e |      | 835  | 432 | 357 | 37.5                |
| 50LVSS10-12/3-51.1-e |      | 895  | 492 | 417 | 39.5                |
| 50LVSS10-14/3-51.1-e |      | 955  | 552 | 477 | 40.5                |
| 50LVSS10-16/3-51.1-e |      | 1015 | 612 | 537 | 41.5                |
| 50LVSS10-18/3-51.1-e |      | 1075 | 672 | 597 | 42.5                |
| 50LVSS10-20/3-51.1-e |      | 1135 | 732 | 657 | 44.5                |
| 50LVSS10-22/3-51.1-e |      | 1195 | 792 | 717 | 45.5                |
| 50LVSS10-5/4-51.5-e  |      | 691  | 282 | 207 | 38.5                |
| 50LVSS10-6/4-51.5-e  |      | 721  | 312 | 237 | 38.5                |
| 50LVSS10-8/4-51.5-e  |      | 781  | 372 | 297 | 40.5                |
| 50LVSS10-10/4-51.5-e |      | 841  | 432 | 357 | 41.5                |
| 50LVSS10-12/4-51.5-e |      | 901  | 492 | 417 | 42.5                |
| 50LVSS10-14/4-51.5-e |      | 961  | 552 | 477 | 44.5                |
| 50LVSS10-16/4-51.5-e |      | 1021 | 612 | 537 | 45.5                |
| 50LVSS10-18/4-51.5-e |      | 1081 | 672 | 597 | 46.5                |
| 50LVSS10-20/4-51.5-e |      | 1141 | 732 | 657 | 48.5                |
| 50LVSS10-22/4-51.5-e |      | 1201 | 792 | 717 | 49.5                |
| 50LVSS10-5/5-52.2-e  |      | 691  | 282 | 207 | 41.5                |
| 50LVSS10-6/5-52.2-e  |      | 721  | 312 | 237 | 42.5                |
| 50LVSS10-8/5-52.2-e  |      | 781  | 372 | 297 | 43.5                |
| 50LVSS10-10/5-52.2-e |      | 841  | 432 | 357 | 45.5                |
| 50LVSS10-12/5-52.2-e |      | 901  | 492 | 417 | 46.5                |
| 50LVSS10-14/5-52.2-e |      | 961  | 552 | 477 | 47.5                |
| 50LVSS10-16/5-52.2-e |      | 1021 | 612 | 537 | 49.5                |
| 50LVSS10-18/5-52.2-e |      | 1081 | 672 | 597 | 50.5                |
| 50LVSS10-20/5-52.2-e |      | 1141 | 732 | 657 | 51.5                |
| 50LVSS10-22/5-52.2-e |      | 1201 | 792 | 717 | 53.5                |
| 50LVSS10-6/6-52.2-e  |      | 721  | 312 | 237 | 42.5                |
| 50LVSS10-8/6-52.2-e  |      | 781  | 372 | 297 | 43.5                |
| 50LVSS10-10/6-52.2-e |      | 841  | 432 | 357 | 45.5                |
| 50LVSS10-12/6-52.2-e |      | 901  | 492 | 417 | 46.5                |
| 50LVSS10-14/6-52.2-e |      | 961  | 552 | 477 | 47.5                |
| 50LVSS10-16/6-52.2-e |      | 1021 | 612 | 537 | 49.5                |
| 50LVSS10-18/6-52.2-e |      | 1081 | 672 | 597 | 50.5                |
| 50LVSS10-20/6-52.2-e |      | 1141 | 732 | 657 | 51.5                |
| 50LVSS10-22/6-52.2-e |      | 1201 | 792 | 717 | 53.5                |

(Unit : mm)

| Type                  | Fig. | L    | LH  | LK  | Approx.<br>mass(kg) |
|-----------------------|------|------|-----|-----|---------------------|
| 50LVSS10-8/8-53.0-e   | 2    | 814  | 372 | 297 | 52                  |
| 50LVSS10-10/8-53.0-e  |      | 874  | 432 | 357 | 53                  |
| 50LVSS10-12/8-53.0-e  |      | 934  | 492 | 417 | 54                  |
| 50LVSS10-14/8-53.0-e  |      | 994  | 552 | 477 | 56                  |
| 50LVSS10-16/8-53.0-e  |      | 1054 | 612 | 537 | 57                  |
| 50LVSS10-18/8-53.0-e  |      | 1114 | 672 | 597 | 58                  |
| 50LVSS10-20/8-53.0-e  |      | 1174 | 732 | 657 | 60                  |
| 50LVSS10-22/8-53.0-e  |      | 1234 | 792 | 717 | 61                  |
| 50LVSS10-10/10-54.0-e |      | 881  | 432 | 357 | 59                  |
| 50LVSS10-12/10-54.0-e |      | 941  | 492 | 417 | 60                  |
| 50LVSS10-14/10-54.0-e |      | 1001 | 552 | 477 | 61                  |
| 50LVSS10-16/10-54.0-e |      | 1061 | 612 | 537 | 63                  |
| 50LVSS10-18/10-54.0-e |      | 1121 | 672 | 597 | 64                  |
| 50LVSS10-20/10-54.0-e |      | 1181 | 732 | 657 | 65                  |
| 50LVSS10-22/10-54.0-e |      | 1241 | 792 | 717 | 67                  |
| 50LVSS10-12/12-54.0-e |      | 941  | 492 | 417 | 60                  |
| 50LVSS10-14/12-54.0-e |      | 1001 | 552 | 477 | 61                  |
| 50LVSS10-16/12-54.0-e |      | 1061 | 612 | 537 | 63                  |
| 50LVSS10-18/12-54.0-e |      | 1121 | 672 | 597 | 64                  |
| 50LVSS10-20/12-54.0-e |      | 1181 | 732 | 657 | 65                  |
| 50LVSS10-22/12-54.0-e |      | 1241 | 792 | 717 | 67                  |
| 50LVSS10-14/14-55.5-e | 3    | 1064 | 552 | 477 | 89                  |
| 50LVSS10-16/14-55.5-e |      | 1124 | 612 | 537 | 90                  |
| 50LVSS10-18/14-55.5-e |      | 1184 | 672 | 597 | 92                  |
| 50LVSS10-20/14-55.5-e |      | 1244 | 732 | 657 | 93                  |
| 50LVSS10-22/14-55.5-e |      | 1304 | 792 | 717 | 94                  |
| 50LVSS10-16/16-55.5-e |      | 1124 | 612 | 537 | 91                  |
| 50LVSS10-18/16-55.5-e |      | 1184 | 672 | 597 | 92                  |
| 50LVSS10-20/16-55.5-e |      | 1244 | 732 | 657 | 93                  |
| 50LVSS10-22/16-55.5-e |      | 1304 | 792 | 717 | 94                  |
| 50LVSS10-18/18-57.5-e |      | 1224 | 672 | 597 | 99                  |
| 50LVSS10-20/18-57.5-e |      | 1284 | 732 | 657 | 100                 |
| 50LVSS10-22/18-57.5-e |      | 1344 | 792 | 717 | 101                 |
| 50LVSS10-20/20-57.5-e |      | 1284 | 732 | 657 | 100                 |
| 50LVSS10-22/20-57.5-e |      | 1344 | 792 | 717 | 101                 |
| 50LVSS10-22/22-57.5-e |      | 1344 | 792 | 717 | 102                 |

●Discharge diameter :50mm, Nominal flow rate : 10m<sup>3</sup>/h

60Hz

(Unit : mm)

| Type                 | Fig. | L    | LH  | LK  | Approx. mass(kg) |
|----------------------|------|------|-----|-----|------------------|
| 50LVSS10-5/1-6.75-□  | 1    | 631  | 282 | 207 | 30               |
| 50LVSS10-6/1-6.75-□  |      | 661  | 312 | 237 | 30               |
| 50LVSS10-8/1-6.75-□  |      | 721  | 372 | 297 | 32               |
| 50LVSS10-10/1-6.75-□ |      | 781  | 432 | 357 | 33               |
| 50LVSS10-12/1-6.75-□ |      | 841  | 492 | 417 | 34               |
| 50LVSS10-5/2-61.5-□  | 2    | 691  | 282 | 207 | 38.5             |
| 50LVSS10-6/2-61.5-□  |      | 721  | 312 | 237 | 38.5             |
| 50LVSS10-8/2-61.5-□  |      | 781  | 372 | 297 | 40.5             |
| 50LVSS10-10/2-61.5-□ |      | 841  | 432 | 357 | 41.5             |
| 50LVSS10-12/2-61.5-□ |      | 901  | 492 | 417 | 42.5             |
| 50LVSS10-14/2-61.5-□ |      | 961  | 552 | 477 | 44.5             |
| 50LVSS10-16/2-61.5-□ |      | 1021 | 612 | 537 | 45.5             |
| 50LVSS10-18/2-61.5-□ |      | 1081 | 672 | 597 | 46.5             |
| 50LVSS10-20/2-61.5-□ |      | 1141 | 732 | 657 | 48.5             |
| 50LVSS10-22/2-61.5-□ |      | 1201 | 792 | 717 | 49.5             |
| 50LVSS10-5/3-62.2-□  |      | 691  | 282 | 207 | 41.5             |
| 50LVSS10-6/3-62.2-□  |      | 721  | 312 | 237 | 42.5             |
| 50LVSS10-8/3-62.2-□  |      | 781  | 372 | 297 | 43.5             |
| 50LVSS10-10/3-62.2-□ |      | 841  | 432 | 357 | 44.5             |
| 50LVSS10-12/3-62.2-□ |      | 901  | 492 | 417 | 46.5             |
| 50LVSS10-14/3-62.2-□ |      | 961  | 552 | 477 | 47.5             |
| 50LVSS10-16/3-62.2-□ |      | 1021 | 612 | 537 | 48.5             |
| 50LVSS10-18/3-62.2-□ |      | 1081 | 672 | 597 | 50.5             |
| 50LVSS10-20/3-62.2-□ |      | 1141 | 732 | 657 | 51.5             |
| 50LVSS10-22/3-62.2-□ |      | 1201 | 792 | 717 | 52.5             |
| 50LVSS10-5/4-63.0-□  |      | 724  | 282 | 207 | 49               |
| 50LVSS10-6/4-63.0-□  |      | 754  | 312 | 237 | 50               |
| 50LVSS10-8/4-63.0-□  |      | 814  | 372 | 297 | 51               |
| 50LVSS10-10/4-63.0-□ |      | 874  | 432 | 357 | 53               |
| 50LVSS10-12/4-63.0-□ |      | 934  | 492 | 417 | 54               |
| 50LVSS10-14/4-63.0-□ |      | 994  | 552 | 477 | 55               |
| 50LVSS10-16/4-63.0-□ |      | 1054 | 612 | 537 | 57               |
| 50LVSS10-18/4-63.0-□ |      | 1114 | 672 | 597 | 58               |
| 50LVSS10-20/4-63.0-□ |      | 1174 | 732 | 657 | 59               |
| 50LVSS10-22/4-63.0-□ |      | 1234 | 792 | 717 | 61               |
| 50LVSS10-5/5-63.0-□  |      | 724  | 282 | 207 | 49               |
| 50LVSS10-6/5-63.0-□  |      | 754  | 312 | 237 | 50               |
| 50LVSS10-8/5-63.0-□  |      | 814  | 372 | 297 | 51               |
| 50LVSS10-10/5-63.0-□ |      | 874  | 432 | 357 | 53               |
| 50LVSS10-12/5-63.0-□ |      | 934  | 492 | 417 | 54               |
| 50LVSS10-14/5-63.0-□ |      | 994  | 552 | 477 | 55               |
| 50LVSS10-16/5-63.0-□ |      | 1054 | 612 | 537 | 57               |
| 50LVSS10-18/5-63.0-□ |      | 1114 | 672 | 597 | 58               |
| 50LVSS10-20/5-63.0-□ |      | 1174 | 732 | 657 | 59               |
| 50LVSS10-22/5-63.0-□ |      | 1234 | 792 | 717 | 61               |
| 50LVSS10-6/6-64.0-□  |      | 761  | 312 | 237 | 56               |
| 50LVSS10-8/6-64.0-□  |      | 821  | 372 | 297 | 57               |
| 50LVSS10-10/6-64.0-□ |      | 881  | 432 | 357 | 58               |
| 50LVSS10-12/6-64.0-□ |      | 941  | 492 | 417 | 60               |
| 50LVSS10-14/6-64.0-□ |      | 1001 | 552 | 477 | 61               |
| 50LVSS10-16/6-64.0-□ |      | 1061 | 612 | 537 | 62               |
| 50LVSS10-18/6-64.0-□ |      | 1121 | 672 | 597 | 64               |
| 50LVSS10-20/6-64.0-□ |      | 1181 | 732 | 657 | 65               |
| 50LVSS10-22/6-64.0-□ |      | 1241 | 792 | 717 | 66               |

Note 1) "□" in pump type can be any one of -e/-KS/-7W.

(Unit : mm)

| Type                  | Fig. | L    | LH  | LK  | Approx. mass(kg) |
|-----------------------|------|------|-----|-----|------------------|
| 50LVSS10-8/8-65.5-□   | 3    | 884  | 372 | 297 | 84               |
| 50LVSS10-10/8-65.5-□  |      | 944  | 432 | 357 | 86               |
| 50LVSS10-12/8-65.5-□  |      | 1004 | 492 | 417 | 87               |
| 50LVSS10-14/8-65.5-□  |      | 1064 | 552 | 477 | 88               |
| 50LVSS10-16/8-65.5-□  |      | 1124 | 612 | 537 | 90               |
| 50LVSS10-18/8-65.5-□  |      | 1184 | 672 | 597 | 91               |
| 50LVSS10-20/8-65.5-□  |      | 1244 | 732 | 657 | 92               |
| 50LVSS10-22/8-65.5-□  |      | 1304 | 792 | 717 | 94               |
| 50LVSS10-9/9-65.5-□   |      | 914  | 402 | 327 | 85               |
| 50LVSS10-12/9-65.5-□  |      | 1004 | 492 | 417 | 87               |
| 50LVSS10-14/9-65.5-□  |      | 1064 | 552 | 477 | 89               |
| 50LVSS10-16/9-65.5-□  |      | 1124 | 612 | 537 | 90               |
| 50LVSS10-18/9-65.5-□  |      | 1184 | 672 | 597 | 91               |
| 50LVSS10-20/9-65.5-□  |      | 1244 | 732 | 657 | 92               |
| 50LVSS10-22/9-65.5-□  |      | 1304 | 792 | 717 | 94               |
| 50LVSS10-10/10-67.5-□ |      | 984  | 432 | 357 | 93               |
| 50LVSS10-12/10-67.5-□ |      | 1044 | 492 | 417 | 94               |
| 50LVSS10-14/10-67.5-□ |      | 1104 | 552 | 477 | 95               |
| 50LVSS10-16/10-67.5-□ |      | 1164 | 612 | 537 | 97               |
| 50LVSS10-18/10-67.5-□ |      | 1224 | 672 | 597 | 98               |
| 50LVSS10-20/10-67.5-□ |      | 1284 | 732 | 657 | 99               |
| 50LVSS10-22/10-67.5-□ |      | 1344 | 792 | 717 | 101              |
| 50LVSS10-12/12-67.5-□ |      | 1044 | 492 | 417 | 94               |
| 50LVSS10-14/12-67.5-□ |      | 1104 | 552 | 477 | 95               |
| 50LVSS10-16/12-67.5-□ |      | 1164 | 612 | 537 | 97               |
| 50LVSS10-18/12-67.5-□ |      | 1224 | 672 | 597 | 98               |
| 50LVSS10-20/12-67.5-□ |      | 1284 | 732 | 657 | 99               |
| 50LVSS10-22/12-67.5-□ |      | 1344 | 792 | 717 | 101              |
| 50LVSS10-14/14-611-e  | 4    | 1241 | 552 | 477 | 170              |
| 50LVSS10-16/14-611-e  |      | 1301 | 612 | 537 | 171              |
| 50LVSS10-18/14-611-e  |      | 1361 | 672 | 597 | 173              |
| 50LVSS10-20/14-611-e  |      | 1421 | 732 | 657 | 174              |
| 50LVSS10-22/14-611-e  |      | 1481 | 792 | 717 | 175              |
| 50LVSS10-16/16-611-e  |      | 1301 | 612 | 537 | 171              |
| 50LVSS10-18/16-611-e  |      | 1361 | 672 | 597 | 173              |
| 50LVSS10-20/16-611-e  |      | 1421 | 732 | 657 | 174              |
| 50LVSS10-22/16-611-e  |      | 1481 | 792 | 717 | 175              |
| 50LVSS10-18/18-611-e  |      | 1361 | 672 | 597 | 173              |
| 50LVSS10-20/18-611-e  |      | 1421 | 732 | 657 | 174              |
| 50LVSS10-22/18-611-e  |      | 1481 | 792 | 717 | 176              |

Note 1) "□" in pump type can be any one of -e/-KS/-7W.

●Discharge diameter : 50mm, Nominal flow rate : 15m<sup>3</sup>/h

50Hz

(Unit : mm)

| Type                 | Fig. | L    | LH  | LK  | Approx.<br>mass(kg) |
|----------------------|------|------|-----|-----|---------------------|
| 50LVSS15-3/1-51.1-e  | 2    | 670  | 267 | 192 | 33.5                |
| 50LVSS15-4/1-51.1-e  |      | 715  | 312 | 237 | 34.5                |
| 50LVSS15-5/1-51.1-e  |      | 760  | 357 | 282 | 35.5                |
| 50LVSS15-6/1-51.1-e  |      | 805  | 402 | 327 | 36.5                |
| 50LVSS15-7/1-51.1-e  |      | 850  | 447 | 372 | 37.5                |
| 50LVSS15-8/1-51.1-e  |      | 895  | 492 | 417 | 38.5                |
| 50LVSS15-3/2-52.2-e  |      | 676  | 267 | 192 | 41.5                |
| 50LVSS15-4/2-52.2-e  |      | 721  | 312 | 237 | 41.5                |
| 50LVSS15-5/2-52.2-e  |      | 766  | 357 | 282 | 42.5                |
| 50LVSS15-6/2-52.2-e  |      | 811  | 402 | 327 | 43.5                |
| 50LVSS15-7/2-52.2-e  |      | 856  | 447 | 372 | 44.5                |
| 50LVSS15-8/2-52.2-e  |      | 901  | 492 | 417 | 45.5                |
| 50LVSS15-10/2-52.2-e |      | 991  | 582 | 507 | 46.5                |
| 50LVSS15-12/2-52.2-e |      | 1081 | 672 | 597 | 48.5                |
| 50LVSS15-14/2-52.2-e |      | 1171 | 762 | 687 | 50.5                |
| 50LVSS15-3/3-53.0-e  |      | 709  | 267 | 192 | 49                  |
| 50LVSS15-4/3-53.0-e  |      | 754  | 312 | 237 | 49                  |
| 50LVSS15-5/3-53.0-e  |      | 799  | 357 | 282 | 50                  |
| 50LVSS15-6/3-53.0-e  |      | 844  | 402 | 327 | 51                  |
| 50LVSS15-7/3-53.0-e  |      | 889  | 447 | 372 | 52                  |
| 50LVSS15-8/3-53.0-e  |      | 934  | 492 | 417 | 53                  |
| 50LVSS15-10/3-53.0-e |      | 1024 | 582 | 507 | 55                  |
| 50LVSS15-12/3-53.0-e |      | 1114 | 672 | 597 | 56                  |
| 50LVSS15-14/3-53.0-e |      | 1204 | 762 | 687 | 58                  |
| 50LVSS15-17/3-53.0-e |      | 1339 | 897 | 822 | 60                  |
| 50LVSS15-4/4-54.0-e  |      | 761  | 312 | 237 | 55                  |
| 50LVSS15-5/4-54.0-e  |      | 806  | 357 | 282 | 56                  |
| 50LVSS15-6/4-54.0-e  |      | 851  | 402 | 327 | 57                  |
| 50LVSS15-7/4-54.0-e  |      | 896  | 447 | 372 | 58                  |
| 50LVSS15-8/4-54.0-e  |      | 941  | 492 | 417 | 59                  |
| 50LVSS15-10/4-54.0-e |      | 1031 | 582 | 507 | 60                  |
| 50LVSS15-12/4-54.0-e |      | 1121 | 672 | 597 | 62                  |
| 50LVSS15-14/4-54.0-e |      | 1211 | 762 | 687 | 64                  |
| 50LVSS15-17/4-54.0-e |      | 1346 | 897 | 822 | 66                  |
| 50LVSS15-5/5-54.0-e  | 3    | 806  | 357 | 282 | 56                  |
| 50LVSS15-6/5-54.0-e  |      | 851  | 402 | 327 | 57                  |
| 50LVSS15-7/5-54.0-e  |      | 896  | 447 | 372 | 58                  |
| 50LVSS15-8/5-54.0-e  |      | 941  | 492 | 417 | 59                  |
| 50LVSS15-10/5-54.0-e |      | 1031 | 582 | 507 | 60                  |
| 50LVSS15-12/5-54.0-e |      | 1121 | 672 | 597 | 62                  |
| 50LVSS15-14/5-54.0-e |      | 1211 | 762 | 687 | 64                  |
| 50LVSS15-17/5-54.0-e |      | 1346 | 897 | 822 | 66                  |
| 50LVSS15-6/6-55.5-e  |      | 914  | 402 | 327 | 85                  |
| 50LVSS15-7/6-55.5-e  |      | 959  | 447 | 372 | 85                  |
| 50LVSS15-8/6-55.5-e  |      | 1004 | 492 | 417 | 86                  |
| 50LVSS15-10/6-55.5-e |      | 1094 | 582 | 507 | 88                  |
| 50LVSS15-12/6-55.5-e |      | 1184 | 672 | 597 | 90                  |
| 50LVSS15-14/6-55.5-e |      | 1274 | 762 | 687 | 91                  |
| 50LVSS15-17/6-55.5-e |      | 1409 | 897 | 822 | 94                  |
| 50LVSS15-7/7-55.5-e  |      | 959  | 447 | 372 | 86                  |
| 50LVSS15-8/7-55.5-e  |      | 1004 | 492 | 417 | 86                  |
| 50LVSS15-10/7-55.5-e |      | 1094 | 582 | 507 | 88                  |
| 50LVSS15-12/7-55.5-e |      | 1184 | 672 | 597 | 90                  |
| 50LVSS15-14/7-55.5-e |      | 1274 | 762 | 687 | 91                  |
| 50LVSS15-17/7-55.5-e |      | 1409 | 897 | 822 | 94                  |
| 50LVSS15-8/8-57.5-e  |      | 1044 | 492 | 417 | 93                  |
| 50LVSS15-10/8-57.5-e |      | 1134 | 582 | 507 | 95                  |
| 50LVSS15-12/8-57.5-e |      | 1224 | 672 | 597 | 97                  |
| 50LVSS15-14/8-57.5-e |      | 1314 | 762 | 687 | 98                  |
| 50LVSS15-17/8-57.5-e |      | 1449 | 897 | 822 | 101                 |
| 50LVSS15-9/9-57.5-e  |      | 1089 | 537 | 462 | 94                  |
| 50LVSS15-12/9-57.5-e |      | 1224 | 672 | 597 | 97                  |
| 50LVSS15-14/9-57.5-e |      | 1314 | 762 | 687 | 98                  |
| 50LVSS15-17/9-57.5-e |      | 1449 | 897 | 822 | 101                 |
| 50LVSS15-10/10-511-e | 4    | 1271 | 582 | 507 | 170                 |
| 50LVSS15-12/10-511-e |      | 1361 | 672 | 597 | 171                 |
| 50LVSS15-14/10-511-e |      | 1451 | 762 | 687 | 173                 |
| 50LVSS15-17/10-511-e |      | 1586 | 897 | 822 | 175                 |
| 50LVSS15-12/12-511-e |      | 1361 | 672 | 597 | 172                 |
| 50LVSS15-14/12-511-e |      | 1451 | 762 | 687 | 173                 |
| 50LVSS15-17/12-511-e |      | 1586 | 897 | 822 | 176                 |
| 50LVSS15-14/14-511-e |      | 1451 | 762 | 687 | 174                 |
| 50LVSS15-17/14-511-e |      | 1586 | 897 | 822 | 176                 |
| 50LVSS15-17/17-515-e |      | 1586 | 897 | 822 | 188                 |

60Hz

(Unit : mm)

| Type                 | Fig. | L    | LH  | LK  | Approx.<br>mass(kg) |
|----------------------|------|------|-----|-----|---------------------|
| 50LVSS15-3/1-61.5-□  | 2    | 676  | 267 | 192 | 37.5                |
| 50LVSS15-4/1-61.5-□  |      | 721  | 312 | 237 | 38.5                |
| 50LVSS15-5/1-61.5-□  |      | 766  | 357 | 282 | 39.5                |
| 50LVSS15-6/1-61.5-□  |      | 811  | 402 | 327 | 40.5                |
| 50LVSS15-7/1-61.5-□  |      | 856  | 447 | 372 | 40.5                |
| 50LVSS15-8/1-61.5-□  |      | 901  | 492 | 417 | 41.5                |
| 50LVSS15-10/1-61.5-□ |      | 991  | 582 | 507 | 43.5                |
| 50LVSS15-3/2-63.0-□  |      | 709  | 267 | 192 | 49                  |
| 50LVSS15-4/2-63.0-□  |      | 754  | 312 | 237 | 49                  |
| 50LVSS15-5/2-63.0-□  |      | 799  | 357 | 282 | 50                  |
| 50LVSS15-6/2-63.0-□  |      | 844  | 402 | 327 | 51                  |
| 50LVSS15-7/2-63.0-□  |      | 889  | 447 | 372 | 52                  |
| 50LVSS15-8/2-63.0-□  |      | 934  | 492 | 417 | 53                  |
| 50LVSS15-10/2-63.0-□ |      | 1024 | 582 | 507 | 55                  |
| 50LVSS15-12/2-63.0-□ |      | 1114 | 672 | 597 | 56                  |
| 50LVSS15-14/2-63.0-□ |      | 1204 | 762 | 687 | 58                  |
| 50LVSS15-17/2-63.0-□ |      | 1339 | 897 | 822 | 61                  |
| 50LVSS15-3/3-64.0-□  |      | 716  | 267 | 192 | 54                  |
| 50LVSS15-4/3-64.0-□  |      | 761  | 312 | 237 | 55                  |
| 50LVSS15-5/3-64.0-□  |      | 806  | 357 | 282 | 56                  |
| 50LVSS15-6/3-64.0-□  |      | 851  | 402 | 327 | 57                  |
| 50LVSS15-7/3-64.0-□  |      | 896  | 447 | 372 | 57                  |
| 50LVSS15-8/3-64.0-□  |      | 941  | 492 | 417 | 58                  |
| 50LVSS15-10/3-64.0-□ |      | 1031 | 582 | 507 | 60                  |
| 50LVSS15-12/3-64.0-□ |      | 1121 | 672 | 597 | 62                  |
| 50LVSS15-14/3-64.0-□ |      | 1211 | 762 | 687 | 63                  |
| 50LVSS15-17/3-64.0-□ |      | 1346 | 897 | 822 | 66                  |
| 50LVSS15-4/4-65.5-□  | 3    | 824  | 312 | 237 | 82                  |
| 50LVSS15-5/4-65.5-□  |      | 869  | 357 | 282 | 83                  |
| 50LVSS15-6/4-65.5-□  |      | 914  | 402 | 327 | 84                  |
| 50LVSS15-7/4-65.5-□  |      | 959  | 447 | 372 | 85                  |
| 50LVSS15-8/4-65.5-□  |      | 1004 | 492 | 417 | 86                  |
| 50LVSS15-10/4-65.5-□ |      | 1094 | 582 | 507 | 88                  |
| 50LVSS15-12/4-65.5-□ |      | 1184 | 672 | 597 | 89                  |
| 50LVSS15-14/4-65.5-□ |      | 1274 | 762 | 687 | 91                  |
| 50LVSS15-17/4-65.5-□ |      | 1409 | 897 | 822 | 93                  |
| 50LVSS15-5/5-67.5-□  |      | 909  | 357 | 282 | 90                  |
| 50LVSS15-6/5-67.5-□  |      | 954  | 402 | 327 | 91                  |
| 50LVSS15-7/5-67.5-□  |      | 999  | 447 | 372 | 92                  |
| 50LVSS15-8/5-67.5-□  |      | 1044 | 492 | 417 | 93                  |
| 50LVSS15-10/5-67.5-□ |      | 1134 | 582 | 507 | 94                  |
| 50LVSS15-12/5-67.5-□ |      | 1224 | 672 | 597 | 96                  |
| 50LVSS15-14/5-67.5-□ |      | 1314 | 762 | 687 | 98                  |
| 50LVSS15-17/5-67.5-□ |      | 1449 | 897 | 822 | 100                 |
| 50LVSS15-6/6-611-e   |      | 1091 | 402 | 327 | 165                 |
| 50LVSS15-7/6-611-e   |      | 1136 | 447 | 372 | 166                 |
| 50LVSS15-8/6-611-e   |      | 1181 | 492 | 417 | 167                 |
| 50LVSS15-10/6-611-e  |      | 1271 | 582 | 507 | 169                 |
| 50LVSS15-12/6-611-e  |      | 1361 | 672 | 597 | 170                 |
| 50LVSS15-14/6-611-e  |      | 1451 | 762 | 687 | 172                 |
| 50LVSS15-17/6-611-e  |      | 1586 | 897 | 822 | 175                 |
| 50LVSS15-7/7-611-e   |      | 1136 | 447 | 372 | 166                 |
| 50LVSS15-8/7-611-e   |      | 1181 | 492 | 417 | 167                 |
| 50LVSS15-10/7-611-e  |      | 1271 | 582 | 507 | 169                 |
| 50LVSS15-12/7-611-e  |      | 1361 | 672 | 597 | 171                 |
| 50LVSS15-14/7-611-e  |      | 1451 | 762 | 687 | 172                 |
| 50LVSS15-17/7-611-e  |      | 1586 | 897 | 822 | 175                 |
| 50LVSS15-10/8-611-e  | 4    | 1271 | 582 | 507 | 169                 |
| 50LVSS15-12/8-611-e  |      | 1361 | 672 | 597 | 171                 |
| 50LVSS15-14/8-611-e  |      | 1451 | 762 | 687 | 172                 |
| 50LVSS15-17/8-611-e  |      | 1586 | 897 | 822 | 175                 |
| 50LVSS15-10/10-615-e |      | 1271 | 582 | 507 | 181                 |
| 50LVSS15-12/10-615-e |      | 1361 | 672 | 597 | 182                 |
| 50LVSS15-14/10-615-e |      | 1451 | 762 | 687 | 184                 |
| 50LVSS15-17/10-615-e |      | 1586 | 897 | 822 | 186                 |
| 50LVSS15-12/12-618-e |      | 1391 | 672 | 597 | 199                 |
| 50LVSS15-14/12-618-e |      | 1481 | 762 | 687 | 200                 |
| 50LVSS15-17/12-618-e |      | 1616 | 897 | 822 | 203                 |

Note 1) "□" in pump type can be any one of -e/-KS/-7W.

●Discharge diameter : 50mm, Nominal flow rate : 20m<sup>3</sup>/h

50Hz

(Unit : mm)

| Type                 | Fig. | L    | LH  | LK  | Approx. mass(kg) |
|----------------------|------|------|-----|-----|------------------|
| 50LVSS20-3/1-51.1-e  | 2    | 670  | 267 | 192 | 33.5             |
| 50LVSS20-4/1-51.1-e  |      | 715  | 312 | 237 | 34.5             |
| 50LVSS20-5/1-51.1-e  |      | 760  | 357 | 282 | 35.5             |
| 50LVSS20-6/1-51.1-e  |      | 805  | 402 | 327 | 36.5             |
| 50LVSS20-3/2-52.2-e  |      | 676  | 267 | 192 | 41.5             |
| 50LVSS20-4/2-52.2-e  |      | 721  | 312 | 237 | 41.5             |
| 50LVSS20-5/2-52.2-e  |      | 766  | 357 | 282 | 42.5             |
| 50LVSS20-6/2-52.2-e  |      | 811  | 402 | 327 | 43.5             |
| 50LVSS20-7/2-52.2-e  |      | 856  | 447 | 372 | 44.5             |
| 50LVSS20-8/2-52.2-e  |      | 901  | 492 | 417 | 45.5             |
| 50LVSS20-10/2-52.2-e |      | 991  | 582 | 507 | 46.5             |
| 50LVSS20-12/2-52.2-e |      | 1081 | 672 | 597 | 48.5             |
| 50LVSS20-3/3-54.0-e  |      | 716  | 267 | 192 | 54               |
| 50LVSS20-4/3-54.0-e  |      | 761  | 312 | 237 | 55               |
| 50LVSS20-5/3-54.0-e  |      | 806  | 357 | 282 | 56               |
| 50LVSS20-6/3-54.0-e  |      | 851  | 402 | 327 | 57               |
| 50LVSS20-7/3-54.0-e  |      | 896  | 447 | 372 | 57               |
| 50LVSS20-8/3-54.0-e  |      | 941  | 492 | 417 | 58               |
| 50LVSS20-10/3-54.0-e |      | 1031 | 582 | 507 | 60               |
| 50LVSS20-12/3-54.0-e |      | 1121 | 672 | 597 | 62               |
| 50LVSS20-14/3-54.0-e |      | 1211 | 762 | 687 | 63               |
| 50LVSS20-17/3-54.0-e |      | 1346 | 897 | 822 | 66               |
| 50LVSS20-4/4-55.5-e  | 3    | 824  | 312 | 237 | 82               |
| 50LVSS20-5/4-55.5-e  |      | 869  | 357 | 282 | 83               |
| 50LVSS20-6/4-55.5-e  |      | 914  | 402 | 327 | 84               |
| 50LVSS20-7/4-55.5-e  |      | 959  | 447 | 372 | 85               |
| 50LVSS20-8/4-55.5-e  |      | 1004 | 492 | 417 | 86               |
| 50LVSS20-10/4-55.5-e |      | 1094 | 582 | 507 | 88               |
| 50LVSS20-12/4-55.5-e |      | 1184 | 672 | 597 | 89               |
| 50LVSS20-14/4-55.5-e |      | 1274 | 762 | 687 | 91               |
| 50LVSS20-17/4-55.5-e |      | 1409 | 897 | 822 | 93               |
| 50LVSS20-5/5-55.5-e  |      | 869  | 357 | 282 | 84               |
| 50LVSS20-6/5-55.5-e  |      | 914  | 402 | 327 | 84               |
| 50LVSS20-7/5-55.5-e  |      | 959  | 447 | 372 | 85               |
| 50LVSS20-8/5-55.5-e  |      | 1004 | 492 | 417 | 86               |
| 50LVSS20-10/5-55.5-e |      | 1094 | 582 | 507 | 88               |
| 50LVSS20-12/5-55.5-e |      | 1184 | 672 | 597 | 89               |
| 50LVSS20-14/5-55.5-e |      | 1274 | 762 | 687 | 91               |
| 50LVSS20-17/5-55.5-e |      | 1409 | 897 | 822 | 94               |
| 50LVSS20-6/6-57.5-e  |      | 954  | 402 | 327 | 91               |
| 50LVSS20-7/6-57.5-e  |      | 999  | 447 | 372 | 92               |
| 50LVSS20-8/6-57.5-e  |      | 1044 | 492 | 417 | 93               |
| 50LVSS20-10/6-57.5-e |      | 1134 | 582 | 507 | 95               |
| 50LVSS20-12/6-57.5-e |      | 1224 | 672 | 597 | 96               |
| 50LVSS20-14/6-57.5-e |      | 1314 | 762 | 687 | 98               |
| 50LVSS20-17/6-57.5-e |      | 1449 | 897 | 822 | 100              |
| 50LVSS20-7/7-57.5-e  | 4    | 999  | 447 | 372 | 92               |
| 50LVSS20-8/7-57.5-e  |      | 1044 | 492 | 417 | 93               |
| 50LVSS20-10/7-57.5-e |      | 1134 | 582 | 507 | 95               |
| 50LVSS20-12/7-57.5-e |      | 1224 | 672 | 597 | 96               |
| 50LVSS20-14/7-57.5-e |      | 1314 | 762 | 687 | 98               |
| 50LVSS20-17/7-57.5-e |      | 1449 | 897 | 822 | 101              |
| 50LVSS20-8/8-511-e   |      | 1181 | 492 | 417 | 168              |
| 50LVSS20-10/8-511-e  |      | 1271 | 582 | 507 | 169              |
| 50LVSS20-12/8-511-e  |      | 1361 | 672 | 597 | 171              |
| 50LVSS20-14/8-511-e  |      | 1451 | 762 | 687 | 173              |
| 50LVSS20-17/8-511-e  |      | 1586 | 897 | 822 | 175              |
| 50LVSS20-10/10-511-e |      | 1271 | 582 | 507 | 169              |
| 50LVSS20-12/10-511-e |      | 1361 | 672 | 597 | 171              |
| 50LVSS20-14/10-511-e |      | 1451 | 762 | 687 | 173              |
| 50LVSS20-17/10-511-e |      | 1586 | 897 | 822 | 175              |
| 50LVSS20-12/12-515-e |      | 1361 | 672 | 597 | 183              |
| 50LVSS20-14/12-515-e |      | 1451 | 762 | 687 | 184              |
| 50LVSS20-17/12-515-e |      | 1586 | 897 | 822 | 187              |
| 50LVSS20-14/14-515-e |      | 1451 | 762 | 687 | 184              |
| 50LVSS20-17/14-515-e |      | 1586 | 897 | 822 | 187              |
| 50LVSS20-17/17-518-e |      | 1616 | 897 | 822 | 204              |

60Hz

(Unit : mm)

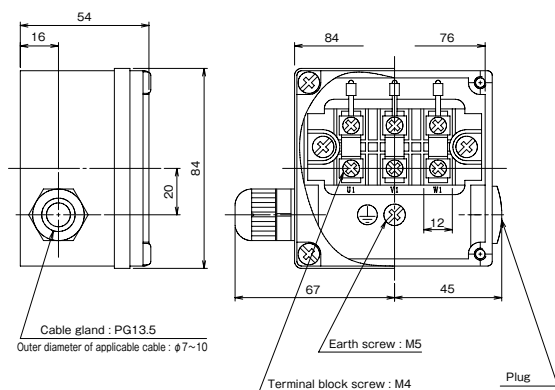
| Type                 | Fig. | L    | LH  | LK  | Approx. mass(kg) |
|----------------------|------|------|-----|-----|------------------|
| 50LVSS20-3/1-62.2-□  | 2    | 676  | 267 | 192 | 41.5             |
| 50LVSS20-4/1-62.2-□  |      | 721  | 312 | 237 | 41.5             |
| 50LVSS20-5/1-62.2-□  |      | 766  | 357 | 282 | 42.5             |
| 50LVSS20-6/1-62.2-□  |      | 811  | 402 | 327 | 43.5             |
| 50LVSS20-7/1-62.2-□  |      | 856  | 447 | 372 | 44.5             |
| 50LVSS20-3/2-64.0-□  |      | 716  | 267 | 192 | 54               |
| 50LVSS20-4/2-64.0-□  |      | 761  | 312 | 237 | 55               |
| 50LVSS20-5/2-64.0-□  |      | 806  | 357 | 282 | 56               |
| 50LVSS20-6/2-64.0-□  |      | 851  | 402 | 327 | 57               |
| 50LVSS20-7/2-64.0-□  |      | 896  | 447 | 372 | 57               |
| 50LVSS20-8/2-64.0-□  |      | 941  | 492 | 417 | 58               |
| 50LVSS20-10/2-64.0-□ |      | 1031 | 582 | 507 | 60               |
| 50LVSS20-12/2-64.0-□ |      | 1121 | 672 | 597 | 62               |
| 50LVSS20-3/3-65.5-□  | 3    | 779  | 267 | 192 | 81               |
| 50LVSS20-4/3-65.5-□  |      | 824  | 312 | 237 | 82               |
| 50LVSS20-5/3-65.5-□  |      | 869  | 357 | 282 | 83               |
| 50LVSS20-6/3-65.5-□  |      | 914  | 402 | 327 | 84               |
| 50LVSS20-7/3-65.5-□  |      | 959  | 447 | 372 | 85               |
| 50LVSS20-8/3-65.5-□  |      | 1004 | 492 | 417 | 86               |
| 50LVSS20-10/3-65.5-□ |      | 1094 | 582 | 507 | 87               |
| 50LVSS20-12/3-65.5-□ |      | 1184 | 672 | 597 | 89               |
| 50LVSS20-14/3-65.5-□ |      | 1274 | 762 | 687 | 91               |
| 50LVSS20-17/3-65.5-□ |      | 1409 | 897 | 822 | 93               |
| 50LVSS20-4/4-67.5-□  |      | 864  | 312 | 237 | 89               |
| 50LVSS20-5/4-67.5-□  |      | 909  | 357 | 282 | 90               |
| 50LVSS20-6/4-67.5-□  |      | 954  | 402 | 327 | 91               |
| 50LVSS20-7/4-67.5-□  |      | 999  | 447 | 372 | 92               |
| 50LVSS20-8/4-67.5-□  |      | 1044 | 492 | 417 | 92               |
| 50LVSS20-10/4-67.5-□ |      | 1134 | 582 | 507 | 94               |
| 50LVSS20-12/4-67.5-□ |      | 1224 | 672 | 597 | 96               |
| 50LVSS20-14/4-67.5-□ |      | 1314 | 762 | 687 | 97               |
| 50LVSS20-17/4-67.5-□ |      | 1449 | 897 | 822 | 100              |
| 50LVSS20-5/5-611-e   | 4    | 1046 | 357 | 282 | 164              |
| 50LVSS20-6/5-611-e   |      | 1091 | 402 | 327 | 165              |
| 50LVSS20-7/5-611-e   |      | 1136 | 447 | 372 | 166              |
| 50LVSS20-8/5-611-e   |      | 1181 | 492 | 417 | 167              |
| 50LVSS20-10/5-611-e  |      | 1271 | 582 | 507 | 169              |
| 50LVSS20-12/5-611-e  |      | 1361 | 672 | 597 | 170              |
| 50LVSS20-14/5-611-e  |      | 1451 | 762 | 687 | 172              |
| 50LVSS20-17/5-611-e  |      | 1586 | 897 | 822 | 174              |
| 50LVSS20-6/6-611-e   |      | 1091 | 402 | 327 | 165              |
| 50LVSS20-7/6-611-e   |      | 1136 | 447 | 372 | 166              |
| 50LVSS20-8/6-611-e   |      | 1181 | 492 | 417 | 167              |
| 50LVSS20-10/6-611-e  |      | 1271 | 582 | 507 | 169              |
| 50LVSS20-12/6-611-e  |      | 1361 | 672 | 597 | 170              |
| 50LVSS20-14/6-611-e  |      | 1451 | 762 | 687 | 172              |
| 50LVSS20-17/6-611-e  |      | 1586 | 897 | 822 | 175              |
| 50LVSS20-7/7-615-e   |      | 1136 | 447 | 372 | 177              |
| 50LVSS20-8/7-615-e   |      | 1181 | 492 | 417 | 178              |
| 50LVSS20-10/7-615-e  |      | 1271 | 582 | 507 | 180              |
| 50LVSS20-12/7-615-e  |      | 1361 | 672 | 597 | 182              |
| 50LVSS20-14/7-615-e  |      | 1451 | 762 | 687 | 183              |
| 50LVSS20-17/7-615-e  |      | 1586 | 897 | 822 | 186              |
| 50LVSS20-8/8-615-e   |      | 1181 | 492 | 417 | 178              |
| 50LVSS20-10/8-615-e  |      | 1271 | 582 | 507 | 180              |
| 50LVSS20-12/8-615-e  |      | 1361 | 672 | 597 | 182              |
| 50LVSS20-14/8-615-e  |      | 1451 | 762 | 687 | 183              |
| 50LVSS20-17/8-615-e  |      | 1586 | 897 | 822 | 186              |
| 50LVSS20-10/10-618-e |      | 1301 | 582 | 507 | 197              |
| 50LVSS20-12/10-618-e |      | 1391 | 672 | 597 | 198              |
| 50LVSS20-14/10-618-e |      | 1481 | 762 | 687 | 200              |
| 50LVSS20-17/10-618-e |      | 1616 | 897 | 822 | 202              |

Note 1) "□" in pump type can be any one of -e/-KS/-7W.

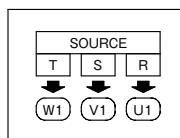
## Detailed drawing of the terminal box

### Assembly drawing (-e/-KS type)

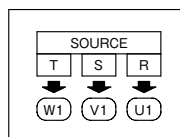
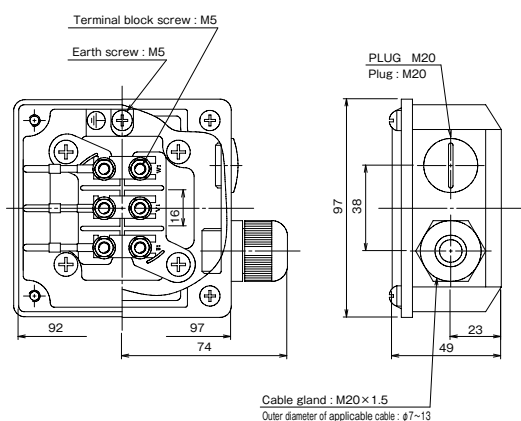
#### ●Output 0.75kW



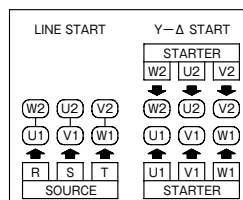
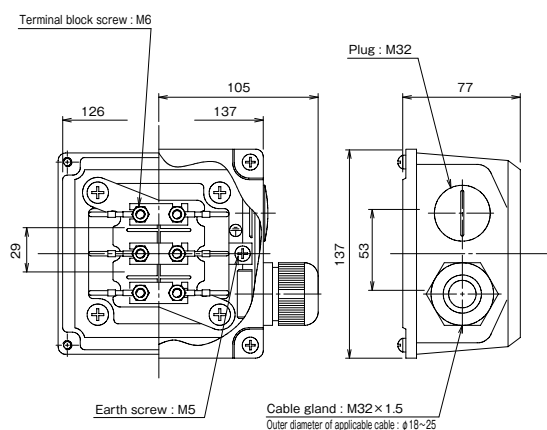
### Connection diagram



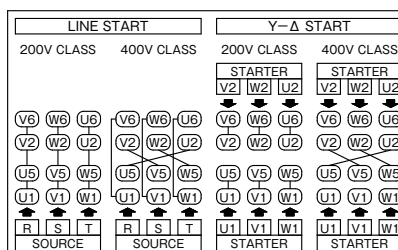
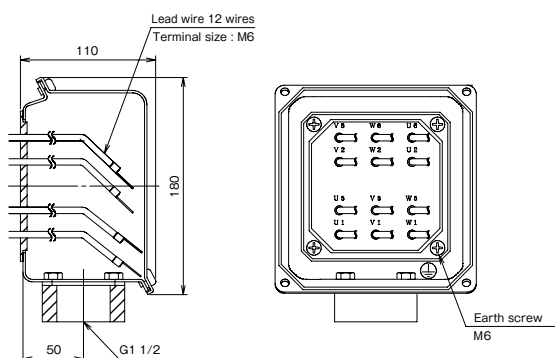
#### ●Output 1.1-4.0 kW



#### ●Output 5.5, 7.5 kW

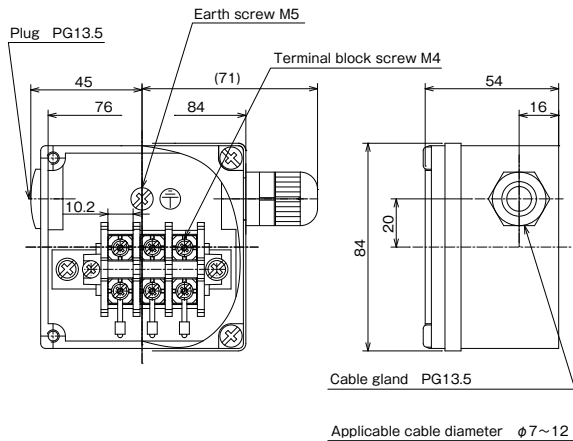


#### ●Output 11-18.5 kW (-e type)

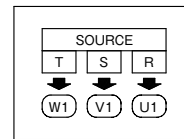


### ■Assembly drawing (-7W type)

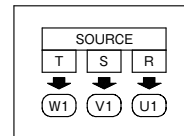
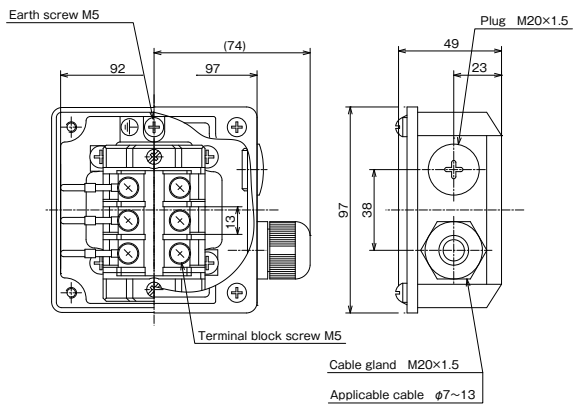
#### ●Output 0.75kW



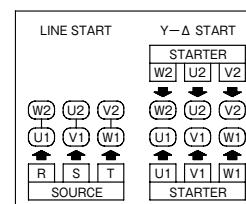
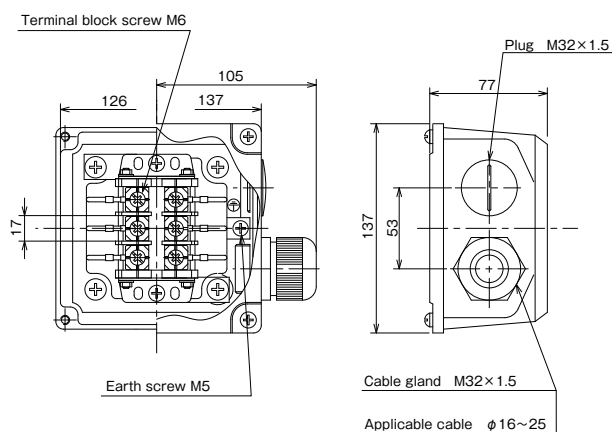
### ■Connection diagram



#### ●Output 1.1-4.0kW

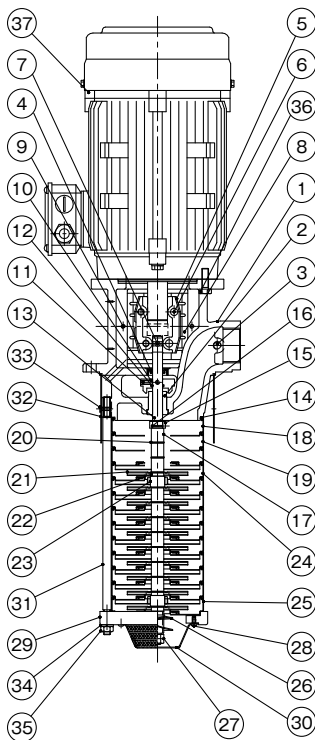


#### ●Output 5.5kW, 7.5kW



## ■ Sectional drawing

## ●32LVSS-e

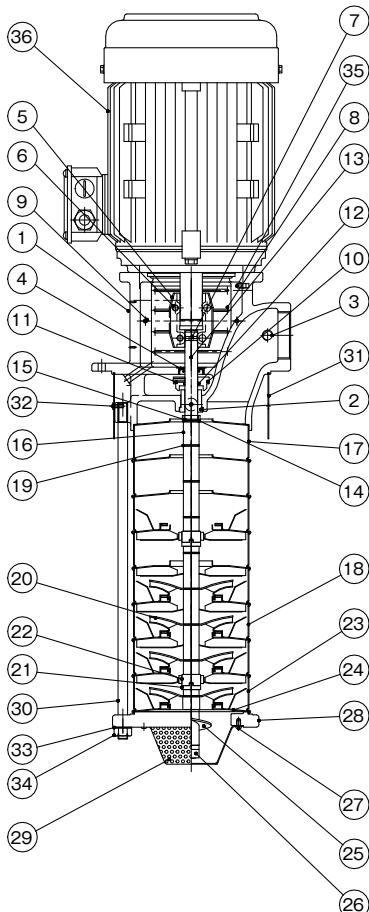


| No. | Part name                         | Material   |
|-----|-----------------------------------|------------|
| 1   | Discharge casing                  | SCS13      |
| 2   | Bushing                           | SUS430     |
| 3   | Plug                              | SUS304     |
| 4   | Oil seal                          | NBR        |
| 5   | Coupling                          | FC0205     |
| 6   | Hexagon socket head bolt          | SCM435     |
| 7   | Shaft pin                         | SUS316     |
| 8   | Coupling cover                    | SUS304     |
| 9   | Cross-recessed pan head screw     | SUS304     |
| 10  | Oil thrower                       | SUS304     |
| 11  | Set screw                         | SUS304     |
| 12  | O-ring                            | FKM        |
| 13  | Main shaft                        | SUS420J2   |
| 14  | Gasket                            | —          |
| 15  | Shaft bushing                     | SUS304     |
| 16  | Shaft ring                        | SUS316     |
| 17  | Sleeve                            | SUS304     |
| 18  | Intermediate casing (Final stage) | SUS304     |
| 19  | Intermediate casing               | SUS304     |
| 20  | Shim                              | SUS304     |
| 21  | Impeller                          | SUS304     |
| 22  | Baffle                            | SUS304     |
| 23  | Bearings                          | SiC        |
| 24  | Bearing casing                    | SUS304+SiC |
| 25  | Intermediate casing (First stage) | SUS304     |
| 26  | Screw                             | SUS304     |
| 27  | Hard locknut                      | SUS304     |
| 28  | Cross-recessed pan head screw     | SUS304     |
| 29  | Suction casing                    | SCS14A     |
| 30  | Strainer                          | SUS304     |
| 31  | Through 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                             | —          |

Note 1) The materials in the table above are equivalents.

Note 2) Structure and other details are subject to change without notice.

## ●50LVSS-e



| No. | Part name                         | Material   |
|-----|-----------------------------------|------------|
| 1   | Discharge casing                  | SCS13      |
| 2   | Bushing                           | SUS430     |
| 3   | Plug                              | SUS304     |
| 4   | Oil seal                          | NBR        |
| 5   | Coupling                          | FC0205     |
| 6   | Hexagon socket head bolt          | SCM435     |
| 7   | Shaft pin                         | SUS316     |
| 8   | Coupling cover                    | SUS304     |
| 9   | Cross-recessed pan head screw     | SUS304     |
| 10  | Oil thrower                       | SUS304     |
| 11  | Set screw                         | SUS304     |
| 12  | O-ring                            | FKM        |
| 13  | Main shaft                        | SUS420J2   |
| 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  | Hard locknut                      | SUS304     |
| 27  | Cross-recessed pan head screw     | SUS304     |
| 28  | Suction casing                    | SCS13      |
| 29  | Strainer                          | SUS304     |
| 30  | Through bolt                      | SUS304     |
| 31  | Outer sleeve                      | SUS304     |
| 32  | Cross-recessed flat head screw    | SUS304     |
| 33  | Plain washer                      | SUS304     |
| 34  | Hexagon nut                       | SUS304     |
| 35  | Hexagon bolt                      | SUS304     |
| 36  | Motor                             | —          |

Note 1) The materials in the table above are equivalents.

Note 2) Structure and other details are subject to change without notice.

### Features

- The motor and the pump are integrated for smaller sizes and lighter weights.
- The self-priming function and floor mount offer a wider choice of installation locations, not limited to the top of tank.
- The lineup including the models complying with global standards by supporting efficiency and other regulations.  
Japan : Top Runner efficiency  
Europe : IE3 efficiency, CE marking (EU Directive)  
RoHS Directive (2011/65/EU) , 10 substances restricted\*  
USA : NEMA Premium efficiency (IE3 efficiency), UL standards (safety)  
China : GB3 (GB18613-2020 )
- The lineup that includes both VKN-A type (flow 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.

\* Excluding the types that end with "L."



Please note that the paint color, etc. of the actual unit may partially differ from the photo.

### Description of types

#### VKN 07 5 A

① ② ③ ④ ⑤

- Model
- Output (04:40W, 05:60W, 06:100W, 07:180W, 08:250W, 09:400W, 11:750W)
- Series number
- Characteristics L : flow type / cabtyre cable used  
A : flow type  
H : pressure type
- Motor efficiency/ voltage  
None : Standard efficiency (equivalent to IE1) / Standard voltage  
-e : Top Runner efficiency (equivalent to IE3) / Standard voltage  
-4Z : Standard efficiency (equivalent to IE1) / Different voltage  
-4Z-e : Top Runner efficiency (equivalent to IE3) / Different voltage  
-7W : UL approved motor (750W is NEMA Premium efficiency)

### Global standards

| Type   | Standards/Regulations                  | Output          |      |                 |
|--------|----------------------------------------|-----------------|------|-----------------|
|        |                                        | 40W-250W        | 400W | 750W            |
| VKN    | IE1 equivalent                         | ●               | ●    | ●               |
|        | CE Marking                             | ● <sup>*1</sup> | ●    | ●               |
|        | EU energy efficiency                   | —               | ●    | ●               |
|        | GB3(GB18613-2020)                      | —               | ●    | —               |
| VKN-e  | Top Runner efficiency (IE3 equivalent) | —               |      | ●               |
|        | CE Marking                             |                 |      | ●               |
|        | EU energy efficiency                   |                 |      | ●               |
|        | GB3(GB18613-2020)                      |                 |      | ● <sup>*2</sup> |
| VKN-7W | NEMA Premium efficiency                | —               | —    | ●               |
|        | UL Standards (safety)                  | ●               | ●    | ●               |

\*1 Excluding the types that end with "L."

\*2 GB certification label is attached as exclusive for GB standard. ● : Compliant — : Ineligible

### Standard Specification

|                       |                               |                                                                                                                                                                                                                              |
|-----------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Used liquid           | Property of liquid            | Grinding liquid, cutting liquid, etc.*1                                                                                                                                                                                      |
|                       | Temperature                   | 40° C or less (No frozen liquid)                                                                                                                                                                                             |
|                       | Allowable kinematic viscosity | VKN-A 50Hz : 200mm <sup>2</sup> /s 60Hz : 75mm <sup>2</sup> /s<br>VKN-H 50/60Hz : 37.5mm <sup>2</sup> /s                                                                                                                     |
| Installation location |                               | Indoor<br>Ambient temperature: 0 to 40 °C, RH 85% or below (no condensation).<br>Height above sea level : 1000m or less, Place not exposed to direct sunlight. Place in an area free of corrosive or explosive gas or vapor. |
| Material              | Casing                        | FC150                                                                                                                                                                                                                        |
|                       | Impeller                      | CAC407 or Special resins<br>Refer to the table of impeller materials.                                                                                                                                                        |
|                       | Main shaft                    | S45C                                                                                                                                                                                                                         |
| Shaft seal structure  |                               | Mechanical seal                                                                                                                                                                                                              |
| Motor                 | Power source                  | 3-phase 50/60/60 Hz, 200/200/220 V <sup>2</sup>                                                                                                                                                                              |
|                       | Type                          | Output 0.25kW or less: Totally enclosed self-cooled type<br>Output 0.4kW or more: Totally enclosed fan-cooled indoor type                                                                                                    |
|                       | Protection method             | Refer to the specification table.                                                                                                                                                                                            |
|                       | Thermal class                 | Refer to the specification table.                                                                                                                                                                                            |
|                       | Rating                        | Continuous                                                                                                                                                                                                                   |
|                       | Number of poles               | 2P                                                                                                                                                                                                                           |
|                       | Standard                      | IEC60034-1 CE marking <sup>*3</sup>                                                                                                                                                                                          |
| 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 (Standard specification) different voltage: 50/50/50/60/60Hz, 380/400/415/400/440V, NEMA Premium efficiency (IE3), UL Standards (safety): 60Hz, 208/230/460V, GB18613-2020: 3-phase 50Hz 200V, 50Hz 380V

\*3 Excluding -7W type and the types that end with "L."

### List of Consumable Parts

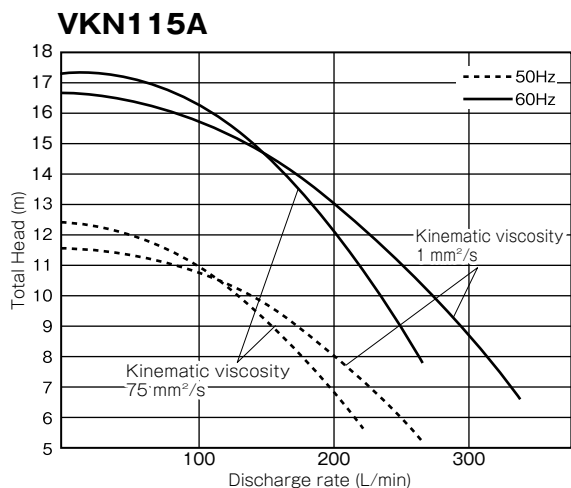
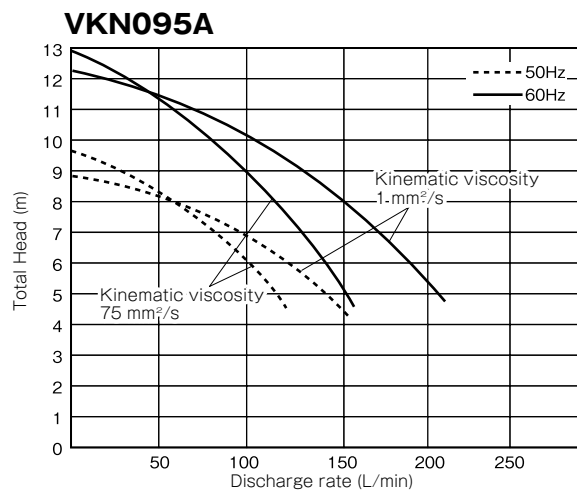
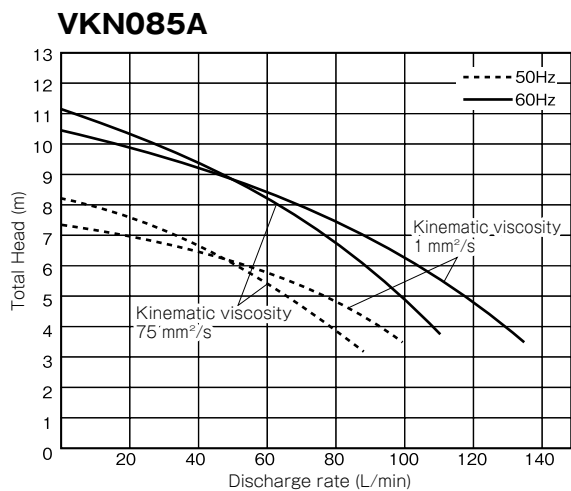
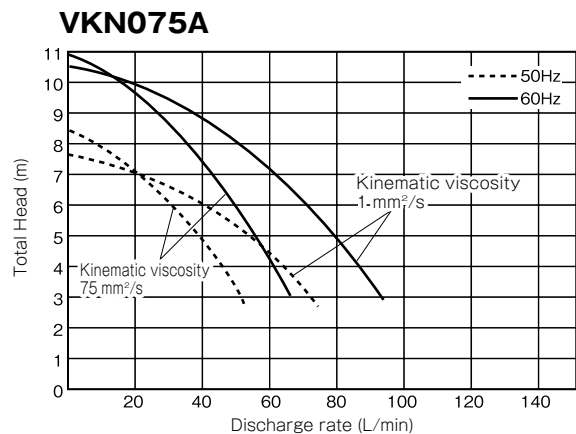
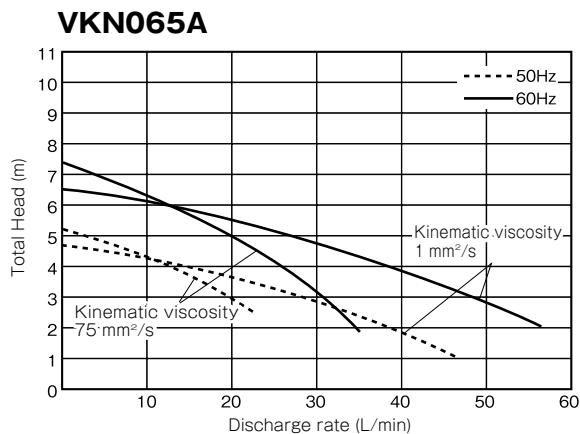
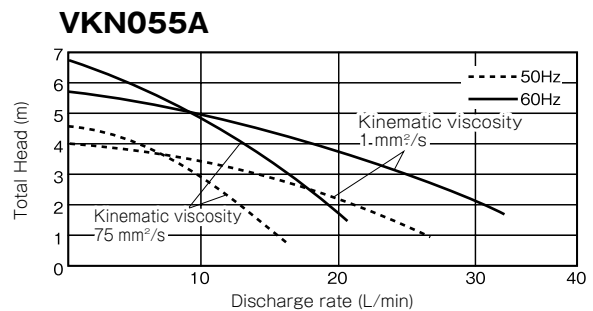
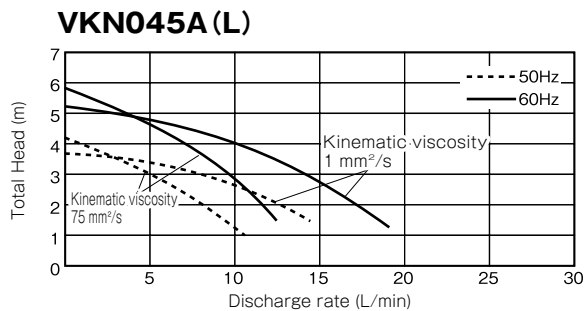
| Type               | Bearing   |             | O-ring for casing |
|--------------------|-----------|-------------|-------------------|
|                    | Load side | Unload side |                   |
| VKN045L            | 6200ZZ    | 6200ZZ      | —                 |
| VKN045A (-4Z/7W)   | 6200ZZ    | 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) | 6305ZZ    | 6203ZZ      | G165-N            |
| VKN055H            | 6200ZZ    | 6200ZZ      | —                 |
| VKN065H (-7W)      | 6200ZZ    | 6200ZZ      | —                 |
| VKN075H            | 6202ZZ    | 6200ZZ      | —                 |
| VKN085H            | 6202ZZ    | 6200ZZ      | —                 |
| VKN095H (-7W)      | 6203ZZ    | 6202ZZ      | —                 |

## ■ Selection chart

## ● VKN-A

(Values at kinematic viscosity  $1\text{ mm}^2/\text{s}$ , specific gravity 1)  
(Values at kinematic viscosity  $75\text{ mm}^2/\text{s}$ , specific gravity 1)

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



※ Above selection chart is also available for -e/-4Z/-7W type.

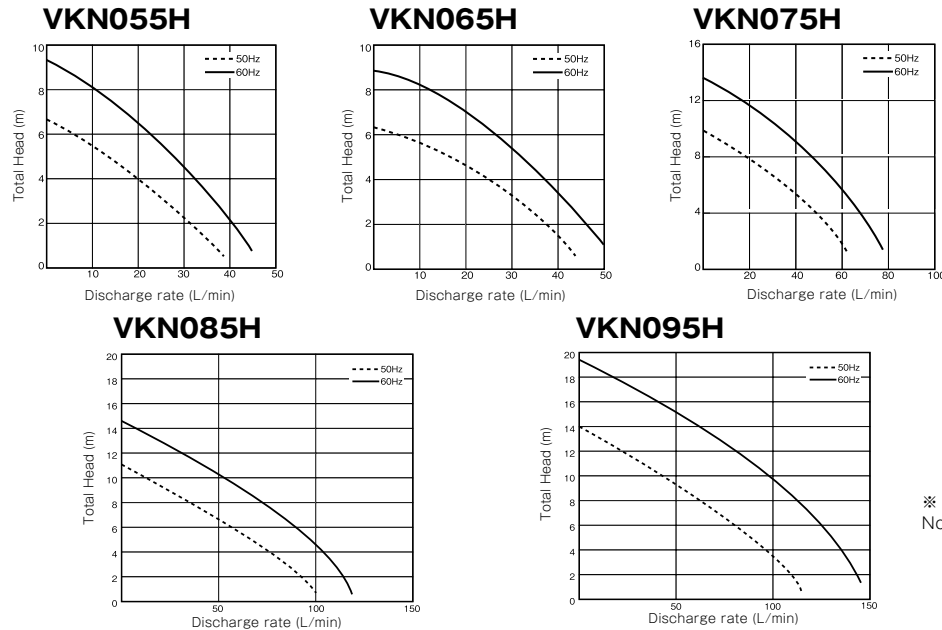
Note) Take note that discharge rate varies considerably depending on the type and kinematic viscosity of liquid.

### Selection chart

(Values at kinematic viscosity 1mm<sup>2</sup>/s, specific gravity 1)

Synchronous rotating speed 50Hz : 3000min<sup>-1</sup>  
60Hz : 3600min<sup>-1</sup>

#### ●VKN-H



※ This also applies to -7W type.  
Note) Take note that discharge rate varies considerably depending on the type and kinematic viscosity of liquid.

### Specification table

#### ●VKN-A

| Bore diameter (Rp) | Type                | Output (W) | 50Hz              |                   |                       |                        |                | 60Hz              |                   |                       |                        |                | Max. length of suction pipe | Protection method | Thermal 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*<br>VKN045A | 40         | 200               | 0.32              | 1.38                  | 13                     | 1.5            | 200/220           | 0.31/0.31         | 1.24/1.36             | 16                     | 1.5            | 0.7                         | 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               |                        |                |                             |                   |               |
|                    | 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           | 0.35/0.35         | 1.75/1.67             | 24                     | 2              | 0.7                         |                   |               |
|                    | 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              | 0.7                         |                   |               |
|                    | 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              | 0.7                         | IP54              |               |
|                    | 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              | 0.6                         |                   |               |
|                    | 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              | 0.7                         |                   |               |
|                    | 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     |                       |                        |                |                             |                   |               |
| 1 1/2              | VKN115A             | 750        | 200               | 3.3               | 25.7                  | 230                    | 7              | 200/220           | 4.5/4.2           | 23.3/25.7             | 320                    | 7              | 0.7                         |                   |               |
|                    | VKN115A-e           |            | 200               | 3.3               | 29.0                  |                        |                | 200/220           | 4.5/4.2           | 28.0/30.0             |                        |                |                             |                   |               |
|                    | 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             |                        |                |                             |                   |               |
|                    | 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             |                        |                |                             |                   |               |
|                    | VKN115A-7W          |            | 208/230/460       |                   |                       |                        |                | 4.2/3.9/1.9       | 28.8/32.0/16.0    |                       |                        |                |                             |                   |               |
|                    |                     |            |                   |                   |                       |                        |                |                   |                   |                       |                        |                |                             |                   |               |

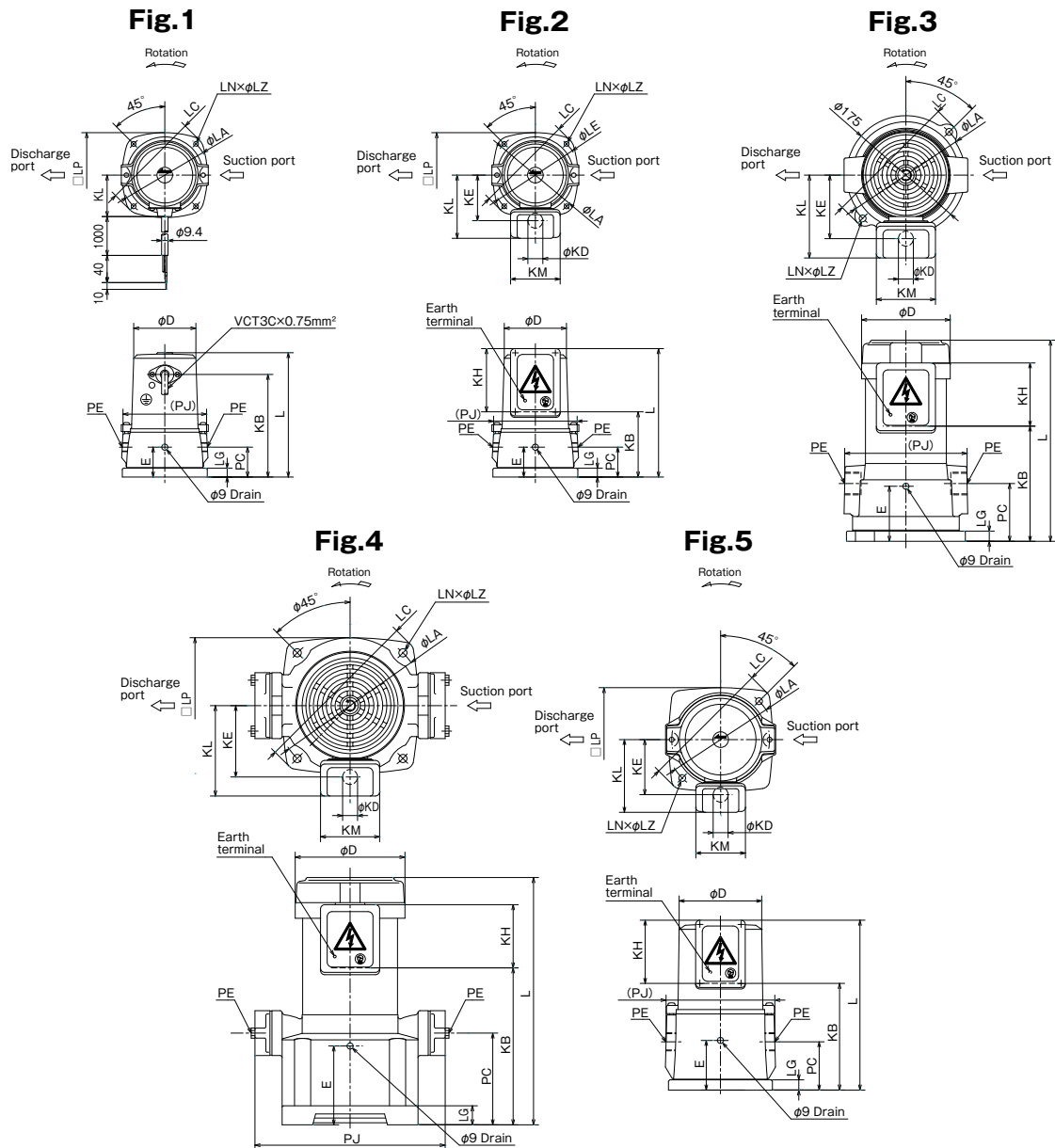
Notes 1) Since VKN045L has cabtyre cable, it does not comply with CE Marking. In addition it does not comply with RoHS Directive (2011/65/EU), which restricting 10 substances. The protection method is IP23.  
Notes 2) The discharge rate and total head values were obtained in tests with a liquid kinematic viscosity of 1 mm<sup>2</sup>/s (same as fresh water at normal temperature). Take note that the pumps cannot be used with water.

#### ●VKN-H

| Bore diameter (Rp) | Type       | Output (W) | 50Hz              |                   |                       |                        |                | 60Hz              |                   |                       |                        |                | Max. length of suction pipe | Protection method | Thermal 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              | 0.7                         | IP54              | B             |  |
|                    | VKN065H    | 100        | 200               | 0.55              | 5.86                  | 10                     | 5              | 200/220           | 0.6/0.6           | 5.52/6.08             |                        | 7.5            | 0.7                         |                   |               |  |
|                    | 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             | 0.7                         |                   |               |  |
| 3/4                | VKN085H    | 250        | 200               | 1.2               | 8.79                  | 20                     | 8              | 200/220           | 1.5/1.5           | 8.26/9.09             |                        | 12             | 0.6                         |                   |               |  |
| 1                  | VKN095H    | 400        | 200               | 2.4               | 11.0                  | 20                     | 12             | 200/220           | 2.5/2.4           | 10.0/11.0             |                        | 17             | 0.6                         |                   |               |  |
|                    | 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<sup>2</sup>/s (same as fresh water at normal temperature). Take note that the pumps cannot be used with water.

## ■ Assembly drawing



## ■ 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 | 4.6              |
| VKN045A(-4Z/7W)   | 2    | 92  | 44  | 96  | 22 | 67  | 93 | 93  | 73 | 189 | 130 | 145 | —   | 13 | 4  | 125 | 7  | 44  | Rp1/4   | 123 | 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  | 57  | 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 | 61  | 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 | 73  | 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             |

## ● VKN-H

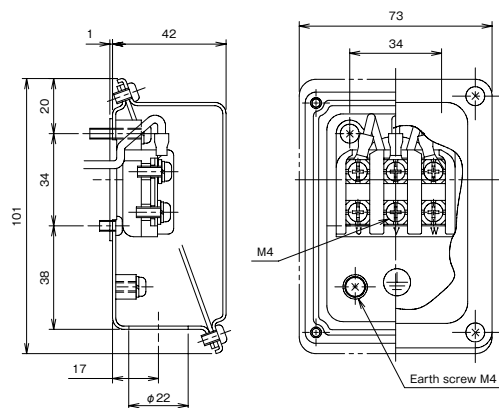
(Unit : mm)

| 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 | 61 | 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

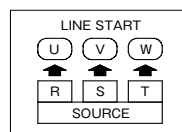
#### ●VKN045A-085A (-4Z), VKN055H-085H

##### ■Assembly drawing



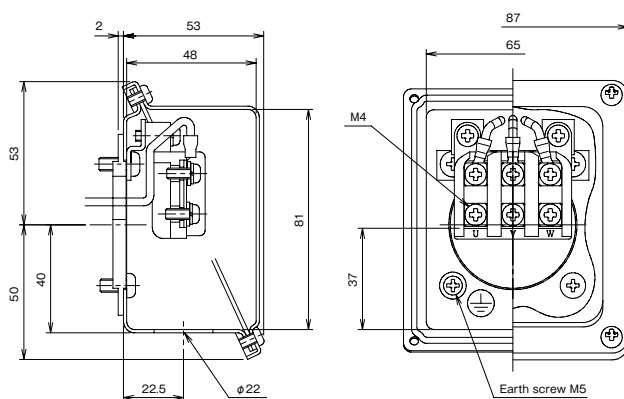
※ For the types that end with "L," cabtyre cable is used.

##### ■Connection diagram

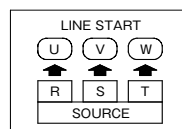


#### ●VKN095□ (-4Z), 115A (-e/4Z)

##### ■Assembly drawing

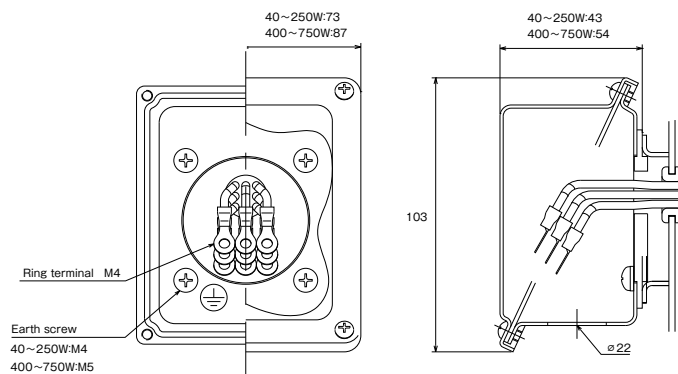


##### ■Connection diagram

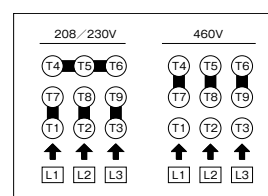


#### ●VKN-7W

##### ■Assembly drawing

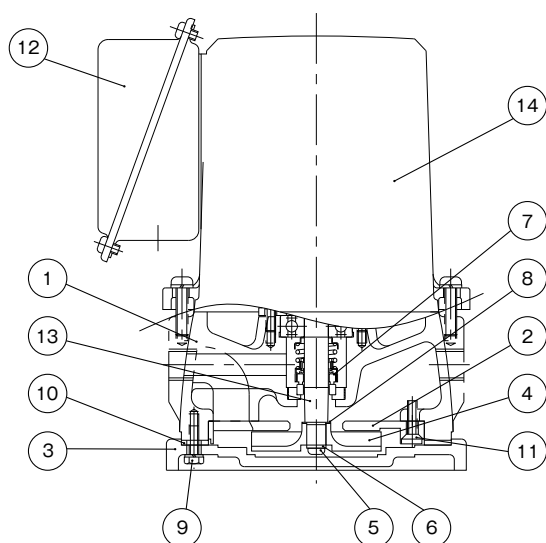


##### ■Connection diagram



## Sectional drawing

### ●VKN045L, VKN045A-085A (-4Z/7W), VKN055H-085H (-7W)



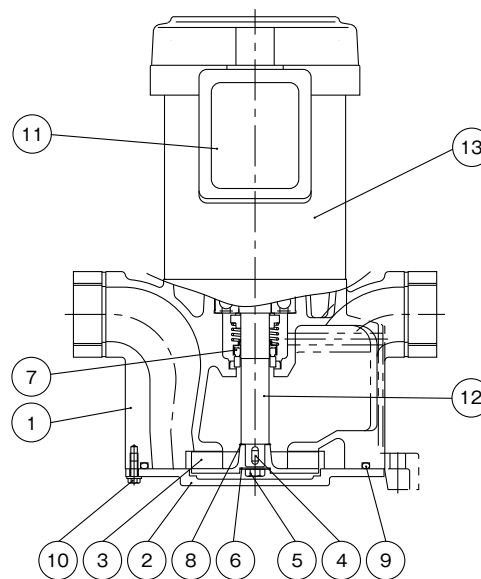
| No. | Part name              | Material                 | No. | Part name                              | Material  |
|-----|------------------------|--------------------------|-----|----------------------------------------|-----------|
| 1   | Casing                 | FC150                    | 8   | Adjust seal                            | BsP3-1/2H |
| 2   | Inner casing           | FC150                    | 9   | Hexagon head screw with captive washer | SUS302    |
| 3   | Bottom plate           | FC150                    | 10  | Packing                                | NBR       |
| 4   | Impeller               | Refer to the table below | 11  | Flat head screw                        | SS        |
| 5   | Pan head machine screw | SS                       | 12  | Terminal box                           | SPCC      |
| 6   | Toothed washer         | SK5                      | 13  | Main shaft                             | S45C      |
| 7   | Mechanical seal        | Ceramic vs carbon        | 14  | Motor                                  | —         |

Note 1) VKN045L has cabtyre cable.

Note 2) The materials in the table above are equivalents.

Note 3) Structure and other details are subject to change without notice.

### ●VKN115A (-e/4Z/7W)



| No. | Part name       | Material          | No. | Part name                              | Material        |
|-----|-----------------|-------------------|-----|----------------------------------------|-----------------|
| 1   | Casing          | FC150             | 8   | Adjust seal                            | BsP3-1/2H       |
| 2   | Bottom plate    | FC150             |     |                                        | Phosphor bronze |
| 3   | Impeller        | CAC407            | 9   | O ring                                 | NBR             |
| 4   | Key             | S45C              | 10  | Hexagon head screw with captive washer | SUS302          |
| 5   | Hexagon bolt    | SS                | 11  | Terminal box                           | SPCC            |
| 6   | Toothed washer  | SK5               | 12  | Main shaft                             | S45C            |
| 7   | Mechanical seal | Ceramic vs carbon | 13  | Motor                                  | —               |

Note 1) The materials in the table above are equivalents.

Note 2) Structure and other details are subject to change without notice.

## Table of impeller materials

### ●VKN-A

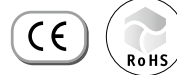
| Type               | Impeller material |
|--------------------|-------------------|
| VKN045L            | CAC407            |
| VKN045A (-4Z/7W)   | CAC407            |
| VKN055A (-4Z/7W)   | CAC407            |
| VKN065A (-4Z/7W)   | CAC407            |
| VKN075A (-4Z/7W)   | Special resins    |
| VKN085A (-4Z/7W)   | Special resins    |
| VKN095A (-4Z/7W)   | Special resins    |
| VKN115A (-e/4Z/7W) | CAC407            |

### ●VKN-H

| Type          | Impeller material |
|---------------|-------------------|
| VKN055H       | CAC407            |
| VKN065H (-7W) | CAC407            |
| VKN075H       | CAC407            |
| VKN085H       | CAC407            |
| VKN095H (-7W) | CAC407            |

### Features

- ① The structure and materials are not easily affected by dirty coolants.
- ② The impeller made of FCD material and non-seal (mechanical seal-less) structure is adopted for excellent durability.
- ③ The self-priming function and floor mount offer a wider choice of installation location, not limited to the top of the tank.
- ④ Can be used for high viscosity coolants. (LPSE40D-e)
- ⑤ The lineup including the models complying with global standards by supporting efficiency and other regulations.  
 Japan : Top Runner efficiency  
 Europe : IE3 efficiency, CE marking (EU Directive)  
 RoHS Directive (2011/65/EU) , 10 substances restricted  
 China : GB3 (GB18613-2020 )



Please note that the paint color, etc. of the actual unit may partially differ from the photo.

### Description of types

#### LPSE 40 4 A - 3.0 -e

- ① Model  
 ② Bore diameter  
 ③ Number of casings  
 ④ Viscosity of the liquid    A : for low viscosity liquid  
                                              B : for high viscosity liquid  
 ⑤ Output  
 ⑥ Motor efficiency                -e : Top Runner efficiency (equivalent to IE3)

### Global standards

| Type   | Standards/Regulations                  | Output          |  |
|--------|----------------------------------------|-----------------|--|
|        |                                        | 0.75kW-3.0kW    |  |
| LPSE-e | Top Runner efficiency (IE3 equivalent) | ●               |  |
|        | CE Marking EU energy efficiency        | ●               |  |
|        | GB3(GB18613-2020)                      | ● <sup>※1</sup> |  |

※1 GB certification label is attached as exclusive for GB standard. ● : Compliant

### Standard Specification

|                               |                                   |                                                                                                                                 |
|-------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Bore diameter [A]             |                                   | 40                                                                                                                              |
| Used liquid                   | Property of liquid                | Water soluble coolant, liquids of similar viscosity to water containing additives (anti-rust agents) and the like <sup>※1</sup> |
|                               | Temperature                       | 0 to 60° C (No frozen liquid is allowed.)                                                                                       |
| Allowable kinematic viscosity |                                   | 40A: 32 mm <sup>2</sup> /s or less<br>40B: 150 mm <sup>2</sup> /s or less                                                       |
| Installation location         |                                   | Indoor                                                                                                                          |
|                               |                                   | Ambient temperature: 0 to 40° C; humidity:85% RH or less (no condensation)                                                      |
|                               |                                   | Height above sea level: 1,000 m or less; place not exposed to direct sunlight                                                   |
|                               |                                   | Place without any corrosive gas, explosive gas, or vapor in the atmosphere                                                      |
| Max. intake piping length     |                                   | 0.7m <sup>※2</sup>                                                                                                              |
| Material                      | Casing (suction/discharge/middle) | FC200                                                                                                                           |
|                               | Impeller                          | FCD450                                                                                                                          |
|                               | Main shaft                        | S45C                                                                                                                            |
| Shaft seal structure          |                                   | Sealless structure (without mechanical seal)                                                                                    |
| Motor                         | Type                              | Totally-enclosed fan-cooled indoor type                                                                                         |
|                               | Protection method                 | IP44                                                                                                                            |
|                               | Power source <sup>※2</sup>        | 3-phase 50/60Hz 200/200-220V <sup>※3</sup>                                                                                      |
|                               | Thermal class                     | B                                                                                                                               |
|                               | Rating                            | Continuous (S1)                                                                                                                 |
|                               | Number of poles                   | 2P                                                                                                                              |
|                               | Terminal box position             | 90° with the discharge port facing the front                                                                                    |
|                               | Wiring inlet direction            | Bottom                                                                                                                          |
| Paint color                   |                                   | Munsell N1.5                                                                                                                    |

※1 Note that the product cannot be used for water. If the liquid contains hard foreign matters or large amount of foreign matters (cutting chips), contact TERAL.

※2 Intake piping should be as short as possible and the number of bends and fittings as few as possible.

※3 GB18613-2020: 3-phase 50Hz 200V, 50Hz 380V

### Special specification

Voltage change<sup>※1</sup>, change of terminal box position<sup>※2</sup>, change of terminal box direction<sup>※3</sup>, With cable inlet adapter for terminal box<sup>※4</sup>

※1 50Hz : 210V/220V/380V/400V/415V,60Hz 400V/440V

※2 Terminal box position change(Every 90° with the discharge port facing the front)

※3 Terminal box orientation (with the terminal box facing the front): wire inlet port is right or left.

※4 G3/4 conduit can be attached

### Special accessories

Companion flange ..... With O-ring, bolts and nuts  
 Eye bolt ..... 2 pcs

### Table of Consumable Parts

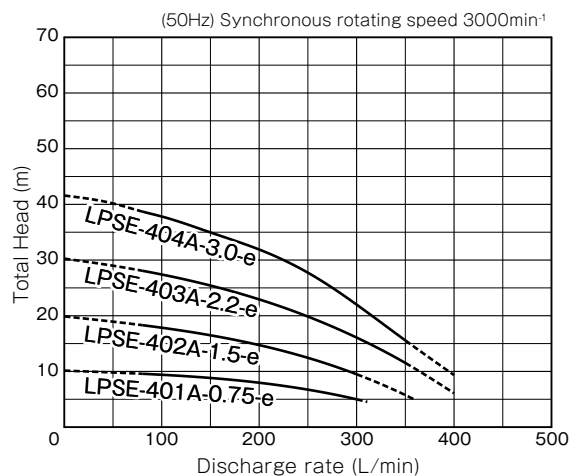
| Output (kW) | Bearing   |                         | Oil seal |
|-------------|-----------|-------------------------|----------|
|             | Load side | Unload side             |          |
| 0.75        | 6306ZZC3  | 6203CXZZC3 (Anti-creep) | AG1705E  |
| 1.5         |           | 6204CXZZC3 (Anti-creep) |          |
| 2.2         |           |                         |          |
| 3.0         |           |                         |          |

| Output (kW) | O-ring               |                    |
|-------------|----------------------|--------------------|
|             | For discharge casing | For suction spacer |
| 0.75        | G155                 | G175               |
| 1.5         |                      |                    |
| 2.2         |                      |                    |
| 3.0         |                      |                    |

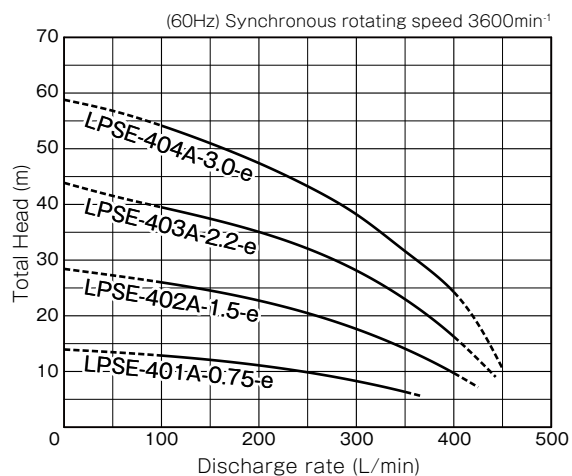
## Selection chart

● **For low viscosity liquid** (Values at kinematic viscosity  $1\text{mm}^2/\text{s}$ , specific gravity 1)

50Hz

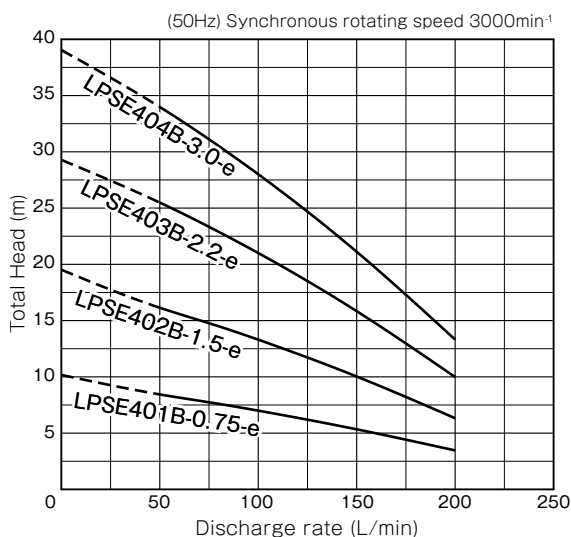


60Hz

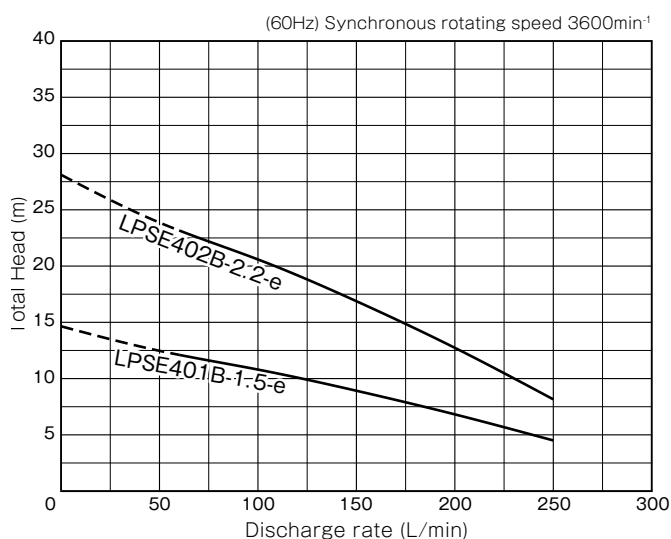


● **For high-viscosity liquid** (Value at kinematic viscosity  $150\text{mm}^2/\text{s}$ , kinematic viscosity, specific gravity 1)

50Hz



60Hz



### ■ Specification table

#### ●LPSE-e

| Bore diameter (mm) | Frequency (Hz) | Used liquid               | Output (kW) | Type            | Rated voltage (V) | Rated current (A) | Starting current (A) | Allowable ampacity (A) | Standard specification        |                |
|--------------------|----------------|---------------------------|-------------|-----------------|-------------------|-------------------|----------------------|------------------------|-------------------------------|----------------|
|                    |                |                           |             |                 |                   |                   |                      |                        | Applied flow rate range L/min | Total head (m) |
| 40                 | 50             | For low viscosity liquid  | 0.75        | LPSE401A-0.75-e | 200               | 3.6               | 28                   | 4.0                    | 80-300                        | 9.5-4.9        |
|                    |                |                           | 1.5         | LPSE402A-1.5-e  | 200               | 6.1               | 64                   | 7.8                    |                               | 18.3-9.4       |
|                    |                |                           | 2.2         | LPSE403A-2.2-e  | 200               | 8.6               | 86                   | 10.0                   | 80-350                        | 28.0-11.5      |
|                    |                |                           | 3           | LPSE404A-3.0-e  | 200               | 12.6              | 164                  | 16.0                   |                               | 38.7-15.5      |
|                    |                | For high-viscosity liquid | 0.75        | LPSE401B-0.75-e | 200               | 3.5               | 28                   | 4.0                    | 50-200                        | 8.4-3.5        |
|                    |                |                           | 1.5         | LPSE402B-1.5-e  | 200               | 6.2               | 64                   | 7.8                    |                               | 16.1-6.3       |
|                    |                |                           | 2.2         | LPSE403B-2.2-e  | 200               | 9.0               | 86                   | 10.0                   |                               | 25.5-10.0      |
|                    |                |                           | 3           | LPSE404B-3.0-e  | 200               | 12.5              | 164                  | 16.0                   |                               | 34.0-13.3      |
|                    | 60             | For low viscosity liquid  | 0.75        | LPSE401A-0.75-e | 200/220           | 4.0               | 27/29                | 4.0                    | 100-350                       | 12.8-6.3       |
|                    |                |                           | 1.5         | LPSE402A-1.5-e  | 200/220           | 7.5               | 61/68                | 7.8                    | 100-400                       | 26.0-9.7       |
|                    |                |                           | 2.2         | LPSE403A-2.2-e  | 200/220           | 10.0              | 79/87                | 10.0                   |                               | 39.4-16.2      |
|                    |                |                           | 3           | LPSE404A-3.0-e  | 200/220           | 14.0              | 129/144              | 16.0                   |                               | 54.1-24.2      |
|                    |                | For high-viscosity liquid | 1.5         | LPSE401B-1.5-e  | 200/220           | 6.0               | 61/68                | 7.8                    | 50-250                        | 12.5-4.5       |
|                    |                |                           | 2.2         | LPSE402B-2.2-e  | 200/220           | 8.4               | 79/87                | 10.0                   |                               | 23.9-8.2       |

Note 1) The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for protection device.

Note 2) The allowable ampacities (current value listed on the pump nameplate) in the table above are the maximum current that a motor can safely carry without overheating. When changing the thermal relay setting value based on the compatibility of the protective device employed (quick acting type, for example) or the operational environment (ambient temperature, power supply devices etc.), keep the current value below the allowable ampacity.

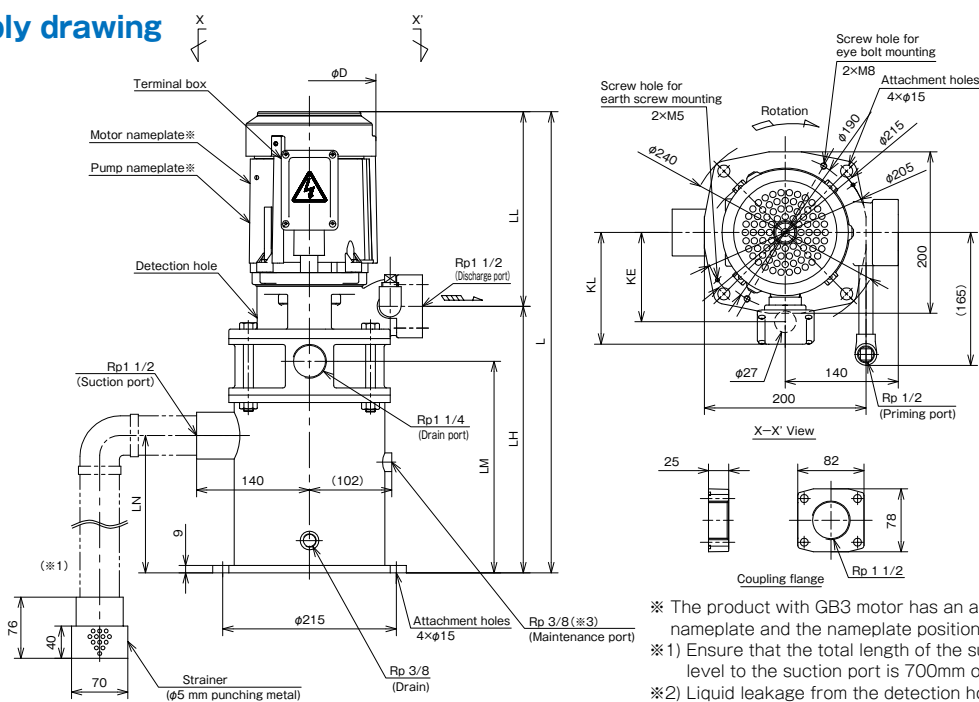
#### ●LPSE-e (50Hz 380V)

| Bore diameter (mm) | Frequency (Hz) | Used liquid               | Output (kW) | Type            | Rated voltage (V) | Rated current (A) | Starting current (A) | Allowable ampacity (A) | Standard specification        |                |
|--------------------|----------------|---------------------------|-------------|-----------------|-------------------|-------------------|----------------------|------------------------|-------------------------------|----------------|
|                    |                |                           |             |                 |                   |                   |                      |                        | Applied flow rate range L/min | Total head (m) |
| 40                 | 50             | For low viscosity liquid  | 0.75        | LPSE401A-0.75-e | 380               | 2.0               | 13                   | 2.2                    | 80-300                        | 9.5-4.9        |
|                    |                |                           | 1.5         | LPSE402A-1.5-e  | 380               | 3.1               | 33                   | 4.5                    |                               | 18.3-9.4       |
|                    |                |                           | 2.2         | LPSE403A-2.2-e  | 380               | 5.0               | 43                   | 5.0                    | 80-350                        | 28.0-11.5      |
|                    |                |                           | 3           | LPSE404A-3.0-e  | 380               | 6.0               | 73                   | 8.0                    |                               | 38.7-15.5      |
|                    |                | For high-viscosity liquid | 0.75        | LPSE401B-0.75-e | 380               | 2.0               | 13                   | 2.2                    | 50-200                        | 8.4-3.5        |
|                    |                |                           | 1.5         | LPSE402B-1.5-e  | 380               | 3.1               | 33                   | 4.5                    |                               | 16.1-6.3       |
|                    |                |                           | 2.2         | LPSE403B-2.2-e  | 380               | 5.0               | 43                   | 5.0                    |                               | 25.5-10.1      |
|                    |                |                           | 3           | LPSE404B-3.0-e  | 380               | 6.2               | 73                   | 8.0                    |                               | 34.0-13.5      |

Note 1) The pump's rated current (current value listed on the pump nameplate) is the recommended current setting for protection device.

Note 2) The allowable ampacities (current value listed on the pump nameplate) in the table above are the maximum current that a motor can safely carry without overheating. When changing the thermal relay setting value based on the compatibility of the protective device employed (quick acting type, for example) or the operational environment (ambient temperature, power supply devices etc.), keep the current value below the allowable ampacity.

## ■ Assembly drawing



- ※ The product with GB3 motor has an additional certification nameplate and the nameplate position is different.  
 ※1) Ensure that the total length of the suction pipe from the liquid level to the suction port is 700mm or less.  
 ※2) Liquid leakage from the detection hole is abnormal. Please check around the drain.  
 ※3) If the siphon preventive hole inside the pump is clogged, it may cause disabling suction. Inspect the pump from the cleaning port.

## ■ Dimensions

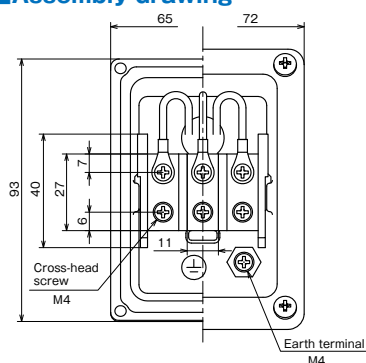
(Unit : mm)

| Bore diameter (mm) | Frequency (Hz) | Used liquid               | Type            | φD  | KL  | KE  | L   | LH  | LL  | LM  | LN  | Approx. mass (kg) |
|--------------------|----------------|---------------------------|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-------------------|
| 40                 | 50             | For low viscosity liquid  | LPSE401A-0.75-e | 170 | 139 | 111 | 571 | 330 | 241 | 262 | 170 | 39                |
|                    |                |                           | LPSE402A-1.5-e  | 195 | 145 | 117 | 604 | 330 | 274 | 262 | 170 | 46                |
|                    |                |                           | LPSE403A-2.2-e  | 195 | 145 | 117 | 614 | 330 | 284 | 262 | 170 | 56                |
|                    |                |                           | LPSE404A-3.0-e  | 195 | 145 | 117 | 689 | 375 | 314 | 307 | 215 | 61                |
|                    |                | For high-viscosity liquid | LPSE401B-0.75-e | 170 | 139 | 111 | 571 | 330 | 241 | 262 | 170 | 39                |
|                    |                |                           | LPSE402B-1.5-e  | 195 | 145 | 117 | 604 | 330 | 274 | 262 | 170 | 46                |
|                    |                |                           | LPSE403B-2.2-e  | 195 | 145 | 117 | 614 | 330 | 284 | 262 | 170 | 56                |
|                    |                |                           | LPSE404B-3.0-e  | 195 | 145 | 117 | 689 | 375 | 314 | 307 | 215 | 61                |
|                    | 60             | For low viscosity liquid  | LPSE401A-0.75-e | 170 | 139 | 111 | 571 | 330 | 241 | 262 | 170 | 39                |
|                    |                |                           | LPSE402A-1.5-e  | 195 | 145 | 117 | 604 | 330 | 274 | 262 | 170 | 46                |
|                    |                |                           | LPSE403A-2.2-e  | 195 | 145 | 117 | 614 | 330 | 284 | 262 | 170 | 56                |
|                    |                |                           | LPSE404A-3.0-e  | 195 | 145 | 117 | 689 | 375 | 314 | 307 | 215 | 61                |
|                    |                | For high-viscosity liquid | LPSE401B-1.5-e  | 195 | 145 | 117 | 604 | 330 | 274 | 262 | 170 | 45                |
|                    |                |                           | LPSE402B-2.2-e  | 195 | 145 | 117 | 614 | 330 | 284 | 262 | 170 | 55                |

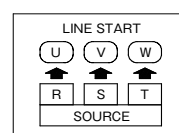
※ Above specification is also available for different voltage specification.

## ■ Detailed drawing of the terminal box

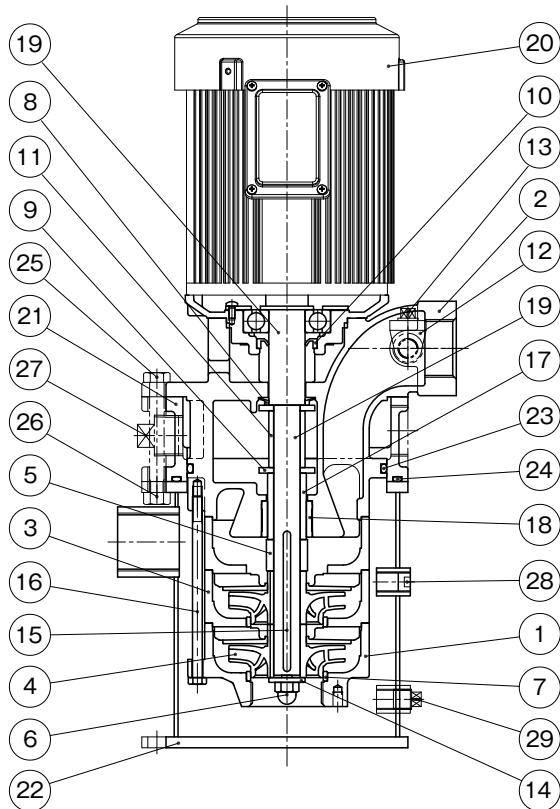
## ■ Assembly drawing



## ■ Connection diagram



### Sectional drawing



| 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   | STKM     |
| 6   | Impeller nut               | 1   | SUS304   |
| 7   | Liner ring                 | 2   | SUS304   |
| 8   | Deflector                  | 1   | NBR      |
| 9   | Deflector                  | 2   | SPHC     |
| 10  | Oil seal                   | 1   | NBR      |
| 11  | Collar                     | 1   | STKM     |
| 12  | Elbow                      | 1   | FCMB     |
| 13  | Plug                       | 1   | SWCH     |
| 14  | Washer                     | 1   | SUS304   |
| 15  | Key                        | 1   | SUS403   |
| 16  | Through bolt               | 4   | SS400    |
| 17  | Shaft sleeve               | 1   | SUS440C  |
| 18  | Discharge bushing          | 1   | SKD11    |
| 19  | Motor shaft                | 1   | S45C     |
| 20  | Motor                      | 1   | —        |
| 21  | Suction spacer             | 1   | FC200    |
| 22  | Suction pipe               | 1   | SS400    |
| 23  | O-ring                     | 1   | NBR      |
| 24  | O-ring                     | 1   | NBR      |
| 25  | Through bolt               | 4   | SS400    |
| 26  | Nut                        | 4   | SWCH     |
| 27  | Plug                       | 1   | FCMB     |
| 28  | Hexagonal socket sunk plug | 1   | SS400    |
| 29  | Plug                       | 1   | SWCH     |

Note 1) The materials in the table above are equivalents.  
 Note 2) Structure and other details are subject to change without notice.  
 Applicable models : LPSE402A(B)-1.5-e · LPSE402B-2.2-e

## Features

- ① Energy-saving pump with a Top Runner (equivalent to IE3) motor (LPS-e).
- ② The structure and materials are not easily affected by dirty coolants.
- ③ The impeller made of FCD material and non-seal (mechanical seal-less) structure is adopted for excellent durability.
- ④ The self-priming function and floor mount offer a wider choice of installation location, not limited to the top of the tank.
- ⑤ The lineup includes the models that meet the efficiency of the various regulations:  
LPS-e type : Equipped with a Top Runner (equivalent to IE3) motor.  
(NEMA Premium motor)



Please note that the paint color, etc. of the actual unit may partially differ from the photo.

## Description of types

**LPS 65 3 / 2 A - 5 7.5 T -e**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

- |                              |                                                              |
|------------------------------|--------------------------------------------------------------|
| ① Model                      | ⑥ Frequency 5:50Hz 6:60Hz                                    |
| ② Bore diameter              | ⑦ Output                                                     |
| ③ Number of casings          | ⑧ ID code                                                    |
| ④ Number of impellers        | ⑨ Motor efficiency Top Runner efficiency (equivalent to IE3) |
| ⑤ Viscosity of the liquid    |                                                              |
| A : for low viscosity liquid |                                                              |

## Standard Specification

|                           |                                         |                                                                                                                                                                                                                            |
|---------------------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bore diameter             |                                         | 65mm                                                                                                                                                                                                                       |
| Used liquid               | Property of liquid                      | Water-soluble coolant liquid                                                                                                                                                                                               |
|                           | Temperature                             | 0 to 60° C (No frozen liquid)                                                                                                                                                                                              |
|                           | Allowable kinematic viscosity           | 1mm <sup>2</sup> /s                                                                                                                                                                                                        |
| Installation location     |                                         | Indoor<br>Ambient temperature: 0 to 40 ° C, RH 85% or below (no condensation). Height above sea level : 1000m or less. Place not exposed to 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 source                            | 3-phase 50/60/60Hz 200/200/230V                                                                                                                                                                                            |
|                           | Type                                    | Totally enclosed fan-cooled outdoor type*3                                                                                                                                                                                 |
|                           | Protection method                       | IP55                                                                                                                                                                                                                       |
|                           | Thermal 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 The pump cannot be installed outdoors.

## Special specification

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

## Table of Consumable Parts

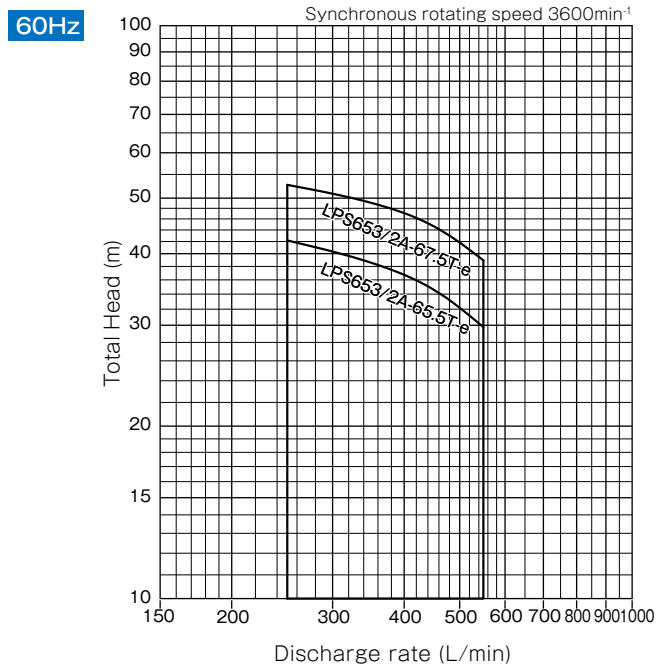
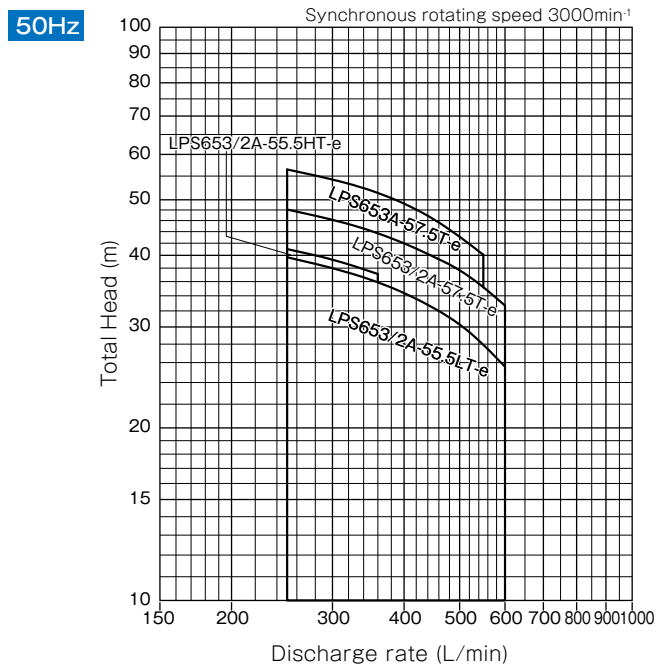
| Output (kW) | Bearing   |             | Oil seal  |             |
|-------------|-----------|-------------|-----------|-------------|
|             | Load side | Unload side | Load side | Unload side |
| 5.5         | 6309ZZC3  | 6306ZZC3    | VC45628   | VC30528     |
| 7.5         | 6309ZZC3  | 6306ZZC3    | VC45628   | VC30528     |

| Bore diameter (mm) | O-ring (For interior surface of suction spacer) | O-ring (For bottom surface of suction spacer) | O-ring (For coolant sealing plate) |
|--------------------|-------------------------------------------------|-----------------------------------------------|------------------------------------|
| 65                 | G270                                            | G280                                          | S56                                |

### Selection chart

#### ●LPS65

●For low viscosity liquid (Values at kinematic viscosity 1mm<sup>2</sup>/s, specific gravity 1)



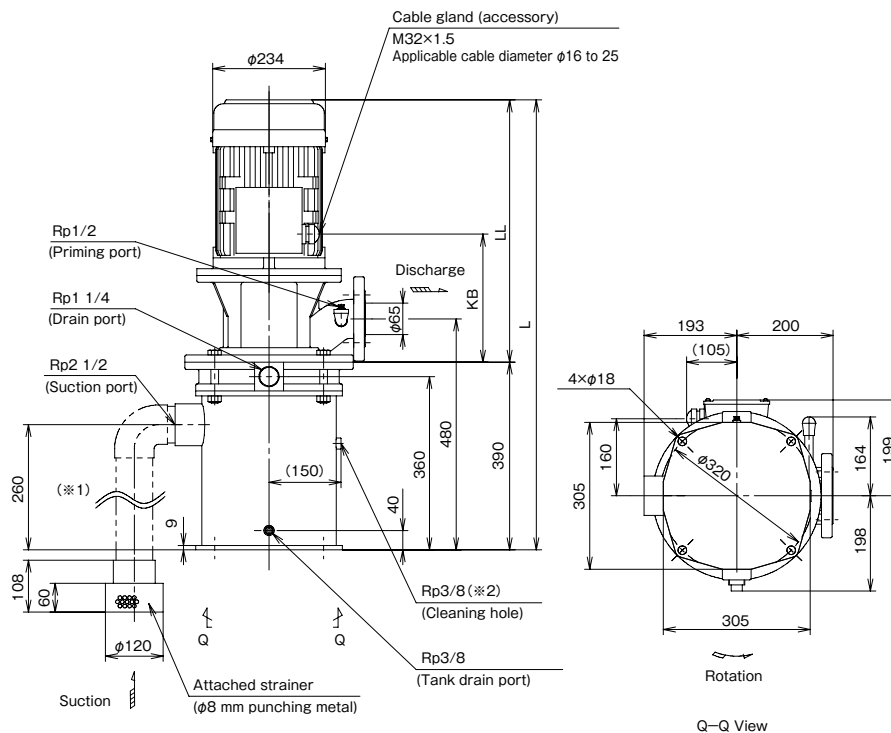
### Specification table

#### ●LPS65

| Bore diameter (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                  | 250-600                | 39.7-25.6      |
|                    |                | LPS653/2A-55.5HT-e | 5.5         |                   | 20.3              | 204                  | 250-360                | 41.0-37.1      |
|                    |                | LPS653/2A-57.5T-e  | 7.5         |                   | 27.2              | 288                  | 250-600                | 48.1-32.7      |
|                    |                | LPS653A-57.5T-e    | 7.5         |                   | 27.2              | 288                  | 250-550                | 56.5-40.1      |
|                    | 60             | LPS653/2A-65.5T-e  | 5.5         | 200/230           | 19.8/17.8         | 178/206              | 250-550                | 42.2-29.8      |
|                    |                | LPS653/2A-67.5T-e  | 7.5         |                   | 26.5/23.7         | 254/295              | 250-550                | 52.8-39.0      |

## ■ Assembly drawing

## ●LPS65



- ※1) The length of suction pipe from the liquid surface to the suction port should be shorter than 700 mm.  
 ※2) If the siphon prevention hole is clogged, suction might be disabled. Inspect the interior via cleaning hole.  
 A companion flange JIS 10K standard type is attached.

## ■ Dimensions

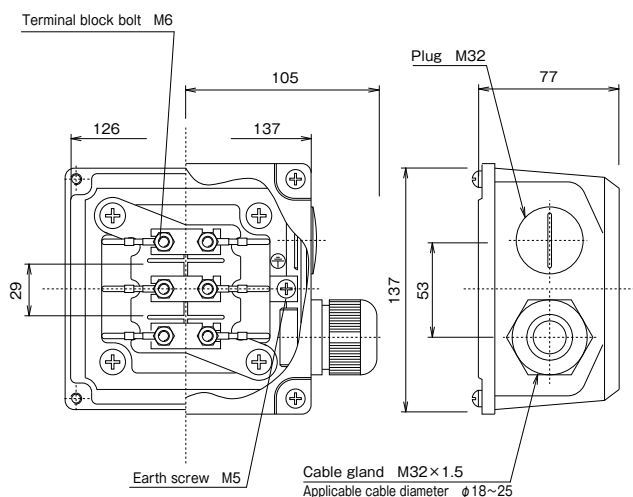
## ●LPS65

(Unit : mm)

| Bore diameter (mm) | Frequency (Hz) | Type               | L   | LL  | KB  | Approx. mass(kg) |
|--------------------|----------------|--------------------|-----|-----|-----|------------------|
| 65                 | 50             | LPS653/2A-55.5LT-e | 935 | 545 | 266 | 135              |
|                    |                | LPS653/2A-55.5HT-e |     |     |     | 135              |
|                    |                | LPS653/2A-57.5T-e  | 975 | 585 | 267 | 141              |
|                    |                | LPS653A-57.5T-e    |     |     |     | 143              |
|                    | 60             | LPS653/2A-65.5T-e  | 935 | 545 | 266 | 135              |
|                    |                | LPS653/2A-67.5T-e  | 940 | 585 | 267 | 141              |

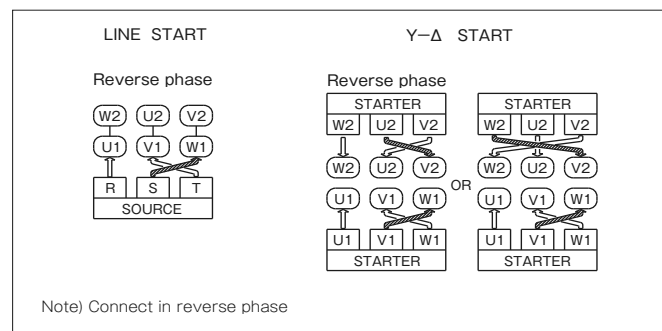
## ■ Detailed drawing of the terminal box

## ●LPS65-e



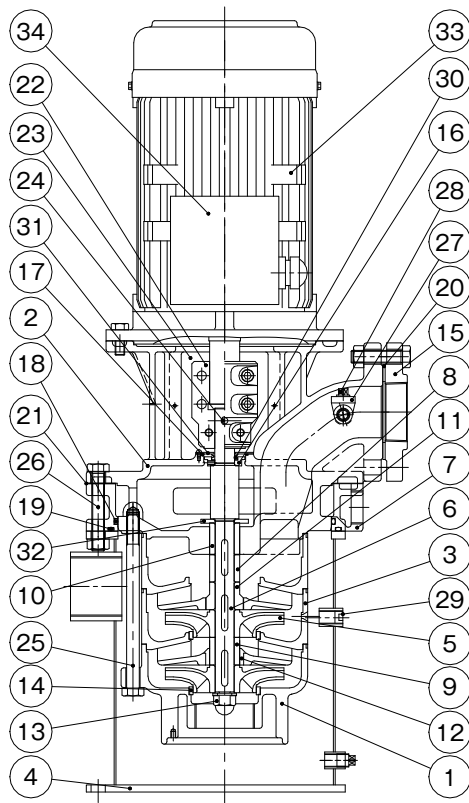
## ●LPS65-e

## ■ Connection diagram



## Sectional drawing

### ●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   | Main shaft                 | 1   | S45C        |
| 7   | Suction spacer             | 1   | FC200       |
| 8   | Shaft sleeve A             | 1   | SUS304      |
| 9   | Shaft sleeve B             | 1   | SiC         |
| 10  | Shaft sleeve C             | 1   | SUS304      |
| 11  | Shaft sleeve D             | 1   | SUS304      |
| 12  | Intermediate bushing       | 1   | SiC         |
| 13  | Impeller nut               | 1   | SUS304      |
| 14  | Liner ring                 | 2   | SUS304      |
| 15  | Companion flange           | 1   | FC200       |
| 16  | Deflector                  | 1   | C3604B      |
| 17  | O-ring                     | 1   | NBR         |
| 18  | O-ring                     | 1   | NBR         |
| 19  | O-ring                     | 1   | NBR         |
| 20  | Sheet packing              | 1   | NBR         |
| 21  | Sheet packing              | 1   | JOINT SHEET |
| 22  | Coupling                   | 1   | FC200       |
| 23  | Coupling cover             | 2   | SUS304      |
| 24  | Hexagon socket set screw   | 1   | SCM435      |
| 25  | Through bolt               | 4   | SS400       |
| 26  | Through bolt               | 4   | SS400       |
| 27  | Elbow                      | 1   | FCMB        |
| 28  | Plug                       | 1   | SS400       |
| 29  | Hexagonal socket sunk plug | 1   | SS400       |
| 30  | V-ring                     | 1   | FKM         |
| 31  | Coolant sealing plate      | 1   | SUS304      |
| 32  | Deflector                  | 1   | SUS304      |
| 33  | Motor                      | 1   |             |
| 34  | Terminal box               | 1   | ADC12       |

Note 1) The materials in the table above are equivalents.

Note 2) Structure and other details are subject to change without notice.

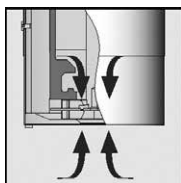
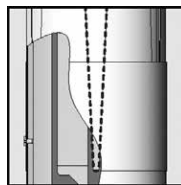
Applicable models: 50Hz LPS653/2A-55.5LT-e, LPS653/2A-55.5HT-e,

LPS653/2A-57.5T-e

60Hz LPS653/2A-65.5T-e, LPS653/2A-67.5T-e

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



Please note that the paint color, etc. of the actual unit may partially differ from the photo.

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

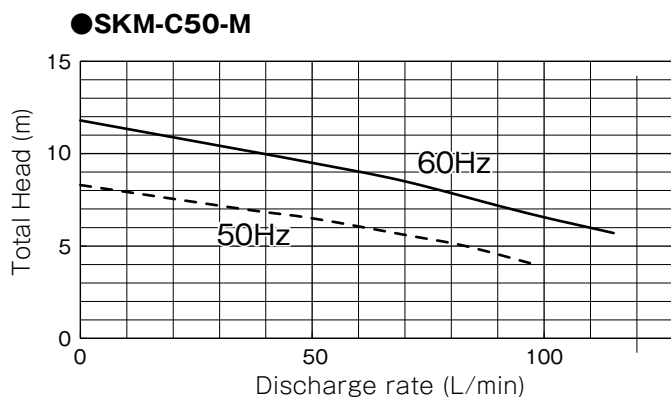
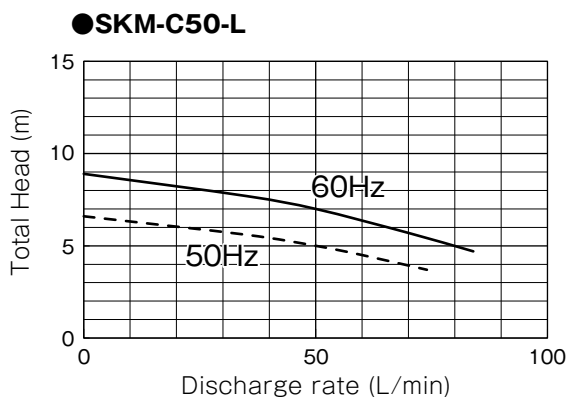
② Discharge rate (L/min)

③ Head category L: low head

H: high head

## Selection chart

(Values at kinematic viscosity 1mm<sup>2</sup>/s, specific gravity 1)



Note 1) The performance of the pump represents the performance when used with the recommended liquid level.

Note 2) The performance of the pump may change depending on the liquid 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.

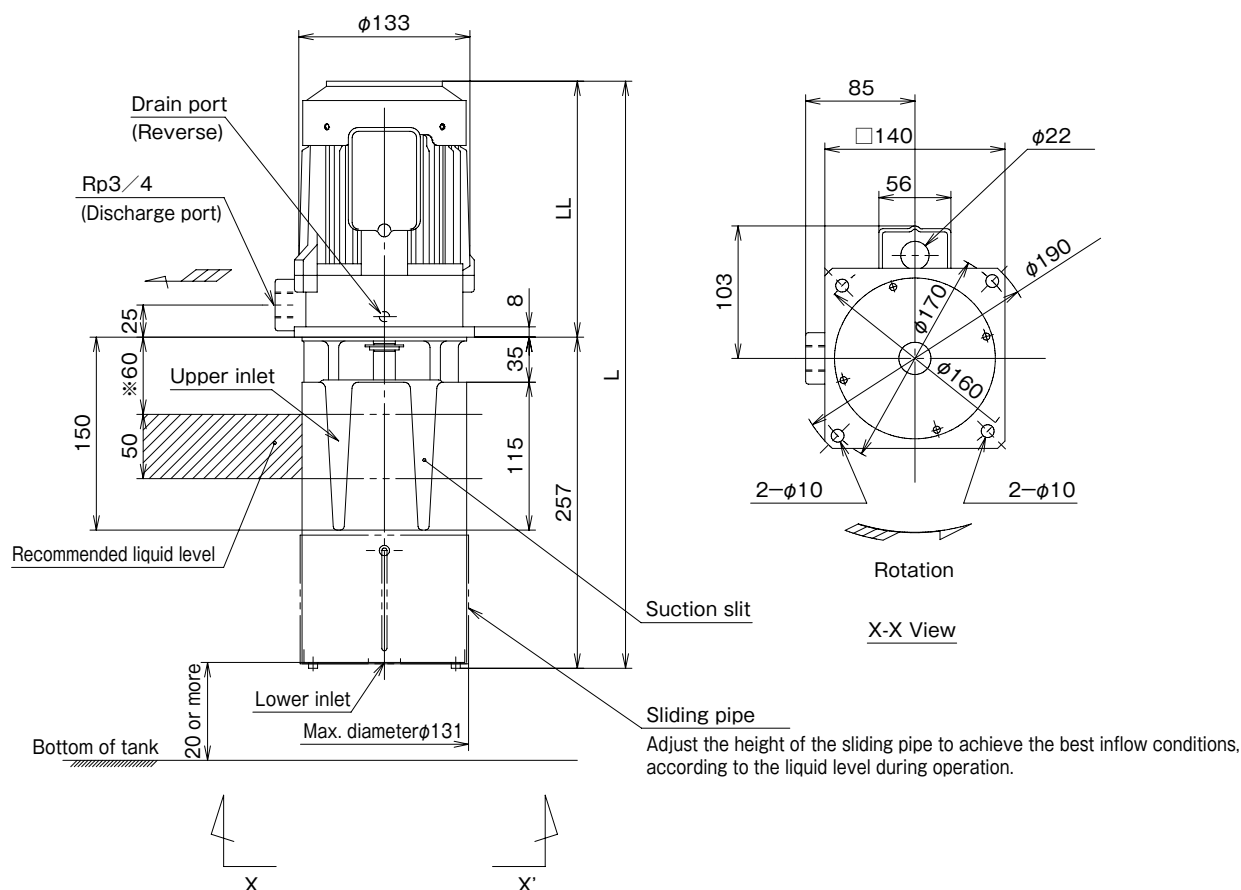
Note 5) The pump should be used at a level higher than the lowest liquid level.

Note 6) Suction is only carried out from the lower inlet if the liquid level is lower than the suction slit.

## ■ Specification table

| Type        |                               | SKM-C50-L    |                                                                           | SKM-C50-M             |                                         |                       |  |
|-------------|-------------------------------|--------------|---------------------------------------------------------------------------|-----------------------|-----------------------------------------|-----------------------|--|
| Pump        | Bore diameter                 |              | 20mm                                                                      |                       |                                         |                       |  |
|             | Discharge rate                |              | 50L /min                                                                  | 50L /min              | 50L /min                                | 50L /min              |  |
|             | Total head                    |              | 5m                                                                        | 7m                    | 6.5m                                    | 9.5m                  |  |
|             | Allowable kinematic viscosity |              | 1mm²/s                                                                    |                       |                                         |                       |  |
|             | Liquid filtration accuracy    |              | Medium filtration accuracy (Max. chip size allowed within the pump: 4 mm) |                       |                                         |                       |  |
|             | Materials                     |              | Bracket FC Impeller SUS304 S35C                                           |                       |                                         |                       |  |
| Motor       | Phases                        |              | 3-phase                                                                   |                       |                                         |                       |  |
|             | Number of poles               |              | 2P                                                                        |                       |                                         |                       |  |
|             | Output                        |              | 0.18kW                                                                    |                       | 0.25kW                                  |                       |  |
|             | Voltage                       |              | 200V                                                                      | 200/220V              | 200V                                    | 200/220V              |  |
|             | Rated current                 |              | 1.0A                                                                      | 1.1/1.0A              | 1.6A                                    | 1.7/1.6A              |  |
|             | Frequency                     |              | 50Hz                                                                      | 60Hz                  | 50Hz                                    | 60Hz                  |  |
|             | Synchronous rotating speed    |              | 3000min <sup>-1</sup>                                                     | 3600min <sup>-1</sup> | 3000min <sup>-1</sup>                   | 3600min <sup>-1</sup> |  |
|             | Thermal class                 |              | B                                                                         |                       |                                         |                       |  |
|             | Ambient temperature           |              | 0~40℃                                                                     |                       |                                         |                       |  |
|             | Rating                        |              | Continuous                                                                |                       |                                         |                       |  |
|             | Protection method             |              | Totally enclosed self-cooling indoor type                                 |                       | Totally enclosed fan-cooled indoor type |                       |  |
|             | Bearing                       | Load side    |                                                                           | 6203ZZ                |                                         |                       |  |
|             |                               | Unload side  |                                                                           | 6201ZZAC              |                                         |                       |  |
| Paint color |                               | Munsell N5.5 |                                                                           |                       |                                         |                       |  |

## ■ Assembly drawing



## ■ Dimensions

(Unit : mm)

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

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

[illegible]





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