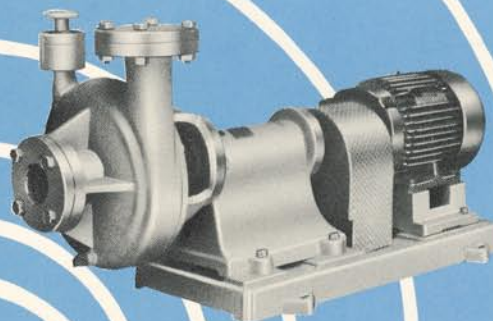
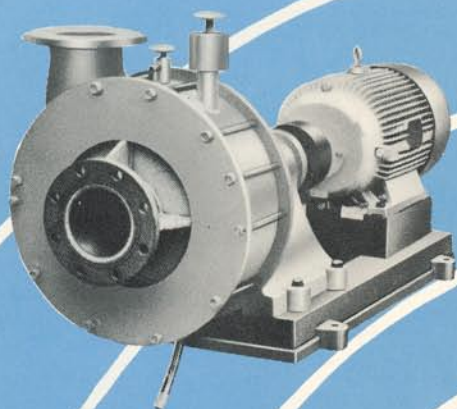




# KYOWA

## Anti-corrosion Volute Pumps

**Horizontal Types**  
**Vertical Types**



Kyowa Kako Company was established in 1952 as a pioneer manufacturer of anti-corrosion pumps composed of an abundance of rigid PVC components. Since then, we have made our development efforts based upon our experience, and in order to extend our pump line to satisfy customers' requirements. These efforts have included variations in configurations, sizes and applications.

This catalog is designed to introduce a range of

Kyowa Kako anti-corrosion volute pumps available, and provide selection guidance to the user. The excellence of PVC use in corrosion resistant materials has been satisfactorily proven by years of field testing and extensive use. The products in the catalog are the fruit of our continual research and development of anti-shock, heat-resistant, anti-corrosion plastics; as well as fibrous glass reinforced plastics (FRP) and anti-corrosive metals.

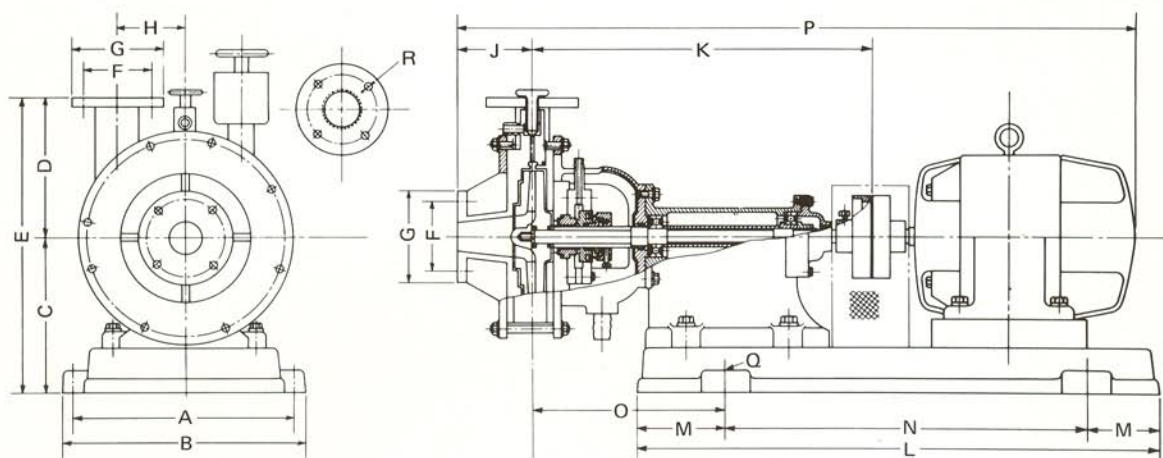
## KYOWA KAKO CO., LTD.



# KYOWA Type SVL VOLUTE PUMPS— Horizontal Type

## STANDARD OUTSIDE DIMENSIONS

Major Material : PVC



Unit; mm

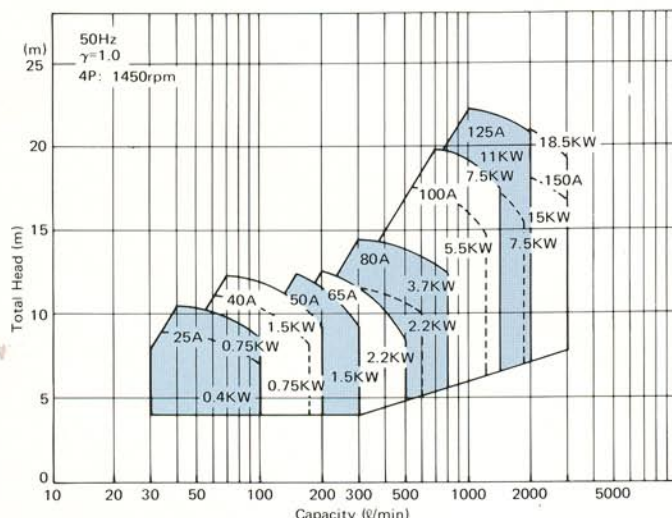
| Nominal Size | Symbols for Dimensions | C   | D   | E   | H   | J   | K   | P    | O   | Flange |     |         | Bed (Common Base) |     |     |     |     |         | Net Weight (kg) |
|--------------|------------------------|-----|-----|-----|-----|-----|-----|------|-----|--------|-----|---------|-------------------|-----|-----|-----|-----|---------|-----------------|
|              |                        |     |     |     |     |     |     |      |     | G      | F   | R       | A                 | B   | L   | M   | N   | Q       |                 |
| 25           |                        | 190 | 160 | 350 | 80  | 84  | 452 | 803  | 245 | 125    | 90  | 4 - 19φ | 310               | 345 | 620 | 100 | 420 | 4 - 15φ | 45              |
| 40           |                        | 210 | 190 | 400 | 95  | 87  | 463 | 870  | 247 | 140    | 105 | 4 - 19φ | 310               | 345 | 620 | 100 | 420 | 4 - 15φ | 54              |
| 50           |                        | 210 | 200 | 410 | 95  | 98  | 467 | 885  | 252 | 155    | 120 | 4 - 19φ | 310               | 345 | 620 | 100 | 420 | 4 - 15φ | 55              |
| 65           |                        | 265 | 220 | 485 | 100 | 102 | 552 | 1004 | 295 | 175    | 140 | 4 - 19φ | 360               | 400 | 760 | 120 | 520 | 4 - 19φ | 82              |
| 80           |                        | 265 | 230 | 495 | 110 | 109 | 554 | 1220 | 298 | 185    | 150 | 8 - 19φ | 360               | 400 | 760 | 120 | 520 | 4 - 19φ | 88              |
| 100          |                        | 305 | 290 | 595 | 135 | 160 | 614 | 1220 | 358 | 210    | 175 | 8 - 19φ | 425               | 470 | 950 | 150 | 650 | 4 - 19φ | 160             |
| 125          |                        | 350 | 320 | 670 | 150 | 190 | 616 | 1291 | 354 | 250    | 210 | 8 - 23φ | 460               | 510 | 990 | 150 | 690 | 4 - 19φ | 180             |
| 150          |                        | 350 | 380 | 730 | 155 | 190 | 629 | 1452 | 385 | 280    | 240 | 8 - 23φ | 460               | 510 | 990 | 150 | 690 | 4 - 19φ | 245             |

Notes: 1) These dimensions are commonly applicable to each.  
2) The dimension 'P' depends upon the size of motor.

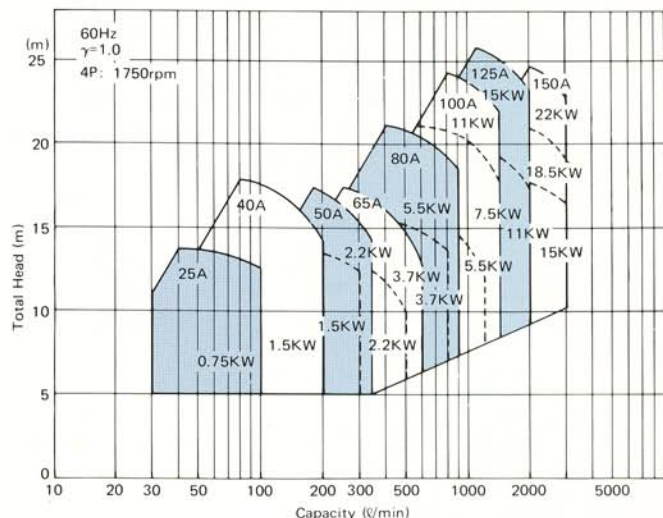
3) Net Weight does not include the weight of motor.  
4) The direction of rotation; Counterclockwise

## STANDARD SELECTION CHARTS for the type SVL

### 50Hz Selection Chart



### 60Hz Selection Chart





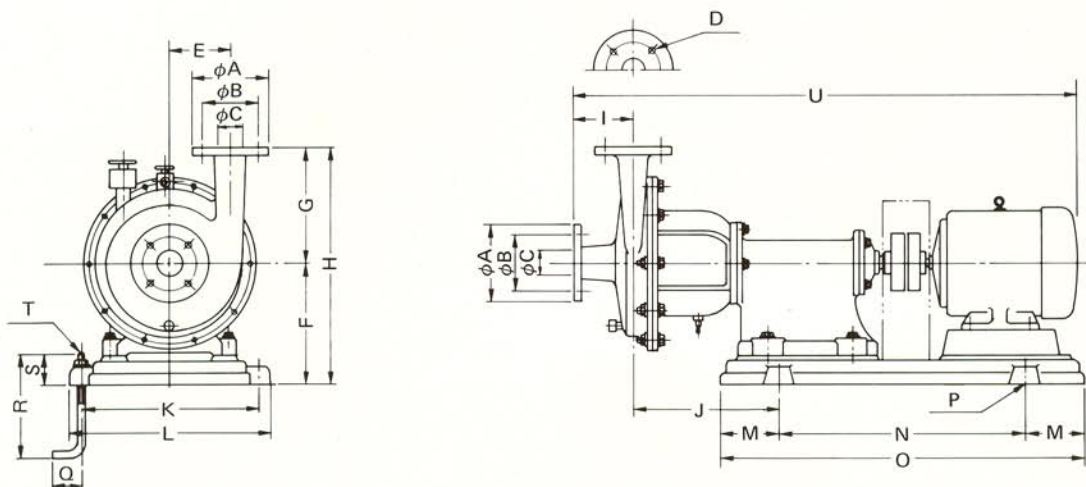
# KYOWA Type FH VOLUTE PUMP — Horizontal Type

## DESIGN FEATURES

- 1) Composed of corrosion-resistant plastic components including those made of vinyl ester.
- 2) Meets a wide range of demands in the temperature of fluid to be handled, total head, etc.
- 3) To reinforce the properties of plastics in shocks and temperature resistance, mechanical strength is significantly improved by the selective use of glass fiber.

## STANDARD OUTSIDE DIMENSIONS

Major Material: FRP



Unit; mm

| Nominal Size | Flange |     |     |               | Main Unit |     |     |     |     |     | Bed (Common Base) |     |     |     |     |               | Anchor Bolts |     |    |     |      | Net Weight (kg) |
|--------------|--------|-----|-----|---------------|-----------|-----|-----|-----|-----|-----|-------------------|-----|-----|-----|-----|---------------|--------------|-----|----|-----|------|-----------------|
|              | A      | B   | C   | D             | E         | F   | G   | H   | I   | J   | K                 | L   | M   | N   | O   | P             | Q            | R   | S  | T   | U    |                 |
| 25           | 125    | 90  | 25  | 4 - $\phi$ 19 | 110       | 210 | 180 | 390 | 80  | 247 | 310               | 345 | 100 | 420 | 620 | 4 - $\phi$ 15 | 50           | 160 | 40 | M12 | 803  |                 |
| 40           | 140    | 105 | 40  | 4 - $\phi$ 19 | 120       | 210 | 210 | 420 | 87  | 258 | 310               | 345 | 100 | 420 | 620 | 4 - $\phi$ 15 | 50           | 160 | 40 | M12 | 870  |                 |
| 50           | 155    | 120 | 50  | 4 - $\phi$ 19 | 125       | 210 | 220 | 430 | 90  | 258 | 310               | 345 | 100 | 420 | 620 | 4 - $\phi$ 15 | 50           | 160 | 40 | M12 | 885  |                 |
| 65           | 175    | 140 | 65  | 4 - $\phi$ 19 | 145       | 265 | 240 | 505 | 100 | 300 | 360               | 400 | 120 | 520 | 760 | 4 - $\phi$ 19 | 65           | 200 | 50 | M16 | 1004 |                 |
| 80           | 185    | 150 | 80  | 8 - $\phi$ 19 | 155       | 265 | 270 | 535 | 110 | 295 | 360               | 400 | 120 | 520 | 760 | 4 - $\phi$ 19 | 65           | 200 | 50 | M16 | 1220 |                 |
| 100          | 210    | 175 | 100 | 8 - $\phi$ 19 | 155       | 305 | 280 | 585 | 150 | 355 | 425               | 470 | 150 | 650 | 950 | 4 - $\phi$ 19 | 65           | 200 | 50 | M16 | 1220 |                 |
| 125          | 250    | 210 | 125 | 8 - $\phi$ 23 | 165       | 350 | 300 | 650 | 150 | 357 | 460               | 510 | 150 | 690 | 990 | 4 - $\phi$ 19 | 65           | 200 | 50 | M16 | 1291 |                 |
| 150          | 280    | 240 | 150 | 8 - $\phi$ 23 | 220       | 350 | 400 | 750 | 160 | 392 | 460               | 510 | 150 | 690 | 990 | 4 - $\phi$ 19 | 65           | 200 | 50 | M16 | 1452 |                 |

Notes: 1) Flanges; 10kg/cm<sup>2</sup> (JIS)

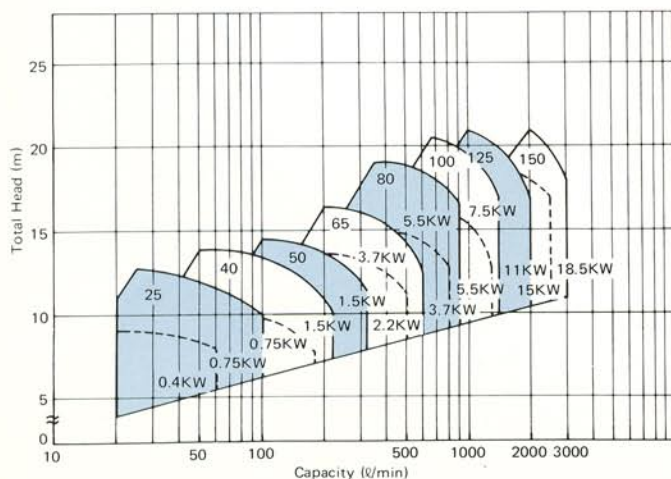
2) The dimension 'U' depends upon the size of motor.

3) The direction of rotation; Clockwise.

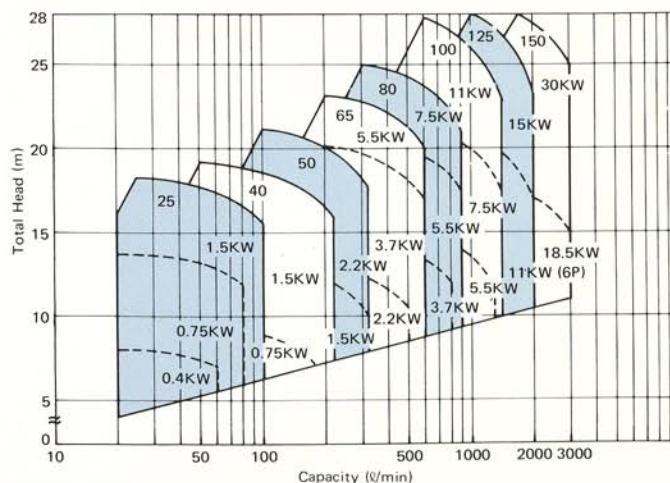
4)

## STANDARD SELECTION CHARTS for the type FH

### 50Hz Selection chart



### 60Hz Selection chart





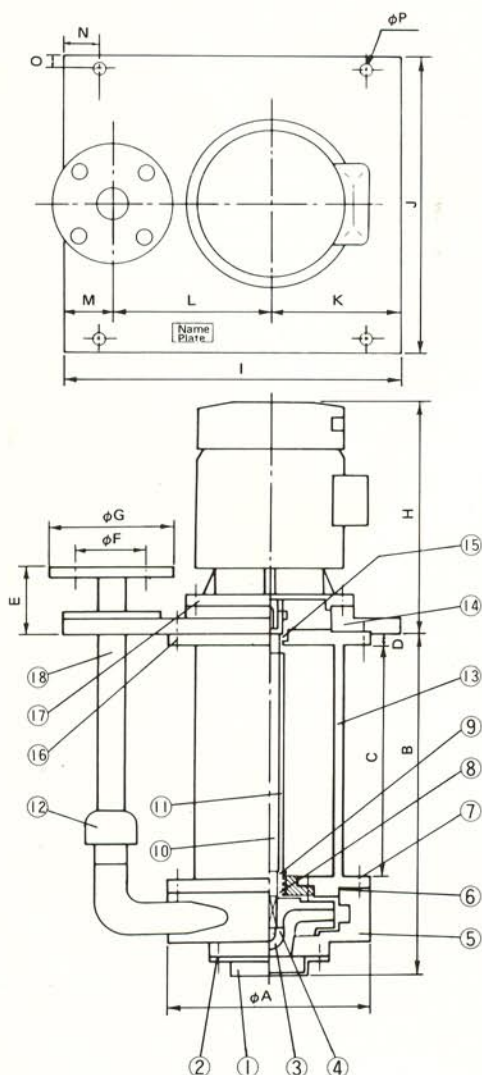
# KYOWA VO SERIES VOLUTE PUMPS-

The Kyowa's V.O. series of (Vertical) volute pumps are the corrosion-resisting pumps developed for a wide use in accordance with the high technique and much experiences obtained from the conventional vertical volute pumps.

## FEATURES

- Few failure and abrasion without sliding portion.
- Less erection space.
- Light weight and compact design.
- Easy maintenance and inspection.
- Suitable to remote control and automatic operation.
- Low price.
- High efficiency.
- Much corrosion-resistance of casing and impeller made of vinyl chloride. [Type VO, VO2]
- Possible to attach each maker's motor for explosion-proof, outdoor, etc. [Type VO, VO2]
- Excellent corrosion-resistance of liquid contact portion made of vinyl chloride and F.P.M. [Type VO3]
- Less consumption power (energy saving motor for outdoor use). [Type VO3]
- Low noise (low noise motor). [Type VO3]

## STANDARD OUTSIDE DIMENSIONS and SECTIONAL DRAWING of the type VO and VO2



| Dimension<br>Nominal size | A   | B   | C   | D  | E   | F   | G   | H   | I   |
|---------------------------|-----|-----|-----|----|-----|-----|-----|-----|-----|
| 25VO2                     | 280 | 451 | 300 | 13 | 120 | 90  | 125 | 290 | 420 |
| 40VO2                     | 280 | 451 | 300 | 13 | 120 | 105 | 140 | 325 | 470 |
| 50VO2                     | 280 | 451 | 300 | 13 | 120 | 120 | 155 | 325 | 470 |
| 65VO                      | 300 | 535 | 350 | 20 | 125 | 140 | 175 | 375 | 495 |
| 80VO                      | 320 | 535 | 350 | 20 | 125 | 150 | 185 | 403 | 495 |
| 100VO                     | 390 | 607 | 384 | 22 | 130 | 175 | 210 | 444 | 670 |
| 125VO                     | 440 | 620 | 380 | 22 | 150 | 210 | 250 | 483 | 670 |

| Dimension<br>Nominal size | J   | K   | L   | M   | N   | O  | P  | Weight<br>(including motor) |
|---------------------------|-----|-----|-----|-----|-----|----|----|-----------------------------|
| 25VO2                     | 370 | 150 | 190 | 80  | 50  | 18 | 12 | about 35kg                  |
| 40VO2                     | 370 | 190 | 215 | 65  | 50  | 18 | 12 | 45                          |
| 50VO2                     | 370 | 190 | 215 | 65  | 50  | 18 | 12 | 50                          |
| 65VO                      | 436 | 190 | 230 | 75  | 50  | 18 | 14 | 60                          |
| 80VO                      | 436 | 190 | 230 | 75  | 50  | 18 | 14 | 75                          |
| 100VO                     | 580 | 230 | 320 | 120 | 100 | 30 | 15 | 140                         |
| 125VO                     | 580 | 230 | 320 | 120 | 100 | 30 | 15 | 170                         |

- Note:**
1. Max. length of suction pipe, 1,000mm.
  2. Flange, JIS, 10kg/cm<sup>2</sup>.
  3. Direction of rotation, clockwise.
  4. The dimension H and weight may be different slightly from maker's standard for motor.

## Names and materials

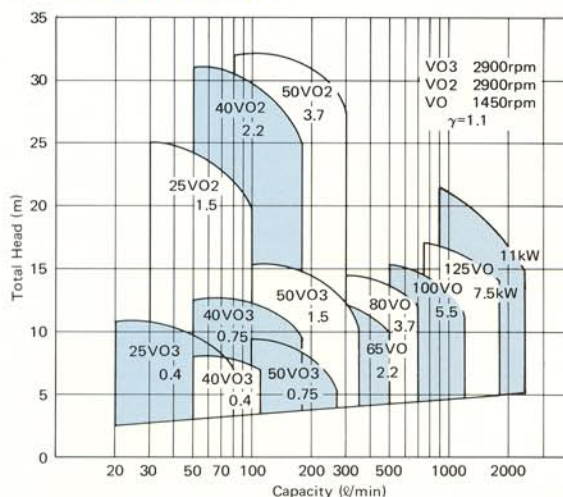
| No. | Name                    | Material | Q'ty | No. | Name                     | Material | Q'ty |
|-----|-------------------------|----------|------|-----|--------------------------|----------|------|
| 1   | Strainer                | PE(PVC)  | 1    | 11  | Shaft sleeve             | PVC      | 1    |
| 2   | Strainer mounting bolts | PVC      | 4    | 12  | TP joint                 | PVC      | 1    |
| 3   | Impeller nut            | PVC      | 1    | 13  | Stay pipe                | PVC      | 1    |
| 4   | Impeller-O ring         | FPM      | 2    | 14  | Bed                      | PVC      | 1    |
| 5   | Casing                  | PVC      | 1    | 15  | Oil seal                 | NBR      | 1    |
| 6   | Casing O ring           | EPDM     | 1    | 16  | Stay pipe mounting bolts | SUS304   | 4    |
| 7   | Casing mounting bolts   | PVC      | 8    | 17  | Motor mounting bolt      | SUS304   | 4    |
| 8   | Sheet ring              | HT-PVC   | 1    | 18  | Discharge pipe           | PVC      | 1    |
| 9   | Seal O ring             | FPM      | 1    |     |                          |          |      |
| 10  | Shaft                   | SUS304   | 1    |     |                          |          |      |



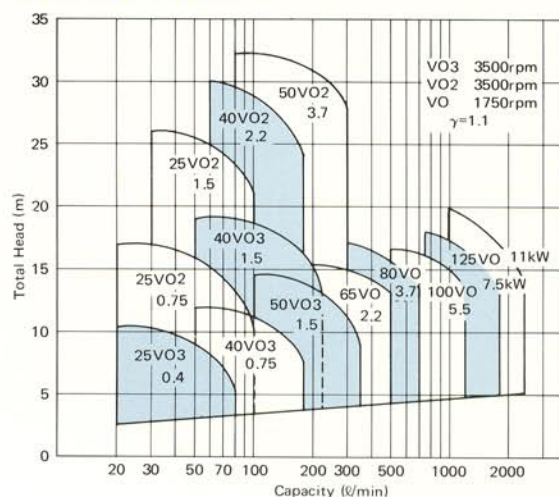
# -Vertical Type

## STANDARD SELECTION CHARTS for the types VO. VO2 and VO3

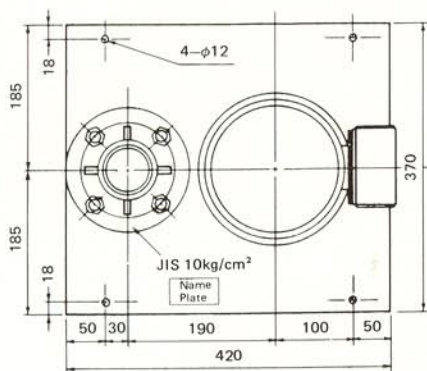
### 50Hz Selection Chart



### 60Hz Selection Chart

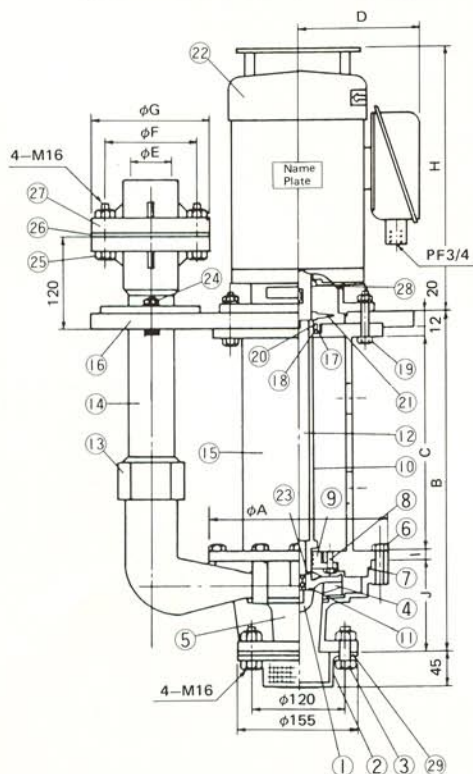


## STANDARD OUTSIDE DIMENSIONS and SECTIONAL DRAWING of the type VO3



| Dimension    |     |     |     |     |    |     |     |     |    |     | Weight (kg) |       |
|--------------|-----|-----|-----|-----|----|-----|-----|-----|----|-----|-------------|-------|
| Nominal size | A   | B   | C   | D   | E  | F   | G   | H   | I  | J   | Pump        | Motor |
| 25VO3        | 186 | 429 | 281 | 145 | 32 | 90  | 125 | 280 | 22 | 102 | about 10.5  | 14.5  |
| 40VO3        | 206 | 431 | 277 | 155 | 48 | 105 | 140 | 291 | 13 | 109 | 11.0        | 20.0  |
| 50VO3        | 232 | 435 | 274 | 165 | 60 | 120 | 155 | 335 | 13 | 116 | 11.5        | 28.0  |

- Note:** 1. Flange: JIS 10kg/cm<sup>2</sup>.  
 2. Direction of rotation, clockwise.  
 3. Motor weight shows for 0.4kW, 0.75kW and 1.5kW (Casting).  
 4. Motor color: Munsell No. N7.



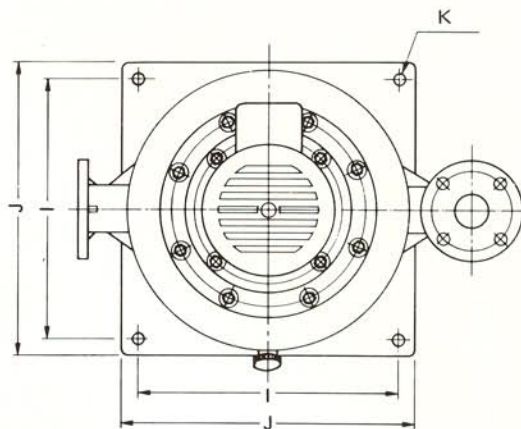
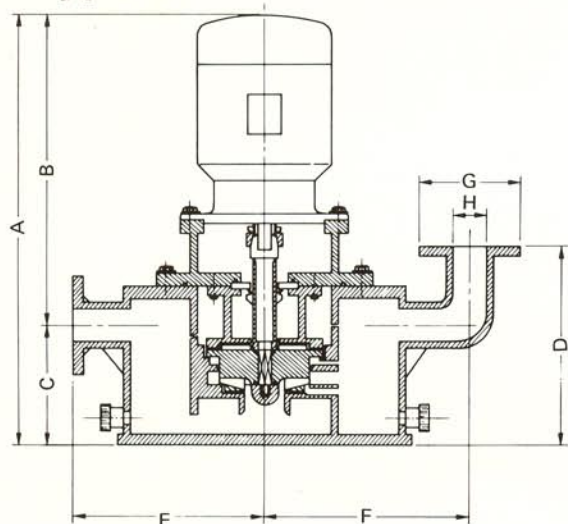
### Names and materials

| No. | Name                    | Material                            | Q'ty | No. | Name                          | Material | Q'ty |
|-----|-------------------------|-------------------------------------|------|-----|-------------------------------|----------|------|
| 1   | Impeller nut            | Vinyl chloride of impact-resistance | 1    | 16  | Bed                           | PVC      | 1    |
| 2   | Strainer                | PE                                  | 1    | 17  | Oil seal                      | NBR      | 1    |
| 3   | Strainer mounting bolts | PVC                                 | 4    | 18  | Shutter ring O ring           | FPM      | 1    |
| 4   | Impeller                | Vinyl chloride of impact-resistance | 1    | 19  | Stay pipe mounting bolts      | SUS304   | 4    |
| 5   | Casing                  | Vinyl chloride of impact-resistance | 1    | 20  | Shutter ring                  | SUS316   | 1    |
| 6   | Casing mounting bolts   | PVC                                 | 8    | 21  | Fin                           | CR       | 1    |
| 7   | Casing O ring           | EPT                                 | 1    | 22  | Motor                         | FUJI     | 1    |
| 8   | Sheet mounting bolts    | PVC                                 | 4    | 23  | Impeller O ring               | FPM      | 1    |
| 9   | Seat ring               | HT-PVC                              | 1    | 24  | Discharge pipe mounting bolts | SUS304   | 2    |
| 10  | Shaft ring              | PVC                                 | 1    | 25  | Bolts for mate flange         | PVC      | 4    |
| 11  | Impeller O ring (front) | FPM                                 | 1    | 26  | Packing for mate flange       | EPDM     | 1    |
| 12  | Shaft                   | SUS304                              | 1    | 27  | Mating flange, TS type        | PVC      | 1    |
| 13  | TP joint                | PVC                                 | 1    | 28  | V ring                        | NBR      | 1    |
| 14  | Discharge pipe          | PVC                                 | 1    | 29  | Strainer retainer             | PVC      | 1    |
| 15  | Stay pipe               | PVC                                 | 1    | 30  |                               |          |      |

# KYOWA Type SPV (Vertical) Type SPH (Horizontal) SELF-

## STANDARD OUTSIDE DIMENSIONS of the type SPV

Major Material: PVC



Standard Output  
(50/60Hz Power)

High Pressure  
(60Hz Only)

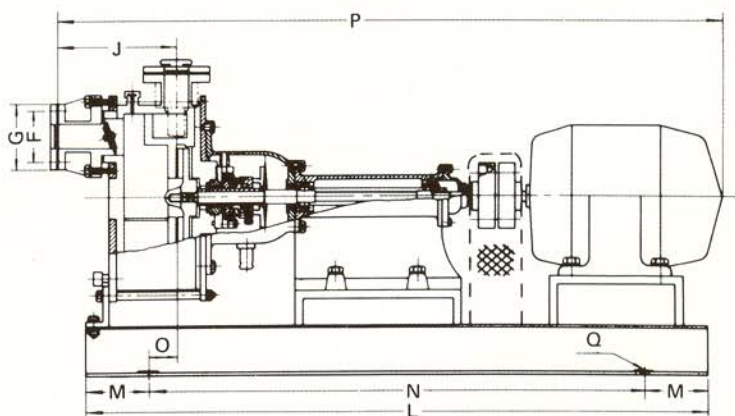
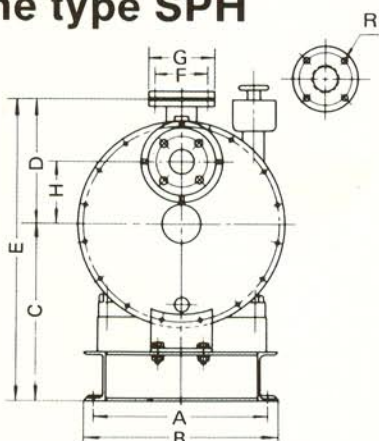
| Nominal Size | Symbols for Dimensions | A   | B   | C   | D   | E   | F   | G   | H  | I   | J   | K     | A   | B   | Net Weight (kg) |
|--------------|------------------------|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|-------|-----|-----|-----------------|
| 25           |                        | 520 | 380 | 140 | 215 | 205 | 215 | 125 | 25 | 290 | 330 | 4-15φ | 565 | 425 | 15              |
| 40           |                        | 640 | 440 | 200 | 300 | 270 | 290 | 140 | 40 | 400 | 440 | 4-15φ | 670 | 470 | 20              |
| 50           |                        | 670 | 470 | 200 | 310 | 280 | 305 | 155 | 50 | 400 | 440 | 4-15φ | 710 | 510 | 20              |
| 65           |                        | 795 | 545 | 250 | 375 | 310 | 345 | 175 | 65 | 430 | 490 | 4-15φ | -   | -   | 35              |
| 80           |                        | 850 | 600 | 250 | 385 | 315 | 355 | 185 | 80 | 430 | 490 | 4-15φ | -   | -   | 35              |

- Notes: 1) Flange; 10kg/cm<sup>2</sup> (JIS)  
2) Direction of rotation; Clockwise  
3) Net weight does not include motor.  
4) The dimensions 'A' and 'B' may change in some extent depending upon the manufacturer of motor employed.

Unit; mm

## STANDARD OUTSIDE DIMENSIONS of the type SPH

Major Material: PVC



Unit; mm

| Nominal Size | Symbols for Dimensions | C   | D   | E    | H   | J   | P    | O   | Flange |     |       | Bed (Common Base) |     |      |     |      |       | Net Weight (kg) |
|--------------|------------------------|-----|-----|------|-----|-----|------|-----|--------|-----|-------|-------------------|-----|------|-----|------|-------|-----------------|
|              |                        |     |     |      |     |     |      |     | G      | F   | R     | A                 | B   | L    | M   | N    | Q     |                 |
| 100          |                        | 450 | 350 | 800  | 190 | 350 | 1460 | 80  | 210    | 175 | 8-φ19 | 360               | 400 | 1400 | 150 | 1100 | 4-φ18 | 180             |
| 125          |                        | 540 | 400 | 940  | 220 | 390 | 1650 | 135 | 250    | 210 | 8-φ23 | 390               | 450 | 1650 | 150 | 1350 | 4-φ22 | 200             |
| 150          |                        | 570 | 460 | 1030 | 230 | 450 | 1800 | 180 | 280    | 240 | 8-φ23 | 390               | 450 | 1650 | 150 | 1350 | 4-φ22 | 265             |

- Notes: 1) Flange; 10kg/cm<sup>2</sup> (JIS)  
2) Direction of rotation; Counterclockwise

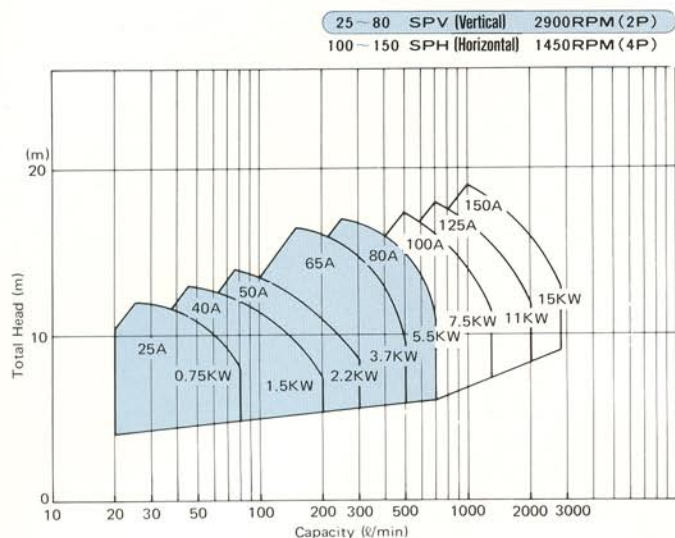
- 3) The dimension 'P' may change in some extent depending upon the manufacturer of motor employed.  
4) Net weight does not include motor.



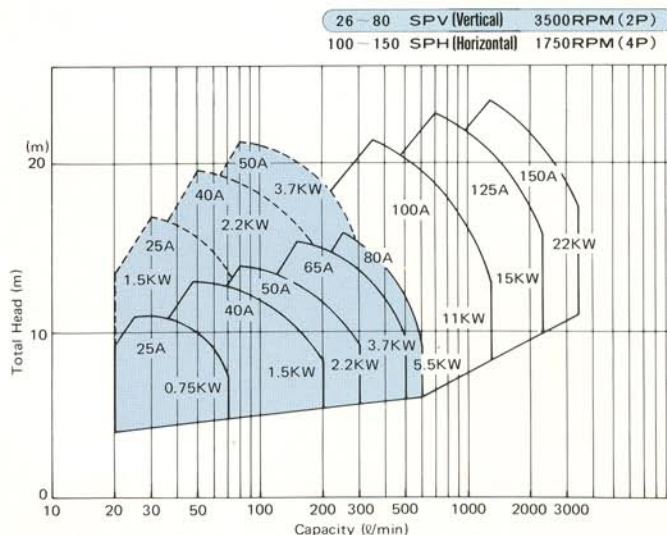
# SUCTION PUMPS

## STANDARD SELECTION CHARTS for the types SPV, SPH

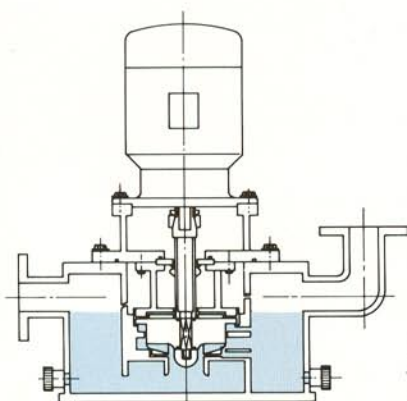
### 50Hz Selection Chart



### 60Hz Selection Chart

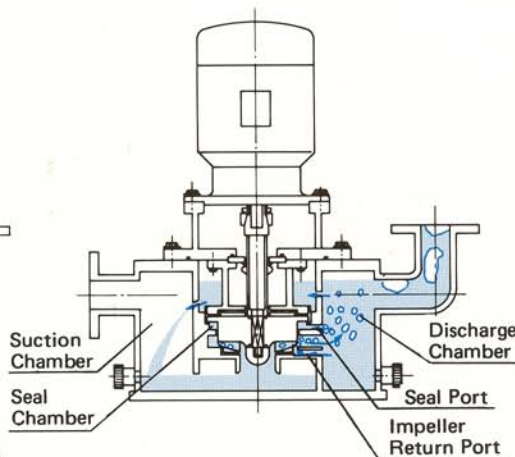


## SELF-SUCTION OPERATION OF SPV



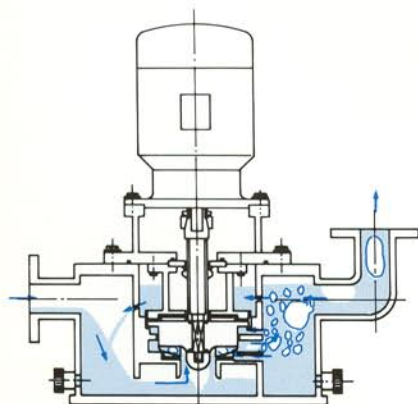
### 1. Full Priming and Resting State

Even in resting state, a certain amount of process fluid will remain as well as priming within the pump.



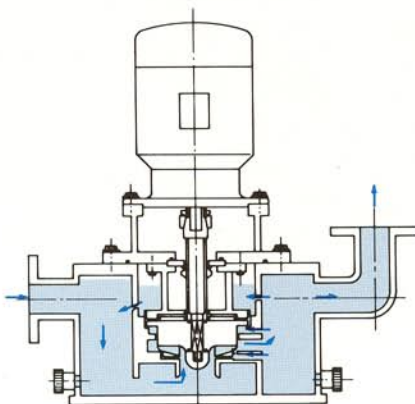
### 2. Starting State (in self-suction)

When starting operation, the fluid in the suction chamber is driven into the discharge chamber, then it returns to the impeller chamber via the impeller return port, and is fed to the discharge chamber together with the air in the suction chamber. The air in the discharge chamber is expelled to the discharge pipe. The fluid is driven again to the impeller return port to repeat air expulsion. This cyclic operation reduces the air in the suction chamber to perform self-suction operation. At the same time, the fluid returns from the discharge chamber to the seal chamber to prevent the invasion of air.



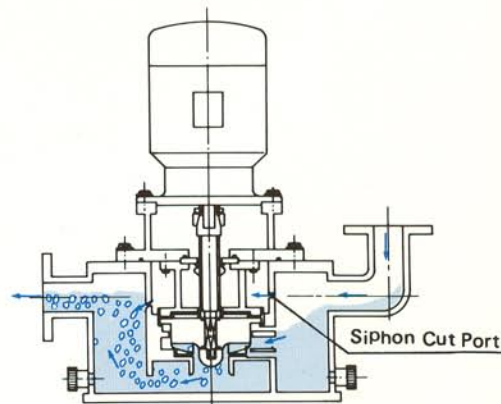
### 3. On Way of Lift-Heading Fluid

The fluid is taken into the pump via the suction port while the discharge pressure is increased.



### 4. Self-suction Stage Is Over

Normal pumping action is being performed after self-suction stage.



### 5. Stopping Transient

Although the fluid in the discharge chamber counterflows, a certain amount of fluid will remain in the suction chamber thanks to the effect of siphon cut port.

## INQUIRY INFORMATION

Inquiries should include the following information to provide the customer with a satisfactory replay.

1. Flow volume:  $\ell/\text{min}$  or  $\text{m}^3/\text{hr}$
2. Total head:  $\text{m}$  or  $\text{kg}/\text{cm}^2$   
Clearly specify the lift head of suction side and/ or the degree of vacuum if it is not negligible.
3. Properties of fluid: Temperature, specific gravity, concentration, viscosity, mixture of slurries or scales in the fluid.
4. Suction side: Presence of possitive pressure. If any the degree.
5. Application: Pump-up, pressurized moving, drainage system, etc.
6. Operating power: Voltage, frequency, phase, motor to be used.

### STANDARD COLOR OF FINISH ON METAL PART

Munsell System: 7.5BG 5.5/2.5      Anti-acids paint  
Other colors are available on request with sample color.

## BUSINESS ITEMS

- Various corrosion-resisting pumps
- Various corrosion-resisting fans
- Standard type exhaust gas treating equipment, NOx treating equipment, Deodorizing equipment
- Electric dust collector, Bag filter,
- Air-conditioning equipment, Exhaust equipment (Duct, hood, etc.)
- F.R.P. airtight butterfly valve
- Draft, Clean room, Various chemical equipment
- Noise analysis, Silencer
- Air-Dryer
- Encoder
- Plastic-Magnet



## KYOWA KAKO CO., LTD.

|                               |                                                                                                  |
|-------------------------------|--------------------------------------------------------------------------------------------------|
| <b>Head Office</b>            | 20-15, 3 chome, Higashi-Ikebukuro, Toshima-ku, Tokyo, Japan                                      |
| <b>Tokyo Sales Department</b> | TEL. (03)-987-3871                                                                               |
| <b>Sendai Office</b>          | Kanno Building<br>1-10-14, Honcho, Sendai City, Miyagi Prefecture<br>TEL. (022)-265-2155         |
| <b>Niigata Office</b>         | 2813-4, Chiyako, Ojiya City, Niigata Prefecture<br>TEL. (0258)-82-2231                           |
| <b>Osaka Sales Department</b> | Munekata Building<br>7-4, 4 chome, Nishi-Nakajima, Yodogawa-ku, Osaka City<br>TEL. (06)-305-2521 |
| <b>Fukuoka Office</b>         | B.S. Building Hakata<br>3-19-14, Hakataekimae, Hakata-ku, Fukuoka City<br>TEL. (092)-472-7911    |
| <b>Hokuriku Branch</b>        | 200, Kawahara-machi, Fuchu-machi, Nei-gun, Toyama Prefecture<br>TEL. (0764)-69-2615              |
| <b>Factories</b>              | Saitama, Osaka, Fukuoka and Niigata                                                              |
| <b>Analysis</b>               | Saitama                                                                                          |

Some minor changes may be done for forms, dimensions and specifications because of continuous endeavor for improvement.