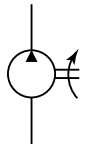
IPH Series IP Pump

3.6 to 125.9cm³/rev
30MPa



❖ **This is a new design series in which all pump types are installation compatible with previous designs. Note, however, that there is no longer compatibility for some of the seal components between the IPH-3 and IPH-4 sizes and design numbers 10 and 12.**

Features

①A patented axial and radial pressure loading system provides high efficiency and generates pressures up to 30MPa {306kgf/cm²}.

②Outstanding durability and very long life.

③A modified involute short-tooth gear enables internal gearing for greatly reduced pulsation and noise, and exceptionally quiet operation.

④A simple structure makes maintenance and inspection easier.

Specifications

Model No.	Capacity cm³/rev	Rated Voltage MPa	Maximum Operating Pressure MPa{kgf/cm²}	Minimum Revolution Speed min⁻¹	Maximum Revolution Speed min⁻¹	Weight kg	
						Type A	Type B
IPH-2A(B)- 3.5-11	3.60	25 {255}	30 {306}	600	2000	4.4	2.4
5	5.24					4.5	2.5
6.5	6.55					4.6	2.6
8	8.18					4.8	2.8
IPH-3A(B)- 10-20	10.2	25 {255}	30 {306}	600	2000	10.5	4.8
13	13.3					10.7	5.0
16	15.8					11.0	5.3
IPH-4A(B)- 20-20	20.7	25 {255}	30 {306}	500	2000	15.2	9.5
25	25.7					15.7	10.0
32	32.3					16.2	10.5
IPH-5A(B)- 40-21(11)	40.8	25 {255}	30 {306}	400	2000	32.0	19.0
50	50.3					33.0	20.0
64	63.9					34.0	21.0
IPH-6A(B)- 80-21(11)	81.3	25 {255}	30 {306}	300	2000	62.0	39.0
100	101.6					64.0	41.0
125	125.9					66.0	43.0

Note) 1.Capacity: Logical discharge rate per rotation.
2.Suction Pressure: +0.03 to +0.3MPa {–0.3 to +0.3kgf/cm²}
3.Maximum working pressure shown here is the pressure limit when there are frequent pressure changes.
4.Avoid installation with the suction port towards the bottom of the pump.
5.Specify using the model number format shown below when pipe flanging is required.

● Handling

1 For the hydraulic operating fluid, use an R&O type and wear-resistant type of ISO VG32 to 68 or equivalent (viscosity index of at least 90). Use hydraulic operating fluid that provides kinematic viscosity during operation in the range of 20 to 150mm²/s.

2 The operating temperature range is 5 to 65°C. When the oil temperature at startup is 5°C or less, perform a warm-up operation at low pressure until the oil temperature reaches 5°C. Use the pump in an area where the temperature is within the range of 0 to 60°C.

3 Suction pressure is -0.03 to +0.03MPa (-0.3 to +0.3kgf/cm²), and the suction port flow rate should be to greater than 2m/sec.

4 Avoid pulley, gear, and other drive systems that impart a radial or thrust load on the end of the pump shaft.

5 Mount the hydraulic pump so its pump shaft is oriented horizontally. Provide a suction strainer with a filtering grade of about 100μm (150 mesh). For the return line to the tank, use a 25μm line filter.

6 Manage hydraulic operating fluid so contamination is maintained at class NAS10 or lower. Take care to avoid contamination with water and other foreign matter, and watch out for discoloration. Whitish fluid indicates that air has contaminated the fluid, and brownish fluid indicates the fluid is dirty.

Understanding Model Numbers

IPH – 4 B – 25 – LT – 20

- 20 — Design number
  11: 2A(B), 5B, 6B
  20: 3A(B), 4A(B)
  21: 5A, 6A
- LT — Auxiliary symbol
  None: Clockwise (viewed from shaft end)
  L: Counterclockwise (viewed from shaft end)
  T: With screw in type flange kit
  E: With welded type flange kit
  Auxiliary symbol must be provided in alphabetic order.
- 25 — Capacity (cm³/rev)
- B — Mounting method
  A: Foot type mounting B: Flange type mounting
- 4 — Size 2, 3, 4, 5, 6
- IPH — IPH Series IP Pump

(Continued on following page)

7 When using water- or glycol-based hydraulic operating fluid, refer to page O-3 for details on applicable models of hydraulic pumps.

8 At startup, repeat the inching operation (start-stop) to bleed air from the pump and pipes.

9 Equip an air bleed valve in circuits where it is difficult to bleed air before startup. See page C-13 for more information.

10 To ensure proper lubrication of the pump's rubbing surfaces, supply oil to the interior of the pump before starting operation.

11 When centering the pump shaft, eccentricity with the motor shaft should be no greater than 0.05mm. Use a pump mounting base of sufficient rigidity. The angle error should be no greater than 1°.

12 Contact your agent for information about engines.

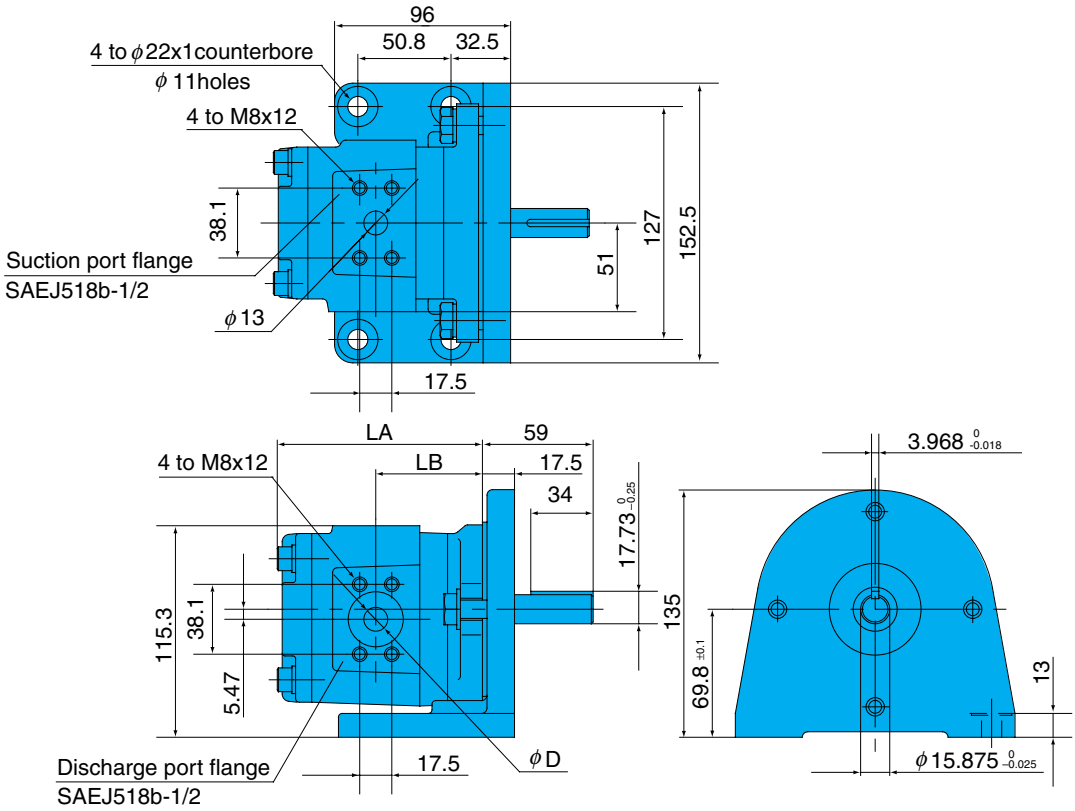
Discharge Rate and Required Input for Each Pump Speed

Speed	Pressure MPa / Model No.	Discharge Rate ℓ/min						Required Input kW					
		0.7	7	14	21	25	30	0.7	7	14	21	25	30
1000 min⁻¹	IPH-2A(B)- 3.5-11	3.60	3.49	3.39	3.28	3.23	3.15	0.09	0.62	1.12	1.63	1.93	2.30
	5	5.24	5.09	4.93	4.78	4.70	4.60	0.12	0.79	1.47	2.26	2.63	3.19
	6.5	6.55	6.37	6.19	6.03	5.93	5.82	0.16	0.97	1.82	2.79	3.25	3.95
	8	8.18	7.95	7.74	7.54	7.40	7.26	0.19	1.19	2.24	3.45	4.01	4.86
	IPH-3A(B)- 10-20	10.2	9.95	9.71	9.47	9.23	9.17	0.25	1.59	2.73	4.25	5.06	6.14
	13	13.3	13.0	12.7	12.4	12.3	12.1	0.32	2.02	3.57	5.35	6.29	7.73
	16	15.8	15.4	15.1	14.8	14.6	14.3	0.37	2.37	4.23	6.35	7.47	9.19
	IPH-4A(B)- 20-20	20.7	20.2	19.8	19.3	19.1	18.8	0.50	3.13	5.56	8.24	9.80	11.7
	25	25.7	25.2	24.7	24.2	23.9	23.6	0.61	3.79	6.89	10.3	12.1	14.6
	32	32.3	31.6	31.0	30.4	30.1	29.6	0.75	4.71	8.67	12.8	15.3	18.4
	IPH-5A(B)- 40-21(11)	40.8	39.9	39.0	38.1	37.6	37.0	0.99	6.18	10.9	16.3	19.3	23.8
	50	50.3	49.3	48.4	47.3	46.8	46.2	1.20	7.42	13.6	20.1	23.8	28.6
	64	63.9	62.6	61.4	60.2	59.5	58.6	1.49	9.32	17.2	25.5	30.6	36.3
	IPH-6A(B)- 80-21(11)	81.3	79.5	77.7	76.0	75.1	73.8	1.98	11.8	21.8	32.3	38.4	46.7
	100	101.6	99.6	97.7	95.8	94.6	93.2	2.42	14.6	27.3	40.5	48.1	57.7
	125	125.9	123.4	121.1	118.7	117.2	115.6	2.94	17.8	33.9	50.1	59.6	71.5
1200 min⁻¹	IPH-2A(B)- 3.5-11	4.32	4.20	4.08	3.97	3.91	3.83	0.11	0.66	1.23	1.83	2.15	2.61
	5	6.28	6.12	5.95	5.79	5.70	5.58	0.15	0.95	1.77	2.62	3.09	3.74
	6.5	7.86	7.67	7.48	7.29	7.18	7.05	0.19	1.16	2.19	3.24	3.81	4.63
	8	9.81	9.58	9.34	9.11	8.97	8.81	0.23	1.44	2.70	4.00	4.70	5.71
	IPH-3A(B)- 10-20	12.2	11.9	11.7	11.4	11.3	11.1	0.30	1.86	3.28	4.93	5.93	7.20
	13	15.9	15.9	15.3	15.0	14.8	14.6	0.39	2.37	4.28	6.42	7.56	9.28
	16	18.9	18.5	18.2	17.8	17.6	17.4	0.45	2.77	5.09	7.63	8.98	11.1
	IPH-4A(B)- 20-20	24.8	24.3	23.8	23.4	23.1	22.8	0.62	3.76	6.67	9.88	11.8	14.2
	25	30.8	30.3	29.8	29.3	29.0	28.6	0.75	4.56	8.27	12.3	14.7	17.5
	32	38.7	38.1	37.4	36.8	36.3	35.9	0.92	5.66	10.4	15.5	18.4	22.0
	IPH-5A(B)- 40-21(11)	48.9	48.0	47.1	46.1	45.5	44.9	1.22	7.42	13.2	19.5	23.1	28.4
	50	60.3	59.3	58.3	57.3	56.6	56.0	1.47	8.91	16.2	24.0	28.6	34.3
	64	76.6	75.3	74.0	72.8	72.0	71.2	1.83	11.2	20.6	30.5	36.3	43.5
	IPH-6A(B)- 80-21(11)	97.5	95.7	93.8	91.9	90.9	89.5	2.42	14.3	26.2	38.7	46.2	56.1
	100	121.9	119.7	117.7	115.8	114.5	113.1	2.96	17.5	32.3	48.4	57.7	69.2
	125	151.0	148.4	145.9	143.4	141.9	140.3	3.60	21.5	40.1	60.1	71.6	85.9
1500 min⁻¹	IPH-2A(B)- 3.5-11	5.40	5.25	5.10	4.97	4.89	4.79	0.14	0.96	1.68	2.46	2.89	3.46
	5	7.86	7.65	7.44	7.24	7.11	6.97	0.20	1.17	2.21	3.31	3.85	4.69
	6.5	9.82	9.59	9.35	9.12	8.97	8.82	0.25	1.49	2.73	4.09	4.76	5.78
	8	12.3	11.9	11.6	11.4	11.2	11.0	0.30	1.78	3.37	5.05	5.87	7.14
	IPH-3A(B)- 10-20	15.3	14.9	14.6	14.3	14.1	13.9	0.40	2.31	4.15	6.22	7.40	8.99
	13	19.9	19.5	19.1	18.8	18.6	18.3	0.51	2.95	5.41	8.03	9.44	11.6
	16	23.7	23.2	22.7	22.3	22.1	21.8	0.59	3.46	6.42	9.53	11.2	13.8
	IPH-4A(B)- 20-20	31.0	30.4	29.8	29.3	28.9	28.4	0.81	4.70	8.33	12.4	14.7	17.6
	25	38.5	37.8	37.2	36.6	36.1	35.7	0.98	5.69	10.4	15.4	18.3	21.9
	32	48.4	47.6	46.8	45.9	45.4	44.9	1.20	7.07	13.1	19.3	22.9	27.5
	IPH-5A(B)- 40-21(11)	61.2	60.0	58.8	57.6	56.9	56.2	1.59	9.51	16.6	24.7	29.3	36.0
	50	75.4	74.1	72.8	71.6	70.8	70.0	1.91	11.4	20.5	30.4	36.1	43.3
	64	95.8	94.2	92.5	91.0	90.0	89.0	2.38	14.4	26.0	38.6	45.9	55.1
	IPH-6A(B)- 80-21(11)	121.9	119.5	117.3	115.0	113.5	111.9	3.16	18.3	33.1	49.0	58.4	70.9
	100	152.4	149.7	147.3	144.7	143.2	141.5	3.86	22.5	41.4	61.4	73.0	87.6
	125	188.8	185.5	182.5	179.3	177.5	175.3	4.69	27.5	51.3	76.0	90.4	108.1
1800 min⁻¹	IPH-2A(B)- 3.5-11	6.48	6.33	6.16	6.01	5.92	5.82	0.17	1.16	2.02	2.95	3.46	4.15
	5	9.43	9.21	8.99	8.76	8.61	8.46	0.24	1.45	2.65	3.47	4.62	5.61
	6.5	11.7	11.5	11.2	11.0	10.9	10.7	0.30	1.78	3.27	4.92	5.71	6.93
	8	14.7	14.4	14.1	13.7	13.6	13.3	0.37	2.20	4.04	6.06	7.05	8.56
	IPH-3A(B)- 10-20	18.3	18.0	17.6	17.3	17.1	16.8	0.49	2.90	5.04	7.47	8.89	10.8
	13	23.9	23.5	23.1	22.7	22.5	22.2	0.62	3.67	6.57	9.63	11.3	13.9
	16	28.4	27.9	27.5	27.0	26.7	26.4	0.72	4.30	7.80	11.4	13.5	16.5
	IPH-4A(B)- 20-20	37.2	36.6	36.0	35.4	35.0	34.5	0.99	5.64	10.0	14.9	17.6	21.2
	25	46.2	45.6	44.9	44.3	43.8	43.3	1.20	6.83	12.4	18.5	21.9	26.3
	32	58.1	57.3	56.5	55.5	55.1	54.5	1.48	8.47	15.6	23.1	27.5	33.0
	IPH-5A(B)- 40-21(11)	73.4	72.1	70.9	69.7	69.0	68.1	1.95	11.7	20.2	30.0	35.6	43.7
	50	90.5	89.2	87.9	86.6	85.9	85.0	2.34	14.1	24.9	36.9	43.8	52.6
	64	115.0	113.4	111.6	110.0	109.1	108.0	2.92	17.6	31.6	46.8	55.7	66.9
	IPH-6A(B)- 80-21(11)	146.3	143.7	141.4	139.0	137.5	135.8	3.88	22.4	40.2	59.6	70.9	86.1
	100	182.8	180.2	177.6	174.9	173.5	171.7	4.74	27.7	50.3	74.4	88.6	106.0
	125	226.6	223.3	220.1	216.9	215.0	212.7	5.75	33.8	62.2	92.3	110.0	131.5

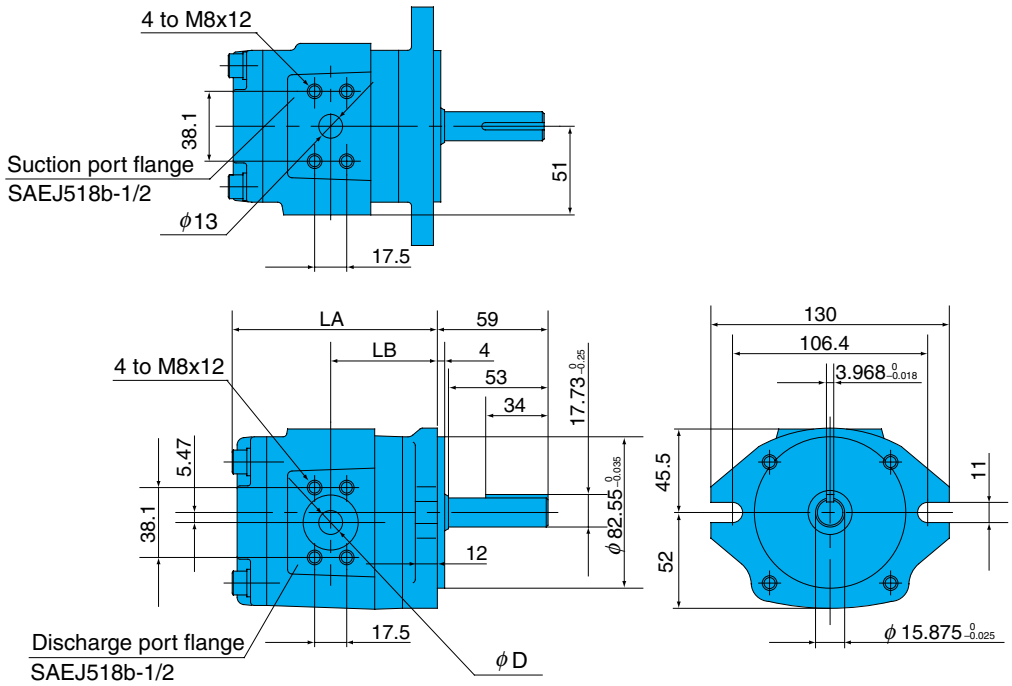
Note) Values in the table are general values at an operating fluid viscosity of 46mm²/s. Use the values when selecting the model for your needs.

Installation Dimension Drawings

IPH-2A-*-11 (Foot Mounting, Clockwise Rotation)



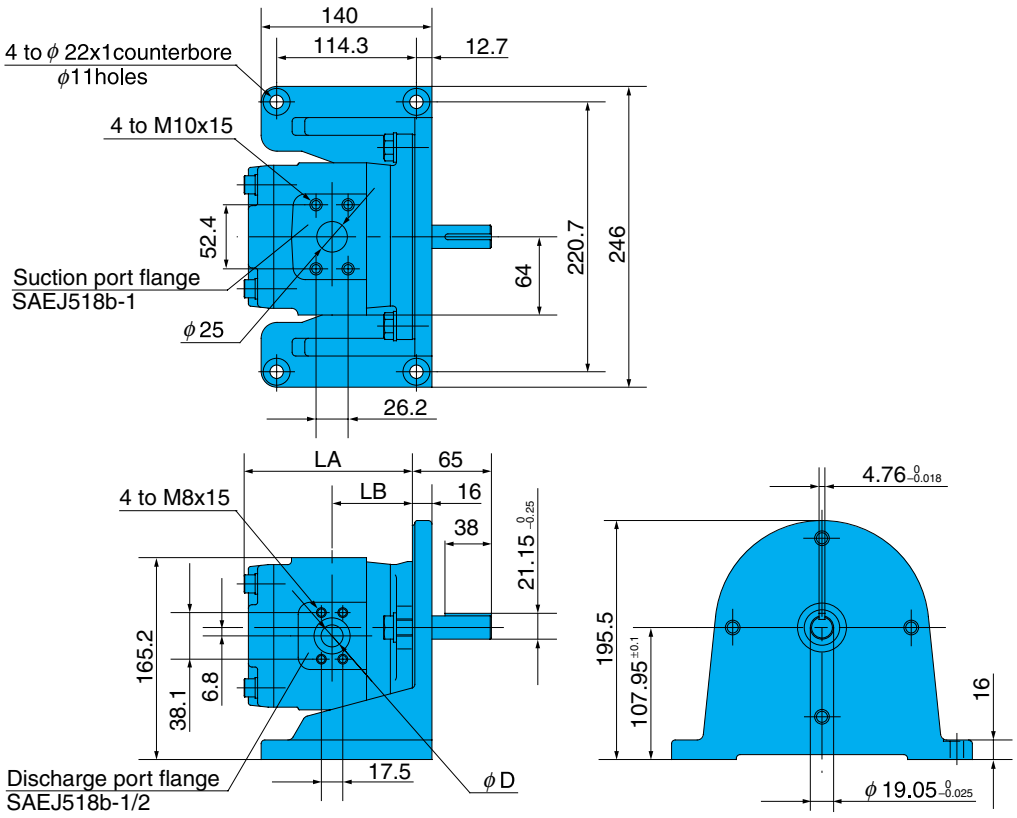
IPH-2B-*-11 (Flange Mounting, Clockwise Rotation)



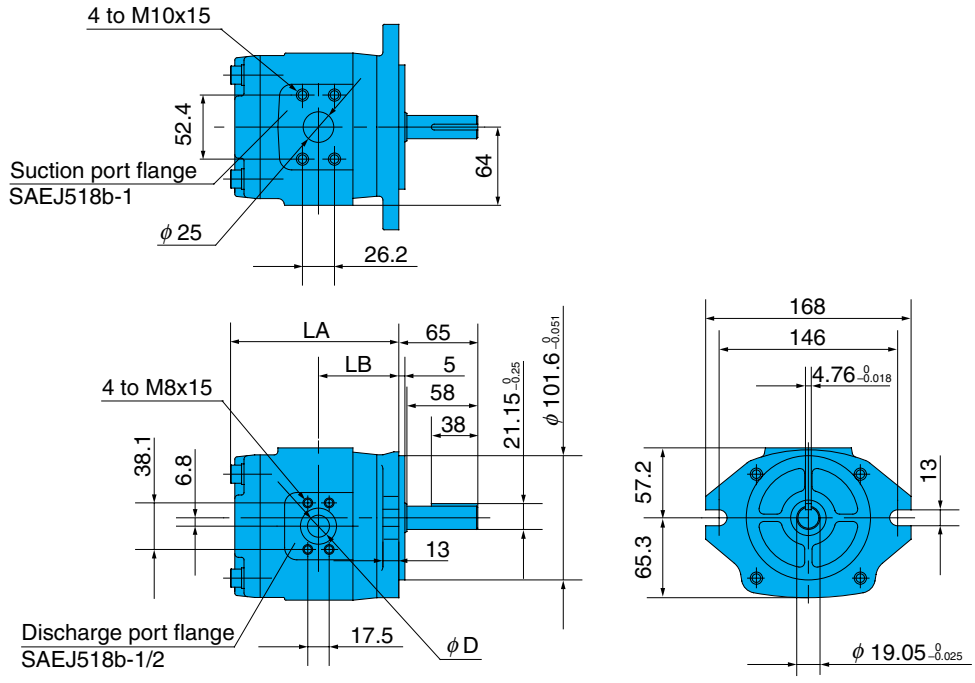
Model No.	Dimensions (mm)		
	LA	LB	ϕD
IPH-2*-3.5-*-11	107	51.0	8.9
IPH-2*-5 -*-11	112	53.5	11
IPH-2*-6.5-*-11	116	55.5	12
IPH-2*-8 -*-11	121	58.0	13

Note) IPH-2A (B)-*-L-11 (foot mounting/flange mounting, counterclockwise rotation) are the mirror image of the drawings shown above. In the case the suction port flange is facing upwards, the discharge port flange is positioned to the right when viewed from the shaft side.

IPH-3A-*-20 (Foot Mounting, Clockwise Rotation)



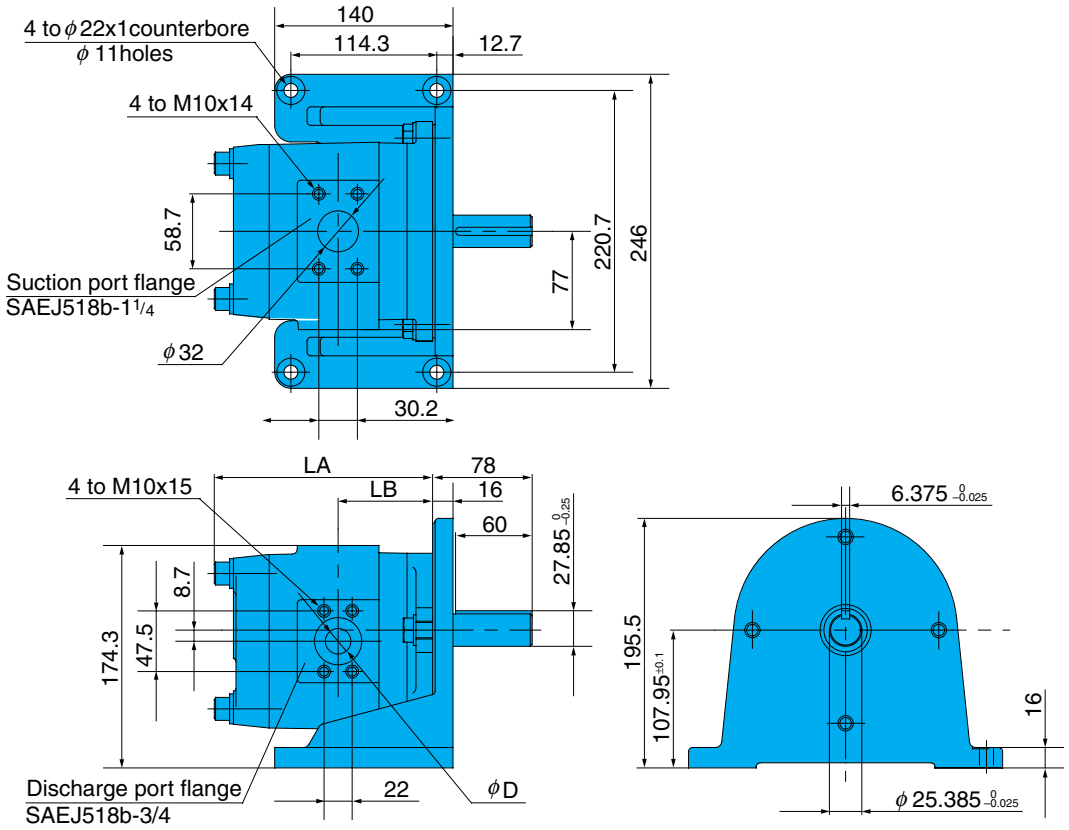
IPH-3B-*-20 (Flange Mounting, Clockwise Rotation)



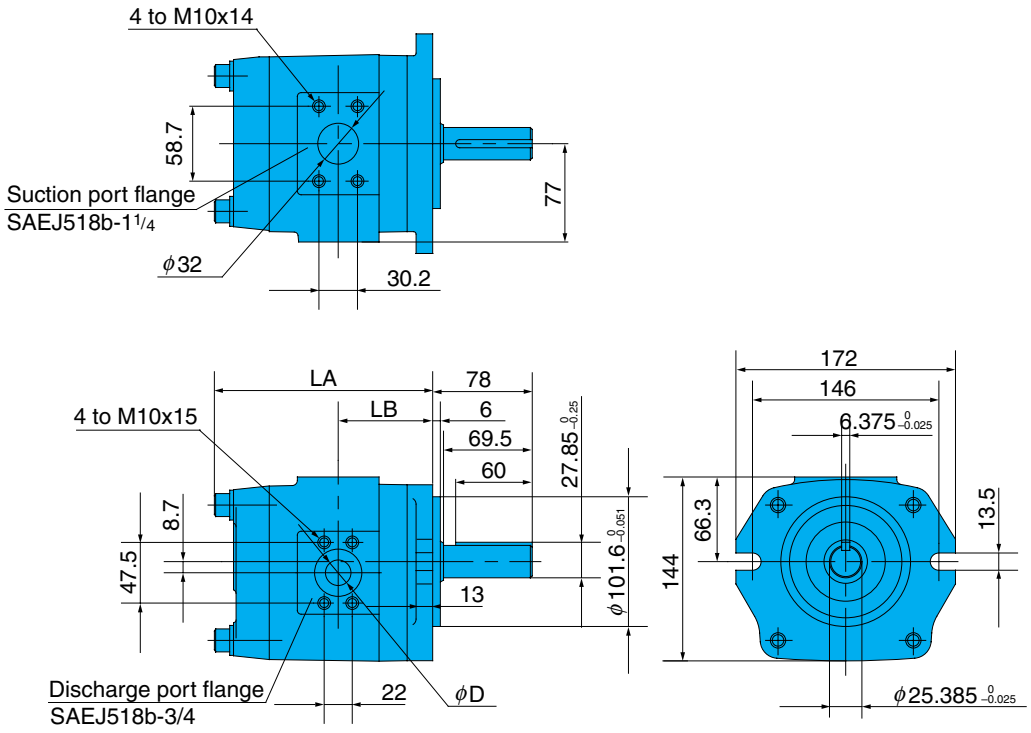
Model No.	Dimensions (mm)		
	LA	LB	ϕD
IPH-3*-10-*-20	128.5	60.0	14
IPH-3*-13-*-20	134.5	63.0	17
IPH-3*-16-*-20	139.5	65.5	18

Note) IPH-3A (B)-*-L-20 (foot mounting/flange mounting, counterclockwise rotation) are the mirror image of the drawings shown above. In the case the suction port flange is facing upwards, the discharge port flange is positioned to the right when viewed from the shaft side.

IPH-4A-*-20 (Foot Mounting, Clockwise Rotation)



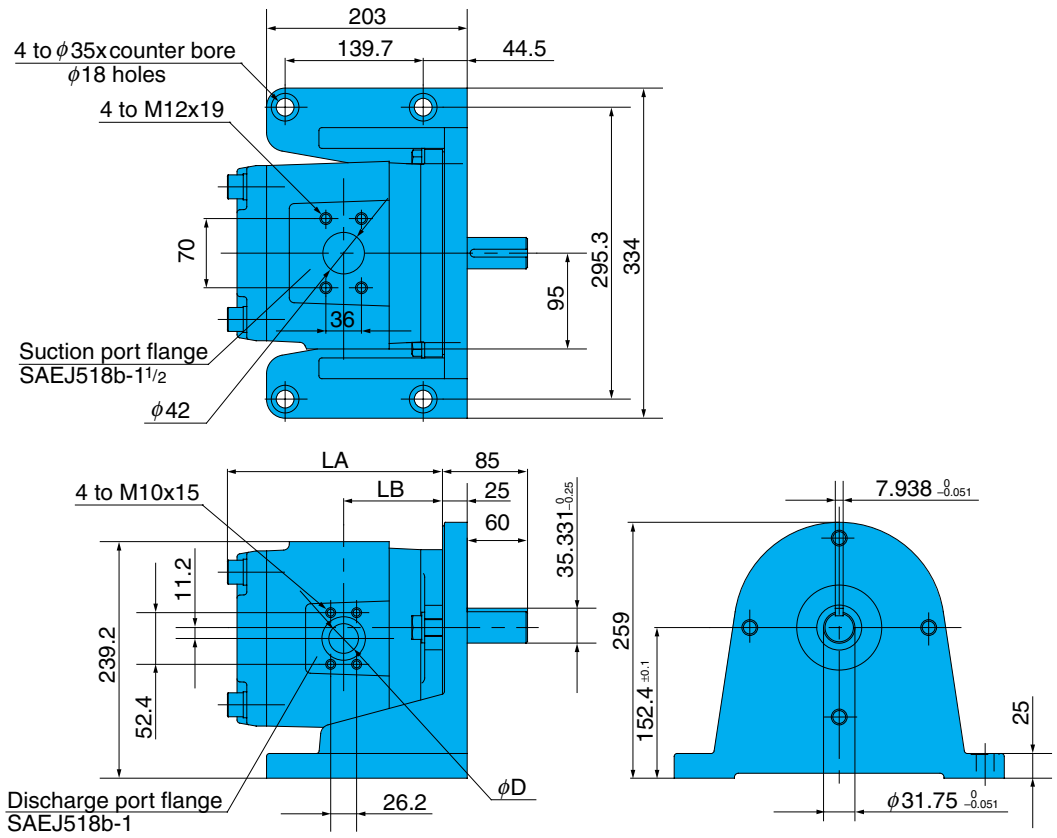
IPH-4B-*-20 (Flange Mounting, Clockwise Rotation)



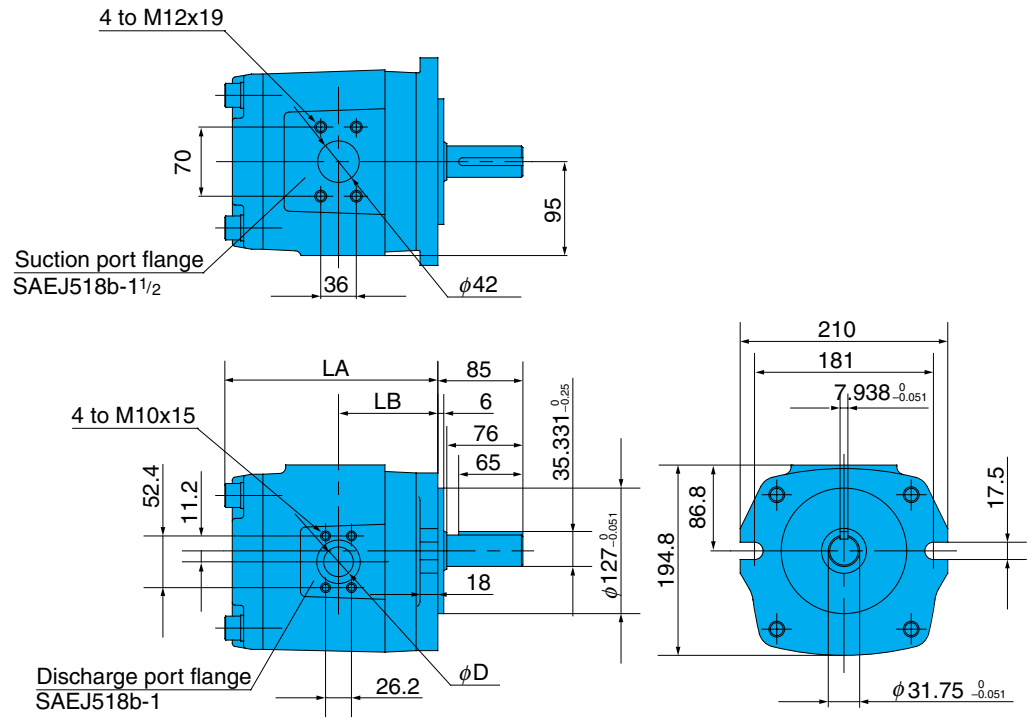
Model No.	Dimensions (mm)		
	LA	LB	φD
IPH-4*-20-*-20	164.5	71	18
IPH-4*-25-*-20	170.5	74	20
IPH-4*-32-*-20	178.5	78	24

Note) IPH-4A (B)-*-L-20 (foot mounting/flange mounting, counterclockwise rotation) are the mirror image of the drawings shown above. In the case the suction port flange is facing upwards, the discharge port flange is positioned to the right when viewed from the shaft side.

IPH-5A-*-21 (Foot Mounting, Clockwise Rotation)



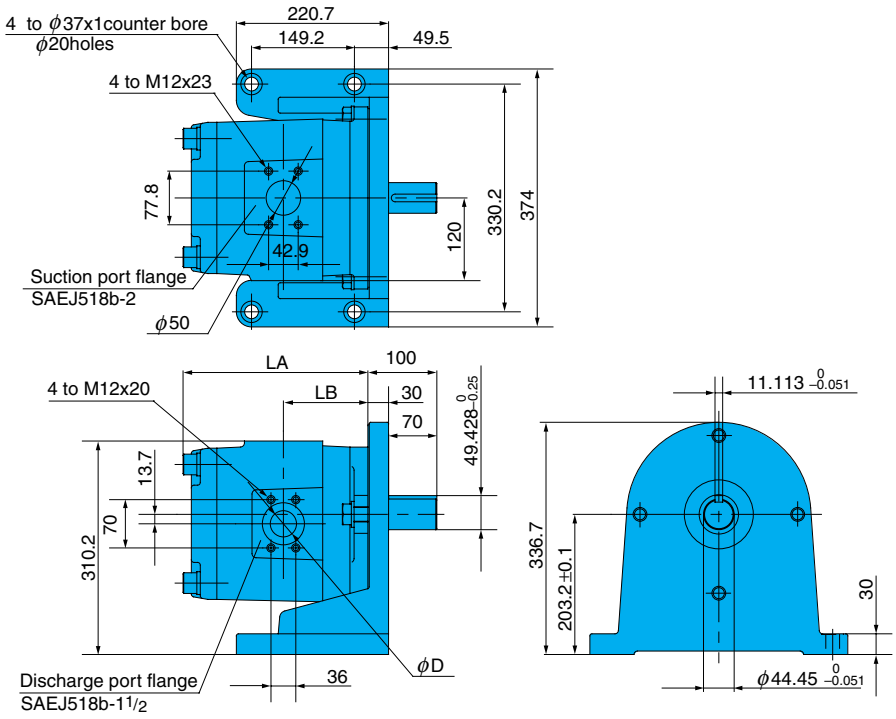
IPH-5B-*-11 (Flange Mounting, Clockwise Rotation)



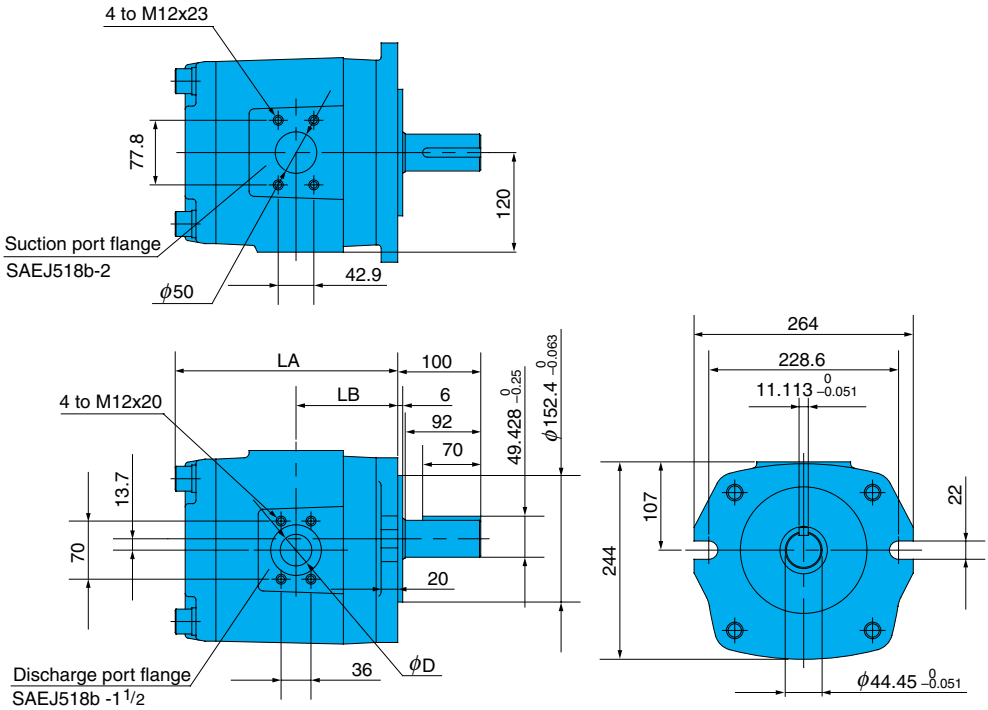
Model No.	Dimensions (mm)		
	LA	LB	ϕD
IPH-5*-40-*-21 (11)	201.5	91.0	24
IPH-5*-50-*-21 (11)	208.5	94.5	26
IPH-5*-64-*-21 (11)	218.5	99.5	28

Note) IPH-5A (B)-*-L-21 (11) (foot mounting/flange mounting, counterclockwise rotation) are the mirror image of the drawings shown above. In the case the suction port flange is facing upwards, the discharge port flange is positioned to the right when viewed from the shaft side.

IPH-6A-*-21 (Foot Mounting, Clockwise Rotation)



IPH-6B-*-11 (Flange Mounting, Clockwise Rotation)

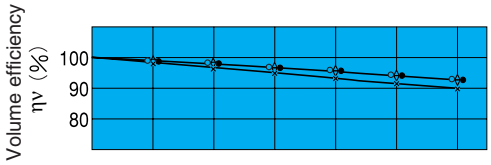


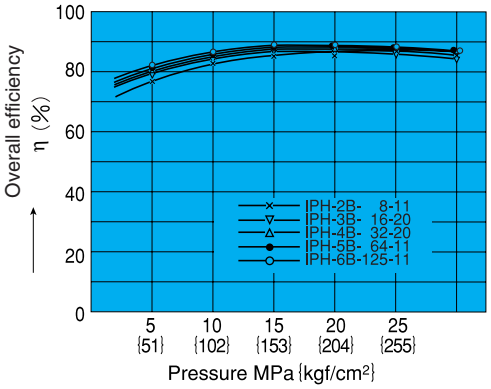
Model No.	Dimensions (mm)		
	LA	LB	ϕD
IPH-6*- 80-*-21 (11)	241.5	111.5	32
IPH-6*-100-*-21 (11)	251.5	116.5	36
IPH-6*-125-*-21 (11)	263.5	122.5	38

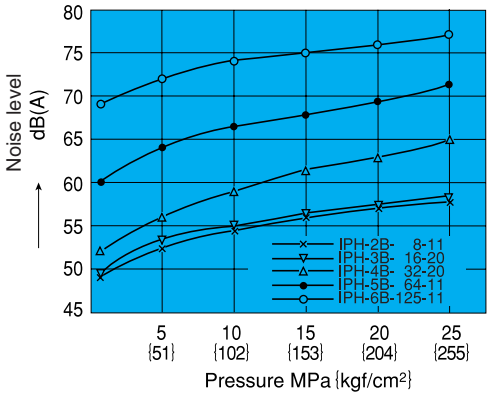
Note) IPH-6A (B)-*-L-21 (11) (foot mounting/flange mounting, counterclockwise rotation) are the mirror image of the drawings shown above. In the case the suction port flange is facing upwards, the discharge port flange is positioned to the right when viewed from the shaft side.

Performance Curves

Revolution Speed 1200min^{-1}
Operating Hydraulic Fluid Viscosity 46mm^2/s
Representative Characteristics Under Above Conditions

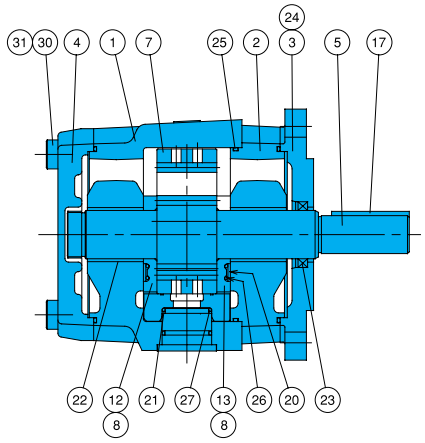


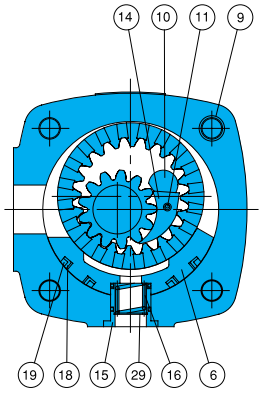


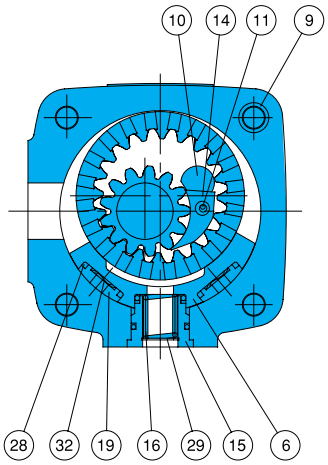


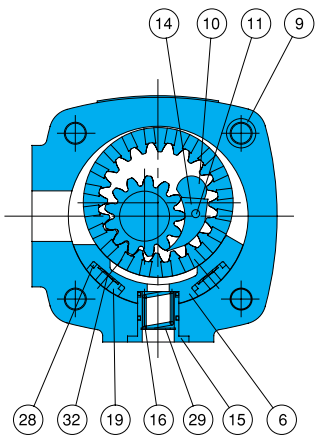
Cross-sectional Drawing

IPH-*B-*-**









Part No.	Part Name
1	Body -1
2	Body -2
3	Mounting
4	Rear cover
5	Pinion shaft
6	Radial piston
7	Internal gear
8	Bushing
9	Knock pin
10	Stopper pin
11	Spring pin (guide pin)
12	Axial plate -1
13	Axial plate -2
14	Feeler piece
15	Spring holder
16	Spring
17	Key
18	Radial seal
19	Radial backup ring
20	Axial backup ring
21	Backup ring
22	Bearing
23	Oil seal
24	Pin
25	O-ring
26	O-ring
27	O-ring
28	O-ring
29	Snap ring
30	Screw
31	Washer
32	Wave washer

IPH Series Seal Kit

Understanding Seal Kit Model Numbers : **IHAS – 2 S ∗ ∗∗∗ – 10(20, 30)**

- IPH Series Seal Kit
- Indoor/outdoor use sealing
- S: Shaft side single pump or double pump
  H: Head side double pump
- Size 2, 3, 4, 5, 6
- Capacity classification D35 to 125
- Design number (IPH3 : 20D, IPH4 : 30D)

Seal Kit Number	Applicable Pump Model No.	Component Part Numbers							
		18 Radial Seal	Q'ty	19 Radial Backup Ring	Q'ty	20 Axial Backup Ring	Q'ty	21 Backup ring	Q'ty
IHAS-2S2D35-10	IPH-2A(B)-3.5-11			IH34J-102D35-1A	2	IH34J-202000	2	IH34J-402D35	1
2S2005-10	5			102005-1A	2	〃	2	402005	1
2S2D65-10	6.5			102D65-1A	2	〃	2	402D65	1
2S2008-10	8			102008-1A	2	〃	2	402008	1
IHAS-2S3010-20	IPH-3A(B)-10-20			IH34J-103010-1A	2	IH34J-203000	2	IH34J-403010	1
2S3013-20	13			103013-1A	2	〃	2	403013	1
2S3016-20	16			103016-1A	2	〃	2	403016	1
IHAS-2S4020-30	IPH-4A(B)-20-20			IH34J-104020-2A	2	IH34J-204000-1A	2	IH34J-404020	1
2S4025-30	25			104025-2A	2	〃	2	404025	1
2S4032-30	32			104032-2A	2	〃	2	404032	1
IHAS-2S5040-10	IPH-5A(B)-40-21(11)	IH33J-105040-1A	2	IH34J-105040-1A	2	IH34J-205000	2	IH34J-405040	1
2S5050-10	50	105050-1A	2	105050-1A	2	〃	2	405050	1
2S5064-10	64	105064-1A	2	105064-1A	2	〃	2	405064	1
IHAS-2S6080-10	IPH-6A(B)-80-21(11)	IH33J-106080-1A	2	IH34J-106080-1A	2	IH34J-206000	2	IH34J-406080	1
2S6100-10	100	106100-1A	2	106100-1A	2	〃	2	406100	1
2S6125-10	125	106125-1A	2	106125-1A	2	〃	2	406125	1

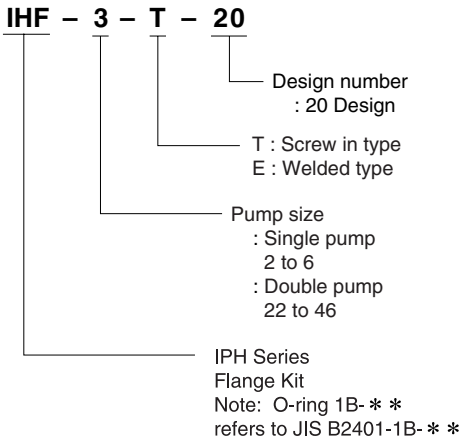
Seal Kit Number	Component Part Numbers									
	23 Oil seal	Q'ty	25 O-ring	Q'ty	26 O-ring	Q'ty	27 O-ring	Q'ty	28 O-ring	Q'ty
IHAS-2S2D35-10	ISD-20328	1	R68×2	3	R23×2	2	R10×2	1	R10×2	2
2S2005-10	〃	1	〃	3	〃	2	R12×2	1	R12×2	2
2S2D65-10	〃	1	〃	3	〃	2	R14×2	1	R14×2	2
2S2008-10	〃	1	〃	3	〃	2	R16×2	1	R16×2	2
IHAS-2S3010-20	ISD-25388	1	R86×2	3	R30×2	2	R15×2.5	1	R15×2.5	2
2S3013-20	〃	1	〃	3	〃	2	R18×2.5	1	R18×2.5	2
2S3016-20	〃	1	〃	3	〃	2	R20×2.5	1	R20×2.5	2
IHAS-2S4020-30	ISD-32458	1	R108×3	3	R38×2.5	2	R21×2.5	1	R21×2.5	2
2S4025-30	〃	1	〃	3	〃	2	R23×3	1	R23×3	2
2S4032-30	〃	1	〃	3	〃	2	R26×3	1	R26×3	2
IHAS-2S5040-10	ISD-40558	1	R140×3	3	R49×3	2	R26×3	1		
2S5050-10	〃	1	〃	3	〃	2	R29×3.5	1		
2S5064-10	〃	1	〃	3	〃	2	R33×3.5	1		
IHAS-2S6080-10	ISD-50659	1	R172×4	3	R60×3.5	2	R34×3.5	1		
2S6100-10	〃	1	〃	3	〃	2	R38×4	1		
2S6125-10	〃	1	〃	3	〃	2	R43×4	1		

Note) 1.Oil seals are manufactured by Nippon Oil Seal Industry Co. Ltd. (NOK).
2.O-rings are not available through retail sources. Consult your agent for more information.

IPH Series Pipe Flange Kit

Understanding Flange Kit Model Numbers :

The pipe flange kit combines the flanges, bolts, washers, and O-rings required for each type of pump into a single kit.
The component parts table shows the screw in type flange kit. In the case of the welded type flange, the flange part number is IH03J-200040 (1 of IH03J-100040 changes to 2). All other included parts are the same.



Screw in type Flange Kit model No.	Applicable Pump Model No.	IN Flange							
		Flange Part No.		Bolt		Washer		O-ring	
IHF-2-T-20	IPH-2A(B)-*-11	IH03J-100040	1	TH- 8×45	4	WS-B- 8	4	IB-P22	1
IHF-3-T-20	IPH-3A(B)-*-20	IH03J-100080	1	TH-10×50	4	WS-B-10	4	IB-G35	1
IHF-4-T-20	IPH-4A(B)-*-20	IH03J-100100	1	TH-10×55	4	〃	4	IB-G40	1
IHF-5-T-20	IPH-5A(B)-*-21(11)	IH03J-100120	1	TH-12×55	4	WS-B-12	4	IB-G50	1
IHF-6-T-20	IPH-6A(B)-*-21(11)	IH03J-100160	1	TH-12×60	4	〃	4	IB-G60	1

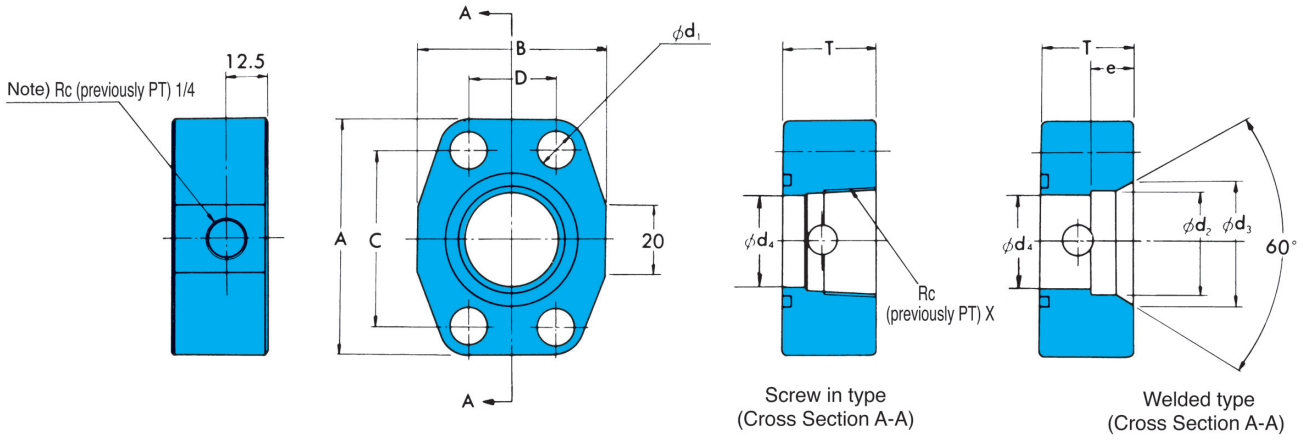
OUT Flange								Plug	
Flange Part No.		Bolt		Washer		O-ring			
IH03J-100040	1	TH- 8×45	4	WS-B- 8	4	IB-P22	1	TPHA-1/4	2
IH03J-100040	1	TH- 8×45	4	〃	4	IB-P22	1	〃	2
IH03J-100060	1	TH-10×50	4	WS-B-10	4	IB-G30	1	〃	1
IH03J-100080	1	TH-10×50	4	〃	4	IB-G35	1	〃	2
IH03J-100120	1	TH-12×60	4	WS-B-12	4	IB-G50	1	〃	1

Note)1. In the case of a double pump, the flange kit includes three flanges: one for the common IN port and two OUT port flanges. When using separate IN ports, use separate single pump flange kits, one each for the head side and the shaft side.
Note)2. There is no common IN port in the case of the double pump models IPH-55, IPH-56, and IPH-66, or a single IN port is used.

Screw in type Flange Kit model No.	Applicable Pump Model No.	IN Flange							
		Flange Part No.		Bolt		Washer		O-ring	
IHF-22-T-20	IPH- 22B-*-*-11	IH03J-100060	1	TH-10×50	4	WS-B-10	4	IB-G30	1
IHF-23-T-20	23	IH03J-100080	1	〃	4	〃	4	IB-G35	1
IHF-24-T-20	24	IH03J-100120	1	TH-12×55	4	WS-B-12	4	IB-G50	1
IHF-25-T-20	25	IH03J-100160	1	TH-12×60	4	〃	4	IB-G60	1
IHF-26-T-20	26	IH03J-100200	1	TH-12×65	4	〃	4	IB-G75	1
IHF-33-T-20	IPH- 33B-*-*-11	IH03J-100100	1	TH-10×55	4	WS-B-10	4	IB-G40	1
IHF-34-T-20	34	IH03J-100120	1	TH-12×55	4	WS-B-12	4	IB-G50	1
IHF-35-T-20	35	IH03J-100160	1	TH-12×60	4	〃	4	IB-G60	1
IHF-36-T-20	36	IH03J-100200	1	TH-12×60	4	〃	4	IB-G75	1
IHF-44-T-20	IPH- 44B-*-*-11	IH03J-100120	1	TH-12×55	4	〃	4	IB-G50	1
IHF-45-T-20	45	IH03J-100200	1	TH-12×65	4	〃	4	IB-G75	1
IHF-46-T-20	46	IH03J-100240	1	TH-16×75	4	WS-B-16	4	IB-G85	1

OUT Flange (Shaft Side)								OUT Flange (Head Side)								Plug	
Flange Part No.		Bolt		Washer		O-ring		Flange Part No.		Bolt		Washer		O-ring			
IH03J-100040	1	TH- 8×45	4	WS-B- 8	4	IB-P22	1	IH03J-100040	1	TH- 8×45	4	WS-B- 8	4	IB-P22	1	TPHA-1/4	3
IH03J-100040	1	〃	4	〃	4	IB-P22	1	〃	1	〃	4	〃	4	〃	1	〃	3
IH03J-100060	1	TH-10×50	4	WS-B-10	4	IB-G30	1	〃	1	〃	4	〃	4	〃	1	〃	3
IH03J-100080	1	〃	4	〃	4	IB-G35	1	〃	1	〃	4	〃	4	〃	1	〃	2
IH03J-100120	1	TH-12×60	4	WS-B-12	4	IB-G50	1	〃	1	〃	4	〃	4	〃	1	〃	2
IH03J-100040	1	TH- 8×45	4	WS-B- 8	4	IB-P22	1	IH03J-100040	1	TH- 8×45	4	WS-B- 8	4	IB-P22	1	〃	2
IH03J-100060	1	TH-10×50	4	WS-B-10	4	IB-G30	1	〃	1	〃	4	〃	4	〃	1	〃	3
IH03J-100080	1	〃	4	〃	4	IB-G35	1	〃	1	〃	4	〃	4	〃	1	〃	2
IH03J-100120	1	TH-12×60	4	WS-B-12	4	IB-G50	1	〃	1	〃	4	〃	4	〃	1	〃	2
IH03J-100060	1	TH-10×50	4	WS-B-10	4	IB-G30	1	IH03J-100060	1	TH-10×50	4	WS-B-10	4	IB-G30	1	〃	3
IH03J-100080	1	〃	4	〃	4	IB-G35	1	〃	1	〃	4	〃	4	〃	1	〃	2
IH03J-100120	1	TH-12×60	4	WS-B-12	4	IB-G50	1	〃	1	〃	4	〃	4	〃	1	〃	2

Pipe Flange Installation Dimension Diagram



Screw in type

	Pipe Flange Kit Part Number	SAE Standard	Nominal Diameter	Dimensions (mm)							Weight kg
				A	B	C	D	T	ϕd_1	ϕd_4	
	IH03J -100040	SAE J518b 1/2	1/2	54	46	38.1	17.5	33	9	12.7	0.4
	-100060	SAE J518b 3/4	3/4	65	52	47.5	22.0	33	11	20	0.6
	-100080	SAE J518b 1	1	70	59	52.4	26.2	33	11	27	0.6
☆	-100100	SAE J518b 1 1/4	1 1/4	79	73	58.7	30.2	38	11	33	1.0
	-100120	SAE J518b 1 1/2	1 1/2	94	83	70.0	36.0	38	13	37.5	1.4
☆	-100160	SAE J518b 2	2	102	97	77.8	42.9	38	13	50	1.7
☆	-100200	SAE J518b 2 1/2	2 1/2	114	109	88.9	50.8	43	13	60	2.1
☆	-100240	SAE J518b 3	3	135	131	106.4	61.9	48	17.5	71	3.3

Welded Type

	Pipe Flange Kit Part Number	SAE Standard	Pipe Diameter	Dimensions (mm)										Weight kg
				A	B	C	D	T	e	ϕd_1	ϕd_2	ϕd_3	ϕd_4	
	IH03J -200040	SAE J518b 1/2	1/2	54	46	38.1	17.5	33	11	9	22.2	27	12.7	0.4
	-200060	SAE J518b 3/4	3/4	65	52	47.5	22.0	33	12	11	27.7	35	20	0.6
	-200080	SAE J518b 1	1	70	59	52.4	26.2	33	14	11	34.5	42	27	0.6
☆	-200100	SAE J518b 1 1/4	1 1/4	79	73	58.7	30.2	38	16	11	43.2	48	33	1.0
	-200120	SAE J518b 1 1/2	1 1/2	94	83	70.0	36.0	38	18	13	49.1	58	37.5	1.4
☆	-200160	SAE J518b 2	2	102	97	77.8	42.9	38	19	13	61.1	68	50	1.7
☆	-200200	SAE J518b 2 1/2	2 1/2	114	109	88.9	50.8	43	22	13	77.1	82	60	2.1
☆	-200240	SAE J518b 3	3	135	131	106.4	61.9	48	25	17.5	90.0	97	71	3.3

Recommended Tightening Torque for Flange Installation Bolts

Mounting bolt	Tightening Torque N · m {kgf · cm}
M8	25.5 to 32.3 {260 to 329}
M10	50.9 to 64.7 {520 to 660}
M12	88.2 to 112.7 {900 to 1150}
M14	142.1 to 176.4 {1450 to 1800}
M16	215.6 to 274.4 {2200 to 2800}
M18	294 to 382.2 {3000 to 3900}

Note) There is no RC (previously PT) 1/4 tap for the above flange numbers (exclusively for suction port use) marked with a star (☆).

IPH Series Foot Mounting Kit

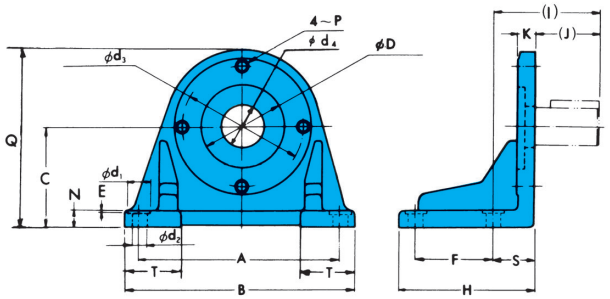
Understanding Foot Mounting Kit Numbers:
When only the mounting feet are required for a single pump or double pump, pump mounting bolts, washers and other parts are sold together as the Foot Mounting Kit.

IHM – 2 – 10

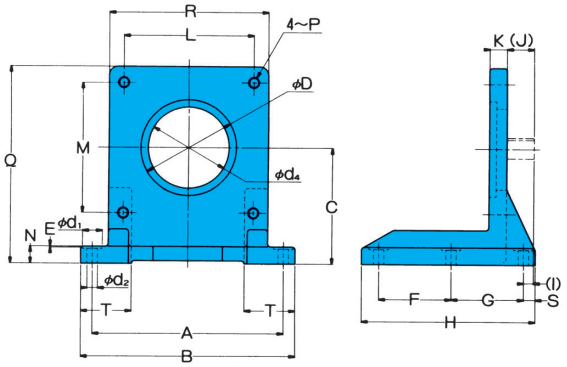
- 10 — Design number
- 2 — Pump size : Single pump 2 to 6 : Double pump 22 to 66
- IHM — IPH Series Foot Mounting Kit

Foot Mounting Installation Measurement Chart

SAE-2BOLT-MOUNTING



SAE-4BOLT-MOUNTING



SAE-2BOLT-MOUNTING

Foot Mounting Kit Model No.	Applicable Pump Model No.		Accessories				Dimensions (mm)					
	SINGLE PUMP	DOUBLE PUMP	Bolt	Q'ty	Washer	Q'ty	A	B	C	E	F	H
IHM-2-10	IPH-2	–	TB-10×30	2	WP-10	2	127	152.5	69.8	1	50.8	96
IHM-4-10	IPH-3	–	TB-12×30	2	WP-12	2	220.7	246	107.95	1	114.3	140
IHM-4-10	IPH-4	–	TB-12×30	2	WP-12	2	220.7	246	107.95	1	114.3	140
IHM-22-10		IPH-22	TB-10×30	2	WP-10	2	171.45	204	107.95	1	95.25	150
IHM-44-10		IPH23, IPH-33	TB-12×30	2	WP-12	2	235	267	139.7	1	127	193
IHM-44-10		IPH-24, IPH-34, IPH-44	TB-12×30	2	WP-12	2	235	267	139.7	1	127	193
IHM-45-10	IPH-5	IPH-25, IPH-35, IPH-45	TB-16×40	2	WP-16	2	295.3	334	152.4	1	139.7	203
IHM-46-10	IPH-6	IPH-26, IPH-36, IPH-46	TB-20×50	2	WP-20	2	330.2	374	203.2	1	149.2	220.7

Foot Mounting Kit Model No.	Dimensions (mm)													Weight kg
	I	(J)	K	N	P	Q	(S)	T	φD	φd1	φd2	φd3	φd4	
IHM-2-10	74	41.5	17.5	13	M10	135	32.5	36.5	82.55	22	11	106.4	50	2.0
IHM-4-10	61.7	49	16	16	M12	195.5	12.7	53	101.6	22	11	146	40	5.5
IHM-4-10	74.7	62	16	16	M12	195.5	12.7	53	101.6	22	11	146	40	5.5
IHM-22-10	73.5	41	18	18	M10	180	32.5	50	82.55	22	11	106.4	40	6.5
IHM-44-10	89.5	45	20	20	M12	232	44.5	57.5	101.6	22	14	146	40	12.0
IHM-44-10	102.5	58	20	20	M12	232	44.5	57.5	101.6	22	14	146	40	12.0
IHM-45-10	104.5	60	25	25	M16	259	44.5	61	127	35	18	181	86	13.5
IHM-46-10	119.5	70	30	30	M20	337	49.5	64	152.4	37	20	228.6	100	22.0

*IHM-2-10, IHM-4-10, and IHM-45-10 are the same as PVS pump foot mounting PSM-101000, PSM102000, and PSM103000 respectively.

SAE-4BOLT-MOUNTING

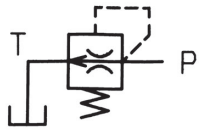
Foot Mounting Kit Model No.	Applicable Pump Model No.	Accessories				Dimensions (mm)							
	DOUBLE PUMP	Bolt	Q'ty	Washer	Q'ty	A	B	C	E	F	G	H	(I)
IHM-55-10	IPH-55	TH-20×50	4	WS-B-20	4	330	370	200	1	125	125	300	17
IHM-66-10	IPH56, IPH-66	TH-24×60	4	WS-B-24	4	380	430	260	1	140	140	340	17

Foot Mounting Kit Model No.	Dimensions (mm)														Weight kg
	(J)	K	L	M	N	P	Q	R	S	T	φD	φd1	φd2	φd4	
IHM-55-10	47	30	224.6	224.6	30	M20	340	275	20	90	165.1	34	18	140	32.0
IHM-66-10	52	40	247.5	247.5	40	M24	415	310	25	105	177.8	34	18	150	48.0

Air Bleed-off Valve

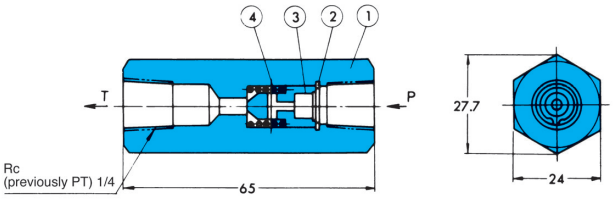
Equipping an air bleed-off valve on the pump's discharge side helps to simplify air bleeding during test operation.

JIS symbol



Specifications

①Air inside the pump and the suction pipe is exhausted rapidly when the pump is started up. When discharge pressure reaches 0.2MPa {2.0kgf/cm²} or greater after the pump intakes oil, a valve closes to prevent oil from leaking.
②Maximum operating pressure: 30MPa {306kgf/cm²}
③Provide piping to ensure that the tank port is under the oil level surface.



Understanding Model Numbers

CAB – T 02 – 1 – 10

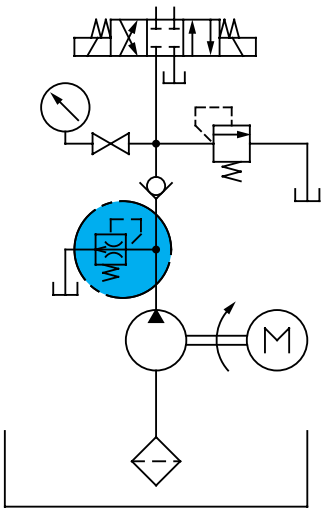
- Design number
- Valve open pressure
  1: 0.24MPa {2.4kgf/cm²}
  A: 0.18MPa {1.8kgf/cm²}
- Piping (nominal diameter)
- Mounting method
  T: Screw connection type
- Air bleed-off valve

Part No.	Part Name	Q'ty
1	Valve body	1
2	Snap ring	1
3	Valve	1
4	Spring	1

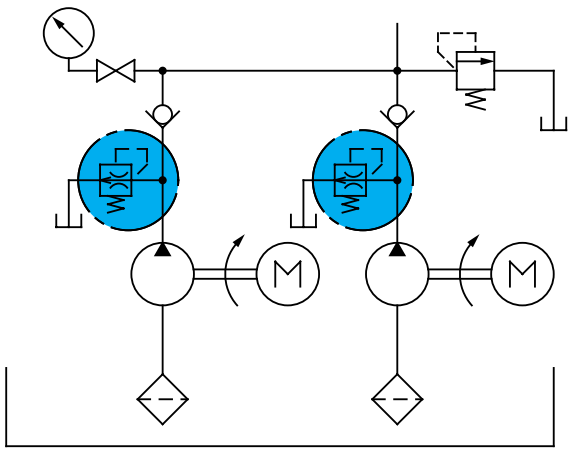
Note 1)If chattering occurs in a circuit when CAB-T02-1-10 is used, use CAB-T02-A-10 instead.
2)If chattering occurs in a circuit when CAB-T02-A-10 is used, use of a CAB air bleed-off valve is not required.

Application Examples

Example of Circuits that Require an Air Bleed-off Valve
①When using a Type 2 or Type 3 check valve (Sample Circuit A)
②When unload circuit function cannot be achieved (Sample Circuit A)
③When the discharge sides of multiple pumps run together (Sample Circuit B)



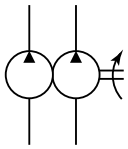
Circuit Diagram A



Circuit Diagram B

IPH Series Double IP Pump

3.6 to 125.9cm³/rev
30MPa



※All the types in this new design (11D) series are installation compatible with the previous design (10D). Note, however, that there is no longer compatibility for some of the seal components between the IPH-3 and IPH-4 sizes and the 3 and 4 sizes.

Features

①Configured with the high-pressure, low-noise IPH Series and IP pumps, these double pumps greatly expand the range of application for the IP pump.

②A wide selection of pump combinations provides options that are perfect for just about any type of application imaginable.

Specifications

Model No.	Discharge Rate (1200min⁻¹ No-load)		Revolution Speed		Operating Pressure MPa{kgf/cm²}	Required Power at 1200min⁻¹, 21MPa kW
	Vent Side ℓ/min	Shaft Side ℓ/min	Min. min⁻¹	Max. min⁻¹		
IPH-22B-*-*-(*)-11	4.3 to 9.8	4.3 to 9.8	600	2000	Rated: 21 {214} Max: 30 {306}	7.99
IPH-23B		12.2 to 18.9				11.6
IPH-24B		24.8 to 38.7				19.5
IPH-25B		48.9 to 76.6				34.5
IPH-26B		97.5 to 151.0				64.0
IPH-33B	12.2 to 18.9	12.2 to 18.9				15.3
IPH-34B		24.8 to 38.7				23.1
IPH-35B		48.9 to 76.6				38.1
IPH-36B		97.5 to 151.0				67.7
IPH-44B	24.8 to 38.7	24.8 to 38.7	500			31.0
IPH-45B		48.9 to 76.6				46.0
IPH-46B		97.5 to 151.0				75.6
IPH-55B	48.9 to 76.6	48.9 to 76.6	400			61.0
IPH-56B		97.5 to 151.0				90.6
IPH-66B	97.5 to 151.0	97.5 to 151.0	300			119.3

Note) 1.Maximum Pressure: Maximum pressure limit when there are frequent pressure changes. However, maximum pressure is the same as rated pressure when load is applied to the head side and shaft side simultaneously.
2.Suction Pressure: +0.03 to +0.3 MPa {–0.3 to +0.3 kgf/cm²}
3.Avoid installation with the suction port towards the bottom of the pump. If the revolution speed will exceed 1800mm⁻¹, provide separate piping for shaft side and head size IN ports.
4.Specify using the model number format shown below when pipe flange is required.
5.Working pressure is continuous operating pressure when the same pressure exists on the head side and shaft side.
6.Individual pump perform performance on the head side and shaft side is the same as that of the single pumps. Required power is the sum of the power required by each of the two pumps.
7.The "Required Power at 1200min⁻¹, 21MPa (kW)" column in the above table are based on combinations that provide the maximum capacity for each model number, when pressure at both the head side and shaft side is 21MPa. Examples of combinations that provide "the maximum capacity for each model number" are IPH-22B-8-8-11 for IPH-22b, and IPH-46B-32-125-11 for IPH-46B. A capacity of 125 for all *6B Type 6 pumps is used for calculations.

● Handling
Handling is in accordance with procedures for the IPH pump. See page C-1 for more information.

Understanding Model Numbers

IPH – 4 6 B – 20 – 125 – LT – 11

- IPH Series IP Pump
- Head side pump size (2 to 6)
- Shaft side pump size (2 to 6)
- Mounting method B: Flange type mounting
- Head side pump capacity (cm³/rev)
- Shaft side pump capacity (cm³/rev)
- Auxiliary symbol
  - None: Clockwise (viewed from shaft end)
  - L : Counterclockwise (viewed from shaft end)
  - T : Includes Screw In Flange Kit (for shared IN port)
  - TT : Includes Screw In Flange Kit (for individual IN port)
  - E : Includes Welded Flange Kit (for shared IN port)
  - EE : Includes Welded Flange Kit (for individual IN port)
- Design number

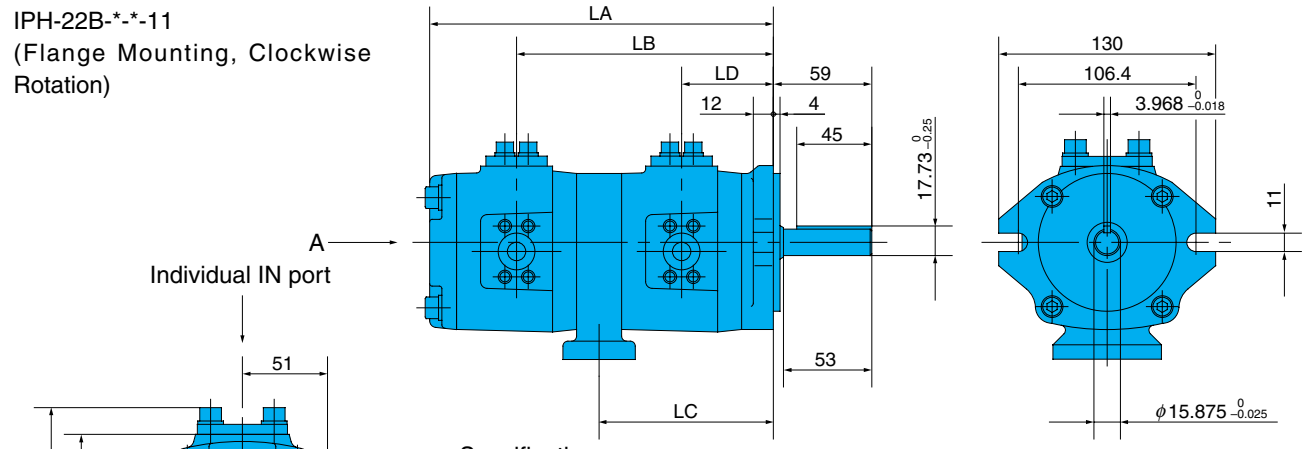
Auxiliary symbol must be provided in alphabetic order.

● IPH Series Double IP Pump Foot Mounting Kit
See the IPH Series (single) IP pump section in page C-12.

● IPH Series Double IP Pump Pipe Flange
See the IPH Series (single) IP pump section in page C-10.

Installation Dimension Drawings

IPH-22B-*-*-11
(Flange Mounting, Clockwise Rotation)

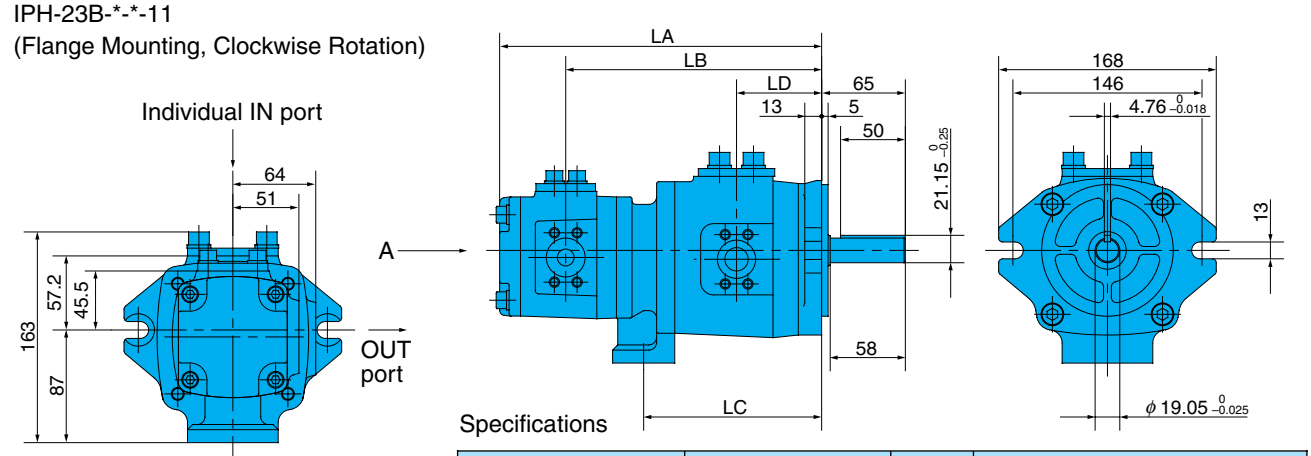


Specifications

Model No.	Volume cm³/rev		Weight kg	Dimensions (mm)			
	Vent Side	Shaft Side		LA	LB	LC	LD
IPH-22B-3.5 -3.5-11	3.60	3.60	5.8	211.5	160	105.5	51
-5		5.24	5.9	216.5	165	110.5	53.5
-6.5		6.55	6.0	220.5	169	114.5	55
-8		8.18	6.2	225.5	174	119.5	58
IPH-22B-5 -5 -11	5.24	5.24	6.0	221.5	167.5	110.5	53.5
-6.5		6.55	6.1	225.5	171.5	114.5	55
-8		8.18	6.3	230.5	176.5	119.5	58
IPH-22B-6.5 -6.5-11	6.55	6.55	6.2	229.5	173.5	114.5	55
-8		8.18	6.4	234.5	178.5	119.5	58
IPH-22B-8 -8 -11	8.18	8.18	6.6	239.5	181	119.5	58

Note) Dimensions shown in this diagram are for a single pump.

IPH-23B-*-*-11
(Flange Mounting, Clockwise Rotation)

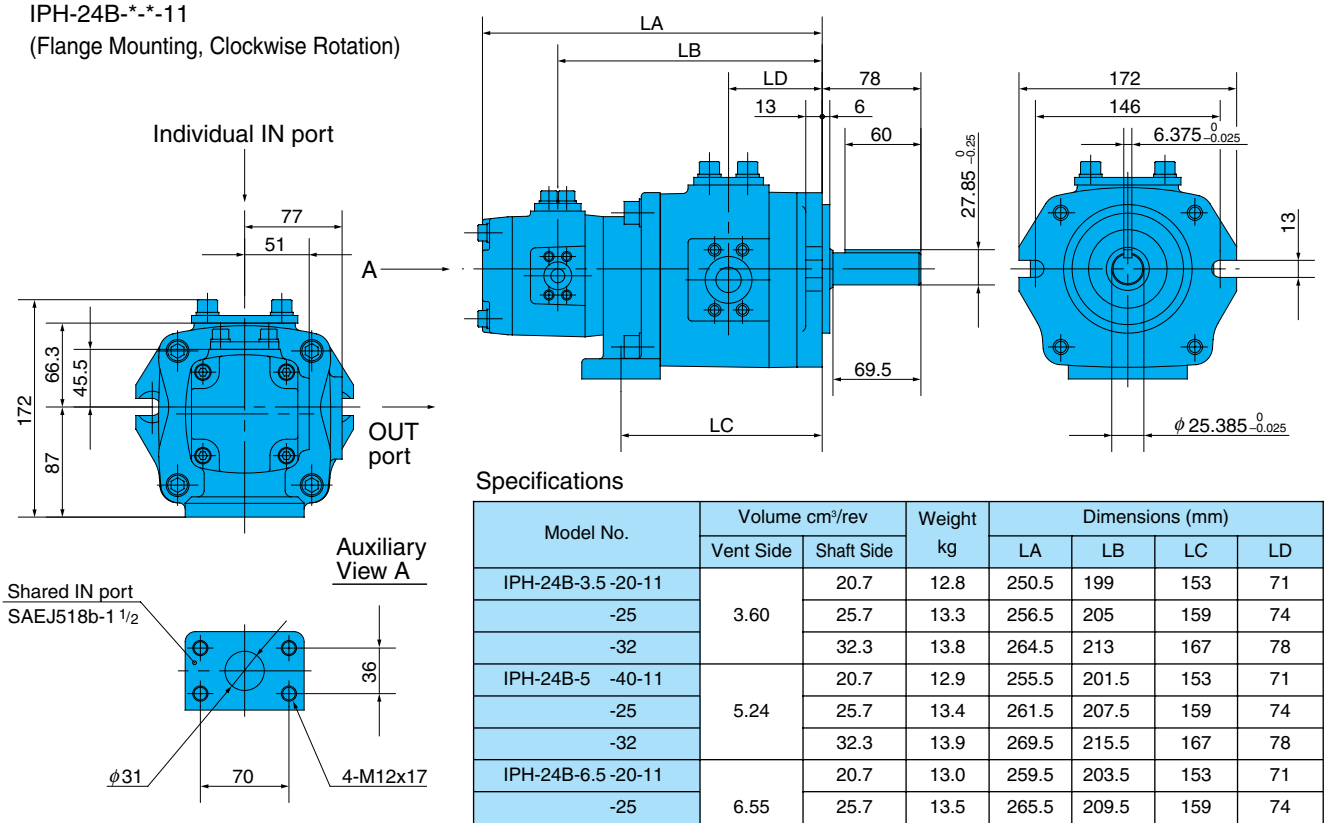


Specifications

Model No.	Volume cm³/rev		Weight kg	Dimensions (mm)			
	Vent Side	Shaft Side		LA	LB	LC	LD
IPH-23B-3.5 -10-11	3.60	10.2	8.2	230.5	179	126	60
-13		13.3	8.4	236.5	185	132	63
-16		15.8	8.7	241.5	190	137	65.5
IPH-23B-5 -10-11	5.24	10.2	8.3	235.5	181.5	126	60
-13		13.3	8.5	241.5	187.5	132	63
-16		15.8	8.8	246.5	192.5	137	65.5
IPH-23B-6.5 -10-11	6.55	10.2	8.4	239.5	183.5	126	60
-13		13.3	8.6	245.5	189.5	132	63
-16		15.8	8.9	250.5	194.5	137	65.5
IPH-23B-8 -10-11	8.18	10.2	8.6	244.5	186	126	60
-13		13.3	8.8	250.5	192	132	63
-16		15.8	9.1	255.5	197	137	65.5

Note) IPH-22B (23B)-*-*-L-11 (foot mounting/flange mounting, counterclockwise rotation) are the mirror image of the drawings shown above. In the case the individual port is facing upwards, the discharge port flange is positioned to the right when viewed from the shaft side.

IPH-24B-*-*-11
(Flange Mounting, Clockwise Rotation)

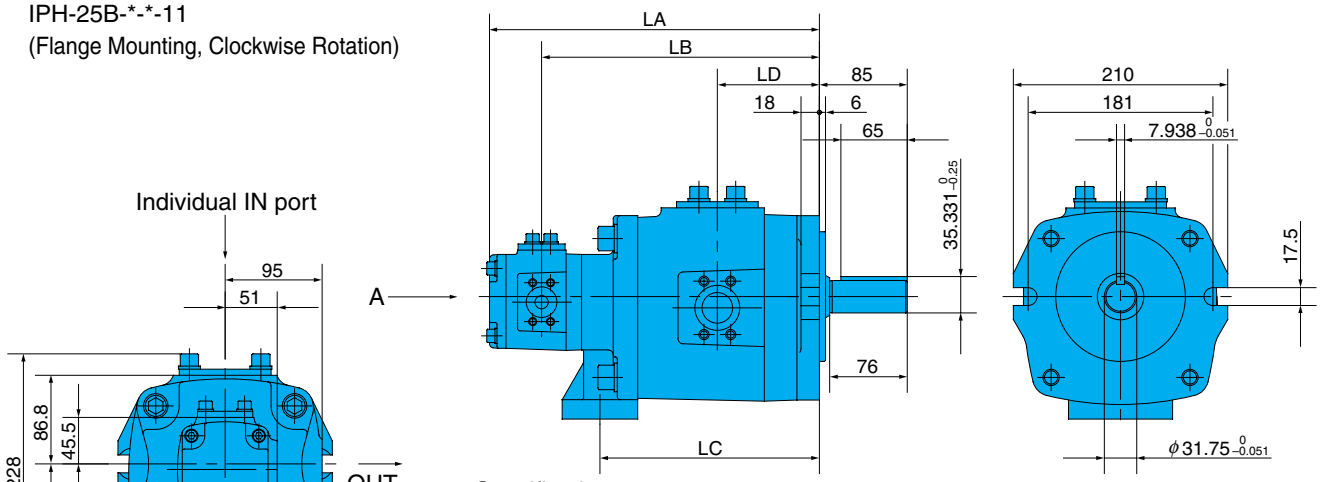


Specifications

Model No.	Volume cm³/rev		Weight kg	Dimensions (mm)			
	Vent Side	Shaft Side		LA	LB	LC	LD
IPH-24B-3.5 -20-11	3.60	20.7	12.8	250.5	199	153	71
-25		25.7	13.3	256.5	205	159	74
-32		32.3	13.8	264.5	213	167	78
IPH-24B-5 -40-11	5.24	20.7	12.9	255.5	201.5	153	71
-25		25.7	13.4	261.5	207.5	159	74
-32		32.3	13.9	269.5	215.5	167	78
IPH-24B-6.5 -20-11	6.55	20.7	13.0	259.5	203.5	153	71
-25		25.7	13.5	265.5	209.5	159	74
-32		32.3	14.0	273.5	217.5	167	78
IPH-24B-8 -20-11	8.18	20.7	13.2	264.5	206	153	71
-25		25.7	13.7	270.5	212	159	74
-32		32.3	14.2	278.5	220	167	78

Note) Dimensions shown in this diagram are for a single pump.

IPH-25B-*-*-11
(Flange Mounting, Clockwise Rotation)

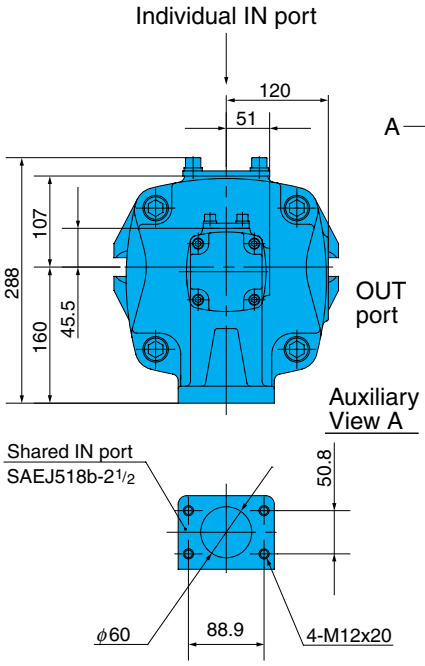


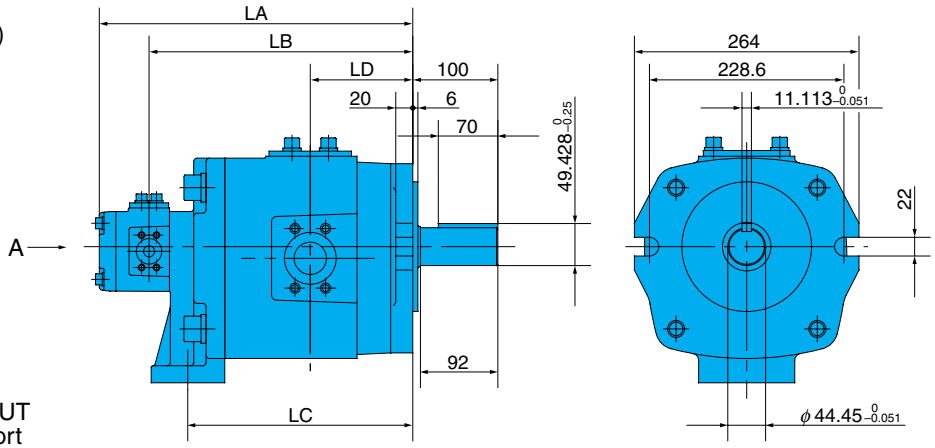
Specifications

Model No.	Volume cm³/rev		Weight kg	Dimensions (mm)			
	Vent Side	Shaft Side		LA	LB	LC	LD
IPH-25B-3.5 -40-11	3.60	40.8	24.1	298.5	247	197	91
-50		50.3	25.1	305.5	254	204	94.5
-64		63.9	26.1	315.5	264	214	99.5
IPH-25B-5 -40-11	5.24	40.8	24.2	303.5	249.5	197	91
-50		50.3	25.2	310.5	256.5	204	94.5
-64		63.9	26.2	320.5	266.5	214	99.5
IPH-25B-6.5 -40-11	6.55	40.8	24.3	307.5	251.5	197	91
-50		50.3	25.3	314.5	258.5	204	94.5
-64		63.9	26.3	324.5	268.5	214	99.5
IPH-25B-8 -40-11	8.18	40.8	24.5	312.5	254	197	91
-50		50.3	25.5	319.5	261	204	94.5
-64		63.9	26.5	329.5	271	214	99.5

Note) IPH-24B (25B)-*-*-L-11 (foot mounting/flange mounting, counterclockwise rotation) are the mirror image of the drawings shown above. In the case the individual IN port is facing upwards, the discharge port flange is positioned to the right when viewed from the shaft side.

IPH-26B-*-*-11
(Flange Mounting, Clockwise Rotation)



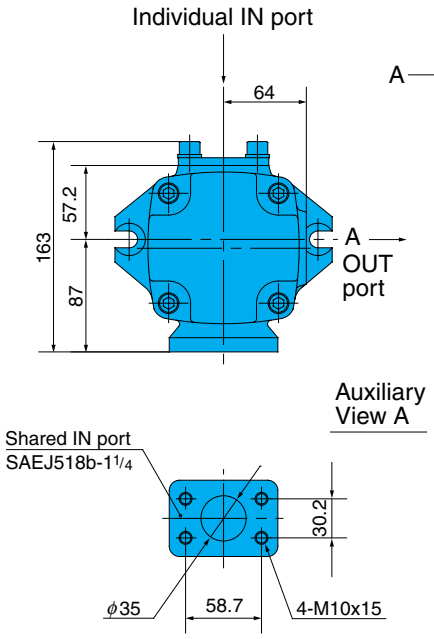


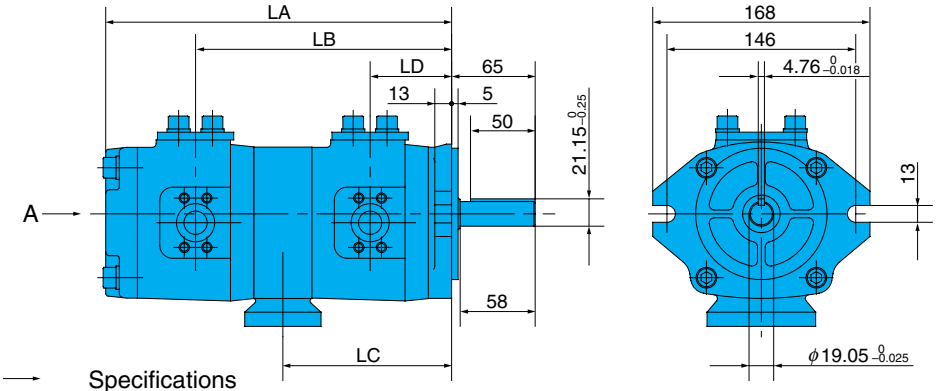
Specifications

Model No.	Volume cm³/rev		Weight kg	Dimensions (mm)			
	Vent Side	Shaft Side		LA	LB	LC	LD
IPH-26B-3.5- 80-11	3.60	81.3	45.8	345.5	294	240	111.5
-100		101.6	47.8	355.5	304	250	116.5
-125		125.9	49.8	367.5	316	262	122.5
IPH-26B-5 - 80-11	5.24	81.3	45.9	350.5	296.5	240	111.5
-100		101.6	47.9	360.5	306.5	250	116.5
-125		125.9	49.9	372.5	318.5	262	122.5
IPH-26B-6.5- 80-11	6.55	81.3	46.0	354.5	298.5	240	111.5
-100		101.6	48.0	364.5	308.5	250	116.5
-125		125.9	50.0	376.5	320.5	262	122.5
IPH-26B-8 - 80-11	8.18	81.3	46.2	357	301	240	111.5
-100		101.6	48.2	367	311	250	116.5
-125		125.9	50.2	379	323	262	122.5

Note)Dimensions shown in this diagram are for a single pump.

IPH-33B-*-*-11
(Flange Mounting, Clockwise Rotation)



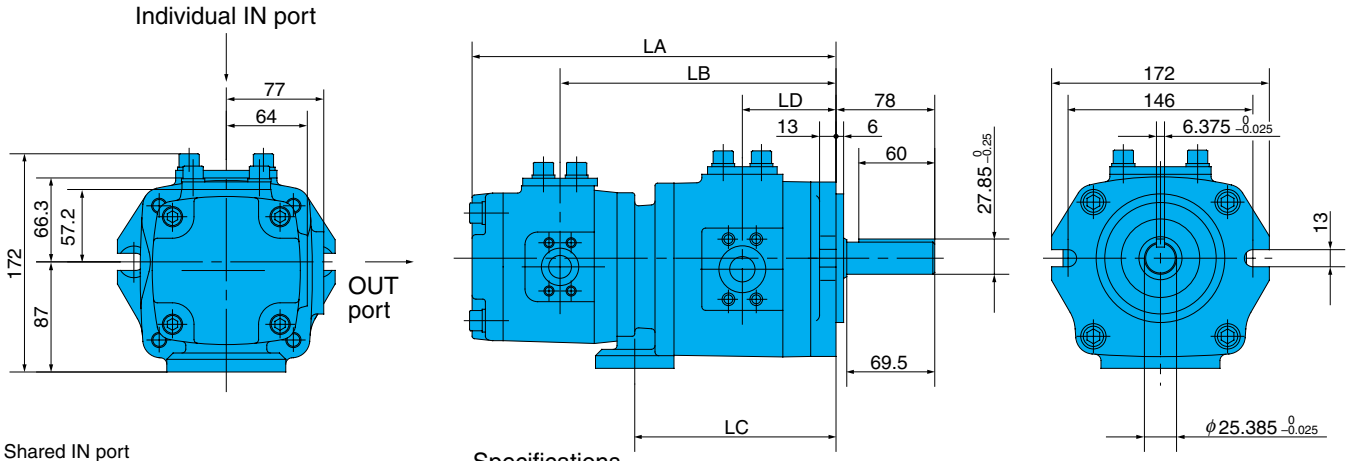


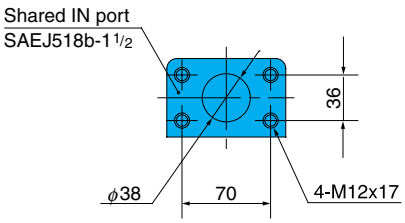
Specifications

Model No.	Volume cm³/rev		Weight kg	Dimensions (mm)			
	Vent Side	Shaft Side		LA	LB	LC	LD
IPH-33B-10 -10-11	10.2	10.2	10.3	255.5	189	124.5	60
-13		13.3	10.5	261.5	195	130.5	63
-16		15.8	10.8	266.5	200	135.5	65.5
IPH-33B-13 -13-11	13.3	13.3	10.5	267.5	198	130.5	63
-16		15.8	11.0	272.5	203	135.5	65.5
IPH-33B-16 -16-11	15.8	15.8	11.3	277.5	205.5	135.5	65.5

Note) IPH-26B (33B)-*-*-L-11 (foot mounting/flange mounting, counterclockwise rotation) are the mirror image of the drawings shown above. In the case the individual IN port is facing upwards, the discharge port flange is positioned to the right when viewed from the shaft side.

IPH-34B-*-*-11
(Flange Mounting, Clockwise Rotation)



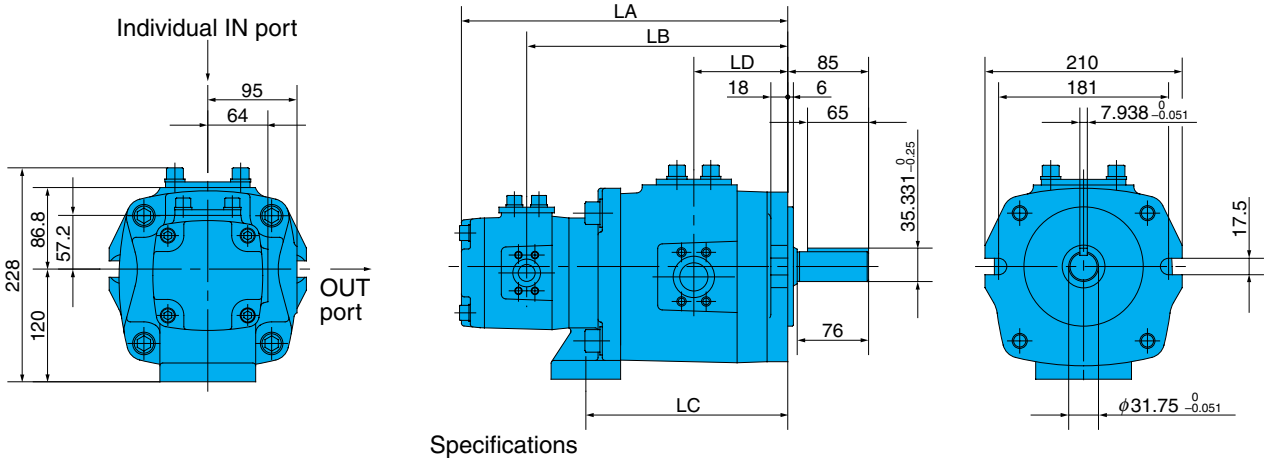


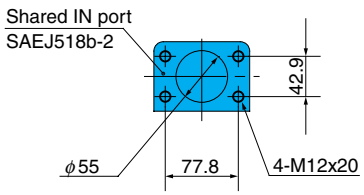
Specifications

Model No.	Volume cm³/rev		Weight kg	Dimensions (mm)			
	Vent Side	Shaft Side		LA	LB	LC	LD
IPH-34B-10 -20-11	10.2	20.7	14.9	272	209	153	71
-25		25.7	15.4	278	215	159	74
-32		32.3	15.9	286	223	167	78
IPH-34B-13 -20-11	13.3	20.7	15.1	278	212	153	71
-25		25.7	15.6	284	218	159	74
-32		32.3	16.1	292	226	167	78
IPH-34B-16 -20-11	15.8	20.7	15.4	283	214.5	153	71
-25		25.7	15.9	289	220.5	159	74
-32		32.3	16.4	297	228.5	167	78

Note) Dimensions shown in this diagram are for a single pump.

IPH-35B-*-*-11
(Flange Mounting, Clockwise Rotation)



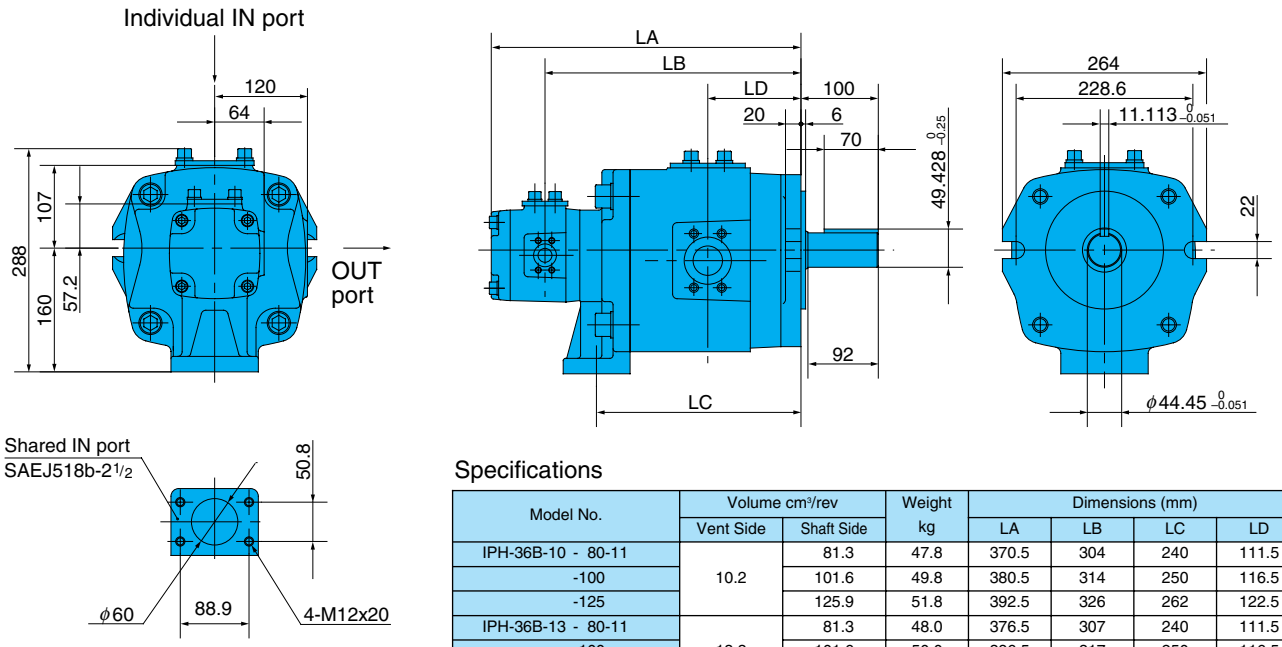


Specifications

Model No.	Volume cm³/rev		Weight kg	Dimensions (mm)			
	Vent Side	Shaft Side		LA	LB	LC	LD
IPH-35B-10 -40-11	10.2	40.8	26.4	323.5	257	197	91
-50		50.3	27.4	330.5	264	204	94.5
-64		63.9	28.4	340.5	274	214	99.5
IPH-35B-13 -40-11	13.3	40.8	26.6	329.5	260	197	91
-50		50.3	27.6	336.5	267	204	94.5
-64		63.9	28.6	346.5	277	214	99.5
IPH-35B-16 -40-11	15.8	40.8	26.9	334.5	262.5	197	91
-50		50.3	27.9	341.5	269.5	204	94.5
-64		63.9	28.9	351.5	279.5	214	99.5

Note) IPH-34B (35B)-*-*-L-11 (foot mounting/flange mounting, counterclockwise rotation) are the mirror image of the drawings shown above. In the case the individual IN port is facing upwards, the discharge port flange is positioned to the right when viewed from the shaft side.

IPH-36B-*-*-11
(Flange Mounting, Clockwise Rotation)

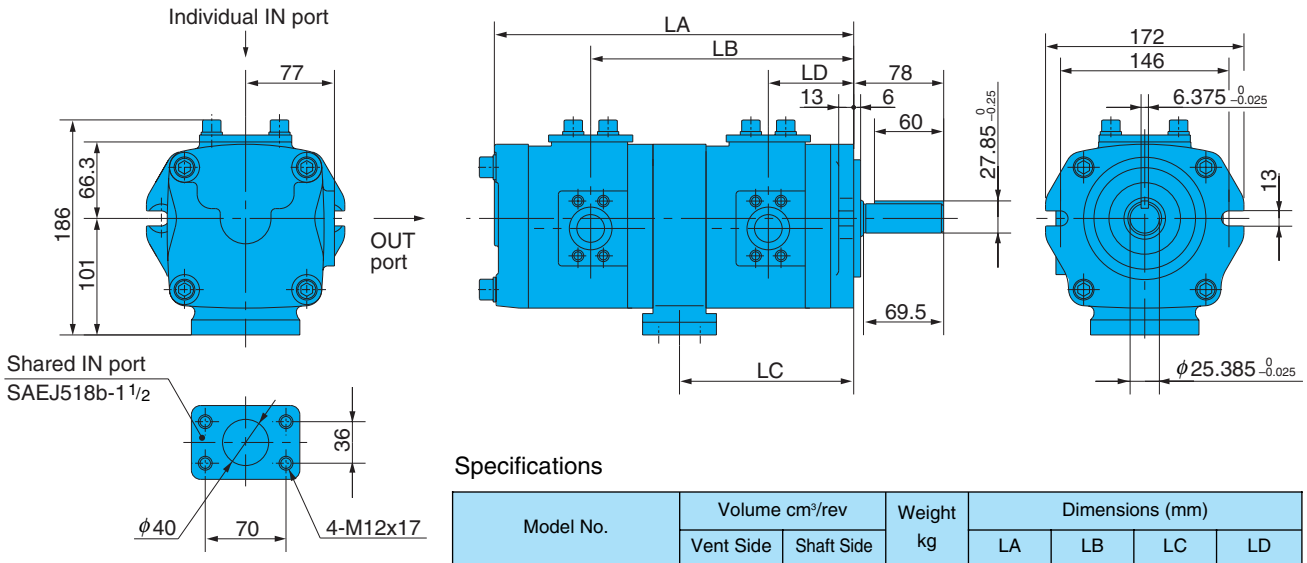


Specifications

Model No.	Volume cm³/rev		Weight kg	Dimensions (mm)			
	Vent Side	Shaft Side		LA	LB	LC	LD
IPH-36B-10 - 80-11	10.2	81.3	47.8	370.5	304	240	111.5
-100		101.6	49.8	380.5	314	250	116.5
-125		125.9	51.8	392.5	326	262	122.5
IPH-36B-13 - 80-11	13.3	81.3	48.0	376.5	307	240	111.5
-100		101.6	50.0	386.5	317	250	116.5
-125		125.9	52.0	398.5	329	262	122.5
IPH-36B-16 - 80-11	15.8	81.3	48.3	381.5	309.5	240	111.5
-100		101.6	50.3	391.5	319.5	250	116.5
-125		125.9	52.3	403.5	331.5	262	122.5

Note) Dimensions shown in this diagram are for a single pump.

IPH-44B-*-*-11
(Flange Mounting, Clockwise Rotation)

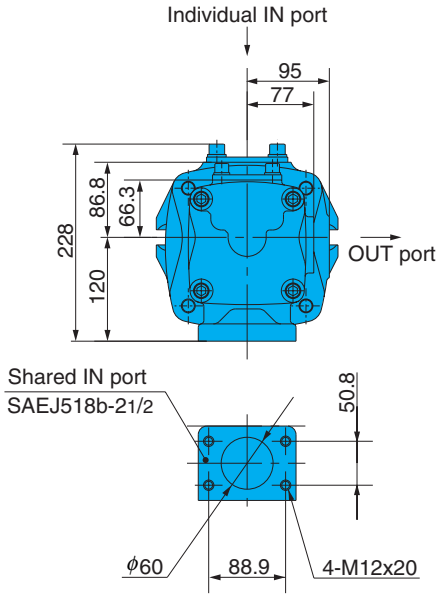


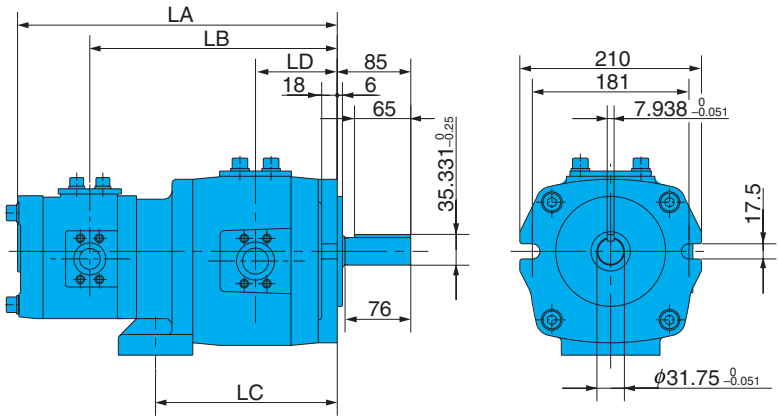
Specifications

Model No.	Volume cm³/rev		Weight kg	Dimensions (mm)			
	Vent Side	Shaft Side		LA	LB	LC	LD
IPH-44B-20 -20-11	20.7	20.7	19.5	307	219	145	71
-25		25.7	20.0	313	225	151	74
-32		32.3	20.5	321	233	159	78
IPH-44B-25 -25-11	25.7	25.7	20.5	319	228	151	74
-32		32.3	21.0	327	236	159	78
IPH-44B-32 -32-11	32.3	32.3	21.5	335	240	159	78

Note) IPH-36B (44B)-*-*-L-11 (foot mounting/flange mounting, counterclockwise rotation) are the mirror image of the drawings shown above. In the case the individual IN port is facing upwards, the discharge port flange is positioned to the right when viewed from the shaft side.

IPH-45B-*-*-11
(Flange Mounting, Clockwise Rotation)



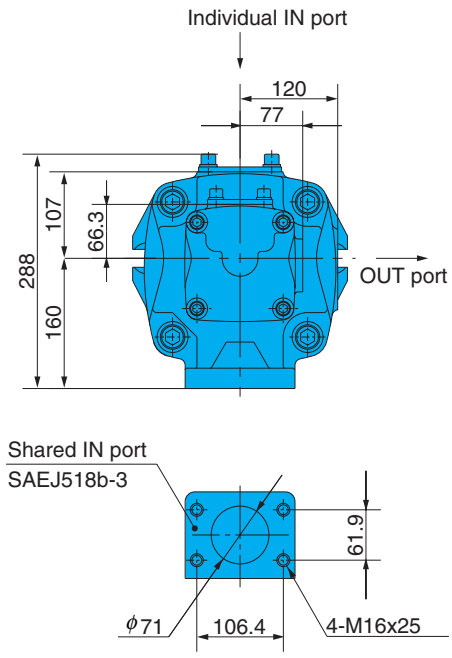


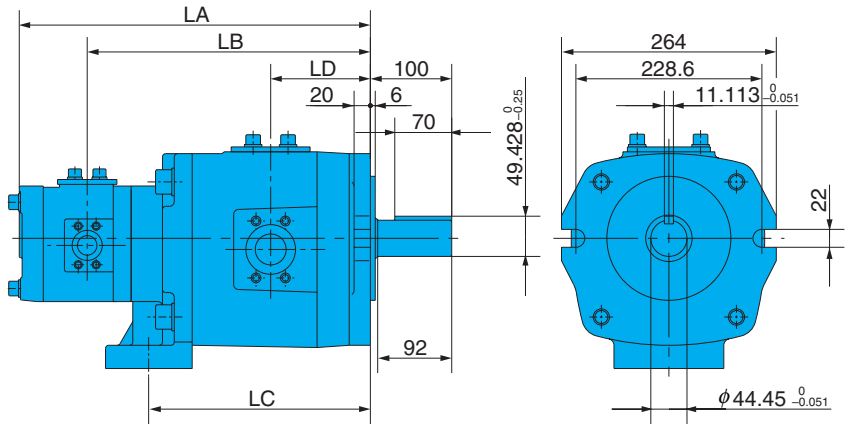
Specifications

Model No.	Volume cm³/rev		Weight kg	Dimensions (mm)			
	Vent Side	Shaft Side		LA	LB	LC	LD
IPH-45B-20 -40-11	20.7	40.8	30.1	357	276	203	91
-50		50.3	31.1	364	283	210	94.5
-64		63.9	32.1	374	293	220	99.5
IPH-45B-25 -40-11	25.7	40.8	30.6	363	279	203	91
-50		50.3	31.6	370	286	210	94.5
-64		63.9	32.6	380	296	220	99.5
IPH-45B-32 -40-11	32.3	40.8	31.1	371	283	203	91
-50		50.3	32.1	378	290	210	94.5
-64		63.9	33.1	388	300	220	99.5

Note) Dimensions shown in this diagram are for a single pump.

IPH-46B-*-*-11
(Flange Mounting, Clockwise Rotation)





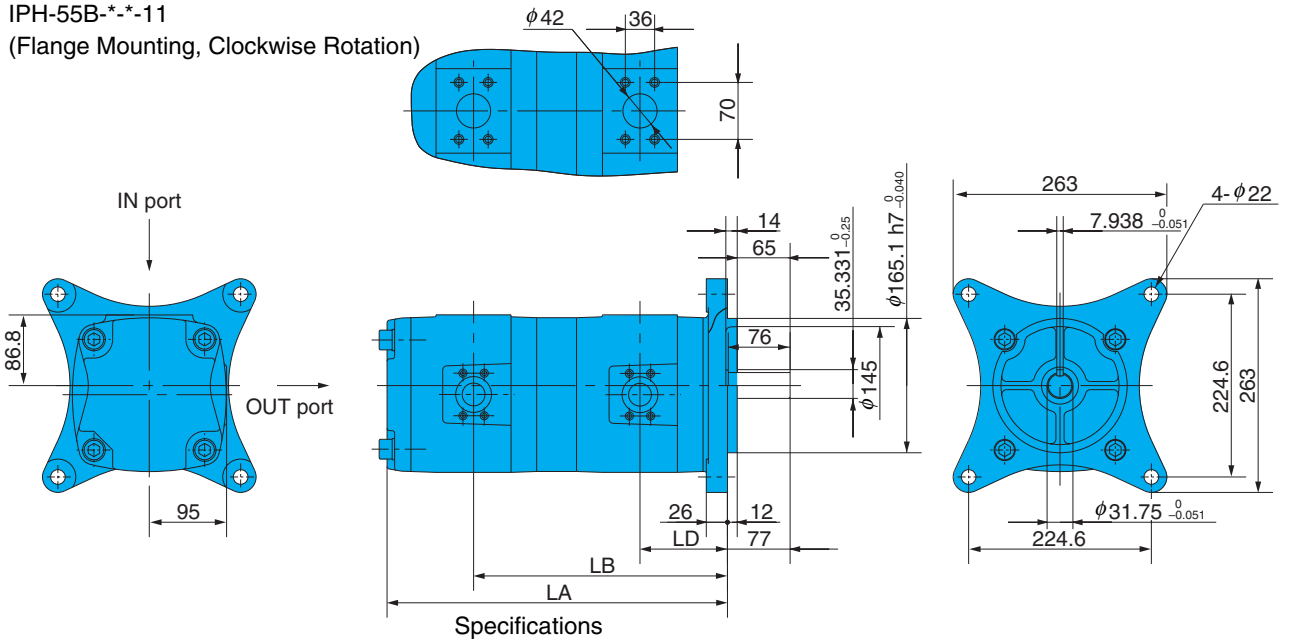
Specifications

Model No.	Volume cm³/rev		Weight kg	Dimensions (mm)			
	Vent Side	Shaft Side		LA	LB	LC	LD
IPH-46B-20 - 80-11	20.7	81.3	52.1	404	323	250	111.5
-100		101.6	54.1	414	333	260	116.5
-125		125.9	56.1	426	345	272	122.5
IPH-46B-25 - 80-11	25.7	81.3	52.6	410	326	250	111.5
-100		101.6	54.6	420	336	260	116.5
-125		125.9	56.6	432	348	272	122.5
IPH-46B-32 - 80-11	32.3	81.3	53.1	418	330	250	111.5
-100		101.6	55.1	428	340	260	116.5
-125		125.9	57.1	440	352	272	122.5

Note) Dimensions shown in this diagram are for a single pump.

Note) IPH-45B (46B)-*-*-L-11 (foot mounting/flange mounting, counterclockwise rotation) are the mirror image of the drawings shown above. In the case the individual IN port is facing upwards, the discharge port flange is positioned to the right when viewed from the shaft side.

IPH-55B-*-*-11
(Flange Mounting, Clockwise Rotation)

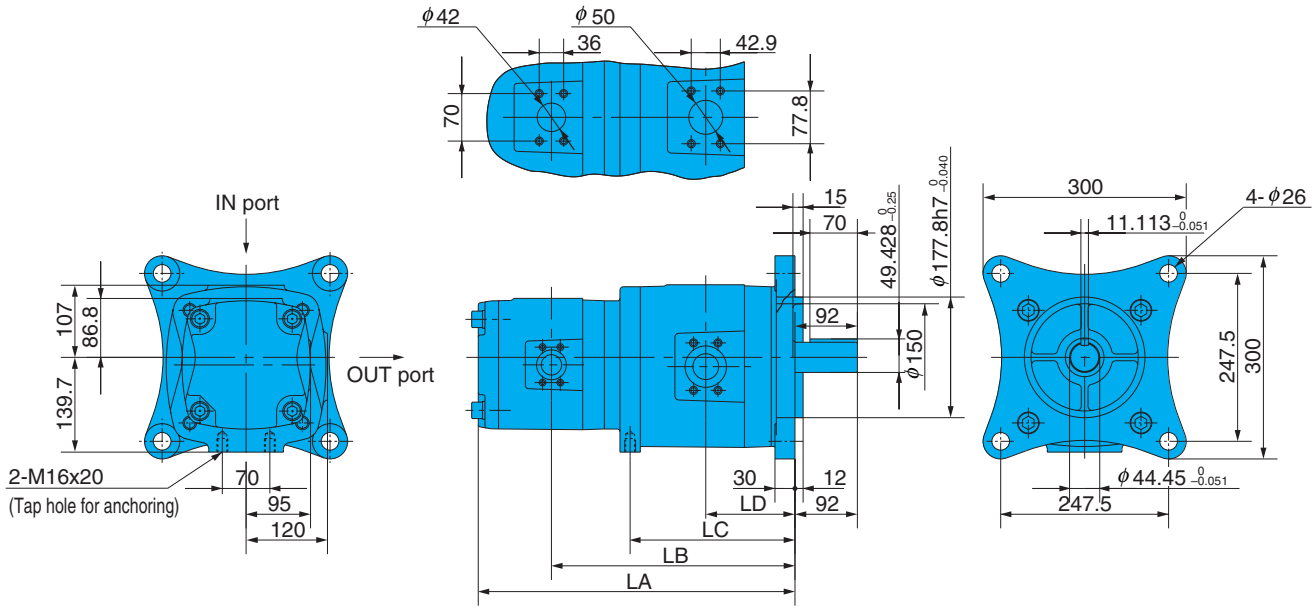


Specifications

Model No.	Volume cm³/rev		Weight kg	Dimensions (mm)		
	Vent Side	Shaft Side		LA	LB	LD
IPH-55B-40 -40-11	40.8	40.8	45.5	385	286	99
-50		50.3	46.5	392	293	102.5
-64		63.9	47.5	402	303	107.5
IPH-55B-50 -50-11	50.3	50.3	47.5	399	296.5	102.5
-64		63.9	48.5	409	306.5	107.5
IPH-55B-64 -64-11	63.9	63.9	49.5	419	311.5	107.5

Note) Dimensions shown in this diagram are for a single pump.

IPH-56B-*-*-11
(Flange Mounting, Clockwise Rotation)



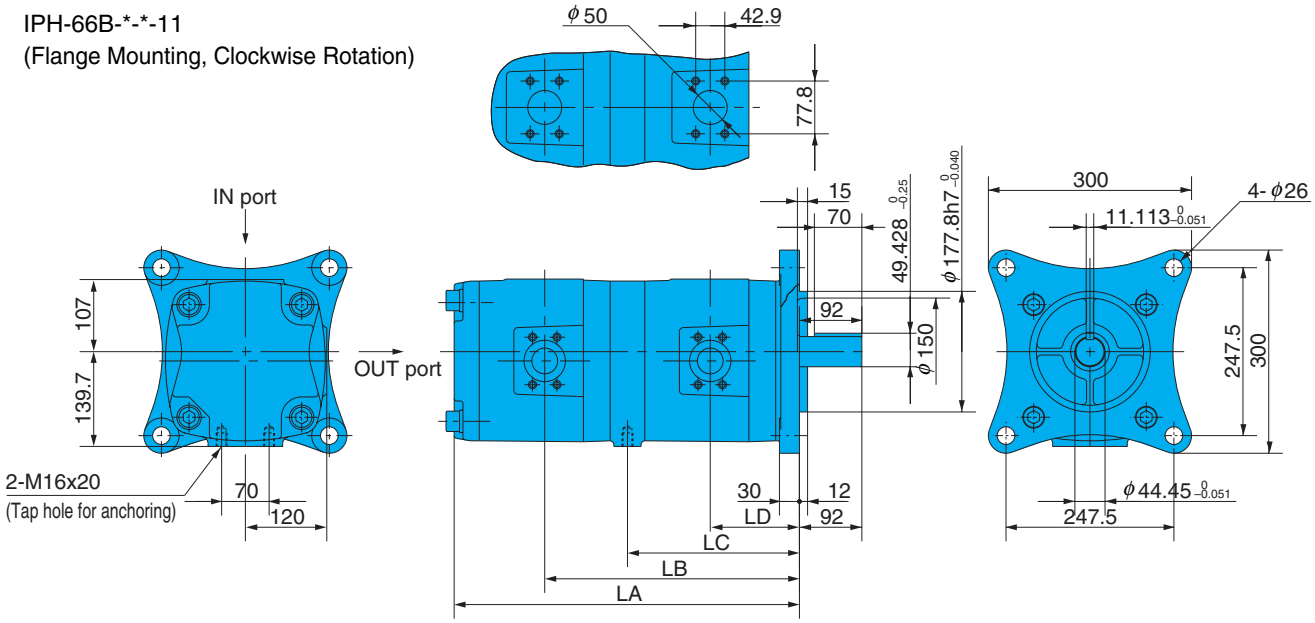
Specifications

Model No.	Volume cm³/rev		Weight kg	Dimensions (mm)			
	Vent Side	Shaft Side		LA	LB	LC	LD
IPH-56B-40 - 80-11	40.8	81.3	70.6	427	328	221	120.5
-100		101.6	72.6	437	338	231	125.5
-125		125.9	74.6	449	350	243	131.5
IPH-56B-50 - 80-11	50.3	81.3	71.6	434	331.5	221	120.5
-100		101.6	73.6	444	341.5	231	125.5
-125		125.9	75.6	456	353.5	243	131.5
IPH-56B-64 - 80-11	63.9	81.3	72.6	444	336.5	221	120.5
-100		101.6	74.6	454	346.5	231	125.5
-125		125.9	76.6	466	358.5	243	131.5

Note)Dimensions shown in this diagram are for a single pump.

Note) IPH-55B (56B)-*-*-L-11 (foot mounting/flange mounting, counterclockwise rotation) are the mirror image of the drawings shown above. In the case the individual IN port is facing upwards, the discharge port flange is positioned to the right when viewed from the shaft side.

IPH-66B-*-*-11
(Flange Mounting, Clockwise Rotation)



Specifications

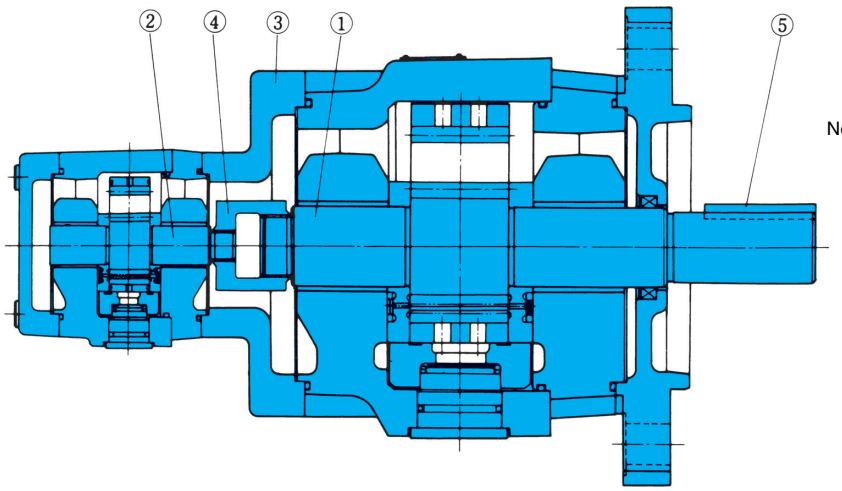
Model No.	Volume cm³/rev		Weight	Dimensions (mm)			
	Vent Side	Shaft Side	kg	LA	LB	LC	LD
IPH-66B- 80- 80-11	81.3	81.3	89.1	470	347.5	234	120.5
-100		101.6	91.1	480	357.5	244	125.5
-120		125.9	93.1	492	369.5	256	131.5
IPH-66B-100-100-11	101.6	101.6	93.1	490	362.5	244	125.5
-125		125.9	95.1	502	374.5	256	131.5
IPH-66B-125-125-11	125.9	125.9	97.1	514	380.5	256	131.5

Note) Dimensions shown in this diagram are for a single pump.

Note) IPH-66B-*-L-11 (foot mounting/flange mounting, counterclockwise rotation) are the mirror image of the drawings shown above. In the case the suction port flange is facing upwards, the discharge port flange position is to the right when viewed from the shaft side.

Cross-sectional Drawing

IPH Series Double IP Pump



Part No.	Part Name
1	Pinion shaft -1
2	Pinion shaft -2
3	Body -3
4	Joint
5	Key

Note) In the case of a double pump, use single pump parts in addition to the 5 parts listed above.

- IPS Series Double IP Pump Seal Kit

  The double pump seal kit combines a shaft side pump seal kit with a head side pump seal kit. The shaft side pump seal kit (IHAS-2S****-**) is the same as the single pump seal kit. The head side pump seal kit (IHAS-2H****-**) includes the same component parts as the single pump seal kit, except that it does not have a #23 oil seal. See the IPH Series (single) IP pump section in page C-9 for more information.

- Air bleed-off valve

  See the IPH Series (single) IP pump section in page C-13.