



IPH Series IP Pump

.21 to 7.68 in³/rev
4350 psi

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

A patented axial and radial pressure loading system provides high efficiency and generates pressures up to 4350 psi.

Outstanding durability and very long life. A modified involute short-tooth gear enables internal gearing for greatly reduced pulsation and noise, and

exceptionally quiet operation. A simple structure makes maintenance and inspection easier.

Specifications

Model No.	Capacity cm ³ /rev (in ³)	Rated Pressure psi	Maximum Operating Pressure psi	Minimum Revolution Speed min ⁻¹	Maximum Revolution Speed min ⁻¹	Weight lbs	
						Type A	Type B
IPH-2A(B)- 3.5-11	3.60 (.21)	3625	4350	600	2000	9.7	5.2
5	5.24 (.31)					9.9	5.5
6.5	6.55 (.39)					10.1	5.7
8	8.18 (.49)					10.5	6.1
IPH-3A(B) - 10-20	10.2 (.62)	3625	4350	600	2000	23.1	10.5
13	13.3 (.81)					23.5	11.0
16	15.8 (.96)					24.2	11.6
IPH-4A(B) - 20-20	20.7 (1.26)	3625	4350	500	2000	33.5	20.9
25	25.7 (1.56)					34.6	22.0
32	32.3 (1.97)					35.7	23.1
IPH-5A(B)- 40-21(11)	40.8 (2.48)	3625	4350	400	2000	70.5	41.8
50	50.3 (3.06)					72.7	44.1
64	63.9 (3.89)					74.9	46.3
IPH-6A(B)- 80-21(11)	81.3 (4.96)	3625	4350	300	2000	136.7	85.9
100	101.6 (6.19)					141.1	90.4
125	125.9 (7.68)					145.5	94.8

Note:

1. Suction Pressure: 3.6 psi.
2. Maximum working pressure shown here is the pressure limit when there are frequent pressure changes.
3. Avoid installation with the suction port towards the bottom of the pump.
4. Specify using the model number format shown below when pipe flanges are 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 150 centistokes.
- 2 The operating temperature range is 40 to 149 °F. When the oil temperature at

startup is 40 °F or less, perform a warm-up operation at low pressure until the oil temperature reaches 40 °F. Use the pump in an area where the temperature is within the range of 32 to 140 °F.

- 3 Suction pressure 3.6 psi, and the suction port flow rate should be to greater than 5 ft/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 10µm 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.

(continued on following page)

Understanding Model Numbers

IPH -- 4 B -- 25 -- LT -- 20

Design Number
11: 2A (B), 5B, 6B
20: 3A (B), 4A (B)
21: 5A, 6A

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

Capacity (cm³/rev)

Auxiliary symbol must be provided in alphabetic order

Mounting Method

A: Foot Type Mounting B: Flange Type Mounting

Size 2, 3, 4, 5, 6

IPH Series IP Pump

- 7 Operate within the RPM range in the catalog for the minimum RPM of the pump. Unload the pump's load pressure to operate at variable speeds. Condition of inflow piping must produce as little inflow load pressure as possible to minimize effect of cavitation.
- 8 When using water- or glycol-based hydraulic operating fluid, refer to page O-3 for details on applicable models
- 9 At startup, repeat the inching operation (start-stop) to bleed air from the pump and pipes.
- 10 Equip an air bleed valve in circuits where it is difficult to bleed air before startup. See page C-13 for more information.
- 11 To ensure proper lubrication of the pump's rubbing surfaces, supply oil to the interior of the pump before starting operation.
- 12 When centering the pump shaft, eccentricity with the motor shaft should be no greater than 0.001 in. Use a pump mounting base of sufficient rigidity. The angle error should be no greater than 1°.
- 13 Contact your agent for information about engines.

Discharge Rate and Required Input for Each Pump Speed

Speed	Pressure psi Model No.	Discharge Rate gpm						Required Input hp					
		100	1015	2030	3045	3625	4350	100	1015	2030	3045	3625	4350
1200 min ⁻¹	IPH-2A(B)- 3.5-11 5 6.5 8	1.1 1.6 2.0 2.5	1.1 1.6 2.0 2.5	1.0 1.5 1.9 2.4	1.0 1.5 1.9 2.4	1.0 1.5 1.8 2.3	1.0 1.4 1.8 2.3	.14 .20 .25 .30	.68 1.2 1.5 1.9	1.6 2.3 2.9 3.6	2.4 3.5 4.3 5.3	2.8 4.1 5.1 6.3	3.5 5.0 6.2 7.6
	IPH-3A(B)- 10-20 13 16	3.2 4.2 4.9	3.1 4.2 4.8	3.0 4.0 4.8	3.0 3.9 4.7	2.9 3.9 4.6	2.9 3.8 4.5	.40 .52 .60	2.4 3.1 3.7	4.3 5.7 6.8	6.6 8.6 10.2	7.9 10.1 12	9.6 12.4 14.8
	IPH-4A(B)- 20-20 25 32	6.5 8.1 10.2	6.7 8.0 10.0	6.28 7.8 9.8	6.1 7.7 9.7	6.1 7.6 9.5	6.0 7.5 9.4	.83 1.0 1.2	5.0 6.1 7.5	8.9 11.0 13.9	13.2 16.4 20.7	15.8 19.7 24.6	19.0 23.4 29.5
	IPH-5A(B)- 40-21(11) 50 64	12.9 15.9 20.2	12.6 15.6 19.8	12.4 15.4 19.5	12.1 15.1 19.2	12.0 14.9 19.0	11.8 14.7 18.8	1.6 1.9 2.4	9.9 11.9 15.0	17.2 21.7 27.6	26.1 32.1 40.9	30.9 38.3 48.6	38.0 45.9 58.3
	IPH-6A(B)- 80-21(11) 100 125	25.7 32.2 39.8	25.2 31.6 39.2	24.7 31.0 38.5	24.2 30.5 37.8	24.0 30.2 37.4	29.8 32.2 37.0	3.2 3.9 4.8	19.1 23.4 28.8	35.1 43.3 53.7	51.8 64.9 86.5	61.9 77.3 96.0	75.2 92.7 115.1
	IPH-2A(B)- 3.5-11 5 6.5 8	1.7 2.4 3.0 3.8	1.6 2.4 3.0 3.8	1.6 2.3 2.9 3.7	1.5 2.3 2.9 3.6	1.5 2.2 2.8 3.5	1.5 2.2 2.8 3.5	.22 .32 .40 .49	1.5 1.9 2.3 2.9	2.7 3.5 4.3 5.4	3.9 4.6 6.5 8.1	4.6 6.1 7.6 9.4	5.5 7.5 9.2 11.4
	IPH-3A(B)- 10-20 13 16	4.8 6.3 7.3	4.7 6.2 7.3	4.6 6.1 7.2	4.5 5.9 7.1	4.5 5.9 7.0	4.4 5.8 6.9	.65 .83 .96	3.8 4.9 5.7	6.7 8.8 10.4	10.0 12.9 15.2	11.9 15.1 18.1	14.4 18.6 22.1
	IPH-4A(B)- 20-20 25 32	9.8 12.2 15.3	9.6 12.0 15.1	9.5 11.8 14.9	9.3 11.7 14.6	9.2 11.5 14.5	9.1 11.4 14.3	1.3 1.6 1.9	7.5 9.1 11.3	13.4 16.6 20.9	19.9 24.8 30.9	23.6 29.0 36.8	28.4 35.2 44.2
	IPH-5A(B)- 40-21(11) 50 64	19.3 23.9 30.3	19.0 23.5 29.9	18.7 23.2 29.4	18.4 22.8 29.0	18.2 22.6 28.8	17.9 22.4 28.5	2.6 3.1 3.9	15.6 18.9 23.6	27.0 33.0 42.3	40.2 49.4 62.7	47.7 58.7 74.6	58.6 70.5 89.7
	IPH-6A(B)- 80-21(11) 100 125	38.6 46.2 59.8	37.9 47.6 58.9	37.3 46.9 58.1	36.7 46.2 57.3	36.3 45.8 56.8	35.8 45.3 56.1	5.2 6.3 7.4	30.0 37.1 45.3	53.9 67.4 83.4	79.9 99.7 123.7	95.0 118 147	115 142 176

Note: Values in the table are general values at an operating fluid viscosity of 46 centistokes. Use the values when selecting the model for your needs.

Parts for IPH Pump (Standard)

	Seal Kit	Najimi 3 Parts Set*	Radial Piston Kit**	Axial Plate Kit***
Single Pump	Mineral Oil/ Water Glycoloi	Mineral Oil	Mineral Oil	Mineral Oil
IPH-2B-***-(L)-11	IHAS-2S2***-10	FZD-7004-***	IHP-2-***-10	IHQ-2-10
IPH-3B-***-(L)-20	IHAS-2S30***-20	FZD-7004-0**	IHP-3-0***-10	IHQ-3-10
IPH-4B-***-(L)-20	IHAS-2S40***-30	FZD-7004-0**	IHP-4-0***-10	IHQ-4-10
IPH-5B-***-(L)-11	IHAS-2S50***-10	FZD-7004-0**	IHP-5-0***-10	IHQ-5-10
IPH-6B-***-(L)-11	IHAS-2S6***-10	FZD-7004-***	IHP-6-***-10	IHQ-6-10

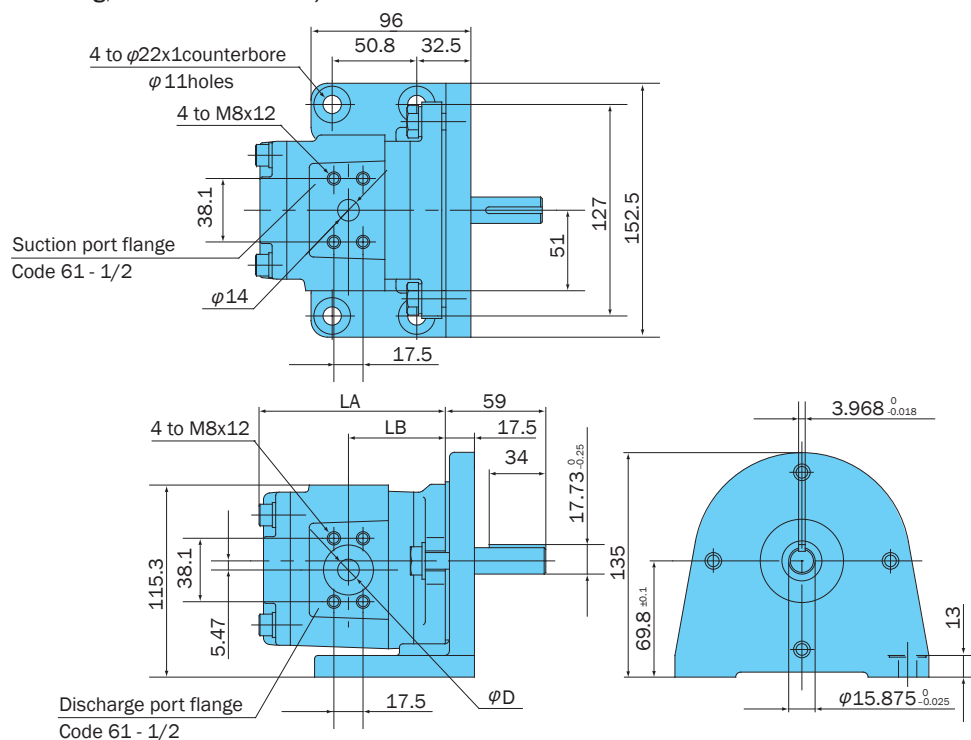
*Najimi set includes: Stopper-pin, axial plate-1, axial plate-2, feeler piece, axial backup ring, O-ring; **Radial Piston Kit includes: Radial piston, radial backup ring, backup ring, O-ring and washer
***Axial Plate Kit includes: Axial plate-1, axial plate-2, axial backup ring and O-ring

	Head (Rear) Side Pump		Shaft Side Pump	
Double Pump	Pump Model	Seal Kit	Pump Model	Seal Kit
IPH-22B-***-(L)-11	IPH-2H-***-(L)-11	IHAS-2H2***-10	IPH-2S-***-(L)-11	IHAS-2S2***-10
IPH-23B-***-(L)-11	IPH-2H-***-(L)-11	IHAS-2H2***-10	IPH-3S-***-(L)-11	IHAS-2S30***-20
IPH-24B-***-(L)-11	IPH-2H-***-(L)-11	IHAS-2H2***-10	IPH-4S-***-H(L)-11	IHAS-2S40***-30
IPH-25B-***-(L)-11	IPH-2H-***-(L)-11	IHAS-2H2***-10	IPH-5S-***-H(L)-11	IHAS-2S50***-10
IPH-26B-***-(L)-11	IPH-2H-***-(L)-11	IHAS-2H2***-10	IPH-6S-***-H(L)-11	IHAS-2S6***-10
IPH-33B-***-(L)-11	IPH-3H-***-(L)-11	IHAS-2H30***-20	IPH-3S-***-(L)-11	IHAS-2S30***-20
IPH-34B-***-(L)-11	IPH-3H-***-(L)-11	IHAS-2H30***-20	IPH-4S-***-(L)-11	IHAS-2S40***-30
IPH-35B-***-(L)-11	IPH-3H-***-(L)-11	IHAS-2H30***-20	IPH-5S-***-H(L)-11	IHAS-2S50***-10
IPH-36B-***-(L)-11	IPH-3H-***-(L)-11	IHAS-2H30***-20	IPH-6S-***-H(L)-11	IHAS-2S6***-10
IPH-44B-***-(L)-11	IPH-4H-***-(L)-11	IHAS-2H40***-30	IPH-4S-***-(L)-11	IHAS-2S40***-30
IPH-45B-***-(L)-11	IPH-4H-***-(L)-11	IHAS-2H40***-30	IPH-5S-***-(L)-11	IHAS-2S50***-10
IPH-46B-***-(L)-11	IPH-4H-***-(L)-11	IHAS-2H40***-30	IPH-6S-***-H(L)-11	IHAS-2S6***-10
IPH-55B-***-(L)-11	IPH-5H-***-(L)-11	IHAS-2H50***-10	IPH-5S-***-F(L)-11	IHAS-2S50***-10
IPH-56B-***-(L)-11	IPH-5H-***-(L)-11	IHAS-2H50***-10	IPH-6S-***-F(L)-11	IHAS-2S6***-10
IPH-66B-***-(L)-11	IPH-6H-***-(L)-11	IHAS-2H6***-10	IPH-6S-***-F(L)-11	IHAS-2S6***-10

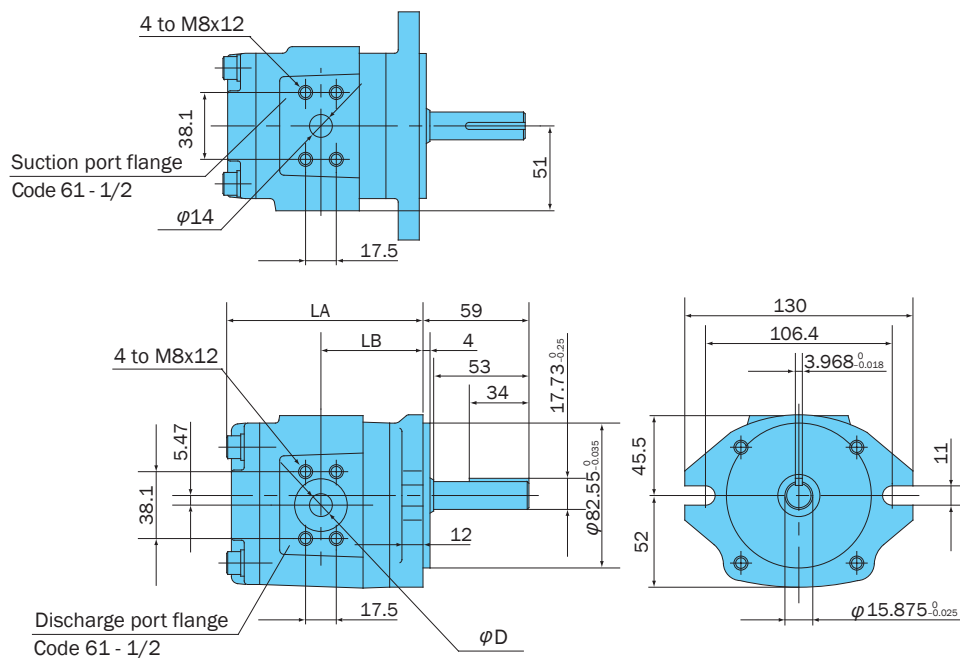
*Regarding Shaft side pump: H, F means the way of the bolt - H: 2-Bolt type, F: 4-Bolt type

Installation Dimension Drawings

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



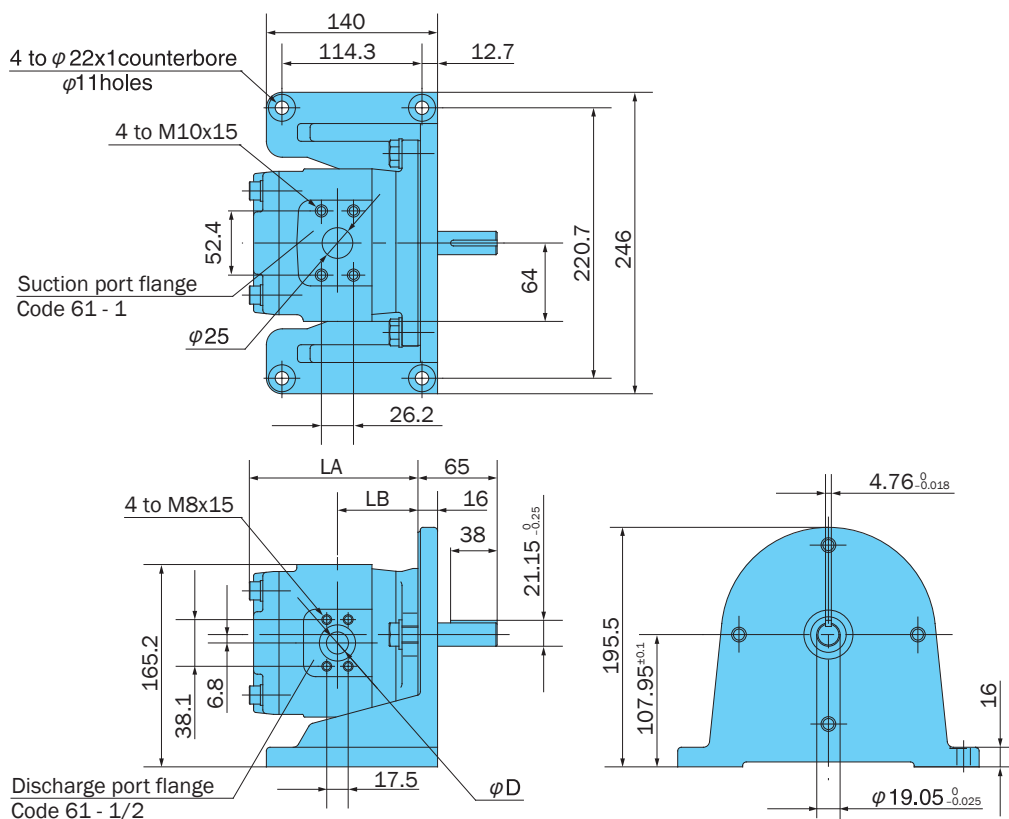
IPH-2B-*-11 (Flange Mounting, Clockwise Rotation) SAE A Mount



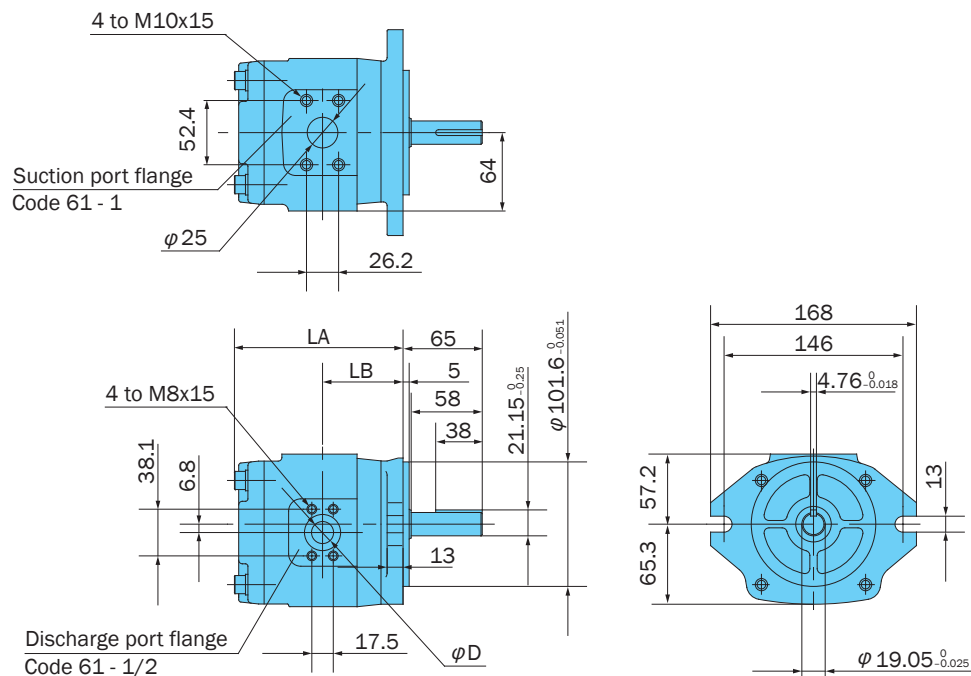
Model No.	Dimensions (mm)		
	LA	LB	ϕD
IPH-2*-3.5-*-11	107	51.0	8.9
IPH-2*-5-*-11	112	53.5	11
IPH-2*-6.5-*-11	116	55.5	12
IPH-2*-8-*-11	121	58.0	13

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)



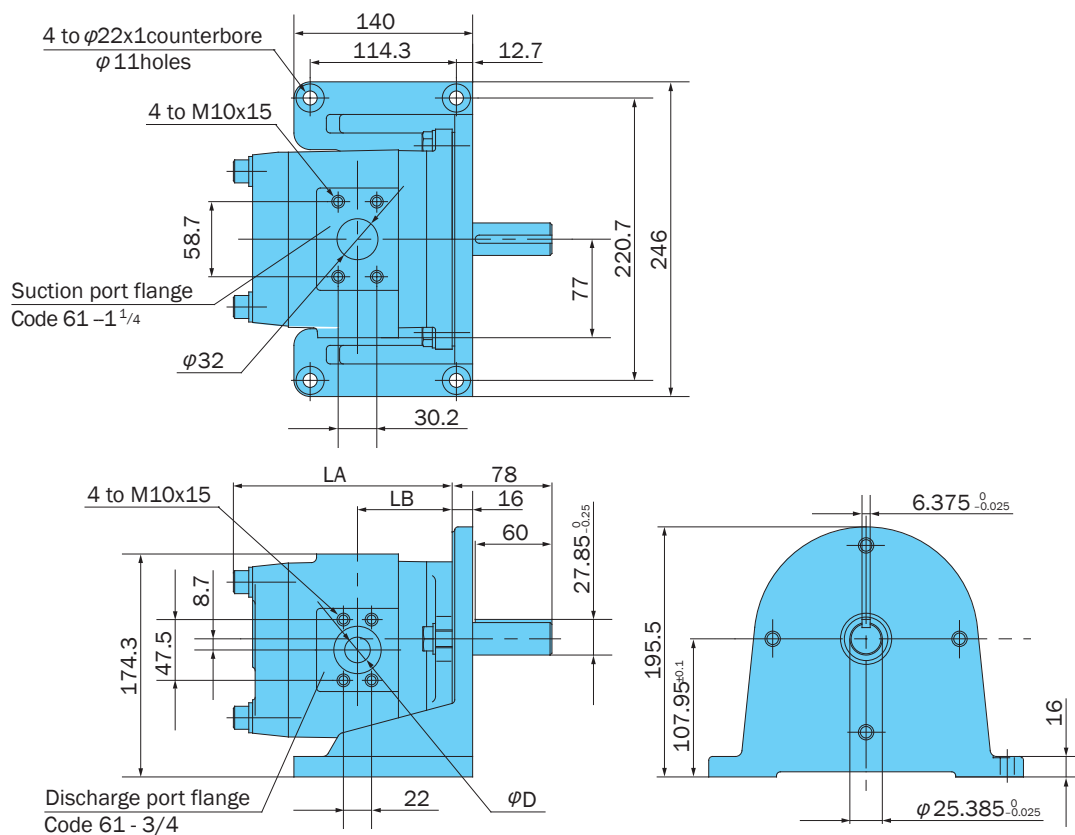
IPH-3B-*-20 (Flange Mounting, Clockwise Rotation) SAE B Mount 3/4 Shaft



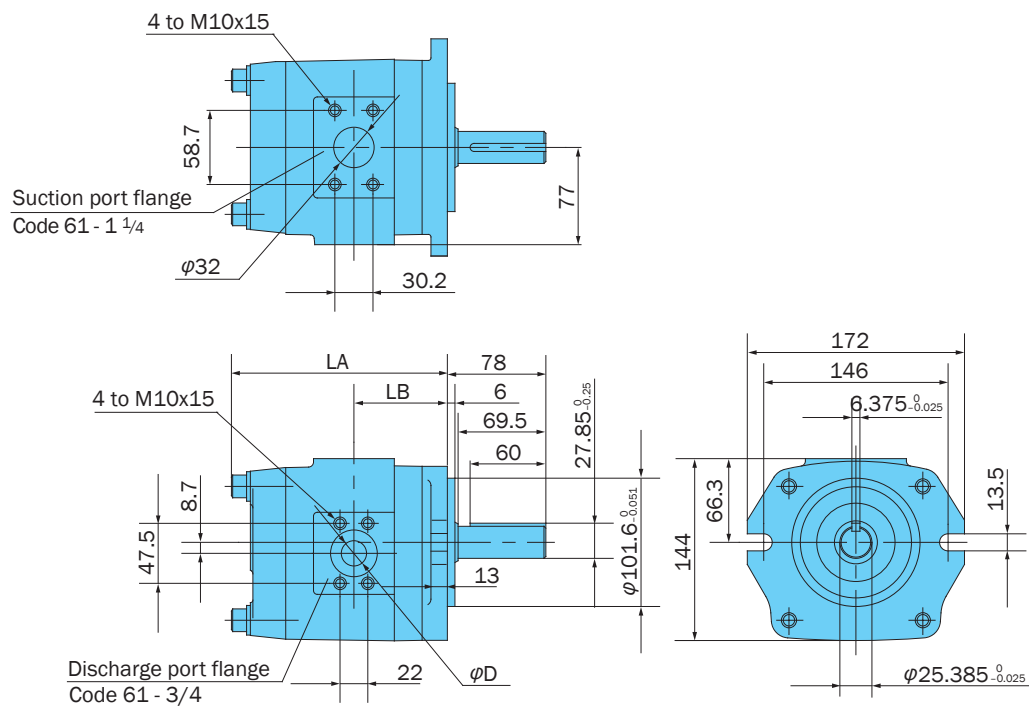
Model No.	Dimensions (mm)		
	LA	LB	ϕD
IPH-3*-10*-20	128.5	60.0	14
IPH-3*-13*-20	134.5	63.0	17
IPH-3*-16*-20	139.5	65.5	18

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)



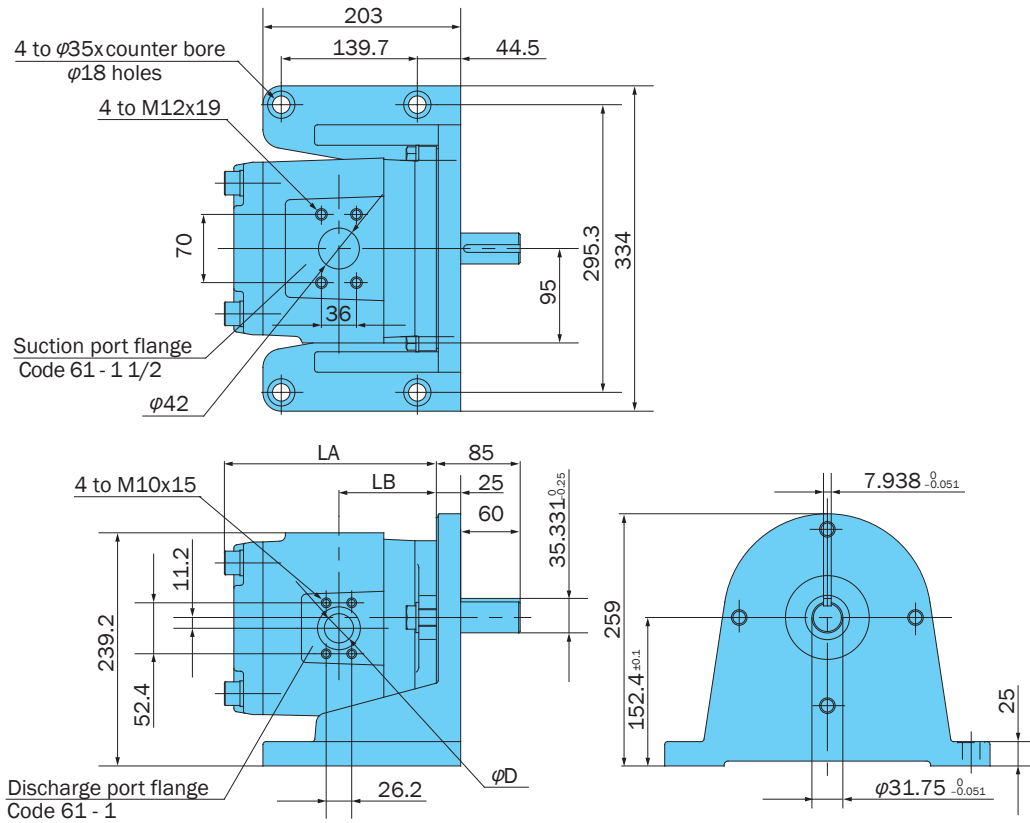
IPH-4B-*-20 (Flange Mounting, Clockwise Rotation) SAE BB Mount



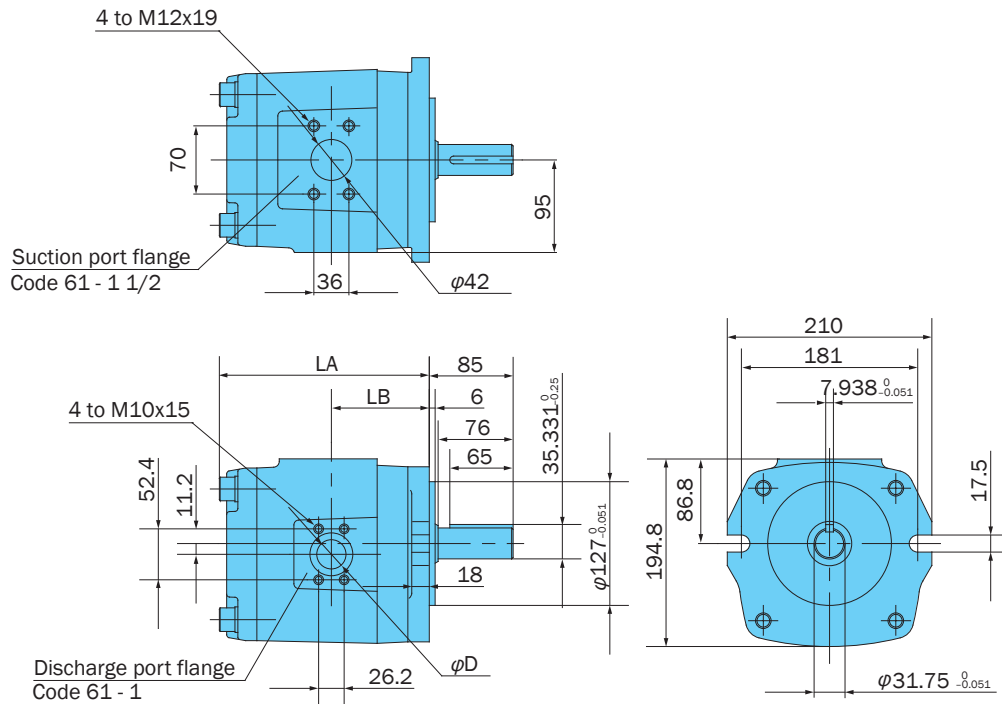
Model No.	Dimensions (mm)		
	LA	LB	ϕD
IPH-4*-20-*-20	164.5	71	18
IPH-4*-25-*-20	170.5	74	20
IPH-4*-32-*-20	178.5	78	24

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)



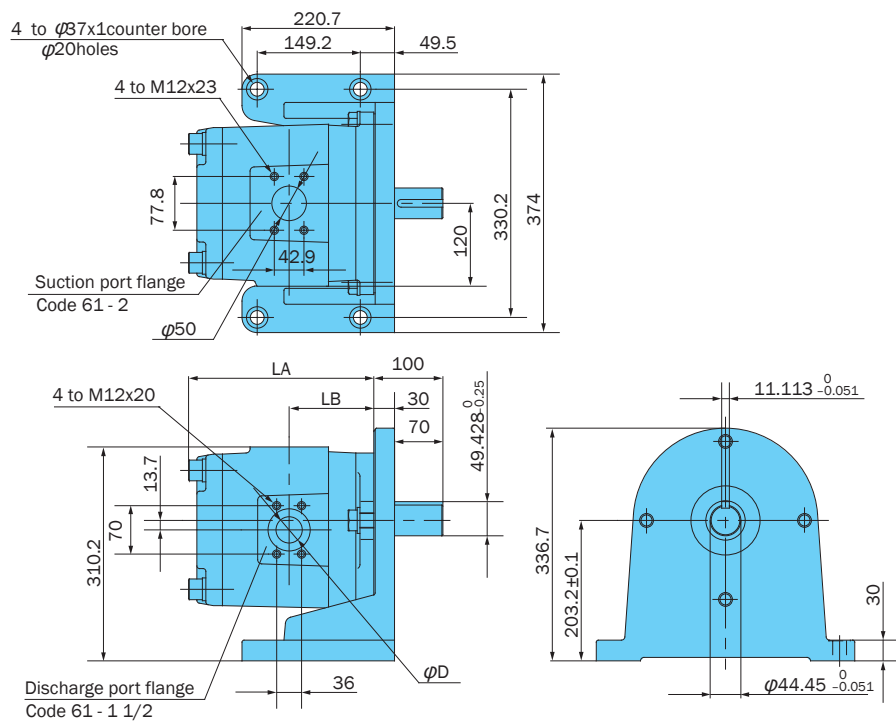
IPH-5B-*-11 (Flange Mounting, Clockwise Rotation) SAE C Mount



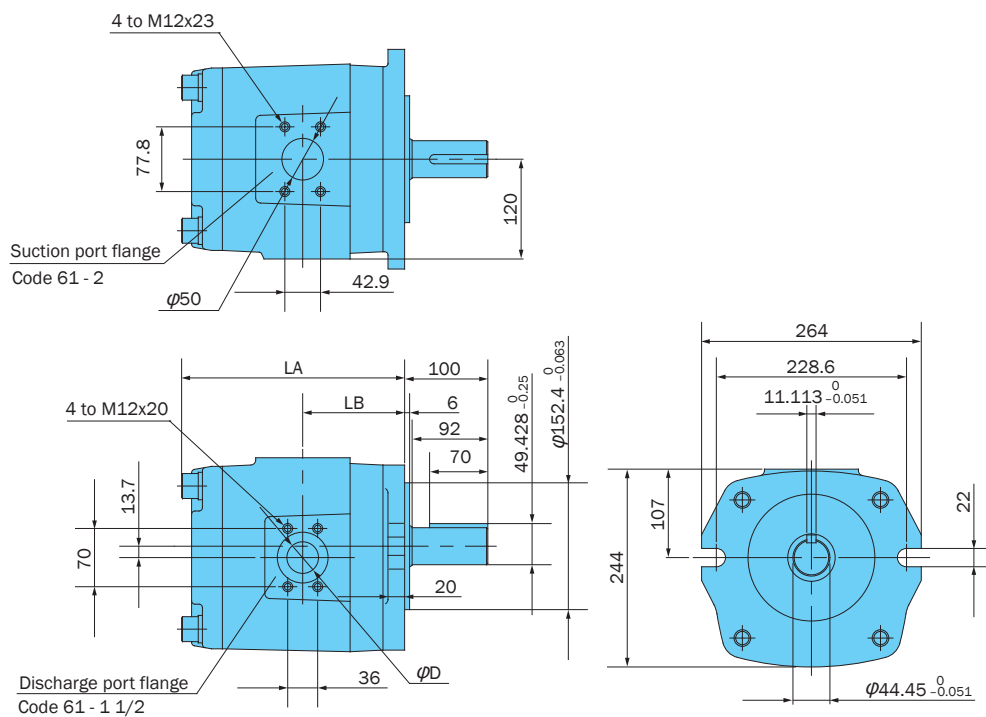
Model No.	Dimensions (mm)		
	LA	LB	ϕD
IPH-5*-40-*-21 (11)	201.5	91.0	24
IPH-5*-50-*-21 (11)	208.5	94.5	26
IPH-5*-64-*-21 (11)	218.5	99.5	28

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) SAE D Mount



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

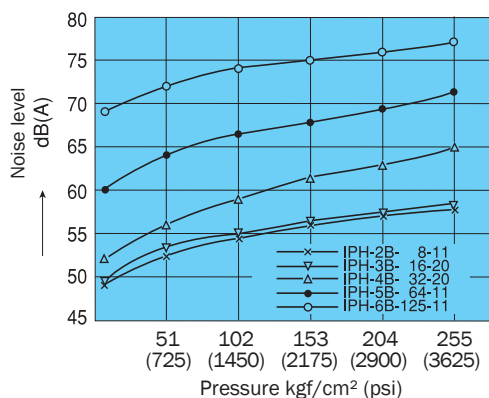
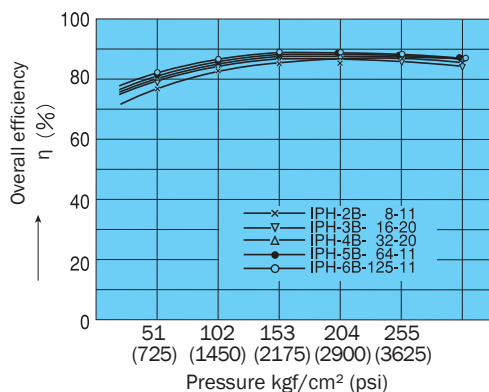
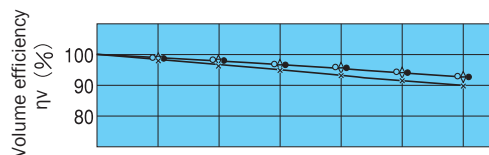
Note: IPH-6A (B)-*L-21 (11) (foot mounting/flange mounting, counterclockwise rotation) are the mirror image of the drawings shown above. In the case the suction port flange is facing upwards, the discharge port flange is positioned to the right when viewed from the shaft side.

Performance Curves

Revolution Speed 1200 rpm

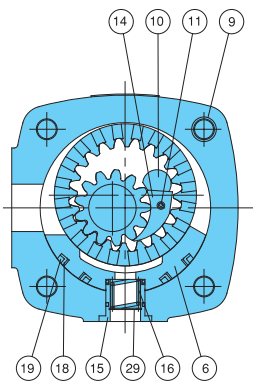
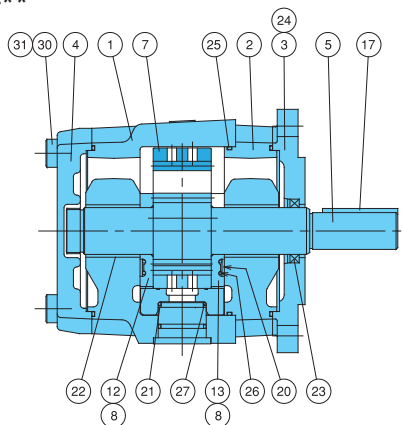
Operating Hydraulic Fluid Viscosity 46 centistokes

Representative Characteristics Under Above Conditions



Cross-sectional Drawing

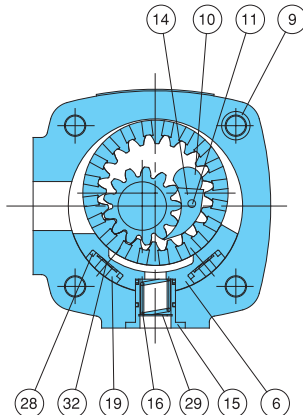
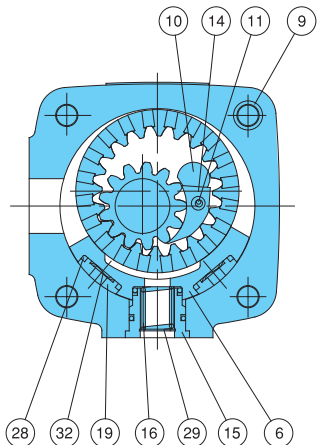
IPH-*B-***



Note: Drawings shown above are the IPH-5 and IPH-6.

The lower left cross-sectional drawing is the IPH-4, the radial seal #18 was removed and a wave washer was added.

The lower right cross-sectional drawing is the IPH-2 and IPH-3, the bushing #8 was removed, the spring pin #11 was replaced with a guide pin, and the radial seal #18 was removed and a wave washer #32 was added.



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

*Note: See page C2 for Parts/Kit Numbers

IPH Series Seal Kit

Understanding Seal Kit
Model Numbers :

IHAS - 2 S * * - 10 (20, 30)**

Design Number (IPH3 : 20D, IPH4 : 30D)

Capacity Classification D35 to 125

Size 2, 3, 4, 5, 6

S: Shaft Side Single Pump or Double Pump

H: Head Side Double Pump

Indoor/Outdoor Use Sealing

IPH Series Seal Kit

Seal Kit Number	Applicable Pump Model No.	Component Part Numbers							
		18	Q'ty	19	Q'ty	20	Q'ty	21	Q'ty
		Radial Seal		Radial Backup Ring		Axial Backup Ring		Backup ring	
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	Q'ty	25	Q'ty	26	Q'ty	27	Q'ty	28
	Oil seal		O-ring		O-ring		O-ring		O-ring
IHAS-2S2D35-10	ISD-20328	1	R68 × 2	3	R23 × 2	2	R10 × 2	1	R10 × 2
2S2005-10	"	1	"	3	"	2	R12 × 2	1	R12 × 2
2S2D65-10	"	1	"	3	"	2	R14 × 2	1	R14 × 2
2S2008-10	"	1	"	3	"	2	R16 × 2	1	R16 × 2
IHAS-2S3010-20	ISD-25388	1	R86 × 2	3	R30 × 2	2	R15 × 2.5	1	R15 × 2.5
2S3013-20	"	1	"	3	"	2	R18 × 2.5	1	R18 × 2.5
2S3016-20	"	1	"	3	"	2	R20 × 2.5	1	R20 × 2.5
IHAS-2S4020-30	ISD-32458	1	R108 × 3	3	R38 × 2.5	2	R21 × 2.5	1	R21 × 2.5
2S4025-30	"	1	"	3	"	2	R23 × 3	1	R23 × 3
2S4032-30	"	1	"	3	"	2	R26 × 3	1	R26 × 3
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.

IHF - 3 - T - 20

Design Number
: 20 Design

T : Screw in Type
E : Welded Type

Pump Size

: Single Pump

2 to 6

: Double Pump

22 to 46

IPH Series Flange Kit

Note: O-ring 1B-* *

refers to JIS B2401-1B-* *

Screw in type Flange Kit model No.	Applicable Pump Model No.	Code 61	IN Flange							
		Size	Flange Part No.		Bolt		Washer		O-ring	
IHF-2-T-20	IPH-2A(B)-*.11	1/2"	IH03J-100040	1	TH- 8 × 45	4	WS-B- 8	4	IB-P22	1
IHF-3-T-20	IPH-3A(B)-*.20	1"	IH03J-100080	1	TH-10 × 50	4	WS-B-10	4	IB-G35	1
IHF-4-T-20	IPH-4A(B)-*.20	1 1/4"	IH03J-100100	1	TH-10 × 55	4	"	4	IB-G40	1
IHF-5-T-20	IPH-5A(B)-*.21(11)	1 1/2"	IH03J-100120	1	TH-12 × 55	4	WS-B-12	4	IB-G50	1
IHF-6-T-20	IPH-6A(B)-*.21(11)	2"	IH03J-100160	1	TH-12 × 60	4	"	4	IB-G60	1

Code 61	OUT Flange								Plug	
Size	Flange Part No.		Bolt		Washer		O-ring			
1/2"	IH03J-100040	1	TH- 8 × 45	4	WS-B- 8	4	IB-P22	1	TPHA-1/4	2
1/2"	IH03J-100040	1	TH- 8 × 45	4	"	4	IB-P22	1	"	2
3/4"	IH03J-100060	1	TH-10 × 50	4	WS-B-10	4	IB-G30	1	"	1
1"	IH03J-100080	1	TH-10 × 50	4	"	4	IB-G35	1	"	2
1 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.

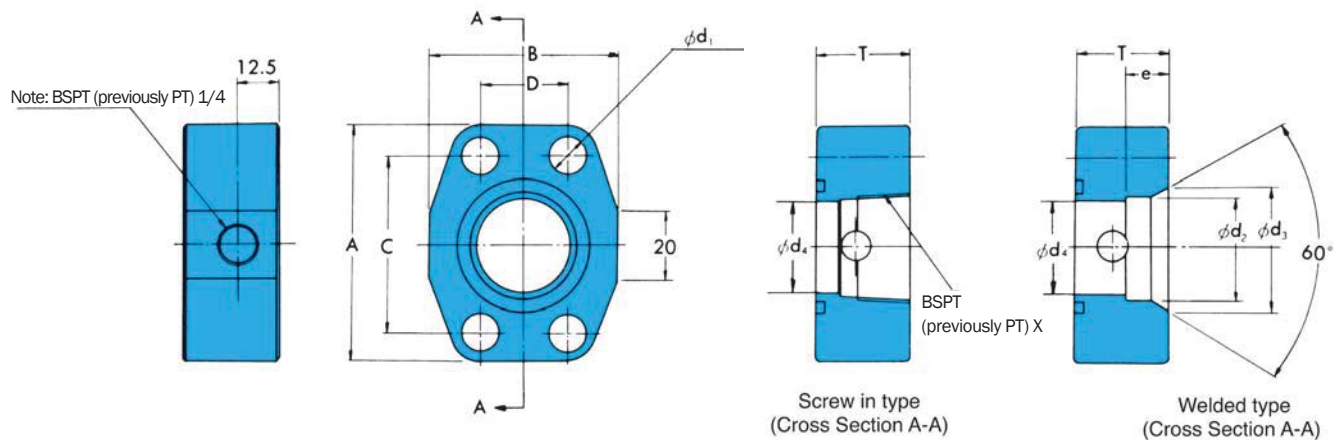
Note: 2. There is no common IN port in the case of the double pump models IPH-55, IPH-56, and IPH-66, or a single IN port is used.

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

*IPH Numbers include both Inlet and Outlet Flange Kits

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 Code 61	Nominal Diameter	Dimensions (mm)							Weight lbs
			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	.88
-100060	SAE J518b 3/4	3/4	65	52	47.5	22.0	33	11	20	1.3
-100080	SAE J518b 1	1	70	59	52.4	26.2	33	11	27	1.3
☆ -100100	SAE J518b 1 1/4	1 1/4	79	73	58.7	30.2	38	11	33	2.2
-100120	SAE J518b 1 1/2	1 1/2	94	83	70.0	36.0	38	13	37.5	3.0
☆ -100160	SAE J518b 2	2	102	97	77.8	42.9	38	13	50	3.7
☆ -100200	SAE J518b 2 1/2	2 1/2	114	109	88.9	50.8	43	13	60	4.6
☆ -100240	SAE J518b 3	3	135	131	106.4	61.9	48	17.5	71	7.2

Welded Type

Pipe Flange Kit Part Number	SAE Standard Code 61	Pipe Diameter	Dimensions (mm)										Weight lbs
			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	.88
-200060	SAE J518b 3/4	3/4	65	52	47.5	22.0	33	12	11	27.7	35	20	1.3
-200080	SAE J518b 1	1	70	59	52.4	26.2	33	14	11	34.5	42	27	1.3
☆ -200100	SAE J518b 1 1/4	1 1/4	79	73	58.7	30.2	38	16	11	43.2	48	33	2.2
-200120	SAE J518b 1 1/2	1 1/2	94	83	70.0	36.0	38	18	13	49.1	58	37.5	3.0
☆ -200160	SAE J518b 2	2	102	97	77.8	42.9	38	19	13	61.1	68	50	3.7
☆ -200200	SAE J518b 2 1/2	2 1/2	114	109	88.9	50.8	43	22	13	77.1	82	60	4.6
☆ -200240	SAE J518b 3	3	135	131	106.4	61.9	48	25	17.5	90.0	97	71	7.2

Recommended Tightening Torque for Flange Installation Bolts

For aluminum body

Mounting bolt	Tightening Torque ft/lbs
M8	14 to 17
M10	36 to 43
M12	65 to 83

For cast body (shared IN port)

Mounting bolt	Tightening Torque ft/lbs
M10	36 to 47
M12	64 to 82
M16	158 to 202

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

IPH Series Pipe Flange 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.

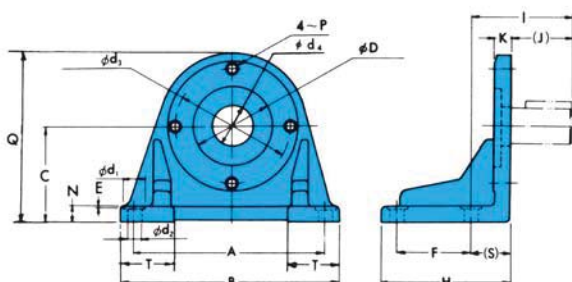
IHM - 2 - 10

Design Number

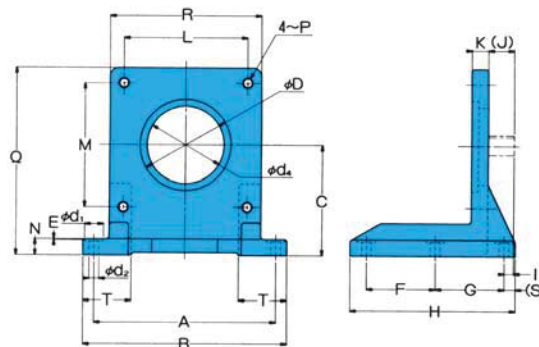
Pump Size: Single Pump 2 to 6
: Double Pump 22 to 66

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	WG-12	2	220.7	246	107.95	1	114.3	140
IHM-4-10	IPH-4	—	TB-12 × 30	2	WG-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	WG-12	2	235	267	139.7	1	127	193
IHM-44-10		IPH-24, IPH-34, IPH-44	TB-12 × 30	2	WG-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 lbs
	I	(J)	K	N	P	Q	(S)	T	φD	φd ₁	φd ₂	φd ₃	φd ₄	
IHM-2-10	74	41.5	17.5	13	M10	135	32.5	36.5	82.55	22	11	106.4	50	4.4
IHM-4-10	61.7	49	16	16	M12	195.5	12.7	53	101.6	22	11	146	40	12.1
IHM-4-10	74.7	62	16	16	M12	195.5	12.7	53	101.6	22	11	146	40	12.1
IHM-22-10	73.5	41	18	18	M10	180	32.5	50	82.55	22	11	106.4	40	14.3
IHM-44-10	89.5	45	20	20	M12	232	44.5	57.5	101.6	22	14	146	40	26.4
IHM-44-10	102.5	58	20	20	M12	232	44.5	57.5	101.6	22	14	146	40	26.4
IHM-45-10	104.5	60	25	25	M16	259	44.5	61	127	35	18	181	86	29.7
IHM-46-10	119.5	70	30	30	M20	337	49.5	64	152.4	37	20	228.6	100	48.5

*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 lbs
	(J)	K	L	M	N	P	Q	R	(S)	T	φ D	φ d ₁	φ d ₂	φ d ₄	
IHM-55-10	47	30	224.6	224.6	30	M20	340	275	20	90	165.1	34	18	140	70.5
IHM-66-10	52	40	247.5	247.5	40	M24	415	310	25	105	177.8	34	18	150	105.8

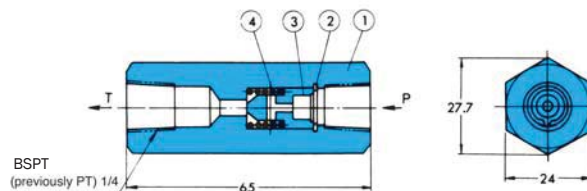
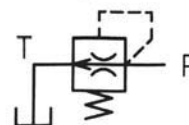
Air Bleed-off Valve

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

Specifications

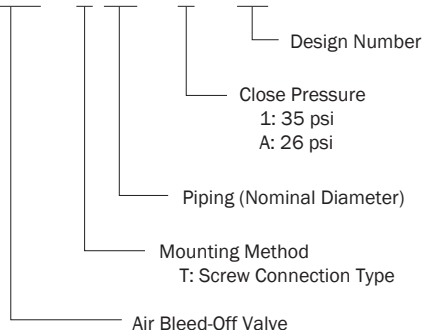
Air inside the pump and the suction pipe is exhausted rapidly when the pump is started up.
When discharge pressure reaches 29 psi or greater after the pump intakes oil, a valve closes to prevent oil from leaking.
Maximum operating pressure: 4350 psi.
Provide piping to ensure that the tank port is under the oil level surface.

JIS symbol



Understanding Model Numbers

CAB - T 02 - 1 - 11



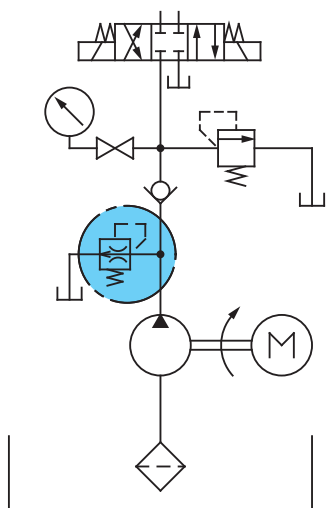
Part No.	Part Name	Q'ty
1	Valve body	1
2	Snap ring	1
3	Valve	1
4	Spring	1

Note: 1) If chattering occurs in a circuit when CAB-T02-1-11 is used, use CAB-T02-A-11 instead.
2) If chattering occurs in a circuit when CAB-T02-A-11 is used, use of a CAB air bleed-off valve is not required.

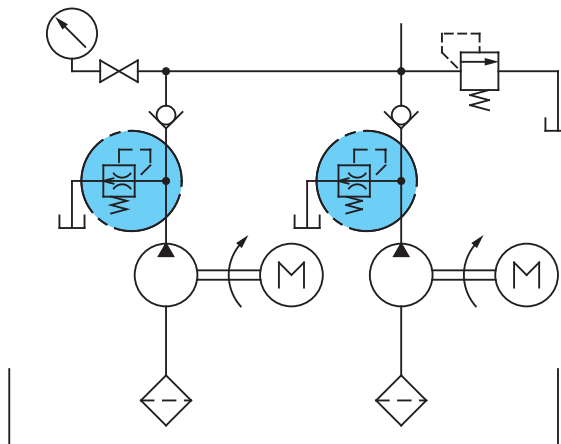
Application Examples

Example of Circuits that Require an Air Bleed-off Valve:

- 1) When using a Type 2 or Type 3 check valve (Sample Circuit A)
- 2) When unload circuit function cannot be achieved (Sample Circuit A)
- 3) When the discharge sides of multiple pumps run together (Sample Circuit B)



Circuit Diagram A



Circuit Diagram B