

Gear Pump

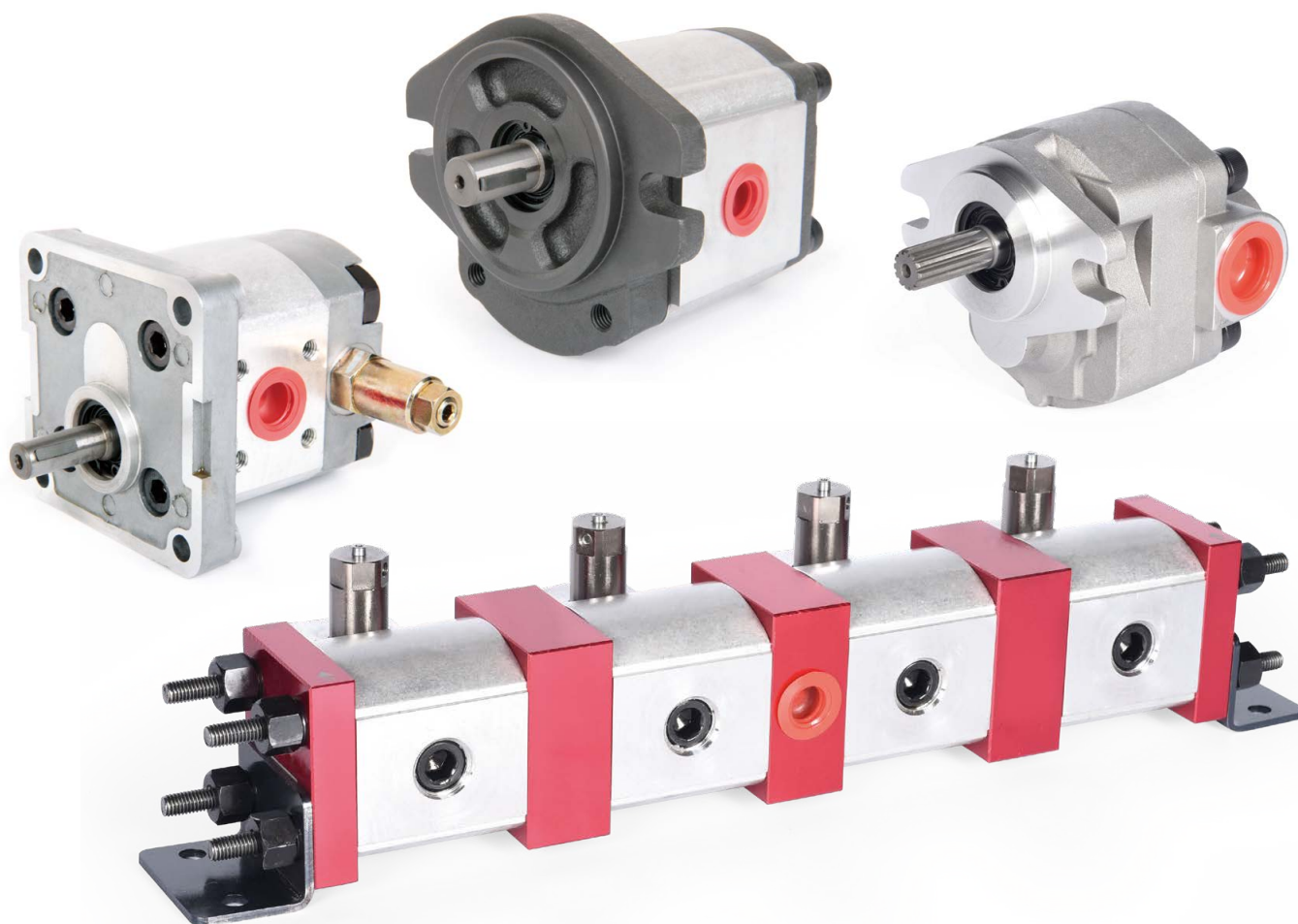
Single Gear Pump

Tandem Gear Pump

Synchronous Flow Divider

Gear Pump with Relief Valve

Chemical Pump (PU)



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Gear Pump

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Features

1. The range of Gear Pumps and Motors is available in 4 basic frame sizes for flows up to 108lpm and pressure up to 250kgf/cm² (3500psi).
2. High tensile extruded aluminum alloy body and die casting covers machined as accurate tolerance, which ensure high volumetric and mechanical efficiency and low noise level.
3. Viton o-ring and back-up ring ensure high temperature proof.
4. Internal bearing design ensures high pressure capacity.
5. Clockwise, counter-clockwise and reverse rotations are available.
6. For comprehensive applications, the gear pump can be optionally mounted with cartridge relief or lifting valves.
7. The Synchronous Flow Divider can be assembled as multiple stages as requirements. The synchronous accuracy can achieve 95% compare than 70% of dividing valve.
8. If you need customized services, please contact us promptly.
We would like to find a common ground with you on the order amount and processing fees after receiving the product drawing.

Technical Info.

1. Recommended Fluids

Petroleum-based fluids. For other fluids, please contact local distributors.

2. Recommended Viscosity & Temperature

Circumstance temperature : -15~80°C (5~176°F)

Viscosity : 12~ 800cSt

Recommended viscosity: 16~40cSt

Filtration : suction side - 60μm ; pressure side - 10 ÷ 25μm

3. Installation & Drive

Installation and drive of pumps must avoid radial and axial loads on the shaft.

The coupling should be able to compensate eventual misalignment errors and the shaft alignment must be within 0.8mm (0.003") TIR.

4. Pressure at Inlet

The lowest absolute pressure allowed in the Inlet side is 0.7kgf/cm².

5. Others

If any application as below, please contact local distributors:

Operating fluid temperature is above 60°C (140°F).

Mounting attitude is other than horizontal.

Changing shaft rotation, internal parts.

Special materials for seals, o-ring or covers.

Index

SINGLE GEAR PUMP

Page No.	Model No.	Accurate Displacement Capacity	Operating Pressure	Max. Pressure		Flange Mounting Type			
		cc/rev	kgf/cm ²	kgf/cm ²	psi	SAE 2-bolt	DIN 4-bolt	European 4-bolt	JIS 4-bolt
10	HGP-05A	0.35 ~ 1.13	210	250	3500				
12	HGP-1A	0.5 ~ 7.8	210 ~ 170	250	3500	✓	✓	✓	
16	HGP-2AY	1 ~ 13	210 ~ 175	250	3500				✓
20	HGP-3A	4 ~ 35	210 ~ 125	250	3500	✓	✓	✓	
24	HGP-3A2D	4 ~ 35	210 ~ 125	250	3500				
26	HGP-3AI	4 ~ 35	240 ~ 155	280	3920	✓	✓		
28	HGP-3AS	4 ~ 19.2	210	250	3500				✓
30	HGP-4A	20 ~ 60	250 ~ 140	300	4200	✓			
34	HGP-5A	22 ~ 90	250 ~ 160	300	4200	✓	✓		
38	HGP-5AI	22 ~ 90	280 ~ 170	330	4620	✓	✓		
40	HGP-1AU	0.5 ~ 7.8	210 ~ 170	250	3500				
42	HGP-1.5A	0.8 ~ 8	300 ~ 210	350	4900				
44	HGP-3.5AF11R	11	240	280	3920				

TANDEM GEAR PUMP

Page No.	Model No.	Accurate Displacement Capacity (single)	Operating Pressure	Max. Pressure		Flange Mounting Type			
		cc/rev	kgf/cm ²	kgf/cm ²	psi	SAE 2-bolt	DIN 4-bolt	European 4-bolt	JIS 4-bolt
48	HGP-11A	0.5 ~ 8	210 ~ 170	250	3500	✓	✓	✓	
50	HGP-22A	2 ~ 12	210 ~ 175	250	3500				✓
52	HGP-33A	2 ~ 35	210 ~ 125	250	3500	✓	✓	✓	
56	HGP-55A	22 ~ 90	250 ~ 160	300	4200	✓	✓		
58	HGP-53A	4 ~ 90	250 ~ 120	300	4200	✓	✓		
60	HGP-55AI	22 ~ 90	280 ~ 150	300	4200		✓		

SYNCHRONOUS FLOW DIVIDER

Page No.	Model No.	Accurate Displacement Capacity	Max. Pressure		Stations					
		cc/rev	kgf/cm ²	psi	2	3	4	5	6	7
62	DFMN-102A-M	2 ~ 7.8	210	2940	✓	✓	✓	✓	✓	✓
62	DFMN-102A-MR	2 ~ 7.8	210	2940	✓	✓	✓	✓	✓	✓
62	DFMN-102A-MOR	2 ~ 7.8	210	2940	✓	✓	✓	✓	✓	✓
64	DFM-302A-M	4 ~ 35	210	2940	✓	✓	✓	✓	✓	✓
64	DFMN-302A-M	4 ~ 35	210	2940	✓	✓	✓	✓	✓	✓
68	DFMN-302A-MR	4 ~ 35	210	2940	✓	✓	✓	✓	✓	✓
68	DFMN-302A-MOR	4 ~ 35	210	2940	✓	✓	✓	✓	✓	✓
72	DFM, DFMN-502A-M	40 ~ 90	210	2940	✓	✓	✓	✓	✓	✓
72	DFM, DFMN-502A-MOR	40 ~ 90	210	2940	✓	✓	✓	✓	✓	✓

GEAR PUMP WITH RELIEF VALVE

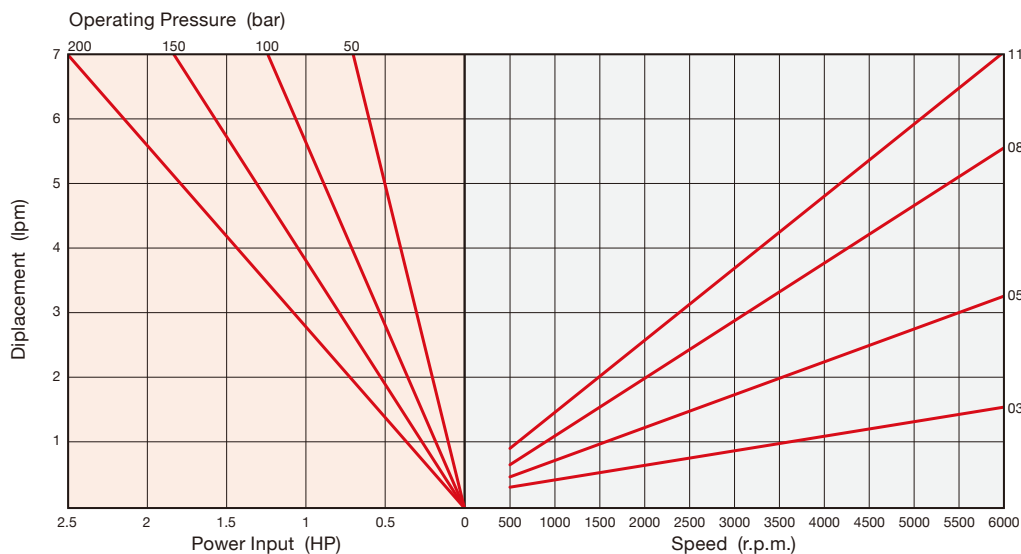
Page No.	Model No.	Accurate Displacement Capacity	Operating Pressure	Max. Pressure		Flange Mounting Type			
		cc/rev	kgf/cm ²	kgf/cm ²	psi	SAE 2-bolt	DIN 4-bolt	European 4-bolt	JIS 4-bolt
74	PR1	1 ~ 13	210 ~ 175	250	3500				✓
76	PR2	0.8 ~ 7.8	210 ~ 175	250	3500	✓	✓	✓	
78	PR3	4 ~ 35	210 ~ 125	250	3500	✓	✓	✓	

DIMENSION OF SHAFT / INLET AND OUTLET SIZE

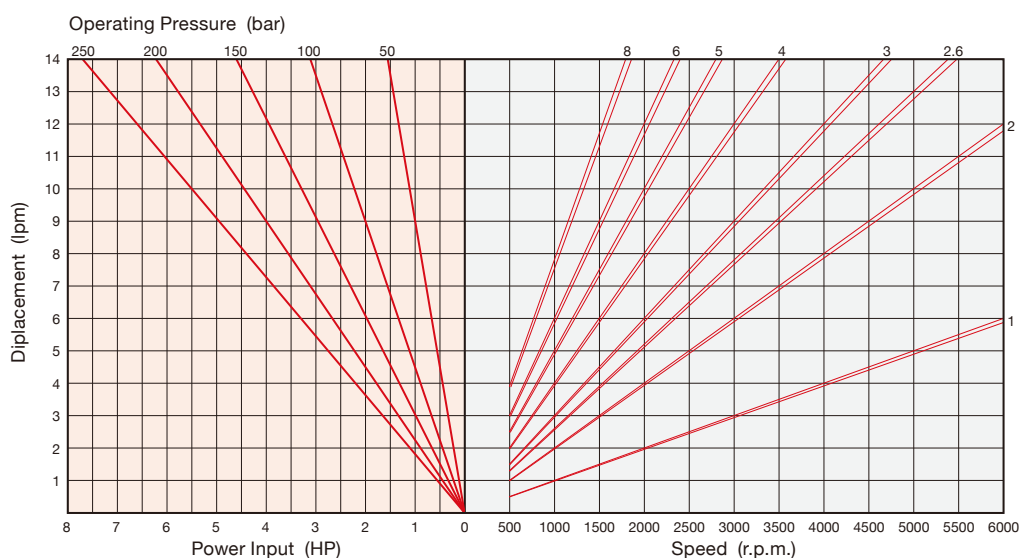
Page No.	Applicable Model List
15	HGP-1A, HGP-11A
19	HGP-2AY, HGP-22A
23	HGP-3A, HGP-3A2D, HGP-3AI, HGP-3AS, HGP-33A, HGP-53A
33	HGP-4A
37	HGP-5A, HGP-5AI, HGP-55A, HGP-53A
61	HGP-55AI

Peerformance Curve

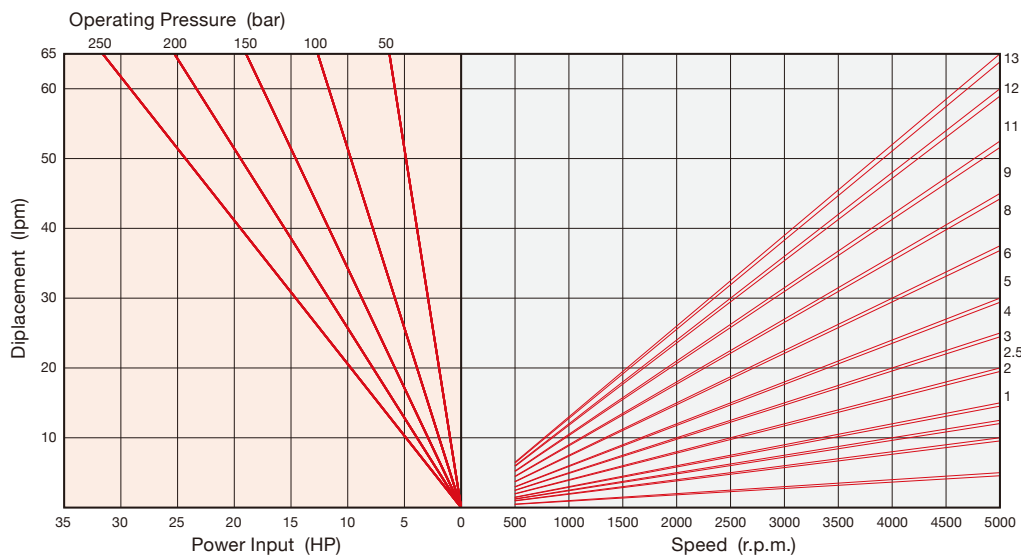
► HGP-05A



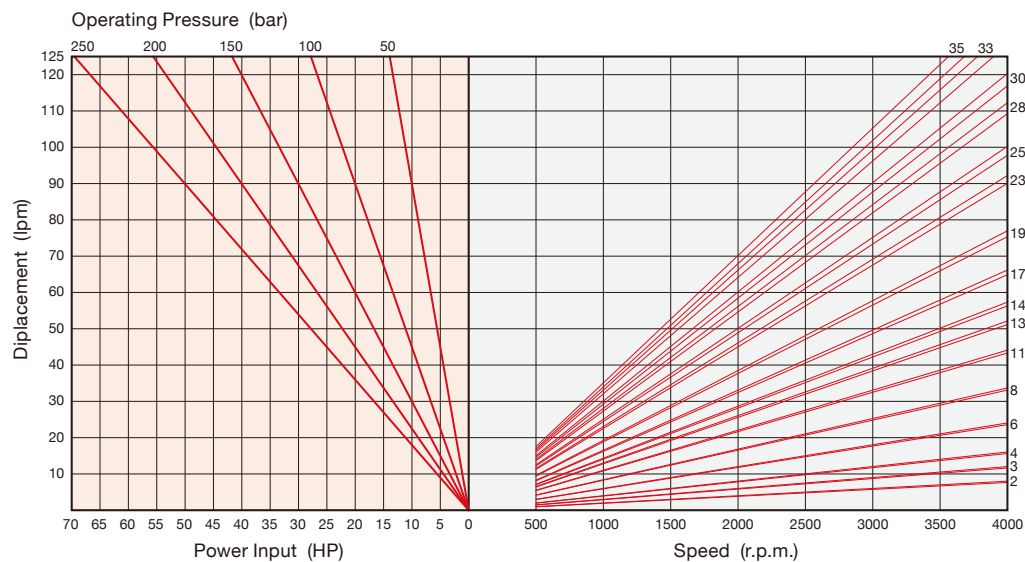
► HGP-1A



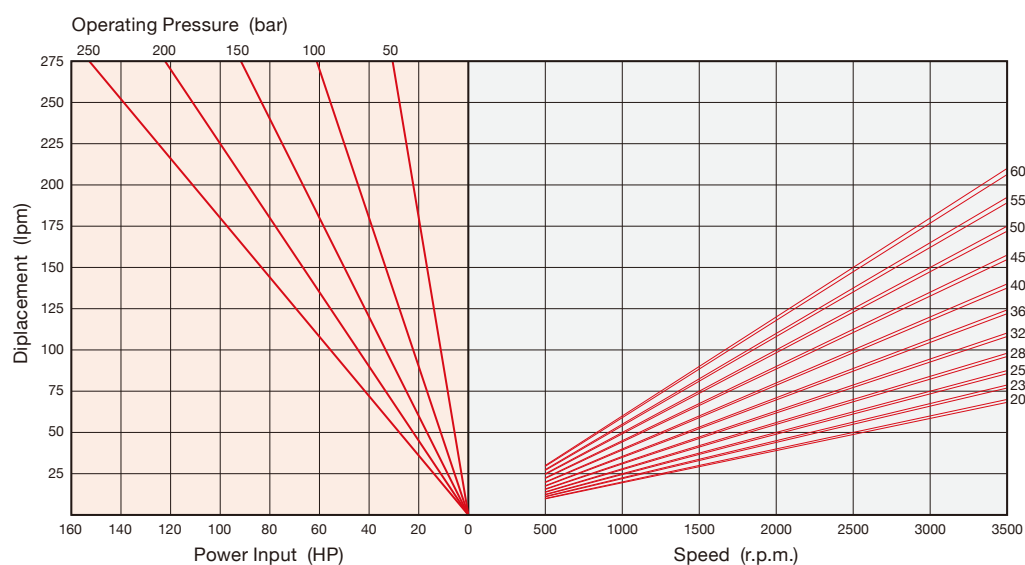
► HGP-2A



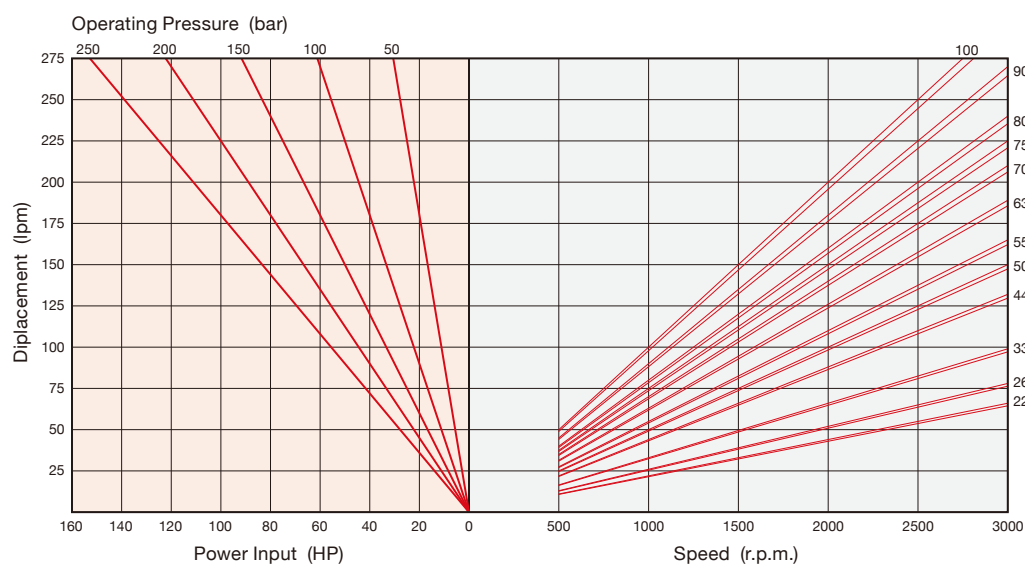
► HGP-3A



► HGP-4A

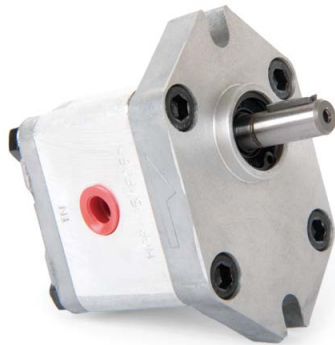


► HGP-5A

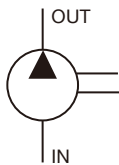


Test Conditions :
Oil viscosity : 45cSt. Oil temperature : 40°C. Speed : 1500 r.p.m.

HGP-05A



SYMBOLS



ORDER CODES

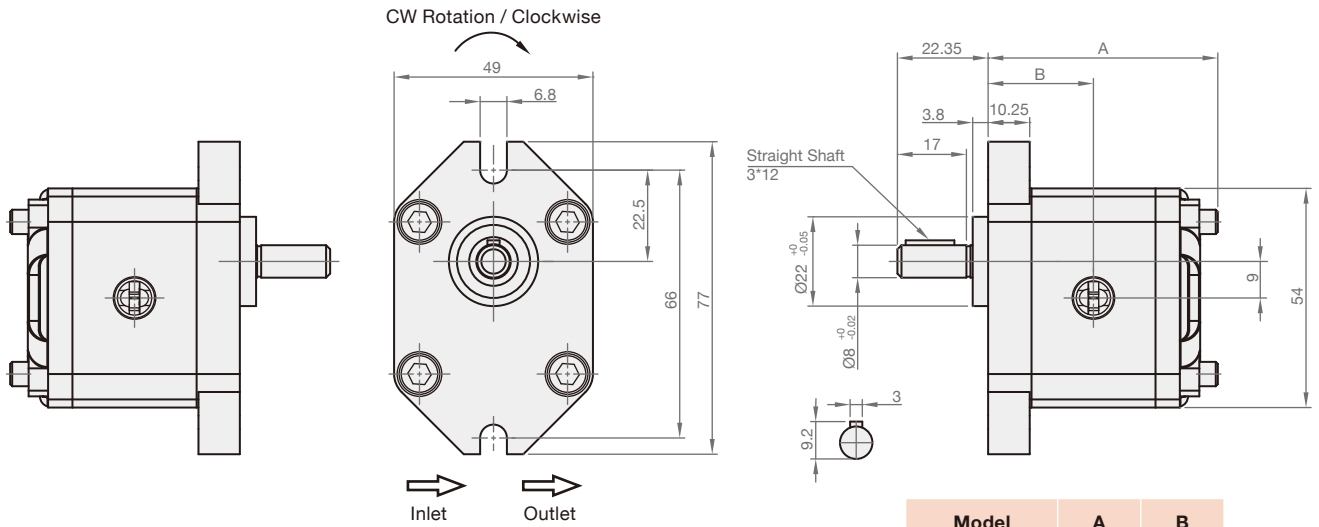
HGP-05A - **F** **08** **R** - **X**

1 2 3 4 5

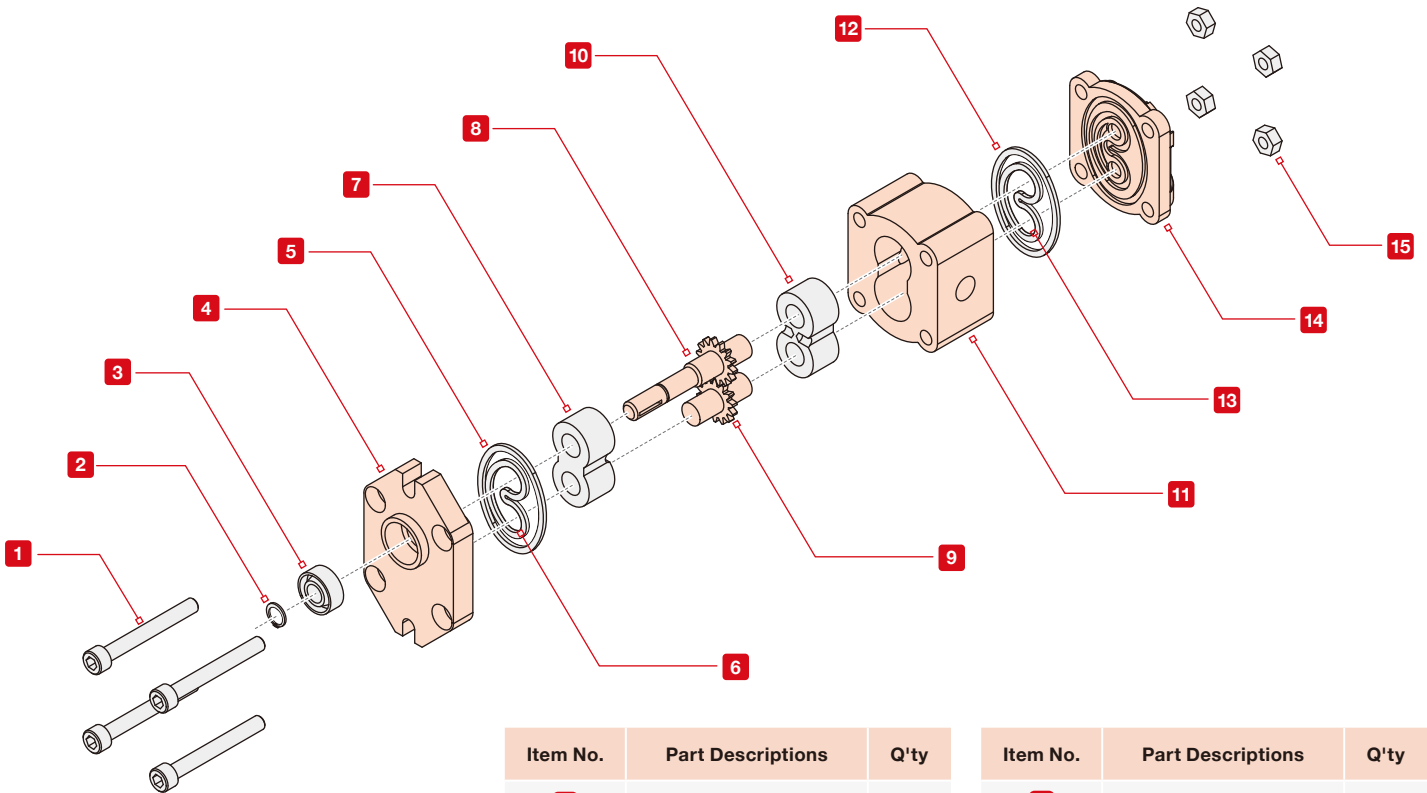
1 ▶	Model Name	HGP-05A	
2 ▶	Mounting	F	flange type
		L	foot type
3 ▶	Delivery Capacity	03, 05, 08, 11	
4 ▶	Rotation Direction	R	clockwise
		L	counter - clockwise
5 ▶	Shaft Type	X	straight shaft

MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)			Ports Size (PT)		Weight (kg)
				Rate	Max.	Min.	Inlet	Outlet	
HGP-05A-03	0.35	210	250	1800	3500	800	1/8"	1/8"	0.40
HGP-05A-05	0.56	210	250	1800	3500	800	1/8"	1/8"	0.42
HGP-05A-08	0.85	210	250	1800	3500	800	1/4"	1/4"	0.43
HGP-05A-11	1.13	210	250	1800	3500	800	1/4"	1/4"	0.44



DECOMPOSITION CHARTS



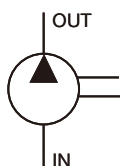
Item No.	Part Descriptions	Q'ty
1	Bolt	4
2	C-ring	1
3	Shaft seal	1
4	Front cover	1
5	O-ring	1
6	Bush lobe seal	1
7	Matching bearing	1
8	Drive gear	1

Item No.	Part Descriptions	Q'ty
9	Driven gear	1
10	Matching bearing	1
11	Housing	1
12	O-ring	1
13	Bush lobe seal	1
14	Rear cover	1
15	Nut	4

HGP-1A



SYMBOLS



ORDER CODES

HGP-1A - **F** **08** **R** - **X1** - **4BDA** - **N1**

1 2 3 4 5 6 7

1 ▶	Model Name	HGP-1A	
2 ▶	Mounting	F	flange type
		L	foot type
3 ▶	Delivery Capacity	05, 08, 1, 2, 26, 3, 4, 5, 6, 8	
4 ▶	Rotation Direction	R	clockwise
		L	counter - clockwise
		M	hydraulic motor *
5 ▶	Shaft Type *	X: straight shaft Y: spline shaft Z: taper shaft	
6 ▶	Flange Mounting Type	2B	SAE 2-bolt
		4BDA	DIN 4-bolt (type A)
		4BDB	DIN 4-bolt (type B)
		4BE	European 4-bolt
7 ▶	Inlet and Outlet *	F: flange type(F1~F2) G: PF, G, BSPP(G1~G2) P: PT(P1~P2) N: NPT(N1~N2) U: UNF(U1~U2)	

* The dimension of shafts and inlet & outlet sizes please refer to page 15.

* Please contact the local distributors to obtain the specifications of hydraulic motors.

MODEL SPEC.

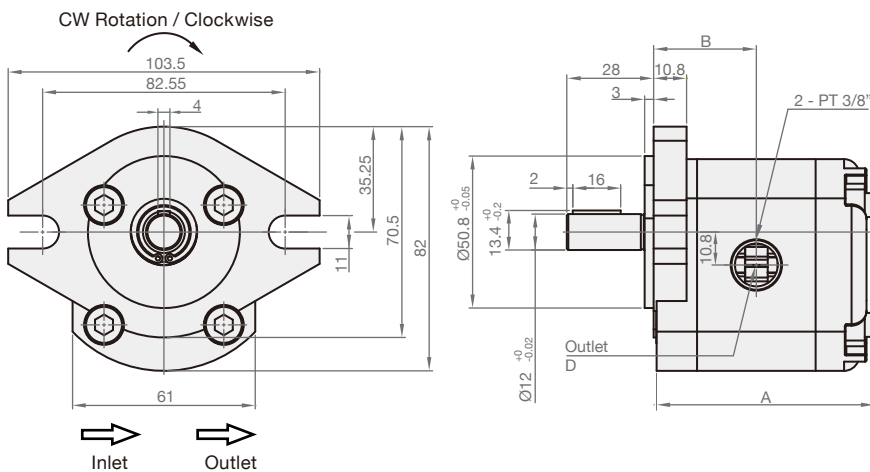
Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)			Weight (kg)
				Rate	Max.	Min.	
HGP-1A-05	0.5	210	250	1800	4500	1000	1.0
HGP-1A-08	0.8	210	250	1800	4500	1000	1.0
HGP-1A-1	1	210	250	1800	4500	1000	1.0
HGP-1A-2	2	210	250	1800	4500	600	1.05
HGP-1A-26	2.6	210	250	1800	4500	600	1.15
HGP-1A-3	3	210	250	1800	4500	600	1.15
HGP-1A-4	4	210	250	1800	4000	600	1.18
HGP-1A-5	5	210	250	1800	3200	600	1.2
HGP-1A-6	6	210	250	1800	3200	600	1.3
HGP-1A-8	7.8	170	210	1800	3200	600	1.4

* HGP-1A-05 and HGP-1A-26 do not belong to regular products. Customized service can be provided.

DIMENSION

(UNIT : mm)

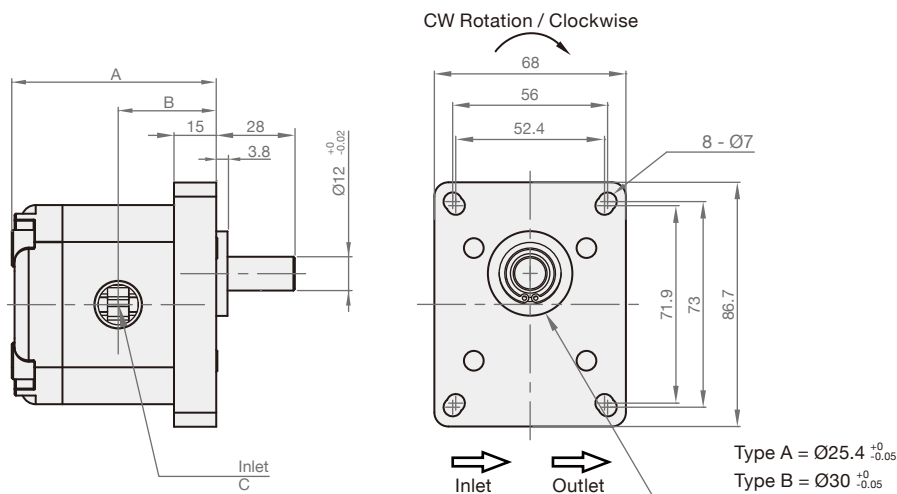
► HGP-1A-2B



Model	A	B	C Inlet	D Outlet
HGP-1A-08	67.5	32.5	PT 3/8"	PT 3/8"
HGP-1A-1	69.5	33.5	PT 3/8"	PT 3/8"
HGP-1A-2	72	34.8	PT 3/8"	PT 3/8"
HGP-1A-3	77.5	37.5	PT 3/8"	PT 3/8"
HGP-1A-4	79.5	38.5	PT 3/8"	PT 3/8"
HGP-1A-5	83.5	40.5	PT 3/8"	PT 3/8"
HGP-1A-6	87.5	42.5	PT 3/8"	PT 3/8"
HGP-1A-8	93.5	45.5	PT 1/2"	PT 3/8"

* If you want to order HGP-1A-05 or HGP-1A-26, please email us to get further information.

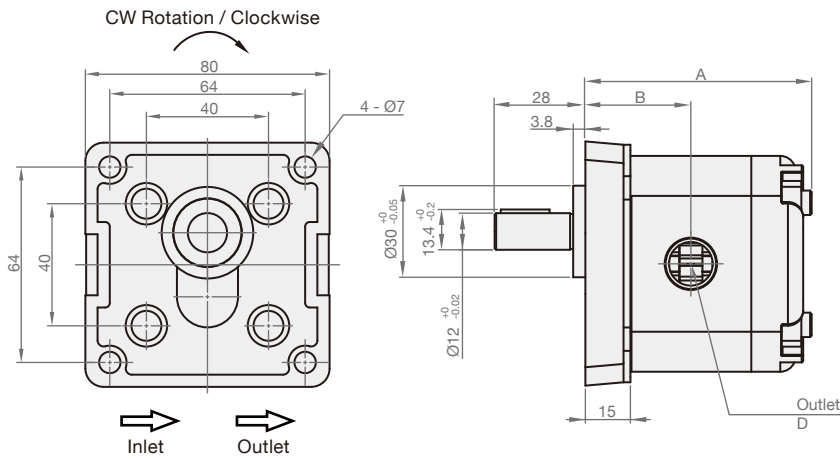
► HGP-1A-4BD



Model	A	B	C Inlet	D Outlet
HGP-1A-08	67.5	32.5	PT 3/8"	PT 3/8"
HGP-1A-1	69.5	33.5	PT 3/8"	PT 3/8"
HGP-1A-2	72	34.8	PT 3/8"	PT 3/8"
HGP-1A-3	77.5	37.5	PT 3/8"	PT 3/8"
HGP-1A-4	79.5	38.5	PT 3/8"	PT 3/8"
HGP-1A-5	82.5	40.5	PT 3/8"	PT 3/8"
HGP-1A-6	87.5	42.5	PT 3/8"	PT 3/8"
HGP-1A-8	93.5	45.5	PT 1/2"	PT 3/8"

* If you want to order HGP-1A-05 or HGP-1A-26, please email us to get further information.

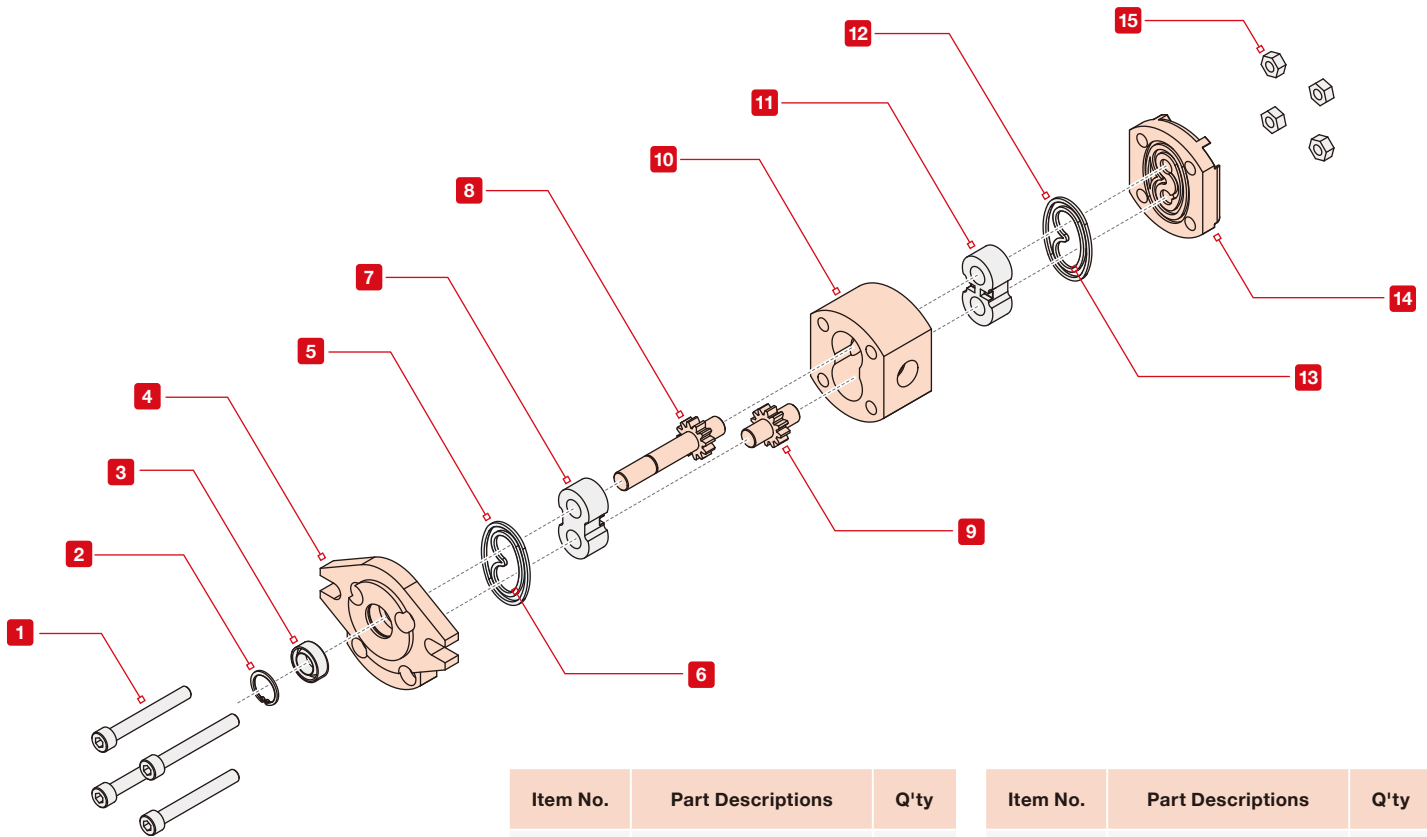
► **HGP-1A-4BE**



Model	A	B	C Inlet	D Outlet
HGP-1A-08	75.5	32.5	PT 3/8"	PT 3/8"
HGP-1A-1	77.5	33.5	PT 3/8"	PT 3/8"
HGP-1A-2	80.1	34.8	PT 3/8"	PT 3/8"
HGP-1A-3	85.5	37.5	PT 3/8"	PT 3/8"
HGP-1A-4	87.5	38.5	PT 3/8"	PT 3/8"
HGP-1A-5	91.5	40.5	PT 3/8"	PT 3/8"
HGP-1A-6	95.5	42.5	PT 3/8"	PT 3/8"
HGP-1A-8	101.5	45.5	PT 1/2"	PT 3/8"

* If you want to order HGP-1A-05 or HGP-1A-26, please email us to get further information.

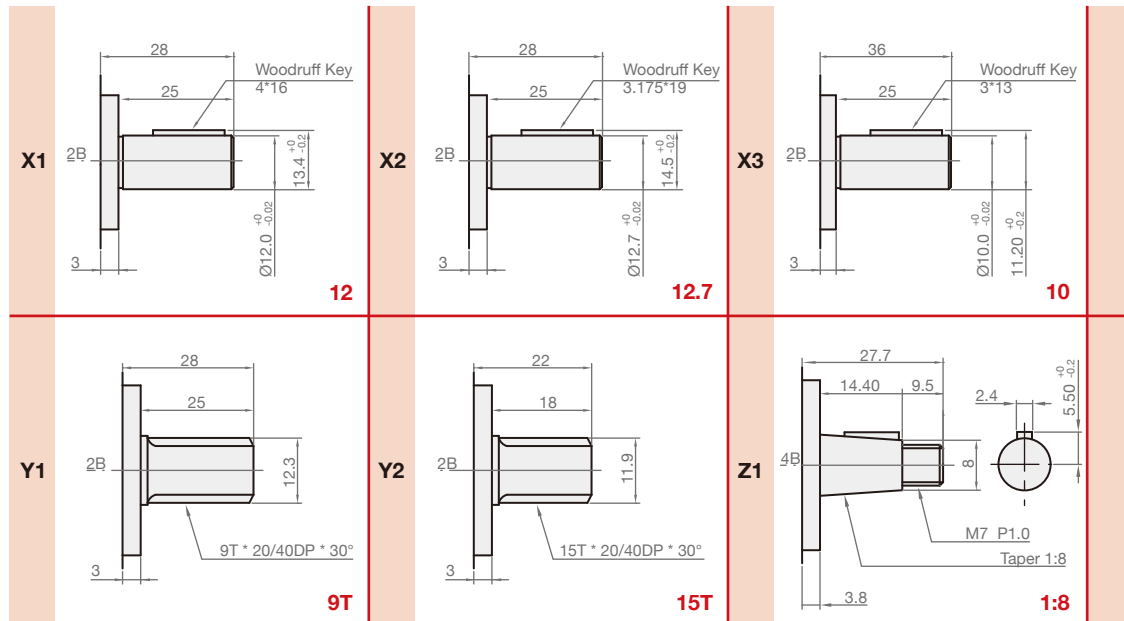
DECOMPOSITION CHARTS



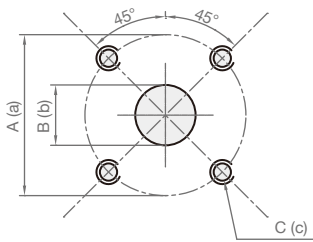
Item No.	Part Descriptions	Q'ty
1	Bolt	4
2	C-ring	1
3	Shaft seal	1
4	Front cover	1
5	O-ring	1
6	Bush lobe seal	1
7	Matching bearing	1
8	Drive gear	1

Item No.	Part Descriptions	Q'ty
9	Driven gear	1
10	Housing	1
11	Matching bearing	1
12	Bush lobe seal	1
13	O-ring	1
14	Rear cover	1
15	Nut	4

► Dimension of Shaft



► Inlet and Outlet Size



Flange Type

Code	Inlet			Outlet		
	A	B	C	a	b	c
F1	30	14.50	M6	30	14.50	M6
F2	35	14.50	M6	35	14.50	M6

PF (G, BSPP)

Code	Inlet	Outlet
	A	a
G1	G 3/8"	G 3/8"
G2	G 1/2"	G 3/8"

PT (BSPT)

Code	Inlet	Outlet	Applicable Model
	A	a	
P1	3/8" PT	3/8" PT	1A-08 ~ 6
P2	1/2" PT	3/8" PT	1A-8

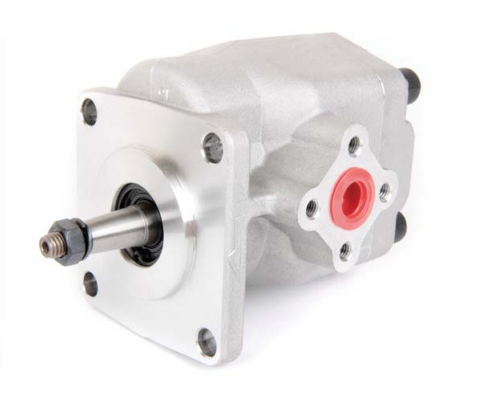
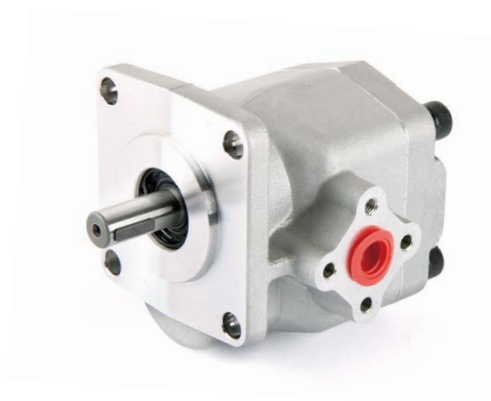
NPT

Code	Inlet	Outlet	Applicable Model
	A	a	
N1	3/8" NPT	3/8" NPT	1A-08 ~ 6
N2	1/2" NPT	3/8" NPT	1A-8

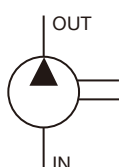
UNF

Code	Inlet	Outlet
	A	a
U1	9/16"-18UNF	9/16"-18UNF
U2	3/4"-16UNF	9/16"-18UNF

HGP-2AY



SYMBOLS



ORDER CODES

HGP-2AY - **F** **12** **R** - **W1** - **4BJ** - **N2**

1 2 3 4 5 6 7

1 ▶	Model Name	HGP-2AY	standard
		HGP-2A	old standard
2 ▶	Mounting	F	flange type
		L	foot type
3 ▶	Delivery Capacity	1, 2, 25, 3, 4, 5, 6, 8, 9, 11, 12, 13	
4 ▶	Rotation Direction	R	clockwise
		L	counter - clockwise
5 ▶	Shaft Type *	W: tang shaft	X: straight shaft
		Y: spline shaft	Z: taper shaft
6 ▶	Flange Mounting Type	4BJ	JIS 4-bolt
7 ▶	Inlet and Outlet *	F: flange type(F1)	G: PF, G, BSPP(G1~G2)
		P: PT(P1~P2)	N: NPT(N1~N2)

* The dimension of shafts and inlet & outlet sizes please refer to page 19.

MODEL SPEC.

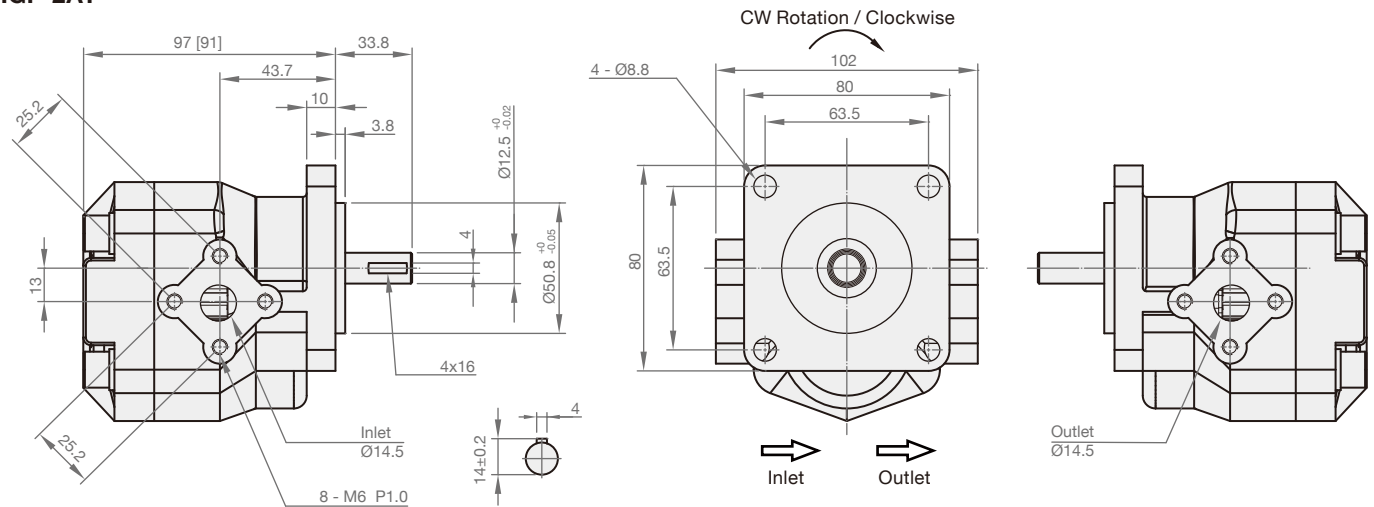
Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)			Weight (kg)	
				Rate	Max.	Min.	HGP-2AY	HGP-2A
HGP-2AY-1	1	210	250	1800	5000	1000	1.60	1.65
HGP-2AY-2	2	210	250	1800	5000	1000	1.64	1.69
HGP-2AY-25	2.5	210	250	1800	5000	850	1.65	1.70
HGP-2AY-3	3	210	250	1800	5000	850	1.65	1.70
HGP-2AY-4	4	210	250	1800	4500	800	1.66	1.71
HGP-2AY-5	5	210	250	1800	3500	700	1.66	1.71
HGP-2AY-6	6	210	250	1800	3500	700	1.67	1.72
HGP-2AY-8	7.5	210	250	1800	3000	600	1.69	1.74
HGP-2AY-9	9	210	250	1800	2500	550	1.69	1.74
HGP-2AY-11	10.5	210	250	1800	2000	500	1.69	1.74
HGP-2AY-12	12	175	210	1800	2000	500	1.71	1.76
HGP-2AY-13	13	175	210	1800	2000	500	1.67	1.72

* HGP-2AY-1, HGP-2AY-25, HGP-2AY-5 and HGP-2AY-13 do not belong to regular products. Customized service can be provided.

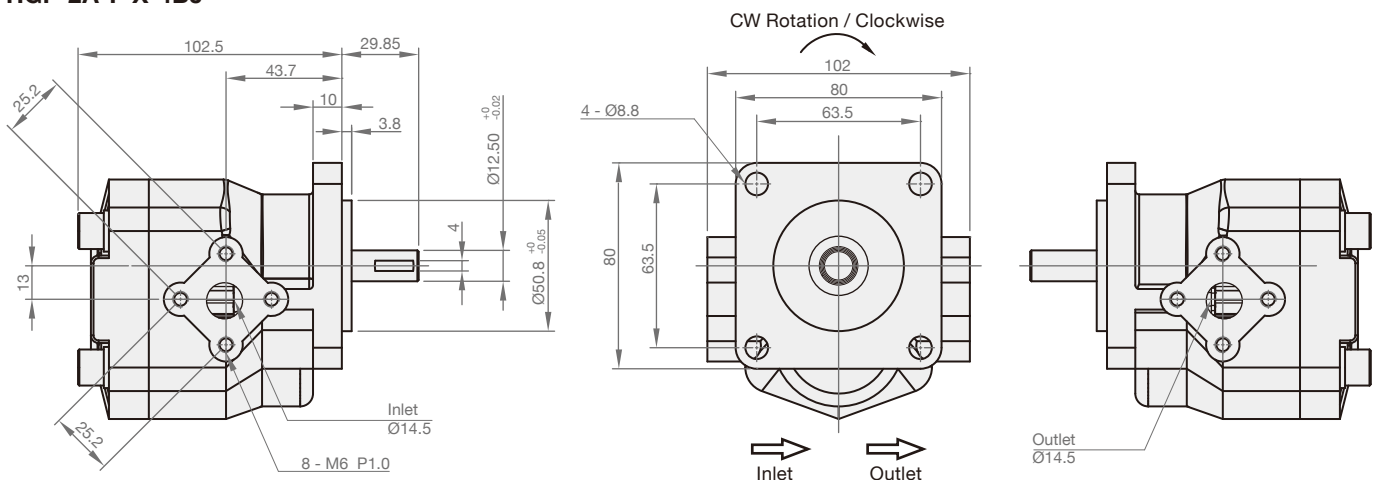
DIMENSION

(UNIT : mm)

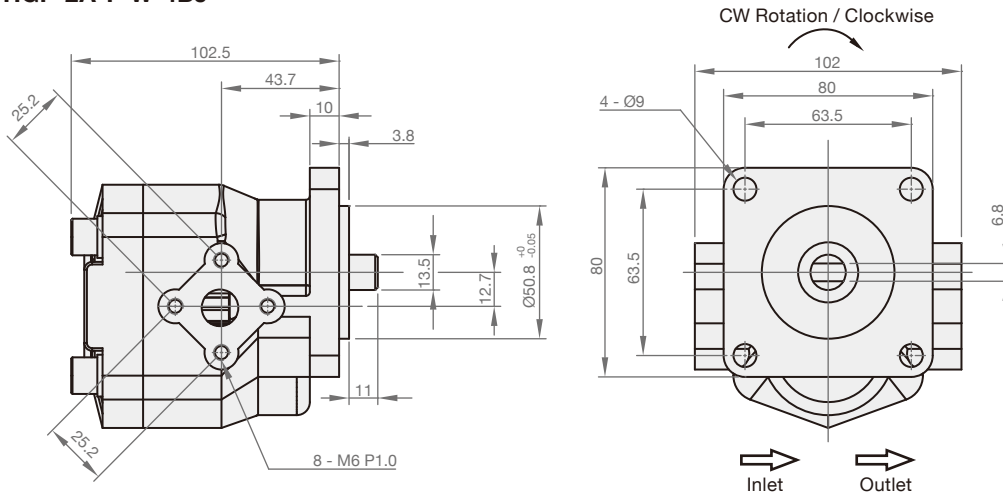
► HGP-2AY



► HGP-2A-F-X-4BJ

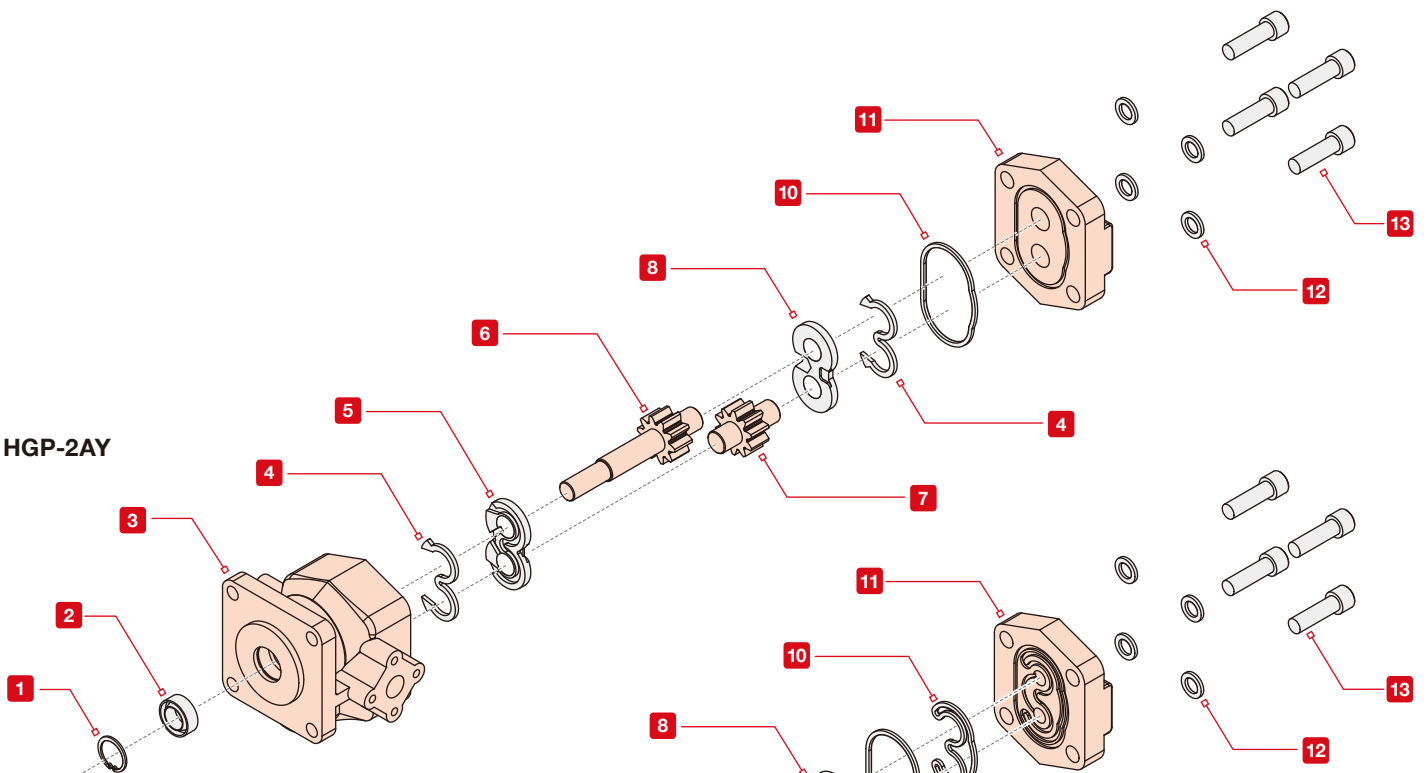


► HGP-2A-F-W-4BJ

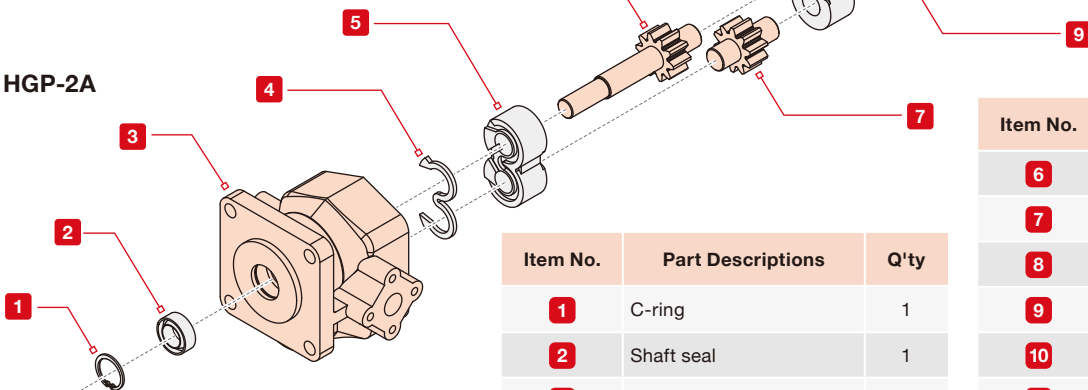


DECOMPOSITION CHARTS

► HGP-2AY



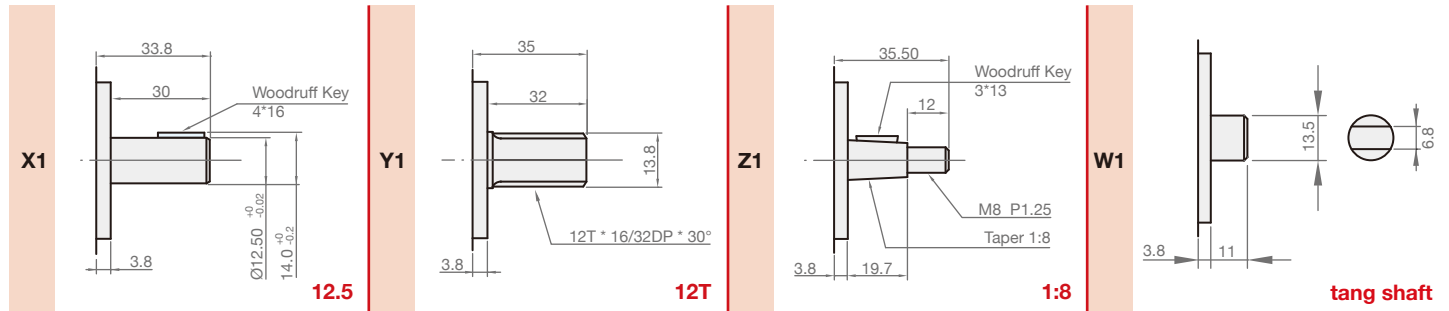
► HGP-2A



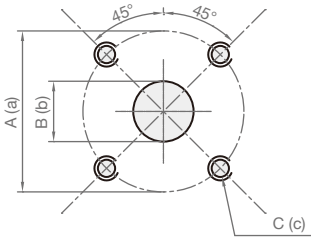
Item No.	Part Descriptions	Q'ty
1	C-ring	1
2	Shaft seal	1
3	Housing	1
4	Bush lobe seal	1
5	Matching bearing	1

Item No.	Part Descriptions	Q'ty
6	Drive gear	1
7	Driven gear	1
8	Matching bearing	1
9	O-ring	1
10	Back-up ring	1
11	Rear cover	1
12	Bolt washer	4
13	Bolt	4

► Dimension of Shaft

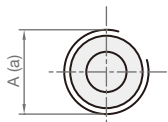


► Inlet and Outlet Size



Flange Type

Code	Inlet			Outlet		
	A	B	C	a	b	c
F1	35	14.5	M6	35	14.5	M6



PF (G, BSPP)

Code	Inlet	Outlet
	A	a
G1	G 3/8"	G 3/8"
G2	G 1/2"	G 1/2"

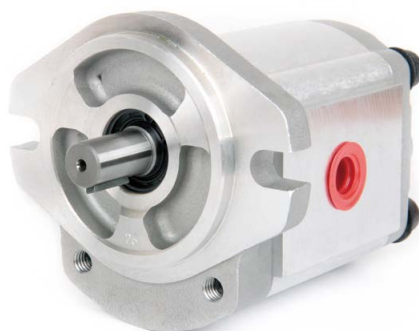
PT (BSPT)

Code	Inlet	Outlet
	A	a
P1	3/8" PT	3/8" PT
P2	1/2" PT	1/2" PT

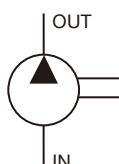
NPT

Code	Inlet	Outlet
	A	a
N1	3/8" NPT	3/8" NPT
N2	1/2" NPT	1/2" NPT

HGP-3A



SYMBOLS



ORDER CODES

HGP-3A - **F** **13** **R** - **X1** - **2B** - **F1**

1
2
3
4
5
6
7

1	Model Name	HGP-3A	
2	Mounting	F	flange type
		L	foot type
3	Delivery Capacity	4, 6, 8, 11, 13, 14, 17, 19, 23, 25, 28, 30, 33, 35	
4	Rotation Direction	R	clockwise
		L	counter - clockwise
		M	hydraulic motor *
5	Shaft Type *	X: straight shaft Y: spline shaft Z: taper shaft	
6	Flange Mounting Type	2B	SAE 2-bolt
		4BD	DIN 4-bolt
		4BE	European 4-bolt
7	Inlet and Outlet *	F: flange type(F1~F6) G: PF, G, BSPP(G1~G2) P: PT(P1~P2) N: NPT(N1~N2) U: UNF(U1~U2)	

* The dimension of shafts and inlet & outlet sizes please refer to page 23.

* Please contact the local distributors to obtain the specifications of hydraulic motors.

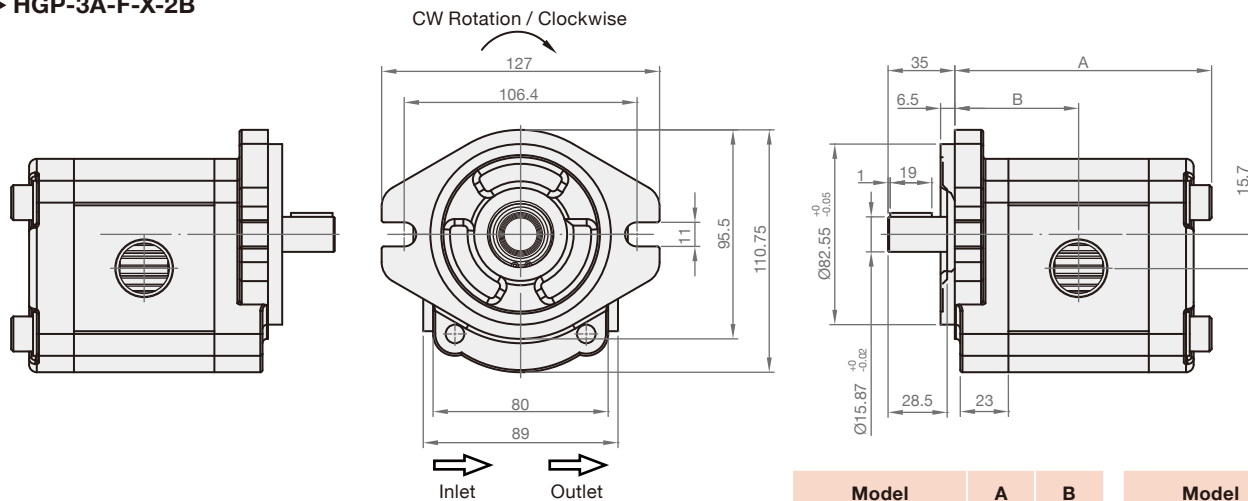
MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)			Weight (kg)
				Rate	Max.	Min.	
HGP-3A-4	4	210	250	1800	4000	700	2.29
HGP-3A-6	6	210	250	1800	4000	700	2.37
HGP-3A-8	8.4	210	250	1800	3500	700	2.45
HGP-3A-11	11	210	250	1800	3000	600	2.60
HGP-3A-13	13	210	250	1800	3000	600	2.70
HGP-3A-14	14.3	210	250	1800	3000	500	2.76
HGP-3A-17	16.5	210	250	1800	3000	500	2.87
HGP-3A-19	19.2	210	250	1800	3000	500	2.99
HGP-3A-23	23	210	250	1800	3000	500	3.19
HGP-3A-25	25	175	210	1800	2800	500	3.24
HGP-3A-28	28	175	210	1800	2500	500	3.35
HGP-3A-30	30	175	210	1800	2500	500	3.45
HGP-3A-33	33	140	175	1200	2500	500	3.60
HGP-3A-35	35	125	140	1200	2500	500	3.71

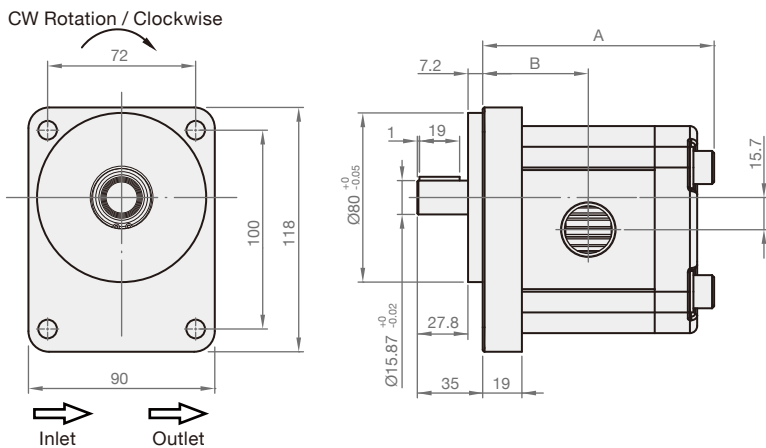
DIMENSION

(UNIT : mm)

► HGP-3A-F-X-2B



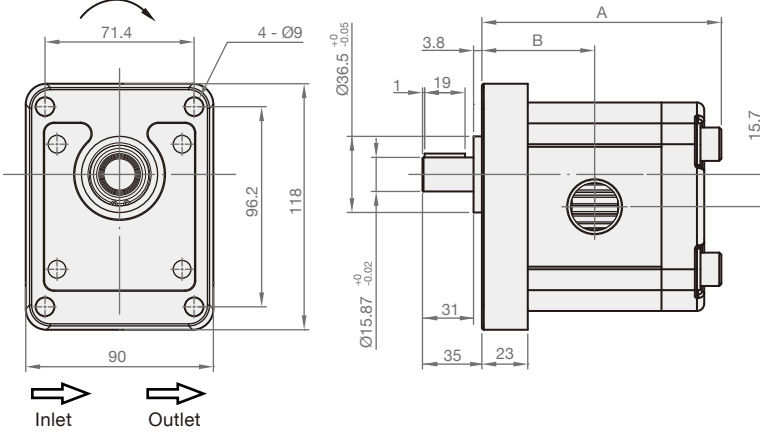
► HGP-3A-F-X-4BD



Model	A	B	Model	A	B
HGP-3A-4-4BD	101	43.5	HGP-3A-4-2B	101	48.5
HGP-3A-6-4BD	105	45	HGP-3A-6-2B	105	50
HGP-3A-8-4BD	109	46.5	HGP-3A-8-2B	109	51.5
HGP-3A-11-4BD	113	49	HGP-3A-11-2B	113	54
HGP-3A-13-4BD	117	51	HGP-3A-13-2B	117	56
HGP-3A-14-4BD	119	52	HGP-3A-14-2B	119	57
HGP-3A-17-4BD	123	54	HGP-3A-17-2B	123	59
HGP-3A-19-4BD	127	56	HGP-3A-19-2B	127	61
HGP-3A-23-4BD	134	60	HGP-3A-23-2B	134	65
HGP-3A-25-4BD	137	61	HGP-3A-25-2B	137	66
HGP-3A-28-4BD	141	63	HGP-3A-28-2B	141	68
HGP-3A-30-4BD	145	65	HGP-3A-30-2B	145	70
HGP-3A-33-4BD	150	68	HGP-3A-33-2B	150	73
HGP-3A-35-4BD	154	70	HGP-3A-35-2B	154	75

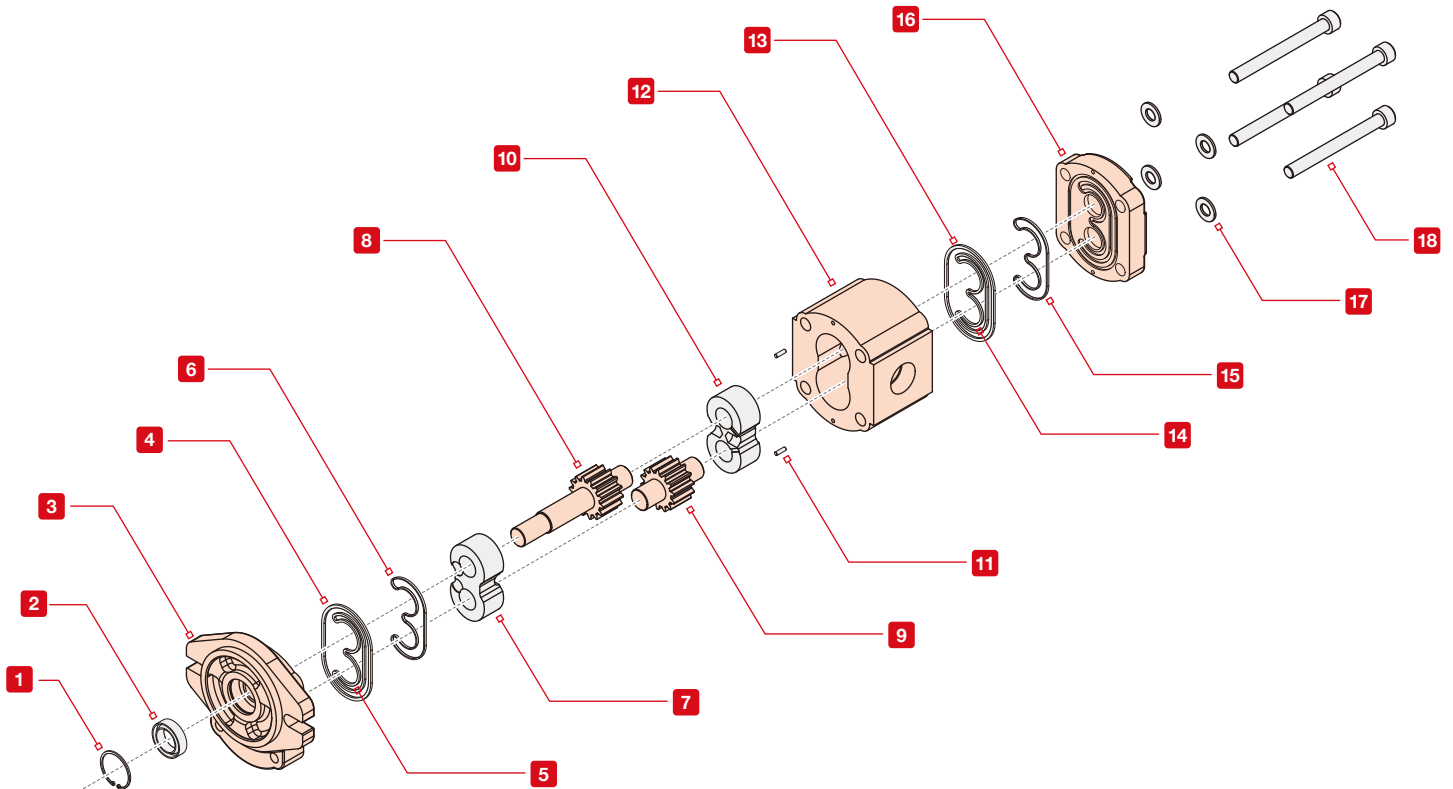
► **HGP-3A-F-X-4BE**

CW Rotation / Clockwise



Model	A	B
HGP-3A-4-4BE	101	46.5
HGP-3A-6-4BE	105	48
HGP-3A-8-4BE	109	49.5
HGP-3A-11-4BE	113	52
HGP-3A-13-4BE	117	54
HGP-3A-14-4BE	119	55
HGP-3A-17-4BE	123	57
HGP-3A-19-4BE	127	59
HGP-3A-23-4BE	134	63
HGP-3A-25-4BE	137	64
HGP-3A-28-4BE	141	66
HGP-3A-30-4BE	145	68
HGP-3A-33-4BE	150	71
HGP-3A-35-4BE	154	73

DECOMPOSITION CHARTS

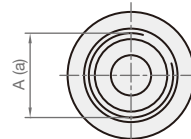


Item No.	Part Descriptions	Q'ty
1	C-ring	1
2	Shaft seal	1
3	Front cover	1
4	O-ring	1
5	Back-up ring	1
6	Bush lobe seal	1
7	Matching bearing	1
8	Drive gear	1
9	Driven gear	1

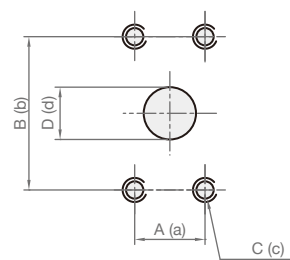
Item No.	Part Descriptions	Q'ty
10	Matching bearing	1
11	Lock pin	2
12	Housing	1
13	O-ring	1
14	Back-up ring	1
15	Bush lobe seal	1
16	Rear cover	1
17	Bolt washer	4
18	Bolt	4

X1 Woodruff Key 4*19 15.85	X2 Woodruff Key 5*22 17.46	X3 Woodruff Key 6*22 18	X4 Woodruff Key 4.76*22 19.05
X5 Woodruff Key 5*22 9T * 16/32DP * 30° 20	Y1 Woodruff Key 5*22 9T * 16/32DP * 30° 21	Y2 Woodruff Key 6*22 10T * 16/32DP * 30° 22	Y3 Woodruff Key 4.76*22 11T * 16/32DP * 30° 23
Z1 Woodruff Key 3*15 M12 P1.5 Taper 1:5 13.6 1:5	Z2 Woodruff Key 4*16 M12 P1.5 Taper 1:8 14.7 1:8	Y4 Woodruff Key 6*22 12T * 20° 13.80 * HGP-3AS only 12T	Y5 Woodruff Key 4.76*22 15T * 30° 16.8 15T

Code	Inlet			Outlet		
	A	B	C	a	b	c
F1	40	18.5	M6	35	14.5	M6
F2	40	18.5	M8	30	14.5	M6
F3	40	18.5	M8	40	14.5	M8



Code	Inlet	Outlet
	A	a
U1	1 1/16"-12UNF	7/8"-14UNF
U2	1 5/16"-12UNF	1 1/16"-12UNF



Code	Inlet				Outlet			
	A	B	C	D	a	b	c	d
F4	17.48	38.1	5/16"-18UNC	14.5	17.48	38.1	5/16"-18UNC	14.5
F5	22.23	47.63	3/8"-16UNC	18.5	17.48	38.1	5/16"-18UNC	14.5
F6	26.2	52.4	3/8"-16UNC	24	22.23	47.63	3/8"-16UNC	18.5

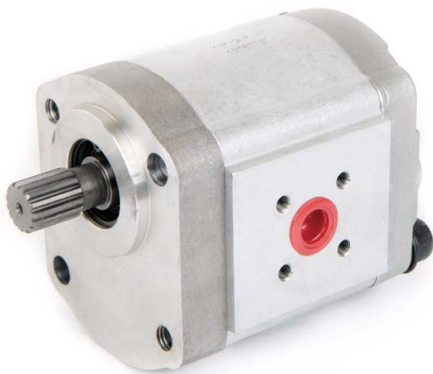
A diagram showing a circular cross-section of a pipe. The outer diameter is labeled $A(a)$. The inner diameter is labeled $A(b)$. The wall thickness is labeled t .

Code	Inlet	Outlet
	A	a
G1	G 3/4"	G 1/2"
G2	G 1"	G 3/4"

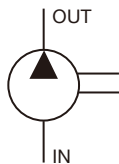
Code	Inlet	Outlet	Applicable Model
	A	a	
P1	3/4" PT	1/2" PT	3A-4 ~ 23
P2	1" PT	3/4" PT	3A-25 ~ 35

Code	Inlet	Outlet	Applicable Model
	A	a	
N1	3/4" NPT	1/2" NPT	3A-4 ~ 23
N2	1" NPT	3/4" NPT	3A-25 ~ 35

HGP-3A2D



SYMBOLS



ORDER CODES

HGP-3A2D - **F** **13** **R** - **Y4** - **N1**

1 2 3 4 5 6

1	Model Name	HGP-3A2D	
2	Mounting	F	flange type
		L	foot type
3	Delivery Capacity	4, 6, 8, 11, 13, 14, 17, 19, 23, 25, 28, 30, 33, 35	
4	Rotation Direction	R	clockwise
		L	counter - clockwise
5	Shaft Type *	X: straight shaft Y: spline shaft Z: taper shaft	
6	Inlet and Outlet *	F: flange type(F1~F6)	G: PF, G, BSPP(G1~G2)
		P: PT(P1~P2)	N: NPT(N1~N2) U: UNF(U1~U2)

* The dimension of shafts and inlet & outlet sizes please refer to page 23.

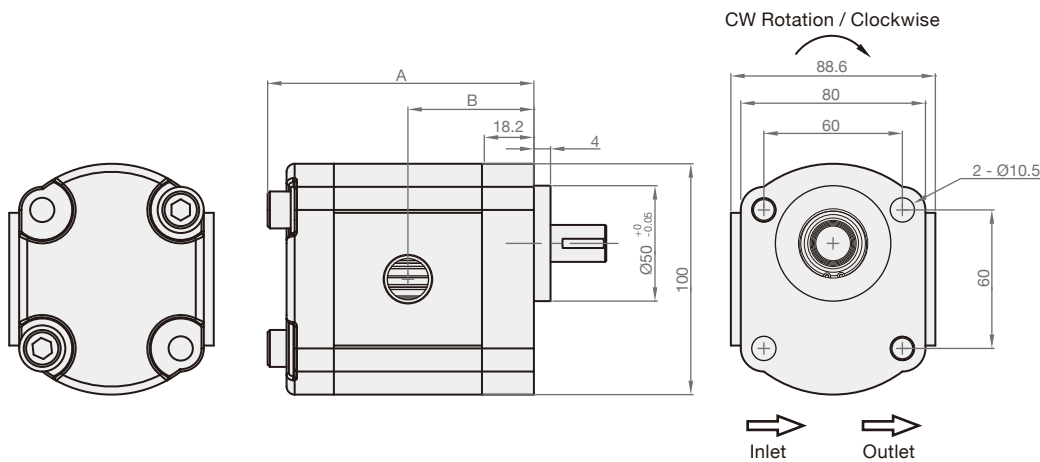
MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)			Weight (kg)
				Rate	Max.	Min.	
HGP-3A2D-4	4	210	250	1800	4000	700	2.09
HGP-3A2D-6	6	210	250	1800	4000	700	2.17
HGP-3A2D-8	8.4	210	250	1800	3500	700	2.25
HGP-3A2D-11	11	210	250	1800	3000	600	2.40
HGP-3A2D-13	13	210	250	1800	3000	600	2.50
HGP-3A2D-14	14.3	210	250	1800	3000	500	2.56
HGP-3A2D-17	16.5	210	250	1800	3000	500	2.67
HGP-3A2D-19	19.2	210	250	1800	3000	500	2.79
HGP-3A2D-23	23	210	250	1800	3000	500	2.99
HGP-3A2D-25	25	175	210	1800	2800	500	3.04
HGP-3A2D-28	28	175	210	1800	2500	500	3.15
HGP-3A2D-30	30	175	210	1800	2500	500	3.25
HGP-3A2D-33	33	140	175	1200	2500	500	3.40
HGP-3A2D-35	35	125	140	1200	2500	500	3.51

DIMENSION

(UNIT : mm)

► HGP-3A2D

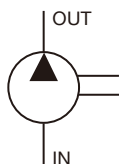


Model	A	B
HGP-3A2D-4	95.9	42.7
HGP-3A2D-6	98.9	44.2
HGP-3A2D-8	101.9	45.7
HGP-3A2D-11	106.9	48.2
HGP-3A2D-13	110.9	50.2
HGP-3A2D-14	112.9	51.2
HGP-3A2D-17	116.9	53.2
HGP-3A2D-19	120.9	55.2
HGP-3A2D-23	127.9	58.7
HGP-3A2D-25	130.9	60.2
HGP-3A2D-28	134.9	62.2
HGP-3A2D-30	138.9	64.2
HGP-3A2D-33	144.9	67.2
HGP-3A2D-35	148.9	69.2

HGP-3AI



SYMBOLS



ORDER CODES

HGP-3AI - **F** **11** **R** - **X3** - **2B** - **N1**

1 2 3 4 5 6 7

1	Model Name	HGP-3AI	
2	Mounting	F	flange type
		L	foot type
3	Delivery Capacity	4, 6, 8, 11, 13, 14, 17, 19, 23, 25, 28, 30, 33, 35	
4	Rotation Direction	R	clockwise
		L	counter - clockwise
5	Shaft Type *	X: straight shaft Y: spline shaft Z: taper shaft	
6	Flange Mounting Type	2B	SAE 2-bolt
		4BD	DIN 4-bolt
7	Inlet and Outlet *	F: flange type(F1~F6) G: PF, G, BSPP(G1~G2) P: PT(P1~P2) N: NPT(N1~N2) U: UNF(U1~U2)	

* The dimension of shafts and inlet & outlet sizes please refer to page 23.

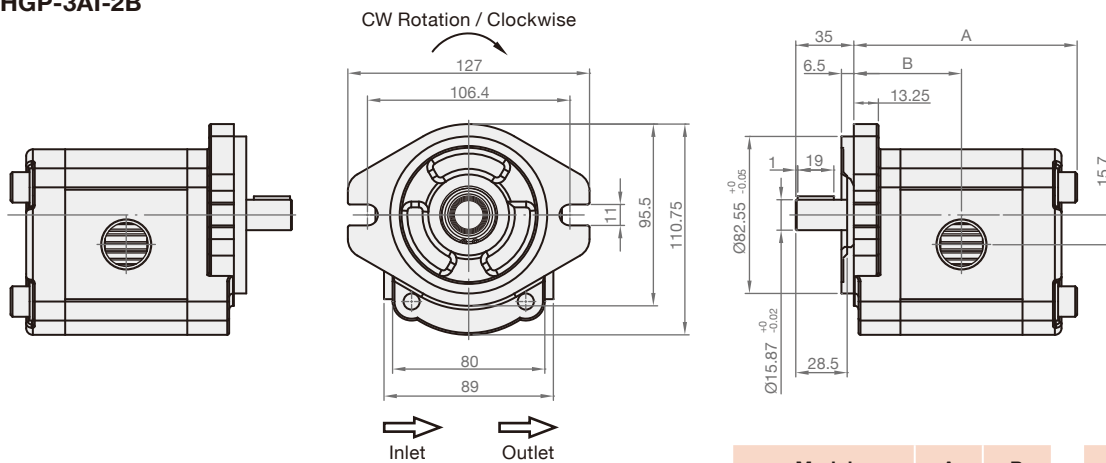
MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)			Weight (kg)
				Rate	Max.	Min.	
HGP-3AI-4	4	240	280	1800	4000	700	3.79
HGP-3AI-6	6	240	280	1800	4000	700	3.87
HGP-3AI-8	8.4	240	280	1800	3500	700	3.95
HGP-3AI-11	11	240	280	1800	3000	600	4.10
HGP-3AI-13	13	240	280	1800	3000	600	4.20
HGP-3AI-14	14.3	240	280	1800	3000	500	4.26
HGP-3AI-17	16.5	240	280	1800	3000	500	4.37
HGP-3AI-19	19.2	240	280	1800	3000	500	4.49
HGP-3AI-23	23	240	280	1800	3000	500	4.69
HGP-3AI-25	25	205	240	1800	2800	500	4.74
HGP-3AI-28	28	205	240	1800	2500	500	4.85
HGP-3AI-30	30	205	240	1800	2500	500	4.95
HGP-3AI-33	33	170	205	1200	2500	500	5.10
HGP-3AI-35	35	155	170	1200	2500	500	5.21

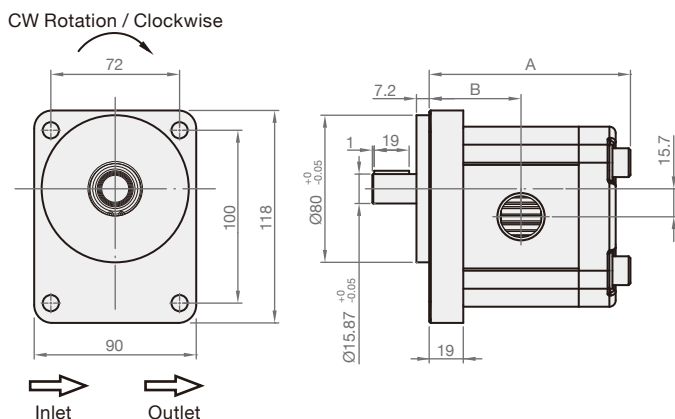
DIMENSION

(UNIT : mm)

► HGP-3AI-2B

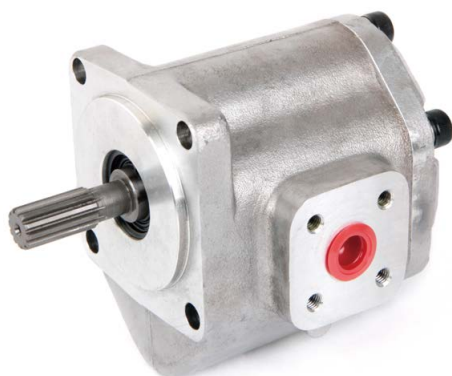


► HGP-3AI-4BD

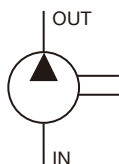


Model	A	B	Model	A	B
HGP-3AI-4-4BD	101	43.5	HGP-3AI-4-2B	101	48.5
HGP-3AI-6-4BD	105	45	HGP-3AI-6-2B	105	50
HGP-3AI-8-4BD	109	46.5	HGP-3AI-8-2B	109	51.5
HGP-3AI-11-4BD	113	49	HGP-3AI-11-2B	113	54
HGP-3AI-13-4BD	117	51	HGP-3AI-13-2B	117	56
HGP-3AI-14-4BD	119	52	HGP-3AI-14-2B	119	57
HGP-3AI-17-4BD	123	54	HGP-3AI-17-2B	123	59
HGP-3AI-19-4BD	127	56	HGP-3AI-19-2B	127	61
HGP-3AI-23-4BD	134	60	HGP-3AI-23-2B	134	65
HGP-3AI-25-4BD	137	61	HGP-3AI-25-2B	137	66
HGP-3AI-28-4BD	141	63	HGP-3AI-28-2B	141	68
HGP-3AI-30-4BD	145	65	HGP-3AI-30-2B	145	70
HGP-3AI-33-4BD	150	68	HGP-3AI-33-2B	150	73
HGP-3AI-35-4BD	154	70	HGP-3AI-35-2B	154	75

HGP-3AS



SYMBOLS



ORDER CODES

HGP-3AS - **F** **19** **R** - **X1** - **4BJ** - **N1**

1 2 3 4 5 6 7

1 ▶	Model Name	HGP-3AS	
2 ▶	Mounting	F	flange type
		L	foot type
3 ▶	Delivery Capacity	4, 6, 8, 11, 13, 14, 17, 19	
4 ▶	Rotation Direction	R	clockwise
		L	counter - clockwise
5 ▶	Shaft Type *	X: straight shaft Y: spline shaft Z: taper shaft	
6 ▶	Flange Mounting Type	4BJ	JIS 4-bolt
7 ▶	Inlet and Outlet *	F: flange type(F1~F6) G: PF, G, BSPP(G1~G2) P: PT(P1~P2) N: NPT(N1~N2) U: UNF(U1~U2)	

* The dimension of shafts and inlet & outlet sizes please refer to page 23.

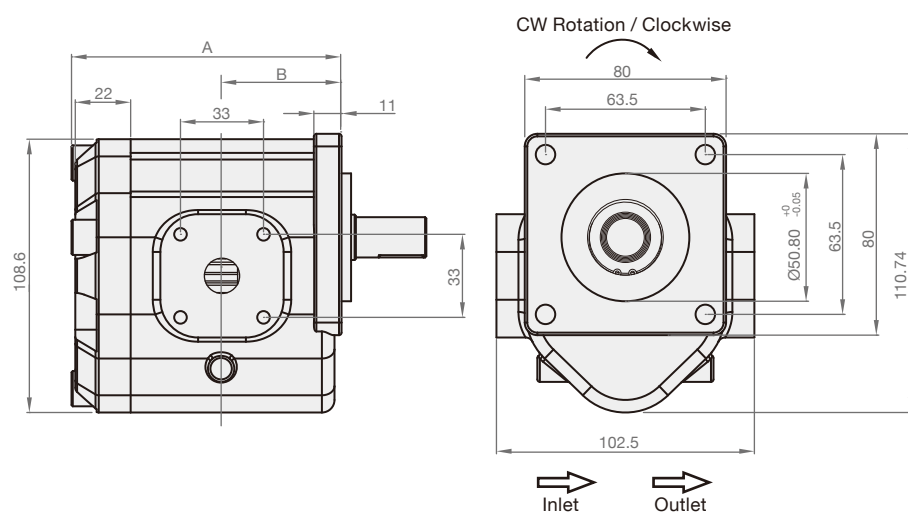
MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)			Weight (kg)
				Rate	Max.	Min.	
HGP-3AS-4	4	210	250	1800	4000	700	1.77
HGP-3AS-6	6	210	250	1800	4000	700	1.85
HGP-3AS-8	8.4	210	250	1800	3500	700	1.93
HGP-3AS-11	11	210	250	1800	3000	600	2.08
HGP-3AS-13	13	210	250	1800	3000	600	2.18
HGP-3AS-14	14.3	210	250	1800	3000	500	2.30
HGP-3AS-17	16.5	210	250	1800	3000	500	2.41
HGP-3AS-19	19.2	210	250	1800	3000	500	2.53

DIMENSION

(UNIT : mm)

► HGP-3AS

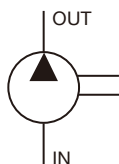


Model	A	B
HGP-3AS-4	101	48.5
HGP-3AS-6	105	50
HGP-3AS-8	109	51.5
HGP-3AS-11	113	54
HGP-3AS-13	117	56
HGP-3AS-14	119	57
HGP-3AS-17	123	59
HGP-3AS-19	127	61

HGP-4A



SYMBOLS



ORDER CODES

HGP-4A - **F** **23** **R** - **Y1** - **2BB** - **N1**

1 2 3 4 5 6 7

1	Model Name	HGP-4A	
2	Mounting	F	flange type
		L	foot type
3	Delivery Capacity	20, 23, 25, 28, 32, 36, 40, 45, 50, 56, 60	
4	Rotation Direction	R	clockwise
		L	counter - clockwise
5	Shaft Type *	X: straight shaft Y: spline shaft Z: taper shaft	
6	Flange Mounting Type	2BA	SAE 2-bolt (type A)
		2BB	SAE 2-bolt (type B)
7	Inlet and Outlet *	F: flange type(F1~F2) P: PT(P1~P2)	G: PF, G, BSPP(G1~G2) N: NPT(N1~N2)

* The dimension of shafts and inlet & outlet sizes please refer to page 33.

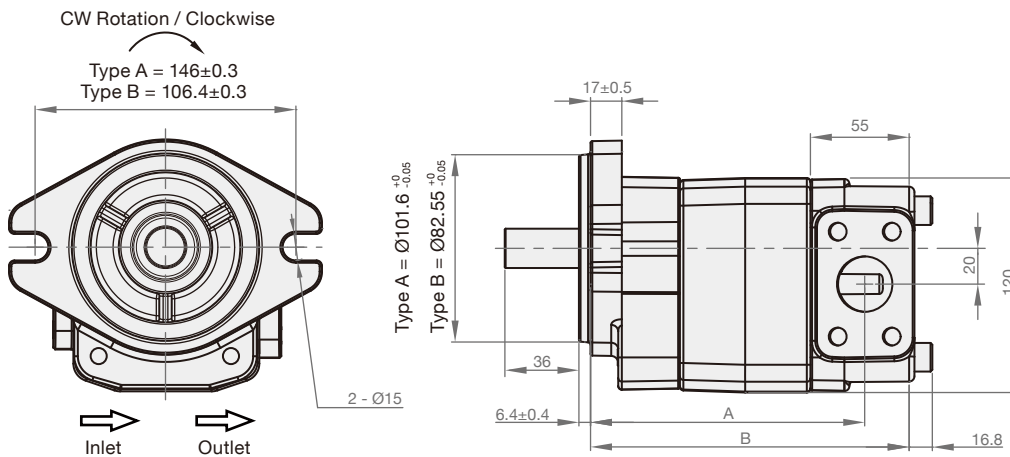
MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)		Weight (kg)
				Loaded	Unloaded	
HGP-4A-20	20	250	300	600	3000	4.1
HGP-4A-23	22.5	250	300	600	3000	4.6
HGP-4A-25	25	250	300	600	3000	5.1
HGP-4A-28	28	250	300	600	3000	5.7
HGP-4A-32	31.5	250	300	600	3000	6.4
HGP-4A-36	35.5	210	250	600	3000	7.1
HGP-4A-40	40	210	250	600	3000	8.0
HGP-4A-45	45	210	250	600	2600	8.8
HGP-4A-50	50	175	210	600	2500	9.7
HGP-4A-55	55	175	210	600	2400	10.7
HGP-4A-60	60	140	175	600	2000	11.8

DIMENSION

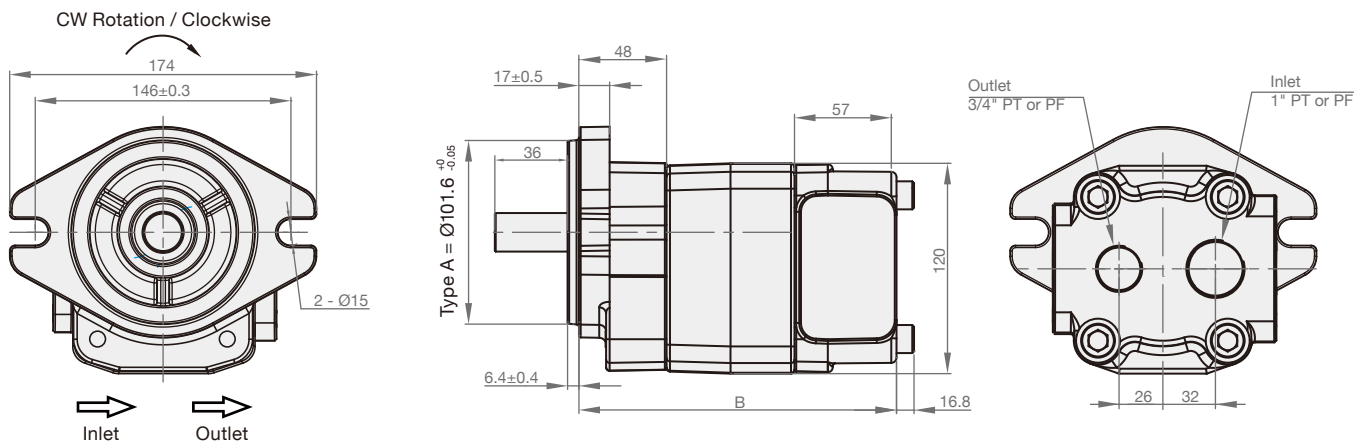
(UNIT : mm)

► HGP-4A-2B

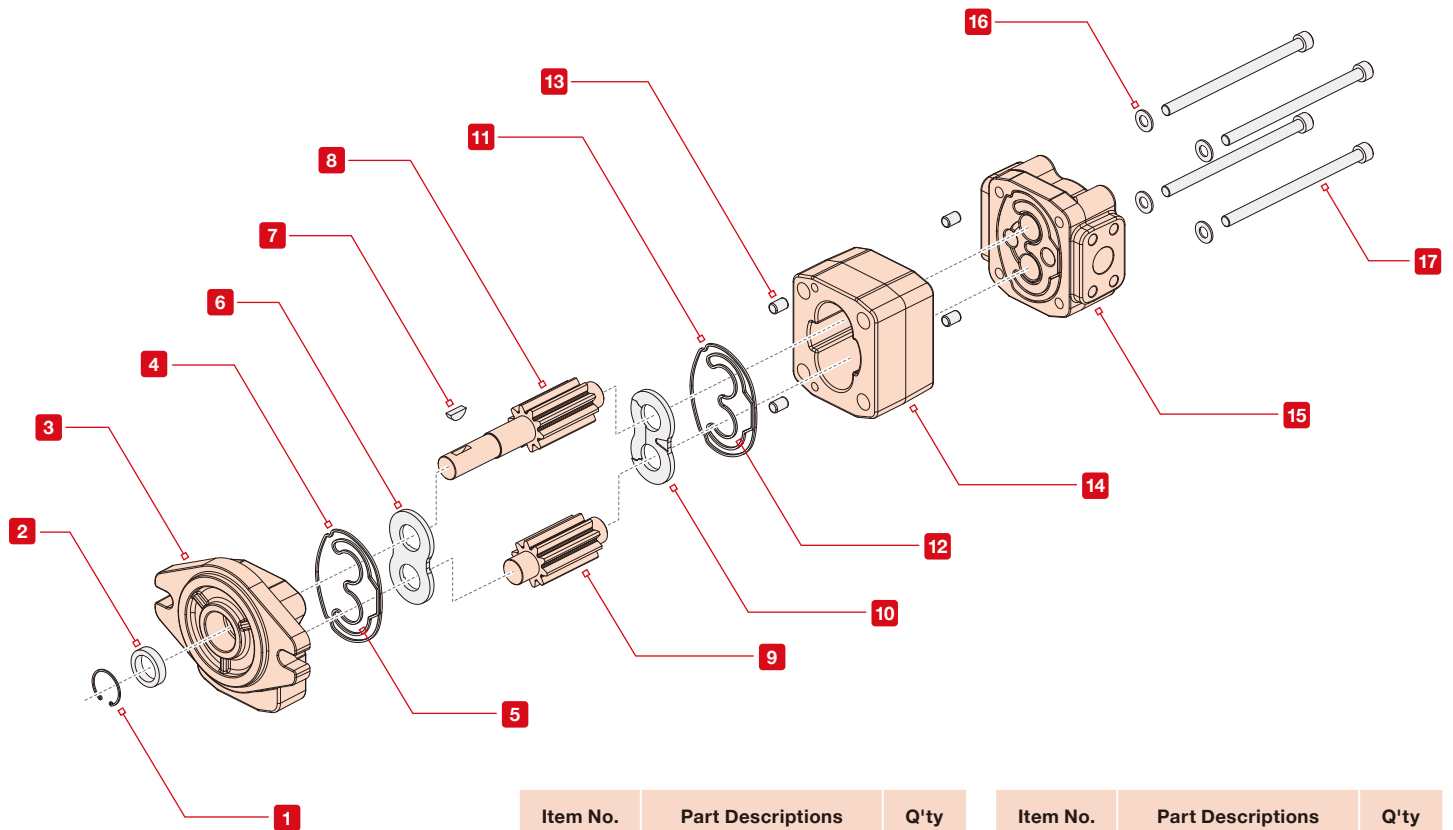


Model	A	B
HGP-4A-20	108.4	135.9
HGP-4A-23	110.9	138
HGP-4A-25	113.3	140.8
HGP-4A-28	116.3	143.8
HGP-4A-32	119.8	147.2
HGP-4A-36	123.7	151.2
HGP-4A-40	128.2	155.6
HGP-4A-45	133.1	160.6
HGP-4A-50	138	165.5
HGP-4A-55	143.4	170.9
HGP-4A-60	148.4	175.9

► HGP-4A (rear ports, customized)



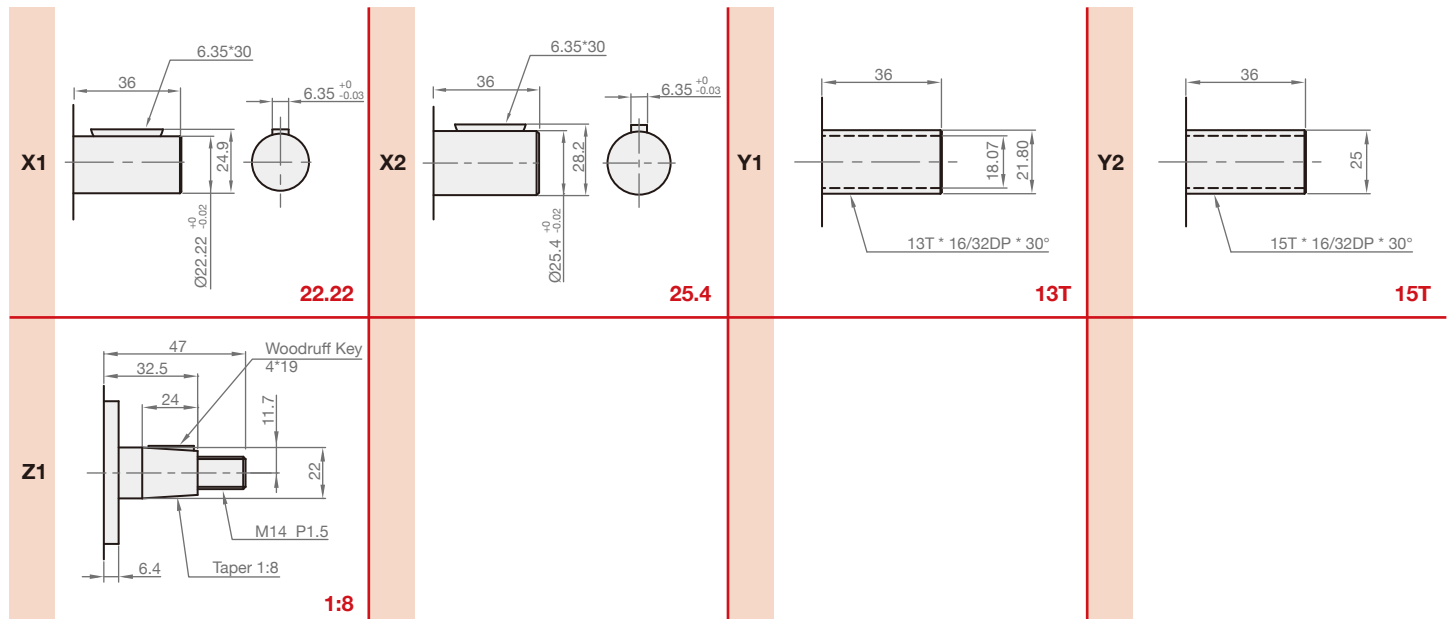
* If you need customized services, please contact the local distributors to obtain the further information.



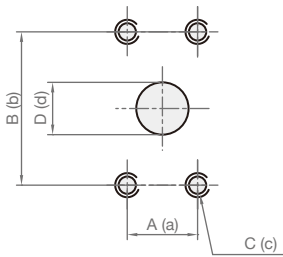
Item No.	Part Descriptions	Q'ty
1	C-ring	1
2	Shaft seal	1
3	Front cover	1
4	O-ring	1
5	Back-up ring	1
6	Matching bearing	1
7	Woodruff key	1
8	Drive gear	1
9	Driven gear	1

Item No.	Part Descriptions	Q'ty
10	Matching bearing	1
11	O-ring	1
12	Back-up ring	1
13	Lock pin	4
14	Housing	1
15	Rear cover	1
16	Bolt washer	4
17	Bolt	4

► Dimension of Shaft



► Inlet and Outlet Size



Flange Type

Code	Inlet				Outlet			
	A	B	C	D	a	b	c	d
F1	26.2	52.4	M10	25	22.2	47.6	M10	18.5
F2	30.2	58.7	M10	30	26.2	52.4	M10	25

PF (G, BSPP)

Code	Inlet	Outlet
	A	a
G1	G 1"	G 3/4"
G2	G 1 1/4"	G 1"

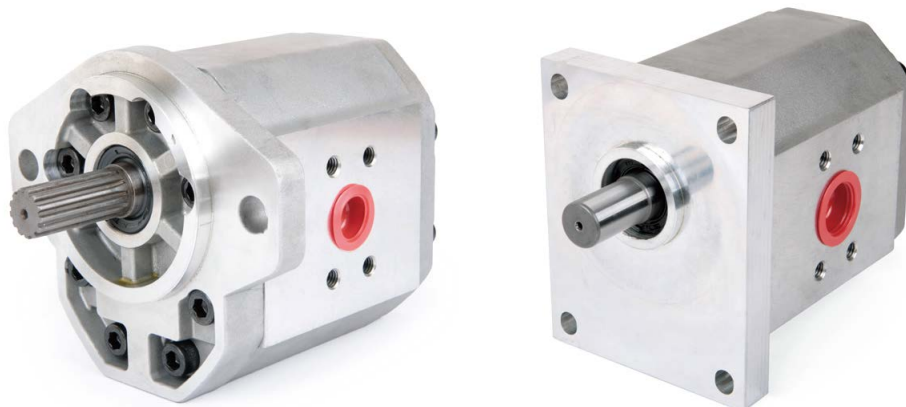
PT (BSPT)

Code	Inlet	Outlet	Applicable Model
	A	a	
P1	1" PT	3/4" PT	4A-20 ~ 36
P2	1 1/4" PT	1" PT	4A-40 ~ 70

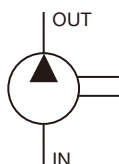
NPT

Code	Inlet	Outlet	Applicable Model
	A	a	
N1	1" NPT	3/4" NPT	4A-20 ~ 36
N2	1 1/4" NPT	1" NPT	4A-40 ~ 70

HGP-5A



SYMBOLS



ORDER CODES

HGP-5A - **F** **80** **R** - **Z1** - **4BD** - **F6**

1
2
3
4
5
6
7

1	Model Name	HGP-5A	
2	Mounting	F	flange type
		L	foot type
3	Delivery Capacity	22, 26, 33, 44, 50, 55, 63, 70, 75, 80, 90	
4	Rotation Direction	R	clockwise
		L	counter - clockwise
		M	hydraulic motor *
5	Shaft Type *	X: straight shaft Y: spline shaft Z: taper shaft	
6	Flange Mounting Type	2B	SAE 2-bolt
		4BD	DIN 4-bolt
7	Inlet and Outlet *	F: flange type(F1~F6) G: PF, G, BSPP(G1) P: PT(P1) N: NPT(N1) U: UNF(U1~U2)	

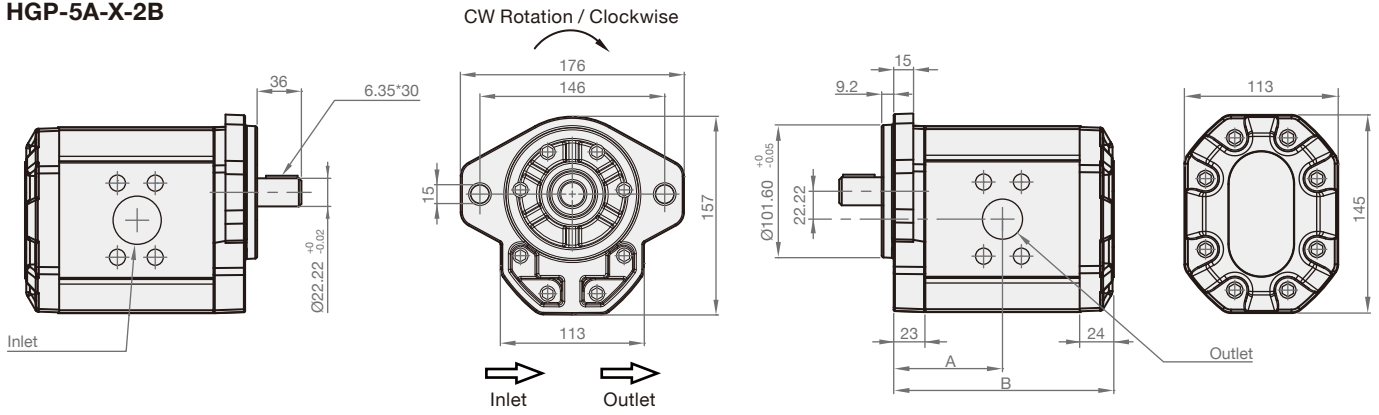
* The dimension of shafts and inlet & outlet sizes please refer to page 37.

* Please contact the local distributors to obtain the specifications of hydraulic motors.

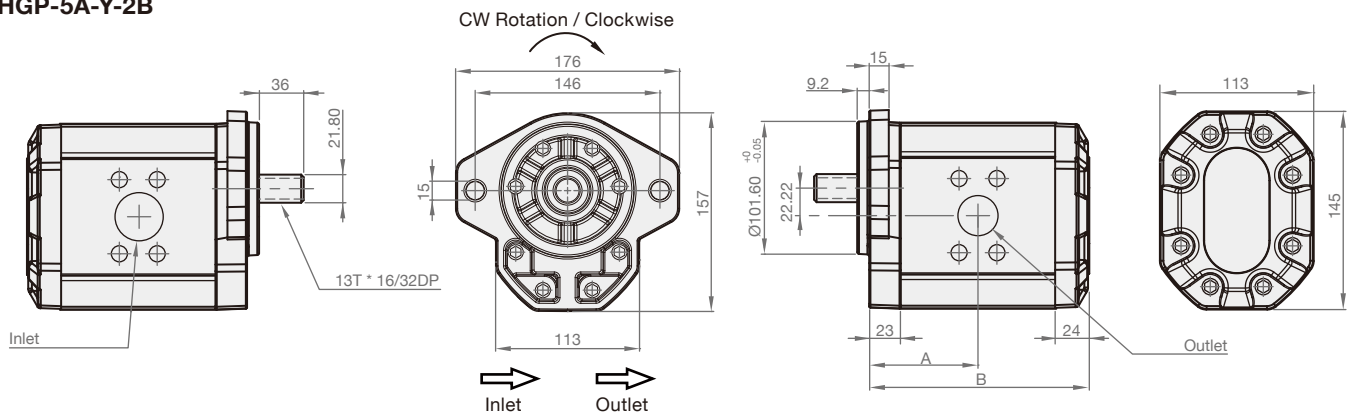
MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)		Weight (kg)
				Loaded	Unloaded	
HGP-5A-22	22	250	300	3000	700	5.61
HGP-5A-26	26	250	300	3000	700	5.69
HGP-5A-33	33	250	300	3000	700	5.83
HGP-5A-44	44	210	250	3000	700	6.05
HGP-5A-50	50	210	250	3000	700	6.18
HGP-5A-55	55	210	250	3000	700	6.27
HGP-5A-63	63	190	240	3000	600	6.43
HGP-5A-70	70	180	210	3000	600	6.57
HGP-5A-75	75	180	210	3000	600	6.67
HGP-5A-80	80	170	200	3000	600	6.77
HGP-5A-90	90	160	190	2500	600	6.97

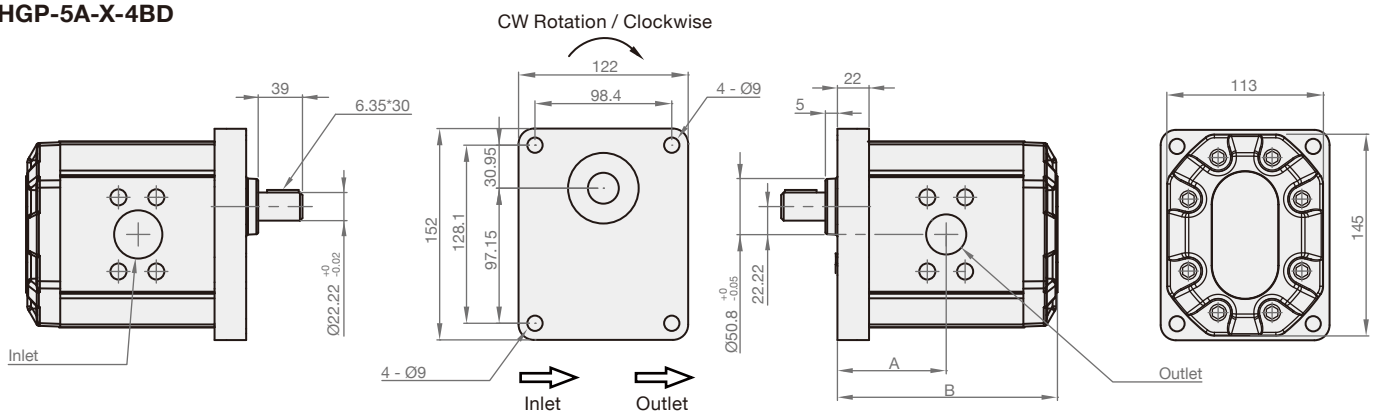
► HGP-5A-X-2B



► HGP-5A-Y-2B

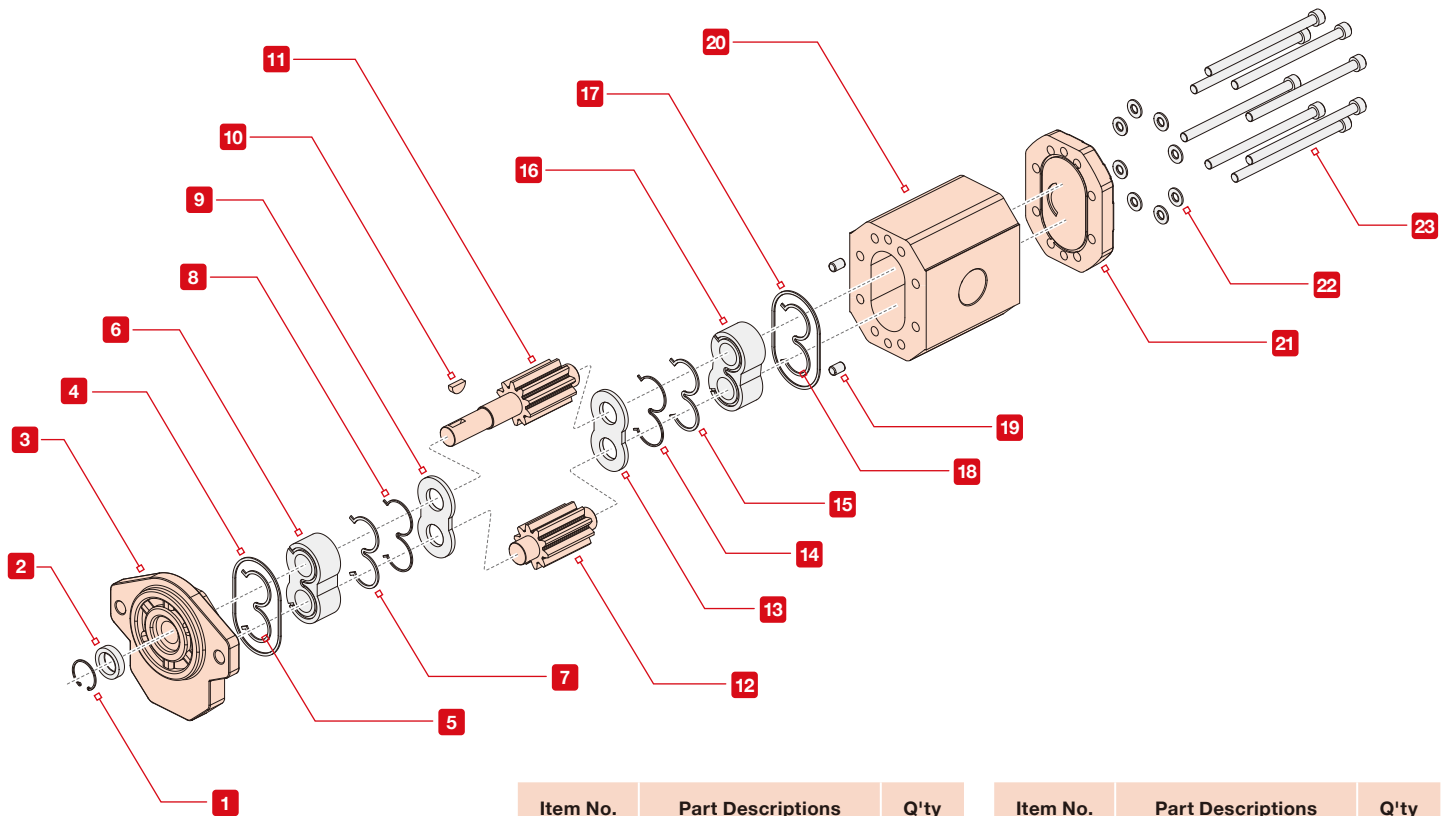


► HGP-5A-X-4BD



Model	A	B
HGP-5A-2B-22	56.5	117
HGP-5A-2B-26	58.5	121
HGP-5A-2B-33	61	126
HGP-5A-2B-44	65	134
HGP-5A-2B-50	67	137
HGP-5A-2B-55	69	142
HGP-5A-2B-63	71	146
HGP-5A-2B-70	74.5	152
HGP-5A-2B-75	76	156
HGP-5A-2B-80	78	160
HGP-5A-2B-90	81.5	167

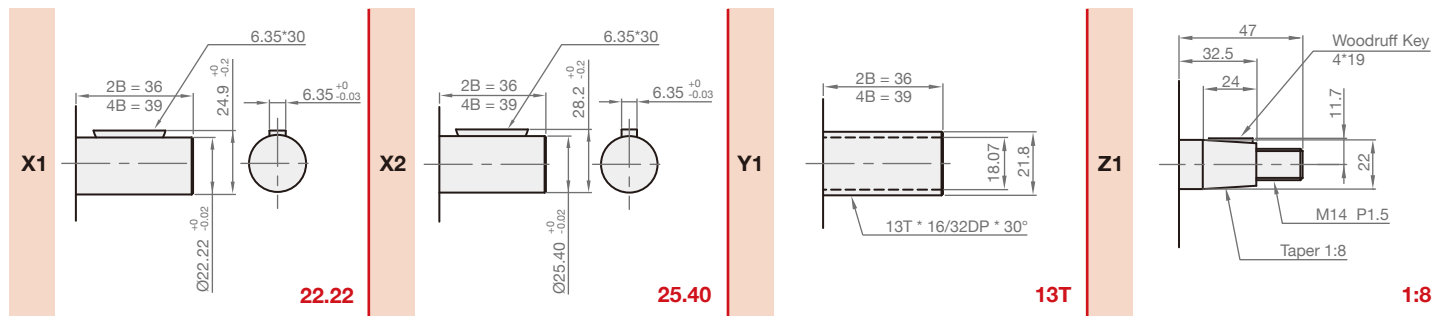
Model	A	B
HGP-5A-4BD-22	55.5	116
HGP-5A-4BD-26	57.5	120
HGP-5A-4BD-33	60	125
HGP-5A-4BD-44	64	133
HGP-5A-4BD-50	66	136
HGP-5A-4BD-55	68	141
HGP-5A-4BD-63	70	145
HGP-5A-4BD-70	73.5	151
HGP-5A-4BD-75	75	155
HGP-5A-4BD-80	77	159
HGP-5A-4BD-90	80.5	166



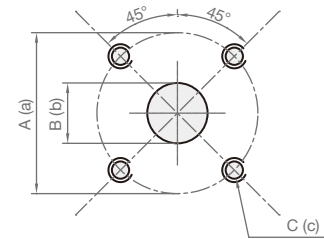
Item No.	Part Descriptions	Q'ty
1	C-ring	1
2	Shaft seal	1
3	Front cover	1
4	O-ring	1
5	Back-up ring	1
6	Matching bearing	1
7	Packing ring	1
8	Back-up Ring	1
9	Matching bearing	1
10	Woodruff key	1
11	Drive gear	1
12	Driven gear	1

Item No.	Part Descriptions	Q'ty
13	Matching bearing	1
14	Back-up ring	1
15	Packing ring	1
16	Matching bearing	1
17	O-ring	1
18	Back-up ring	1
19	Lock pin	2
20	Housing	1
21	Rear cover	1
22	Bolt washer	8
23	Bolt	8

► Dimension of Shaft

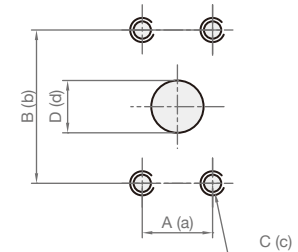


► Inlet and Outlet Size



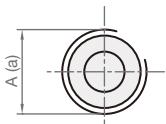
Flange Type

Code	Inlet			Outlet		
	A	B	C	a	b	c
F1	40	18.5	M8	40	18.5	M8
F2	51	25	M10	51	25	M10
F3	62	30	M10	62	30	M10



Flange Type

Code	Inlet				Outlet			
	A	B	C	D	a	b	c	d
F4	26.2	52.4	M10	25	22.2	47.6	M10	18.5
F5	30.2	58.7	M10	30	26.2	52.4	M10	25
F6	35.7	69.8	M10	39	30.2	58.7	M10	30



PF (G, BSPP)

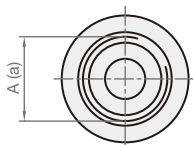
Code	Inlet	Outlet
	A	a
G1	G 1"	G 3/4"

PT (BSPT)

Code	Inlet	Outlet
	A	a
P1	1" PT	3/4" PT

NPT

Code	Inlet	Outlet
	A	a
N1	1" NPT	3/4" NPT



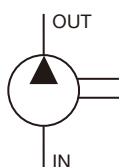
UNF

Code	Inlet	Outlet
	A	a
U1	1 5/16"-12UNF	1 1/16"-12UNF
U2	1 5/8"-12UNF	1 5/16"-12UNF

HGP-5AI



SYMBOLS



ORDER CODES

HGP-5AI - **F** **63** **R** - **Z1** - **2B** - **N1**

1 2 3 4 5 6 7

1	Model Name	HGP-5AI	
2	Mounting	F	flange type
		L	foot type
3	Delivery Capacity	22, 26, 33, 44, 50, 55, 63, 70, 75, 80, 90	
4	Rotation Direction	R	clockwise
		L	counter - clockwise
5	Shaft Type *	X: straight shaft Y: spline shaft Z: taper shaft	
6	Flange Mounting Type	2B	SAE 2-bolt
		4BD	DIN 4-bolt
7	Inlet and Outlet *	F: flange type(F1~F6) G: PF, G, BSPP(G1) P: PT(P1) N: NPT(N1) U: UNF(U1~U2)	

* The dimension of shafts and inlet & outlet sizes please refer to page 37.

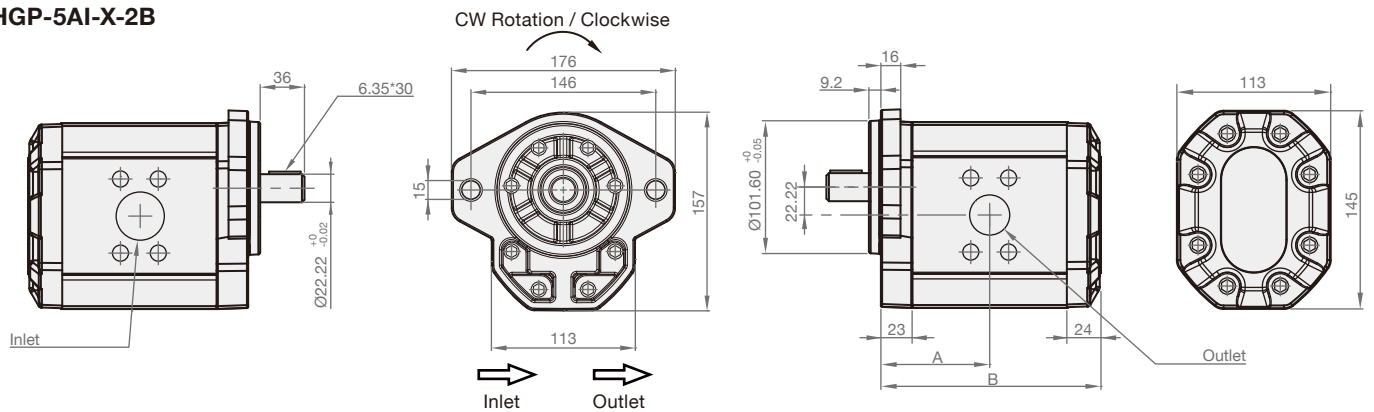
MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)		Weight (kg)
				Loaded	Unloaded	
HGP-5AI-22	22	280	330	3000	700	8.96
HGP-5AI-26	26	280	330	3000	700	9.04
HGP-5AI-33	33	280	330	3000	700	9.18
HGP-5AI-44	44	240	290	3000	700	9.40
HGP-5AI-50	50	240	290	3000	700	9.53
HGP-5AI-55	55	210	255	3000	700	9.62
HGP-5AI-63	63	210	240	3000	600	9.78
HGP-5AI-70	70	190	210	3000	600	9.92
HGP-5AI-75	75	190	210	3000	600	10.02
HGP-5AI-80	80	180	210	3000	600	10.12
HGP-5AI-90	90	170	190	2500	600	10.32

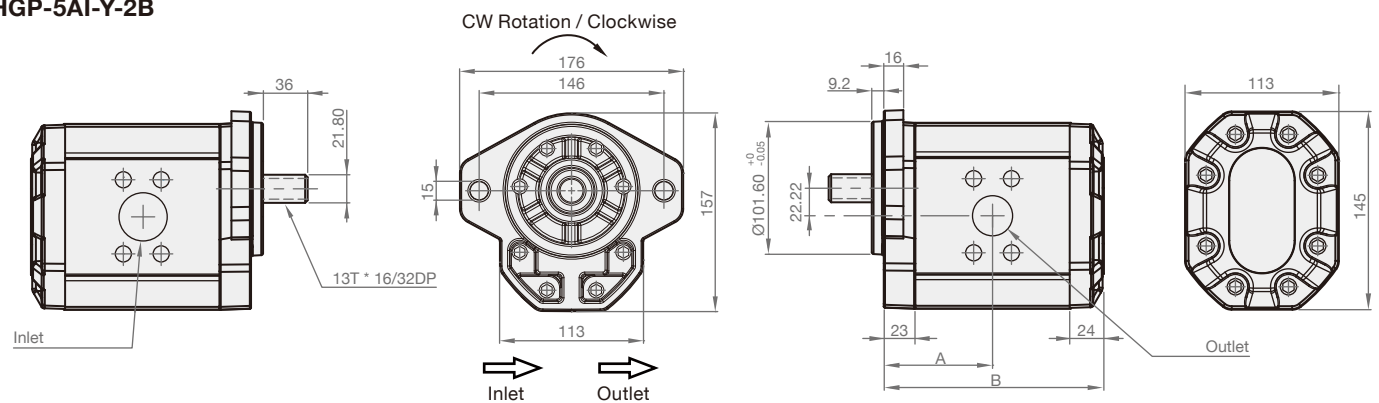
DIMENSION

(UNIT : mm)

► HGP-5AI-X-2B



► HGP-5AI-Y-2B



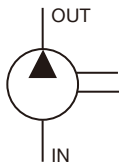
Model	A	B
HGP-5AI-2B-22	56.5	117
HGP-5AI-2B-26	58.5	121
HGP-5AI-2B-33	61	126
HGP-5AI-2B-44	65	134
HGP-5AI-2B-50	67	137
HGP-5AI-2B-55	69	142

Model	A	B
HGP-5AI-2B-63	71	146
HGP-5AI-2B-70	74.5	152
HGP-5AI-2B-75	76	156
HGP-5AI-2B-80	78	160
HGP-5AI-2B-90	81.5	167

HGP-1AU



SYMBOLS



ORDER CODES

HGP-1AU - **F** **08** **L** - **W**

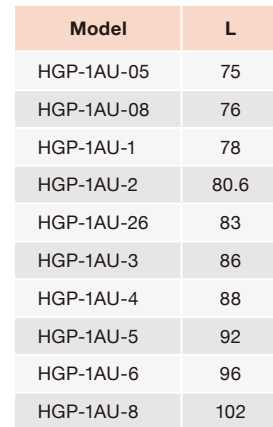
1
2
3
4
5

1	Model Name	HGP-1AU	
2	Mounting	F	flange type
3	Delivery Capacity	05, 08, 1, 2, 26, 3, 4, 5, 6, 8	
4	Rotation Direction	L	counter - clockwise
5	Shaft Type	W	tang shaft

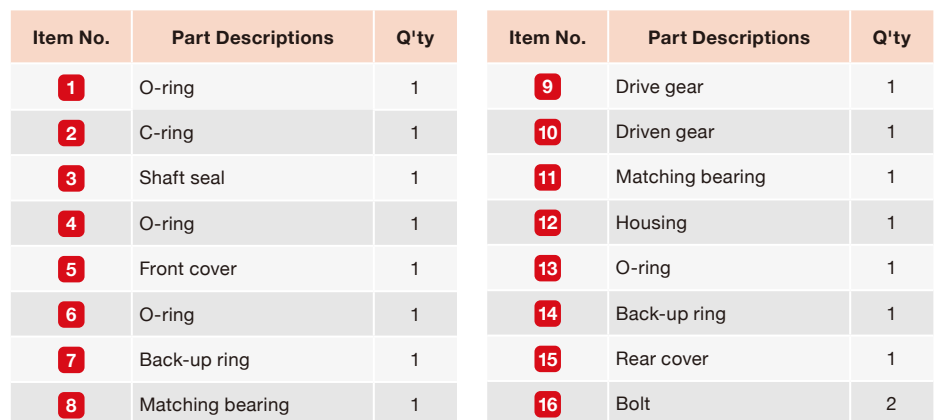
MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)			Weight (kg)
				Rate	Max.	Min.	
HGP-1AU-05	0.5	210	250	1800	4500	1000	0.60
HGP-1AU-08	0.8	210	250	1800	4500	1000	0.65
HGP-1AU-1	1	210	250	1800	4500	1000	0.70
HGP-1AU-2	2	210	250	1800	4500	600	0.75
HGP-1AU-26	2.6	210	250	1800	4500	600	0.85
HGP-1AU-3	3	210	250	1800	4500	600	0.86
HGP-1AU-4	4	210	250	1800	4000	600	0.88
HGP-1AU-5	5	210	250	1800	3200	600	0.90
HGP-1AU-6	6	210	250	1800	3200	600	1.00
HGP-1AU-8	7.8	170	210	1800	3200	600	1.10

* HGP-1AU-05 and HGP-1AU-26 do not belong to regular products. Customized service can be provided.



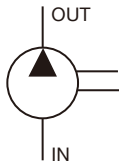
DECOMPOSITION CHARTS



HGP-1.5A



SYMBOLS



ORDER CODES

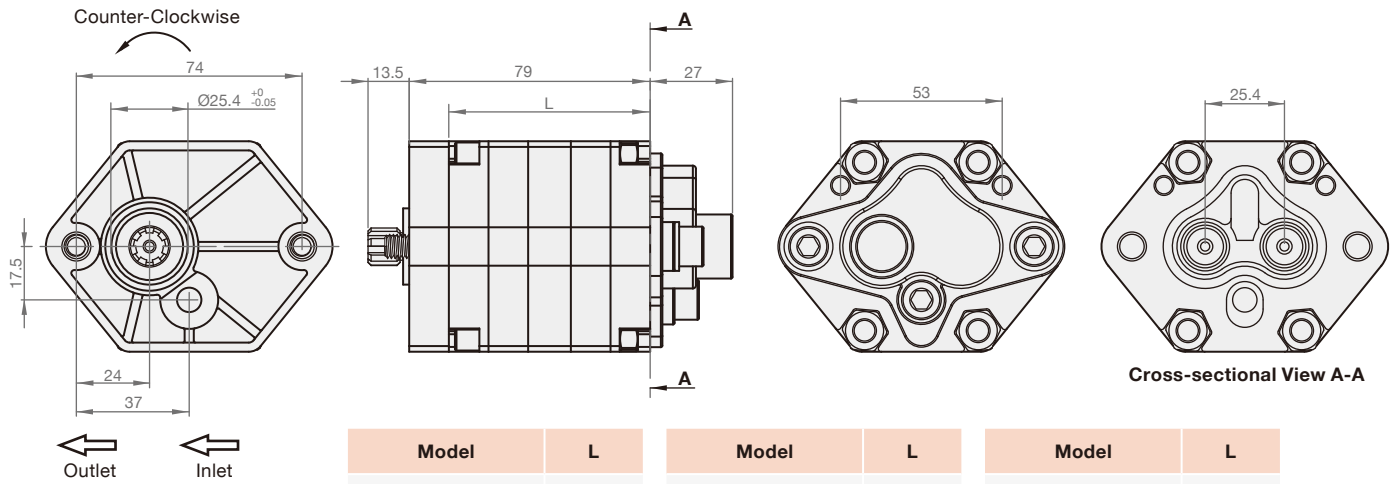
HGP-1.5A - **F** **2** **L** - **Y**

1
2
3
4
5

1	Model Name	HGP-1.5A	
2	Mounting	F	flange type
3	Delivery Capacity	08, 1, 12, 16, 2, 25, 3, 4, 5, 65, 8	
4	Rotation Direction	L	counter - clockwise
5	Shaft Type	Y	spline shaft

MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)			Weight (kg)
				Rate	Max.	Min.	
HGP-1.5A-08	0.8	300	350	1800	5000	1000	0.89
HGP-1.5A-1	1	300	350	1800	5000	800	0.91
HGP-1.5A-12	1.2	300	350	1800	5000	800	0.92
HGP-1.5A-16	1.6	300	350	1800	5000	800	0.93
HGP-1.5A-2	2	300	350	1800	4000	800	0.94
HGP-1.5A-25	2.5	300	350	1800	4000	800	0.95
HGP-1.5A-3	3.1	300	350	1800	4000	700	0.97
HGP-1.5A-4	4	300	350	1800	4000	600	1.00
HGP-1.5A-5	5	250	300	1800	4000	500	1.04
HGP-1.5A-65	6.3	250	300	1800	3200	500	1.14
HGP-1.5A-8	8	210	250	1800	2400	500	1.17

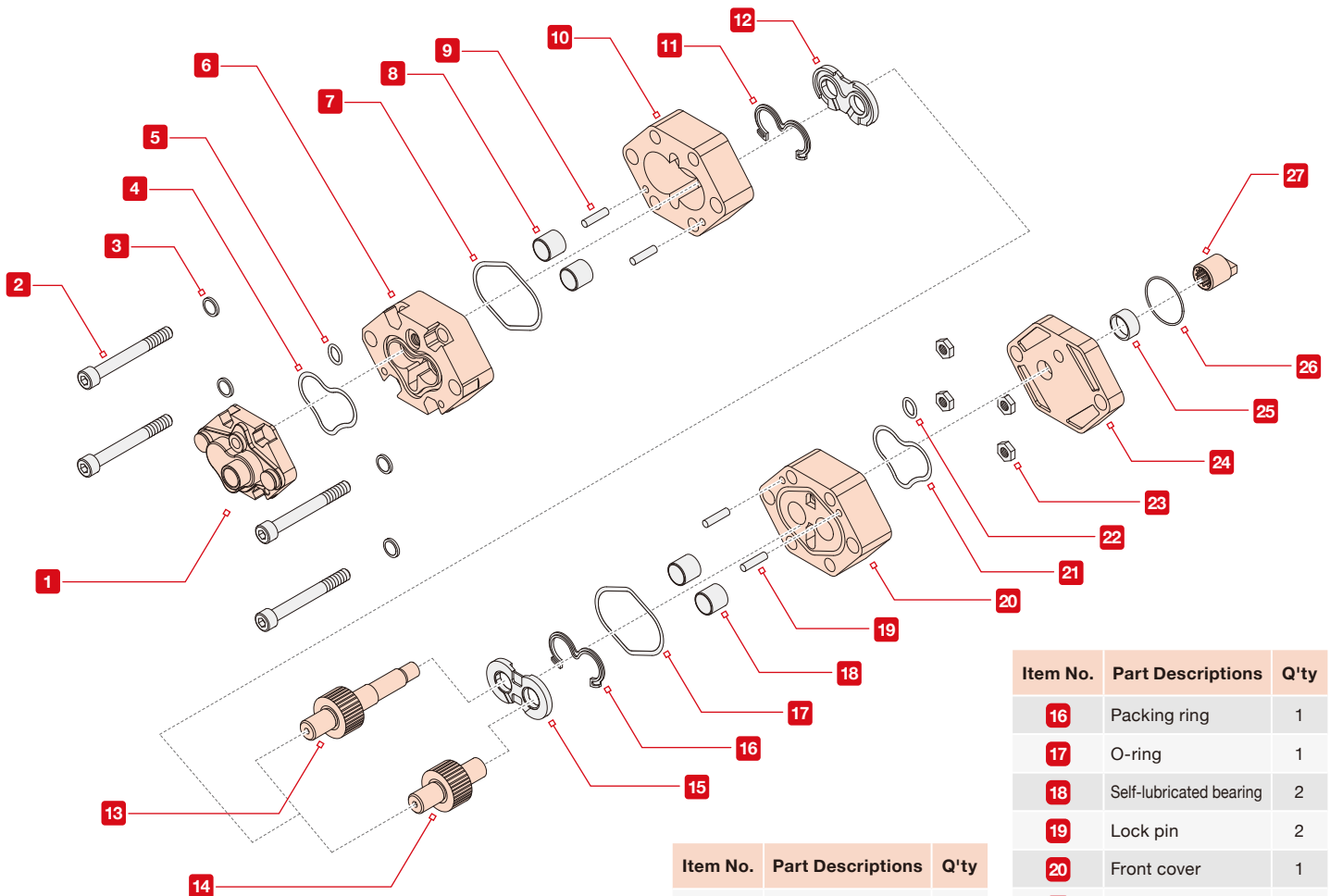


Model	L
HGP-1.5A-08	64.6
HGP-1.5A-1	65.1
HGP-1.5A-12	65.6
HGP-1.5A-16	66.6

Model	L
HGP-1.5A-2	67.6
HGP-1.5A-25	68.6
HGP-1.5A-3	70.1
HGP-1.5A-4	72.6

Model	L
HGP-1.5A-5	75.6
HGP-1.5A-65	79.6
HGP-1.5A-8	82.6

DECOMPOSITION CHARTS



Item No.	Part Descriptions	Q'ty
1	Rear cover	1
2	Bolt	4
3	Bolt washer	4
4	O-ring	1

Item No.	Part Descriptions	Q'ty
5	O-ring	1
6	Rear cover	1
7	O-ring	1
8	Self-lubricated bearing	2

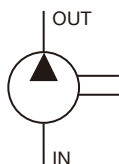
Item No.	Part Descriptions	Q'ty
9	Lock pin	2
10	Housing	1
11	Packing ring	1
12	Matching bearing	1
13	Drive gear	1
14	Driven gear	1
15	Matching bearing	1

Item No.	Part Descriptions	Q'ty
16	Packing ring	1
17	O-ring	1
18	Self-lubricated bearing	2
19	Lock pin	2
20	Front cover	1
21	O-ring	1
22	O-ring	1
23	Nut	4
24	Front cover	1
25	Shaft seal	1
26	O-ring	1
27	Couplings	1

HGP-3.5AF11R



SYMBOLS



ORDER CODES

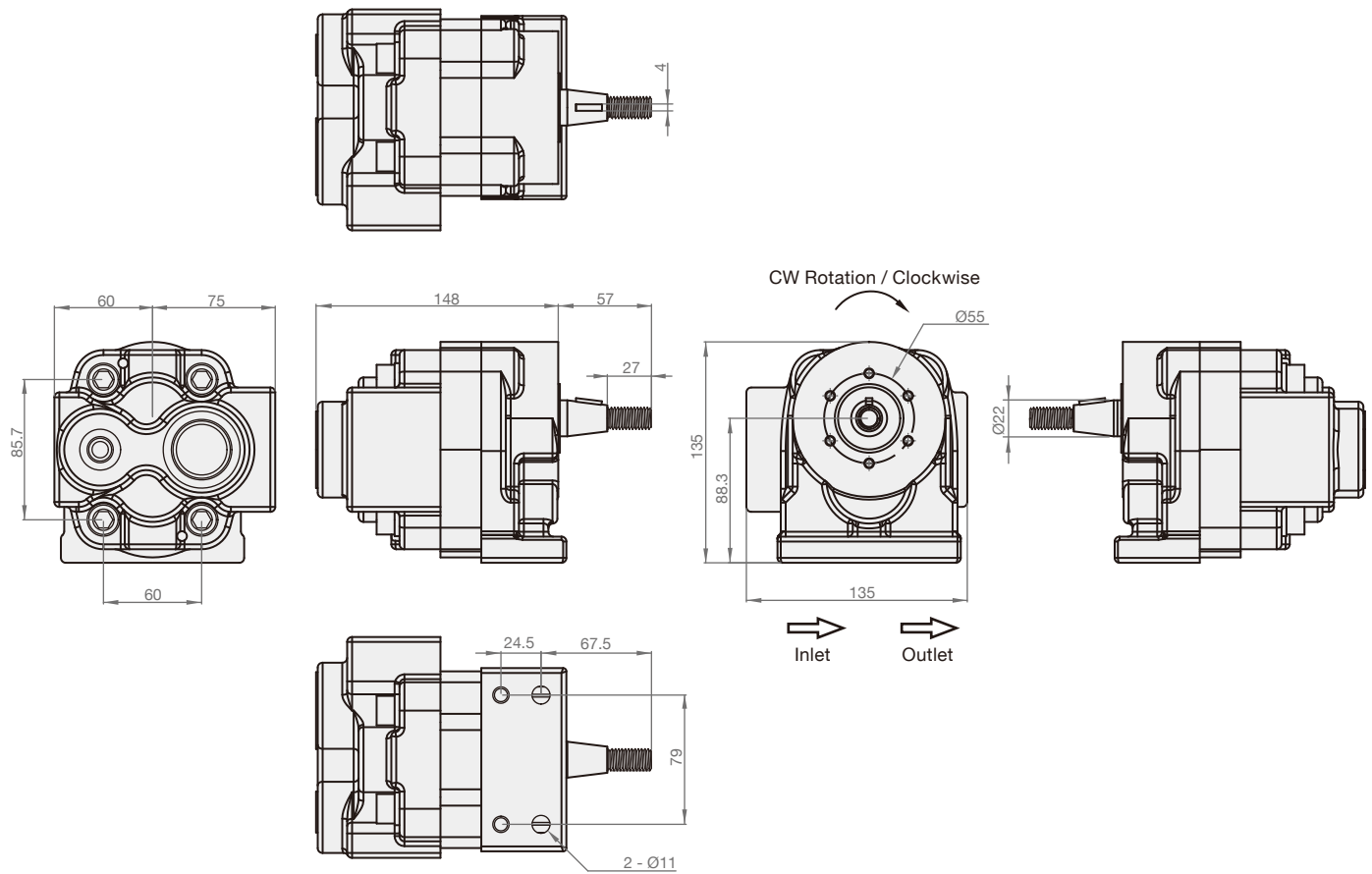
HGP-3.5A - **F** **11** **R**

1 2 3 4

1	Model Name	HGP-3.5A	
2	Mounting	F	flange type
3	Delivery Capacity	11	
4	Rotation Direction	R	clockwise

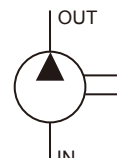
MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Max. Speed (r.p.m.)	Weight (kg)
HGP-3.5A-F11R	11	240	280	3000	16



Speciality

SYMBOLS



HGP-2AB



HGP-2AK (KP-10)



HGP-1.5A-F3.4L

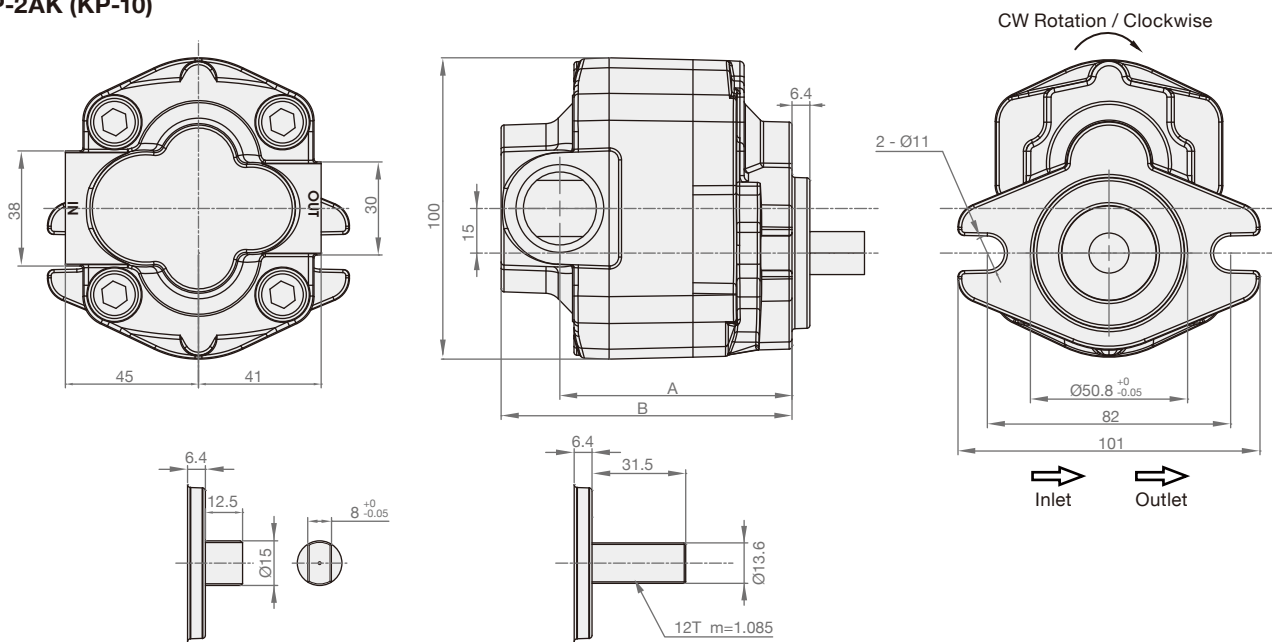


TP-206HBVB
(Trochoid Pump with Relief)

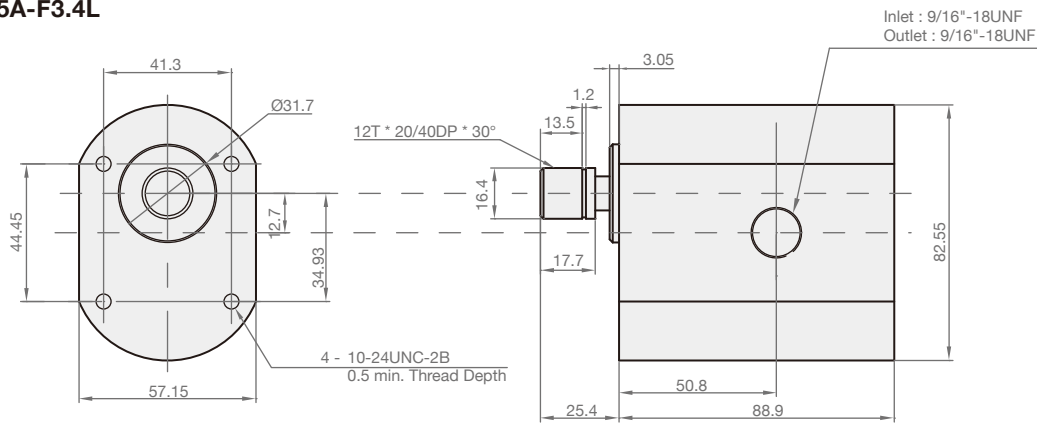
MODEL SPEC.

Model	Displacement Capacity (cc/rev)	Max. Pressure (kg/cm ²)	Speed (r.p.m.)	
			Max.	Min.
HGP-2AK-F7(R/L) [KP10-7(C/A)]	7.26	175	3000	600
HGP-2AK-F9(R/L) [KP10-9(C/A)]	9.08	175	3000	600
HGP-2AK-F11(R/L) [KP10-11(C/A)]	11.2	175	3000	600
HGP-1.5A-F3.4L	3.4	-	3000	600
TP-206HBVB	-	-	-	-

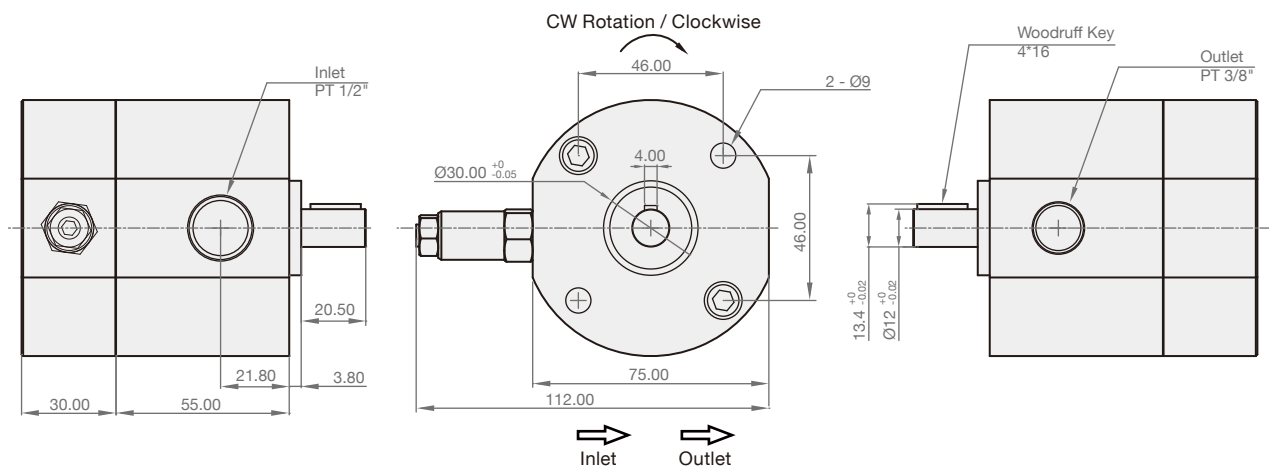
▶ **HGP-2AK (KP-10)**



► **HGP-1.5A-F3.4L**



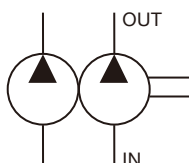
▶ **TP-206HBVB**



HGP-11A



SYMBOLS



ORDER CODES

HGP-11A - **F** **2** **08** **R** - **X2** - **4BDB** - **N1**

1
2
3
3
4
5
6
7

1	Model Name	HGP-11A	
2	Mounting	F	flange type
		L	foot type
3	Delivery Capacity	05, 08, 1, 2, 26, 3, 4, 5, 6, 8	
4	Rotation Direction	R	clockwise
		L	counter - clockwise
5	Shaft Type *	X: straight shaft Y: spline shaft Z: taper shaft	
6	Flange Mounting Type	2B	SAE 2-bolt
		4BDA	DIN 4-bolt (type A)
		4BDB	DIN 4-bolt (type B)
		4BE	European 4-bolt
7	Inlet and Outlet *	F: flange type(F1~F2) G: PF, G, BSPP(G1~G2) P: PT(P1~P2) N: NPT(N1~N2) U: UNF(U1~U2)	

* The dimension of shafts and inlet & outlet sizes please refer to page 15.

MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)			Weight (kg)
				Rate	Max.	Min.	
HGP-11A-0505	0.5+0.5	210	250	1800	4500	1000	2.61
HGP-11A-0808	0.8+0.8	210	250	1800	4500	1000	2.71
HGP-11A-11	1+1	210	250	1800	4500	1000	2.81
HGP-11A-22	2+2	210	250	1800	4500	600	2.91
HGP-11A-2626	2.6+2.6	210	250	1800	4500	600	3.11
HGP-11A-33	3+3	210	250	1800	4500	600	3.13
HGP-11A-44	4+4	210	250	1800	4000	600	3.17
HGP-11A-55	5+5	210	250	1800	3200	600	3.21
HGP-11A-66	6+6	210	250	1800	3200	600	3.41
HGP-11A-88	8+8	170	210	1800	3200	600	3.61

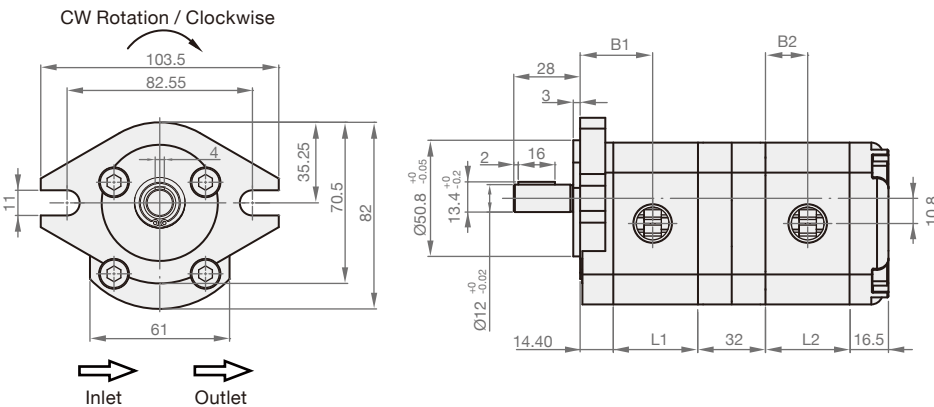
* We provide many options to meet your displacement inquiries of tandem gear pumps, such as HGP-11A-208 (2+0.8 cc/rev).

* HGP-11A-05 and HGP-11A-26 do not belong to regular products. Customized service can be provided.

DIMENSION (UNIT : mm)

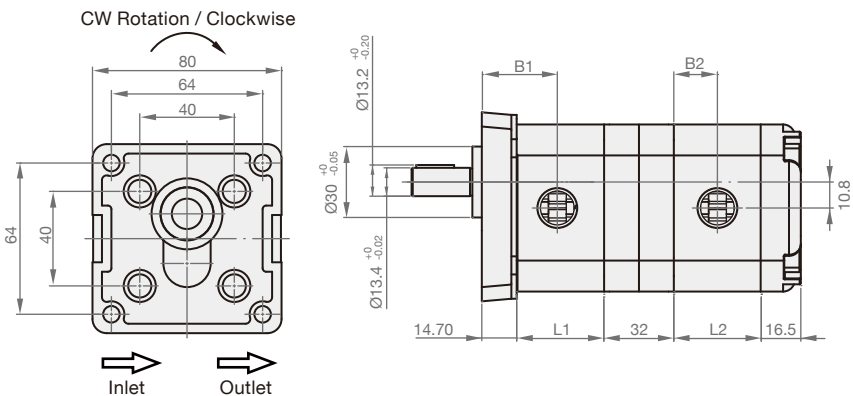
(UNIT : mm)

► **HGP-11A-2B**



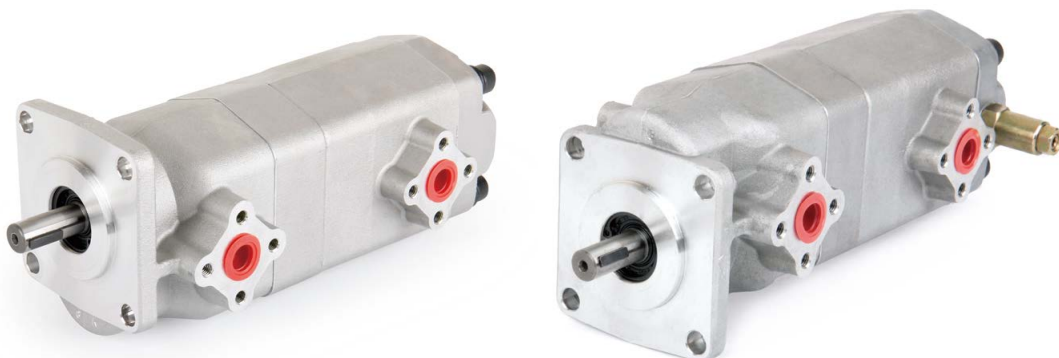
Model	L1, L2	B1	B2
HGP-11A-05-2B	34	31.4	17
HGP-11A-08-2B	35	31.9	17.5
HGP-11A-1-2B	37	32.9	18.5
HGP-11A-2-2B	40	34.4	20
HGP-11A-26-2B	42	35.4	21
HGP-11A-3-2B	45	36.9	22.5
HGP-11A-4-2B	47	37.9	23.5
HGP-11A-5-2B	51	39.9	25.5
HGP-11A-6-2B	55	41.9	27.5
HGP-11A-8-2B	61	44.9	30.5

► **HGP-11A-4BD, 4BE**

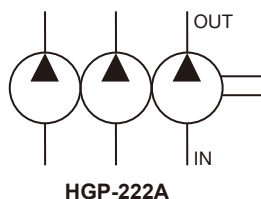
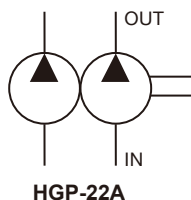


Model	L1, L2	B1	B2
HGP-11A-05-4BD, 4BE	34	31.7	17
HGP-11A-08-4BD, 4BE	35	32.2	17.5
HGP-11A-1-4BD, 4BE	37	33.2	18.5
HGP-11A-2-4BD, 4BE	40	34.7	20
HGP-11A-26-4BD, 4BE	42	35.7	21
HGP-11A-3-4BD, 4BE	45	37.2	22.5
HGP-11A-4-4BD, 4BE	47	38.2	23.5
HGP-11A-5-4BD, 4BE	51	40.2	25.5
HGP-11A-6-4BD, 4BE	55	42.2	27.5
HGP-11A-8-4BD, 4BE	61	45.2	30.5

HGP-22A



SYMBOLS



ORDER CODES

HGP-22A - F 9 6 R - W1 - 4BJ - N2

1 2 3 3 4 5 6 7

1	Model Name	HGP-22A, HGP-222A	
2	Mounting	F	flange type
		L	foot type
3	Delivery Capacity	2, 3, 4, 5, 6, 8, 9, 11, 12	
4	Rotation Direction	R	clockwise
		L	counter - clockwise
5	Shaft Type *	W: tang shaft Y: spline shaft	X: straight shaft Z: taper shaft
6	Flange Mounting Type	4BJ	JIS 4-bolt
7	Inlet and Outlet *	F: flange type(F1) P: PT(P1~P2)	G: PF, G, BSPP(G1~G2) N: NPT(N1~N2)

* The dimension of shafts and inlet & outlet sizes please refer to page 19.

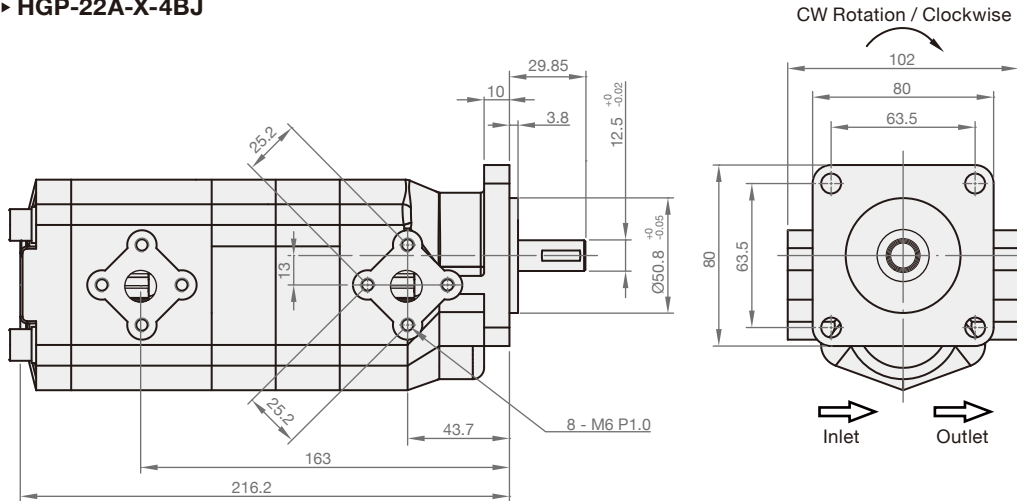
MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)			Weight (kg)
				Rate	Max.	Min.	
HGP-22A-22	2+2	210	250	1800	4000	700	3.38
HGP-22A-33	3+3	210	250	1800	4000	700	3.40
HGP-22A-44	4+4	210	250	1800	4000	700	3.40
HGP-22A-55	5+5	210	250	1800	4000	700	3.42
HGP-22A-66	6+6	210	250	1800	3500	700	3.42
HGP-22A-88	8+8	210	250	1800	3000	600	3.48
HGP-22A-99	9+9	210	250	1800	2500	550	3.48
HGP-22A-1111	11+11	210	250	1800	2000	500	3.48
HGP-22A-1212	12+12	175	210	1800	2000	500	3.52

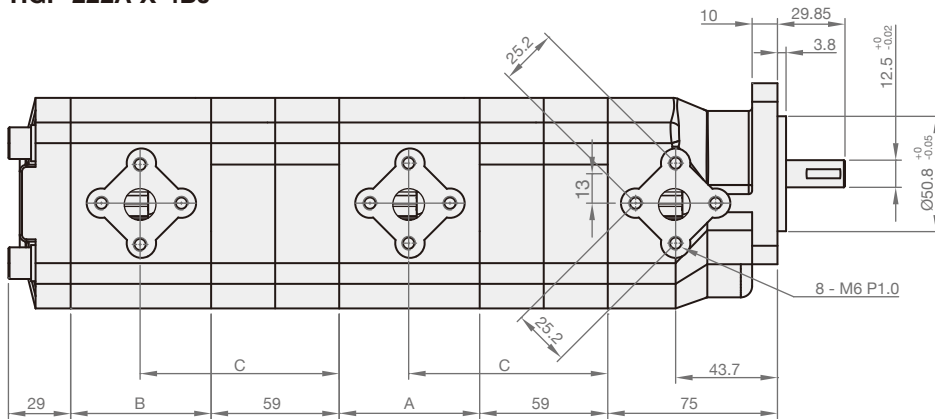
* We provide many options to meet your displacement inquiries of tandem gear pumps, such as HGP-22A-96 (9+6 cc/rev).

* HGP-22A-5 do not belong to regular products. Customized service can be provided.

► HGP-22A-X-4BJ

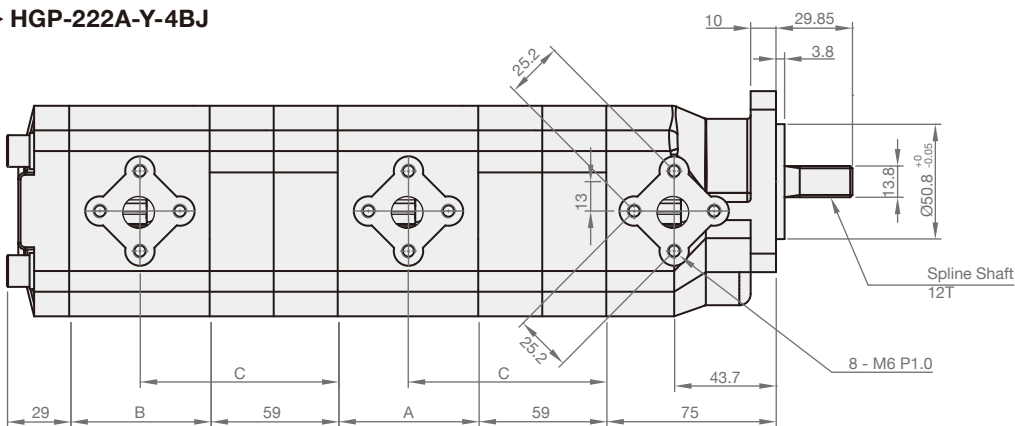


► HGP-222A-X-4BJ

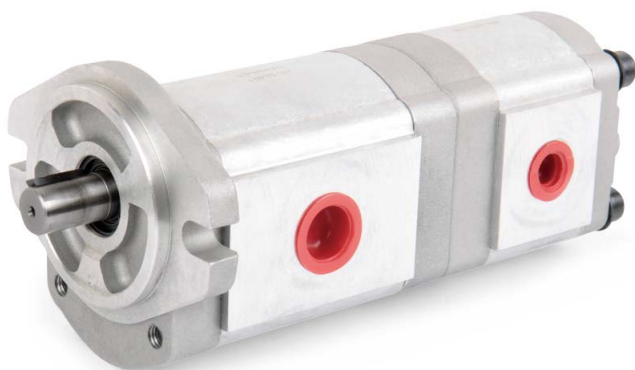


Model	A, B	C
HGP-222A-2	42.5	80.25
HGP-222A-3	45	81.5
HGP-222A-4	47	82.5
HGP-222A-5	49	83.5
HGP-222A-6	52	85
HGP-222A-8	54	86
HGP-222A-9	57	87.5
HGP-222A-11	57	87.5
HGP-222A-12	57	87.5

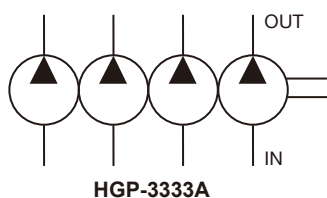
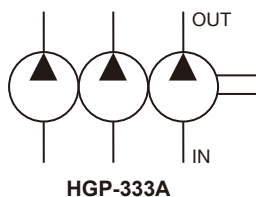
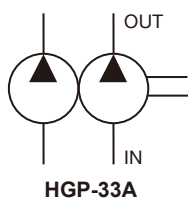
► HGP-222A-Y-4BJ



HGP-33A



SYMBOLS



ORDER CODES

HGP-33A - **F** **30** **11** **R** - **X1** - **2B** - **N2**

1 2 3 4 5 6 7 8

1	Model Name	HGP-33A, HGP-333A, HGP-3333A	
2	Mounting	F	flange type
		L	foot type
3	Delivery Capacity (1st)	4, 6, 8, 11, 13, 14, 17, 19, 23, 25, 28, 30, 33, 35	
4	Delivery Capacity (2nd)	2, 3, 4, 6, 8, 11, 13, 14, 17, 19, 23, 25, 28, 30, 33, 35 *	
5	Rotation Direction	R	clockwise
		L	counter - clockwise
6	Shaft Type *	X: straight shaft Y: spline shaft Z: taper shaft	
7	Flange Mounting Type	2B	SAE 2-bolt
		4BD	DIN 4-bolt
		4BE	European 4-bolt
8	Inlet and Outlet *	F: flange type(F1~F6) G: PF, G, BSPP(G1~G2) P: PT(P1~P2) N: NPT(N1~N2) U: UNF(U1~U2)	

* 2 and 3 cc/rev can only be the pump at the back side.

* The dimension of shafts and inlet & outlet sizes please refer to page 23.

MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)			Weight (kg)
				Rate	Max.	Min.	
HGP-33A-X2 *	X+2 *	210	250	1800	4000	700	-
HGP-33A-X3 *	X+3 *	210	250	1800	4000	700	-
HGP-33A-44	4+4	210	250	1800	4000	700	4.38
HGP-33A-66	6+6	210	250	1800	4000	700	4.46
HGP-33A-88	8+8	210	250	1800	3500	700	4.58
HGP-33A-1111	11+11	210	250	1800	3000	600	5.20
HGP-33A-1313	13+13	210	250	1800	3000	600	5.40
HGP-33A-1414	14.3+14.3	210	250	1800	3000	500	5.52
HGP-33A-1717	16.5+16.5	210	250	1800	3000	500	5.74
HGP-33A-1919	19.2+19.2	210	250	1800	3000	500	5.98
HGP-33A-2323	23+23	210	250	1800	3000	500	6.38
HGP-33A-2525	25+25	175	210	1800	2800	500	6.48
HGP-33A-2828	28+28	175	210	1800	2500	500	6.70
HGP-33A-3030	30+30	175	210	1800	2500	500	6.90
HGP-33A-3333	33+33	140	175	1200	2500	500	7.20
HGP-33A-3535	35+35	125	140	1200	2500	500	7.42

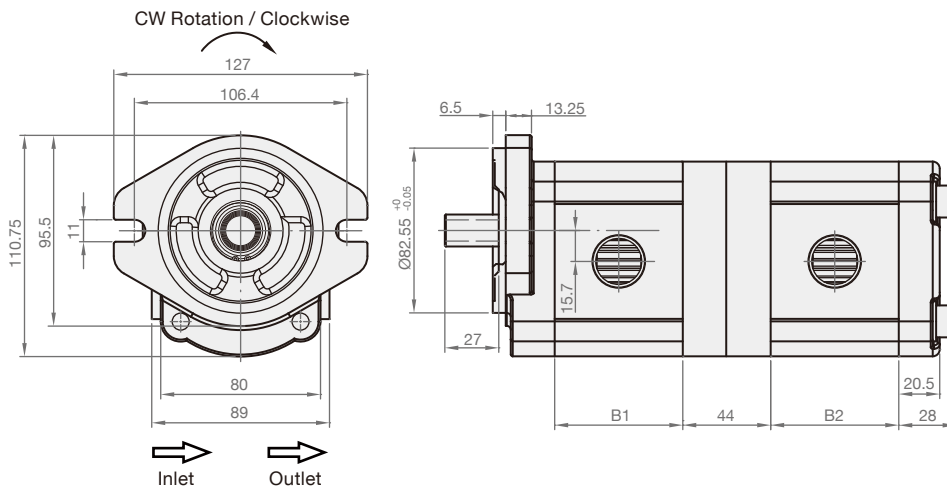
* 2 and 3 cc/rev can only be the pump at the back side, X≥4.

* We provide many options to meet your displacement inquiries of tandem gear pumps, such as HGP-33A-3011 (30+11 cc/rev).

DIMENSION

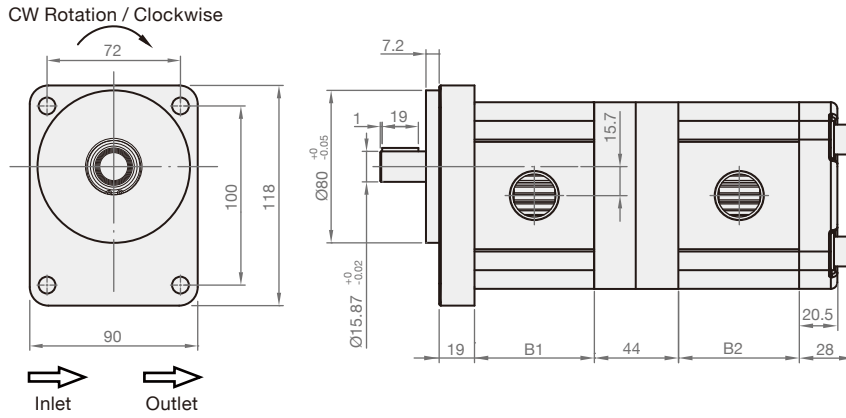
(UNIT : mm)

► HGP-33A-2B

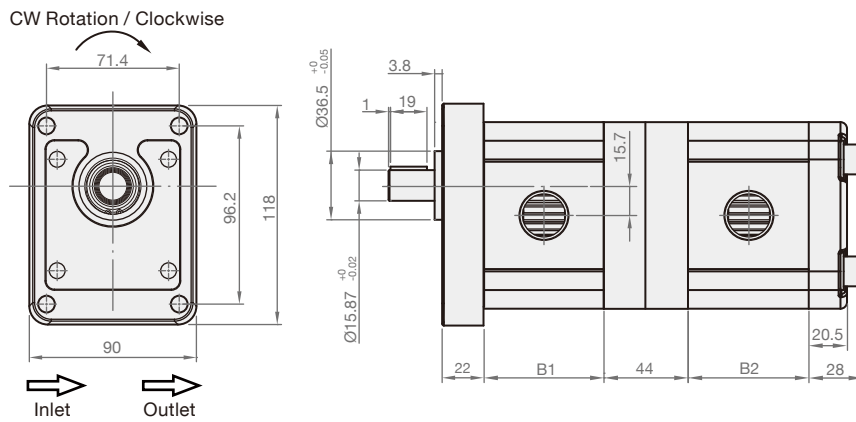


Model	B1, B2
HGP-33A-2	45.5
HGP-33A-3	47
HGP-33A-4	49
HGP-33A-6	52
HGP-33A-8	55
HGP-33A-11	60
HGP-33A-13	64
HGP-33A-14	66
HGP-33A-17	70
HGP-33A-19	74
HGP-33A-23	81
HGP-33A-25	84
HGP-33A-28	88
HGP-33A-30	92
HGP-33A-33	98
HGP-33A-35	102

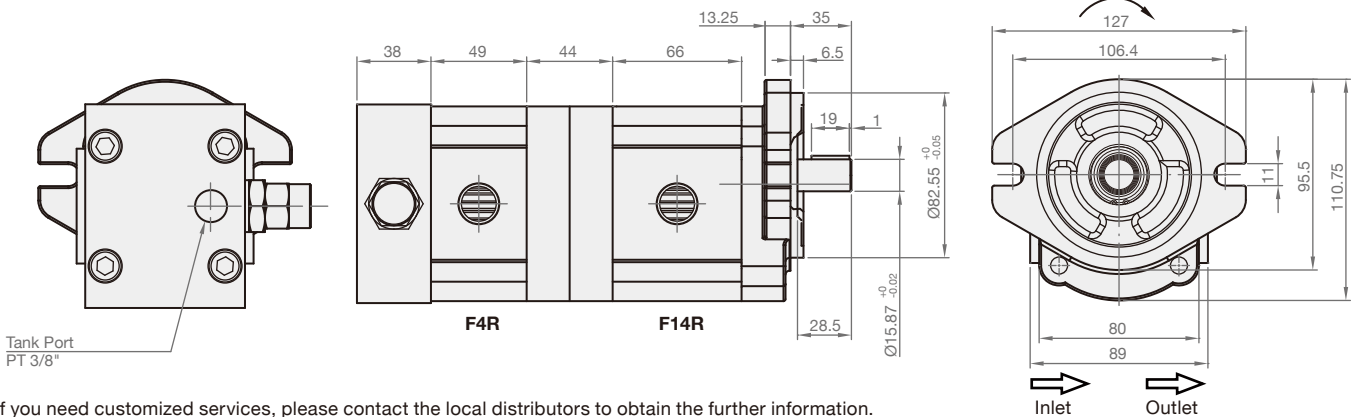
► HGP-33A-4BD



► HGP-33A-4BE



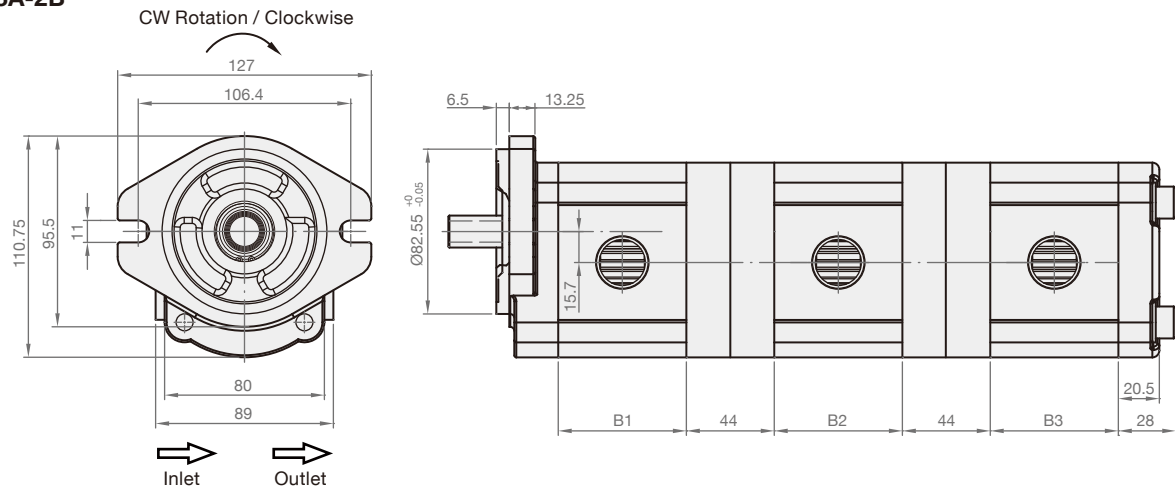
► HGP-33A-F14+4R (with relief valve, customized)



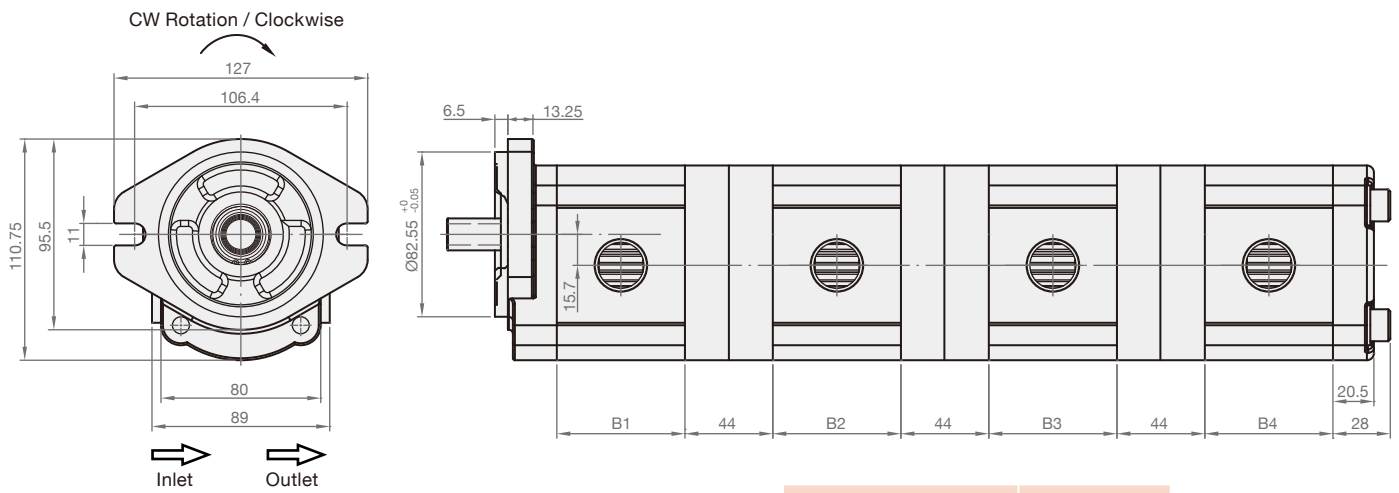
* If you need customized services, please contact the local distributors to obtain the further information.

Model	B1, B2
HGP-33A-2	45.5
HGP-33A-3	47
HGP-33A-4	49
HGP-33A-6	52
HGP-33A-8	55
HGP-33A-11	60
HGP-33A-13	64
HGP-33A-14	66
HGP-33A-17	70
HGP-33A-19	74
HGP-33A-23	81
HGP-33A-25	84
HGP-33A-28	88
HGP-33A-30	92
HGP-33A-33	98
HGP-33A-35	102

► **HGP-333A-2B**



► **HGP-333A-2B**

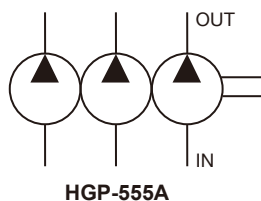
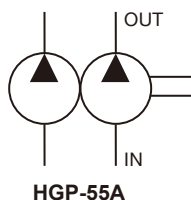


Model	B1, B2, B3, B4
HGP-333A, 3333A-2	45.5
HGP-333A, 3333A-3	47
HGP-333A, 3333A-4	49
HGP-333A, 3333A-6	52
HGP-333A, 3333A-8	55
HGP-333A, 3333A-11	60
HGP-333A, 3333A-13	64
HGP-333A, 3333A-14	66
HGP-333A, 3333A-17	70
HGP-333A, 3333A-19	74
HGP-333A, 3333A-23	81
HGP-333A, 3333A-25	84
HGP-333A, 3333A-28	88
HGP-333A, 3333A-30	92
HGP-333A, 3333A-33	98
HGP-333A, 3333A-35	102

HGP-55A



SYMBOLS



ORDER CODES

HGP-55A - **F** **80** **63** **R** - **Z1** - **2B** - **N2**

1 2 3 3 4 5 6 7

1	Model Name	HGP-55A, HGP-555A	
2	Mounting	F	flange type
		L	foot type
3	Delivery Capacity	22, 26, 33, 44, 50, 55, 63, 70, 75, 80, 90	
4	Rotation Direction	R	clockwise
		L	counter - clockwise
5	Shaft Type *	X: straight shaft Y: spline shaft Z: taper shaft	
6	Flange Mounting Type	2B	SAE 2-bolt
		4BD	DIN 4-bolt
7	Inlet and Outlet *	F: flange type(F1~F6) G: PF, G, BSPP(G1) P: PT(P1) N: NPT(N1) U: UNF(U1~U2)	

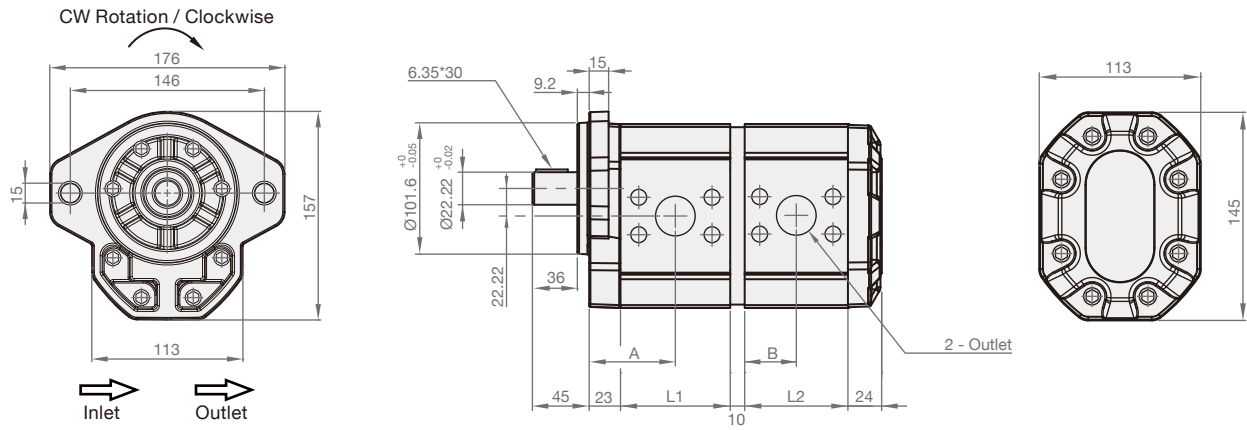
* The dimension of shafts and inlet & outlet sizes please refer to page 37.

MODEL SPEC.

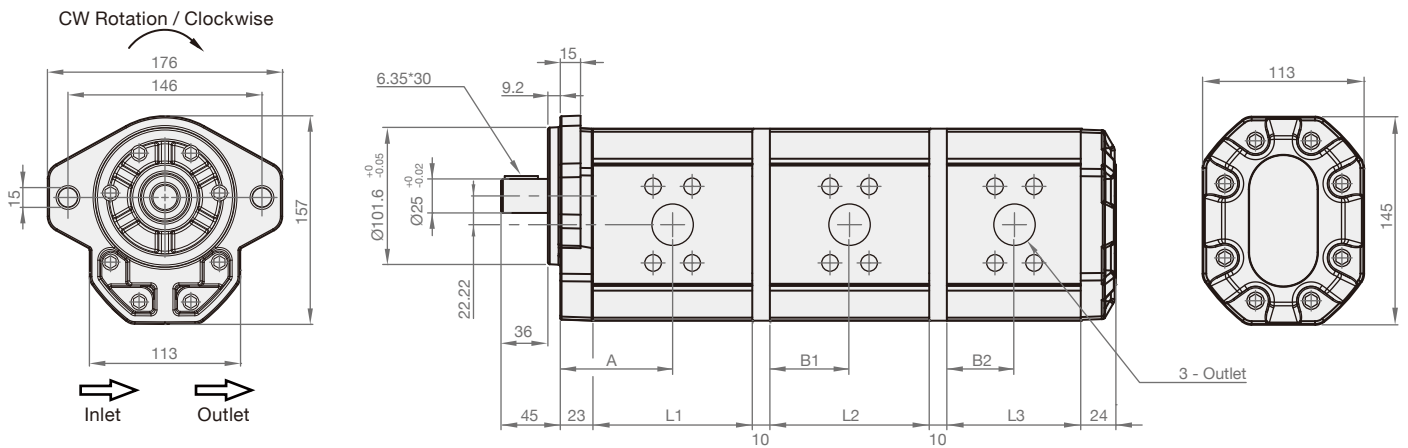
Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)		Weight (kg)
				Loaded	Unloaded	
HGP-55A-2222	22+22	250	300	3000	700	11.22
HGP-55A-2626	26+26	250	300	3000	700	11.38
HGP-55A-3333	33+33	250	300	3000	700	11.66
HGP-55A-4444	44+44	210	250	3000	700	12.10
HGP-55A-5050	50+50	210	250	3000	700	12.36
HGP-55A-5555	55+55	210	250	3000	700	12.54
HGP-55A-6363	63+63	210	250	3000	600	12.86
HGP-55A-7070	70+70	180	210	3000	600	13.14
HGP-55A-7575	75+75	180	210	3000	600	13.34
HGP-55A-8080	80+80	170	200	3000	600	13.54
HGP-55A-9090	90+90	160	190	2500	600	13.94

* We provide many options to meet your displacement inquiries of tandem gear pumps, such as HGP-55A-8063 (80+63 cc/rev).

► HGP-55A-2B



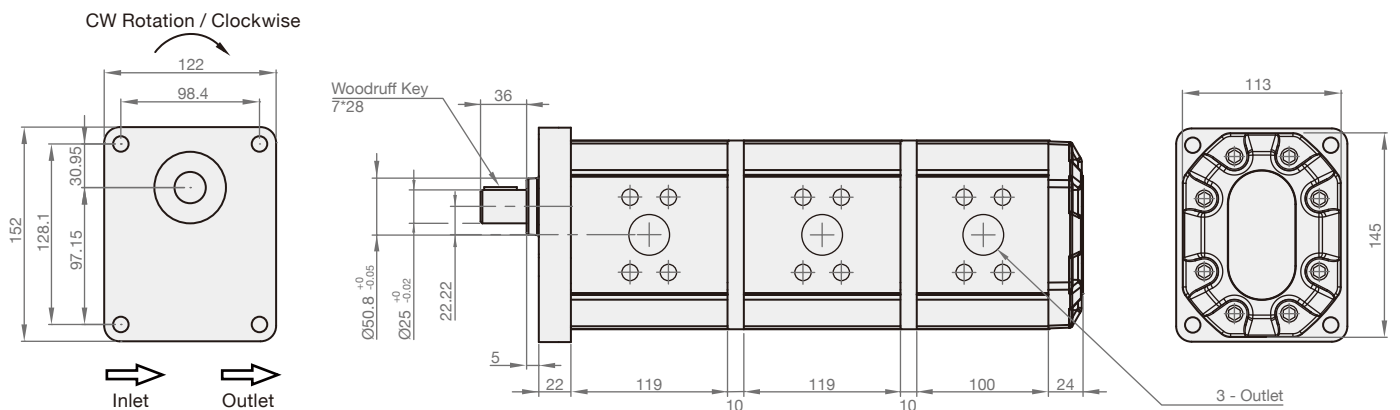
► HGP-555A-2B



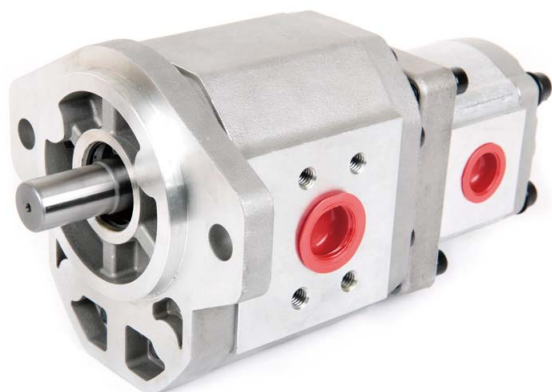
Model	L1, L2	A	B
HGP-55A-22	68	57	34
HGP-55A-26	71	58.5	35.5
HGP-55A-33	76	61	38
HGP-55A-44	84	65	42
HGP-55A-50	88	67	44
HGP-55A-55	92	69	46
HGP-55A-63	98	72	49
HGP-55A-70	103	74.5	51.5
HGP-55A-75	106	76	53
HGP-55A-80	110	78	55
HGP-55A-90	117	81.5	58.5

Model	L1, L2, L3	A	B1, B2
HGP-555A-22	68	57	34
HGP-555A-26	71	58.5	35.5
HGP-555A-33	76	61	38
HGP-555A-44	84	65	42
HGP-555A-50	88	67	44
HGP-555A-55	92	69	46
HGP-555A-63	98	72	49
HGP-555A-70	103	74.5	51.5
HGP-555A-75	106	76	53
HGP-555A-80	110	78	55
HGP-555A-90	117	81.5	58.5

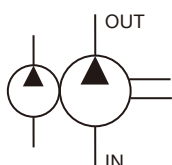
► HGP-555A-4BD



HGP-53A



SYMBOLS



ORDER CODES

HGP-53A - **F** **75** **R** - **X1** - **2B** - **F6** - **13** - **N2**

1 2 3 4 5 6 7 8 9

1	Model Name	HGP-53A	
2	Mounting	F	flange type
		L	foot type
3	Delivery Capacity (5A)	22, 26, 33, 44, 50, 55, 63, 70, 75, 80, 90	
4	Rotation Direction	R	clockwise
		L	counter - clockwise
5	Shaft Type *	X: straight shaft Y: spline shaft Z: taper shaft	
6	Flange Mounting Type	2B	SAE 2-bolt
		4BD	DIN 4-bolt
7	Inlet and Outlet * (5A)	F: flange type(F1~F6) G: PF, G, BSPP(G1) P: PT(P1) N: NPT(N1) U: UNF(U1~U2)	
7	Delivery Capacity (3A)	4, 6, 8, 11, 13, 14, 17, 19, 23, 25, 28, 30, 33, 35	
7	Inlet and Outlet * (3A)	F: flange type(F1~F6) G: PF, G, BSPP(G1~G2) P: PT(P1~P2) N: NPT(N1~N2) U: UNF(U1~U2)	

* The dimension of shafts please refer to page 37.

* The dimension of inlet and outlet sizes please refer to page 23 & 37.

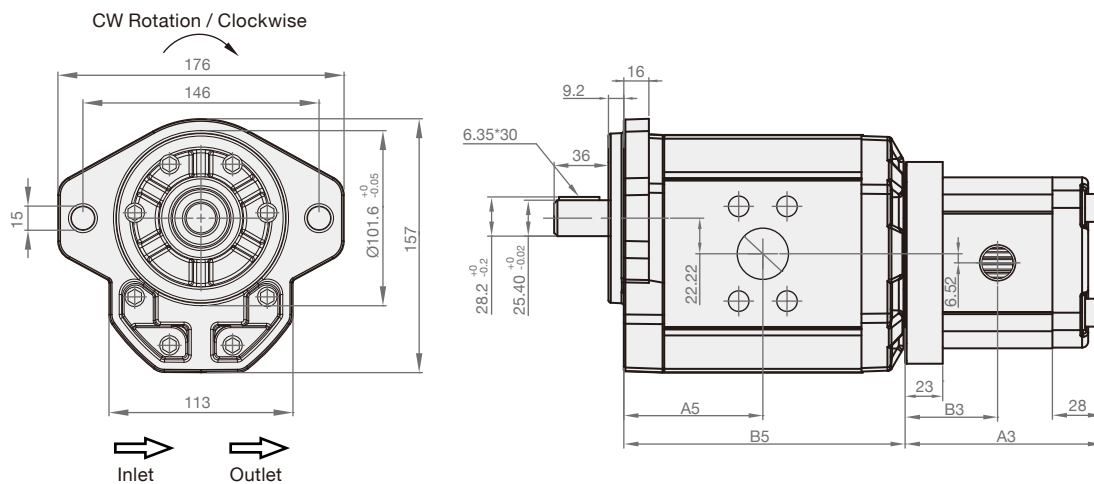
MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)		Weight (kg)
				Loaded	Unloaded	
HGP-53A-22	22+3A	It depends on the 3A that meet your needs.	It depends on the 3A that meet your needs.	3000	700	7.6 ~ 10.5
HGP-53A-26	26+3A			3000	700	
HGP-53A-33	33+3A			3000	700	
HGP-53A-44	44+3A			3000	700	
HGP-53A-50	50+3A			3000	700	
HGP-53A-55	55+3A			3000	700	
HGP-53A-63	63+3A			3000	600	
HGP-53A-70	70+3A			3000	600	
HGP-53A-75	75+3A			3000	600	
HGP-53A-80	80+3A			3000	600	
HGP-53A-90	90+3A			2500	600	

DIMENSION

(UNIT : mm)

► HGP-53A-X-2B



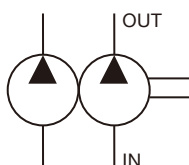
Model	A5	B5
HGP-5A-2B-22	56.5	117
HGP-5A-2B-26	58.5	121
HGP-5A-2B-33	61	126
HGP-5A-2B-44	65	134
HGP-5A-2B-50	67	137
HGP-5A-2B-55	69	142
HGP-5A-2B-63	71	146
HGP-5A-2B-70	74.5	152
HGP-5A-2B-75	76	156
HGP-5A-2B-80	78	160
HGP-5A-2B-90	81.5	167

Model	A3	B3
HGP-3A-4	101	48.5
HGP-3A-6	105	50
HGP-3A-8	109	51.5
HGP-3A-11	113	54
HGP-3A-13	117	56
HGP-3A-14	119	57
HGP-3A-17	123	59
HGP-3A-19	127	61
HGP-3A-23	134	65
HGP-3A-25	137	66
HGP-3A-28	141	68
HGP-3A-30	145	70
HGP-3A-33	150	73
HGP-3A-35	154	75

HGP-55AI



SYMBOLS



ORDER CODES

HGP-55AI - **F** **80** **55** **R** - **Z1** - **4BD** - **N2**

1 2 3 4 5 6 7

1	▶ Model Name	HGP-55AI	
2	▶ Mounting	F	flange type
		L	foot type
3	▶ Delivery Capacity	22, 26, 33, 44, 48, 55, 63, 75, 80, 90	
4	▶ Rotation Direction	R	clockwise
		L	counter - clockwise
5	▶ Shaft Type *	X: straight shaft Y: spline shaft Z: taper shaft	
6	▶ Flange Mounting Type	4BD	DIN 4-bolt
7	▶ Inlet and Outlet *	F: flange type(F1~F7) G: PF, G, BSPP(G1~G4) P: PT(P1~P2) N: NPT(N1~N2) U: UNF(U1~U6)	

* The dimension of shafts and inlet & outlet sizes please refer to page 61.

MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)		Weight (kg)
				Loaded	Unloaded	
HGP-55AI-2222	22+22	280	300	3000	500	
HGP-55AI-2626	26+26	280	300	3000	500	
HGP-55AI-3333	33+33	280	300	3000	500	
HGP-55AI-4444	44+44	240	300	3000	500	
HGP-55AI-4848	48+48	240	300	3000	500	
HGP-55AI-5555	55+55	210	250	3000	500	
HGP-55AI-6363	63+63	190	240	2750	500	
HGP-55AI-7575	75+75	170	210	2750	500	
HGP-55AI-8080	80+80	170	210	2500	500	
HGP-55AI-9090	90+90	150	180	2500	500	

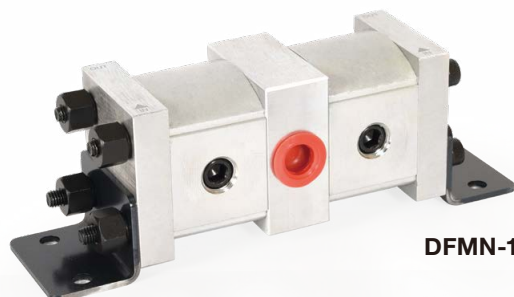
* We provide many options to meet your displacement inquiries of tandem gear pumps, such as HGP-55AI-6348 (63+48 cc/rev).

CW Rotation / Clockwise



HGP-55AI | 61

DFMN-102A



DFMN-102A-M



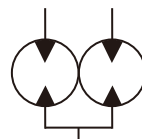
DFMN-103A-MR



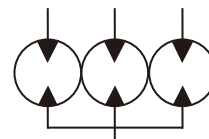
DFMN-104A-MOR*

* Regular products do not equip anodizing treatment surface. Customized service can be provided.

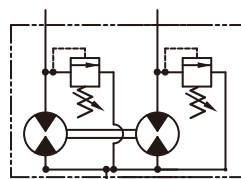
SYMBOLS



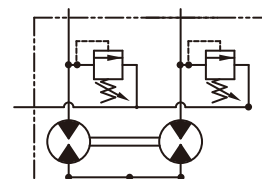
DFMN-102A



DFMN-103A



DFMN-102A-MR



DFMN-102A-MOR

ORDER CODES

DFMN-1 02A - 4 MOR

1

2

3

4

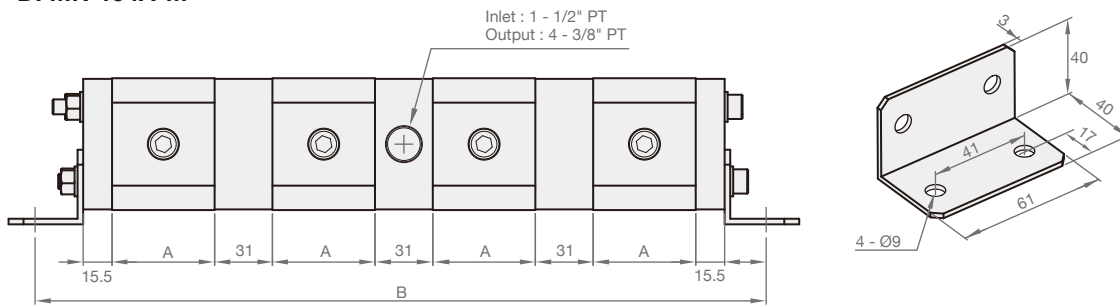
1	Model Name	DFMN-1	
2	Stations	02A	2 stations
		03A	3 stations
		04A	4 stations
		05A	5 stations
		06A	6 stations
		07A	7 stations
3	Flow Rate	2, 3, 4, 6, 8	
4	Functional Type	M	synchronous flow divider
		MR	with internal drain relief valve
		MOR	with external drain relief valve

MODEL SPEC.

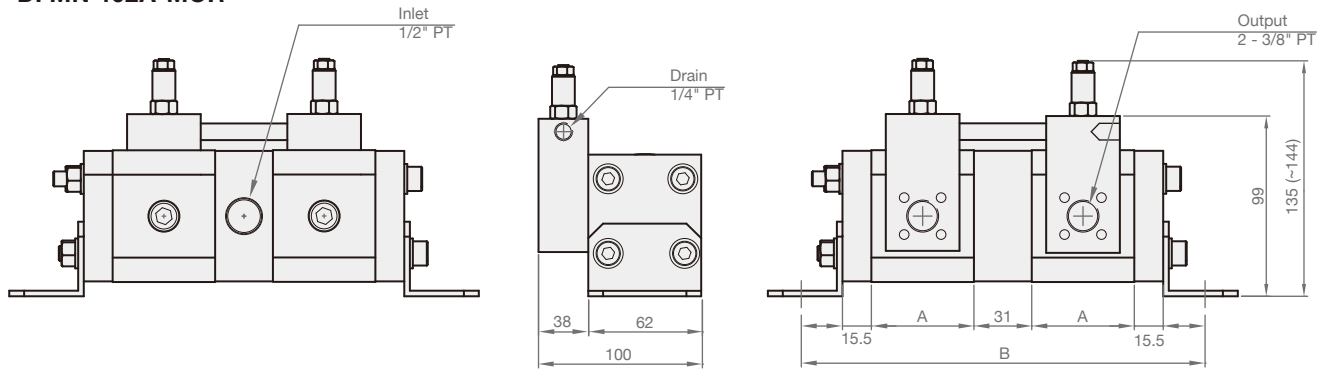
Model	Accurate Displacement Capacity (cc/rev)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)		Ports Size (PT)	
			Loaded	Unloaded	Inlet	Outlet
DFMN-10*A-2M	2	210	1000	2000	1/2"	3/8"
DFMN-10*A-3M	3	210	1000	2000	1/2"	3/8"
DFMN-10*A-4M	4	210	1000	2000	1/2"	3/8"
DFMN-10*A-6M	6	210	1000	2000	1/2"	3/8"
DFMN-10*A-8M	7.8	210	1000	2000	1/2"	3/8"

* The initial pressure : 30kgf/cm²

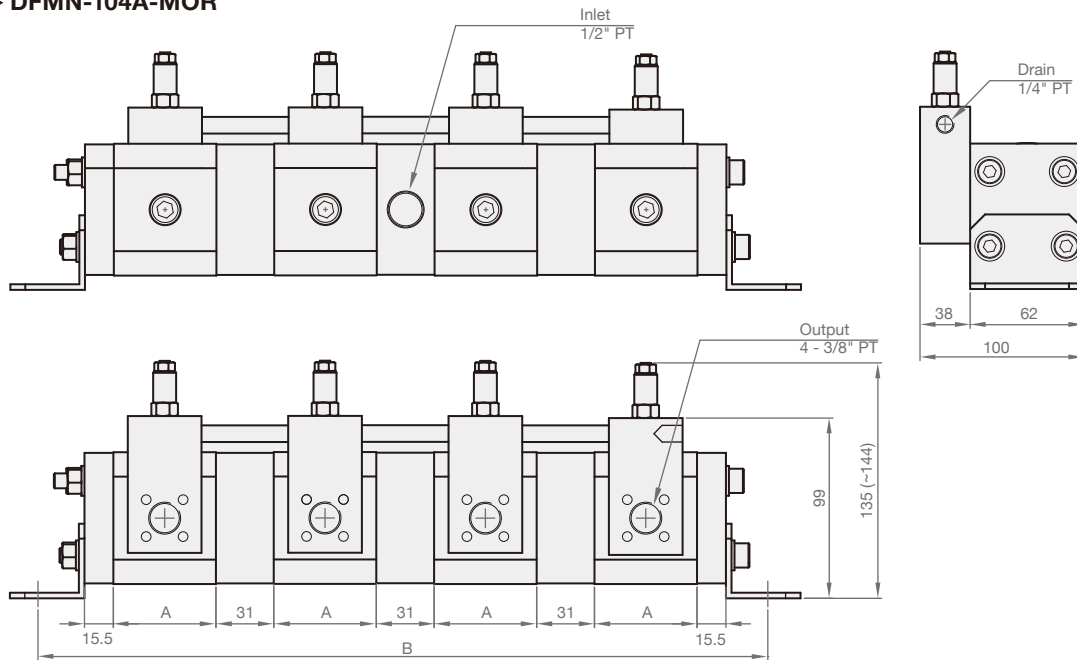
► **DFMN-104A-M**



► **DFMN-102A-MOR**



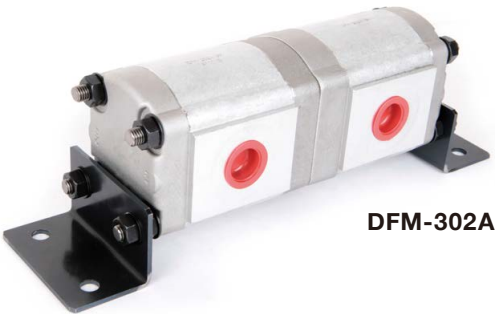
► **DFMN-104A-MOR**



Model	A	B		
DFMN		102A	103A	104A
2M	39.6	187.2	257.8	328.4
3M	45	198	274	350
4M	47	202	280	358
6M	55	218	304	390
8M	61	230	322	414

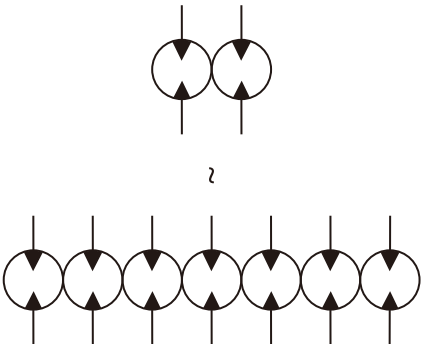
* If you need customized services, please contact the local distributors to obtain the further information.

DFM-302A



DFM-302A

SYMBOLS



ORDER CODES

DFM-3 02A - 11 M

1 2 3 4

1	Model Name	DFM-3	
2	Stations	02A	2 stations
		03A	3 stations
		04A	4 stations
		05A	5 stations
		06A	6 stations
		07A	7 stations
3	Flow Rate	4, 6, 8, 11, 13, 14, 17, 19, 23, 25, 28, 30, 35	
4	Functional Type	M	synchronous flow divider

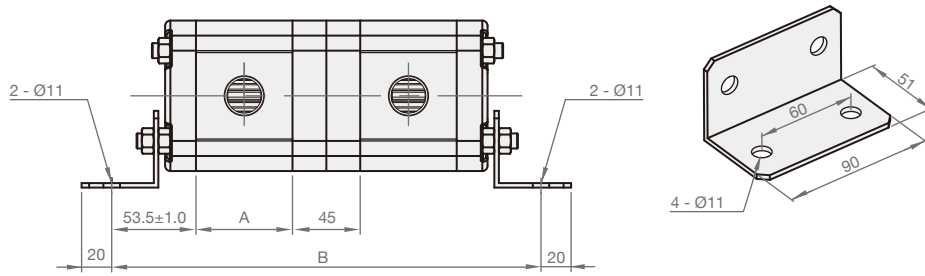
MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)		Ports Size (PT)	
			Loaded	Unloaded	Inlet	Outlet
DFM-30*A-4M	4	210	1000	2000	3/4"	1/2"
DFM-30*A-6M	6	210	1000	2000	3/4"	1/2"
DFM-30*A-8M	8.4	210	1000	2000	3/4"	1/2"
DFM-30*A-11M	11	210	1000	2000	3/4"	1/2"
DFM-30*A-13M	13	210	1000	2000	3/4"	1/2"
DFM-30*A-14M	14.3	210	1000	2000	3/4"	1/2"
DFM-30*A-17M	16.5	210	1000	2000	3/4"	1/2"
DFM-30*A-19M	19.2	210	1000	2000	3/4"	1/2"
DFM-30*A-23M	23	210	1000	2000	3/4"	1/2"
DFM-30*A-25M	25	210	1000	2000	1"	3/4"
DFM-30*A-28M	28	210	1000	2000	1"	3/4"
DFM-30*A-30M	30	210	1000	2000	1"	3/4"
DFM-30*A-35M	35	210	1000	2000	1"	3/4"

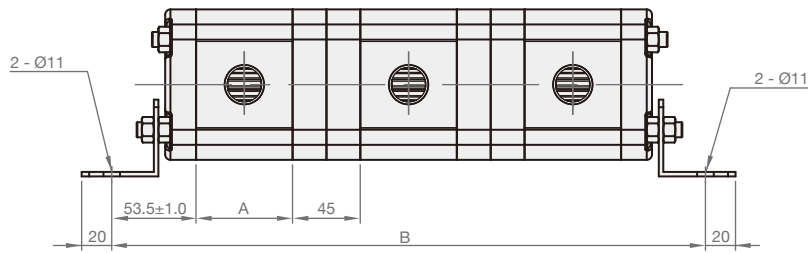
* The initial pressure : 30kgf/cm²

Model	Weight (kg)					
	302A	303A	304A	305A	306A	307A
DFM						
4M	4.64	6.75	8.86	10.97	13.08	15.19
6M	4.80	6.99	9.18	11.37	13.56	15.75
8M	4.96	7.23	9.50	11.77	14.04	16.31
11M	5.26	7.68	10.10	12.52	14.94	17.36
13M	5.46	7.98	10.50	13.02	15.54	18.06
14M	5.58	8.16	10.75	13.32	15.9	18.48
17M	5.83	8.52	11.18	13.87	16.56	19.25
19M	6.04	8.85	11.66	14.47	17.28	20.09
23M	6.41	9.45	12.46	15.47	18.48	21.49
25M	6.54	9.60	12.66	15.72	18.78	21.84
28M	6.76	9.93	13.10	16.27	19.44	22.61
30M	6.96	10.23	13.50	16.77	20.04	23.31
35M	7.48	11.01	14.54	18.07	21.60	25.13

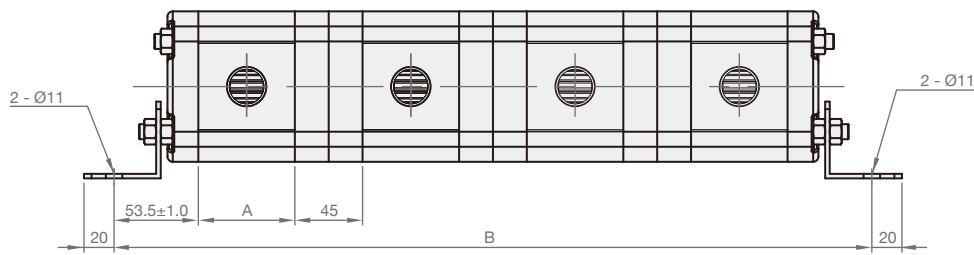
► **DFM-302A**



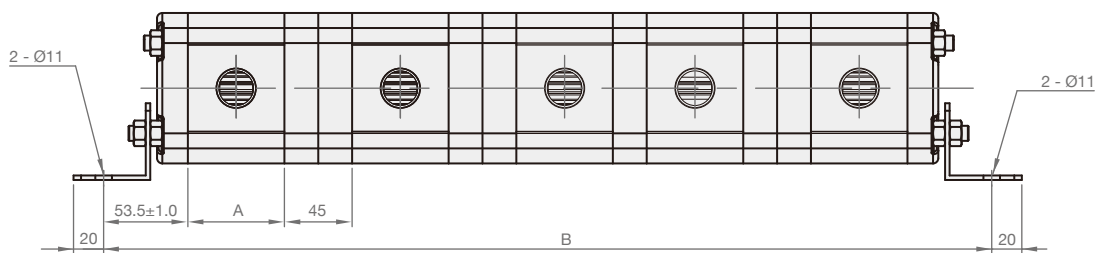
► **DFM-303A**



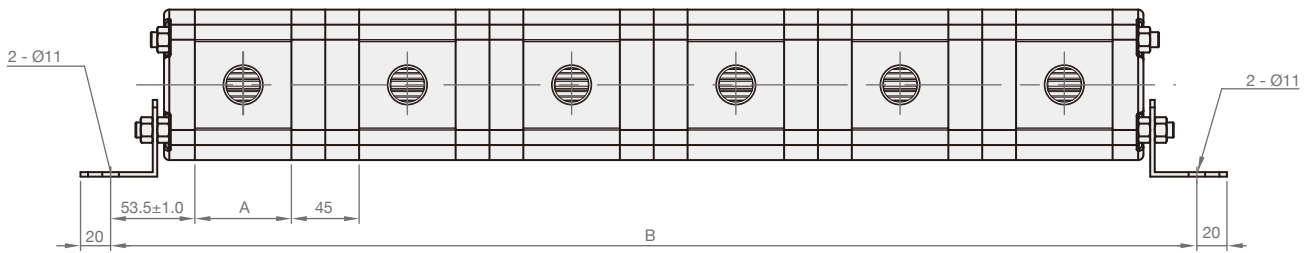
► **DFM-304A**



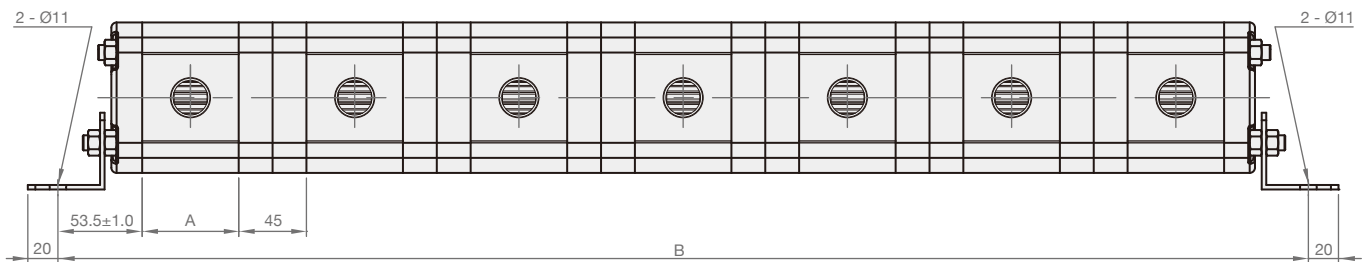
► **DFM-305A**



► **DFM-306A**

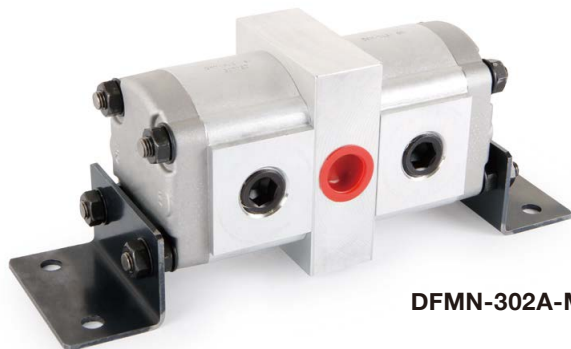


► **DFM-307A**

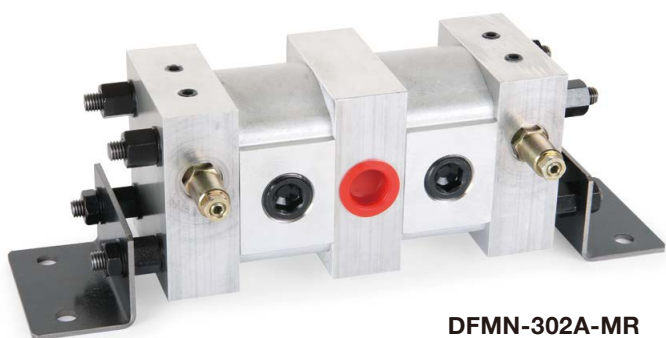


Model	A	B					
DFM		302A	303A	304A	305A	306A	307A
4M	49	250	344	438	532	626	720
6M	52	256	353	450	547	644	741
8M	55	262	362	462	562	662	762
11M	60	272	377	482	587	692	797
13M	64	280	389	498	607	716	825
14M	66	284	395	506	617	728	839
17M	70	292	407	522	637	752	867
19M	74	300	419	538	657	776	895
23M	81	314	440	566	692	818	944
25M	84	320	449	578	707	836	965
28M	88	328	461	594	727	860	993
30M	92	336	473	610	747	884	1021
35M	102	356	503	650	797	944	1091

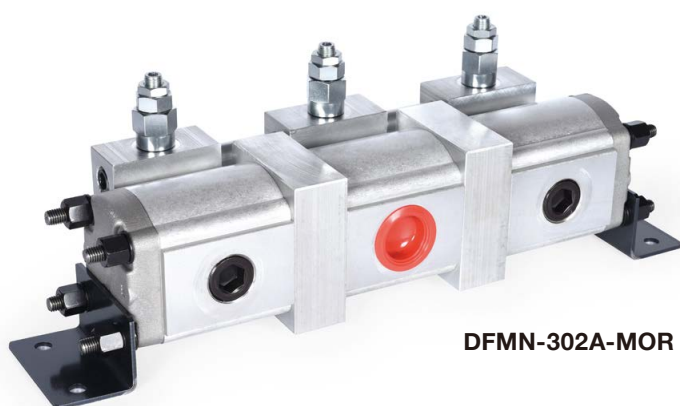
DFMN-302A



DFMN-302A-M

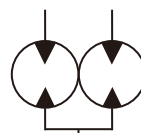


DFMN-302A-MR

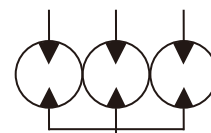


DFMN-302A-MOR

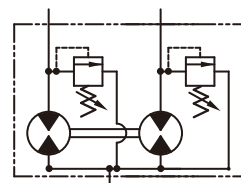
SYMBOLS



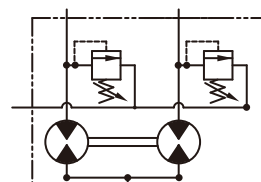
DFMN-302A



DFMN-303A



DFMN-302A-MR



DFMN-302A-MOR

ORDER CODES

DFMN-3	02A	-	11	MOR
1	2		3	4

1	Model Name	DFMN-3	
2	Stations	02A	2 stations
		03A	3 stations
		04A	4 stations
		05A	5 stations
		06A	6 stations
		07A	7 stations
3	Flow Rate	4, 6, 8, 11, 13, 14, 17, 19, 23, 25, 28, 30, 35	
4	Functional Type	M	synchronous flow divider
		MR	with internal drain relief valve
		MOR	with external drain relief valve

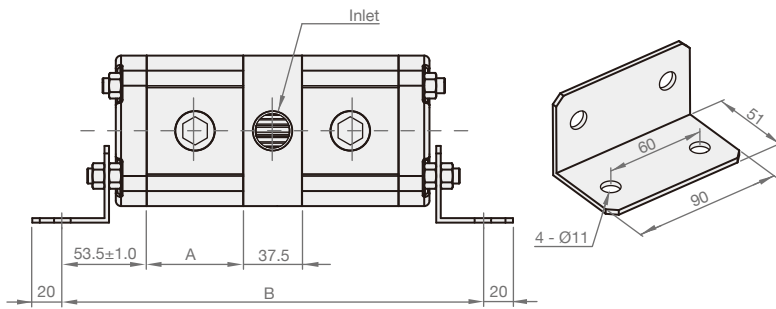
MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)		Ports Size (PT)	
			Loaded	Unloaded	Inlet	Outlet
DFMN-30*A-4M	4	210	1000	2000	3/4"	1/2"
DFMN-30*A-6M	6	210	1000	2000	3/4"	1/2"
DFMN-30*A-8M	8.4	210	1000	2000	3/4"	1/2"
DFMN-30*A-11M	11	210	1000	2000	3/4"	1/2"
DFMN-30*A-13M	13	210	1000	2000	3/4"	1/2"
DFMN-30*A-14M	14.3	210	1000	2000	3/4"	1/2"
DFMN-30*A-17M	16.5	210	1000	2000	3/4"	1/2"
DFMN-30*A-19M	19.2	210	1000	2000	3/4"	1/2"
DFMN-30*A-23M	23	210	1000	2000	3/4"	1/2"
DFMN-30*A-25M	25	210	1000	2000	3/4"	3/4"
DFMN-30*A-28M	28	210	1000	2000	3/4"	3/4"
DFMN-30*A-30M	30	210	1000	2000	3/4"	3/4"
DFMN-30*A-35M	35	210	1000	2000	3/4"	3/4"

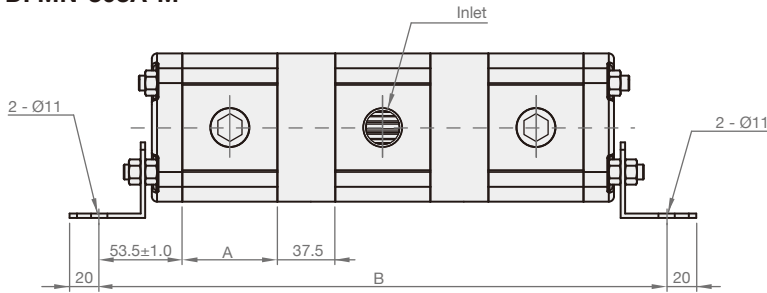
* The initial pressure : 30kgf/cm²

Model	Weight (kg)					
DFMN	302A	303A	304A	305A	306A	307A
4M	4.83	7.06	9.32	11.47	13.68	15.89
6M	4.99	7.30	9.68	11.87	14.16	16.45
8M	5.15	7.54	9.96	12.27	14.64	17.01
11M	5.45	7.99	10.50	13.02	15.54	18.06
13M	5.65	8.29	10.90	13.52	16.14	18.76
14M	5.77	8.47	11.15	13.82	16.5	19.18
17M	6.02	8.83	11.58	14.37	17.16	19.95
19M	6.23	9.16	12.06	14.97	17.88	20.79
23M	6.60	9.76	12.86	15.97	19.08	22.19
25M	6.73	9.91	13.10	16.27	19.45	22.64
28M	6.95	10.24	13.55	16.85	20.10	23.41
30M	7.15	10.54	13.96	17.32	20.71	24.10
35M	7.67	11.32	14.99	18.63	22.27	25.92

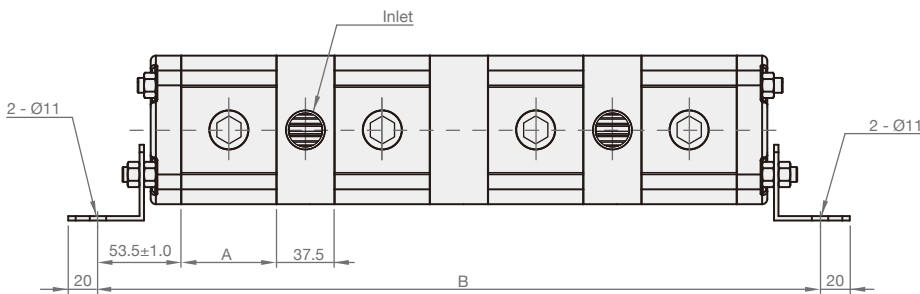
► **DFMN-302A-M**



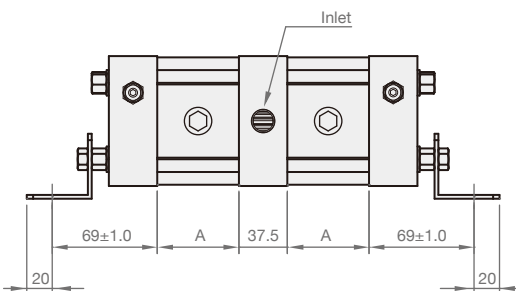
► **DFMN-303A-M**



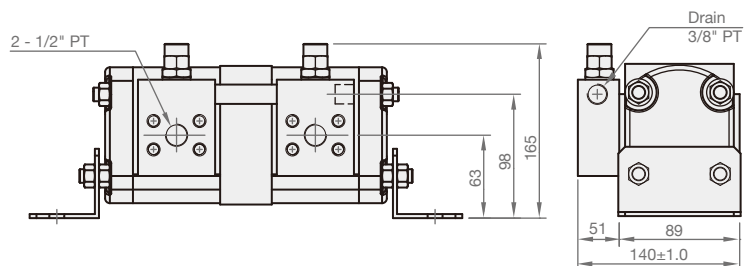
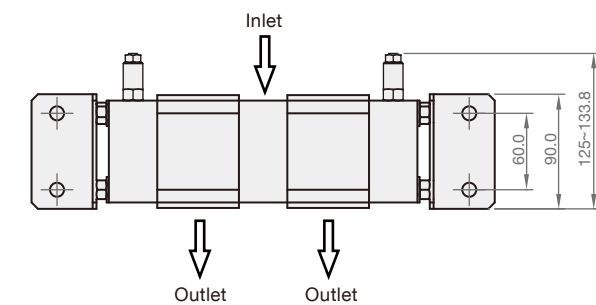
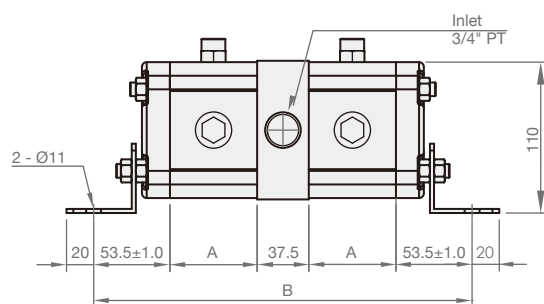
► **DFMN-304A-M**



► **DFMN-302A-MR**

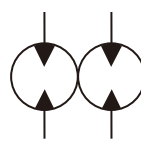


► **DFMN-302A-MOR**

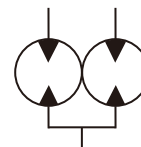


DFM-502A, DFMN-502A

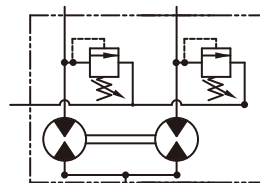
SYMBOLS



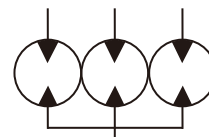
DFM-502A



DFMN-502A



DFMN-502A-MOR



DFMN-503A

ORDER CODES

DFMN-5 **02A** - **63** **M**

1 2 3 4

1	Model Name	DFM-5, DFMN-5	
2	Stations	02A	2 stations
		03A	3 stations
		04A	4 stations
		05A	5 stations
		06A	6 stations
		07A	7 stations
3	Flow Rate	40, 50, 55, 63, 75, 80, 90	
4	Functional Type	M	synchronous flow divider
		MOR	with external drain relief valve



DFMN-502A-M

MODEL SPEC.

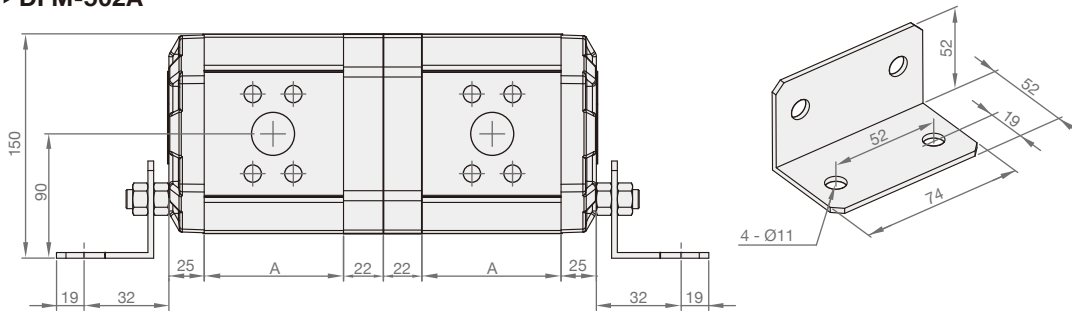
Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Speed (r.p.m.)	
			Loaded	Unloaded
DFM, DFMN-50*A-40	40	210	1000	2000
DFM, DFMN-50*A-50	50	210	1000	2000
DFM, DFMN-50*A-55	55	210	1000	2000
DFM, DFMN-50*A-63	63	210	1000	2000
DFM, DFMN-50*A-75	75	210	1000	2000
DFM, DFMN-50*A-80	80	210	1000	2000
DFM, DFMN-50*A-90	90	210	1000	2000

* The initial pressure : 30kgf/cm²

DIMENSION

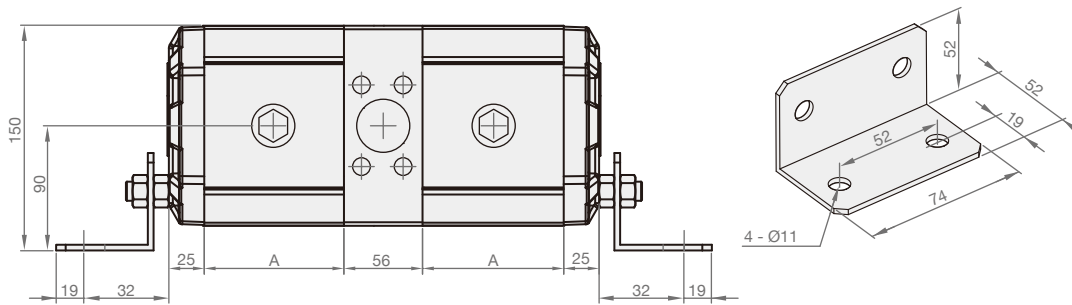
(UNIT : mm)

► DFM-502A



Model	502A
DFM, DFMN	
40M	92
50M	102
55M	92
63M	98
75M	106
80M	110
90M	117

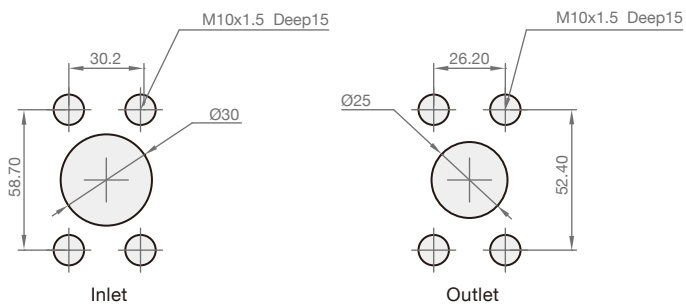
► DFMN-502A



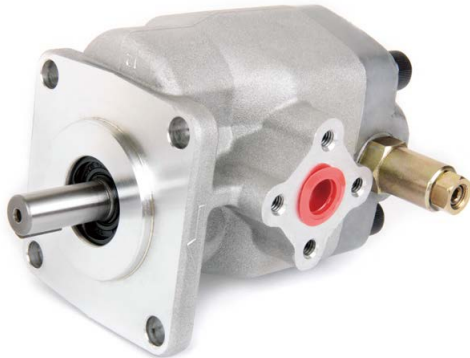
ADDITIONAL DIMENSION

(UNIT : mm)

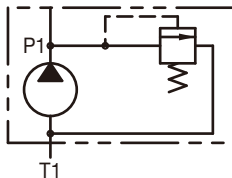
► Inlet and Outlet Size



PR1



SYMBOLS



ORDER CODES

PR1 - **2** **R** - **X1** - **4BJ** - **N1** - **S2**

1
2
3
4
5
6
7

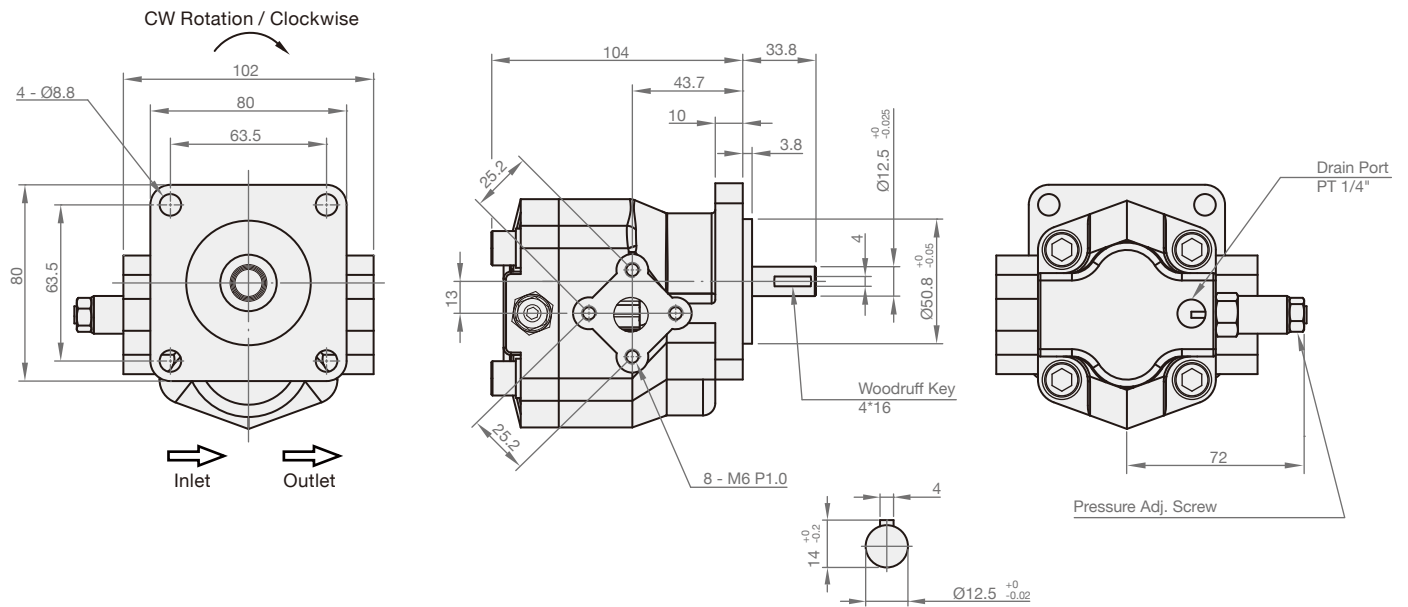
1	Model Name	PR1	
2	Delivery Capacity	1, 2, 25, 3, 4, 5, 6, 8, 9, 11, 12, 13	
3	Rotation Direction	R	clockwise
		L	counter - clockwise
4	Shaft Type *	W: tang shaft	X: straight shaft
		Y: spline shaft	Z: taper shaft
5	Flange Mounting Type	4BJ	JIS 4-bolt
6	Inlet and Outlet *	F: flange type(F1)	G: PF, G, BSPP(G1~G2)
		P: PT(P1~P2)	N: NPT(N1~N2)
7	Pressure Adj. Range	S1	5~70 kgf/cm ²
		S2	40~250 kgf/cm ²

* The dimension of shafts and inlet & outlet sizes please refer to page 19.

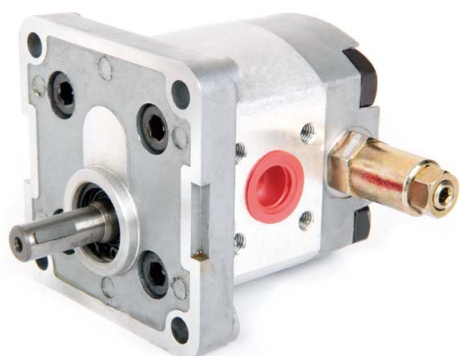
MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)			Weight (kg)
				Rate	Max.	Min.	
PR1-1	1	210	250	1800	5000	900	1.65
PR1-2	2	210	250	1800	5000	900	1.69
PR1-3	3	210	250	1800	5000	850	1.70
PR1-4	4	210	250	1800	4500	800	1.71
PR1-6	6	210	250	1800	3500	700	1.72
PR1-8	7.5	210	250	1800	3000	600	1.74
PR1-9	9	210	250	1800	2500	550	1.74
PR1-11	10.5	210	250	1800	2000	500	1.74
PR1-12	12	175	210	1800	2000	500	1.76
PR1-13	13	175	210	1800	2000	500	1.72

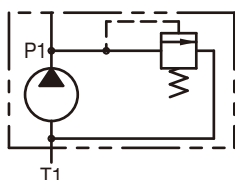
* PR1-1, PR1-25, PR1-5 and PR1-13 do not belong to regular products. Customized service can be provided.



PR2



SYMBOLS



ORDER CODES

PR2 - **08** **R** - **Y1** - **4BDB** - **N1** - **S2**

1 2 3 4 5 6 7

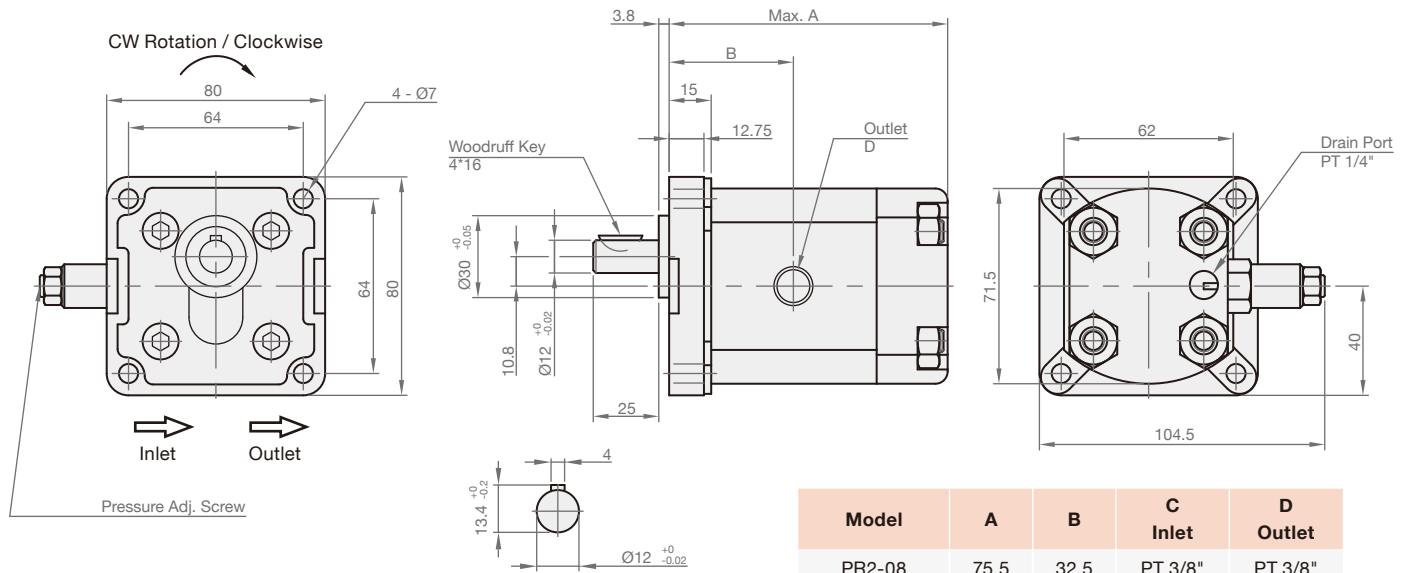
1	Model Name	PR2	
2	Delivery Capacity	08, 1, 2, 26, 3, 4, 5, 6, 8	
3	Rotation Direction	R	clockwise
		L	counter - clockwise
4	Shaft Type *	X: straight shaft Y: spline shaft Z: taper shaft	
5	Flange Mounting Type	2B	SAE 2-bolt
		4BDA	DIN 4-bolt (type A)
		4BDB	DIN 4-bolt (type B)
		4BE	European 4-bolt
6	Inlet and Outlet *	F: flange type(F1~F2)	G: PF, G, BSPP(G1~G2)
		P: PT(P1~P2)	N: NPT(N1~N2) U: UNF(U1~U2)
7	Pressure Adj. Range	S1	5~70 kgf/cm ²
		S2	40~250 kgf/cm ²

* The dimension of shafts and inlet & outlet sizes please refer to page 15.

MODEL SPEC.

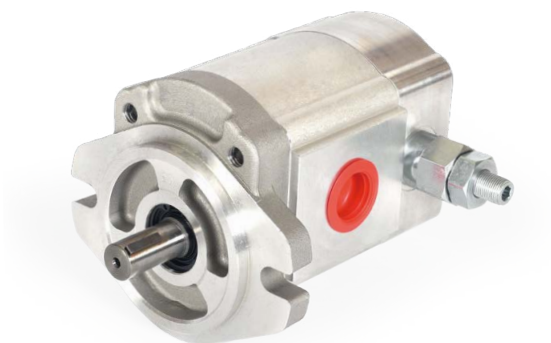
Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)			Weight (kg)
				Rate	Max.	Min.	
PR2-08	0.8	210	250	1800	4500	1000	1.0
PR2-1	1	210	250	1800	4500	1000	1.0
PR2-2	2	210	250	1800	4500	600	1.05
PR2-3	3	210	250	1800	4500	600	1.15
PR2-4	4	210	250	1800	4000	600	1.18
PR2-5	5	210	250	1800	3200	600	1.2
PR2-6	6	210	250	1800	3200	600	1.3
PR2-8	7.8	175	210	1800	3200	600	1.4

* PR2-008 and PR2-026 do not belong to regular products. Customized service can be provided.

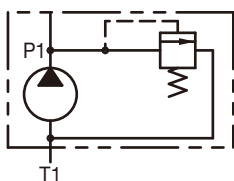


Model	A	B	C Inlet	D Outlet
PR2-08	75.5	32.5	PT 3/8"	PT 3/8"
PR2-1	77.5	33.5	PT 3/8"	PT 3/8"
PR2-8	80.1	34.8	PT 3/8"	PT 3/8"
PR2-3	85.5	37.5	PT 3/8"	PT 3/8"
PR2-4	87.5	38.5	PT 3/8"	PT 3/8"
PR2-5	91.5	40.5	PT 3/8"	PT 3/8"
PR2-6	95.5	42.5	PT 3/8"	PT 3/8"
PR2-8	101.5	45.5	PT 1/2"	PT 3/8"

PR3



SYMBOLS



ORDER CODES

PR3 - **13** **R** - **X1** - **2B** - **N1** - **S2**

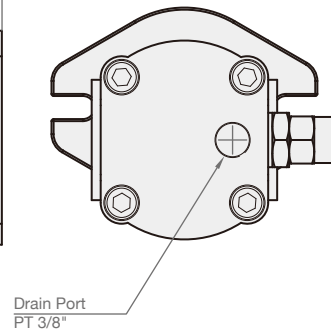
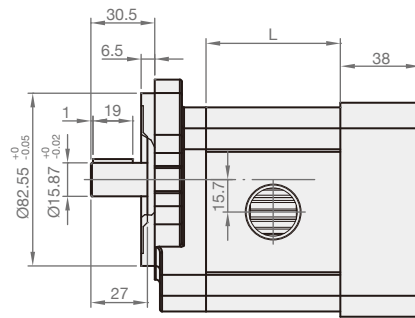
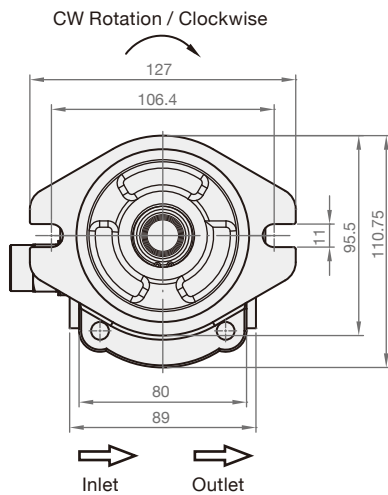
1 2 3 4 5 6 7

1	Model Name	PR3	
2	Delivery Capacity	4, 6, 8, 11, 13, 14, 17, 19, 23, 25, 28, 30, 33, 35	
3	Rotation Direction	R	clockwise
		L	counter - clockwise
4	Shaft Type *	X: straight shaft Y: spline shaft Z: taper shaft	
5	Flange Mounting Type	2B	SAE 2-bolt
		4BD	DIN 4-bolt
		4BE	European 4-bolt
6	Inlet and Outlet *	F: flange type(F1~F6)	G: PF, G, BSPP(G1~G2)
		P: PT(P1~P2)	U: UNF(U1~U2)
7	Pressure Adj. Range	S1	10~250 kgf/cm ²
		S2	40~300 kgf/cm ²

* The dimension of shafts and inlet & outlet sizes please refer to page 23.

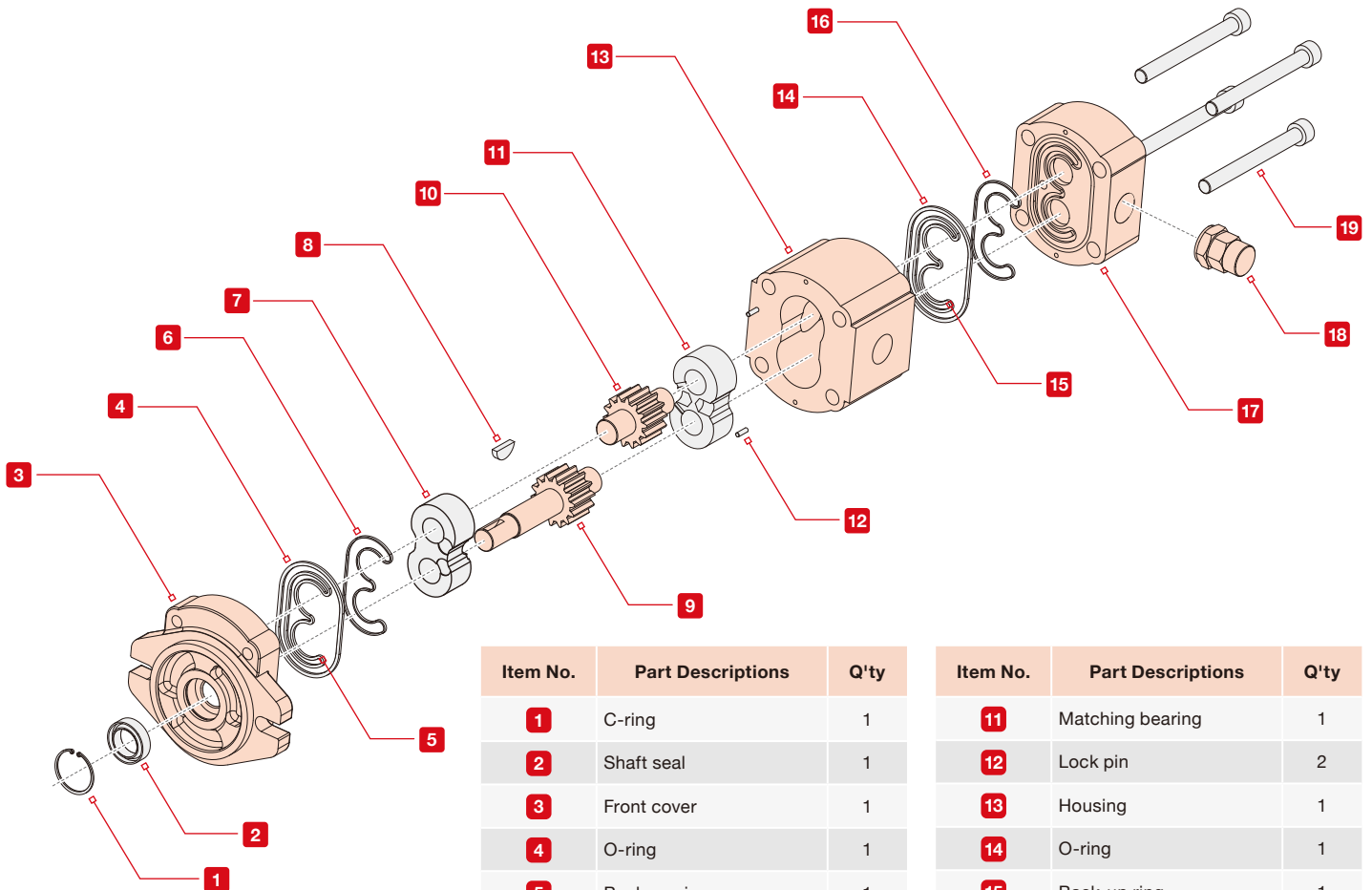
MODEL SPEC.

Model	Accurate Displacement Capacity (cc/rev)	Operating Pressure (kgf/cm ²)	Max. Pressure (kgf/cm ²)	Speed (r.p.m.)			Weight (kg)
				Rate	Max.	Min.	
PR3-4	4	210	250	1800	4000	700	2.83
PR3-6	6	210	250	1800	4000	700	2.91
PR3-8	8.4	210	250	1800	3500	700	2.99
PR3-11	11	210	250	1800	3000	600	3.14
PR3-13	13	210	250	1800	3000	600	3.24
PR3-14	14.3	210	250	1800	3000	500	3.3
PR3-17	16.5	210	250	1800	3000	500	3.41
PR3-19	19.2	210	250	1800	3000	500	3.53
PR3-23	23	210	250	1800	3000	500	3.73
PR3-25	25	175	210	1800	2800	500	3.78
PR3-28	28	175	210	1800	2500	500	3.89
PR3-30	30	175	210	1800	2500	500	3.99
PR3-33	33	140	175	1200	2500	500	4.14
PR3-35	35	125	140	1200	2500	500	4.25



Model	L
PR3-4	49
PR3-6	52
PR3-8	55
PR3-11	60
PR3-13	64
PR3-14	66
PR3-17	70
PR3-19	74
PR3-23	81
PR3-25	84
PR3-28	88
PR3-30	92
PR3-33	98
PR3-35	102

DECOMPOSITION CHARTS



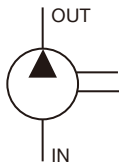
Item No.	Part Descriptions	Q'ty
1	C-ring	1
2	Shaft seal	1
3	Front cover	1
4	O-ring	1
5	Back-up ring	1
6	Bush lobe seal	1
7	Matching bearing	1
8	Woodruff key	1
9	Drive gear	1
10	Driven gear	1

Item No.	Part Descriptions	Q'ty
11	Matching bearing	1
12	Lock pin	2
13	Housing	1
14	O-ring	1
15	Back-up ring	1
16	Bush lobe seal	1
17	Rear cover	1
18	Relief valve	1
19	Bolt	4

GH1



SYMBOLS



ORDER CODES

GH1 - **04** - **C** - **L** - **R**

1 2 3 4 5

1	Model Name	GH1
2	Delivery	02, 04, 07, 10, 15, 19
3	Application	C chemical (PU)
		S spindle coolant
4	Mounting	F flange type
		L foot type
5	Direction of Revolving (Side View of Self Aligning Bearing)	R clockwise direction
		L counter clockwise direction

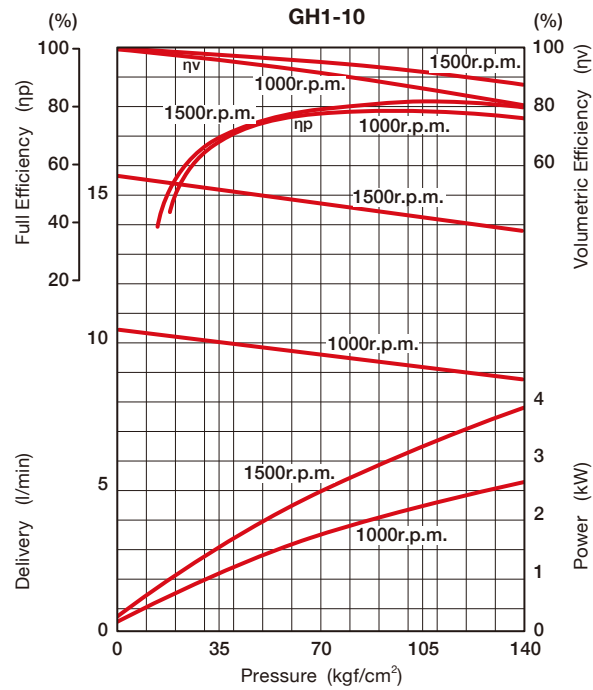
* The raw material of seal: VITON
The raw material of shaft: JIS G4103 SNCM-21
(SAE8620)

MODEL SPEC.

Model	Max. Pressure (kgf/cm ²)	Delivery (cc/rev)	Speed (r.p.m.)		Ports Size (PT)		Weight (kg)
			Min.	Max.	Outlet	Inlet	
GH1-02	140	2.2	200	2000	1/2"	3/4"	8
GH1-04	140	4.5					8.5
GH1-07	140	7					9
GH1-10	140	10.4					9.5
GH1-15	140	15					9.8
GH1-19	140	19					10.5

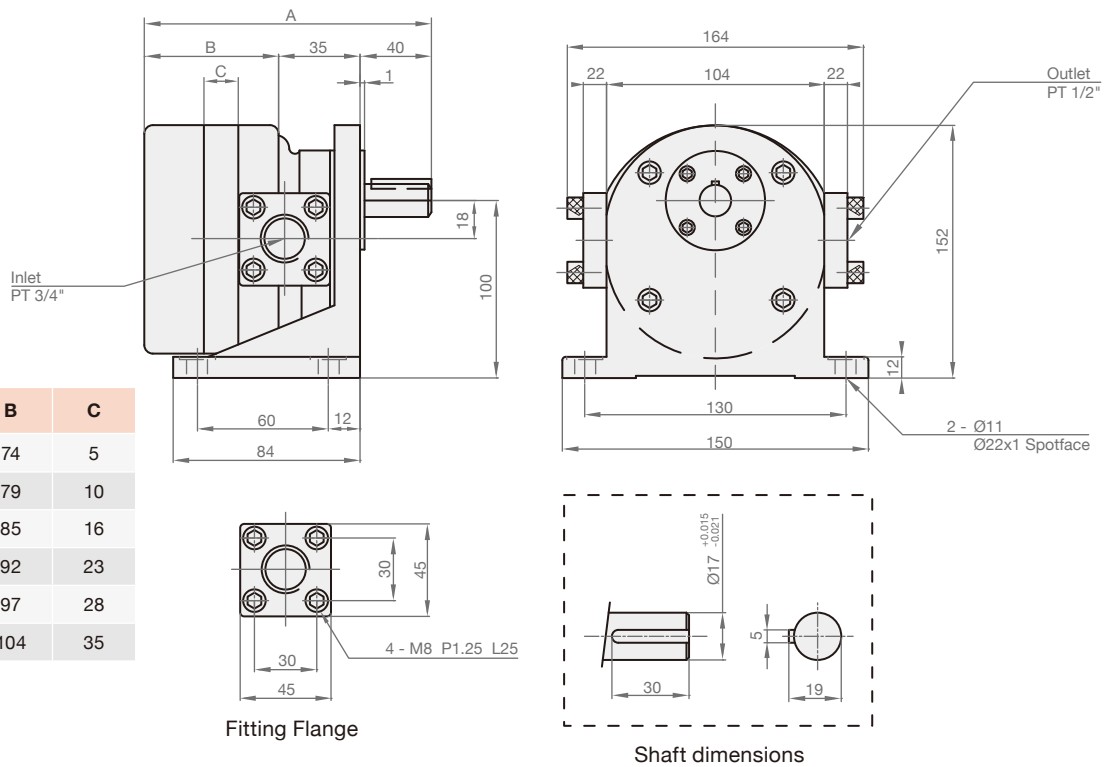
* For PU usage, the recommended speed is 100 to 500 r.p.m., and the operating pressure is 35 to 50 kgf/cm².

CURVES



DIMENSION

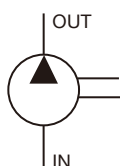
(UNIT : mm)



GH2



SYMBOLS



ORDER CODES

GH2 - **25** - **C** - **L** - **R**

1 2 3 4 5

1	Model Name	GH2
2	Delivery	25, 30, 35, 40
3	Application	C chemical (PU)
		S spindle coolant
4	Mounting	F flange type
		L foot type
5	Direction of Revolving (Side View of Self Aligning Bearing)	R clockwise direction
		L counter clockwise direction

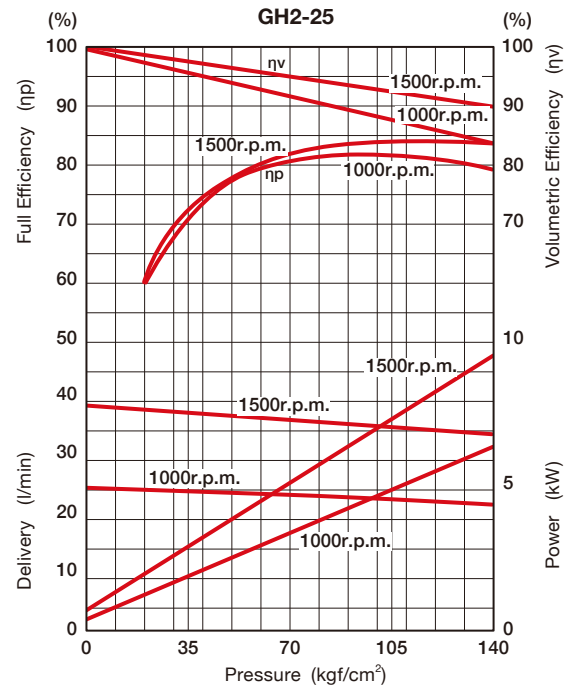
* The raw material of seal: VITON
The raw material of shaft: JIS G4103 SNCM-21
(SAE8620)

MODEL SPEC.

Model	Max. Pressure (kgf/cm ²)	Delivery (cc/rev)	Speed (r.p.m.)		Ports Size (PT)		Weight (kg)
			Min.	Max.	Outlet	Inlet	
GH2-25	120	25	200	2000	3/4"	1"	19
GH2-30	120	30					19.5
GH2-35	120	35					20
GH2-40	120	40					20.5

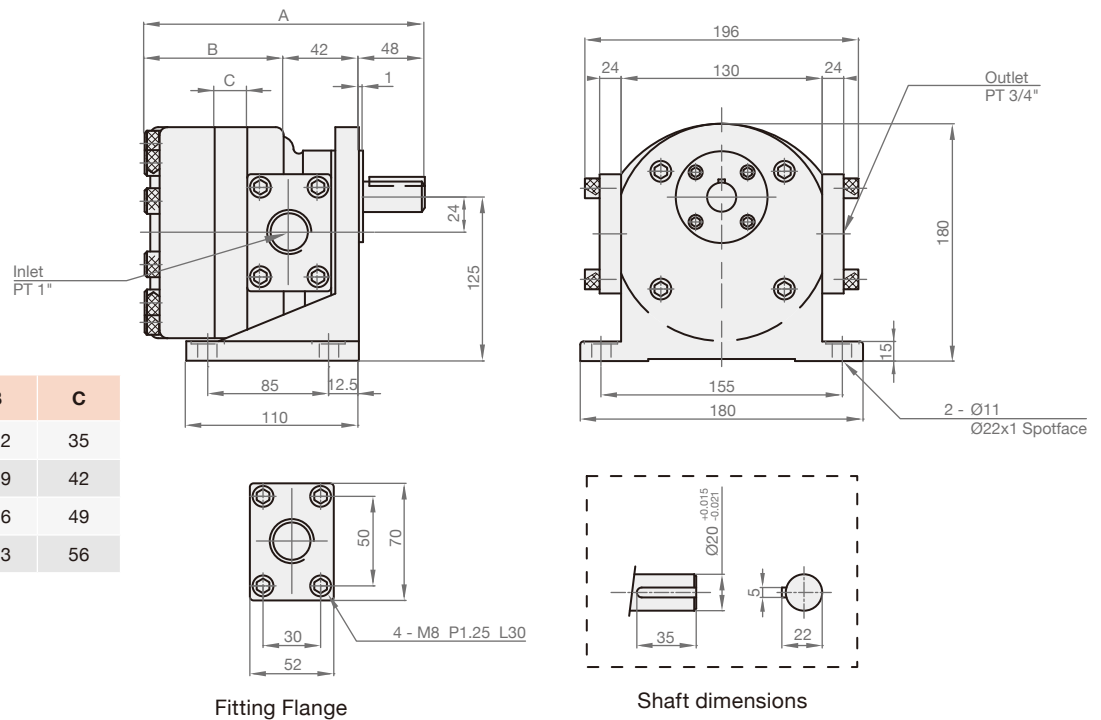
* For PU usage, the recommended speed is 100 to 500 r.p.m., and the operating pressure is 35 to 50 kgf/cm².

CURVES



DIMENSION

(UNIT : mm)

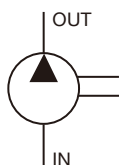


Model	A	B	C
GH2-25	215	122	35
GH2-30	222	129	42
GH2-35	234	136	49
GH2-40	236	143	56

GH4



SYMBOLS



ORDER CODES

GH4 - **50** - **C** - **L** - **R**

1 2 3 4 5

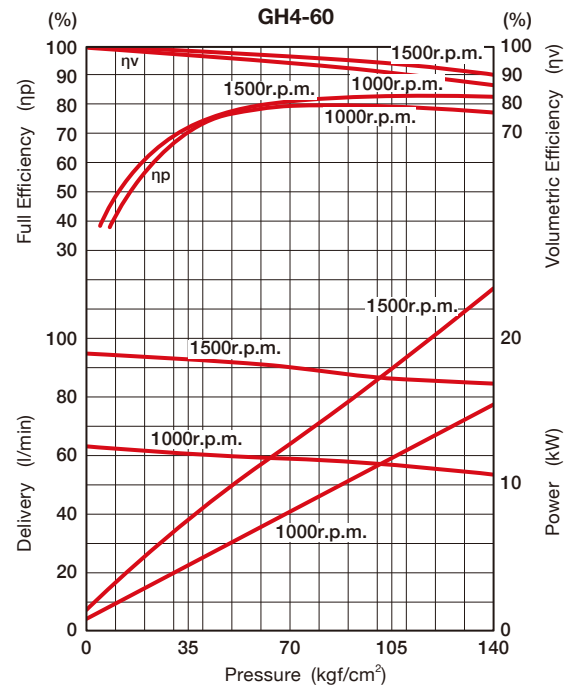
1	Model Name	GH4
2	Delivery	50, 60, 70, 80
3	Application	C chemical (PU)
		S spindle coolant
4	Mounting	F flange type
		L foot type
5	Direction of Revolving (Side View of Self Aligning Bearing)	R clockwise direction
		L counter clockwise direction

* The raw material of seal: VITON
The raw material of shaft: JIS G4103 SNCM-21
(SAE8620)

MODEL SPEC.

Model	Max. Pressure (kgf/cm ²)	Delivery (cc/rev)	Speed (r.p.m.)		Ports Size (PT)		Weight (kg)
			Min.	Max.	Outlet	Inlet	
GH4-50	100	50	200	1800	1"	1 1/4"	30
GH4-60	100	60					31
GH4-70	100	70					32
GH4-80	100	80					33

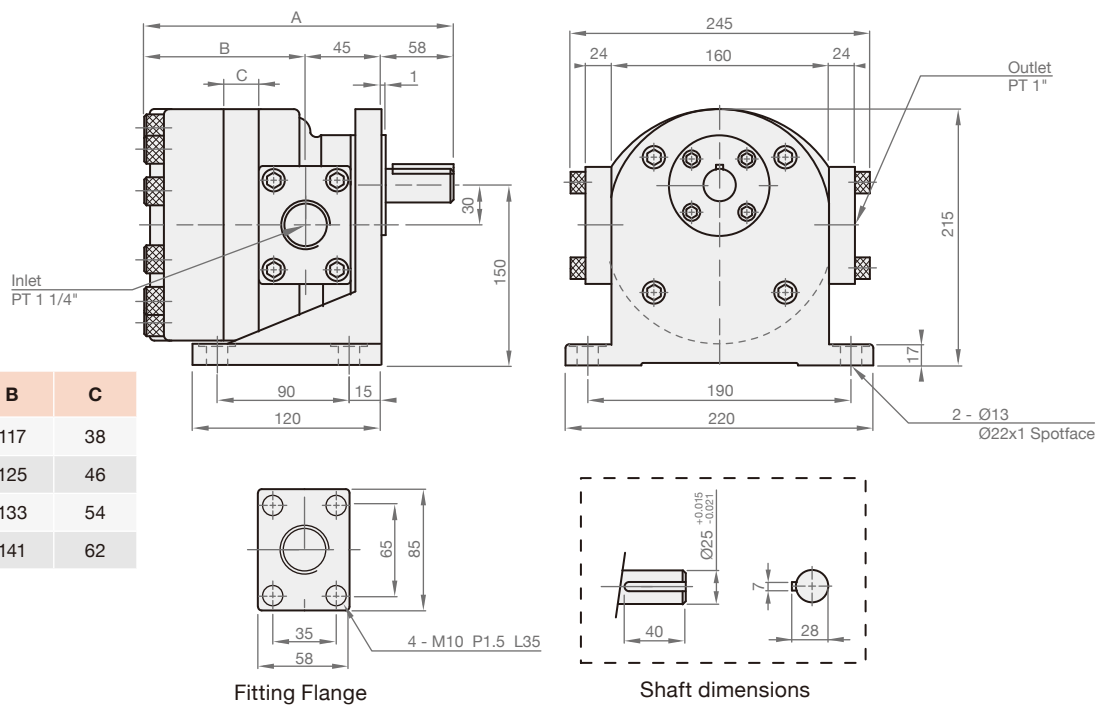
* For PU usage, the recommended speed is 100 to 500 r.p.m., and the operating pressure is 35 to 50 kgf/cm².



DIMENSION

(UNIT : mm)

Model	A	B	C
GH4-50	226	117	38
GH4-60	234	125	46
GH4-70	242	133	54
GH4-80	250	141	62



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