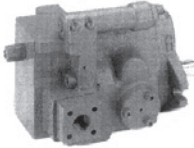


KOMPASS

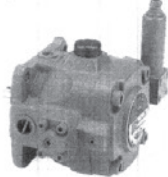
A

HYDRAULIC PUMPS

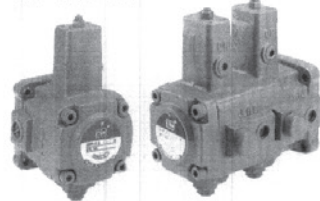
Variable Displacement Axial Piston Pumps V15~V70



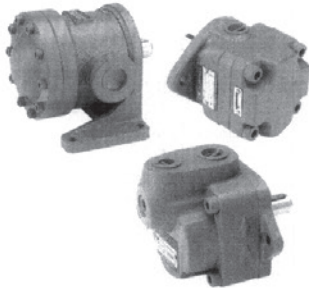
Variable Displacement Vane Pumps HVP-VD2~VE2



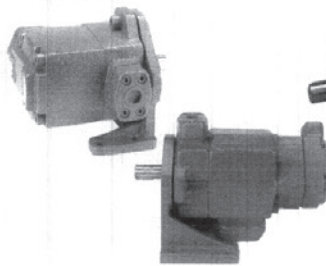
Variable Displacement Vane Pumps HVP-VA1~VE1



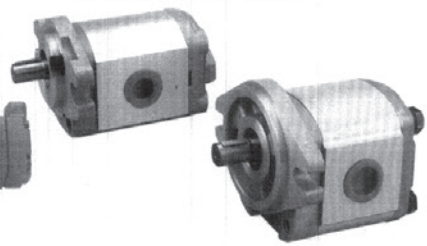
Fixed Displacement Vane Pumps 50T · 150T · HVP-VA1 · VB1



Fixed Displacement Vane Pumps PV2R · VK



Gear Pumps & Gear Motors HP1 · HP2 & HGM1 · HGM2



Classified No.	Descriptions	Max. Pressure kgf/cm ² (psi)	Displacement Range cc/rev (in ³ /rev)	Page
A-1	Variable Displacement Axial Piston Pumps V15 · 18 · 23 · 38 · 50 · 70	250(3500)	15~70 (0.92~4.27)	2
	Maintenance Packages For Axial Piston Pumps CB-15 · 18 · 23 · 38 · 50 · 70	250(3500)	15~70 (0.92~4.27)	15
A-2	Variable Displacement Vane Pumps HVP-VD2 · VE2 · VF2 · VK2	140(2000)	16.7~38.9 (1.02~2.37)	16
A-3	Variable Displacement Vane Pumps HVP-VA1 · VB1 · VD1 · VE1	70(1000)	6.7~22.2 (0.41~1.35)	20
	Variable Dual Displacement Vane Pumps HVP-VA1A1 · VB1B1 · VD1D1 · VE1E1	70(1000)	6.7+6.7~ (0.41+0.41~ 22.2+22.2 1.35+1.35)	24
	Hi-lo Pressure Pumps HVP-VD1 · VE1+SI	70+210 (1000+3000)	16.7+SI ~ (1.02+SI~ 22.2+SI 1.35+SI)	26
A-4	Fixed Displacement Vane Pumps 50T · 150T	70~90(1000~1280)	7~116(0.43~7.08)	27
	Fixed Dual Displacement Vane Pumps 50150T · 150150T	70(1000)	7+48~36+116 (0.43+2.93~2.20+7.08)	31
	Hi-lo Pressure Pumps 50T+SI · 150T+SI	70+SI(1000+SI)	7+SI~116+SI (0.43+SI~7.08+SI)	33
	Fixed Displacement Vane Pumps HVP-FA1	70(1000)	2~11(0.12~0.67)	36
	Fixed Displacement Vane Pumps HVP-FB1	70(1000)	1.7~12.3(0.10~0.75)	38
	Fixed Displacement Vane Pumps PV2R1 · 2 · 3	210(3000)	6~116(0.37~7.08)	39
	Fixed Dual Displacement Vane Pumps PV2R12 · PV2R13	210(3000)	6+47~25+116 (0.37+2.87~1.53+7.08)	44
A-5	Fixed Displacement Vane Pumps VK15 · 25 · 35	210(3000)	8~123 (0.49~7.50)	46
	Fixed Dual Displacement Vane Pumps VK125 · 135 · 225 · 235	210(3000)	8+19~78+123 (0.49+1.16~4.76+7.50)	52
	Gear Pumps HP1 · HP2	250(3500)	1.2~25 (0.07~1.53)	55
Dual Gear Pumps HP11,HP22,HP21	1.2+1.2~25+25(0.07+0.07~1.53+1.53)		64	
A-7	Gear Motors HGM1,HGM2		1.2~25(0.07~1.53)	70

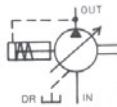
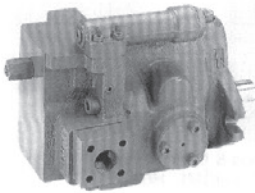
Variable Displacement Axial Piston Pumps



Variable Displacement Axial Piston Pumps

V15, V18, V23, V38, V50, V70

A-1



■ Feature:

1. Combining special internal designs and strict engineering disciplines has reduced noise level to new lows in whole pressure zones.
2. Depending on variety of application needs multiple optional unique control methods are available. It does not only reduce a number of unnecessary hoses, pipes and control valves but also increase efficiency and save horsepower, and cost.
3. Less capacity reservoirs can be selected and applied because of performances of low pressure loss and less heat generation.
4. Wide application ranges: it is very suitable for machine tools, plastic injection molding machines, forging machines and other industrial machines etc..
5. Mounting flanges are made to SAE A or B 2-bolt (V15, 18, 23, 38 types) and SAE-C 2 & 4-bolt (V50, V70 types).

■ How To Order:

V-15-A1-R-A

Model
V15, V38
V18, V50
V23, V70

Displacement
(refer to 'Specifications')

Pressure Adj. Range
(refer to 'Specifications')

Control Types
A,B,C,D,E,F,G,H
(refer to 'Control Types')

Shaft Rotation(View from shaft end)
R : Colckwise
L : Anti-clockwise

■ Specifications:

Model	Max. Pressure kgf/cm ² (psi)	Displacement cc/rev (in ³ /rev)	Displacement Under Unloading Conditions l/min(GPM)		Pressure Adj. Range kgf/cm ² (psi)	Input Speed Range(rpm)		Weight kg(lb)
			1500rpm	1800rpm		Min.	Max.	
V15	250(3500)	14.8(0.90)	22.2(5.87)	26.7(7.05)	A1:8~70(115~1000)	600	1800	11.5(25.3)
V18	250(3500)	17.8(1.09)	26.7(7.05)	32.0(8.45)				11.5(25.3)
V23	250(3500)	23.0(1.40)	34.5(9.11)	41.4(10.94)	A2:15~140(210~2000)	600	1800	23.0(50.7)
V38	250(3500)	37.8(2.31)	56.7(14.98)	68.0(17.96)	A3:35~210(500~3000)			23.0(50.7)
V50	250(3500)	51.5(3.14)	77.2(20.37)	92.7(24.49)	A4:35~250(500~3500)			50.0(110)
V70	250(3500)	69.7(4.25)	104.5(27.60)	125.4(33.13)				55.0(121)

There are dual axial piston pumps available. For details please consult us.

■ Control Types:

Figure	Graphic Symbols	Performance Curves	Feature
A. Pressure Compensating Type (Standard)			
			<ol style="list-style-type: none"> 1. When system pressure increase and reach preset pressure the flow decrease automatically and pressure maintain without changing. 2. Flow and pressure can be adjusted manually.
B. Pressure Remote Control Type			
			<ol style="list-style-type: none"> 1. Same as Type A. 2. Pressure can be adjusted remotely by integrated remote pressure control valve.
C. Multi-stage Flow & Single-stage Pressure Control Type (With Cylinder)			
			<ol style="list-style-type: none"> 1. Flow can be adjusted form 0 to maximum and pressure can have been maintaining at preset pressure. 2. Absorbing impact and vibration which are produced by up and down motions of actuators. It is suitable for lifting equipment etc..

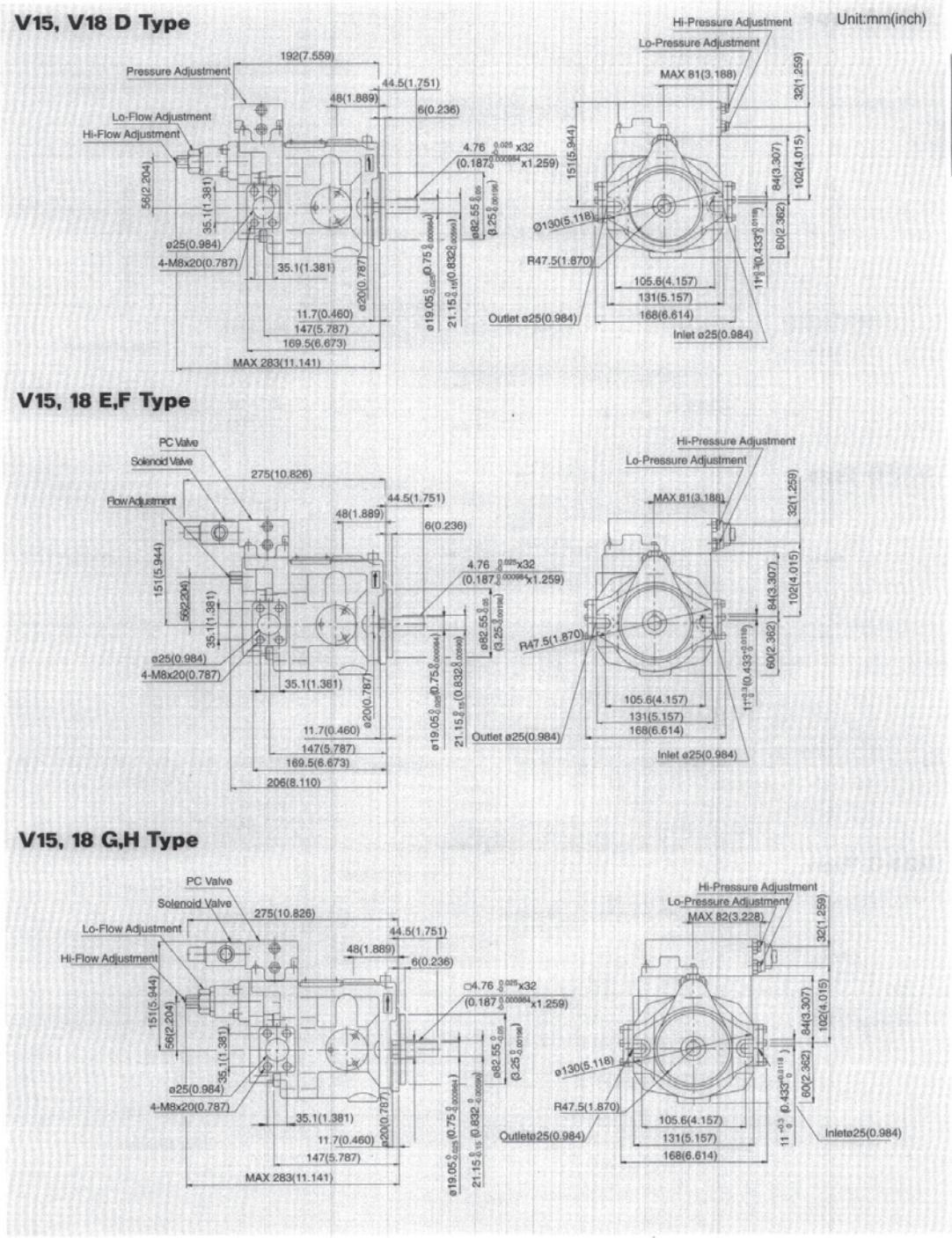
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Variable Displacement Axial Piston Pumps

Figure	Graphic Symbols	Performance Curves	Feature
D.2-stage Pressure & Flow Control Type			
			<ol style="list-style-type: none"> 1. Lo-consumption electric motor can be selected to save energy because of functions of high flow at low pressure and low flow at high pressure. 2. When pressure increase and reach preset pressure "PH", flow is reduced to "QL". 3. Pressure "PH, PL" and Flow "QH, QL" can be adjusted optionally. 4. It is applied to actuators requiring long unloaded or short loaded strokes. Speedy and horsepower efficient.
E.Solenoid Controlled Pressure Compensating Type With Unloading Device			
			<ol style="list-style-type: none"> 1. Same as Type A and unloading function added. 2. It is applied to systems requiring long-term unloading operation. 3. When solenoid is turned off, pump operates under unloading conditions. This results in less noise and heat generation.
F.Solenoid Controlled 2-stage Pressure & Single-stage Flow Control Type			
			<ol style="list-style-type: none"> 1. High and low pressure can be controlled by switching directions of solenoid control valves. 2. This type is applied to actuators requiring 2-stage pressures with single speed. 3. One of "PL" and "PH" relief valves can optionally be high pressure.
G.Solenoid Controlled 2-stage Flow & Single -stage Pressure Control Type			
			<ol style="list-style-type: none"> 1. 2 different stage flow rates are controlled by switching directions of solenoid control valve. 2. This type is applied to actuator requiring operations to switch high and low speed.
H.Solenoid Controlled 2-stage Pressure & Flow Control Type			
			<ol style="list-style-type: none"> 1. Actuators can be shifted slowly (high pressure low flow) and quickly (low pressure high flow) by switching directions of solenoid control valve. 2. This type is applied to actuator requiring operations to shift speed from high to low or low to high. 3. Pressure "PL, PH" and flow "QL, QH" can be adjusted optionally.

Remarks: These pumps also may incorporate combinations with proportional control valves as requirements.

■ Dimensions: (Mounting Surface: SAE "A" 2-bolt)



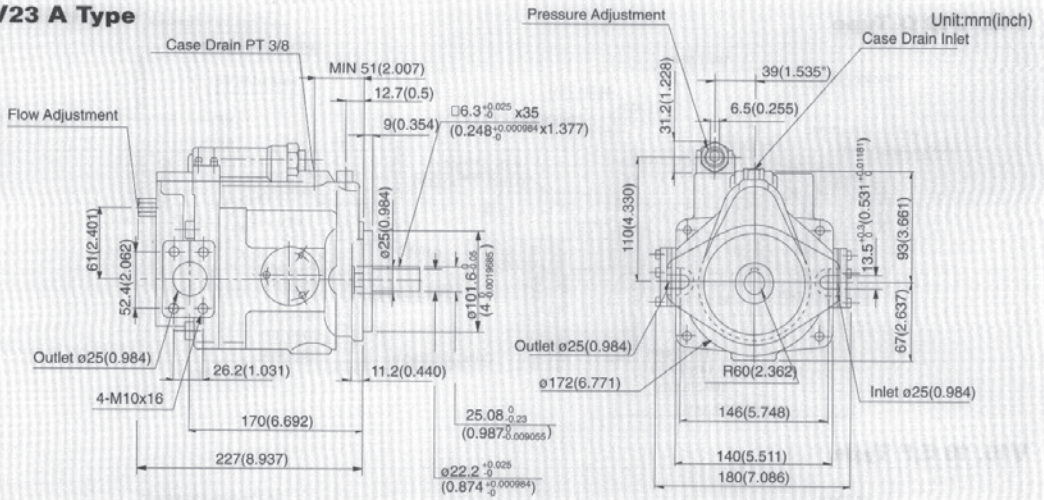
A-1

Variable Displacement Axial Piston Pumps

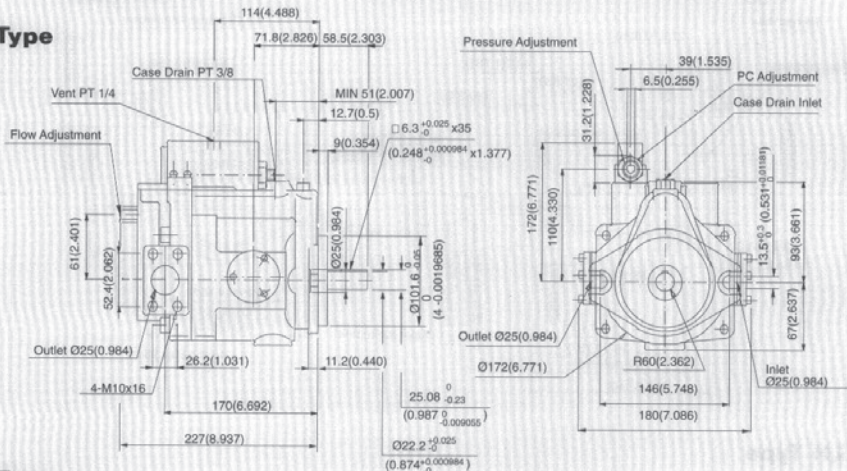
■ Dimensions: (Mounting Surface: SAE "B" 2-bolt)

A-1

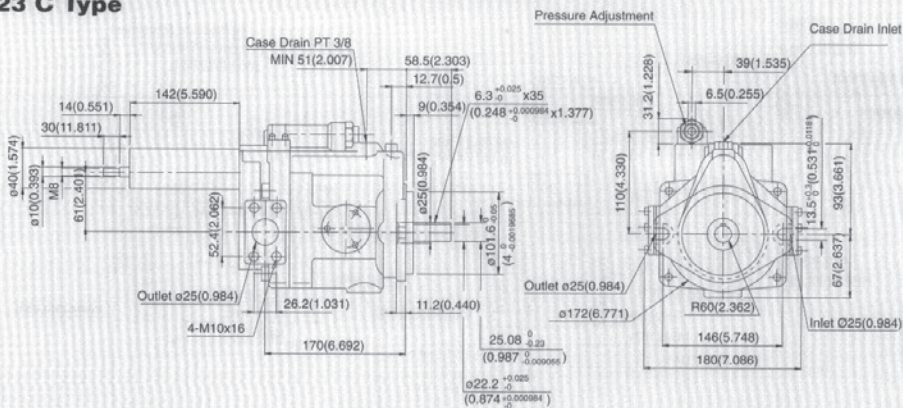
V23 A Type



V23 B Type



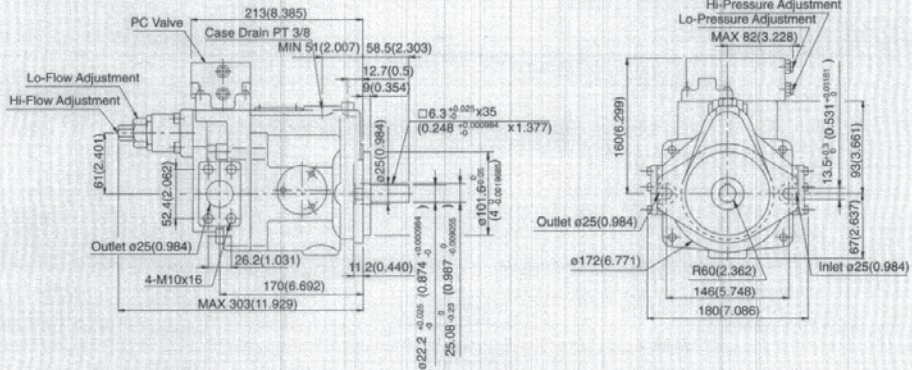
V23 C Type



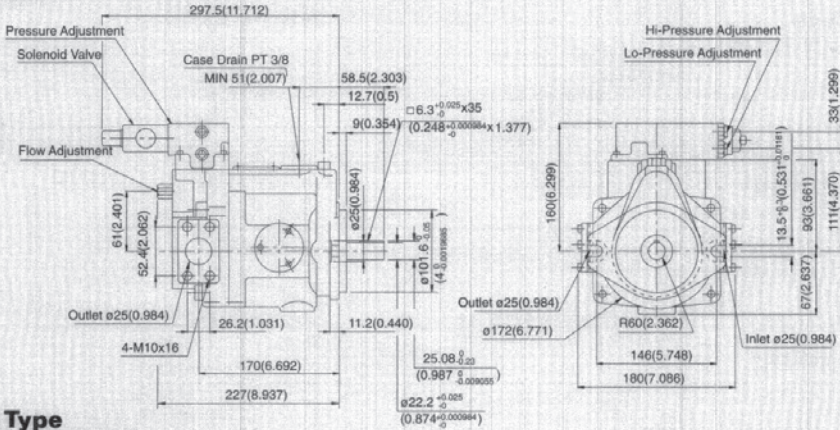
■ Dimensions: (Mounting Surface: SAE 'B' 2-bolt)

V23 D Type

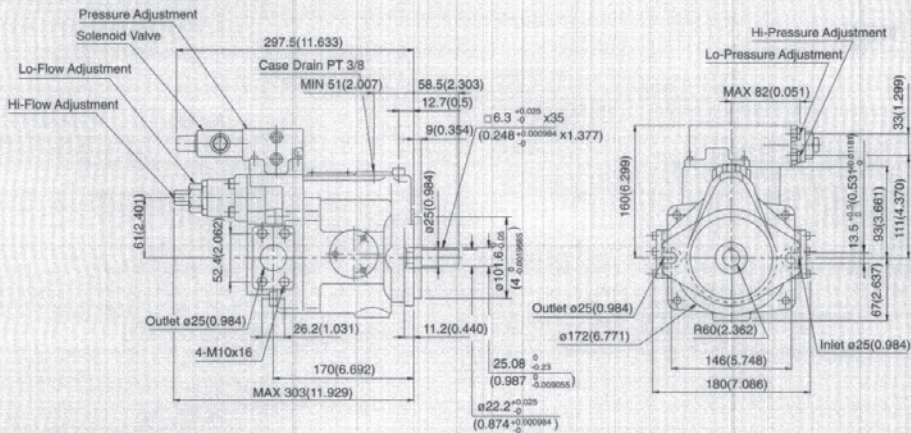
Unit:mm(inch)



V23 E,F Type



V23 G,H Type



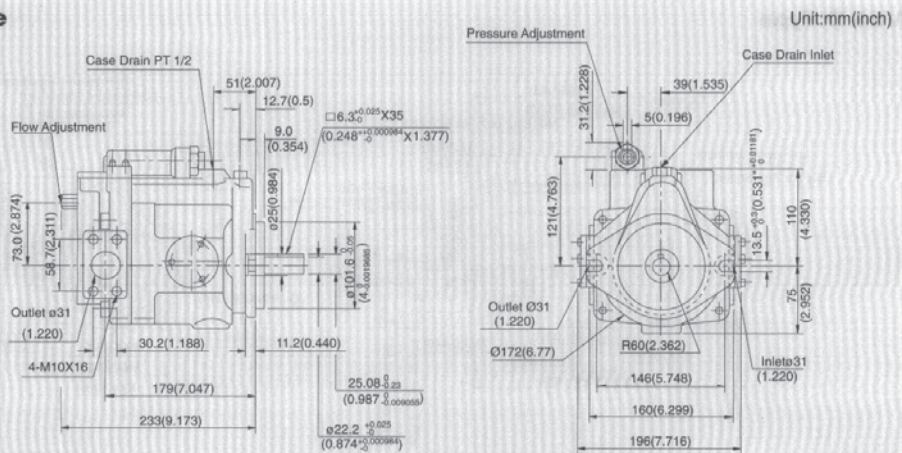
Variable Displacement Axial Piston Pumps



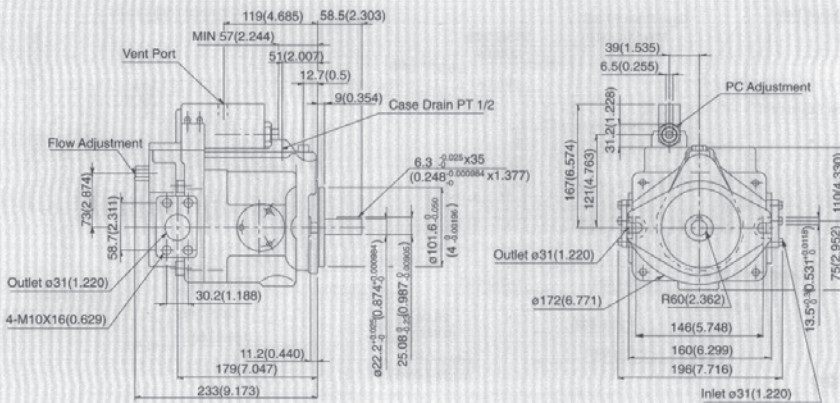
■ Dimensions: (Mounting Surface: SAE "B" 2-bolt)

A-1

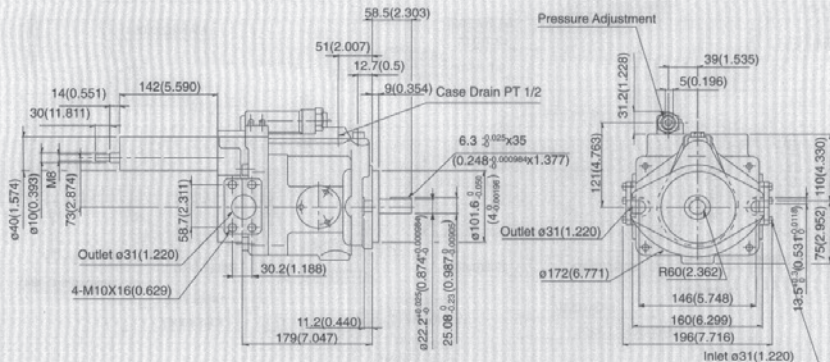
V38 A Type



V38 B Type



V38 C Type

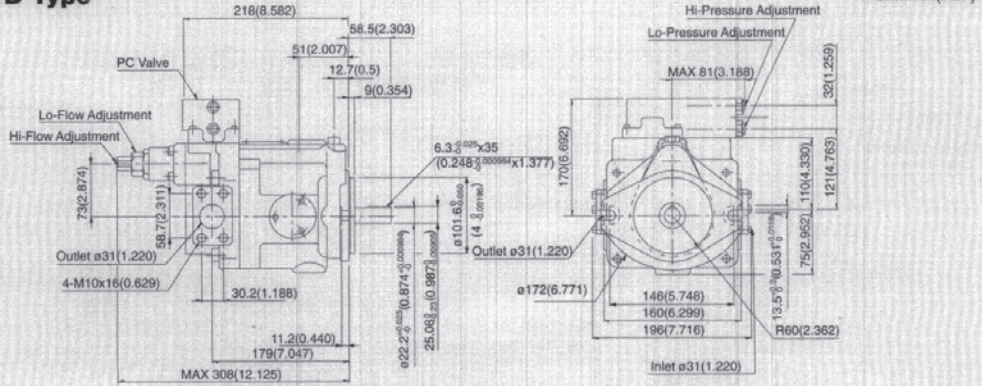


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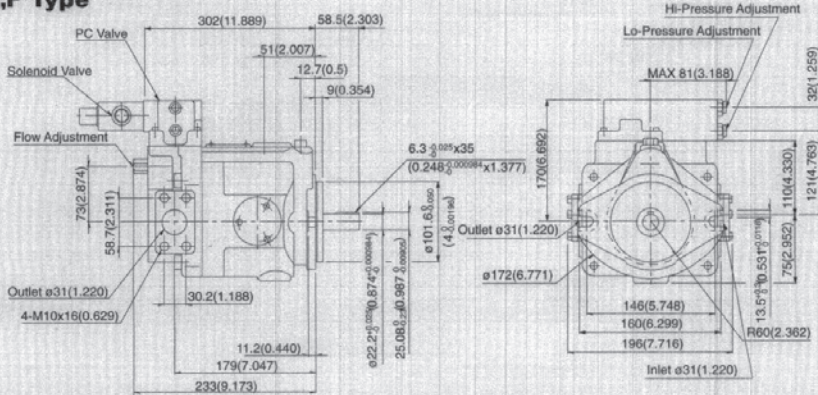
Variable Displacement Axial Piston Pumps

■ Dimensions: (Mounting Surface: SAE 'B' 2-bolt)

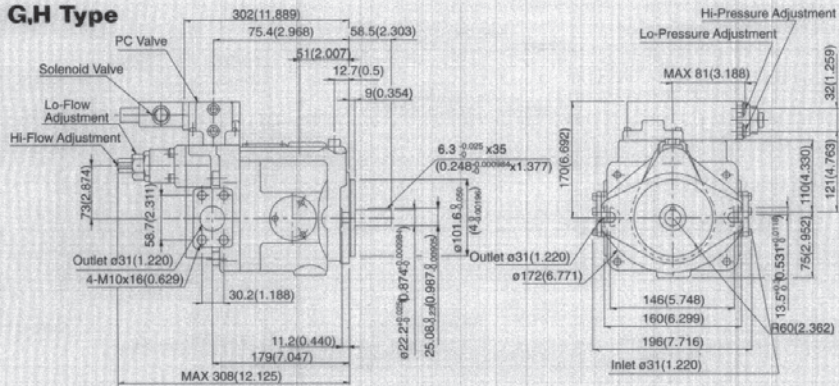
V38 D Type



V38 E,F Type



V38 G,H Type



A-1

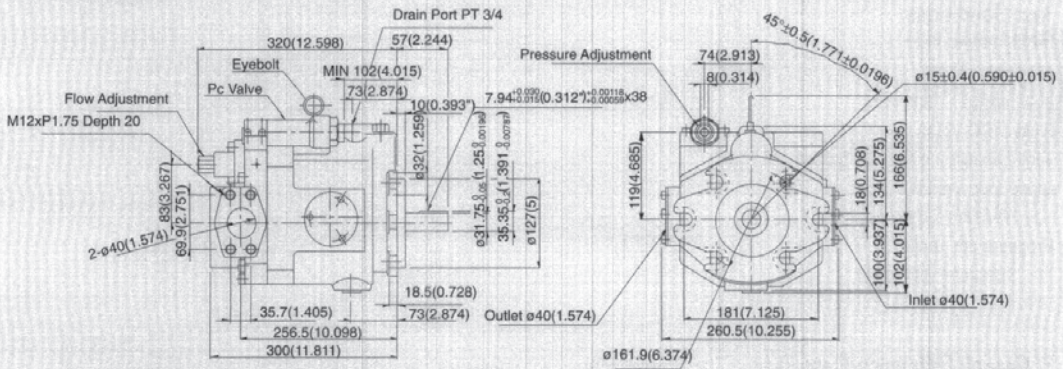
KOMPASS

Variable Displacement Axial Piston Pumps

■ Dimensions: (Mounting Surface: SAE "C" 2-bolt & 4-bolt)

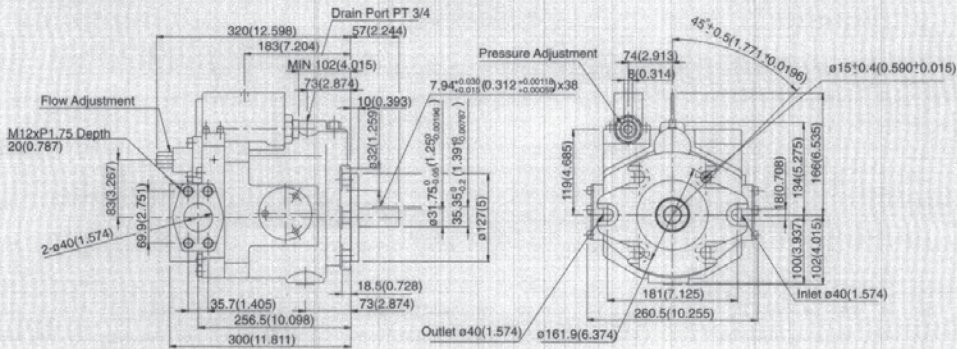
V70 A Type

Unit:mm(inch)

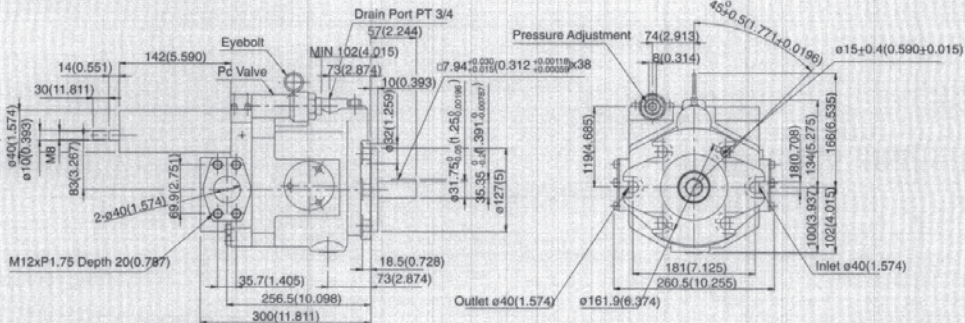


A-1

V70 B Type



V70 C Type



Variable Displacement Axial Piston Pumps



■ Performance Curves:

A-1

A. Temperature-Time Characteristics:

Test Conditions:

Room temperature:

$\pm 2^{\circ}\text{C}$ (28~36°F)

Input speed : 1800 rpm

Fluid : ISO VG32

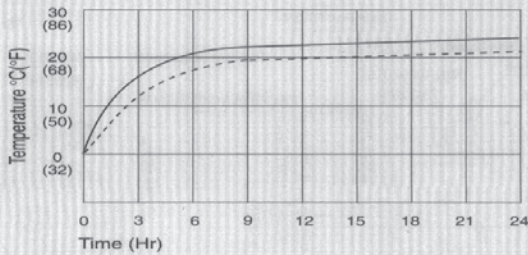
Tank capacity : 140 L (37 gallon)

Close loop circuits :

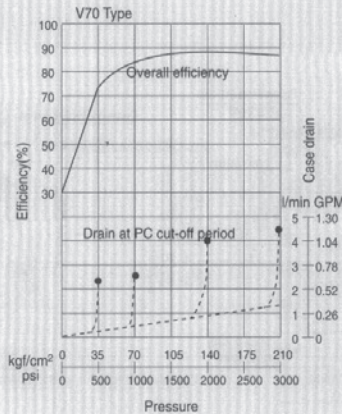
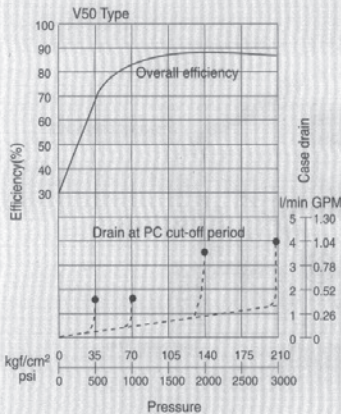
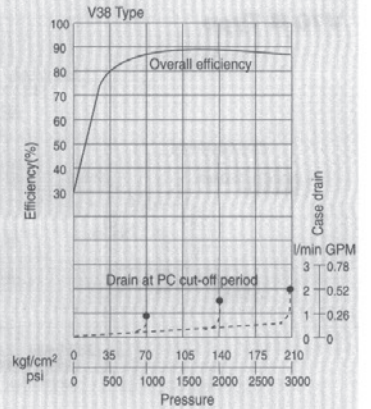
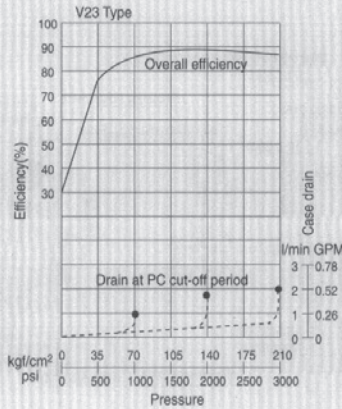
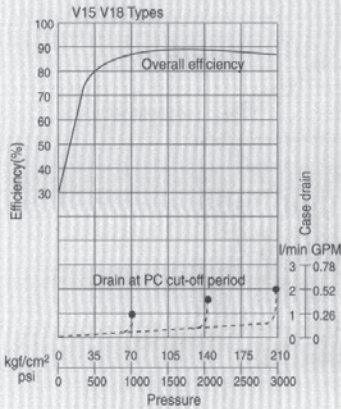
— 70kgf/cm² (1000 psi)

Pressure adj. range :

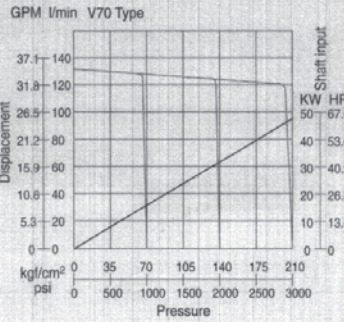
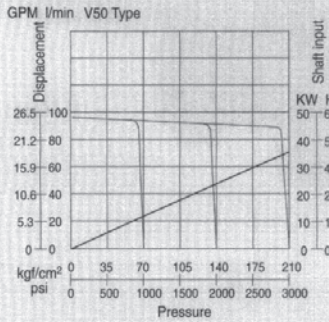
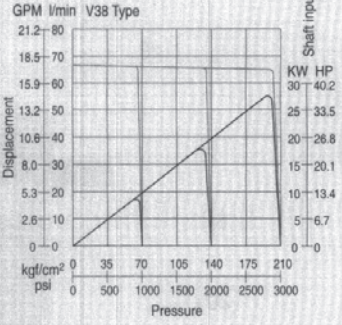
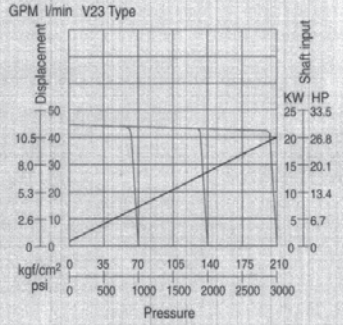
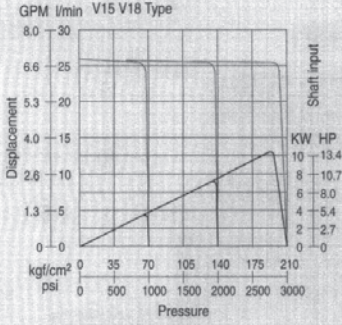
----- 35kgf/cm² (500 psi)



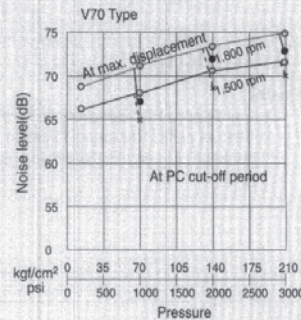
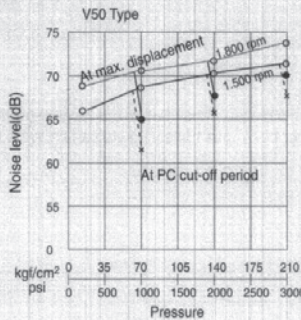
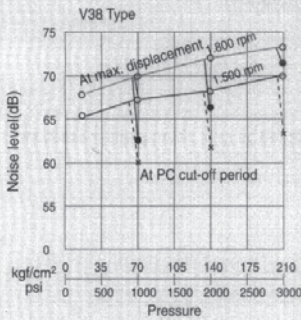
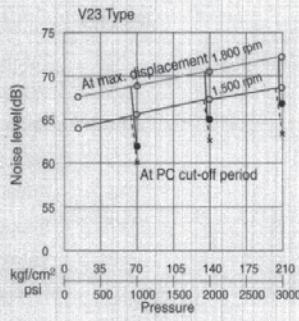
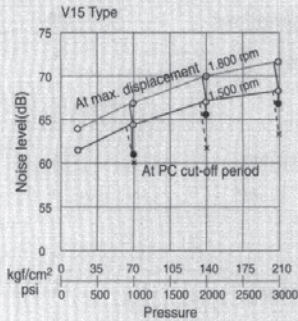
B. Overall Efficiency-Case Drain Characteristics:



C. Displacement-Pressure-Shaft Input Characteristics:



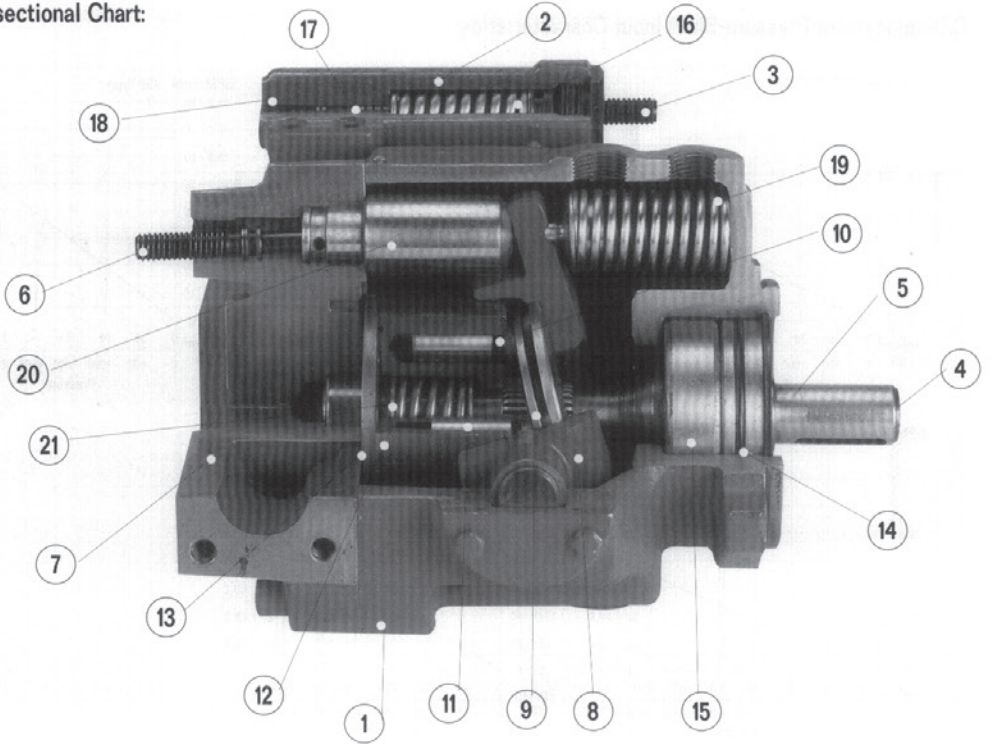
D. Noise Characteristics:



Variable Displacement Axial Piston Pumps

■ Cross-sectional Chart:

A-1



Item No.	Part Descriptions	Q'ty
1	Housing	1
2	Pressure compensator & adjuster	1
3	Pressure adj. screw	1
4	Shaft	1
5	Woodruff key	1
6	Flow adj. screw	1
7	Rear cover	1
8	Swash plate	1
9	Thrust plate	1
10	Slipper	9
11	Piston	9

Item No.	Part Descriptions	Q'ty
12	Cylinder block	1
13	Valve plate	1
14	Shaft seal	1
15	Taper roller bearing	1
16	Pressure adj. spring	1
17	Poppet	1
18	Valve seat	1
19	Swash plate spring	1
20	Swash adj. pusher	1
21	Spring	1

Remarks:

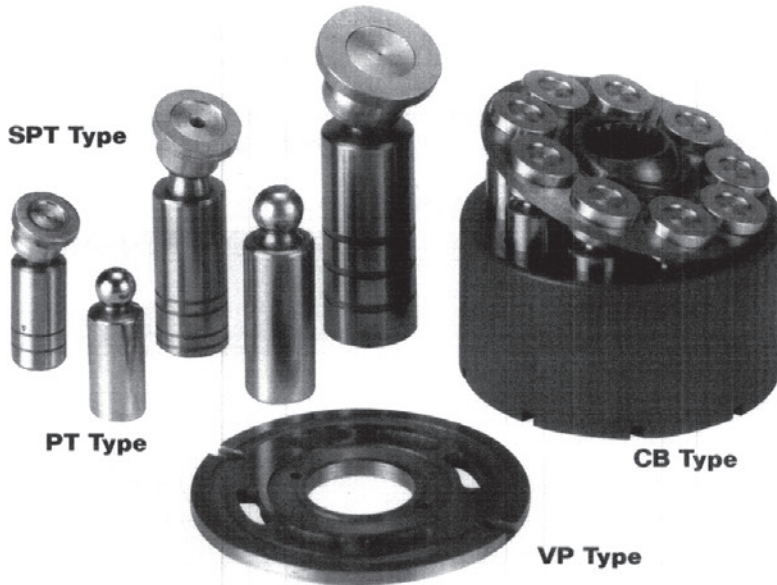
- For detailed Part Descriptions for replacements please consult us or our local distributors.
- 9/thrust plate, 10/slipper, 11/piston, 12/cylinder block and 13/valve plate can be individually supplied as axial piston pump maintenance package. For details please see page15.

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Maintenance Packages For Axial Piston Pumps

Maintenance Packages For Axial Piston Pumps

CB, VP, SPT, PT Type



A-1

Feature:

1. Completed ranges of parts are easy to maintain and interchange.
2. Precisely machined brass and alloy materials result in high efficiency and long using life.
3. Except KOMPASS products other customized specifications are acceptable.

How To Order:

1.CB Type(Set of Thrust Plate, Slippers, Pistons & Cylinder Block)

CB - V15

Model

Pump Size
V15 · V23 · V50
V18 · V38 · V70

3.PT Type (Piston)

PT - V18

Model

Pump Size
V15 · V23 · V50
V18 · V38 · V70

2.SPT Type(Slipper+Piston)

SPT - V18

Model

Pump Size
V15 · V23 · V50
V18 · V38 · V70

4.VP Type (Valve Plate)

VP - V18

Model

Pump Size
V15 · V23 · V50
V18 · V38 · V70

Remarks:

1. Dimensions of these parts are not submitted because of spare parts.
2. For other customized specifications please consult us.

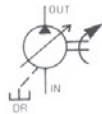
Variable Displacement Vane Pumps



Variable Displacement Vane Pumps

HVP-VD2,VE2,VF2,VK2

A-2



■ **Feature:**

1. Axial clearance compensation design results in high efficiency.
2. "Counter piston" is designed to prevent vibration and ensure low noise, when pump operates under operating pressure.
3. Pressure is easy to adjust. It results in high stability and fast acting times.
4. Applicable to direct-mounted electric motor without couplings and easy to install.

■ **How To Order:**

HVP-VD2-F-30-A3-R



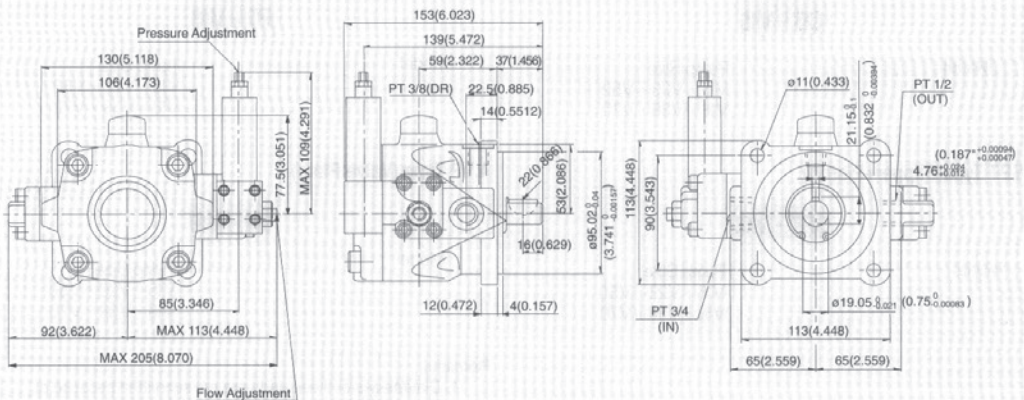
■ **Specifications:**

Model	Max. Pressure kgf/cm ² (psi)	Displacement cc/rev(in ³ /rev)	Displacement At Unloading period		Pressure Adj. Range kgf/cm ² (psi)	Input Speed Range (rpm)		Weight kg(lb)
			l/min(GPM) 1500rpm	1800rpm		Min.	Max.	
HVP-VD2-L30A※	140(2000)	16.7(1.02)	25(6.6)	30(7.9)	A1:15-35(210-500)	750	1800	9.7(21.4)
HVP-VE2-L40A※		22.2(1.35)	33.3(8.8)	40(10.6)	A2:20-70(285-1000)			
HVP-VF2-L54A※		30.0(1.83)	45(11.9)	54(14.3)	A3:50-105(710-1500)			
HVP-VK2-L70A※		38.9(2.37)	58.3(15.4)	70(18.5)	A4:70-140(1000-2000)			

■ **Dimensions:**

HVP-VD2,VE2 (Mounting Surface: 4-bolt)

Unit:mm(inch)



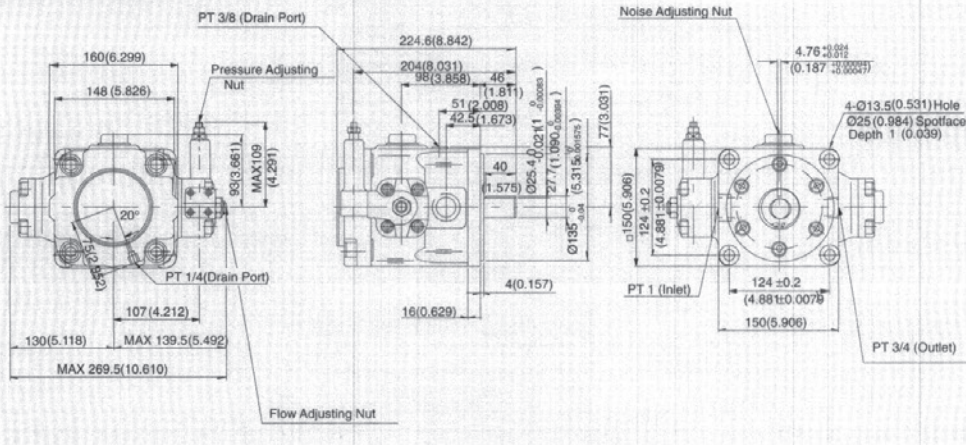
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Variable Displacement Vane Pumps

■ **Dimensions:**

HVP-VK2,VF2 (Mounting Surface:4-bolt)

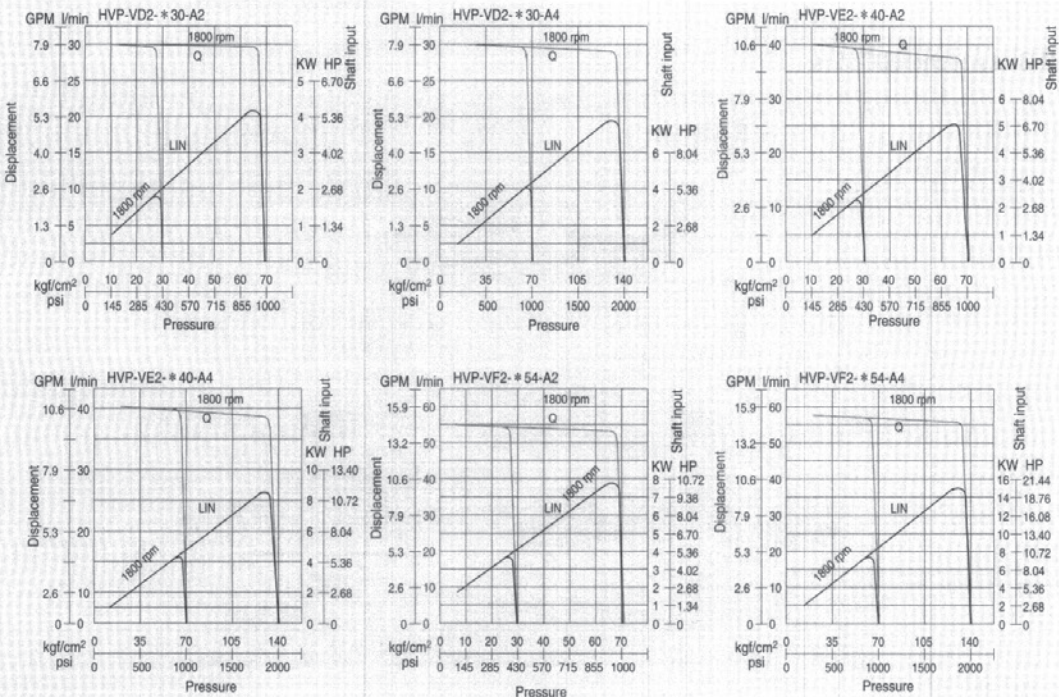
Unit:mm(inch)



A-2

■ **Performance Curves:** (Test Conditions:Viscosity:20cSt, Temperature:50°C(122°F)
Fluid:ISO VG32, Specific gravity:0.850)

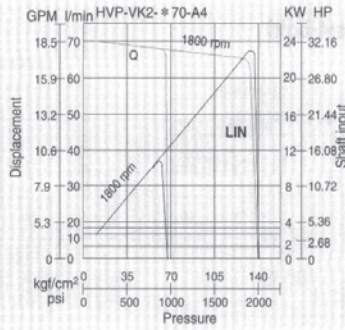
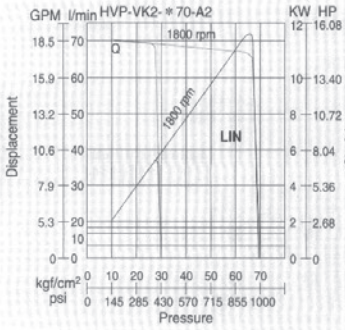
A.Pressure-Displacement - Shaft Input Characteristics:



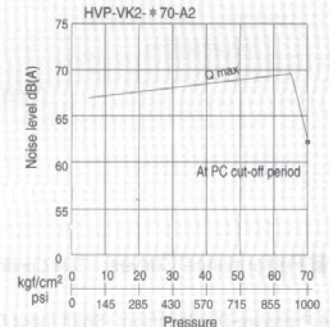
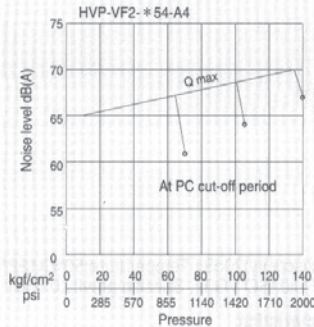
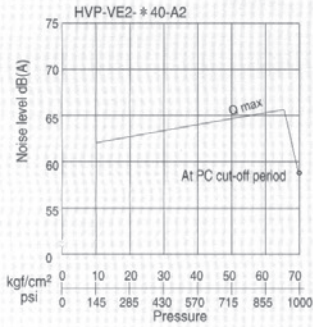
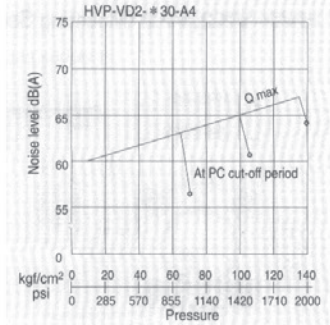
Variable Displacement Vane Pumps



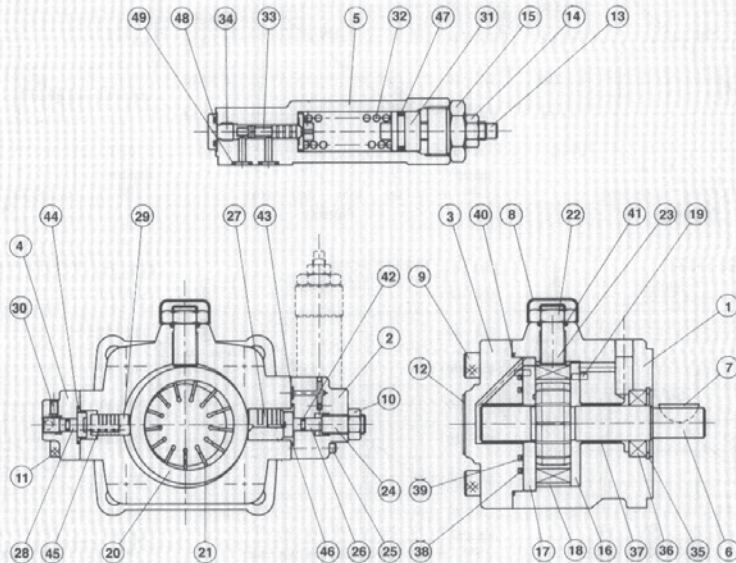
A-2



B. Noise Characteristics:



■ Cross-sectional Charts:



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Variable Displacement Vane Pumps

Item No.	Part Descriptions	Q'ty
1	Housing	1
2	Front cover	1
3	Rear cover	1
4	Side cover	1
5	Pressure compensator and adjuster	1
6	Shaft	1
7	Woodruff key	1
8	Dust-proof cover	1
9	Bolt-A	4
10	Flow adj. fix nut	1
11	Bolt-B	4
12	Nameplate	1
13	Pressure adj. screw	1
14	Fix nut	1
15	Screw guide	1
16	Valve plate	1
17	Thrust plate	1
18	Rotor	1
19	Lock pin	5
20	Cam ring	1
21	Vane	13
22	Fix nut	1
23	Stroke ring screw	1
24	Flow adj. screw	1
25	Bolt-C	4

Item No.	Part Descriptions	Q'ty
26	Flow adj. pusher	1
27	Large control piston	1
28	Zero position stroke limit	1
29	Counter piston	1
30	Fix plug	1
31	Spring retainer	1
32	Spring	1
33	Spool	1
34	Plug	1
35	Shaft seal	1
36	Bearing	1
37	Bushing	2
38	Back-up ring-A	1
39	Back-up ring-B	1
40	O-ring-A	1
41	O-ring-B	1
42	O-ring-C	1
43	O-ring-D	4
44	O-ring-E	1
45	Spring	1
46	O-ring-F	1
47	O-ring-G	1
48	O-ring-H	1
49	O-ring-I	3

For detailed Part Descriptions please consult us or our local distributors.

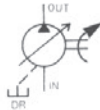
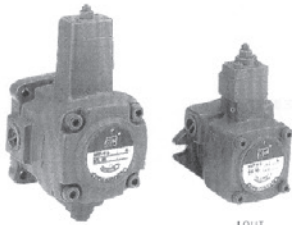
Variable Displacement Vane Pumps



Variable Displacement Vane Pumps

HVP-VA1,VB1,VD1,VE1

A-3



Feature:

1. Axial clearance compensation design results in high efficiency.
2. "Counter piston" is designed to prevent vibration and ensure low noise, when pump operates under operating pressure.
3. Pressure is easy to adjust. It results in high stability and fast acting times.
4. Applicable to direct-mounted electric motor without couplings and easy to install.

How To Order:

HVP-VA1-F-15-A1-R

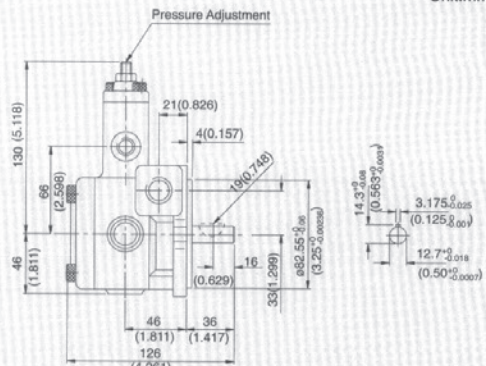
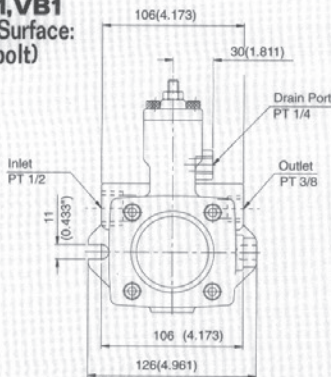


Specifications:

Model	Max. Pressure kgf/cm ² (psi)	Displacement cc/rev (in ³ /rev)	Displacement Under Unloading Conditions l/min(GPM)		Pressure Adj. Range kgf/cm ² (psi)	Input Speed Range(rpm)		Weight kg(lb)
			1500rpm	1800rpm		Min.	Max.	
HVP-VA1-F12A※	70(1000)	6.7 (0.41)	10(2.64)	12(3.17)	A1:8-18(115-255)			4.5(9.9)
HVP-VA1-F15A※	70(1000)	8.3(0.51)	12.5(3.30)	15(3.96)				4.5(9.9)
HVP-VB1-F20A※	70(1000)	11.1(0.68)	16.7(4.41)	20(5.28)	A2:18-35(255-500)	800	1800	4.5(9.9)
HVP-VD1-F30A※	70(1000)	16.7(1.02)	25(6.61)	30(7.93)				9.0(19.8)
HVP-VE1-F40A※	70(1000)	22.2(1.35)	33.3(8.80)	40(10.57)	A3:35-70(500-1000)			9.0(19.8)

Dimensions:

HVP-VA1,VB1 (Mounting Surface: SAE "A" 2-bolt)



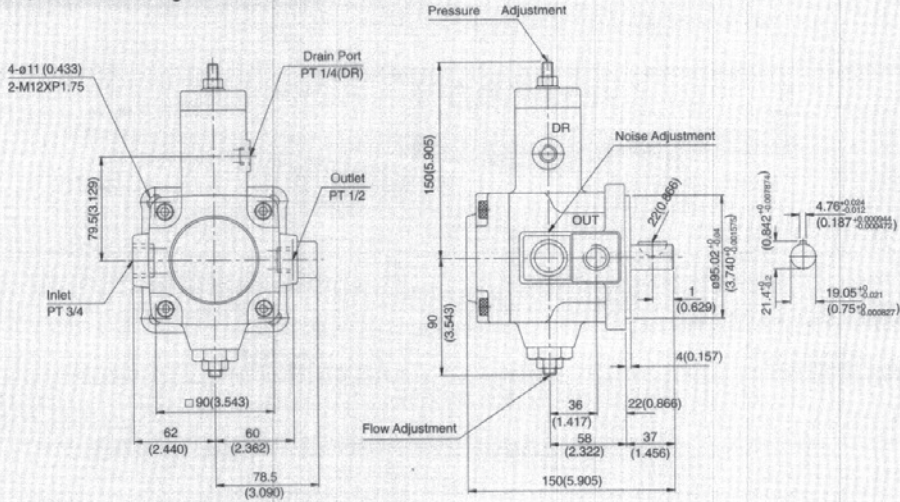
Unit:mm(inch)

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Variable Displacement Vane Pumps

HVP-VD1,VE1 (Mounting Surface: 4-bolt)

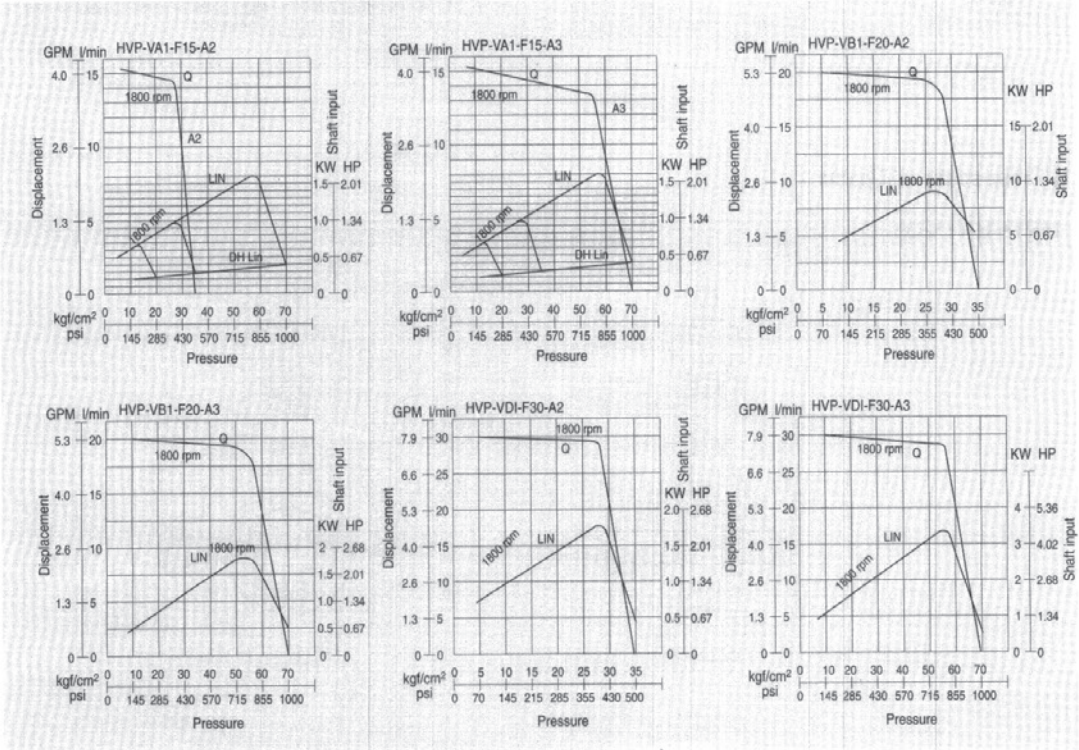
Unit:mm (inch)



A-3

■ Performance Curves: (Test Conditions: Viscosity: 20cSt, Temperature: 50°C (122°F)
Fluid: ISO VG32, Specific gravity: 0.850)

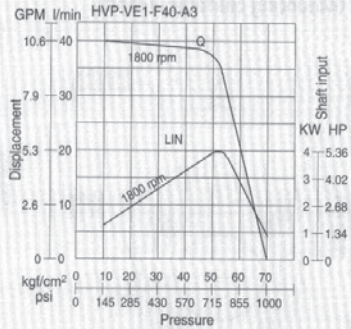
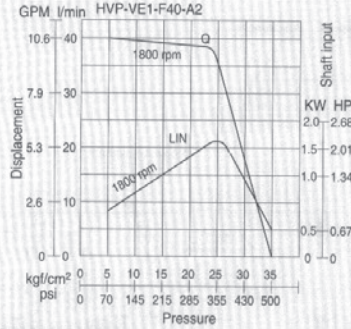
A. Pressure-Displacement-Shaft Input Characteristics:



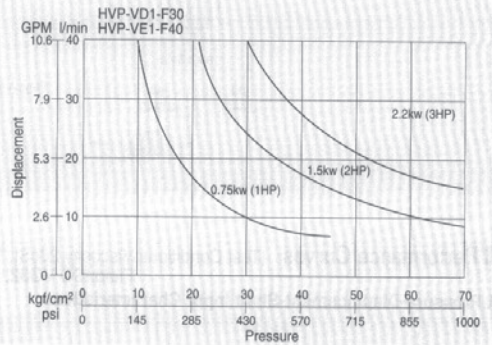
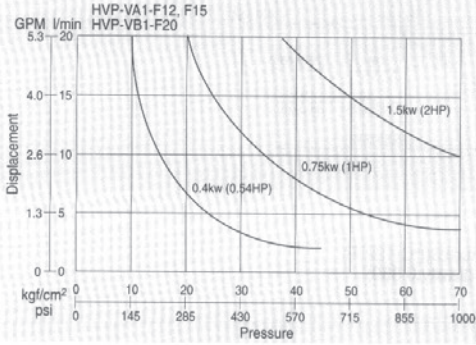
Variable Displacement Vane Pumps

KOMPASS

A-3

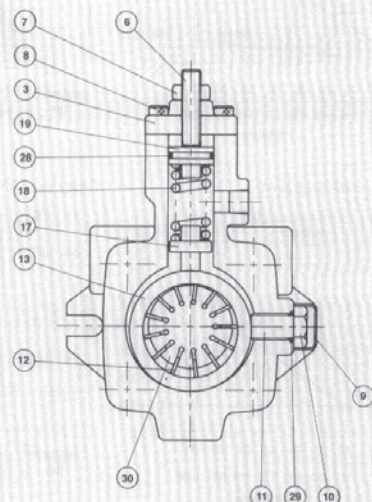
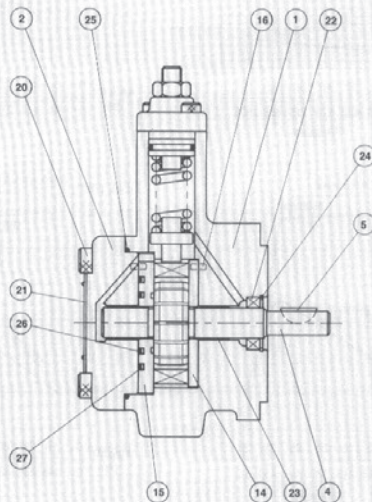


B. Theoretical Shaft Input Curves:



■ Cross-sectional Charts:

HVP-VA1,VB1



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Variable Dual Displacement Vane Pumps

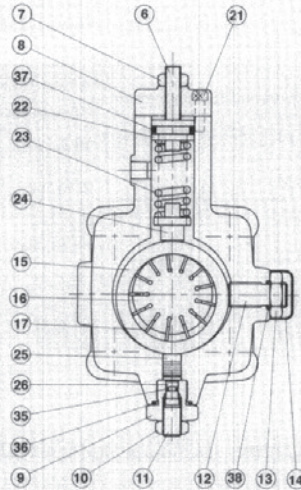
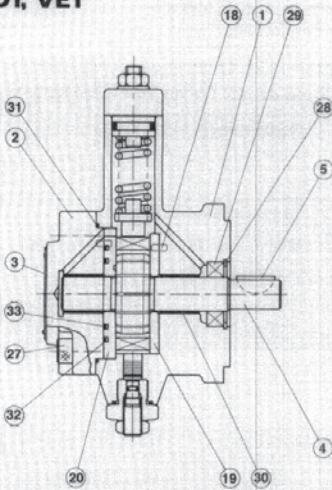
Item No.	Part Descriptions	Q'ty
1	Housing	1
2	Rear cover	1
3	Pressure adj. valve cover	1
4	Shaft	1
5	Woodruff key	1
6	Pressure adj. screw	1
7	Fix nut	1
8	Bolt-A	2
9	Dust-proof cover	1
10	Fix nut	1
11	Flow adj. screw	1
12	Vane	13

Item No.	Part Descriptions	Q'ty
13	Cam ring	1
14	Valve plate	1
15	Thrust plate	1
16	Lock pin	5
17	Piston	1
18	Spring	1
19	Spring retainer	1
20	Bolt-B	4
21	Nameplate	1
22	Bearing	1
23	Bushing	2
24	Shaft seal	1

Item No.	Part Descriptions	Q'ty
25	O-ring-A	1
26	Back-up ring-A	1
27	Back-up ring-B	1
28	O-ring-B	1
29	O-ring-C	1
30	Rotor	1

A-3

HVP-VD1, VE1



Item No.	Part Descriptions	Q'ty
1	Housing	1
2	Rear cover	1
3	Nameplate	1
4	Shaft	1
5	Woodruff key	1
6	Pressure adj. screw	1
7	Fix nut	1
8	Pressure adj. cover	1
9	Screw guide	1
10	Fix nut	1
11	Flow adj. screw	1
12	Zero position stroke limit	1
13	Fix nut	1

Item No.	Part Descriptions	Q'ty
14	Dust-proof cover	1
15	Cam ring	1
16	Rotor	1
17	Vane	13
18	Lock pin	5
19	Valve plate	1
20	Thrust plate	1
21	Bolt-A	2
22	Spring retainer	1
23	Spring	1
24	Piston	1
25	Flow adj. piston	1
26	Flow adj. piston pusher	1

Item No.	Part Descriptions	Q'ty
27	Bolt-B	4
28	Shaft seal	1
29	Bearing	1
30	Bushing	2
31	O-ring-A	1
32	Back-up ring-A	1
33	Back-up ring-B	1
34	O-ring-B	1
35	O-ring-C	1
36	O-ring-D	1
37	O-ring-E	1
38	O-ring-F	1

Remarks: For detailed Part Descriptions please consult us or our local distributors.

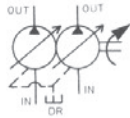
Variable Dual Displacement Vane Pumps



Variable Dual Displacement Vane Pumps

HVP-VA1A1,VB1B1,VD1D1,VE1E1

A-3



Feature:

1. This pump is operated by one electric motor but separately supplies two individual circuits with different pressure and flow at same working period.
2. Applicable to direct-mounted electric motor without couplings and easy to install.

How To Order:

HVP-VD1D1-F-3030-A1-R

Model
VA1A1
VB1B1
VD1D1
VE1E1

Mounting
Configuration
F : Flange

Displacement
(refer to 'specifications')

Shaft Rotation
(View from Shaft end)
R : Clockwise
L : Anti-clockwise

Pressure Adj. Range
(refer to 'Specifications')

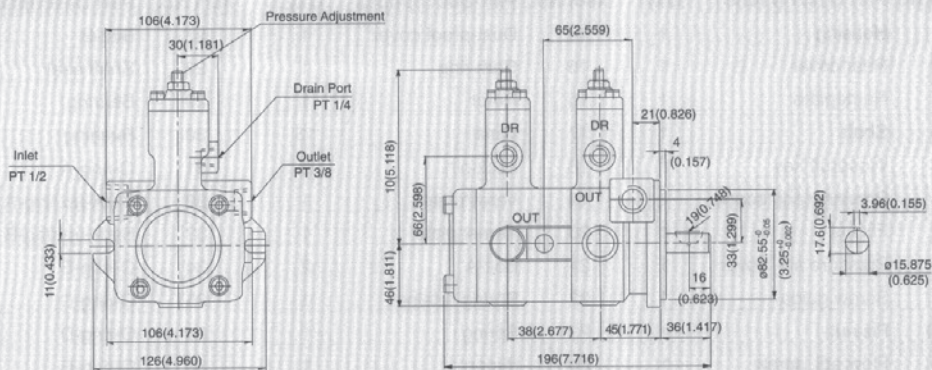
Specifications:

Model	Max. Pressure kgf/cm ² (psi)	Displacement cc/rev (in ³ /rev)	Displacement Under Unloading Conditions l/min(GPM)		Pressure Adj. Range kgf/cm ² (psi)	Input Speed Range(rpm)		Weight kg(lb)	
			1500rpm	1800rpm		Min.	Max.		
HVP-VA1A1-F1212-A#	70(1000)	6.7+6.7 (0.41+0.41)	10(2.64) (2.64+2.64)	12(3.17) (3.17+3.17)	A1:8-18(115-255) A2:18-35(255-500) A3:35-70(500-1000)	800	1800	4.5(9.9)	
HVP-VA1A1-F1515-A#	70(1000)	8.3+8.3 (0.51+0.51)	12.5(3.30) (3.3+3.3)	15(3.96) (3.96+3.96)					9.0(19.8)
HVP-VB1B1-F2020-A#	70(1000)	11.1+11.1 (0.68+0.68)	16.7(4.41) (4.41+4.41)	20(5.28) (5.28+5.28)				9.0(19.8)	
HVP-VD1D1-F3030-A#	70(1000)	16.7+16.7 (1.02+1.02)	25(6.61) (6.61+6.61)	30(7.93) (7.92+7.92)					
HVP-VE1E1-F4040-A#	70(1000)	22.2+22.2 (1.35+1.35)	33.3(8.80) (8.8+8.8)	40(10.57) (10.57+10.57)					

Dimensions:

HVP-VA1A1,VB1B1 (Mounting Surface: SAE "A" 2-bolt)

Unit:mm (inch)

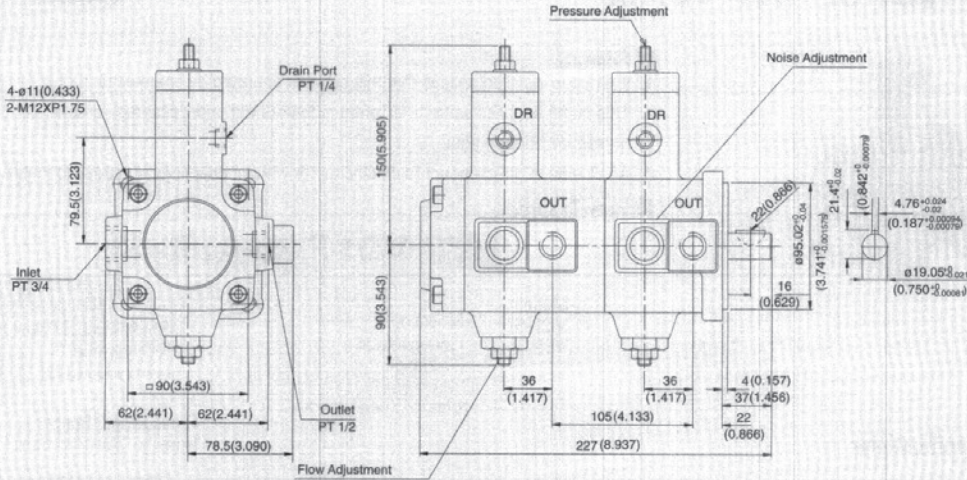


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Variable Dual Displacement Vane Pumps

**HVP-VD1VD1 (Mounting surface:4-bolt)
VE1VE1**

Unit:mm(inch)



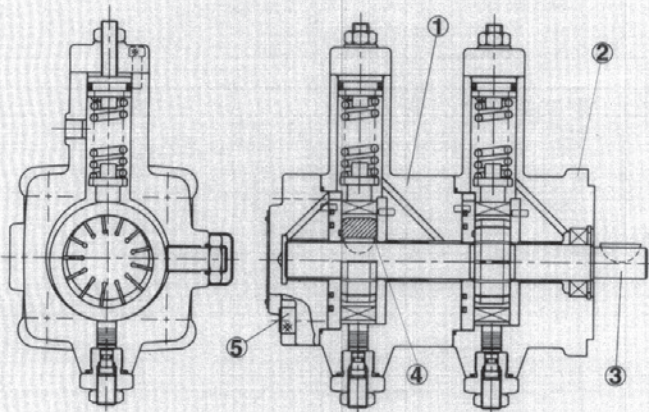
A-3

■ **Performance Curves:**

Please refer to Page 21, 22 "Performance Curves" of HVP-VA1, VB1, VD1, VE1.

■ **Cross-sectional Charts:**

HVP-VA1A1/VE1E1



Item No.	Part Description	Q'ty
1	Housing-A	1
2	Housing-B	1
3	Shaft	1
4	Woodruff key	1
5	Bolt	4

Except above-mentioned Part Descriptions which differ from HVP-VA1, VB1, VD1, VE1, for details please refer to page 22, 23 "Cross-sectional Charts".

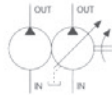
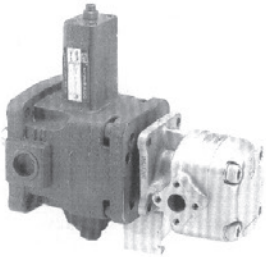
For detailed Part Descriptions, please consult us or our local distributors.

Hi-lo Pressure Pumps (Variable Displacement Vane Pumps+Gear Pumps)



Hi-lo Pressure Pumps (Variable Displacement Vane Pumps+Gear Pumps) HVP-VD1+SI HVP-VE1+SI

A-3



Feature:

1. It reduces installed spaces that this pump is operated by one electric motor.
2. This pump supplies same or different actuators with individual high or low pressure arrangements.
3. Applicable to direct-mounted electric motor without couplings and easy to install.

How To Order:

HVP-VD1-F-30-A1-R+SI

Model
VD1+SI
VE1+SI

Mounting
Configuration
F : Flange
Displacement
(refer to "Specifications")

Gear Pump Type
(Displacement)
Shaft Rotation(View from shaft end)
R:Clockwise
L:Anti-clockwise
Pressure Adj. Range
(refer to "Specifications")

Specifications:

Model	Max. Pressure kgf/cm ² (psi)	Displacement cc/rev (in ³ /rev)	Displacement Under Unloading Conditions l/min(GPM)		Pressure Adj. Range kgf/cm ² (psi)	Input Speed Range(rpm)		Weight kg(lb)
			1500rpm	1800rpm		Min.	Max.	
HVP-VD1-F30A+SI	70+210 (1000+3000)	16.7+SI (1.02+SI)	25+SI (6.6+SI)	30+SI (7.9+SI)	A1:8-18(115-255) A2:18-35(255-500)	800	1800	9.4(20.7)
HVP-VE1-F40A+SI	70+210 (1000+3000)	22.2+SI (1.35+SI)	33.3+SI (8.8+SI)	40+SI (10.6+SI)	A3:35-70(255-1000)			

- Remarks: 1. "SI" of HVP-VD1-F30+SI is specification (displacement) of high pressure and low flow pump. This pump is interchangeable with any other brand's gear pumps under allowable conditions of mounting configurations. (For details please refer to "Dimensions" or consult us.)
 2. The above-mentioned Max. pressure will be changed depending on different pumps.
 3. Weight does not include gear pump but vane pump only.

Dimensions:(Below-listed gear pumps are for reference only)

