



Bell Hydromatics

Variable Displacement Vane Pump

PVDF – Double Pumps



Ordering Code

PVF	-3		-70		-3		-70		-11
Series No.	Shaft end Pump				Cover end Pump				Design No.
	Outlet Flow (lpm) at 3.5 bar, 1800 rpm		Operating Pressure range (bar)		Outlet Flow (lpm) at 3.5 bar, 1800 rpm		Operating Pressure range (bar)		
PDVF Flange Mounting	Code	Outlet Flow (lpm)	Code	Pressure Range	Code	Outlet Flow (lpm)	Code	Pressure Range	11: PT(Rc)
	3	30 lpm	20	8 ~ 20 bar	3	30 lpm	20	8 ~ 20 bar	
	4	40 lpm	35	15 ~ 35 bar	4	40 lpm	35	15 ~ 35 bar	1180: PF(G)
	Factory Setting Qmax.		55	30 ~ 55 bar	Factory Setting Qmax.		55	30 ~ 55 bar	
			70	55 ~ 70 bar			70	55 ~ 70 bar	
Factory Setting Pmin.		Factory Setting Pmin.		Factory Setting Pmin.		Factory Setting Pmin.		1190: NPT	

Operating Data

ROTARY DIRECTION

Clockwise rotation viewed from shaft end is standard.

FLUIDS PERMISSIBLE

When working pressure lower than 70 bar, hydraulic oil with a viscosity ranging from 30~50 cSt(ISO VG32). When working pressure higher than 71 bar .hydraulic oil with a viscosity ranging from 50-70 cSt(ISO VG68) at 40°C is recommended.(ISO VG32) at 40 °C is recommended.

DRAIN PORT PIPING

Drain connection must be piped directly to tank and below the oil level with a back pressure not exceed 0.3 bar.

OIL TEMPERATURE RANGE

Oil temperature range should be between 15-60°C for continuous operation and should be higher than 7°C at starting.

ALIGNMENT AND INSTALLATION OF PUMP

The shaft alignment for pump and electric motor shall be limited to 0.05mm TIR. and 1 degree angular error.

INLET PORT PRESSURE

Inlet port pressure should be -0.3 bar to +0.3 bar.

FLOW ADJUSTMENT

The flow will be reduced when the flow adjusting screw is turned clockwise and increased when anti-clockwise.

PRESSURE ADJUSTMENT

The pressure will be increased when the pressure adjusting screw is turned clockwise and reduced when anti-clockwise.

P-Q CHARACTERISTICS (EX-WORK SET) Flow setting:The max. flow as catalogue shown. Pressure setting:The min. operating pressure range.

SLIDE SCREW

The slide screw is non-adjustable and set at factory. Unauthorized persons cannot tamper with the desired setting.

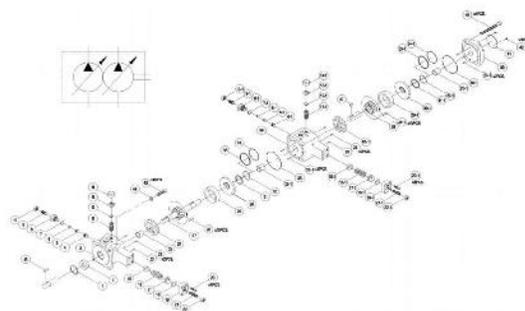
CAUTIONS FOR STARTING

Start up the pump under No-Load condition and repeat to start and stop the motor several times to extract the air from inside of the pump and piping.Then keep a 10 minutes continuous running for a better de-airing.

PEAK-PRESSURE

The peak pressure is 140 bar for code * 2 & * 3,and 210 bar for A4 & A5.

Assembly



Parts List:

No.	Part Name	Specification	Quantity
1	Retainer Ring	R42	1
2	Shaft Seal	TCV 224211	1
3	Pump Body		1
4	Piston		2
5	Piston		2
6	O-Ring	1A-P5	2
7	O-Ring	1A-P22	2
8	Thrust Screw		2
9	Socket Set Screw	M12xP1.75x25L	2
10	Hexagon Nut	M12xP1.75	2
11	Slide Screw		2
12	O-Ring	1A-P14	2
13	Hexagon Nut	M16xP1.0	2
14	Cap		2
15	Piston		2
16	Spring		1
16-1	Spring		1
17	Spring Retainer		2
18	O-Ring	1A-P22A	2
19	Cover		2
20	Socket Head Cap Screw	M6xP1.0x20L	8
21	Socket Set Screw	M10xP1.5x35L	2
22	Hexagon Nut	M16xP1.5	2
23	Spring Pin	ø4×10	2
23-1	Spring Pin	ø4×10	4
24	Straight Pin	ø4×10	4

No.	Part Name	Specification	Quantity
25	Engine Bush	DIADO(Japan)DD2225	1
25-1	Engine Bush	DIADO(Japan)DD2225	2
26	Port Plate		2
27	Rotorshaft		1
28	Vanes		26
29	Cam Ring		1
29-1	Cam Ring		1
30	Thrust Plate		2
31	O-Ring	AS568-030	2
32	Endless Back-up Ring		2
33	O-Ring	AS568-035	2
34	Endless Back-up Ring		2
35	O-Ring	1A-S85	2
36	Pump Body		1
37	Woodruff Key	No. 406	1
38	Rotor		1
39	Cover		1
40	Socket Head Cap Screw	M10xP1.5x10L	4
41	Name Plate		1
42	Fixing Screw		3
43	Woodruff Key	No.608	1
44	Spring Washer	M10	4
45	Socket Head Cap Screw	M10xP1.5x30L	4

◆ 44 ~ 45 are Accessories.

◆ 4 & 4-1; 26 & 26-1 is same kits (Without spring 16-1)

◆ 23 & 23-1; 28 & 28-1 is same kits 9/Without Cam-ring 29-1)

Dimensions

