



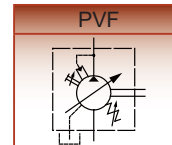
**[ PVF, PVDF, VD ]**

※SPECIFICATION

MODEL	MAX. PRES. MPa(PSI)	MAX. FLOW ℓ/min(GPM) at 1800 RPM	WEIGHT (Kg)
PVF-8	7 (1015)	8(1.8)	4.8
PVF-12		12(2.6)	4.8
PVF-15		15(3.3)	5.2
PVF-20		20(4.4)	5.2
PVF-23		23(5.1)	9.0
PVF-26		26(5.7)	9.0
PVF-30		30(6.6)	9.0
PVF-40		40(8.8)	9.0
PVDF-12*-12*		12(2.6)	9.5
PVDF-15*-15		15(3.3)	9.5
PVDF-20*-20		20(4.4)	9.5
PVDF-23*-23		23(5.1)	16.0
PVDF-26*-26		26(5.7)	16.0
PVDF-30-30		30(6.6)	16.0
PVDF-40-40		40(8.8)	16.0



※GRAPHIC SYMBOL



SPEED LIMIT : Min. 800 r/min, Max. 1800 r/min.

※MODEL NUMBER DESIGNATION(SINGLE PUMP)

PVF-	12-	70-	10-	S
FRAME SIZE	OUTLET FLOW (AT 3.5 Bar, 1800 r/min)	OPR. PRES. RANGE	DESIGN	SHAFTS CODE K1: KEY NO.1 K2: KEY NO.2 (Refer to Dimenison) S: SPLINED SHAFTS
FLANGE	8: 8 (ℓ/min)			
MOUNTING	12: 12 (ℓ/min)			
	15: 15 (ℓ/min)			
	20: 20 (ℓ/min)			
	23: 23 (ℓ/min)			
	26: 26 (ℓ/min)			
	30: 30 (ℓ/min)			
	40: 40 (ℓ/min)			

※MODEL NUMBER DESIGNATION(DOUBLE PUMP)

PVDF	12	70	12	70	10	S
	SHAFT END PUMP		COVER END PUMP			
FRAME SIZE	OUTLET FLOW (AT 3.5 Bar, 1800 r/min)	OPR. PRES. RANGE	OUTLET FLOW (AT 3.5 Bar, 1800 r/min)	OPR. PRES. RANGE	DESIGN	SHAFTS CODE 01: KEY NO.1 02: KEY NO.2 (Refer to Dimenison) S: SPLINED SHAFTS
FLANGE	12: 12 (ℓ/min)		12: 12 (ℓ/min)			
MOUNTING	15: 15 (ℓ/min)		15: 15 (ℓ/min)			
	20: 20 (ℓ/min)		20: 20 (ℓ/min)			
	23: 23 (ℓ/min)		23: 23 (ℓ/min)			
	26: 26 (ℓ/min)		26: 26 (ℓ/min)			
	30: 30 (ℓ/min)	30: 30 (ℓ/min)				
	40: 40 (ℓ/min)	40: 40 (ℓ/min)				

※MODEL NUMBER DESIGNATION(SINGLE PUMP)

VD	12	B	10	S
SERIES NO	OUTLET FLOW	OPR. PRES. RANGE	DESIGN	SHAFTS CODE
	08: 8 (cm³/rev)	A: 8 bar - 20 bar(8)		OMIT:
	12: 12 (cm³/rev)	B: 15 bar - 35 bar(15)		WOODRUFF KEY
	16: 16 (cm³/rev)	C: 30 bar - 55 bar(30)		S:
		D: 50 bar - 70 bar(50)		SPLINED SHAFTS

■ STABLE FLOW

Due to use new design "PRESSURE BALANCE MECHANISM" the output flow pressure control systems ,the output flow is very stable even in the high pressure ranges.

■ ENERGY SAVING TYPE

Power loss has been reduced further by application of our highly advanced precision machining technology to assure the same high efficiency performance. As the "VP5" series with many new mechanisms of our improvement designs. And the power loss at the "dead head" has been reduced by a large degree.

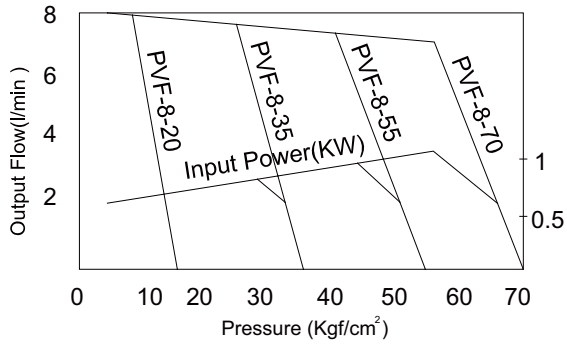
■ NO VIBRATION AND QUIET

The cam ring is specifically designed to have a special curve so the noise level [dB] is very low , even in the high pressure operations.

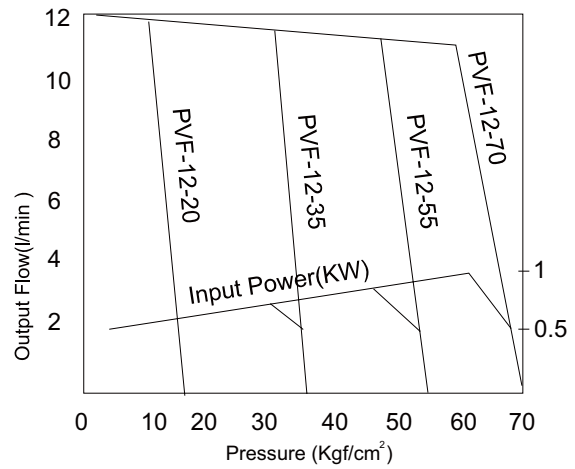


### [ SPECIFICATION CURVE ]

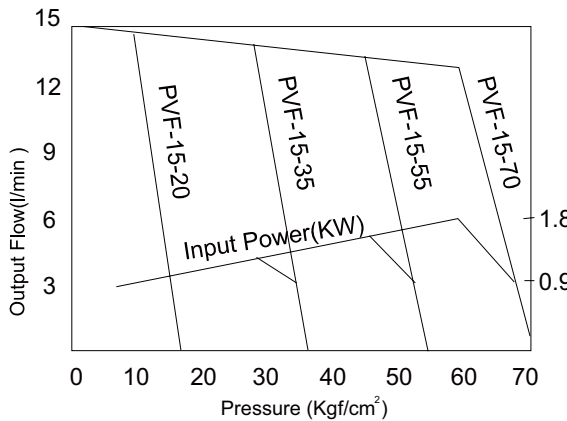
#### PVF-8



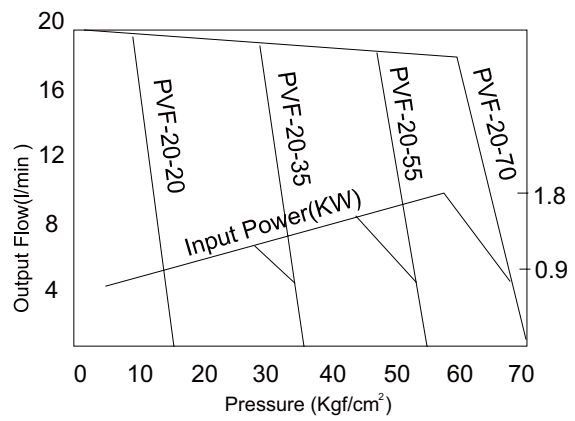
#### PVF-12



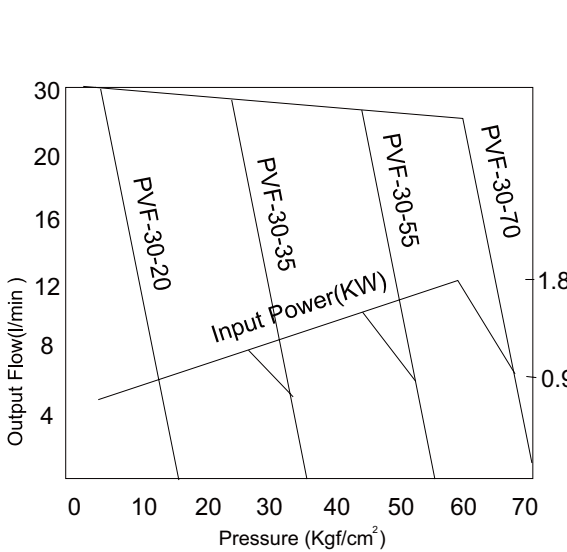
#### PVF-15



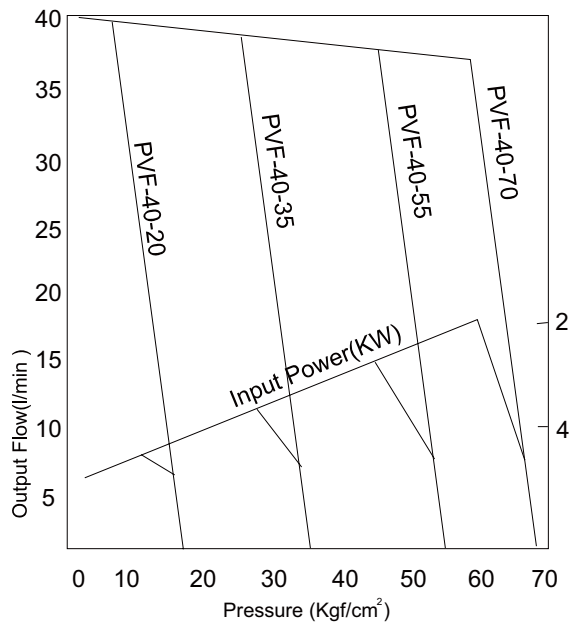
#### PVF-20



#### PVF-30



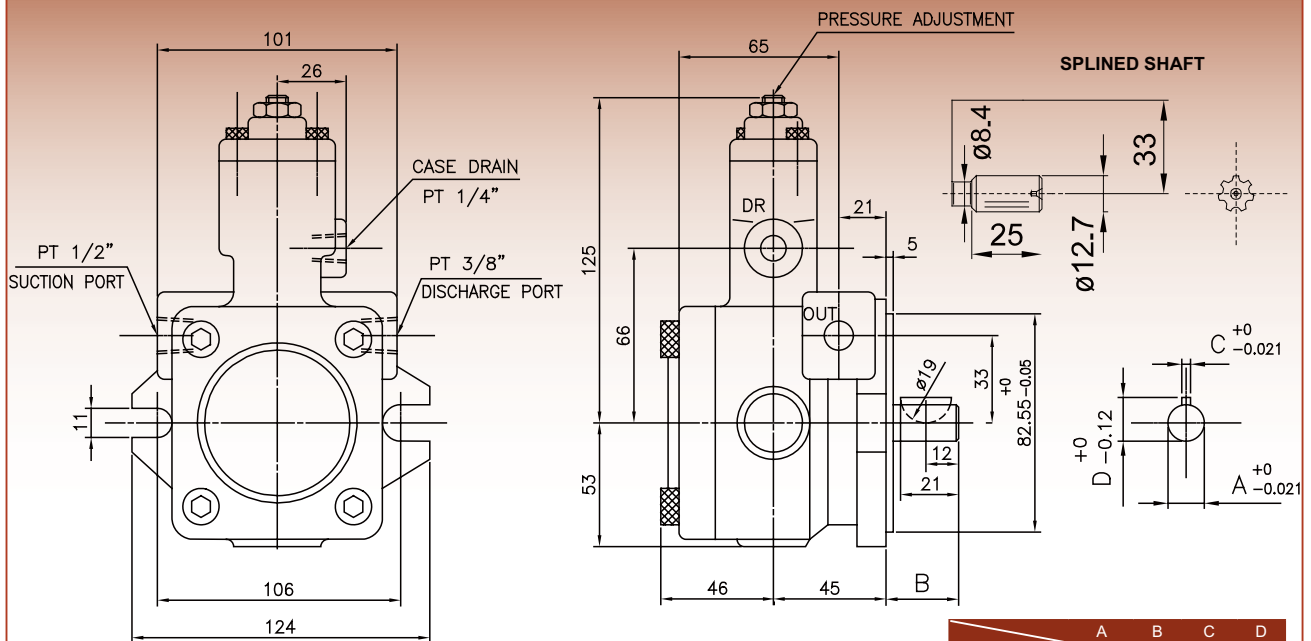
#### PVF-40



F

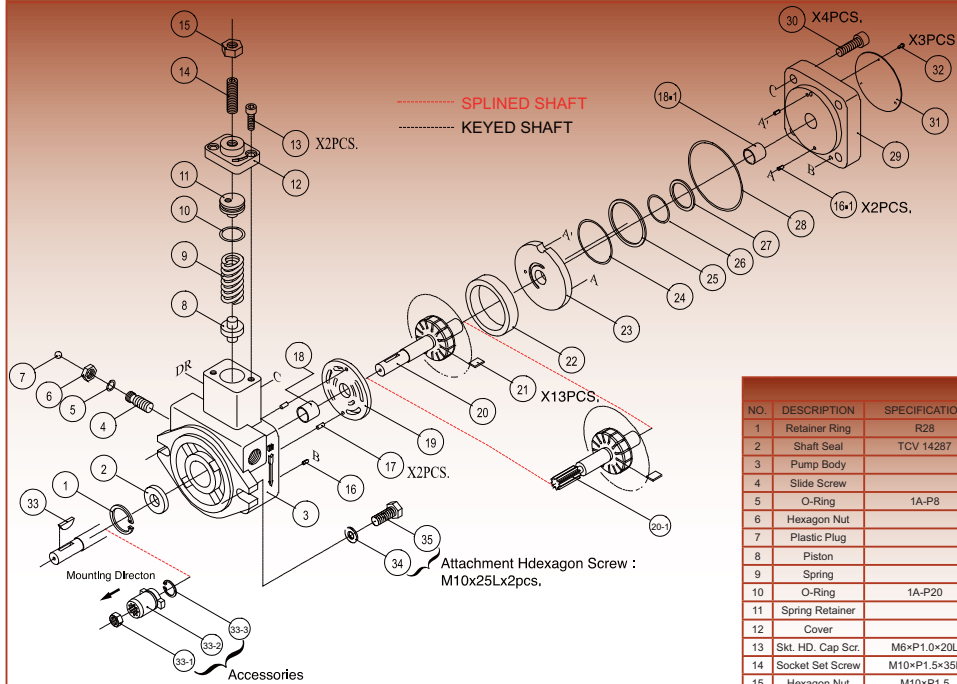
### [ DIMENSIONS ]

PVF-8, 12, 15, 20



	A	B	C	D
K1 SHAFT	$\phi 12.7$	36	3.175	14.3
K2 SHAFT (PVF-20 ONLY)	$\phi 15.88$	32	4	17.6

### ASSEMBLY & PARTS LIST

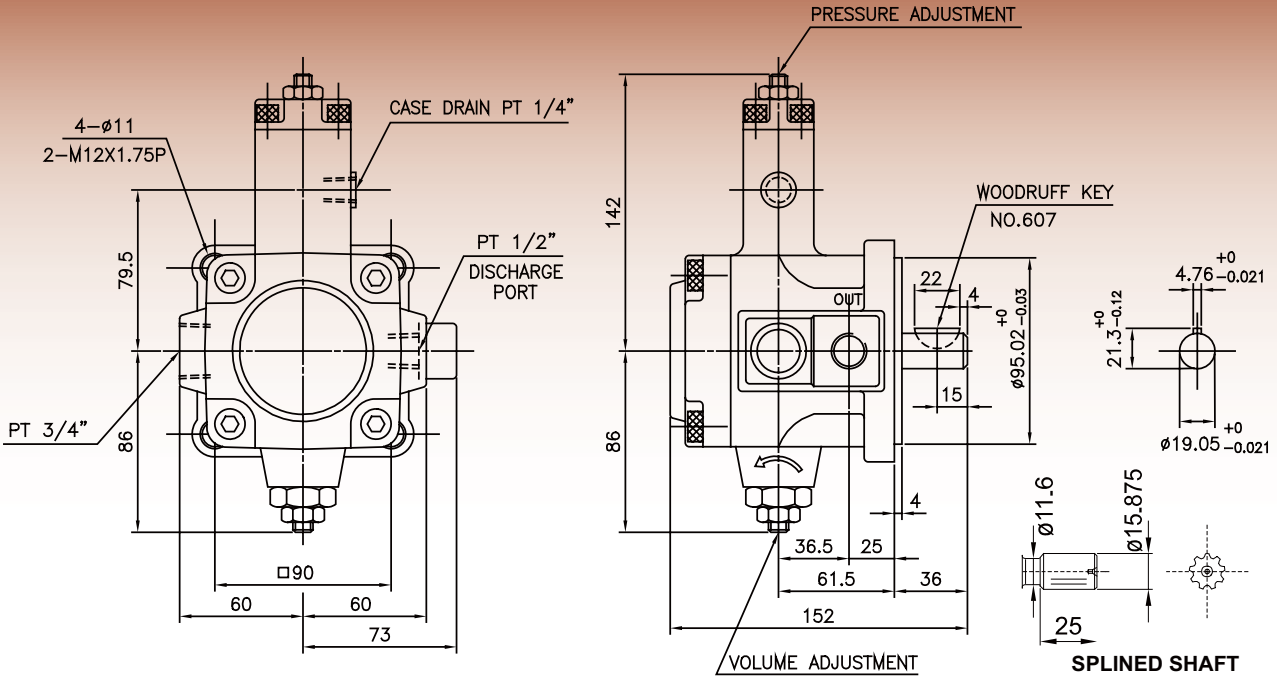


PARTS LIST							
NO.	DESCRIPTION	SPECIFICATION	QTY	NO.	DESCRIPTION	SPECIFICATION	QTY
1	Retainer Ring	R28	1	20	Rotorshaft		1
2	Shaft Seal	TCV 14287	1	21	Vanes		13
3	Pump Body		1	22	Cam Ring		1
4	Slide Screw		1	23	Thrust Plate		1
5	O-Ring	1A-P8	1	24	O-Ring	AS568-031	1
6	Hexagon Nut		1	25	Endless Back-up Ring		1
7	Plastic Plug		1	26	O-Ring	AS568-023	1
8	Piston		1	27	Endless Back-up Ring	Keyed Shaft	1
9	Spring		1	27-1	Endless Back-up Ring	Spined Shaft	1
10	O-Ring	1A-P20	1	28	O-Ring	1A-S71	1
11	Spring Retainer		1	29	Cover		1
12	Cover		1	30	Skt. HD. cap Scr.	M8xP1.25x30L	4
13	Skt. HD. Cap Scr.	M6xP1.0x20L	2	31	Name Plate		1
14	Socket Set Screw	M10xP1.5x35L	1	32	Fixing Screw		3
15	Hexagon Nut	M10xP1.5	1	33	Woodruff Key	NO.406	1
16	Spring Pin	e3 8	1	33-1	Hexagon Nut	M10 X P1.2	1
16-1	Spring Pin	e3 8	2	33-2	Coupling		1
17	Straight Pin	e3 8	2	33-3	Retainer Ring		1
18	Engine Bush	DIADO(JAPAN)DD1415	1	34	Washer	M10	2
18-1	Engine Bush	DIADO(JAPAN)DD1415	1	35	Hexagon Screw	M10xP1.5x25L	2
19	Port Plate		1				

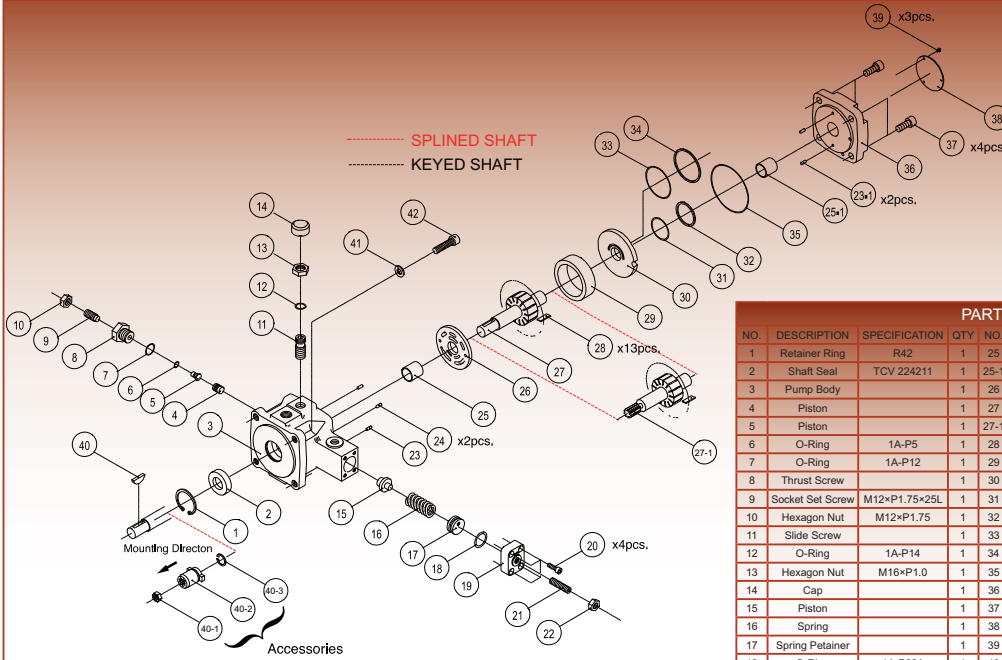
※33-1-35 are Accessories.

### [ DIMENSIONS ]

PVF-23, 26, 30, 40



### ASSEMBLY & PARTS LIST

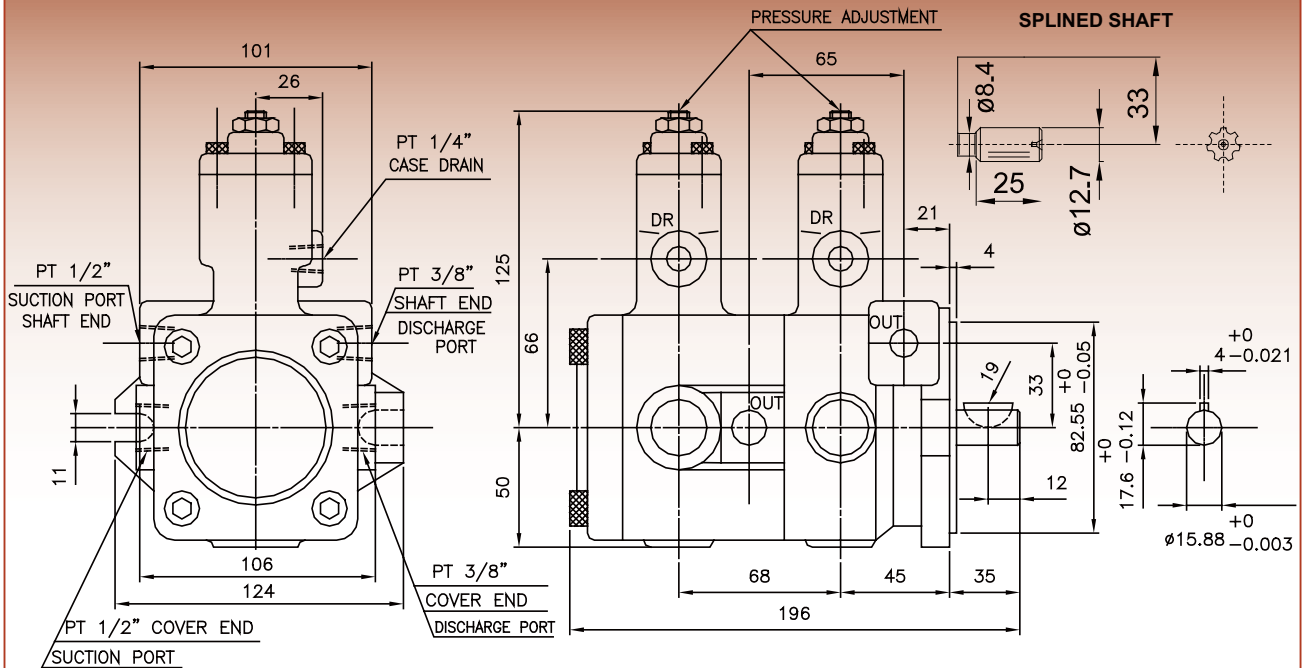


PARTS LIST							
NO.	DESCRIPTION	SPECIFICATION	QTY	NO.	DESCRIPTION	SPECIFICATION	QTY
1	Retainer Ring	R42	1	25	Engine Bush	DIADO(JAPAN)DD2225	1
2	Shaft Seal	TCV 224211	1	25-1	Engine Bush	DIADO(JAPAN)DD2225	1
3	Pump Body		1	26	Port Plate		1
4	Piston		1	27	Rotorshaft	Keyed Shaft	1
5	Piston		1	27-1	Port Plate	Splined Shaft	1
6	O-Ring	1A-P5	1	28	Vanes		13
7	O-Ring	1A-P12	1	29	Cam Ring		1
8	Thrust Screw		1	30	Thrust Plate		1
9	Socket Set Screw	M12×P1.75×25L	1	31	O-Ring	AS568-030	1
10	Hexagon Nut	M12×P1.75	1	32	Endless Back-up Ring		1
11	Slide Screw		1	33	O-Ring	AS568-035	1
12	O-Ring	1A-P14	1	34	Endless Back-up Ring		1
13	Hexagon Nut	M16×P1.0	1	35	O-Ring	1A-S85	1
14	Cap		1	36	Cover		1
15	Piston		1	37	Skt. HD. cap Scr.	M10×P1.5×25L	4
16	Spring		1	38	Name Plate		1
17	Spring Retainer		1	39	Fixing Screw		3
18	O-Ring	1A-P22A	1	40	Woodruff Key	NO.608	1
19	Cover		1	40-1	Hexagon Nut	M10 X P1.5	
20	Skt. HD. Cap Scr.	M6×P1.0×20L	4	40-2	Coupling		
21	Socket Set Screw	M10×P1.5×35L	1	40-3	Retainer Ring	R24	4
22	Hexagon Nut	M10×P1.5	1	41	Spring Washer	M10	4
23	Spring Pin	$\phi 4 \times 10$	1	42	Skt. HD. cap Scr.	M10×P1.5×30L	4
23-1	Spring Pin	$\phi 4 \times 10$	2				
24	Spring Pin	$\phi 4 \times 10$	2				

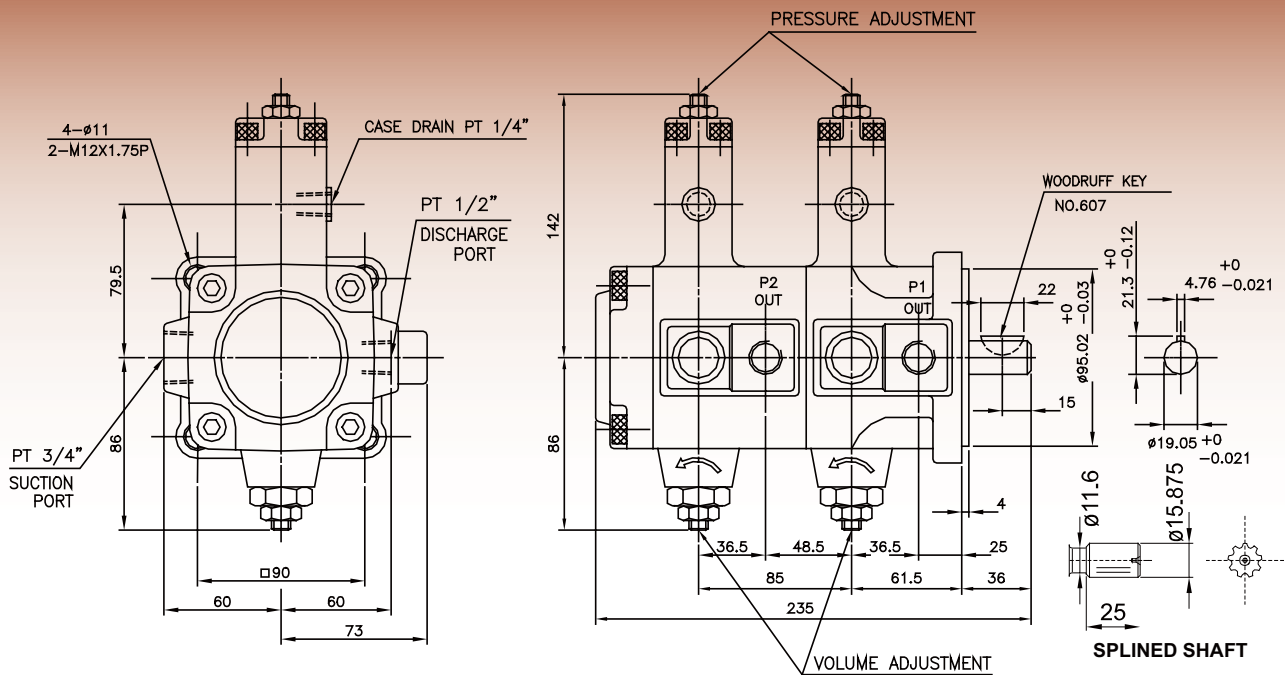
⊗40-1~42 are Accessories.

### [ DIMENSIONS ]

PVDF-12\*-12\*, 15\*-15\*, 20\*-20\*



PVDF-23\*-23\*, 26\*-26\*, 30\*-30\*, 40\*-40\*





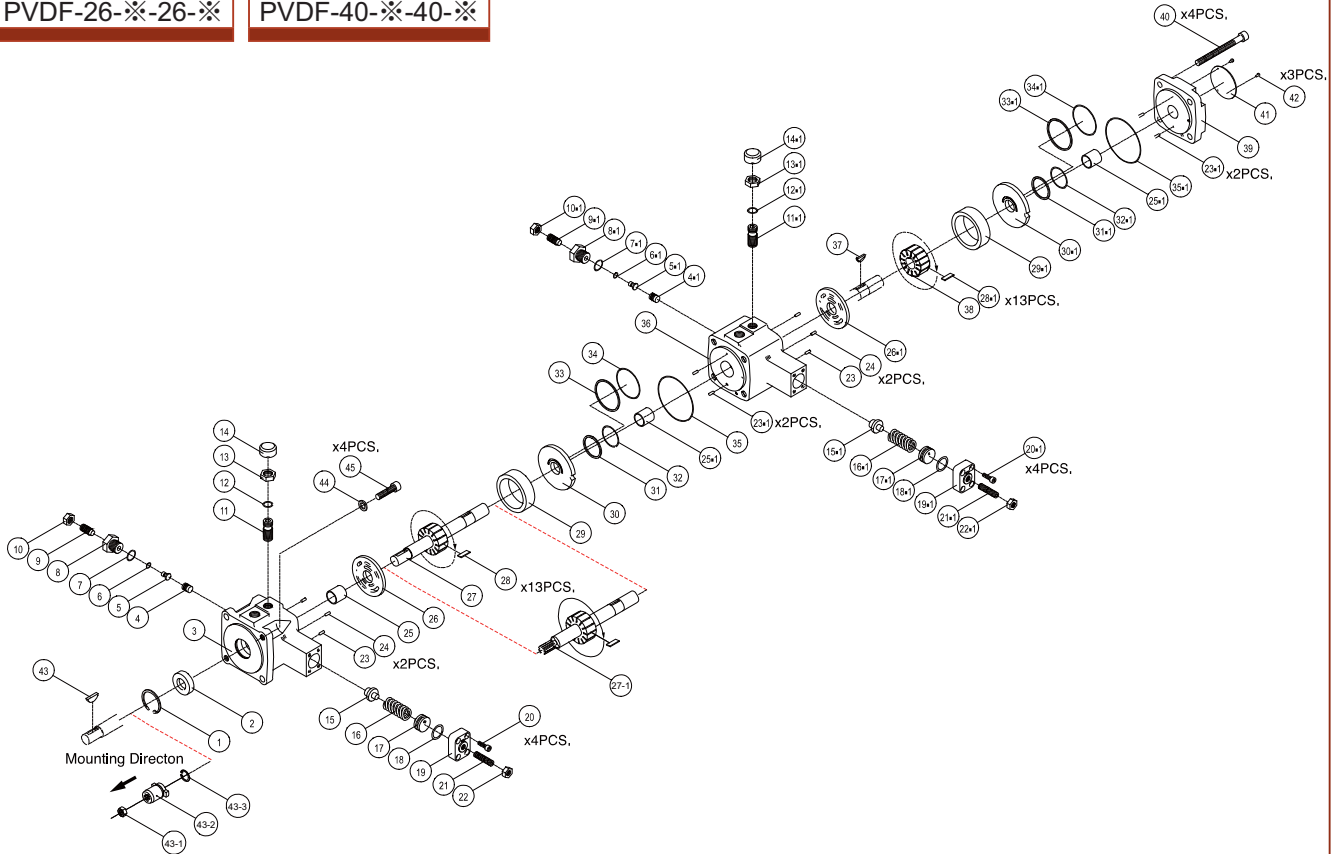
**[ ASSEMBLY & PARTS LIST ]**

PVDF-23-※-23-※

PVDF-30-※-30-※

PVDF-26-※-26-※

PVDF-40-※-40-※

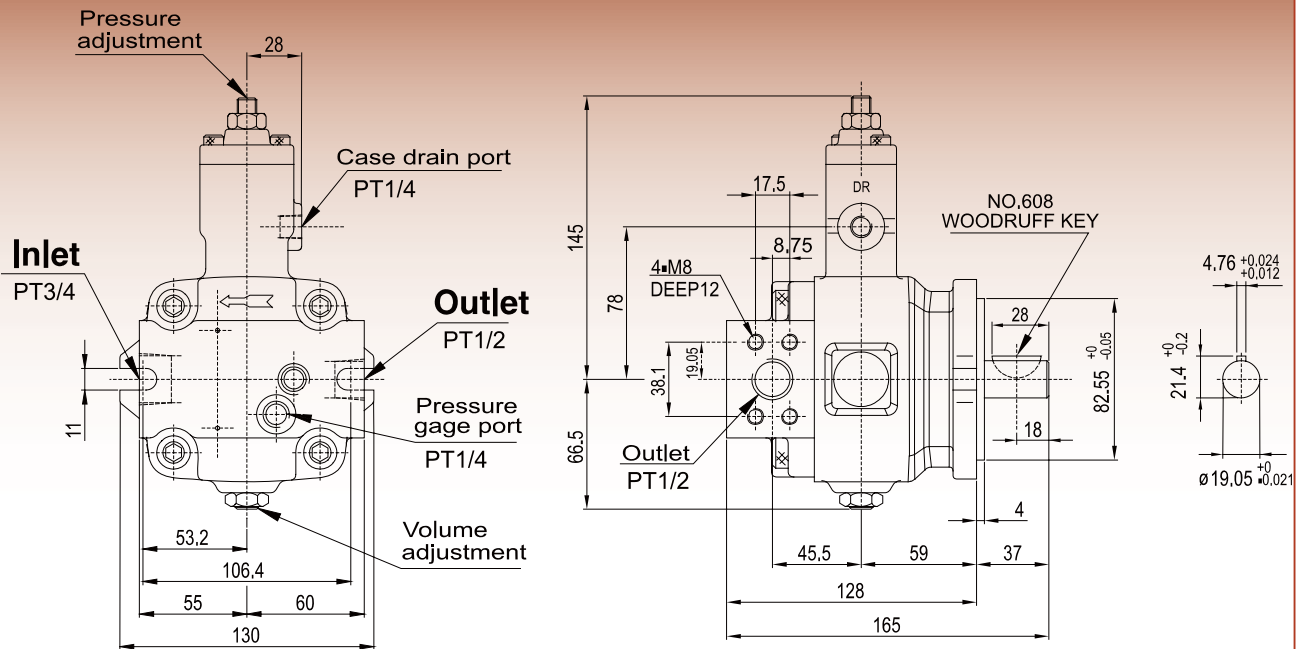


**PARTS LIST**

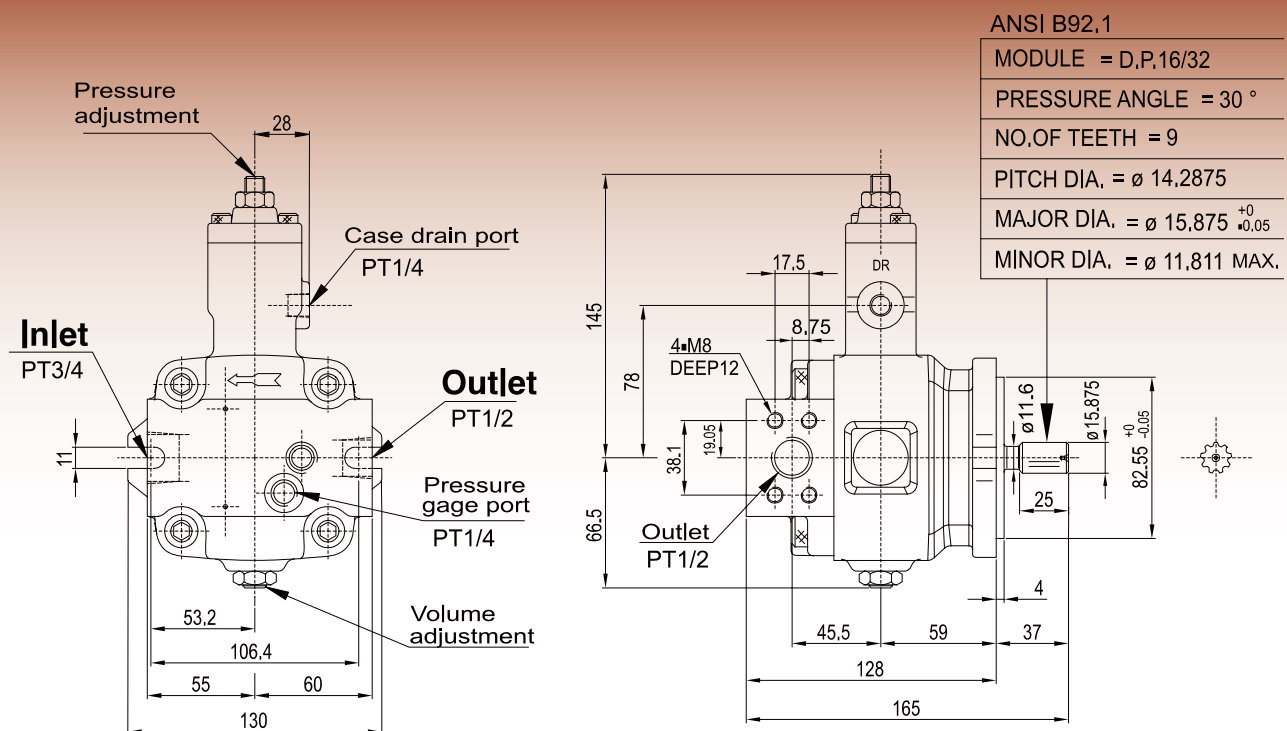
NO.	DESCRIPTION	SPECIFICATION	QTY	NO.	DESCRIPTION	SPECIFICATION	QTY
1	Retainer Ring	R42	1	26	Port Plate		2
2	Shaft Seal	TCV-224211	1	27	Rotorshaft	Keyed Shaft	1
3	Pump Body		1	27-1	Rotorshaft	Splined Shaft	1
4	Piston		2	28	Vanes		26
5	Piston		2	29	Cam Ring		1
6	O-Ring	1A-P5	2	29-1	Cam Ring		1
7	O-Ring	1A-P22	2	30	Thrust Plate		2
8	Thrust Screw		2	31	O-Ring	AS568-030	2
9	Socket Set Screw	M12×P1.75×25L	2	32	Endless Back-up Ring		2
10	Hexagon Nut	M12×P1.75	2	33	O-Ring	AS568-035	2
11	Slide Screw		2	34	Cover		2
12	O-Ring	1A-P14	2	35	Skt. HD. Cap Scr	1A-S85	2
13	Spring Retainer	M16×P1.0	2	36	Piston		1
14	Cap		2	Parts numbers 4-1 26-1 are same as 4 26. Quantity are calculated together.(spring 16-1 is not included )			
15	Piston		2	37	Plug	NO.406	1
16	Spring		1	38	Plug		1
16-1	Spring		1	Parts numbers 28-1 23-1 are same as 28 23-1. Quantity are calculated together.(camring 29-1 is not included)			
17	Spring Retainer		2	39	Cover		1
18	O-Ring	1A-P22A	2	40	Skt. HD. Cap Scr	M10×P1.5×110L	4
19	Cover		2	41	Name Plate		1
20	Skt. HD. Cap Scr.	M6×P1.0×20L	8	42	Fixing Screw		3
21	Socket Set Screw	M10×P1.5×35L	2	43-1	Hexagon Nut	M10×P1.5	1
22	Hexagon Nut	M10×P1.5	2	43-2	Coupling		1
23	Spring Pin	ø4 10	2	43-3	Retainer Ring	IRTW 24	1
23-1	Spring Pin	ø4 10	4	44	Spring Washer	M10	4
24	Straight Pin	ø4 10	4	45	Skt. HD. Cap Scr	M10×P1.5×30L	4
25	Engine Bush	DIADO(JAPAN)DD2225	1				
25-1	Engine Bush	DIADO(JAPAN)DD2225	2	※43-47 are Accessories.			

### [ DIMENSIONS ]

#### VD\*\*\*-10 (WOODRUFF KEY)



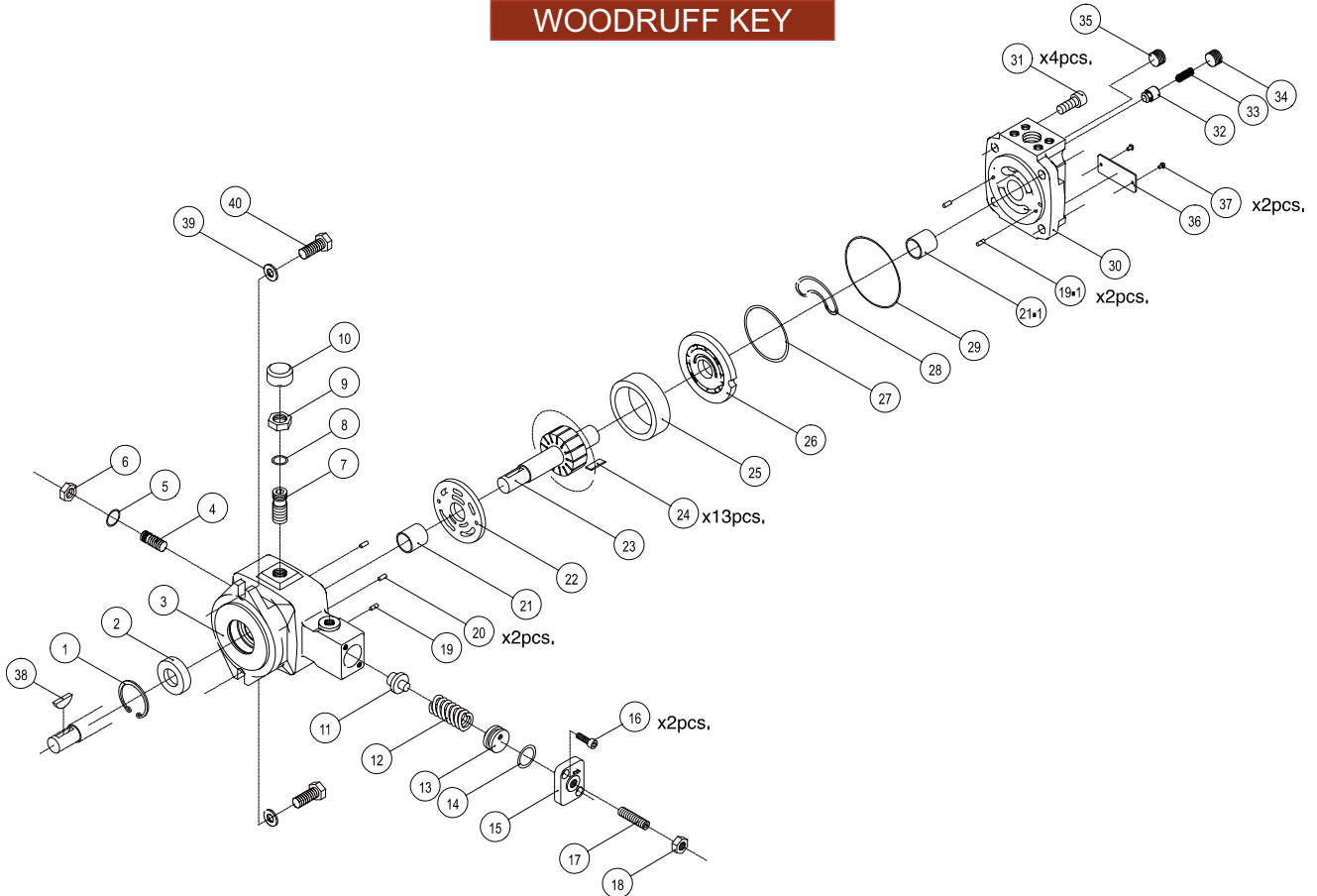
#### VD\*\*\*-10S (SPLINED SHAFTS)





**[ ASSEMBLY & PARTS LIST ]**

VD\*\*-\*-10  
WOODRUFF KEY



**PARTS LIST**

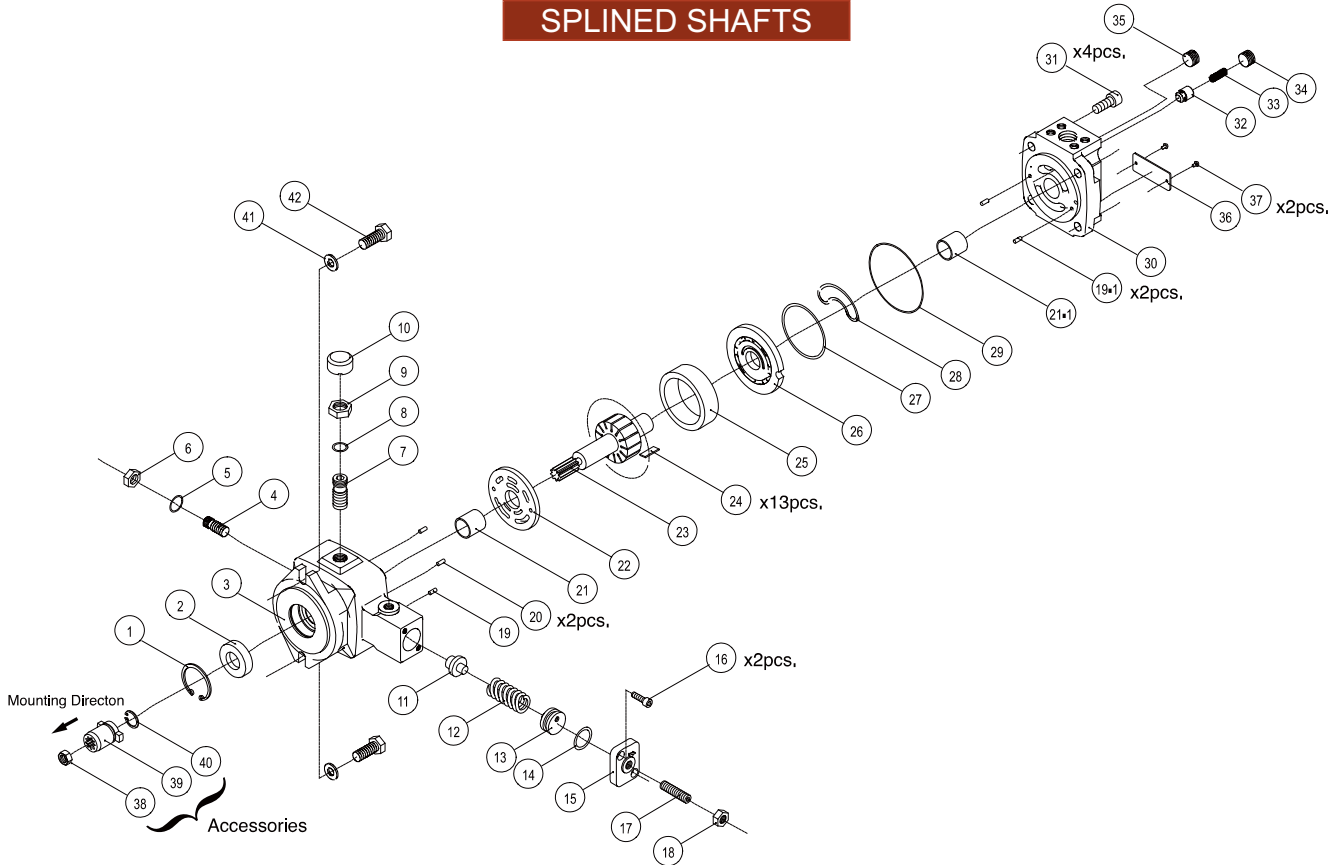
NO.	DESCRIPTION	SPECIFICATION	QTY	NO.	DESCRIPTION	SPECIFICATION	QTY
1	Retainer Ring	R42	1	22	Port Plate		1
2	Shaft Seal	TCV-224211	1	23	Rotorshaft		1
3	Pump Body		1	24	Vanes		13
4	Retainer Ring	M12×P1.0×30L	1	25	Cam Ring		1
5	O-Ring	1A-P10	1	26	Thrust Plate		1
6	Hexagon Nut	M12×P1.0	1	27	O-Ring	AS568-034	1
7	Slide Screw	M16×P1.0×32L	1	28	Endless Back-up Ring		1
8	O-Ring	1A-P14	1	29	O-Ring	1A-S85	1
9	Hexagon Nut	M16×P1.0	1	30	Cover		1
10	Cap		1	31	Skt. HD. Cap Scr	M10×P1.5×25L	4
11	Piston		1	32	Piston		1
12	Spring		1	33	Spring		1
13	Spring Retainer		1	34	Plug	PT 3/8"	1
14	O-Ring	1A-P22A	1	35	Plug	PT 1/4"	1
15	Cover		1	36	Name Plate		1
16	Skt. HD. Cap Scr	M6×P1.0×20L	2	37	Fixing Screw	M10×P1.5×25L	2
17	Socket Set Screw	M10×P1.5×35L	1	38	Woodruff Key	NO.608	1
18	Hexagon Nut	M10 P1.5	1	39	Washer	M10	2
19	Spring Pin	ø4×10	1	40	Hexagon Screw	M10×P1.5×25L	2
19-1	Spring Pin	ø4×10	2				
20	Straight Pin	ø4×10	2				
21	Engine Bush	DIADO(JAPAN)DD2225	1				
21-1	Engine Bush	DIADO(JAPAN)DD2225	1	※39-40 are Accessories.			





**[ASSEMBLY & PARTS LIST]**

**VD\*\*-\*\*-10S  
SPLINED SHAFTS**



**F**

**PARTS LIST**

NO.	DESCRIPTION	SPECIFICATION	QTY	NO.	DESCRIPTION	SPECIFICATION	QTY
1	Retainer Ring	R42	1	22	Port Plate		1
2	Shaft Seal	TCV-224211	1	23	Rotorshaft		1
3	Pump Body		1	24	Vanes		13
4	Retainer Ring	M12×P1.0×30L	1	25	Cam Ring		1
5	O-Ring	1A-P10	1	26	Thrust Plate		1
6	Hexagon Nut	M12×P1.0	1	27	O-Ring	AS568-034	1
7	Slide Screw	M16×P1.0×32L	1	28	Endless Back-up Ring		1
8	O-Ring	1A-P14	1	29	O-Ring	1A-S85	1
9	Hexagon Nut	M16×P1.0	1	30	Cover		1
10	Cap		1	31	Skt. HD. Cap Scr	M10×P1.5×25L	4
11	Piston		1	32	Piston		1
12	Spring		1	33	Spring		1
13	Spring Retainer		1	34	Plug	PT 3/8"	1
14	O-Ring	1A-P22A	1	35	Plug	PT 1/4"	1
15	Cover		1	36	Name Plate		1
16	Skt. HD. Cap Scr	M6×P1.0×20L	2	37	Fixing Screw		2
17	Socket Set Screw	M10×P1.5×35L	1	38	Hexagon Nut	M10×P1.5	1
18	Hexagon Nut	M10 P1.5	1	39	Coupling		1
19	Spring Pin	ø4×10	1	40	Retainer Ring	IRTW24	1
19-1	Spring Pin	ø4×10	2	41	Washer	M10	2
20	Straight Pin	ø4×10	2	42	Hexagon Screw	M10×P1.5×25L	2
21	Engine Bush	DIADO(JAPAN)DD2225	1				
21-1	Engine Bush	DIADO(JAPAN)DD2225	1	※38-42 are Accessories.			