

# HIGH PERFORMANCE VANE PUMP VT6CBB



Series **VT6CBB - 022 - B09 - B02 - 1 R 00 - B 1 01 \***

**Cam ring for "P1"**  
 Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)  
 \*003/B03 = 10.8 (0.66)    015/B15 = 50.5 (3.08)  
 005/B05 = 17.2 (1.05)    017/B17 = 58.3 (3.56)  
 006/B06 = 21.3 (1.30)    020/B20 = 63.8 (3.89)  
 008/B08 = 26.4 (1.61)    022/B22 = 70.3 (4.29)  
 010/B10 = 34.1 (2.08)    025/B25 = 79.3 (4.84)  
 012/B12 = 37.1 (2.26)    028/B28 = 88.8 (5.42)  
 014/B14 = 46.0 (2.81)    031/B31 = 100.0 (6.10)

\*0 - Uni - directional 'B' - Bi - directional  
**Cam ring for "P2" & "P3"**  
 Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

B02 = 5.8 (0.35)  
 B03 = 9.8 (0.59)  
 B04 = 12.8 (0.78)  
 B05 = 15.9 (0.97)  
 B06 = 19.8 (1.21)  
 B07 = 22.5 (1.37)  
 B08 = 24.9 (1.52)  
 B09 = 28.0 (1.71)  
 B10 = 31.8 (1.94)  
 B11 = 34.9 (2.13)  
 B12 = 41.0 (2.50)  
 B14 = 45.0 (2.75)

**Type of Shaft**  
 1 = Keyed (no SAE)  
 2 = Keyed (SAE BB)  
 3 = Splined (SAE BB)  
 5 = Splined (SAE B)  
 E = Splined

**Modifications**  
**Port connections**

CODE		S = 2 1/2" SAE 4-Bolt Pad.		
UNC	METRIC	P1	P2	P3
01	W0	1" SAE 4 bolt Pad.	3/4" SAE 4 bolt Pad.	SAE 8,3/4" 16 UNF-2B O'ring Boss
11	W1			3/4" SAE 4 bolt Pad.
02	W2	SAE 16,1 5/16" 12 UNF-2B O'ring Boss	SAE 12,1 1/16" 12 UNF-2B O'ring Boss	SAE 8,3/4" 16 UNF-2B O'ring Boss

**Seal class**  
 1 - S1 (for mineral oil)  
 4 - S4 (for fire resistant fluids)  
 5 - S5 (for mineral oil and fire resistant fluids)

**Design letter**

**Porting combination (see page CI-1-4)**  
 00 - standard

**Direction of rotation (view on shaft end)**

R - clockwise  
 L - counter-clockwise

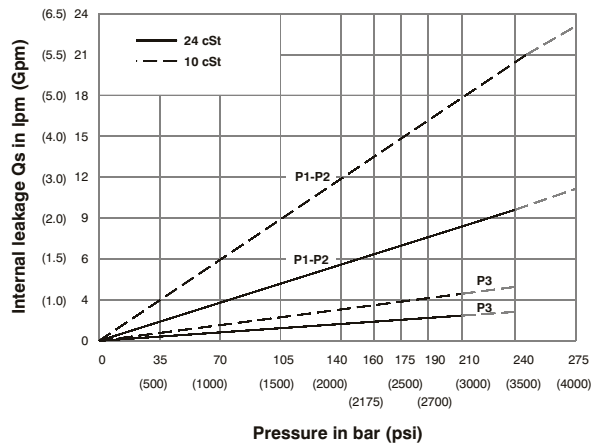
## OPERATING CHARACTERISTICS - TYPICAL (24 cST) (Input power p (KW) for one cartridge only)

Pressure port	Series	Volumetric Displacement Vp		Flow q & n = 1500 rpm						Input power p & n = 1500 rpm					
		in <sup>3</sup> /rev	cm <sup>3</sup> /rev	p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 240 bar (3500 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 210 bar (3000 psi)	
				gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
P1	003	0.66	10.8	4.29	16.2	2.96	11.2	2.04	7.7	1.74	1.3	7.11	5.3	11.26	8.4
	005	1.05	17.2	6.83	25.8	5.50	20.8	4.57	17.3	1.88	1.4	10.06	7.5	16.36	12.2
	006	1.30	21.3	8.44	31.9	7.11	26.9	6.19	23.4	2.01	1.5	11.94	8.9	19.71	14.7
	008	1.61	26.4	10.48	39.6	9.15	34.6	8.22	31.1	2.15	1.6	14.35	10.7	22.93	17.7
	010	2.08	34.1	13.52	51.1	12.19	46.1	11.26	42.6	2.28	1.7	18.64	13.4	29.90	22.3
	012	2.26	37.1	14.71	55.6	13.36	50.6	12.46	47.1	2.28	1.7	19.31	14.4	32.32	24.1
	014	2.81	46.0	18.25	69.0	16.93	64.0	16.00	60.5	2.55	1.9	23.60	17.6	39.56	29.5
	015	3.08	50.5	20.00	75.6	18.73	73.2	19.02	67.5	2.68	2.0	25.61	19.1	42.91	32.0
	017	3.56	58.3	23.12	87.4	21.79	82.4	20.87	78.9	2.82	2.1	29.37	21.9	49.48	36.9
	020	3.89	63.8	25.32	95.7	23.99	90.7	23.07	87.2	2.95	2.2	31.92	23.8	53.91	40.2
	022	4.29	70.3	27.88	105.4	26.56	100.4	25.63	96.9	3.08	2.3	35.00	26.1	59.14	44.1
	025	4.84	79.3	31.46	118.9	30.13	113.9	29.21	110.4	3.35	2.5	39.16	29.2	66.38	49.5
	028 <sup>1)</sup>	5.42	88.8	35.24	133.2	33.92	128.2	33.28	125.8	3.75	2.8	43.85	32.7	65.04	48.5
031 <sup>1)</sup>	6.10	100.0	39.68	150.0	38.35	145.0	37.72	142.6	3.75	2.8	48.95	36.5	72.95	54.4	
P2 & P3				p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 210 bar (3000 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 210 bar (3000 psi)	
		in <sup>3</sup> /rev	cm <sup>3</sup> /rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
	B02	0.35	5.8	2.30	8.7	1.4	5.9	--	--	0.53	0.4	2.81	2.1	--	--
	B03	0.59	9.8	3.88	14.7	2.9	11.9	--	--	0.67	0.5	3.62	2.7	--	--
	B04	0.78	12.8	5.08	19.2	4.33	16.4	3.97	15.0	0.93	0.7	5.23	3.9	10.06	7.5
	B05	0.97	15.9	6.31	23.8	5.55	21.0	5.18	19.6	1.00	0.75	6.64	4.9	11.2	8.3
	B06	1.21	19.8	7.85	29.7	7.12	26.9	6.66	25.2	1.07	0.8	8.05	6.0	12.34	9.2
	B07	1.37	22.5	8.92	33.7	8.17	30.9	7.80	29.5	1.20	0.9	9.05	6.7	14.02	10.4
	B08	1.52	24.9	9.89	37.4	9.15	34.6	8.78	33.2	1.34	1.0	10.05	7.5	15.69	11.7
	B09	1.71	28.0	11.11	42.0	10.37	39.2	10.00	37.8	1.47	1.1	11.94	8.9	23.60	17.6
	B10	1.94	31.8	12.61	47.7	11.87	44.9	11.51	43.5	1.6	1.2	13.0	9.7	26.0	19.6
	B11	2.13	34.9	13.85	52.3	13.09	49.5	12.72	48.1	1.7	1.3	14.0	10.5	28.0	21.0
	B12	2.50	41.0	16.27	61.5	15.53	58.7	*	*	1.8	1.4	15.02	11.2	*	*
B14	2.75	45.0	17.86	67.5	17.12	64.7	**	**	2.1	1.6	15.42	11.5	**	**	

1) 028-031 = 210 bar (3000 psi) max. int.  
 \*B12 = 210bar (3000psi) Max. Int  
 \*\*B14 = 175bar (2500psi) Max. Int

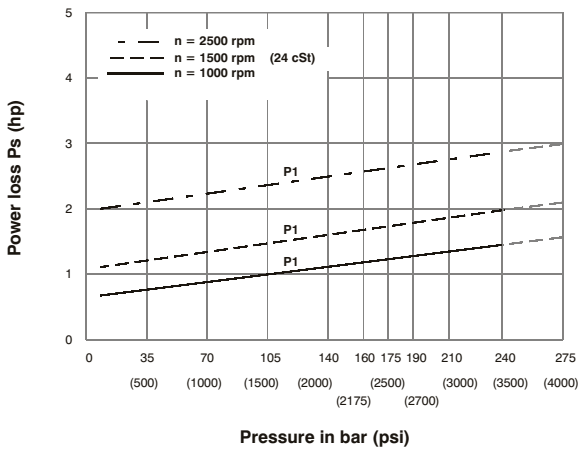
- Not to use because internal leakage greater than 50% of theoretical flow.

## INTERNAL LEAKAGE (TYPICAL)



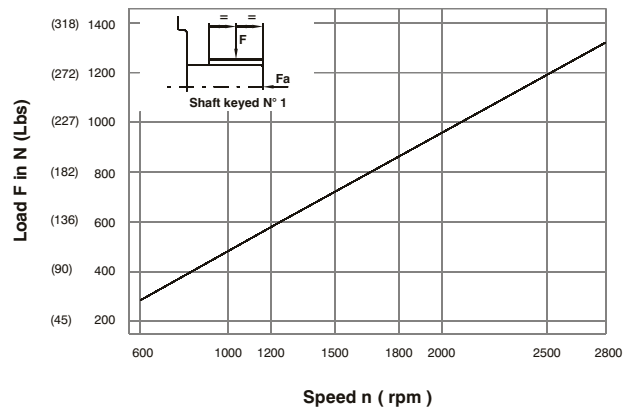
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is more than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

## HYDROMECHANICAL POWER LOSS (TYPICAL)



Total hydromechanical power loss is the sum of each section at its operating conditions.

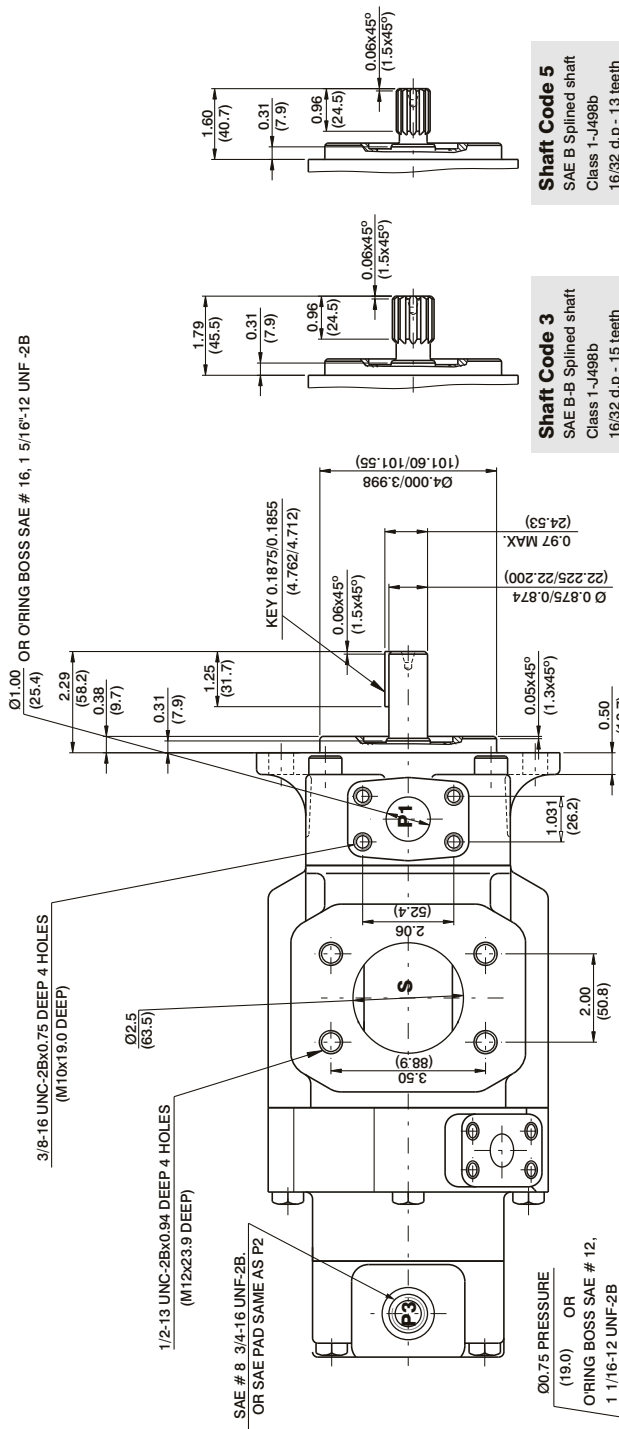
## PERMISSIBLE RADIAL LOAD



Maximum axial load permissible  $F_a = 800 \text{ N (180 Lbs)}$



TP



**Shaft Code 5**  
SAE B Splined shaft  
Class 1-J498b  
16/32 d.p - 13 teeth  
30° pressure angle  
flat root side fit

**Shaft Code 3**  
SAE B-B Splined shaft  
Class 1-J498b  
16/32 d.p - 15 teeth  
30° pressure angle  
flat root side fit

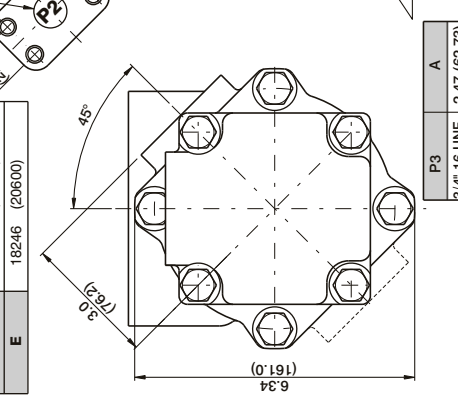
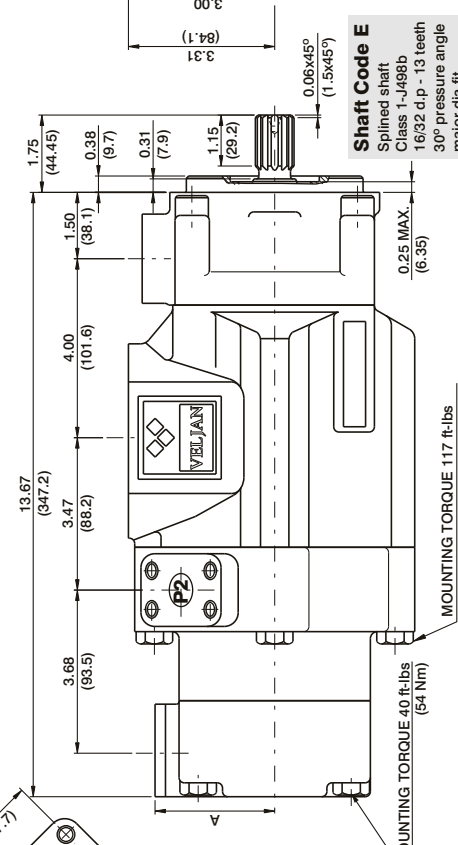
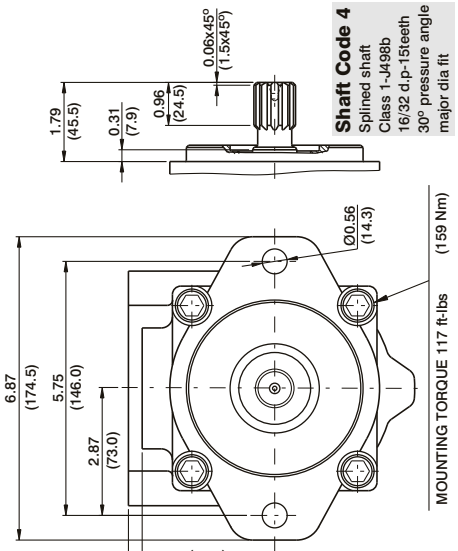
**Shaft Code 1**

**Shaft Code 4**  
Splined shaft  
Class 1-J498b  
16/32 d.p-15teeth  
30° pressure angle  
major dia fit

**Shaft Code E**  
Splined shaft  
Class 1-J498b  
16/32 d.p - 13 teeth  
30° pressure angle  
major dia fit

**Shaft Code 2**

Shaft Code	in <sup>3</sup> /rev x psi (ml/rev x bar)
1	12666 (14300)
2	18972 (21470)
3	28937 (32670)
4	28937 (32670)
5	18246 (20600)
E	18246 (20600)



	A
P3	3/4"-16 UNF (62.73)
	3/4" SAE PAD (69.8)