

VT7DD or VT7DDS - B42 - B22 - 1 R 00 - A 1 M0 -

**Series**

**VT7DD** series-ISO 4 bolts 3019-2  
Mounting flange 125 B4 HW  
**VT7DDS** series- SAE C 6 bolts  
Mounting flange J744c

**Camring for "P1" & "P2"**

Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)

B14 = 43.9 (2.68)	B31 = 99.1 (6.05)
B17 = 55.0 (3.36)	B35 = 113.4 (6.92)
B20 = 66.0 (4.03)	B38 = 120.6 (7.36)
B22 = 70.3 (4.29)	B42 = 137.5 (8.39)
B24 = 81.1 (4.95)	045 = 145.7 (8.89)
B28 = 89.9 (5.49)	050 = 157.9 (9.64)

**Type of shaft VT7DDS**

- 1 - keyed (SAE C)
- 2 - keyed (SAE CC)
- 3 - splined (SAE C)
- 4 - splined (SAE BB)

**Type of shaft VT7DD - VT7DDS**

- 5 - keyed (ISO 3019-2-G32M)

**Modifications**

**Mounting w/connection variables**

4 bolts SAE flange (J518)

P1 & P2=1-1/4" S = 4"	
	UNC METRIC
VT7DD	M0
VT7DDS	00 M0

**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 BM-1-5)**

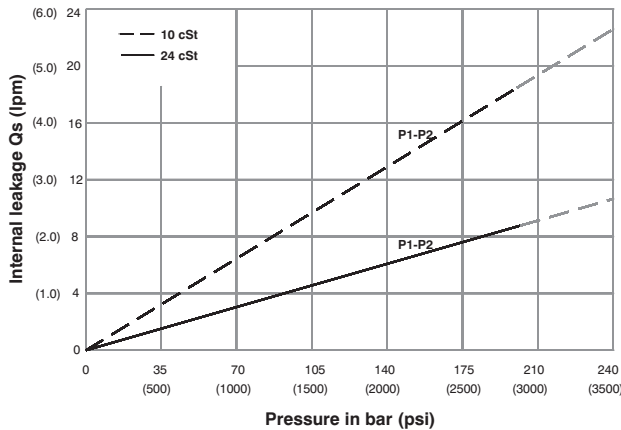
00 - standard

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

- R - clockwise
- L - counter-clockwise

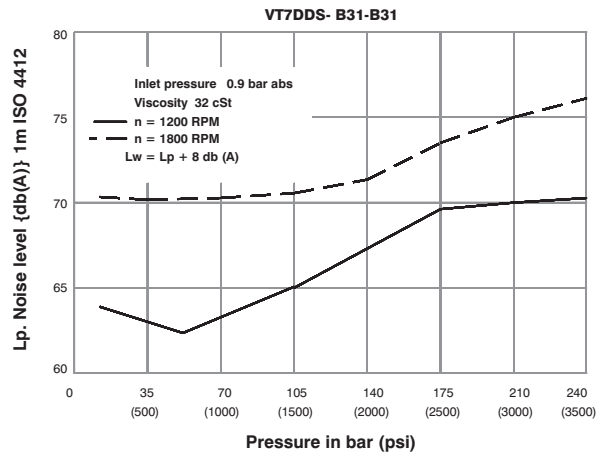
VP  
DP

**INTERNAL LEAKAGE (TYPICAL)**



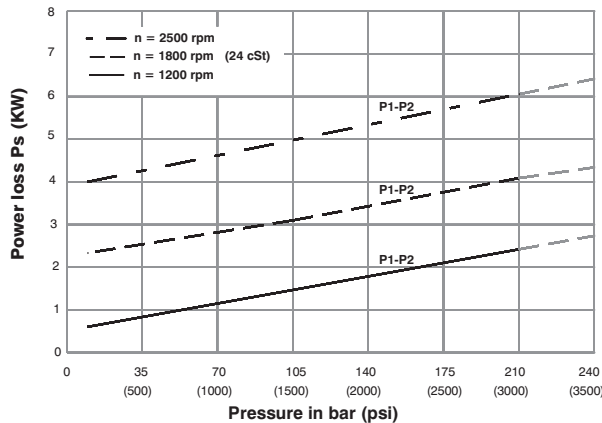
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is more than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

**NOISE LEVEL (TYPICAL)**



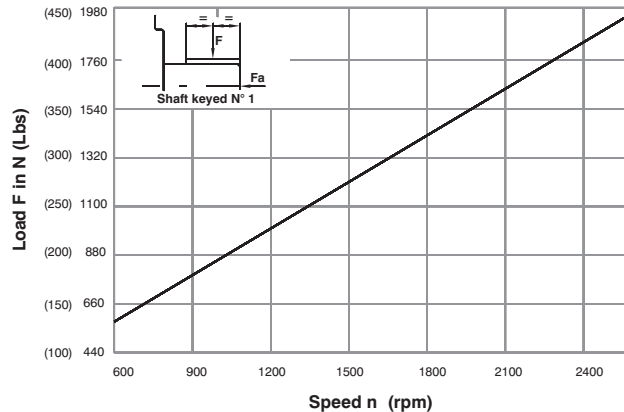
Double pump noise level is given with each section discharging at the pressure noted on the curve.

**HYDROMECHANICAL POWER LOSS (TYPICAL)**



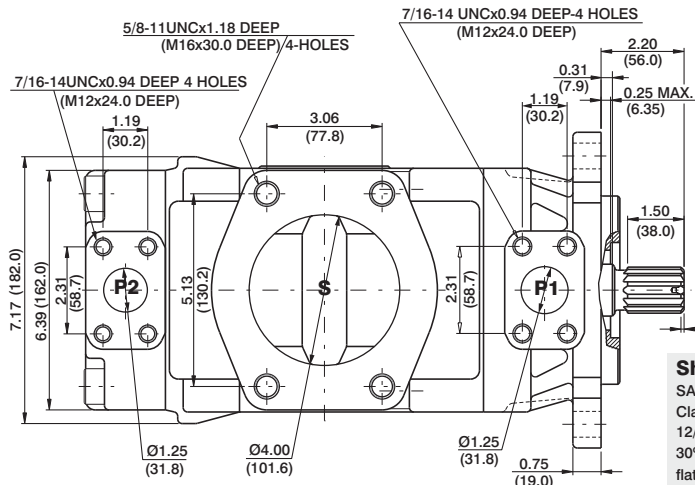
Total hydrodynamic power loss is the sum of each section at its operating conditions.

**PERMISSIBLE RADIAL LOAD**

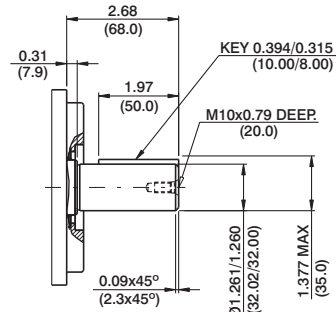


Maximum axial load permissible Fa = 800 N (180 Lbs)

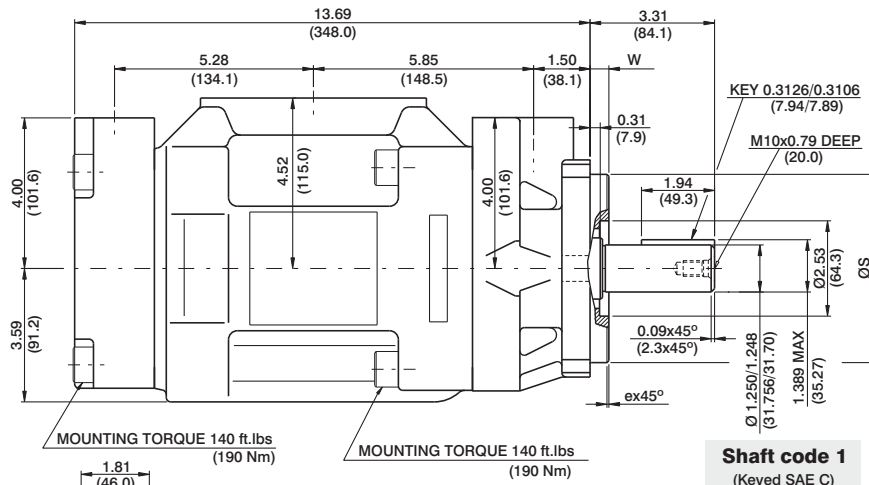
# HIGH PERFORMANCE VANE PUMP VT7DD / VT7DDS ◆ VELJAN



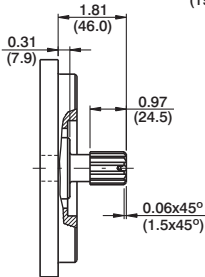
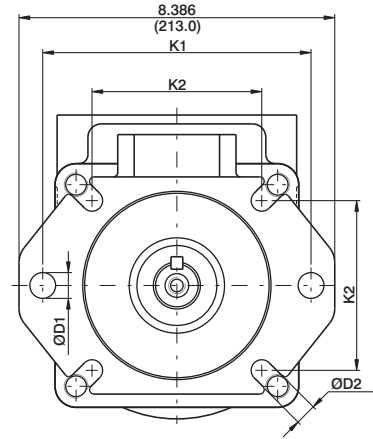
**Shaft code 3**  
SAE C splined shaft  
Class 1-J498b  
12/24 dp. 14 teeth  
30° pressure angle  
flat root side fit



**Shaft code 5**  
(Keyed ISO 3018/2-G32M)

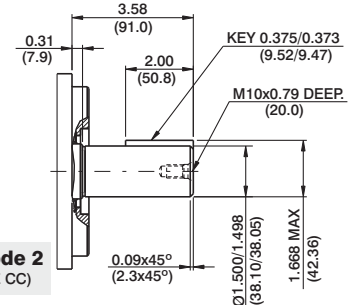


**Shaft code 1**  
(Keyed SAE C)



**Shaft code 4**  
SAE BB splined shaft  
Class 1-J498b  
12/24 dp. 15 teeth  
30° pressure angle  
flat root side fit

Shaft torque limits in <sup>3</sup> /rev x psi (ml/rev x bar)	
Shaft	Vp x p max. (P1+P2)
1	38299 (43240)
2	63552 (71822)
3	54207 (61200)
4	31780 (28120)
5	40035 (35424)



**Shaft code 2**  
(Keyed SAE CC)

Series	ØS		ex45°	W	K1	ØD1	K2	ØD2
	MAX.	Min.						
VT7DD	4.921 (124.99)	4.919 (124.94)	0.079 (2.0)	0.374 (9.49)	7.087 (180.0)	0.709 (18.0)	4.454 (113.1)	0.551 (13.9)
VT7DDS	5.00 (127.00)	4.998 (126.94)	0.059 (1.5)	0.50 (12.7)	7.126 (181.0)	0.689 (17.5)	4.508 (114.5)	0.563 (14.3)

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

Pressure port	Series	Volumetric Displacement Vp		Flow q & n = 1800 rpm						Input power p & n = 1800 rpm					
		in <sup>3</sup> /rev	cm <sup>3</sup> /rev	p = 0 bar (0 psi)		p = 140 bar (2000 psi)		p = 250 bar (3630 psi)		p = 7 bar (100 psi)		p = 140 bar (2000 psi)		p = 250 bar (3630 psi)	
				gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
P1 & P2	B14	2.68	43.9	20.92	79.1	19.18	72.5	17.81	67.3	3.46	2.6	27.77	20.7	47.03	35.07
	B17	3.36	55.0	26.16	98.8	24.41	92.3	23.04	87.0	3.77	2.8	33.88	25.3	57.71	43.03
	B20	4.03	66.0	31.39	118.6	29.64	112.0	28.27	106.8	4.07	3.0	39.98	29.8	68.39	50.99
	B22	4.29	70.3	33.43	126.4	31.69	119.8	30.32	104.6	4.19	3.1	42.37	31.6	72.57	54.11
	B24	4.95	81.1	38.57	145.8	36.82	139.2	35.45	134.0	4.49	3.4	48.36	36.1	83.06	61.93
	B28	5.49	89.9	42.80	161.8	41.06	155.2	39.69	150.0	4.74	3.5	53.30	39.7	91.70	68.38
	B31	6.05	99.1	47.18	178.3	45.43	171.7	44.06	166.5	4.99	3.7	58.41	43.6	100.63	75.03
	B35 <sup>1)</sup>	6.92	113.4	53.93	203.9	52.18	197.2	50.81	192.0	5.39	4.0	66.29	49.4	114.42	85.32
	B38 <sup>1)</sup>	7.36	120.6	57.35	216.8	55.61	210.2	54.24	204.9	5.59	4.2	70.27	52.4	121.42	90.54
	B42 <sup>2)</sup>	8.39	137.5	65.39	247.2	63.65	240.6	62.28	235.4	6.05	4.5	79.66	59.4	137.83	102.77
	045 <sup>3)</sup>	8.89	145.7	69.29	262.0	67.11	253.6	65.31	246.8	6.74	5.0	83.75	62.4	145.79	108.71
	050 <sup>4)</sup>	9.64	157.9	75.14	284.0	72.96	275.8	71.78	271.3	7.08	5.3	90.58	67.5	154.50	113.30

1) B35-B38 = 280 bar (4060 psi) max.int. 2) B42 = 260 bar (3770 psi) max.int. 3) 045 = 240 bar (3500 psi) max. int. 4) 050 = 210 bar (3000 psi) max. int.