

## VTXB 1 - B09 - 1 R 00 - D 1 02 \*

### Series

### Mounting

- 1 - SAE A
- 2 - SAE B

### Cam ring

Volumetric displacement  $\text{cm}^3/\text{rev}$  ( $\text{in}^3/\text{rev}$ )

- 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) (cont. 175 bar, Max. int 210 bar)
- B14 = 45.0 (2.75) (cont. 140 bar, Max. int 175 bar)

### Type of Shaft

#### TXB1

- 1 - Keyed (Non SAE)
- 2 - Keyed
- 3 - Splined
- 4 - Splined
- 5 - Keyed
- V - Splined

#### TXB2

- 1 - Keyed (Non SAE)
- 2 - Keyed
- 4 - Splined

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

- R - clockwise
- L - counter-clockwise

### Modifications

### Port connections

CODE	S	P
00	SAE 20 1" 5/8 12 UNF-2B	SAE 12 1" 1/16 12 UNF-2B
01	1" 1/4 SAE 4 bolt (UNC)	3/4" SAE 4 bolt (UNC)
M0	1" 1/4 SAE 4 bolt (METRIC)	3/4" SAE 4 bolt (METRIC)
02	1" 1/4 BSP	3/4" BSP
03	1" 1/4 NPTF	SAE 12 1" 1/16 12 UNF-2B
0X	1" 1/4 NPTF	3/4" NPTF
MX	Ø28 SAE 4 bolt (METRIC)	Ø15 SAE 4 bolt (METRIC)

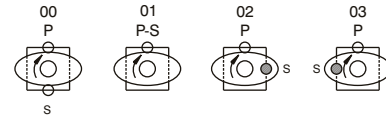
### Seal class

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

### Design letter

### Porting combination

- 00 - standard



**S - Suction port P - Pressure port**

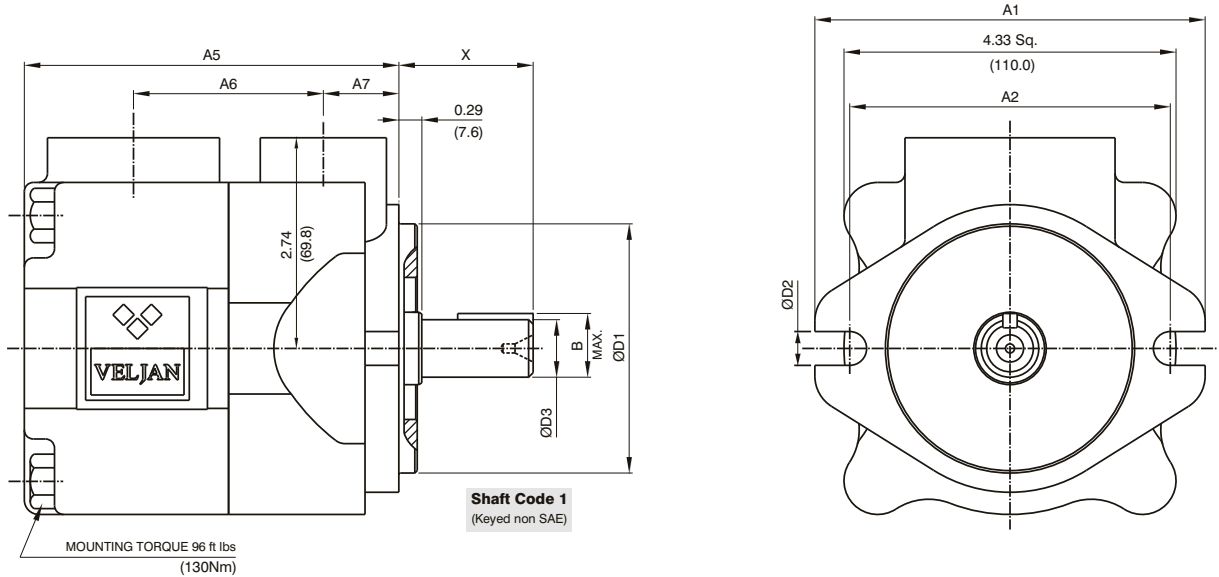
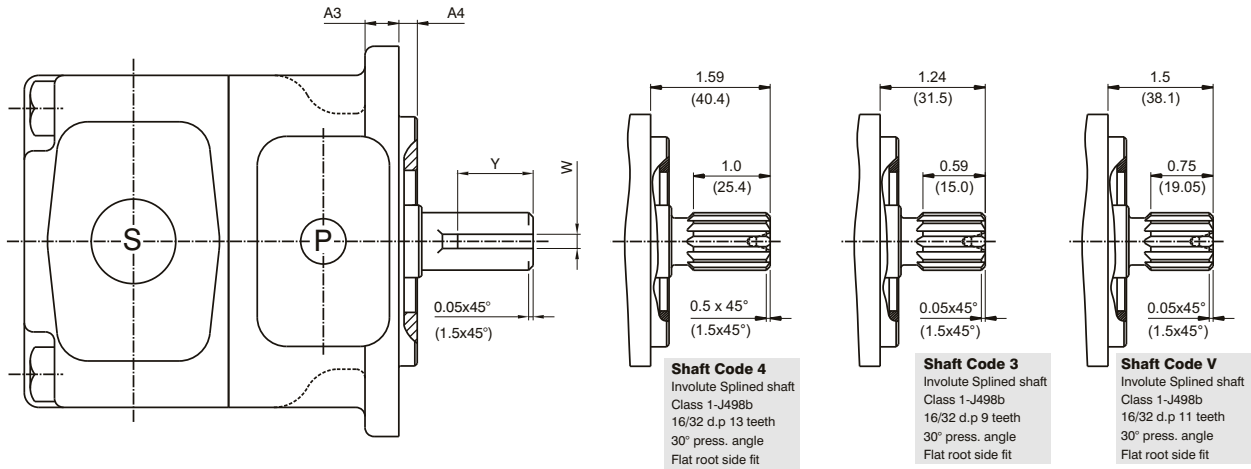
## OPERATING CHARACTERISTICS (24 cSt)

Pressure port	Series	Volumetric Displacement $V_p$		Flow $q$ & $n = 1500$ rpm						Input power $p$ & $n = 1500$ rpm					
		$\text{in}^3/\text{rev}$	$\text{cm}^3/\text{rev}$	$p = 0$ 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)	
				gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
VTXB1 VTXB2	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	**	**

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

\* B12= 210 bar(3000 psi) Max.Int

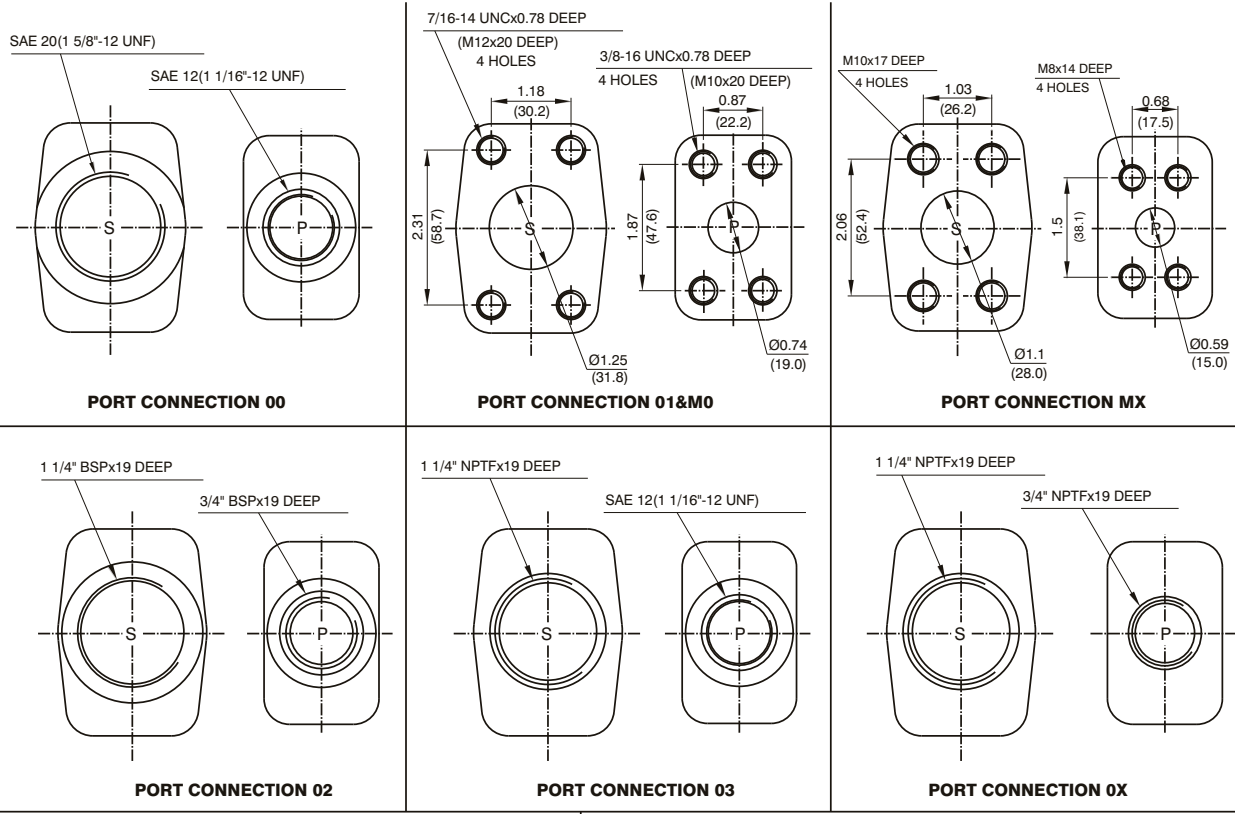
\*\* B14= 175 bar(2500 psi) Max.Int



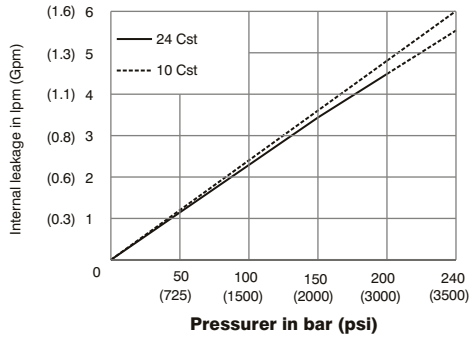
DIMENSIONS OF KEYED SHAFT in inches (mm)						
MODEL	CODE	X	Y	ØD3	B	W
TXB1	1	1.75(44.5)	0.98(25)	0.75/0.74(19.05/19.00)	0.83(21.1)	0.187/0.185(4.75/4.70)
	2	1.96(50.0)	0.98(25)	0.625/0.624(15.88/15.85)	0.69(17.7)	0.156/0.155(3.97/3.94)
	5	2.66(67.6)	1.61(41)	0.75/0.74(19.05/19.00)	0.83(21.1)	0.187/0.185(4.75/4.70)
TXB2	1	2.32(59.0)	1.25(32)	0.875/0.874(22.22/22.20)	0.96(24.5)	0.187/0.185(4.75/4.70)
	2	2.81(71.4)	1.49(38)	0.875/0.874(22.22/22.20)	0.96(24.5)	0.250/0.248(6.35/6.30)

DIMENSIONS in inches (mm)									
MODEL	A1	A2	A3	A4	A5	A6	A7	ØD1	ØD2
TXB1	5.11(130.0)	4.18(106.2)	0.44(11.2)	0.24(6.1)	4.88(124.1)	2.47(62.9)	0.98(25.0)	3.25/3.24(82.55/82.50)	0.44(11.2)
TXB2	6.87(174.5)	5.74(146.0)	0.5(12.7)	0.38(9.7)	4.94(125.6)	2.29(58.4)	1.22(31.0)	4.00/3.99(101.60/101.55)	0.56(14.3)

SP

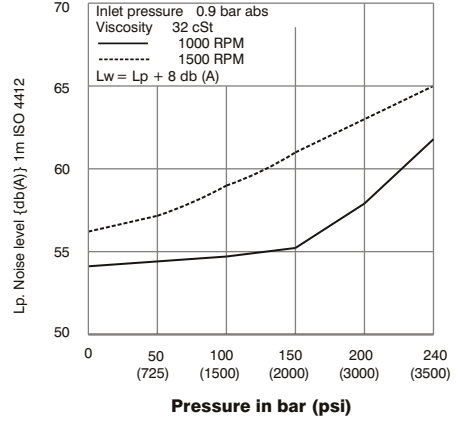


### INTERNAL LEAKAGE (TYPICAL)

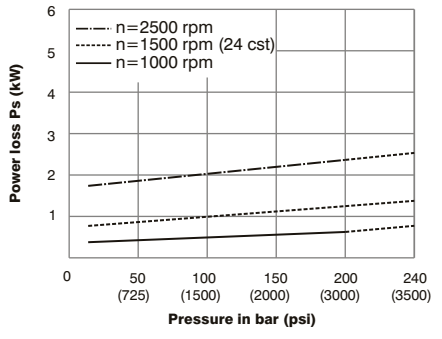


Do not operate pump for more than 5 seconds at any speed or viscosities if internal leakage is more than 50% of theoretical flow.

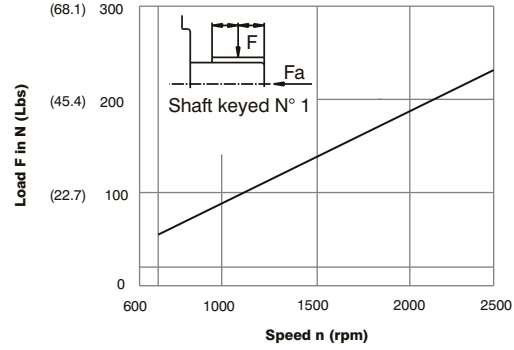
### NOISE LEVEL (TYPICAL)



### POWER LOSS HYDROMECHANICAL (TYPICAL)



### PERMISSIBLE RADIAL LOAD



Maximum axial load permissible Fa = 500 N (113.6 lbs)



**VT6B - B09 - 1 R 00 - D 1 02 \***

**Series**

**Cam ring**

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

B02 = 5.8 (0.35)	B08 = 24.9 (1.52)
B03 = 9.8 (0.59)	B09 = 28.0 (1.71)
B04 = 12.8 (0.78)	B10 = 31.8 (1.94)
B05 = 15.9 (0.97)	B11 = 34.9 (2.13)
B06 = 19.8 (1.21)	B12 = 41.0 (2.50)(cont. 175 bar, Max. int 210 bar)
B07 = 22.5 (1.37)	B14 = 45.0 (2.75)(cont. 140 bar, Max. int 175 bar)

**Type of Shaft**

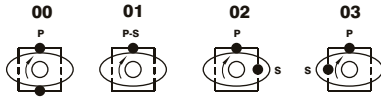
- 1 - Keyed (Non SAE)
- 2 - Keyed
- 3 - Splined (SAE A)
- 4 - Splined (SAE B)
- 5 - Splined SAE (11 teeth)
- 11 - Splined

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

- R - clockwise
- L - counter-clockwise

**Porting combination**

00 - standard



**S** - Suction port **P** - Pressure port

**Modifications**

**Port connections**

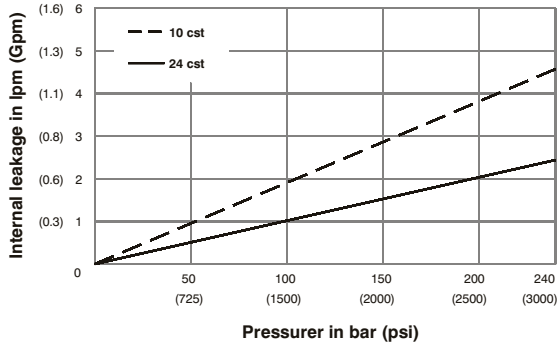
CODE	S	P
00	SAE 20 1-5/8" 12 UNF-2B	SAE 12 1-1/16" 12 UNF-2B
01	1-1/4" SAE 4 bolt (UNC)	3/4" SAE 4 bolt (UNC)
M0	1-1/4" SAE 4 bolt (METRIC)	3/4" SAE 4 bolt (METRIC)
02	1-1/4" BSP	3/4" BSP
03	1-1/4" NPTF	SAE 12 1-1/16" 12 UNF-2B
0X	1-1/4" NPTF	3/4" NPTF

**Seal class**

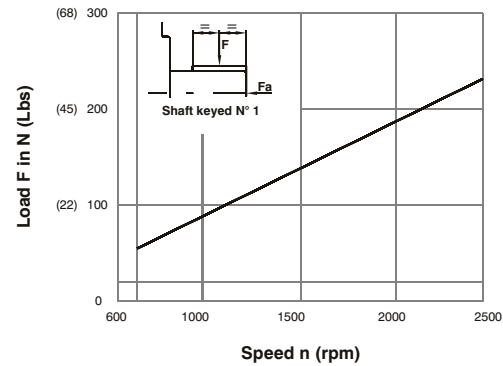
- 1 - S1 (for mineral oil)
- 4 - S4 (for fire resistant fluids)
- 5 - S5 (for mineral oil and fire resistant fluids)

**Design letter**

### INTERNAL LEAKAGE (TYPICAL)



### PERMISSIBLE RADIAL LOAD



Maximum axial load permissible  $F_a = 500$  N (113 Lbs)

### OPERATING CHARACTERISTICS (24 cSt)

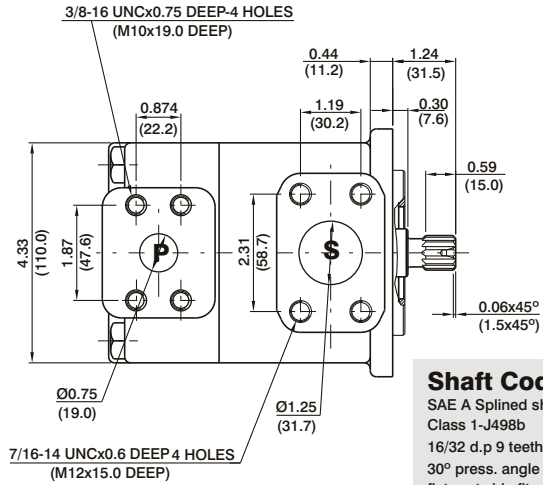
Pressure port	Series	Volumetric Displacement $V_p$		Flow $q$ & $n = 1500$ rpm						Input power $p$ & $n = 1500$ rpm					
		in <sup>3</sup> /rev	cm <sup>3</sup> /rev	$p = 0$ bar (0 psi)		$p = 140$ bar (2000 psi)		$p = 210$ bar (3000 psi)		$p = 7$ bar (100 psi)		$p = 140$ bar (2000 psi)		$p = 210$ bar (3000 psi)	
				gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
VT6B	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	**	**

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

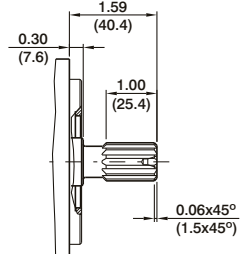
\* B12 = 210 bar (3000 psi) Max.Int

\*\* B14 = 175 bar (2500 psi) Max.Int

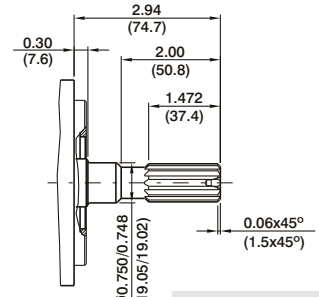
SP



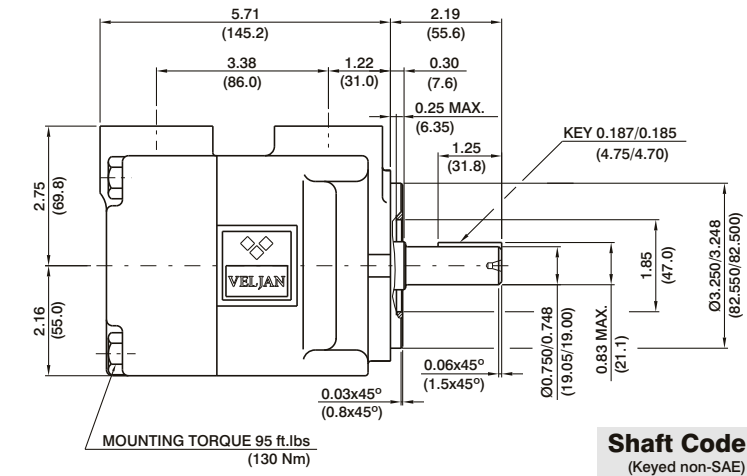
**Shaft Code 3**  
SAE A Splined shaft  
Class 1-J498b  
16/32 d.p 9 teeth  
30° press. angle  
flat root side fit



**Shaft Code 4**  
SAE B Splined shaft  
Class 1-J498b  
16/32 d.p 13 teeth  
30° press. angle  
flat root side fit

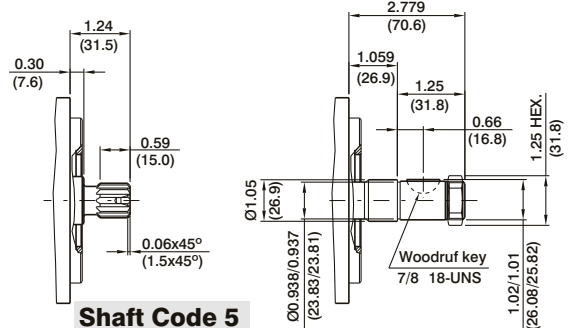
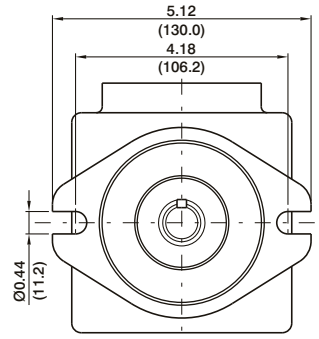


**Shaft Code 11**  
Splined shaft  
Class 1-J498b  
16/32 d.p 11 teeth  
30° press. angle  
flat root side fit



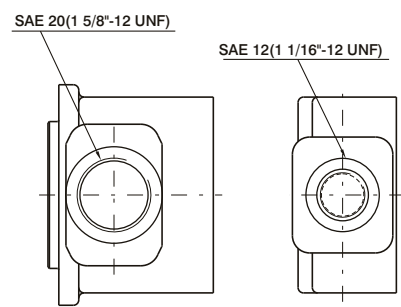
**Shaft Code 1**  
(Keyed non-SAE)

Shaft torque limits in <sup>3</sup> /revxpsi(ml/revxbar)	
Shaft	Vp x p max.
3	5119 (5780)
4	18246 (20600)

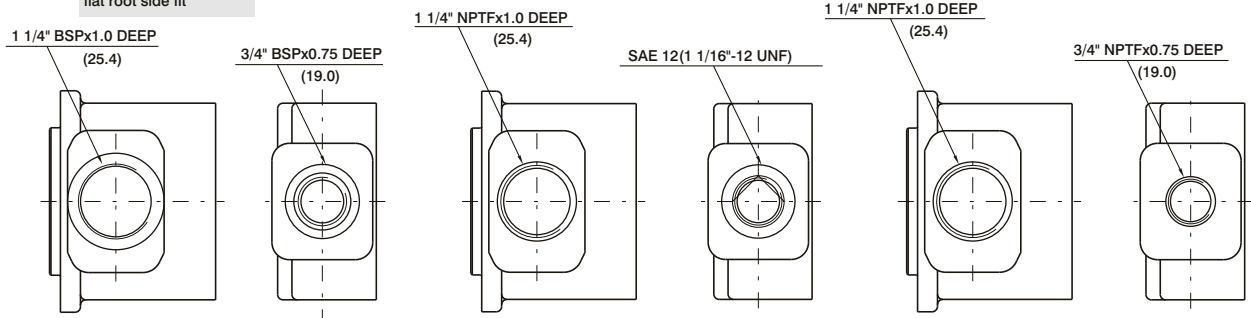


**Shaft Code 5**  
SAE Splined shaft  
Class 1-J498b  
16/32 d.p 11 teeth  
30° press. angle  
flat root side fit

**Shaft Code 2**  
Woodruff key  
Recommended  
nut Torque  
125 ft.lbs (170 Nm)



**PORT CONNECTION 00**



**PORT CONNECTION 02**

**PORT CONNECTION 03**

**PORT CONNECTION 0X**

**VT6C \* - 022 - 1 R 00 - B 1 \***

**Series**

**Y** - Metric port connection, Omit for UNC

**Cam ring**

Volumetric displacement  $\text{cm}^3/\text{rev}$  ( $\text{in}^3/\text{rev}$ )

*003/B03/Y03 = 10.8 (0.66)	015/B15/Y15 = 50.5 (3.08)
005/B05/Y05 = 17.2 (1.05)	017/B17/Y17 = 58.3 (3.56)
006/B06/Y06 = 21.3 (1.30)	020/B20/Y20 = 63.8 (3.89)
008/B08/Y08 = 26.4 (1.61)	022/B22/Y22 = 70.3 (4.29)
010/B10/Y10 = 34.1 (2.08)	025/B25/Y25 = 79.3 (4.84)
012/B12/Y12 = 37.1 (2.26)	028/B28/Y28 = 88.8 (5.42)
014/B14/Y14 = 46.0 (2.81)	031/B31/Y31 = 100.0 (6.10)

\*'0' - Uni - directional 'B' - Bi - directional 'Y' - Bi - directional for cold start

**Type of shaft**

- 1 - keyed (SAE B)
- 2 - keyed (no SAE)
- 3 - splined (SAE B)
- 4 - splined (SAE BB)

**Modifications**

**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**

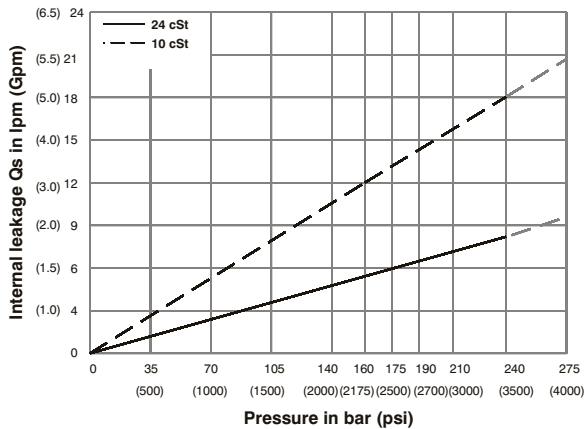
00 - standard

**S** - Suction port **P** - Pressure port

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

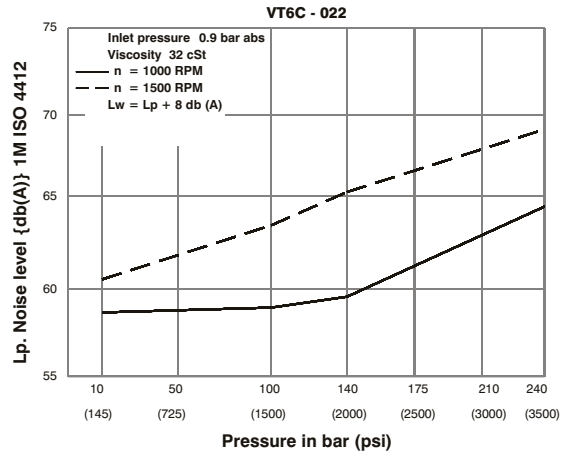
R - clockwise  
L - counter-clockwise

**INTERNAL LEAKAGE (TYPICAL)**

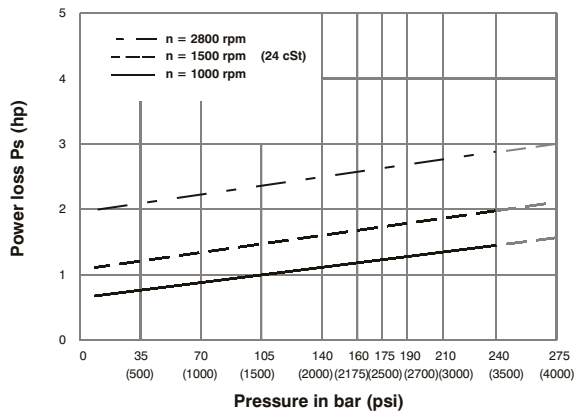


Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is more than 50% of theoretical flow.

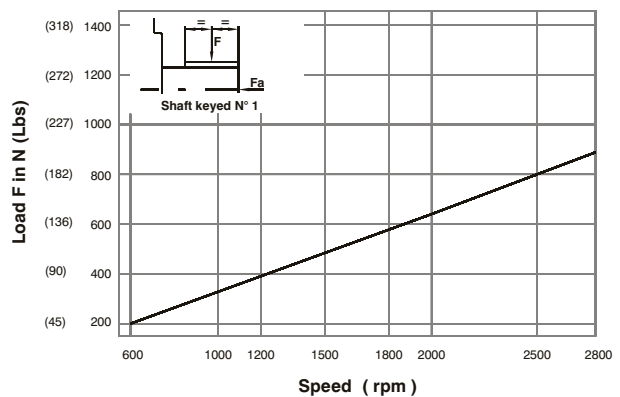
**NOISE LEVEL (TYPICAL)**



**HYDROMECHANICAL POWER LOSS (TYPICAL)**

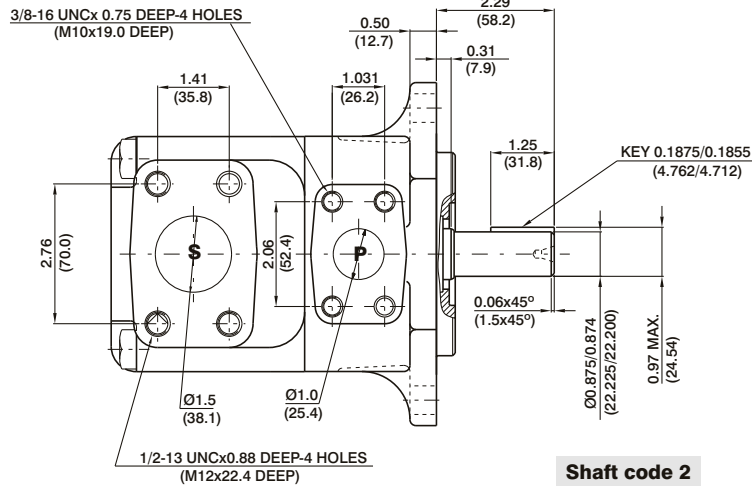


**PERMISSIBLE RADIAL LOAD**

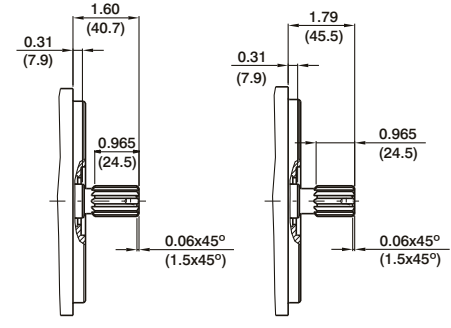


Maximum axial load permissible  $F_a = 800 \text{ N}$  (180 Lbs)

SP

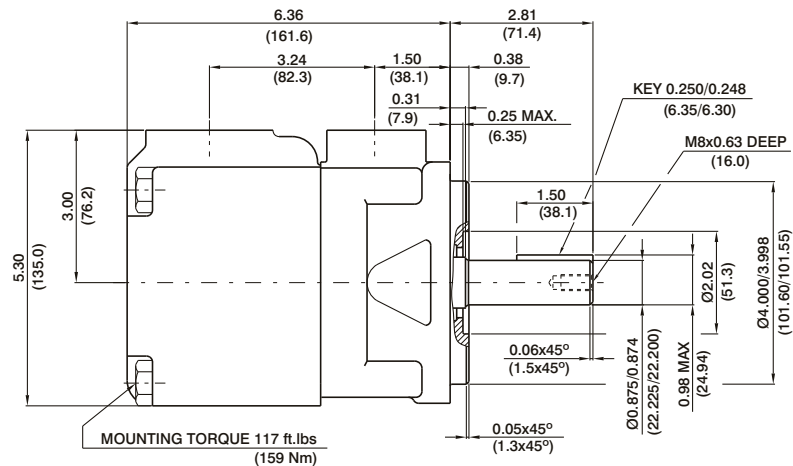


**Shaft code 2**  
(Keyed no SAE)

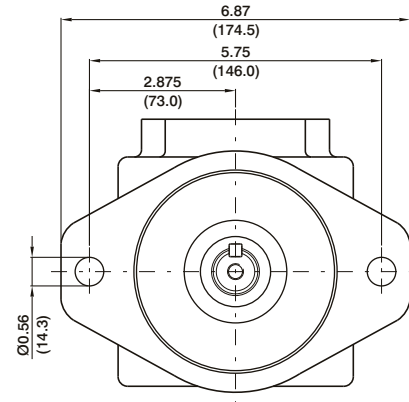


**Shaft code 3**  
SAE B splined shaft  
Class 1-J498b  
16/32 dp. 13 teeth  
30° pressure angle  
flat root side fit

**Shaft code 4**  
SAE BB splined shaft  
Class 1-J498b  
16/32 dp. 15 teeth  
30° pressure angle  
flat root side fit



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



Shaft torque limits in <sup>3</sup> /rev x psi (ml/rev x bar)	
Shaft	Vp x p max.
1	14473 (16500)
2	12666 (14300)
3	18246 (20600)
4	19309 (21821)

## OPERATING CHARACTERISTICS - TYPICAL (24 cST)

Pressure port	Series	Volumetric Displacement Vp		Flow q & n = 1500 rpm						Input power p & n = 1500 rpm					
				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 = 240 bar (3500 psi)	
				in <sup>3</sup> /rev	cm <sup>3</sup> /rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw
VT6C	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 <sup>1)</sup>	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>1,2)</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	72.95	54.5
	031 <sup>1,2)</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	80.95	60.4

1) 025-028-031 = 2500 RPM. max.

2) 028-031 = 210 bar (3000 psi) max. int.



**Series** VT6D \* \* - 045 - 1

**N** - Shaft seal installed reverse

**Q** - Special mounting cap with ear orientation of 20° from standard

**Y** - Metric port connection (not for code 'Q')  
Omit for UNC

**Cam ring**

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

*014/B14 = 47.6 (2.90)	035/B35 = 111.0 (6.77)
017/B17 = 58.2(3.55)	038/B38 = 120.3 (7.34)
020/B20 = 66.0 (4.03)	042/B42 = 136.0 (8.30)
024/B24 = 79.5 (4.85)	045/B45 = 145.7 (8.89)
028/B28 = 89.7 (5.47)	050/B50 = 158.0 (9.64)
031/B31 = 98.3 (6.00)	061/B61 = 190.5 (11.62)

\*'0' - Uni - directional    'B' - Bi - directional

**Type of shaft**

1 - keyed (SAE C)  
2 - keyed (no SAE)  
3 - splined (SAE C)  
4 - splined (no SAE)

**Modifications**

**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**

00 - standard

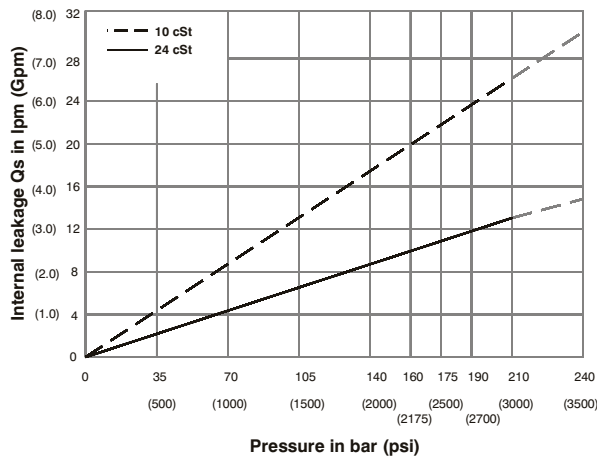
<b>00</b>	<b>01</b>	<b>02</b>	<b>03</b>

**S** - Suction port    **P** - Pressure port

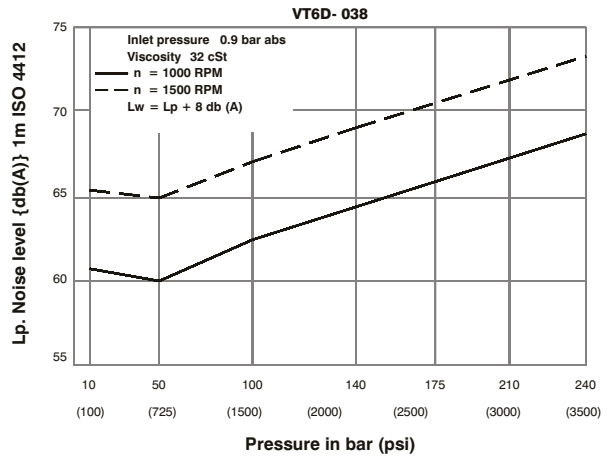
**Direction of rotation (view on shaft end)**

R - clockwise  
L - counter-clockwise

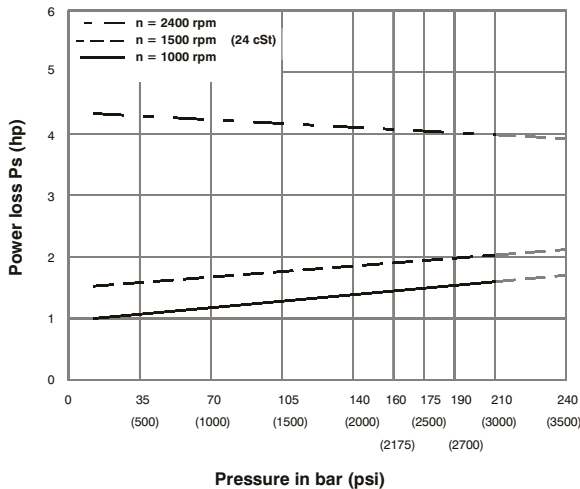
**INTERNAL LEAKAGE (TYPICAL)**



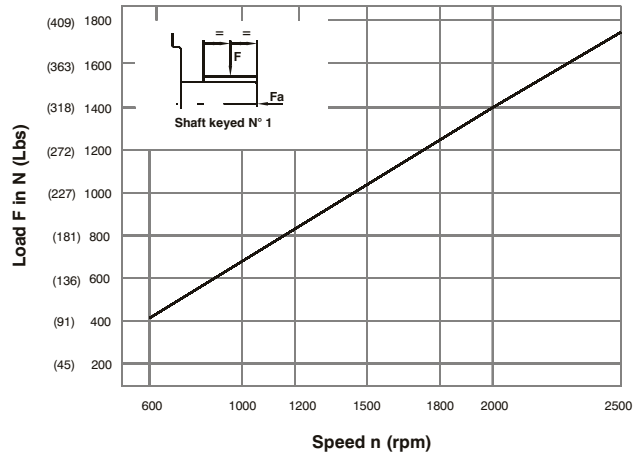
**NOISE LEVEL (TYPICAL)**



**HYDROMECHANICAL POWER LOSS (TYPICAL)**

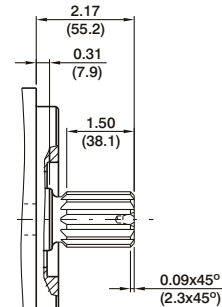
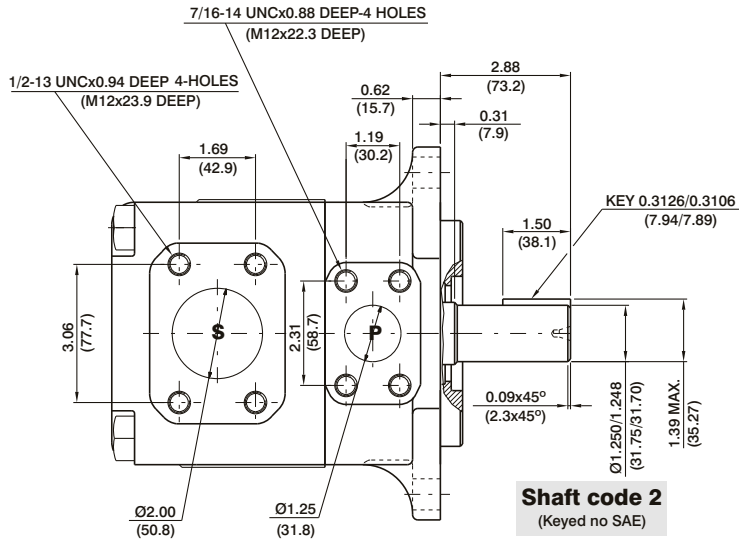


**PERMISSIBLE RADIAL LOAD**

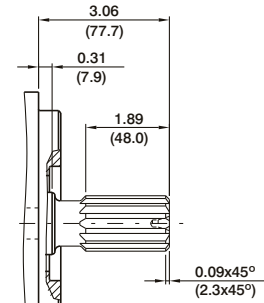


Maximum permissible axial load Fa = 1200 N (270 Lbs)

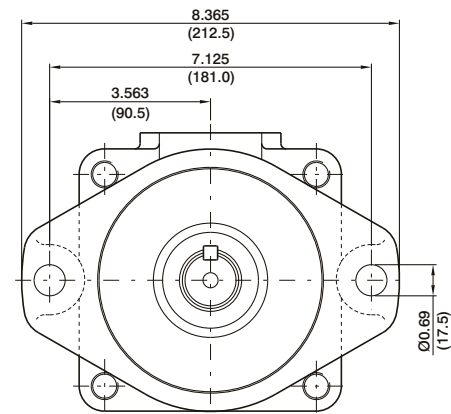
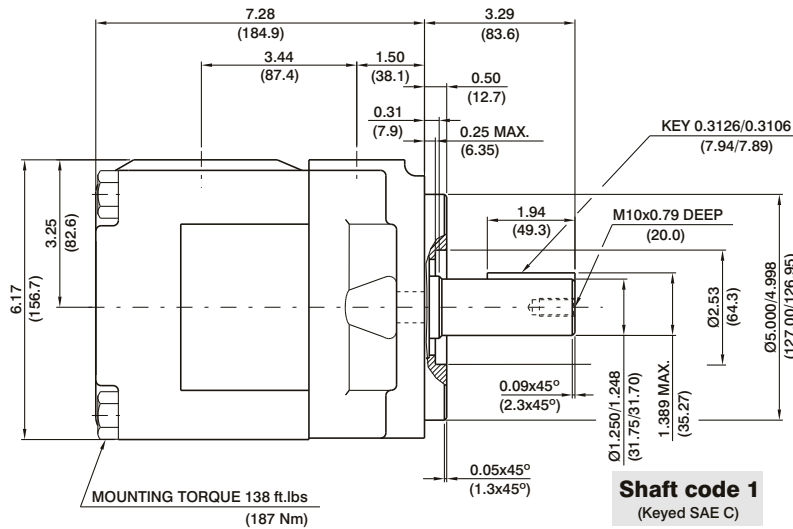




**Shaft code 3**  
SAE C splined shaft  
Class 1-J498b  
12/24 dp. 14 teeth  
30° pressure angle  
flat root side fit



**Shaft code 4**  
no SAE splined shaft  
Class 1-J498b  
12/24 dp. 14 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.
1	38299 (43283)
2	30638 (34590)
3	54207 (61200)
4	54207 (61200)

## OPERATING CHARACTERISTICS - TYPICAL (24 cST)

Pressure port	Series	Volumetric Displacement Vp		Flow q & n = 1500 rpm						Input power p & n = 1500 rpm					
				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 = 240 bar (3500 psi)	
		in <sup>3</sup> /rev	cm <sup>3</sup> /rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
VT6D VT6DQ VT6DN	014	2.90	47.6	18.88	71.4	16.42	62.1	14.78	55.9	3.08	2.3	24.81	18.5	41.03	30.6
	017	3.55	58.2	23.1	87.3	20.6	78.0	18.99	71.8	3.35	2.5	29.77	22.2	49.62	37.0
	020	4.00	66.0	26.19	99.0	23.73	89.7	22.08	83.5	3.75	2.8	33.39	24.9	55.92	41.7
	024	4.80	79.5	31.56	119.3	29.10	110.0	27.46	103.8	4.02	3.0	39.69	29.6	66.78	49.8
	028	5.50	89.7	35.58	134.5	33.12	125.2	31.48	119.0	4.29	3.2	44.52	33.2	74.96	55.9
	031	6.00	98.3	39.00	147.5	36.53	138.1	34.89	131.9	4.42	3.3	48.54	36.2	81.80	61.0
	035	6.80	111.0	44.04	166.5	41.58	157.2	39.94	151.0	4.69	3.5	54.58	40.7	92.13	68.7
	038	7.30	120.3	47.72	180.4	45.26	171.1	43.62	164.9	4.96	3.7	58.87	43.9	99.64	74.3
	042 <sup>1)</sup>	8.30	136.0	53.96	204.0	51.50	194.7	49.86	188.5	5.36	4.0	66.25	49.4	112.24	83.7
	045 <sup>1)</sup>	8.89	145.7	57.80	218.5	55.34	209.2	53.70	203.0	5.50	4.1	70.81	52.8	120.02	89.5
	050 <sup>1,2)</sup>	9.64	158.0	62.69	237.0	60.23	227.7	59.25	224.0	5.90	4.4	76.44	57.0	113.98	85.0
061 <sup>1,3)</sup>	11.62	190.5	76.25	285.7	73.54	278.0	--	--	6.16	4.6	81.26	60.6	--	--	

1) 042-045-050-061=2200 RPM max.

2) 050=210 bar (3000 psi) max. int.

3) 061 = 120 bar (1740 psi) max. int, 061 = 80 bar (1160 psi) cont.

**Series** VT6E \* - 066 - 3 R 00 - A 1 \*

**Y** - Metric port connection, Omit for UNC

**Cam ring**  
 Volumetric displacement cm<sup>3</sup>/rev (in<sup>3</sup>/rev)  
 042 = 132.3 (8.07)  
 045 = 142.4 (8.69)  
 050 = 158.5 (9.67)  
 052 = 164.8 (10.06)  
 057 = 180.7 (11.02)  
 062 = 196.7 (12.00)  
 066 = 213.3 (13.02)  
 072 = 227.1 (13.86)  
 085 = 269.8 (16.46)

**Type of shaft**  
 1 - keyed (SAE CC)  
 2 - keyed (no SAE)  
 3 - splined (SAE C)  
 4 - splined (SAE CC)  
 T - splined (SAE J718C)

**Modifications**

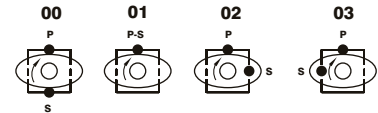
**Seal class**

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

**Design letter**

**Porting combination**

00 - standard

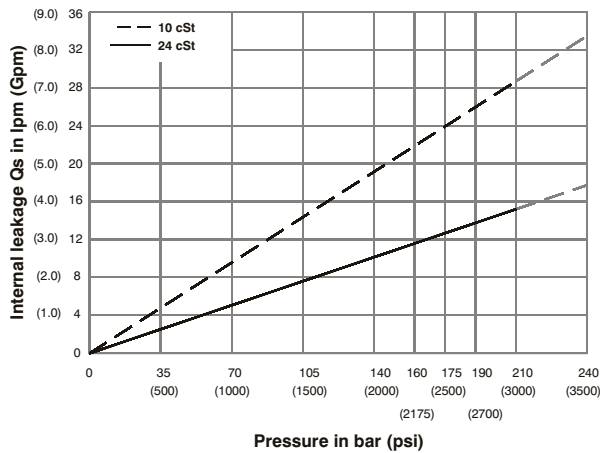


S - Suction port P - Pressure port

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

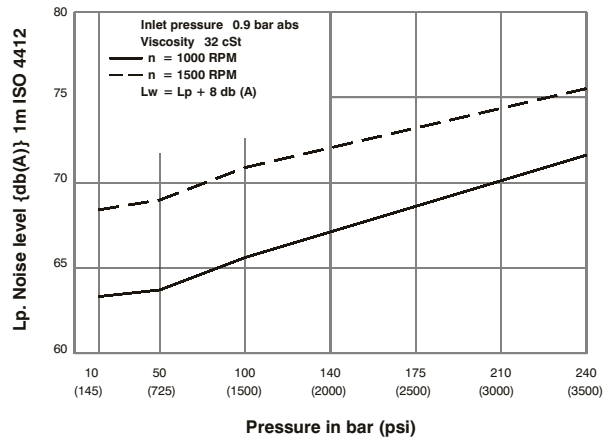
- R - clockwise
- L - counter-clockwise

**INTERNAL LEAKAGE (TYPICAL)**

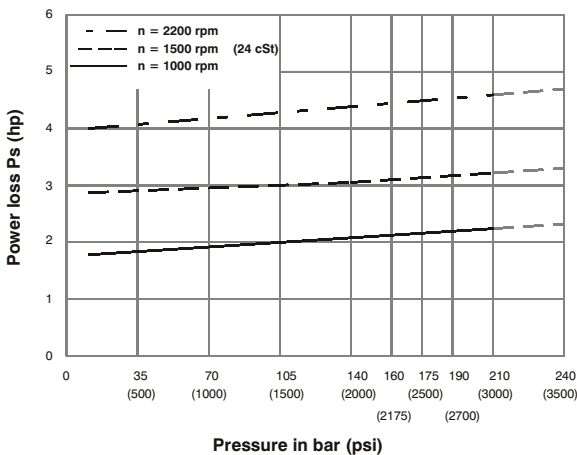


**NOISE LEVEL (TYPICAL)**

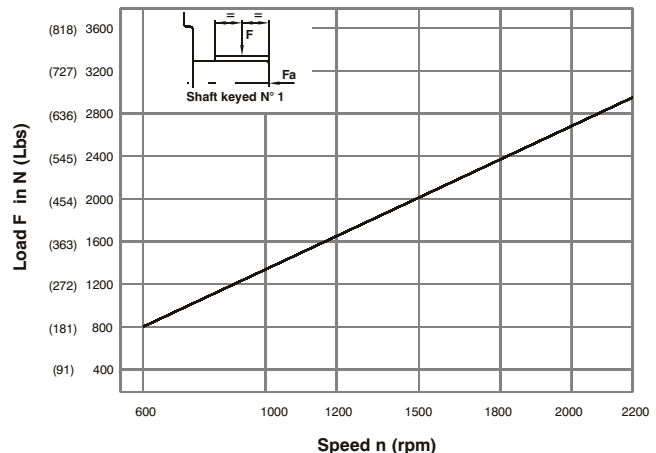
VT6E - 050



**HYDROMECHANICAL POWER LOSS (TYPICAL)**

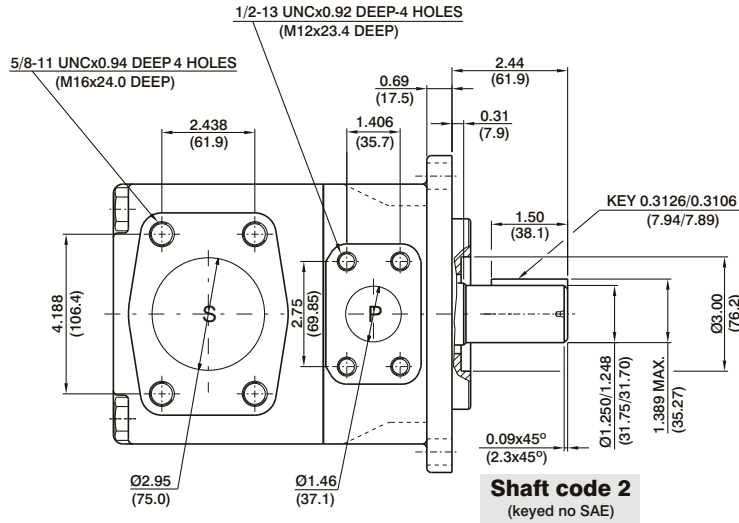


**PERMISSIBLE RADIAL LOAD**

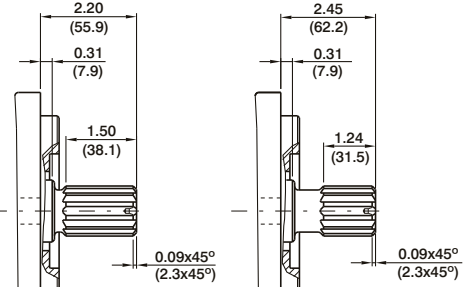


Maximum permissible axial load Fa = 2000 N (449 Lbs)

SP

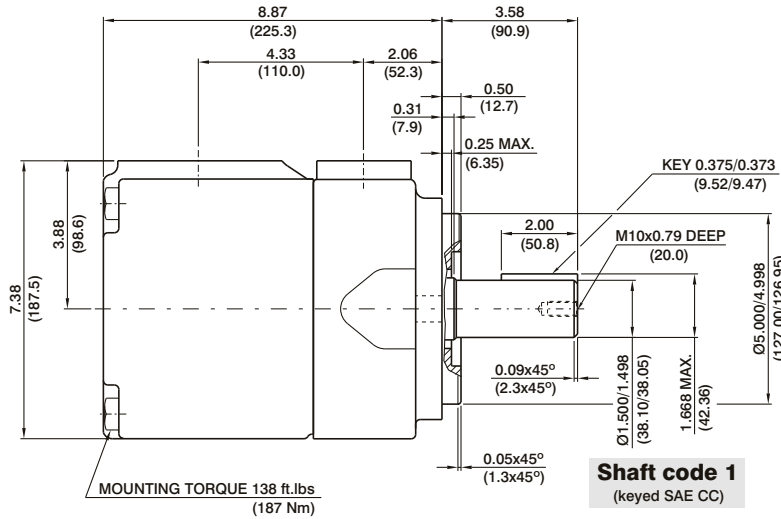


**Shaft code 2**  
(keyed no SAE)

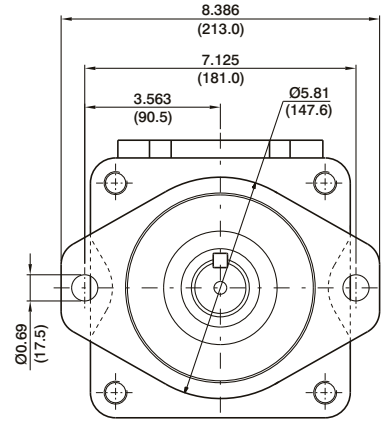


**Shaft code 3**  
SAE C splined shaft  
Class 1-J498b  
12/24 dp. 14 teeth  
30° pressure angle  
flat root side fit

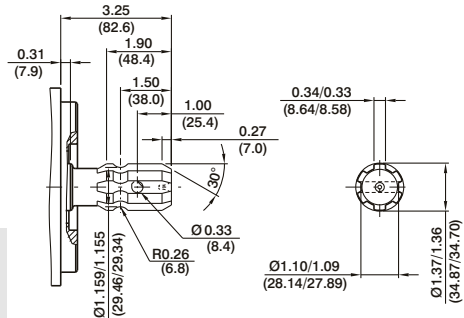
**Shaft code 4**  
SAE CC splined shaft  
Class 1-J498b  
12/24 dp. 17 teeth  
30° pressure angle  
flat root side fit



**Shaft code 1**  
(keyed SAE CC)



Shaft torque limits in <sup>3</sup> /rev x psi (ml/rev x bar)	
Shaft	V <sub>p</sub> x p max.
1	48273 (54555)
2	30638 (34590)
3	54207 (61200)
4	54207 (61200)



**Shaft code T**  
SAE J718C  
540 rpm power take-off  
For Farm Tractor application

## OPERATING CHARACTERISTICS - TYPICAL (24 cST)

Pressure port	Series	Volumetric Displacement V <sub>p</sub>		Flow q & n = 1500 rpm						Input power p & n = 1500 rpm					
				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 = 240 bar (3500 psi)	
		in <sup>3</sup> /rev	cm <sup>3</sup> /rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp	kw
VT6E	042	8.07	132.3	52.50	198.5	49.87	188.5	47.96	181.3	6.97	5.2	66.25	49.4	110.77	82.6
	045	8.70	142.4	56.51	213.6	53.86	203.6	51.98	196.5	7.24	5.4	70.94	52.9	118.95	88.7
	050	9.67	158.5	62.88	237.7	60.24	227.7	58.36	220.6	7.64	5.7	78.45	58.5	131.82	98.3
	052	10.00	164.8	65.40	247.2	62.75	237.2	60.87	230.1	7.78	5.8	81.53	60.8	136.92	102.1
	057	11.02	180.7	71.71	271.1	69.07	261.1	67.19	254.0	8.18	6.1	89.04	66.4	143.35	106.9
	062	12.00	196.7	78.04	295.0	75.40	285.0	73.52	277.9	8.58	6.4	96.42	71.9	162.67	121.3
	066	13.00	213.3	84.63	319.9	81.98	309.9	80.11	302.8	8.98	6.7	104.20	77.7	175.94	131.2
	072	13.86	227.1	90.11	340.6	87.46	330.6	85.58	323.5	9.25	6.9	110.77	82.6	187.07	139.5
	085 <sup>1,2)</sup>	16.40	269.8	107.00	404.7	105.21	397.7	--	--	9.78	7.3	87.56	65.3	--	--

1) 085 = 2000 RPM max.

2) 085 = 75 bar (1100 psi) cont.

085 = 90 bar (1300 psi) max. int.

VT7E or VT7ES - 072 - 1 R 00 - A 1 M0 -

### Series

**VT7E** series-125 A2 HW  
ISO 2 bolts 3019-2 mounting flange  
**VT7ES** series- SAE C 2 bolts  
Mounting flange J744

### Camring

Volumetric displacement  $\text{cm}^3/\text{rev}$  ( $\text{in}^3/\text{rev}$ )

042 = 132.2 (8.07)	057 = 183.2 (11.18)
045 = 142.5 (8.70)	062 = 196.6 (12.0)
050 = 158.5 (9.67)	066 = 213.0 (13.0)
052 = 163.8 (10.0)	072 = 227.1 (13.86)
054 = 170.9 (10.43)	085 = 268.7 (16.40)

### Type of shaft VT7E-VT7ES

5 - keyed (ISO R775-G38M)

### Type of shaft VT7ES

- 1 - keyed (SAE CC)
- 2 - keyed (no SAE)
- 3 - splined (SAE C)
- 4 - splined (SAE CC)

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

- R - clockwise
- L - counter-clockwise

### Modifications

#### Mounting w/connection variables

4 bolts SAE flange (J518)

P = 1-1/2" S = 3"

	UNC	METRIC
VT7E		M0
VT7ES	00	M0

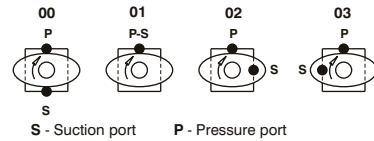
### Seal class

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

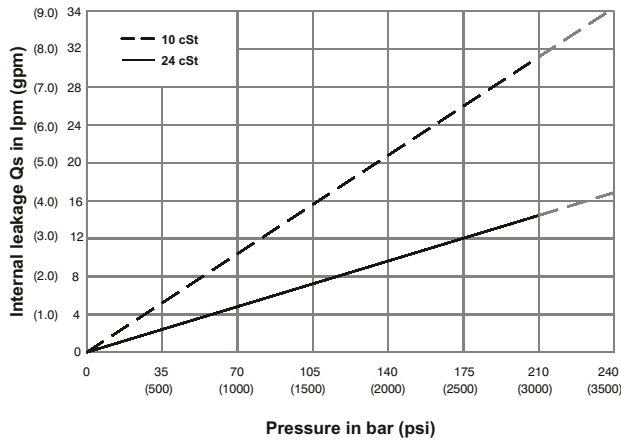
### Design letter

### Porting combination

00 - standard

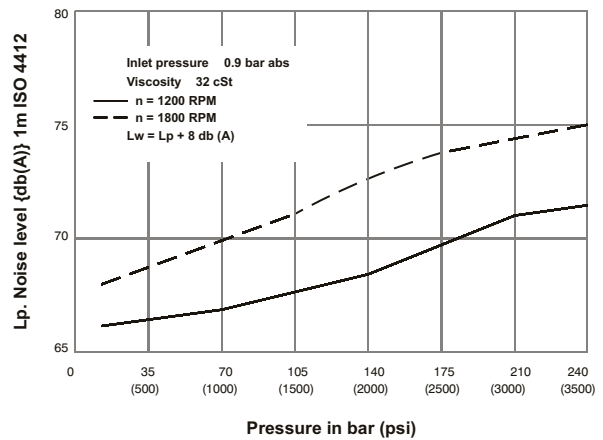


### INTERNAL LEAKAGE (TYPICAL)

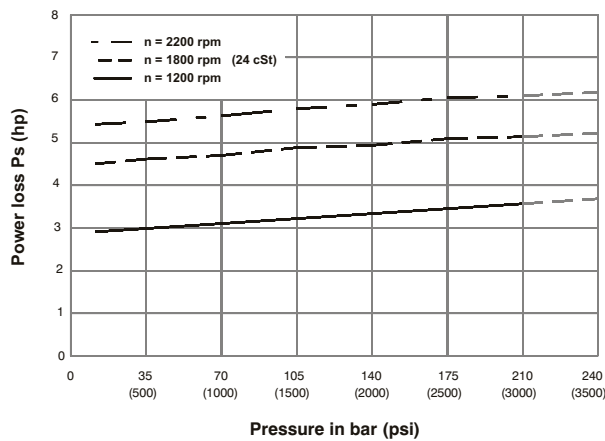


### NOISE LEVEL (TYPICAL)

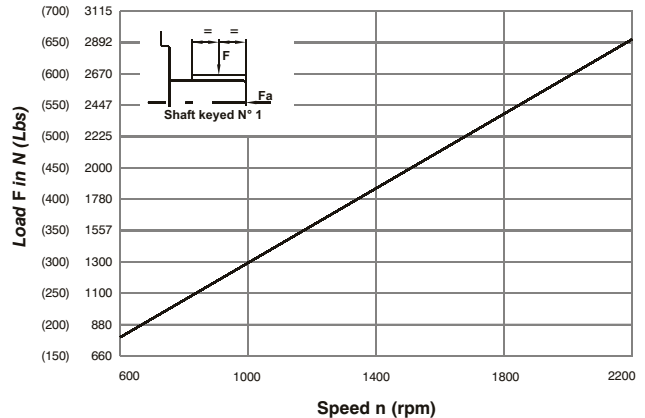
VT7E-050



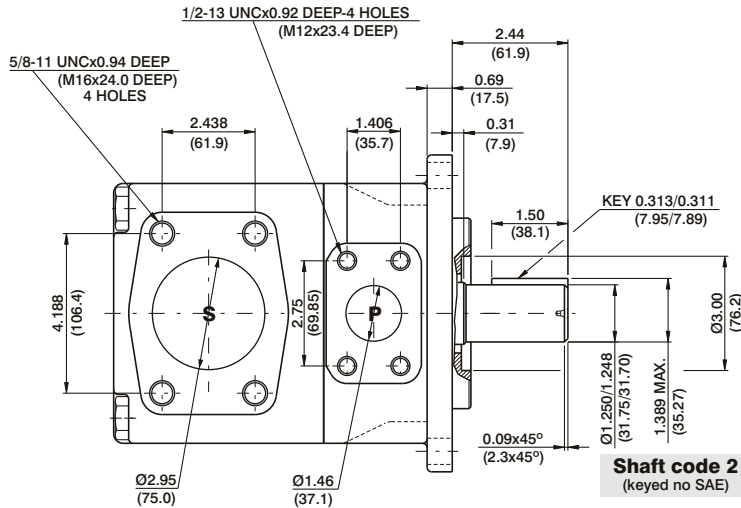
### HYDROMECHANICAL POWER LOSS (TYPICAL)



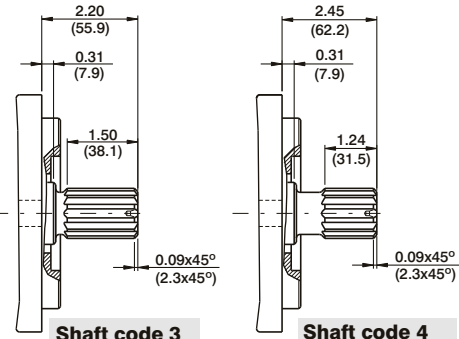
### PERMISSIBLE RADIAL LOAD



Maximum axial load permissible  $F_a = 2000 \text{ N}$  (449 Lbs)

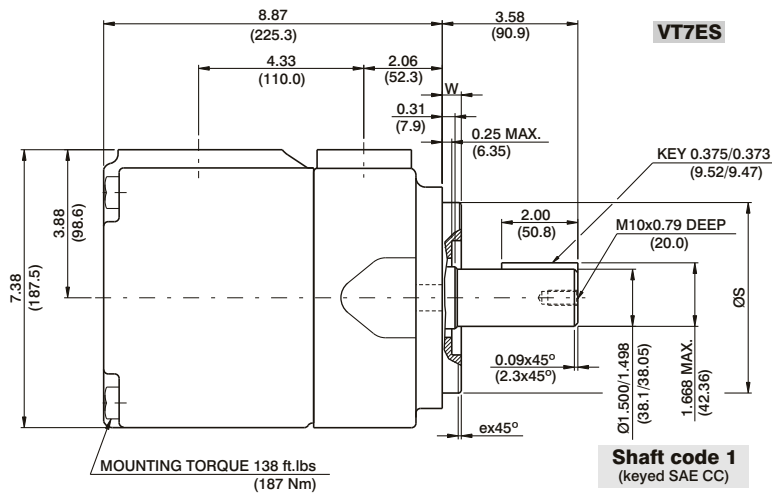


**Shaft code 2**  
(keyed no SAE)

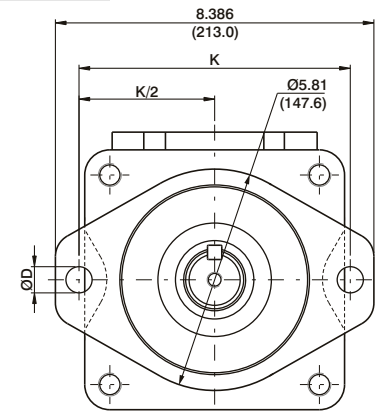


**Shaft code 3**  
SAE C splined shaft  
Class 1-J498b  
12/24 dp. 14 teeth  
30° pressure angle  
flat root side fit

**Shaft code 4**  
SAE CC splined shaft  
Class 1-J498b  
16/32 dp. 17 teeth  
30° pressure angle  
flat root side fit

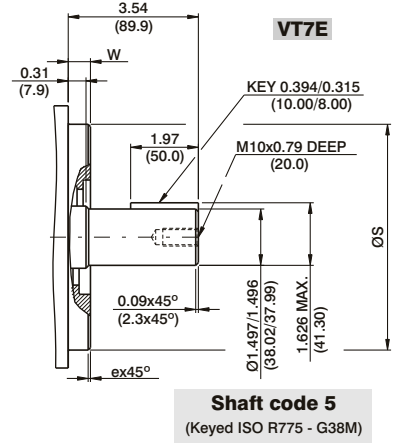


**Shaft code 1**  
(keyed SAE CC)



Shaft torque limits in <sup>3</sup> /rev x psi (ml/rev x bar)	
Shaft	Vp x p max.
1	48273 (54555)
2	30638 (34590)
3	54207 (61200)
4	54207 (61200)
5	48273 (54555)

Series	Alternate mounting flange		ex45°	W	K	ØD
	MAX.	Min.				
VT7E	4.921 (124.99)	4.919 (124.94)	0.079 (2.0)	0.374 (9.49)	7.087 (180.0)	0.709 (18.0)
VT7ES	5.00 (127.00)	4.998 (126.94)	0.051 (1.3)	0.50 (12.7)	7.126 (181.0)	0.689 (17.5)



**Shaft code 5**  
(Keyed ISO R775 - G38M)

## OPERATING CHARACTERISTICS - TYPICAL (24 cST)

Pressure port	Series	Volumetric Displacement Vp	Flow q & n = 1800 rpm						Input power p & n = 1800 rpm						
			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 = 240 bar (3500 psi)		
			in <sup>3</sup> /rev	cm <sup>3</sup> /rev	gpm	lpm	gpm	lpm	gpm	lpm	hp	kw	hp	kw	hp
VT7E VT7ES	042	8.07	132.2	62.92	237.8	60.37	228.2	58.52	221.2	8.09	6.03	78.44	58.49	133.80	99.77
	045	8.70	142.5	67.72	255.9	65.17	246.3	63.32	239.3	8.37	6.24	84.04	62.66	143.60	107.08
	050	9.67	158.5	75.38	284.9	72.83	275.3	70.98	268.3	8.82	6.58	92.97	69.32	159.24	118.75
	052	10.00	163.8	78.37	296.2	75.82	286.6	73.97	279.6	8.99	6.70	96.47	71.94	165.36	123.31
	054	10.43	170.9	81.27	307.2	78.72	297.6	76.87	290.6	9.17	6.84	99.75	74.38	177.46	132.33
	057	11.18	183.2	87.12	329.3	84.57	319.7	82.72	312.7	9.51	7.09	106.57	79.47	189.84	141.56
	062	12.00	196.6	93.54	353.6	90.99	343.9	89.14	336.9	9.88	7.37	114.17	85.13	196.34	146.41
	066	13.00	213.0	101.44	383.4	98.89	373.8	97.04	366.8	10.34	7.71	123.38	92.0	212.46	158.43
	072	13.86	227.1	108.00	408.2	105.45	398.6	103.60	391.6	10.72	7.99	131.04	97.71	225.86	166.42
085 <sup>1)</sup>	16.40	268.7	127.79	483.0	126.13	476.7	--	--	11.88	8.85	101.66	75.80	--	--	

1) 085 = 90 bar (1300 psi) max.int. & 085 = 2000 rpm max.

\* special 3 1/2 (3.5 dia) suction also available - Please contact VELJAN