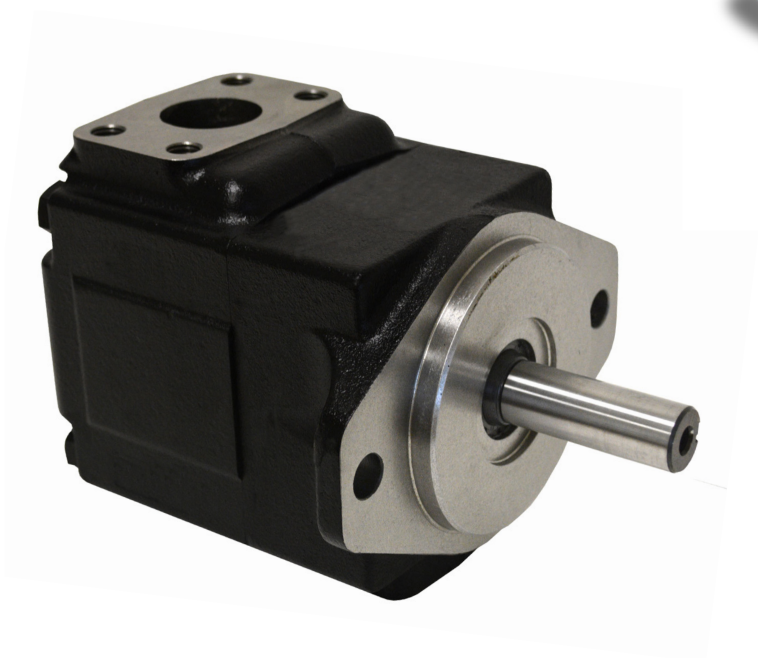


Hydraulic Pumps
T6CM for low pressure drives

Denison Vane Technology

ENGINEERING YOUR SUCCESS.

Key features

These hydraulic vane pumps are using the Denison 3 springs technology which has been proven to be very well adapted to pumping at very low system pressure even fluids with high viscosity.

Reliable performance

The Denison Vane Technology allows very low noise levels over the entire operating range and during the whole life of the pump. Like all our vane pumps, the performances do remain very stable over time, making this pump an ideal solution for the heavy duty industries.

Long lifetime

The fully pressure balanced concept increases the pump lifetime over its full operating range while double lip vanes reduce the sensitivity to fluid pollution.

General characteristics

	Mounting standard	Weight without connector and bracket - kg	Moment of inertia $kgm^2 \times 10^{-4}$	SAE 4 bolts J518c - ISO/DIS 6162-1	
				Suction	Pressure
T6CM T6CMY	SAE J744c ISO/3019-1 SAE B	15,7	7,5	1.1/2"	1"

Main technical data

Pump		Theoretical Displacement Vi	Max. Speed	Max. Pressure		Minimum allowable inlet pressure (bar absolute)					
Type	Ring size		Mineral oil	Int.	Cont.	Speed rpm					Ring size
		cm^3/rev.	rpm	bar	bar	1200	1500	1800	2100	2200	
	R03	10,8									R03
	R05	17,2									R05
	R06	21,3									R06
	R08	26,4								0,80	R08
	R10	34,1							0,80		R10
T6CM	R12	37,1		140	110						R12
T6CMY	R14	46,0	2200			0,80	0,80	0,80			R14
	R17	58,3								0,85	R17
	R20	63,8									R20
	R22	70,3							0,85	0,90	R22
	R25	79,3							0,90	0,95	R25
	R28	88,8								0,98	R28
	R31	100,0		90	75				0,85	0,90	R31

Inlet pressure is measured at inlet flange with petroleum base fluids at viscosity between 10 and 65 cSt. The difference between inlet pressure at the pump flange and atmospheric pressure must not exceed 0.2 bar to prevent aeration.

Multiply absolute pressure by 1,25 for HF-3, HF-4 fluids.
by 1,35 for HF-5 fluid.
by 1,10 for ester or rapeseed base.

Note : For further information or if the performance characteristics outlined in the table do not meet your particular requirements, please consult your local Parker office.

Model No. T6CM (Y) - R22 - 1 R 00 - C 1 - ..

T6CM series - SAE B 2 bolts
J744 mounting flange
Y = Port flanges with metric threads

Displacement
Volumetric displacement (cm³/rev.)

R03 = 10,8	R17 = 58,3
R05 = 17,2	R20 = 63,8
R06 = 21,3	R22 = 70,3
R08 = 26,4	R25 = 79,3
R10 = 34,1	R28 = 88,8
R12 = 37,1	R31 = 100,0
R14 = 46,0	

Type of shaft
1 = keyed (SAE B)
2 = keyed (non SAE)
3 = splined (SAE B) 13 teeth
4 = splined (SAE BB) 15 teeth

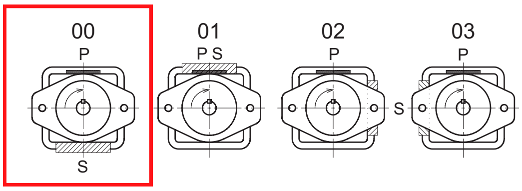
Modifications

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

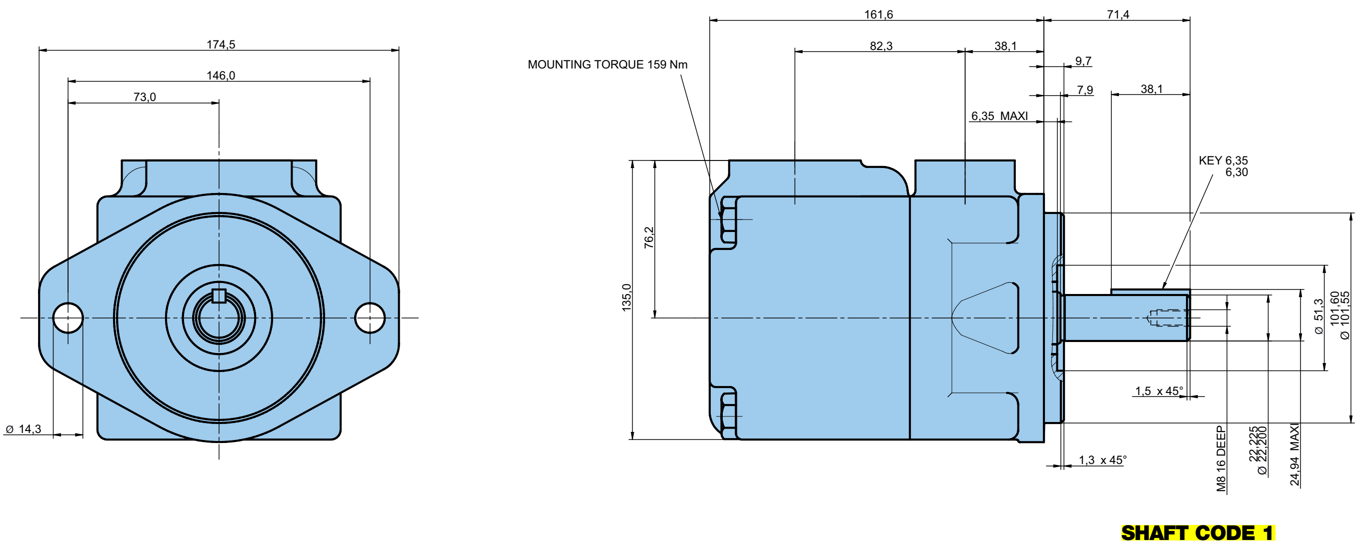
Design letter

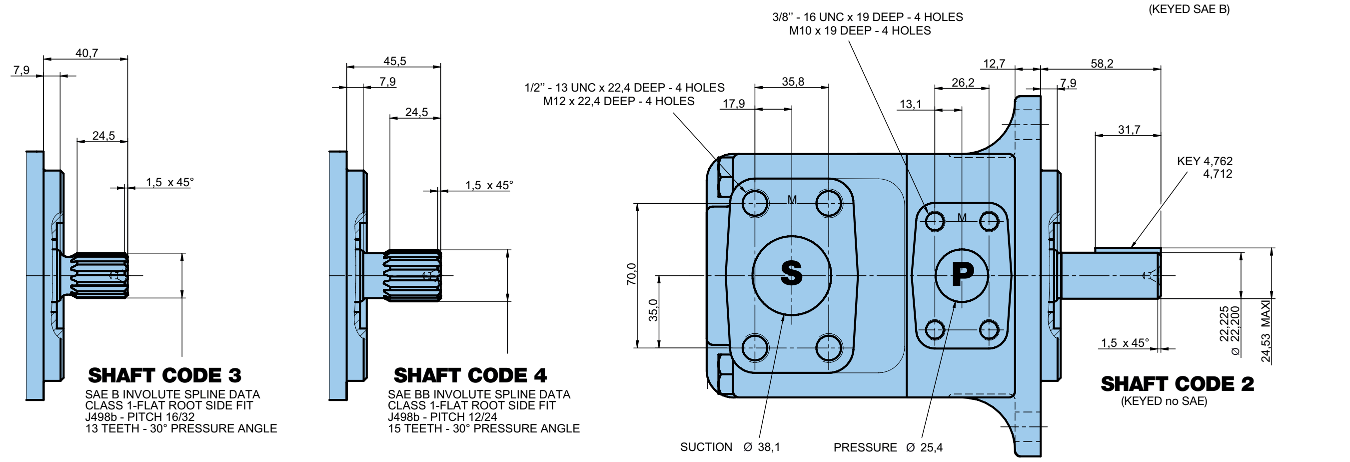
Porting combination
00 = standard

Direction of rotation (shaft end view)
R = Clockwise
L = Counter-clockwise



P = Pressure
S = Suction





Parker Hannifin Manufacturing France SAS
VPDE, Denison Vane Pumps
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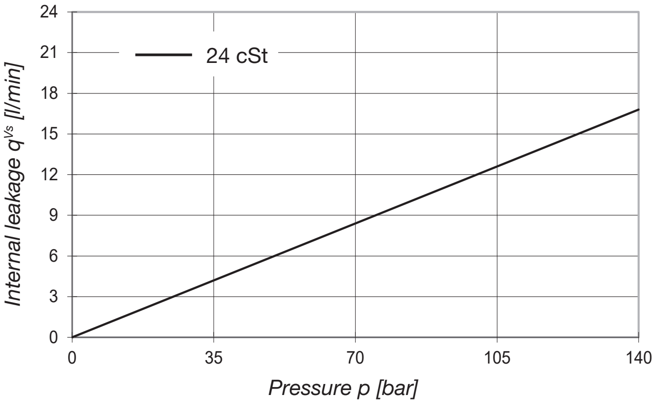
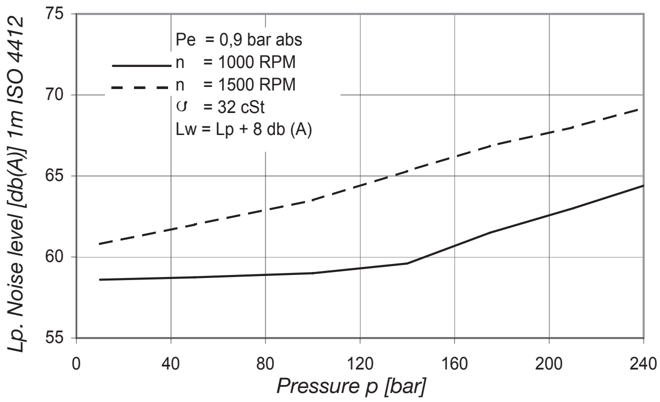
Internal leakage (Typical)

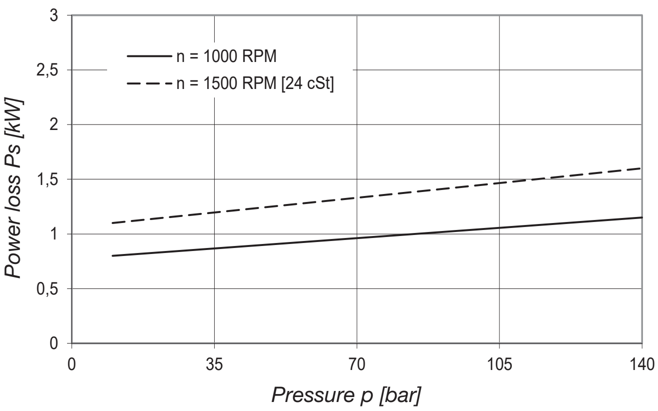


Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is higher than 50% of theoretical flow.

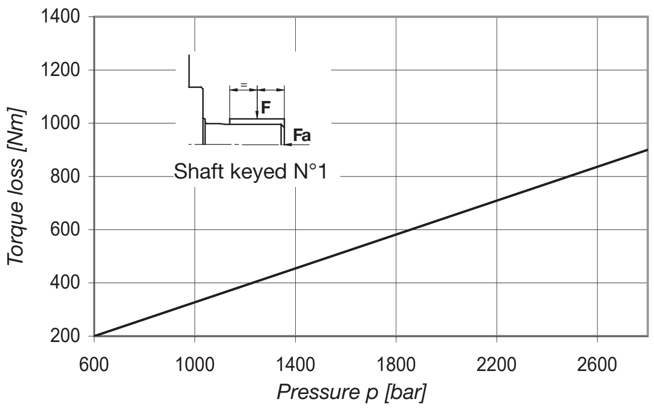
Noise level (Typical) T6CM - R22



Power loss hydromechanical (Typical)



Permissible radial load



Max permissible axial load Fa = 800 N

Operating characteristics - typical [24 cst]

Pressure port	Series	Vi Volumetric displacement	Output flow q_{Ve} [l/min] @ 1500 RPM			Input power P [kW] @ 1500 RPM		
			p = 0 bar	p = 50 bar	p = 140 bar	p = 7 bar	p = 50 bar	p = 140 bar
T6CM T6CMY	R03	10,8 cm³/rev	16,2	10,2	1)	1,3	2,7	1)
	R05	17,2 cm³/rev	25,8	19,8	1)	1,4	3,0	1)
	R06	21,3 cm³/rev	31,9	25,9	1)	1,5	4,0	1)
	R08	26,4 cm³/rev	39,6	33,6	22,8	1,6	4,6	11,0
	R10	34,1 cm³/rev	51,1	45,1	28,3	1,7	5,6	13,7
	R12	37,1 cm³/rev	55,6	49,6	32,8	1,8	6,0	14,7
	R14	46,0 cm³/rev	69,0	63,0	52,2	2,0	7,1	17,9
	R17	58,3 cm³/rev	87,4	81,5	70,7	2,2	8,6	22,2
	R20	63,8 cm³/rev	95,7	89,7	78,9	2,3	9,3	24,1
	R22	70,3 cm³/rev	105,4	99,5	88,7	2,4	10,1	26,1
	R25	79,3 cm³/rev	118,9	113,0	102,2	2,5	11,2	29,6
	R28	88,8 cm³/rev	133,2	127,2	116,4	2,8	12,4	32,9
	R31	100,0 cm³/rev	150,0	144	139,2	2,9	13,8	2)

1) *Do not use : η vol < 50 %*
2) *p max = 90 bar*

Calculation

To resolve

Volumetric displ.	*Vi [cm^3/rev.]*
Available flow	*Q_{eff} [l/min]*
Input power	*P_{eff} [kW]*

Performances required

Requested flow	*Q*	*[l/min]*	*42*
Speed	*n*	*[rpm]*	*1500*
Pressure	*p*	*[bar]*	*50*

Routine :	*Example :*
1. First calculation Vi = 1000 x Q / n	*Vi = 1000 x 42 / 1500 = 28 cm^3/rev.*
2. Choose the pump with the next higher Vi	*R10, Vi = 34,1 cm^3/rev.*
3. Theoretical flow of this pump *Q_{theo} = Vi x n / 1000*	*Q_{theo} = 34,1 x 1500 / 1000 = 51,1 l/min*
4. Read q_{vs} leakage function of pressure Q_{Vs} = f(p) on curve	*q_{Vs} = 6 l/min at 50 bar*
5. Available flow $Q_{eff} = Q_{theo} - q_{Vs}$	*Q_{eff} = 51,1 - 6 = 45,1 l/min*
6. Theoretical input power *$P_{theo} = Q_{theo}$ x p / 600*	*P_{theo} = 51,1 x 50 / 600 = 4,3 kW*
7. Read Ps hydrodynamical power loss on curve	*Ps at 1500 rpm, 50 bar = 1,3 kW*
8. Calculation of necessary input power *$P_{eff} = P_{theo}$ + Ps*	*P_{eff} = 4,3 + 1,3 = 5,6 kW*
9. Results	*Vi = 34,1 cm^3/rev.* *Q_{eeff} = 45,1 l/min* *P_{eff} = 5,6 kW* — *T6CM(Y) R10*

Follow these calculation steps for each application.

General applications instructions

1. Check speed range, pressure, temperature, fluid quality, fluid viscosity and pump rotation way.
2. Check the inlet conditions of the pump, if it can accept the application requirements.
3. Check the type of shaft : if it will support the operating torque.
4. Check the coupling which must be chosen to minimize pump shaft load (weight, misalignment).
5. Filtration : must be adequate for the lowest contamination level.
6. Check the environment of the pump : as to avoid noise reflection, pollution and shocks.

Offer of Sale

Please contact your Parker representation for a detailed "Offer of Sale".

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