Mobile Hydraulic Pumps T6*M

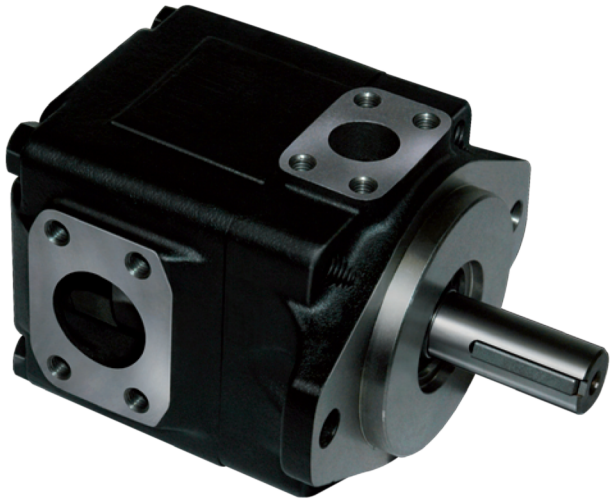
Denison Vane Technology, fixed displacement

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Parker

ENGINEERING YOUR SUCCESS.

Parker Hannifin SAS
VPDE, Denison Vane Pumps
Vierzon - France



GREATER FLOW

Greater flow for the envelope size is achieved by increased displacement cam rings at high permissible speeds with atmospheric inlet
C → 3 to 31 GPM, 10 to 100 ml/rev.
D → 14 to 50 GPM, 48 to 158 ml/rev.
E → 42 to 72 GPM, 132 to 227 ml/rev.

HIGHER PRESSURE

Pressure ratings to 275 bar reduce size and cost of actuators, valves and lines, give extended life at reduced pressures.

BETTER EFFICIENCY

Better efficiency under load increases productivity, reduces heating and operating costs.

MOUNTING FLEXIBILITY

Up to 32 positions for double pumps and up to 128 for triple pumps: this reduces mounting costs and improves performance.

LOWER NOISE LEVELS

Increase operator safety and acceptance.

COMPLETE CONFORMITY

To SAE - J744c 2-bolt standards and to ISO 3019-1 (T6EDCS SAE E, T6EDCM ISO 3019/2) in the various keyed and splined shaft options offered.

CARTRIDGE DESIGN

Provides for drop-in assemblies. This allows easy conversion or renewal of serviceable elements in minutes at minimum expense and risk of contamination. The “C” & “D” cartridge pumps are birotational and indicated by “B” description in cartridge model number. Pump rotation is easy to change by changing position of cam ring on port plate dowel pin hole.

WIDER RANGE OF ACCEPTABLE VISCOSITIES

Viscosities from 2000 to 10 cSt permit colder starts and hotter running. The balanced design compensates for wear and temperature changes. At high viscosity or cold temperature, the rotor to side plates gap is well lubricated and improves mechanical efficiency.

FIRE RESISTANT FLUIDS

Including phosphate esters, chlorinated hydrocarbons, water glycols and invert emulsions may be pumped at higher pressures and with longer service life by these pumps.

GENERAL APPLICATIONS INSTRUCTIONS

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

Size	Series	Theoretical Displacement Vi	Minimum Speed	Maximum Speed		Maximum Pressure					
				HF-0,HF-1 HF-2	HF-3, HF-4 HF-5	HF-0, HF-2		HF-1, HF-4, HF-5		HF-3	
						Int.	Cont.	Int	Cont	Int	Cont
		ml/rev.	RPM	RPM	RPM	bar	bar	bar	bar	bar	bar
CM CP	B03	10,8	400	2800	1800	275	240	210	175	175	140
	B05	17,2									
	B06	21,3									
	B08	26,4									
	B10	34,1									
	B12	37,1									
	B14	46,0									
	B17	58,3									
	B20	63,8									
	B22	70,3									
	B25	79,3		2500							
	B28	88,8				210	160		160		
	B31	100,0									
DM DP	B14	47,6	400	2500	1800	240	210	210	175	175	140
	B17	58,2									
	B20	66,0									
	B24	79,5									
	B28	89,7									
	B31	98,3									
	B35	111,0									
	B38	120,3									
	B42	136,0		2200							
	B45	145,7									
	B50	158,0				210	160		160		
EM EP	042	132,3	400	2200	1800	240	210	210	175	175	140
	045	142,4									
	050	158,5									
	052	164,8									
	062	196,7									
	066	213,3									
	072	227,1									

HF-0, HF2 = Antiwear Petroleum Base
HF-1 = Non Antiwear Petroleum Base
HF-5 = Synthetic Fluids
HF-3 = Water in oil Emulsions
HF-4 = Water Glycols

For further information or if the performance characteristics outlined above do not meet your own particular requirements, please consult your local Parker office.

PRIMING AT STARTING

At first, start operation of the pump shaft at the lowest speed and at the lowest pressure to obtain priming. When a pressure relief valve is used at the outlet, it should be backed off to minimize return pressure.
When possible, an air bleed off should be provided in the circuit to facilitate purging of system air.
Never operate pump shaft at top speed and pressure without checking for completion of pump priming, and the fluid has no aeration disaerated.

Parker Hannifin SAS
VPDE, Denison Vane Pumps
Vierzon - France

Minimum allowable inlet pressure (bar absolute)

Cartridge		Speed RPM								Series
Size	Series	1200	1500	1800	2100	2200	2300	2500	2800	
CM CP	B03	0,80	0,80	0,80	0,80	0,80	0,80	0,90	1,00	B03
	B05									B05
	B06									B06
	B08									B08
	B10									B10
	B12						0,85	0,92		B12
	B14							0,95		B14
	B17					0,85	0,90		1,03	B17
	B20									B20
	B22				0,85	0,90		0,98	1,05	B22
	B25				0,90	0,95	0,95	1,05		B25
	B28					0,98	0,98	1,08		B28
	B31				0,85	0,90	1,00	1,11		B31
DM DP	B14	0,80	0,80	0,80	0,80	0,88	0,95	1,00		B14
	B17									B17
	B20									B20
	B24				0,82			1,10		B24
	B28				0,85	0,92	1,00	1,18		B28
	B31				0,90	0,95		1,23		B31
	B35				0,92	0,98	1,02	1,29		B35
	B38				0,95	1,00	1,05			B38
	B42					1,02	1,08			B42
	B45			0,85	0,98	1,05				B45
	B50				1,02	1,09				B50
EM EP	042	0,80	0,80	0,80	0,88	1,00				042
	045				0,90					045
	050									050
	052									052
	062			0,85	0,95					062
	066	0,85	0,85	0,95	1,00	1,09				066
	072			0,85		1,05				072

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.

Use highest cartridge absolute pressure for double & triple pump.

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 - [4] ISO/DIS 6162-2			
				Suction	Pressure		
T6CM	SAE J744c ISO/3019-1 SAE B	15,7	7,5	1.1/2"	1"		
T6CP	SAE J744c ISO/3019-1 SAE C	18,0	7,8	2"[4]	1.1/4"[4]		
T6D*		24,0	23,3	2"	1.1/4"		
T6E*		43,3	51,5	3"	1.1/2"		
T6CC*	SAE J744c ISO/3019-1 SAE B	26,0	14,9	2.1/2" or 3"	P1	P2	
					1"	1" or 3/4"	
T6DC*	SAE J744c ISO/3019-1 SAE C	36,6	30,4	3"	1.1/4"	1"	
T6EC*		55,0	73,4	3.1/2"	1.1/2"	1"	
T6ED*		66,0	73,4	4"	1.1/2"	1"1/4	
T6DCC*		61,0	37,3	4"	P1	P2	P3
					1.1/4"	1"	1" or 3/4"
T6EDC*	SAE "E" (T6EDCS) ISO/3019-2 (T6EDCM)	100,0	80,2	4"	1.1/2"	1.1/4"	1" or 3/4"

Parker Hannifin SAS
VPDE, Denison Vane Pumps
Vierzon - France

Model No. T6D* - B45 - 1 R 00 - C 1

Series M = Mobile 1 shaft seal
Series P = Mobile 2 shaft seals

Cam ring
(Delivery at 0 bar & 1500 r.p.m.)
B14 = 71,4 l/min
B17 = 87,3 l/min
B20 = 99,0 l/min
B24 = 119,3 l/min
B28 = 134,5 l/min
B31 = 147,4 l/min
B35 = 166,5 l/min
B38 = 180,4 l/min
B42 = 204,0 l/min
B45 = 218,5 l/min
B50 = 237,0 l/min

Type of shaft
M version
1 = keyed (SAE C)
2 = keyed (no SAE)
3 = splined (SAE C)
4 = splined (no SAE)
T = splined (SAE J718c)

Type of shaft
P version
3 = splined (no SAE)

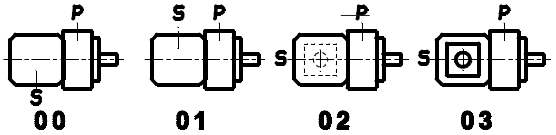
Modification

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

Design letter

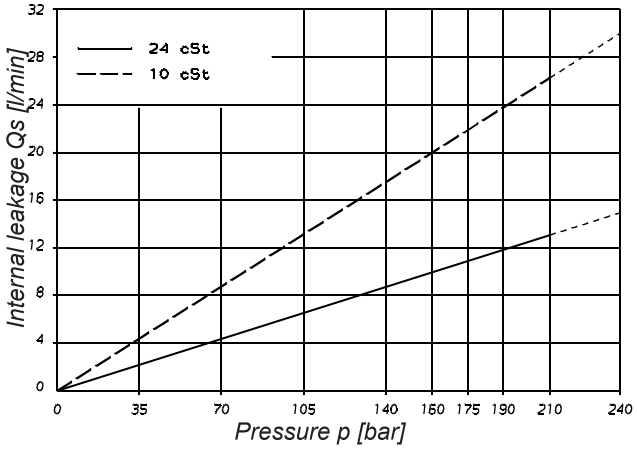
Porting combination
00 = standard

Direct. of rotation (view on shaft end)
R = clockwise
L = counter-clockwise

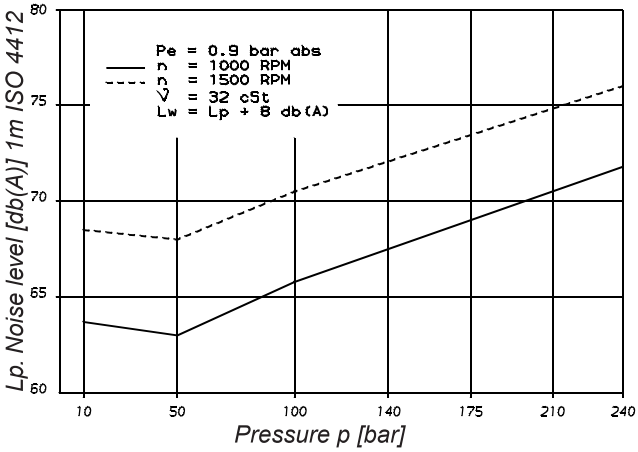


P = Pressure port
S = Suction port

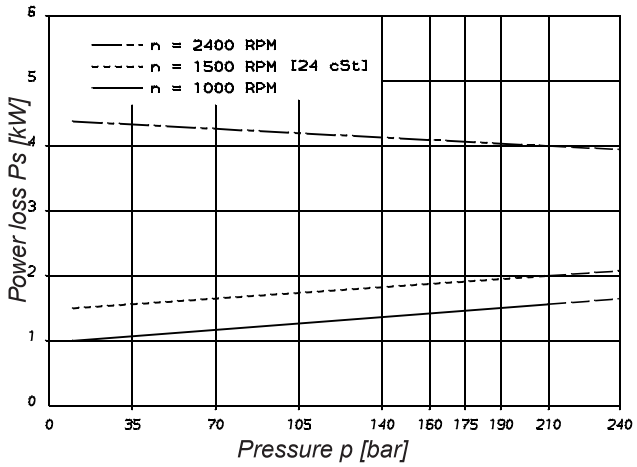
INTERNAL LEAKAGE (TYPICAL)



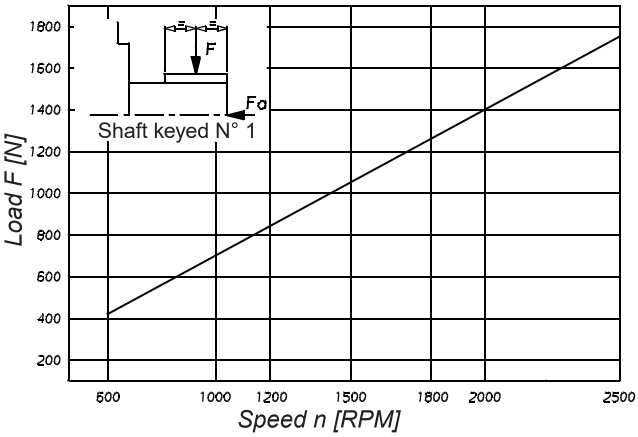
NOISE LEVEL (TYPICAL)
T6DM - B38



POWER LOSS HYDROMECHANICAL (TYPICAL)

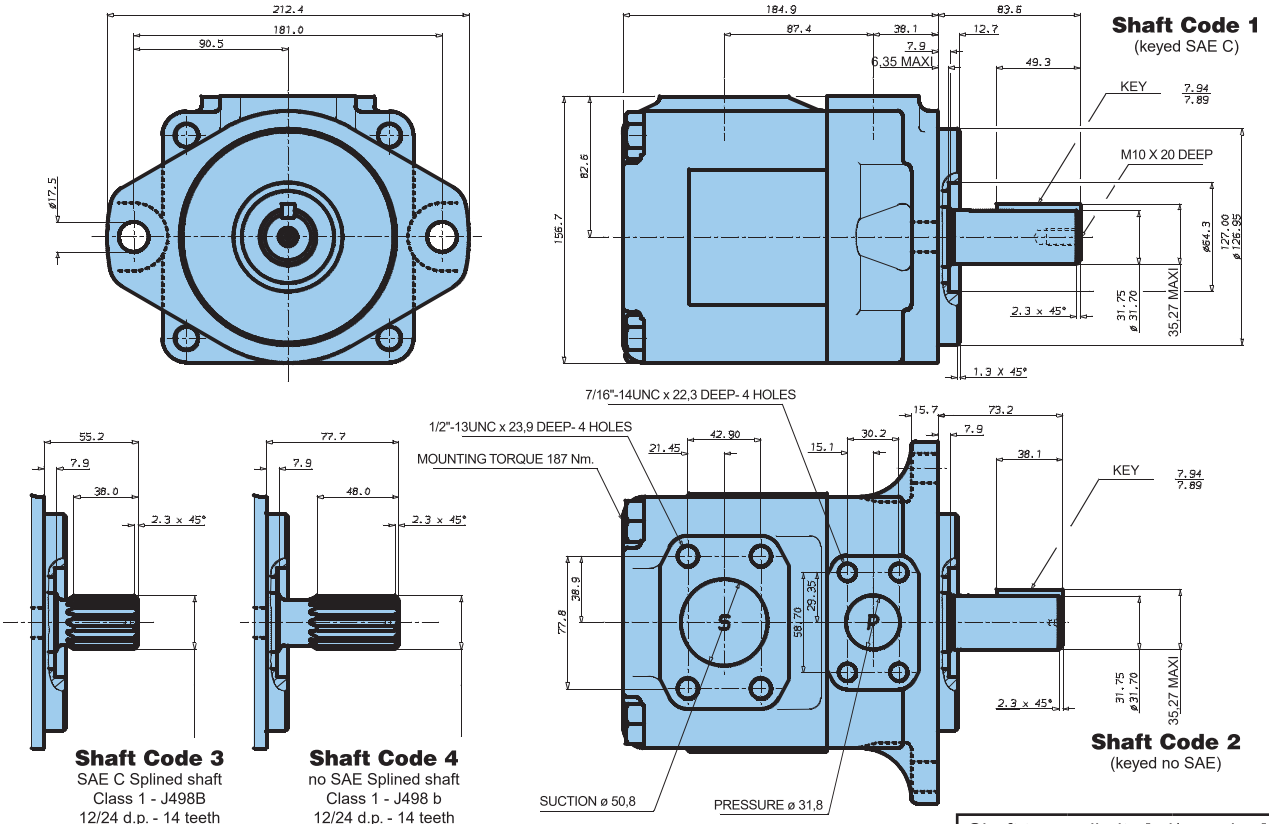


PERMISSIBLE RADIAL LOAD



Maximum permissible axial load Fa = 1200 N

Parker Hannifin SAS
VPDE, Denison Vane Pumps
Vierzon - France



Shaft torque limits [ml/rev x bar]		
Pump	**Shaft**	**Vi x p max.**
T6DM	1	43240
	2	34590
	3	61200
	4	61200

Additional T6DM shaft code T: see page 33
Additional T6DP version shaft see page 33

OPERATING CHARACTERISTICS - TYPICAL [24 cSt]

Series	Volumetric Displacement Vi	Speed n [R.P.M.]	Flow Q [l/min]			Input power P [kW]		
			p = 0 bar	p = 140 bar	p = 240 bar	p = 7 bar	p = 140 bar	p = 240 bar
B14	47.6 ml/rev	1000 1500	47.6 71.4	38.3 62.1	32.1 55.9	1.5 2.3	12.5 18.5	20.7 30.6
B17	58.2 ml/rev	1000 1500	58.2 87.3	48.9 78.0	42.7 71.8	1.6 2.5	14.9 22.2	24.9 37.0
B20	66.0 ml/rev	1000 1500	66.0 99.0	56.7 89.7	50.5 83.5	1.7 2.8	16.8 24.9	28.0 41.7
B24	79.5 ml/rev	1000 1500	79.5 119.3	70.2 110.0	64.0 103.8	1.9 3.0	19.9 29.6	33.4 49.8
B28	89.7 ml/rev	1000 1500	89.7 134.5	80.4 125.2	74.2 119.0	2.0 3.2	22.3 33.2	37.5 55.9
B31	98.3 ml/rev	1000 1500	98.3 147.4	89.0 138.1	82.8 131.9	2.1 3.3	24.3 36.2	40.9 61.0
B35	111.0 ml/rev	1000 1500	111.0 166.5	101.7 157.2	95.5 151.0	2.3 3.5	27.3 40.7	46.0 68.7
B38	120.3 ml/rev	1000 1500	120.3 180.4	111.0 171.1	104.8 164.9	2.4 3.7	29.4 43.9	49.8 74.3
B42[1)]	136.0 ml/rev	1000 1500	136.0 204.0	126.7 194.7	120.5 188.5	2.6 4.0	33.1 49.4	56.0 83.7
B45[1)]	145.7 ml/rev	1000 1500	145.7 218.5	136.4 209.2	130.2 203.0	2.7 4.1	35.3 52.8	59.9 89.5
B50[1)]	158.0 ml/rev	1000 1500	158.0 237.0	148.7 227.7	145.0[2)] 224.0[2)]	2.8 4.4	38.2 57.0	56.8[2)] 85.0[2)]

[1)] B42 - B45 - B50 = 2200 R.P.M. max. *[2)] B50 = 210 bar max. int.* *Port connection can be furnished with metric threads.*

Parker Hannifin SAS
VPDE, Denison Vane Pumps
Vierzon - France