

DENISON HYDRAULICS
vane pumps : single, double & triple
General catalog
T7 - T67 - T6C series



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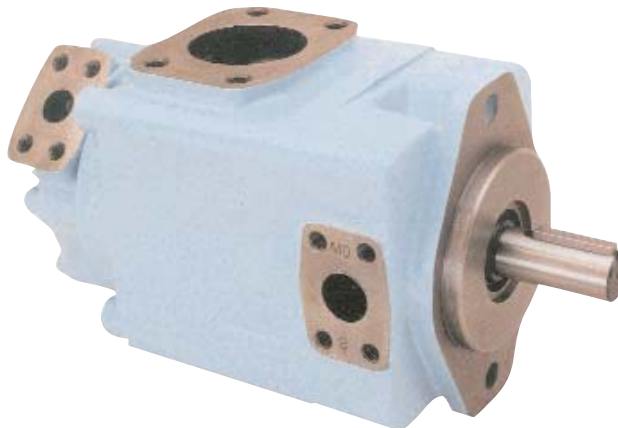
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DENISON Hydraulics

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CHARACTERISTICS

These vane pumps have been specially designed for high/low circuit. The combination of different cartridges in double and triple pumps allows low flow at high pressure (300 bar max.) and high flow at lower pressure. This is a clever way to optimize your circuit design.

This pump feature will also allow a very fast pressure cycle change with a very precise flow repeatability.

GREATER FLOW

- B : 5,8 to 50,0 ml/rev.
- C : 10,8 to 100,0 ml/rev.
- D : 44,0 to 158,0 ml/rev.
- E : 132,3 to 268,7 ml/rev.

HIGHER PRESSURE

- B : 320 bar max. (300 bar for multiple pump).
- C : 275 bar max.
- D : 280 bar max. (250 bar for multiple pump).
- E : 240 bar max.

WIDE SPEED RANGE

Industrial pumps : from 600 to 3600 RPM

BETTER EFFICIENCY

Over 94 % under high pressure, which increases productivity and reduces heating and operation costs.

LOW NOISE LEVELS

Increase operator safety and acceptance.

MOUNTING FLEXIBILITY

- Single pumps : 4 positions.
- Double pumps : 32 positions.
- Triple pumps : 128 positions.

CARTRIDGE DESIGN

Provides for drop-in assemblies. They permit easy conversion and service.
 B and D cartridges : bi-directional
 C and E cartridges : Uni-directional.

WIDE RANGE OF ACCEPTABLE VISCOSITIES

Viscosities from 860 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 AND BIODEGRADABLE FLUIDS

Including phosphate esters, organic esters, chlorinated hydrocarbons, water glycols, rapeseed 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 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.

Model of pump	Displ.	Theoretical Displacement Vi ml/rev	Minimum speed RPM	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	
				RPM	RPM	Int. bar	Cont. bar	Int. bar	Cont. bar	Int. bar	Cont. bar
T7B T7BS	B02	5,8	600	3600	1800	320 ¹⁾	290	240	210	175	140
	B03	9,8									
	B04	12,8									
	B05	15,9									
	B06	19,8									
	B07	22,5									
	B08	24,9									
	B09	28,0									
	B10	31,8									
	B11	35,0									
	B12	41,0									
	B14	45,0		3000			300	275			
	B15	50,0					280	240			
T6C	003	10,8	600	2800	1800	275	240	210	175	175	140
	005	17,2									
	006	21,3									
	008	26,4									
	010	34,1									
	012	37,1									
	014	46,0									
	017	58,3									
	020	63,8									
	022	70,3									
	025	79,3									
	028	88,8									
	031	100,0									
				2500			210	160		160	
T7D T7DS	B14	44,0	600	3000	1800	300	250	240	210	175	140
	B17	55,0									
	B20	66,0									
	B22	70,3									
	B24	81,1									
	B28	90,0									
	B31	99,2									
	B35	113,4									
	B38	120,6									
	B42	137,5									
	045 ²⁾	145,7									
050 ²⁾	158,0										
				2800		280					
				2500		260	230				
				2200		240	210	210	175		
						210	160		160		
T7E T7ES	042	132,3	600	2200	1800	240	210	210	175	175	140
	045	142,4									
	050	158,5									
	052	164,8									
	054	171,0									
	057	183,3									
	062	196,7									
	066	213,3									
	072	227,1									
085	268,7										
				2000		90	75	75	75	75	75

HF-0, HF-2 = Anti-wear petroleum base.

HF-1 = Non anti-wear petroleum base.

HF-5 = Synthetic fluids.

HF-3 = Water-in-oil invert emulsions.

HF-4 = Water glycol solutions.

¹⁾ Please consult DENISON Hydraulics for application over 300 bar.

²⁾ Ten vane technology.

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

Model of pump	Displ.	Theoretical Displacement Vi ml/rev	Minimum speed RPM	Maximum speed		Maximum pressure					
				HF-0, HF-1 HF-2 RPM	HF-3, HF-4 HF-5 RPM	HF-0, HF-2		HF-1, HF-4, HF-5		HF-3	
						Int. bar	Cont. bar	Int. bar	Cont. bar	Int. bar	Cont. bar
T7 <u>BB</u> /S T67 <u>CB</u> T7 <u>DB</u> /S T7 <u>EB</u> /S T67 <u>DBB</u> T67 <u>DCB</u> T7 <u>DDB</u> /S T7 <u>EDB</u> /S	B02	5,8	600	2200 ³⁾	1800	T7BB T7BBS 320 ¹⁾	T7BB T7BBS 290	240	210	175	140
	B03	9,8									
	B04	12,8									
	B05	15,9									
	B06	19,8									
	B07	22,5									
	B08	24,9									
	B09	28,0									
	B10	31,8									
	B11	35,0									
	B12	41,0									
	B14	45,0									
	B15	50,0				280	240				
T6 <u>CC</u> T67 <u>CB</u> T67 <u>DC</u> T67 <u>EC</u> T67 <u>DCB</u> T67 <u>DCC</u> T67 <u>DDCS</u> T67 <u>EDC/S</u>	003	10,8	600	2200 ³⁾	1800	275	240	210	175	175	140
	005	17,2									
	006	21,3									
	008	26,4									
	010	34,1									
	012	37,1									
	014	46,0									
	017	58,3									
	020	63,8									
	022	70,3									
	025	79,3									
	028	88,8									
	031	100,0				210	160	160			
T7 <u>DB</u> /S T67 <u>DC</u> T7 <u>DD</u> /S T7 <u>EDS</u> T67 <u>DBB</u> T67 <u>DCB</u> T67 <u>DCC</u> T7 <u>DDB</u> /S T67 <u>DDCS</u> T7 <u>EDB</u> /S T67 <u>EDC/S</u>	B14	44,0	600	2200 ³⁾	1800	250	210	240	210	175	140
	B17	55,0									
	B20	66,0									
	B22	70,3									
	B24	81,1									
	B28	90,0									
	B31	99,2									
	B35	113,4									
	B38	120,6									
	B42	137,5									
	045 ²⁾	145,7									
	050 ²⁾	158,0				250	210	210	175		
						210	160	160			
T7 <u>EB</u> /S T67 <u>EC</u> T7 <u>EDS</u> T7 <u>EE</u> /S T67 <u>EDB</u> /S T67 <u>EDC/S</u>	042	132,3	600	2200 ³⁾	1800	240	210	210	175	175	140
	045	142,4									
	050	158,5									
	052	164,8									
	054	171,0									
	057	183,3									
	062	196,7									
	066	213,3									
	072	227,1									
	085	268,7				90	75	75	75	75	75

HF-0, HF-2 = Anti-wear petroleum base.
 HF-1 = Non anti-wear petroleum base.
 HF-5 = Synthetic fluids.
 HF-3 = Water-in-oil invert emulsions.
 HF-4 = Water glycol solutions.

¹⁾ Please consult DENISON Hydraulics for application over 300 bar.

²⁾ Ten vane technology.

³⁾ Please consult DENISON Hydraulics with higher speeds.

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

MINIMUM ALLOWABLE INLET PRESSURE (BAR ABSOLUTE) - GENERAL CATALOG

Cartridges		Speed RPM										Displ.																																																						
Sizes	Displ.	1200	1500	1800	2100	2200	2300	2500	2800	3000	3600																																																							
B	B02	0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80	B02																																																		
	B03																0,82	0,98	B03																																															
	B04																			B04																																														
	B05																				B05																																													
	B06											0,85	1,05	B06																																																				
	B07														B07																																																			
	B08											0,90	1,15				B08																																																	
	B09																	B09																																																
	B10																					B10																																												
	B11																						B11																																											
	B12																							B12																																										
	B14																								B14																																									
	B15																									B15																																								
	C																										003	0,80	0,80	0,80	0,80	0,80	0,80	0,90	1,00	1,00	1,00	1,00	1,00	1,00	003																									
005		0,85	0,92	005																																																														
006					0,95	1,03	006																																																											
008								0,90	1,05	008																																																								
010											0,98					1,08			010																																															
012														1,11						1,11	012																																													
014															0,85												0,90															014																								
017												0,95	1,05				017																																																	
020																		0,98																									1,08	020																						
022																						1,05																							1,05	022																				
025																							0,90																								0,98	025																		
028																								0,95																									1,05	028																
031																									0,98																										1,08	031														
D																										B14																											0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80
	B17																									0,82		0,86	B17																																					
	B20	0,83	0,88	B20																																																														
	B22				0,86	0,95	B22																																																											
	B24							0,88	1,00	B24																																																								
	B28										0,90					1,05			B28																																															
	B31													0,84						0,97	B31																																													
	B35														0,86												1,01			B35																																				
	B38											0,90	0,90				B38																																																	
	B42																	0,85													0,98	1,05	B42																																	
	045																					1,02												1,09	045																															
	050																						0,80													0,80	0,80	050																												
	E																							042															0,80	0,80	0,80	0,90	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00																
																								045	0,85																										0,95	1,09														
050																								0,85																													1,00	1,05	050											
052																										0,85		1,00	1,05																											052										
054		0,85	1,00	1,05																																																					054									
057					0,85	1,00	1,05																																																			057								
062								0,85	1,00	1,05																																																	062							
066											0,85					1,00			1,05																																									066						
072														0,85						1,00	1,05																																								072					
085															0,85												1,00			1,05																																085				

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 the cartridge with the highest absolute pressure for double and triple pumps.

MAIN CALCULATION

To resolve
 Volumetric displ. V_i [ml/rev.]
 Available flow q_v [l/min]
 Input power P [kW]

Performances required
 Requested flow q_v [l/min] 75
 Speed n [RPM] 2500
 Pressure p [bar] 250

Routine :

Example :

1. First calculation $V_i = \frac{1000 Q}{n}$

$V_i = \frac{1000 \times 75}{2500} = 30 \text{ ml/rev.}$

2. Choice V_i of pump immediately greater (see tabulation)

T7B B10, $V_i = 31,8 \text{ cm}^3/\text{rev.}$

3. Theoretical flow of this pump

$q_{Vi} = \frac{V_p \times n}{1000}$

$q_{Vi} = \frac{31,8 \times 2500}{1000} = 79,5 \text{ l/min}$

4. Find q_{Vs} leakage function of pressure $q_{Vs} = f(p)$ on curve at 10 or 24 cSt

T7B (page 14) : $q_{Vs} = 3 \text{ l/min}$ at 250 bar, 24 cSt

5. Available flow $q_{Ve} = q_{Vi} - q_{Vs}$

$q_{Ve} = 79,5 - 3 = 76,5 \text{ l/min}$

6. Theoretical input power

$P_i = \frac{q_{Vi} \times p}{600}$

$P_i = \frac{79,5 \times 250}{600} = 33,1 \text{ kW}$

7. Find P_s hydrodynamic power loss on curve

T7B (page 14) : P_s at 2500 RPM, 250 bar = 0,9 kW

8. Calculation of necessary input power

$P = P_i + P_s$

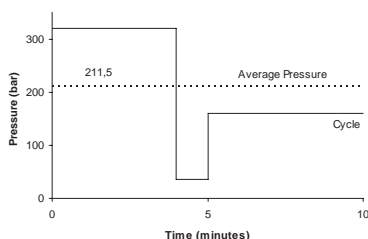
$P = 33,1 + 0,9 = 34,0 \text{ kW}$

9. Results

$V_i = 31,8 \text{ ml/rev.}$
 $q_{Ve} = 76,5 \text{ l/min}$
 $P = 34,0 \text{ kW}$) T7B B10

These calculation steps must be followed for each application.

INTERMITTENT PRESSURE RATING



T7 and T67 units may be operated intermittently at pressures higher than the recommended continuous rating when the time weighted average of pressure is less than or equal to the continuous duty pressure rating. This intermittent pressure rating calculation is only valid if other parameters : speed, fluid, viscosity and contamination level are respected.

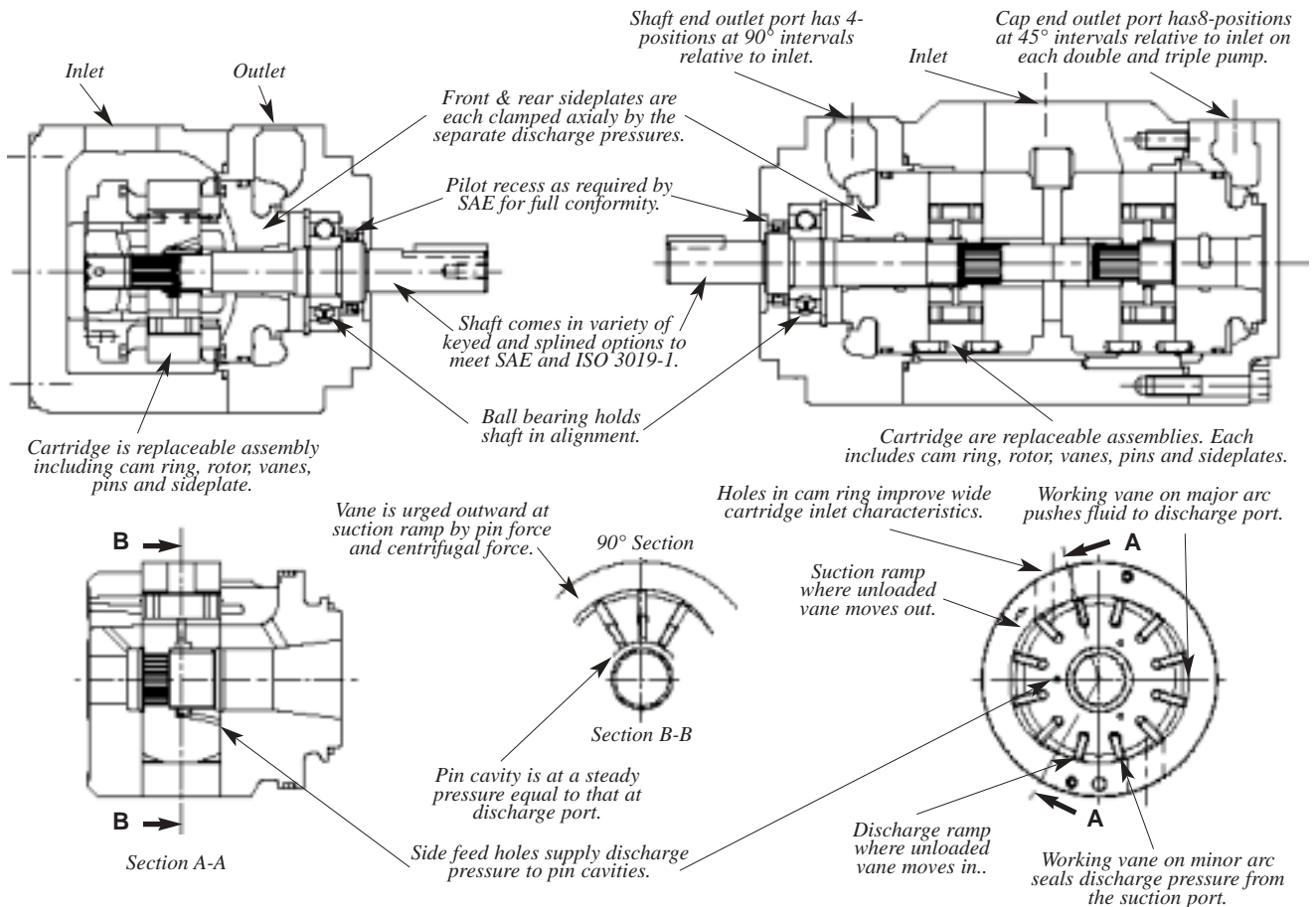
For total cycle time longer than 15 minutes, please consult your DENISON Hydraulics representative.

Example : T7B - B10

Duty cycle
 4 min. at 320 bar
 1 min. at 35 bar
 5 min. at 160 bar

$\frac{(4 \times 320) + (1 \times 35) + (5 \times 160)}{10} = 211,5 \text{ bar}$

211,5 bar is lower than 290 bar allowed as continuous pressure for T7B - B10 with HF-0 fluid.



APPLICATION ADVANTAGES

- The high pressure capability up to 320 bar, in the small envelope, reduces installation costs and provides extended life at reduced pressure.
- The high volumetric efficiency, typically better than 94%, reduces heat generation, and allows speeds down to 600 RPM at full pressure.
- The high mechanical efficiency, typically better than 94%, reduces energy consumption.
- The wide speed range (600 RPM at 3600 RPM), combined with large size cartridge displacements will optimize operation for the lowest noise level in the smallest envelope
- The low speed (600 RPM), low pressure, high viscosity (860 cSt) allows application in cold environment with a minimum energy consumption and without risk of seizure.
- The low ripple pressure (± 2 bar) reduces piping noise and increases lifetime of other components in the circuit.
- The high resistance to particle contamination, because of the double lip vane, increases pump life.
- The large variety of options (cam displacement, shaft, porting) allows customized installation.
- Noise : Specially designed to optimize the low noise level characteristics.
- Cartridge concept : drops maintenance costs by two.

GENERAL :

All DENISON Hydraulics vane pumps & motors are individually tested to provide the best quality & reliability. Modifications, conversions & repairs can only be done by authorized dealers or OEM to avoid invalidation of the guarantee.

The pumps & motors are to be used in the design limits indicated in all the sales bulletins. Please contact DENISON when trespassing the catalog limits.

Do not modify or work on the pump (or motor) under pressure or when the electric motor (or any drive) is on.

Qualified personnel is required to assemble and set-up hydraulic devices.

Always conform yourself to the valid regulations (safety, electrical, environment...).

The following instructions are important to follow to obtain a good service life time from the unit.

ROTATION & PORTS INDICATION

The rotation and ports orientation are viewed from the shaft end.

CW stands for clockwise, right-hand rotation.

CCW stands for counter-clockwise, left-hand rotation.

START-UP CHECK-UP

Check that the assembly of the power unit is correct :

The distance between the suction pipe & the return lines in the tank should be at its maximum.

A bevel on both suction & return lines is recommended to increase the surface and so lower the velocity. We suggest a 45° minimum angle.

Velocities : inlet $0,5 < x < 1,9$ m/s (1,64 < x < 6,23 ft per sec.)
 : return $x < 6$ m/s (x < 19,7 ft per sec.)
 : Always insure that all return and suction lines are under the oil level to avoid forming aeration or vortex effect. This should be done under the most critical situation (all cylinders extended for example). Straight and short pipes are the best.

$$V = \frac{Q \text{ (Lpm)}}{6 \times \pi \times r^2 \text{ (cm)}} = \text{m/s} \qquad V = \frac{Q \text{ (GPM)}}{3.12 \times \pi \times r^2 \text{ (in)}} = \text{ft/s}$$

The size of the air filter should be 3 times greater than the max. instant return flow (all cylinders in movement for example).

If the pump is in the tank, please choose the NOP option (no paint) and use a short inlet pipe.

DENISON does not recommend inlet strainers. If needed, a 100 mesh (149 microns) is the finest mesh recommended.

A coaxial drive is recommended. For any other type of drives, please contact DENISON.

Make sure that all protective plugs & covers have been removed.

Check the pump rotation versus the E-motor or engine rotation.

Start-up :

The tank has been filled up with a clean fluid in proper conditions.

Flushing the system with an external pump prior to the start-up is good.

To allow a good priming of the pump, the air should be bled off.

The first valve on the circuit should be open to tank.

Air bleed off valves are available on the market place.

It is possible to bleed off the air by creating a leak in the P port of the pump.

Warning : this has to be done in low pressure mode as it could create a dangerous fluid leak. Make sure that the pressure cannot rise (open center valve to tank, pressure relief valve unloaded ...).

When oil free of air appears, tighten the connectors to the correct torque.

The pump should prime within a few seconds. If not, please read the troubleshooting guide (1 - EN0721 - *).

If the pump is noisy, please troubleshoot the system.

Never operate the pump at top speed and pressure without checking the completion of pump priming.

SHAFT & COUPLING DATA :

COUPLINGS AND FEMALE SPLINES

- ◆ The mating female spline should be free to float and find its own center. If both members are rigidly supported, they must be aligned within 0,15 TIR (0.006" TIR) or less to reduce fretting. The angular alignment of two splines axes must be less than ± 0,05 per 25,4 radius (± 0.002" per 1" radius).
- ◆ The coupling spline must be lubricated with a lithium molydisulfide grease, disulfide of molybdenum or a similar lubricant.
- ◆ The coupling must be hardened to a hardness between 29 and 45 HRC.
- ◆ The female spline must be made to conform to the Class 1 fit as described in SAE-J498b (1971). This is described as a Flat Root Side Fit.

KEYED SHAFTS

DENISON Hydraulics supplies the T6 series keyed shaft pumps with high strength heat-treated keys. Therefore, when installing or replacing these pumps, the heat-treated keys must be used in order to ensure maximum life in the application. If the key is replaced, it must be a heat-treated key between 27 and 34 R.C. hardness. The corners of the keys must be chamfered by 0,76 mm to 1,02 mm (0.03 to 0.04) at 45° to clear the radii in the key way.

The alignment of keyed shafts must be within tolerances given for splined shafts here above.

SHAFT LOADS

These products are primarily designed for coaxial drives which do not impose axial or side loading on the shaft. Contact DENISON for specific applications.

SPECIFIC POINTS :

MINIMUM INLET PRESSURE

Please read the charts in the sales leaflets as the minimum requested inlet pressure varies versus the displacement and the speed.
Never go under 0,8 bar Absolute (-0,2 bar relative)
11.6 PSI Absolute (-2.9 PSI G).

MAXIMUM INLET PRESSURE

It is recommended to always have at least 1,5 bar (22 PSI) differential between inlet and outlet.
Standard shaft seals are limited to 0,7 bar (10 PSI G) but some allow 7 bar (100 PSI G). Please contact DENISON for more information.

MINIMUM OUTLET PRESSURE

It is recommended to always have at least 1,5 bar (22 PSI) differential between inlet and outlet.

VERTICAL MOUNT

When assembled vertically, always be careful to prevent any air from being trapped in the pump (behind the shaft seal for example).

FLUIDS :

DENISON CLASSIFICATIONS

Type of fluids : For all types of fluids, DENISON's products have different pressures, speeds & temperature limits. Please refer to the sales leaflets.
HF-0 = Anti-wear petroleum base.
HF-1 = Non anti-wear petroleum base.
HF-2 = Anti-wear petroleum base.
HF-3 = Water-in-oil invert emulsions.
HF-4 = Water glycol solutions.
HF-5 = Synthetic fluids.

FILTRATION RECOMMENDATIONS

NAS 1638 class 8 or better.
ISO 18 / 14 or better.
Inlet strainers : DENISON does not recommend inlet strainers.
If requested, a 100 mesh (149 microns) is the finest mesh recommended.

RECOMMENDED FLUIDS

Petroleum based antiwear R & O fluids.
 These fluids are the recommended fluids for pumps & motors. Maximum catalog ratings and performance data are based on operation with these fluids. These fluids are covered by DENISON Hydraulics HF-0 and HF-2 specifications.

ACCEPTABLE ALTERNATE FLUIDS

The use of fluids other than petroleum based antiwear R & O fluids requires that the maximum ratings of the pumps will be reduced. In some cases the minimum replenishment pressures must be increased. Consult specific sections for more details (page 11).

VISCOSITY

	Industrial
Max. (cold start, low speed & pressure)	860 cSt - 3900 SUS
Max. (full speed & pressure)	108 cSt - 500 SUS
Optimum (max. life)	30 cSt - 140 SUS
Min. (full speed & pressure for HF-1, HF-3, HF-4 & HF-5 fluids)	18 cSt - 90 SUS
Min. (full speed & pressure for HF-0 & HF-2 fluids)	10 cSt - 60 SUS

VISCOSITY INDEX

90 min. Higher values extend the range of operating temperatures.

TEMPERATURES

The usual limiting factor of temperature (low or high) comes from the obtained viscosity. The seals are sometimes the limit : standard seals range from -30° C to 90° C (-9.4° F to 194° F).

Maximum fluid temperature (θ)	° C	° F
HF-0, HF-1, HF-2	+ 100	+ 212
HF-3, HF-4	+ 50	+ 122
HF-5	+ 70	+ 158
Biodegradable fluids (esters & rapeseed base)	+ 65	+ 149
Minimum fluid temperature (θ) (also depend on max. viscosity)	° C	° F
HF-0, HF-1, HF-2, HF-5	- 18	- 0.4
HF-3, HF-4	+ 10	+ 50
Biodegradable fluids (esters & rapeseed base)	- 18	- 0.4

Over or under these values, please contact DENISON.

WATER CONTAMINATION IN THE FLUID

Maximum acceptable content of water :
 ♦ 0,10 % for mineral base fluids.
 ♦ 0,05 % for synthetic fluids, crankcase oils, biodegradable fluids.
 If the amount of water is higher, then it should be drained off the circuit.

FLUID POWER FORMULAS

Pump input torque	N.m	$\frac{\text{pressure (bar)} \times \text{displacement cm}^3/\text{rev}}{20 \pi \times \text{mech. eff.}}$
Pump input power	kW	$\frac{\text{rpm} \times (\text{cm}^3/\text{rev}) \times \text{pressure (bar)}}{600000 \times \text{overall eff.}}$
Pump output flow	Lpm	$\frac{\text{rpm} \times (\text{cm}^3/\text{rev}) \times \text{volumetric eff.}}{1000}$
Fluid motor speed	rpm	$\frac{1000 \times \text{flow rate (Lpm)} \times \text{volumetric eff.}}{\text{displacement (cm}^3/\text{rev.)}}$
Fluid motor torque	N.m	$\frac{\text{pressure (bar)} \times \text{displacement (cm}^3/\text{rev)} \times \text{mech. eff.}}{20 \pi}$
Fluid motor power	kW	$\frac{\text{rpm} \times (\text{cm}^3/\text{rev}) \times (\text{bar}) \times \text{overall eff.}}{600000}$

GENERAL CHARACTERISTICS

	Mounting standard	Weight without connector and bracket - kg	Moment of inertia $\text{kgm}^2 \times 10^{-4}$	SAE 4 bolts J518 - ISO/DIS 6162-1			
				Suction	Pressure		
T7B	ISO 3019-2 100 A2 HW	23,0	3,2	1"1/2	1" or 3/4"		
T7BS	SAE J744 SAE B						
T6C	SAE J744 SAE B	15,7	7,5	1"1/2	1"		
T7D	ISO 3019-2 125 A2 HW	26,0	19,6	2"	1"1/4		
T7DS	SAE J744 SAE C						
T7E	ISO 3019-2 125 A2 HW	43,3	62,5	3"	1"1/2		
T7ES	SAE J744 SAE C						
					P1	P2	
T7BB	ISO 3019-2 100 A2 HW	32,6	6,7	2"1/2	1" or 3/4"		
T7BBS	SAE J744 SAE B						
T6CC	SAE J744 SAE B	26,0	16,9	2"1/2 or 3"	1"	1" or 3/4"	
T67CB	SAE J744 SAE B	26,0	11,4	2"1/2	1"	3/4"	
T7DB	ISO 3019-2 125 A2 HW	38,6	22,7	3"	1"1/4		
T7DBS	SAE J744 SAE C						
T67DC	SAE J744 SAE C	38,6	26,3	3"	1"1/4	1" or 3/4"	
T7DD	ISO 3019-2 125 B4 HW	56,0	36,3	4"	1"1/4		
T7DDS	SAE J744 SAE C						
T7EB	ISO 3019-2 125 A2 HW	55,0	65,9	3"1/2	1"1/2		
T7EBS	SAE J744 SAE C						
T67EC	SAE J744 SAE C	55,0	70,8	3"1/2	1"1/2	1"	
T7ED	ISO 3019-2 125 A2 HW	66,0	79,7	4"	1"1/2		
T7EDS	SAE J744 SAE C						
T7EE	ISO 3019-2 250 B4 HW	95,0	97,4	4"	1"1/2		
T7EES	SAE J744 SAE E						
					P1	P2	P3
T67DBB	SAE J744 SAE C	61,0	26,1	4"	1"1/4	1"	3/4"
T67DCB			29,7				1" or 3/4"
T67DCC			33,3				1" or 3/4"
T7DDB	ISO 3019-2 125 B4 HW	66,0	39,5	4"	1"1/4		1" or 3/4"
T7DDBS	SAE J744 SAE C						
T67DDCS	SAE J744 SAE C	66,0	43,1	4"	1"1/4	1"1/4	1" or 3/4"
T7EDB	ISO 3019-2 250 B4 HW	102,0	76,6	4"	1"1/2		1" or 3/4"
T7EDBS	SAE J744 SAE E						
T67EDC	ISO 3019-2 250 B4 HW	102,0	80,2	4"	1"1/2		1" or 3/4"
T67EDCS	SAE J744 SAE E						

Model No. **T7B or T7BS - B10 - 1 R 00 - A 1 M0 - ..**

T7B series - 100 A2 HW
ISO 2 bolts 3019-2 mounting flange
T7BS series - SAE B 2 bolts
Mounting flange J744

Displacement
Volumetric displacement (ml/rev)
B02 = 5,8 B09 = 28,0
B03 = 9,8 B10 = 31,8
B04 = 12,8 B11 = 35,0
B05 = 15,9 B12 = 41,0
B06 = 19,8 B14 = 45,0
B07 = 22,5 B15 = 50,0
B08 = 24,9

Type of shaft T7B - T7BS
2 = keyed (ISO R775)

Type of shaft T7BS
1 = keyed (SAE B)
3 = splined (SAE B)
4 = splined (SAE BB)

Modifications

Mounting w/connection variables
4 bolts SAE flange (J518C)

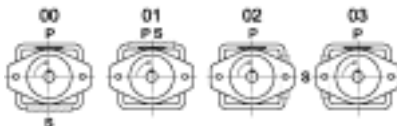
	Metric thread T7B - T7BS		UNC thread T7BS	
	M0	M1	00	01
P	1"	3/4"	1"	3/4"
S	1"1/2			

Seal class
1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

Design letter

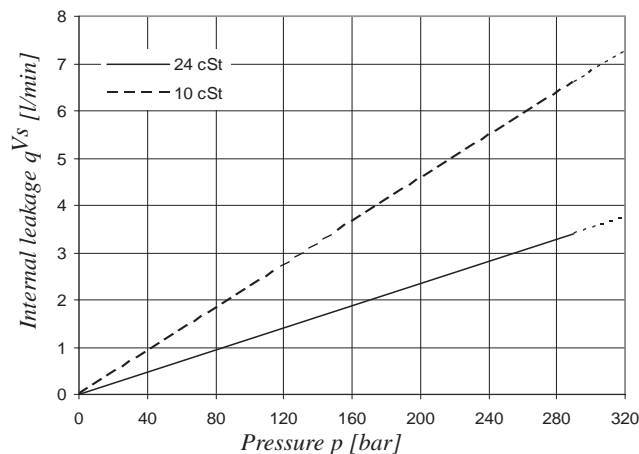
Porting combination
00 = standard

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

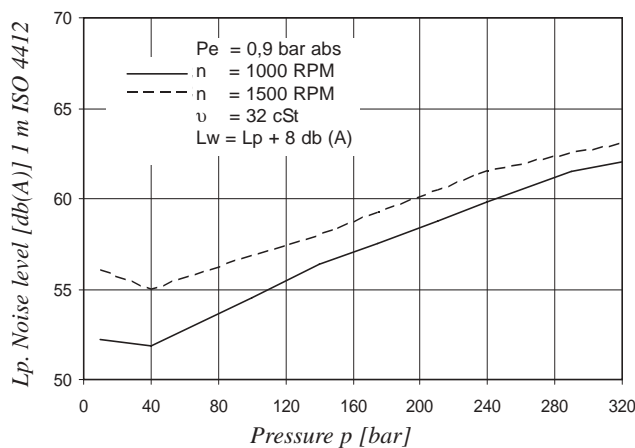


P = Pressure port
S = Suction port

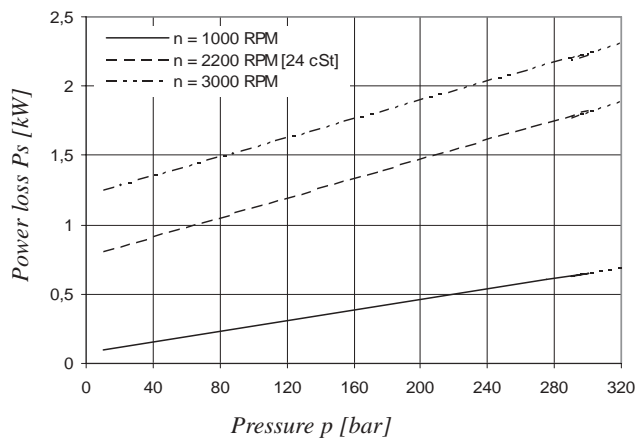
INTERNAL LEAKAGE (TYPICAL)



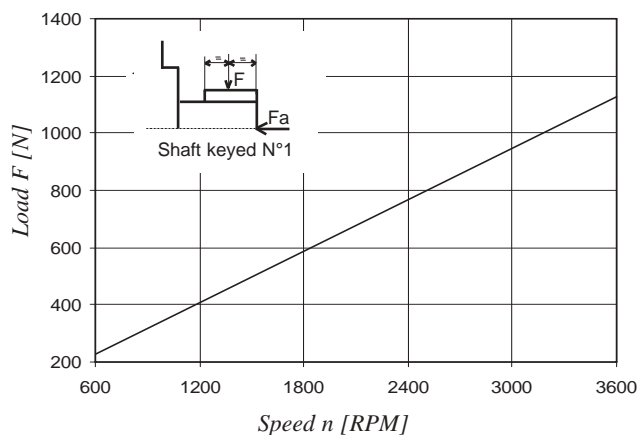
**NOISE LEVEL (TYPICAL)
T7B - B10**



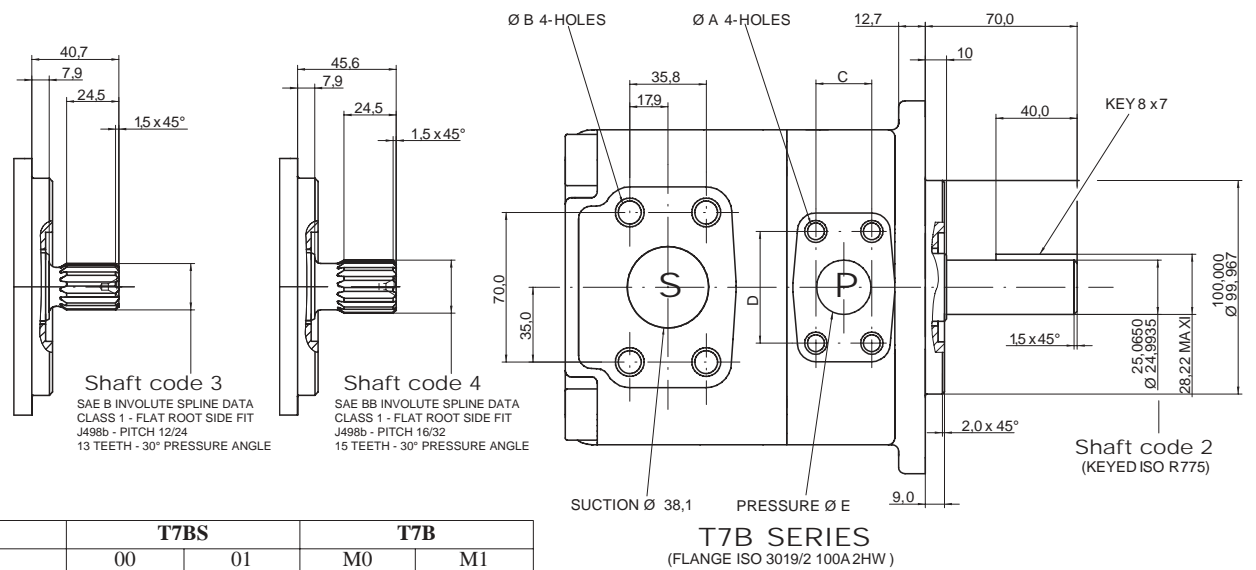
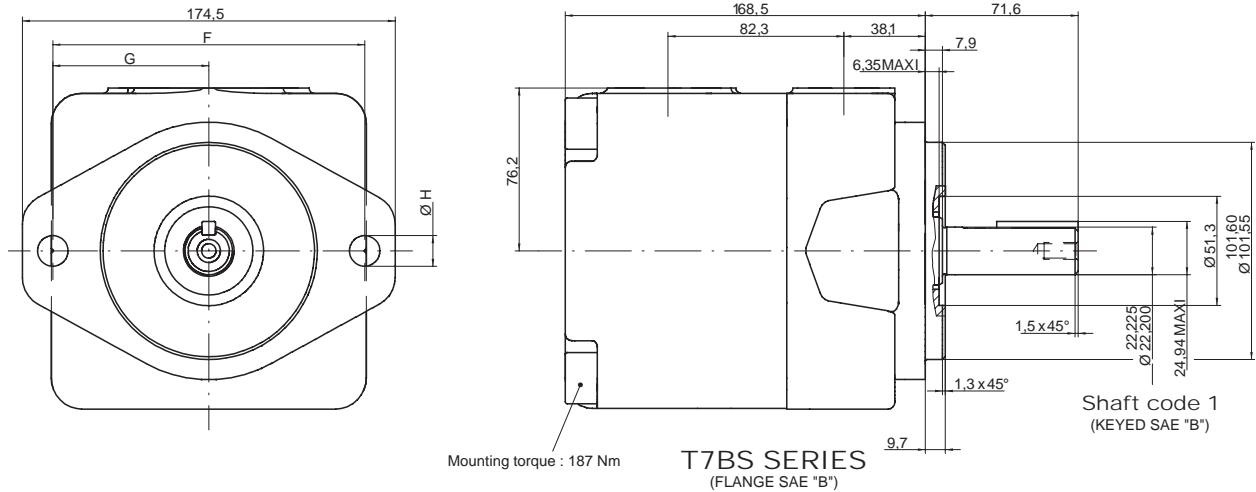
HYDROMECHANICAL POWER LOSS (TYPICAL)



PERMISSIBLE RADIAL LOAD



Maximum permissible axial load $F_a = 800$ N



	T7BS		T7B	
	00	01	M0	M1
A	3/8 16 UNC x 19 deep		M10 x 19 deep	
B	1/2 13 UNC x 22,4 deep		M12 x 22,4 deep	
C	26,20	22,25	26,20	22,25
D	52,4	47,65	52,4	47,65
Ø E	25,4	19,1	25,4	19,1
F	146		140	
G	73		70	
Ø H	14,3		14,0	

Shaft torque limits [ml/rev. x bar]	
Shaft	Vi x p max.
1	16500
2	20600
3	20600
4	20600

OPERATING CHARACTERISTICS – TYPICAL [24 cSt]

Pressure port	Series	Volumetric displacem. Vi	Flow q _{ve} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 320 bar	p = 7 bar	p = 140 bar	p = 320 bar
T7B T7BS	B02	5,8 ml/rev	8,7	7,0	4,8	0,5	2,6	5,4
	B03	9,8 ml/rev	14,7	13,0	10,8	0,6	4,0	8,6
	B04	12,8 ml/rev	19,2	17,5	15,3	0,6	5,0	11,0
	B05	15,9 ml/rev	23,9	22,2	20,0	0,7	6,1	13,5
	B06	19,8 ml/rev	29,7	28,0	25,8	0,7	7,5	16,6
	B07	22,5 ml/rev	33,7	32,0	29,9	0,8	8,5	18,8
	B08	24,9 ml/rev	37,4	35,7	33,5	0,8	9,3	20,7
	B09	28,0 ml/rev	42,0	40,3	38,1	0,9	10,4	23,2
	B10	31,8 ml/rev	47,7	46,0	43,8	0,9	11,7	26,2
	B11	35,0 ml/rev	52,5	50,8	48,9 ¹⁾	1,0	12,8	27,0 ¹⁾
	B12	41,0 ml/rev	61,5	59,8	57,9 ¹⁾	1,1	14,9	31,5 ¹⁾
	B14	45,0 ml/rev	67,5	65,8	63,9 ¹⁾	1,2	16,3	34,5 ¹⁾
	B15	50,0 ml/rev	75,0	73,3	71,6 ²⁾	1,3	18,1	35,7 ²⁾

1) B11 - B12 - B14 = 300 bar max. int. 2) B15 = 280 bar max. int.

Model No.

T6C - 022 - 1 R 00 - B 1 - ..

Series SAE B 2 bolts
Mounting flange J744

Displacement

Volumetric displacement (ml/rev)

003 = 10,8	017 = 58,3
005 = 17,2	020 = 63,8
006 = 21,3	022 = 70,3
008 = 26,4	025 = 79,3
010 = 34,1	028 = 88,8
012 = 37,1	031 = 100,0
014 = 46,0	

Type of shaft

- 1 = keyed (SAE B)
- 2 = keyed (non SAE)
- 3 = splined (SAE B)
- 4 = splined (SAE BB)

Modifications

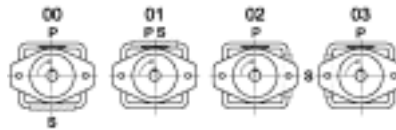
- Seal class**
- 1 = S1 - BUNA N
 - 4 = S4 - EPDM
 - 5 = S5 - VITON

Design letter

- Porting combination**
- 00 = standard

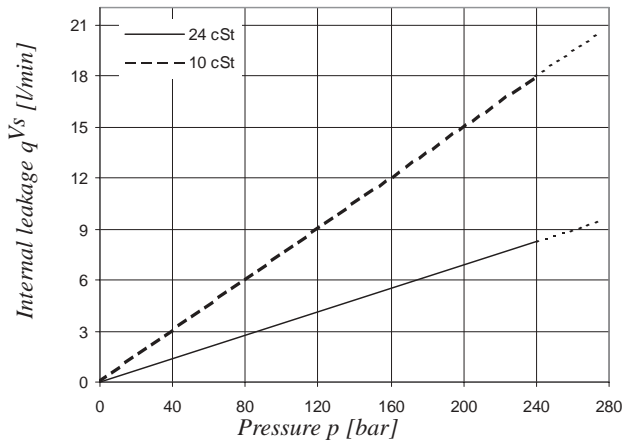
Direction of rotation (view on shaft end)

- R = Clockwise
- L = Counter-clockwise

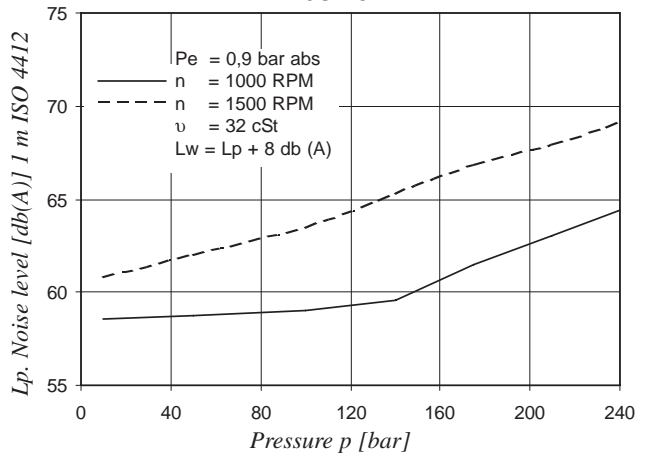


P = Pressure port
S = Suction port

INTERNAL LEAKAGE (TYPICAL)

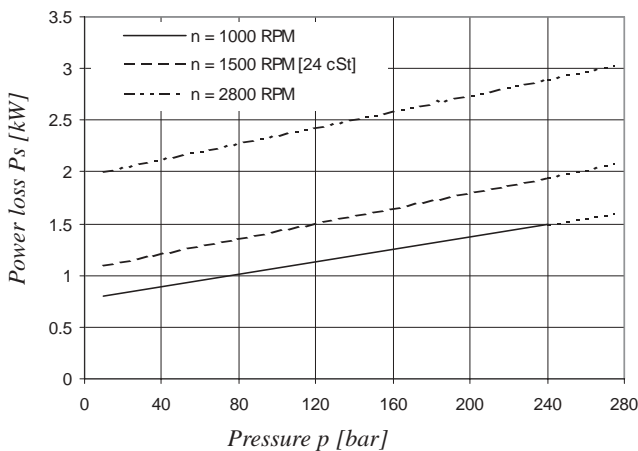


NOISE LEVEL (TYPICAL)
T6C - 022

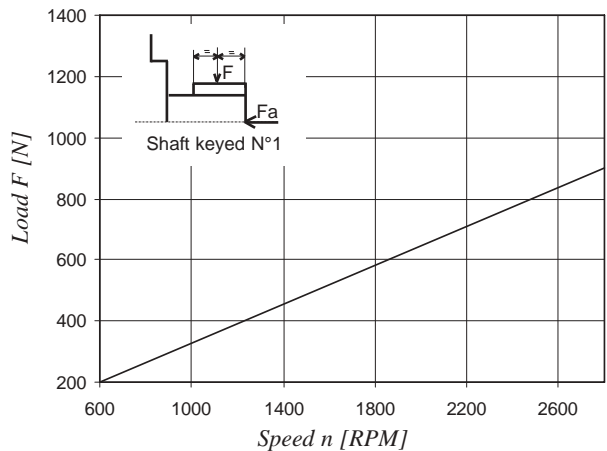


Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is more than 50% of theoretical flow.

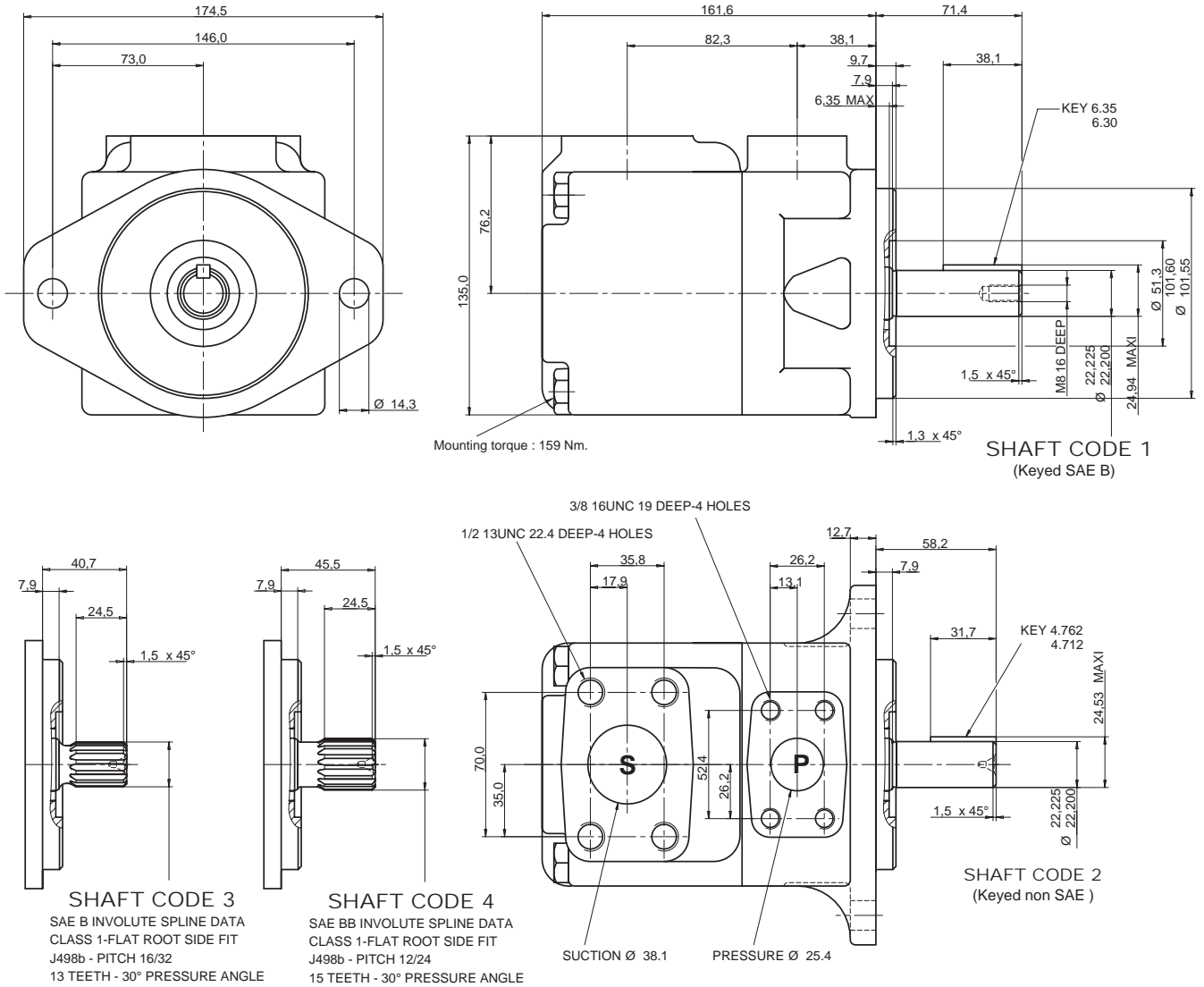
HYDROMECHANICAL POWER LOSS (TYPICAL)



PERMISSIBLE RADIAL LOAD



Maximum permissible axial load Fa = 800 N



Shaft torque limits [ml/rev. x bar]	
Shaft	Vi x p max.
1	16340
2	14300
3	20600
4	21800

OPERATING CHARACTERISTICS – TYPICAL [24 cSt]

Pressure port	Series	Volumetric displacem. Vi	Flow q _v [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 240 bar	p = 7 bar	p = 140 bar	p = 240 bar
T6C	003	10,8 ml/rev	16,2	11,2	7,7	1,3	5,3	8,4
	005	17,2 ml/rev	25,8	20,8	17,3	1,4	7,5	12,2
	006	21,3 ml/rev	31,9	26,9	23,4	1,5	8,9	14,7
	008	26,4 ml/rev	39,6	34,6	31,1	1,6	10,7	17,7
	010	34,1 ml/rev	51,1	46,1	42,6	1,7	13,4	22,3
	012	37,1 ml/rev	55,6	50,6	47,1	1,7	14,4	24,1
	014	46,0 ml/rev	69,0	64,0	60,5	1,9	17,6	29,5
	017	58,3 ml/rev	87,4	82,4	78,9	2,1	21,9	36,9
	020	63,8 ml/rev	95,7	90,7	87,2	2,2	23,8	40,2
	022	70,3 ml/rev	105,4	100,4	96,9	2,3	26,1	44,1
	025 ¹⁾	79,3 ml/rev	118,9	113,9	110,4	2,5	29,2	49,5
	028 ¹⁾	88,8 ml/rev	133,2	128,2	125,8 ²⁾	2,8	32,7	48,5 ²⁾
031 ¹⁾	100,0 ml/rev	150,0	145,0	142,6 ²⁾	2,8	36,5	54,4 ²⁾	

1) 025 – 028 – 031 = 2500 RPM max.. 2) 028 – 031 = 210 bar max. int.
Port connection can be furnished with metric threads.

Model No. **T7D or T7DS - B42 - 1 R 00 - A 1 M0 - ..**

T7D series - 125 A2 HW
ISO 2 bolts 3019-2 mounting flange
T7DS series - SAE C 2 bolts
Mounting flange J744

Displacement
Volumetric displacement (ml/rev)
B14 = 44,0 B31 = 99,2
B17 = 55,0 B35 = 113,4
B20 = 66,0 B38 = 120,6
B22 = 70,3 B42 = 137,5
B24 = 81,1 045 = 145,7
B28 = 90,0 050 = 158,0

Type of shaft T7DS
1 = keyed (SAE C 32 - 1)
2 = keyed (non SAE)
3 = splined (SAE C 32 - 4)
4 = splined (non SAE)

Type of shaft T7D - T7DS
5 = keyed (ISO 3019-2 - G32M)

Modifications

Mounting w/connection variables
4 bolts SAE flange J518

	P = 1"1/4 - S = 2"	
	UNC	Metric
T7D		M0
T7DS	00	M0 YO ¹⁾

1) 250 bar max. int.

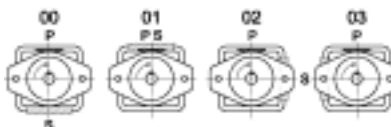
Seal class
1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

Design letter

Porting combination
00 = standard

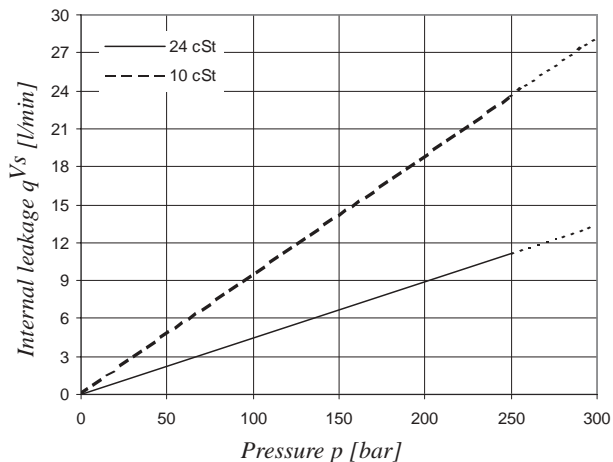
Direction of rotation (view on shaft end)

R = Clockwise
L = Counter-clockwise

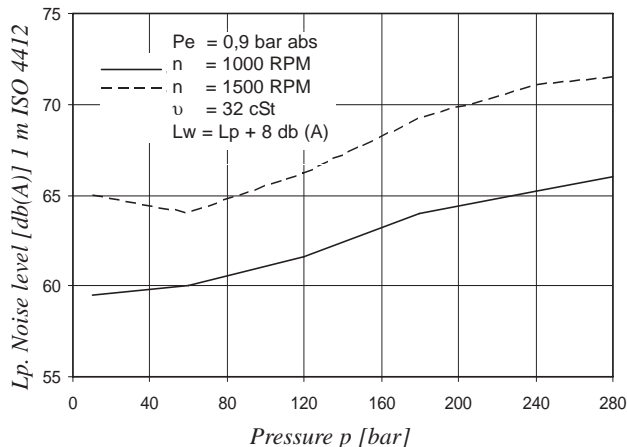


P = Pressure port
S = Suction port

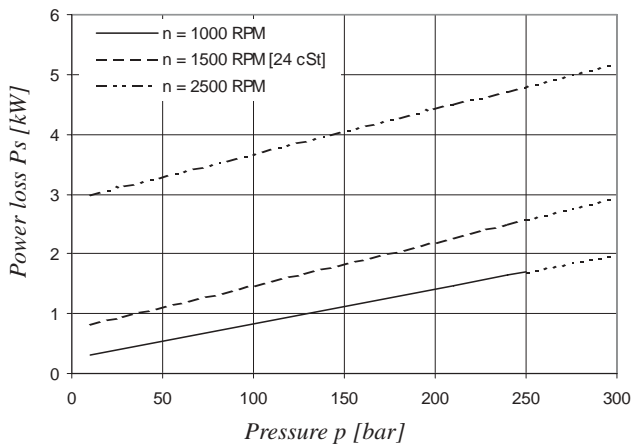
INTERNAL LEAKAGE (TYPICAL)



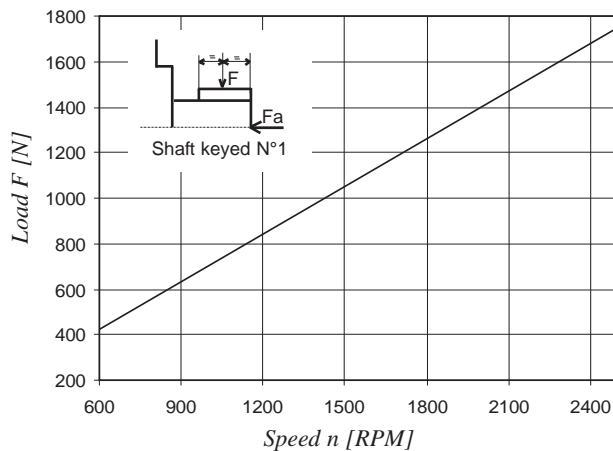
NOISE LEVEL (TYPICAL)
T7D - B31



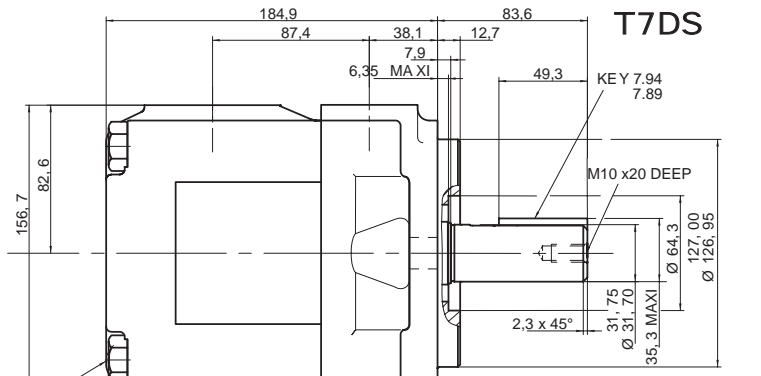
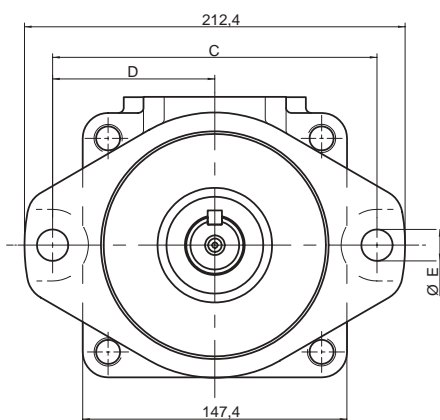
HYDROMECHANICAL POWER LOSS (TYPICAL)



PERMISSIBLE RADIAL LOAD

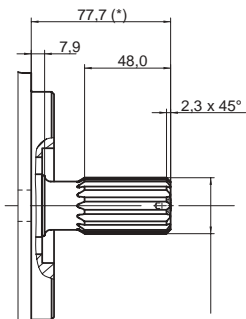


Maximum permissible axial load Fa = 1200 N

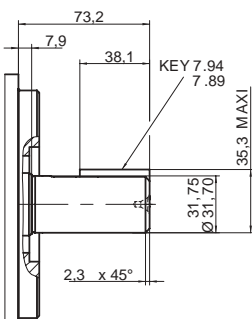


T7DS
SHAFT CODE 1
(Keyed SAE C)

MOUNTING TORQUE : 187 Nm

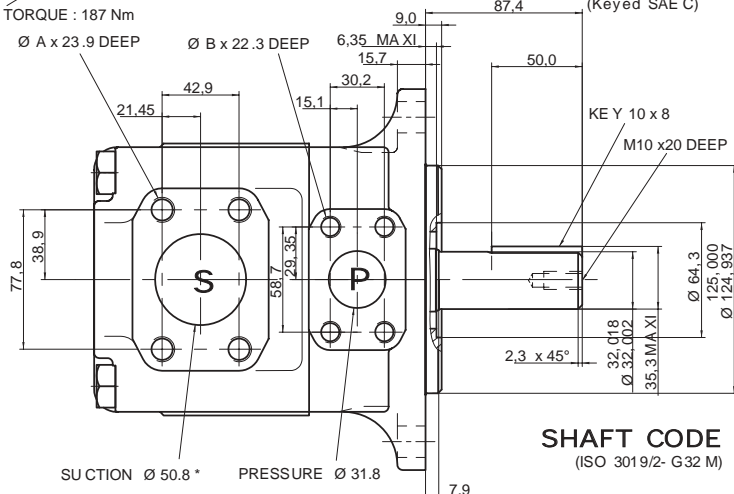


SHAFT CODE 4



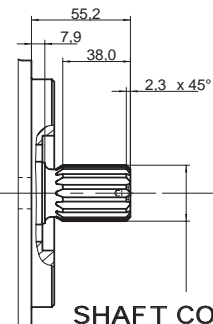
SHAFT CODE 2
(Keyed non SAE)

SAE C S_{pc} (*) INVOLUTE SPLINE DATA
CLASS 1-FLAT ROOT SIDE FIT
J498 b - PITCH 12/24
14 TEETH - 30° PRESSURE ANGLE



SHAFT CODE 5
(ISO 3019/2- G32 M)

SUCTION Ø 50.8* PRESSURE Ø 31.8



SHAFT CODE 3

SAE C INVOLUTE SPLINE DATA
CLASS 1-FLAT ROOT SIDE FIT
J498 b - PITCH 12/24
14 TEETH - 30° PRESSURE ANGLE

Shaft torque limits [ml/rev. x bar]	
Shaft	Vi x p max.
1	43240
2	34590
3	61200
4	61200
5	44300

	T7DS			T7D
	00	M0	Y0 ¹⁾	M0
Ø A	1/2 - 13 UNC	M12	M12	M12
Ø B	7/16 - 14 UNC	M12	M10	M12
C		181,0		180,0
D		90,5		90,0
Ø E		17,5		18,0

1) 250 bar max. int.

OPERATING CHARACTERISTICS – TYPICAL [24 cSt]

Pressure port	Series	Volumetric displacem. Vi	Flow q _{ve} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 250 bar	p = 7 bar	p = 140 bar	p = 250 bar
T7D T7DS	B14	44,0 ml/rev	66,0	59,4	54,6	1,5	16,6	29,1
	B17	55,0 ml/rev	82,5	76,4	71,9	1,7	20,4	35,8
	B20	66,0 ml/rev	99,0	93,3	88,5	1,9	24,2	42,7
	B22	70,3 ml/rev	105,4	99,5	94,6	2,0	25,7	45,4
	B24	81,1 ml/rev	121,6	115,4	110,1	2,2	29,6	52,2
	B28	90,0 ml/rev	135,0	128,6	123,6	2,3	32,6	57,7
	B31	99,2 ml/rev	148,8	142,1	137,5	2,5	35,9	63,4
	B35	113,4 ml/rev	170,1	162,9	157,9	2,9	41,2	72,9
	B38	120,6 ml/rev	180,9	174,5	170,4	2,9	43,4	76,8
	B42	137,5 ml/rev	206,2	199,6	195,9 ¹⁾	3,4	49,8	81,3 ¹⁾
	045 ³⁾	145,7 ml/rev	218,5	209,2	203,0	4,1	52,8	89,5
	050 ³⁾	158,0 ml/rev	237,0	227,7	224,0 ²⁾	4,4	57,0	85,0 ²⁾

1) B42 = 230 bar max. int. 2) 050 = 210 bar max. int. 3) 045 - 050 = 2200 RPM max

* special 2 1/2 (Ø 63,5) suction also available – Please contact DENISON Hydraulics

Model No.

T7E or T7ES - 072 - 1 R 00 - A 1 M0 - ..

T7E series - 125 A2 HW
 ISO 2 bolts 3019-2 mounting flange
T7ES series - SAE C 2 bolts
 Mounting flange J744

Displacement

Volumetric displacement (ml/rev)
 042 = 132,3
 045 = 142,4
 050 = 158,5
 052 = 164,8
 054 = 171,0
 057 = 183,3
 062 = 196,7
 066 = 213,3
 072 = 227,1
 085 = 268,7

Type of shaft T7E - T7ES

5 = keyed (ISO R775 - G38M)

Type of shaft T7ES

1 = keyed (SAE CC)
 2 = keyed (non SAE)
 3 = splined (SAE C)
 4 = splined (SAE CC)

Modifications

Mounting w/connection variables

4 bolts SAE flange (J518)

	Metric thread T7E - T7ES	UNC thread T7ES
	M0	00
P	1" 1/2	
S	3"	

Seal class

1 = S1 - BUNA N
 4 = S4 - EPDM
 5 = S5 - VITON

Design letter

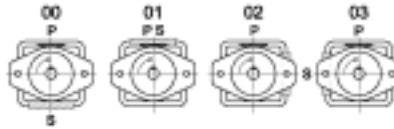
Porting combination

00 = standard

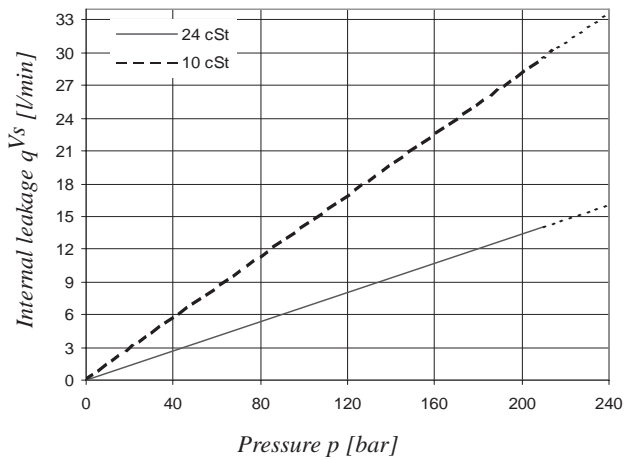
Direction of rotation (view on shaft end)

R = Clockwise
 L = Counter-clockwise

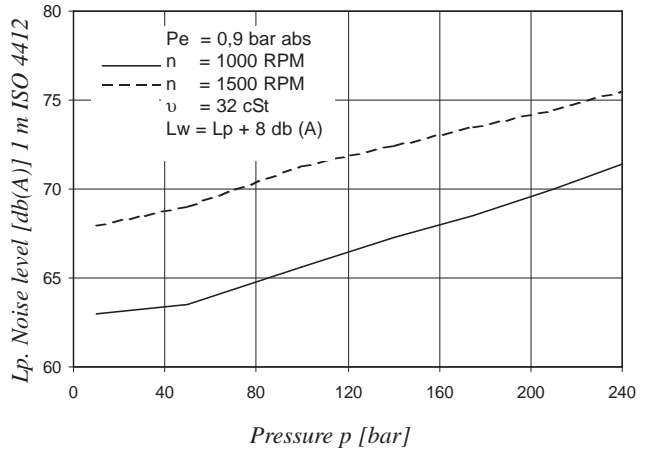
P = pressure port
 S = Suction port



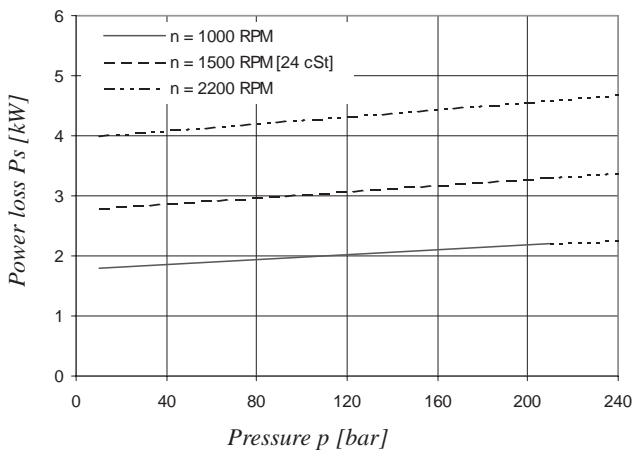
INTERNAL LEAKAGE (TYPICAL)



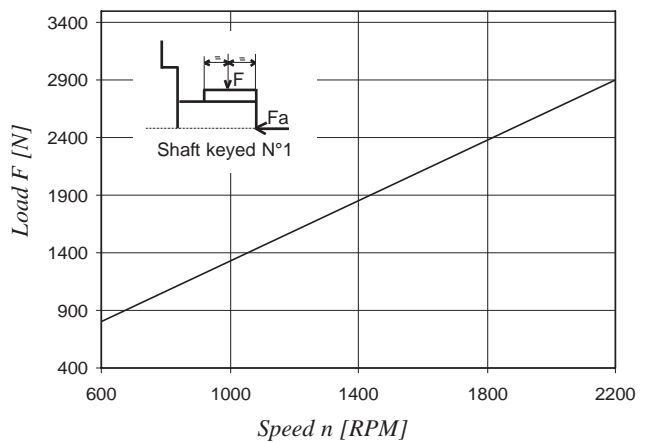
**NOISE LEVEL (TYPICAL)
T7ES - 050**



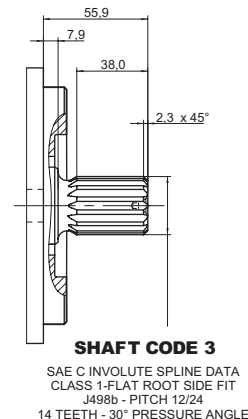
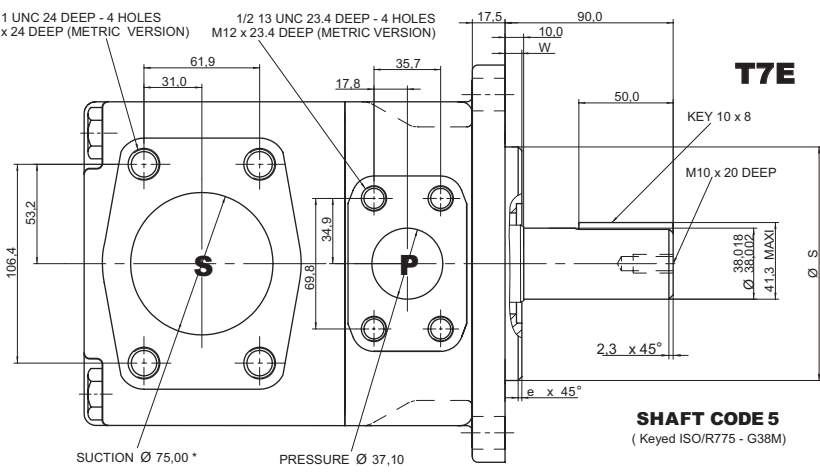
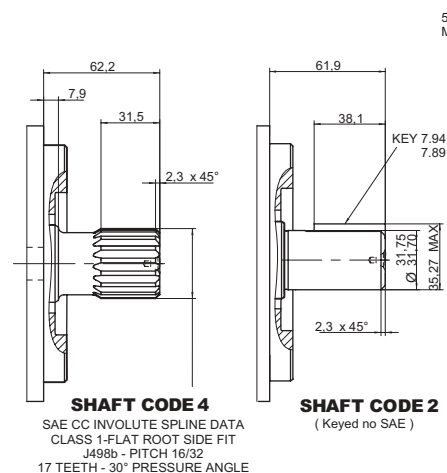
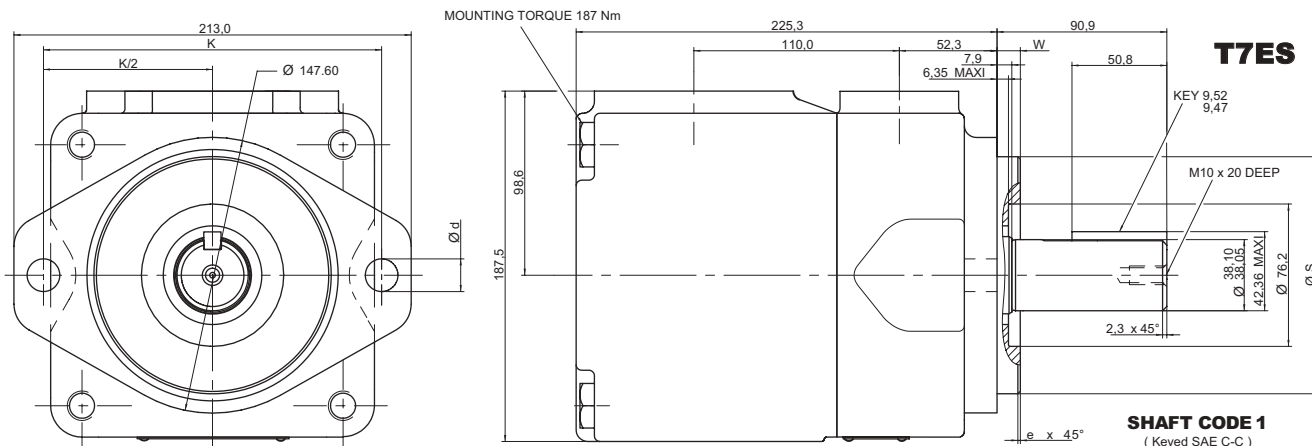
HYDROMECHANICAL POWER LOSS (TYPICAL)



PERMISSIBLE RADIAL LOAD



Maximum permissible axial load $F_a = 2000$ N



Shaft torque limits [ml/rev. x bar]	
Shaft	Vi x p max.
1	54500
2	34590
3	61200
4	61200
5	54500

Series	Dia S		e x 45°	W	K	Dia d
	Max.	Min.				
T7E	125,00	124,937	2,0	9,5	180,0	18,0
T7ES	127,00	126,950	1,3	12,7	181,0	17,5

OPERATING CHARACTERISTICS – TYPICAL [24 cSt]								
Pressure port	Series	Volumetric displacem. Vi	Flow q _{ve} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 240 bar	p = 7 bar	p = 140 bar	p = 240 bar
T7E T7ES	042	132,3 ml/rev	198,5	188,5	181,3	5,2	49,4	82,6
	045	142,4 ml/rev	213,6	203,6	196,5	5,4	52,9	88,7
	050	158,5 ml/rev	237,7	227,7	220,6	5,7	58,5	98,3
	052	164,8 ml/rev	247,2	237,2	230,1	5,8	60,8	102,1
	054	171,0 ml/rev	256,5	246,5	239,4	5,9	63,0	105,8
	057	183,3 ml/rev	275,0	265,0	257,9	6,1	67,3	113,2
	062	196,7 ml/rev	295,0	285,0	277,9	6,4	71,9	121,3
	066	213,3 ml/rev	319,9	309,0	302,8	6,7	77,7	131,2
	072	227,1 ml/rev	340,6	330,6	323,5	6,9	82,6	139,5
	085	268,7 ml/rev	403,0	392,0 ¹⁾	-	9,1	65,8 ¹⁾	-

1) 085 = 90 bar max. int.
 * special 3 1/2 (Ø 88,9) suction also available – Please contact DENISON Hydraulics

Model No.

T7BB or T7BBS - B10 - B10 - 1 R 00 - A 1 M1 - ..

T7BB series - 100 A2 HW
ISO 2 bolts 3019-2 mounting flange

T7BBS series - SAE B 2 bolts
Mounting flange J744

Displacement P1 and P2

Volumetric displacement (ml/rev)

B02 = 5,8 B09 = 28,0
B03 = 9,8 B10 = 31,8
B04 = 12,8 B11 = 35,0
B05 = 15,9 B12 = 41,0
B06 = 19,8 B14 = 45,0
B07 = 22,5 B15 = 50,0
B08 = 24,9

Type of shaft T7BB - T7BBS

5 = keyed (ISO R775)

Type of shaft T7BBS

1 = keyed (non SAE)
2 = keyed (SAE BB)
3 = splined (SAE B)
4 = splined (SAE BB)

Modifications

Mounting w/connection variables
4 bolts SAE flange (J518)

	Metric thread		UNC thread	
	T7BB - T7BBS	T7BBS	T7BBS	T7BBS
	M0	M1	00	01
P1	1"	3/4"	1"	3/4"
P2	3/4"			
S	2"1/2			

Seal class

1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

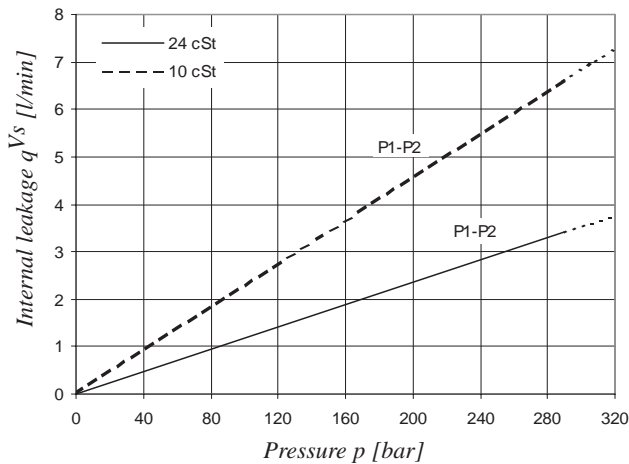
Design letter

Porting combination (see page 62)
00 = standard

Direction of rotation (view on shaft end)

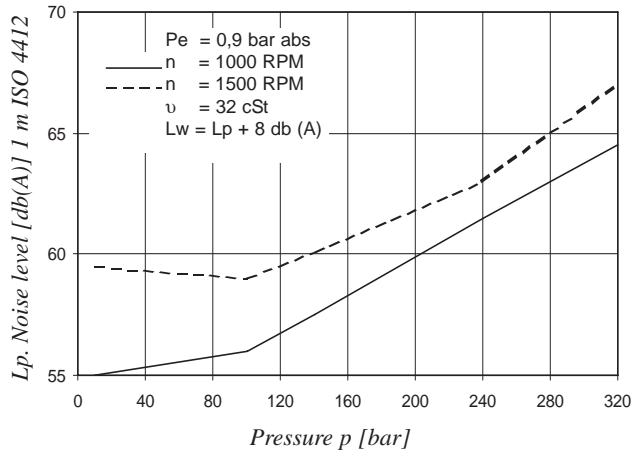
R = Clockwise
L = Counter-clockwise

INTERNAL LEAKAGE (TYPICAL)



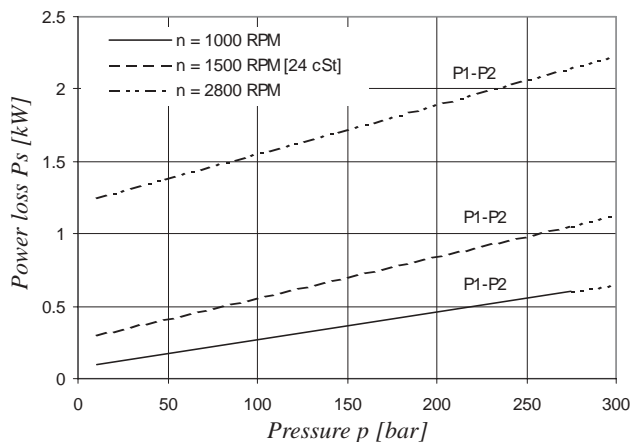
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is higher than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

NOISE LEVEL (TYPICAL)
T7BB - B10 - B04



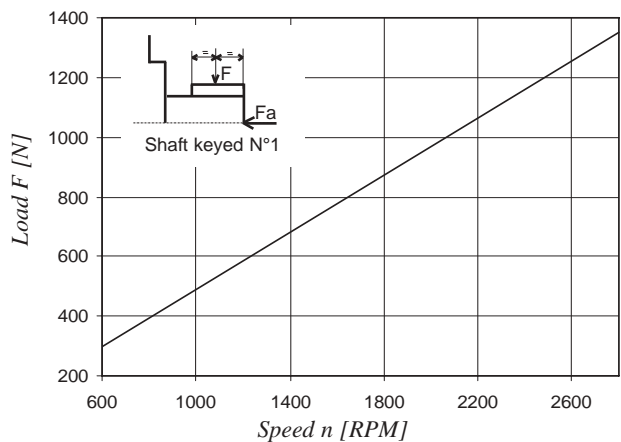
Double pump noise level is given with each section discharging at the pressure noted on the curve.

HYDROMECHANICAL POWER LOSS (TYPICAL)

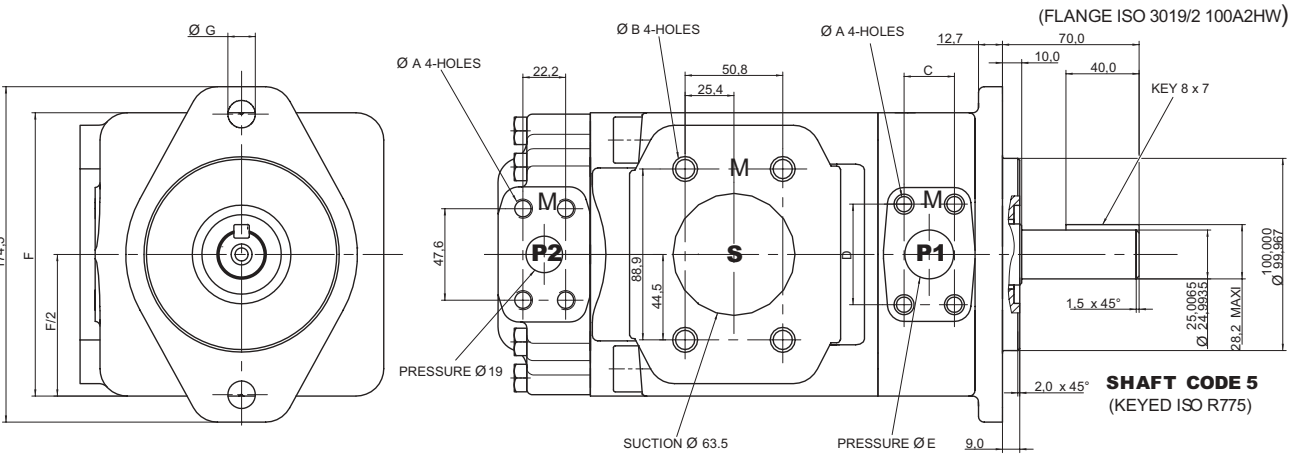
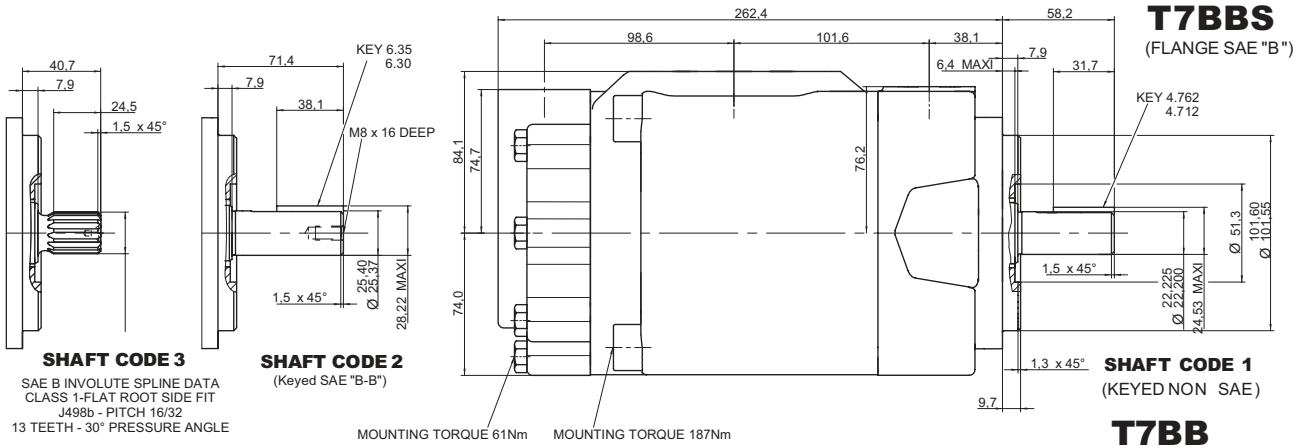


Total hydromechanical power loss is the sum of each section at its operating conditions.

PERMISSIBLE RADIAL LOAD



Maximum permissible axial load $F_a = 800 N$



Shaft torque limits [ml/rev. x bar]	
Shaft	Vi x p max.
1	14300
2	21420
3	20600
4	32670
5	25300

	T7BBS		T7BB	
	00	01	M0	M1
Ø A	3/8" 16 UNC - 19 deep		M10 x 19 deep	
Ø B	1/2" 13 UNC - 22,4 deep		M12 x 22,4 deep	
C	26,20	22,25	26,20	22,25
D	52,4	47,65	52,4	47,65
Ø E	25,4	19,1	25,4	19,1
F	146		140	
G	73		70	
Ø H	14,3		14,0	

OPERATING CHARACTERISTICS – TYPICAL [24 cSt]

Pressure port	Series	Volumetric displacem. Vi	Flow q _{ve} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 320 bar	p = 7 bar	p = 140 bar	p = 320 bar
P1 & P2	B02	5,8 ml/rev	8,7	7,0	4,8	0,5	2,6	5,4
	B03	9,8 ml/rev	14,7	13,0	10,8	0,6	4,0	8,6
	B04	12,8 ml/rev	19,2	17,5	15,3	0,6	5,0	11,0
	B05	15,9 ml/rev	23,9	22,2	20,0	0,7	6,1	13,5
	B06	19,8 ml/rev	29,7	28,0	25,8	0,7	7,5	16,6
	B07	22,5 ml/rev	33,7	32,0	29,9	0,8	8,5	18,8
	B08	24,9 ml/rev	37,4	35,7	33,5	0,8	9,3	20,7
	B09	28,0 ml/rev	42,0	40,9	38,1	0,9	10,4	23,2
	B10	31,8 ml/rev	47,7	46,0	43,8	0,9	11,7	26,2
	B11	35,0 ml/rev	52,5	50,8	48,9 ¹⁾	1,0	12,8	27,0 ¹⁾
	B12	41,0 ml/rev	61,5	59,8	57,9 ¹⁾	1,1	14,9	31,5 ¹⁾
	B14	45,0 ml/rev	67,5	65,8	63,9 ¹⁾	1,2	13,3	34,5 ¹⁾
	B15	50,0 ml/rev	75,0	73,3	71,6 ²⁾	1,3	18,1	35,7 ²⁾

1) B11 - B12 - B14 = 300 bar max. int. 2) B15 = 280 bar max. int.

Model No.

T6CC W - 022 - 008 - 1 R 00 - C 1 00 - ..

Series SAE B 2 bolts
Mounting flange J744

P1 P2

Severe duty shaft

Displacement P1 and P2

Volumetric displacement (ml/rev)
003 = 10,8 017 = 58,3
005 = 17,2 020 = 63,8
006 = 21,3 022 = 70,3
008 = 26,4 025 = 79,3
010 = 34,1 028 = 88,8
012 = 37,1 031 = 100,0
014 = 46,0

Type of shaft Severe duty shaft (T6CCW only)

1 = keyed (non SAE) 2 = keyed (SAE BB)
3 = splined (SAE BB)
5 = splined (SAE B)

Direction of rotation (view on shaft end)

R = Clockwise
L = Counter-clockwise

Modifications

Mounting w/connection variables
4 bolts SAE flange (J518)

	P1 = 1" - S = 3"		P1 = 1" - 2"1/2 ⁽²⁾	
	00	01	10	11
P2	1"	3/4" ⁽¹⁾	1"	3/4"

1) for 46 ml/rev. max.
2) for 126 ml/rev. max.
The largest cartridge must be always mounted in the front.

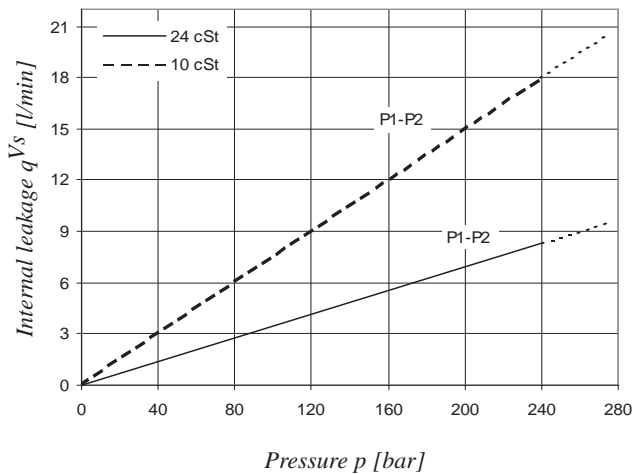
Seal class

1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

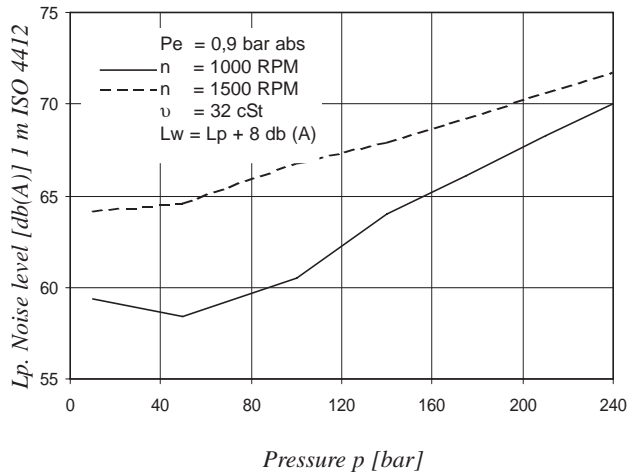
Design letter

Porting combination (see page 62)
00 = standard

INTERNAL LEAKAGE (TYPICAL)



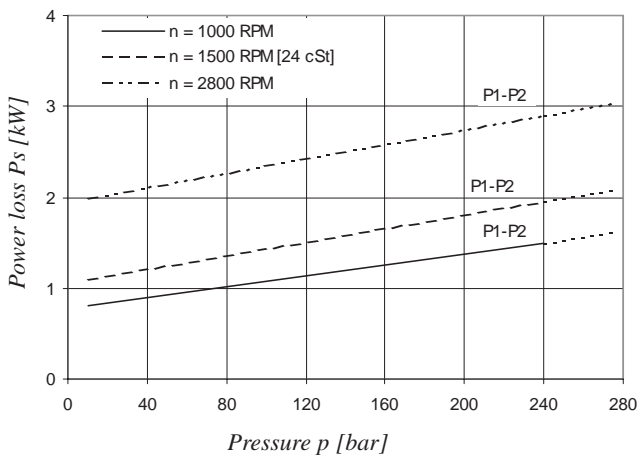
NOISE LEVEL (TYPICAL)
T6CC - 022 - 022



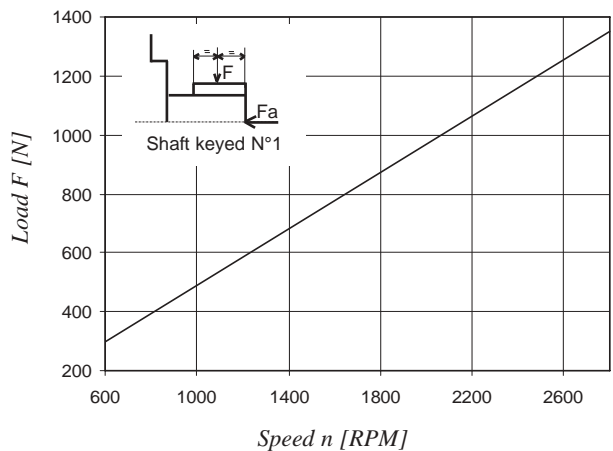
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is higher than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

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

HYDROMECHANICAL POWER LOSS (TYPICAL)

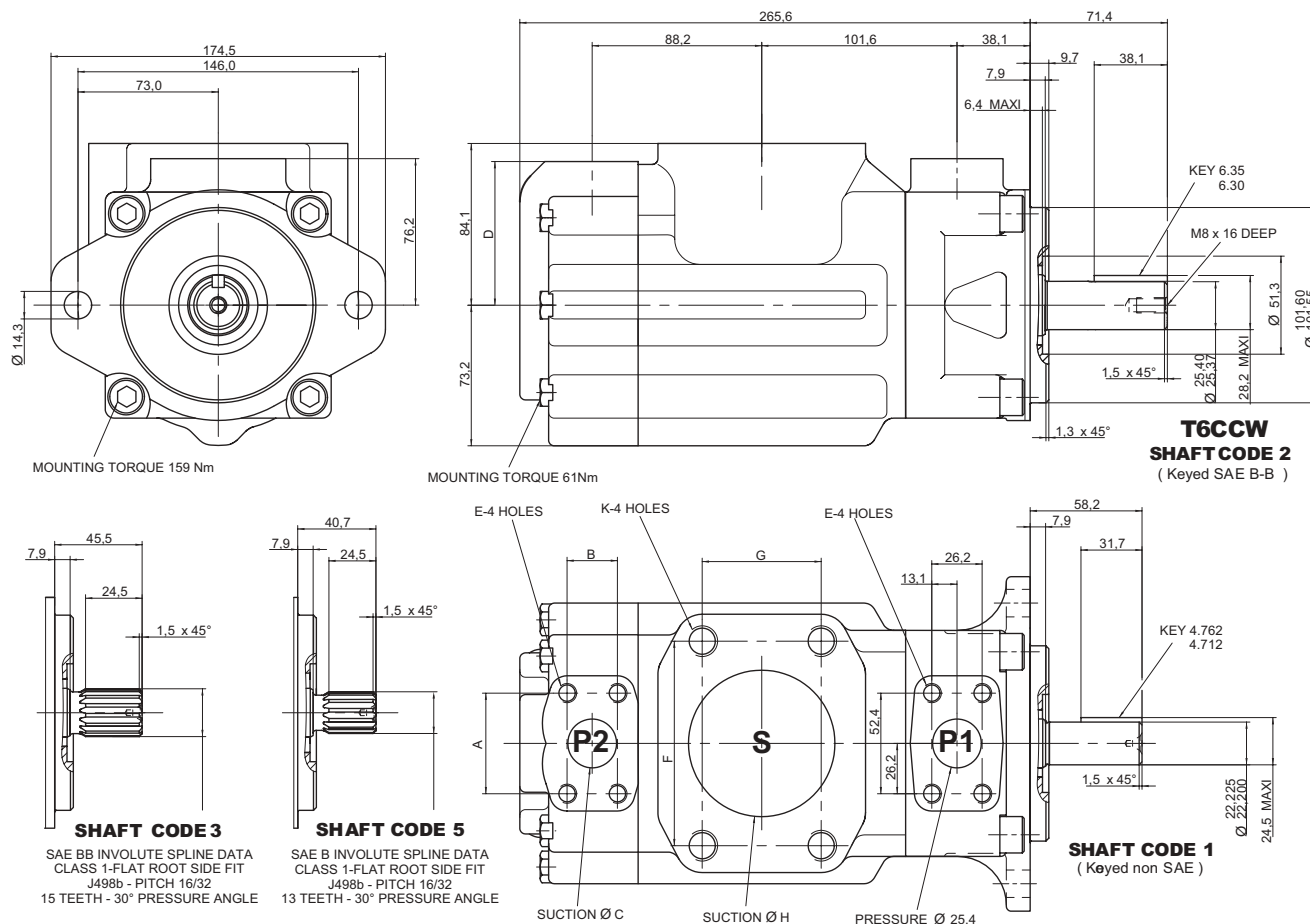


PERMISSIBLE RADIAL LOAD



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

Maximum permissible axial load $F_a = 800\text{ N}$



Alternate ports								
	S = 3"				S = 2"1/2 ²⁾			
F	106,4				88,9			
G	61,9				50,9			
Ø H	76,2				63,5			
Code	00	01¹⁾	0M	W0¹⁾	10	11¹⁾	1M	W1¹⁾
A	52,4	47,7	52,4	47,7	52,4	47,7	52,4	47,7
B	26,2	22,4	26,2	22,4	26,2	22,4	26,2	22,4
Ø C	25,4	19,0	25,4	19,0	25,4	19,0	25,4	19,0
D	74,7	76,2	74,7	76,2	74,7	76,2	74,7	76,2
E	3/8" - 16 UNC x 19 deep		M10 x 19 deep		3/8" - 16 UNC - 19 deep		M10 x 19 deep	
K	5/8" - 16 UNC x 28,4 deep		M12 x 28,4 deep		5/8" - 16 UNC x 28,4 deep		M12 x 28,4 deep	

Shaft torque limits [ml/rev. x bar]	
Shaft	Vi x p max.
1	14300
2	21420
3	32670
5	20600

¹⁾ Max. cam 014 ²⁾ P1 + P2 = 126 ml/rev max.

OPERATING CHARACTERISTICS – TYPICAL [24 cst]

Pressure port	Series	Volumetric displacem. Vi	Flow q _{ve} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 240 bar	p = 7 bar	p = 140 bar	p = 240 bar
P1 & P2	003	10,8 ml/rev	16,2	11,2	7,7	1,3	5,3	8,4
	005	17,2 ml/rev	25,8	20,8	17,3	1,4	7,5	12,2
	006	21,3 ml/rev	31,9	26,9	23,4	1,5	8,9	14,7
	008	26,4 ml/rev	39,6	34,6	31,1	1,6	10,7	17,7
	010	34,1 ml/rev	51,1	46,1	42,6	1,7	13,4	22,3
	012	37,1 ml/rev	55,6	50,6	47,1	1,7	14,4	24,1
	014	46,0 ml/rev	69,0	64,0	60,5	1,9	17,6	29,5
	017	58,3 ml/rev	87,4	82,4	78,9	2,1	21,9	36,9
	020	63,8 ml/rev	95,7	90,7	87,2	2,2	23,8	40,2
	022	70,3 ml/rev	105,4	100,4	96,9	2,3	26,1	44,1
	025 ¹⁾	79,3 ml/rev	118,9	113,9	110,4	2,5	29,2	49,5
	028 ¹⁾	88,8 ml/rev	133,2	128,2	125,8 ²⁾	2,8	32,7	48,5 ²⁾
	031 ¹⁾	100,0 ml/rev	150,0	145,0	142,6 ²⁾	2,8	36,5	54,4 ²⁾

1) 025 – 028 – 031 = 2500 RPM max.. 2) 028 – 031 = 210 bar max. int.

Model No.

T67CB W - 010 - B10 - 1 R 00 - A 1 - M1 - ..

Series - SAE B 2 bolts
Mounting flange J744

Severe duty shaft

Displacement for "P1"
Volumetric displacement (ml/rev)
003 = 10,8 017 = 58,3
005 = 17,2 020 = 63,8
006 = 21,3 022 = 70,3
008 = 26,4 025 = 79,3
010 = 34,1 028 = 88,8
012 = 37,1 031 = 100,0
014 = 46,0

Displacement for "P2"
Volumetric displacement (ml/rev)
B02 = 5,8 B09 = 28,0
B03 = 9,8 B10 = 31,8
B04 = 12,8 B11 = 35,0
B05 = 15,9 B12 = 41,0
B06 = 19,8 B14 = 45,0
B07 = 22,5 B15 = 50,0
B08 = 24,9

Type of shaft Severe duty shaft (T67CBW only)

1 = keyed (non SAE) 2 = keyed (SAE BB)
3 = splined (SAE BB)
5 = splined (SAE B)

Modifications

Mounting w/connection variables
11 = 4 bolts SAE flange (J518) UNC thread
M1 = 4 bolts SAE flange (J518) Metric thread

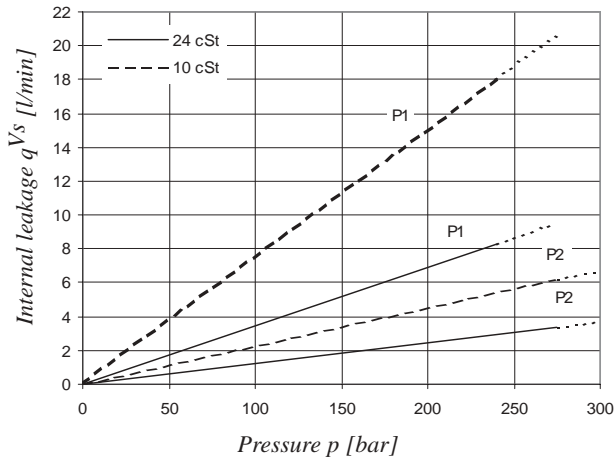
Seal class
1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

Design letter

Porting combination (see page 62)
00 = standard

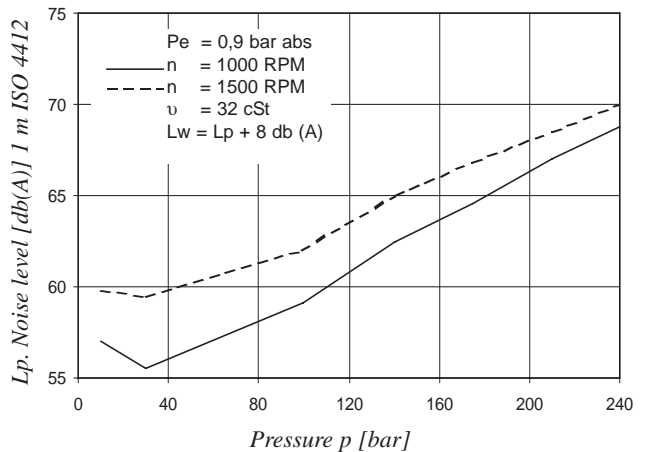
Direction of rotation (view on shaft end)
R = Clockwise
L = Counter-clockwise

INTERNAL LEAKAGE (TYPICAL)



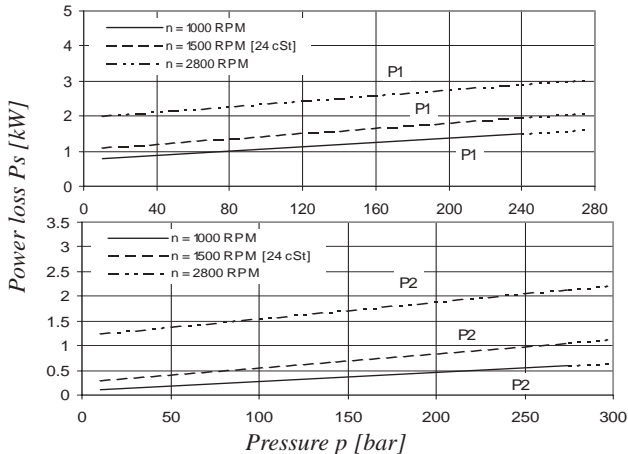
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is higher than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

**NOISE LEVEL (TYPICAL)
T67CB - 014 - B03**



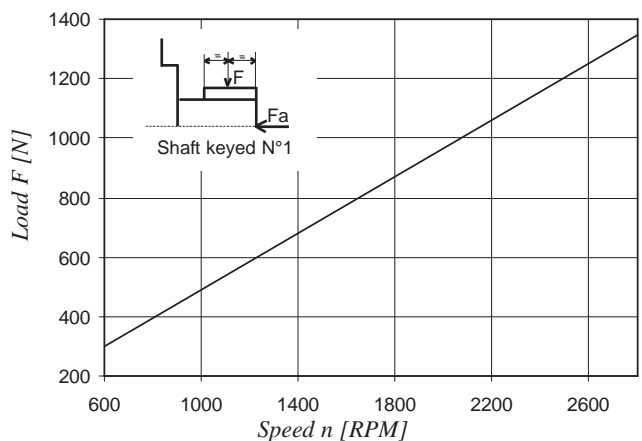
Double pump noise level is given with each section discharging at the pressure noted on the curve.

HYDROMECHANICAL POWER LOSS (TYPICAL)



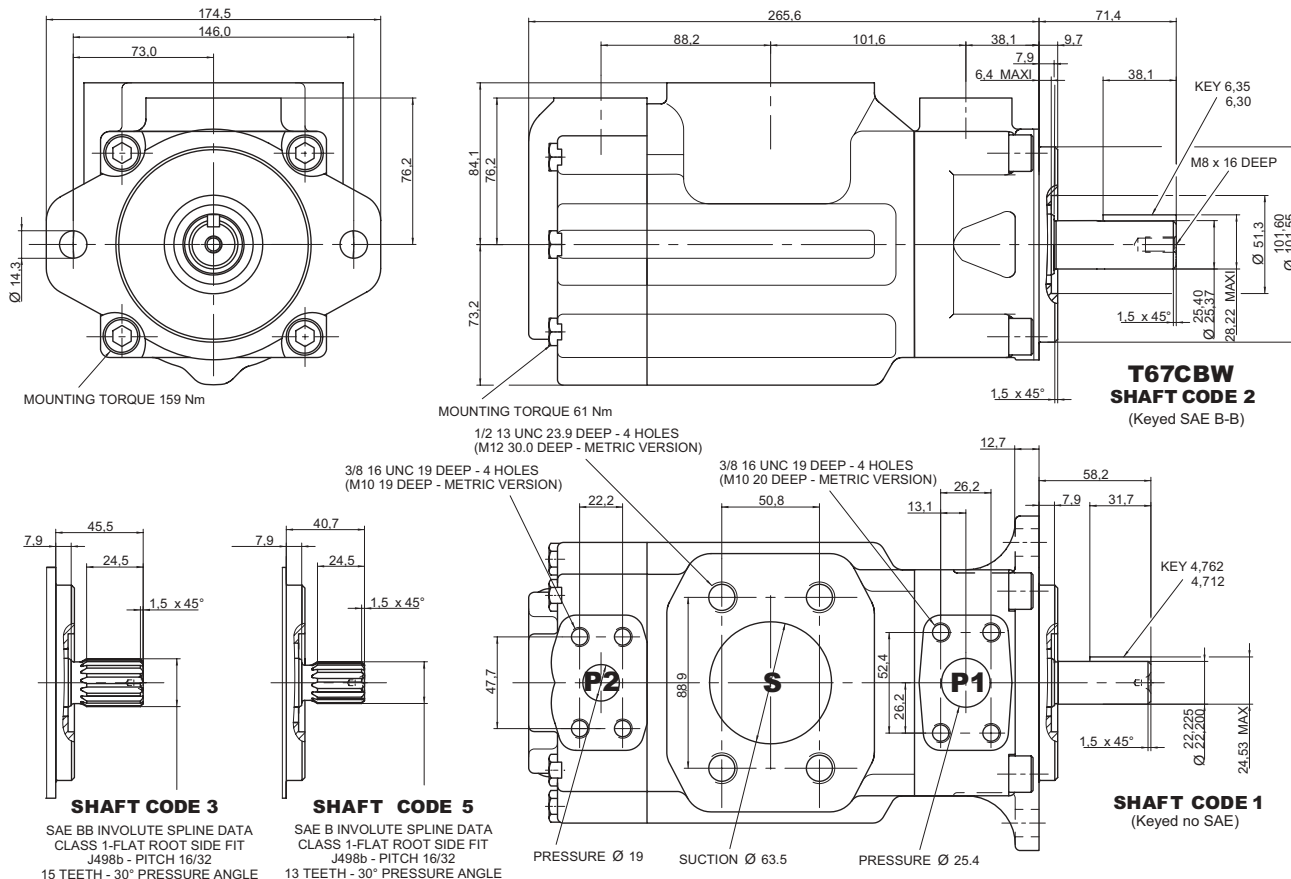
Total hydromechanical power loss is the sum of each section at its operating conditions.

PERMISSIBLE RADIAL LOAD



Maximum permissible axial load Fa = 800 N

DIMENSIONS - Weight : 26,0 kg - T67CB SERIES



Shaft torque limits [ml/rev. x bar]	
Shaft	Vi x p max.
1	14300
2	21420
3	32670
5	20600

OPERATING CHARACTERISTICS – TYPICAL [24 cSt]

Pressure port	Series	Volumetric displacem. Vi	Flow q _{vc} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 275 bar	p = 7 bar	p = 140 bar	p = 275 bar
P1	003	10,8 ml/rev	16,2	11,2	-	1,3	5,3	-
	005	17,2 ml/rev	25,8	20,8	16,1	1,4	7,5	13,9
	006	21,3 ml/rev	31,9	26,9	22,2	1,5	8,9	16,8
	008	26,4 ml/rev	39,6	34,6	29,9	1,6	10,7	20,3
	010	34,1 ml/rev	51,1	46,1	41,4	1,7	13,4	25,6
	012	37,1 ml/rev	55,6	50,6	45,9	1,7	14,4	27,6
	014	46,0 ml/rev	69,0	64,0	59,3	1,9	17,6	33,7
	017	58,3 ml/rev	87,4	82,4	77,7	2,1	21,9	42,2
	020	63,8 ml/rev	95,7	90,7	86,0	2,2	23,8	46,0
	022	70,3 ml/rev	105,4	100,4	95,7	2,3	26,1	50,4
	025 ¹⁾	79,3 ml/rev	118,9	113,9	109,2	2,5	29,2	56,6
028 ¹⁾	88,8 ml/rev	133,2	128,2	125,8 ²⁾	2,8	32,7	48,5 ²⁾	
031 ¹⁾	100,0 ml/rev	150,0	145,0	142,6 ²⁾	2,8	36,5	54,4 ²⁾	
			p = 0 bar	p = 140 bar	p = 300 bar	p = 7 bar	p = 140 bar	p = 300 bar
P2	B02	5,8 ml/rev	8,7	7,0	5,1	0,5	2,6	5,1
	B03	9,8 ml/rev	14,7	13,0	11,1	0,6	4,0	8,1
	B04	12,8 ml/rev	19,2	17,5	15,6	0,6	5,0	10,4
	B05	15,9 ml/rev	23,9	22,2	20,2	0,7	6,1	12,7
	B06	19,8 ml/rev	29,7	28,0	26,1	0,7	7,5	15,6
	B07	22,5 ml/rev	33,7	32,0	30,2	0,8	8,5	17,6
	B08	24,9 ml/rev	37,4	35,7	33,7	0,8	9,3	19,5
	B09	28,0 ml/rev	42,0	40,3	38,4	0,9	10,4	21,8
	B10	31,8 ml/rev	47,7	46,0	44,1	0,9	11,7	26,2
	B11	35,0 ml/rev	52,5	50,8	48,9	1,0	12,8	27,0
	B12	41,0 ml/rev	61,5	59,8	57,9	1,1	14,9	31,5
	B14	45,0 ml/rev	67,5	65,8	63,9	1,2	16,3	34,5
	B15	50,0 ml/rev	75,0	73,3	71,6 ³⁾	1,3	18,1	35,7 ³⁾

- We do not recommend to use this 003 at 275 bar & 1500 RPM as the internal is over 50% of theoretical flow.

1) 025 - 028 - 031 = 2500 RPM max. 2) 028 - 031 = 210 bar max. int. 3) B15 = 280 bar max. int.

Model No. **T7DB or T7DBS - B42 - B10 - 1 R 00 - A 1 M1 - ..**

T7DB series - 125 A2 HW
ISO 2 bolts 3019-2 mounting flange

T7DBS series - SAE C 2 bolts
Mounting flange J744

Displacement for "P1"
Volumetric displacement (ml/rev.)
B14 = 44,0 B31 = 99,2
B17 = 55,0 B35 = 113,4
B20 = 66,0 B38 = 120,6
B22 = 70,3 B42 = 137,5
B24 = 81,1 045 = 145,7
B28 = 90,0 050 = 158,0

Displacement for "P2"
Volumetric displacement (ml/rev.)
B02 = 5,8 B09 = 28,0
B03 = 9,8 B10 = 31,8
B04 = 12,8 B11 = 35,0
B05 = 15,9 B12 = 41,0
B06 = 19,8 B14 = 45,0
B07 = 22,5 B15 = 50,0
B08 = 24,9

Type of shaft T7DBS
1 = keyed (SAE C) 3 = splined (SAE C)
2 = keyed (non SAE) 4 = splined (spec. SAE C)

Type of shaft T7DB - T7DBS
5 = keyed (ISO 3019-2 - G32M)

Modifications

Mounting w/connection variables
4 bolts SAE flanges J518

	Metric thread T7DB - T7DBS		UNC thread T7DBS	
	M0	M1	00	01
P1	1"1/4	1"1/4	1"1/4	1"1/4
P2	1"	3/4"	1"	3/4"
S	3"	3"	3"	3"

Seal class

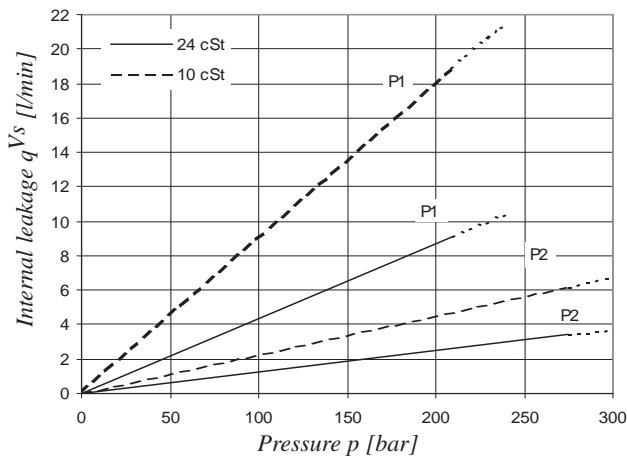
1 = S1 (for mineral oil)
4 = S4 (for the resistant fluid)
5 = S5 (for mineral oil and fire resistant fluids)

Design letter

Porting combination (see page 62)
00 = standard

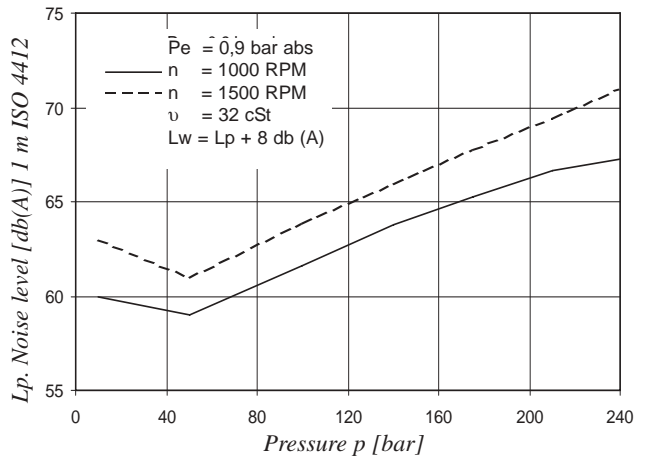
Direction of rotation (view on shaft end)
R = Clockwise
L = Counter-clockwise

INTERNAL LEAKAGE (TYPICAL)



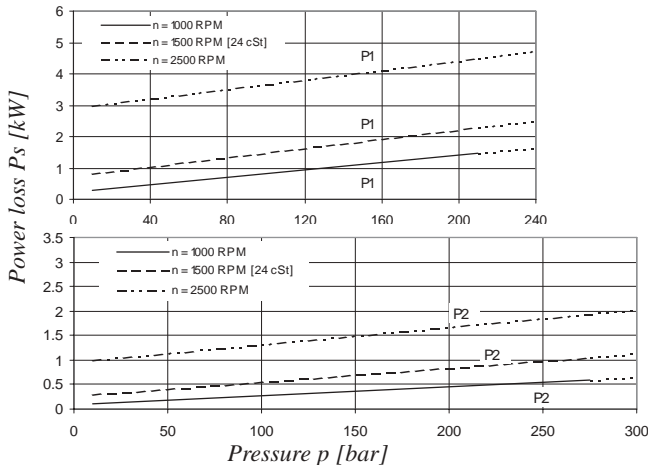
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is higher than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

**NOISE LEVEL (TYPICAL)
T7DBS - B31 - B10**



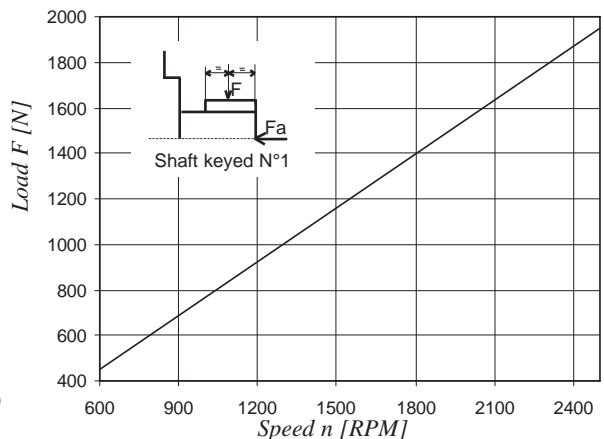
Double pump noise level is given with each section discharging at the pressure noted on the curve.

HYDROMECHANICAL POWER LOSS (TYPICAL)



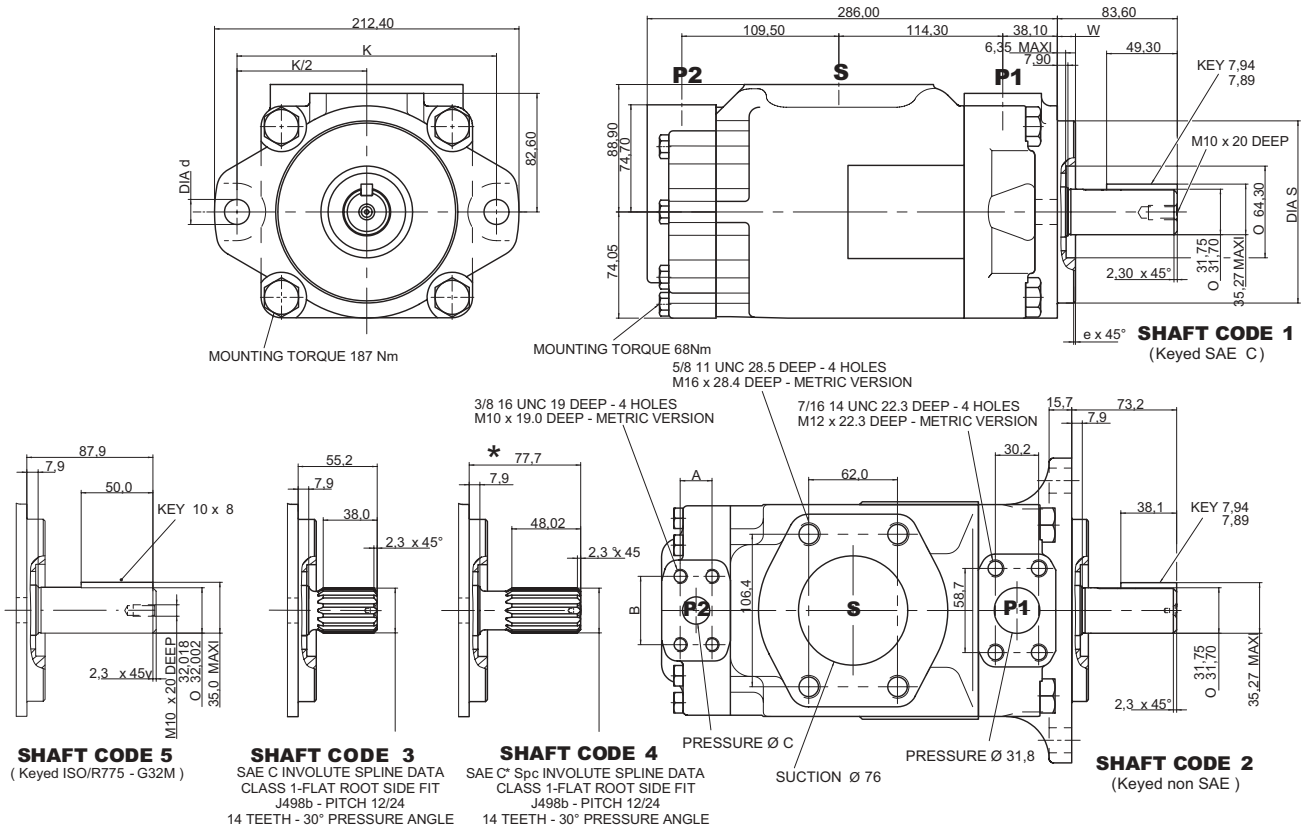
Total hydromechanical power loss is the sum of each section at its operating conditions.

PERMISSIBLE RADIAL LOAD



Maximum permissible axial load Fa = 1200 N

DIMENSIONS & OPERATING CHARACTERISTICS - Weight : 38,6 kg - T7DB - T7DBS SERIES



Alternate mounting flange							Alternate connect. variables			Shaft torque limits [ml/rev. x bar]	
Series	Dia S		e x 45°	W	K	Dia d		Shaft		Vi x p max.	
	Max.	Min.						1	2		
T7DB	125,00	124,937	2,0	9,5	180,0	18,0	A	26,20	22,20	43240	
T7DBS	127,00	126,950	1,3	12,7	181,0	17,5	B	52,35	47,60	34590	
							C	25,0	19,0	61200	
										61200	
										42500	

OPERATING CHARACTERISTICS – TYPICAL [24 cSt]

Pressure port	Series	Volumetric displacem. Vi	Flow q _v [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 250 bar	p = 7 bar	p = 140 bar	p = 250 bar
P1	B14	44,0 ml/rev	66,0	59,4	54,6	1,5	16,6	29,1
	B17	55,0 ml/rev	82,5	76,4	71,9	1,7	20,4	35,8
	B20	66,0 ml/rev	99,0	93,3	88,5	1,9	24,2	42,7
	B22	70,3 ml/rev	105,4	99,5	94,6	2,0	25,7	45,4
	B24	81,1 ml/rev	121,6	115,4	110,1	2,2	29,6	52,2
	B28	90,0 ml/rev	135,0	128,6	123,6	2,3	32,6	57,7
	B31	99,2 ml/rev	148,8	142,1	137,5	2,5	35,9	63,4
	B35	113,4 ml/rev	170,1	162,9	157,9	2,9	41,2	72,9
	B38	120,6 ml/rev	180,9	174,5	170,4	2,9	43,4	76,8
	B42	137,5 ml/rev	206,2	199,6	195,9 ¹⁾	3,4	49,8	81,3 ¹⁾
	045 ³⁾	145,7 ml/rev	218,5	209,2	203,0	4,1	52,8	89,5
050 ³⁾	158,0 ml/rev	237,0	227,7	224,0 ²⁾	4,4	57,0	85,0 ²⁾	
P2			p = 0 bar	p = 140 bar	p = 300 bar	p = 7 bar	p = 140 bar	p = 300 bar
	B02	5,8 ml/rev	8,7	7,0	5,1	0,5	2,6	5,1
	B03	9,8 ml/rev	14,7	13,0	11,1	0,6	4,0	8,1
	B04	12,8 ml/rev	19,2	17,5	15,6	0,6	5,0	10,4
	B05	15,9 ml/rev	23,9	22,2	20,2	0,7	6,1	12,7
	B06	19,8 ml/rev	29,7	28,0	26,1	0,7	7,5	15,6
	B07	22,5 ml/rev	33,7	32,0	30,2	0,8	8,5	17,6
	B08	24,9 ml/rev	37,4	35,7	33,7	0,8	9,3	19,5
	B09	28,0 ml/rev	42,0	40,3	38,4	0,9	10,4	21,8
	B10	31,8 ml/rev	47,7	46,0	44,1	0,9	11,7	26,2
	B11	35,0 ml/rev	52,5	50,8	48,9	1,0	12,8	27,0
	B12	41,0 ml/rev	61,5	59,8	57,9	1,1	14,9	31,5
	B14	45,0 ml/rev	67,5	65,8	63,9	1,2	16,3	34,5
	B15	50,0 ml/rev	75,0	73,3	71,6 ⁴⁾	1,3	18,1	35,7 ⁴⁾

1) B42 = 230 bar max. int. 2) 050 = 210 bar max. int. 3) 045 – 050 = 2200 RPM max 4) B15 = 280 bar max.int.

Model No.

T67DC W - B42 - 010 - 1 R 00 - A 1 - M1 - ..

Series - SAE C 2 bolts
Mounting Flange J744

Severe duty shaft

Displacement for "P1"

Volumetric displacement (ml/rev)
B14 = 44,0 B31 = 99,2
B17 = 55,0 B35 = 113,4
B20 = 66,0 B38 = 120,6
B22 = 70,3 B42 = 137,5
B24 = 81,1 045 = 145,7
B28 = 90,0 050 = 158,0

Displacement for "P2"

Volumetric displacement (ml/rev)
003 = 10,8 017 = 58,3
005 = 17,2 020 = 63,8
006 = 21,3 022 = 70,3
008 = 26,4 025 = 79,3
010 = 34,1 028 = 88,8
012 = 37,1 031 = 100,0
014 = 46,0

Type of shaft

1 = keyed (SAE C) 3 = splined (SAE C)
2 = keyed (non SAE) 4 = splined (spec. SAE C)

Type of shaft - Severe duty (T67DCW only)

5 = keyed (non SAE)

Modifications

Mounting w/connection variables
4 bolts SAE flange J518

	Metric thread		UNC thread	
	M0	M1	00	01
P1	1"1/4	1"1/4	1"1/4	1"1/4
P2	1"	3/4"	1"	3/4"
S	3"	3"	3"	3"

Seal class

1 = S1 - BUNA N
4 = S4 - EPDM
5 = S5 - VITON

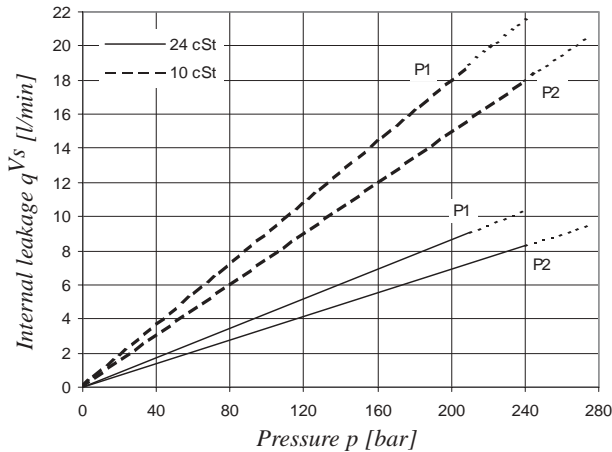
Design letter

Porting combination (see page 62)
00 = standard

Direction of rotation (view on shaft end)

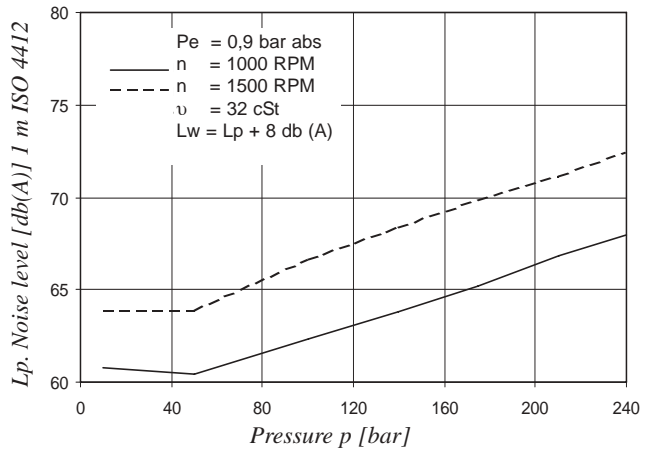
R = Clockwise
L = Counter-clockwise

INTERNAL LEAKAGE (TYPICAL)



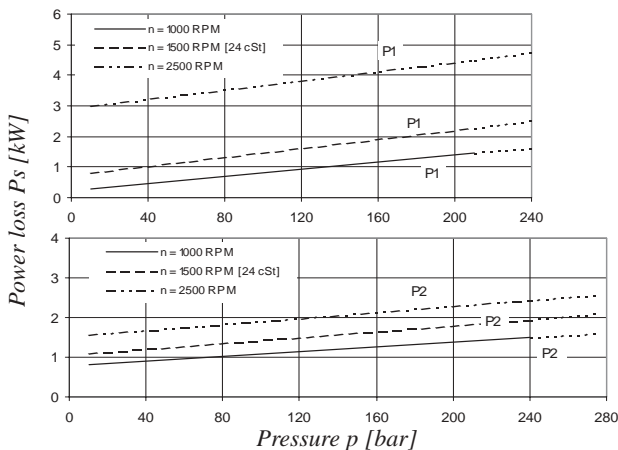
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is higher than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

**NOISE LEVEL (TYPICAL)
T67DC - B31 - 022**



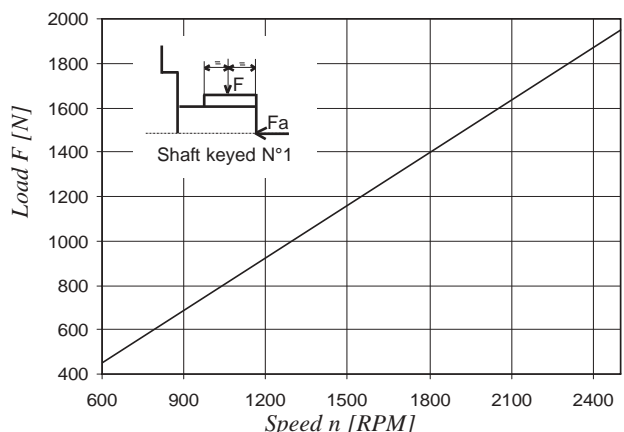
Double pump noise level is given with each section discharging at the pressure noted on the curve.

HYDROMECHANICAL POWER LOSS (TYPICAL)



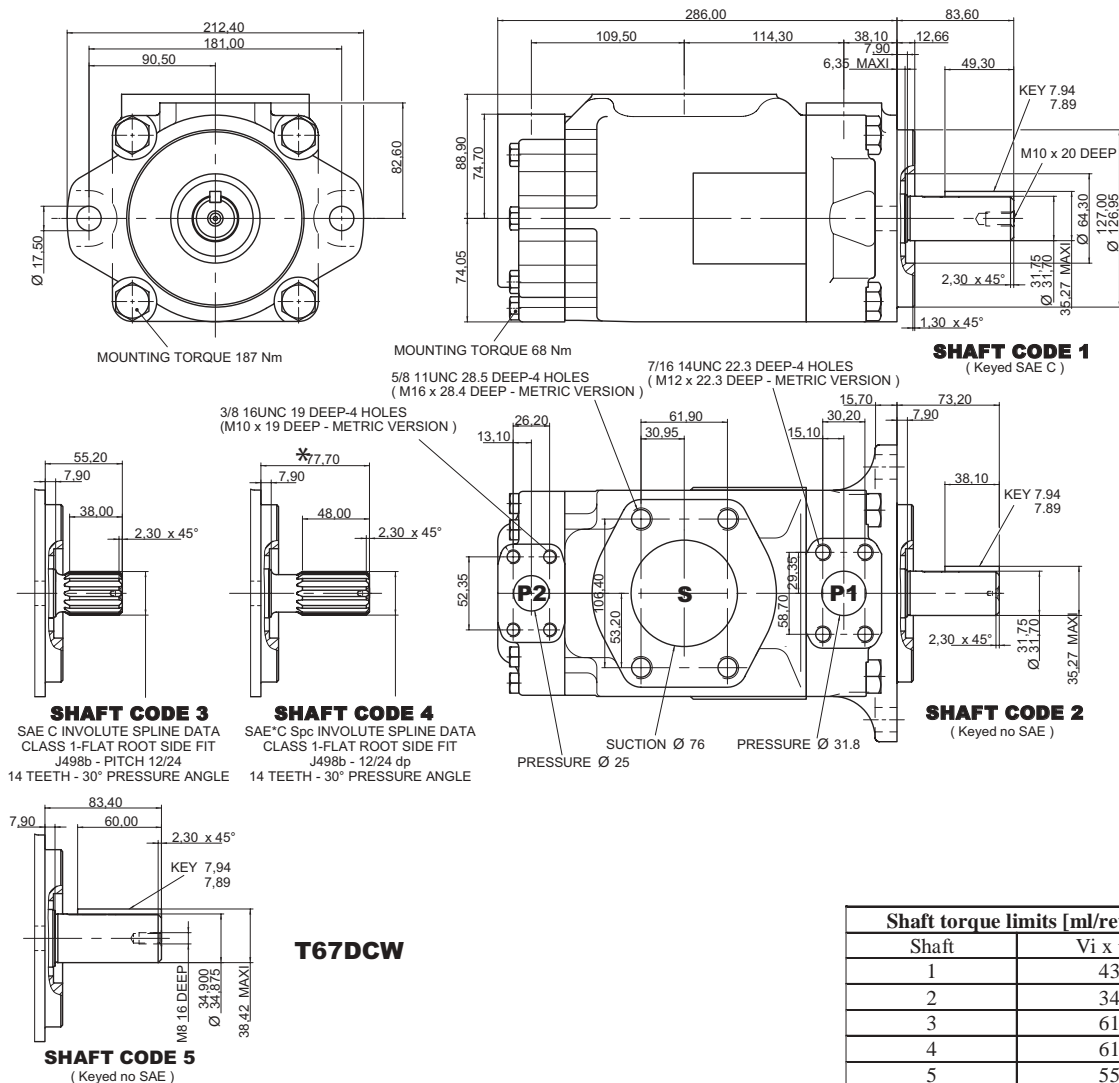
Total hydromechanical power loss is the sum of each section at its operating conditions.

PERMISSIBLE RADIAL LOAD



Maximum permissible axial load $F_a = 1200$ N

DIMENSIONS - Weight : 38,6 kg - T67DC SERIES



Shaft torque limits [ml/rev. x bar]	
Shaft	Vi x p max.
1	43240
2	34590
3	61200
4	61200
5	55600

OPERATING CHARACTERISTICS – TYPICAL [24 cSt]

Pressure port	Series	Volumetric displacem. Vi	Flow q _{ve} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 250 bar	p = 7 bar	p = 140 bar	p = 250 bar
P1	B14	44,0 ml/rev	66,0	59,4	54,6	1,5	16,6	29,1
	B17	55,0 ml/rev	82,5	76,4	71,9	1,7	20,4	35,8
	B20	66,0 ml/rev	99,0	93,3	88,5	1,9	24,2	42,7
	B22	70,3 ml/rev	105,4	99,5	94,6	2,0	25,7	45,4
	B24	81,1 ml/rev	121,6	115,4	110,1	2,2	29,6	52,2
	B28	90,0 ml/rev	135,0	128,6	123,6	2,3	32,6	57,7
	B31	99,2 ml/rev	148,8	142,1	137,5	2,5	35,9	63,4
	B35	113,4 ml/rev	170,1	162,9	157,9	2,9	41,2	72,9
	B38	120,6 ml/rev	180,9	174,5	170,4	2,9	43,4	76,8
	B42	137,5 ml/rev	206,2	199,6	195,9 ¹⁾	3,4	49,8	81,3 ¹⁾
045 ³⁾	145,7 ml/rev	218,5	209,2	203,0	4,1	52,8	89,5	
050 ³⁾	158,0 ml/rev	237,0	227,7	224,0 ²⁾	4,4	57,0	85,0 ²⁾	
			p = 0 bar	p = 140 bar	p = 275 bar	p = 7 bar	p = 140 bar	p = 275 bar
P2	003	10,8 ml/rev	16,2	11,2	-	1,3	5,3	-
	005	17,2 ml/rev	25,8	20,8	16,1	1,4	7,5	13,9
	006	21,3 ml/rev	31,9	26,9	22,2	1,5	8,9	16,8
	008	26,4 ml/rev	39,6	34,6	29,9	1,6	10,7	20,3
	010	34,1 ml/rev	51,1	46,1	41,4	1,7	13,4	25,6
	012	37,1 ml/rev	55,6	50,6	45,9	1,7	14,4	27,6
	014	46,0 ml/rev	69,0	64,0	59,3	1,9	17,6	33,7
	017	58,3 ml/rev	87,4	82,4	77,7	2,1	21,9	42,2
	020	63,8 ml/rev	95,7	90,7	86,0	2,2	23,8	46,0
	022	70,3 ml/rev	105,4	100,4	95,7	2,3	26,1	50,4
	025 ⁴⁾	79,3 ml/rev	118,9	113,9	109,2	2,5	29,2	56,6
	028 ⁴⁾	88,8 ml/rev	133,2	128,2	125,8 ²⁾	2,8	32,7	48,5 ²⁾
	031 ⁴⁾	100,0 ml/rev	150,0	145,0	142,6 ²⁾	2,8	36,5	54,4 ²⁾

- We do not recommend to use this 003 at 275 bar & 1500 RPM as the internal leakage is over 50% of theoretical flow.

1) B42 = 230 bar max. int. 2) 050 - 028 - 031 = 210 bar max. int. 3) 045 - 050 = 2200 RPM max 4) 025 - 028 - 031 = 2500 RPM max.

Model No.

T7DD or T7DDS - B42 - B22 - 1 R 00 - A 1 - M0 - ..

T7DD series - ISO 4 bolts 3019-2

Mounting flange 125-B4 HW

T7DDS series - SAE-C 6 bolts

Mounting flange J744

Displacement for "P1" & "P2"

Volumetric displacement (ml/rev)

B14 = 44,0	B31 = 99,2
B17 = 55,0	B35 = 113,4
B20 = 66,0	B38 = 120,6
B22 = 70,3	B42 = 137,5
B24 = 81,1	045 = 145,7
B28 = 90,0	050 = 158,0

Type of shaft - T7DDS only

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

Type of shaft T7DD and T7DDS

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

Modifications

Mounting w/connection variables

4 bolts SAE flange J518

Type	P1 & P2 = 1"1/4 - S = 4"	
	UNC	Metric
T7DD		M0
T7DDS	00	M0

Seal class

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

Design letter

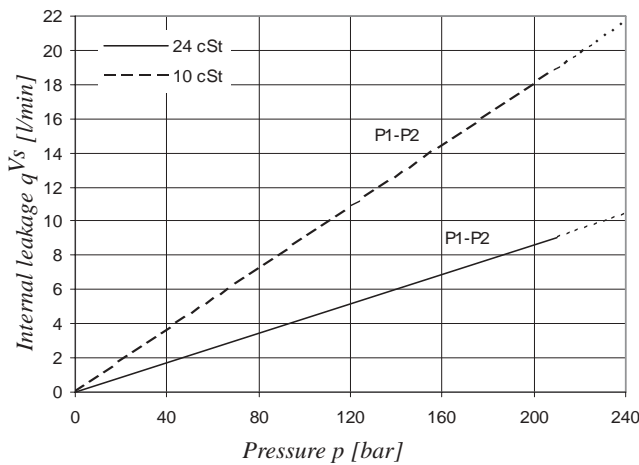
Porting combination (see page 62)

00 = standard

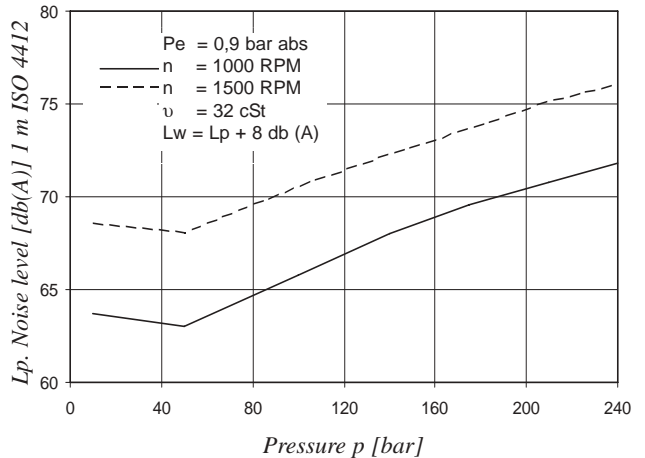
Direction of rotation (view on shaft end)

- R = Clockwise
- L = Counter-clockwise

INTERNAL LEAKAGE (TYPICAL)



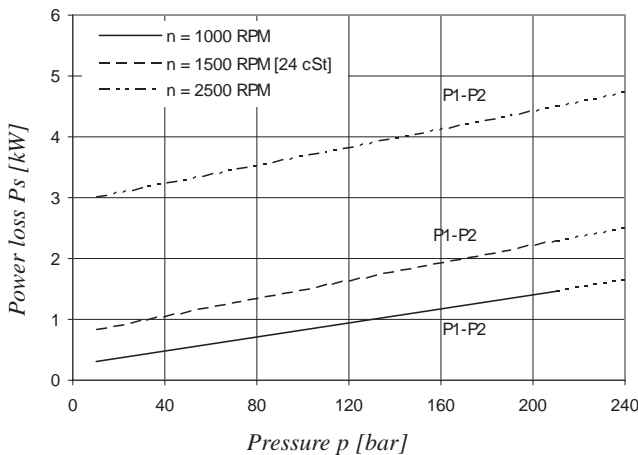
**NOISE LEVEL (TYPICAL)
T7DDS - B31 - B31**



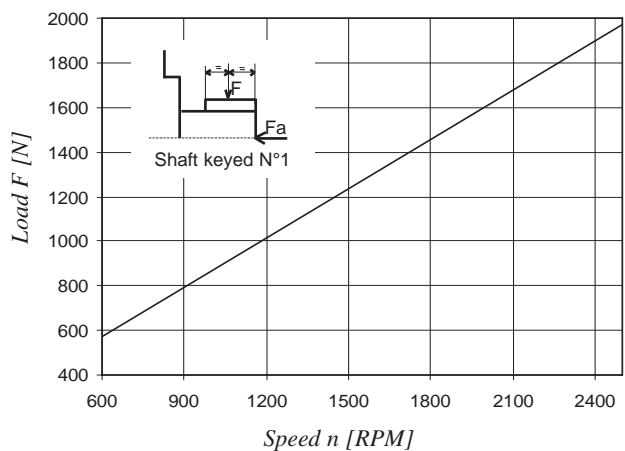
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is higher than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

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

HYDROMECHANICAL POWER LOSS (TYPICAL)

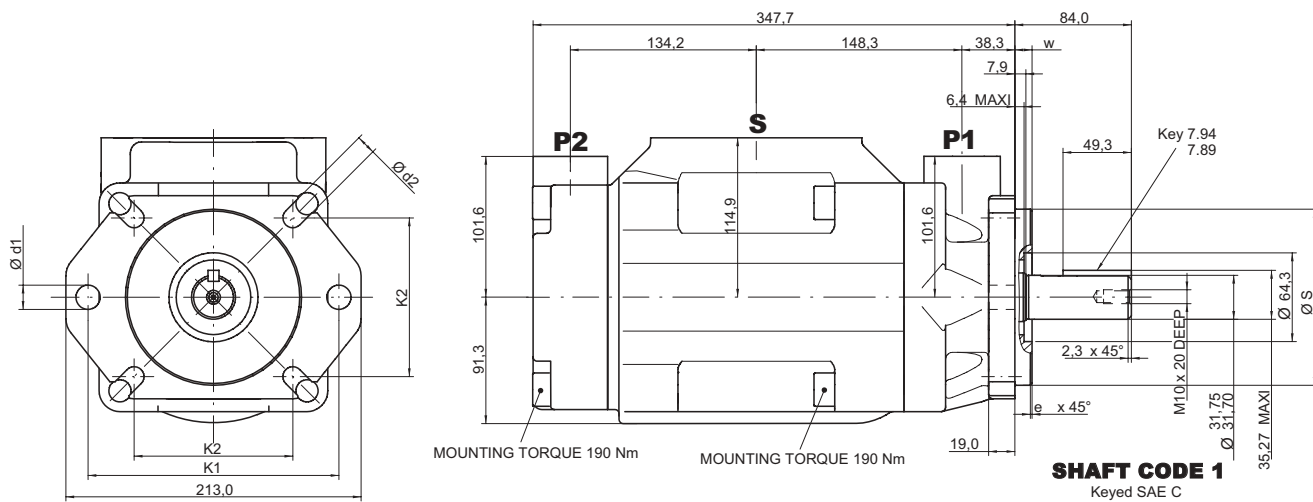


PERMISSIBLE RADIAL LOAD

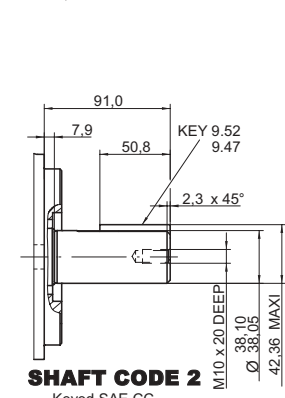


Total hydromechanical power loss is the sum of each section at its operating conditions.

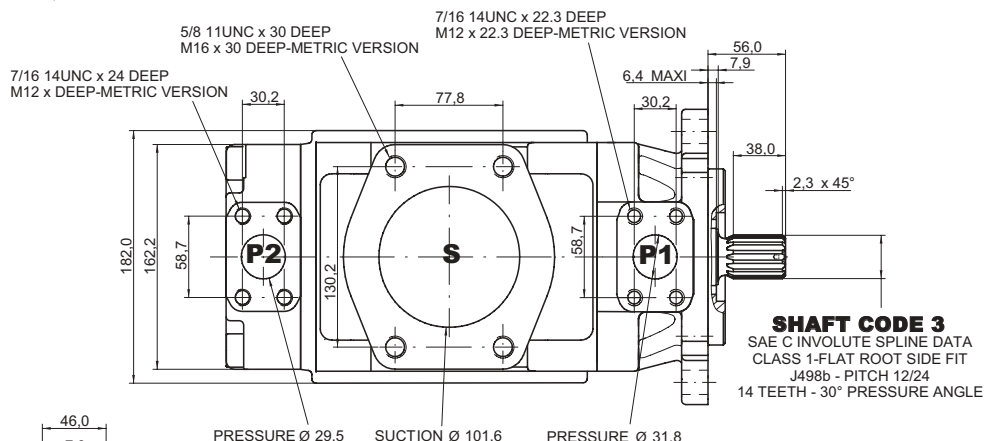
Maximum permissible axial load $F_a = 1200 N$



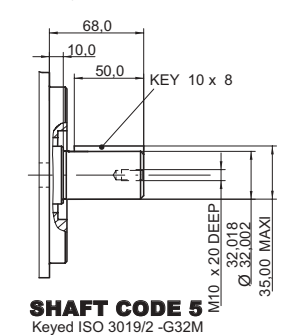
SHAFT CODE 1
Keyed SAE C



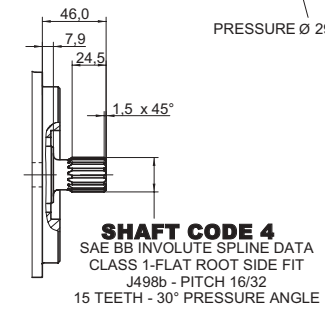
SHAFT CODE 2
Keyed SAE CC



SHAFT CODE 3
SAE C INVOLUTE SPLINE DATA
CLASS 1-FLAT ROOT SIDE FIT
J498b - PITCH 12/24
14 TEETH - 30° PRESSURE ANGLE



SHAFT CODE 5
Keyed ISO 3019/2 - G32M



SHAFT CODE 4
SAE BB INVOLUTE SPLINE DATA
CLASS 1-FLAT ROOT SIDE FIT
J498b - PITCH 16/32
15 TEETH - 30° PRESSURE ANGLE

Shaft torque limits [ml/rev. x bar]	
Shaft	Vi x p max.
1	43240
2	71750
3	61200
4	35880
5	45200

Series	Alternate mounting flange							
	Dia S		e x 45°	W	K1	DIA d1	K2	DIA d2
	Max.	Min.						
T7DD	125,00	124,937	2,0	9,5	180,0	18,0	113,14	14,0
T7DDS	127,00	126,950	1,5	12,7	181,0	17,5	114,50	14,3

OPERATING CHARACTERISTICS – TYPICAL [24 cSt]

Pressure port	Series	Volumetric displacem. Vi	Flow q _{Vc} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 250 bar	p = 7 bar	p = 140 bar	p = 250 bar
			P1 & P2	B14	44,0 ml/rev	66,0	59,4	54,6
B17	55,0 ml/rev	82,5		76,4	71,9	1,7	20,4	35,8
B20	66,0 ml/rev	99,0		93,3	88,5	1,9	24,2	42,7
B22	70,3 ml/rev	105,4		99,5	94,6	2,0	25,7	45,4
B24	81,1 ml/rev	121,6		115,4	110,1	2,2	29,6	52,2
B28	90,0 ml/rev	135,0		128,6	123,6	2,3	32,6	57,7
B31	99,2 ml/rev	148,8		142,1	137,5	2,5	35,9	63,4
B35	113,4 ml/rev	170,1		162,9	157,9	2,9	41,2	72,9
B38	120,6 ml/rev	180,9		174,5	170,4	2,9	43,4	76,8
B42	137,5 ml/rev	206,2		199,6	195,9 ¹⁾	3,4	49,8	81,3 ¹⁾
045 ³⁾	145,7 ml/rev	218,5		209,2	203,0	4,1	52,8	89,5
050 ³⁾	158,0 ml/rev	237,0		227,7	224,0 ²⁾	4,4	57,0	85,0 ²⁾

1) B42 = 230 bar max. int. 2) 050 = 210 bar max. int. 3) 045 - 050 = 2200 RPM max

Model No.

T7EB - T7EBS - 042 - B12 - 1 R 00 - A 1 M1 - ..

T7EB series - ISO 4 bolts 3019-2
 Mounting flange I25-A2 HW

T7EBS series - SAE-C 2 bolts
 Mounting flange J744

Displacement for "P1"

Volumetric displacement (ml/rev)

042 = 132,3 057 = 183,3
 045 = 142,4 062 = 196,7
 050 = 158,5 066 = 213,3
 052 = 164,8 072 = 227,1
 054 = 171,0 085 = 268,7

Displacement for "P2"

Volumetric displacement (ml/rev)

B02 = 5,8 B09 = 28,0
 B03 = 9,8 B10 = 31,8
 B04 = 12,8 B11 = 35,0
 B05 = 15,9 B12 = 41,0
 B06 = 19,8 B14 = 45,0
 B07 = 22,5 B15 = 50,0
 B08 = 24,9

Type of shaft T7EB and T7EBS

5 = keyed (ISO/R 775 - G38M)

Type of shaft T7EBS

1 = keyed (SAE CC) 3 = splined (SAE C)
 2 = keyed (non SAE) 4 = splined (SAE CC)

Modifications

Mounting w/connection variables

4 bolts SAE flange J518

	P1 = 1"1/2 - P2 = 3/4" - S = 3"1/2	
	T7EBS	T7EB - T7EBS
Type	UNC	Metric
Code	01	M1

Seal class

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

Design letter

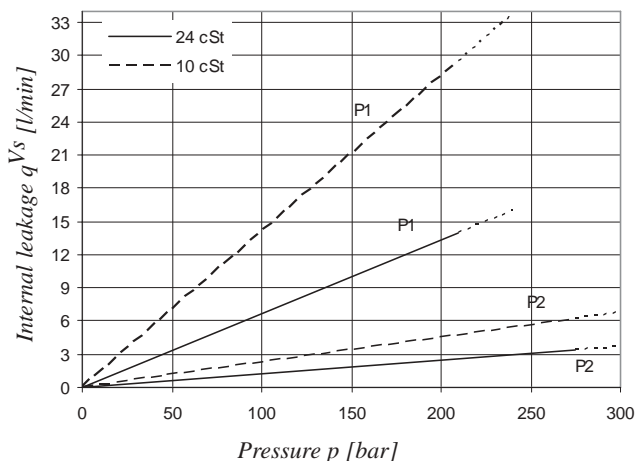
Porting combination (see page 62)

00 = standard

Direction of rotation (view on shaft end)

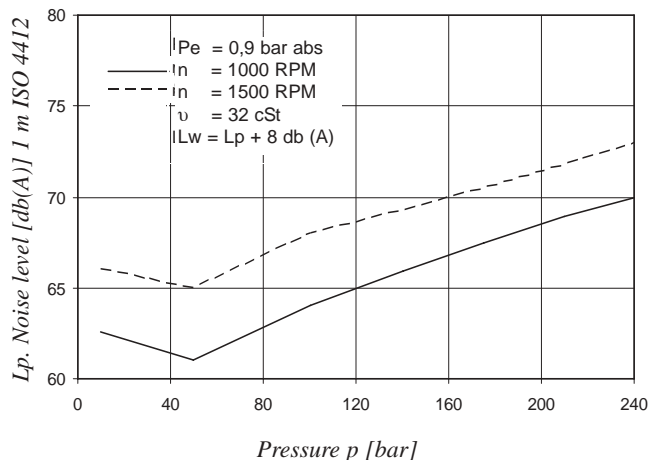
R = Clockwise
 L = Counter-clockwise

INTERNAL LEAKAGE (TYPICAL)



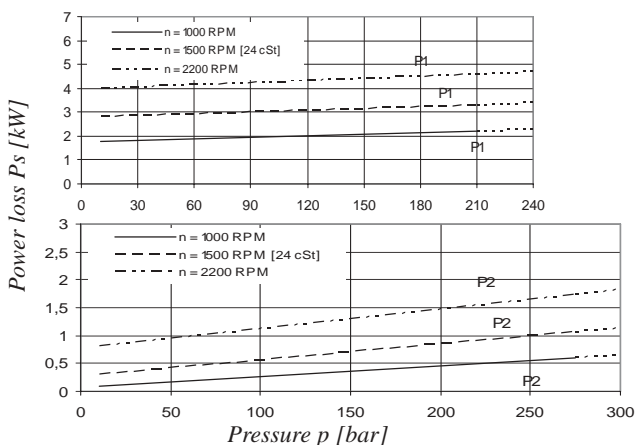
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is higher than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

**NOISE LEVEL (TYPICAL)
 T7EBS 050 - B03**



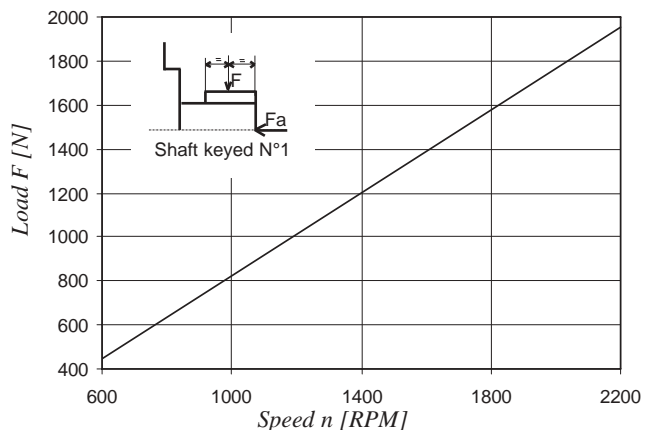
Double pump noise level is given with each section discharging at the pressure noted on the curve.

HYDROMECHANICAL POWER LOSS (TYPICAL)

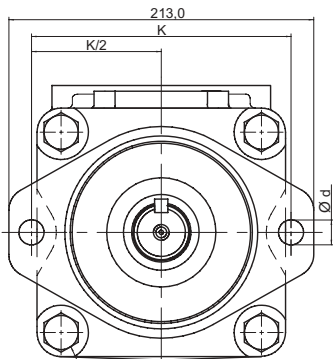


Total hydromechanical power loss is the sum of each section at its operating conditions.

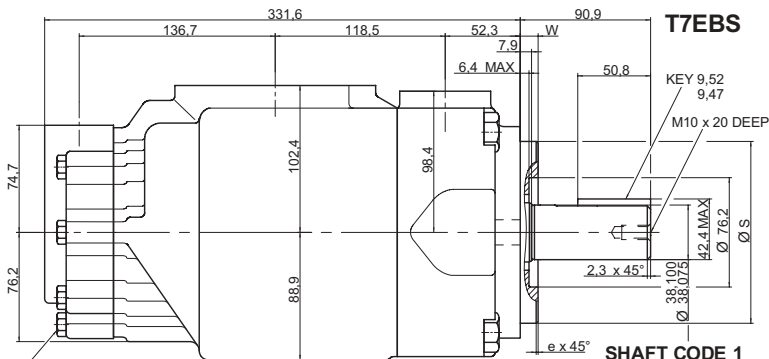
PERMISSIBLE RADIAL LOAD



Maximum permissible axial load Fa = 2000 N

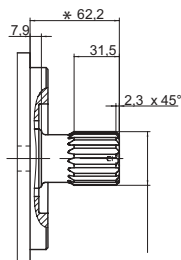


MOUNTING TORQUE 187 Nm.



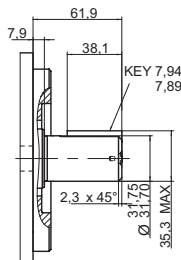
MOUNTING TORQUE 68 Nm.

SHAFT CODE 1 (Keyed SAE CC)

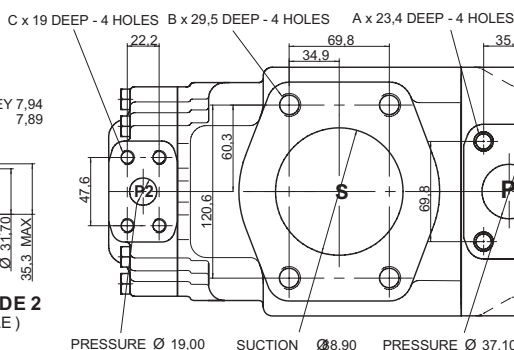


SHAFT CODE 4

SAE *CC INVOLUTE SPLINE DATA
CLASS 1-FLAT ROOT SIDE FIT
J498b - PITCH 12/24
17 TEETH - 30° PRESSURE ANGLE

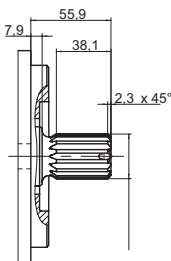


SHAFT CODE 2 (Keyed noSAE)



PRESSURE Ø 19,00 SUCTION Ø 8,90 PRESSURE Ø 37,10

SHAFT CODE 5 (Keyed ISO/R775 - G38M)



SHAFT CODE 3

SAE C INVOLUTE SPLINE DATA
CLASS 1-FLAT ROOT SIDE FIT
J498b - PITCH 12/24
14 TEETH - 30° PRESSURE ANGLE

Shaft torque limits [ml/rev. x bar]	
Shaft	Vi x p max.
1	68500
2	34590
3	61200
4	68500
5	68500

Alternate connect. variables		
	01	M1
A	1/2 - 13 UNC	M12
B	5/8 - 11 UNC	M16
C	3/8 - 16 UNC	M10

Alternate mounting flange						
Series	Dia S		e x 45°	W	K	Dia d
	Max.	Min.				
T7EB	125,00	124,937	2,0	9,5	180,0	18,0
T7EBS	127,00	126,950	1,3	12,7	181,0	17,5

OPERATING CHARACTERISTICS – TYPICAL [24 cSt]

Pressure port	Series	Volumetric displacem. Vi	Flow q _{v,c} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 240 bar	p = 7 bar	p = 140 bar	p = 240 bar
P1	042	132,3 ml/rev	198,5	188,5	181,3	5,2	49,4	82,6
	045	142,4 ml/rev	213,6	203,6	196,5	5,4	52,9	88,7
	050	158,5 ml/rev	237,7	227,7	220,6	5,7	58,5	98,3
	052	164,8 ml/rev	247,2	237,2	230,1	5,8	60,8	102,1
	054	171,0 ml/rev	256,5	246,5	239,4	5,9	63,0	105,8
	057	183,3 ml/rev	275,0	265,0	257,9	6,1	67,3	113,2
	062	196,7 ml/rev	295,0	285,0	277,9	6,4	71,9	121,3
	066	213,3 ml/rev	319,9	309,0	302,8	6,7	77,7	131,2
	072	227,1 ml/rev	340,6	330,6	323,5	6,9	82,6	139,5
085	268,7 ml/rev	403,0	392,0 ¹⁾	-	9,1	65,8 ¹⁾	-	
P2			p = 0 bar	p = 140 bar	p = 300 bar	p = 7 bar	p = 140 bar	p = 300 bar
	B02	5,8 ml/rev	8,7	7,0	4,8	0,5	2,6	5,4
	B03	9,8 ml/rev	14,7	13,0	10,8	0,6	4,0	8,6
	B04	12,8 ml/rev	19,2	17,5	15,3	0,6	5,0	11,0
	B05	15,9 ml/rev	23,9	22,2	20,0	0,7	6,1	13,5
	B06	19,8 ml/rev	29,7	28,0	25,8	0,7	7,5	16,6
	B07	22,5 ml/rev	33,7	32,0	29,9	0,8	8,5	18,8
	B08	24,9 ml/rev	37,4	35,7	33,5	0,8	9,3	20,7
	B09	28,0 ml/rev	42,0	40,3	38,4	0,9	10,4	21,8
	B10	31,8 ml/rev	47,7	46,0	43,8	0,9	11,7	26,2
	B11	35,0 ml/rev	52,5	50,8	48,9	1,0	12,8	27,0
	B12	41,0 ml/rev	61,5	59,8	57,9	1,1	14,9	31,5
	B14	45,0 ml/rev	67,5	65,8	63,9	1,2	16,3	34,5
	B15	50,0 ml/rev	75,0	73,3	71,6 ²⁾	1,3	18,1	35,7 ²⁾

1) 085 = 90 bar max. int.

2) B15 = 280 bar max. int.

Model No.

T67EC - 085 - 020 - 1 R 00 - A 1 00 - ..

Series SAE-C 2 bolts
Mounting flange J744

Displacement for "P1"
Volumetric displacement (ml/rev)
042 = 132,3 057 = 183,3
045 = 142,4 062 = 196,7
050 = 158,5 066 = 213,3
052 = 164,8 072 = 227,1
054 = 171,0 085 = 268,7

Displacement for "P2"
Volumetric displacement (ml/rev)
003 = 10,8 017 = 58,3
005 = 17,2 020 = 63,8
006 = 21,3 022 = 70,3
008 = 26,4 025 = 79,3
010 = 34,1 028 = 88,8
012 = 37,1 031 = 100,0
014 = 46,0

Type of shaft
1 = keyed (SAE CC)
2 = keyed (non SAE)
3 = splined (SAE C)
4 = splined (SAE CC)

Modifications

Mounting w/connection variables
4 bolts SAE flange J518

	Metric thread		UNC thread	
	M0	M1	00	01
P1	1"1/2	1"1/2	1"1/2	1"1/2
P2	1"	3/4"	1"	3/4"
S	3"1/2	3"1/2	3"1/2	3"1/2

Seal class

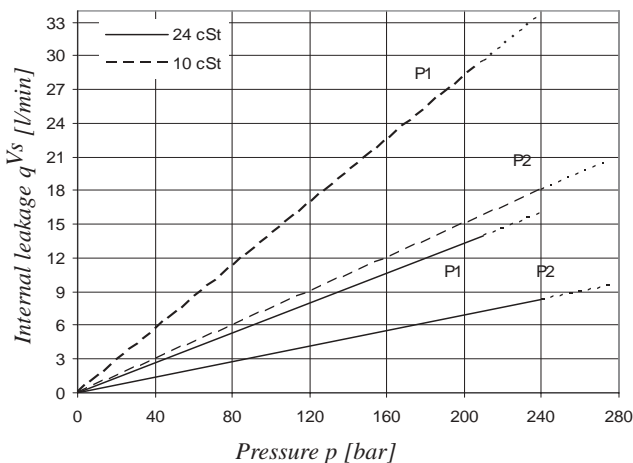
1 = S1 (for mineral oil)
4 = S4 (for the resistant fluid)
5 = S5 (for mineral oil and fire resistant fluids)

Design letter

Porting combination (see page 62)
00 = standard

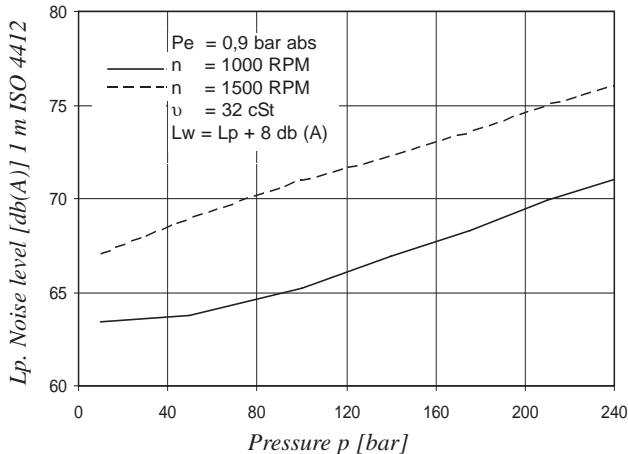
Direction of rotation (view on shaft end)
R = Clockwise
L = Counter-clockwise

INTERNAL LEAKAGE (TYPICAL)



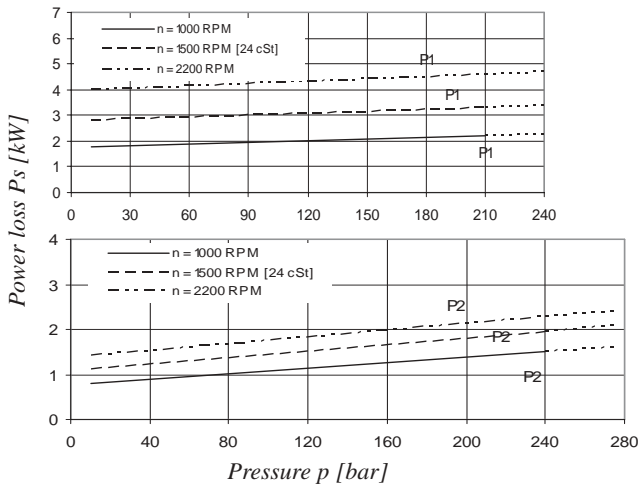
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is higher than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

NOISE LEVEL (TYPICAL)
T67EC - 050 - 022



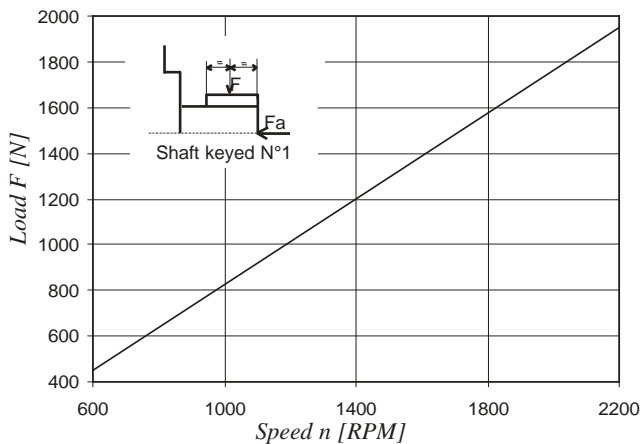
Double pump noise level is given with each section discharging at the pressure noted on the curve.

HYDROMECHANICAL POWER LOSS (TYPICAL)

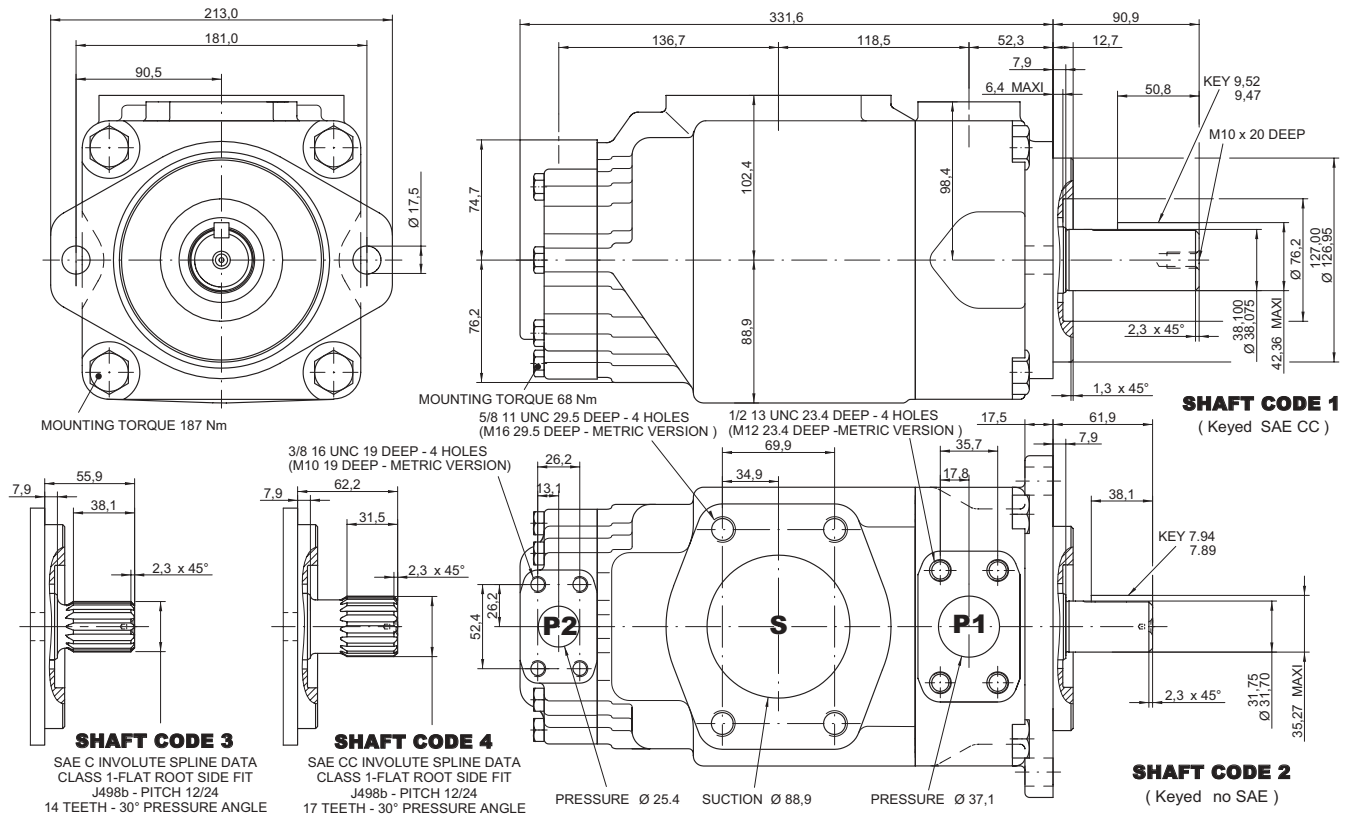


Total hydromechanical power loss is the sum of each section at its operating conditions.

PERMISSIBLE RADIAL LOAD



Maximum permissible axial load Fa = 2000 N



Shaft torque limits [ml/rev. x bar]	
Shaft	Vi x p max.
1	72300
2	34590
3	61200
4	76300

OPERATING CHARACTERISTICS – TYPICAL [24 cSt]

Pressure port	Series	Volumetric displacem. Vi	Flow q _{ve} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 240 bar	p = 7 bar	p = 140 bar	p = 240 bar
P1	042	132,3 ml/rev	198,5	188,5	181,3	5,2	49,4	82,6
	045	142,4 ml/rev	213,6	203,6	196,5	5,4	52,9	88,7
	050	158,5 ml/rev	237,7	227,7	220,6	5,7	58,5	98,3
	052	164,8 ml/rev	247,2	237,2	230,1	5,8	60,8	102,1
	054	171,0 ml/rev	256,5	246,5	239,4	5,9	63,0	105,8
	057	183,3 ml/rev	275,0	265,0	257,9	6,1	67,3	113,2
	062	196,7 ml/rev	295,0	285,0	277,9	6,4	71,9	121,3
	066	213,3 ml/rev	319,9	309,0	302,8	6,7	77,7	131,2
	072	227,1 ml/rev	340,6	330,6	323,5	6,9	82,6	139,5
085	268,7 ml/rev	403,0	392,0 ¹⁾	-	9,1	65,8 ¹⁾	-	
P2			p = 0 bar	p = 140 bar	p = 275 bar	p = 7 bar	p = 140 bar	p = 275 bar
	003	10,8 ml/rev	16,2	11,2	-	1,3	5,3	-
	005	17,2 ml/rev	25,8	20,8	16,1	1,4	7,5	13,9
	006	21,3 ml/rev	31,9	26,9	22,2	1,5	8,9	16,8
	008	26,4 ml/rev	39,6	34,6	29,9	1,6	10,7	20,3
	010	34,1 ml/rev	51,1	46,1	41,4	1,7	13,4	25,6
	012	37,1 ml/rev	55,6	50,6	45,9	1,7	14,4	27,6
	014	46,0 ml/rev	69,0	64,0	59,3	1,9	17,6	33,7
	017	58,3 ml/rev	87,4	82,4	77,7	2,1	21,9	42,2
	020	63,8 ml/rev	95,7	90,7	86,0	2,2	23,8	46,0
	022	70,3 ml/rev	105,4	100,4	95,7	2,3	26,1	50,4
	025 ²⁾	79,3 ml/rev	118,9	113,9	109,2	2,5	29,2	56,6
	028 ²⁾	88,8 ml/rev	133,2	128,2	125,8 ³⁾	2,8	32,7	64,5 ³⁾
	031 ²⁾	100,0 ml/rev	150,0	145,0	142,6 ³⁾	2,8	36,5	74,4 ³⁾

- We do not recommend to use this 003 at 275 bar & 1500 RPM as the internal leakage is over 50% of theoretical flow.

1) 085 = 90 bar max. int. 2) 025 – 028 – 031 = 2500 RPM max. 3) 028 – 031 = 210 bar max.

Model No.

T7ED or T7EDS - 042 - B22 - 1 R 00 - A 1 - M0 - ..

T7ED series - 125 A2 HW
ISO 2 bolts 3019-2 mounting flange

T7EDS series - SAE C 2 bolts
Mounting flange J744

Displacement for "P1"

Volumetric displacement (ml/rev)
042 = 132,3 057 = 183,3
045 = 142,4 062 = 196,7
050 = 158,5 066 = 213,3
052 = 164,8 072 = 227,1
054 = 171,0 085 = 268,7

Displacement for "P2"

Volumetric displacement (ml/rev)
B14 = 44,0 B31 = 99,2
B17 = 55,0 B35 = 113,4
B20 = 66,0 B38 = 120,6
B22 = 70,3 B42 = 137,5
B24 = 81,1 045 = 145,7
B28 = 90,0 050 = 158,0

Type of shaft T7ED - T7EDS

5 = keyed (ISO R775 - G38M)

Type of shaft T7EDS

1 = keyed (SAE CC) 3 = splined (SAE C)
2 = keyed (non SAE) 4 = splined (SAE CC)

Modifications

Mounting w/connection variables

4 bolts SAE flange J518

P1 = 1" 1/2 - P2 = 1" 1/4 - S = 4"

	T7EDS	T7ED - T7EDS
Type	UNC	Metric
Code	00	M0

Seal class

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

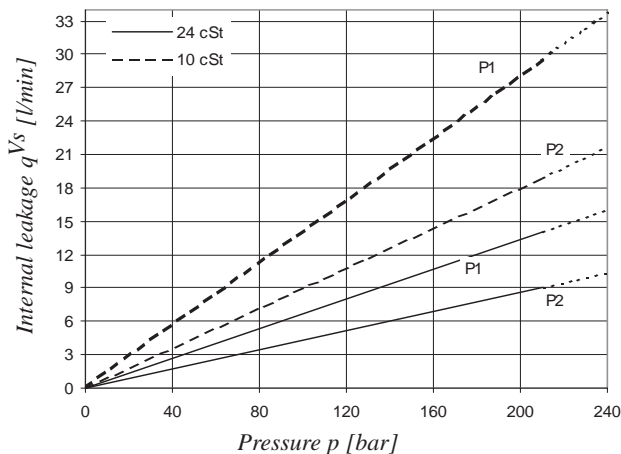
Design letter

Porting combination (see page 62)
00 = standard

Direction of rotation (view on shaft end)

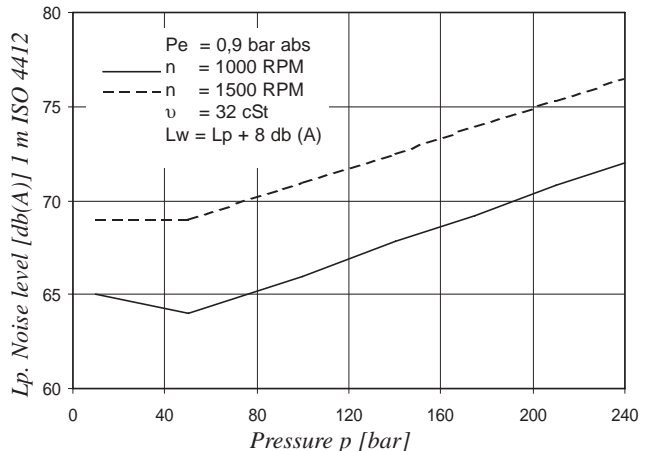
R = Clockwise
L = Counter-clockwise

INTERNAL LEAKAGE (TYPICAL)



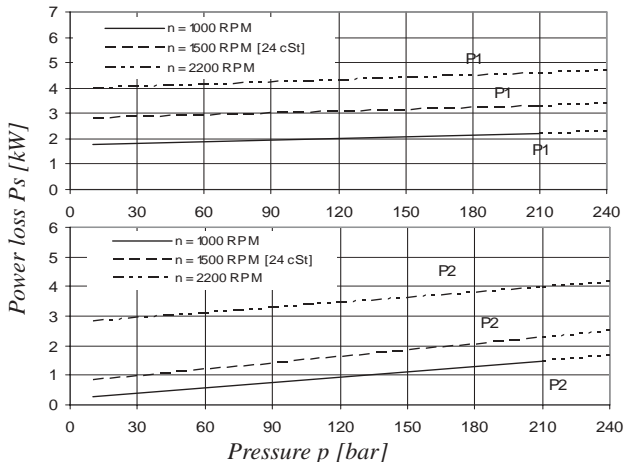
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is higher than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

**NOISE LEVEL (TYPICAL)
T7EDS - 050 - B31**



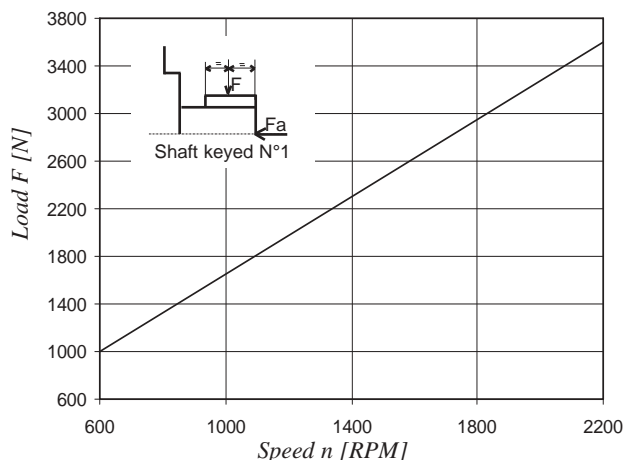
Double pump noise level is given with each section discharging at the pressure noted on the curve.

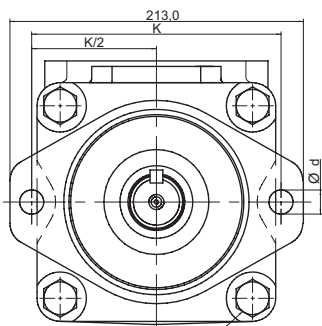
HYDROMECHANICAL POWER LOSS (TYPICAL)



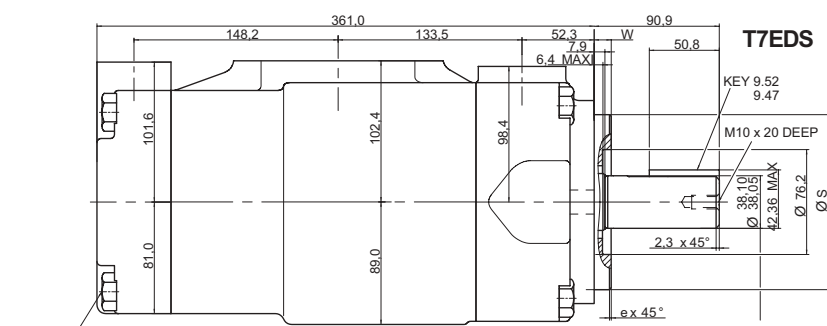
Total hydromechanical power loss is the sum of each section at its operating conditions.

PERMISSIBLE RADIAL LOAD

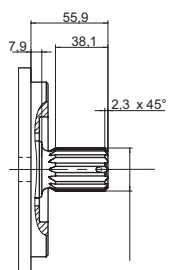




MOUNTING TORQUE 187Nm

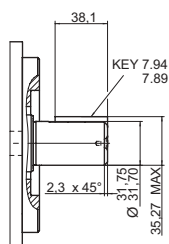


SHAFT CODE 1
(Keyed SAE CC)

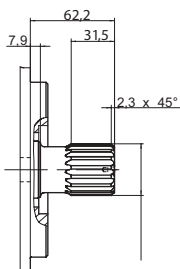


SHAFT CODE 3

SAE C INVOLUTE SPLINE DATA
CLASS 1-FLAT ROOT SIDE FIT
J498b - PITCH 12/24
14 TEETH - 30° PRESSURE ANGLE

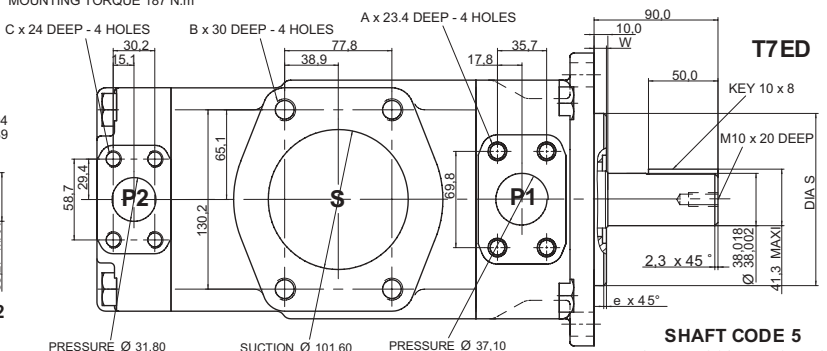


SHAFT CODE 2
(Keyed no SAE)



SHAFT CODE 4

SAE CC INVOLUTE SPLINE DATA
CLASS 1-FLAT ROOT SIDE FIT
J498b - PITCH 12/24
17 TEETH - 30° PRESSURE ANGLE



T7ED

SHAFT CODE 5
(Keyed ISO/R775 - G38M)

Shaft torque limits [ml/rev. x bar]	
Shaft	Vi x p max.
1	72300
2	34590
3	61200
4	68500
5	68500

Alternate connect. variables		
	01	M1
A	1/2 - 13 UNC	M12
B	5/8 - 11 UNC	M16
C	7/16 - 14 UNC	M12

Series	Alternate mounting flange		e x 45°	W	K	Dia d
	Dia S					
	Max.	Min.				
T7ED	125,00	124,937	2,0	9,5	180,0	18,0
T7EDS	127,00	126,950	1,3	12,7	181,0	17,5

OPERATING CHARACTERISTICS – TYPICAL [24 cSt]

Pressure port	Series	Volumetric displacem. Vi	Flow q _{vc} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 240 bar	p = 7 bar	p = 140 bar	p = 240 bar
P1	042	132,3 ml/rev	198,5	188,5	181,3	5,2	49,4	82,6
	045	142,4 ml/rev	213,6	203,6	196,5	5,4	52,9	88,7
	050	158,5 ml/rev	237,7	227,7	220,6	5,7	58,5	98,3
	052	164,8 ml/rev	247,2	237,2	230,1	5,8	60,8	102,1
	054	171,0 ml/rev	256,5	246,5	239,4	5,9	63,0	105,8
	057	183,3 ml/rev	275,0	265,0	257,9	6,1	67,3	113,2
	062	196,7 ml/rev	295,0	285,0	277,9	6,4	71,9	121,3
	066	213,3 ml/rev	319,9	309,0	302,8	6,7	77,7	131,2
	072	227,1 ml/rev	340,6	330,6	323,5	6,9	82,6	139,5
085	268,7 ml/rev	403,0	392,0 ¹⁾	-	9,1	65,8 ¹⁾	-	
P2			p = 0 bar	p = 140 bar	p = 250 bar	p = 7 bar	p = 140 bar	p = 250 bar
	B14	44,0 ml/rev	66,0	59,4	54,6	1,5	16,6	29,1
	B17	55,0 ml/rev	82,5	76,4	71,9	1,7	20,4	35,8
	B20	66,0 ml/rev	99,0	93,3	88,5	1,9	24,2	42,7
	B22	70,3 ml/rev	105,4	99,5	94,6	2,0	25,7	45,4
	B24	81,1 ml/rev	121,6	115,4	110,1	2,2	29,6	52,2
	B28	90,0 ml/rev	135,0	128,6	123,6	2,3	32,6	57,7
	B31	99,2 ml/rev	148,8	142,1	137,5	2,5	35,9	63,4
	B35	113,4 ml/rev	170,1	162,9	157,9	2,9	41,2	72,9
	B38	120,6 ml/rev	180,9	174,5	170,4	2,9	43,4	76,8
	B42	137,5 ml/rev	206,2	199,6	195,9 ²⁾	3,4	49,8	81,3 ²⁾
	045 ⁴⁾	145,7 ml/rev	218,5	209,2	203,0	4,1	52,8	89,5
	050 ⁴⁾	158,0 ml/rev	237,0	227,7	224,0 ³⁾	4,4	57,0	85,0 ³⁾

1) 085 = 90 bar max. int.

2) B42 = 230 bar max. int.

3) 050 = 210 bar max. int.

4) 045 - 050 = 2200 RPM max.

Model No.

T7EE or T7EES - 066 - 045 - 1 R 00 - A 1 0 - 00 - ..

T7EE series - 250 B4HW
ISO 3019-2 mounting flange
T7EES series - SAE E 4 bolts
Mounting flange J744c

Displacement for "P1" & "P2"
Volumetric displacement (ml/rev)

- 042 = 132,3
- 045 = 142,4
- 050 = 158,5
- 052 = 164,8
- 054 = 171,0
- 057 = 183,3
- 062 = 196,7
- 066 = 213,3
- 072 = 227,1
- 085 = 268,7

Type of shaft T7EE
2 = keyed G45N (ISO 3019-2)

Type of shaft T7EES
1 = keyed (SAE CC)
3 = splined (SAE CC)
4 = splined (SAE D & E)
5 = keyed (SAE D & E)

Modifications

Mounting w/connection variables

	P1 & P2 = 1"1/2 - S = 4"	
	UNC	Metric
T7EE		M0
T7EES	00	M0

Coupling adaptor

- 0 = none
- 2 = SAE B
- 3 = SAE BB

Seal class

- 1 = S1 - BUNA N
- 4 = S4 - EPDM
- 5 = S5 - VITON

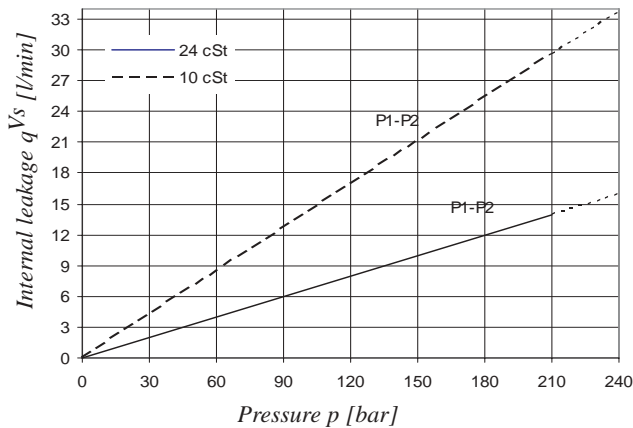
Design letter

Porting combination (see page 62)
00 = standard

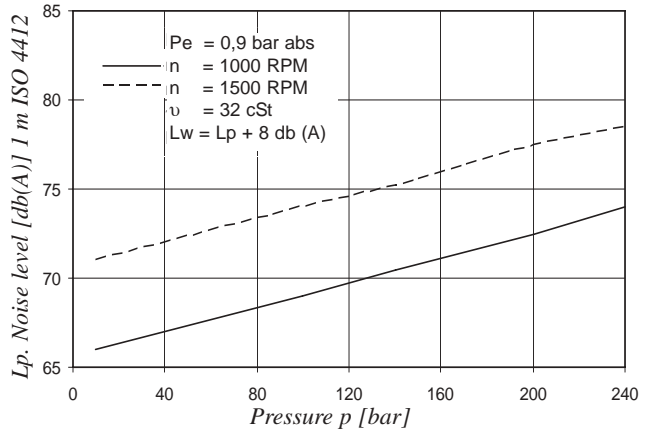
Direction of rotation (view on shaft end)

- R = Clockwise
- L = Counter-clockwise

INTERNAL LEAKAGE (TYPICAL)



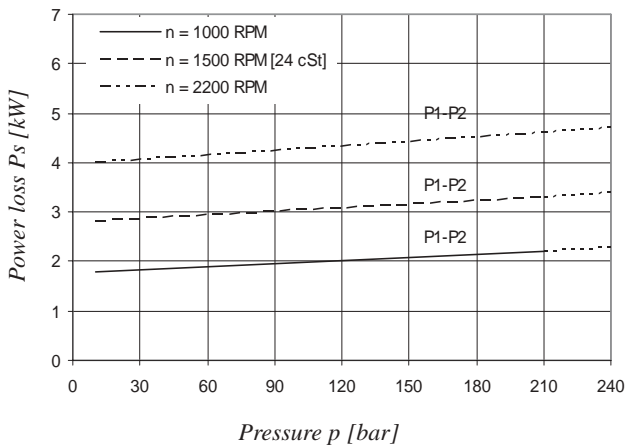
**NOISE LEVEL (TYPICAL)
T7EE 050 - 050**



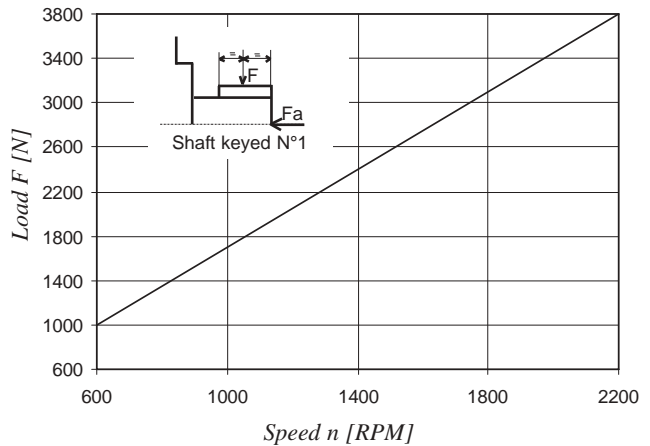
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is higher than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

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

HYDROMECHANICAL POWER LOSS (TYPICAL)

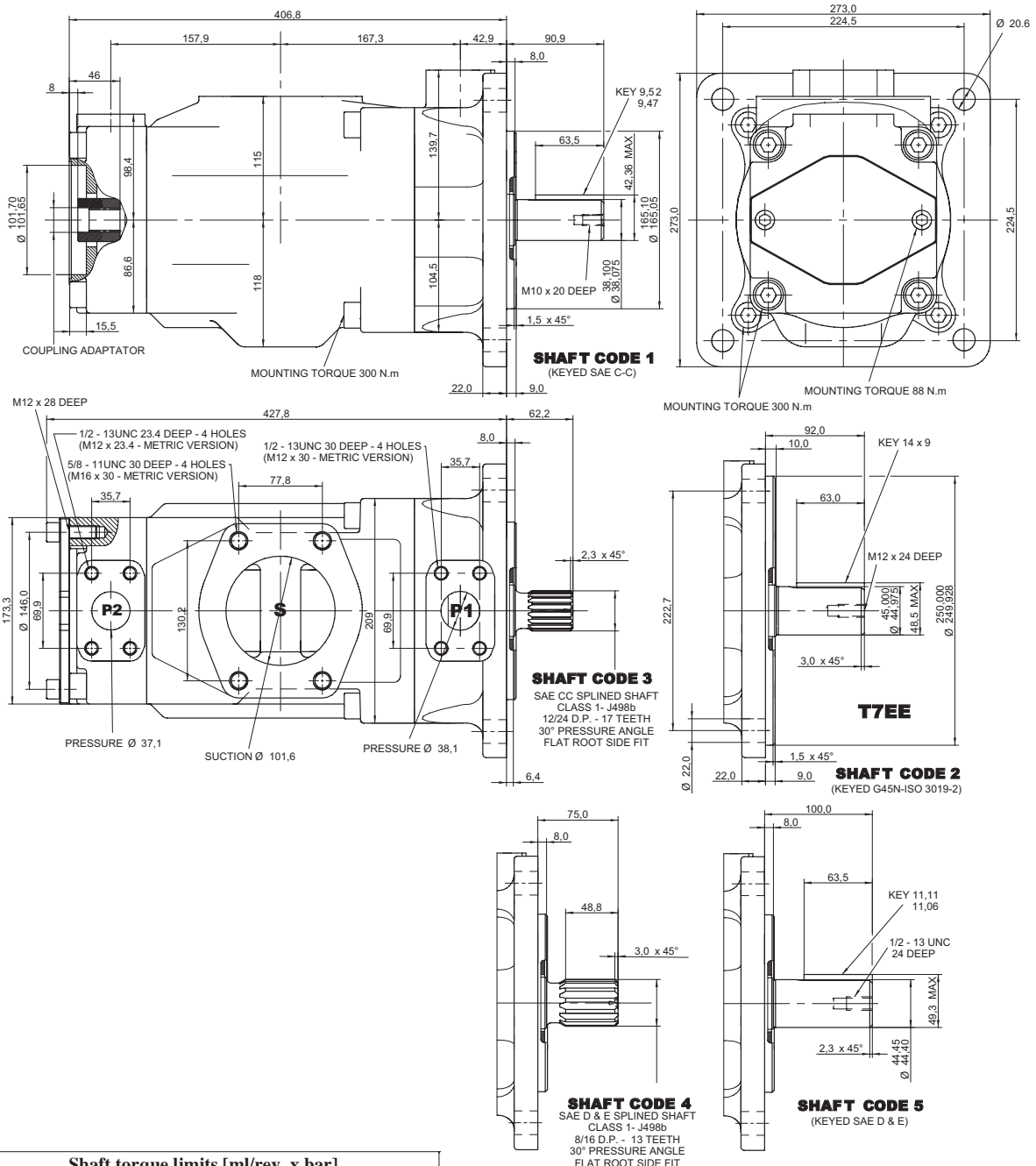


PERMISSIBLE RADIAL LOAD



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

Maximum permissible axial load $F_a = 2000\text{ N}$



Shaft torque limits [ml/rev. x bar]			
Shaft	Vi x p max.	Coupling drive	Vi x p max.
1	90380	SAE B	20600
2	114600	SAE BB	32670
3	126800		
4	126800		
5	118340		

Code	Coupling adaptor
0	Without coupling
2	SAE B – 13 teeth – Pitch 16/32 Major dia. (min.) 22,225 – Minor dia. (min.) 19,134
3	SAE BB – 15 teeth – Pitch 16/32 Major dia.(min.) 25,400 – Minor dia. (min.) 22,268

OPERATING CHARACTERISTICS – TYPICAL [24 cst]

Pressure port	Series	Volumetric displacem. Vi	Flow q _{vc} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 240 bar	p = 7 bar	p = 140 bar	p = 240 bar
P1 & P2	042	132,3 ml/rev	198,5	188,5	181,3	5,2	49,4	82,6
	045	142,4 ml/rev	213,6	203,6	196,5	5,4	52,9	88,7
	050	158,5 ml/rev	237,7	227,7	220,6	5,7	58,5	98,3
	052	164,8 ml/rev	247,2	237,2	230,1	5,8	60,8	102,1
	054	171,0 ml/rev	256,5	246,5	239,4	5,9	63,0	105,8
	057	183,3 ml/rev	275,0	265,0	257,9	6,1	67,3	113,2
	062	196,7 ml/rev	295,0	285,0	277,9	6,4	71,9	121,3
	066	213,3 ml/rev	319,9	309,0	302,8	6,7	77,7	131,2
	072	227,1 ml/rev	340,6	330,6	323,5	6,9	82,6	139,5
	085	268,7 ml/rev	403,0	392,0 ¹⁾	-	9,1	65,8 ¹⁾	-

1) 085 = 90 bar max. int.

Model No.

T67DBB series - SAE C 2 bolts
Mounting flange J744

T67DBB - B38 - B14 - B08 - 1 R 00 - B 1 - M1 - ..

P1 P2 P3

Displacement for "P1"

Volumetric displacement (ml/rev)
B14 = 44,0 B31 = 99,2
B17 = 55,0 B35 = 113,4
B20 = 66,0 B38 = 120,6
B22 = 70,3 B42 = 137,5
B24 = 81,1 045 = 145,7
B28 = 90,0 050 = 158,0

Displacement for "P2" & "P3"

Volumetric displacement (ml/rev)
B02 = 5,8 B09 = 28,0
B03 = 9,8 B10 = 31,8
B04 = 12,8 B11 = 35,0
B05 = 15,9 B12 = 41,0
B06 = 19,8 B14 = 45,0
B07 = 22,5 B15 = 50,0
B08 = 24,9

Type of shaft

1 = keyed (non SAE)
2 = keyed (SAE CC)
3 = splined 12/24 (SAE C)
4 = splined 12/24 (SAE CC)

Modifications

Mounting w/connection variables

P1 = 1" 1/4 - P2 = 1" - P3 = 3/4" - S = 4"
01 = 4 bolts SAE flange
J518 - UNC thread
M1 = 4 bolts SAE flange
J518 - Metric thread

Seal class

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

Design letter

Porting combination (see page 62 - 63)
00 = standard

Direction of rotation (view on shaft end)

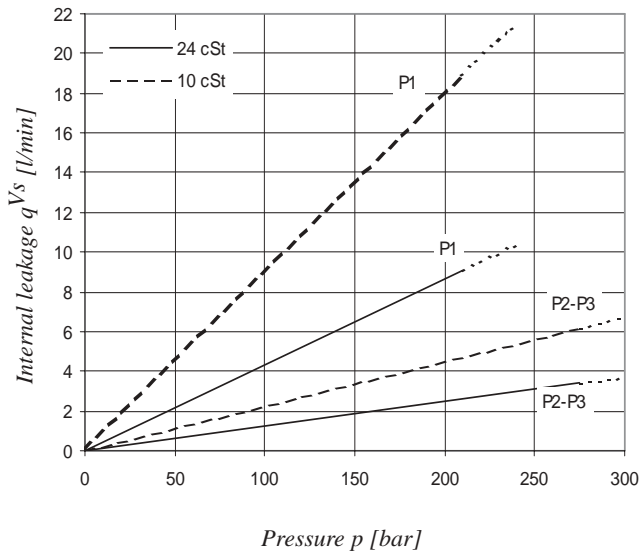
R = Clockwise
L = Counter-clockwise

OPERATING CHARACTERISTICS – TYPICAL [24 cSt]

Pressure port	Series	Volumetric displacem. Vi	Flow q _{vc} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 250 bar	p = 7 bar	p = 140 bar	p = 250 bar
P1	B14	44,0 ml/rev	66,0	59,4	54,6	1,5	16,6	29,1
	B17	55,0 ml/rev	82,5	76,4	71,9	1,7	20,4	35,8
	B20	66,0 ml/rev	99,0	93,3	88,5	1,9	24,2	42,7
	B22	70,3 ml/rev	105,4	99,5	94,6	2,0	25,7	45,4
	B24	81,1 ml/rev	121,6	115,4	110,1	2,2	29,6	52,2
	B28	90,0 ml/rev	135,0	128,6	123,6	2,3	32,6	57,7
	B31	99,2 ml/rev	148,8	142,1	137,5	2,5	35,9	63,4
	B35	113,4 ml/rev	170,1	162,9	157,9	2,9	41,2	72,9
	B38	120,6 ml/rev	180,9	174,5	170,4	2,9	43,4	76,8
	B42	137,5 ml/rev	206,2	199,6	195,9 ¹⁾	3,4	49,8	81,3 ¹⁾
045 ³⁾	145,7 ml/rev	218,5	209,2	203,0	4,1	52,8	89,5	
050 ³⁾	158,0 ml/rev	237,0	227,7	224,0 ²⁾	4,4	57,0	85,0 ²⁾	
			p = 0 bar	p = 140 bar	p = 300 bar	p = 7 bar	p = 140 bar	p = 300 bar
P2 & P3	B02	5,8 ml/rev	8,7	7,0	5,1	0,5	2,6	5,1
	B03	9,8 ml/rev	14,7	13,0	11,1	0,6	4,0	8,1
	B04	12,8 ml/rev	19,2	17,5	15,6	0,6	5,0	10,4
	B05	15,9 ml/rev	23,9	22,2	20,2	0,7	6,1	12,7
	B06	19,8 ml/rev	29,7	28,0	26,1	0,7	7,5	15,6
	B07	22,5 ml/rev	33,7	32,0	30,2	0,8	8,5	17,6
	B08	24,9 ml/rev	37,4	35,7	33,7	0,8	9,3	19,5
	B09	28,0 ml/rev	42,0	40,3	38,4	0,9	11,7	24,6
	B10	31,8 ml/rev	47,7	46,0	44,1	0,9	11,7	24,6
	B11	35,0 ml/rev	52,5	50,8	48,9	1,0	12,8	27,0
	B12	41,0 ml/rev	61,5	59,8	57,9	1,1	14,9	31,5
	B14	45,0 ml/rev	67,5	65,8	63,9	1,2	16,3	34,5
	B15	50,0 ml/rev	75,0	73,3	71,6 ⁴⁾	1,3	18,1	35,7 ⁴⁾

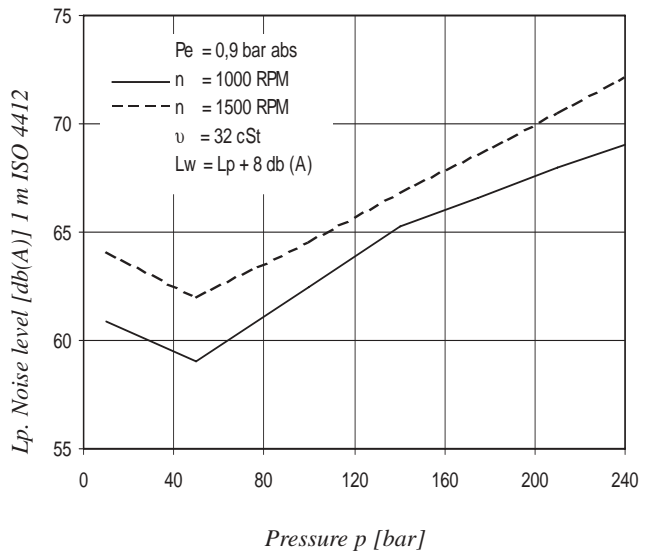
1) B42 = 230 bar max. int. 2) 050 = 210 bar max. int. 3) 045 - 050 = 2200 RPM max. 4) B15 = 280 bar max. int.

INTERNAL LEAKAGE (TYPICAL)



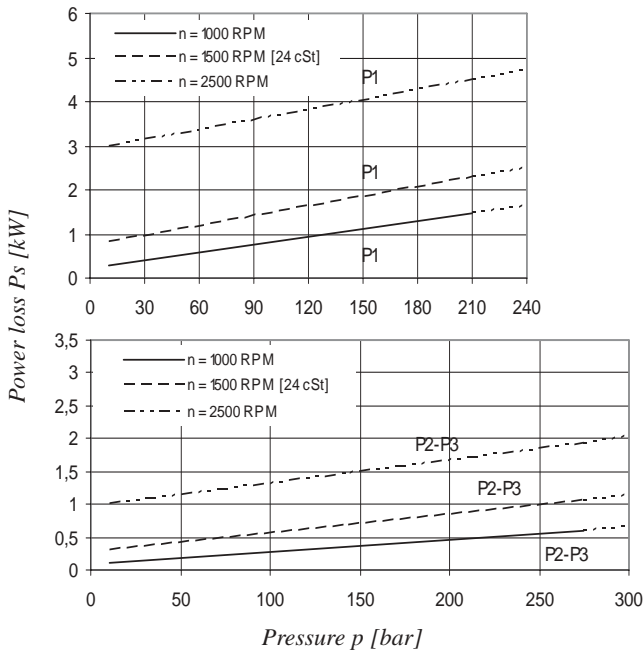
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is higher than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

NOISE LEVEL (TYPICAL)
T67DBB - B38 - B06 - B04



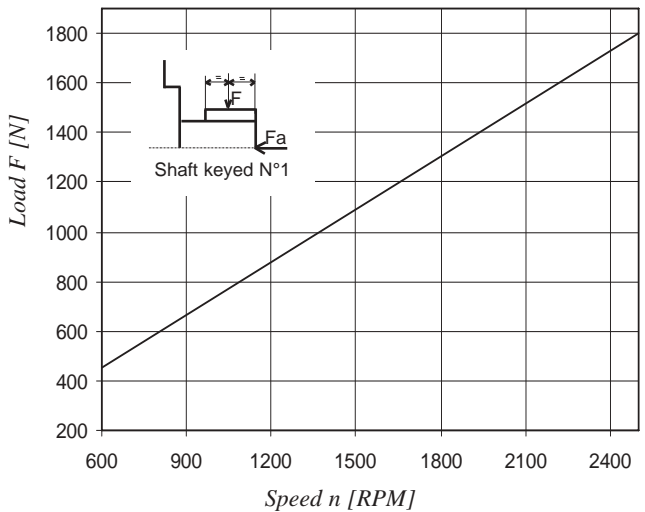
Triple pump noise level is given with each section discharging at the pressure noted on the curve.

HYDROMECHANICAL POWER LOSS (TYPICAL)



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

PERMISSIBLE RADIAL LOAD



Maximum permissible axial load $F_a = 1200$ N

Model No.

T67DCB - B38 - 028 - B08 - 1 R 00 - B 1 - M1 - ..

T67DCB series - SAE C 2 bolts
Mounting flange J744

P1 P2 P3

Modifications

Displacement for "P1"

Volumetric displacement (ml/rev)
B14 = 44,0 B31 = 99,2
B17 = 55,0 B35 = 113,4
B20 = 66,0 B38 = 120,6
B22 = 70,3 B42 = 137,5
B24 = 81,1 045 = 145,7
B28 = 90,0 050 = 158,0

Mounting w/connection variables

P1 = 1" 1/4 - P2 = 1" - P3 = 3/4" - S = 4"
01 = 4 bolts SAE flange
J518 - UNC thread
M1 = 4 bolts SAE flange
J518 - Metric thread

Seal class

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

Design letter

Porting combination (see page 62 - 63)
00 = standard

Direction of rotation (view on shaft end)

R = Clockwise
L = Counter-clockwise

Type of shaft

1 = keyed (non SAE)
2 = keyed (SAE CC)
3 = splined 12/24 (SAE C)
4 = splined 12/24 (SAE CC)

Displacement for "P2"

Volumetric displacement (ml/rev)
003 = 10,8 017 = 58,3
005 = 17,2 020 = 63,8
006 = 21,3 022 = 70,3
008 = 26,4 025 = 79,3
010 = 34,1 028 = 88,8
012 = 37,1 031 = 100,0
014 = 46,0

Displacement for "P3"

Volumetric displacement (ml/rev)
B02 = 5,8 B07 = 22,5 B12 = 41,0
B03 = 9,8 B08 = 24,9 B14 = 45,0
B04 = 12,8 B09 = 28,0 B15 = 50,0
B05 = 15,9 B10 = 31,8
B06 = 19,8 B11 = 35,0

OPERATING CHARACTERISTICS – TYPICAL [24 cSt]

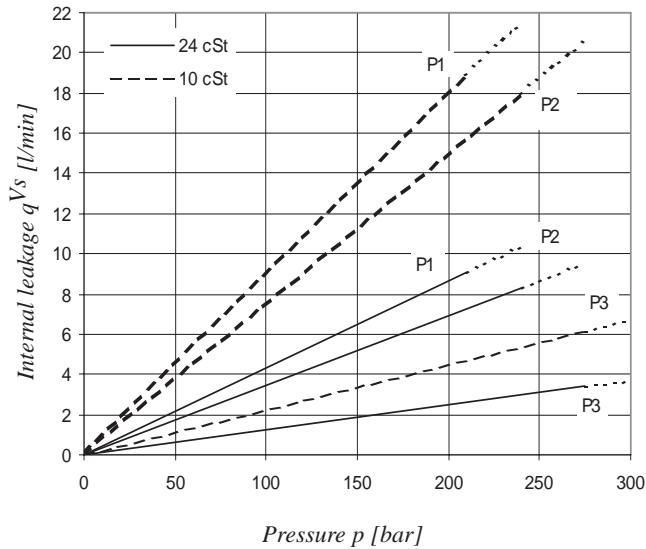
Pressure port	Series	Volumetric displacem. Vi	Flow q _{vc} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 250 bar	p = 7 bar	p = 140 bar	p = 250 bar
P1	B14	44,0 ml/rev	66,0	59,4	54,6	1,5	16,6	29,1
	B17	55,0 ml /rev	82,5	76,4	71,9	1,7	20,4	35,8
	B20	66,0 ml/rev	99,0	93,3	88,5	1,9	24,2	42,7
	B22	70,3 ml/rev	105,4	99,5	94,6	2,0	25,7	45,4
	B24	81,1 ml/rev	121,6	115,4	110,1	2,2	29,6	52,2
	B28	90,0 ml/rev	135,0	128,6	123,6	2,3	32,6	57,7
	B31	99,2 ml/rev	148,8	142,1	137,5	2,5	35,9	63,4
	B35	113,4 ml/rev	170,1	162,9	157,9	2,9	41,2	72,9
	B38	120,6 ml/rev	180,9	174,5	170,4	2,9	43,4	76,8
	B42	137,5 ml/rev	206,2	199,6	195,9 ²⁾	3,4	49,8	81,3 ²⁾
045 ¹⁾	145,7 ml/rev	218,5	209,2	203,0	4,1	52,8	89,5	
050 ¹⁾	158,0 ml/rev	237,0	227,7	224,0 ³⁾	4,4	57,0	85,0 ³⁾	
			p = 0 bar	p = 140 bar	p = 275 bar	p = 7 bar	p = 140 bar	p = 275 bar
P2	003	10,8 ml/rev	16,2	11,2	-	1,3	5,3	-
	005	17,2 ml/rev	25,8	20,8	16,1	1,4	7,5	13,9
	006	21,3 ml/rev	31,9	26,9	22,2	1,5	8,9	16,8
	008	26,4 ml/rev	39,6	34,6	29,9	1,6	10,7	20,3
	010	34,1 ml/rev	51,1	46,1	41,4	1,7	13,4	25,6
	012	37,1 ml/rev	55,6	50,6	45,9	1,7	14,4	27,6
	014	46,0 ml/rev	69,0	64,0	59,3	1,9	17,6	33,7
	017	58,3 ml/rev	87,4	82,4	77,7	2,1	21,9	42,2
	020	63,8 ml/rev	95,7	90,7	86,0	2,2	23,8	46,0
	022	70,3 ml/rev	105,4	100,4	95,7	2,3	26,1	50,4
	025 ⁴⁾	79,3 ml/rev	118,9	113,9	109,2	2,5	29,2	56,6
028 ⁴⁾	88,8 ml/rev	133,2	128,2	125,8 ³⁾	2,8	32,7	48,5 ³⁾	
031 ⁴⁾	100,0 ml/rev	150,0	145,0	142,6 ³⁾	2,8	36,5	54,4 ³⁾	
			p = 0 bar	p = 140 bar	p = 300 bar	p = 7 bar	p = 140 bar	p = 300 bar
P3	B02	5,8 ml/rev	8,7	7,0	5,1	0,5	2,6	5,1
	B03	9,8 ml/rev	14,7	13,0	11,1	0,6	4,0	8,1
	B04	12,8 ml/rev	19,2	17,5	15,6	0,6	5,0	10,4
	B05	15,9 ml/rev	23,9	22,2	20,2	0,7	6,1	12,7
	B06	19,8 ml/rev	29,7	28,0	26,1	0,7	7,5	15,6
	B07	22,5 ml/rev	33,7	32,0	30,2	0,8	8,5	17,6
	B08	24,9 ml/rev	37,4	35,7	33,7	0,8	9,3	19,5
	B09	28,0 ml/rev	42,0	40,3	38,4	0,9	11,7	24,6
	B10	31,8 ml/rev	47,7	46,0	44,1	0,9	11,7	24,6
	B11	35,0 ml/rev	52,5	50,8	48,9	1,0	12,8	27,0
	B12	41,0 ml/rev	61,5	59,8	57,9	1,1	14,9	31,5
	B14	45,0 ml/rev	67,5	65,8	63,9	1,2	16,3	34,5
	B15	50,0 ml/rev	75,0	73,3	71,6 ³⁾	1,3	18,1	35,7 ³⁾

- We do not recommend to use this 003 at 275 bar & 1500 RPM as the internal leakage is over 50% of theoretical flow.

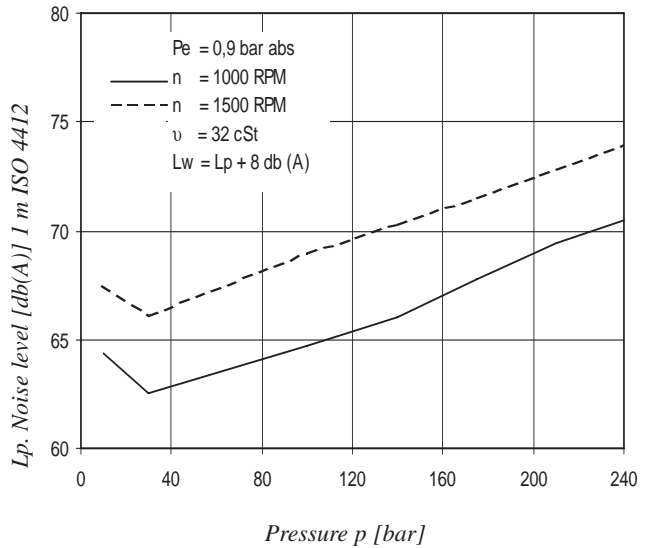
1) 045 - 050 = 2200 RPM max. 2) B42 = 230 bar max. int. 3) 028 - 031 - 050 = 210 bar max. int.

4) 025 - 028 - 031 = 2500 RPM max 5) B15 = 280 bar max. int.

INTERNAL LEAKAGE (TYPICAL)



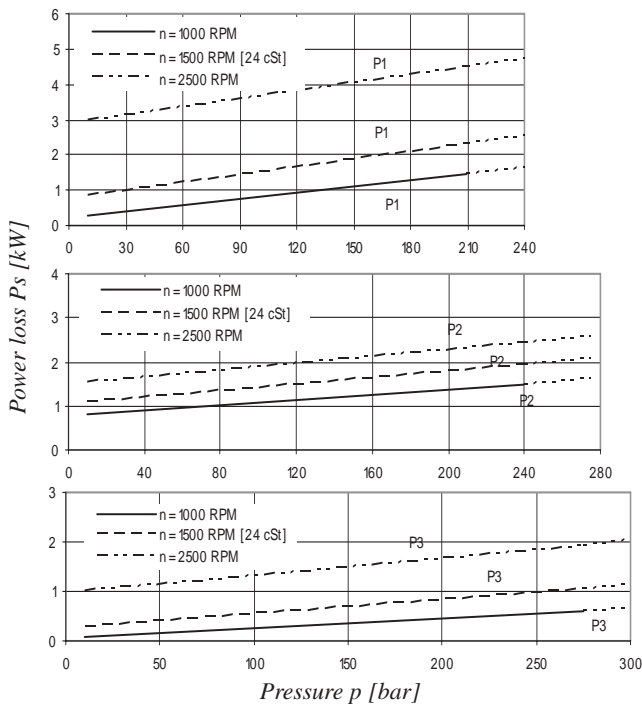
NOISE LEVEL (TYPICAL)
T67DCB - 038 - 022 - B10



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

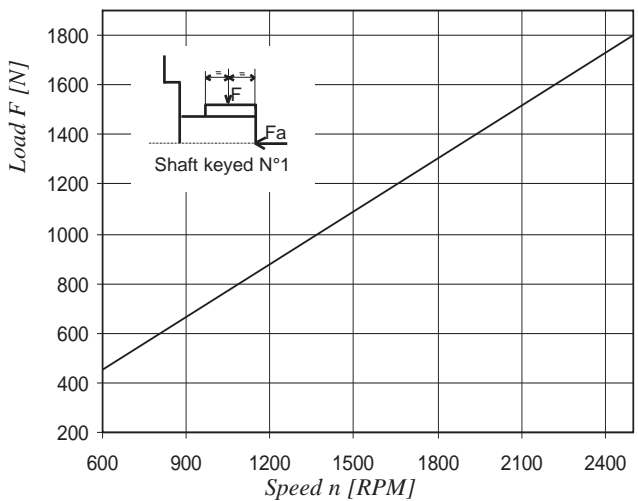
Triple pump noise level is given with each section discharging at the pressure noted on the curve.

HYDROMECHANICAL POWER LOSS (TYPICAL)

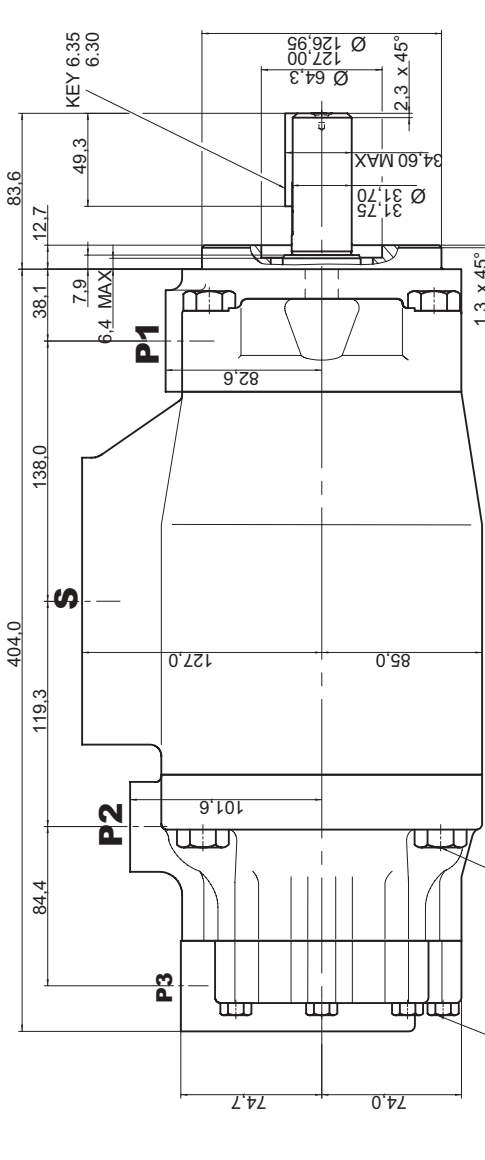


Total hydromechanical power loss is the sum of each section at its operating conditions.

PERMISSIBLE RADIAL LOAD

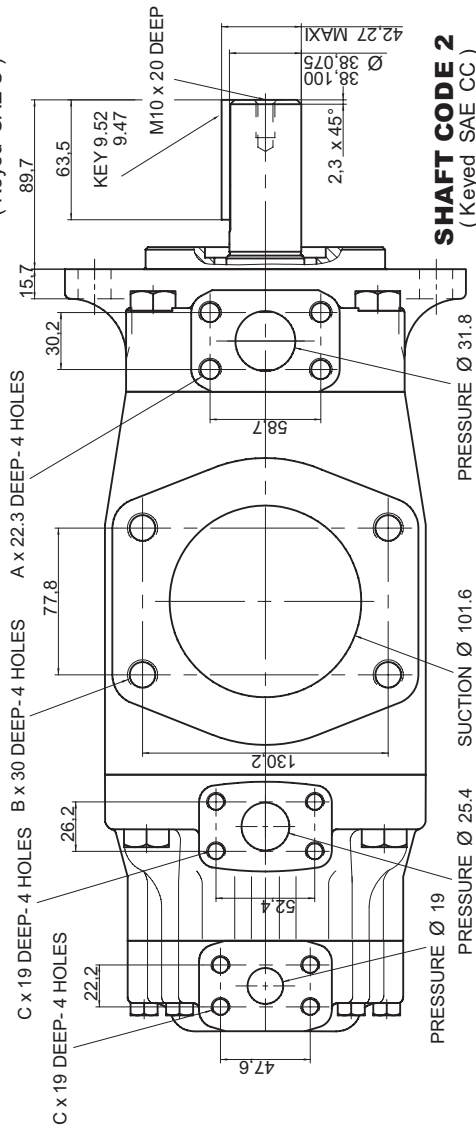


Maximum permissible axial load $F_a = 800$ N

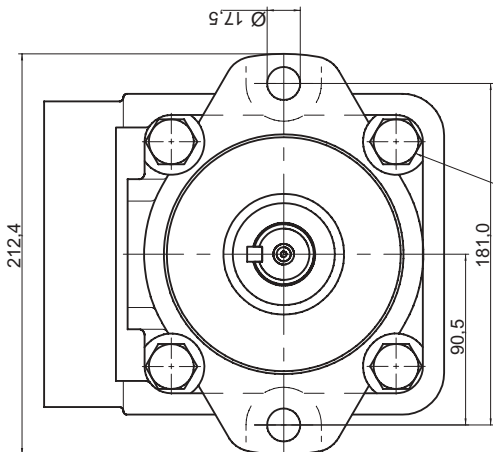


SHAFT CODE 1
(Keyed SAE C)

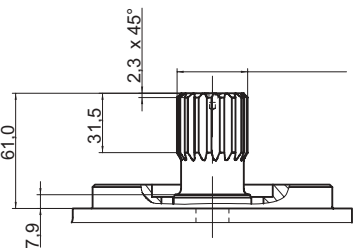
MOUNTING TORQUE 68 Nm
MOUNTING TORQUE 187 Nm



SHAFT CODE 2
(Keyed SAE CC)

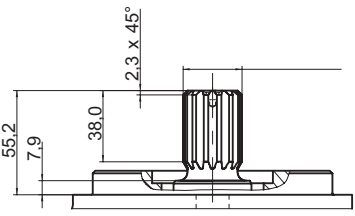


MOUNTING TORQUE 187 Nm



SHAFT CODE 3

SAE C INVOLUTE SPLINE DATA
CLASS 1-FLAT ROOT SIDE FIT
J498b - PITCH 16/32
14 TEETH - 30° PRESSURE ANGLE

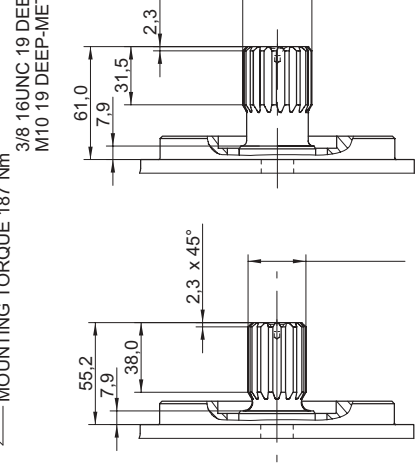
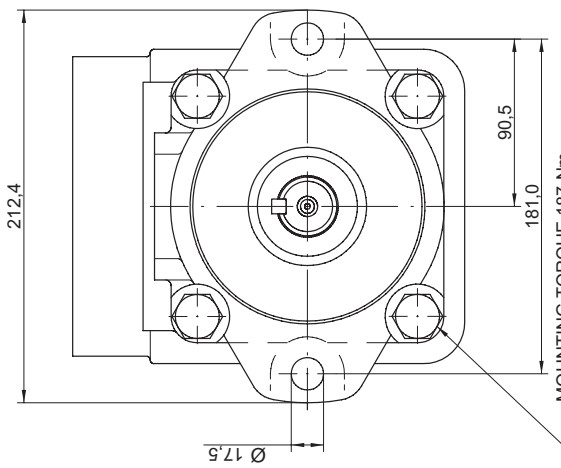
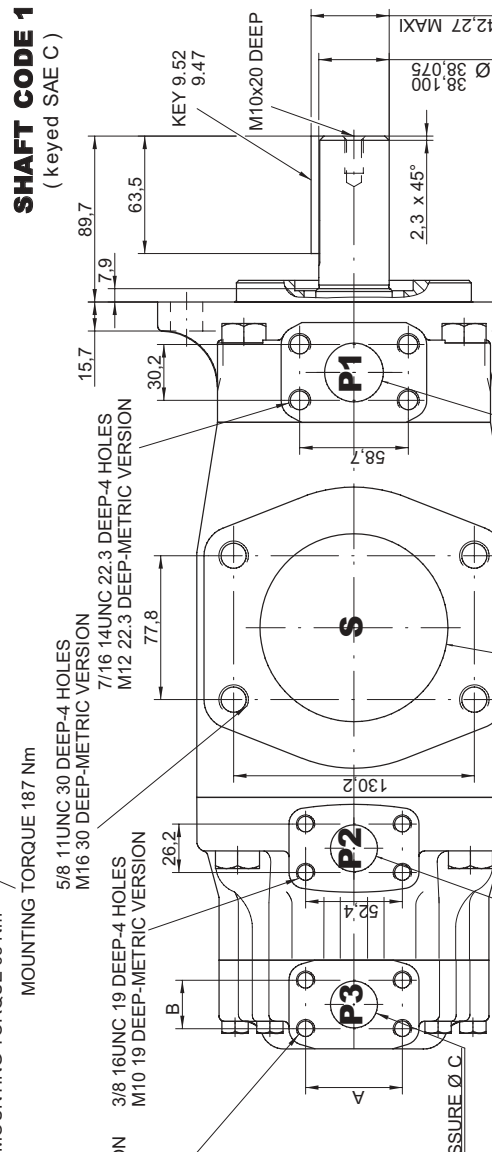
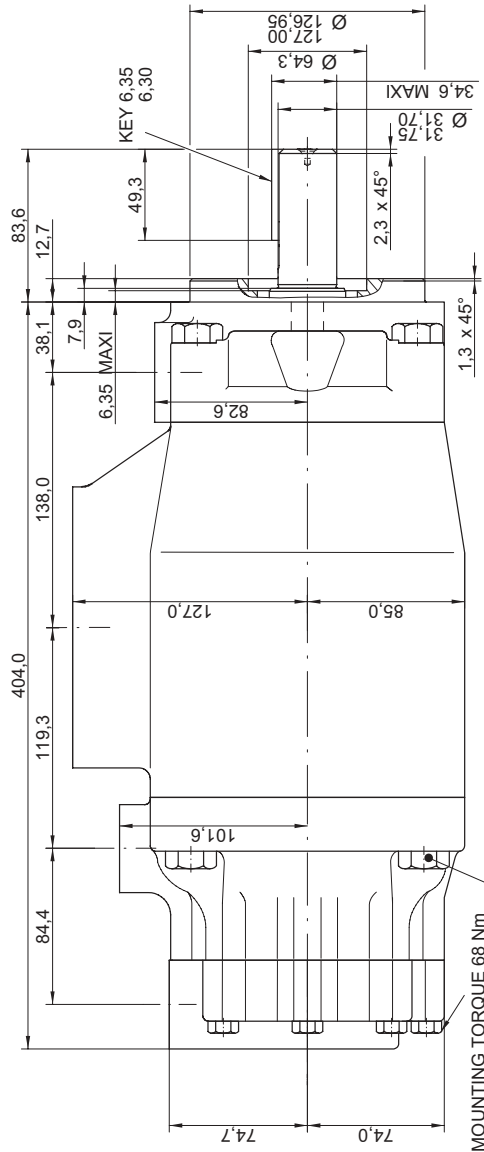


SHAFT CODE 4

SAE CC INVOLUTE SPLINE DATA
CLASS 1-FLAT ROOT SIDE FIT
J498b - PITCH 16/32
17 TEETH - 30° PRESSURE ANGLE

Shaft torque limits [ml/rev. x bar]	
Shaft	V _i x p max. P1 + P2 + P3
1	43240
2	66500
3	61200
4	66500

Alternate connect. variables	
	01
A	7/16 - 14 UNC M12
B	5/8 - 11 UNC M16
C	3/8 - 16 UNC M10



Shaft torque limits [ml/rev. x bar]	
Shaft	Vi x p max. P1 + P2 + P3
1	43240
2	66500
3	61200
4	66500

Alternate connect. variables	
00 & M0	01 & M1
A	52,4
B	26,2
C	25,4

Model No.

T67DCC - B38 - 028 - 010 - 1 R 00 - A 1 - M1 - ..

T67DCC series - SAE C 2 bolts
Mounting flange J744

P1 P2 P3

Displacement for "P1"

Volumetric displacement (ml/rev)
B14 = 44,0 B31 = 99,2
B17 = 55,0 B35 = 113,4
B20 = 66,0 B38 = 120,6
B22 = 70,3 B42 = 137,5
B24 = 81,1 045 = 145,7
B28 = 90,0 050 = 158,0

Displacement for "P2" & P3

Volumetric displacement (ml/rev)
003 = 10,8 017 = 58,3
005 = 17,2 020 = 63,8
006 = 21,3 022 = 70,3
008 = 26,4 025 = 79,3
010 = 34,1 028 = 88,8
012 = 37,1 031 = 100,0
014 = 46,0

Type of shaft

1 = keyed (non SAE)
2 = keyed (SAE CC)
3 = splined 12/24 (SAE C)
4 = splined 12/24 (SAE CC)

Modifications

Mounting w/connection variables

4 bolts SAE flange J518
P1 = 1"1/4 - P2 = 1" - S = 4"

	UNC	Metric
P3 = 1"	00	M0
P3 = 3/4"	01	M1

Seal class

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

Design letter

Porting combination (see page 62 - 63)
00 = standard

Direction of rotation (view on shaft end)

R = Clockwise
L = Counter-clockwise

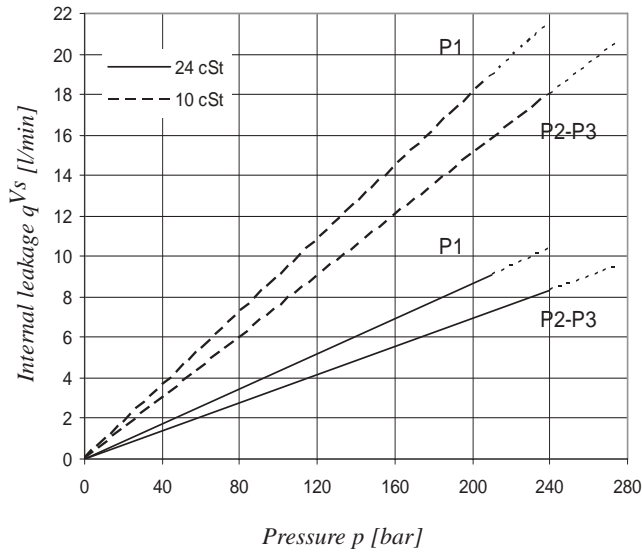
OPERATING CHARACTERISTICS – TYPICAL [24 cSt]

Pressure port	Series	Volumetric displacem. Vi	Flow q _{vc} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 250 bar	p = 7 bar	p = 140 bar	p = 250 bar
P1	B14	44,0 ml/rev	66,0	59,4	54,6	1,5	16,6	29,1
	B17	55,0 ml /rev	82,5	76,4	71,9	1,7	20,4	35,8
	B20	66,0 ml/rev	99,0	93,3	88,5	1,9	24,2	42,7
	B22	70,3 ml/rev	105,4	99,5	94,6	2,0	25,7	45,4
	B24	81,1 ml/rev	121,6	115,4	110,1	2,2	29,6	52,2
	B28	90,0 ml/rev	135,0	128,6	123,6	2,3	32,6	57,7
	B31	99,2 ml/rev	148,8	142,1	137,5	2,5	35,9	63,4
	B35	113,4 ml/rev	170,1	162,9	157,9	2,9	41,2	72,9
	B38	120,6 ml/rev	180,9	174,5	170,4	2,9	43,4	76,8
	B42	137,5 ml/rev	206,2	199,6	195,9 ¹⁾	3,4	49,8	81,3 ¹⁾
045 ³⁾	145,7 ml/rev	218,5	209,2	203,0	4,1	52,8	89,5	
050 ³⁾	158,0 ml/rev	237,0	227,7	224,0 ²⁾	4,4	57,0	85,0 ²⁾	
			p = 0 bar	p = 140 bar	p = 275 bar	p = 7 bar	p = 140 bar	p = 275 bar
P2 & P3	003	10,8 ml/rev	16,2	11,2	-	1,3	5,3	-
	005	17,2 ml/rev	25,8	20,8	16,1	1,4	7,5	13,9
	006	21,3 ml/rev	31,9	26,9	22,2	1,5	8,9	16,8
	008	26,4 ml/rev	39,6	34,6	29,9	1,6	10,7	20,3
	010	34,1 ml/rev	51,1	46,1	41,4	1,7	13,4	25,6
	012	37,1 ml/rev	55,6	50,6	45,9	1,7	14,4	27,6
	014	46,0 ml/rev	69,0	64,0	59,3	1,9	17,6	33,7
	017	58,3 ml/rev	87,4	82,4	77,7	2,1	21,9	42,2
	020	63,8 ml/rev	95,7	90,7	86,0	2,2	23,8	46,0
	022	70,3 ml/rev	105,4	100,4	95,7	2,3	26,1	50,4
	025 ⁴⁾	79,3 ml/rev	118,9	113,9	109,2	2,5	29,2	56,6
	028 ⁴⁾	88,8 ml/rev	133,2	128,2	125,8 ²⁾	2,8	32,7	63,5 ²⁾
	031 ⁴⁾	100,0 ml/rev	150,0	145,0	142,6 ²⁾	2,8	36,5	71,4 ²⁾

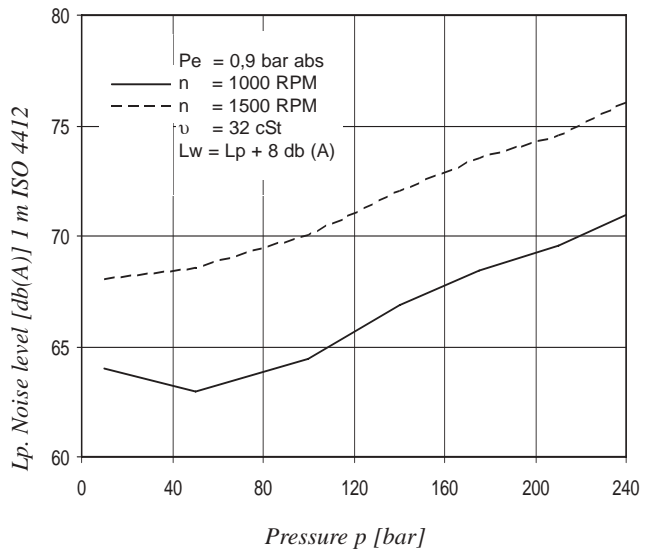
- We do not recommend to use this 003 at 275 bar & 1500 RPM as the internal leakage is over 50% of theoretical flow.

1) B42 = 230 bar max. int. 2) 050 - 028 - 031 = 210 bar max. int. 3) 045 - 050 = 2200 RPM max 4) 025 - 028 - 031 = 2500 RPM max.

INTERNAL LEAKAGE (TYPICAL)



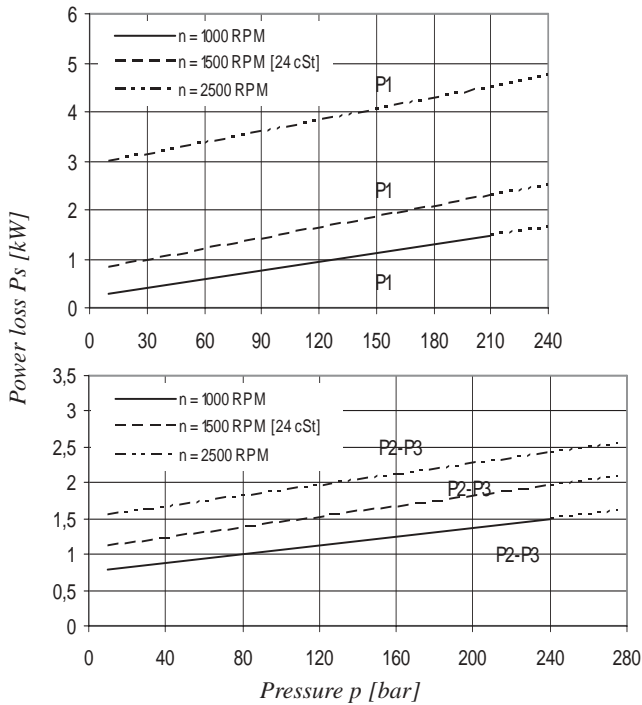
NOISE LEVEL (TYPICAL)
T67DCC - B31 - 022 - 022



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

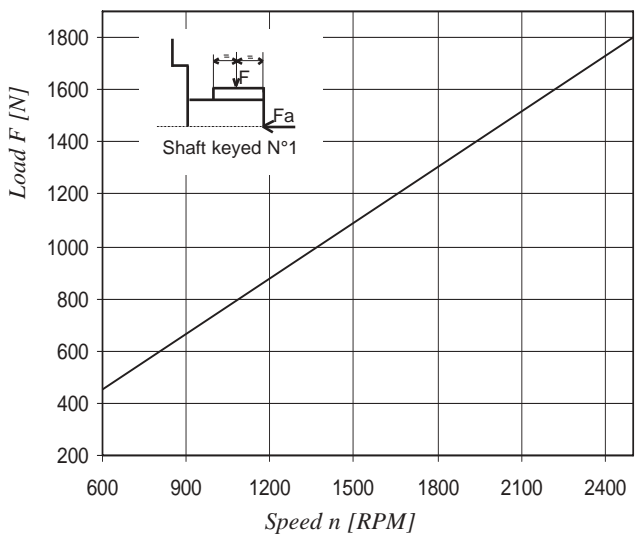
Triple pump noise level is given with each section discharging at the pressure noted on the curve.

HYDROMECHANICAL POWER LOSS (TYPICAL)



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

PERMISSIBLE RADIAL LOAD



Maximum permissible axial load $F_a = 1200$ N

Model No. T7DDB or T7DDBS - 050 - B22 - B12 - 1 R 00 - A 1 - M0 - ..

T7DDB series - 125-B4 HW
ISO 4 bolts 3019-2 mounting flange
T7DDBS series - SAE C 6 bolts
Mounting flange J744

Displacement for "P1" & "P2"

Volumetric displacement (ml/rev)

B14 = 44,0	B31 = 99,2
B17 = 55,0	B35 = 113,4
B20 = 66,0	B38 = 120,6
B22 = 70,3	B42 = 137,5
B24 = 81,1	045 = 145,7
B28 = 90,0	050 = 158,0

Displacement for "P3"

Volumetric displacement (ml/rev)

B02 = 5,8	B09 = 28,0
B03 = 9,8	B10 = 31,8
B04 = 12,8	B11 = 35,0
B05 = 15,9	B12 = 41,0
B06 = 19,8	B14 = 45,0
B07 = 22,5	B15 = 50,0
B08 = 24,9	

Type of shaft T7DDBS

1 = keyed (SAE C) 3 = splined 12/24 (SAE C)
2 = keyed (SAE CC) 4 = splined 12/24 (SAE CC)

Type of shaft T7DDB and T7DDBS

5 = keyed (ISO R775 - G38M)

Modifications

Mounting w/connection variables

4 bolts SAE flange J518c

P1 & P2 = 1"1/4 - S = 4"		
Type	UNC	Metric
T7DDB - P3 = 1"		M0
T7DDB - P3 = 3/4"		M1
T7DDBS - P3 = 1"	00	M0
T7DDBS - P3 = 3/4"	01	M1

Seal class

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

Design letter

Porting combination (see page 62 - 63)
00 = standard

Direction of rotation (view on shaft end)

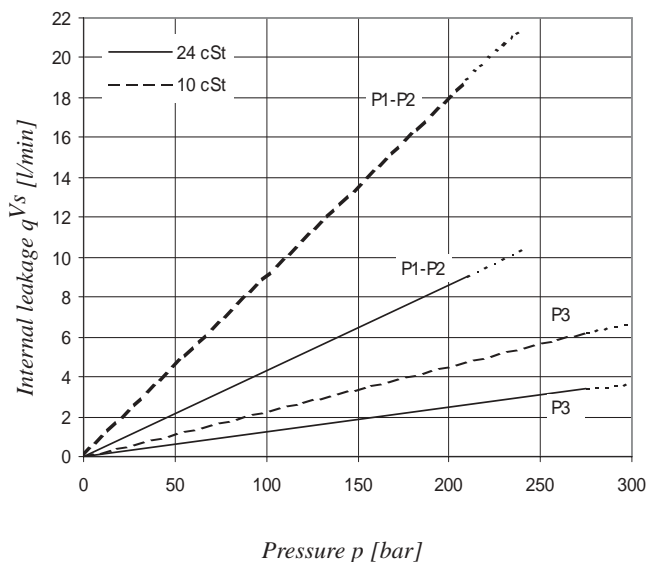
R = Clockwise
L = Counter-clockwise

OPERATING CHARACTERISTICS – TYPICAL [24 cSt]

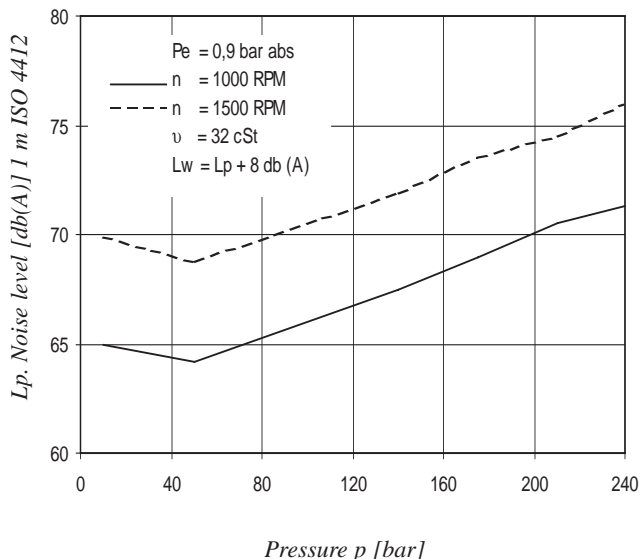
Pressure port	Series	Volumetric displacem. Vi	Flow q _{ve} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 250 bar	p = 7 bar	p = 140 bar	p = 250 bar
P1 & P2	B14	44,0 ml/rev	66,0	59,4	54,6	1,5	16,6	29,1
	B17	55,0 ml/rev	82,5	76,4	71,9	1,7	20,4	35,8
	B20	66,0 ml/rev	99,0	93,3	88,5	1,9	24,2	42,7
	B22	70,3 ml/rev	105,4	99,5	94,6	2,0	25,7	45,4
	B24	81,1 ml/rev	121,6	115,4	110,1	2,2	29,6	52,2
	B28	90,0 ml/rev	135,0	128,6	123,6	2,3	32,6	57,7
	B31	99,2 ml/rev	148,8	142,1	137,5	2,5	35,9	63,4
	B35	113,4 ml/rev	170,1	162,9	157,9	2,9	41,2	72,9
	B38	120,6 ml/rev	180,9	174,5	170,4	2,9	43,4	76,8
	B42	137,5 ml/rev	206,2	199,6	195,9 ²⁾	3,4	49,8	81,3 ²⁾
	045 ¹⁾	145,7 ml/rev	218,5	209,2	203,0	4,1	52,8	89,5
	050 ¹⁾	158,0 ml/rev	237,0	227,7	224,0 ³⁾	4,4	57,0	85,0 ³⁾
			p = 0 bar	p = 140 bar	p = 300 bar	p = 7 bar	p = 140 bar	p = 300 bar
P3	B02	5,8 ml/rev	8,7	7,0	5,1	0,5	2,6	5,1
	B03	9,8 ml/rev	14,7	13,0	11,1	0,6	4,0	8,1
	B04	12,8 ml/rev	19,2	17,5	15,6	0,6	5,0	10,4
	B05	15,9 ml/rev	23,9	22,2	20,2	0,7	6,1	12,7
	B06	19,8 ml/rev	29,7	28,0	26,1	0,7	7,5	15,6
	B07	22,5 ml/rev	33,7	32,0	30,2	0,8	8,5	17,6
	B08	24,9 ml/rev	37,4	35,7	33,7	0,8	9,3	19,5
	B09	28,0 ml/rev	42,0	40,3	38,4	0,9	10,4	21,8
	B10	31,8 ml/rev	47,7	46,0	44,1	0,9	11,7	24,6
	B11	35,0 ml/rev	52,5	50,8	48,9	1,0	12,8	27,0
	B12	41,0 ml/rev	61,5	59,8	57,9	1,1	14,9	31,5
	B14	45,0 ml/rev	67,5	65,8	63,9	1,2	16,3	34,5
	B15	50,0 ml/rev	75,0	73,3	71,6 ⁴⁾	1,3	18,1	35,7 ⁴⁾

1) 045 - 050 = 2200 RPM 2) B42 = 230 bar max. int. 3) 050 = 210 bar max. int. 4) B15 = 280 bar max. int.

INTERNAL LEAKAGE (TYPICAL)



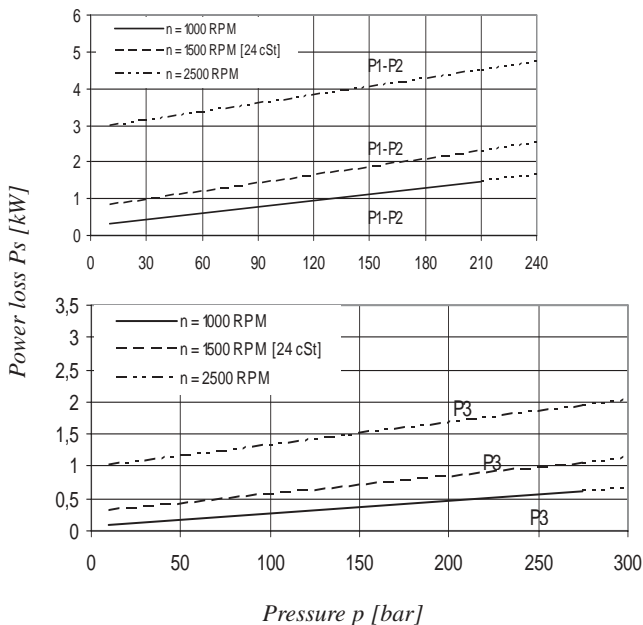
**NOISE LEVEL (TYPICAL)
T7DDB - B31 - B31 - B10**



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

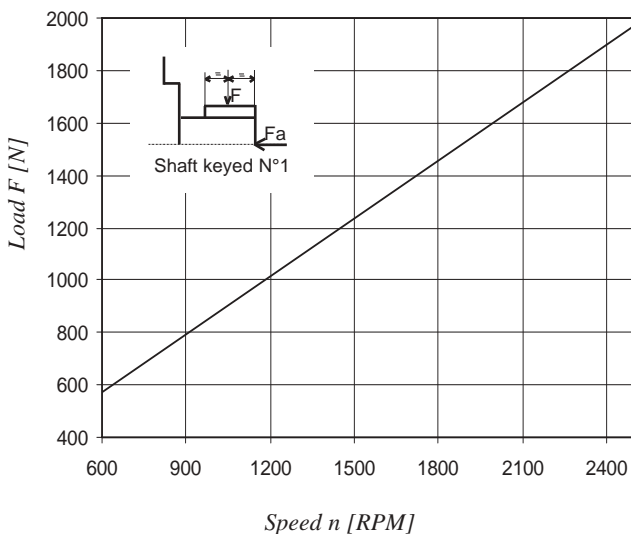
Triple pump noise level is given with each section discharging at the pressure noted on the curve.

HYDROMECHANICAL POWER LOSS (TYPICAL)

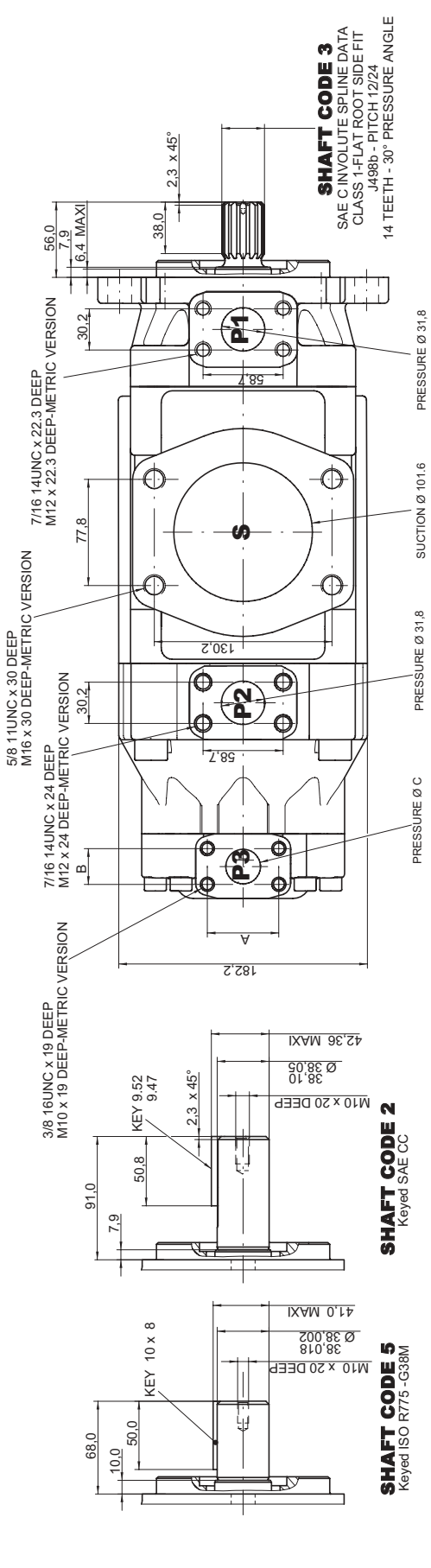
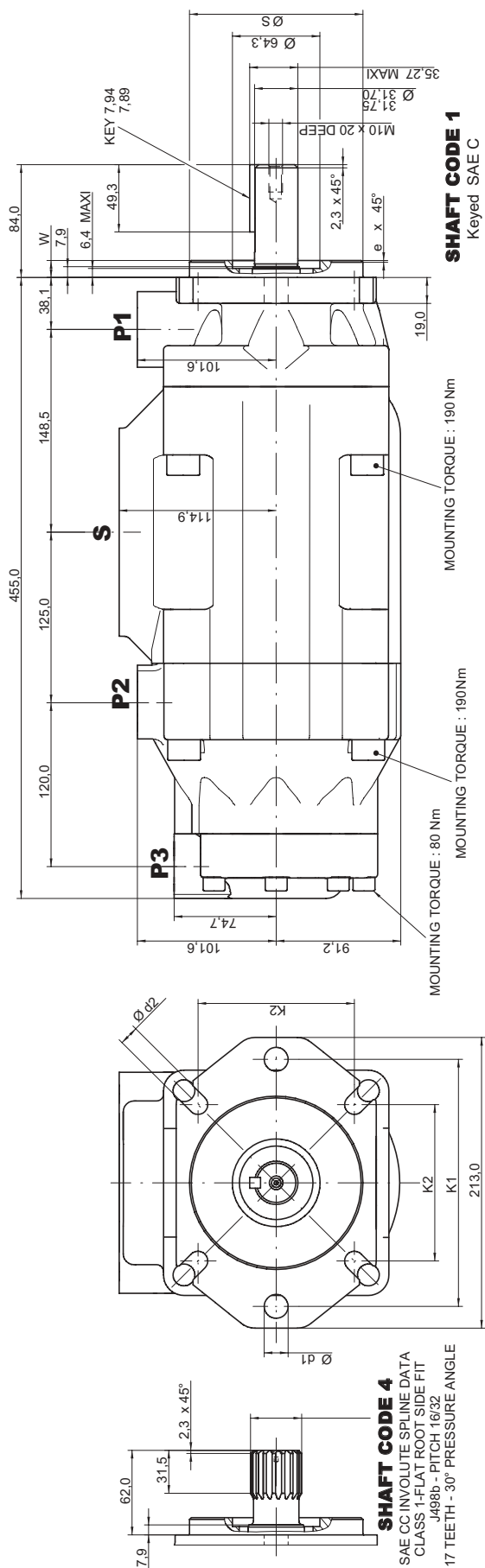


Total hydromechanical power loss is the sum of each section at its operating conditions.

PERMISSIBLE RADIAL LOAD



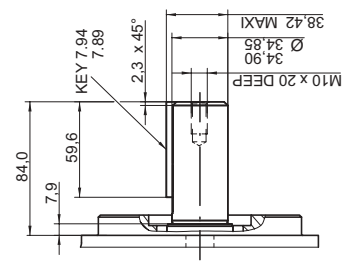
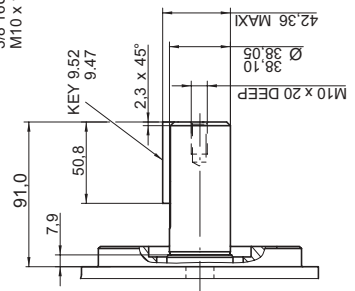
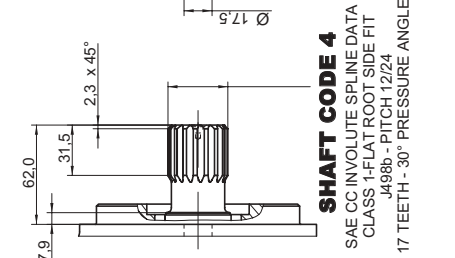
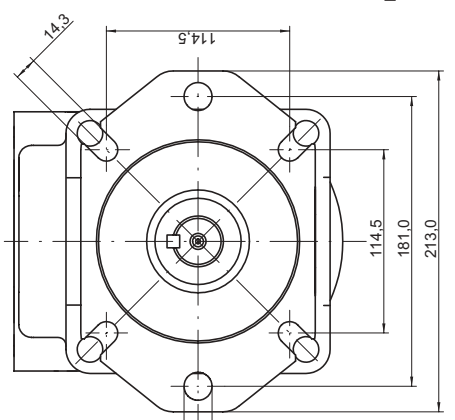
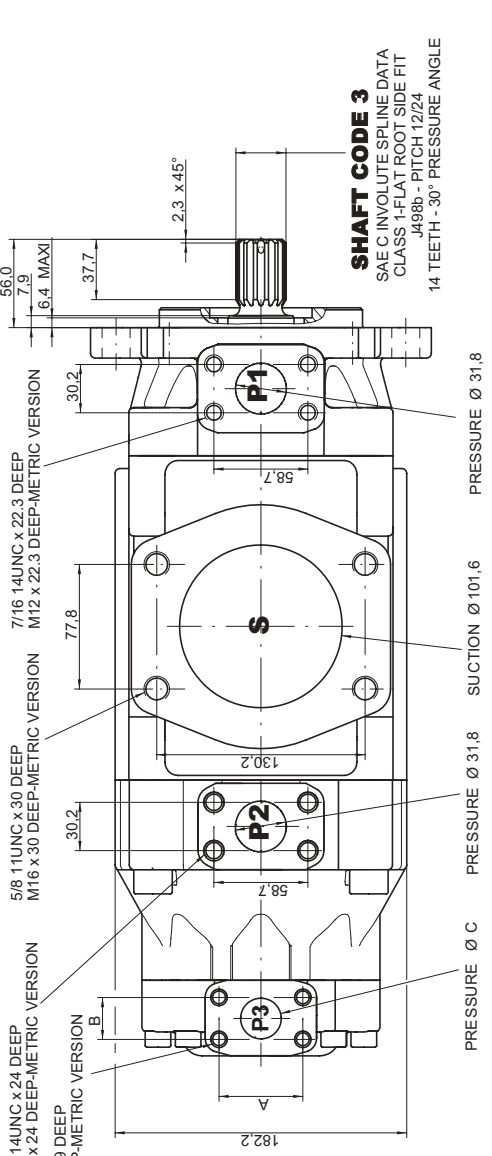
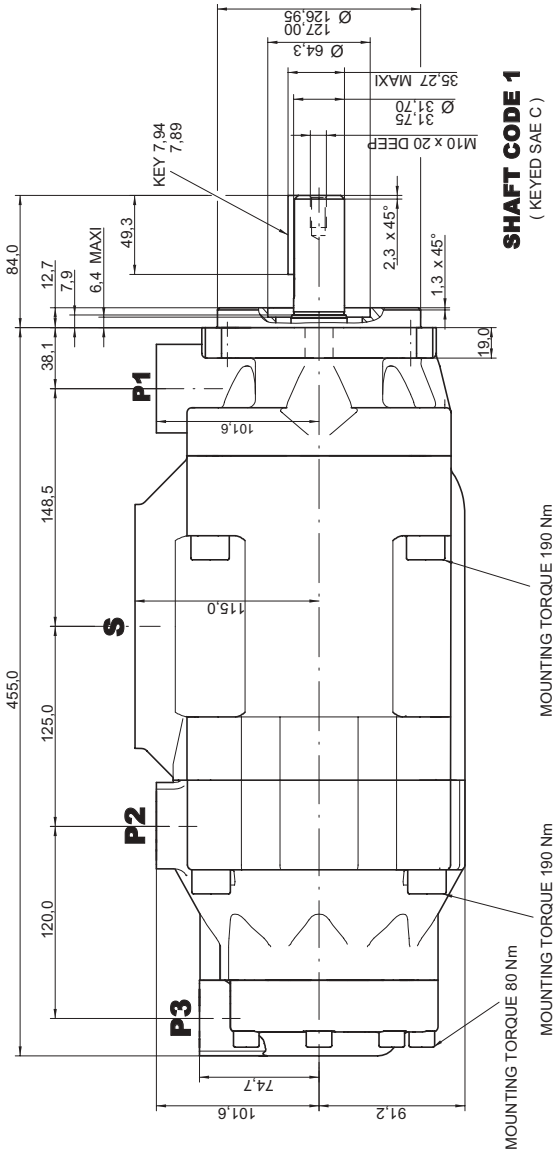
Maximum permissible axial load $F_a = 1200$ N



Shaft torque limits [ml/rev. x bar]	
Shaft	V _i x p max. P1 + P2 + P3
1	43240
2	72306
3	61200
4	66500
5	53100

Series	Alternate mounting flange		
	Dia S	W	K2
T7DDB	Max.	125,00	180,0
	Min.	124,937	113,14
T7DDBS	Max.	127,00	181,0
	Min.	126,950	114,50

Alternate connect. variables	
	00 & M0
A	52,4
B	26,2
C	25,4



Shaft torque limits [ml/rev. x bar]	
Shaft	V1 x p max.
1	43240
2	72306
3	61200
4	66500
5	55600

Alternate connect. variables	
	Ø 01 & M1
A	52.4
B	26.2
C	25.4
	19.0

Model No.

T67DDCS - 050 - B35 - B08 - 1 R 00 - A 1 M0 - ..

Series - SAE C 6 bolts
Mounting flange J744

P1 P2 P3

Displacement for "P1" & "P2"

Volumetric displacement (ml/rev)
B14 = 44,0 B31 = 99,2
B17 = 55,0 B35 = 113,4
B20 = 66,0 B38 = 120,6
B22 = 70,3 B42 = 137,5
B24 = 81,1 045 = 145,7
B28 = 90,0 050 = 158,0

Displacement for "P3"

Volumetric displacement (ml/rev)
003 = 10,8 017 = 58,3
005 = 17,2 020 = 63,8
006 = 21,3 022 = 70,3
008 = 26,4 025 = 79,3
010 = 34,1 028 = 88,8
012 = 37,1 031 = 100,0
014 = 46,0

Type of shaft

1 = keyed (SAE C) 4 = splined 12/24 (SAE CC)
2 = keyed (SAE CC) 5 = keyed (non SAE)
3 = splined 12/24 (SAE C)

Modifications

Mounting w/connection variables
4 bolts SAE flange J518

	P1 & P2 = 1"1/4 - S = 4"			
Type	UNC		Metric	
P3	1"	3/4"	1"	3/4"
Code	00	01	M0	M1

Seal class

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

Design letter

Porting combination (see page 62 - 63)
00 = standard

Direction of rotation (view on shaft end)

R = Clockwise
L = Counter-clockwise

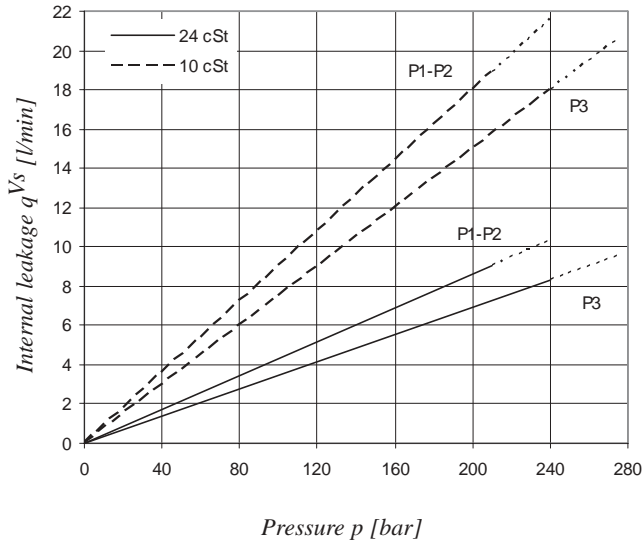
OPERATING CHARACTERISTICS – TYPICAL [24 cSt]

Pressure port	Series	Volumetric displacem. Vi	Flow q _{vc} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 250 bar	p = 7 bar	p = 140 bar	p = 250 bar
P1 & P2	B14	44,0 ml/rev	66,0	59,4	54,6	1,5	16,6	29,1
	B17	55,0 ml/rev	82,5	76,4	71,9	1,7	20,4	35,8
	B20	66,0 ml/rev	99,0	93,3	88,5	1,9	24,2	42,7
	B22	70,3 ml/rev	105,4	99,5	94,6	2,0	25,7	45,4
	B24	81,1 ml/rev	121,6	115,4	110,1	2,2	29,6	52,2
	B28	90,0 ml/rev	135,0	128,6	123,6	2,3	32,6	57,7
	B31	99,2 ml/rev	148,8	142,1	137,5	2,5	35,9	63,4
	B35	113,4 ml/rev	170,1	162,9	157,9	2,9	41,2	72,9
	B38	120,6 ml/rev	180,9	174,5	170,4	2,9	43,4	76,8
	B42	137,5 ml/rev	206,2	199,6	195,9 ¹⁾	3,4	49,8	81,3 ¹⁾
045 ³⁾	145,7 ml/rev	218,5	209,2	203,0	4,1	52,8	89,5	
050 ³⁾	158,0 ml/rev	237,0	227,7	224,0 ²⁾	4,4	57,0	85,0 ²⁾	
			p = 0 bar	p = 140 bar	p = 275 bar	p = 7 bar	p = 140 bar	p = 275 bar
P3	003	10,8 ml/rev	16,2	11,2	-	1,3	5,3	-
	005	17,2 ml/rev	25,8	20,8	16,1	1,4	7,5	13,9
	006	21,3 ml/rev	31,9	26,9	22,2	1,5	8,9	16,8
	008	26,4 ml/rev	39,6	34,6	29,9	1,6	10,7	20,3
	010	34,1 ml/rev	51,1	46,1	41,4	1,7	13,4	25,6
	012	37,1 ml/rev	55,6	50,6	45,9	1,7	14,4	27,6
	014	46,0 ml/rev	69,0	64,0	59,3	1,9	17,6	33,7
	017	58,3 ml/rev	87,4	82,4	77,7	2,1	21,9	42,2
	020	63,8 ml/rev	95,7	90,7	86,0	2,2	23,8	46,0
	022	70,3 ml/rev	105,4	100,4	95,7	2,3	26,1	50,4
	025 ⁴⁾	79,3 ml/rev	118,9	113,9	109,2	2,5	29,2	56,6
	028 ⁴⁾	88,8 ml/rev	133,2	128,2	125,8 ²⁾	2,8	32,7	48,5 ²⁾
	031 ⁴⁾	100,0 ml/rev	150,0	145,0	142,6 ²⁾	2,8	36,5	54,4 ²⁾

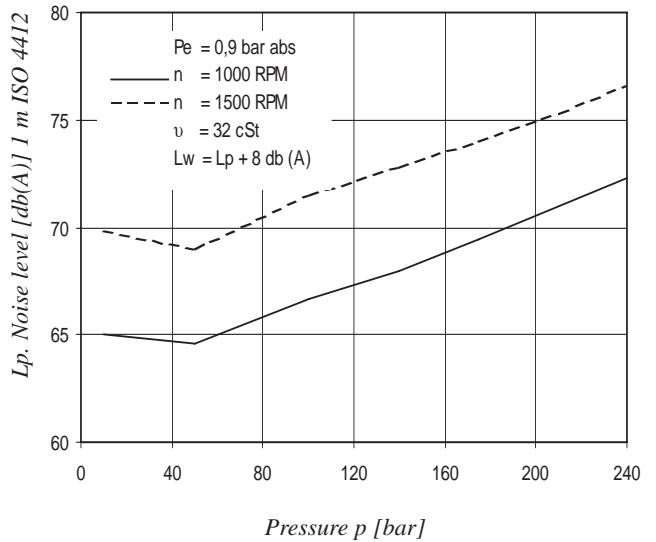
- We do not recommend to use this 003 at 275 bar & 1500 RPM as the internal leakage is over 50% of theoretical flow.

1) B42 = 230 bar max. int. 2) 050 – 028 – 031 = 210 bar max. int. 3) 045 – 050 = 2200 RPM max 4) 025 – 028 – 031 = 2500 RPM max.

INTERNAL LEAKAGE (TYPICAL)



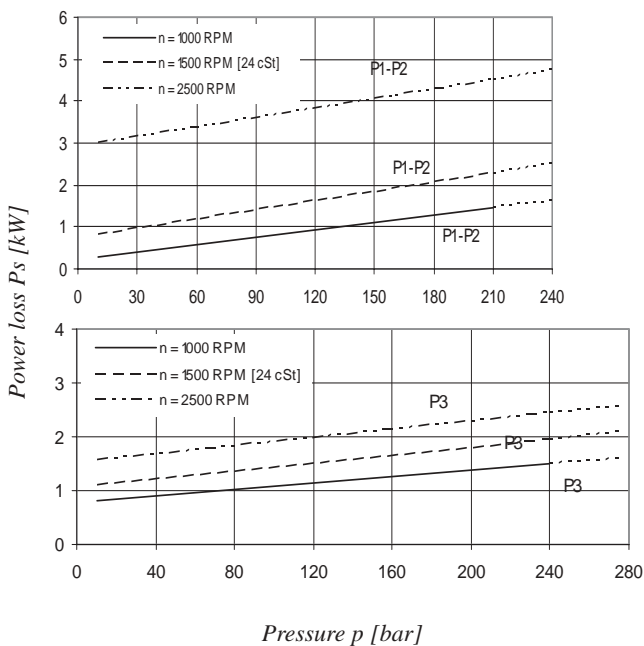
**NOISE LEVEL (TYPICAL)
T67DDCS - B31 - B31 - 022**



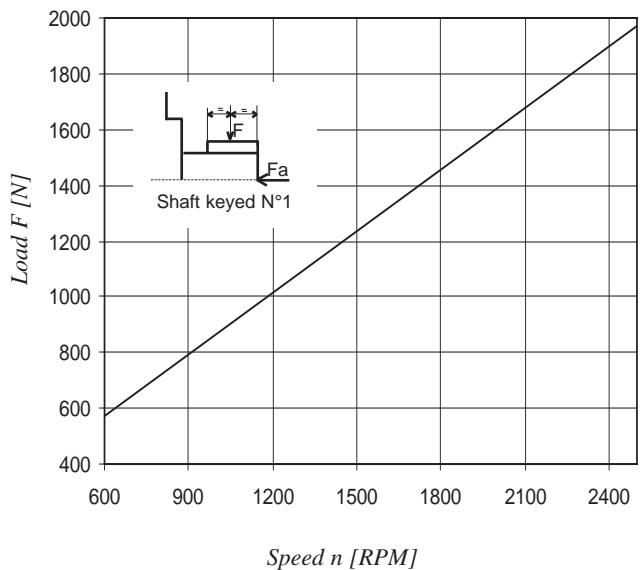
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is higher than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

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

HYDROMECHANICAL POWER LOSS (TYPICAL)



PERMISSIBLE RADIAL LOAD



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

Maximum permissible axial load $F_a = 1200\text{ N}$

Model No. **T7EDB or T7EDBS - 062 - B35 - B10 - 1 R 00 - A 1 - 01 - ..**

T7EDB series - 250-B4 HW
ISO 4 bolts 3019-2 mounting flange
T7EDBS series - SAE E 4 bolts
Mounting flange J744

Displacement for "P1"
Volumetric displacement (ml/rev)
042 = 132,3 057 = 183,3
045 = 142,4 062 = 196,7
050 = 158,5 066 = 213,3
052 = 164,8 072 = 227,1
054 = 171,0 085 = 268,7

Displacement for "P2"
Volumetric displacement (ml/rev)
B14 = 44,0 B31 = 99,2
B17 = 55,0 B35 = 113,4
B20 = 66,0 B38 = 120,6
B22 = 70,3 B42 = 137,5
B24 = 81,1 045 = 145,7
B28 = 90,0 050 = 158,0

Displacement for "P3"
Volumetric displacement (ml/rev)
B02 = 5,8 B09 = 28,0
B03 = 9,8 B10 = 31,8
B04 = 12,8 B11 = 35,0
B05 = 15,9 B12 = 41,0
B06 = 19,8 B14 = 45,0
B07 = 22,5 B15 = 50,0
B08 = 24,9

Modifications

Mounting w/connection variables
4 bolts SAE flanges J518

P1 = 1"1/2 - P2 = 1"1/4 - S = 4"		
Type	UNC	Metric
T7EDB - P3 = 1"		M0
T7EDB - P3 = 3/4"		M1
T7EDBS - P3 = 1"	00	M0
T7EDBS - P3 = 3/4"	01	M1

Seal class

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

Design letter

Porting combination (see page 62 - 63)
00 = standard

Direction of rotation (view on shaft end)

R = Clockwise
L = Counter-clockwise

Type of shaft T7EDB

1 = keyed (G45N - ISO 3019-2)

Type of shaft T7EDBS

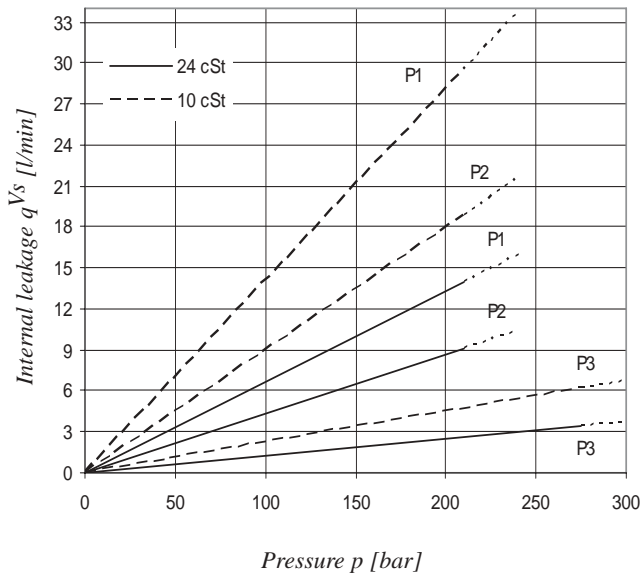
2 = keyed (SAE D & E)
3 = splined 8/16 (SAE D & E)

OPERATING CHARACTERISTICS – TYPICAL [24 cSt]

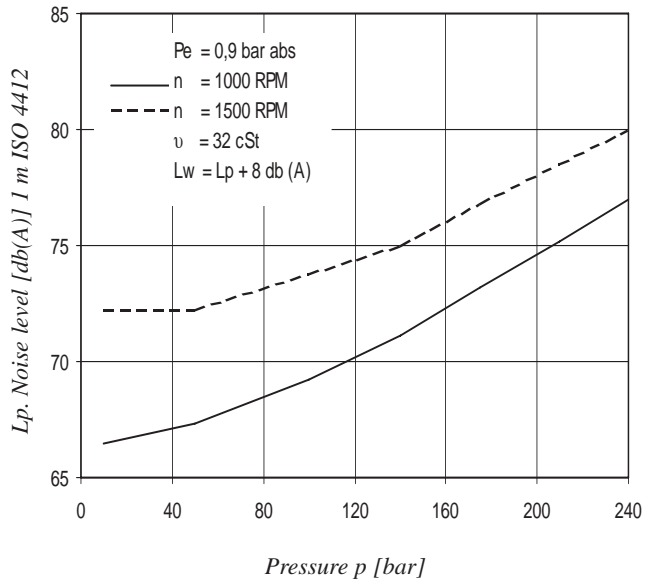
Pressure port	Series	Volumetric displacem. Vi	Flow q _{vc} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 240 bar	p = 7 bar	p = 140 bar	p = 240 bar
P1	042	132,3 ml/rev	198,5	188,5	181,3	5,2	49,4	82,6
	045	142,4 ml/rev	213,6	203,6	196,5	5,4	52,9	88,7
	050	158,5 ml/rev	237,7	227,7	220,6	5,7	58,5	98,3
	052	164,8 ml/rev	247,2	237,2	230,1	5,8	60,8	102,1
	054	171,0 ml/rev	256,5	246,5	239,4	5,9	63,0	105,8
	057	183,3 ml/rev	275,0	265,0	257,9	6,1	67,3	113,2
	062	196,7 ml/rev	295,0	285,0	277,9	6,4	71,9	121,3
	066	213,3 ml/rev	319,9	309,0	302,8	6,7	77,7	131,2
	072	227,1 ml/rev	340,6	330,6	323,5	6,9	82,6	139,5
085	268,7 ml/rev	403,0	392,0 ¹⁾	-	9,1	65,8 ¹⁾	-	
			p = 0 bar	p = 140 bar	p = 250 bar	p = 7 bar	p = 140 bar	p = 250 bar
P2	B14	44,0 ml/rev	66,0	59,4	54,6	1,5	16,6	29,1
	B17	55,0 ml/rev	82,5	76,4	71,9	1,7	20,4	35,8
	B20	66,0 ml/rev	99,0	93,3	88,5	1,9	24,2	42,7
	B22	70,3 ml/rev	105,4	99,5	94,6	2,0	25,7	45,4
	B24	81,1 ml/rev	121,6	115,4	110,1	2,2	29,6	52,2
	B28	90,0 ml/rev	135,0	128,6	123,6	2,3	32,6	57,7
	B31	99,2 ml/rev	148,8	142,1	137,5	2,5	35,9	63,4
	B35	113,4 ml/rev	170,1	162,9	157,9	2,9	41,2	72,9
	B38	120,6 ml/rev	180,9	174,5	170,4	2,9	43,4	76,8
	B42	137,5 ml/rev	206,2	199,6	195,9 ¹⁾	3,4	49,8	81,3 ¹⁾
	045 ³⁾	145,7 ml/rev	218,5	209,2	203,0	4,1	52,8	89,5
050 ³⁾	158,0 ml/rev	237,0	227,7	224,0 ²⁾	4,4	57,0	85,0 ²⁾	
			p = 0 bar	p = 140 bar	p = 300 bar	p = 7 bar	p = 140 bar	p = 300 bar
P3	B02	5,8 ml/rev	8,7	7,0	5,1	0,5	2,6	5,1
	B03	9,8 ml/rev	14,7	13,0	11,1	0,6	4,0	8,1
	B04	12,8 ml/rev	19,2	17,5	15,6	0,6	5,0	10,4
	B05	15,9 ml/rev	23,9	22,2	20,2	0,7	6,1	12,7
	B06	19,8 ml/rev	29,7	28,0	26,1	0,7	7,5	15,6
	B07	22,5 ml/rev	33,7	32,0	30,2	0,8	8,5	17,6
	B08	24,9 ml/rev	37,4	35,7	33,7	0,8	9,3	19,5
	B09	28,0 ml/rev	42,0	40,3	38,4	0,9	10,4	21,8
	B10	31,8 ml/rev	47,7	46,0	44,1	0,9	11,7	24,6
	B11	35,0 ml/rev	52,5	50,8	48,9	1,0	12,8	27,0
	B12	41,0 ml/rev	61,5	59,8	57,9	1,1	14,9	31,5
	B14	45,0 ml/rev	67,5	65,8	63,9	1,2	16,3	34,5
	B15	50,0 ml/rev	75,0	73,3	71,6 ⁴⁾	1,3	18,1	35,7 ⁴⁾

1) B42 = 230 bar max. int. 2) 050 = 210 bar max. int. 3) 045 - 050 = 2200 RPM max. 4) B15 = 280 bar max. int. 5) 085 = 90 bar max. int.

INTERNAL LEAKAGE (TYPICAL)



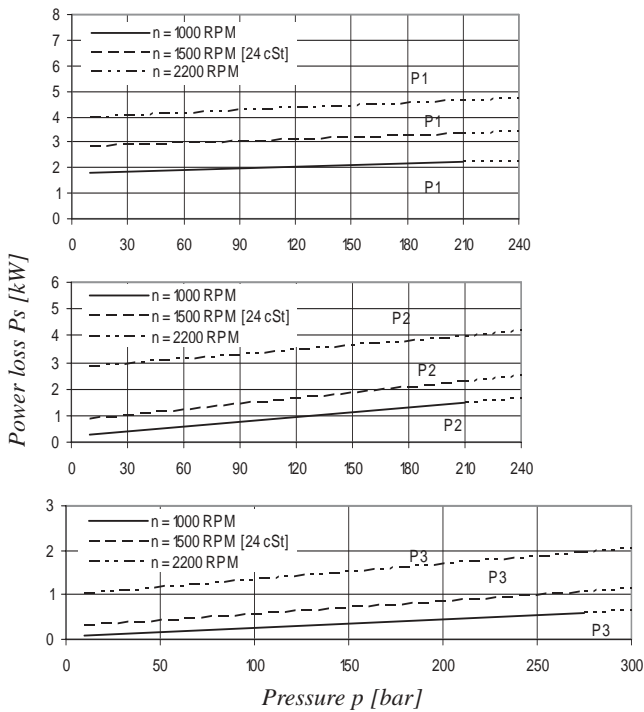
NOISE LEVEL (TYPICAL)
T7EDB - 062 - B35 - B04



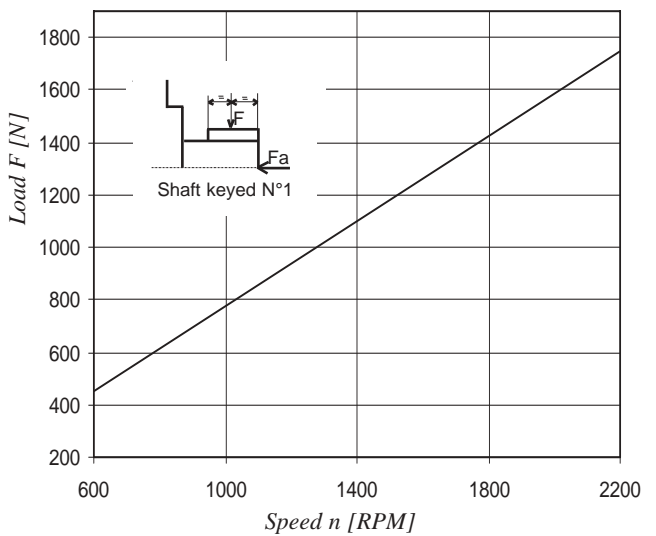
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is higher than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

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

HYDROMECHANICAL POWER LOSS (TYPICAL)

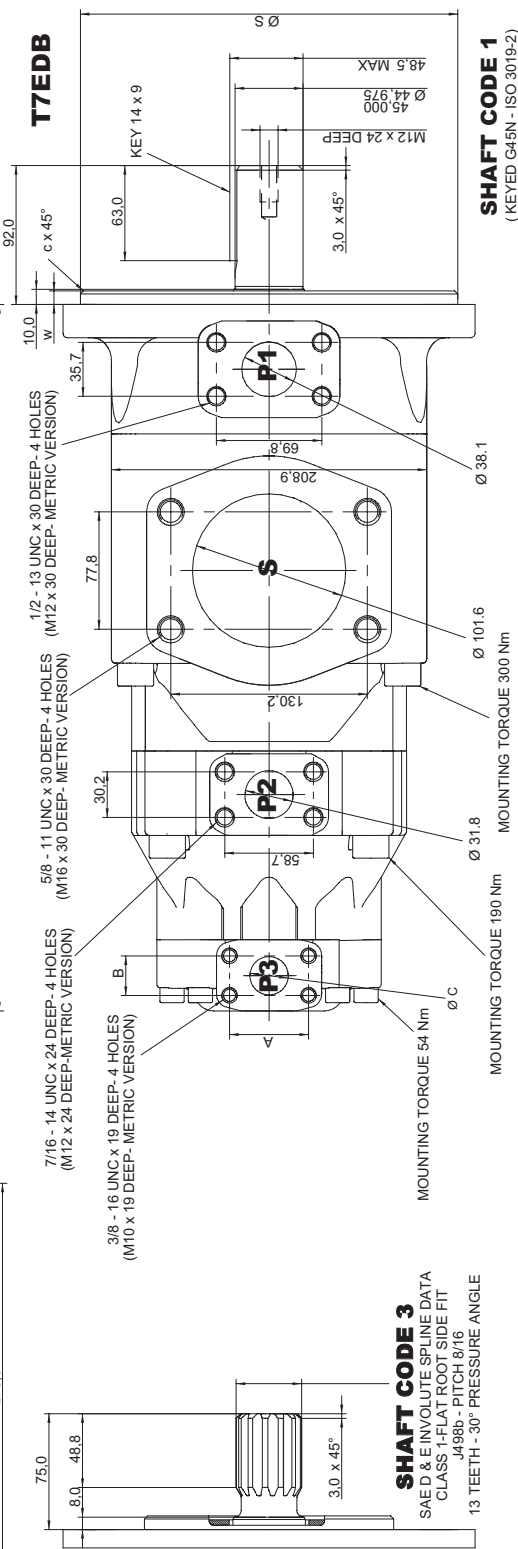
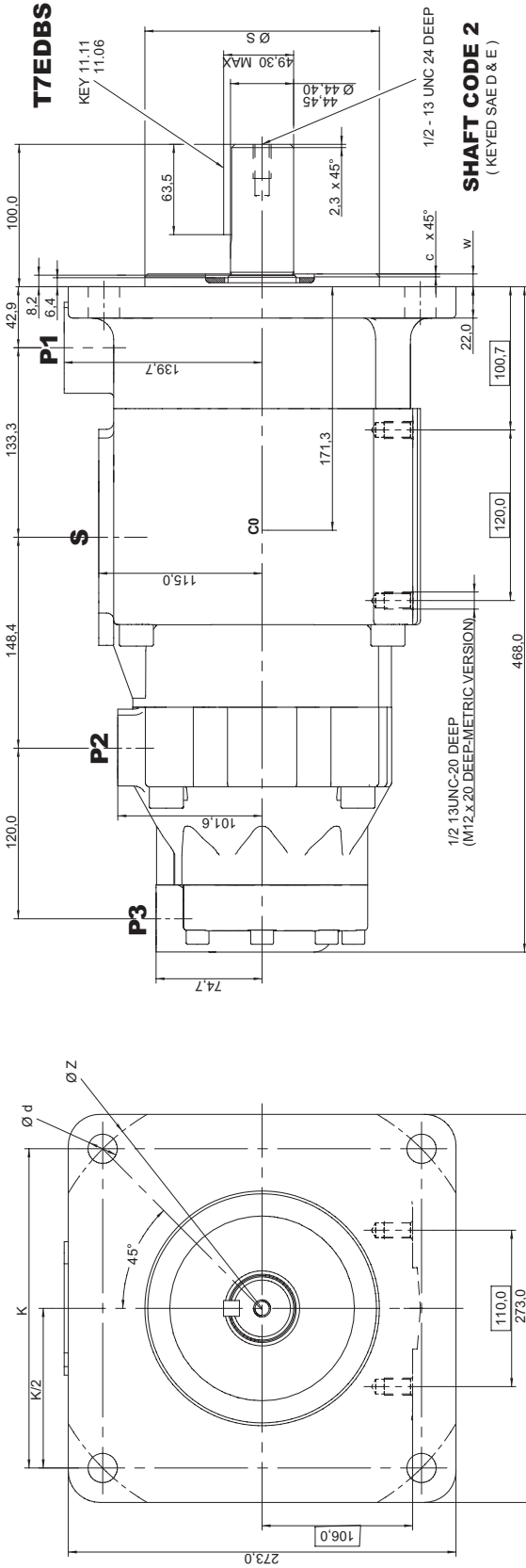


PERMISSIBLE RADIAL LOAD



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

Maximum permissible axial load $F_a = 2000\text{ N}$



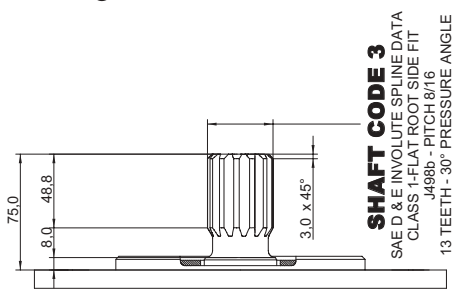
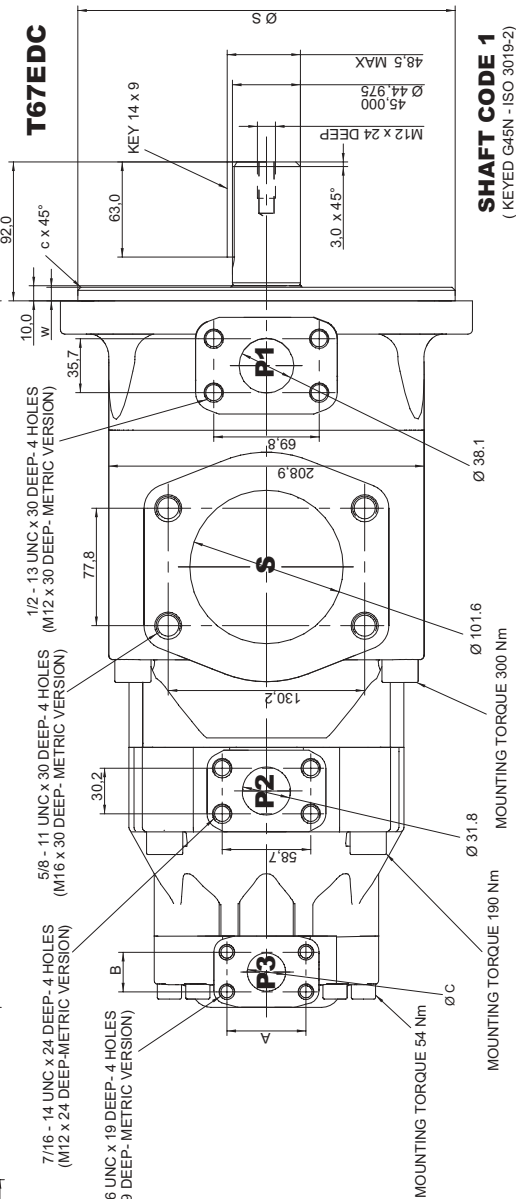
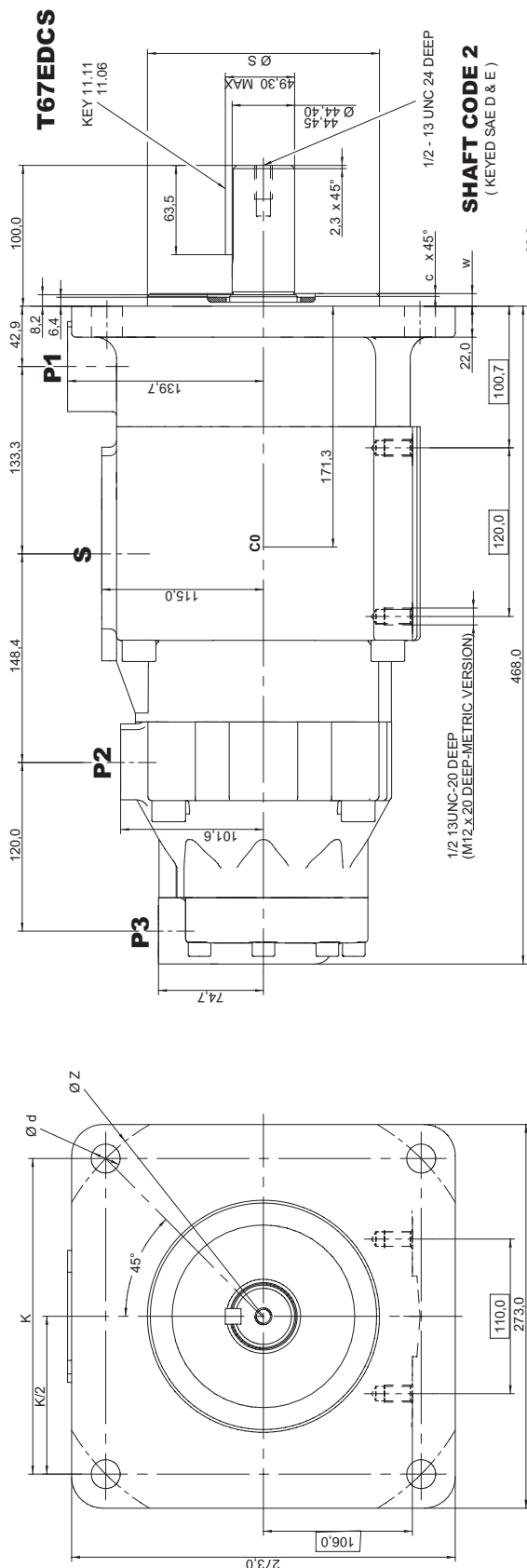
SHAFT CODE 3

SAE D & E INVOLUTE SPLINE DATA
CLASS 1-FLA - ROOT SIDE FIT
J4980 - FITCH 8/16
13 TEETH - 30° PRESSURE ANGLE

Shaft torque limits [ml/rev. x PSI]	
Shaft	Vi x p max. P1 + P2 + P3
1	114600
2	118340
3	126800

Series	Alternate mounting flange			
	Dia S	W	K	Dia Z
	Max.	e x 45°		Dia d2
	Min.			
T7EDB	250,00	2,0	-	315
T7EDBS	165,10	2,0	224,5	-
		9,0		22,0
		9,0		20,6

Alternate connect. variables	
	00
A	52,4
B	26,2
C	25,4
01	47,6
	22,2
	19,0



Alternate connect. variables	
00	01
A	52,4
B	26,2
C	25,4

Series	Alternate mounting flange			
	Dia S	W	K	Dia d
T67EDC	Max. 250,00	Min. 249,928	-	22,0
T67EDCS	165,10	165,050	224,5	20,6

Shaft torque limits [ml/rev. x bar]	
Shaft	Vi x p max. P1 + P2 + P3
1	114600
2	118340
3	126800

Model No. **T67EDC or T67EDCS - 062 - B35 - 010 - 1 R 00 - A 1 - M1 - ..**

T67EDC series - 250-B4 HW
ISO 4 bolts 3019-2 mounting flange
T67EDCS series - SAE E
Mounting flange J744

Displacement for "P1"
Volumetric displacement (ml/rev)
042 = 132,3 057 = 183,3
045 = 142,4 062 = 196,7
050 = 158,5 066 = 213,3
052 = 164,8 072 = 227,1
054 = 171,0 085 = 268,7

Displacement for "P2"
Volumetric displacement (ml/rev)
B14 = 44,0 B31 = 99,2
B17 = 55,0 B35 = 113,4
B20 = 66,0 B38 = 120,6
B22 = 70,3 B42 = 137,5
B24 = 81,1 045 = 145,7
B28 = 90,0 050 = 158,0

Displacement for "P3"
Volumetric displacement (ml/rev)
003 = 10,8 017 = 58,3
005 = 17,2 020 = 63,8
006 = 21,3 022 = 70,3
008 = 26,4 025 = 79,3
010 = 34,1 028 = 88,8
012 = 37,1 031 = 100,0
014 = 46,0

Modifications

Mounting w/connection variables
4 bolts SAE flanges J518

P1 = 1"1/2 - P2 = 1"1/4 - S = 4"		
Type	UNC	Metric
T67EDC - P3 = 1"		M0
T67EDC - P3 = 3/4"		M1
T67EDCS - P3 = 1"	00	M0
T67EDCS - P3 = 3/4"	01	M1

Seal class

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

Design letter

Porting combination
00 = standard

Direction of rotation (view on shaft end)

R = Clockwise
L = Counter-clockwise

Type of shaft T67EDC

1 = keyed (G45N - ISO 3019-2)

Type of shaft T67EDCS

2 = keyed (SAE D & E)
3 = splined (SAE D & E)

OPERATING CHARACTERISTICS – TYPICAL [24 cSt]

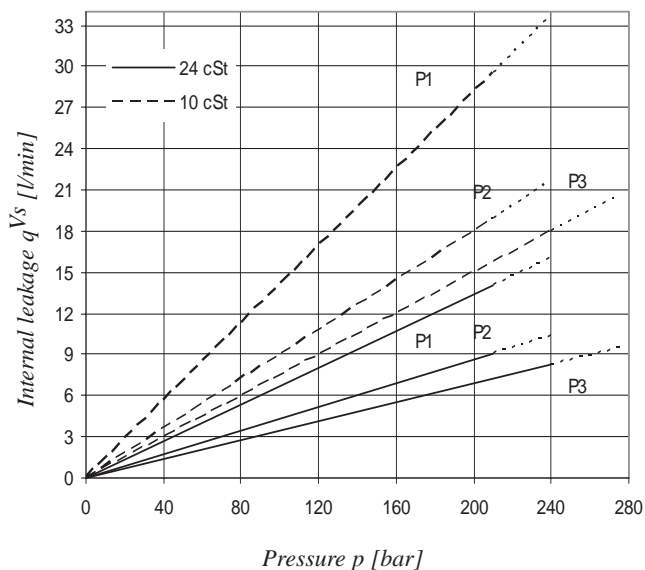
Pressure port	Series	Volumetric displacem. Vi	Flow q _{ve} [l/min] & n = 1500 RPM			Input power P [kW] & n = 1500 RPM		
			p = 0 bar	p = 140 bar	p = 240 bar	p = 7 bar	p = 140 bar	p = 240 bar
P1	042	132,3 ml/rev	198,5	188,5	181,3	5,2	49,4	82,6
	045	142,4 ml/rev	213,6	203,6	196,5	5,4	52,9	88,7
	050	158,5 ml/rev	237,7	227,7	220,6	5,7	58,5	98,3
	052	164,8 ml/rev	247,2	237,2	230,1	5,8	60,8	102,1
	054	171,0 ml/rev	256,5	246,5	239,4	5,9	63,0	105,8
	057	183,3 ml/rev	275,0	265,0	257,9	6,1	67,3	113,2
	062	196,7 ml/rev	295,0	285,0	277,9	6,4	71,9	121,3
	066	213,3 ml/rev	319,9	309,0	302,8	6,7	77,7	131,2
	072	227,1 ml/rev	340,6	330,6	323,5	6,9	82,6	139,5
	085	268,7 ml/rev	403,0	392,0 ³⁾	-	9,1	65,8 ³⁾	-
			p = 0 bar	p = 140 bar	p = 250 bar	p = 7 bar	p = 140 bar	p = 250 bar
P2	B14	44,0 ml/rev	66,0	59,4	54,6	1,5	16,6	29,1
	B17	55,0 ml/rev	82,5	76,4	71,9	1,7	20,4	35,8
	B20	66,0 ml/rev	99,0	93,3	88,5	1,9	24,2	42,7
	B22	70,3 ml/rev	105,4	99,5	94,6	2,0	25,7	45,4
	B24	81,1 ml/rev	121,6	115,4	110,1	2,2	29,6	52,2
	B28	90,0 ml/rev	135,0	128,6	123,6	2,3	32,6	57,7
	B31	99,2 ml/rev	148,8	142,1	137,5	2,5	35,9	63,4
	B35	113,4 ml/rev	170,1	162,9	157,9	2,9	41,2	72,9
	B38	120,6 ml/rev	180,9	174,5	170,4	2,9	43,4	76,8
	B42	137,5 ml/rev	206,2	199,6	195,9 ¹⁾	3,4	49,8	81,3 ¹⁾
	045 ³⁾	145,7 ml/rev	218,5	209,2	203,0	4,1	52,8	89,5
050 ³⁾	158,0 ml/rev	237,0	227,7	224,0 ²⁾	4,4	57,0	85,0 ²⁾	
			p = 0 bar	p = 140 bar	p = 275 bar	p = 7 bar	p = 140 bar	p = 275 bar
P3	003	10,8 ml/rev	16,2	11,2	-	1,3	5,3	-
	005	17,2 ml/rev	25,8	20,8	16,1	1,4	7,5	13,9
	006	21,3 ml/rev	31,9	26,9	22,2	1,5	8,9	16,8
	008	26,4 ml/rev	39,6	34,6	29,9	1,6	10,7	20,3
	010	34,1 ml/rev	51,1	46,1	41,4	1,7	13,4	25,6
	012	37,1 ml/rev	55,6	50,6	45,9	1,7	14,4	27,6
	014	46,0 ml/rev	69,0	64,0	59,3	1,9	17,6	33,7
	017	58,3 ml/rev	87,4	82,4	77,7	2,1	21,9	42,2
	020	63,8 ml/rev	95,7	90,7	86,0	2,2	23,8	46,0
	022	70,3 ml/rev	105,4	100,4	95,7	2,3	26,1	50,4
	025 ⁴⁾	79,3 ml/rev	118,9	113,9	109,2	2,5	29,2	56,6
	028 ⁴⁾	88,8 ml/rev	133,2	128,2	125,8 ²⁾	2,8	32,7	48,5 ²⁾
	031 ⁴⁾	100,0 ml/rev	150,0	145,0	142,6 ²⁾	2,8	36,5	54,4 ²⁾

- We do not recommend to use this 003 at 275 bar & 1500 RPM as the internal leakage is over 50% of theoretical flow.

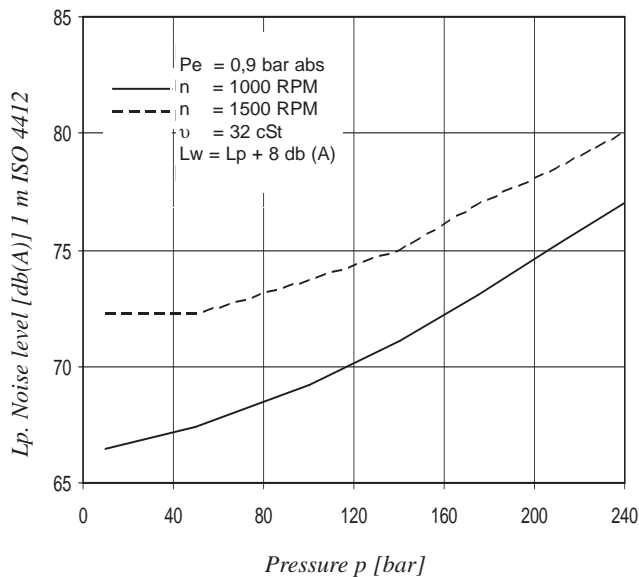
1) B42 = 230 bar max. int. 2) 050 – 028 – 031 = 210 bar max. int. 3) 045 – 050 = 2200 RPM max. 4) 025 – 028 – 031 = 2500 RPM max

5) 085 = 90 bar max. int.

INTERNAL LEAKAGE (TYPICAL)



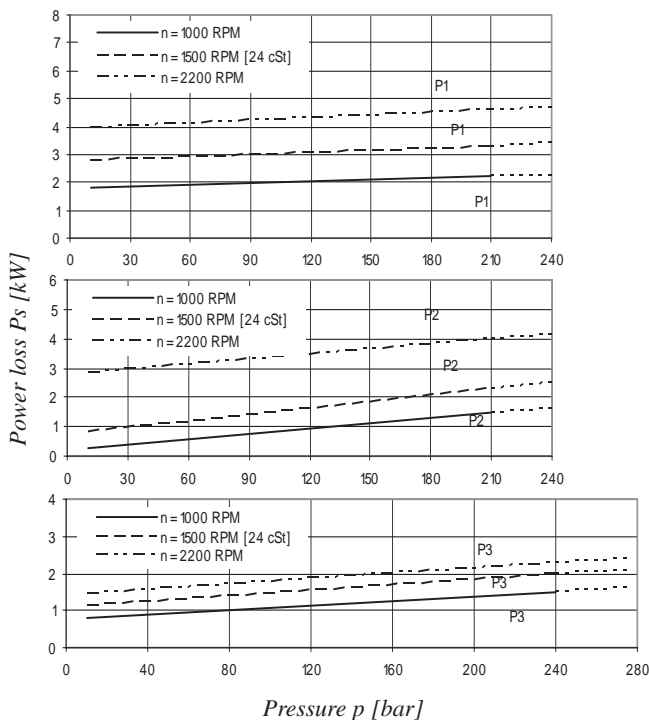
**NOISE LEVEL (TYPICAL)
T67EDCS - 062 - B35 - 022**



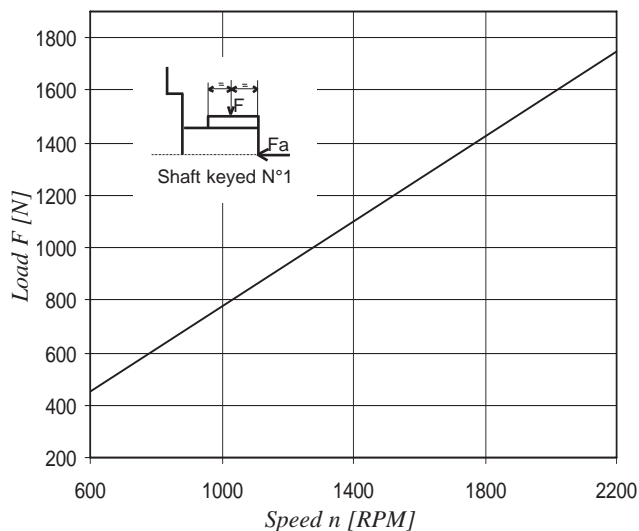
Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is higher than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

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

HYDROMECHANICAL POWER LOSS (TYPICAL)



PERMISSIBLE RADIAL LOAD



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

Maximum permissible axial load $F_a = 2000\text{ N}$

T7BB/T7BBS

T6CC

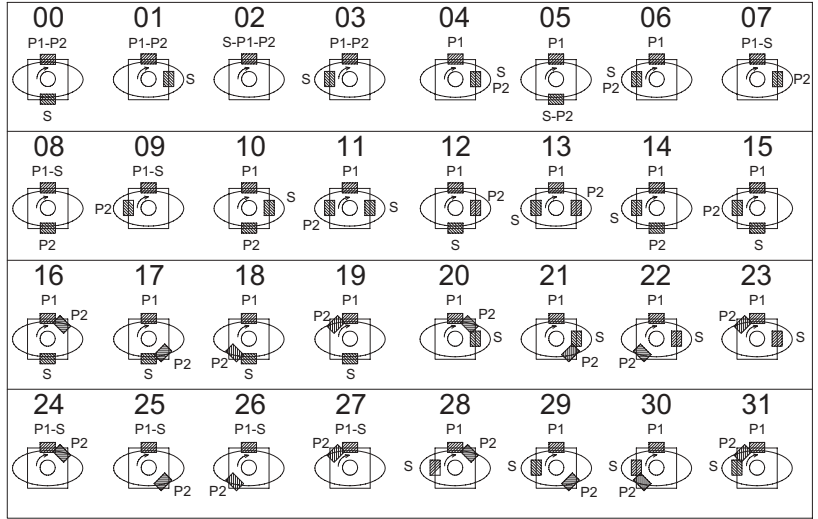
T67CB

T7DB/T7DBS

T67DC

T7EB/T7EBS

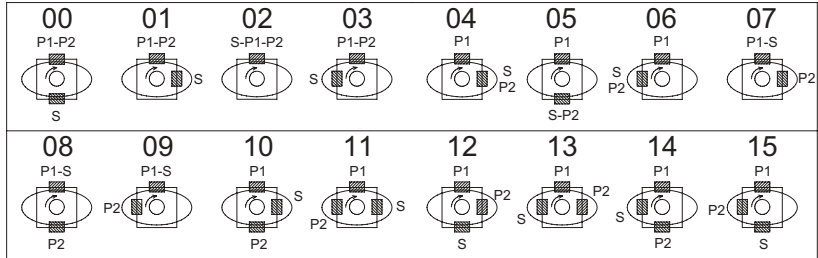
T67EC



T7DD/T7DDS

T7ED/T7EDS

T7EE/T7EES



T67DBB

T67DCB

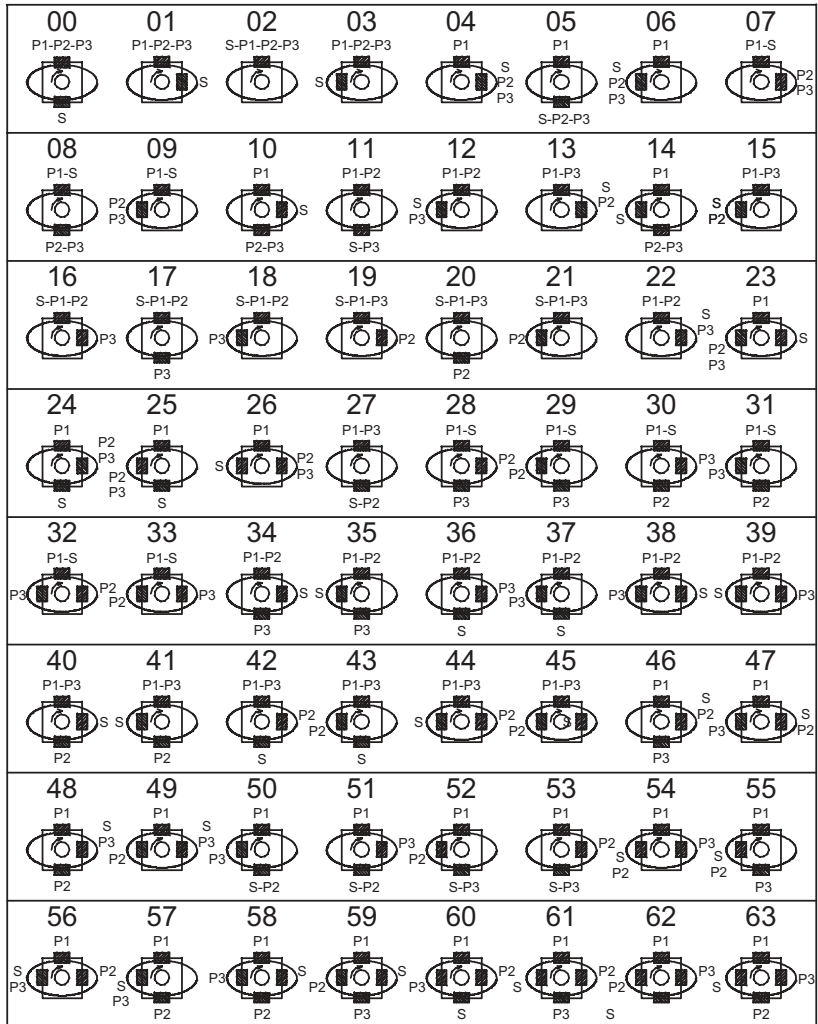
T67DCC

T7ddb/T7ddbS

T67DDCS

T7EDB/T7EDBS

T67EDC/T67EDCS



T67DBB

T67DCB

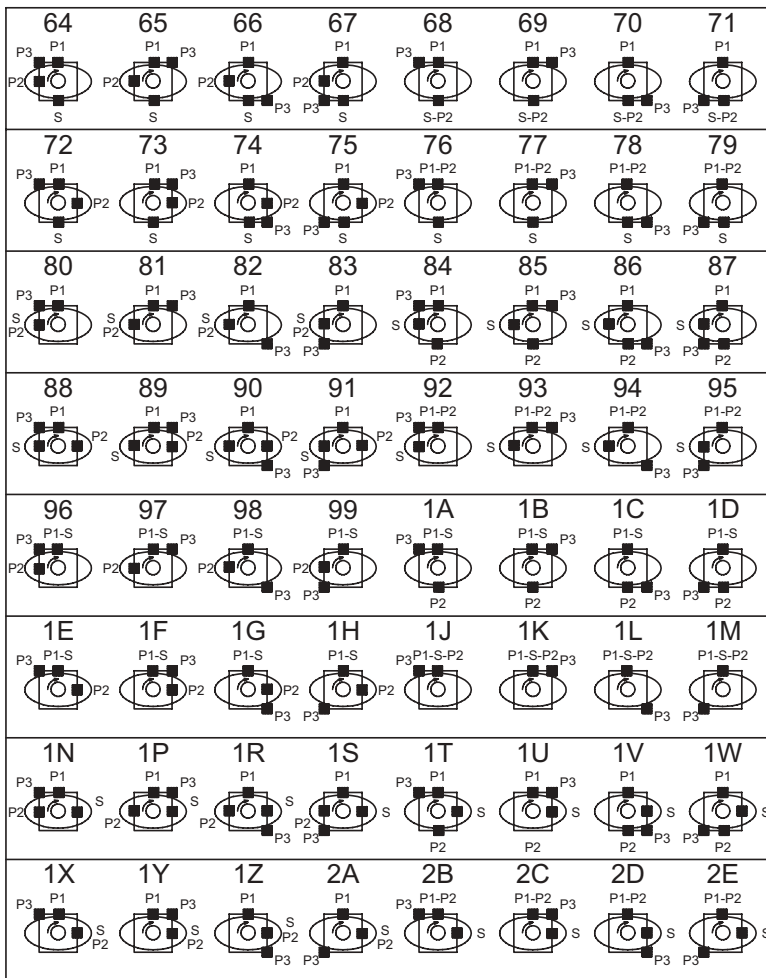
T67DCC

T7DDB/T7DDBS

T67DDCS

T7EDB/T7EDBS

T67EDC/T67EDCS



S	P2	P3				P2	P3			
		02	16	17	18		20	30	08	31
		19	07	28	32		21	33	29	09
		01	22	34	38		40	48	10	58
		13	04	46	47		45	49	59	23
		00	36	11	37		27	51	05	50
		42	24	53	60		43	62	52	25
		03	39	35	12		41	63	14	57
		44	26	61	56		15	54	55	06