GROUP 1 PUMPS

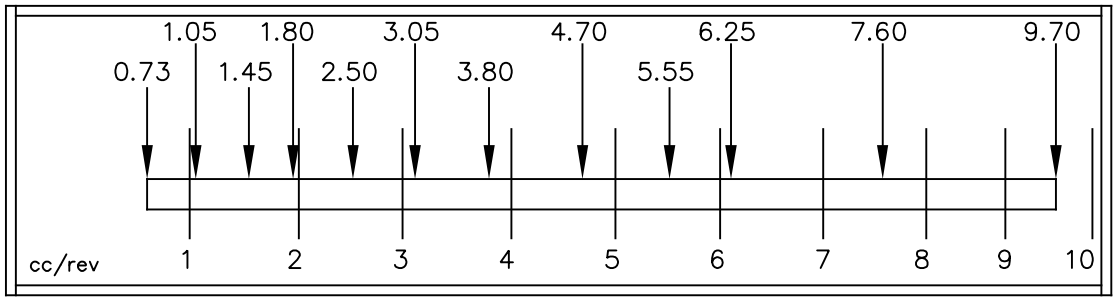
CONSTRUCTIVE CHARACTERISTICS:

PART	MATERIAL	CHARACTERISTICS
GEARS	**Hardened steel UNI 7846**	**Rs= 1250 N/mm²** **Rm= 1450 N/mm²**
FLANGE AND COVER	**G25 / G30 cast iron**	**Rs= 300 N/mm²** **Rm= 450 N/mm²**
BEARINGS	**Sical 3** **Bearings with DU**	**Rs= 350 N/mm²** **Rm= 390 N/mm²**
BODY	**Etruded in aluminium alloy** **Series 7020**	**Rs= 350 N/mm²** **Rm= 390 N/mm²**
O–RINGS	**Buna N** **Viton**	**90 Shore, up to 90°C** **80 Shore, for high temperature**
ANTIEXTRUSION	**Zitel**	**With glass fibres**

Rs= Enervation load
Rm= Breaking load

GENERAL CHARACTERISTICS:

Maximum pressures up to 300 bar
Weight : from 0.9 Kg to 1.6 kg
Maximum speed up to 5.000 rpm
Type of shafts: **Taper 1:8**
Oldham
Slined DIN 5482
SAE AA
Keyed
Type of flanges: **European standard**
Standard for power units
SAE AA standard
Displacements from 0.73 cc/rev to 9.9 cc/rev
The displacements are available according this table:



There is also available a special version with built-in support and a bigger taper 1:8 shaft (diameter Ø14) for 9.9 cc/rev pump.
In the range there are tandem pumps with unloading valve in the back cover and pumps with built in maximum pressure relief valve (with internal or external drain)

DRIVE:

The connection of the pump to the motor must be done preferably with the use of a flexible coupling to avoid any radial and/or axial force on the shaft, otherwise pump efficiency will dramatically drop due to early wear of inner moving parts.
In any applications where the motion is trasmitted through belts, it is necessary to use a support to avoid any radial or axial load to the pump shaft.
In any applications where are used splined shafts ot Oldham couplings, it is suggested to assure a costant lubrification through grease or similar products.

GROUP 1 PUMPS

WORKING CONDITIONS- LIMIT PERFORMANCES

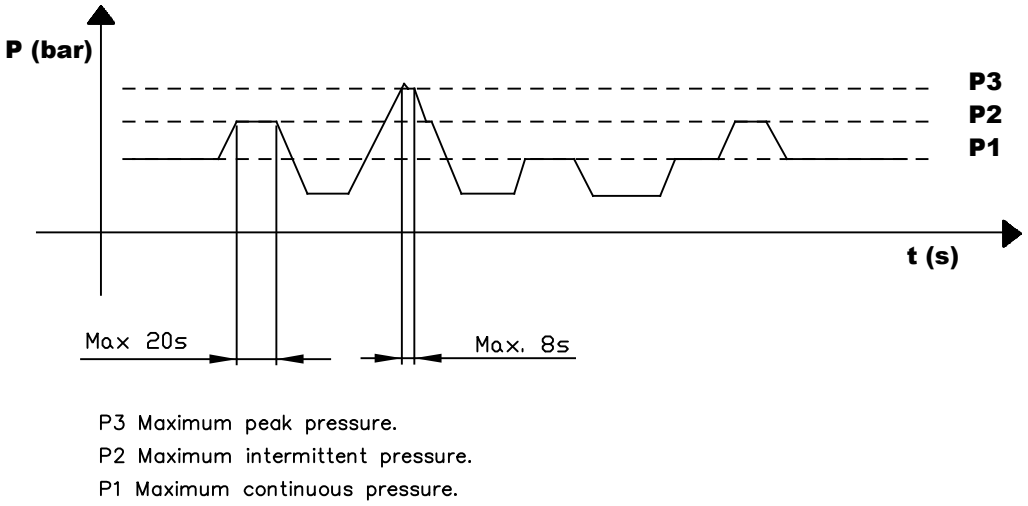
In normal working conditions there must be, in the suction pipe, a pressure lower than the atmospheric pressure.

The pressure range in suction must be:

Min. 0.75 bar (absolute)	Max 2,0 bar (absolute)

The maximun pressure values "P1" are referred to a continuous working at 1500 rpm with standard hydraulic fluids with minimum viscosity of 10 cSt.
For heavier working conditions (viscosity or high temperature) it is necessary to reduce the "P1" values.

In the following table are described the admitted pressures:

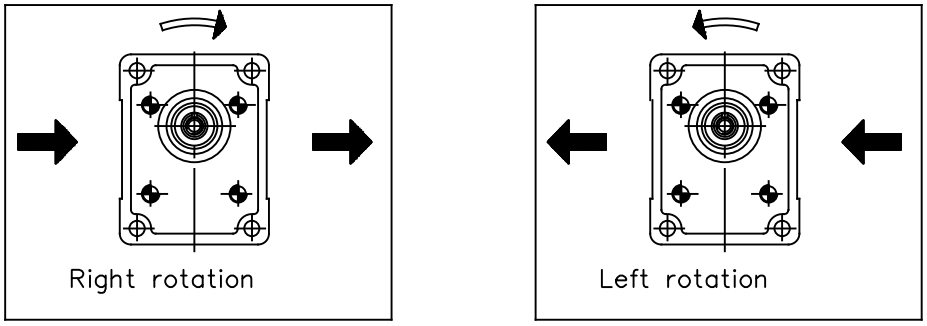


P3 Maximum peak pressure.
P2 Maximum intermittent pressure.
P1 Maximum continuous pressure.

The standard working speeds (minimum and maximum) are the following:

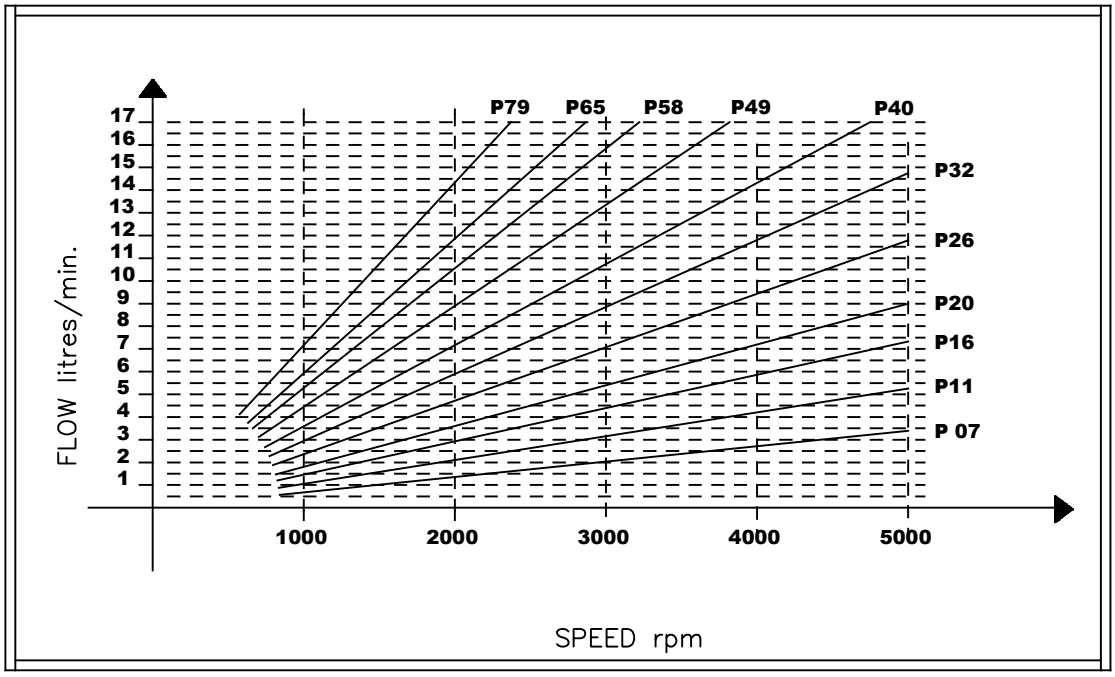
Min. = 750 rpm	Max = (See following tables)

DIRECTION OF ROTATION LOOKING AT THE SHAFT:

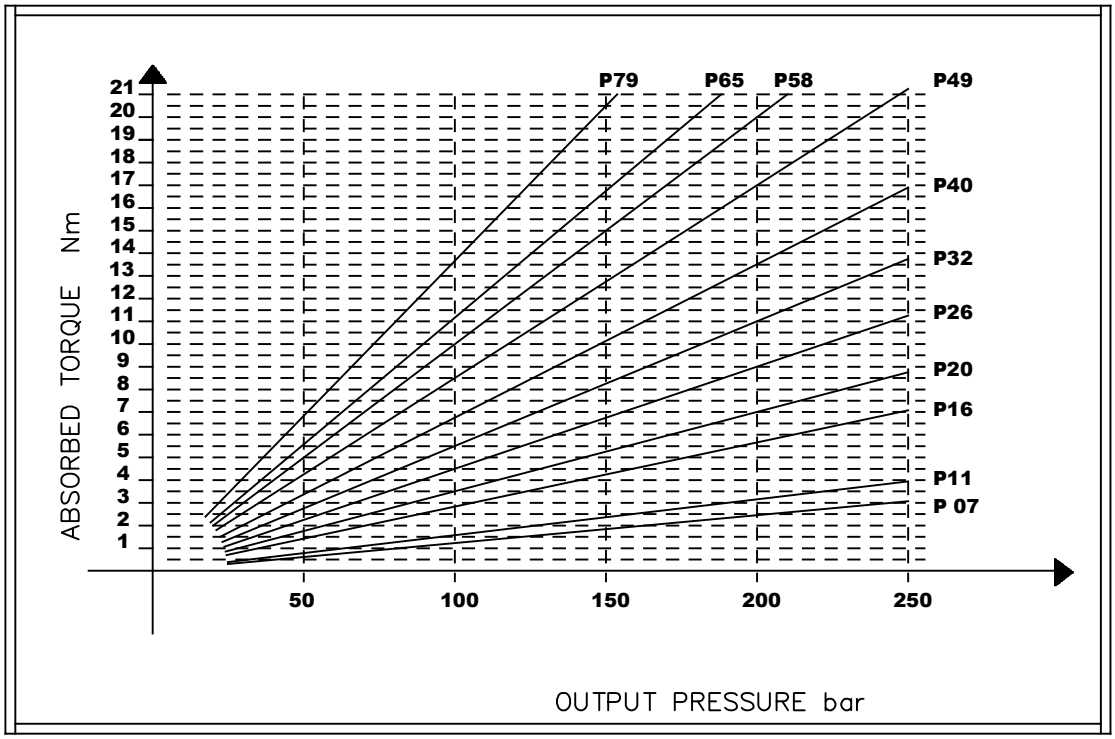


GROUP 1 PUMPS

FLOW CHARACTERISTICS CURVES



ABSORBED TORQUE



NOTE

Above flow characteristics curves have been made considering a volumetric efficiency of 95%

GROUP 1 PUMPS

PUMP CALCULATION

V	**Displacement**	**cc / rev**
Q	**Flow**	**l/min**
P	**Power**	**kW**
C	**Torque**	**N · m**
N	**Speed**	**rpm**
ΔP	**Pressure**	**bar**
n_v	**Volumetric efficiency**	**0.95**
n_m	**Mechanical efficiency**	**0.9**
n_t	**Total efficiency**	**0.85**

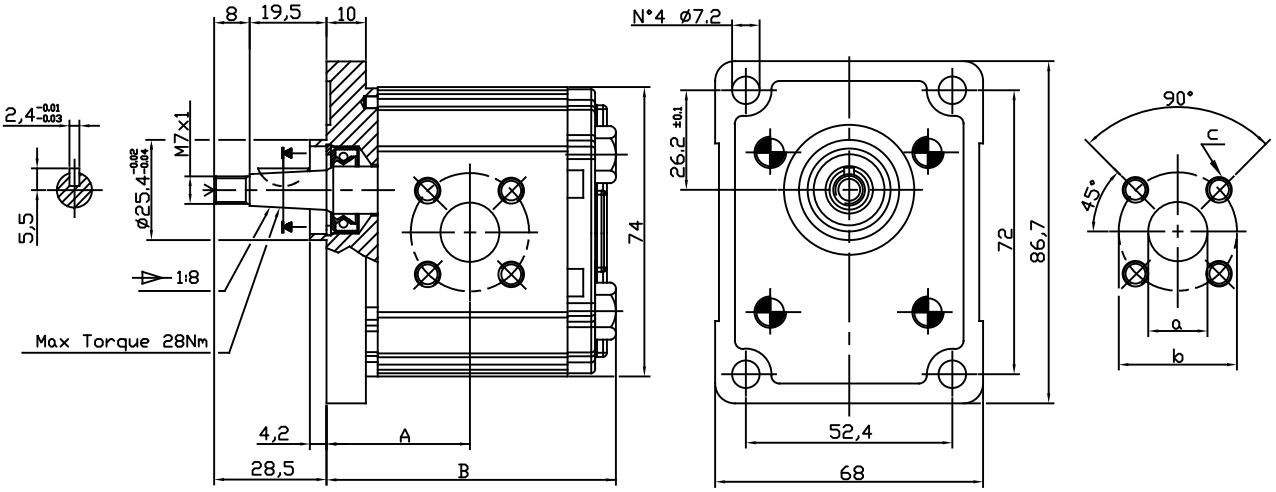
$$Q = \frac{V_v \cdot n \cdot N}{10^3} \quad l/min$$

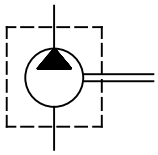
$$C = \frac{\Delta P \cdot V}{62.8 \cdot n_m} \quad N \cdot m$$

$$P = \frac{\Delta P \cdot V \cdot N}{612000 \cdot n_t} \quad kW$$

GROUP 1 PUMPS - EUROPEAN STANDARD

VERSION: B18 P1





Port	a	b	c
	mm	mm	Thread
Outlet	13	30	M6x12
Inlet	13	30	M6x12

Type	Displacement (cc/rev)	Max working pressure P1 (bar)	Peak pressure P3 (bar)	Max speed (r.p.m)	Dimension A (mm)	Dimension B (mm)	Absorbed torque at 150 bar (Nm)	Code (Anti-clockwise)	Code (Clockwise)
OT 100 P07	0.73	200	240	5000	31.30	64.5	1.8	PS1007081S	PS1007081D
OT 100 P11	1.05	250	290	5000	31.90	65.6	2.4	PS1007082S	PS1007082D
OT 100 P16	1.45	260	300	5000	32.75	67.3	4.2	PS1007083S	PS1007083D
OT 100 P20	1.80	260	300	5000	33.45	68.7	5.2	PS1007084S	PS1007084D
OT 100 P25	2.45	260	300	5000	34.50	70.8	6.7	PS1007085S	PS1007085D
OT 100 P32	3.05	260	300	5000	35.50	72.8	8.3	PS1007086S	PS1007086D
OT 100 P40	3.80	260	300	4500	36.90	75.6	10.1	PS1007087S	PS1007087D
OT 100 P49	4.70	240	280	4500	38.45	78.7	12.7	PS1007088S	PS1007088D
OT 100 P58	5.55	200	240	4000	40.00	81.8	15.0	PS1007089S	PS1007089D
OT 100 P65	6.25	190	230	3750	41.25	84.3	16.8	PS1007090S	PS1007090D
OT 100 P79	7.60	170	220	3500	43.60	89.0	20.5	PS1017091S	PS1017091D

EXAMPLE OF ORDERING CODE

OT100 P 20 S / B 18 P1

- OT100 — Series
- P — Pump
- 20 — Displacement (see above table)
- S — Rotation: S Anti-clockwise, D Clockwise
- B — Body for European flanges
- 18 — Taper shaft (1:8)
- P1 — European standard flange

AVAILABLE FOR QUANTITIES