

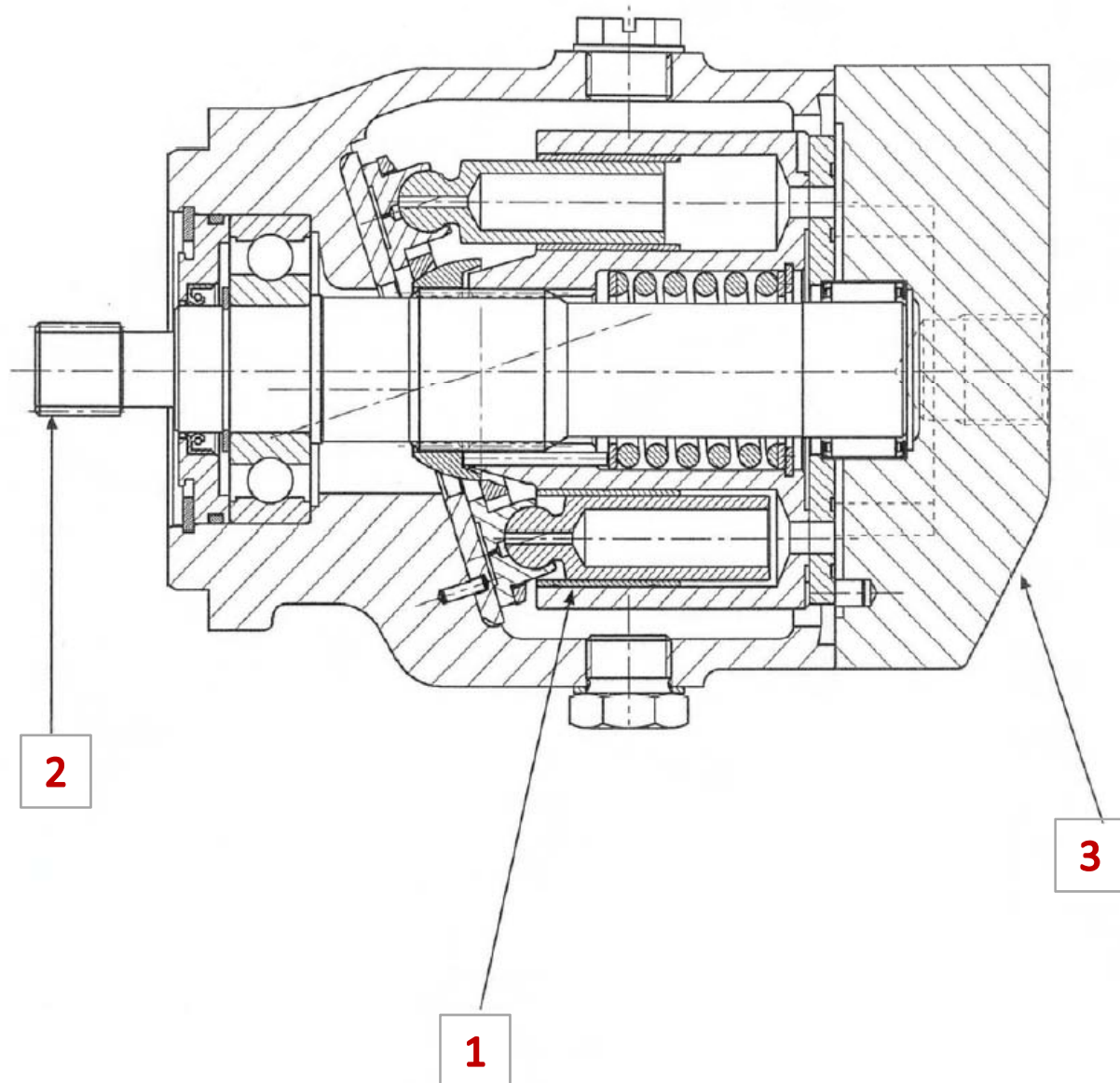


M MOTORS



M3 MOTOR.

HOW TO ORDER "M0"



ORDER CODE

| | | | | | |
|-----------|-----------|-----------|-----------|-----------|-----------|
| M3 | 65 | S4 | 02 | 00 | 00 |
| | 1 | 2 | 3 | 4 | 5 |

| 1 | CILINDRATA | DISPLACEMENT |
|----------|-----------------------------|----------------------------|
| 40 | 41,44 cm ³ /giro | 41,44 cm ³ /rev |
| 45 | 44,34 cm ³ /giro | 44,34 cm ³ /rev |
| 50 | 49,57 cm ³ /giro | 49,57 cm ³ /rev |
| 55 | 57,01 cm ³ /giro | 57,01 cm ³ /rev |
| 60 | 60,79 cm ³ /giro | 60,79 cm ³ /rev |
| 65 | 64,60 cm ³ /giro | 64,60 cm ³ /rev |

| 2 | ALBERO | SHAFT |
|----------|---|---|
| S3 | Scanalato SAE "B" Z = 13/32 D.P. | SAE "B" Z = 13/32 D.P. splined shaft |
| S4 | Scanalato SAE "B" Z = 13/32 D.P. (standard) | SAE "B" Z = 13/32 D.P.(standard)splined shaft |

| 3 | ATTACCHI | CONNECTIONS |
|----------|-----------------------|--------------------|
| 02 | Laterali | Side |
| 04 | Posteriori | Rear |
| 05 | Laterali e posteriori | Side and rear |

| 4 | OPTIONALS | OPTIONS |
|----------|--------------------|-----------------|
| 00 | Senza optional | Without options |
| VS | Valvola di scambio | Purge valve |

| 5 | ESECUZIONI SPECIALI | SPECIAL EXECUTIONS |
|----------|---|---------------------------------------|
| 00 | Esecuzione standard (filetti 3/4" gas) | Standard execution (1/2" gas threads) |
| FS | Flange SAE (per quantità) | SAE flanges (for quantities) |
| FU | Filetti UNF + O-ring (per quantità) | UNF threads (for quantities) |
| ES | Esecuzione speciale | Special execution |

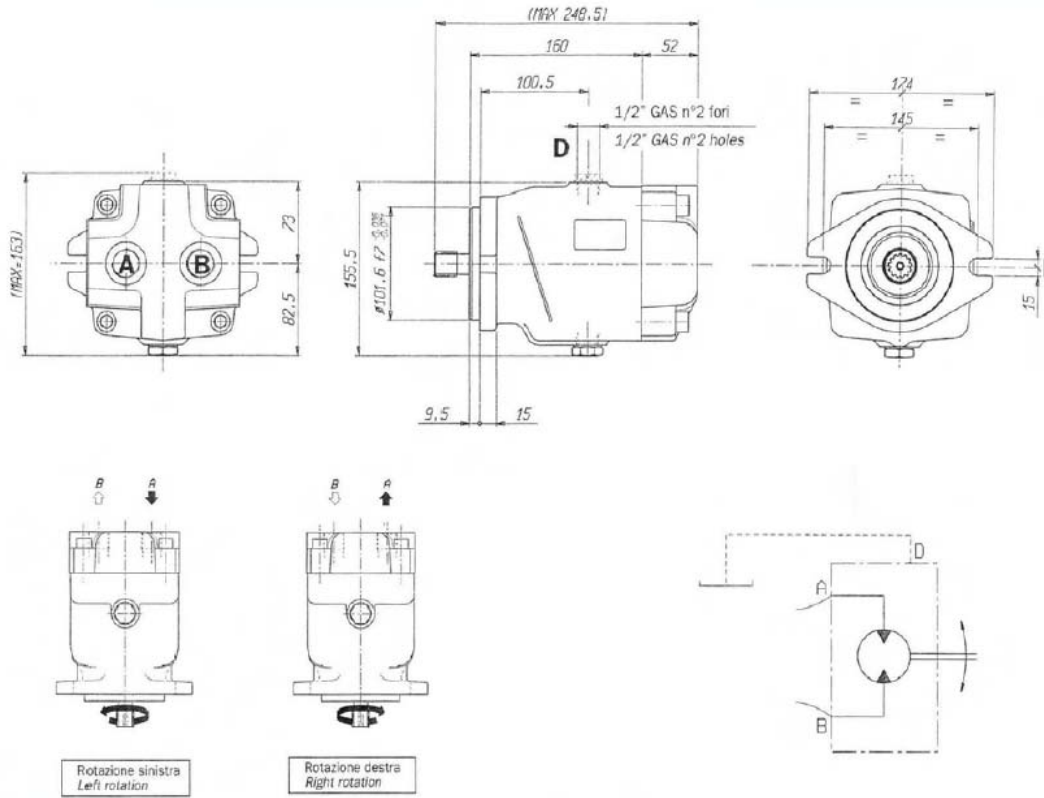
EXAMPLE OF ORDER CODE

M3 60 S4 04 VS 00

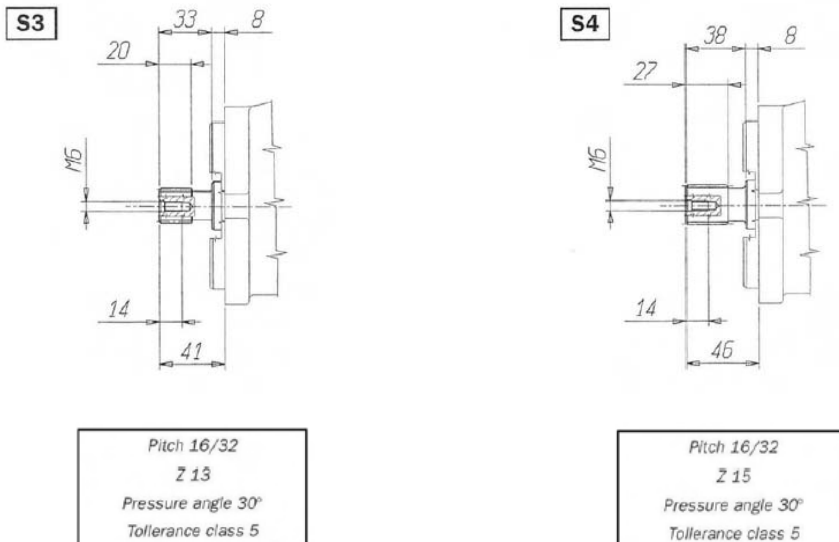
Order for motor 60,8 cm³/rev.,
splined shaft Z15,
rear connections,
purge valve,
threads 3/4 gas.



“M3” MOTORS

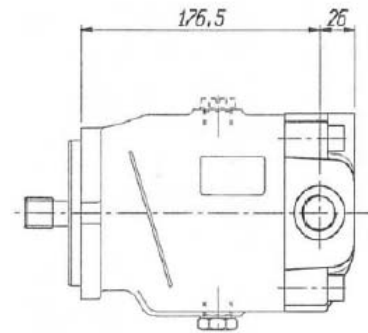
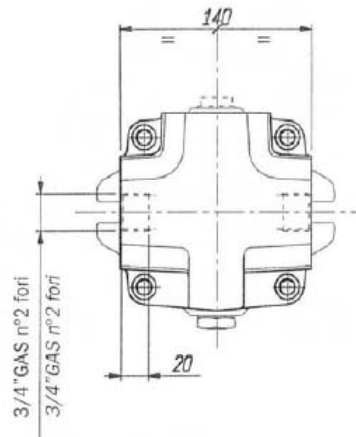


SHAFT

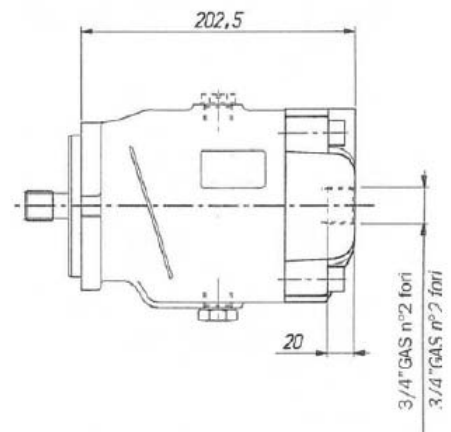
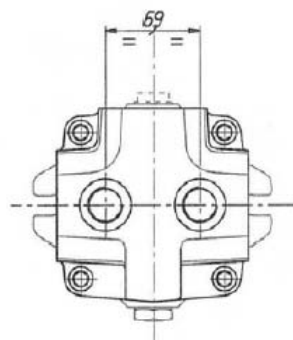


CONNECTIONS

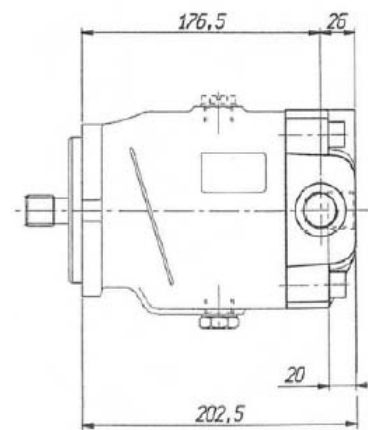
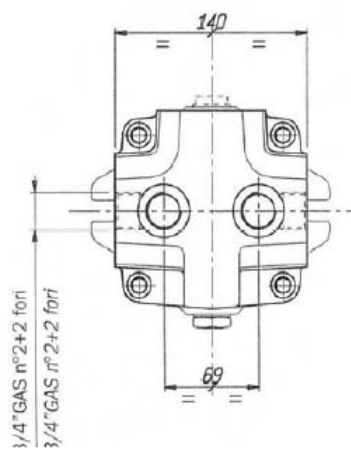
02 Attacchi laterali
Lateral connection



04 Attacchi posteriori
Rear connection

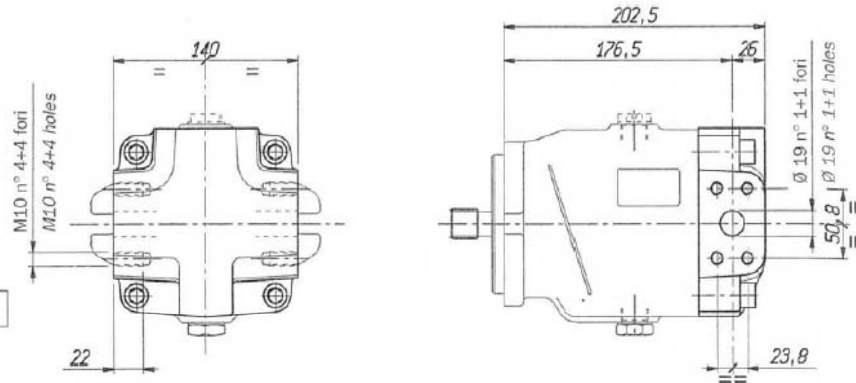


05 Attacchi laterali + posteriori
Lateral + Rear connection

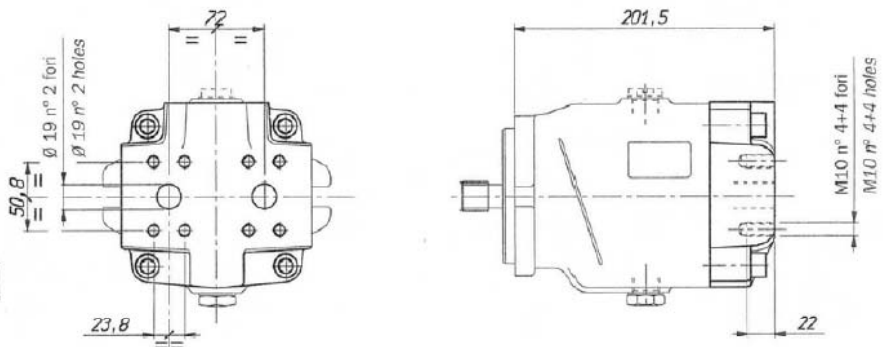


SAE FS FLANGE CONNECTIONS

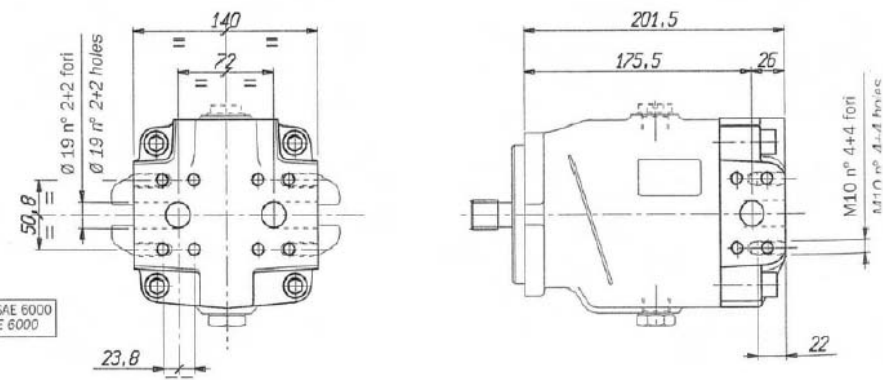
02 Attacchi laterali 3/4" SAE 6000
Lateral connection 3/4" SAE 6000



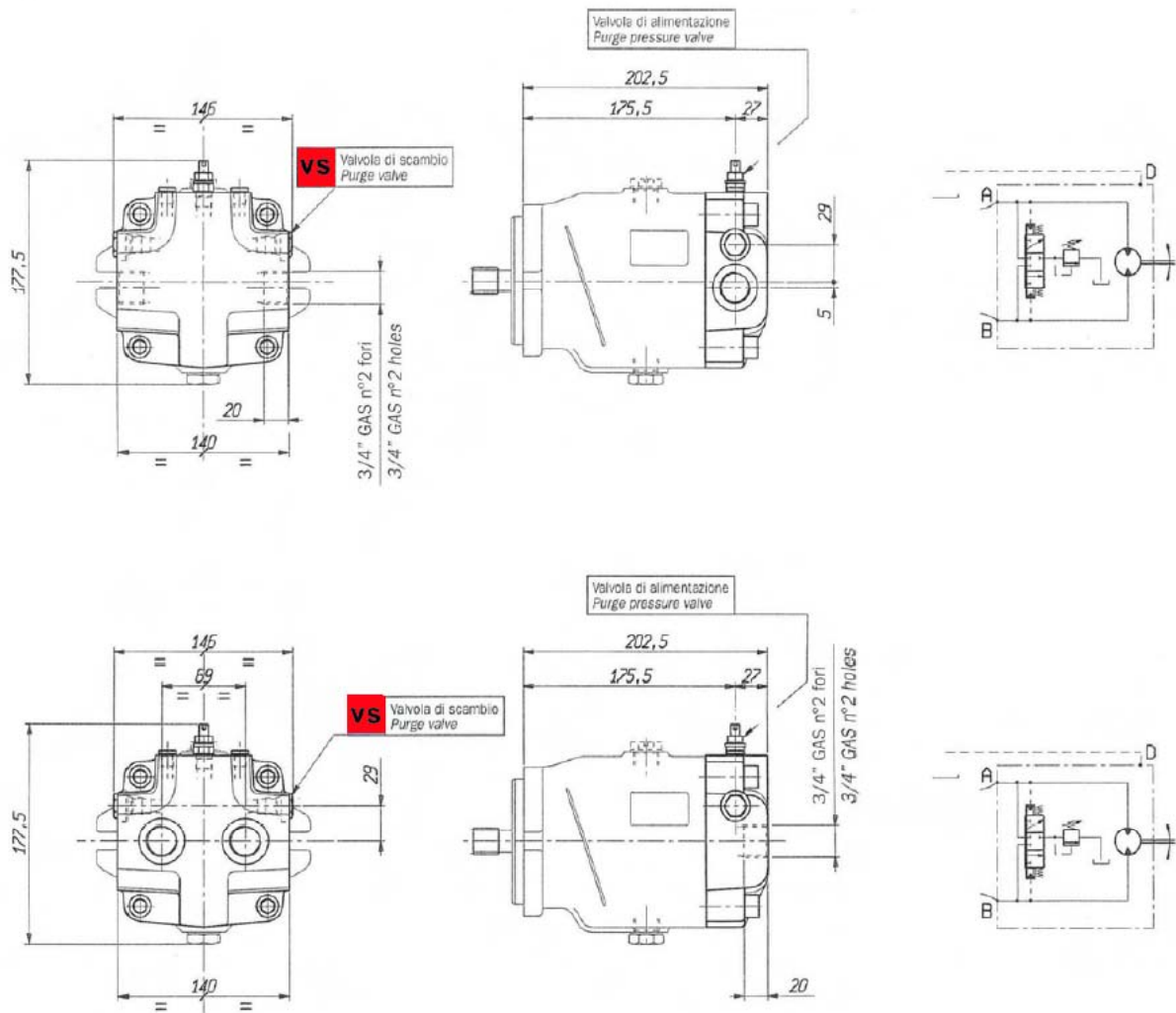
04 Attacchi posteriori 3/4" SAE 6000
Rear connection 3/4" SAE 6000



05 Attacchi laterali + posteriori 3/4" SAE 6000
Lateral + rear connection 3/4" SAE 6000

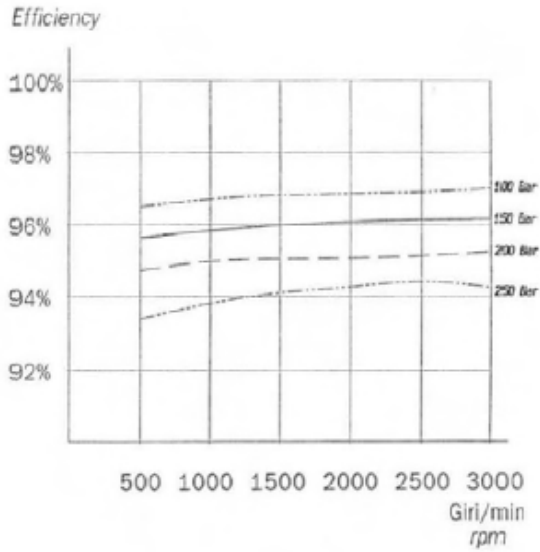


OPTIONS

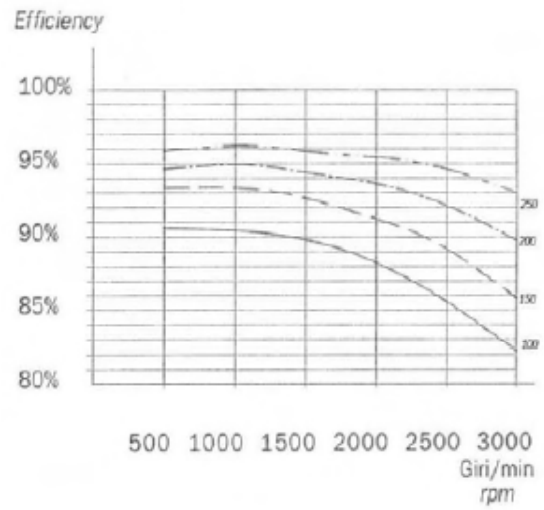


MOTOR PERFORMANCE CURVES

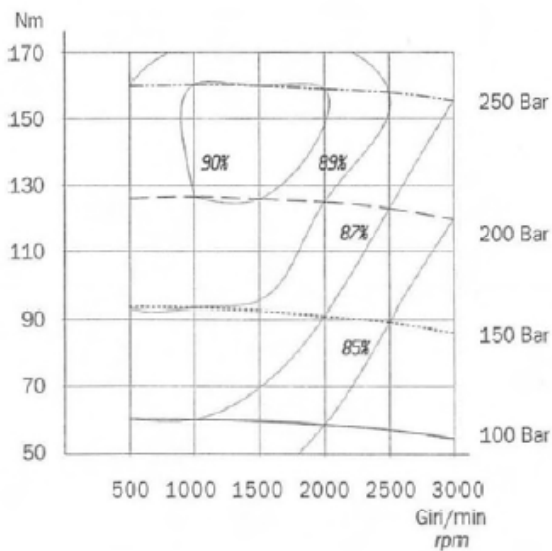
VOLUMETRIC EFFICIENCY



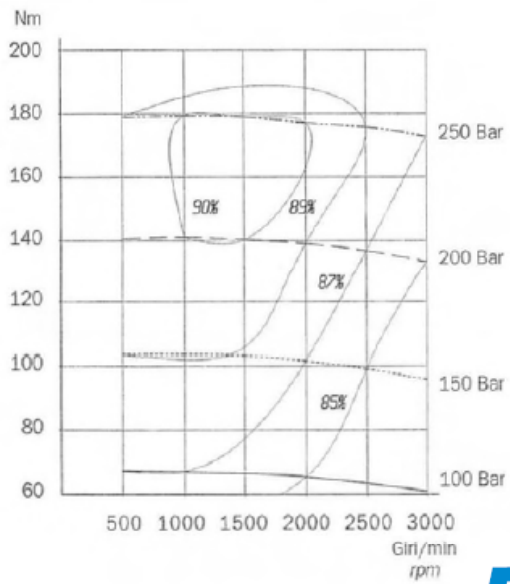
MECHANICAL EFFICIENCY



M0-07 MOTOR TOTAL EFFICIENCY

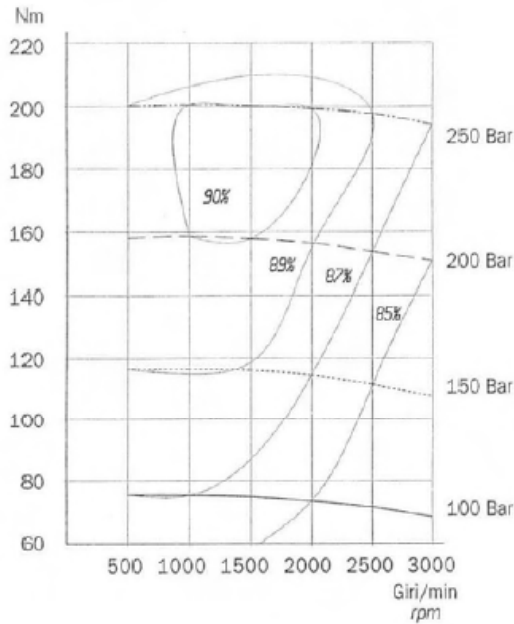


M0-09 MOTOR EFFICIENCY

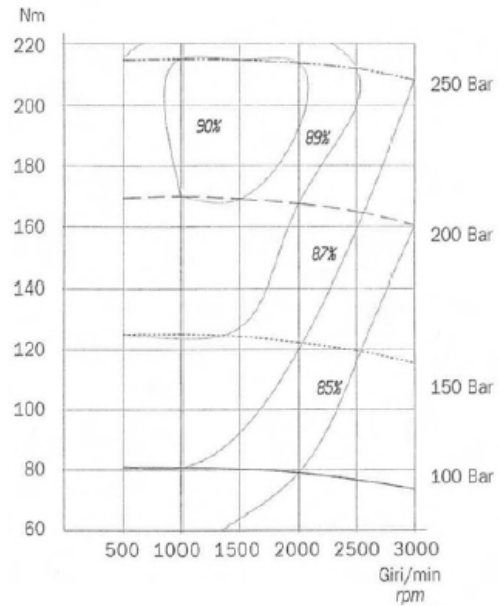


MOTOR PERFORMANCE CURVES

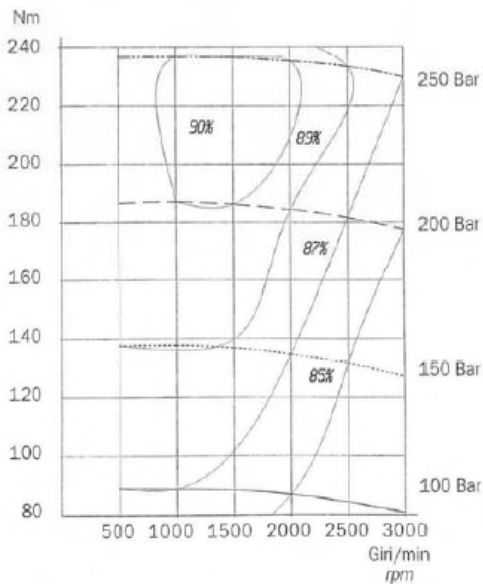
M3-50 MOTOR TOTAL EFFICIENCY



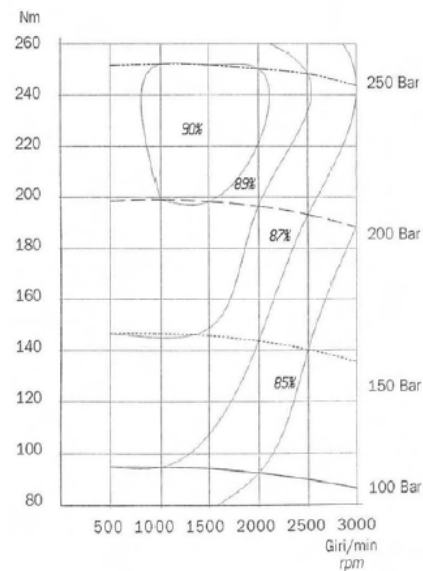
M3-55 MOTOR TOTAL EFFICIENCY



M3-60 MOTOR TOTAL EFFICIENCY



M3-65 MOTOR EFFICIENCY



CALCULATION FORMULA FOR "M0" MOTORS BEARING LIFE

Rear bearing:

$$L_{HP} = \frac{16667}{n} \left[\frac{23100}{\sqrt{CP}} \right]^{3,33}$$

- p** = 3 ball bearing
- p** = 3,33 roller bearing
- K_A** = 9560 ball bearing
- K_A** = 17200 roller bearing
- L** = distance between flange and radial load (mm)
- n** = rotation speed (rpm)
- F_p** = internal radial load (N)
- R** = external radial load (N)
- α** = angle of external radial load (degrees)
- P_{in}** = input pressure (bar)
- P_{out}** = output pressure (bar)

| CA | CP |
|---------------------------------------|---------------------------------------|
| $(0,65F_p - R_x L_2)^2 + (R_y L_2)^2$ | $(0,35F_p - R_x L_1)^2 + (R_y L_1)^2$ |

| R _x | R _y | F _p | L ₁ | L ₂ |
|-----------------|-----------------|---------------------------|----------------|----------------|
| $R \cos \alpha$ | $R \sin \alpha$ | $0,64V_c(P_{in}+P_{out})$ | $0,1+0,007L$ | $1,1+0,007L$ |

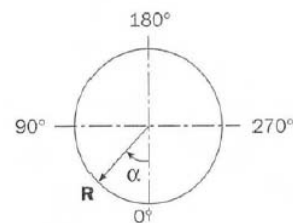
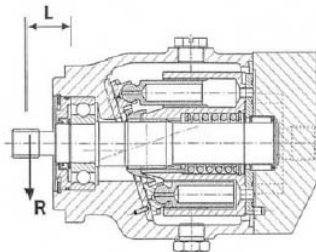
If the motor works at time intervals q_1, q_2, \dots, q_n with different values of rotation speed, working pressure and radial loads the above mentioned formulas calculate, for each intervals the fatigue life of each bearing (rear and front one). The following formula calculates each bearing's total life for the whole motor's working cycle.

$$L_H = \frac{100}{\frac{q_1}{L_{H1}} + \frac{q_2}{L_{H2}} + \dots + \frac{q_n}{L_{Hn}}}$$

When:

q_1, q_2, \dots, q_n (%) = percentages of the considered cycle when the motor works in constant conditions.

$L_{H1}, L_{H2}, \dots, L_{Hn}$ (hours) = life of each bearing referring to intervals q_1, q_2, \dots, q_n



WARNING

*When operating always pay maximum attention to moving machine parts; do not wear loose fitting clothing.
Do not approach wheels, tracks, chain or shaft drives if they are moving and not properly protected, or if they could start moving suddenly and without any warning.
Do not unscrew or disconnect connectors and pipes if the engine is operating.
Avoid oil leaks in order to prevent environmental pollution.*

Poclain Hydraulics relieves itself from all and any responsibilities concerning non compliance with these instructions and observance of safety rules in force, even if not provided for in this manual.

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