



**GEAR PUMPS**

**GROUP 2.5**

**MODEL MGP**

**SERIES K**

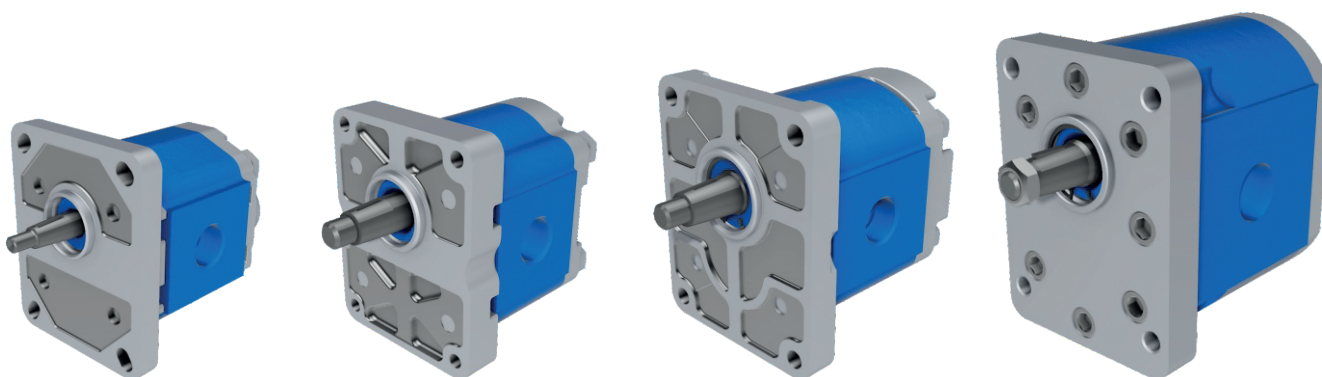
[WWW.OLEODINAMICAMOZIONI.IT](http://WWW.OLEODINAMICAMOZIONI.IT)

GEAR PUMPS SERIES "K" MANUFACTURED BY OLEODINAMICA MOZIONI ARE THE MOST USED IN HYDRAULIC UNITS IN THE HYDRAULIC SYSTEMS OF MOBILE MACHINES AND CONFORM TO INTERNATIONAL STANDARDS.

WE USE THE ADVANCED WORLD'S CONCEPTS – IMPROVING THE TECHNICAL CHARACTERISTICS OF THE PRODUCT, USE ONLY HIGH QUALITY MATERIALS AND HARDWARE MANUFACTURERS OF THE WORLD AT ALL STAGES OF DESIGN AND PRODUCTION. THE QUALITY MANAGEMENT SYSTEM CONFORMS INTERNATIONAL STANDARD ISO 9001: 2008.

GEAR PUMPS SERIES "K" OF OLEODINAMICA MOZIONI HAVE HIGH VOLUMETRIC AND MECHANICAL EFFICIENCY, LOW NOISE AND OPERATE RELIABLY IN A VARIETY HYDRAULIC SYSTEMS AND MOBILE MACHINERY.

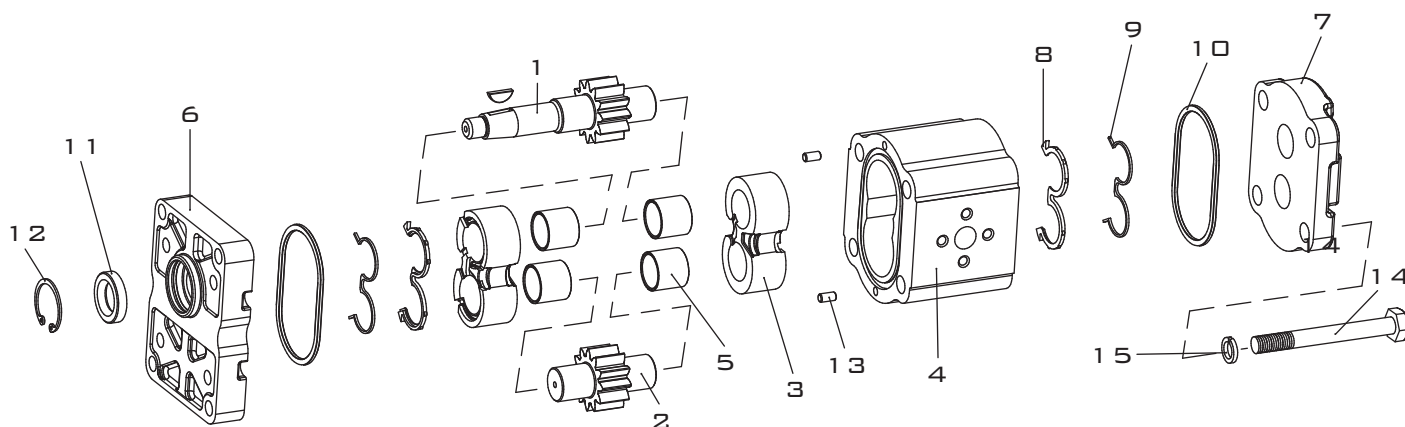
- DIMENSIONS OF THE PUMPS ARE ACCORDING TO INTERNATIONAL STANDARDS SAE, DIN, EUROPEAN.
- GEAR PUMPS ARE SUPPLIED IN NEXT GROUPS: MGP1K, MGP2K, MGP2.5K, MGP3K WITH DISPLACEMENTS FROM 1 TO 90 CM<sup>3</sup>/REV.
- MAXIMUM CONTINUOUS PRESSURE UP TO 250 BAR.
- MOUNTING FLANGES AND REAR COVERS ARE PRODUCED WITH ALUMINIUM OR CAST IRON.
- BUILT-IN VALVES IN REAR COVER.
- MULTIPLE UNITS AVAILABLE WITH SEPARATED OR COMMON INLET FOR STAGES.
- PUMPS WITH BEARING SUPPORT FOR HEAVY DUTY APPLICATIONS.



GEAR PUMPS SERIES "K" ARE MANUFACTURED WITH THRU-BOLT OF ROLLED ALUMINIUM, MOUNTING FLANGES AND REAR COVERS EITHER IN ALUMINIUM OR IN CAST IRON FOR MOBILE MACHINES, WHERE THERE ARE INCREASED REQUIREMENTS FOR THE NOISE LEVEL.

GEAR PUMPS SERIES "K" HAVE HIGH ANTI-FRICTION AND STRENGTH CHARACTERISTICS. THE SEALS REDUCE INTERNAL FLOW OF THE FLUID AND TO ACHIEVE A HIGH VOLUMETRIC EFFICIENCY.

1. DRIVE SHAFT
2. DRIVEN SHAFT
3. BEARING HOUSING
4. BODY
5. SLIDE BEARING
6. MOUNTING FLANGE
7. REAR COVER
8. COMPENSATION SEAL
9. ANTI-EXTRUSION PLATE
10. SEALING RING
11. SHAFT SEAL
12. STOP RING
13. CENTERING PIN
14. SCREW
15. WASHER

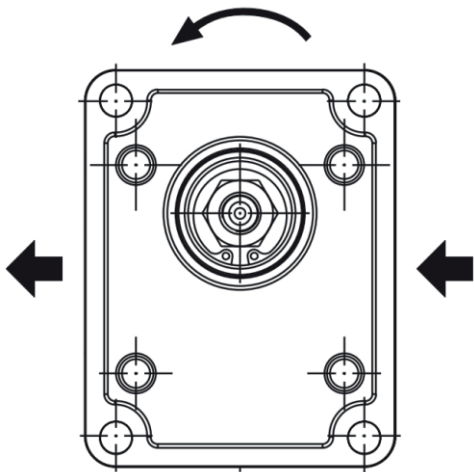


WORKING CONDITIONS

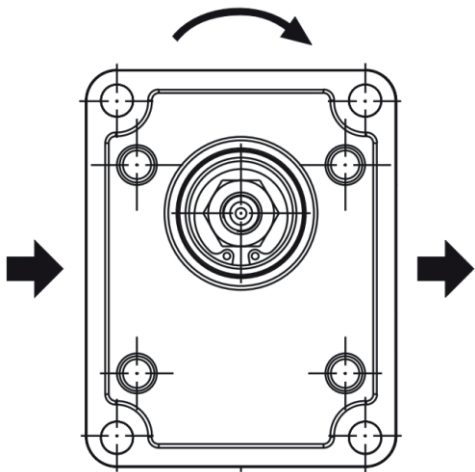
|                                                          |                                    |
|----------------------------------------------------------|------------------------------------|
| INLET PRESSURE (MAX.)                                    | 0.5 – 2.5 BAR                      |
| MIN. OPERATING FLUID VISCOSITY                           | 10 MM <sup>2</sup> /SEC            |
| MAX. STARTING VISCOSITY (COLD START)                     | 1000 MM <sup>2</sup> /SEC          |
| FLUID VISCOSITY RECOMMENDED RANGE                        | 17 – 65 MM <sup>2</sup> /SEC       |
| FLUID OPERATING TEMPERATURE RANGE WITH NBR SEALS         | -40 + 100 °C                       |
| FLUID OPERATING TEMPERATURE RANGE WITH FPM SEALS (VITON) | -20 + 170 °C                       |
| HYDRAULIC FLUID                                          | MINERAL OIL                        |
| CONTAMINATION CLASS ISO 4406                             | 18/15 (>200 BAR), 19/16 (<200 BAR) |
| CONTAMINATION CLASS NAS 1638                             | 9 (>200 BAR), 10 (<200 BAR)        |
| ACHIEVED WITH FILTER β <sub>x</sub> =75                  | 15 μM (>200 BAR), 25 μM (<200 BAR) |

DEFINITION OF ROTATION DIRECTION  
LOOKING ON THE DRIVE SHAFT

COUNTERCLOCKWISE ROTAION

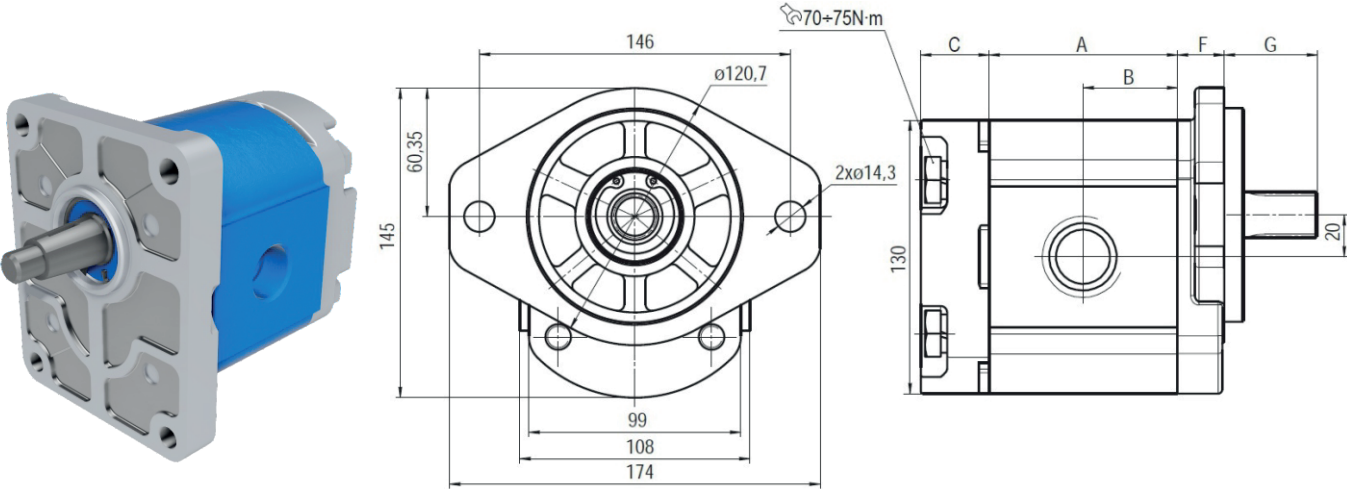


CLOCKWISE ROTAION



TECHNICAL DATA AND INSTALLATION DIMENSIONS

| TYPE                                                                        | MGP2.5K16 | MGP2.5K19 | MGP2.5K20 | MGP2.5K23 | MGP2.5K25 | MGP2.5K28 | MGP2.5K30 | MGP2.5K32 | MGP2.5K36 | MGP2.5K37 | MGP2.5K38 | MGP2.5K40 | MGP2.5K45 |
|-----------------------------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| DISPLACEMENT, CM <sup>3</sup> /REV                                          | 16,0      | 19,0      | 20,0      | 23,0      | 25,0      | 28,0      | 30,0      | 32,0      | 36,0      | 37,0      | 38,0      | 40,0      | 45,0      |
| DIMENSION A, MM                                                             | 71,8      | 75,0      | 76,2      | 79,5      | 81,7      | 85,0      | 87,3      | 89,5      | 94,0      | 95,0      | 96,0      | 98,0      | 104       |
| DIMENSION B, MM                                                             | 35,9      | 37,5      | 38,1      | 39,8      | 40,9      | 42,5      | 43,7      | 44,8      | 47,0      | 47,5      | 48,0      | 49,0      | 51,8      |
| MAX. CONTINUOUS PRESSURE P <sub>1</sub> , BAR                               | 250       |           |           |           |           |           |           | 230       |           | 200       |           | 170       |           |
| MAX. INTERMITTENT PRESSURE P <sub>2</sub> , BAR                             | 280       |           |           |           |           |           |           | 250       |           | 220       |           | 190       |           |
| PEAK PRESSURE P <sub>3</sub> , BAR                                          | 300       |           |           |           |           |           |           | 260       |           | 240       |           | 210       |           |
| MAX. SPEED N <sub>MAX</sub> , MIN <sup>-1</sup>                             | 3000      |           |           |           |           |           |           |           |           | 2750      |           | 2500      |           |
| MIN. SPEED AT P <sub>1</sub> ≤100 BAR, N <sub>MIN</sub> , MIN <sup>-1</sup> | 700       |           |           |           | 600       |           |           |           |           | 500       |           |           |           |
| WEIGHT*, KG                                                                 | 4,8       | 4,9       | 5,0       | 5,1       | 5,2       | 5,3       | 5,5       | 5,6       | 5,8       | 5,8       | 5,9       | 6,0       | 6,2       |



DIMENSION G SEE AT SECTION “DRIVE SHAFTS”  
 DIMENSION F SEE AT SECTION “MOUNTING FLANGES”  
 DIMENSION C SEE AT SECTION “REAR COVERS”

\* – WEIGHT SPECIFIED FOR PUMPS WITH ALUMINUM COVERS.  
 WEIGHT FOR PUMPS WITH CAST IRON COATINGS MUST BE CLARIFY.

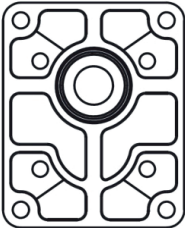
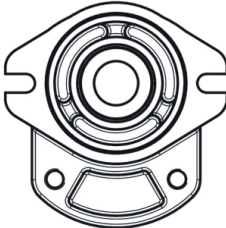
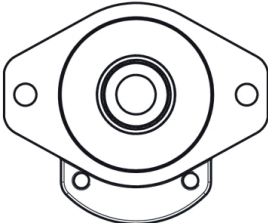
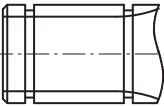
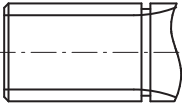
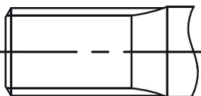
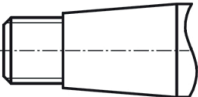
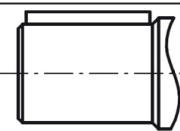


POMPE AD INGRANAGGI

MGP2.5

GEAR PUMPS  
GROUP 2.5

COMBINATIONS OF MOUNTING FLANGES & SHAFTS

|                                                                                                                 |                                                                                                      |                                                                                               |                                                                                                     |                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| MGP2.5K                                                                                                         | <br>GSTU3-25-180-97 | <br>EUROPEAN | <br>SAE A 2 BOLTS | <br>SAE B 2 BOLTS |
| <br>GSTU 3-25-180-97           | A 2 03                                                                                               |                                                                                               |                                                                                                     |                                                                                                      |
| <br>GSTU 3-25-180-97         | A 3 03                                                                                               |                                                                                               |                                                                                                     |                                                                                                      |
| <br>SAE A SPLINED (10 TEETH) |                                                                                                      |                                                                                               | B 3 31                                                                                              |                                                                                                      |
| <br>SAE A SPLINED (11 TEETH) |                                                                                                      |                                                                                               | B 4 31                                                                                              |                                                                                                      |
| <br>SAE B SPLINED (13 TEETH) |                                                                                                      |                                                                                               |                                                                                                     | B 5 33                                                                                               |
| <br>EUROPEAN TAPERED 1:8     |                                                                                                      | G 3 63                                                                                        |                                                                                                     |                                                                                                      |
| <br>SAE B STRAIGHT 22,2      |                                                                                                      |                                                                                               |                                                                                                     | G 3 33                                                                                               |

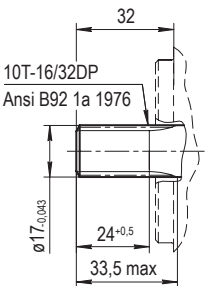
THIS COMBINATIONS OF MOUNTING FLANGES AND SHAFTS ARE USED TO SERIAL PRODUCTION. THE OTHER COMBINATIONS AND DATE OF PRODUCTION, BEFORE ORDERING CLARIFY WITH THE MANUFACTURER.

SEE ALSO: MGP1K  
MGP2K, MGP3K



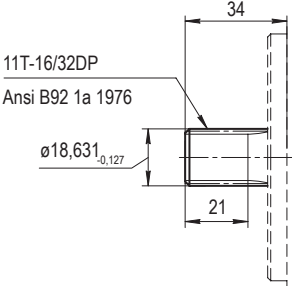
DRIVE SHAFTS

MAX. TORQUE 100



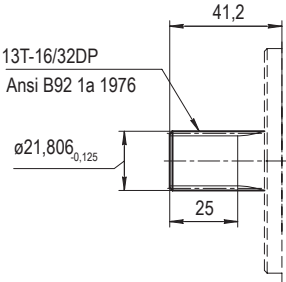
B3 – SAE A SPLINED (10 TEETH)

MAX. TORQUE 140



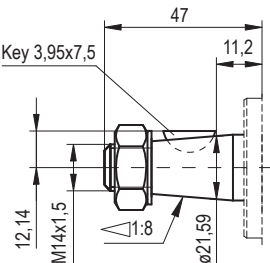
B4 – SAE A SPLINED (11 TEETH)

MAX. TORQUE 320



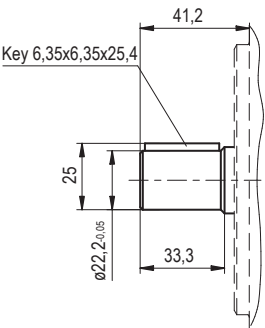
B5 – SAE B SPLINED (13 TEETH)

MAX. TORQUE 250



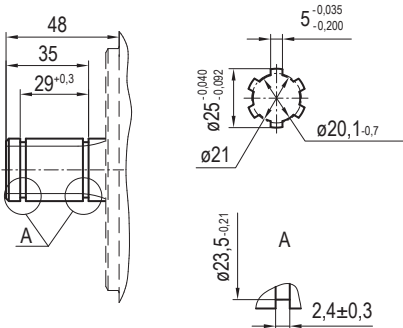
G3 – EUROPEAN TAPERED 1:8

MAX. TORQUE 220



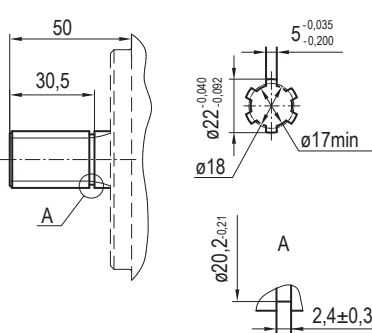
H3 – SAE B STRAIGHT 22,2

MAX. TORQUE 320 N·M



A2 – GSTU 3-25-180-97

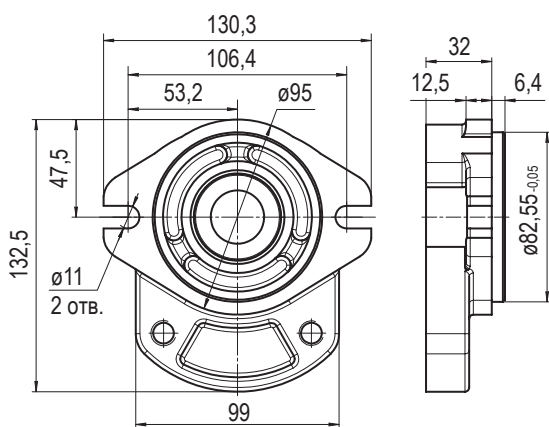
MAX. TORQUE 400 N·M



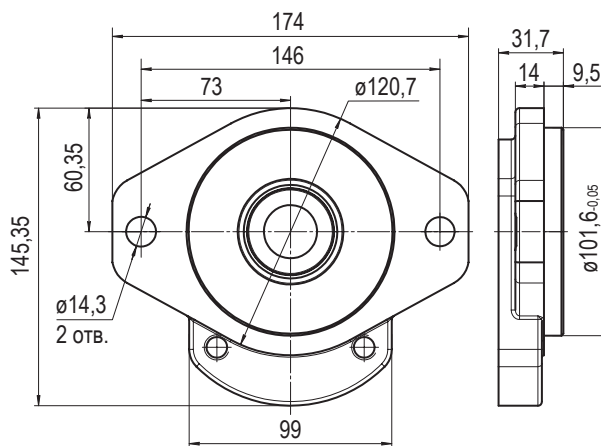
A3 – GSTU 3-25-180-97



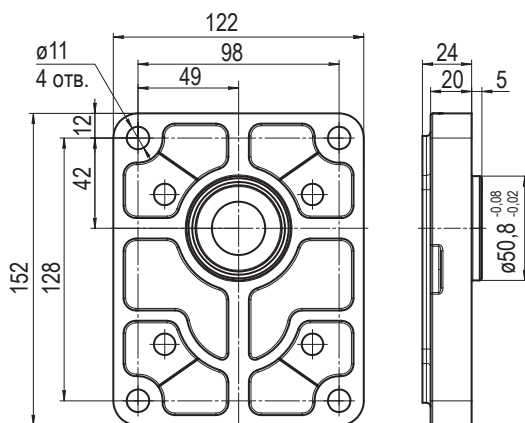
MOUNTING FLANGES



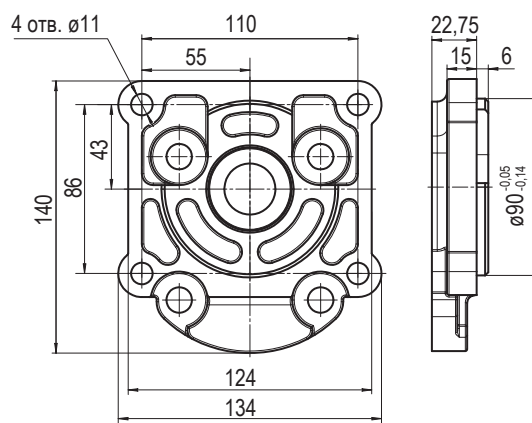
31 - SAE A 2 BOLTS



33 - SAE B 2 BOLTS

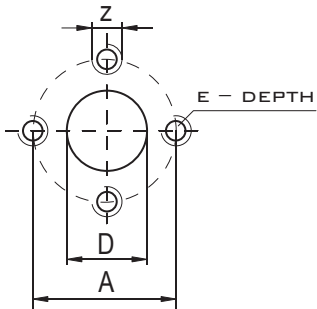


63 - EUROPEAN



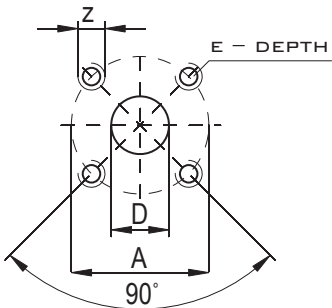
03 - GSTU 3-25-180-97

PORTS



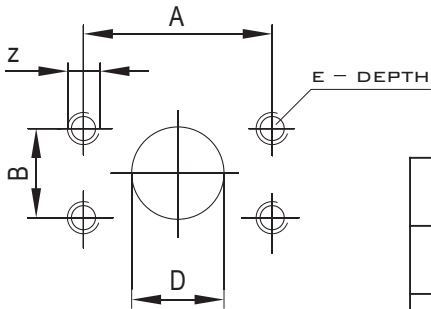
B – EUROPEAN FLANGE

| TYPE         | INLET |    |     |    | OUTLET |    |    |    |
|--------------|-------|----|-----|----|--------|----|----|----|
|              | D     | A  | Z   | E  | D      | A  | Z  | E  |
| MGP2.5K16÷20 | 19    | 40 | M8  | 13 | 13     | 30 | M6 | 13 |
| MGP2.5K23÷45 | 25    | 51 | M10 | 17 | 19     | 40 | M8 | 17 |



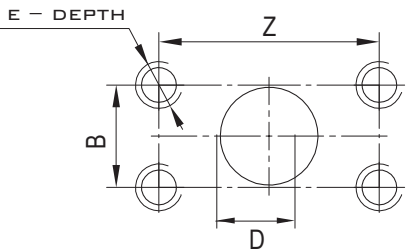
C – GERMAN FLANGE

| TYPE         | INLET |    |    |    | OUTLET |    |    |    |
|--------------|-------|----|----|----|--------|----|----|----|
|              | D     | A  | Z  | E  | D      | A  | Z  | E  |
| MGP2.5K16÷45 | 25    | 55 | M8 | 17 | 19     | 55 | M8 | 17 |



D – SAE FLANGE (UNC)

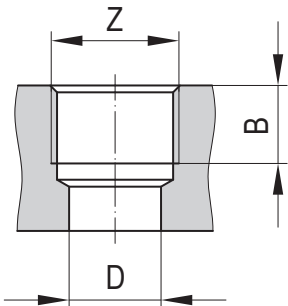
| TYPE         | INLET |      |      |               |    | OUTLET |      |      |               |    |
|--------------|-------|------|------|---------------|----|--------|------|------|---------------|----|
|              | D     | A    | B    | Z             | E  | D      | A    | B    | Z             | E  |
| MGP2.5K16÷45 | 25    | 52,4 | 26,2 | 3/8 16<br>UNC | 16 | 19     | 47,6 | 22,2 | 3/8 16<br>UNC | 14 |



W – SAE FLANGE (METRIC)

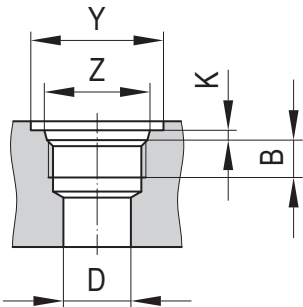
| TYPE         | INLET |      |      |     |    | OUTLET |      |      |     |    |
|--------------|-------|------|------|-----|----|--------|------|------|-----|----|
|              | D     | A    | B    | Z   | E  | D      | A    | B    | Z   | E  |
| MGP2.5K16÷45 | 25    | 52,4 | 26,2 | M10 | 16 | 19     | 47,6 | 22,2 | M10 | 16 |

PORTS



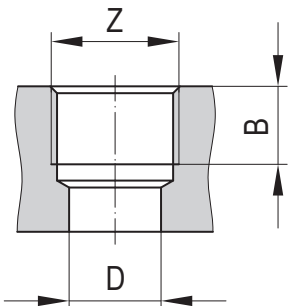
E – METRIC THREADED

| TYPE         | INLET |    |    | OUTLET  |    |    |
|--------------|-------|----|----|---------|----|----|
|              | Z     | B  | D  | Z       | B  | D  |
| MGP2.5K16÷23 | M27x2 | 19 | 22 | M22x1,5 | 16 | 18 |
| MGP2.5K25÷45 | M33x2 | 21 | 25 | M27x2   | 19 | 22 |



F – SAE THREADED

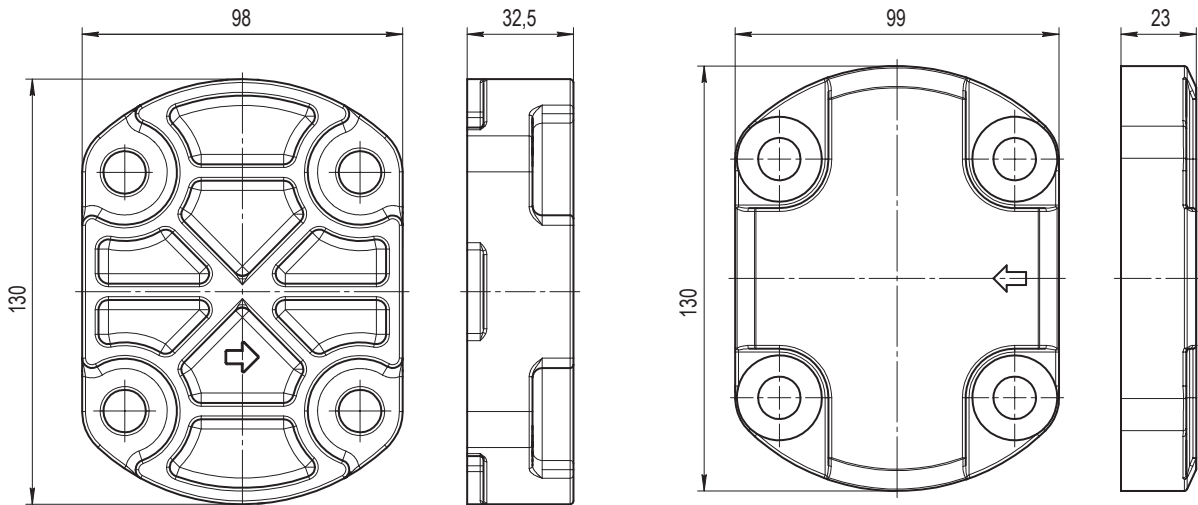
| TYPE         | INLET                 |    |    |    |     | OUTLET                |    |    |    |     |
|--------------|-----------------------|----|----|----|-----|-----------------------|----|----|----|-----|
|              | Z                     | B  | D  | Y  | K   | Z                     | B  | D  | Y  | K   |
| MGP2.5K16÷23 | 1 1/16-12 UN (SAE#12) | 19 | 20 | 42 | 3,3 | 7/8-14 UNF (SAE#10)   | 19 | 15 | 32 | 2,5 |
| MGP2.5K25÷45 | 1 5/16-12 UN (SAE#16) |    | 23 | 51 |     | 1 1/16-12 UN (SAE#12) |    | 20 | 42 | 3,3 |



G – GAS THREADED

| TYPE         | INLET    |    |    | OUTLET   |    |    |
|--------------|----------|----|----|----------|----|----|
|              | Z        | B  | D  | Z        | B  | D  |
| MGP2.5K16÷23 | 3/4" GAS | 19 | 20 | 1/2" GAS | 16 | 13 |
| MGP2.5K25÷45 | 1" GAS   | 21 | 27 | 3/4" GAS | 19 | 20 |

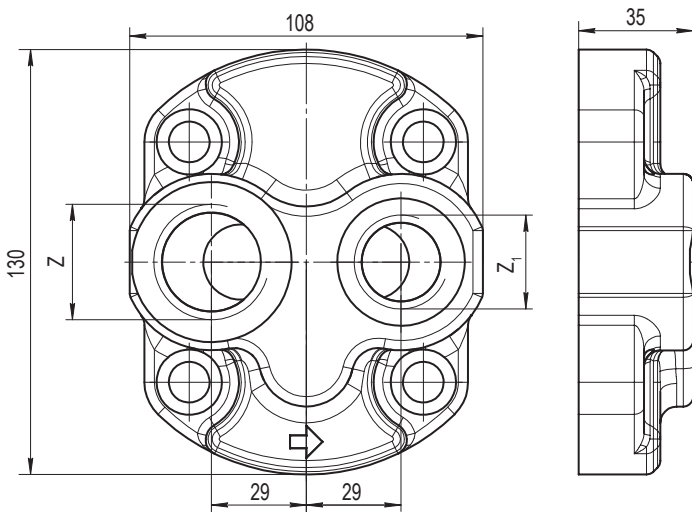
REAR COVERS



ALUMINIUM

CAST IRON

STANDART REAR COVERS



CAST IRON

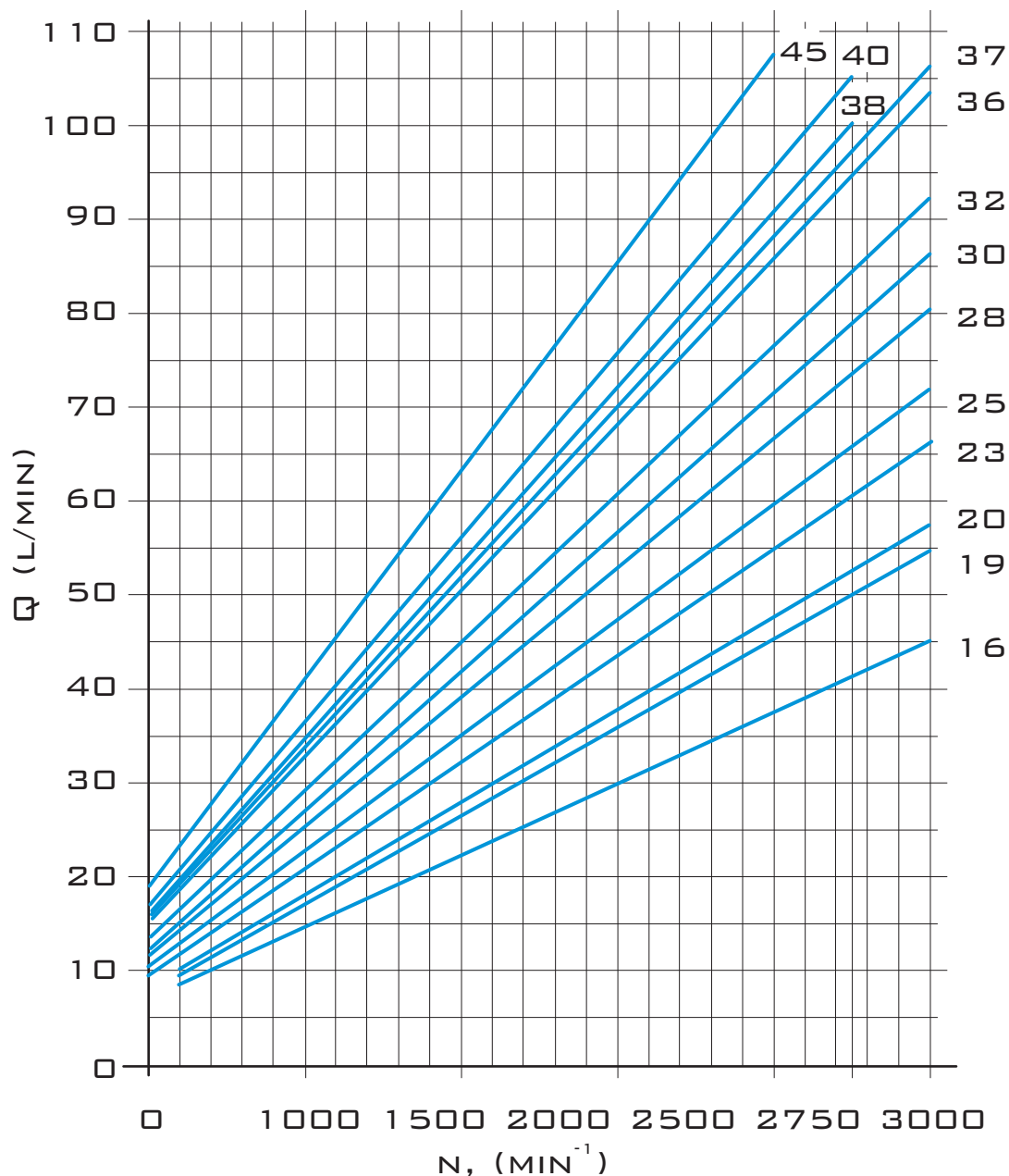
| TYPE             | INLET        | OUTLET         |
|------------------|--------------|----------------|
|                  | Z            | Z <sub>1</sub> |
| MGP2.5K<br>16÷23 | 3/4" GAS     | 1/2" GAS       |
| MGP2.5K<br>25÷45 | 1" GAS       | 3/4" GAS       |
| MGP2.5K<br>16÷23 | 1 1/16-12 UN | 7/8-14 UNF     |
| MGP2.5K<br>25÷45 | 1 5/16-12 UN | 1 1/16-12 UN   |

1 – REAR COVER WITH THREADED PORTS



CHARACTERISTIC CURVES

CHARACTERISTIC CURVES CARRIED OUT WITH OIL VISCOSITY AT 16 MM<sup>2</sup>/SEC,  
OIL TEMPERATURE AT 60 °C AND MAX. CONTINUOUS PRESSURES FOR EACH TYPE.

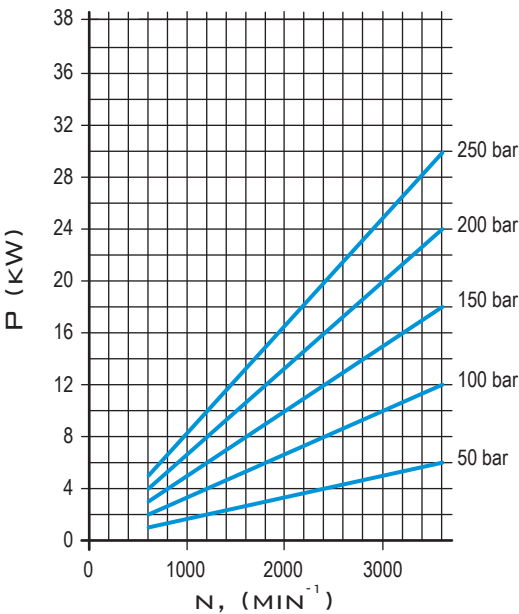




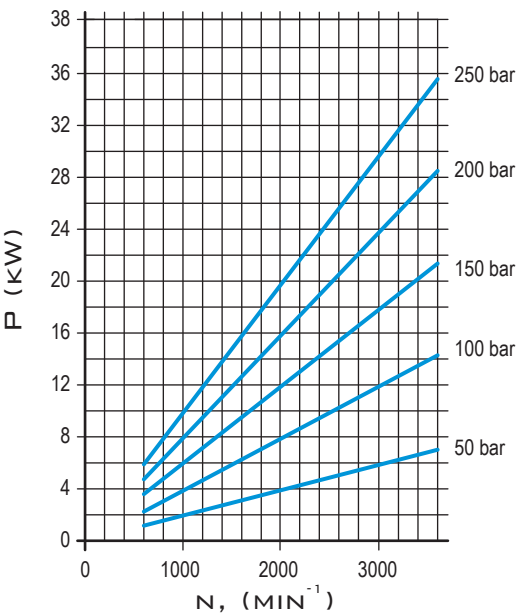
CHARACTERISTIC CURVES

CHARACTERISTIC CURVES CARRIED OUT WITH OIL VISCOSITY AT 16 MM<sup>2</sup>/SEC AND OIL TEMPERATURE AT 60 °C.

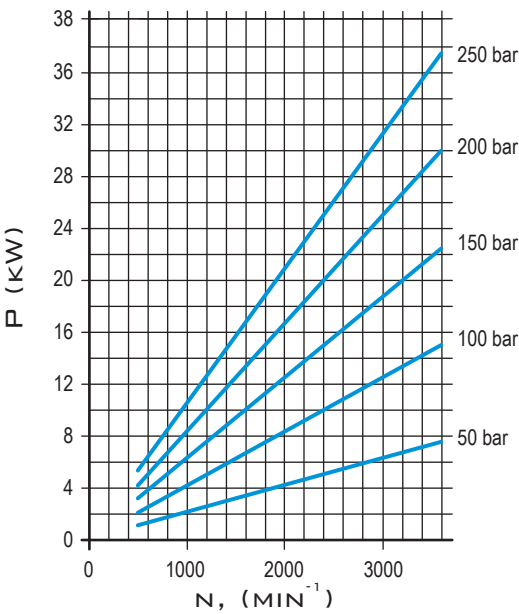
MGP2.5K16



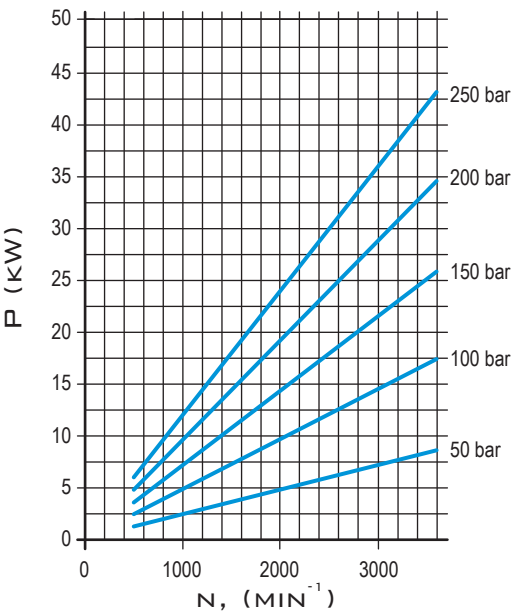
MGP2.5K19



MGP2.5K20



MGP2.5K23

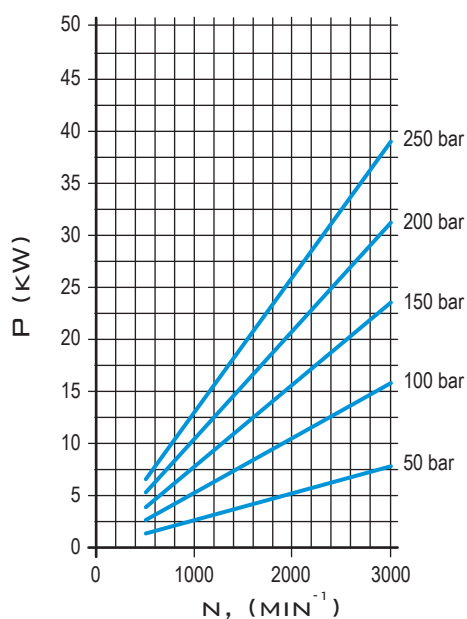




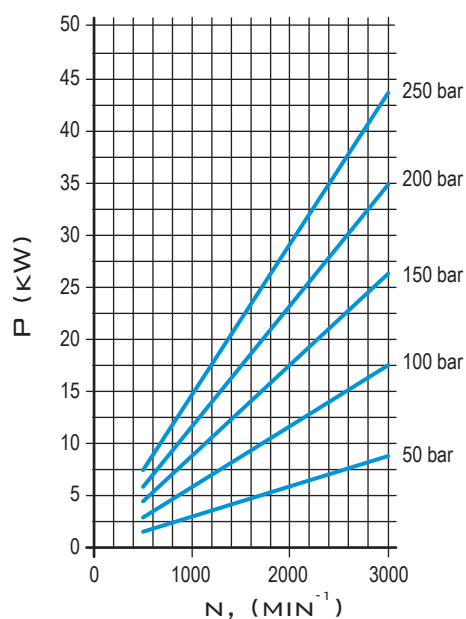
CHARACTERISTIC CURVES

CHARACTERISTIC CURVES CARRIED OUT WITH OIL VISCOSITY AT  $16 \text{ mm}^2/\text{SEC}$  AND OIL TEMPERATURE AT  $60^\circ\text{C}$ .

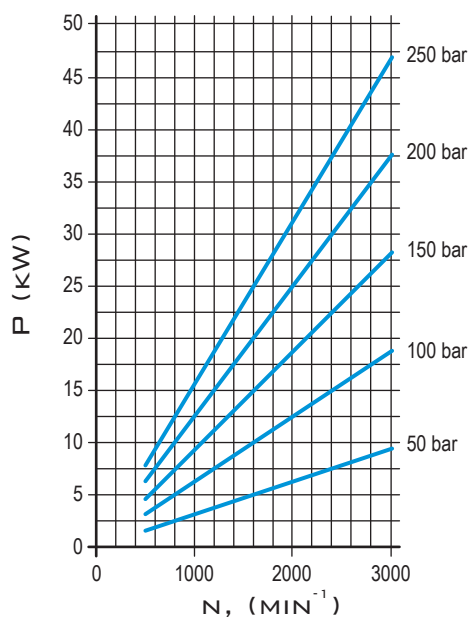
MGP2.5K25



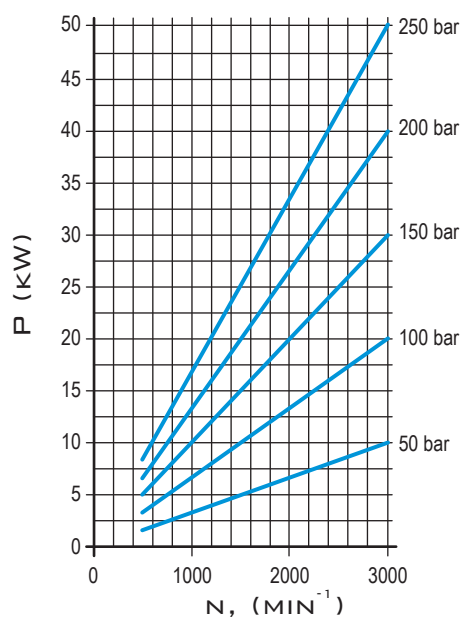
MGP2.5K28



MGP2.5K30



MGP2.5K32

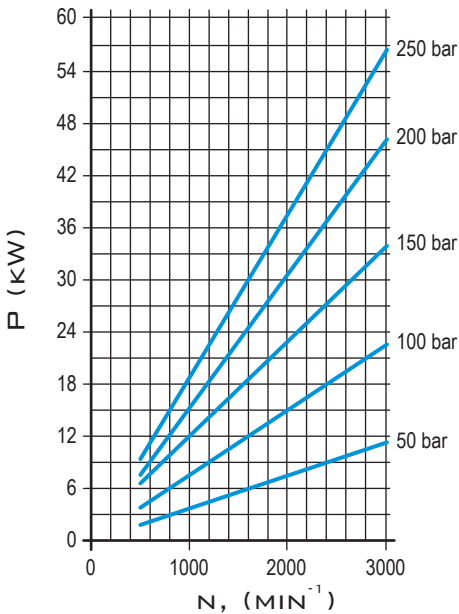




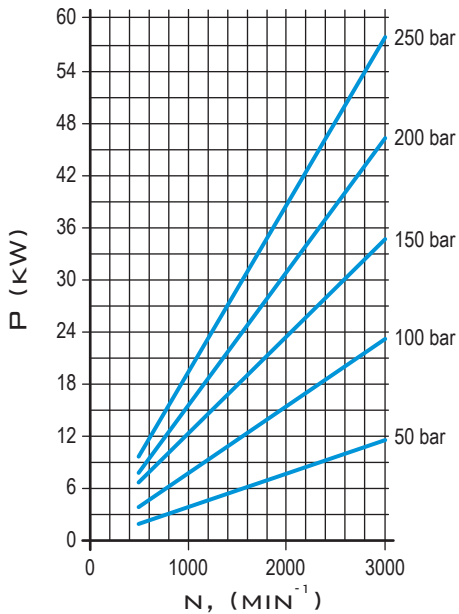
CHARACTERISTIC CURVES

CHARACTERISTIC CURVES CARRIED OUT WITH OIL VISCOSITY AT 16 MM<sup>2</sup>/SEC AND OIL TEMPERATURE AT 60 °C.

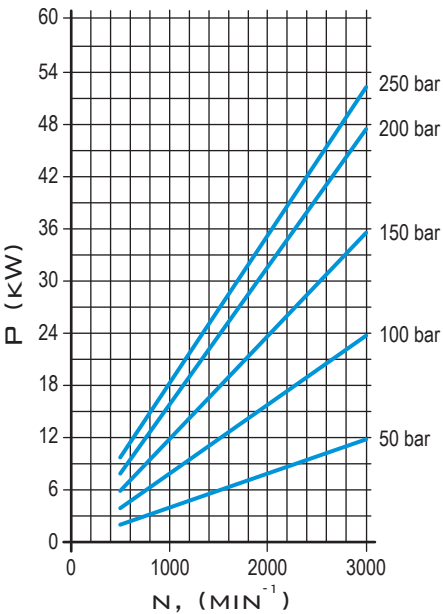
MGP2.5K36



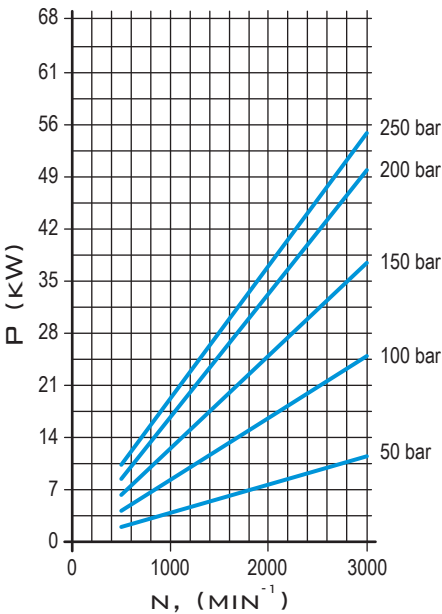
MGP2.5K37



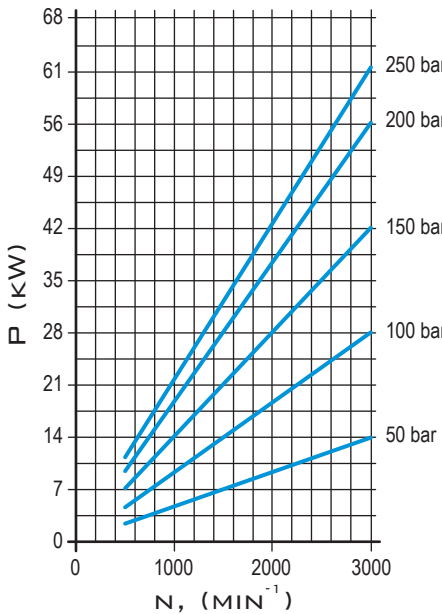
MGP2.5K38



MGP2.5K40



MGP2.5K45

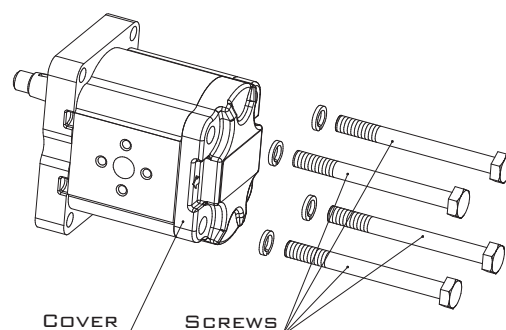


**INSTRUCTIONS OF ROTATION CHANGING**

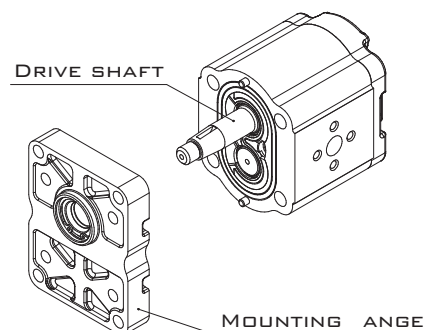
PROCESS OF CHANGE DIRECTION SHOWN AT THE EXAMPLE FOR PUMP WITH CLOCKWISE ROTATION.

**STEP 1**

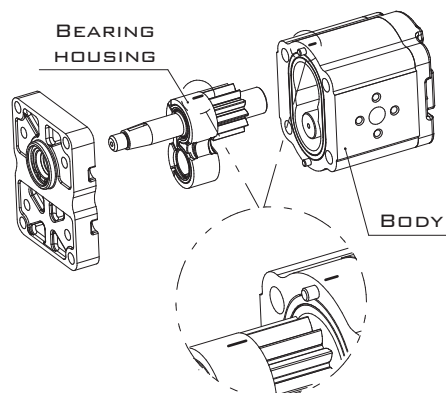
- UNSCREW AND REMOVE THE SCREWS COMPLETELY.
- PUT THE PUMP MOUNTING FLANGE UP.
- LUBRICATE THE DRIVE SHAFT WITH GREASE TO PREVENT DAMAGE TO THE SHAFT SEAL.

**STEP 2**

- REMOVE THE MOUNTING FLANGE.
- VERIFY THAT THE COMPENSATION SEAL IS CORRECTLY LOCATED IN THE BODY SEAT.

**STEP 3**

- MARK THE POSITION OF THE BEARING HOUSING (WITH MARKER) RELATIVE TO THE BODY.
- REMOVE THE BEARING HOUSING AND THE DRIVE SHAFT TAKING CARE TO AVOID DRIVEN SHAFT AXIAL SHIFTS.

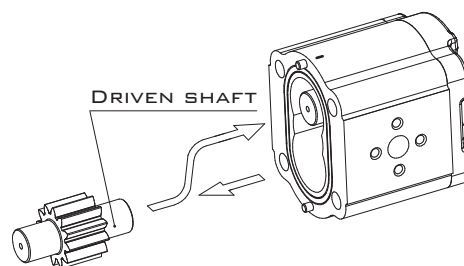


## INSTRUCTIONS OF ROTATION CHANGING

PROCESS OF CHANGE DIRECTION SHOWN AT THE EXAMPLE FOR PUMP WITH CLOCKWISE ROTATION.

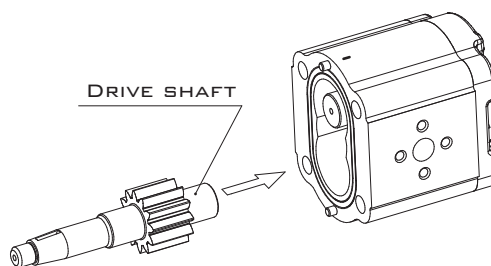
## STEP 4

- DRAW OUT THE DRIVEN SHAFT FROM ITS HOUSING.
- RE-LOCATE THE DRIVEN SHAFT IN THE POSITION PREVIOUSLY OCCUPIED BY THE DRIVE SHAFT.



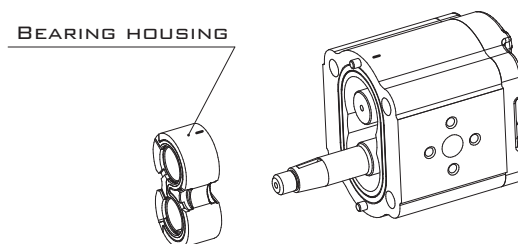
## STEP 5

- RE-LOCATE THE DRIVE SHAFT IN THE POSITION PREVIOUSLY OCCUPIED BY THE DRIVEN SHAFT.



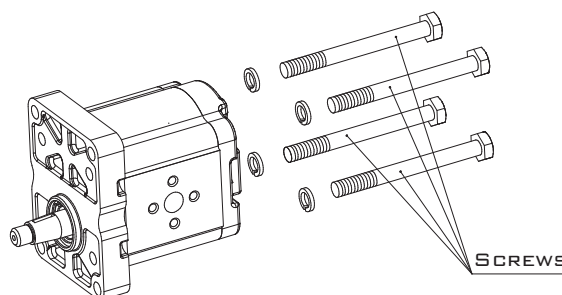
## STEP 6

- REPLACE THE BEARING HOUSING TAKING CARE THAT:
- MARKS SHALL BE LOCATED AS IN THE PICTURE.
- COMPENSATION SEAL AND ANTI-EXTRUSION PLATE ARE CORRECTLY LOCATED.



## STEP 7

- CLEAN BODY AND MOUNTING FLANGE.
- REFIT THE MOUNTING FLANGE, TURNED 180° FROM ITS ORIGINAL POSITION.
- REPLACE THE CLAMP SCREWS AND TIGHTEN (TORQUE – SEE SECTION “TECHNICAL DATA”).
- CHECK THAT THE SHAFT ROTATES FREELY.





POMPE AD INGRANAGGI

MGP2.5

GEAR PUMPS  
GROUP 2.5

ORDER CODE

|     |     |   |  |  |  |  |  |  |  |  |  |  |
|-----|-----|---|--|--|--|--|--|--|--|--|--|--|
| MGP | 2.5 | K |  |  |  |  |  |  |  |  |  |  |
|-----|-----|---|--|--|--|--|--|--|--|--|--|--|

GROUP 2.5

SERIES K

16 = 16 CM<sup>3</sup>/REV  
19 = 19 CM<sup>3</sup>/REV  
20 = 20 CM<sup>3</sup>/REV  
23 = 23 CM<sup>3</sup>/REV  
25 = 25 CM<sup>3</sup>/REV  
28 = 28 CM<sup>3</sup>/REV  
30 = 30 CM<sup>3</sup>/REV  
32 = 32 CM<sup>3</sup>/REV  
36 = 36 CM<sup>3</sup>/REV  
37 = 37 CM<sup>3</sup>/REV  
38 = 38 CM<sup>3</sup>/REV  
40 = 40 CM<sup>3</sup>/REV  
45 = 45 CM<sup>3</sup>/REV

R = CLOCKWISE ROTATION  
L = COUNTERCLOCKWISE ROTATION

DRIVE SHAFTS:  
A2 = GSTU 3-25-180-97  
A3 = GSTU 3-25-180-97  
B3 = SAE A SPLINED (10 TEETH)  
B4 = SAE A SPLINED (11 TEETH)  
B5 = SAE B SPLINED (13 TEETH)  
G3 = EUROPEAN TAPERED 1:8  
H3 = SAE B STRAIGHT Ø22,2

MATERIAL OF COVERS:  
No CODE = ALUMINIUM  
F = CAST IRON

No CODE = NBR SEALS  
V = FKM SEALS

PORTS POSITION:  
No CODE = SIDE INLET - SIDE OUTLET  
1 = BACK INLET - BACK OUTLET

PORTS:  
B = EUROPEAN FLANGE  
C = GERMAN FLANGE  
D = SAE FLANGE (UNC)  
W = SAE A FLANGE (METRIC) - 4 BOLTS  
E = METRIC THREADED  
F = SAE THREADED  
G = GAS THREADED (BSPP)

MOUNTING FLANGES:  
03 = GSTU 3-25-180-97  
33 = SAE B 2 BOLTS  
63 = EUROPEAN  
31 = SAE A 2 BOLTS