



**GEAR PUMPS**

**GROUP 2.5**

**MODEL MGP**

**SERIES K**

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

# MGP2.5K

GEAR PUMPS  
GROUP 2.5

POMPE AD INGRANAGGI

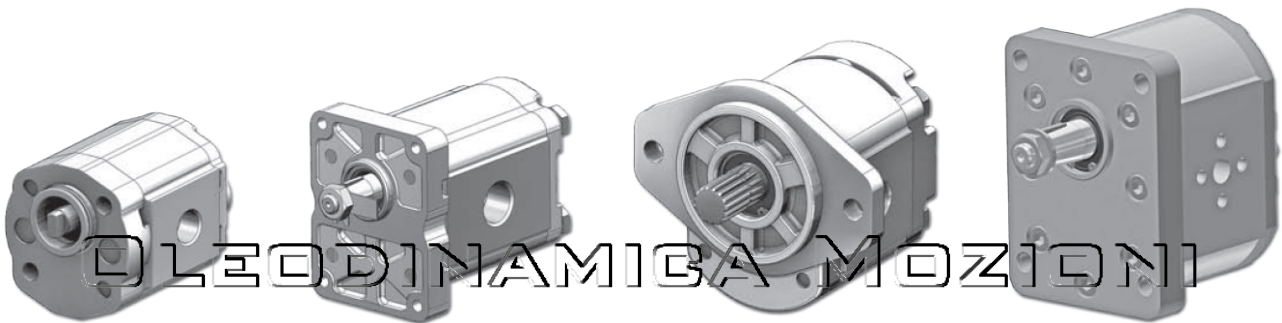


GEAR PUMPS SERIES "K" MANUFACTURED BY OLEODINAMICA MOZIONI ARE THE MOST USED IN HYDRAULIC UNITS IN THE HYDRAULIC SYSTEMS OF MOBILE MACHINES AND CONFORM TO INTERNATIONAL STANDARDS.

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.

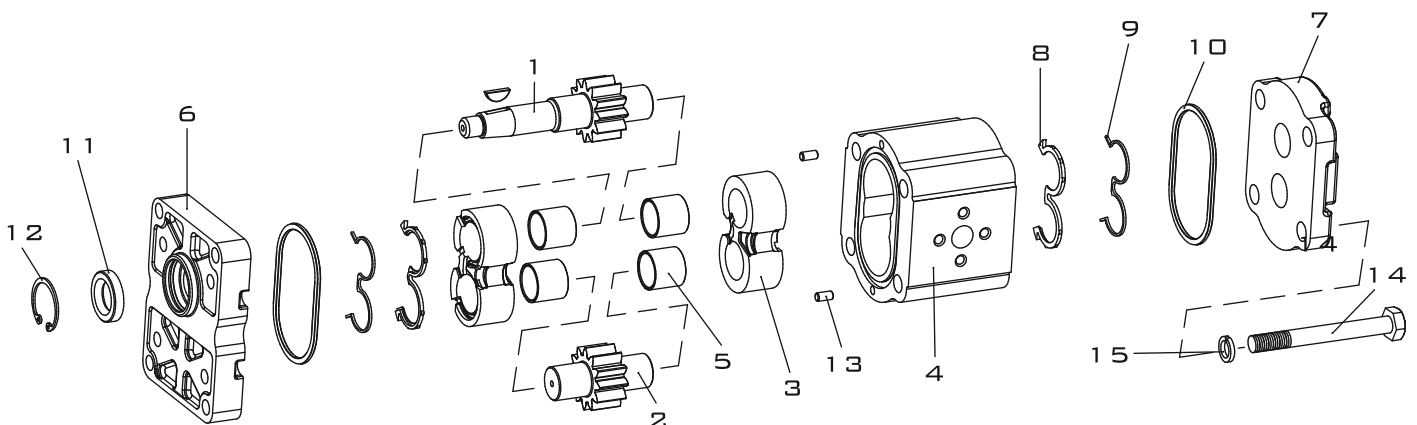
- DIMENSIONS OF THE PUMPS ARE ACCORDING TO INTERNATIONAL STANDARDS SAE, DIN, EUROPEAN.
- GEAR PUMPS ARE SUPPLIED IN NEXT GROUPS: MGP1K, MGP2K, MGP2.5K, MGP3K WITH DISPLACEMENTS FROM 1 TO 90 CM<sup>3</sup>/REV.
- MAXIMUM CONTINUOUS PRESSURE UP TO 250 BAR.
- MOUNTING FLANGES AND REAR COVERS ARE PRODUCED 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





POMPE AD INGRANAGGI

**MGP2.5K**

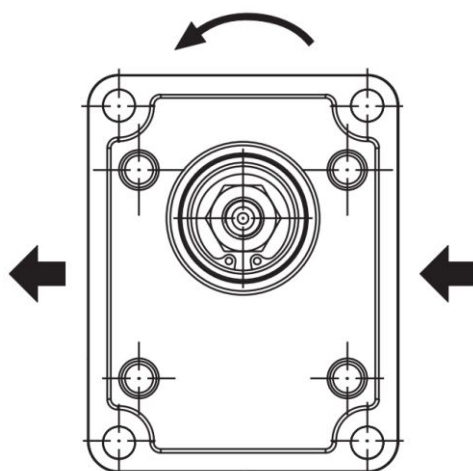
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GROUP 2.5

**WORKING CONDITIONS**

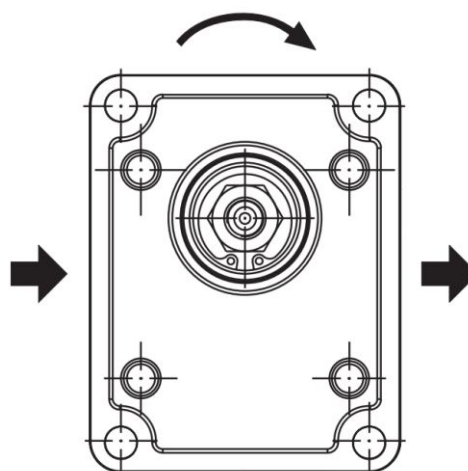
INLET PRESSURE (MAX.)	0.5 – 2.5 BAR
MIN. OPERATING FLUID VISCOSITY	10 MM <sup>2</sup> /SEC
MAX. STARTING VISCOSITY (COLD START)	1000 MM <sup>2</sup> /SEC
FLUID VISCOSITY RECOMMENDED RANGE	17 – 65 MM <sup>2</sup> /SEC
FLUID OPERATING TEMPERATURE RANGE WITH NBR SEALS	-40 + 100 °C
FLUID OPERATING TEMPERATURE 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 $\beta_x=75$	15 $\mu$ M (>200 BAR), 25 $\mu$ M (<200 BAR)

**DEFINITION OF ROTATION DIRECTION  
LOOKING ON THE DRIVE SHAFT**

COUNTERCLOCKWISE ROTATION



CLOCKWISE ROTATION



# MGP2.5K

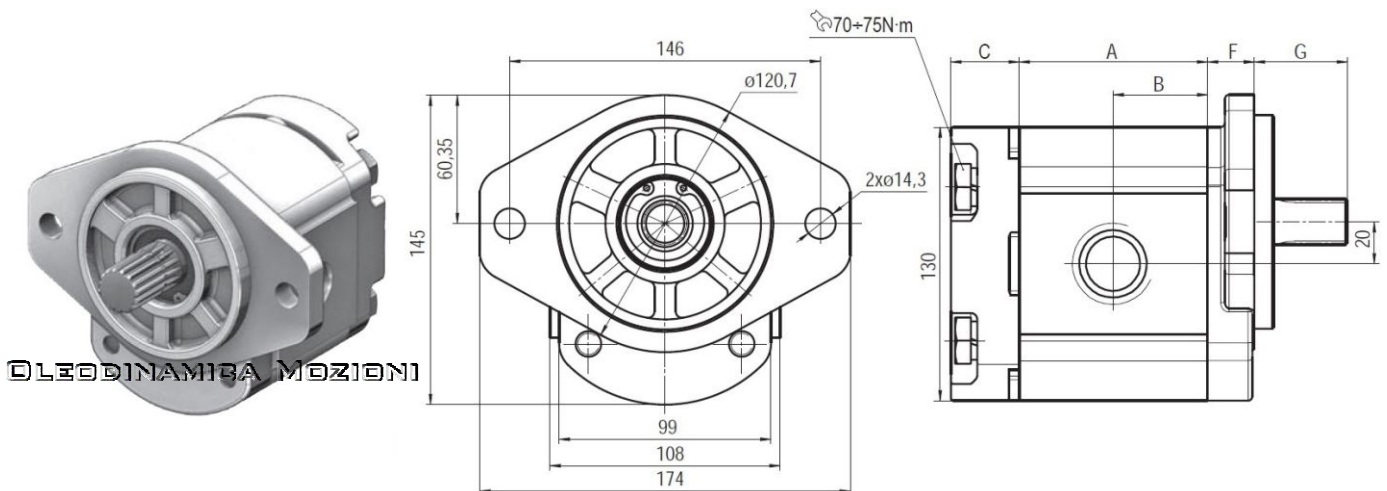
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GROUP 2.5

POMPE AD INGRANAGGI



## 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, $\text{CM}^3/\text{REV}$	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 $P_1$ , BAR	250				230				200		170		
MAX. INTERMITTENT PRESSURE $P_2$ , BAR	280				250				220		190		
PEAK PRESSURE $P_3$ , BAR	300				260				240		210		
MAX. SPEED $\eta_{\text{MAX}}$ , $\text{MIN}^{-1}$	3000									2750		2500	
MIN. SPEED AT $P_1 \leq 100$ BAR, $\eta_{\text{MIN}}$ , $\text{MIN}^{-1}$	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



GP2.5K25R-B533G

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.

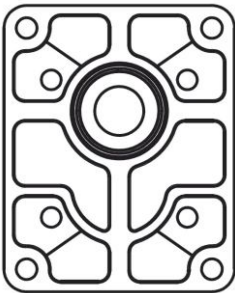
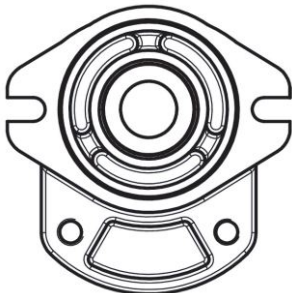
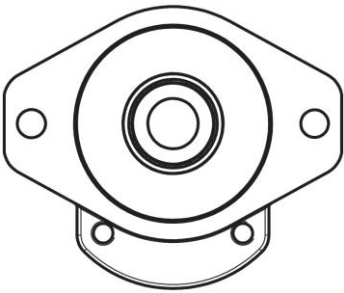
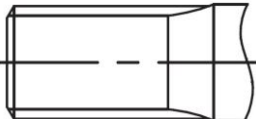
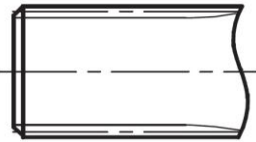
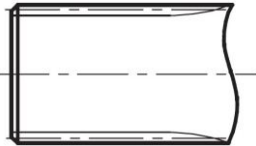
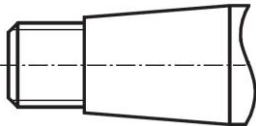
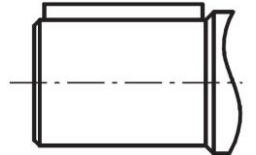


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**MGP2.5K**

GEAR PUMPS  
GROUP 2.5

**COMBINATIONS OF MOUNTING FLANGES & SHAFTS**

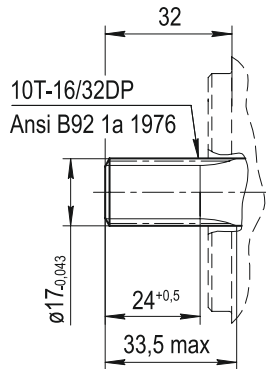
<p><b>MGP2.5K</b></p>	 <p>EUROPEAN</p>	 <p>SAE A 2 BOLTS</p>	 <p>SAE B 2 BOLTS</p>
 <p>SAE A SPLINED (10 TEETH)</p>		<p>B3 31</p>	
 <p>SAE A SPLINED (11 TEETH)</p>		<p>B4 31</p>	
 <p>SAE B SPLINED (13 TEETH)</p>			<p>B5 33</p>
 <p>EUROPEAN TAPERED 1:8</p>	<p>G3 63</p>		
 <p>SAE B STRAIGHT ø22,2</p>			<p>G3 33</p>

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

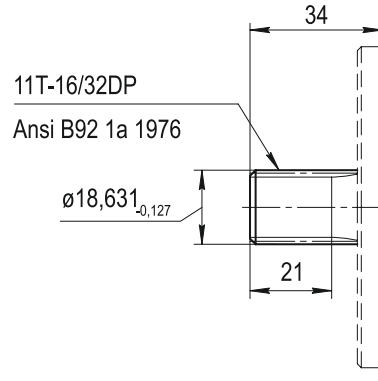
## DRIVE SHAFTS

MAX. TORQUE 100 N·M



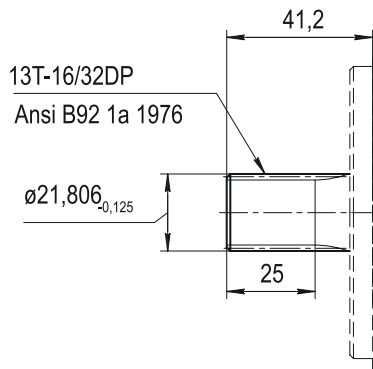
**B3 - SAE A SPLINED (10 TEETH)**

MAX. TORQUE 140 N·M



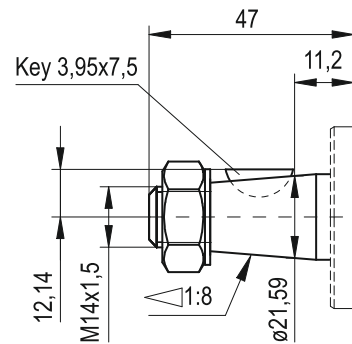
**B4 - SAE A SPLINED (11 TEETH)**

MAX. TORQUE 320 N·M



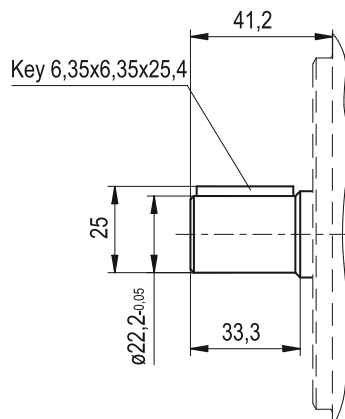
**B5 - SAE B SPLINED (13 TEETH)**

MAX. TORQUE 250 N·M



**G3 - EUROPEAN TAPERED 1:8**

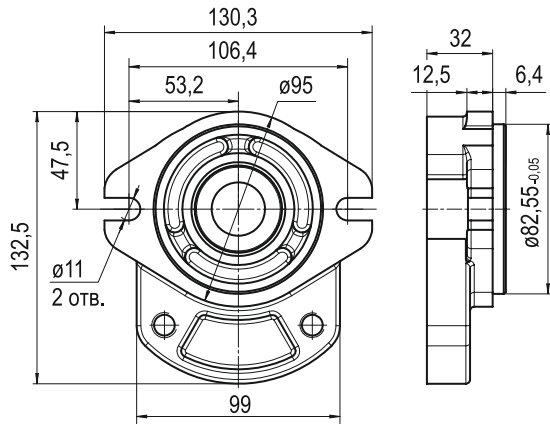
MAX. TORQUE 220 N·M



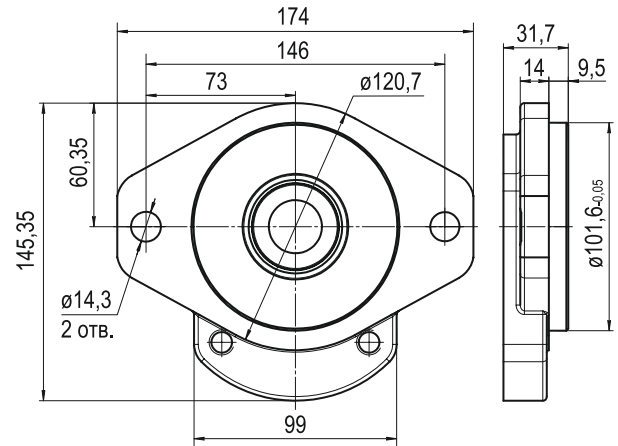
**H3 - SAE B STRAIGHT <math>\varnothing 22,2</math>**



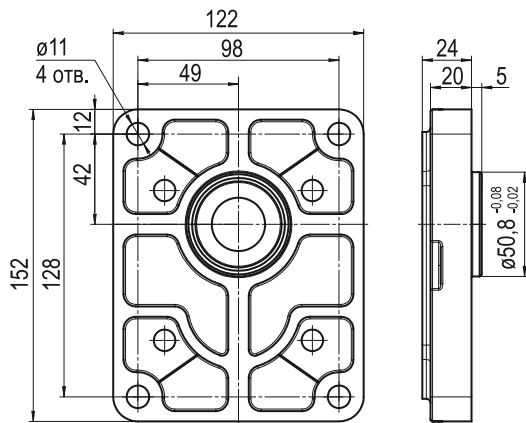
MOUNTING FLANGES



31 - SAE A 2 BOLTS



33 - SAE B 2 BOLTS



63 - EUROPEAN

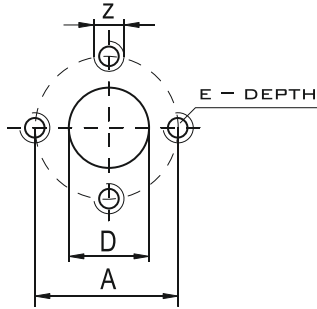
# MGP2.5K

POMPE AD INGRANAGGI



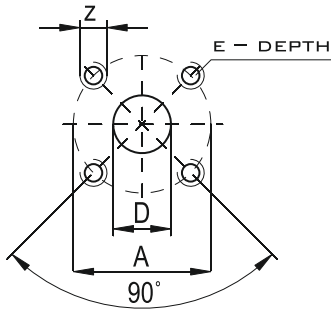
GEAR PUMPS  
GROUP 2.5

## PORTS



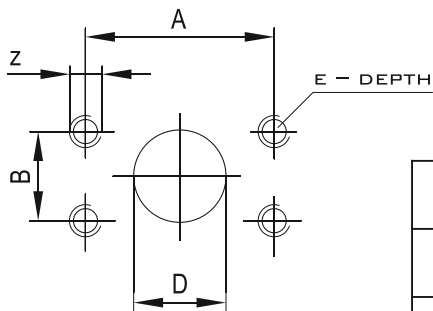
**B - EUROPEAN FLANGE**

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



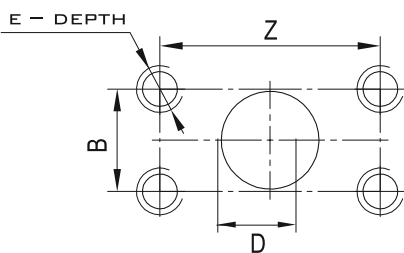
**C - GERMAN FLANGE**

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 UNC	16	19	47,6	22,2	3/8 16 UNC	14



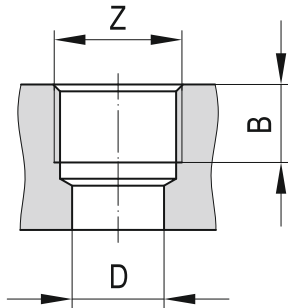
**W - SAE FLANGE (METRIC)**

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



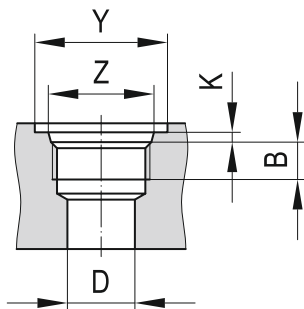


**PORTS**



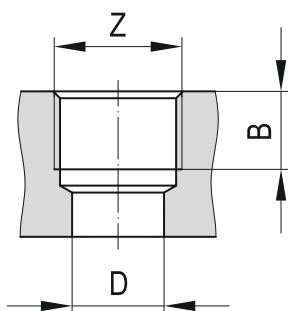
**E - METRIC THREADED**

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
MGP2.5K 16÷23	1 1/16-12 UN (SAE#12)	19	20	42	3,3	7/8-14 UNF (SAE#10)	19	15	32	2,5
MGP2.5K 25÷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

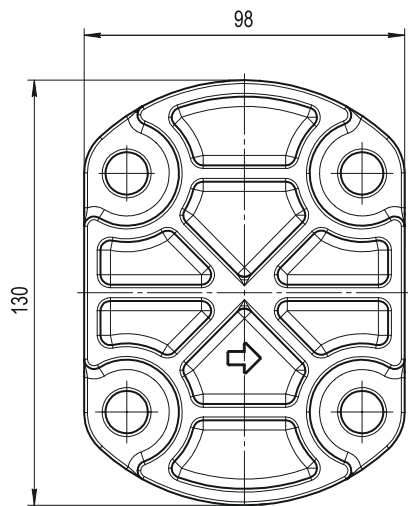
# MGP2.5K

GEAR PUMPS  
GROUP 2.5

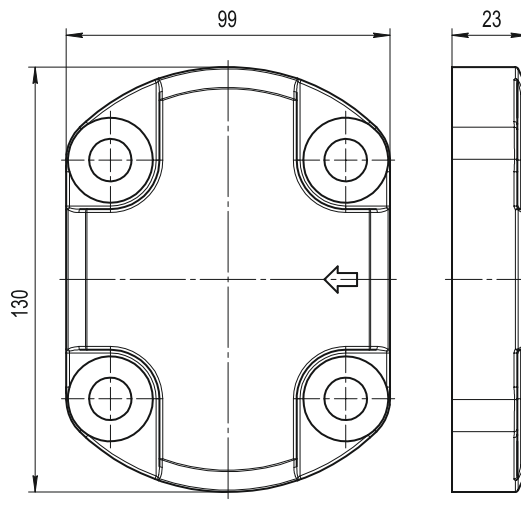
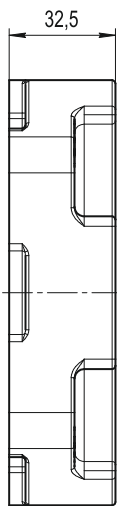
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## REAR COVERS

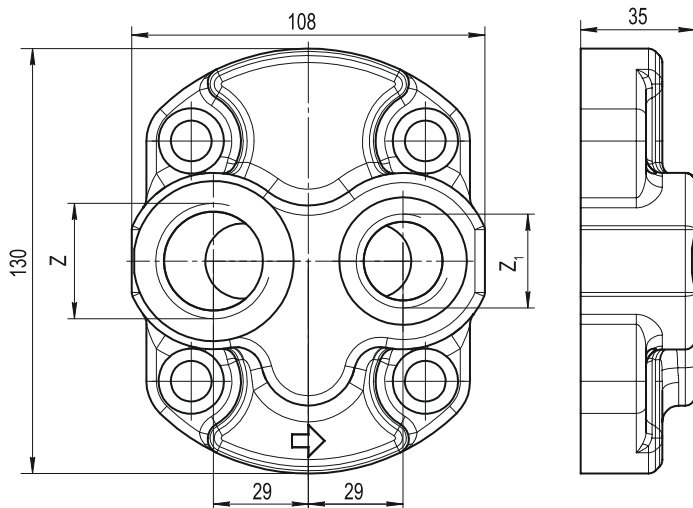


ALUMINIUM



CAST IRON

## STANDART REAR COVERS



CAST IRON

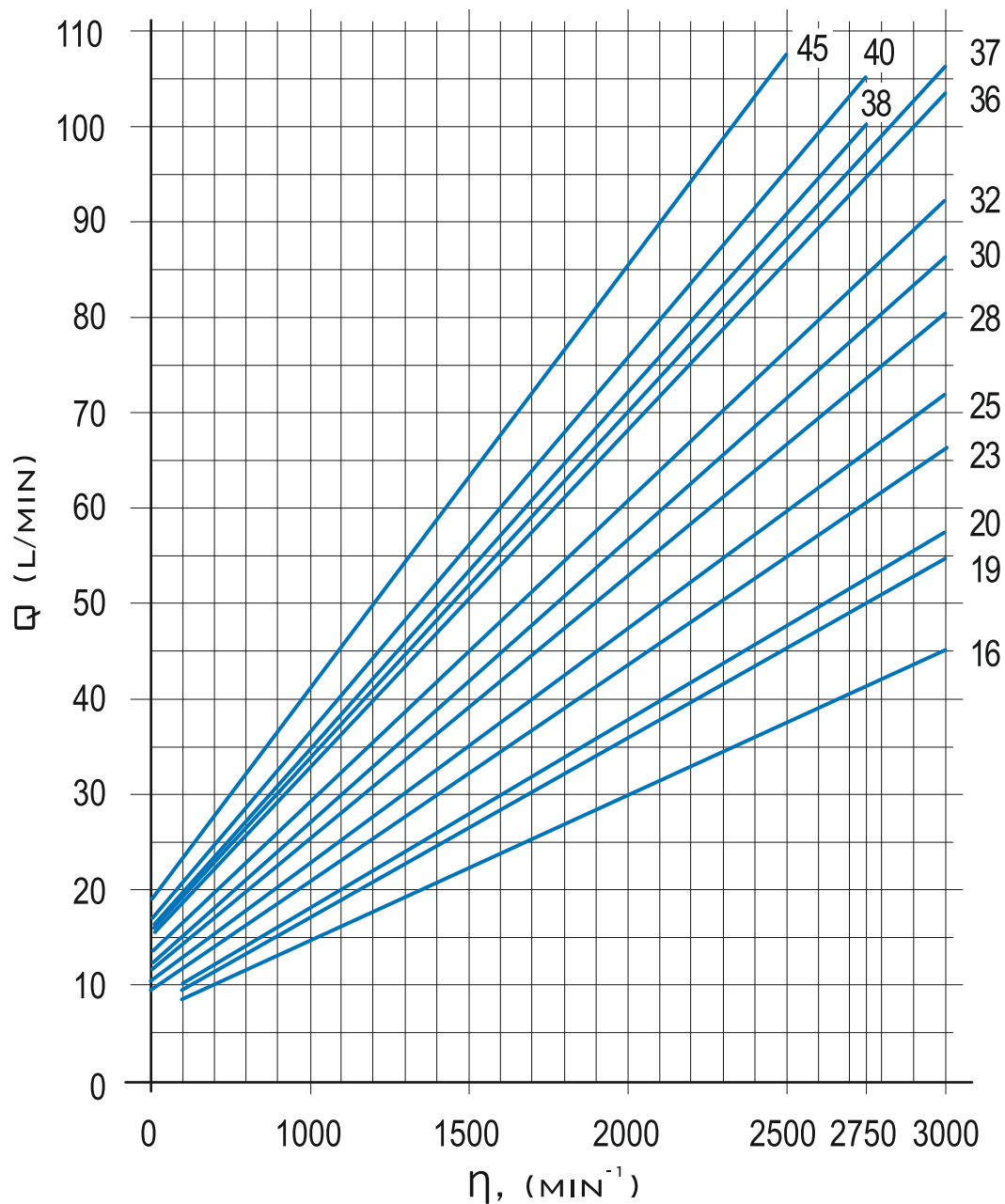
TYPE	INLET	OUTLET
	Z	Z <sub>1</sub>
MGP2.5K 16÷23	3/4" GAS	1/2" GAS
MGP2.5K 25÷45	1" GAS	3/4" GAS
MGP2.5K 16÷23	1 1/16-12 UN	7/8-14 UNF
MGP2.5K 25÷45	1 5/16-12 UN	1 1/16-12 UN

## 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.

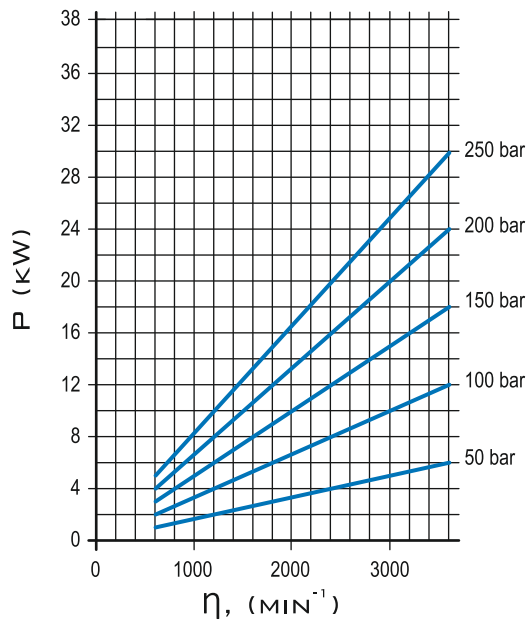




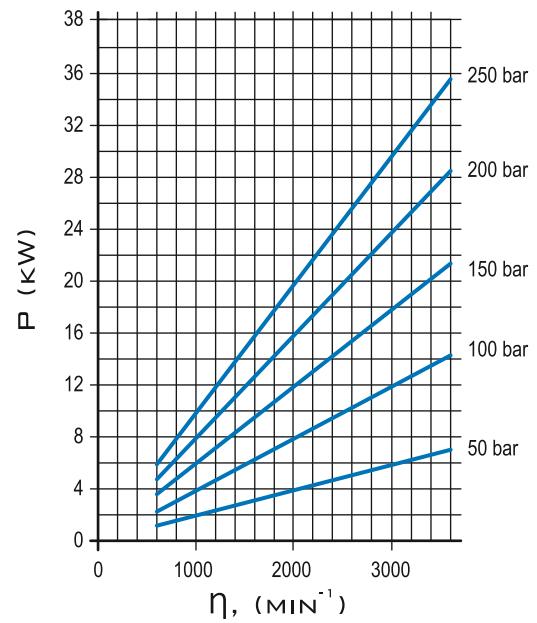
## CHARACTERISTIC CURVES

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

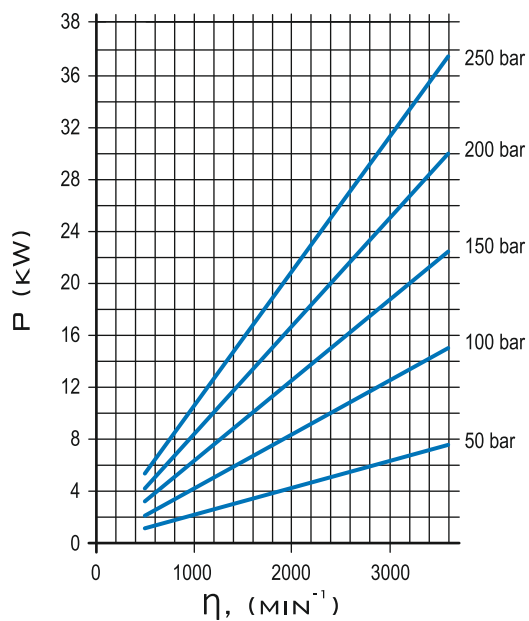
**MGP2.5K16**



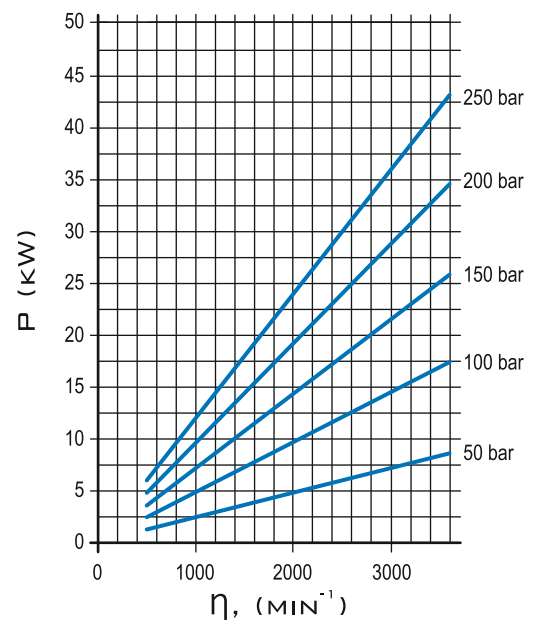
**MGP2.5K19**



**MGP2.5K20**



**MGP2.5K23**

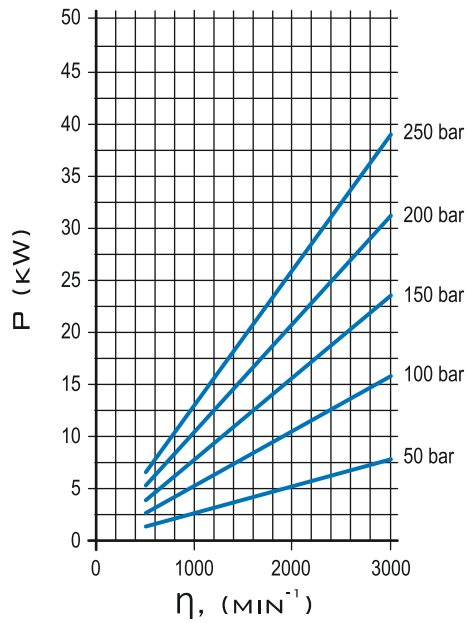




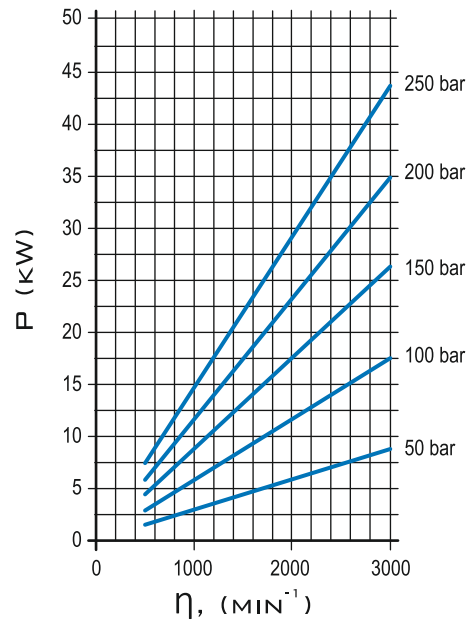
CHARACTERISTIC CURVES

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

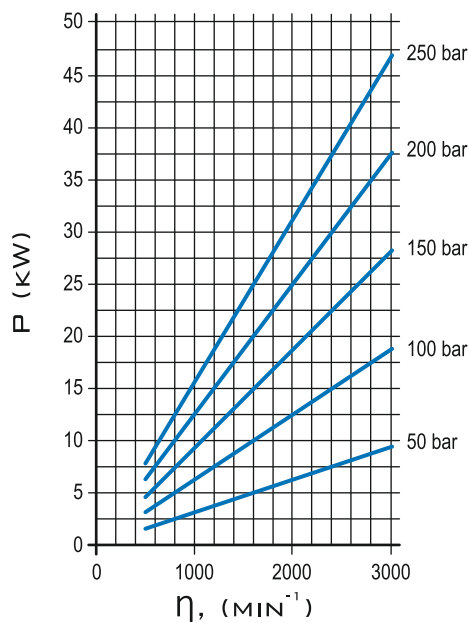
MGP2.5K25



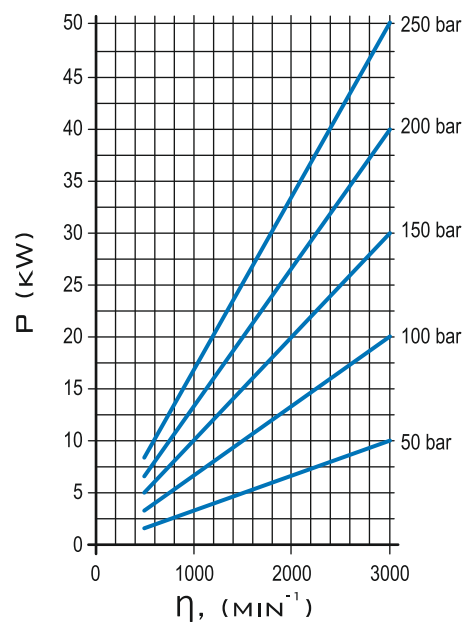
MGP2.5K28



MGP2.5K30



MGP2.5K32

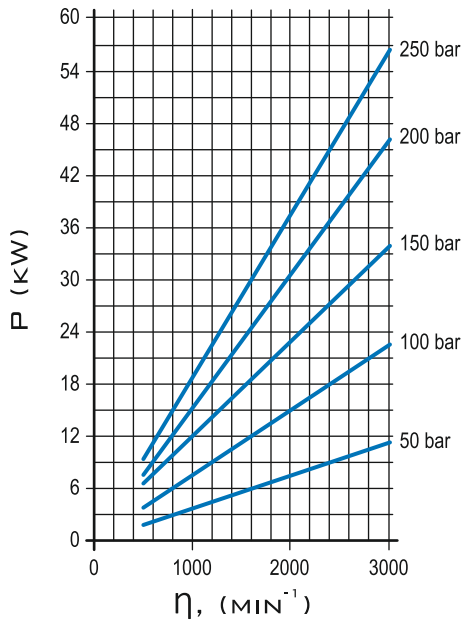




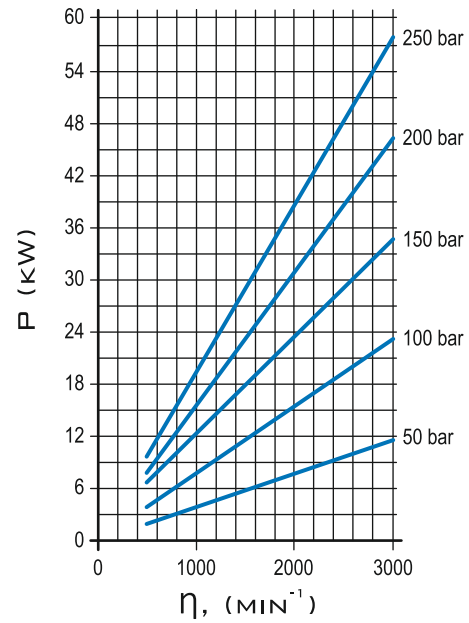
## CHARACTERISTIC CURVES

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

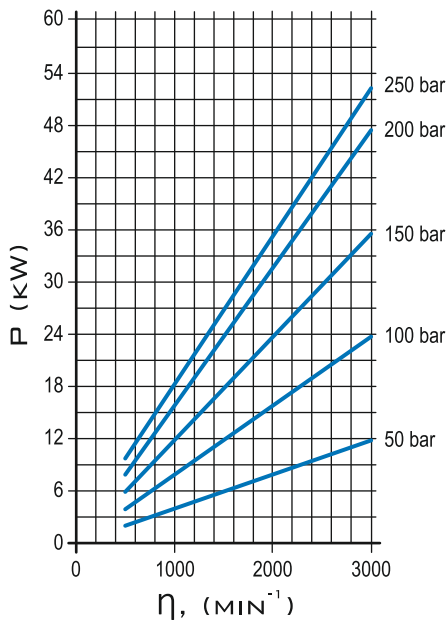
**MGP2.5K36**



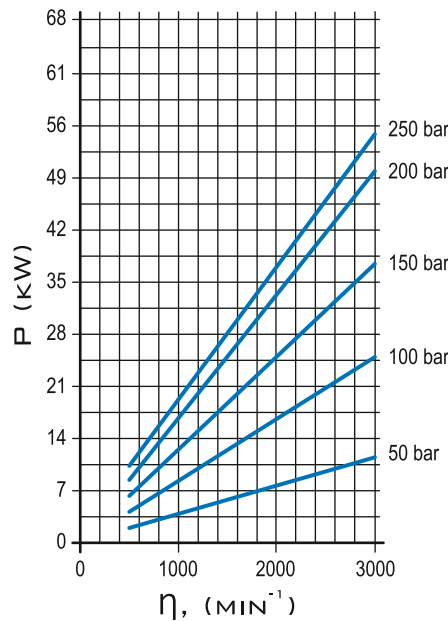
**MGP2.5K37**



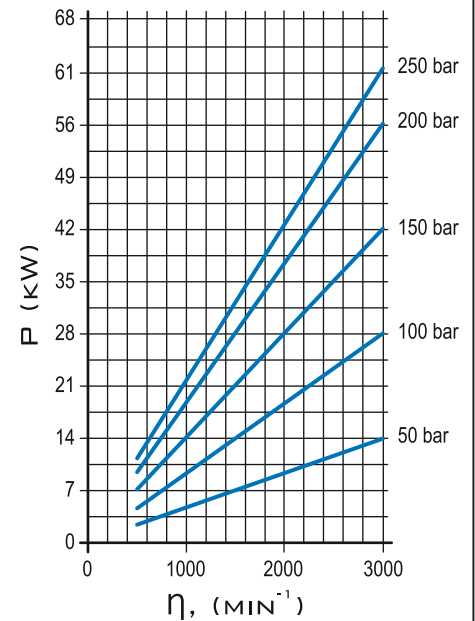
**MGP2.5K38**



**MGP2.5K40**



**MGP2.5K45**

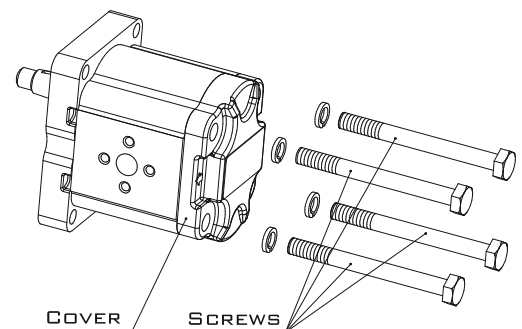


**INSTRUCTIONS OF ROTATION CHANGING**

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

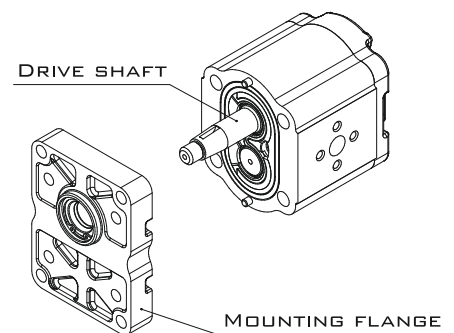
**STEP 1**

- 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.



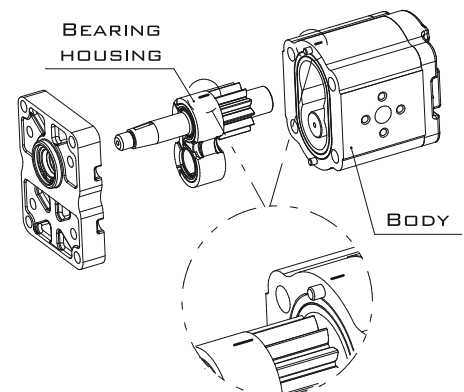
**STEP 2**

- 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.

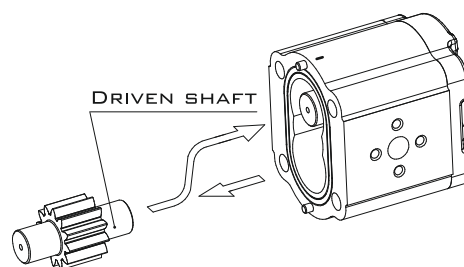


## INSTRUCTIONS OF ROTATION CHANGING

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

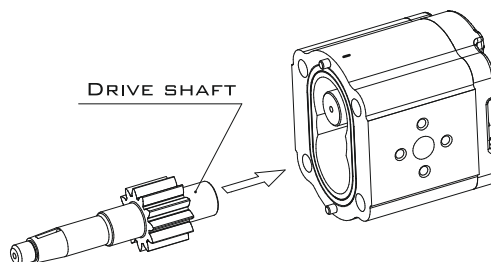
### STEP 4

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



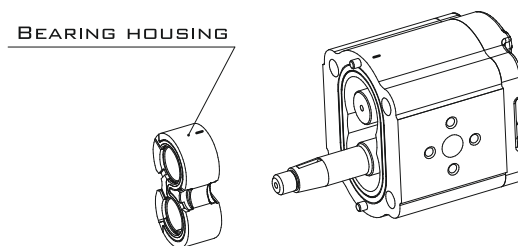
### STEP 5

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



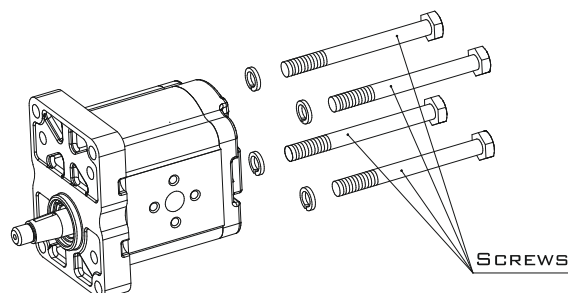
### STEP 6

- 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

**MGP2.5K**

GEAR PUMPS  
GROUP 2.5

**ORDER CODE**

MGP	2.5	K																	
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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:  
**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:  
**31** = SAE A 2 BOLTS  
**33** = SAE B 2 BOLTS  
**63** = EUROPEAN