



**GEAR PUMPS**

**GROUP 3**

**MODEL MGP**

**SERIES K**

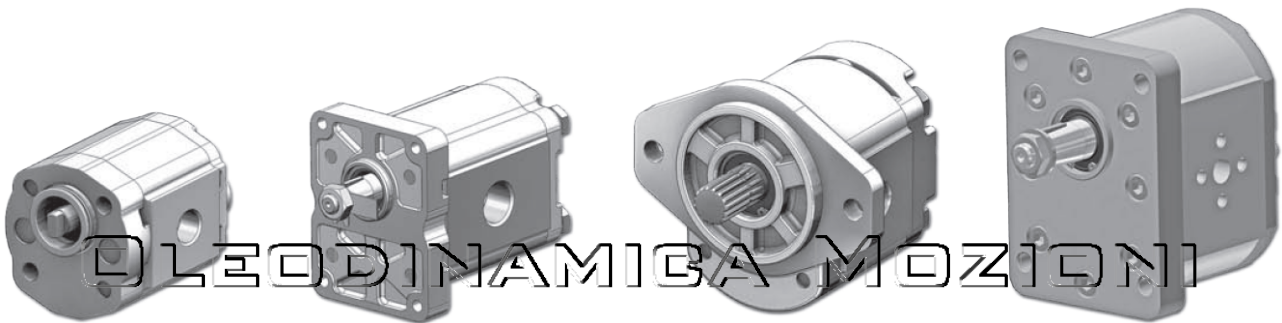
[WWW.OLEODINAMICAMOZIONI.IT](http://WWW.OLEODINAMICAMOZIONI.IT)

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.

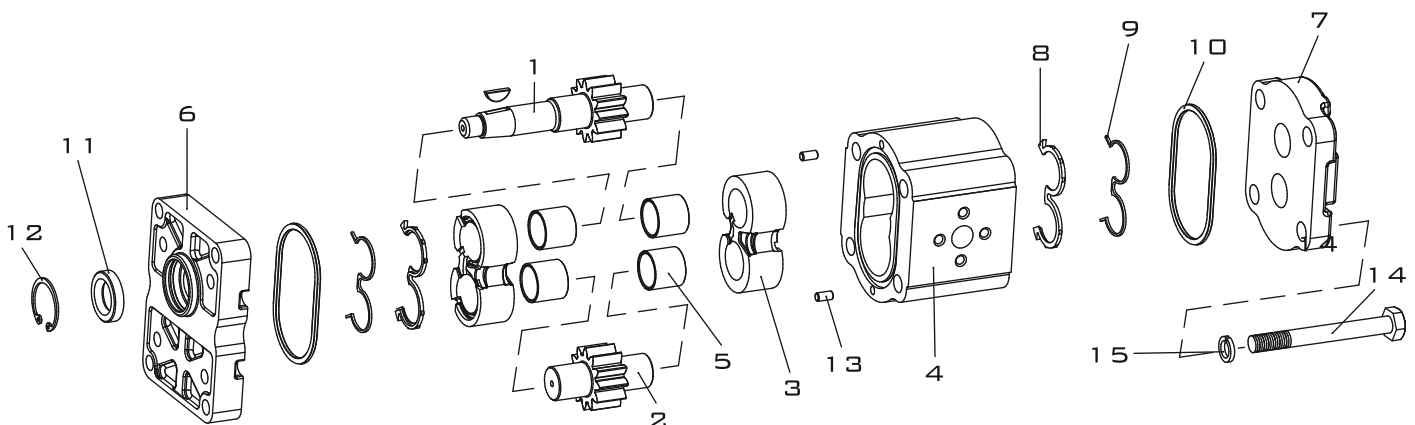
- DIMENSIONS OF THE PUMPS ARE ACCORDING TO INTERNATIONAL STANDARDS SAE, DIN, EUROPEAN.
- GEAR PUMPS ARE SUPPLIED IN NEXT GROUPS: MGP1K, MGP2K, MGP2.5K, MGP3K WITH DISPLACEMENTS FROM 1 TO 90 CM<sup>3</sup>/REV.
- MAXIMUM CONTINUOUS PRESSURE UP TO 250 BAR.
- MOUNTING FLANGES AND REAR COVERS ARE PRODUCED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





POMPE AD INGRANAGGI

**MGP3K**

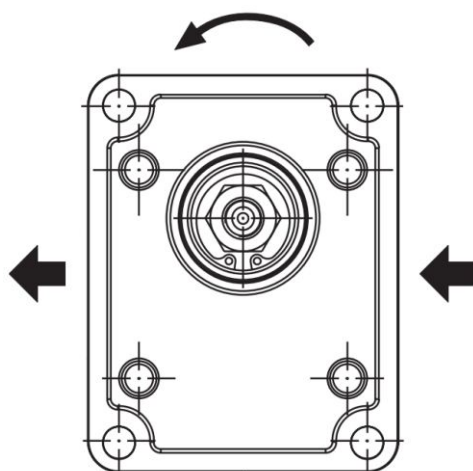
GEAR PUMPS  
GROUP 3

**WORKING CONDITIONS**

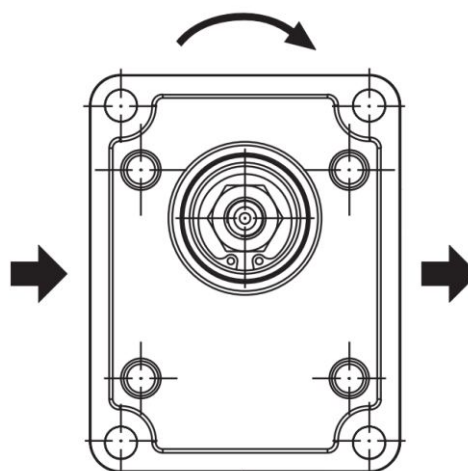
INLET PRESSURE (MAX.)	0.5 – 2.5 BAR
MIN. OPERATING FLUID VISCOSITY	10 MM <sup>2</sup> /SEC
MAX. STARTING VISCOSITY (COLD START)	1000 MM <sup>2</sup> /SEC
FLUID VISCOSITY RECOMMENDED RANGE	17 – 65 MM <sup>2</sup> /SEC
FLUID OPERATING TEMPERATURE RANGE WITH NBR SEALS	-40 + 100 °C
FLUID OPERATING TEMPERATURE 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

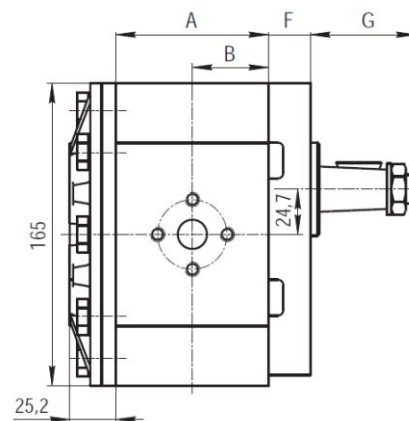
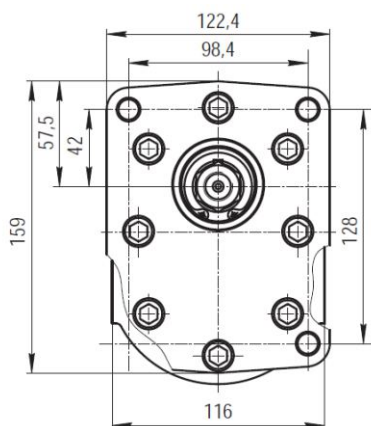
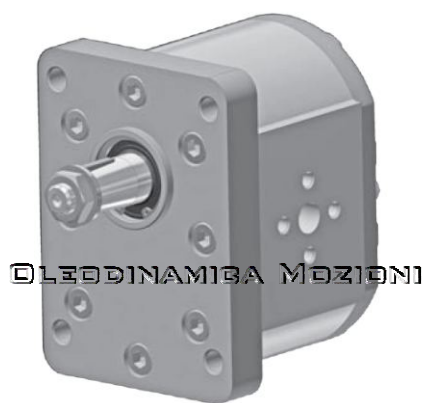


CLOCKWISE ROTATION



## TECHNICAL DATA AND INSTALLATION DIMENSIONS

TYPE	MGP3K20	MGP3K23	MGP3K25	MGP3K28	MGP3K32	MGP3K36	MGP3K40	MGP3K45	MGP3K50	MGP3K56	MGP3K63	MGP3K71	MGP3K80	MGP3K90
DISPLACEMENT, CM <sup>3</sup> /REV	20	23	25	28	32	36	40	45	50	56	63	71	80	90
DIMENSION A, MM	81,5	83,5	84,8	86,8	89,4	92,0	94,7	98,0	102	105	109	115	120	127
DIMENSION B, MM	40,8	41,8	42,4	43,4	44,7	46,0	47,4	49,0	51,0	52,5	54,7	57,3	60,2	63,5
MAX. CONTINUOUS PRESSURE P <sub>1</sub> , BAR	250		250		240			230	210	200	190	170	160	150
MAX. INTERMITTENT PRESSURE P <sub>2</sub> , BAR	270		270		260			250	230	220	210	190	180	170
PEAK PRESSURE P <sub>3</sub> , BAR	300		290		280			270	250	230	220	200	190	180
MAX. SPEED $\eta_{MAX}$ , MIN <sup>-1</sup>	3000								2500			2200		
MIN. SPEED AT P <sub>1</sub> ≤ 100 BAR, $\eta_{MIN}$ , MIN <sup>-1</sup>	700								600					
WEIGHT*, KG	7,0	7,1	7,2	7,3	7,4	7,6	7,7	7,9	8,1	8,3	8,5	8,8	9,2	9,6



MGP3K50R-G463B

DIMENSION G SEE AT SECTION "DRIVE SHAFTS"  
DIMENSION F SEE AT SECTION "MOUNTING FLANGES"

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


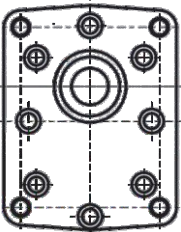
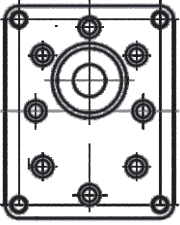
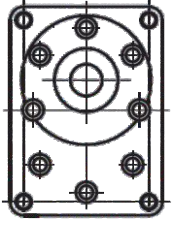
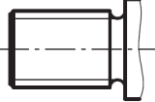
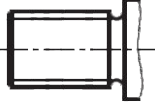
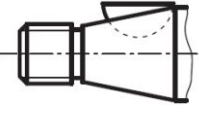
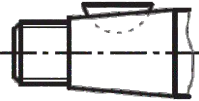
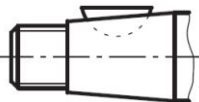




POMPE AD INGRANAGGI

**MGP3K**

GEAR PUMPS  
GROUP 3

**COMBINATIONS OF MOUNTING FLANGES & SHAFTS**

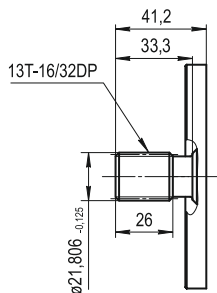
<p><b>MGP3K</b></p>	 <p>SAE B 2 BOLTS</p>	 <p>EUROPEAN</p>	 <p>EUROPEAN</p>	 <p>GERMAN</p>
 <p>SAE B SPLINED (13 TEETH)</p>	<p>B5 33</p>			
 <p>SAE BB SPLINED (15 TEETH)</p>	<p>B6 33</p>			
 <p>GERMAN TAPERED 1:5</p>				<p>F4 88</p>
 <p>EUROPEAN TAPERED 1:8</p>		<p>G4 63</p>	<p>G4 64</p>	
 <p>EUROPEAN TAPERED 1:8</p>		<p>G5 63</p>	<p>G5 64</p>	
 <p>SAE B STRAIGHT <math>\varnothing 22,2</math></p>	<p>H3 33</p>			
 <p>SAE BB STRAIGHT <math>\varnothing 25,4</math></p>	<p>H4 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, MGP2.5K

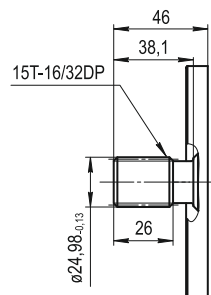
## DRIVE SHAFTS

MAX. TORQUE 300 N·M



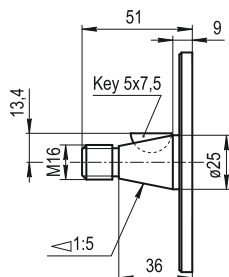
**B5 - SAE B SPLINED (13 TEETH)**

MAX. TORQUE 450 N·M



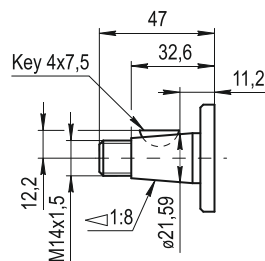
**B6 - SAE BB SPLINED (15 TEETH)**

MAX. TORQUE 240 N·M



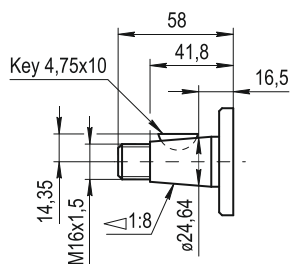
**F4 - GERMAN TAPERED 1:5**

MAX. TORQUE 240 N·M



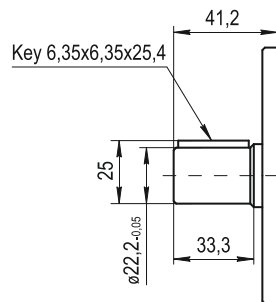
**G4 - EUROPEAN TAPERED 1:8**

MAX. TORQUE 350 N·M



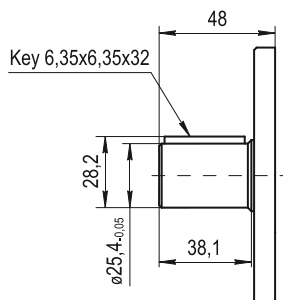
**G5 - EUROPEAN TAPERED 1:8**

MAX. TORQUE 185 N·M



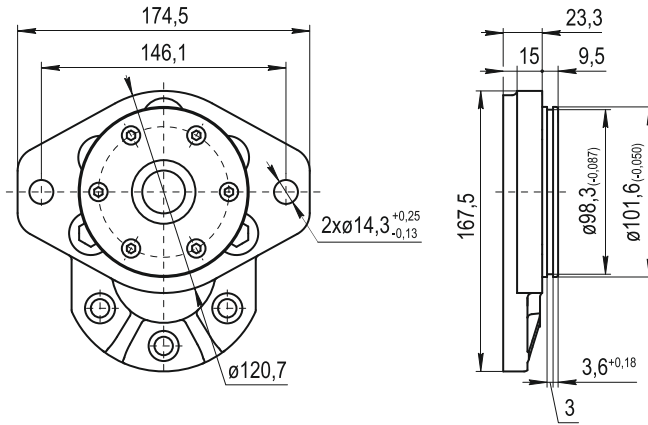
**H3 - SAE B STRAIGHT <math>\varnothing 22,2</math>**

MAX. TORQUE 280 N·M

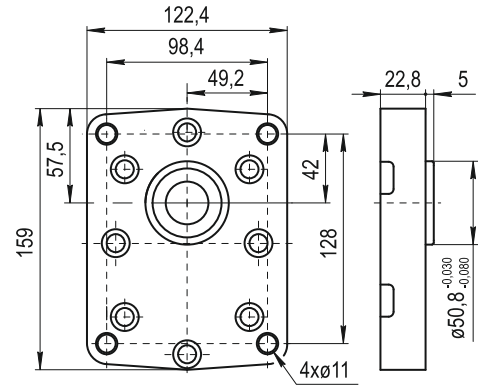


**H4 - SAE BB STRAIGHT <math>\varnothing 25,4</math>**

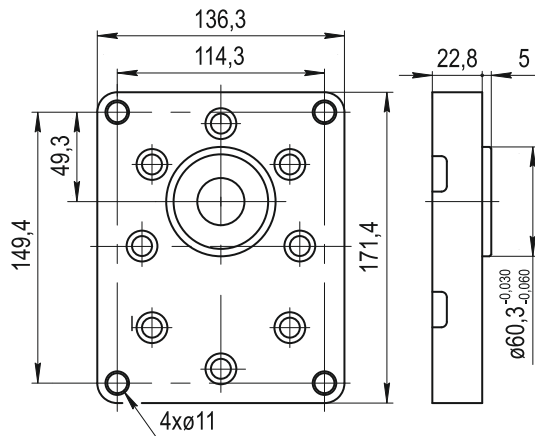
**MOUNTING FLANGES**



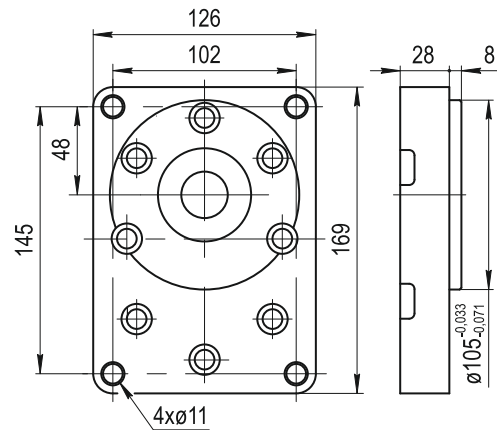
**33 - SAE B 2 BOLTS**



**63 - EUROPEAN Ø50,8**

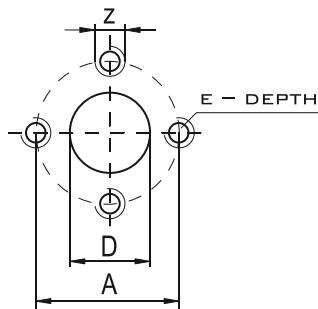


**64 - EUROPEAN Ø60,3**



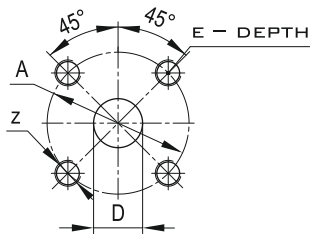
**88 - GERMAN Ø105**

## PORTS



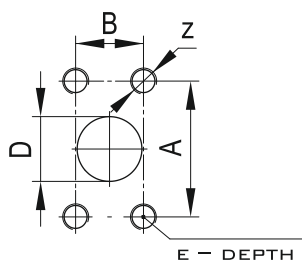
**B - EUROPEAN FLANGE**

TYPE	INLET				OUTLET			
	D	A	Z	E	D	A	Z	E
MGP3K20÷56	27	51	M10	18	19	40	M8	18
MGP3K63÷90	32	62	M12		27	51	M10	



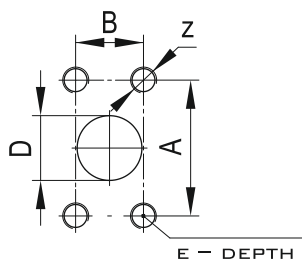
**C - GERMAN FLANGE**

TYPE	INLET				OUTLET			
	D	A	Z	E	D	A	Z	E
MGP3K20÷56	27	55	M8	16	19	55	M8	16



**D - SAE FLANGE (UNC)**

TYPE	INLET					OUTLET				
	D	A	B	Z	E	D	A	B	Z	E
MGP3K20÷32	25	52,4	26,2	3/8-16 UNC	16	19	47,6	22,2	3/8-16UNC	16
MGP3K36÷56	32	58,7	30,2	7/16-14 UNC		25	52,4	26,2		
MGP3K63÷80	40	69,8	37,5	1/2-13 UNC		32	58,7	30,2	7/16-14 UNC	
MGP3K90	45	77,8	42,9			40	69,8	37,5	1/2-13 UNC	



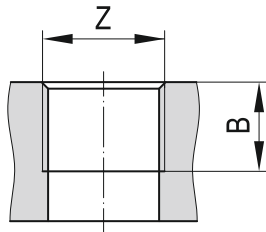
**W - SAE FLANGE (METRIC)**

TYPE	INLET					OUTLET				
	D	A	B	Z	E	D	A	B	Z	E
MGP3K20÷32	25	52,4	26,2	M10	16	19	47,6	22,2	M10	16
MGP3K36÷56	32	58,7	30,2			25	52,4	26,2		
MGP3K63÷80	40	69,8	37,5	M12		32	58,7	30,2	M12	
MGP3K90	45	77,8	42,9			40	69,8	37,5		



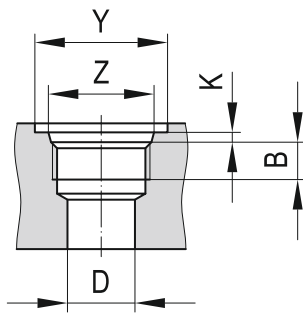


**PORTS**



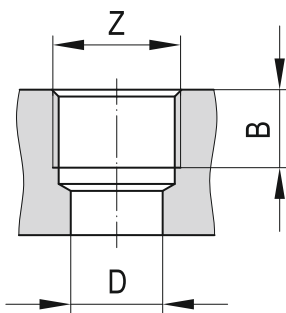
**E - METRIC THREADED**

TYPE	INLET		OUTLET	
	Z	B	Z	B
MGP3K20÷25	M26x1,5	24	M26x1,5	24
MGP3K28÷50	M33x2		M33x2	
MGP3K56÷90	M42x2		M42x2	



**F - SAE THREADED**

TYPE	INLET					OUTLET				
	Z	B	D	Y	K	Z	B	D	Y	K
MGP3K20÷25	1 1/16-12 UN	19	20	41	3,3	1 1/16-12 UN	19	20	41	3,3
MGP3K28÷36	1 5/16-12 UN	20	23	49						
MGP3K40÷63	1 5/8-12 UN		30	58		1 5/8-12 UN	20	30	58	
MGP3K71÷90	1 7/8-12 UN	37	65	1 5/8-12 UN						



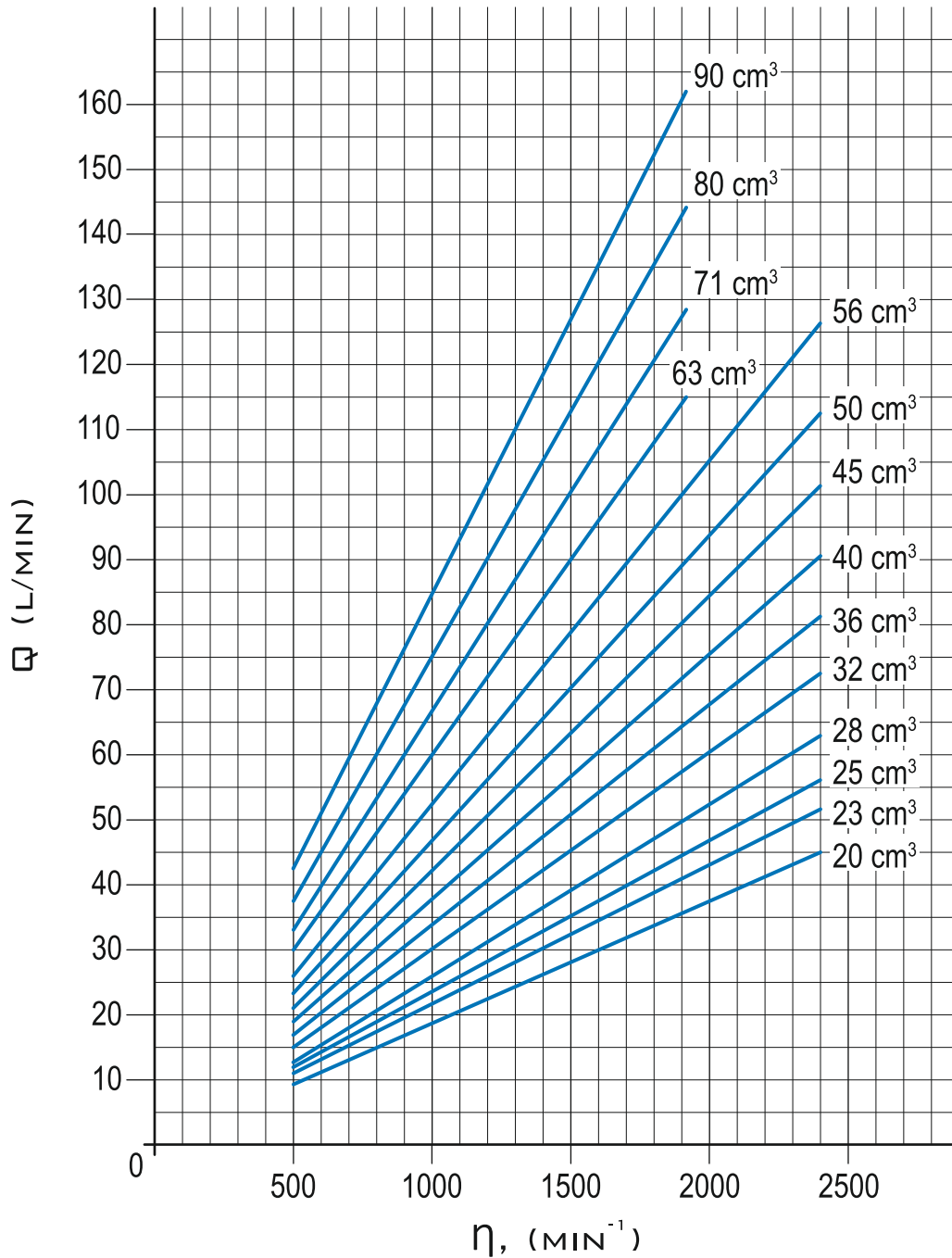
**G - GAS THREADED**

TYPE	INLET			OUTLET		
	Z	B	D	Z	B	D
MGP3K20÷25	3/4" GAS	19	20	3/4" GAS	19	20
MGP3K28÷50	1" GAS	21	27	1" GAS	21	27
MGP3K56÷71	1 1/4" GAS	21	33			
MGP3K80÷90	1 1/2" GAS	25	38	1 1/4" GAS	21	33



## 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.

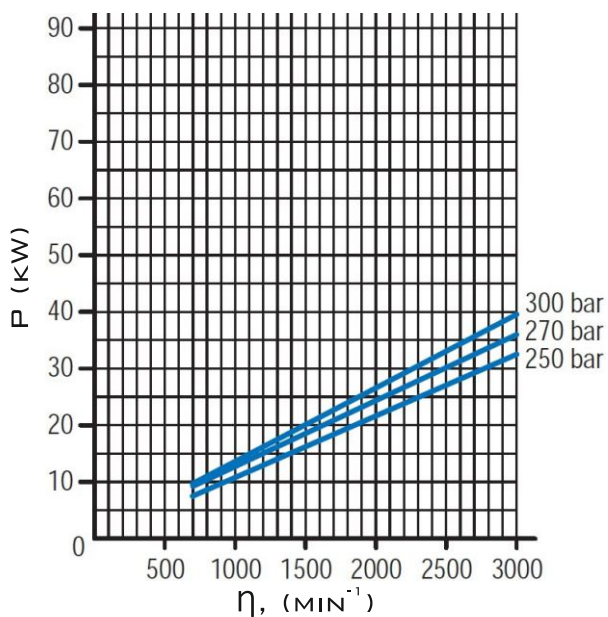




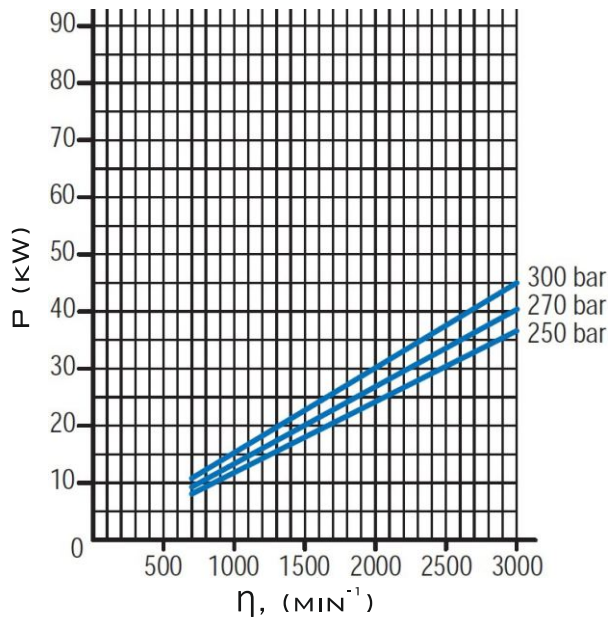
CHARACTERISTIC CURVES

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

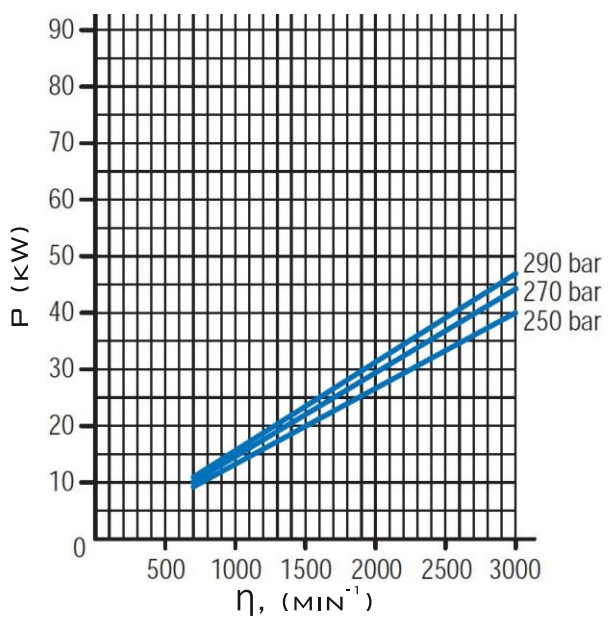
MGP3K20



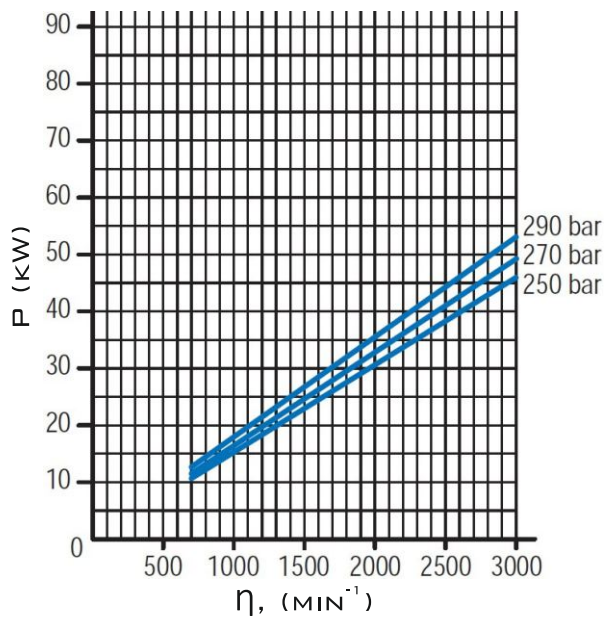
MGP3K23



MGP3K25



MGP2K28

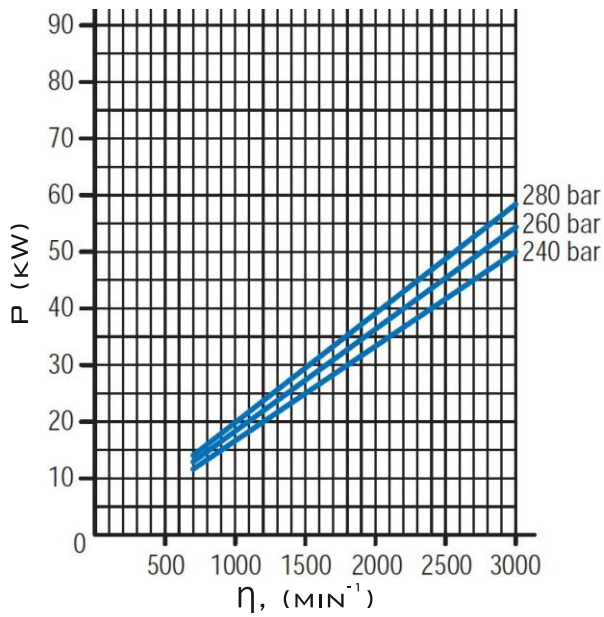




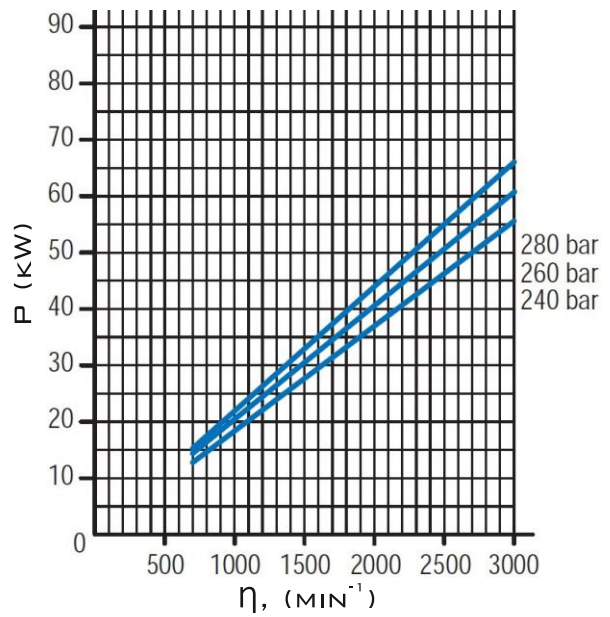
## CHARACTERISTIC CURVES

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

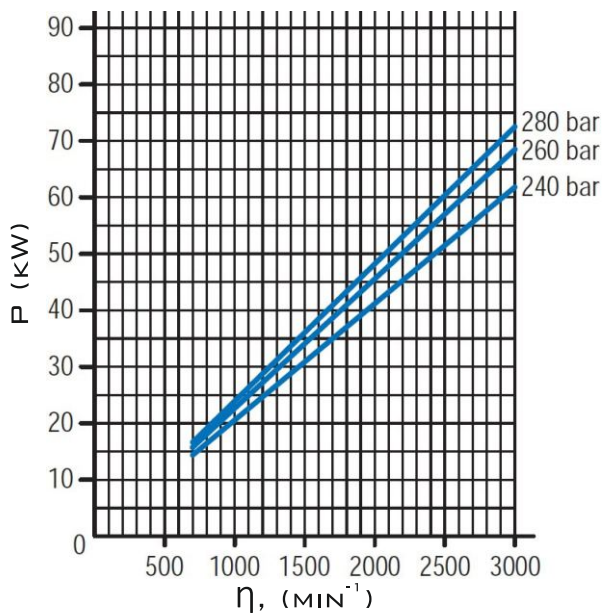
**MGP3K32**



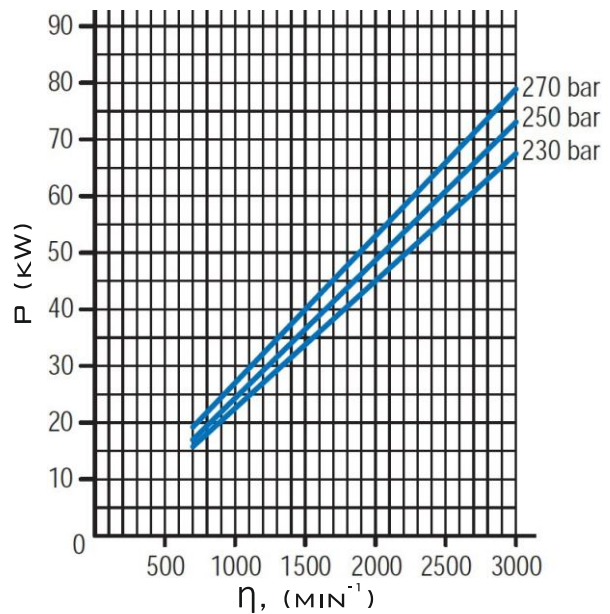
**MGP3K36**



**MGP3K40**



**MGP2K45**

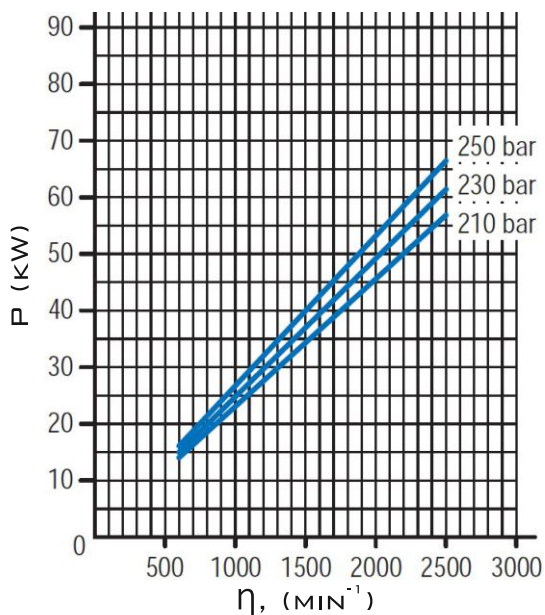




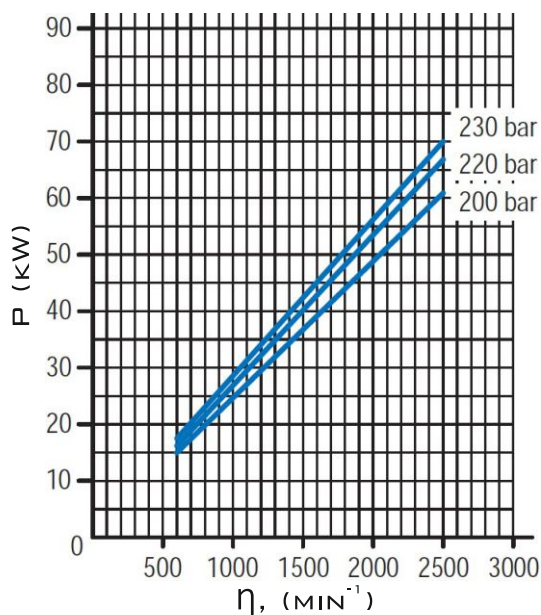
CHARACTERISTIC CURVES

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

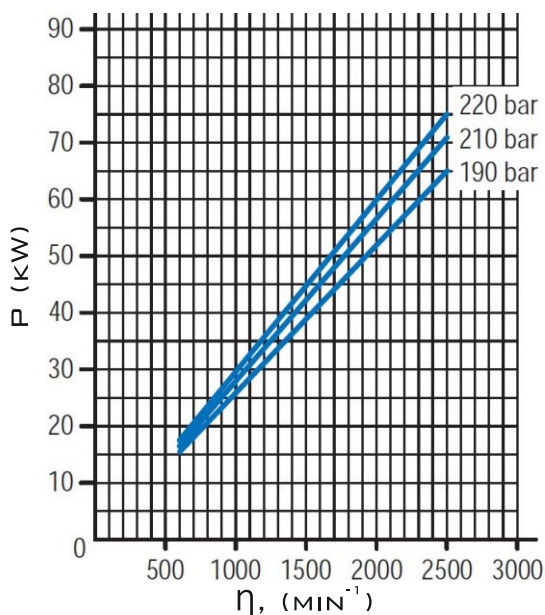
MGP3K50



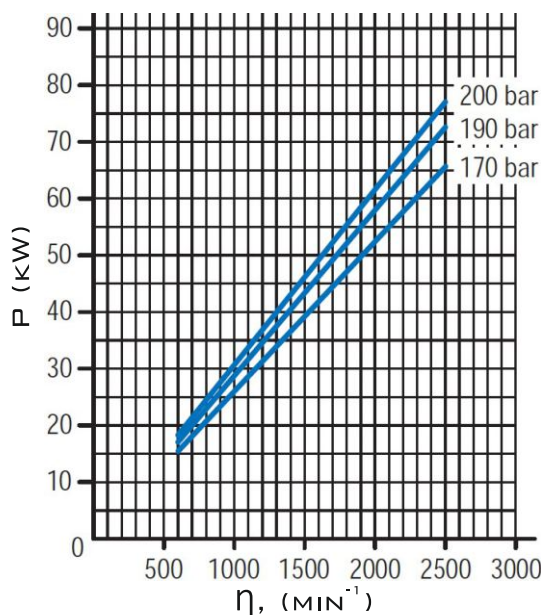
MGP3K56



MGP3K63



MGP2K71

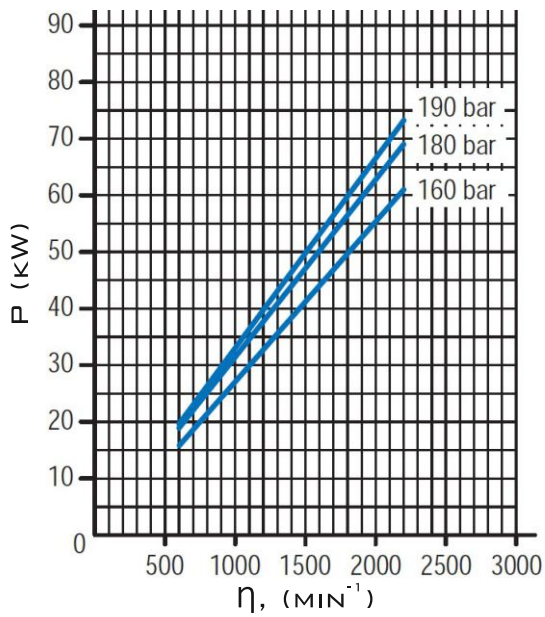




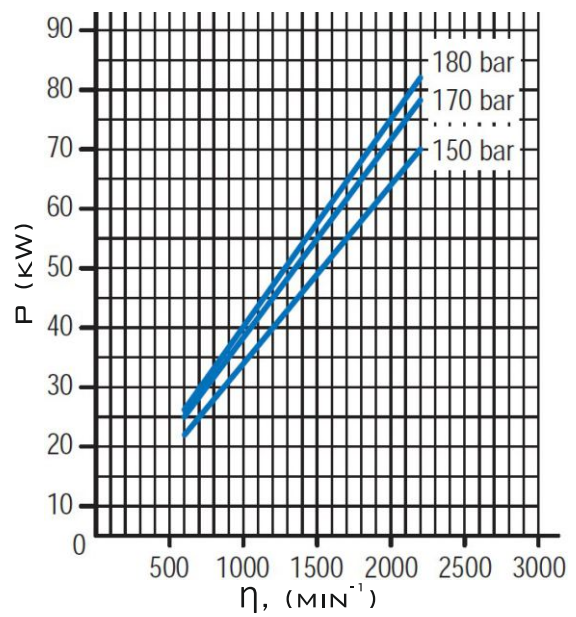
## CHARACTERISTIC CURVES

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

### MGP3K80



### MGP3K90

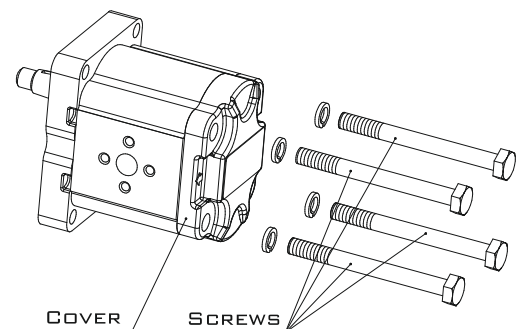


**INSTRUCTIONS OF ROTATION CHANGING**

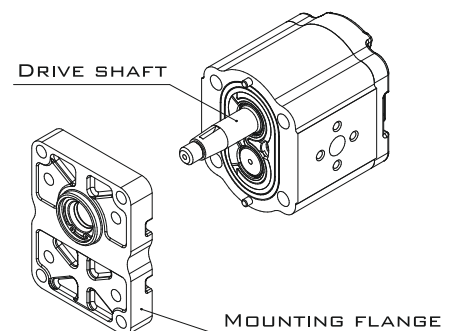
PROCESS OF CHANGE DIRECTION SHOWN AT THE EXAMPLE FOR PUMP WITH CLOCKWISE ROTATION.

**STEP 1**

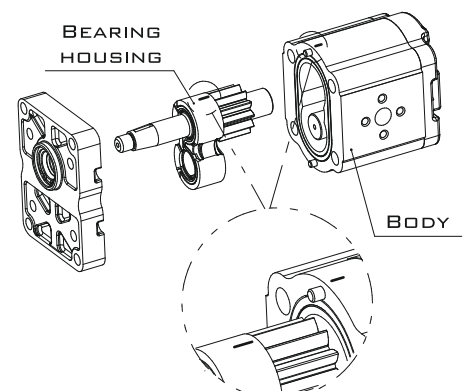
- UNSCREW AND REMOVE THE SCREWS COMPLETELY.
- PUT THE PUMP MOUNTING FLANGE UP.
- LUBRICATE THE DRIVE SHAFT WITH GREASE TO PREVENT DAMAGE TO THE SHAFT SEAL.

**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.

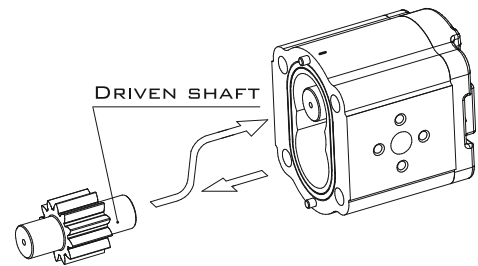


## INSTRUCTIONS OF ROTATION CHANGING

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

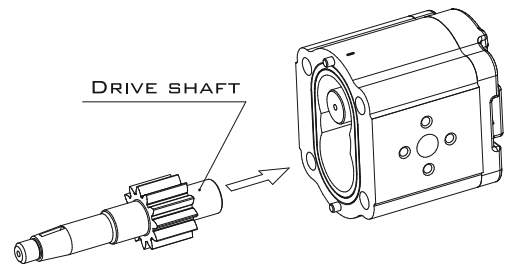
### STEP 4

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



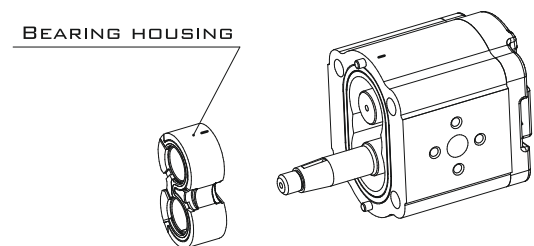
### STEP 5

- 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.

