



**GEAR PUMPS**

**GROUP 1**

**MODEL MGP**

**SERIES K**

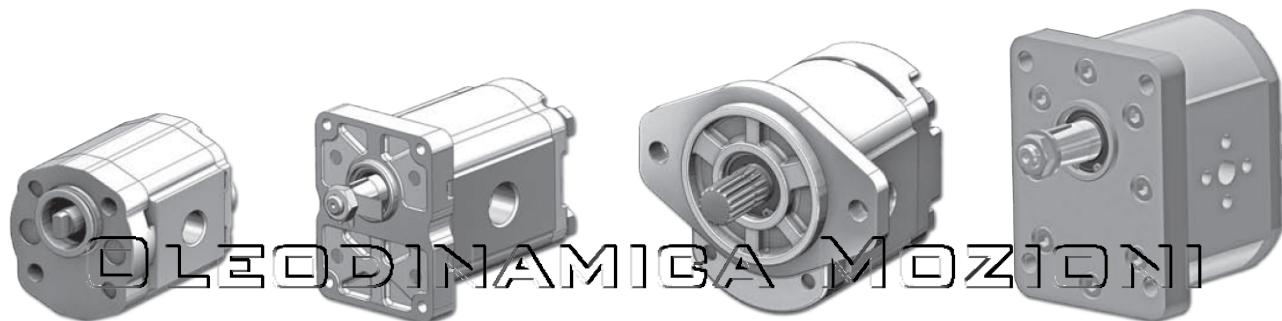


GEAR PUMPS SERIES "K" MANUFACTURED BY OLEODINAMICA MOZIONI ARE THE MOST USED IN HYDRAULIC UNITS IN THE HYDRAULIC SYSTEMS OF MOBILE MACHINES AND CONFORM TO INTERNATIONAL STANDARDS.

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.

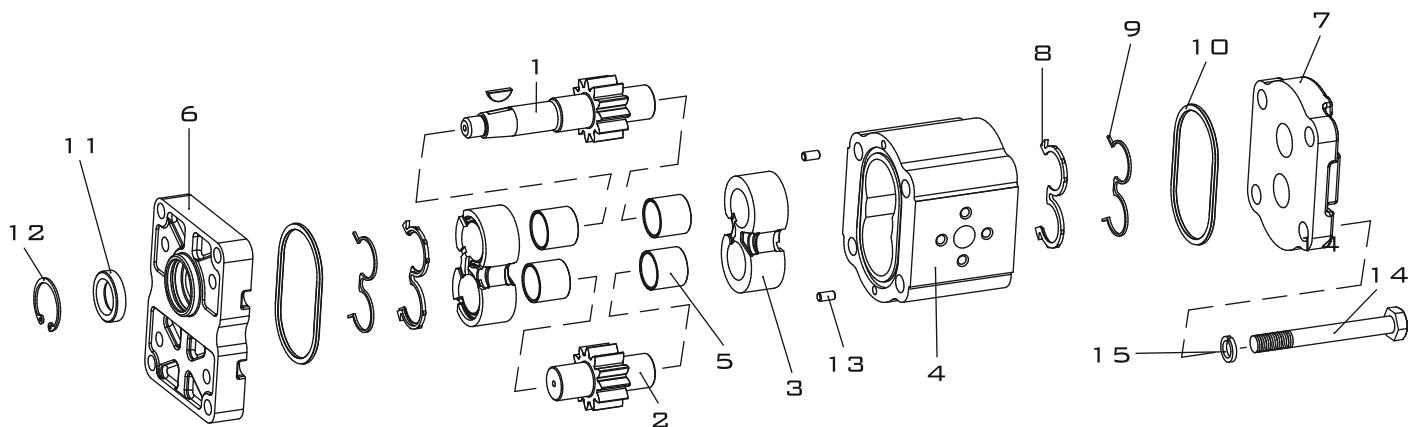


GEAR PUMPS SERIES "K" ARE MANUFACTURED WITH THRU-BOLT OF ROLLED ALUMINIUM, MOUNTING FLANGES AND REAR COVERS EITHER IN ALUMINIUM OR IN CAST IRON FOR MOBILE MACHINES, WHERE THERE ARE INCREASED REQUIREMENTS FOR THE NOISE LEVEL.

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

MGP1K

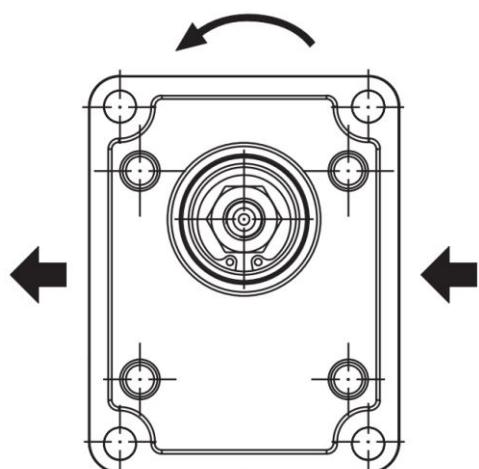
GEAR PUMPS  
GROUP 1

## WORKING CONDITIONS

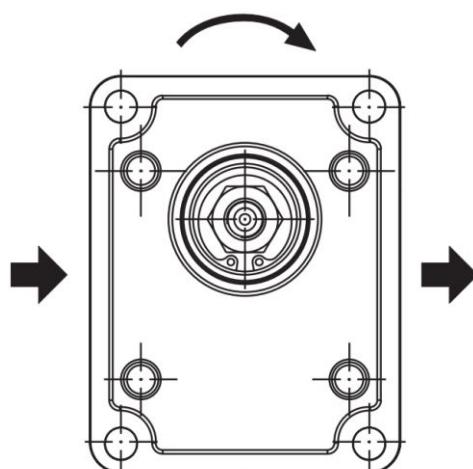
INLET PRESSURE (MAX.)	0.5 – 2.5 BAR
MIN. OPERATING FLUID VISCOSITY	10 MM <sup>2</sup> /SEC
MAX. STARTING VISCOSITY (COLD START)	1000 MM <sup>2</sup> /SEC
FLUID VISCOSITY RECOMMENDED RANGE	17 – 65 MM <sup>2</sup> /SEC
FLUID OPERATING TEMPERATURE RANGE WITH NBR SEALS	-40 +100 °C
FLUID OPERATING TEMPERATURE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

DEFINITION OF ROTATION DIRECTION  
LOOKING ON THE DRIVE SHAFT

COUNTERCLOCKWISE ROTATION



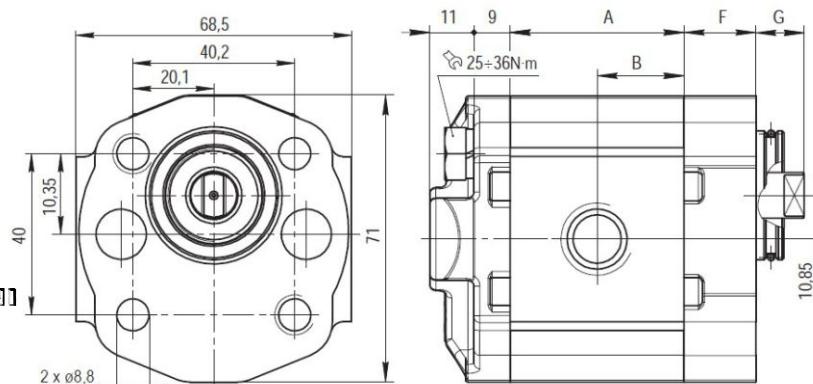
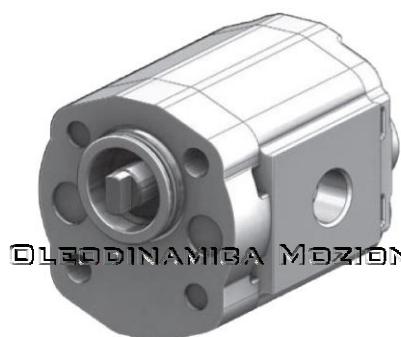
CLOCKWISE ROTATION



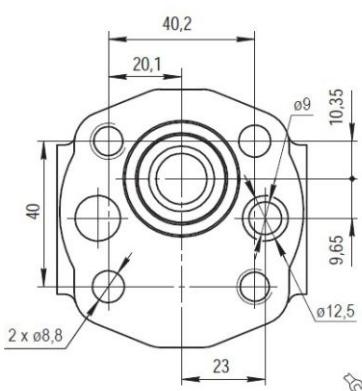


## TECHNICAL DATA AND INSTALLATION DIMENSIONS

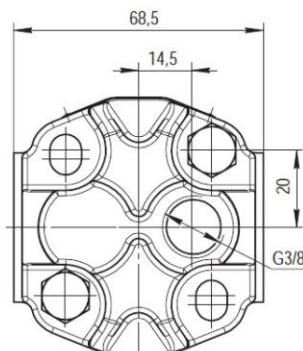
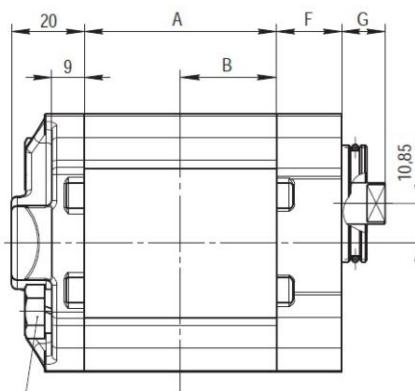
TYPE	MGP1K1	MGP1K1.2	MGP1K1.6	MGP1K2.1	MGP1K2.5	MGP1K3.2	MGP1K3.5	MGP1K4.2	MGP1K5	MGP1K6.2	MGP1K7	MGP1K8	MGP1K10
DISPLACEMENT, CM <sup>3</sup> /REV	1,0	1,2	1,6	2,1	2,5	3,2	3,5	4,2	5,0	6,2	7,0	8,0	10,0
DIMENSION A, MM	37,7	38,4	39,9	41,8	43,3	45,9	47,0	49,6	52,6	57,2	60,2	63,6	71,0
DIMENSION B, MM	18,9	19,2	20,0	20,9	21,7	23,0	23,5	24,8	26,3	28,6	30,1	31,8	35,5
MAX. CONTINUOUS PRESSURE P <sub>1</sub> , BAR				250			240	230	220	210	170	140	
MAX. INTERMITTENT PRESSURE P <sub>2</sub> , BAR				270			260	250	240	230	190	160	
PEAK PRESSURE P <sub>3</sub> , BAR				290			280	270	260	250	210	180	
MAX. SPEED n <sub>MAX</sub> , MIN <sup>-1</sup>				4000						3500			3200
MIN. SPEED AT P <sub>1</sub> ≤ 100 BAR, n <sub>MIN</sub> , MIN <sup>-1</sup>			750			650				600			
WEIGHT, KG	0,83	0,85	0,87	0,91	0,93	0,96	0,98	1,00	1,05	1,16	1,20	1,26	1,32



MGP1K4.2R-K212G



MGP1K4.2R-K210GC-A



DIMENSIONS G AND F SEE AT SECTIONS "DRIVE SHAFTS" AND "MOUNTING FLANGES"



POMPE AD INGRANAGGI

MGP1K

GEAR PUMPS  
GROUP 1

## COMBINATIONS OF MOUNTING FLANGES &amp; SHAFTS

MGP1K	SAE "A-A" 2 BOLTS	EUROPEAN Ø25,4	EUROPEAN Ø30	GERMAN 2 BOLTS (RIGHT)	GERMAN 2 BOLTS (LEFT)	GERMAN 2 BOLTS
	SAE SPLINED (8 TEETH)	B1 30				
	EUROPEAN TAPERED 1:8		G1 60	G1 70		
	TANG DRIVE				K1 10	K1 11
	TANG DRIVE				K2 10	K2 11
	DIN 5482 SPLINED (6 TEETH)	I1 30				K2 12

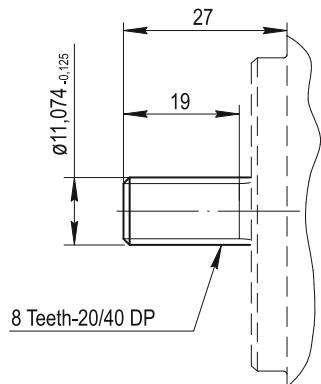
THIS COMBINATIONS OF MOUNTING FLANGES AND SHAFTS  
ARE USED TO SERIAL PRODUCTION. THE OTHER COMBINATIONS  
AND DATE OF PRODUCTION, BEFORE ORDERING CLARIFY WITH  
THE MANUFACTURER.

SEE ALSO: MGP2K  
MGP2.5K, MGP3K



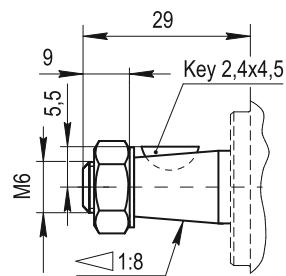
## DRIVE SHAFTS

MAX. TORQUE 35 N·M



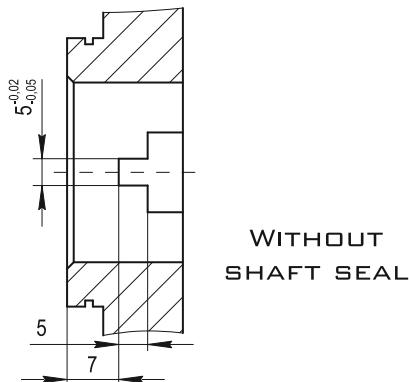
B1 - SAE SPLINED (8 TEETH)

MAX. TORQUE 20 N·M



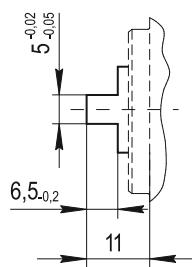
G1 - EUROPEAN TAPERED 1:8

MAX. TORQUE 20 N·M

WITHOUT  
SHAFT SEAL

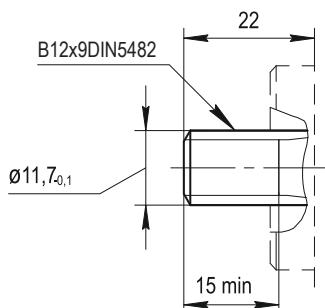
K1 - TANG DRIVE

MAX. TORQUE 20 N·M



K2 - TANG DRIVE

MAX. TORQUE 20 N·M



I1 - DIN 5482 SPLINED (6 TEETH)

THE TORQUE ON THE OUTPUT SHAFT FOR CODES G1 K1, K2 SHOULD BE RESTRICTED OUTLET PRESSURE.

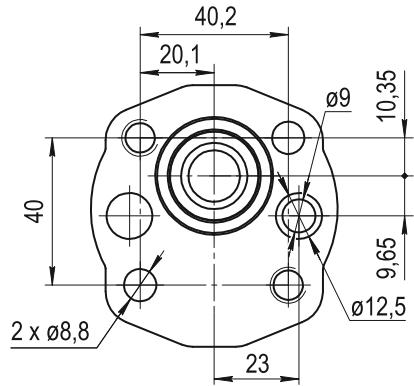


POMPE AD INGRANAGGI

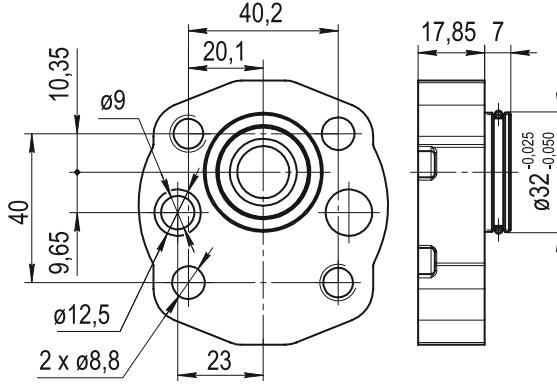
MGP1K

GEAR PUMPS  
GROUP 1

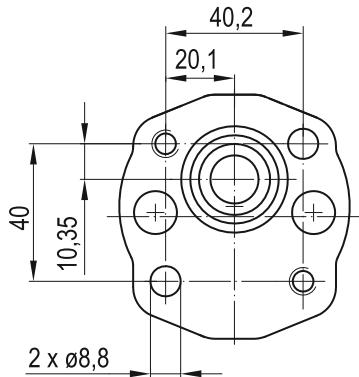
MOUNTING FLANGES



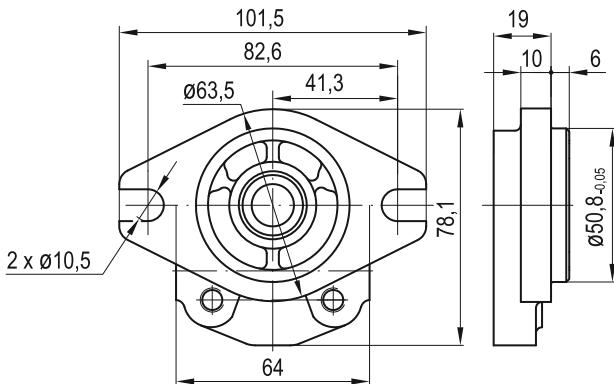
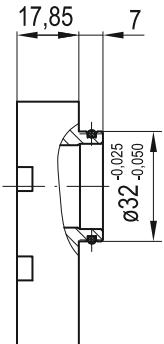
10 - GERMAN 2 BOLTS (RIGHT)



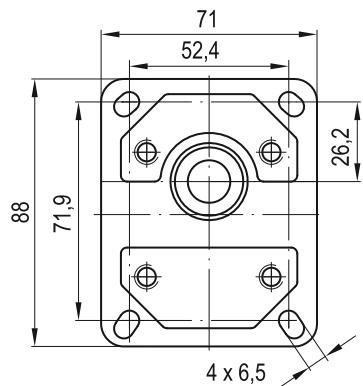
11 - GERMAN 2 BOLTS (LEFT)



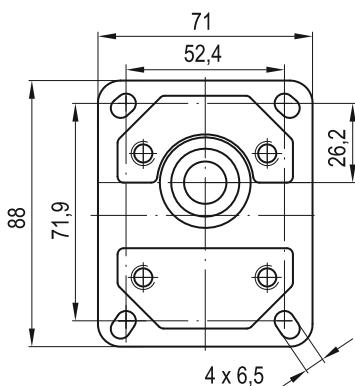
12 - GERMAN 2 BOLTS



30 - SAE "A-A" 2 BOLTS



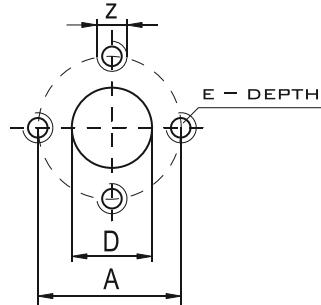
60 - EUROPEAN Ø25,4



70 - EUROPEAN Ø30

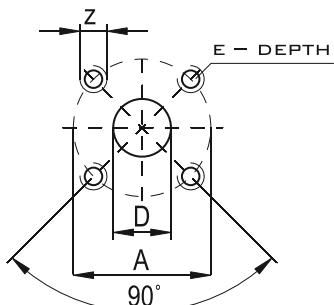


## PORTS



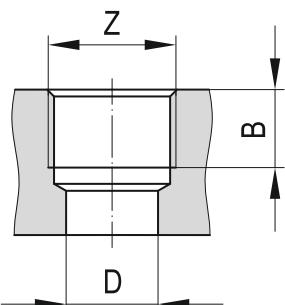
B - EUROPEAN FLANGE

TYPE	INLET				OUTLET			
	D	A	z	E	D	A	z	E
MGP1K1÷10	13	30	M6	12	13	30	M6	12



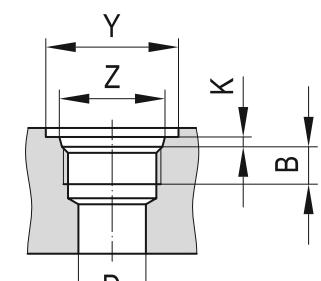
C - GERMAN FLANGE

TYPE	INLET				OUTLET			
	D	A	z	E	D	A	z	E
MGP1K1÷10	13	30	M6	12	13	30	M6	12



E - METRIC THREADED

TYPE	INLET				OUTLET			
	Z	B	D		Z	B	D	
MGP1K1÷10	M18x1,5	15	13		M14x1,5	15	13	



F - SAE THREADED

TYPE	INLET					OUTLET				
	Z	B	D	Y	K	Z	B	D	Y	K
MGP1K1÷5	9/16-18 UNF	15	12	26	2,5	9/16-18 UNF	15	12	26	2,5
MGP1K6.2÷10	3/4-16 UNF		13	32		3/4-16 UNF	15	13	32	

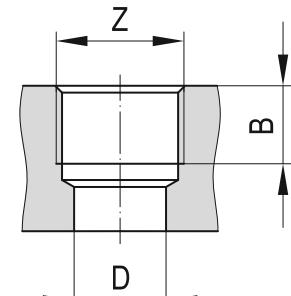


POMPE AD INGRANAGGI

MGP1K

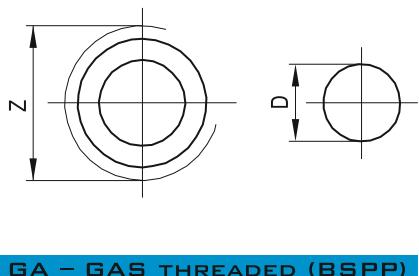
GEAR PUMPS  
GROUP 1

## PORTS



G - GAS THREADED (BSPP)

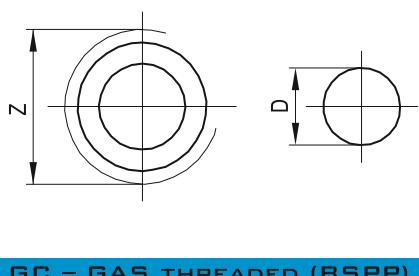
TYPE	INLET			OUTLET		
	Z	B	D	Z	B	D
MGP1K1÷5	3/8" GAS	15	12	3/8" GAS	15	12
MGP1K6.2÷10	1/2" GAS		13	1/2" GAS		13



GA - GAS THREADED (BSPP)

PORT POSITIONS ONLY FOR BACK-FRONT OR SIDE-FRONT  
(CODE "A" OR "C")

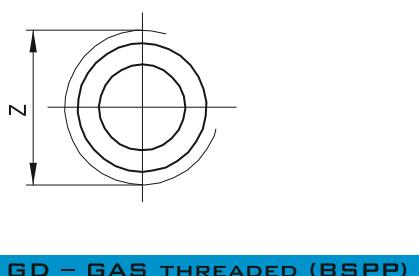
TYPE	INLET	OUTLET
	Z	D
MGP1K1÷10	1/4" GAS	9



GC - GAS THREADED (BSPP)

PORT POSITIONS ONLY FOR BACK-FRONT OR SIDE-FRONT  
(CODE "A" OR "C")

TYPE	INLET	OUTLET
	Z	D
MGP1K1÷10	3/8" GAS	9



GD - GAS THREADED (BSPP)

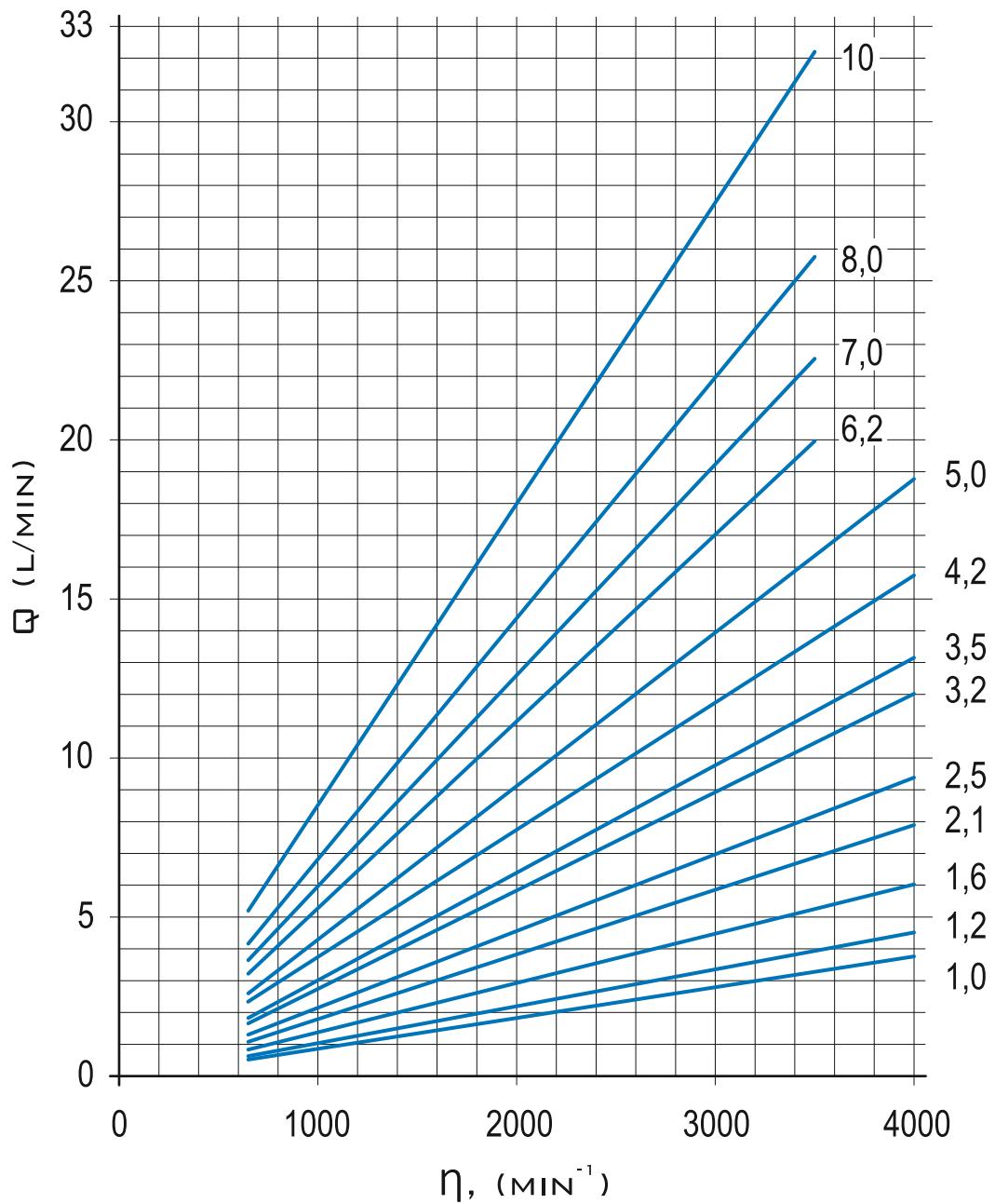
PORT POSITIONS ONLY FOR BACK INLET AND BACK OUTLET  
(CODE "D")

TYPE	INLET	OUTLET
	Z	
MGP1K1÷10	3/8" GAS	1/4" GAS



## CHARACTERISTIC CURVES

CHARACTERISTIC CURVES CARRIED OUT WITH OIL VISCOSITY AT 30 MM<sup>2</sup>/SEC,  
OIL TEMPERATURE AT 50 °C AND MAX. CONTINUOUS PRESSURES FOR EACH TYPE.

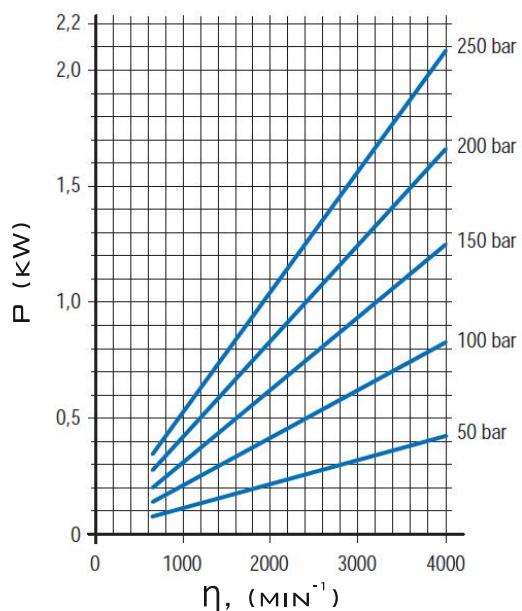




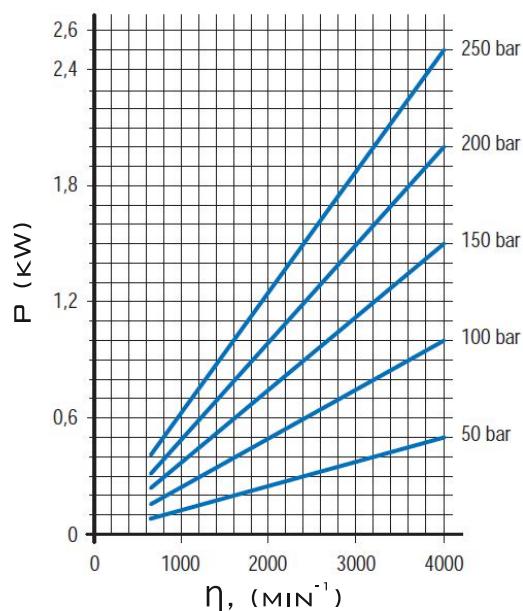
## CHARACTERISTIC CURVES

CHARACTERISTIC CURVES CARRIED OUT WITH OIL VISCOSITY AT 30 MM<sup>2</sup>/SEC AND OIL TEMPERATURE AT 50 °C.

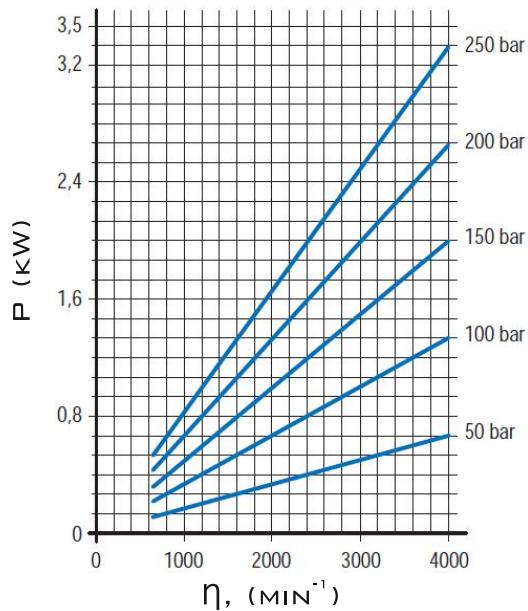
MGP1K1



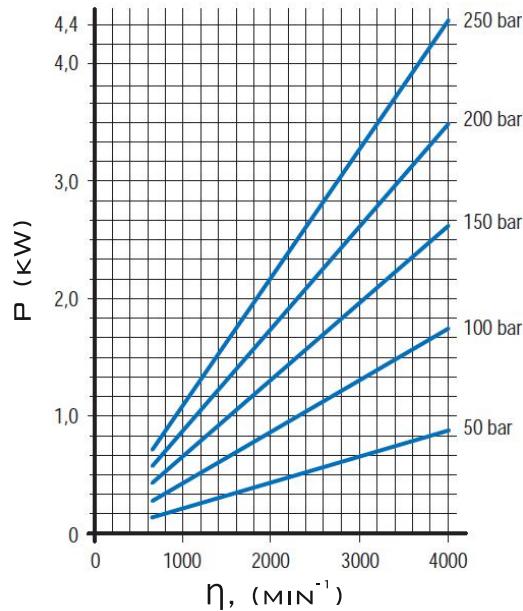
MGP1K1.2



MGP1K1.6



MGP1K2.1

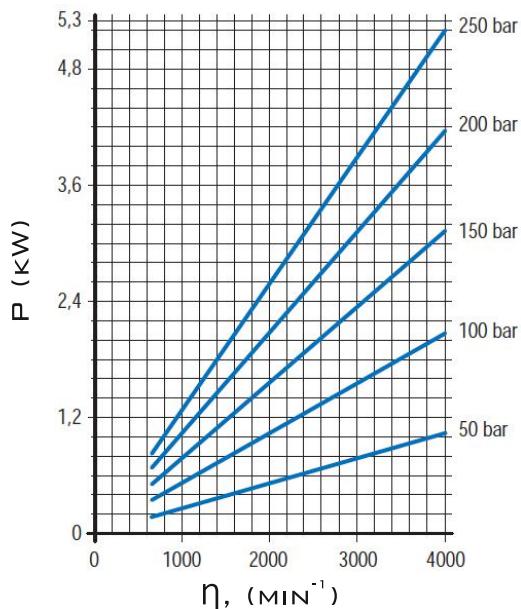




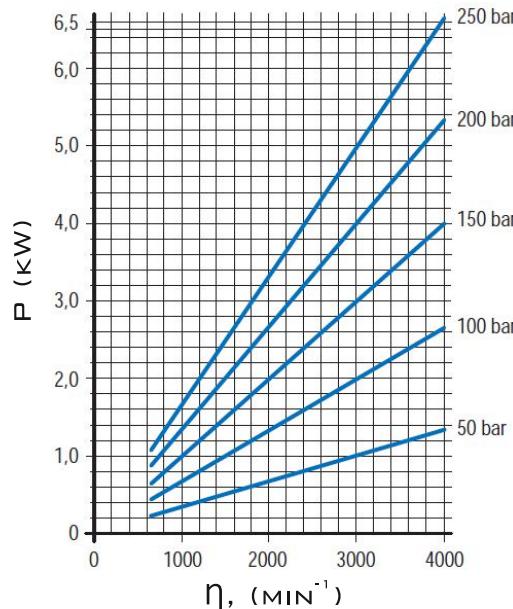
## CHARACTERISTIC CURVES

CHARACTERISTIC CURVES CARRIED OUT WITH OIL VISCOSITY AT 30 MM<sup>2</sup>/SEC AND OIL TEMPERATURE AT 50 °C.

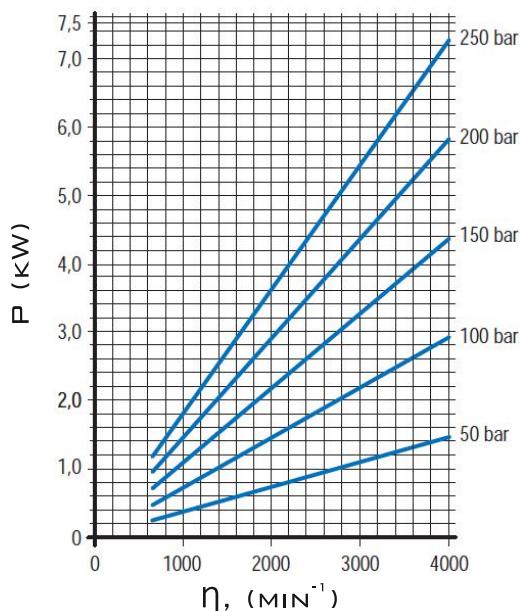
MGP1K2.5



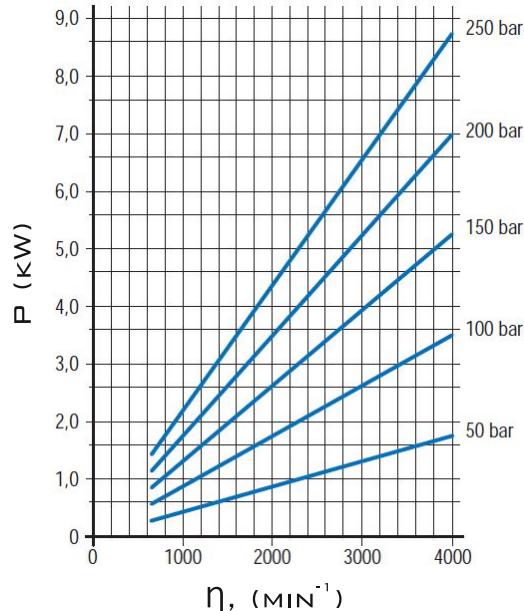
MGP1K3.2



MGP1K3.5



MGP1K4.2

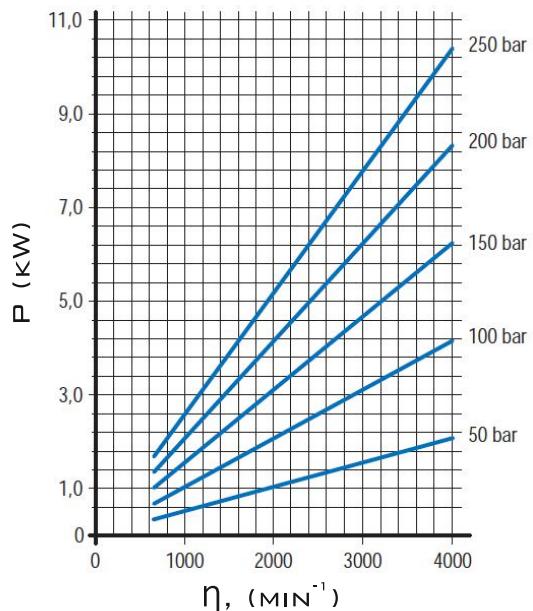




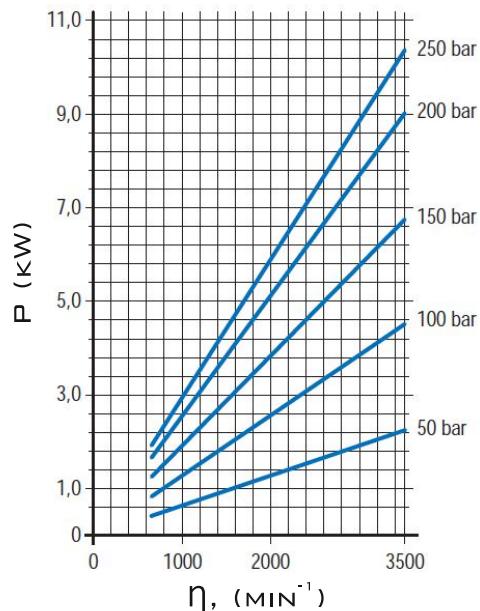
## CHARACTERISTIC CURVES

CHARACTERISTIC CURVES CARRIED OUT WITH OIL VISCOSITY AT 30 MM<sup>2</sup>/SEC AND OIL TEMPERATURE AT 50 °C.

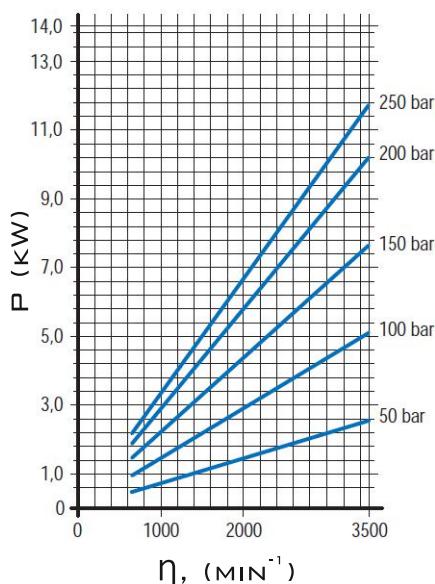
MGP1K5



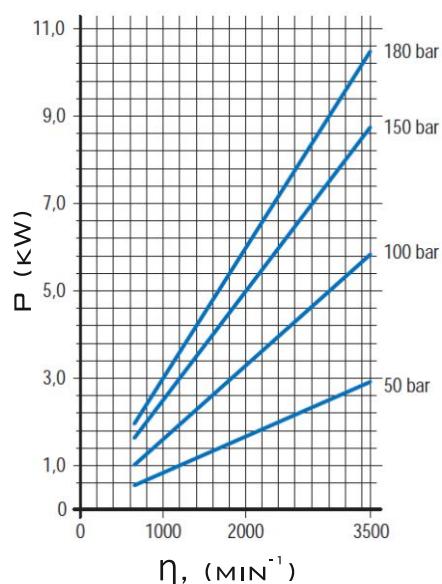
MGP1K6.2



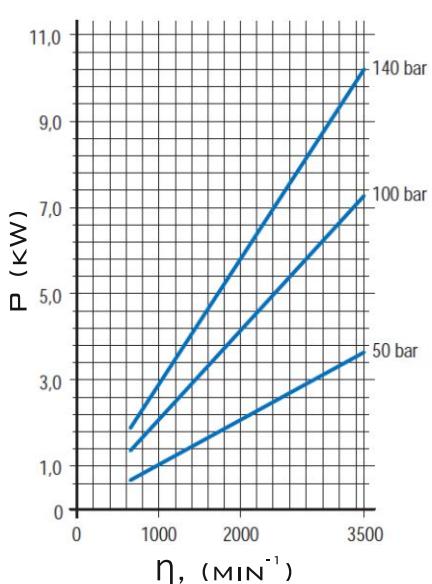
MGP1K7



MGP1K8



MGP1K10



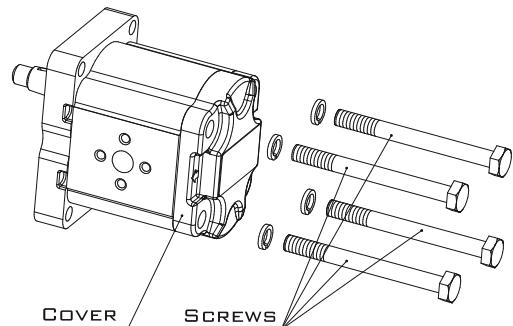


## INSTRUCTIONS OF ROTATION CHANGING

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

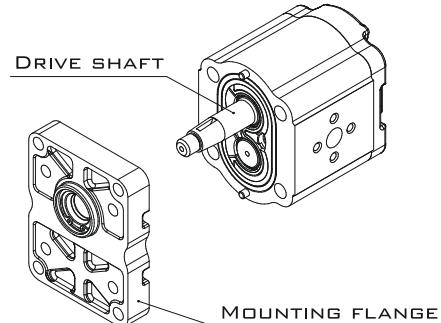
## STEP 1

- 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.



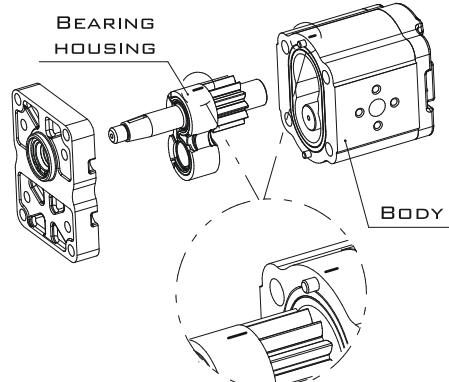
## STEP 2

- 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.



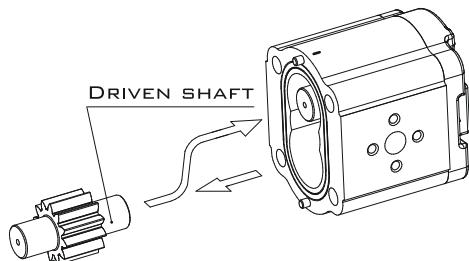


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PROCESS OF CHANGE DIRECTION SHOWN AT THE EXAMPLE FOR PUMP WITH CLOCKWISE ROTATION.

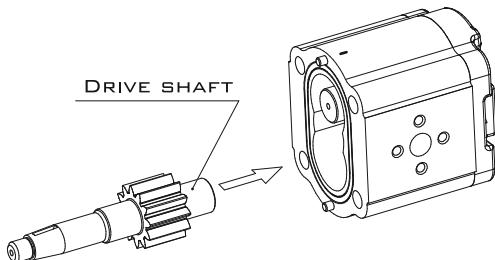
## STEP 4

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



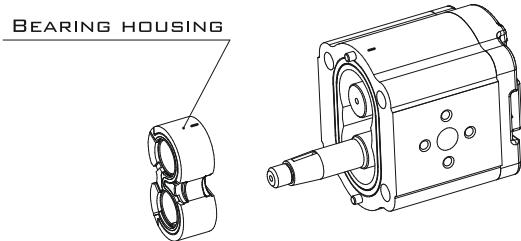
## STEP 5

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



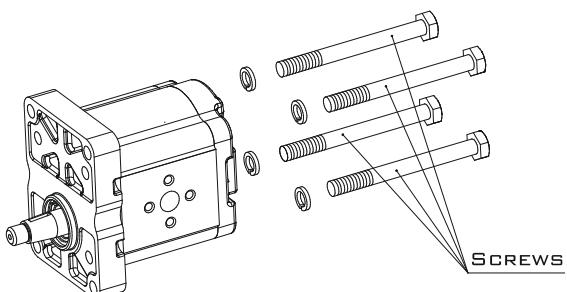
## STEP 6

- 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.



**MGP 1 K**GEAR PUMPS  
GROUP 1

POMPE AD INGRANAGGI

**ORDER CODE**

<b>M</b>	<b>G</b>	<b>P</b>	<b>1</b>	<b>K</b>						
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GROUP 1

SERIES K

**1**=1,0 CM<sup>3</sup>/REV  
**1.2**=1,2 CM<sup>3</sup>/REV  
**1.6**=1,6 CM<sup>3</sup>/REV  
**2.1**=2,1 CM<sup>3</sup>/REV  
**2.5**=2,5 CM<sup>3</sup>/REV  
**3.2**=3,2 CM<sup>3</sup>/REV  
**3.5**=3,5 CM<sup>3</sup>/REV  
**4.2**=4,2 CM<sup>3</sup>/REV  
**5**=5,0 CM<sup>3</sup>/REV  
**6.2**=6,2 CM<sup>3</sup>/REV  
**7**=7,0 CM<sup>3</sup>/REV  
**8**=8,0 CM<sup>3</sup>/REV  
**10**=10,0 CM<sup>3</sup>/REV

**R**=CLOCKWISE ROTATION**L**=COUNTERCLOCKWISE ROTATION

## DRIVE SHAFTS:

**B1**=SAE SPLINED (8 TEETH)  
**G1**=EUROPEAN TAPERED 1:8  
**K1**=TANG DRIVE  
**K2**=TANG DRIVE  
**I1**=DIN 5482 SPLINED (6 TEETH)

**NO CODE**=NBR SEALS  
**V**=FKM SEALS

**PORTS POSITION:**  
**NO CODE**=SIDE INLET – SIDE OUTLET  
**A**=BACK INLET – FRONT OUTLET  
**B**=BACK INLET – SIDE OUTLET  
**C**=SIDE INLET – FRONT OUTLET  
**D**=BACK INLET – BACK OUTLET

**PORTS:**  
**B**=EUROPEAN FLANGE  
**C**=GERMAN FLANGE  
**E**=METRIC THREADED  
**F**=SAE THREADED  
**G**=GAS THREADED (BSPP)  
**GA**=GAS THREADED (BSPP)  
**GC**=GAS THREADED (BSPP)  
**GD**=GAS THREADED (BSPP)

**MOUNTING FLANGES:**  
**10**=GERMAN 2 BOLTS (RIGHT)  
**11**=GERMAN 2 BOLTS (LEFT)  
**12**=GERMAN 2 BOLTS  
**30**=SAE "A-A" 2 BOLTS  
**60**=EUROPEAN Ø25,4  
**70**=EUROPEAN Ø30