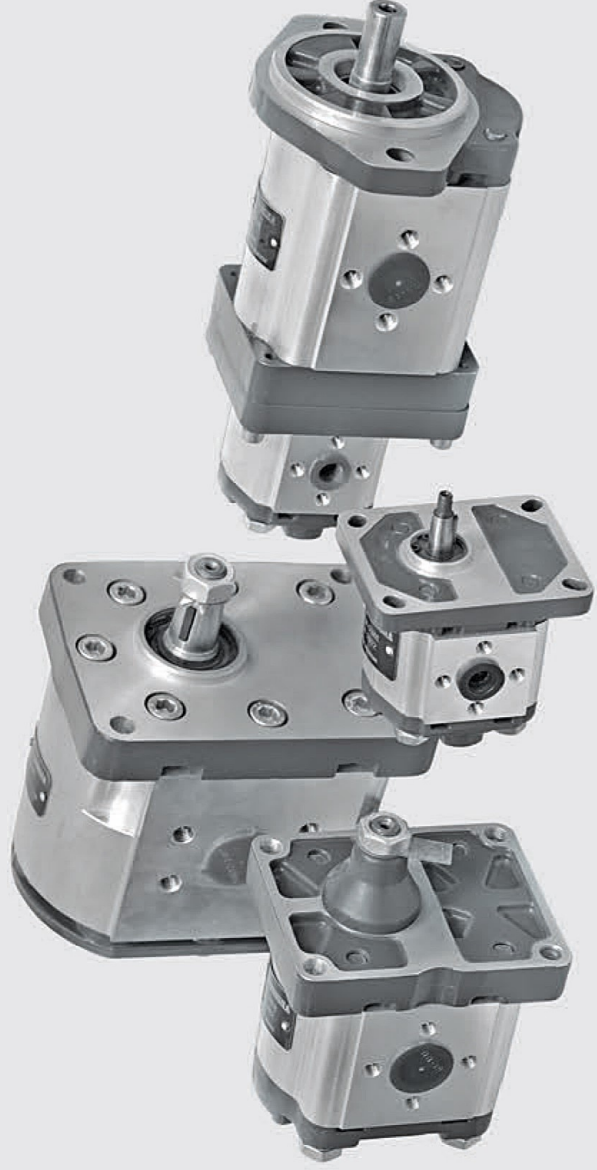




ML
OLEODINAMICA



GEAR PUMPS SERIES "K"

FEATURES

Gear pumps **series "K"** are the most used in hydraulic units in the hydraulic systems of mobile machines and conform to international standards.

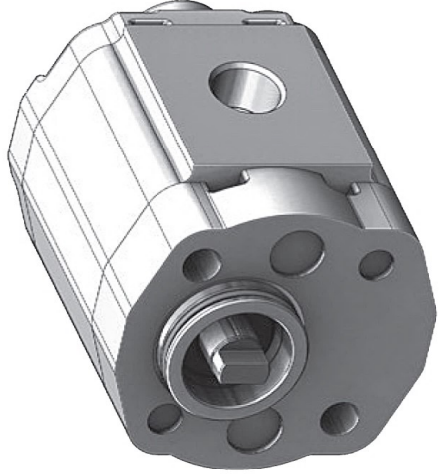
We use the advanced world's concepts; improving the technical characteristics of the product; use only high quality materials and hardware manufacturers the world at all stages of design and production. The quality management system conforms international standard ISO 9001 : 2008.

Gear pumps series "K" of ML OLEODINAMICA have high volumetric and mechanical efficiency, low noise and operate reliably in a variety hydraulic systems of mobile machinery.

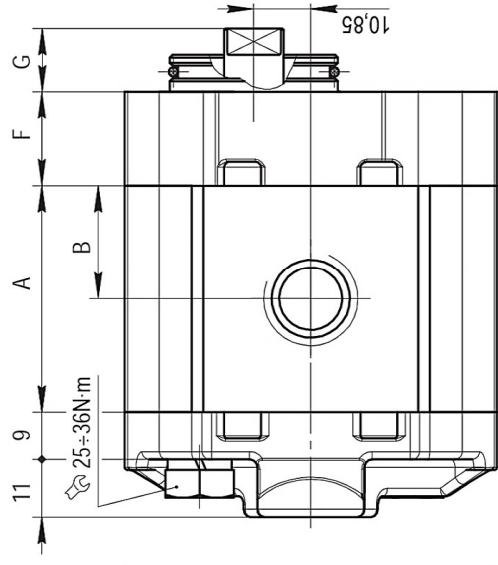
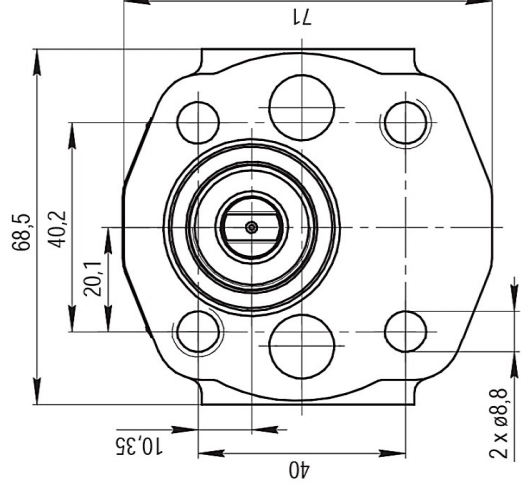
- Dimensions of the pumps are according to international standards SAE, DIN, EUROPEAN.
- Gear pumps are supplied in next groups GP1K, GP2K, GP2.5K, GP3K, GP4K with displacements from 1 to 200 cm³/rev.
- Maximum continuous pressure up to 250 bar.
- Mounting flanges and rear covers are produced with aluminum or cast iron.
- Options built-in valves in rear cover.
- Multiple units available with separated or common inlet for stages.
- Pumps with bearing support for heavy duty applications.

TECHNICAL DATA AND ASSEMBLING DIMENSIONS

Type	GP1K1	GP1K1.2	GP1K1.6	GP1K2.1	GP1K2.5	GP1K3.2	GP1K3.5	GP1K4.2	GP1K5	GP1K6.2	GP1K7	GP1K8	GP1K10
Displacement	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
Flow rate at 1500 rpm	l/min	1,4	1,7	2,3	3,0	4,6	5,0	6,0	7,1	8,8	10,0	11,4	14,3
Dimension A	mm	37,70	38,40	39,90	41,80	43,30	45,90	49,60	52,60	57,20	60,20	63,60	71,00
Dimension B	mm	18,85	19,20	19,95	20,90	21,65	22,95	24,80	26,30	28,60	30,10	31,80	35,50
Max. continuous pressure, P_1	bar	250				240		230	220	210	170	140	
Max. intermittent pressure, P_2	bar	270				260		250	240	230	190	160	
Peak pressure, P_3	bar	290				280		270	260	250	210	180	
Max. speed, n_{max}	min ⁻¹	4000				3500		3200					
Min. speed at $P_1 \leq 100$ bar, n_{min}	min ⁻¹	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	1,26	1,32



Ordering example
GP1K4.2R-K212G

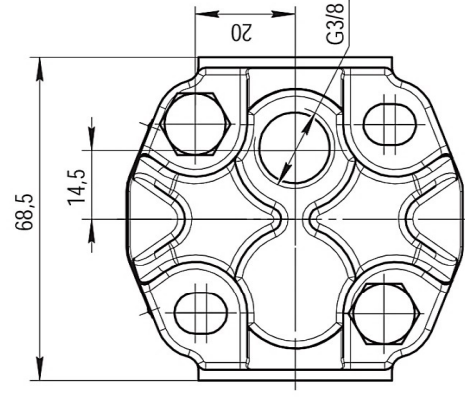
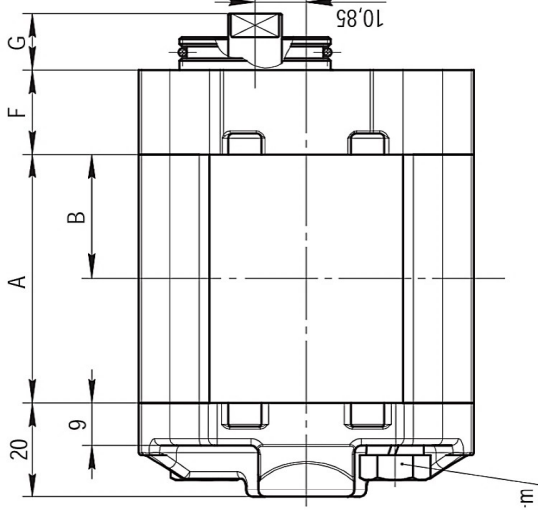
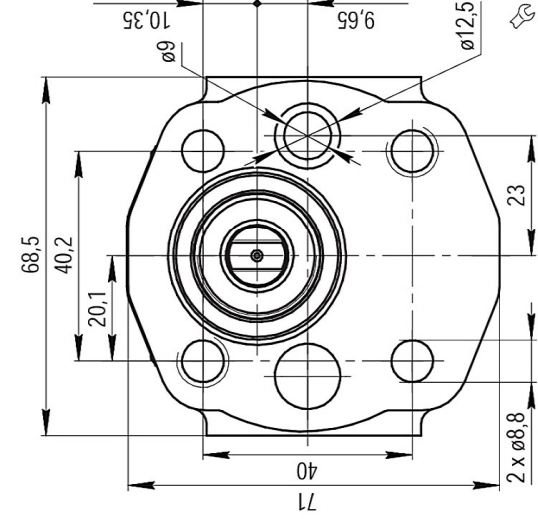


Dimension G = see section "Drive shafts"

Dimension F = see section "Mounting flanges"

TECHNICAL DATA AND ASSEMBLING DIMENSIONS

Type	GP1K1	GP1K1.2	GP1K1.6	GP1K2.1	GP1K2.5	GP1K3.2	GP1K3.5	GP1K4.2	GP1K5	GP1K6.2	GP1K7	GP1K8	GP1K10
Displacement	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
Flow rate at 1500 rpm	cm ³ /rev	1,4	1,7	2,3	3,0	3,6	4,6	5,0	7,1	8,8	10,0	11,4	14,3
Dimension A	mm	37,70	38,40	39,90	41,80	43,30	45,90	49,60	52,60	57,20	60,20	63,60	71,00
Dimension B	mm	18,85	19,20	19,95	20,90	21,65	22,95	23,50	26,30	28,60	30,10	31,80	35,50
Max. continuous pressure, P ₁	bar	250			240			230			210		
Max. intermittent pressure, P ₂	bar	270			260			250			230		
Peak pressure, P ₃	bar	290			280			270			250		
Max. speed at P ₂ , n _{max}	min ⁻¹	4000			3500			3200					
Min. speed at P ₁ =100 bar, n _{min}	min ⁻¹	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



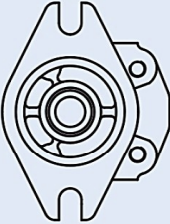
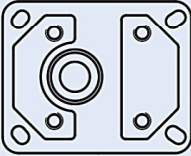
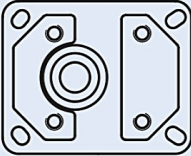
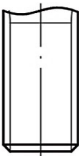
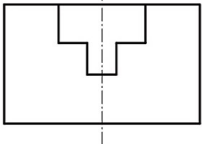
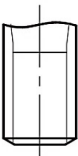
Ordering example

GP1K4.2R-K210GC-A

Dimension G = see section "Drive shafts"

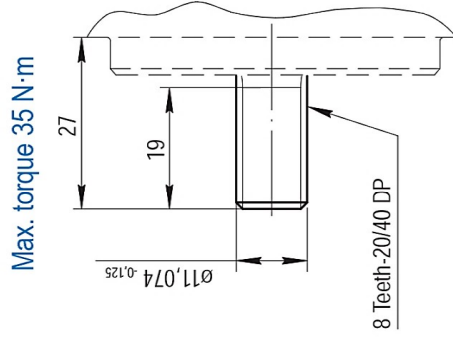
Dimension F = see section "Mounting flanges"

COMBINATION TYPES OF MOUNTING FLANGES & SHAFTS

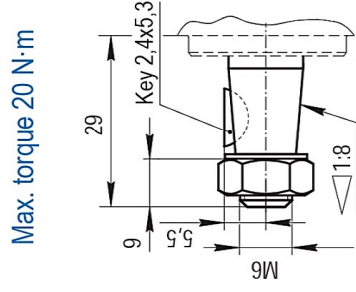
GP1K	 SAE "A-A" 2 BOLTS	 EUROPEAN Ø25,4	 EUROPEAN Ø30	 GERMAN 2 BOLTS (RIGHT)	 GERMAN 2 BOLTS (LEFT)	 GERMAN 2 BOLTS
 SAE SPLINED (8 TEETH)	B1 30					
 EUROPEAN TAPERED 1:8		G1 60	G1 70			
 TANG DRIVE				K1 10	K1 11	K1 12
 TANG DRIVE				K2 10	K2 11	K2 12
 DIN 5482 SPLINED (6 TEETH)	I1 30					

represent combination types of mounting flanges and shafts are used to serial production. The other combination and date of production, before ordering clarify with the manufacturer.

DRIVE SHAFTS

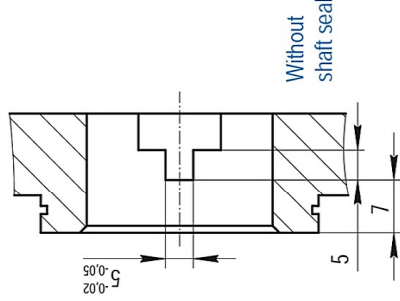


B1 SAE SPLINED (8 TEETH)



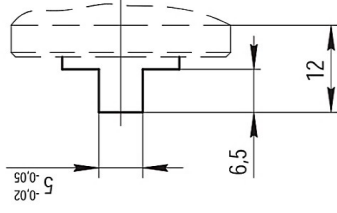
G1 EUROPEAN TAPERED 1:8

Max. torque 20 N·m



K1 TANG DRIVE

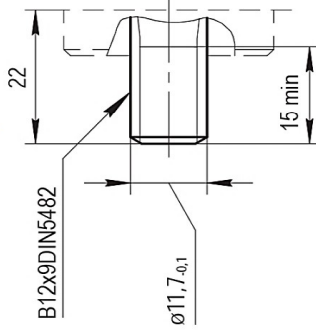
Max. torque 20 N·m



K2 TANG DRIVE

*The torque on the output shaft for codes G1 K1, K2 should be restricted outlet pressure.
Use formula on page 8 for calculation.

Max. torque 35 N·m



I1 DIN 5482 SPLINED (6 TEETH)

ORDERING INSTRUCTIONS

GEAR PUMP		GP	1	K	1.6	R	B1	30	F	-	-
-----------	--	----	---	---	-----	---	----	----	---	---	---

GROUP	1
-------	---

SERIES	K
--------	---

DISPLACEMENT	CODE
1,0 cm³/rev	1
1,2 cm³/rev	1.2
1,6 cm³/rev	1.6
2,1 cm³/rev	2.1
2,5cm³/rev	2.5
3,2 cm³/rev	3.2
3,5 cm³/rev	3.5
4,2 cm³/rev	4.2
5,0 cm³/rev	5
6,2 cm³/rev	6.2
7,0 cm³/rev	7
8,0 cm³/rev	8
10,0 cm³/rev	10

ROTATION	CODE
Clockwise	R
Counterclockwise	L

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

SPECIFICATION OF CONSUMER	
SEAL MATERIAL	CODE
NBR	
FPM (Viton)	V

PORTS POSITION	CODE
Side Inlet - side Outlet	
Back Inlet - front Outlet	A
Back Inlet - side Outlet	B
Side Inlet - front Outlet	C
Back Inlet - back Outlet	D

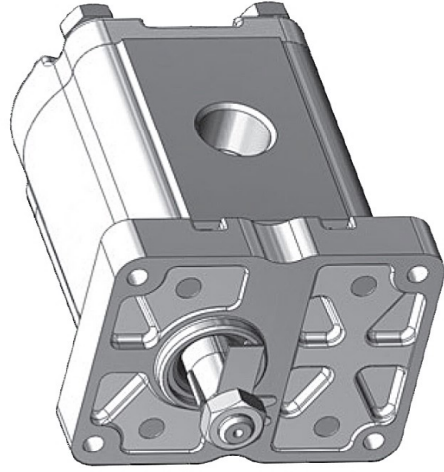
PORTS	CODE
EUROPEAN FLANGE	B
GERMAN FLANGE	C
METRIC THREADED	E
SAE THREADED	F
GAS THREADED (BSPP)	G
GAS THREADED (BSPP)	GA
GAS THREADED (BSPP)	GC
GAS THREADED (BSPP)	GD

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

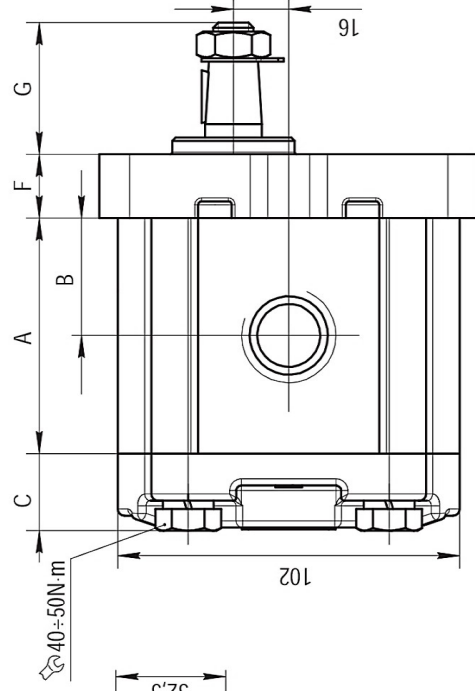
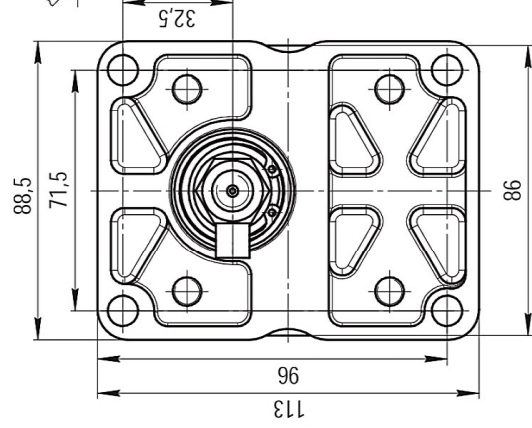
Specification of consumer assigned if necessary after clarify special conditions with the customer

TECHNICAL DATA AND ASSEMBLING DIMENSIONS

Type		GP2K4	GP2K5	GP2K6	GP2K8	GP2K10	GP2K11	GP2K12	GP2K14	GP2K15	GP2K16	GP2K17	GP2K19	GP2K20	GP2K23	GP2K25	GP2K28
Displacement	cm³/rev	4,5	5,6	6,3	8,2	10,0	11,3	12,5	14,0	15,0	16,0	17,0	19,0	20,0	22,5	24,8	28,0
Flow rate at 1500 rpm	l/min	6,4	8,0	9,0	11,7	14,3	16,1	17,8	20,0	21,4	22,8	24,2	27,1	28,5	32,1	35,3	39,9
Dimension A	mm	47,5	49,1	50,2	53,2	56,0	58,0	59,8	62,1	63,7	65,2	66,9	69,9	71,4	75,3	78,8	83,7
Dimension B	mm	23,7	24,55	25,1	26,6	28,0	29,0	29,9	31,05	31,85	32,6	33,45	34,95	35,7	37,65	39,4	41,9
Max. continuous pressure, P ₁	bar	250											220	210	190	170	150
Max. intermittent pressure, P ₂	bar	280											250	230	210	190	170
Peak pressure, P ₃	bar	300											270	250	230	210	190
Max. speed, n _{max}	min ⁻¹	4000			3500							3000			2500		
Min. speed at P ₁ ≤100 bar, n _{min}	min ⁻¹	700					600					500					
Weight	kg	2,1	2,1	2,2	2,2	2,3	2,4	2,4	2,6	2,6	2,7	2,7	2,8	2,8	3,0	3,2	3,4



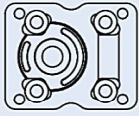
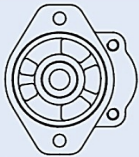
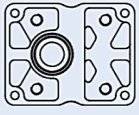
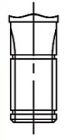
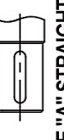
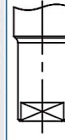
Ordering example

GP2K10R-G262G

Dimension G = see section "Drive shafts"
 Dimension F = see section "Mounting flanges"
 Dimension C = see section "Rear covers"

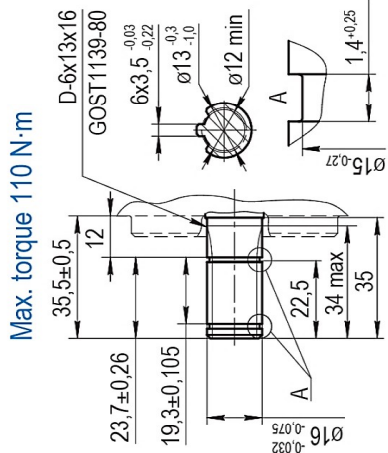
Weight shown are for pumps with aluminum covers. Weight for pumps with cast iron covers should be refined

COMBINATION TYPES OF MOUNTING FLANGES & SHAFTS

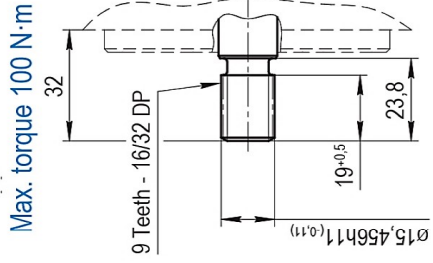
GP2K								
 GSTU 3-25-180-97	A1 01 A1 02							
 SAE "A" SPLINED (9 TEETH)	B2 31 B2 32							
 SAE "A" SPLINED (10 TEETH)	B3 31 B3 32							
 SAE "A" SPLINED (11 TEETH)	B4 31 B4 32							
 EUROPEAN TAPERED 1:8			G2 61 G2 62					G2 21
 GERMAN TAPERED 1:5				F2 81	F2 91 F2 92			
 SAE "A" STRAIGHT Ø15,87	H2 31 H2 32		H2 61 H2 62					
 SAE "A" STRAIGHT Ø19,05	H8 31 H8 32							
 SAE "A" STRAIGHT Ø19,05 LENGTH	H9 31 H9 32							
 TANG DRIVE						K3 93 K3 94	K3 95	
 TANG DRIVE					K4 91 K4 92			
 DIN 5482 SPLINED (9 TEETH)			I2 61 I2 62	I2 81	I2 91 I2 92			

Present combination types of mounting flanges and shafts are used to serial production. The other combination and date of production, before ordering clarify with the manufacturer.

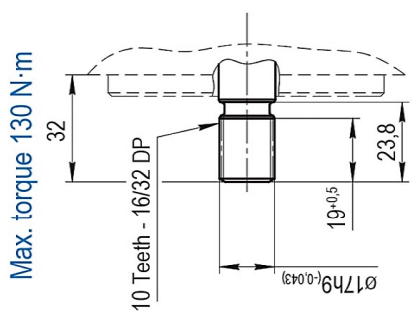
DRIVE SHAFTS



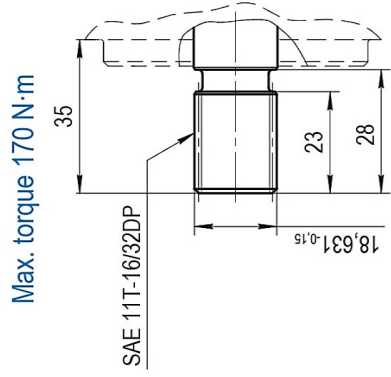
A1 GSTU 3-25-180-97



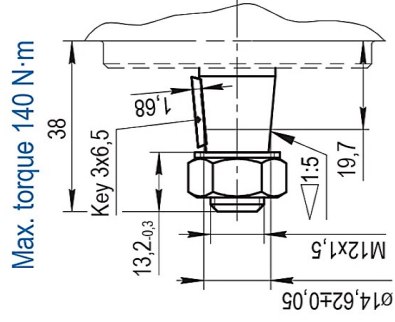
B2 SAE A SPLINED (9 TEETH)



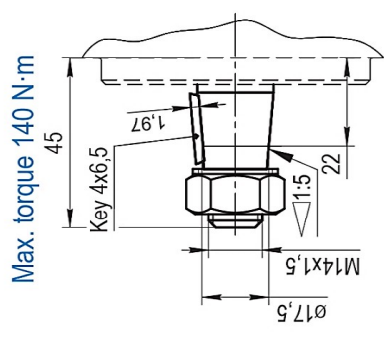
B3 SAE A SPLINED (10 TEETH)



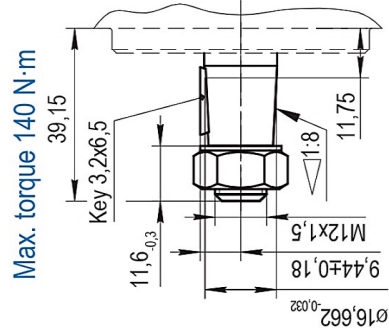
B4 SAE A SPLINED (11 TEETH)



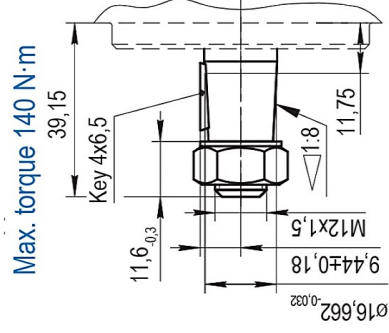
F2 GERMAN TAPERED 1:5



F6 GERMAN TAPERED 1:5

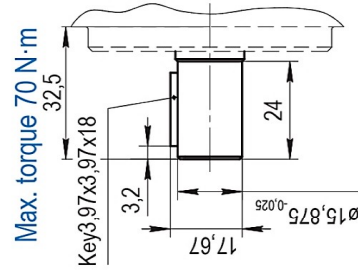
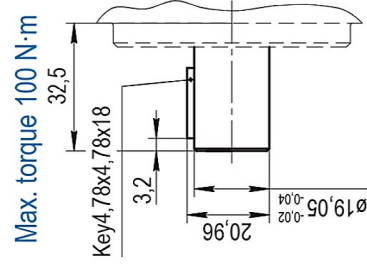
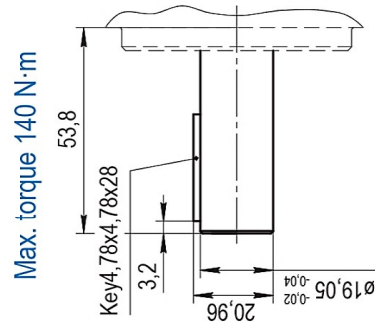
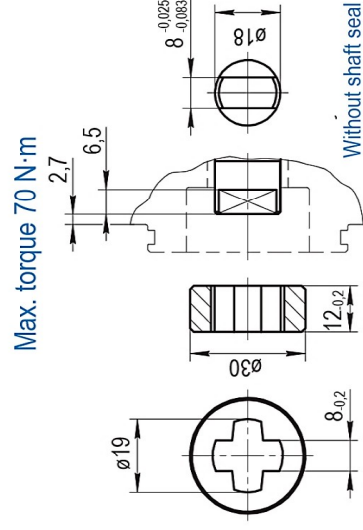


G2 EUROPEAN TAPERED 1:8

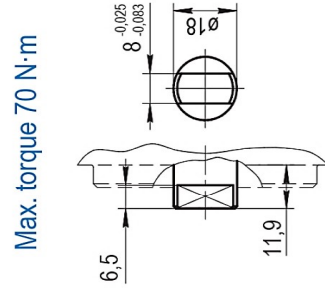


G6 EUROPEAN TAPERED 1:8

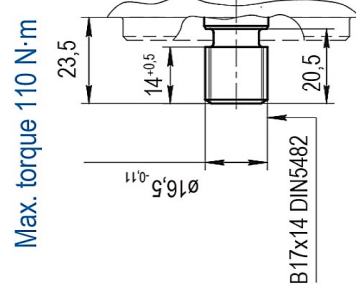
DRIVE SHAFTS

H2 SAE A STRAIGHT $\varnothing 15,87$ H8 SAE A STRAIGHT $\varnothing 19,05$ H9 SAE A STRAIGHT $\varnothing 19,05$ LENGTH

K3 TANG DRIVE FOR ELECTRIC MOTORS

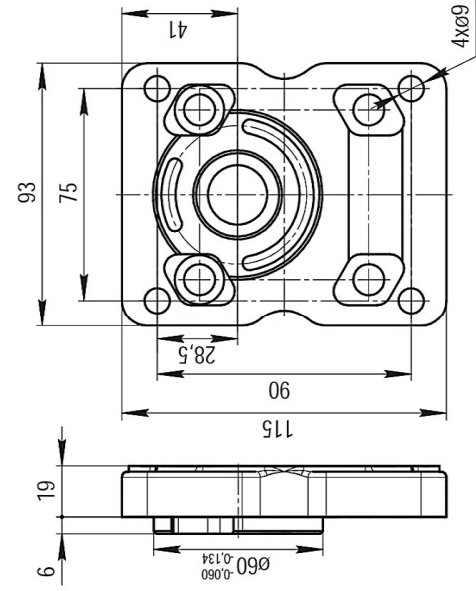


K4 TANG DRIVE

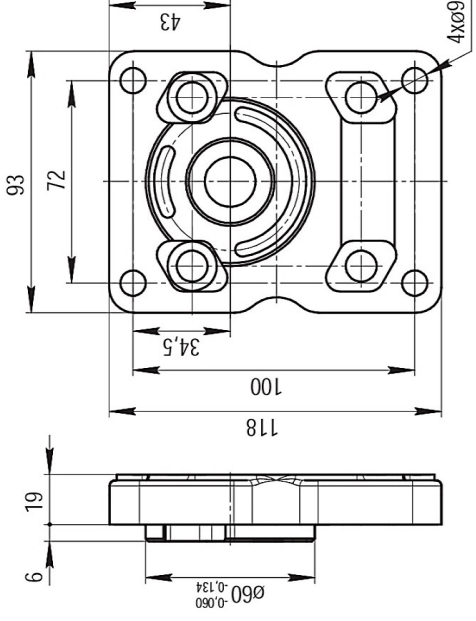


I2 DIN 5482 SPLINED (9 TEETH)

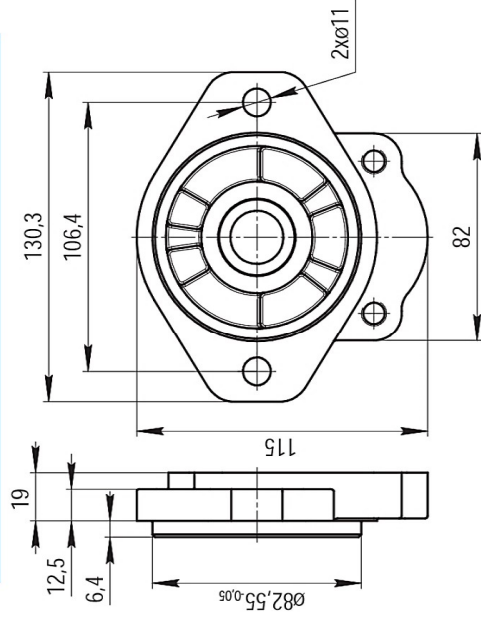
MOUNTING FLANGES



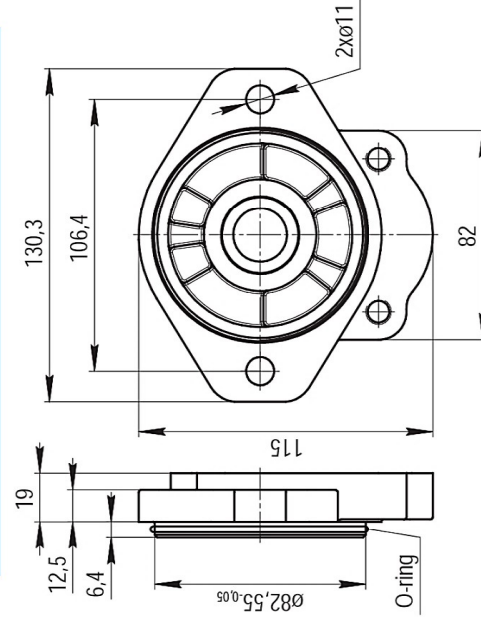
01 GSTU 3-25-180-97



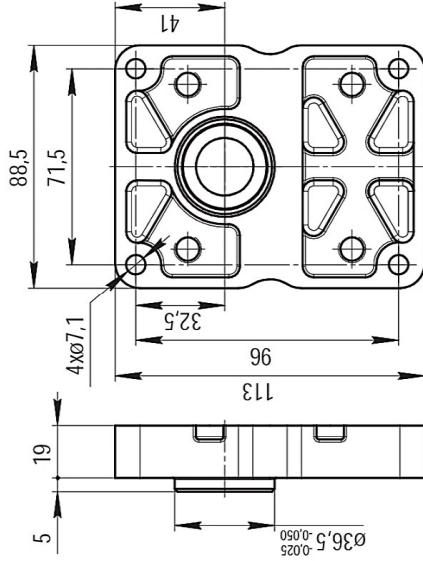
02 GSTU 3-25-180-97



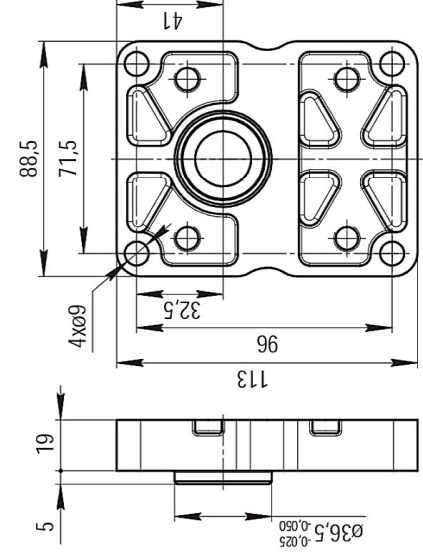
31 SAE A 2 BOLTS



32 SAE A 2 BOLTS (WITH O-RING)

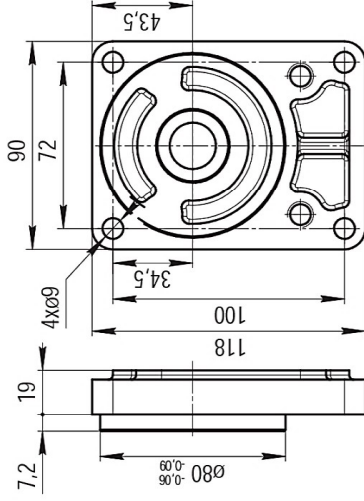


61 EUROPEAN (Ø7,1)

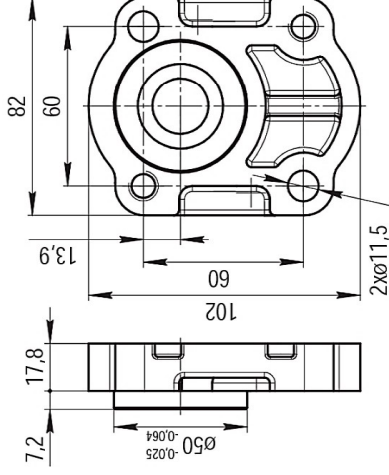


62 EUROPEAN (Ø9)

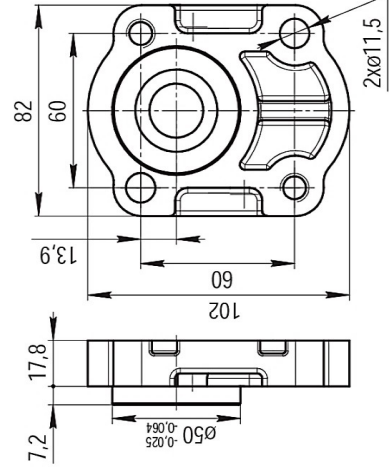
MOUNTING FLANGES



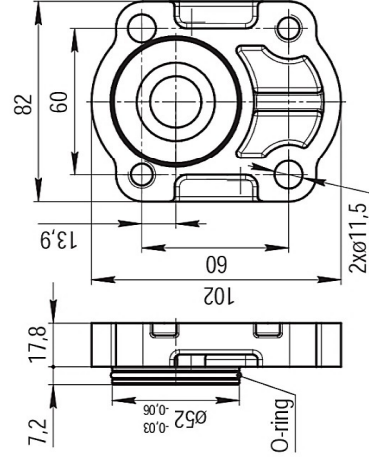
81 GERMAN Ø80



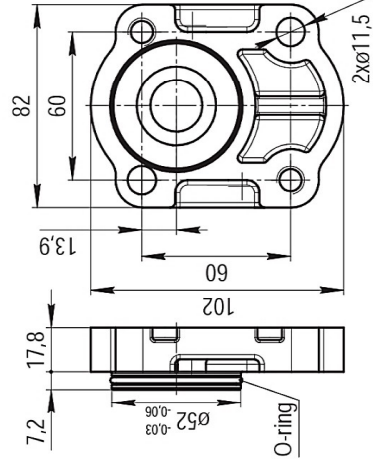
91 GERMAN 2 BOLTS Ø50



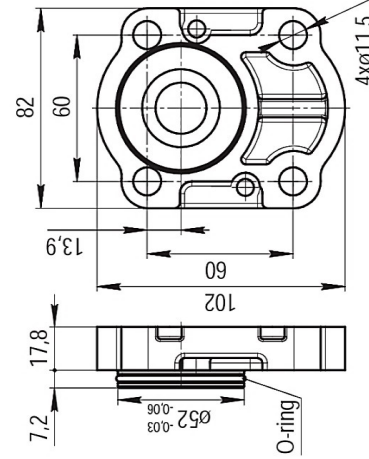
92 GERMAN 2 BOLTS Ø50



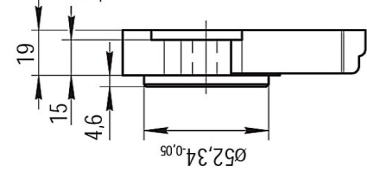
93 GERMAN 2 BOLTS Ø52



94 GERMAN 2 BOLTS Ø52



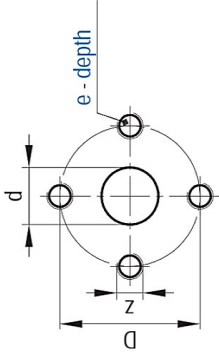
95 GERMAN 4 BOLTS Ø52



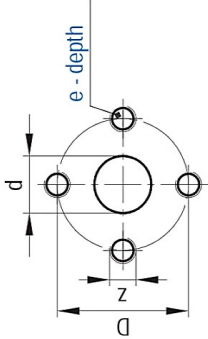
21 MOUNTING FLANGE FOR PERKINS MOTOR

Important: in case of assembling of pumps without shaft seals (mounting flanges 93, 94, 95), you have to keep the value of min. suction pressure (0.7 bar) in the vane between pump and coupling too.

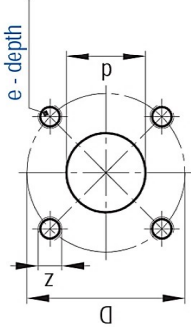
PORTS



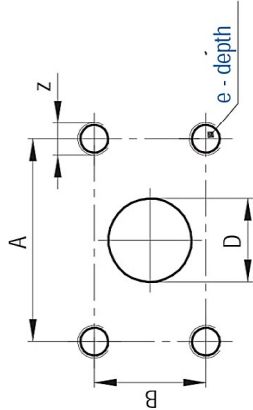
A GSTU 3-25-180-97



B EUROPEAN FLANGE



C GERMAN FLANGE



D SAE FLANGE (UNC)

Type	Inlet					Outlet				
	d	D	z	e		d	D	z	e	
GP2K4÷8	12	32	M6	13		12	32	M6	13	
GP2K10÷14	14	38	M8			14	38	M8		
GP2K15÷16	16					16				
GP2K19÷28	19					19				

Type	Inlet					Outlet				
	d	D	z	e		d	D	z	e	
GP2K4÷8	13	30	M6	13		13	30	M6	13	
GP2K10÷28	19	40	M8			14				

Type	Inlet					Outlet				
	d	D	z	e		d	D	z	e	
GP2K4÷28	20	40	M6	13		15	35	M6	13	

Type	Inlet					Outlet				
	A	B	D	z	e	A	B	D	z	e
GP2K4÷12	38,1	17,48	13	5/16-18 UNC	14	38,1	17,48	13	5/16-18 UNC	14
GP2K14÷20	47,63	22,23	19	3/8-16 UNC		47,63	22,23	19	3/8-16 UNC	
GP2K22÷28	52,37	26,19	25			52,37	26,19	25		

ORDERING INSTRUCTIONS

GP 2 K 10 R - A1 01 A - 1 V F - VR .../... F00

GEAR PUMP	GP
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GROUP	2
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SERIES	K
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DISPLACEMENT	CODE
4,5 cm³/rev	4
5,6 cm³/rev	5
6,3 cm³/rev	6
8,2 cm³/rev	8
10 cm³/rev	10
11,3 cm³/rev	11
12,5 cm³/rev	12
14 cm³/rev	14
15 cm³/rev	15
16 cm³/rev	16
17 cm³/rev	17
19 cm³/rev	19
20 cm³/rev	20
22,5 cm³/rev	23
24,8 cm³/rev	25
28 cm³/rev	28

ROTATION	CODE
Clockwise	R
Counterclockwise	L
Reversible	B

DRIVE SHAFTS	CODE
NS 3-25-180-97	A1
SAE A SPLINED (9 TEETH)	B2
SAE A SPLINED (10 TEETH)	B3
SAE A SPLINED (11 TEETH)	B4
GERMAN TAPERED 1:5	F2
GERMAN TAPERED 1:5	F6
EUROPEAN TAPERED 1:8	G2
EUROPEAN TAPERED 1:8	G6
SAE A STRAIGHT Ø15.87	H2
SAE A STRAIGHT Ø19.05	H8
SAE A STRAIGHT Ø19.05 LENGTH	H9
TANG DRIVE FOR ELECTRIC MOTORS	K3
TANG DRIVE	K4
DIN 5482 SPLINED (9 TEETH)	I2

MOUNTING FLANGES	CODE
NS 3-25-180-97	01
NS 3-25-180-97	02
SAE A 2 BOLTS	31
SAE A 2 BOLTS (WITH O-RING)	32
EUROPEAN (Ø7,1)	61
EUROPEAN (Ø9)	62
GERMAN Ø80	81
GERMAN 2 BOLTS Ø50	91-92
GERMAN 2 BOLTS Ø52	93-94
GERMAN 4 BOLTS Ø52	95
MOUNTING FLANGE FOR PERKINS MOTOR	21

CUSTOMER CODE	CODE
...	G00
	F00

Setting main relief valve (bar)

Adjusted flow (l/min)

VALVES IN THE COVER	CODE
Adjustable main relief valve	VR
Flow regulator with excess flow to tank	VR1
Like VP with main relief valve	VQR
Priority flow divider with excess flow	VP
Like VP with main relief valve	VPR
Priority flow divider with Load-sensing	VPL

MATERIAL OF COVERS	CODE
Aluminium	
Cast iron	F

SEAL MATERIAL	CODE
NBR (STANDARD)	

PORTS POSITION	CODE
Side Inlet - side Outlet	
Back Inlet - back Outlet	1

PORTS	CODE
NS 3-25-180-97	A
EUROPEAN FLANGE	B
GERMAN FLANGE	C
SAE FLANGE (UNC)	D
METRIC THREADED	E
SAE THREADED (ODT)	F
GAS THREADED (BSPP)	G

MOUNTING FLANGES WITH BEARINGS SUPPORT	CODE
SAE A	C3
EUROPEAN	C6
GERMAN Ø50	C7
GERMAN Ø50	C8
GERMAN Ø80	C9

Specification of consumer assigned if necessary after clarify special conditions with the customer