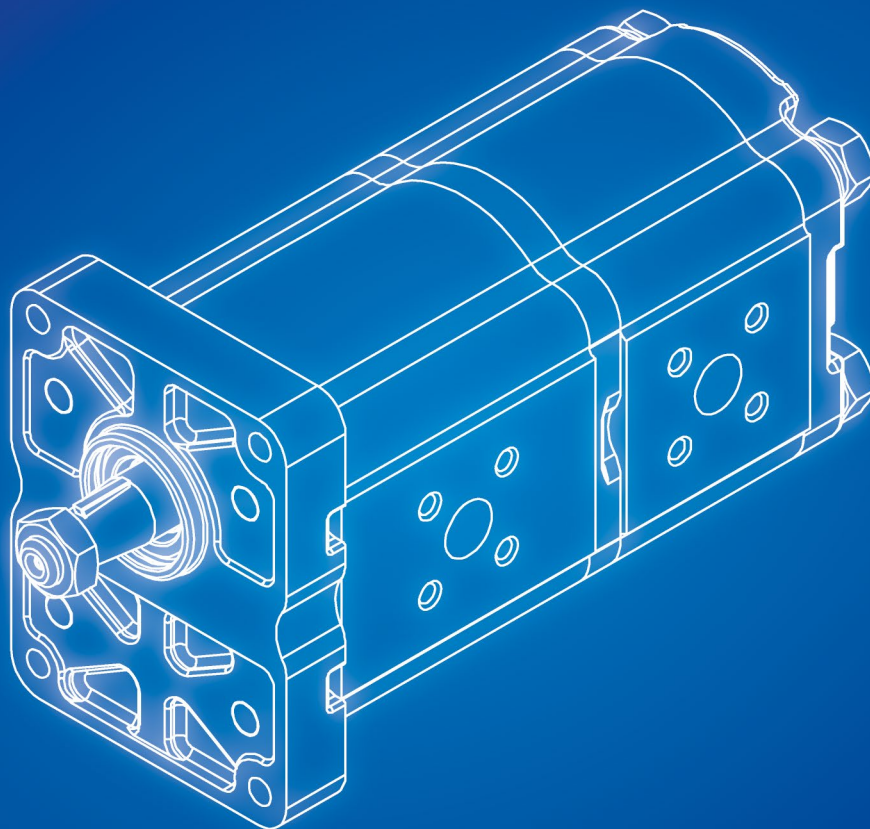




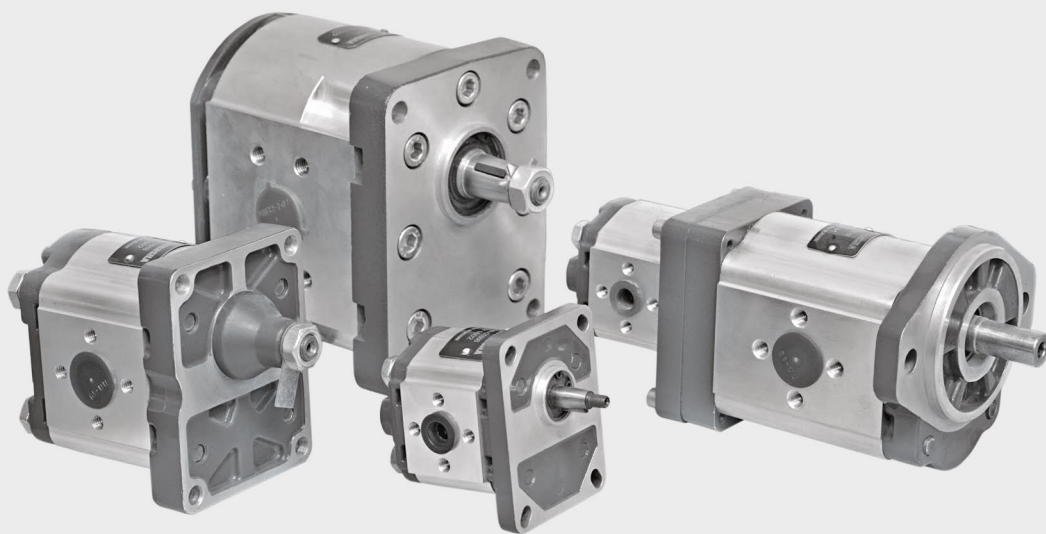
GEAR PUMPS AND MOTORS

series **K**

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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.

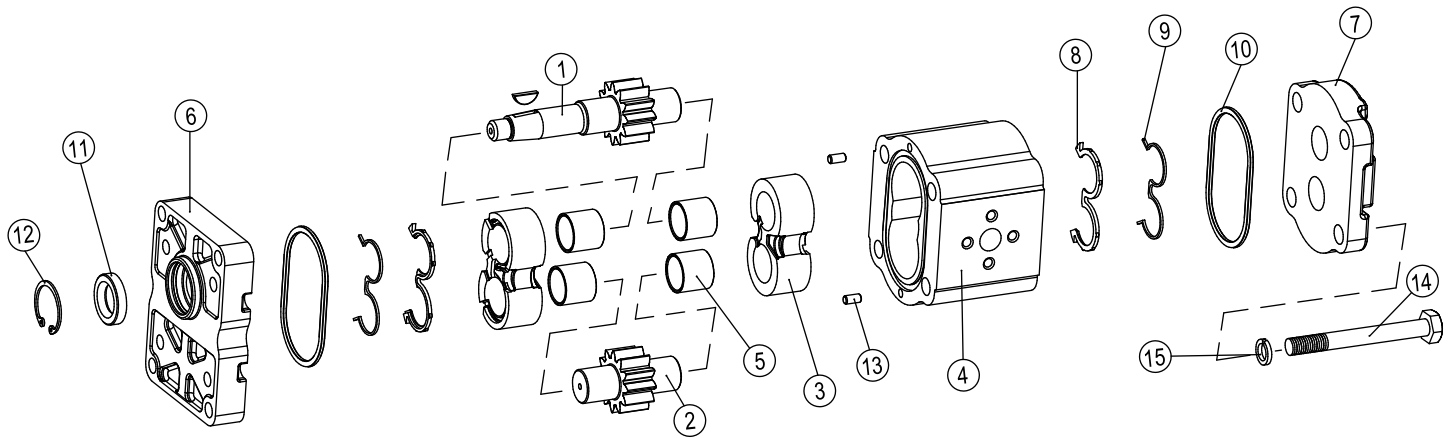
Gear pumps **series "K"** of TM "Hydrosila" have high volumetric and mechanical efficiency, low noise and operate reliably in a variety hydraulic systems of mobile machinery.

- 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.

BASIC PARTS

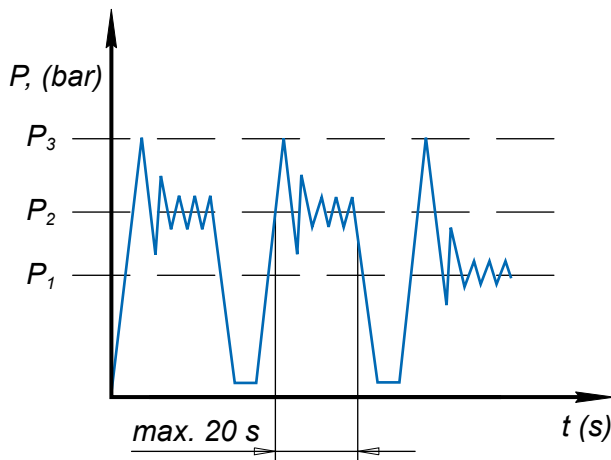
Gear pumps series "K" are manufactured with thru-bolt of rolled aluminium, mounting flanges and rear covers either in aluminium or in cast iron for mobile machines.

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

DEFINITION OF PRESSURES



P_3 - peak pressure
 P_2 - max. intermittent pressure (1/3 of working time)
 P_1 - max. continuous pressure

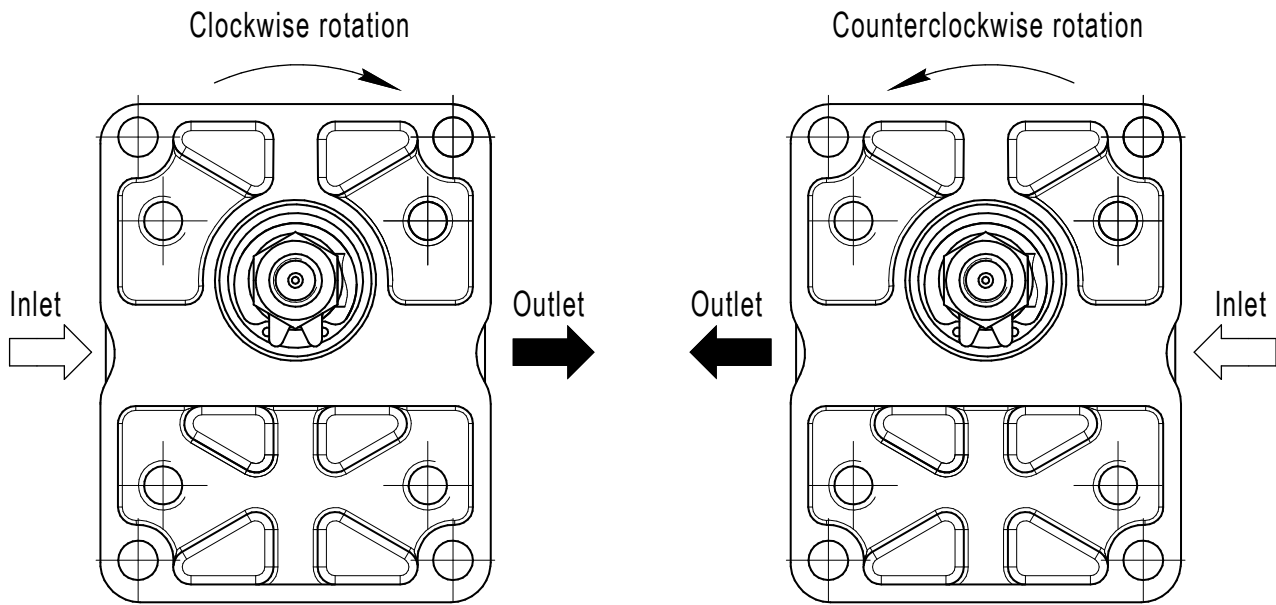
WORKING CONDITIONS

Pump inlet pressure (absolute pressure)	0,5 ÷ 2,5 bar
Minimum operating fluid viscosity	15 mm ² /sec
Max. starting viscosity (cold start)	1000 mm ² /sec
Fluid viscosity recommended range	17 ÷ 65 mm ² /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

FILTRATION INDEX RECOMMENDED

Maximum continuous pressure	>200 bar	<200 bar
Contamination class ISO 4406	18/15	19/16
Contamination class NAS 1638	9	10
Achieved with filter $\beta_x=75$	15 μ m	25 μ m

DEFINITION OF PUMP SHAFT ROTATIONAL DIRECTION

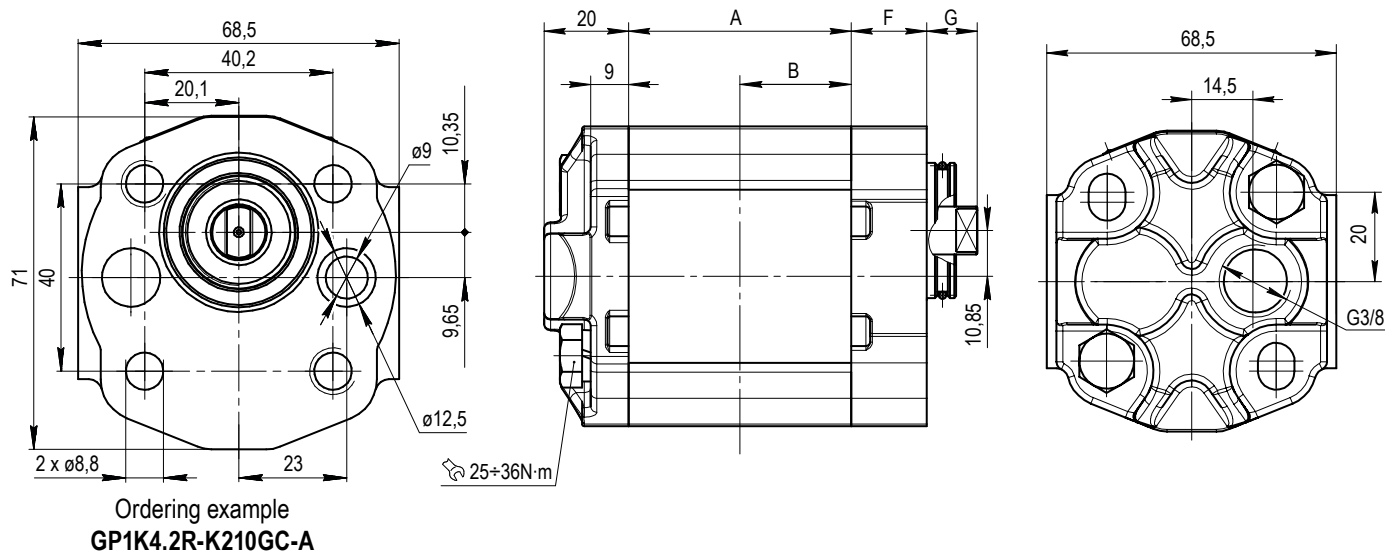


FORMULAS

Flow	$Q = \frac{q \cdot n \cdot \eta_v}{1000}$	[l/min]	q displacement (cm ³ /rev)
			n speed (min ⁻¹)
Input torque	$M = \frac{q \cdot \Delta p}{20 \cdot \pi \cdot \eta_m}$	[N·m]	η_v volumetric efficiency (0,94 min)
Input power	$P = \frac{q \cdot n \cdot \Delta p \cdot 10^{-3}}{600 \cdot \eta_m}$	[kW]	Δp pressure (bar)
			η_m mechanical efficiency (0,88 min)
Volumetric efficiency at low rpm	$\eta_v' = 1 - \frac{n_{nom}}{n} (1 - \eta_v)$		

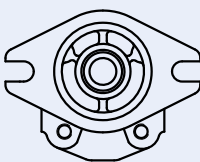
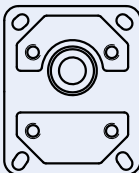
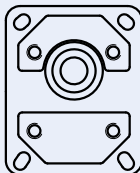
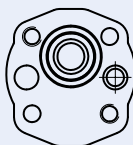
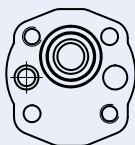
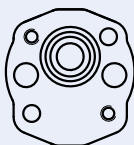
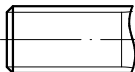
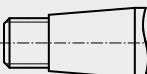
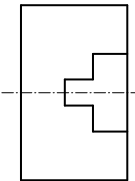
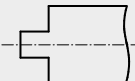
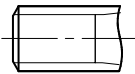
TECHNICAL DATA AND ASSEMBLING DIMENSIONS

Type		GP1K1	GP1K1.2	GP1K1.6	GP1K2.1	GP1K2.5	GP1K3.2	GP1K3.5	GP1K4.2	GP1K5	GP1K6.2	GP1K7	GP1K8	GP1K10
Displacement	cm³/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
Flow rate at 1500 rpm	l/min	1,4	1,7	2,3	3,0	3,6	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	47,00	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	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 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



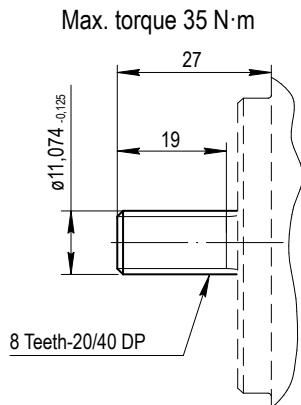
Dimension G = see section "Drive shafts"
 Dimension F = see section "Mounting flanges"

COMBINATION TYPES OF MOUNTING FLANGES & SHAFTS

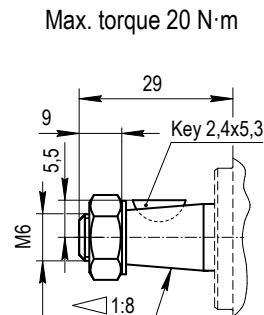
GP1K						
	SAE "A-A" 2 BOLTS	EUROPEAN Ø25,4	EUROPEAN Ø30	GERMAN 2 BOLTS (RIGHT)	GERMAN 2 BOLTS (LEFT)	GERMAN 2 BOLTS
		B1 30				
	SAE SPLINED (8 TEETH)					
			G1 60	G1 70		
	EUROPEAN TAPERED 1:8					
				K1 10	K1 11	K1 12
TANG DRIVE						
				K2 10	K2 11	K2 12
TANG DRIVE						
	I1 30	I1 60	I1 70	I1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

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.

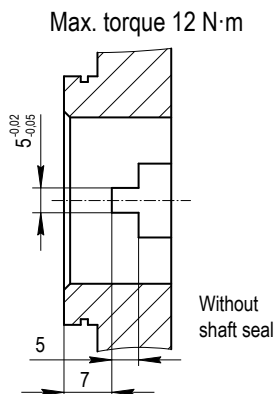
DRIVE SHAFTS



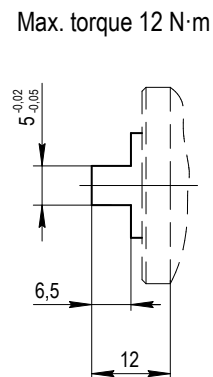
B1 SAE SPLINED (8 TEETH)



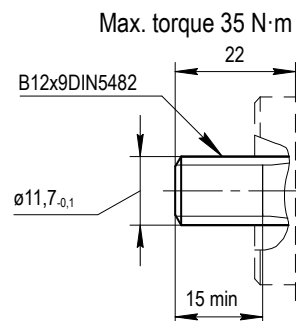
G1 EUROPEAN TAPERED 1:8



K1 TANG DRIVE



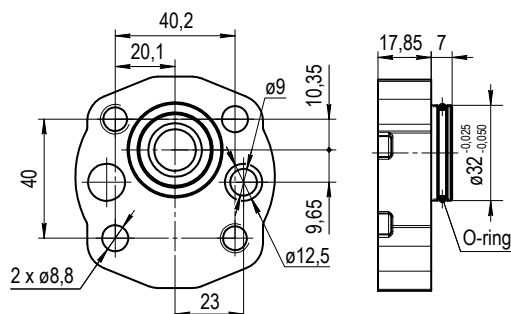
K2 TANG DRIVE



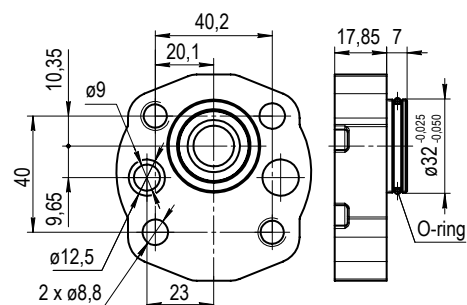
I1 DIN 5482 SPLINED (6 TEETH)

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

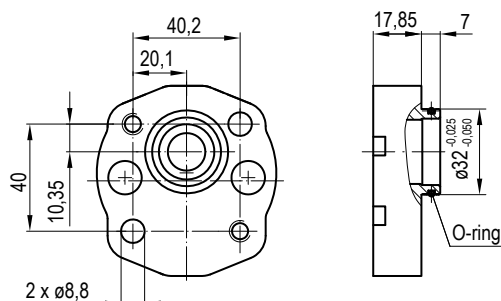
MOUNTING FLANGES



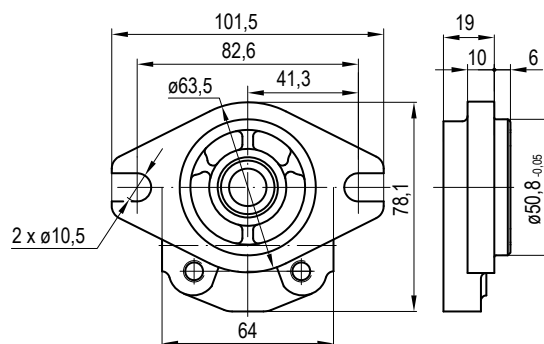
10 GERMAN 2 BOLTS (RIGHT)



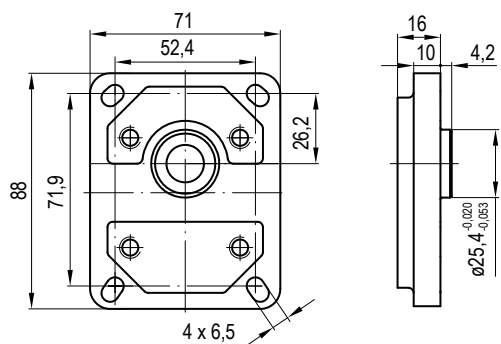
11 GERMAN 2 BOLTS (LEFT)



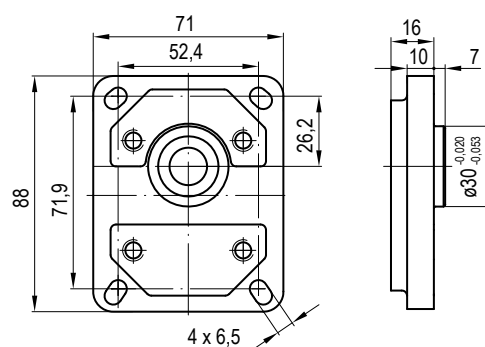
12 GERMAN 2 BOLTS



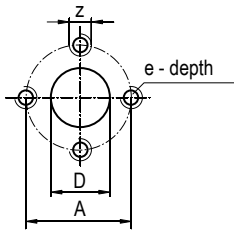
30 SAE "A-A" 2 BOLTS



60 EUROPEAN Ø25,4

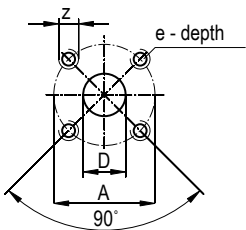


70 EUROPEAN Ø30



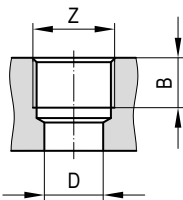
B EUROPEAN FLANGE

Type	Inlet				Outlet			
	D	A	z	e	D	A	z	e
GP1K1.6÷10	13	30	M6	12	13	30	M6	12



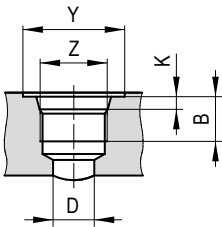
C GERMAN FLANGE

Type	Inlet				Outlet			
	D	A	z	e	D	A	z	e
GP1K1÷10	13	30	M6	12	13	30	M6	12



E METRIC THREADED

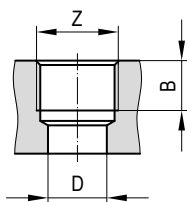
Type	Inlet			Outlet		
	Z	B	D	Z	B	D
GP1K1÷10	M18x1,5	15	13	M14x1,5	15	13



F SAE THREADED

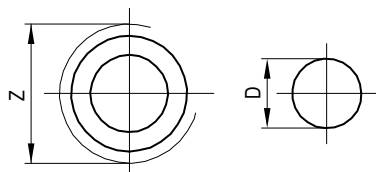
Type	Inlet					Outlet				
	Z	B	D	Y	K	Z	B	D	Y	K
GP1K1÷5	9/16-18 UNF	15	12	26	2,5	9/16-18 UNF	15	12	26	2,5
GP1K6.2÷10	3/4-16 UNF		13	32		3/4-16 UNF		13	32	

PORTS



G GAS THREADED (BSPP)

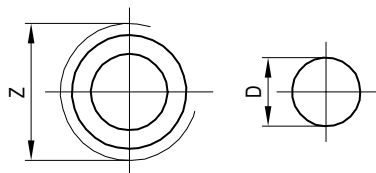
Type	Inlet			Outlet		
	Z	B	D	Z	B	D
GP1K1÷5	3/8" GAS	15	12	3/8" GAS	15	12
GP1K6.2÷10	1/2" GAS		13	1/2" GAS		13



GA GAS THREADED (BSPP)

Port positions only for back-front or side-front (code "A" or "C")

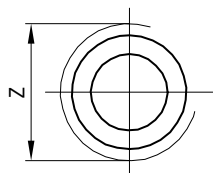
Type	Inlet	Outlet
	Z	D
GP1K1÷10	1/4" GAS	9



GC GAS THREADED (BSPP)

Port positions only for back-front or side-front (code "A" or "C")

Type	Inlet	Outlet
	Z	D
GP1K1÷10	3/8" GAS	9



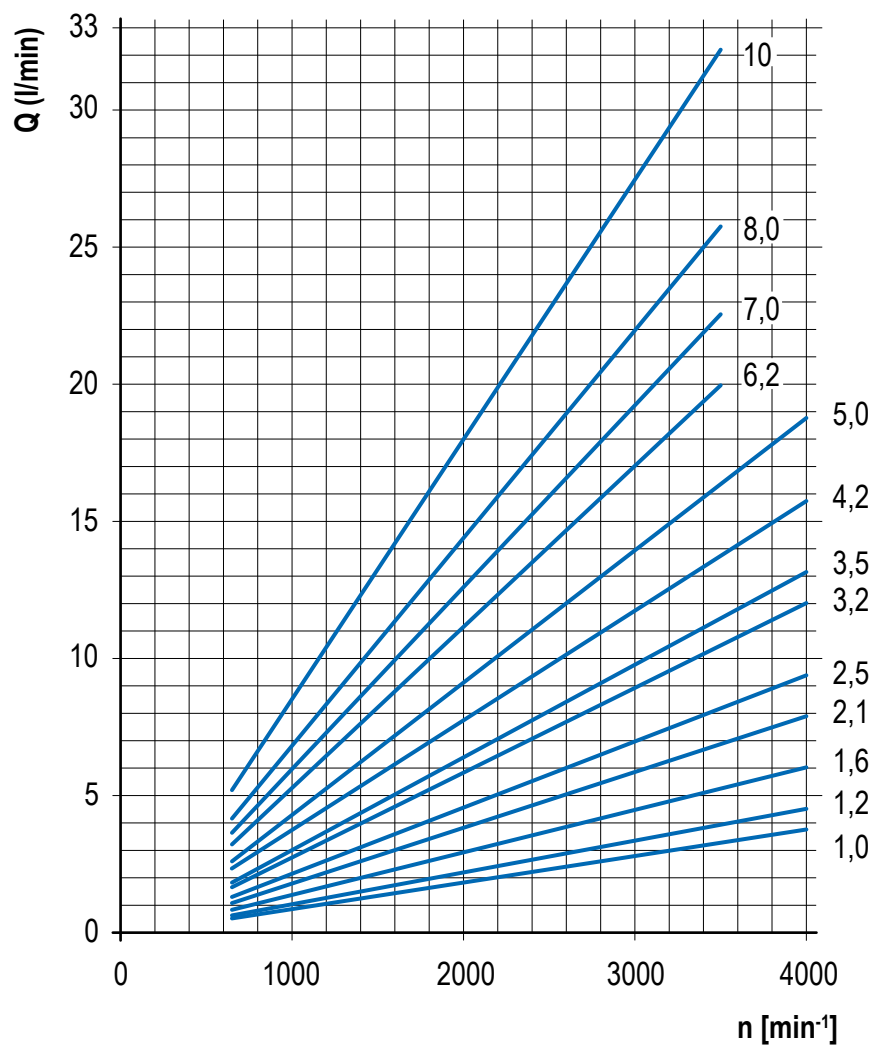
GD GAS THREADED (BSPP)

Port positions only for back inlet and back outlet (code "D")

Type	Inlet	Outlet
	Z	
GP1K1÷10	3/8" GAS	1/4" GAS

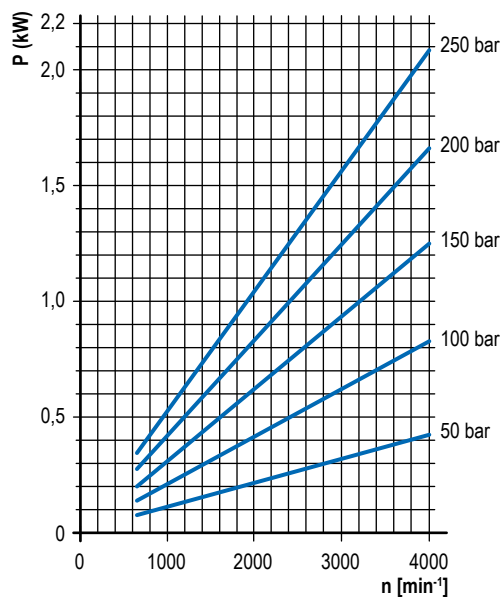
PERFORMANCE CURVES

Performance curves carried out with oil viscosity at 30 mm²/sec, oil temperature at 50°C and max. continuous pressures for each type.

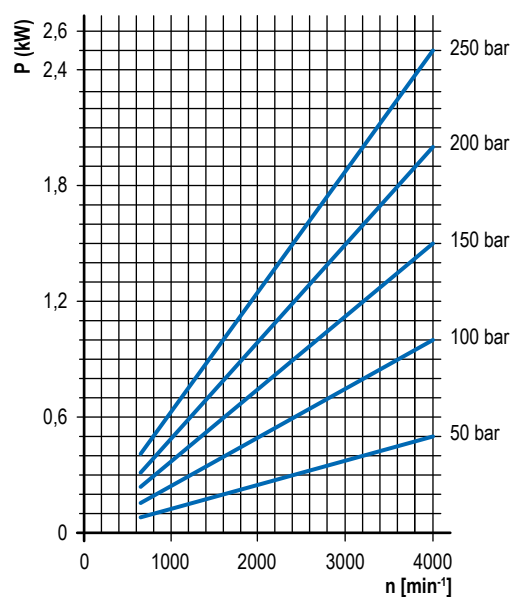


PERFORMANCE CURVES

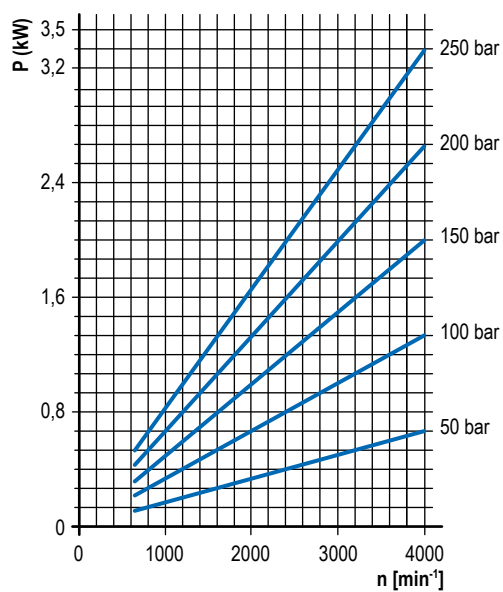
Performance curves carried out with oil viscosity at 30 mm²/sec and oil temperature at 50°C.



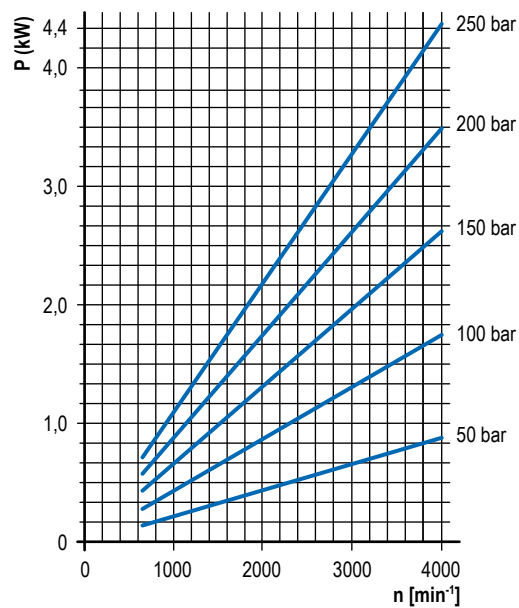
GP1K1



GP1K1.2



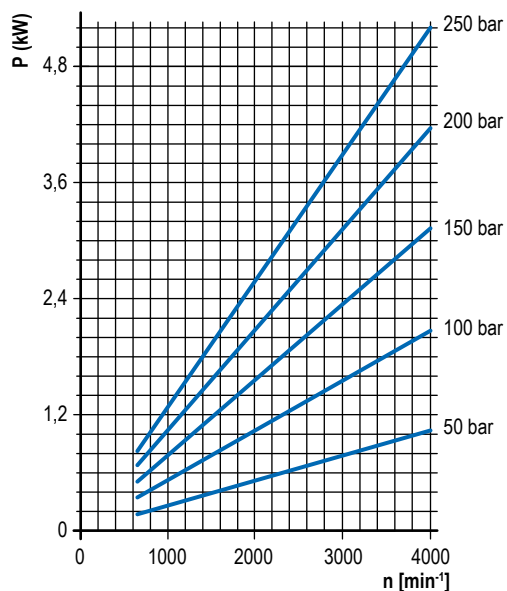
GP1K1.6



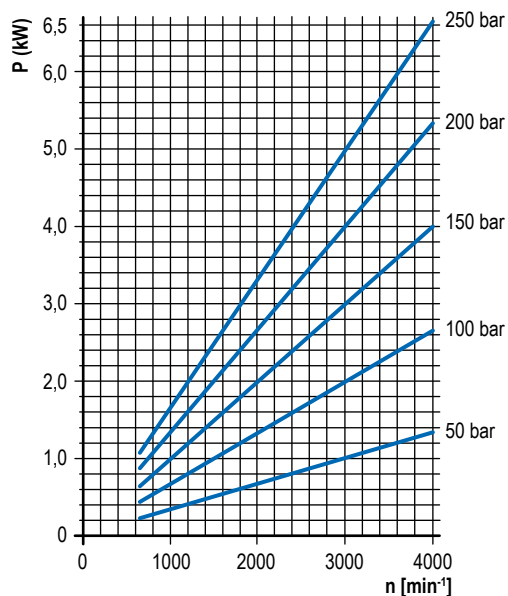
GP1K2.1

PERFORMANCE CURVES

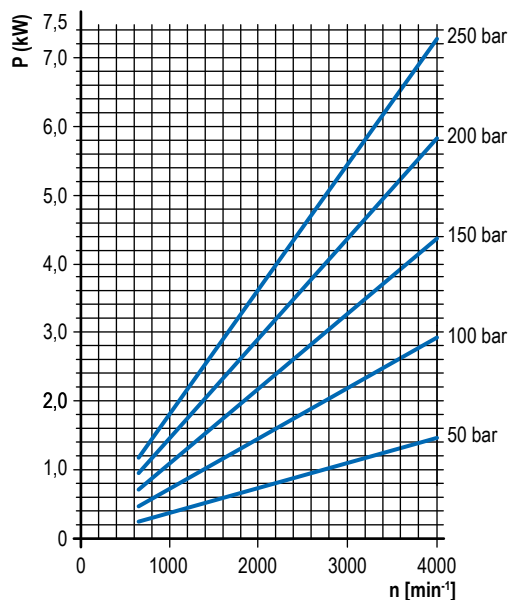
Performance curves carried out with oil viscosity at 30 mm²/sec and oil temperature at 50°C.



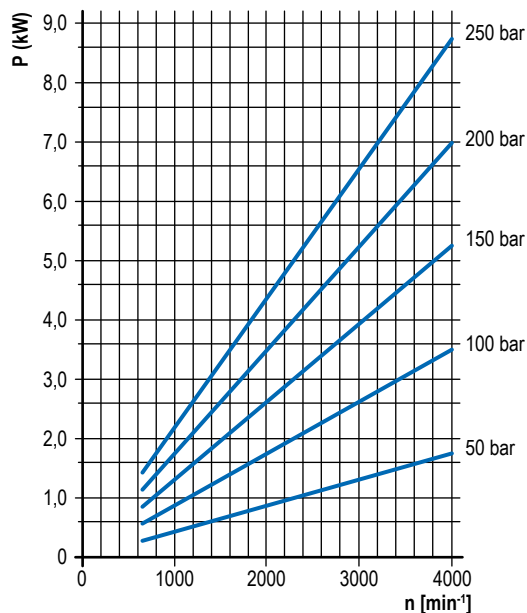
GP1K2.5



GP1K3.2



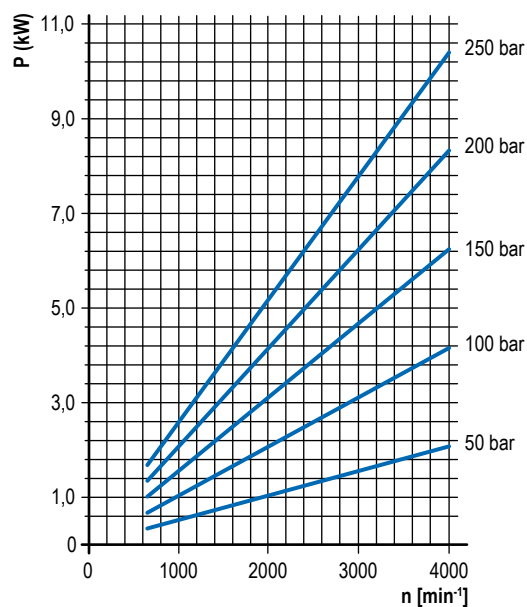
GP1K3.5



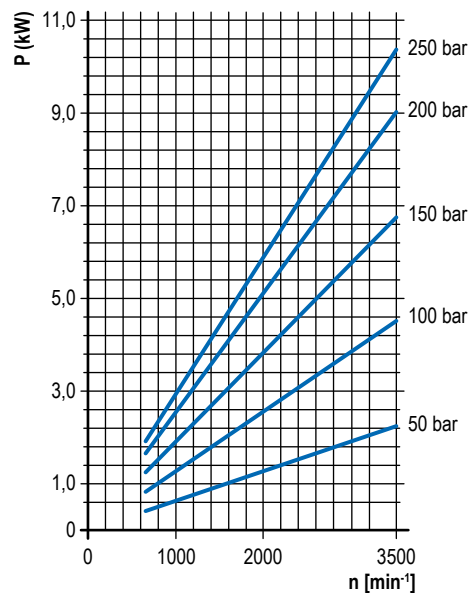
GP1K4.2

PERFORMANCE CURVES

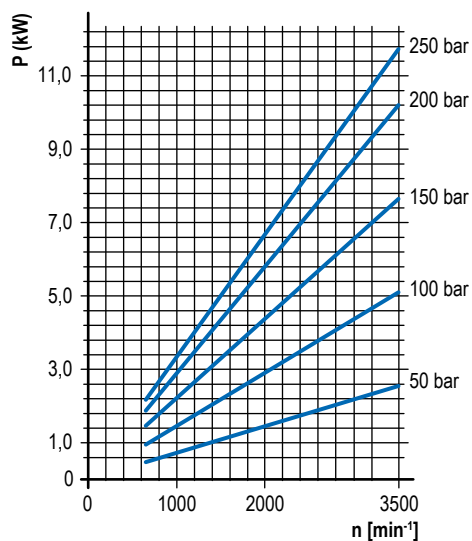
Performance curves carried out with oil viscosity at 30 mm²/sec and oil temperature at 50°C.



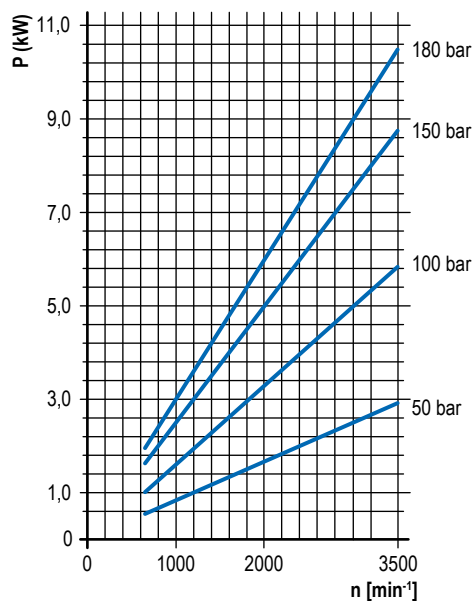
GP1K5



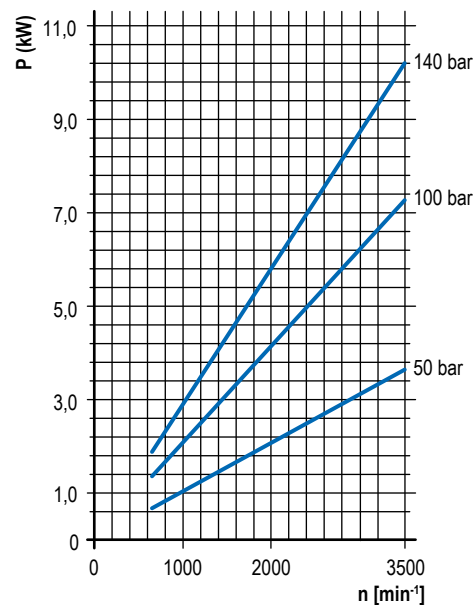
GP1K6.2



GP1K7



GP1K8



GP1K10

ORDERING INSTRUCTIONS

GEAR PUMP	GP	GROUP	1	SERIES	K	DISPLACEMENT	CODE	ROTATION	CODE	DRIVE SHAFTS	CODE
						1,0 cm³/rev	1	Clockwise	R	SAE SPLINED (8 TEETH)	B1
						1,2 cm³/rev	1.2	Counterclockwise	L	EUROPEAN TAPERED 1:8	G1
						1,6 cm³/rev	1.6			TANG DRIVE	K1
						2,1 cm³/rev	2.1			TANG DRIVE	K2
						2,5 cm³/rev	2.5			DIN 5482 SPLINED (6 TEETH)	I1
						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				

*SPECIAL FEATURES	
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

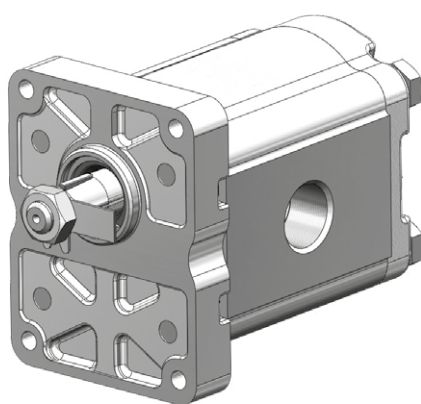
PORTS		CODE
EUROPEAN FLANGE		B
GERMAN FLANGE		C
METRIC THREADED		E
SAE THREADED		F
GAS THREADED (BSPP)		G
GAS THREADED (BSPP)		GA
GAS THREADED (BSPP)		GC
GAS THREADED (BSPP)		GD

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

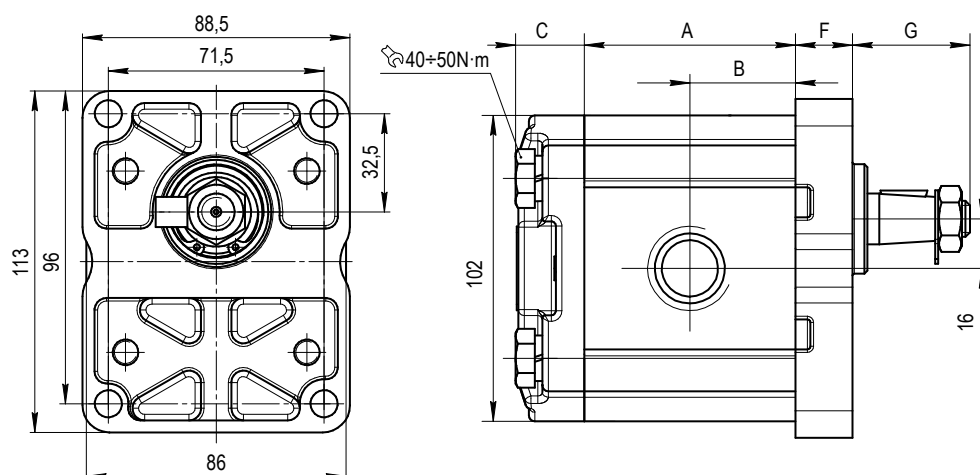
*Special features assigned if necessary

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



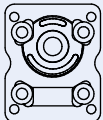
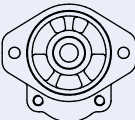
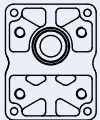
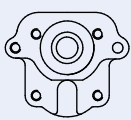
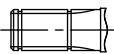
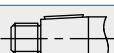
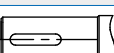
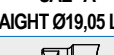
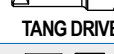
Ordering example
GP2K10R-G262G



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

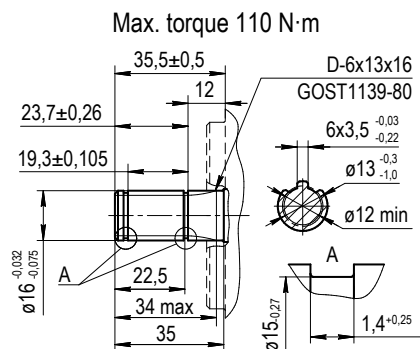
*Weight shown are for pumps with aluminum covers. Weight for pumps with cast iron covers should be refined

COMBINATION TYPES OF MOUNTING FLANGES & SHAFTS

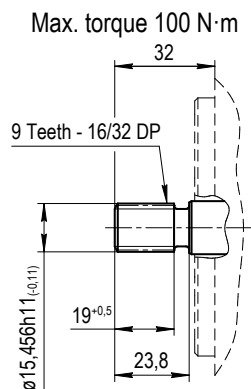
GP2K	 GSTU 3-25-180-97	 SAE "A" 2 BOLTS	 EUROPEAN	 GERMAN Ø80	 GERMAN 2 BOLTS Ø50	 GERMAN 2 BOLTS Ø52	 GERMAN 4 BOLTS Ø52	 PERKINS
 GSTU 3-25-180-97	A1 01 A1 02							
 SAE "A" SPLINED (9 TEETH)		B2 31 B2 32						
 SAE "A" SPLINED (10 TEETH)		B3 31 B3 32						
 SAE "A" SPLINED (11 TEETH)		B4 31 B4 32						
 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.

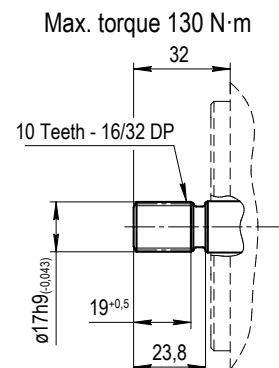
DRIVE SHAFTS



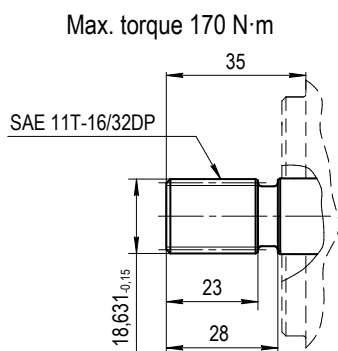
A1 GSTU 3-25-180-97



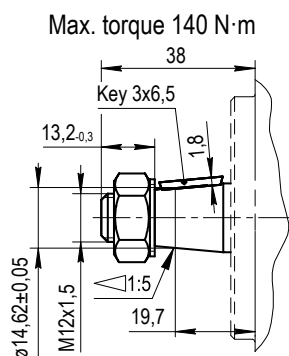
B2 SAE A SPLINED (9 TEETH)



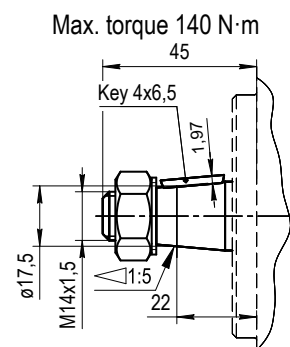
B3 SAE A SPLINED (10 TEETH)



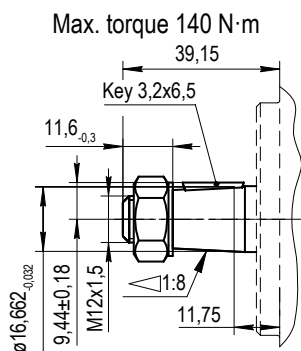
B4 SAE A SPLINED (11 TEETH)



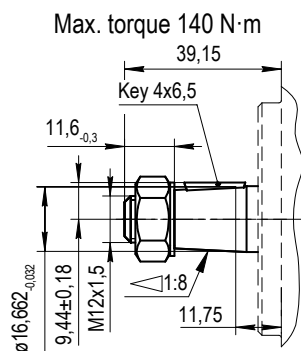
F2 GERMAN TAPERED 1:5



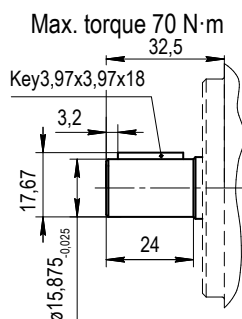
F6 GERMAN TAPERED 1:5



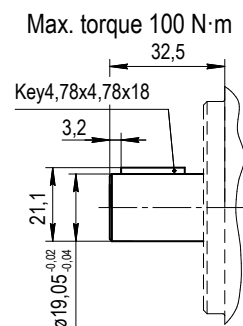
G2 EUROPEAN TAPERED 1:8



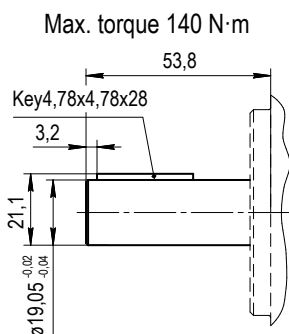
G6 EUROPEAN TAPERED 1:8



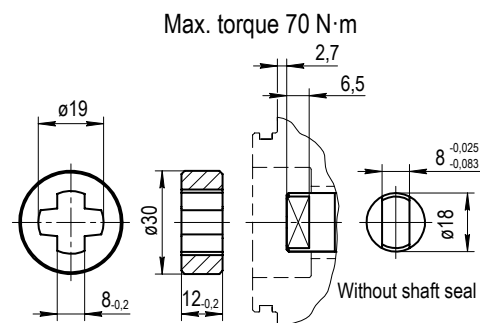
H2 SAE A STRAIGHT Ø15,87



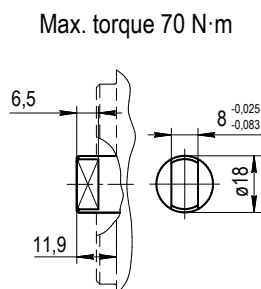
H8 SAE A STRAIGHT Ø19,05



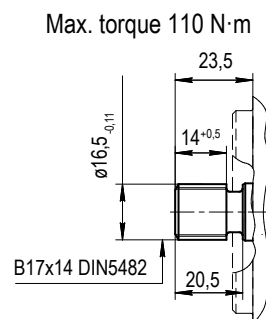
H9 SAE A STRAIGHT Ø19,05 LENGTH



K3 TANG DRIVE FOR ELECTRIC MOTORS

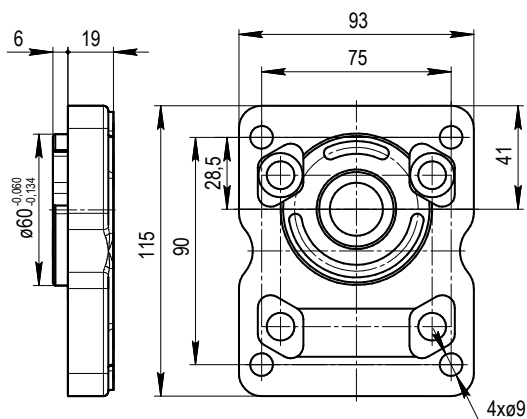


K4 TANG DRIVE

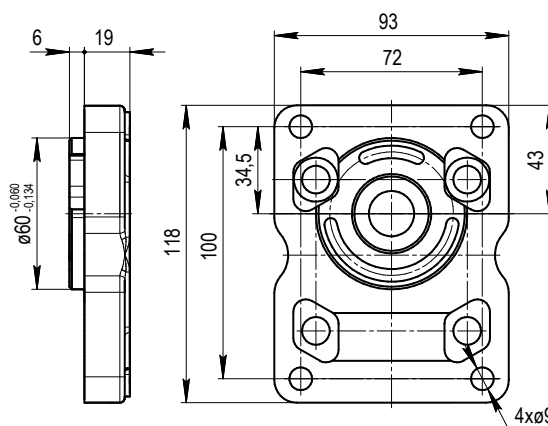


12 DIN 5482 SPLINED (9 TEETH)

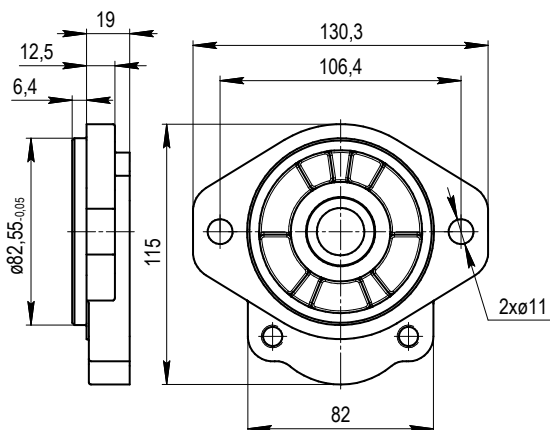
MOUNTING FLANGES



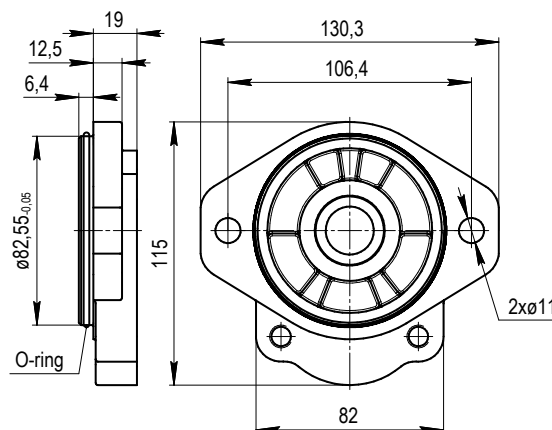
01 GSTU 3-25-180-97



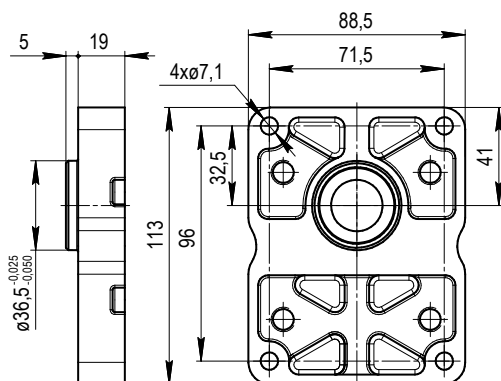
02 GSTU 3-25-180-97



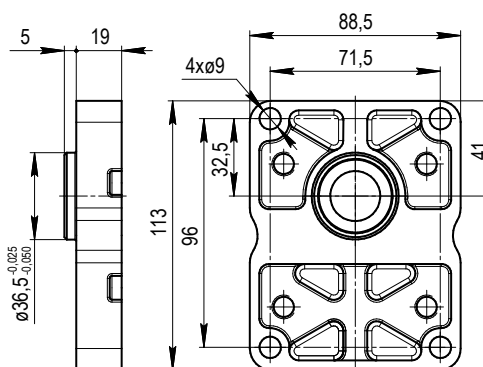
31 SAE A 2 BOLTS



32 SAE A 2 BOLTS (WITH O-RING)

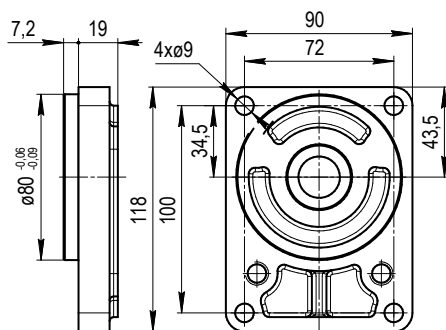


61 EUROPEAN ($\phi 7,1$)



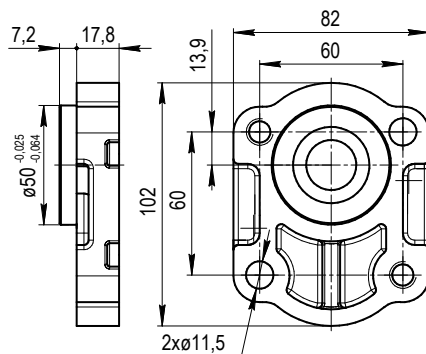
62 EUROPEAN ($\phi 9$)

MOUNTING FLANGES



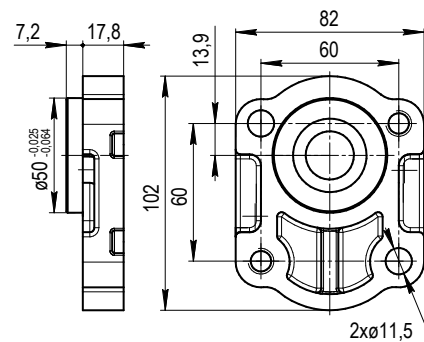
81

GERMAN Ø80



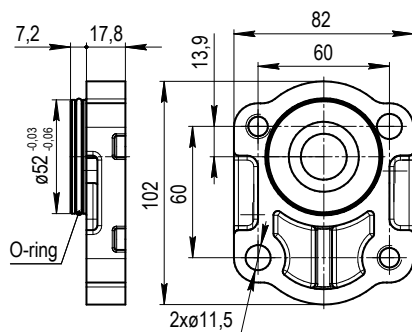
91

GERMAN 2 BOLTS Ø50



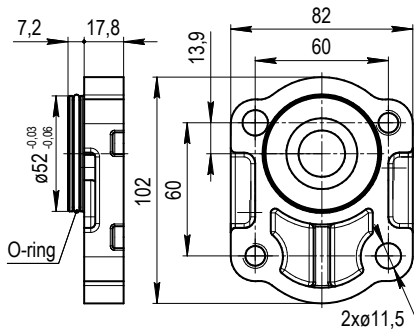
92

GERMAN 2 BOLTS Ø50



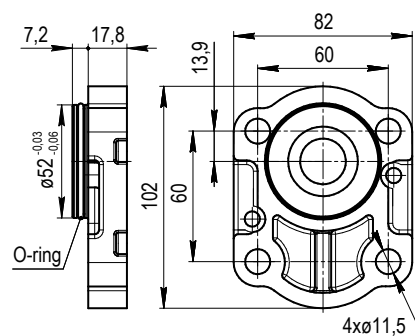
93

GERMAN 2 BOLTS Ø52



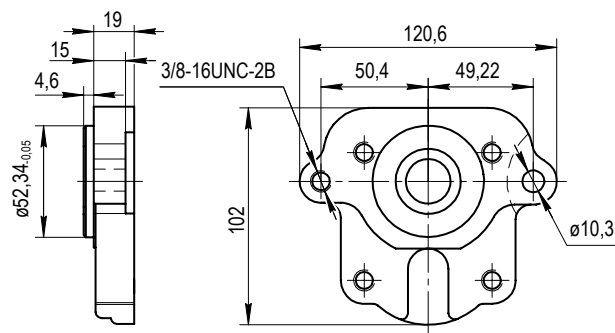
94

GERMAN 2 BOLTS Ø52



95

GERMAN 4 BOLTS Ø52

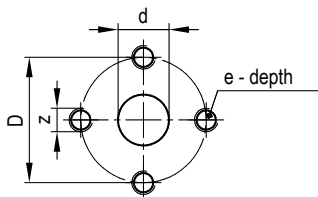


21

MOUNTING FLANGE FOR PERKINS MOTOR

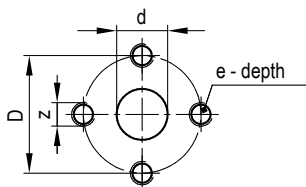
Important: in case of assembling of pumps without shaft seals (mounting flanges 93, 94, 95), you have to keep the value of min. suction pressure (0.7 bar) in the vane between pump and coupling too.

PORTS



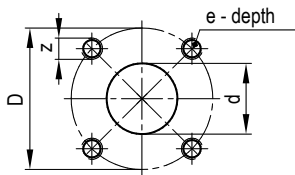
A GSTU 3-25-180-97

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			



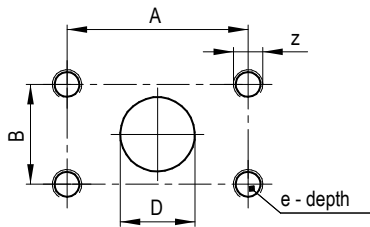
B EUROPEAN FLANGE

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			



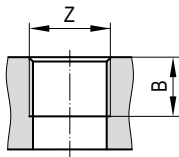
C GERMAN FLANGE

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



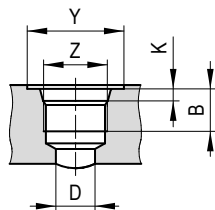
D SAE FLANGE (UNC)

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						
GP2K22÷28	52,37	26,19	25							



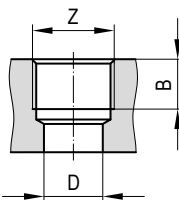
E METRIC THREADED

Type	Inlet		Outlet	
	Z	B	Z	B
GP2K4÷8	M18x1,5	16	M14x1,5	16
GP2K10÷12	M22x1,5		M18x1,5	
GP2K14÷28	M27x2			



F SAE THREADED

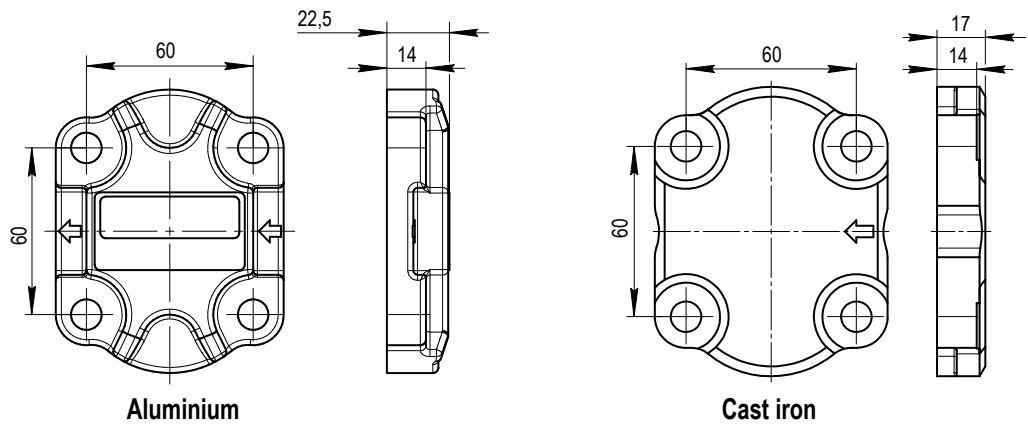
Type	Inlet					Outlet				
	Z	B	K	D	Y	Z	B	K	D	Y
GP2K4÷8	7/8-14 UNF (SAE #10)	14	2,5	13	32	7/8-14 UNF (SAE #10)	14	2,5	13	32
GP2K10÷28	1-1/16-12 UN (SAE #12)	16	3,3	20	42					



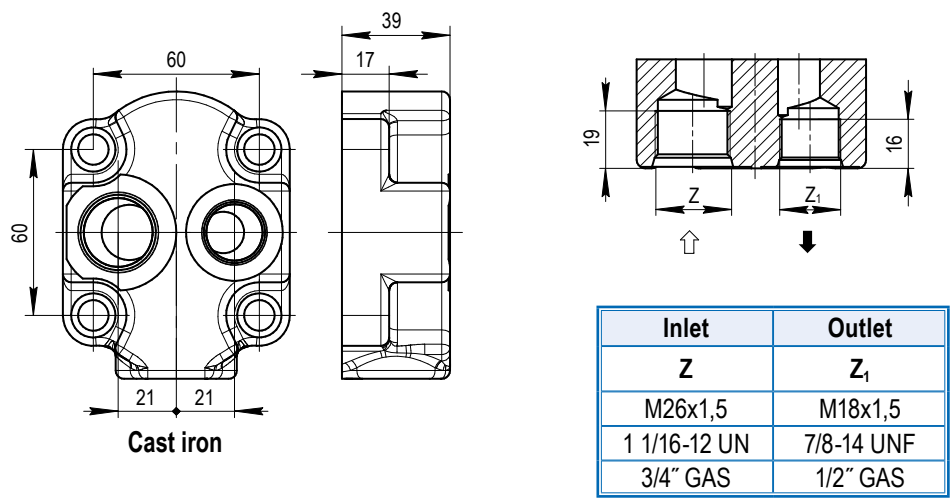
G GAS THREADED (BSPP)

Type	Inlet			Outlet		
	Z	B	D	Z	B	D
GP2K4÷8	1/2" GAS	16	13	1/2" GAS	16	13
GP2K10÷28	3/4" GAS	19	20			

REAR COVERS

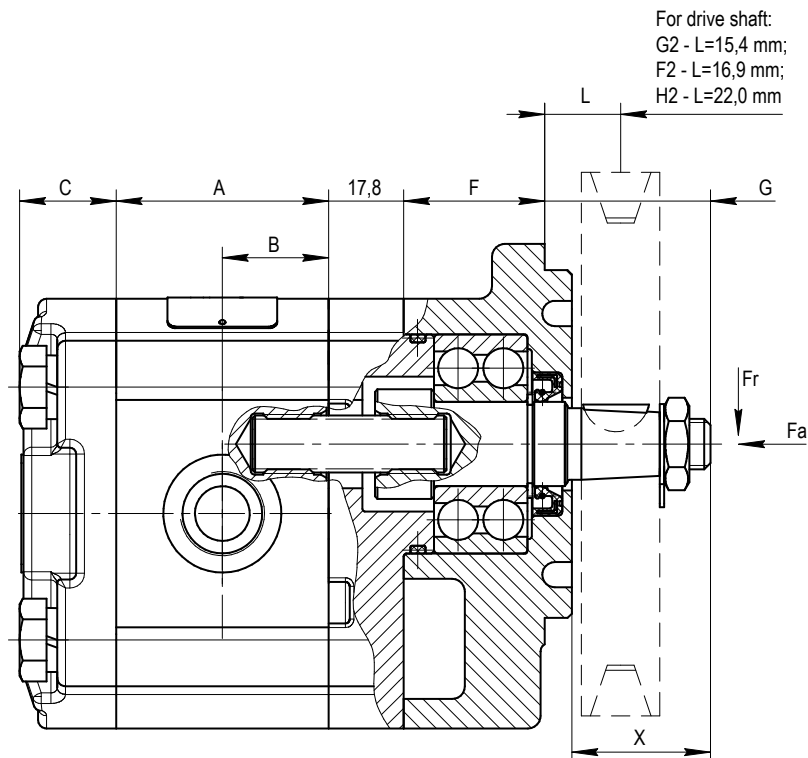


STANDARD REAR COVERS



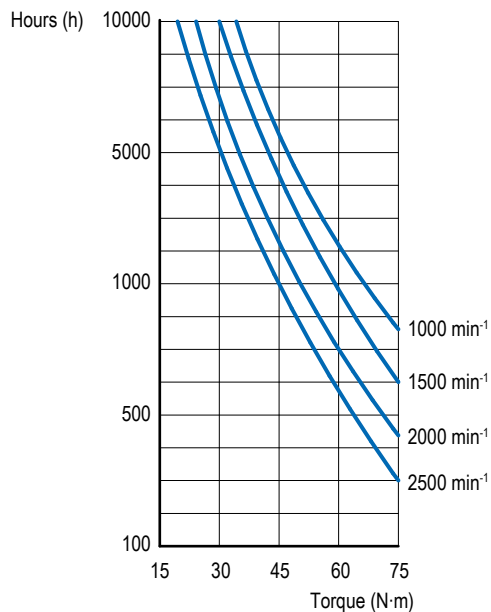
1

REAR COVER WITH THREADED PORTS



Service life under the following conditions:

L = 18 mm; pulley diameter = 90 mm.



Ordering example
GP2K16R-F2C9F

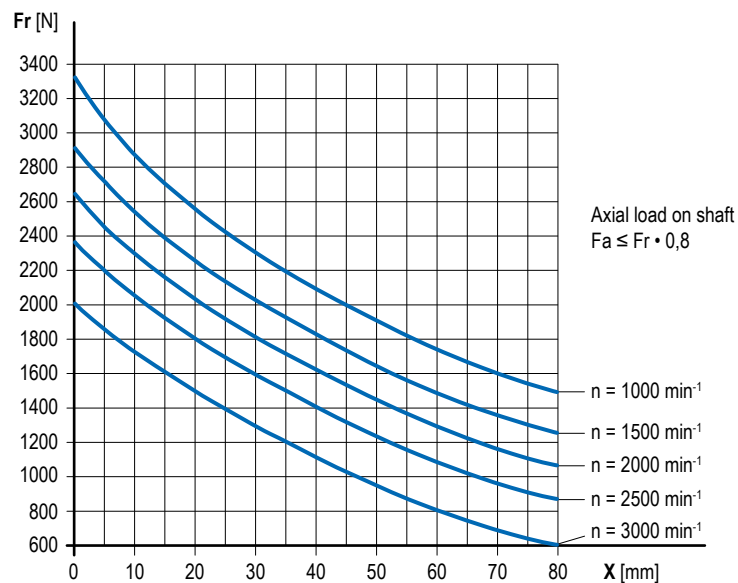
Dimension A and B = see section "Technical data"

Dimension G = see section "Drive shafts"

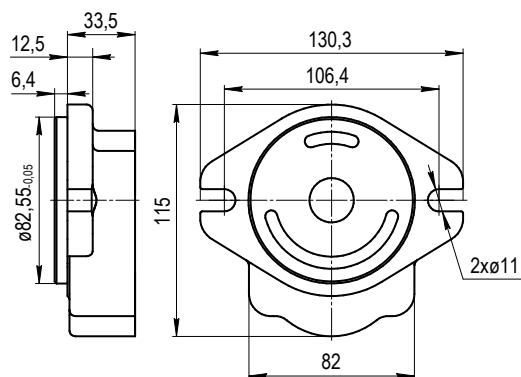
Dimension F = see section "Mounting flanges with bearing support"

Dimension C = see section "Rear covers"

Working characteristic of outrigger bearing

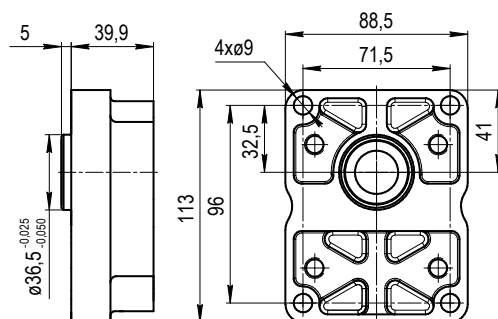


MOUNTING FLANGES WITH BEARING SUPPORT



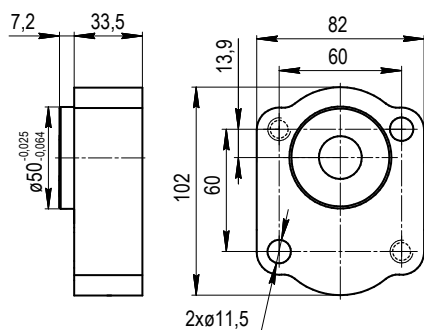
C3

SAE A



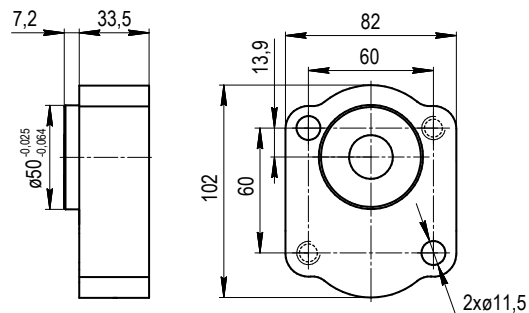
C6

EUROPEAN



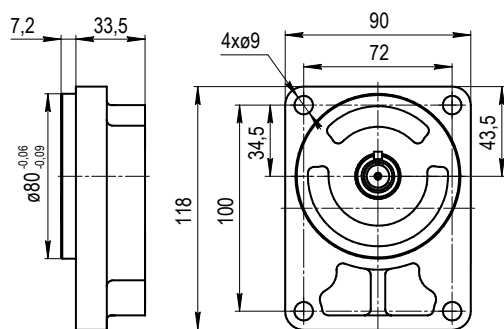
C7

GERMAN Ø50



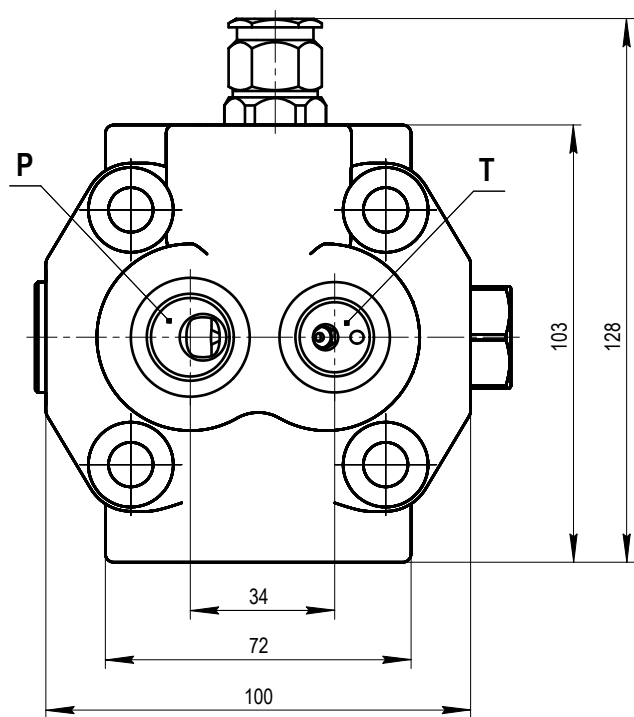
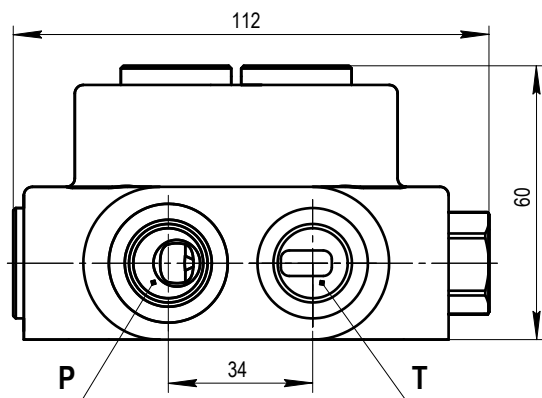
C8

GERMAN Ø50



C9

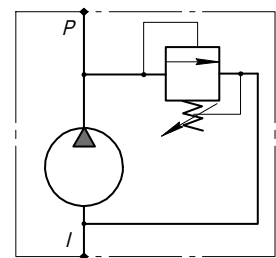
GERMAN Ø80



P - pressure line
T - drain

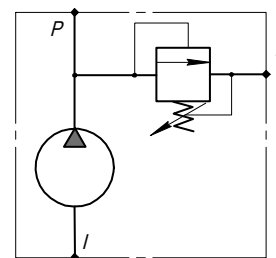
CODE	P	T
E	M20x1,5	M18x1,5
F	7/8"-14 UNF	3/4"-16 UNF
G	1/2" GAS	3/8" GAS

Pressure relief setting	bar	20÷280
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VR

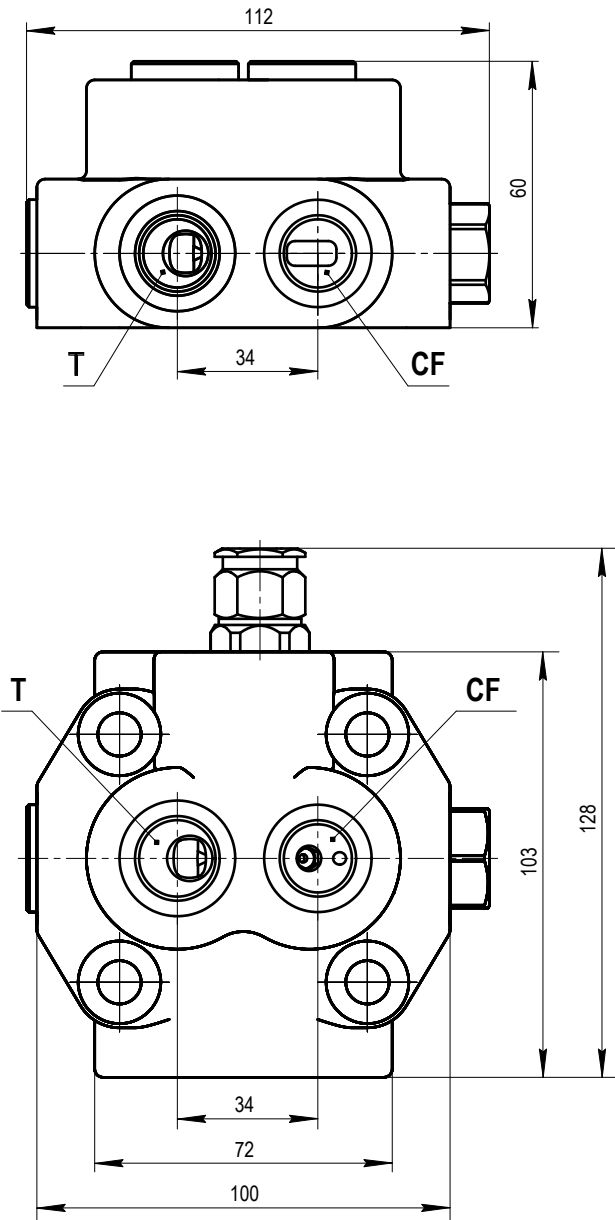
Return-to-suction relief valve



VR1

Return-to-tank relief valve

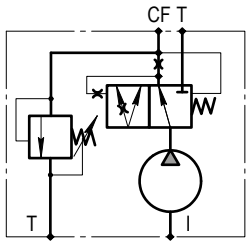
VERSION WITH VALVE IN THE REAR COVER



CF - constant flow
T - drain

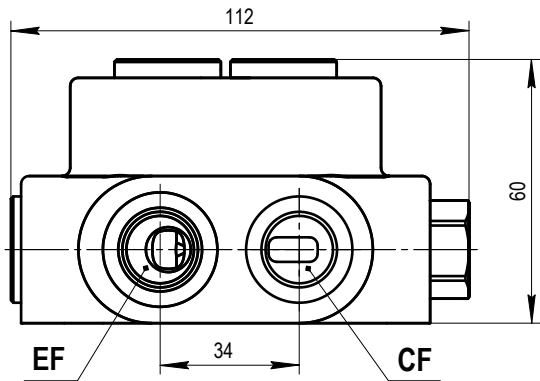
CODE	CF	T
E	M18x1,5	M18x1,5
F	3/4"-16 UNF	3/4"-16 UNF
G	3/8" GAS	3/8" GAS

Constant flow	l/min, $\pm 10\%$	1.2	2	4.5	6	8	10
		12	14.5	18	20	23	25
Pressure relief setting	bar	20÷280					



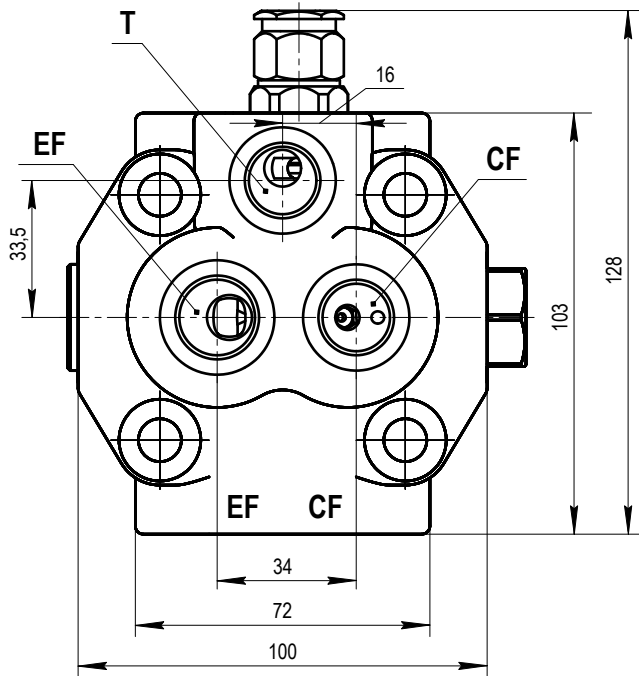
Constant flow valve with a relief and drain to tank

VQR

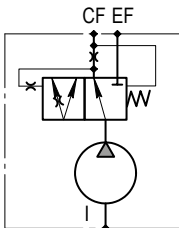


CODE	CF	EF	T
E	M18x1,5	M20x1,5	M18x1,5
F	3/4"-16 UNF	7/8"-14 UNF	3/4"-16 UNF
G	3/8" GAS	1/2" GAS	3/8" GAS

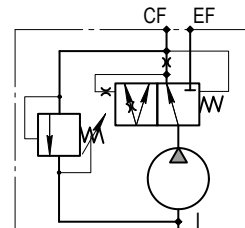
Priority flow	l/min, ±10%	1.2	2	4.5	6	8	10
		12	14.5	18	20	23	25
Pressure relief setting	bar	20÷280					



CF - priority flow
EF - secondary flow
T - drain

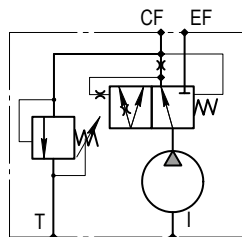


VP



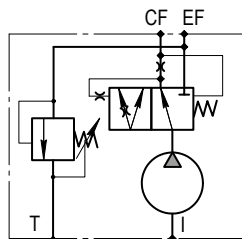
VPR

Priority flow divider with a relief in the priority line and return to the suction line



VPRT

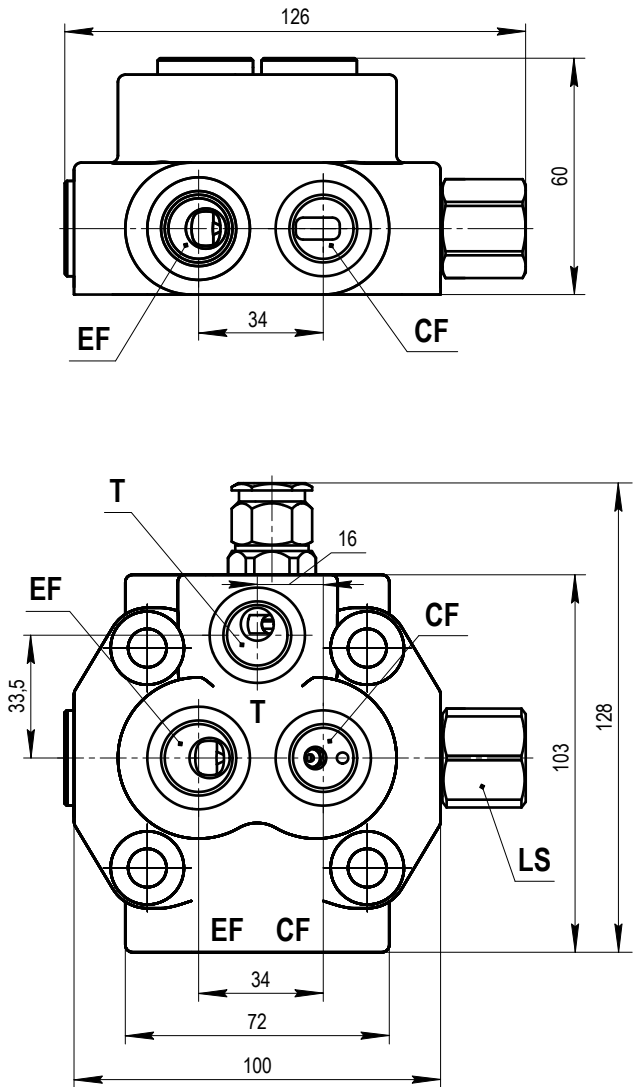
Priority flow divider with a relief in the priority line and return to the tank



VPRET

Priority flow divider with a relief in the secondary line and return to the tank

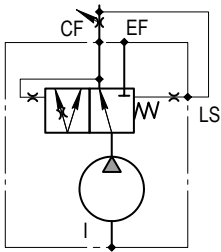
VERSION WITH VALVE IN THE REAR COVER



CF - priority flow
EF - secondary flow
LS - LS line
T - drain

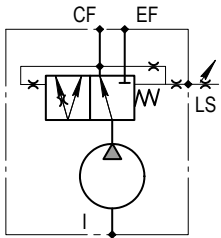
CODE	CF	EF	T	LS
E	M18x1,5	M20x1,5	M18x1,5	M14x1,5
F	3/4"-16 UNF	7/8"-14 UNF	3/4"-16 UNF	7/16"-20 UNF
G	3/8" GAS	1/2" GAS	3/8" GAS	1/4" GAS

LS signal	bar	4	7	10
Pressure relief setting	bar	20÷280		



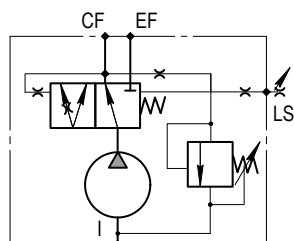
Priority flow divider
with static LS control

VPLS



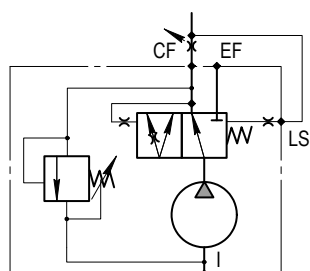
Priority flow divider
with dynamic LS control

VPLD



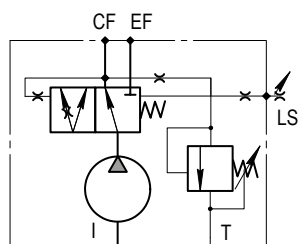
VPLRS

Priority flow divider with a static LS control, relief in the priority line and return to the suction line



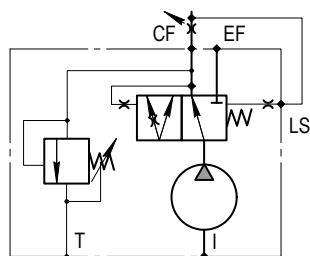
VPLRD

Priority flow divider with a dynamic LS control, relief in the priority line and return to the suction line



VPLRST

Priority flow divider with a static LS control, relief in the priority line and return to the tank

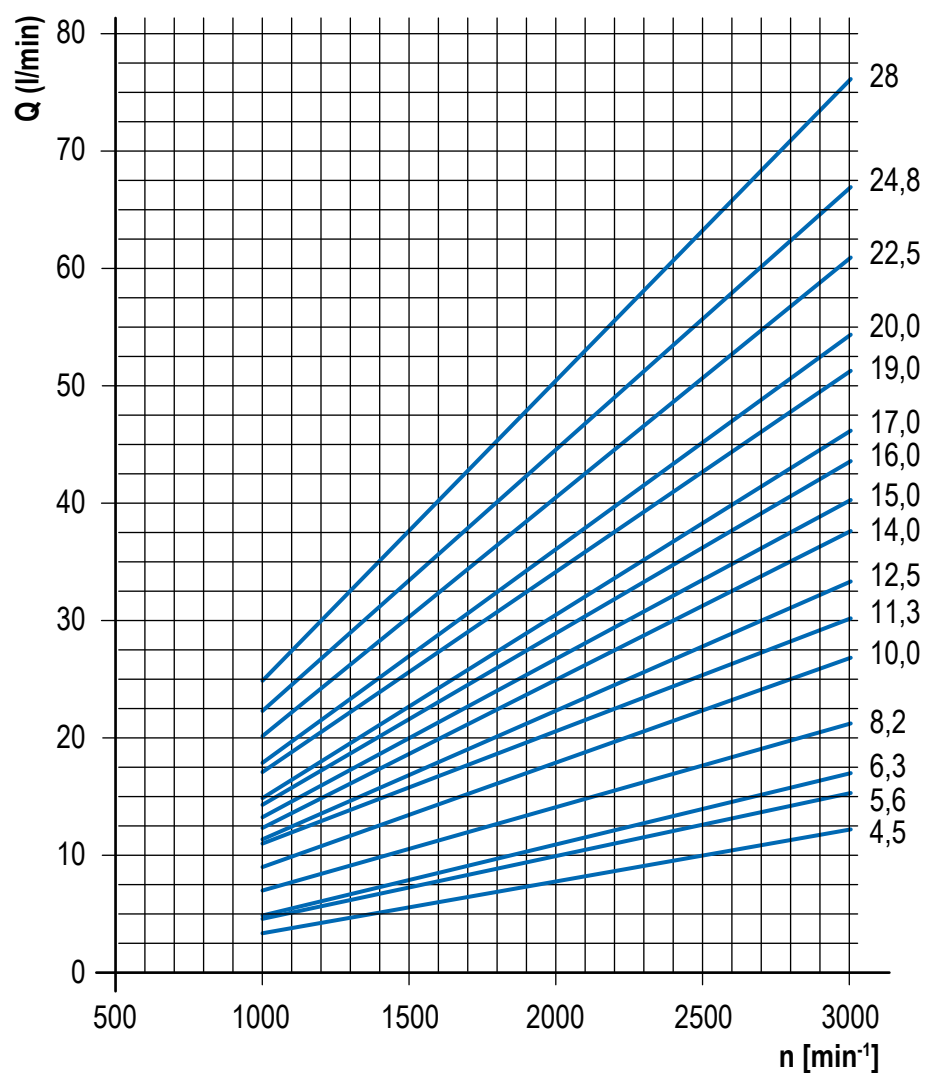


VPLRDT

Priority flow divider with a dynamic LS control, relief in the priority line and return to the tank

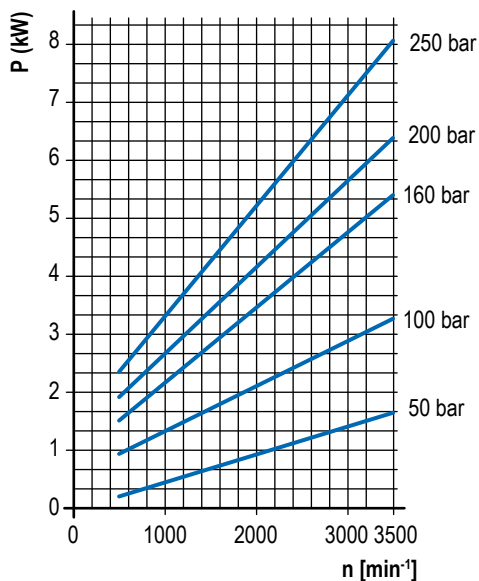
PERFORMANCE CURVES

Performance curves carried out with oil viscosity at 16 mm²/sec, oil temperature at 60°C and max. continuous pressures for each type.

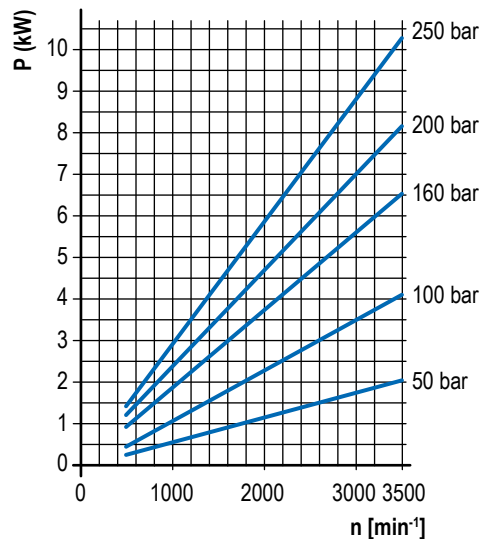


PERFORMANCE CURVES

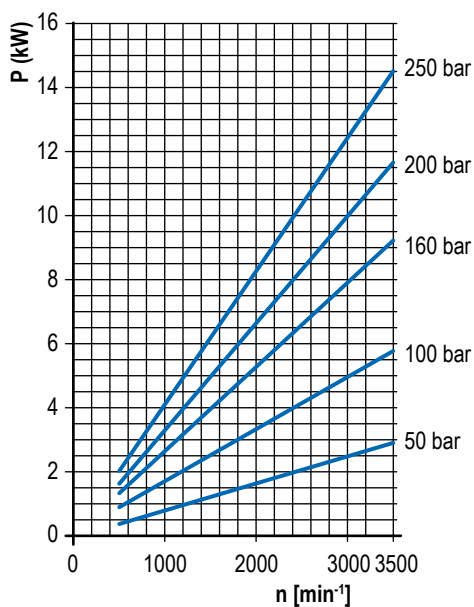
Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



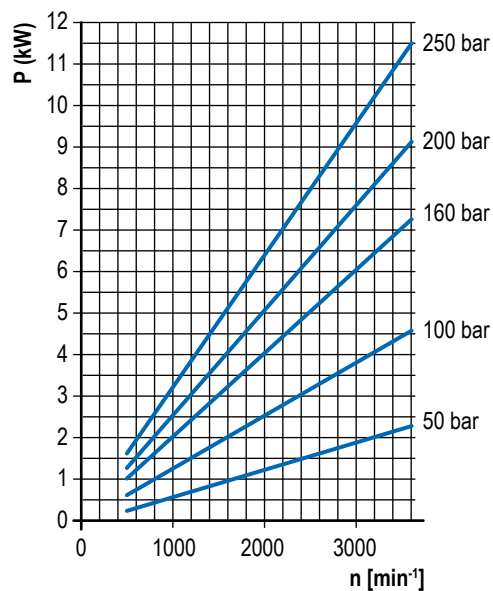
GP2K4



GP2K5



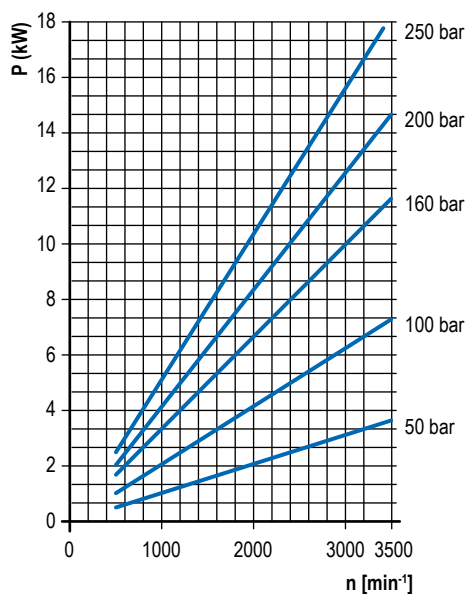
GP2K6



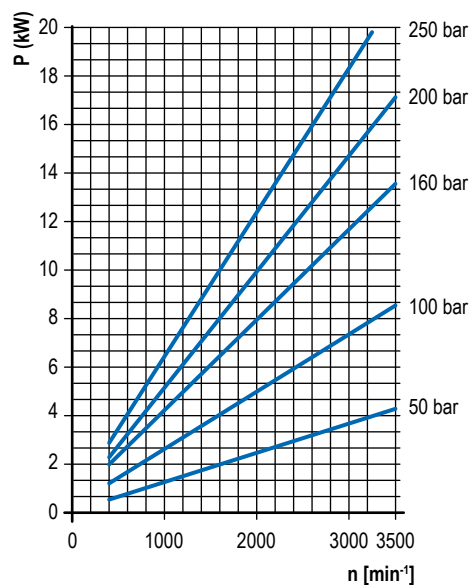
GP2K8

PERFORMANCE CURVES

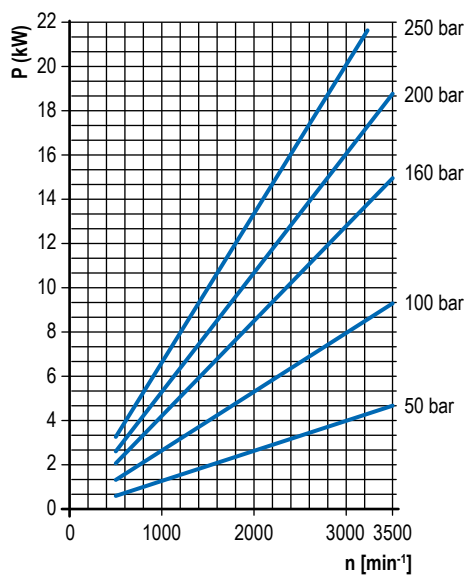
Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



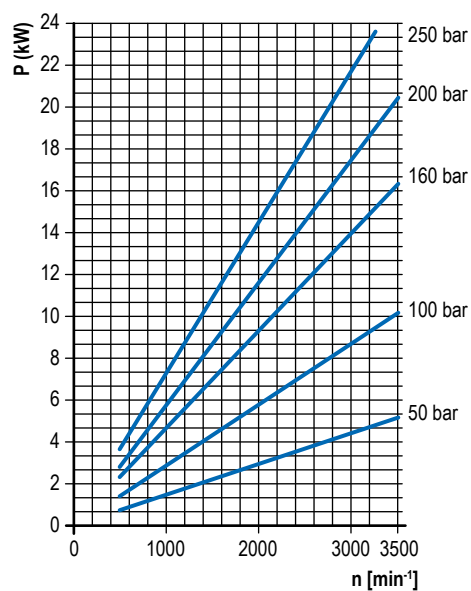
GP2K10



GP2K11



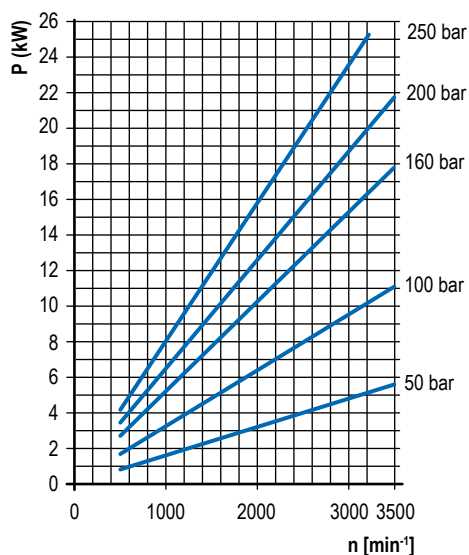
GP2K12



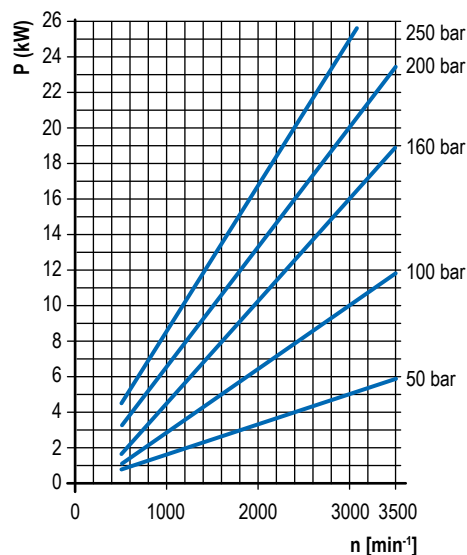
GP2K14

PERFORMANCE CURVES

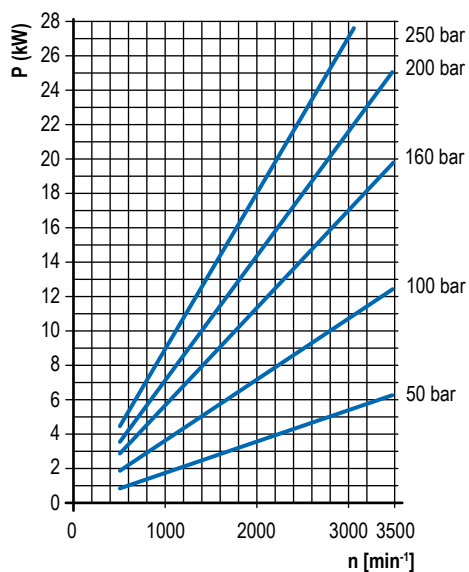
Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



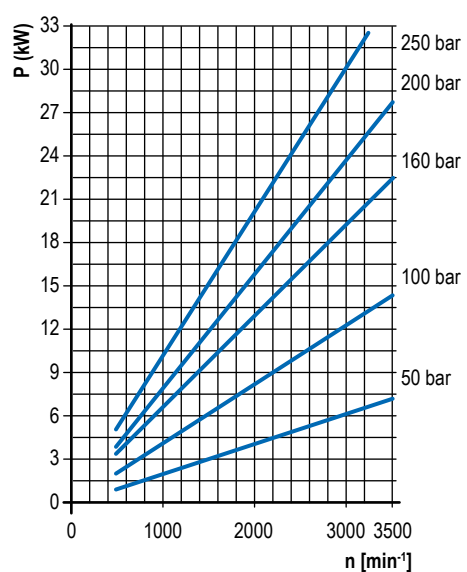
GP2K15



GP2K16



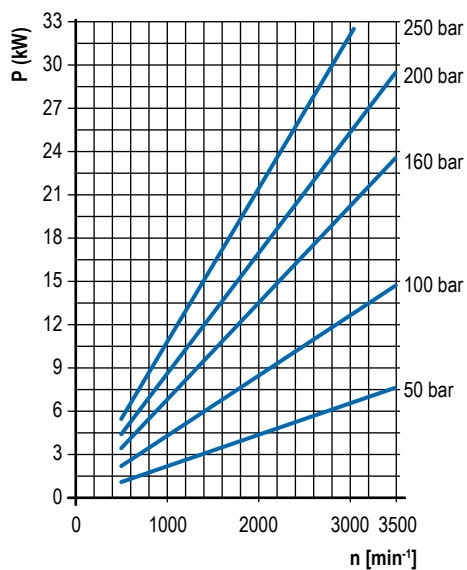
GP2K17



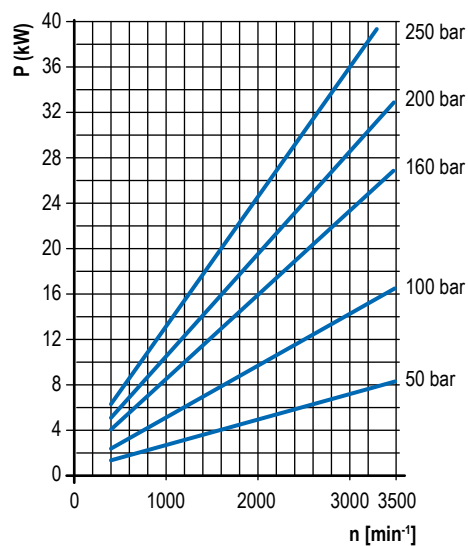
GP2K19

PERFORMANCE CURVES

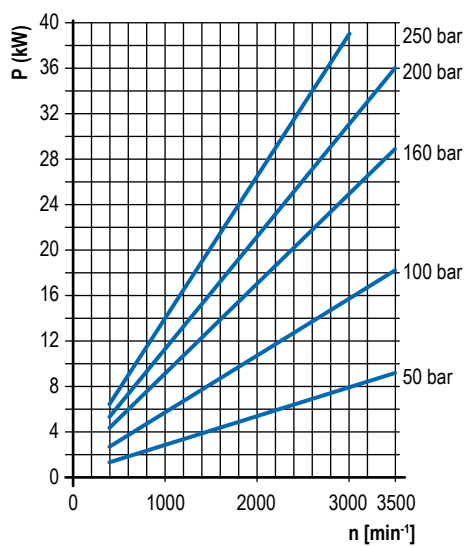
Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



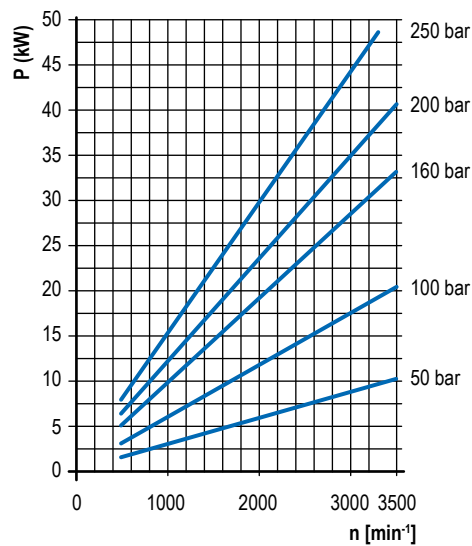
GP2K20



GP2K23



GP2K25



GP2K28

ORDERING INSTRUCTIONS

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

GEAR PUMP	GP	*CUSTOMER CODE	CODE
GROUP	2	...	G00
SERIES	K		F00

DISPLACEMENT	CODE	DISPLACEMENT	CODE
4,5 cm³/rev	4	15 cm³/rev	15
5,6 cm³/rev	5	16 cm³/rev	16
6,3 cm³/rev	6	17 cm³/rev	17
8,2 cm³/rev	8	19 cm³/rev	19
10 cm³/rev	10	20 cm³/rev	20
11,3 cm³/rev	11	22,5 cm³/rev	23
12,5 cm³/rev	12	24,8 cm³/rev	25
14 cm³/rev	14	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

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

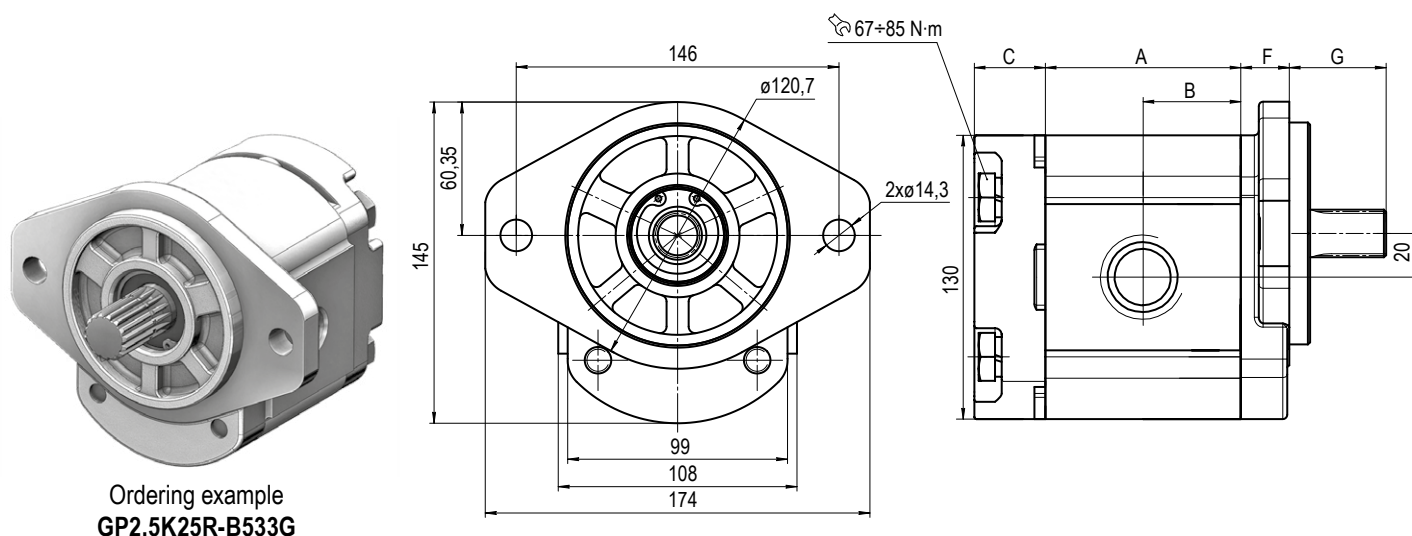
Setting main relief valve (bar)

Adjusted flow (l/min)

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

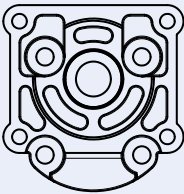
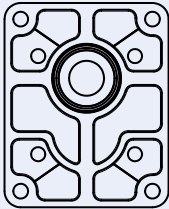
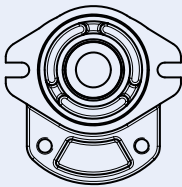
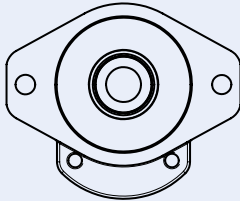
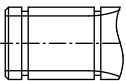
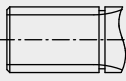
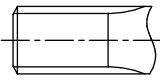
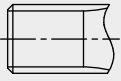
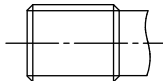
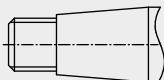
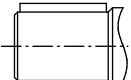
TECHNICAL DATA AND ASSEMBLING DIMENSIONS

Type		GP2.5K16	GP2.5K19	GP2.5K20	GP2.5K23	GP2.5K25	GP2.5K28	GP2.5K30	GP2.5K32	GP2.5K36	GP2.5K37	GP2.5K38	GP2.5K40	GP2.5K45
Displacement	cm³/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
Flow rate at 1500 rpm	l/min	22,8	27,1	28,5	32,8	35,6	39,9	42,8	45,6	51,3	52,7	54,2	57,0	64,1
Dimension A	mm	71,80	75,00	76,20	79,50	81,70	85,00	87,30	89,50	94,00	95,00	96,00	98,00	103,50
Dimension B	mm	35,90	37,50	38,10	39,75	40,85	42,50	43,65	44,75	47,00	47,50	48,00	49,00	51,75
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, n _{max}	min ⁻¹	3000									2750		2500	
Min. speed at P ₁ ≤100 bar, n _{min}	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



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

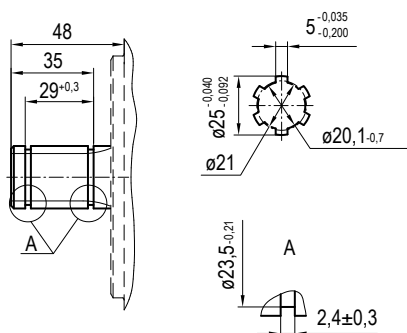
*Weight shown are for pumps with aluminum covers. Weight for pumps with cast iron covers should be refined

GP2.5K	 GSTU 3-25-180-97	 EUROPEAN	 SAE A 2 BOLTS	 SAE B 2 BOLTS
	 GSTU 3-25-180-97 A2 03			
	 GSTU 3-25-180-97 A3 03			
	 SAE A SPLINED (10 TEETH)		B3 31	
	 SAE A SPLINED (11 TEETH)		B4 31	
	 SAE B SPLINED (13 TEETH)			B5 33
	 EUROPEAN TAPERED 1:8	G3 63		
	 SAE B STRAIGHT Ø22,2			H3 33

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.

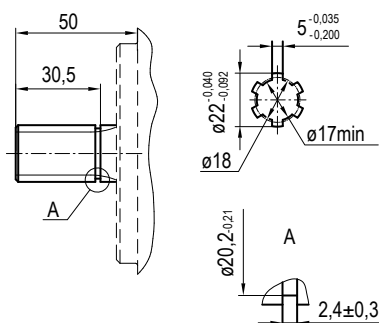
DRIVE SHAFTS

Max. torque 400 N·m



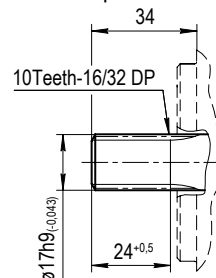
A2 GSTU 3-25-180-97

Max. torque 320 N·m



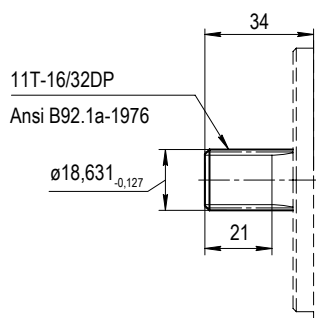
A3 GSTU 3-25-180-97

Max. torque 100 N·m



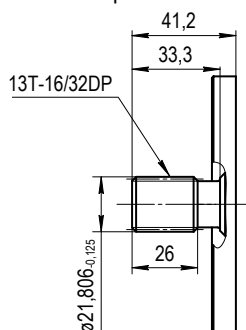
B3 SAE A SPLINED (10 TEETH)

Max. torque 140 N·m



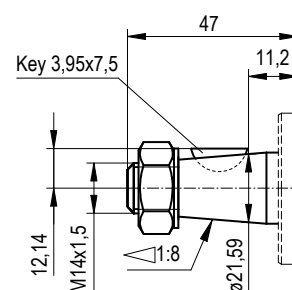
B4 SAE A SPLINED (11 TEETH)

Max. torque 320 N·m



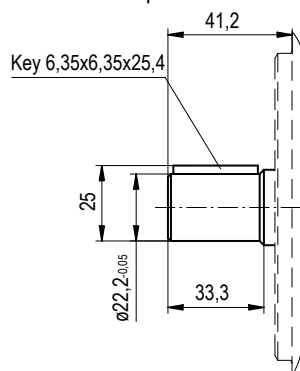
B5 SAE B SPLINED (13 TEETH)

Max. torque 250 N·m



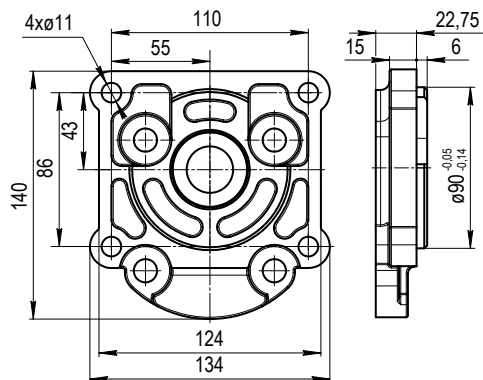
G3 EUROPEAN TAPERED 1:8

Max. torque 220 N·m



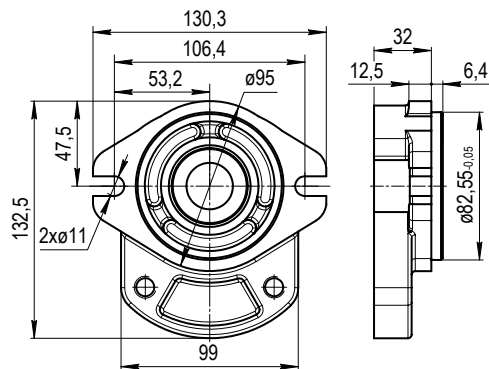
H3 SAE B STRAIGHT Ø22,2

MOUNTING FLANGES



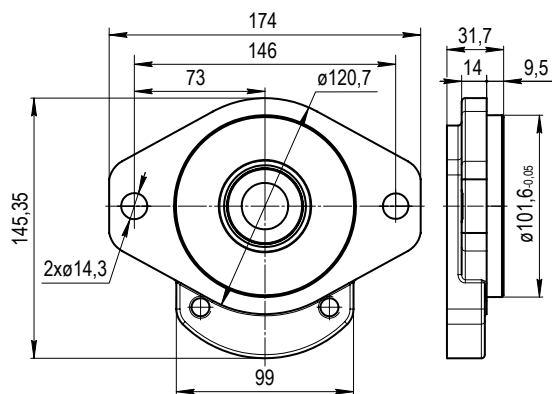
03

GSTU 3-25-180-97



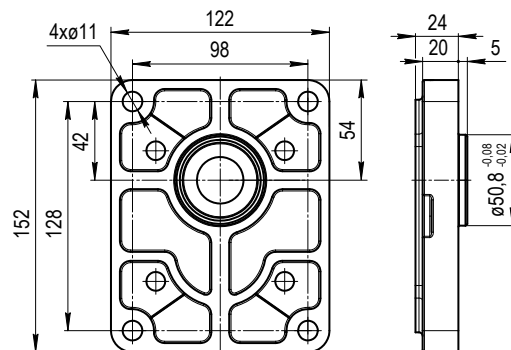
31

SAE A 2 BOLTS



33

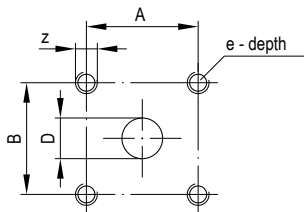
SAE B 2 BOLTS



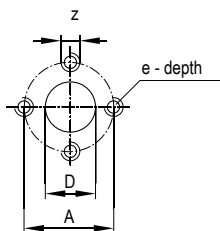
63

EUROPEAN

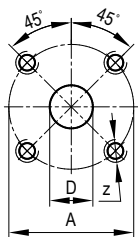
PORTS



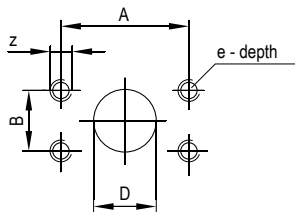
A GSTU 3-25-180-97



B EUROPEAN FLANGE



C GERMAN FLANGE



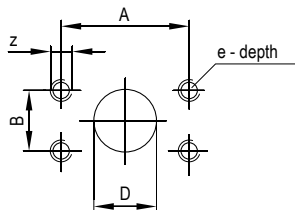
D SAE FLANGE (UNC)

Type	Inlet					Outlet				
	D	A	B	z	e	D	A	B	z	e
GP2.5K16÷45	23,5	46	46	M8	17	23,5	46	46	M8	17

Type	Inlet				Outlet			
	D	A	z	e	D	A	z	e
GP2.5K16÷20	19	40	M8	13	13	30	M6	13
GP2.5K23÷45	25	51	M10	17	19	40	M8	17

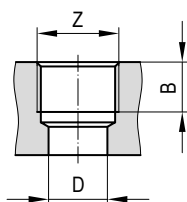
Type	Inlet				Outlet			
	D	A	z	e	D	A	z	e
GP2.5K16÷45	25	55	M8	17	19	55	M8	17

Type	Inlet					Outlet				
	D	A	B	z	e	D	A	B	z	e
GP2.5K16÷45	25	52,4	26,2	3/8 16UNC	16	19	47,6	22,2	3/8 16UNC	14



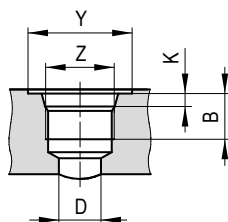
W SAE FLANGE (METRIC)

Type	Inlet					Outlet				
	D	A	B	z	e	D	A	B	z	e
GP2.5K16÷45	25	52,4	26,2	M10	16	19	47,6	22,2	M10	16



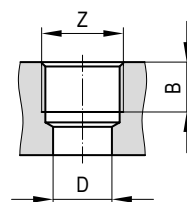
E METRIC THREADED

Type	Inlet			Outlet		
	Z	B	D	Z	B	D
GP2.5K16÷23	M27x2	19	22	M22x1,5	16	18
GP2.5K25÷45	M33x2	21	25	M27x2	19	22



F SAE THREADED

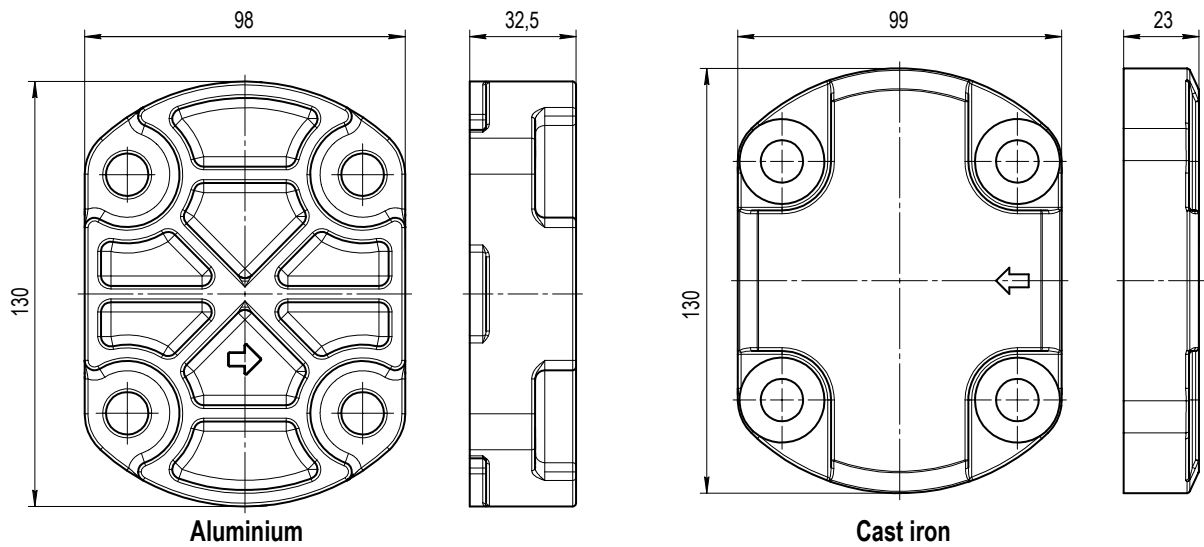
Type	Inlet					Outlet				
	Z	B	D	Y	K	Z	B	D	Y	K
GP2.5K16÷23	1-1/16-12 UN (SAE#12)	19	20	42	3,3	7/8-14 UNF (SAE#10)	19	15	32	2,5
GP2.5K25÷45	1-5/16-12 UN (SAE#16)		23	51		1-1/16-12 UN (SAE#12)		20	42	3,3



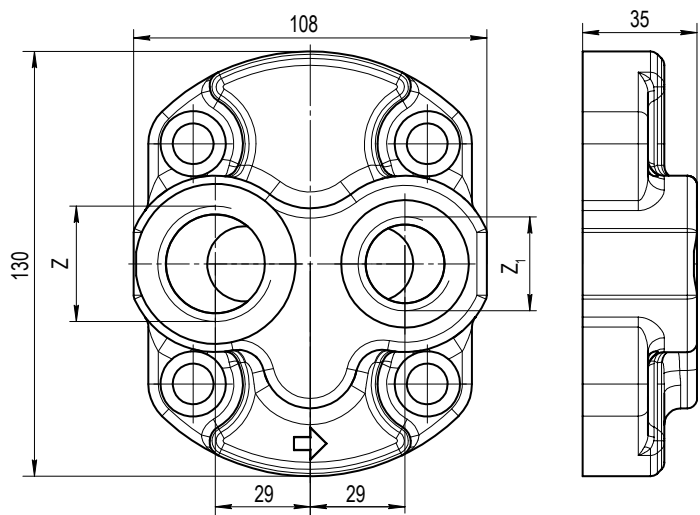
G GAS THREADED

Type	Inlet			Outlet		
	Z	B	D	Z	B	D
GP2.5K16÷23	3/4" GAS	19	20	1/2" GAS	16	13
GP2.5K25÷45	1" GAS	21	27	3/4" GAS	19	20

REAR COVERS



STANDARD REAR COVERS



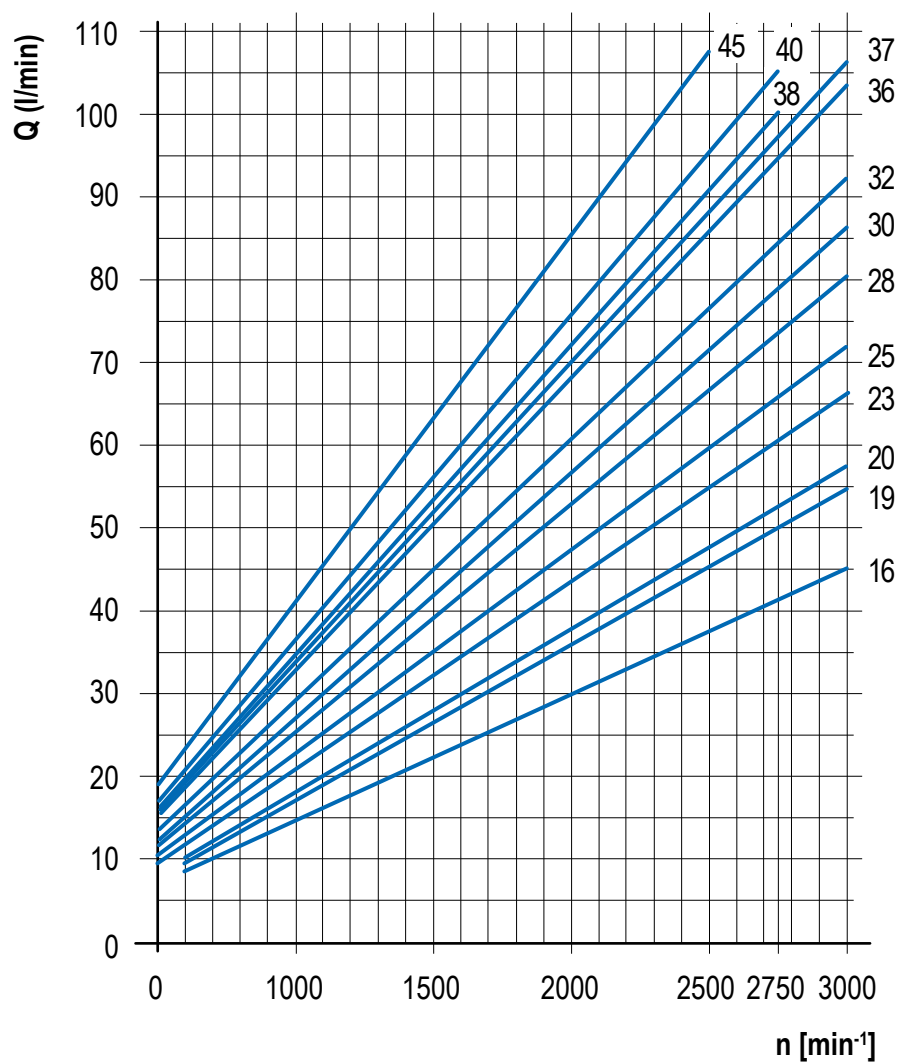
Type	Inlet	Outlet
	Z	Z ₁
GP2.5K16÷23	3/4" GAS	1/2" GAS
GP2.5K25÷45	1" GAS	3/4" GAS
GP2.5K16÷23	1 1/16-12 UN	7/8-14 UNF
GP2.5K25÷45	1 5/16-12 UN	1 1/16-12 UN

1

REAR COVER WITH THREADED PORTS

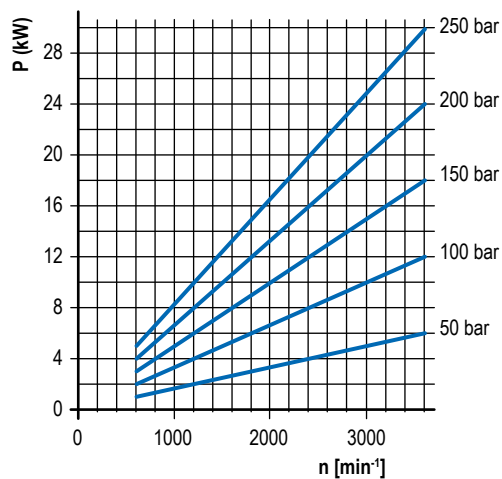
PERFORMANCE CURVES

Performance curves carried out with oil viscosity at 16 mm²/sec, oil temperature at 60°C and max. continuous pressures for each type.

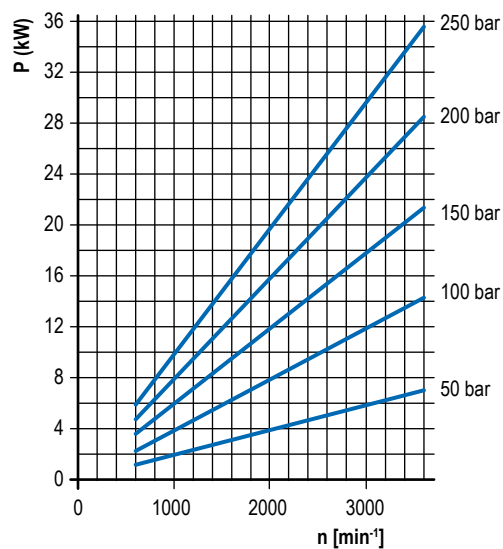


PERFORMANCE CURVES

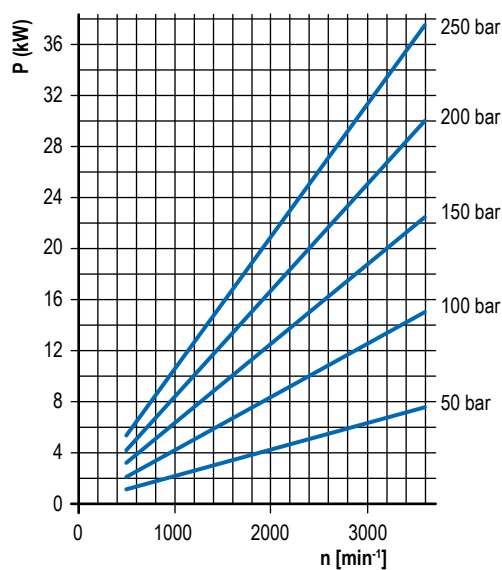
Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



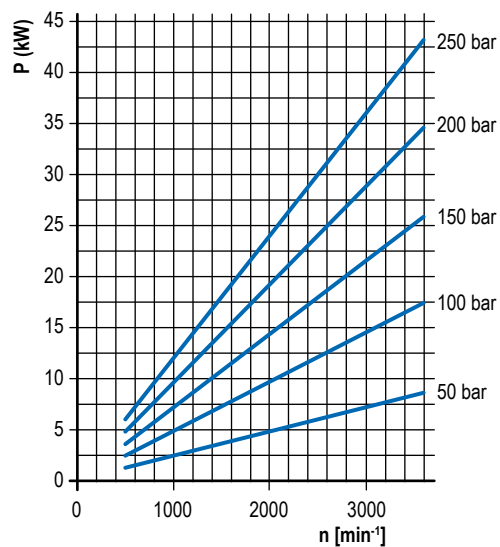
GP2.5K16



GP2.5K19



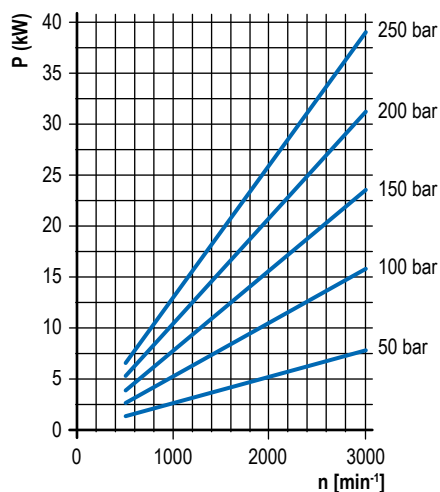
GP2.5K20



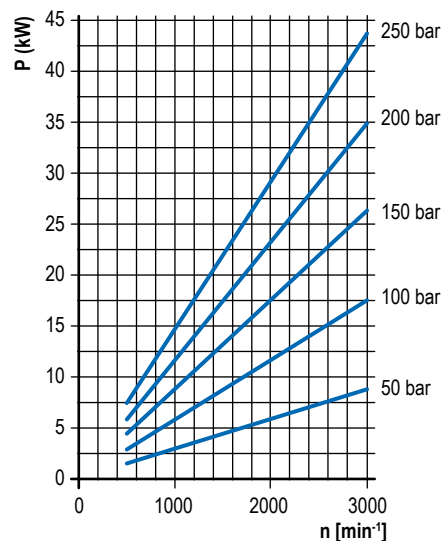
GP2.5K23

PERFORMANCE CURVES

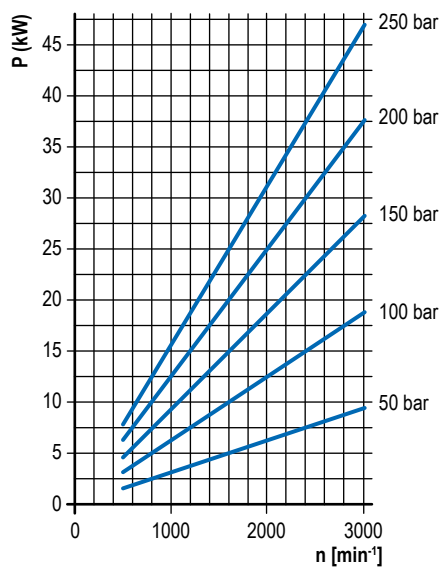
Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



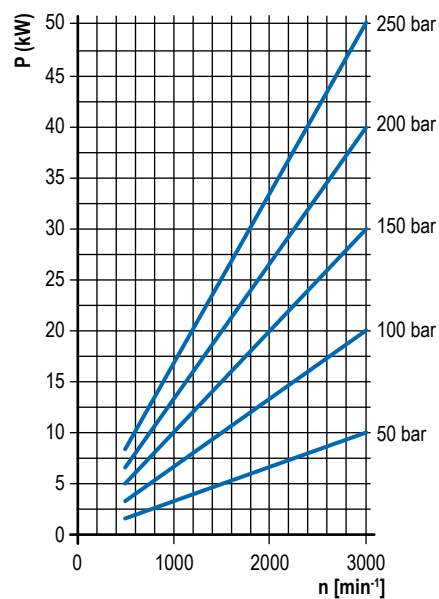
GP2.5K25



GP2.5K28



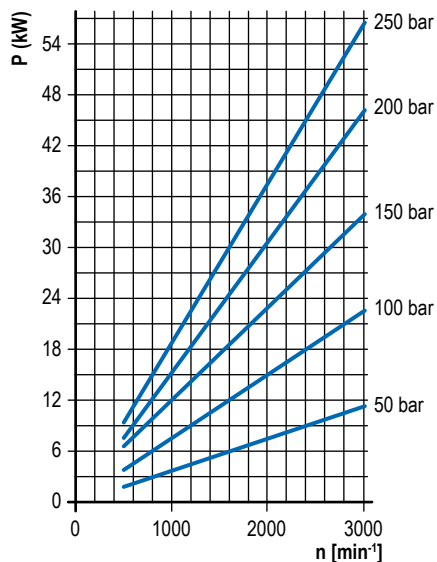
GP2.5K30



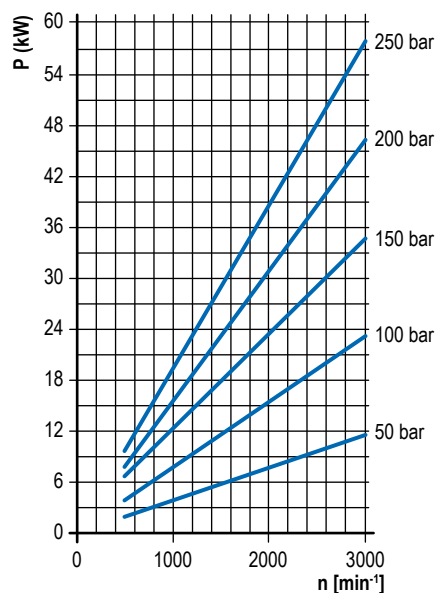
GP2.5K32

PERFORMANCE CURVES

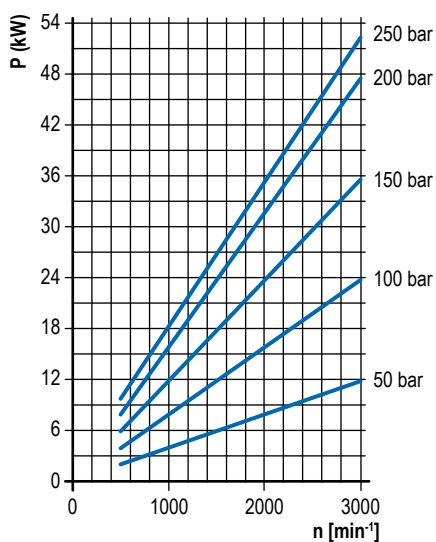
Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



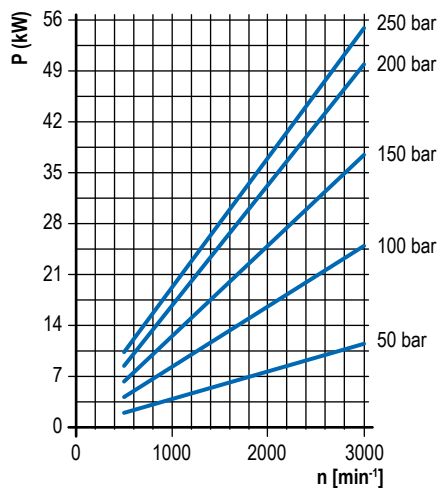
GP2.5K36



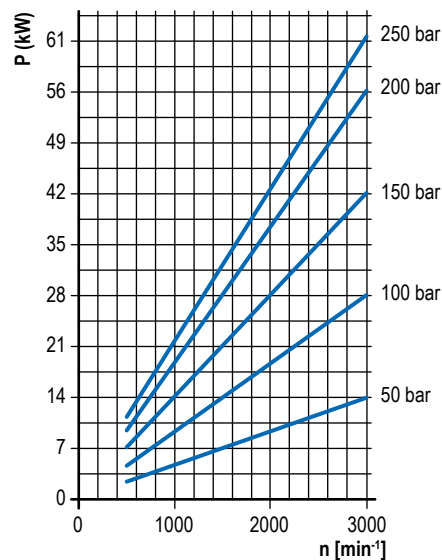
GP2.5K37



GP2.5K38

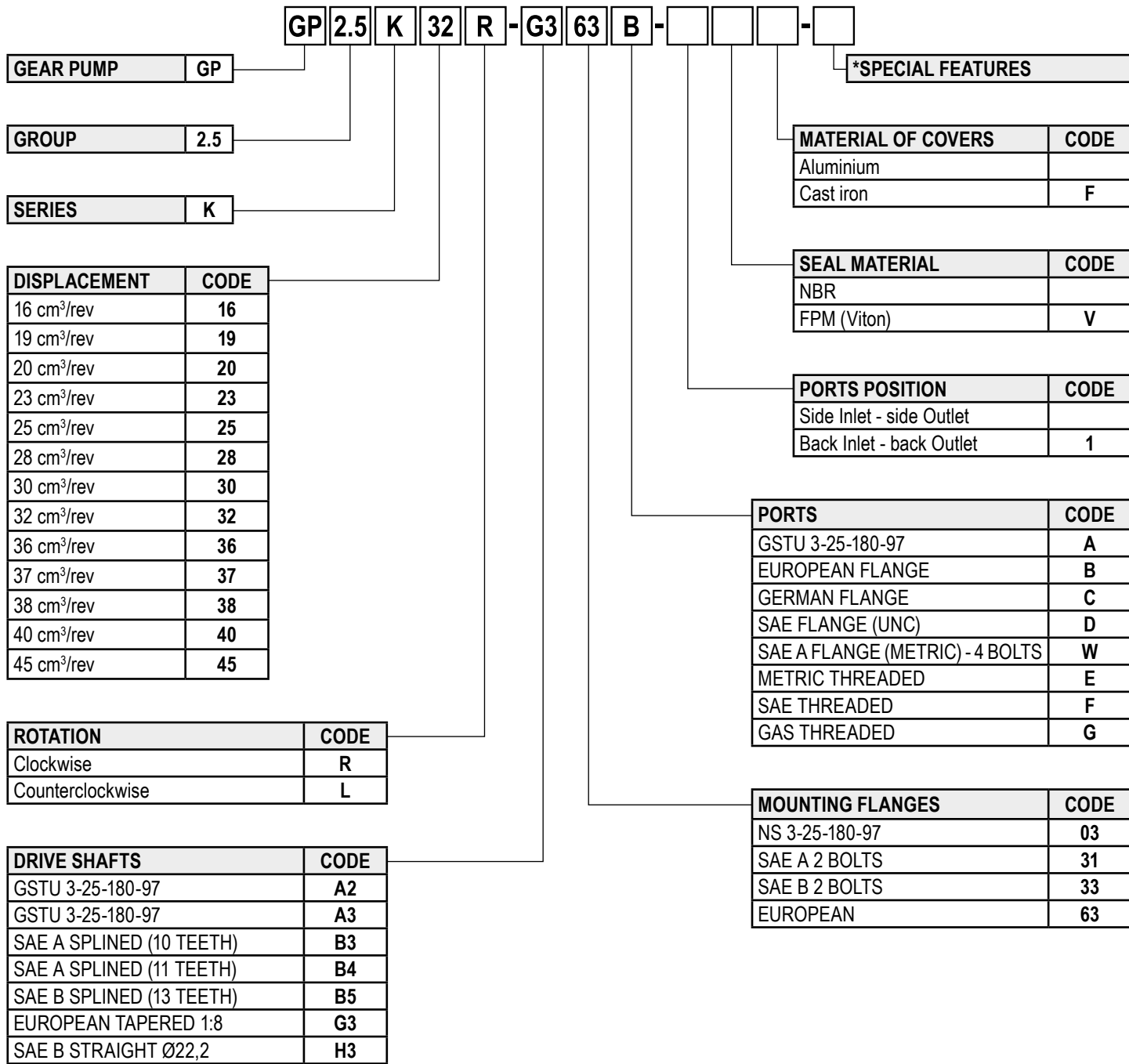


GP2.5K40



GP2.5K45

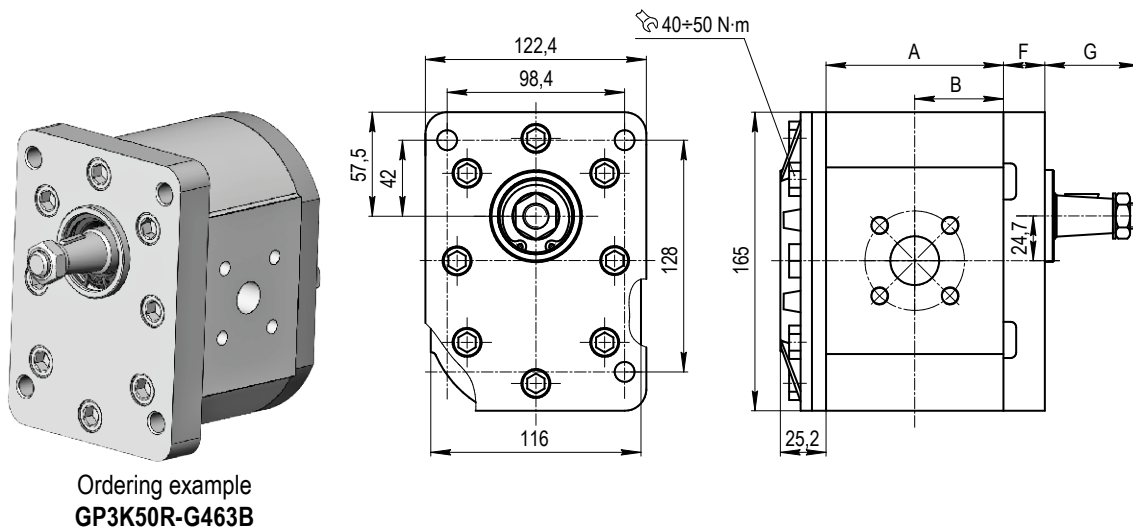
ORDERING INSTRUCTIONS



*Special features assigned if necessary

TECHNICAL DATA AND ASSEMBLING DIMENSIONS

Type		GP3K20	GP3K23	GP3K25	GP3K28	GP3K32	GP3K36	GP3K40	GP3K45	GP3K50	GP3K56	GP3K63	GP3K71	GP3K80	GP3K90
Displacement	cm³/rev	20	23	25	28	32	36	40	45	50	56	63	71	80	90
Flow rate at 1500 rpm	l/min	28,5	32,8	35,6	39,9	45,6	51,3	57,0	64,1	71,3	79,8	89,8	101,2	114,0	128,3
Dimension A	mm	81,5	83,5	84,8	86,8	89,4	92,0	94,7	98,0	102,0	105,0	109,4	114,6	120,4	127,0
Dimension B	mm	40,75	41,75	42,4	43,4	44,7	46,0	47,35	49,0	51,0	52,5	54,7	57,3	60,2	63,5
Max. continuous pressure, P ₁	bar	250		250		240			230	210	200	190	170	160	150
Max. intermittent pressure, P ₂	bar	270		270		260			250	230	220	210	190	180	170
Peak pressure, P ₃	bar	300		290		280			270	250	230	220	200	190	180
Max. speed, n _{max}	min ⁻¹	3000								2500				2200	
Min. speed at P ₁ ≤100 bar, n _{min}	min ⁻¹	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

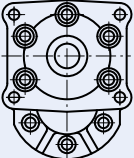
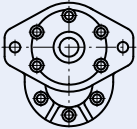
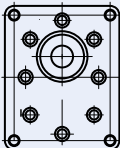
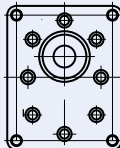
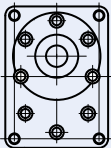
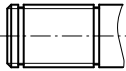
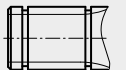
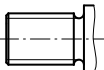
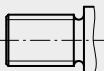
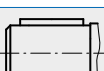
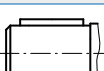


Dimension G = see section "Drive shafts"

Dimension F = see section "Mounting flanges"

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

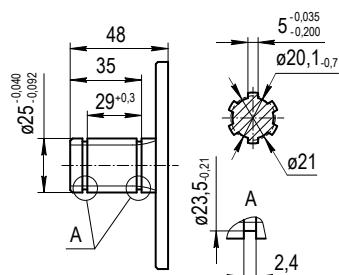
COMBINATION TYPES OF FLANGES & SHAFTS

GP3K	 GSTU 3-25-180-97	 SAE B 2 BOLTS	 EUROPEAN Ø50,8	 EUROPEAN Ø60,3	 GERMAN Ø105
 GSTU 3-25-180-97	A2 04				
 ГОСТ/NS6033-51	D4 04				
 SAE B SPLINED (13 TEETH)		B5 33			
 SAE BB SPLINED (15 TEETH)		B6 33			
 GERMAN TAPERED 1:5					F4 88
 EUROPEAN TAPERED 1:8			G4 63	G4 64	
 EUROPEAN TAPERED 1:8			G5 63	G5 64	
 SAE B STRAIGHT Ø22,2		H3 33			
 SAE BB STRAIGHT Ø25,4		H4 33			

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.

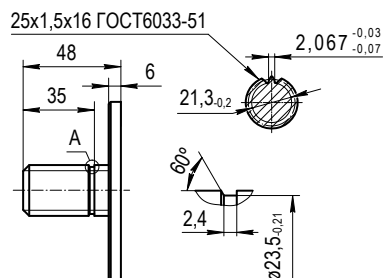
DRIVE SHAFTS

Max. torque 400 N·m



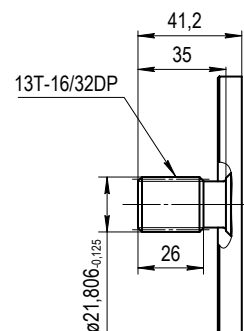
A2 GSTU 3-25-180-97

Max. torque 400 N·m



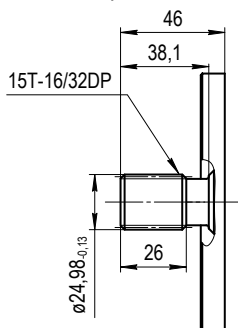
D4 ГОСТ/NS 6033-51

Max. torque 300 N·m



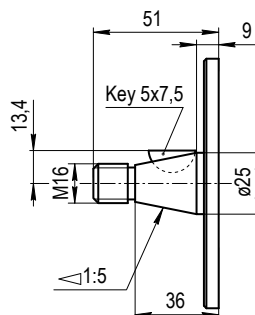
B5 SAE B SPLINED (13 TEETH)

Max. torque 450 N·m



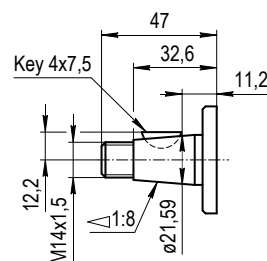
B6 SAE BB SPLINED (15 TEETH)

Max. torque 240 N·m



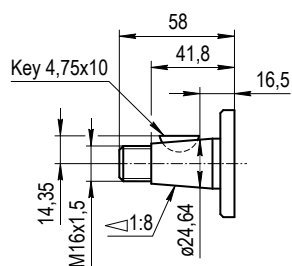
F4 GERMAN TAPERED 1:5

Max. torque 240 N·m



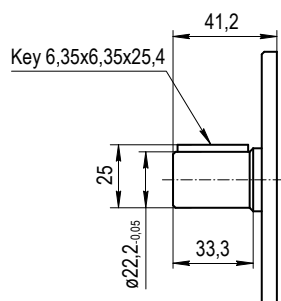
G4 EUROPEAN TAPERED 1:8

Max. torque 350 N·m



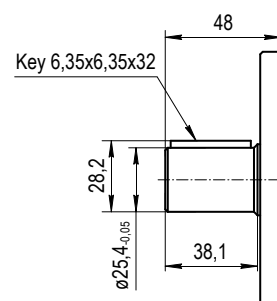
G5 EUROPEAN TAPERED 1:8

Max. torque 185 N·m



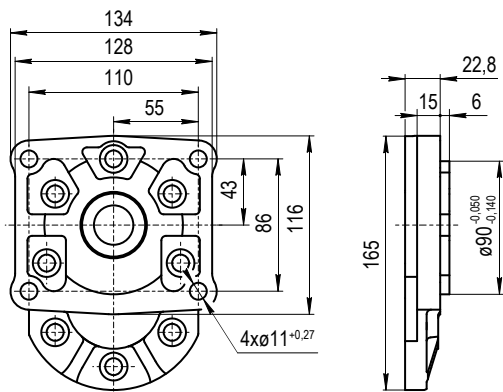
H3 SAE B STRAIGHT Ø22,2

Max. torque 280 N·m

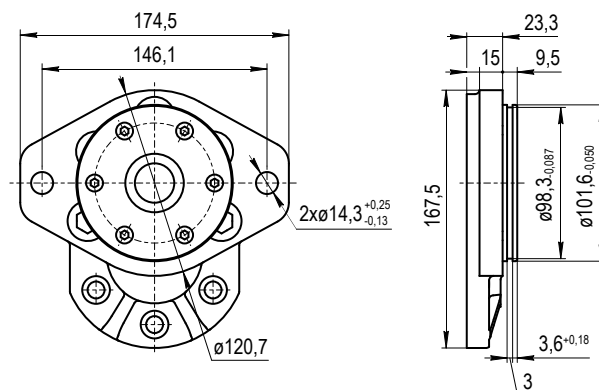


H4 SAE BB STRAIGHT Ø25,4

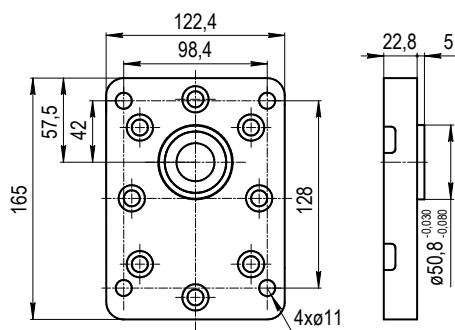
MOUNTING FLANGES



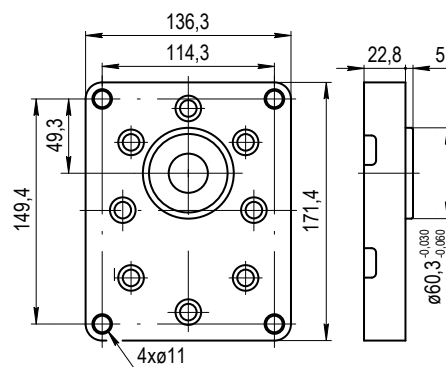
04 GSTU 3-25-180-97



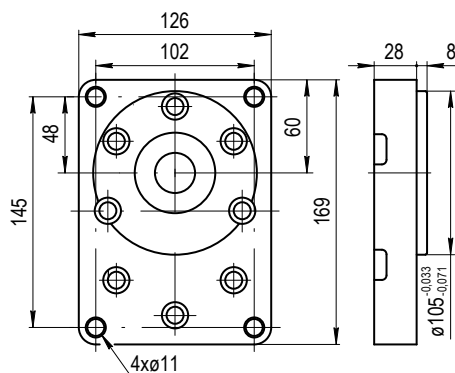
33 SAE B 2 BOLTS



63 EUROPEAN Ø50,8

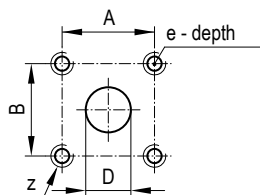


64 EUROPEAN Ø60,3

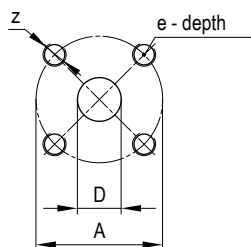


88 GERMAN Ø105

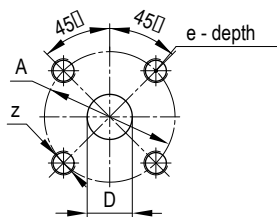
PORTS



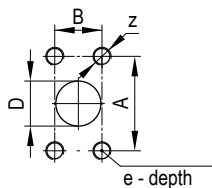
A GSTU 3-25-180-97



B EUROPEAN FLANGE



C GERMAN FLANGE



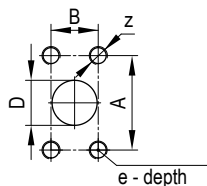
D SAE FLANGE (UNC)

Type	Inlet					Outlet				
	A	B	D	z	e	A	B	D	z	e
GP3K20÷23	46		16	M8	16	46		16	M8	16
GP3K25÷28			19					19		
GP3K32÷36			23,5					23,5		
GP3K40÷56	54		28	M10	16	54		28	M10	16
GP3K63÷90	42,88	77,77	32	M12		42,88	77,77	32	M12	

Type	Inlet				Outlet			
	D	A	z	e	D	A	z	e
GP3K20÷56	27	51	M10	18	19	40	M8	18
GP3K63÷90	32	62	M12		27	51	M10	

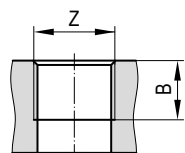
Type	Inlet				Outlet			
	D	A	z	e	D	A	z	e
GP3K20÷56	27	55	M8	16	19	55	M8	16

Type	Inlet					Outlet				
	D	A	B	z	e	D	A	B	z	e
GP3K20÷32	25	52,4	26,2	3/8-16 UNC	16	19	47,6	22,2	3/8-16 UNC	16
GP3K36÷56	32	58,7	30,2	7/16-14 UNC		25	52,4	26,2		
GP3K63÷80	40	69,8	35,7	1/2-13 UNC		32	58,7	30,2	7/16-14 UNC	
GP3K90	45	77,8	42,9			40	69,8	35,7	1/2-13 UNC	



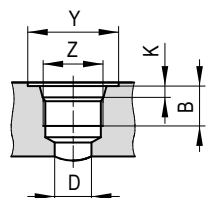
W SAE FLANGE (METRIC)

Type	Inlet					Outlet						
	D	A	B	z	e	D	A	B	z	e		
GP3K20÷32	25	52,4	26,2	M10	16	19	47,6	22,2	M10	16		
GP3K36÷56	32	58,7	30,2			25	52,4	26,2				
GP3K63÷80	40	69,8	35,7	M12		32	58,7	30,2	M12			
GP3K90	45	77,8	42,9			40	69,8	35,7				



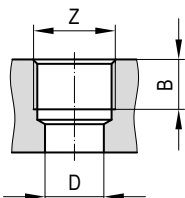
E METRIC THREADED

Type	Inlet		Outlet	
	Z	B	Z	B
GP3K20÷25	M26x1,5	24	M26x1,5	24
GP3K28÷50	M33x2		M33x2	
GP3K56÷90	M42x2		M42x2	



F SAE THREADED

Type	Inlet					Outlet				
	Z	B	D	Y	K	Z	B	D	Y	K
GP3K20÷25	1 1/16-12 UN	19	20	41	3,3	1 1/16-12 UN	19	20	41	3,3
GP3K28÷36	1 5/16-12 UN	20	23	49		1 5/16-12 UN	20	23	49	
GP3K40÷63	1 5/8-12 UN		30	58				30	58	
GP3K71÷90	1 7/8-12 UN		37	65				30	58	

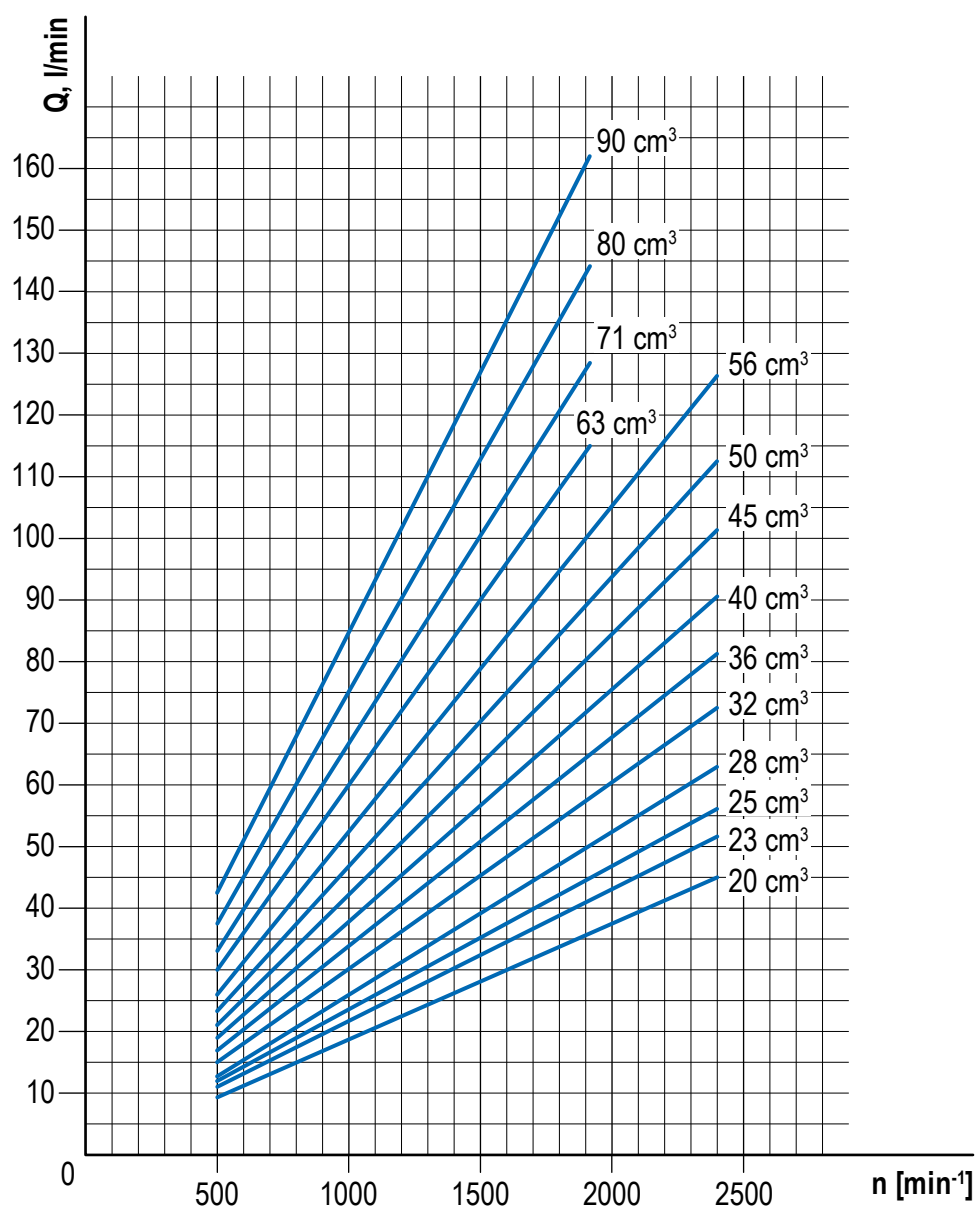


G GAS THREADED

Type	Inlet			Outlet		
	Z	B	D	Z	B	D
GP3K20÷25	3/4" GAS	19	20	3/4" GAS	19	20
GP3K28÷50	1" GAS	21	27	1" GAS	21	27
GP3K56÷71	1 1/4" GAS	21	33			
GP3K80÷90	1 1/2" GAS	25	38	1 1/4" GAS	21	33

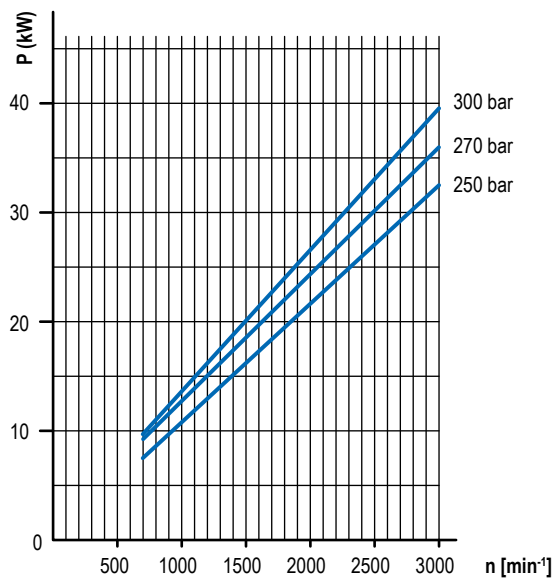
PERFORMANCE CURVES

Performance curves carried out with oil viscosity at 16 mm²/sec, oil temperature at 60°C and max. continuous pressures for each type.

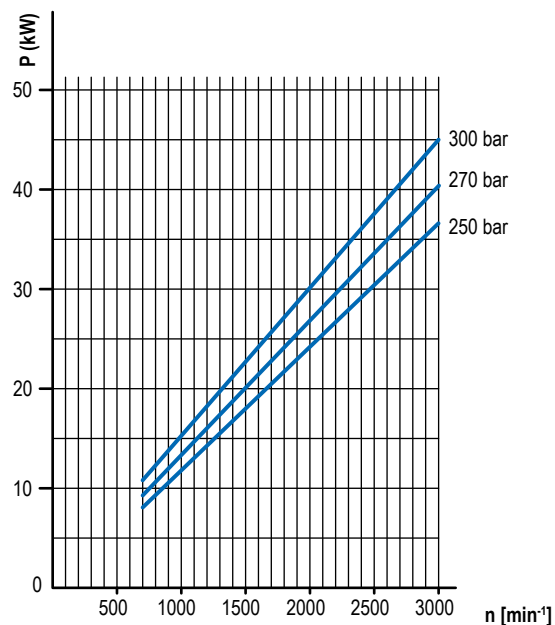


PERFORMANCE CURVES

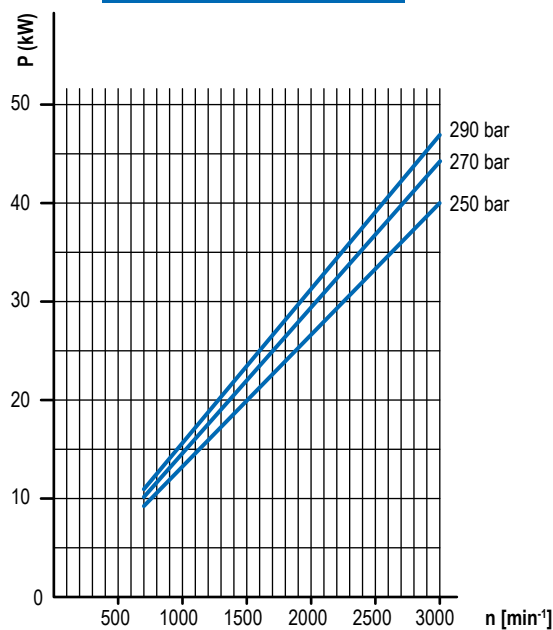
Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



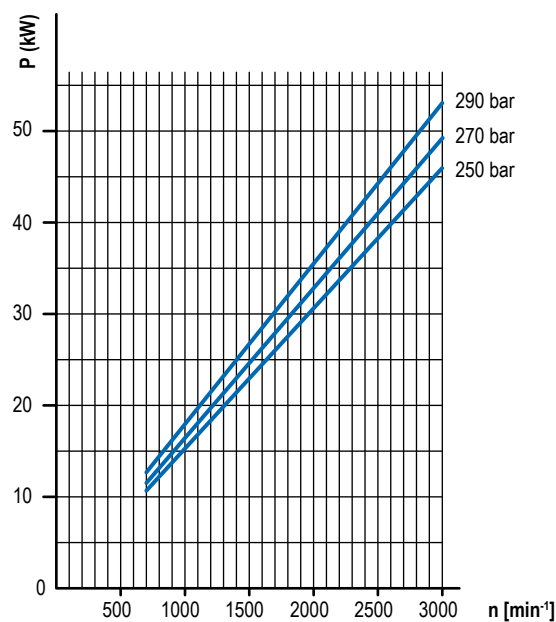
GP3K20



GP3K23



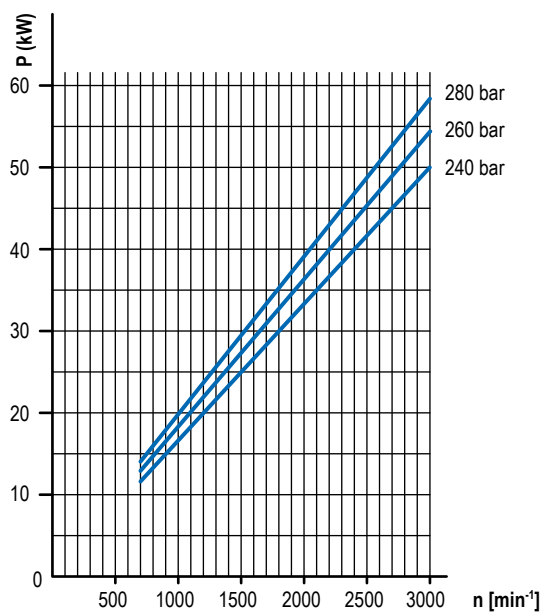
GP3K25



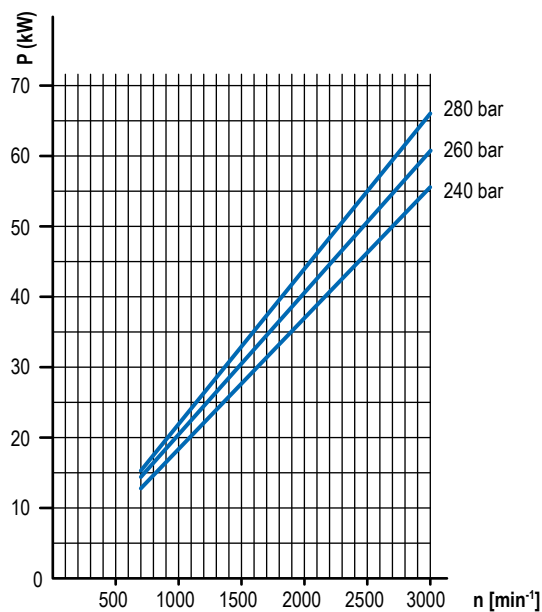
GP3K28

PERFORMANCE CURVES

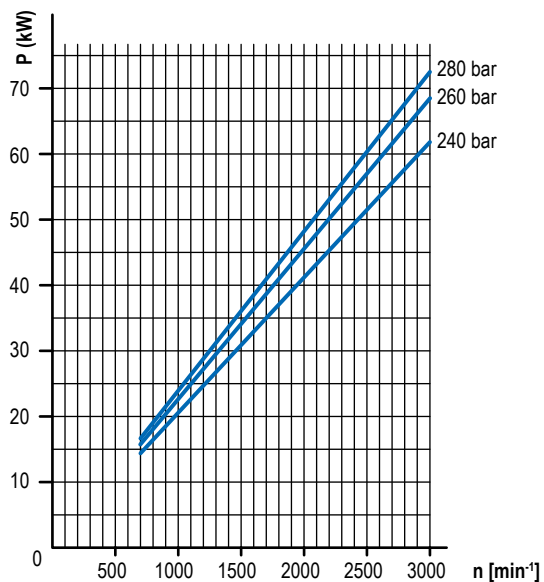
Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



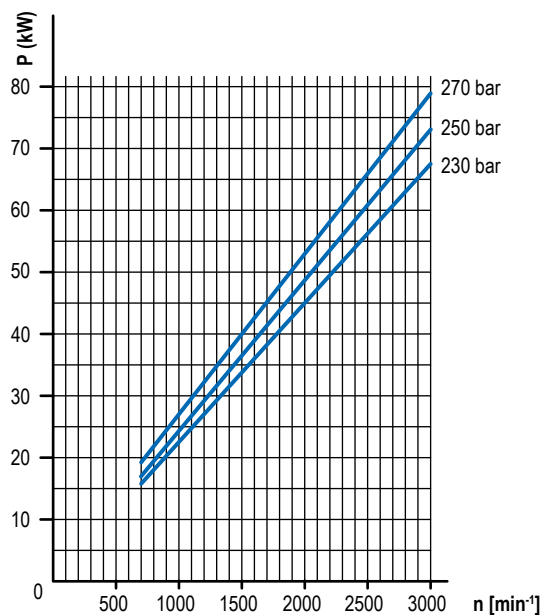
GP3K32



GP3K36



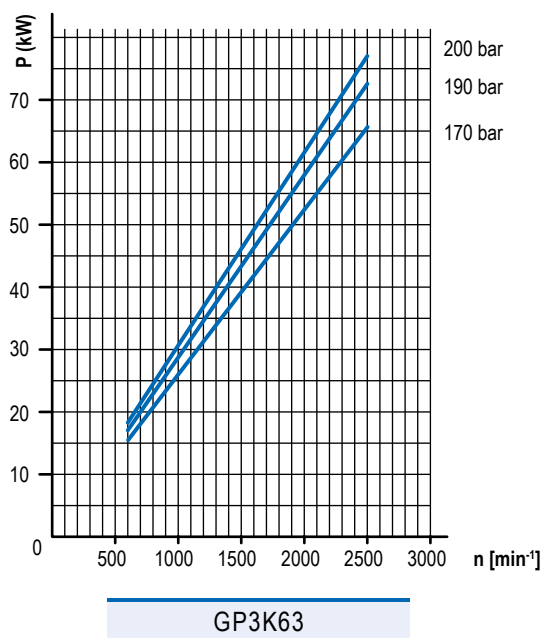
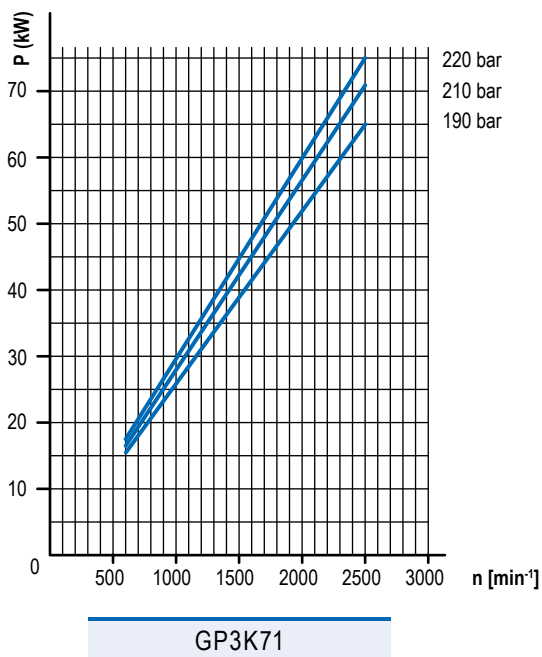
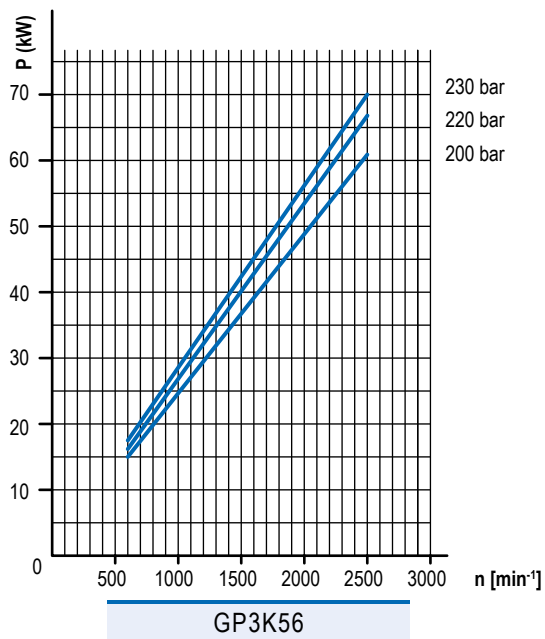
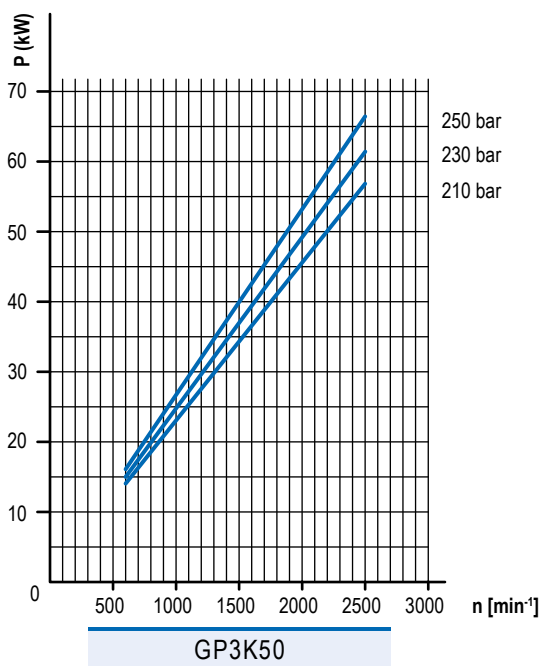
GP3K40



GP3K45

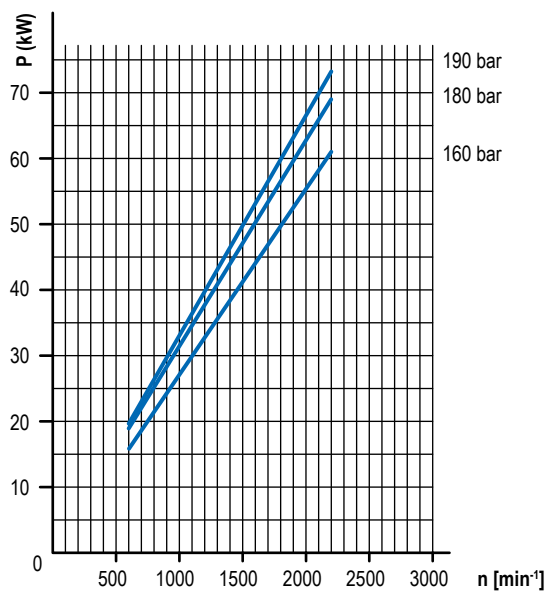
PERFORMANCE CURVES

Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.

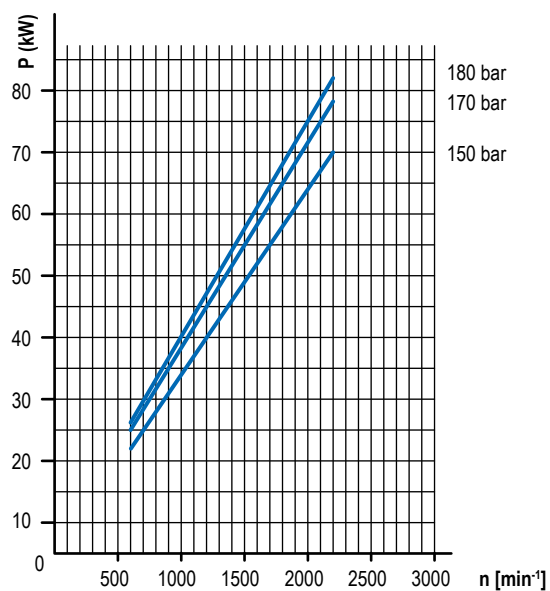


PERFORMANCE CURVES

Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



GP3K80



GP3K90

ORDERING INSTRUCTIONS

GEAR PUMP	GP
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GROUP	3
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SERIES	K
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DISPLACEMENT	CODE
20 cm³/rev	20
23 cm³/rev	23
25 cm³/rev	25
28 cm³/rev	28
32 cm³/rev	32
36 cm³/rev	36
40 cm³/rev	40
45 cm³/rev	45
50 cm³/rev	50
56 cm³/rev	56
63 cm³/rev	63
71 cm³/rev	71
80 cm³/rev	80
90 cm³/rev	90

ROTATION	Code
Clockwise	R
Counterclockwise	L

DRIVE SHAFTS	CODE
GSTU 3-25-180-97	A2
FOCT/NS6033-51	D4
SAE B SPLINED (13 TEETH)	B5
SAE BB SPLINED (15 TEETH)	B6
GERMAN TAPERED 1:5	F4
EUROPEAN TAPERED 1:8 (M14)	G4
EUROPEAN TAPERED 1:8 (M16)	G5
SAE B STRAIGHT Ø22,2	H3
SAE BB STRAIGHT Ø25,4	H4

*SPECIAL FEATURES	
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MATERIAL OF COVERS	CODE
Aluminium	
Cast iron	F

SEAL MATERIAL	CODE
NBR	
FPM (Viton)	V

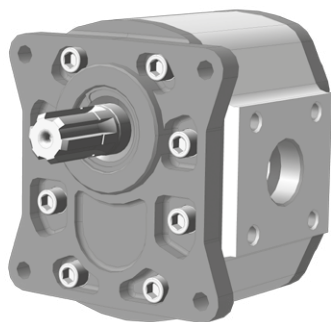
PORTS	CODE
GSTU 3-25-180-97	A
EUROPEAN FLANGE	B
GERMAN FLANGE	C
SAE FLANGE (UNC)	D
SAE FLANGE (METRIC)	W
METRIC THREADED	E
SAE THREADED	F
GAS THREADED	G

MOUNTING FLANGES	CODE
GSTU 3-25-180-97	04
SAE B 2 BOLTS	33
EUROPEAN Ø50,8	63
EUROPEAN Ø60,3	64
GERMAN Ø105	88

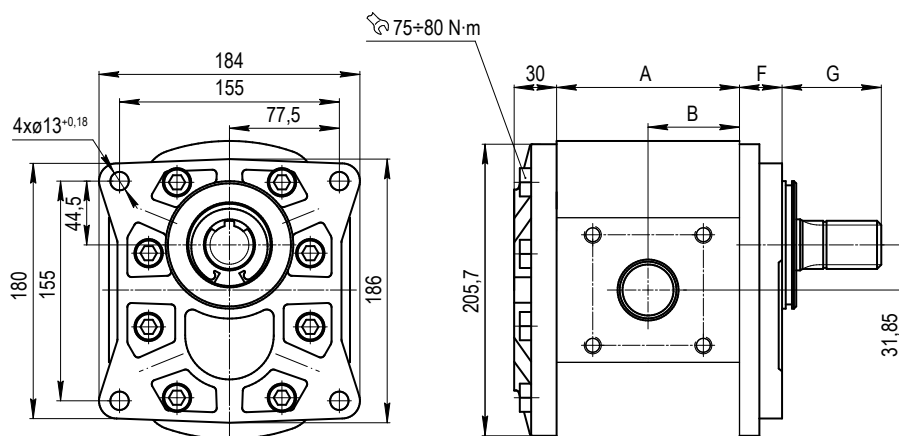
*Special features assigned if necessary

TECHNICAL DATA AND ASSEMBLING DIMENSIONS

Type		GP4K63	GP4K71	GP4K80	GP4K90	GP4K100	GP4K112	GP4K125	GP4K140	GP4K150	GP4K160	GP4K170	GP4K180	GP4K190	GP4K200
Displacement	cm³/rev	63	71	80	90	100	112	125	140	150	160	170	180	190	200
Flow rate at 1500 rpm	l/min	89,8	101,2	114,0	128,3	142,5	159,6	178,1	199,5	213,8	228,0	242,3	256,5	270,8	285,0
Dimension A	mm	87,3	90,2	93,3	96,8	121	124,5	129	134,5	158	161,5	165,5	169	172,5	176
Dimension B	mm	43,65	45,1	46,65	48,4	60,5	62,26	64,5	67,25	79	80,75	82,75	84,5	86,25	88
Max. continuous pressure, P ₁	bar	220							200		160			140	
Max. intermittent pressure, P ₂	bar	240							220		180			160	
Peak pressure, P ₃	bar	260							230		200			180	
Max. speed, n _{max}	min ⁻¹	3000							2400						
Min. speed at P ₁ ≤100 bar, n _{min}	min ⁻¹	500													
*Weight	kg	10	10,5	12	13,5	15,5	17	21,8	23	24,5	25	27	28	28,5	29



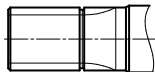
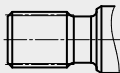
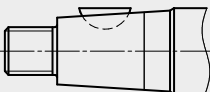
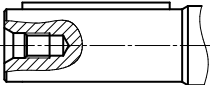
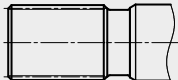
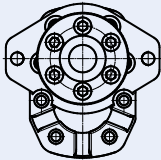
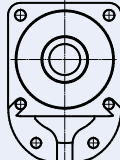
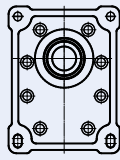
Ordering example
GP4K100R-A405A



Dimension G = see section "Drive shafts"
Dimension F = see section "Mounting flanges"

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

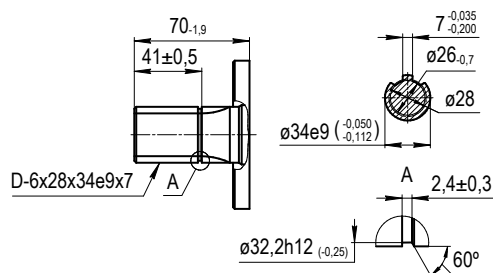
COMBINATION TYPES OF FLANGES & SHAFTS

GP4K  GSTU 3-25-180-97  SAE C SPLINED  SAE C-C SPLINED  EUROPEAN TAPERED 1:8  SAE C STREIGHT  DIN 5482 SPLINED (18TEETH)	 GSTU 3-25-180-97	 SAE C 2 BOLTS	 SAE C 4 BOLTS	 GERMAN
	A4 05			
		B7 35	B7 36	
		B8 35	B8 36	
				G7 86
		H5 35	H5 36	
				I4 86

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

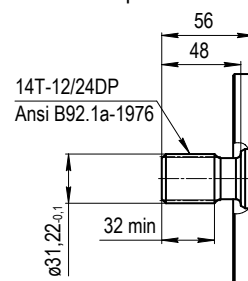
Max. torque 830 N·m



A4

GSTU 3-25-180-97

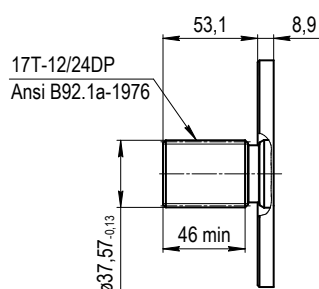
Max. torque 940 N·m



B7

SAE C SPLINED

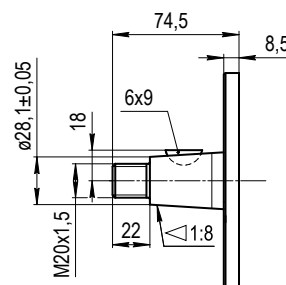
Max. torque 1270 N·m



B8

SAE C-C SPLINED

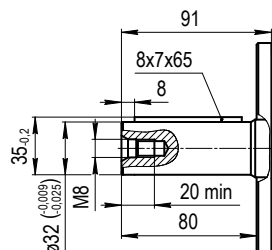
Max. torque 400 N·m



G7

EUROPEAN TAPERED 1:8

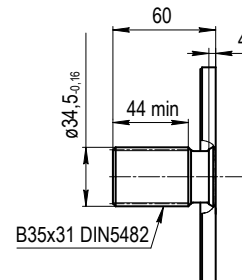
Max. torque 600 N·m



H5

SAE C STREIGHT

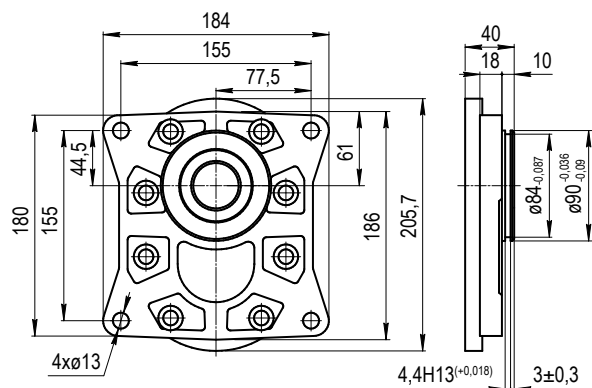
Max. torque 1100 N·m



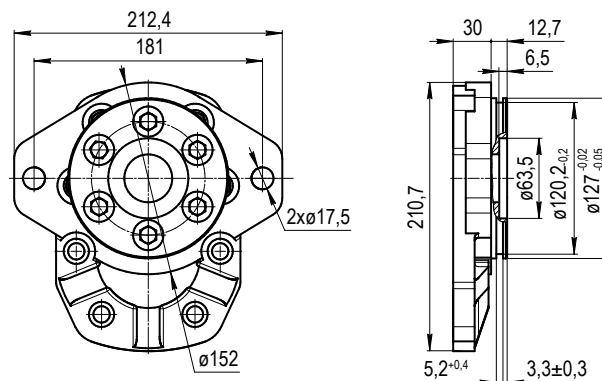
I4

DIN 5482 SPLINED (18TEETH)

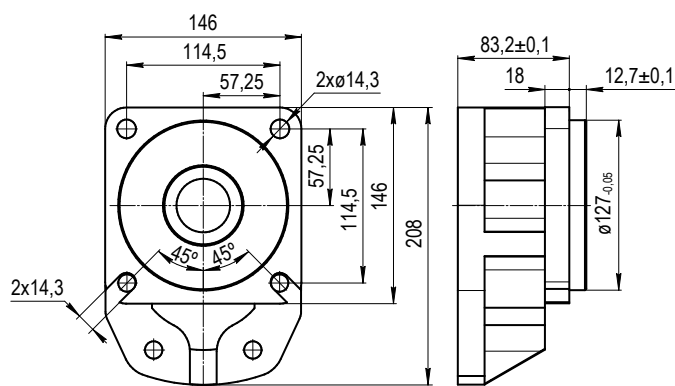
MOUNTING FLANGES



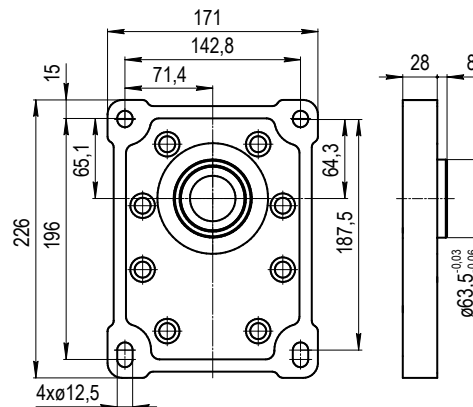
05 GSTU 3-25-180-97



35 SAE C 2 BOLTS

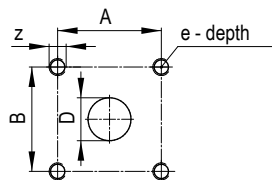


36 SAE C 4 BOLTS

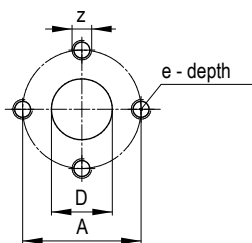


86 GERMAN Ø63,5

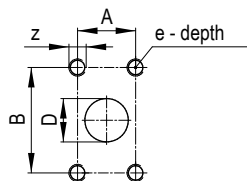
PORTS



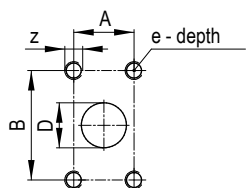
A GSTU 3-25-180-97



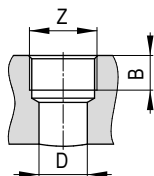
B EUROPEAN FLANGE



D SAE FLANGE (UNC)



W SAE FLANGE (METRIC)



G GAS THREADED

Type	Inlet					Outlet				
	A	B	D	z	e	A	B	D	z	e
GP4K63÷90	42,88	77,77	32	M12	25	42,88	77,77	32	M12	25
GP4K100÷140	78		46			78		46		
GP4K150÷200			60					60		

Type	Inlet				Outlet			
	D	A	z	e	D	A	z	e
GP4K63÷100	36	62	M10	21	30	56	M10	21
GP4K112÷170	46	72,5	M12	25	36	62		
GP4K180÷200	56	92			46	72,5	M12	25

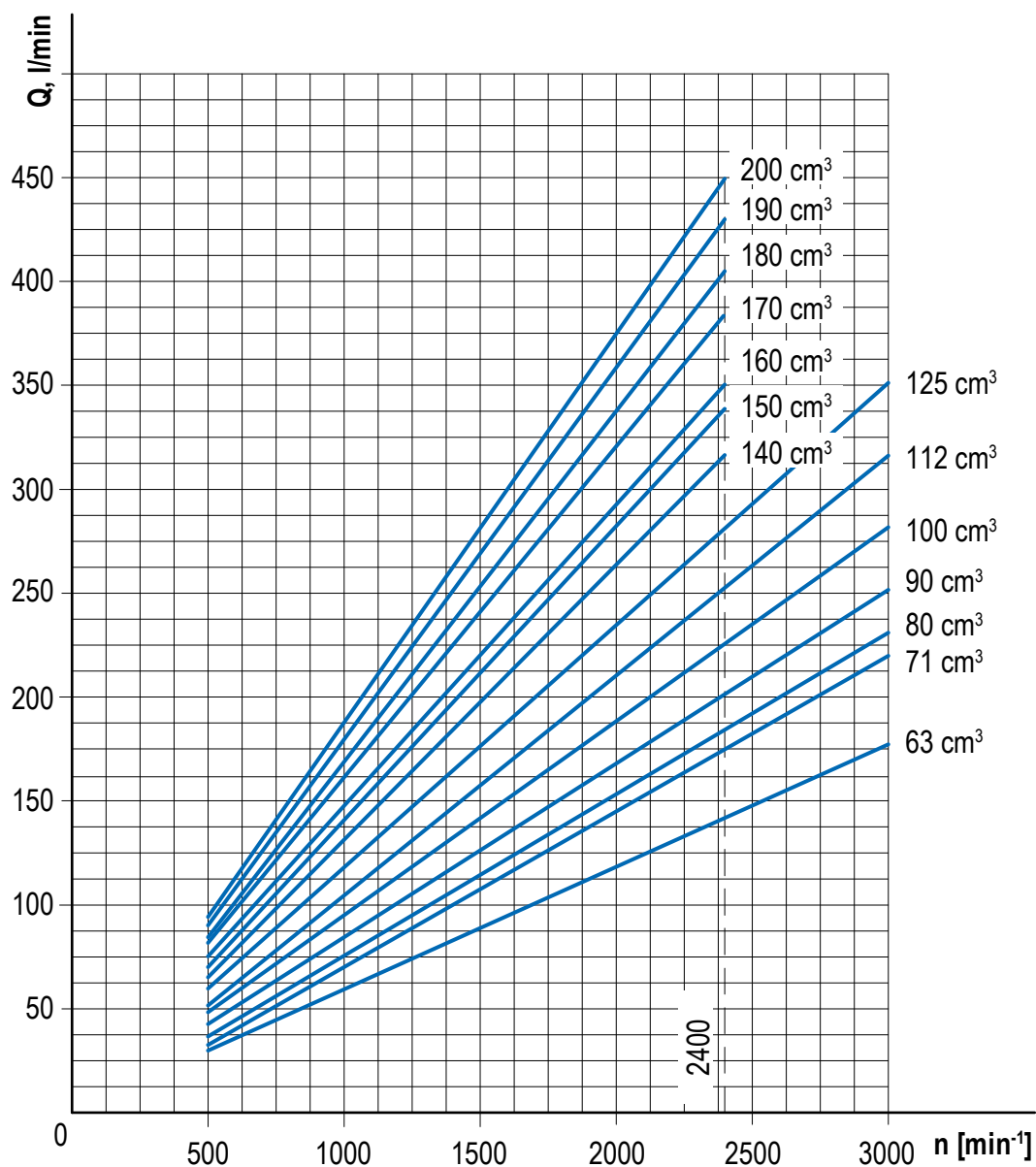
Type	Inlet					Outlet				
	A	B	D	z	e	A	B	D	z	e
GP4K63÷90	35,71	69,85	38	1/2-13UNC	25	30,18	58,72	32	7/16-14UNC	21
GP4K100÷200	42,88	77,77	51			35,71	69,85	38	1/2-13UNC	25

Type	Inlet					Outlet				
	A	B	D	z	e	A	B	D	z	e
GP4K63÷90	35,71	69,85	38	M12	25	30,18	58,72	32	M10	21
GP4K100÷200	42,88	77,77	51			35,71	69,85	38	M12	25

Type	Inlet			Outlet		
	Z	B	D	Z	B	D
GP4K63÷100	1 1/2" GAS	22,5	36	1 1/4" GAS	21,5	30
GP4K112÷200	1 3/4" GAS	25	-	1 1/2" GAS	22,5	36

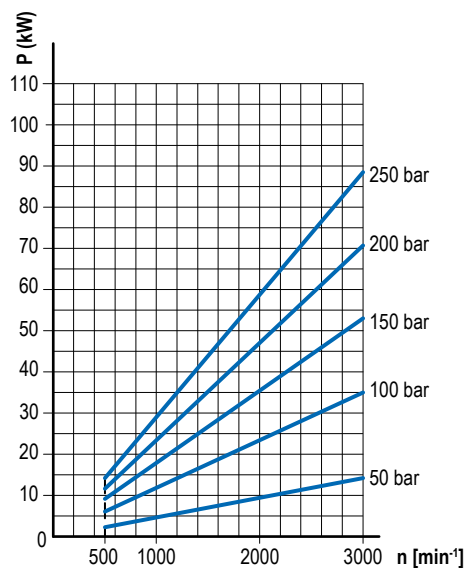
PERFORMANCE CURVES

Performance curves carried out with oil viscosity at 16 mm²/sec, oil temperature at 60°C and max. continuous pressures for each type.

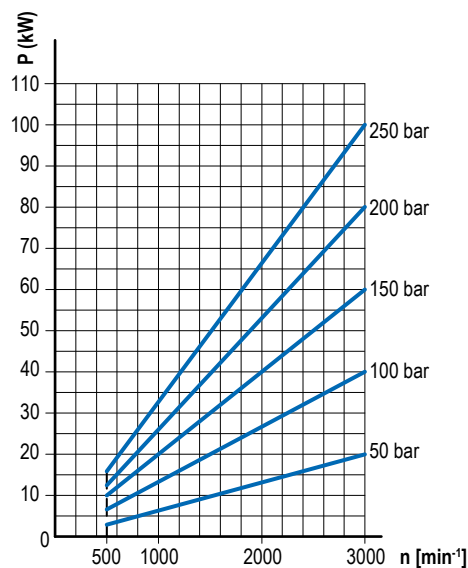


PERFORMANCE CURVES

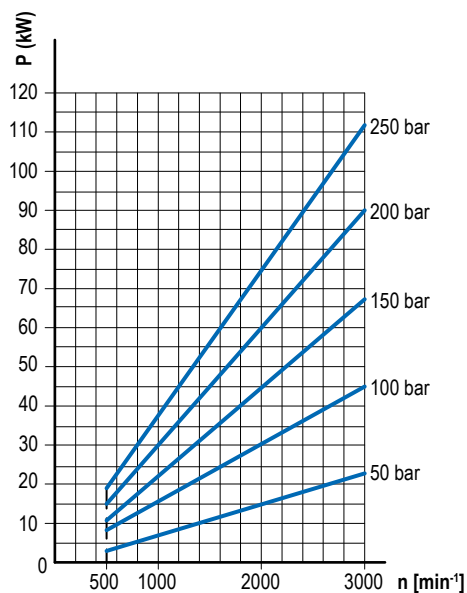
Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



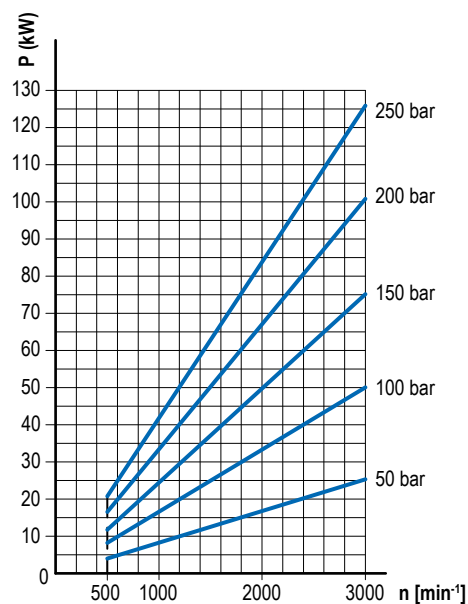
GP4K63



GP4K71



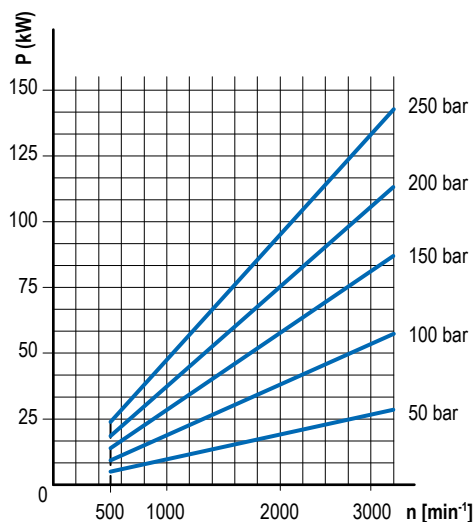
GP4K80



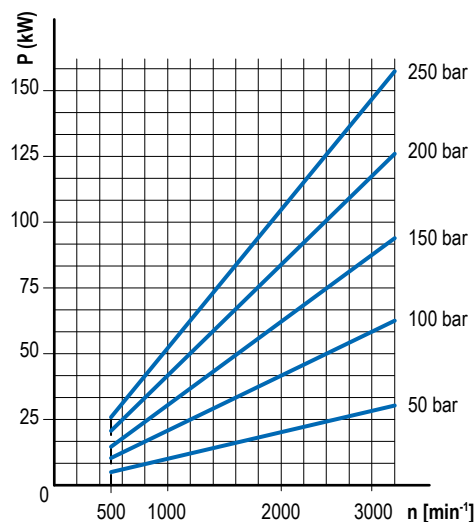
GP4K90

PERFORMANCE CURVES

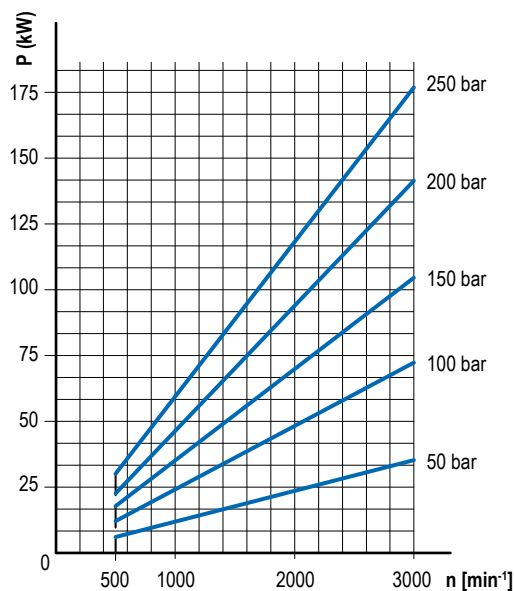
Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



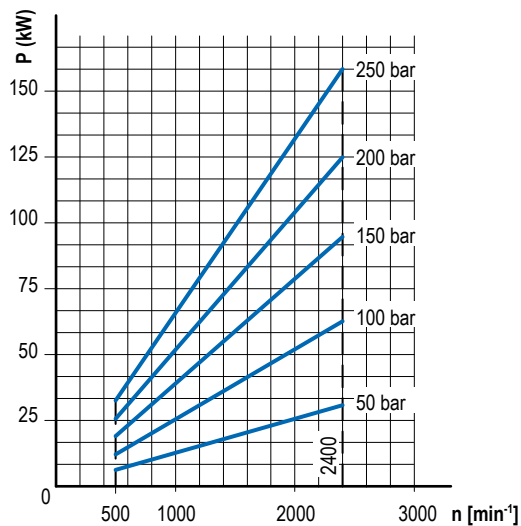
GP4K100



GP4K112



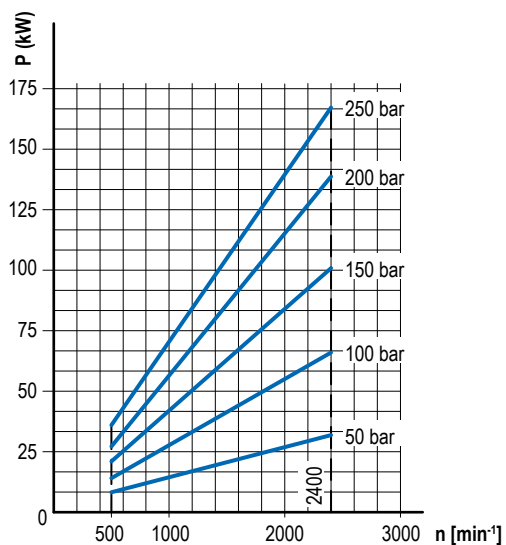
GP4K125



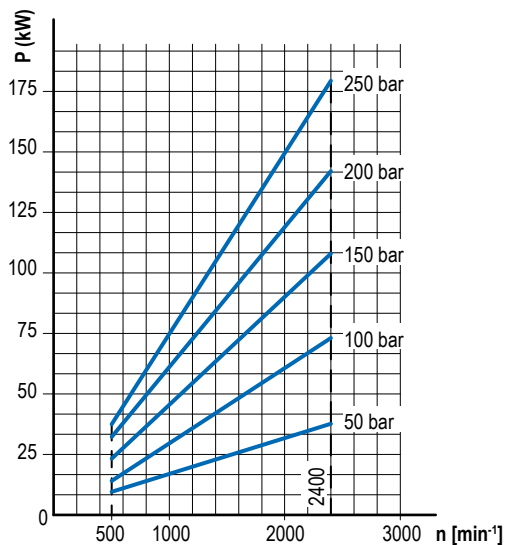
GP4K140

PERFORMANCE CURVES

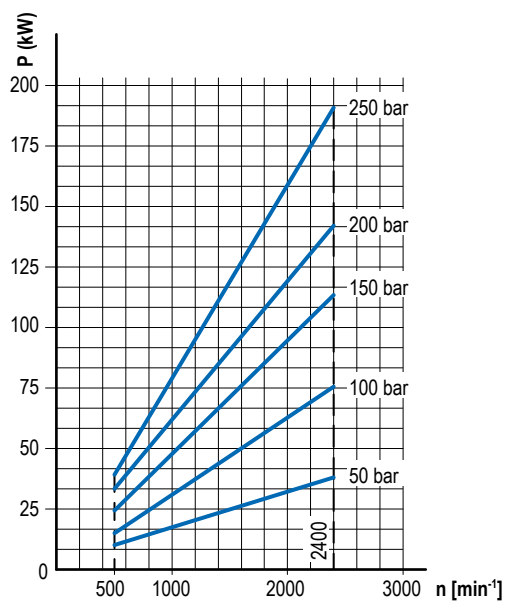
Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



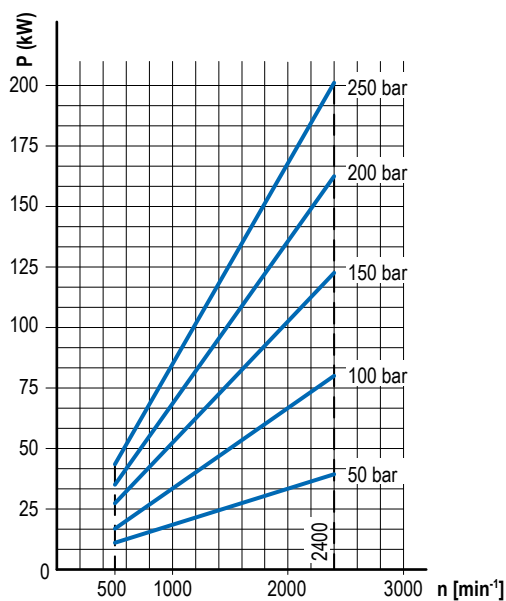
GP4K150



GP4K160



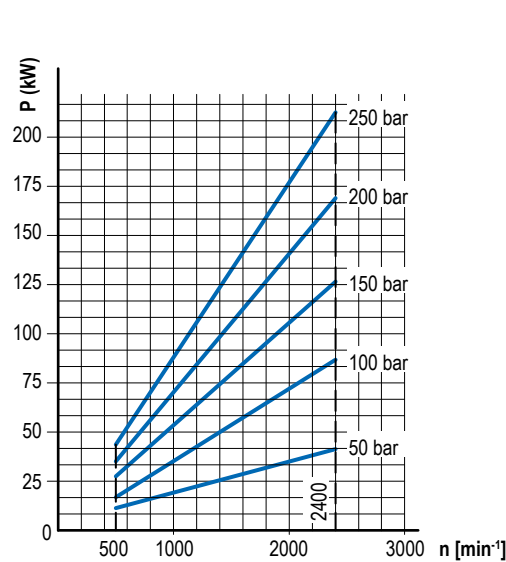
GP4K170



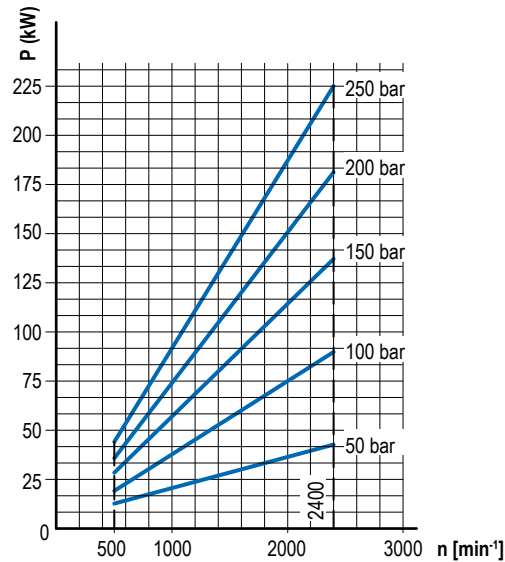
GP4K180

PERFORMANCE CURVES

Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



GP4K190



GP4K200

ORDERING INSTRUCTIONS

GEAR PUMP	GP	4	K	63	R	-G7	86	B	-	-	-
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GROUP	4
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SERIES	K
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DISPLACEMENT	CODE
63 cm ³ /rev	63
71 cm ³ /rev	71
80 cm ³ /rev	80
90 cm ³ /rev	90
100 cm ³ /rev	100
112 cm ³ /rev	112
125 cm ³ /rev	125
140 cm ³ /rev	140
150 cm ³ /rev	150
160 cm ³ /rev	160
170 cm ³ /rev	170
180 cm ³ /rev	180
190 cm ³ /rev	190
200 cm ³ /rev	200

ROTATION	CODE
Clockwise	R
Counterclockwise	L

DRIVE SHAFTS	CODE
NS 3-25-180-97	A4
SAE C SPLINED 14T	B7
SAE C-C SPLINED 17T	B8
EUROPEAN TAPERED 1:8	G7
SAE C STREIGHT Ø32	H5
DIN 5482 SPLINED 14T	I4

*SPECIAL FEATURES	
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MATERIAL OF COVERS	CODE
Aluminium	
Cast iron	F

SEAL MATERIAL	CODE
NBR	
FPM (Viton)	V

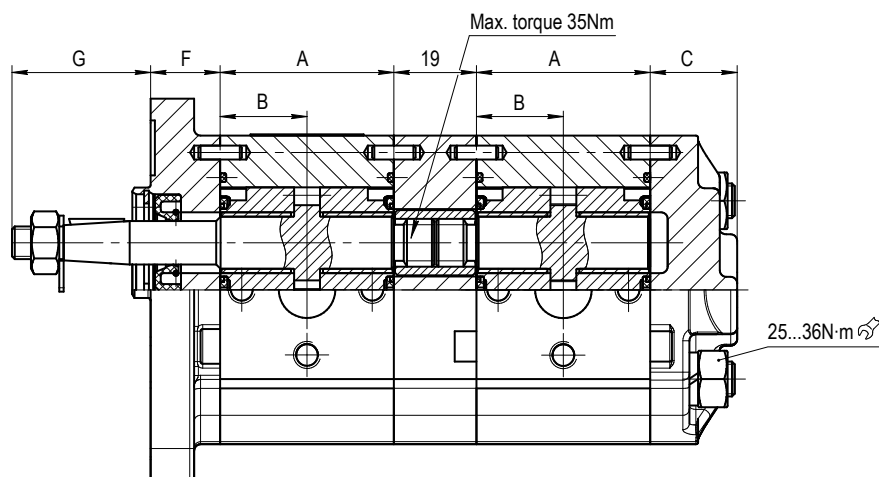
PORTS	CODE
NS 3-25-180-97	A
FLANGED PORTS EUROPEAN STANDARD	B
FLANGED PORTS SAE (METRIC)	W
FLANGED PORTS SAE (UNC)	D
GAS THREADED PORTS (BSPP)	G

MOUNTING FLANGES	CODE
NS 3-25-180-97	05
SAE C 2 BOLTS	35
SAE C 4 BOLTS	36
GERMAN STANDARD	86

*Special features assigned if necessary

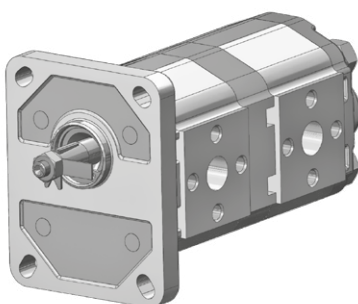
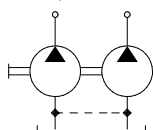
MULTIPLE PUMPS

MULTIPLE PUMPS GROUPS 1+1



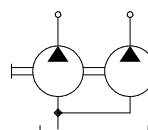
Ordering example
GP1K4.2/1K3.5R-G160BB

With inlet port on each body

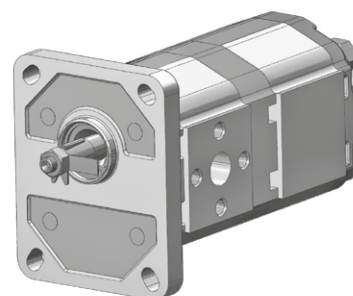


Ordering example
GP1K4.2/1K3.5R-G160BB-TJ

With common inlet port



TJ



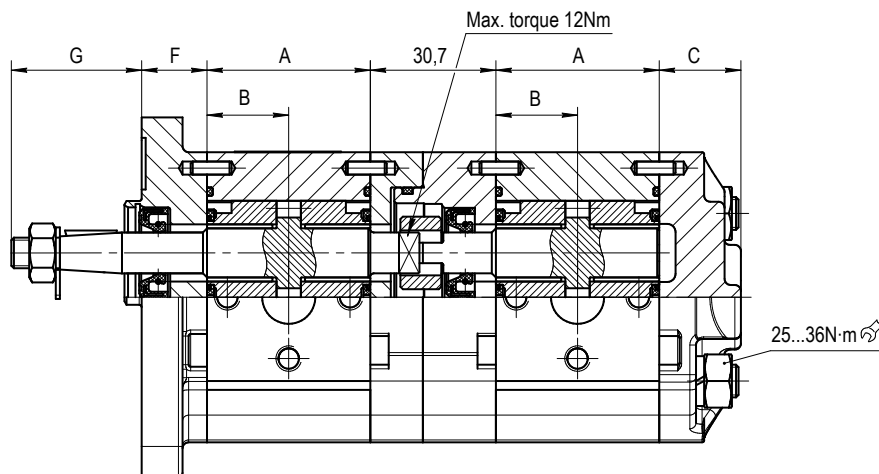
STAGES 1 AND 2														
Type		GP1K1	GP1K1.2	GP1K1.6	GP1K2.1	GP1K2.5	GP1K3.2	GP1K3.5	GP1K4.2	GP1K5	GP1K6.2	GP1K7	GP1K8	GP1K10
Dimension A	mm	37,70	38,40	39,90	41,80	43,30	45,90	47,00	49,60	52,60	57,20	60,20	63,60	71,00
Dimension B	mm	18,85	19,20	19,95	20,90	21,65	22,95	23,50	24,80	26,30	28,60	30,10	31,80	35,50

Others dimensions see: C = page 8, G = page 10, F = page 11.

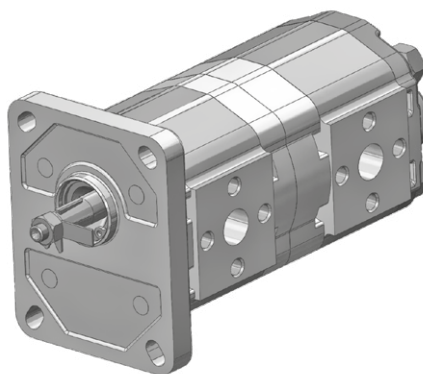
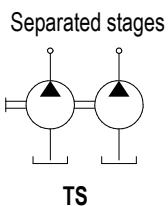
Overall and mounting dimensions are similar to single pumps.

A pump's torque is equal to the sum of all the pump sections' torques.

The total torque mustn't exceed the maximum permitted torque for a pump's driveshaft. For defining the maximum permitted torque of each section use the formula on page 7.



Ordering example
GP1K4.2/1K3.5R-G160BB-TS



STAGES 1 AND 2

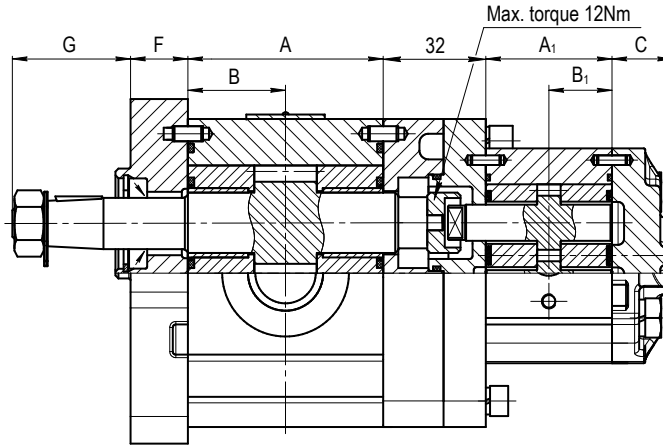
Type		GP1K1	GP1K1.2	GP1K1.6	GP1K2.1	GP1K2.5	GP1K3.2	GP1K3.5	GP1K4.2	GP1K5	GP1K6.2	GP1K7	GP1K8	GP1K10
Dimension A	mm	37,70	38,40	39,90	41,80	43,30	45,90	47,00	49,60	52,60	57,20	60,20	63,60	71,00
Dimension B	mm	18,85	19,20	19,95	20,90	21,65	22,95	23,50	24,80	26,30	28,60	30,10	31,80	35,50

Others dimensions see: C = page 8, G = page 10, F = page 11.

Overall and mounting dimensions are similar to single pumps.

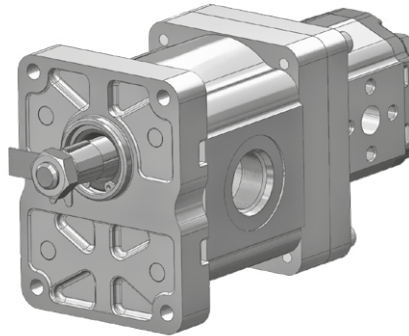
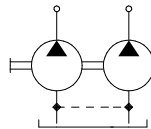
A pump's torque is equal to the sum of all the pump sections' torques.

The total torque mustn't exceed the maximum permitted torque for a pump's driveshaft. For defining the maximum permitted torque of each section use the formula on page 7.



Ordering example
GP2K16/1K4.2L-G262FB

With inlet port on each body



1 STAGE																	
Type		GP2K4	GP2K5	GP2K6	GP2K8	GP2K10	GP2K11	GP2K12	GP2K14	GP2K15	GP2K16	GP2K17	GP2K19	GP2K20	GP2K23	GP2K25	GP2K28
Dimension A	mm	47,4	49,1	50,2	52,9	56,0	58,0	59,8	62,1	63,7	65,2	66,9	69,9	71,4	75,3	78,8	83,8
Dimension B	mm	23,7	24,55	25,1	26,45	28,0	29,0	29,9	31,05	31,85	32,6	33,45	34,95	35,7	37,65	39,4	41,9

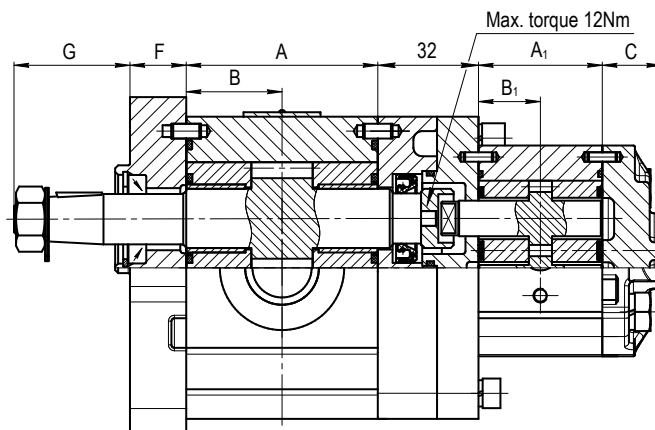
2 STAGE														
Type		GP1K1	GP1K1.2	GP1K1.6	GP1K2.1	GP1K2.5	GP1K3.2	GP1K3.5	GP1K4.2	GP1K5	GP1K6.2	GP1K7	GP1K8	GP1K10
Dimension A ₁	mm	37,70	38,40	39,90	41,80	43,30	45,90	47,00	49,60	52,60	57,20	60,20	63,60	71,00
Dimension B ₁	mm	18,85	19,20	19,95	20,90	21,65	22,95	23,50	24,80	26,30	28,60	30,10	31,80	35,50

Others dimensions see: C = page 8, G = page 21-22, F = page 23-24.

Overall and mounting dimensions are similar to single pumps.

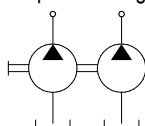
A pump's torque is equal to the sum of all the pump sections' torques.

The total torque mustn't exceed the maximum permitted torque for a pump's driveshaft. For defining the maximum permitted torque of each section use the formula on page 7.

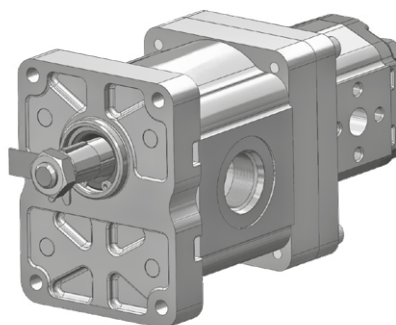


Ordering example
GP2K16/1K4.2L-G262FB-TS

Separated stages



TS



1 STAGE

Type		GP2K4	GP2K5	GP2K6	GP2K8	GP2K10	GP2K11	GP2K12	GP2K14	GP2K15	GP2K16	GP2K17	GP2K19	GP2K20	GP2K23	GP2K25	GP2K28
Dimension A	mm	47,4	49,1	50,2	52,9	56,0	58,0	59,8	62,1	63,7	65,2	66,9	69,9	71,4	75,3	78,8	83,8
Dimension B	mm	23,7	24,55	25,1	26,45	28,0	29,0	29,9	31,05	31,85	32,6	33,45	34,95	35,7	37,65	39,4	41,9

2 STAGE

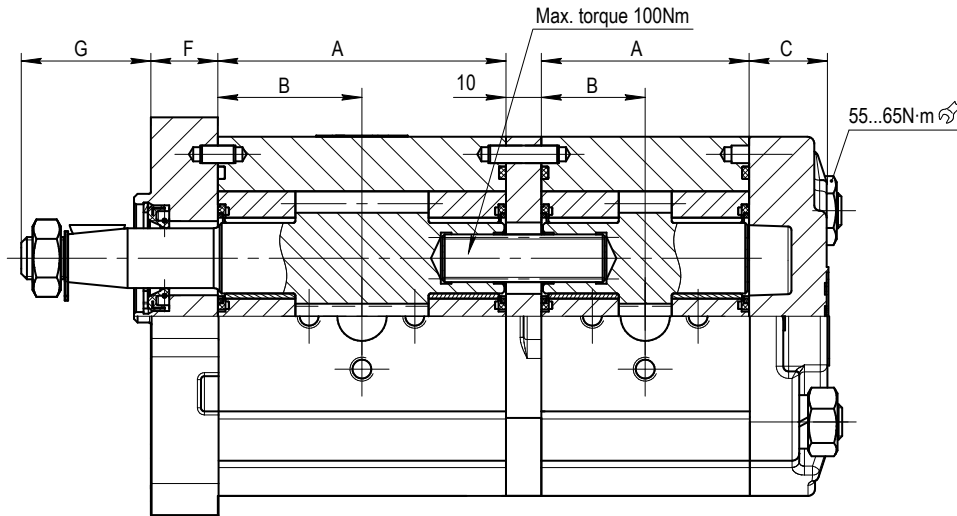
Type		GP1K1	GP1K1.2	GP1K1.6	GP1K2.1	GP1K2.5	GP1K3.2	GP1K3.5	GP1K4.2	GP1K5	GP1K6.2	GP1K7	GP1K8	GP1K10
Dimension A ₁	mm	37,70	38,40	39,90	41,80	43,30	45,90	47,00	49,60	52,60	57,20	60,20	63,60	71,00
Dimension B ₁	mm	18,85	19,20	19,95	20,90	21,65	22,95	23,50	24,80	26,30	28,60	30,10	31,80	35,50

Others dimensions see: C = page 8, G = page 21-22, F = page 23-24.

Overall and mounting dimensions are similar to single pumps.

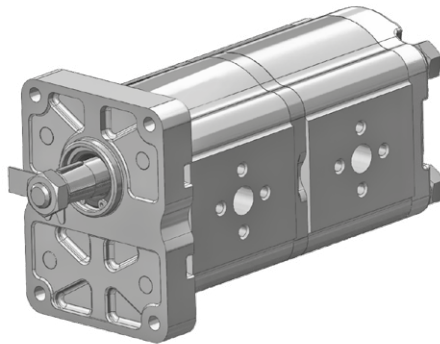
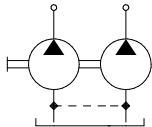
A pump's torque is equal to the sum of all the pump sections' torques.

The total torque mustn't exceed the maximum permitted torque for a pump's driveshaft. For defining the maximum permitted torque of each section use the formula on page 7.



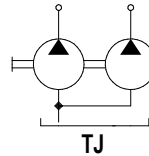
Ordering example
GP2K11/2K11R-G262BB

With inlet port on each body

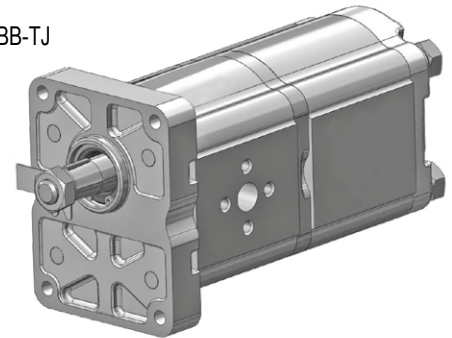


Ordering example
GGP2K11/2K11R-G262BB-TJ

With common inlet port



TJ



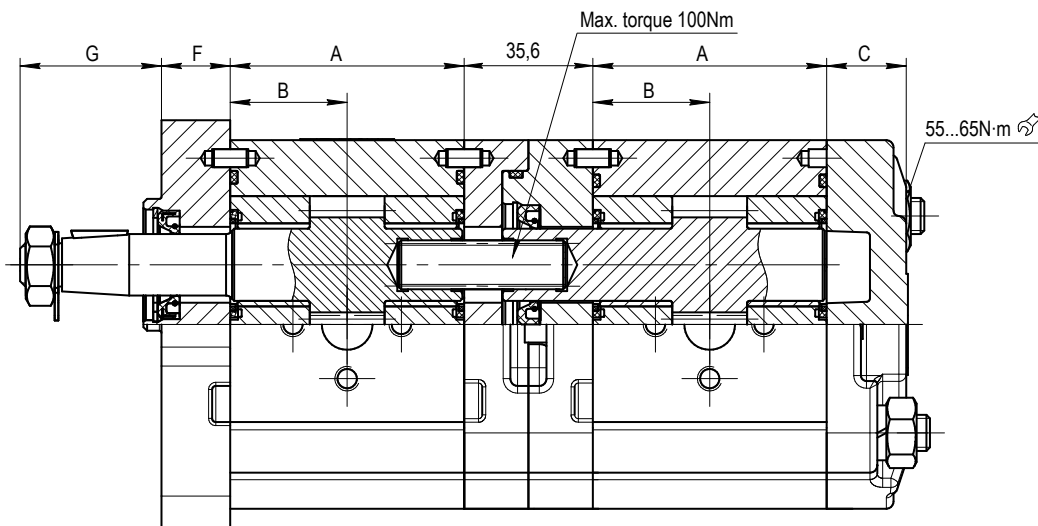
STAGES 1 AND 2																	
Type		GP2K4	GP2K5	GP2K6	GP2K8	GP2K10	GP2K11	GP2K12	GP2K14	GP2K15	GP2K16	GP2K17	GP2K19	GP2K20	GP2K23	GP2K25	GP2K28
Dimension A	mm	47,4	49,1	50,2	52,9	56,0	58,0	59,8	62,1	63,7	65,2	66,9	69,9	71,4	75,3	78,8	83,8
Dimension B	mm	23,7	24,55	25,1	26,45	28,0	29,0	29,9	31,05	31,85	32,6	33,45	34,95	35,7	37,65	39,4	41,9

Others dimensions see: G = page 21-22, F = page 23-24, C = page 27.

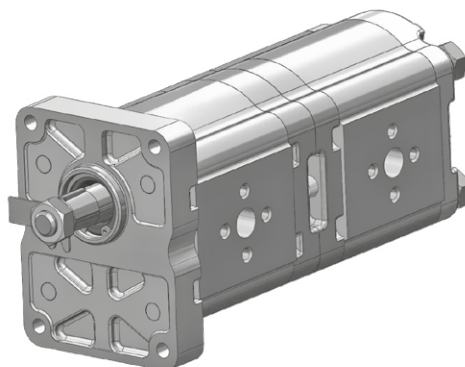
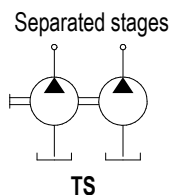
Overall and mounting dimensions are similar to single pumps.

A pump's torque is equal to the sum of all the pump sections' torques.

The total torque mustn't exceed the maximum permitted torque for a pump's driveshaft. For defining the maximum permitted torque of each section use the formula on page 7.



Ordering example
GP2K11/2K11R-G262BB-TS



STAGES 1 AND 2

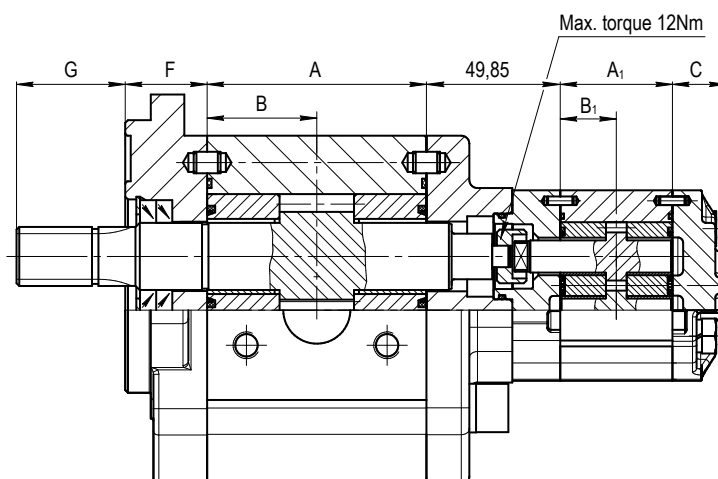
Type		GP2K4	GP2K5	GP2K6	GP2K8	GP2K10	GP2K11	GP2K12	GP2K14	GP2K15	GP2K16	GP2K17	GP2K19	GP2K20	GP2K23	GP2K25	GP2K28
Dimension A	mm	47,4	49,1	50,2	52,9	56,0	58,0	59,8	62,1	63,7	65,2	66,9	69,9	71,4	75,3	78,8	83,8
Dimension B	mm	23,7	24,55	25,1	26,45	28,0	29,0	29,9	31,05	31,85	32,6	33,45	34,95	35,7	37,65	39,4	41,9

Others dimensions see: G = page 21-22, F = page 23-24, C = page 27.

Overall and mounting dimensions are similar to single pumps.

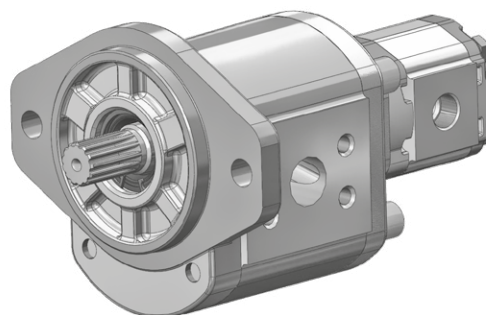
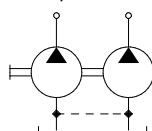
A pump's torque is equal to the sum of all the pump sections' torques.

The total torque mustn't exceed the maximum permitted torque for a pump's driveshaft. For defining the maximum permitted torque of each section use the formula on page 7.



Ordering example
GP2.5K25/1K3.2R-B533CG

With inlet port on each body



1 STAGE														
Type		GP2.5K16	GP2.5K19	GP2.5K20	GP2.5K23	GP2.5K25	GP2.5K28	GP2.5K30	GP2.5K32	GP2.5K36	GP2.5K37	GP2.5K38	GP2.5K40	GP2.5K45
Dimension A	mm	71,80	75,00	76,20	79,50	81,70	85,00	87,30	89,50	94,00	95,00	96,00	98,00	103,50
Dimension B	mm	35,90	37,50	38,10	39,75	40,85	42,50	43,65	44,75	47,00	47,50	48,00	49,00	51,75

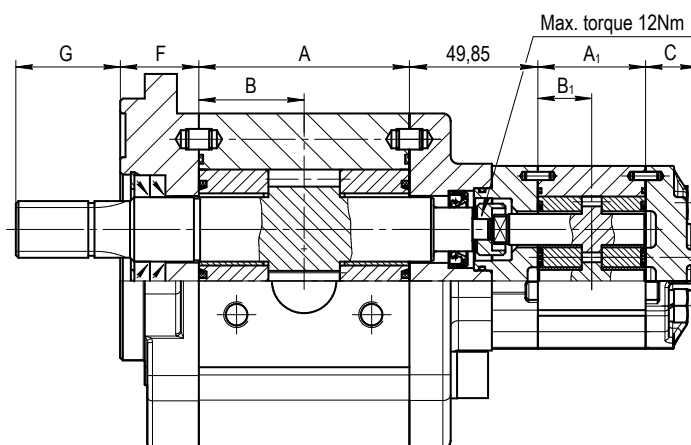
2 STAGE														
Type		GP1K1	GP1K1.2	GP1K1.6	GP1K2.1	GP1K2.5	GP1K3.2	GP1K3.5	GP1K4.2	GP1K5	GP1K6.2	GP1K7	GP1K8	GP1K10
Dimension A ₁	mm	37,70	38,40	39,90	41,80	43,30	45,90	47,00	49,60	52,60	57,20	60,20	63,60	71,00
Dimension B ₁	mm	18,85	19,20	19,95	20,90	21,65	22,95	23,50	24,80	26,30	28,60	30,10	31,80	35,50

Others dimensions see: C = page 8, G = page 43, F = page 44.

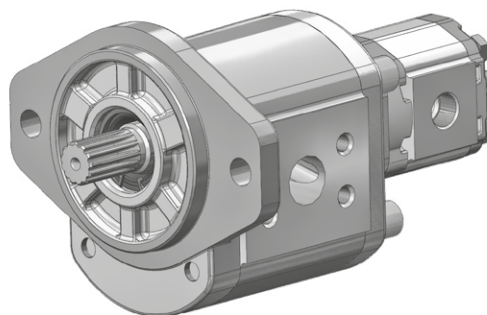
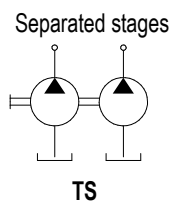
Overall and mounting dimensions are similar to single pumps.

A pump's torque is equal to the sum of all the pump sections' torques.

The total torque mustn't exceed the maximum permitted torque for a pump's driveshaft. For defining the maximum permitted torque of each section use the formula on page 7.



Ordering example
GP2.5K25/1K3.2R-B533CG-TS



1 STAGE														
Type		GP2.5K16	GP2.5K19	GP2.5K20	GP2.5K23	GP2.5K25	GP2.5K28	GP2.5K30	GP2.5K32	GP2.5K36	GP2.5K37	GP2.5K38	GP2.5K40	GP2.5K45
Dimension A	mm	71,80	75,00	76,20	79,50	81,70	85,00	87,30	89,50	94,00	95,00	96,00	98,00	103,50
Dimension B	mm	35,90	37,50	38,10	39,75	40,85	42,50	43,65	44,75	47,00	47,50	48,00	49,00	51,75

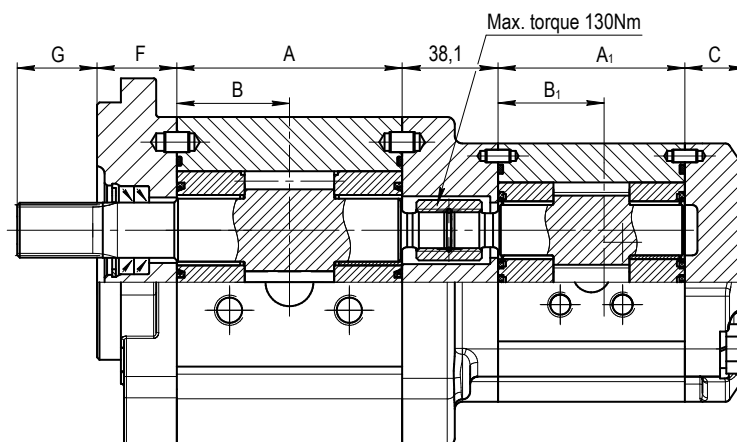
2 STAGE														
Type		GP1K1	GP1K1.2	GP1K1.6	GP1K2.1	GP1K2.5	GP1K3.2	GP1K3.5	GP1K4.2	GP1K5	GP1K6.2	GP1K7	GP1K8	GP1K10
Dimension A ₁	mm	37,70	38,40	39,90	41,80	43,30	45,90	47,00	49,60	52,60	57,20	60,20	63,60	71,00
Dimension B ₁	mm	18,85	19,20	19,95	20,90	21,65	22,95	23,50	24,80	26,30	28,60	30,10	31,80	35,50

Others dimensions see: C = page 8, G = page 43, F = page 44.

Overall and mounting dimensions are similar to single pumps.

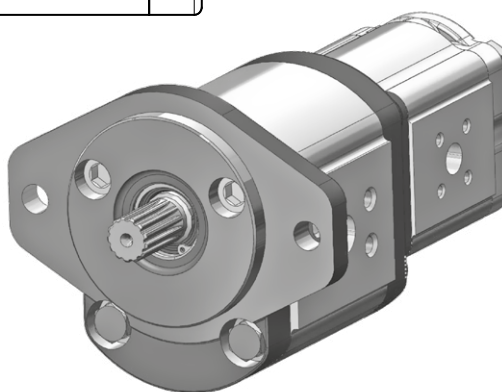
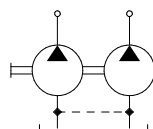
A pump's torque is equal to the sum of all the pump sections' torques.

The total torque mustn't exceed the maximum permitted torque for a pump's driveshaft. For defining the maximum permitted torque of each section use the formula on page 7.



Ordering example
GP2.5K25/2K12R-B533CC-F

With inlet port on each body



1 STAGE														
Type		GP2.5K16	GP2.5K19	GP2.5K20	GP2.5K23	GP2.5K25	GP2.5K28	GP2.5K30	GP2.5K32	GP2.5K36	GP2.5K37	GP2.5K38	GP2.5K40	GP2.5K45
Dimension A	mm	71,80	75,00	76,20	79,50	81,70	85,00	87,30	89,50	94,00	95,00	96,00	98,00	103,50
Dimension B	mm	35,90	37,50	38,10	39,75	40,85	42,50	43,65	44,75	47,00	47,50	48,00	49,00	51,75

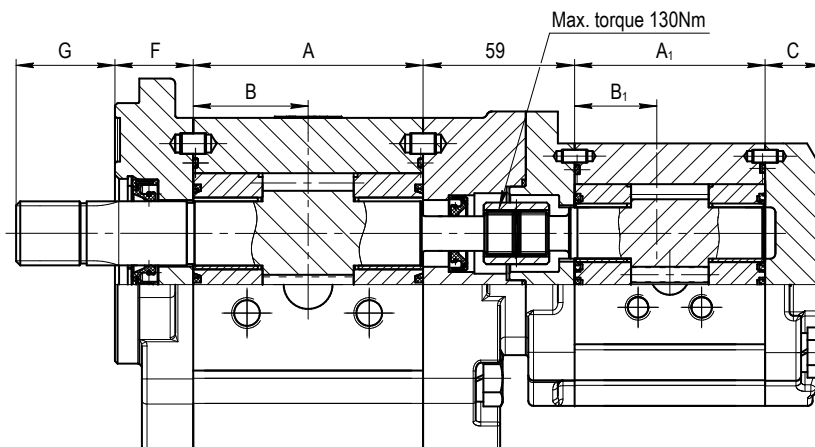
2 STAGE																	
Type		GP2K4	GP2K5	GP2K6	GP2K8	GP2K10	GP2K11	GP2K12	GP2K14	GP2K15	GP2K16	GP2K17	GP2K19	GP2K20	GP2K23	GP2K25	GP2K28
Dimension A ₁	mm	47,4	49,1	50,2	52,9	56,0	58,0	59,8	62,1	63,7	65,2	66,9	69,9	71,4	75,3	78,8	83,8
Dimension B ₁	mm	23,7	24,55	25,1	26,45	28,0	29,0	29,9	31,05	31,85	32,6	33,45	34,95	35,7	37,65	39,4	41,9

Others dimensions see: C = page 27, G = page 43, F = page 44.

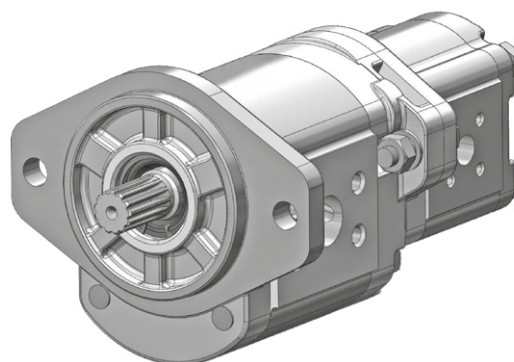
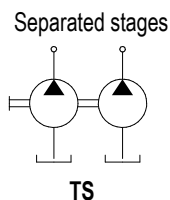
Overall and mounting dimensions are similar to single pumps.

A pump's torque is equal to the sum of all the pump sections' torques.

The total torque mustn't exceed the maximum permitted torque for a pump's driveshaft. For defining the maximum permitted torque of each section use the formula on page 7.



Ordering example
GP2.5K25/2K12R-B533CC-TS



1 STAGE

Type		GP2.5K16	GP2.5K19	GP2.5K20	GP2.5K23	GP2.5K25	GP2.5K28	GP2.5K30	GP2.5K32	GP2.5K36	GP2.5K37	GP2.5K38	GP2.5K40	GP2.5K45
Dimension A	mm	71,80	75,00	76,20	79,50	81,70	85,00	87,30	89,50	94,00	95,00	96,00	98,00	103,50
Dimension B	mm	35,90	37,50	38,10	39,75	40,85	42,50	43,65	44,75	47,00	47,50	48,00	49,00	51,75

2 STAGE

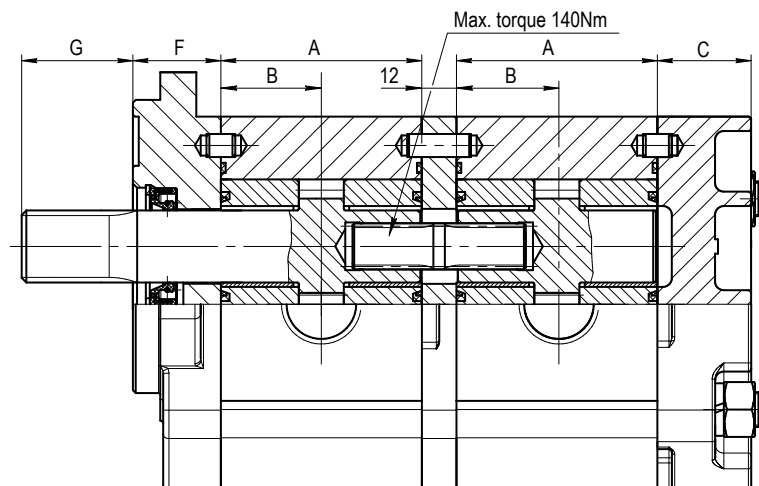
Type		GP2K4	GP2K5	GP2K6	GP2K8	GP2K10	GP2K11	GP2K12	GP2K14	GP2K15	GP2K16	GP2K17	GP2K19	GP2K20	GP2K23	GP2K25	GP2K28
Dimension A ₁	mm	47,4	49,1	50,2	52,9	56,0	58,0	59,8	62,1	63,7	65,2	66,9	69,9	71,4	75,3	78,8	83,8
Dimension B ₁	mm	23,7	24,55	25,1	26,45	28,0	29,0	29,9	31,05	31,85	32,6	33,45	34,95	35,7	37,65	39,4	41,9

Others dimensions see: C = page 27, G = page 43, F = page 44.

Overall and mounting dimensions are similar to single pumps.

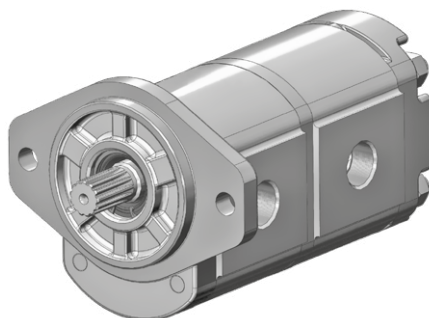
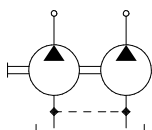
A pump's torque is equal to the sum of all the pump sections' torques.

The total torque mustn't exceed the maximum permitted torque for a pump's driveshaft. For defining the maximum permitted torque of each section use the formula on page 7.



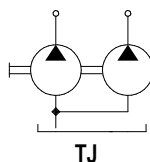
Ordering example
GP2.5K25/2.5K20R-B533GG

With inlet port on each body

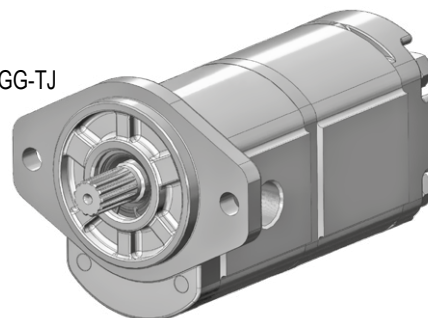


Ordering example
GP2.5K25/2.5K20R-B533GG-TJ

With common inlet port



TJ



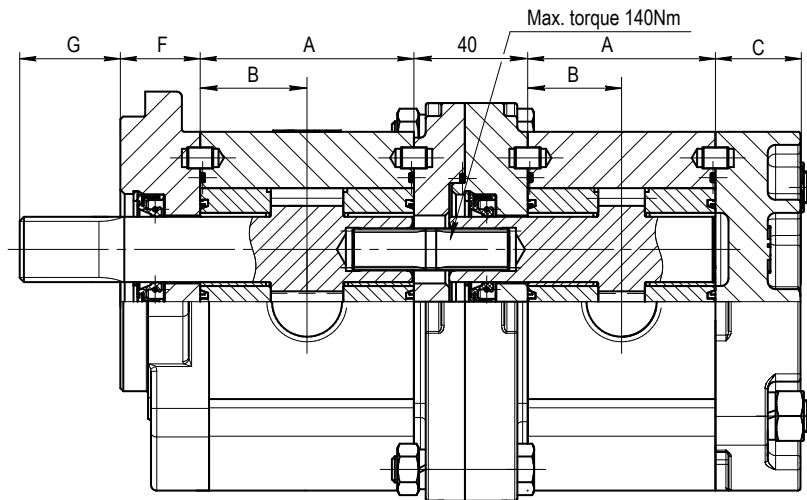
STAGES 1 AND 2														
Type		GP2.5K16	GP2.5K19	GP2.5K20	GP2.5K23	GP2.5K25	GP2.5K28	GP2.5K30	GP2.5K32	GP2.5K36	GP2.5K37	GP2.5K38	GP2.5K40	GP2.5K45
Dimension A	mm	71,80	75,00	76,20	79,50	81,70	85,00	87,30	89,50	94,00	95,00	96,00	98,00	103,50
Dimension B	mm	35,90	37,50	38,10	39,75	40,85	42,50	43,65	44,75	47,00	47,50	48,00	49,00	51,75

Others dimensions see: G = page 43, F = page 44, C = page 47.

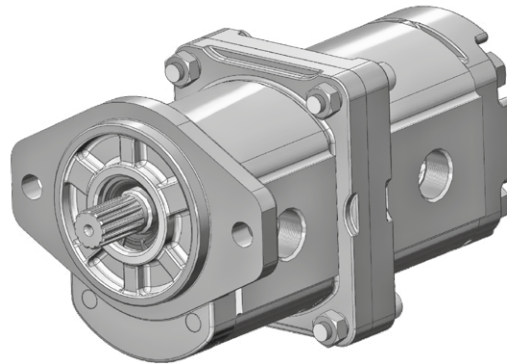
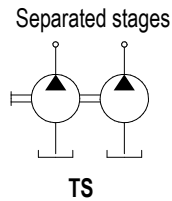
Overall and mounting dimensions are similar to single pumps.

A pump's torque is equal to the sum of all the pump sections' torques.

The total torque mustn't exceed the maximum permitted torque for a pump's driveshaft. For defining the maximum permitted torque of each section use the formula on page 7.



Ordering example
GP2.5K25/2.5K20R-B533GG-TS



STAGES 1 AND 2

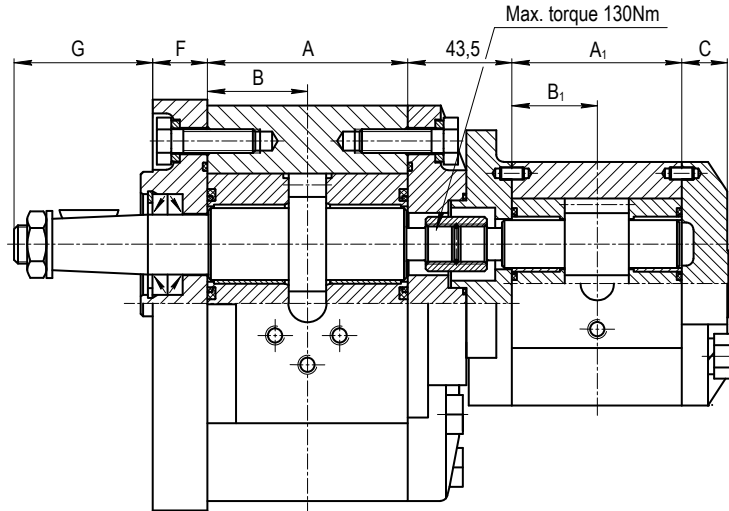
Type		GP2.5K16	GP2.5K19	GP2.5K20	GP2.5K23	GP2.5K25	GP2.5K28	GP2.5K30	GP2.5K32	GP2.5K36	GP2.5K37	GP2.5K38	GP2.5K40	GP2.5K45
Dimension A	mm	71,80	75,00	76,20	79,50	81,70	85,00	87,30	89,50	94,00	95,00	96,00	98,00	103,50
Dimension B	mm	35,90	37,50	38,10	39,75	40,85	42,50	43,65	44,75	47,00	47,50	48,00	49,00	51,75

Others dimensions see: G = page 43, F = page 44, C = page 47.

Overall and mounting dimensions are similar to single pumps.

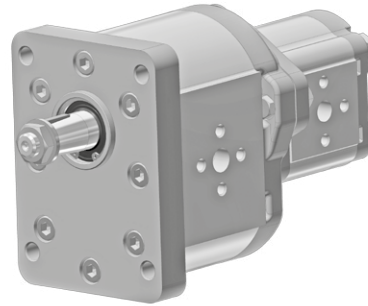
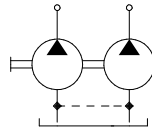
A pump's torque is equal to the sum of all the pump sections' torques.

The total torque mustn't exceed the maximum permitted torque for a pump's driveshaft. For defining the maximum permitted torque of each section use the formula on page 7.



Ordering example
GP3K40/2K10R-G463BB

With inlet port on each body



1 STAGE															
Type		GP3K20	GP3K23	GP3K25	GP3K28	GP3K32	GP3K36	GP3K40	GP3K45	GP3K50	GP3K56	GP3K63	GP3K71	GP3K80	GP3K90
Dimension A	mm	81,5	83,5	84,8	86,8	89,4	92,0	94,7	98,0	102,0	105,0	109,4	114,6	120,4	127,0
Dimension B	mm	40,75	41,75	42,4	43,4	44,7	46,0	47,35	49,0	51,0	52,5	54,7	57,3	60,2	63,5

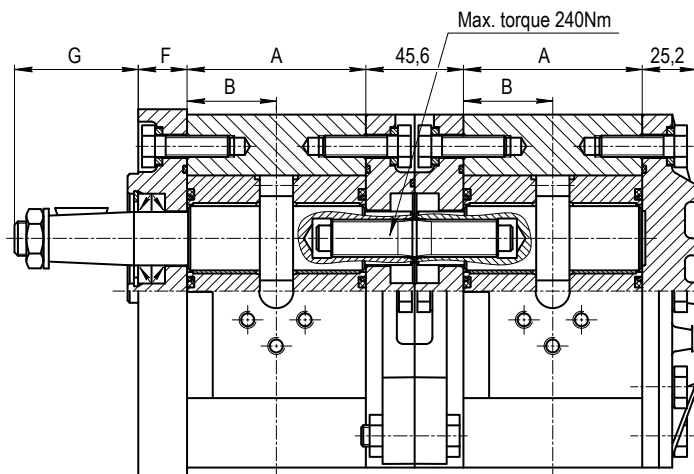
2 STAGE																	
Type		GP2K4	GP2K5	GP2K6	GP2K8	GP2K10	GP2K11	GP2K12	GP2K14	GP2K15	GP2K16	GP2K17	GP2K19	GP2K20	GP2K23	GP2K25	GP2K28
Dimension A ₁	mm	47,4	49,1	50,2	52,9	56,0	58,0	59,8	62,1	63,7	65,2	66,9	69,9	71,4	75,3	78,8	83,8
Dimension B ₁	mm	23,7	24,55	25,1	26,45	28,0	29,0	29,9	31,05	31,85	32,6	33,45	34,95	35,7	37,65	39,4	41,9

Others dimensions see: C = page 27, G = page 55, F = page 56.

Overall and mounting dimensions are similar to single pumps.

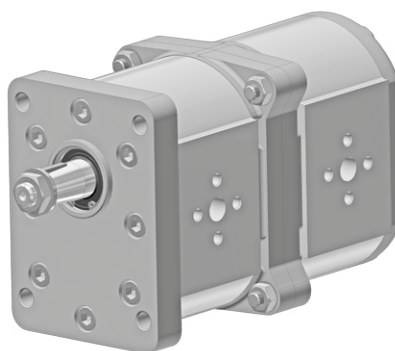
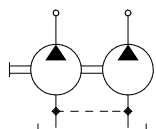
A pump's torque is equal to the sum of all the pump sections' torques.

The total torque mustn't exceed the maximum permitted torque for a pump's driveshaft. For defining the maximum permitted torque of each section use the formula on page 7.



Ordering example
GP3K28K/3K28R-G463BB

With inlet port on each body



1 STAGE

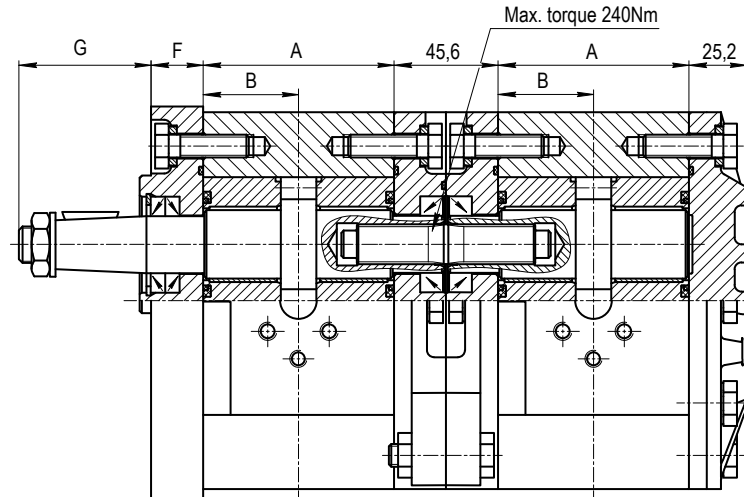
Type		GP3K20	GP3K23	GP3K25	GP3K28	GP3K32	GP3K36	GP3K40	GP3K45	GP3K50	GP3K56	GP3K63	GP3K71	GP3K80	GP3K90
Dimension A	mm	81,5	83,5	84,8	86,8	89,4	92,0	94,7	98,0	102,0	105,0	109,4	114,6	120,4	127,0
Dimension B	mm	40,75	41,75	42,4	43,4	44,7	46,0	47,35	49,0	51,0	52,5	54,7	57,3	60,2	63,5

Others dimensions see: C = page 53, G = page 55, F = page 56.

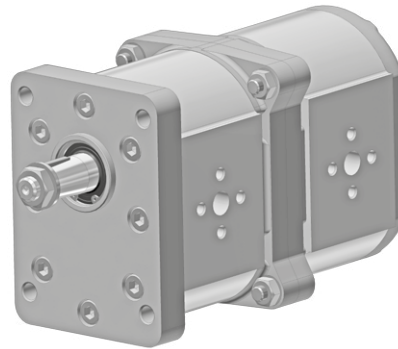
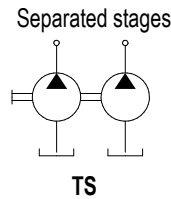
Overall and mounting dimensions are similar to single pumps.

A pump's torque is equal to the sum of all the pump sections' torques.

The total torque mustn't exceed the maximum permitted torque for a pump's driveshaft. For defining the maximum permitted torque of each section use the formula on page 7.



Ordering example
GP3K32K/3K32R-G463BB-TS



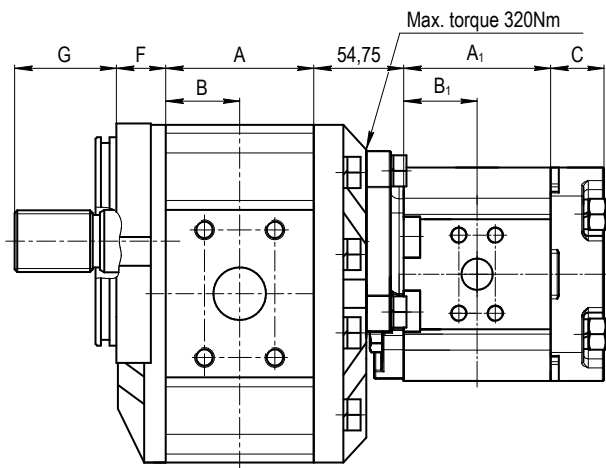
1 STAGE															
Type		GP3K20	GP3K23	GP3K25	GP3K28	GP3K32	GP3K36	GP3K40	GP3K45	GP3K50	GP3K56	GP3K63	GP3K71	GP3K80	GP3K90
Dimension A	mm	81,5	83,5	84,8	86,8	89,4	92,0	94,7	98,0	102,0	105,0	109,4	114,6	120,4	127,0
Dimension B	mm	40,75	41,75	42,4	43,4	44,7	46,0	47,35	49,0	51,0	52,5	54,7	57,3	60,2	63,5

Others dimensions see: C = page 53, G = page 55, F = page 56

Overall and mounting dimensions are similar to single pumps.

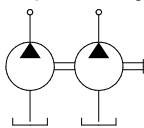
A pump's torque is equal to the sum of all the pump sections' torques.

The total torque mustn't exceed the maximum permitted torque for a pump's driveshaft. For defining the maximum permitted torque of each section use the formula on page 7.

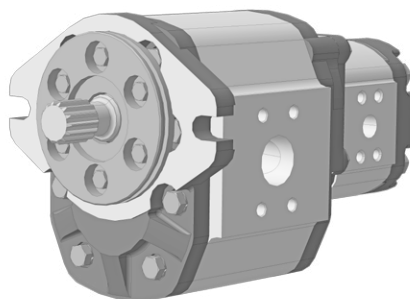


Ordering example
GP4K63/2.5K16R-B633D-TS

Separated stages



TS



1 STAGE

Type		GP4K63	GP4K71	GP4K80	GP4K90	GP4K100	GP4K112	GP4K125	GP4K140	GP4K150	GP4K160	GP4K170	GP4K180	GP4K190	GP4K200
Dimension A	mm	87,3	90,2	93,3	96,8	120	124,5	129	134,5	158	161,5	165,5	169	172,5	176
Dimension B	mm	43,65	45,1	46,65	48,4	60	62,26	64,5	67,25	79	80,75	82,75	84,5	86,25	88

2 STAGE

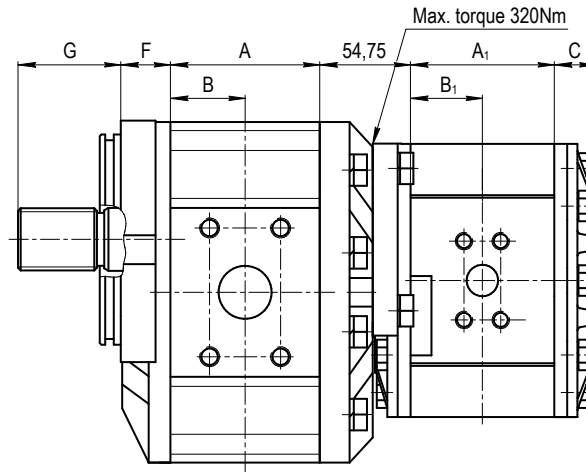
Type		GP2.5K16	GP2.5K19	GP2.5K20	GP2.5K23	GP2.5K25	GP2.5K28	GP2.5K30	GP2.5K32	GP2.5K36	GP2.5K37	GP2.5K38	GP2.5K40	GP2.5K45
Dimension A ₁	mm	71,8	75,0	76,2	79,5	81,7	85,0	87,3	89,5	94,0	95,0	96,0	98,0	103,5
Dimension B ₁	mm	35,9	37,5	38,1	39,75	40,85	42,5	43,65	44,75	47,0	47,5	48,0	49,0	51,75

Others dimensions see: C = page 47, G = page 67, F = page 68.

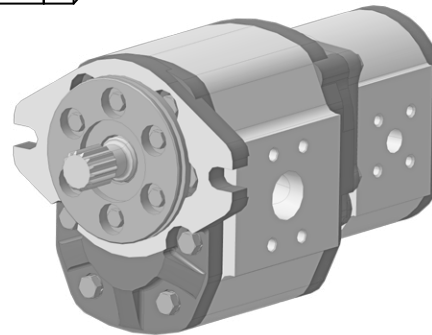
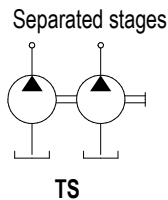
Overall and mounting dimensions are similar to single pumps.

A pump's torque is equal to the sum of all the pump sections' torques.

The total torque mustn't exceed the maximum permitted torque for a pump's driveshaft. For defining the maximum permitted torque of each section use the formula on page 7.



Ordering example
GP4K63/3K20R-B633D-TS



1 STAGE															
Type		GP4K63	GP4K71	GP4K80	GP4K90	GP4K100	GP4K112	GP4K125	GP4K140	GP4K150	GP4K160	GP4K170	GP4K180	GP4K190	GP4K200
Dimension A	mm	87,3	90,2	93,3	96,8	120	124,5	129	134,5	158	161,5	165,5	169	172,5	176
Dimension B	mm	43,65	45,1	46,65	48,4	60	62,26	64,5	67,25	79	80,75	82,75	84,5	86,25	88

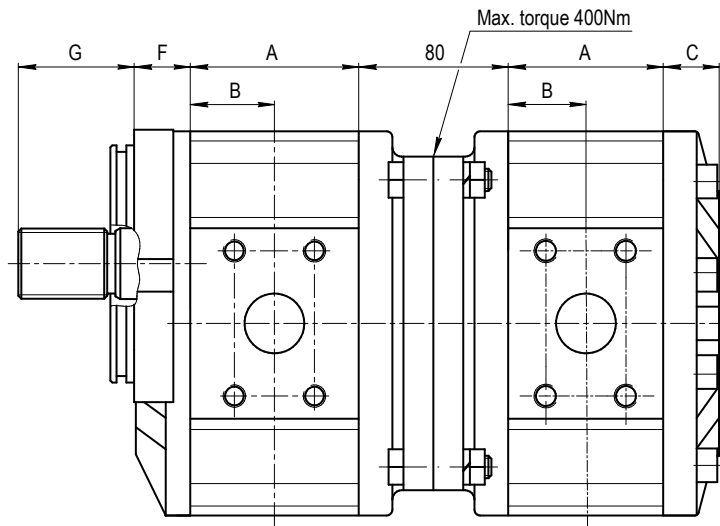
2 STAGE															
Type		GP3K20	GP3K23	GP3K25	GP3K28	GP3K32	GP3K36	GP3K40	GP3K45	GP3K50	GP3K56	GP3K63	GP3K71	GP3K80	GP3K90
Dimension A ₁	mm	81,5	83,5	84,8	86,8	89,4	92,0	94,7	98,0	102,0	105,0	109,4	114,6	120,4	127,0
Dimension B ₂	mm	40,75	41,75	42,4	43,4	44,7	46,0	47,35	49,0	51,0	52,5	54,7	57,3	60,2	63,5

Others dimensions see: C = page 53, G = page 67, F = page 68.

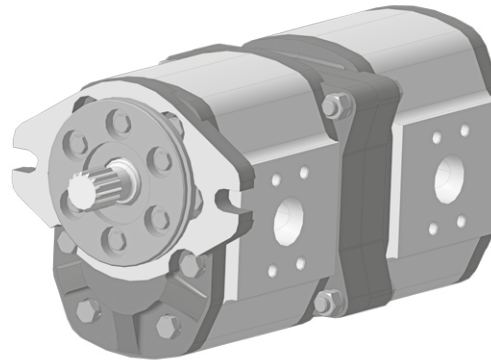
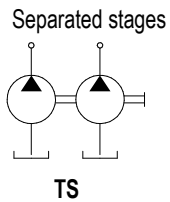
Overall and mounting dimensions are similar to single pumps.

A pump's torque is equal to the sum of all the pump sections' torques.

The total torque mustn't exceed the maximum permitted torque for a pump's driveshaft. For defining the maximum permitted torque of each section use the formula on page 7.



Ordering example
GP4K63/4K63R-B633D-TS



1 STAGE

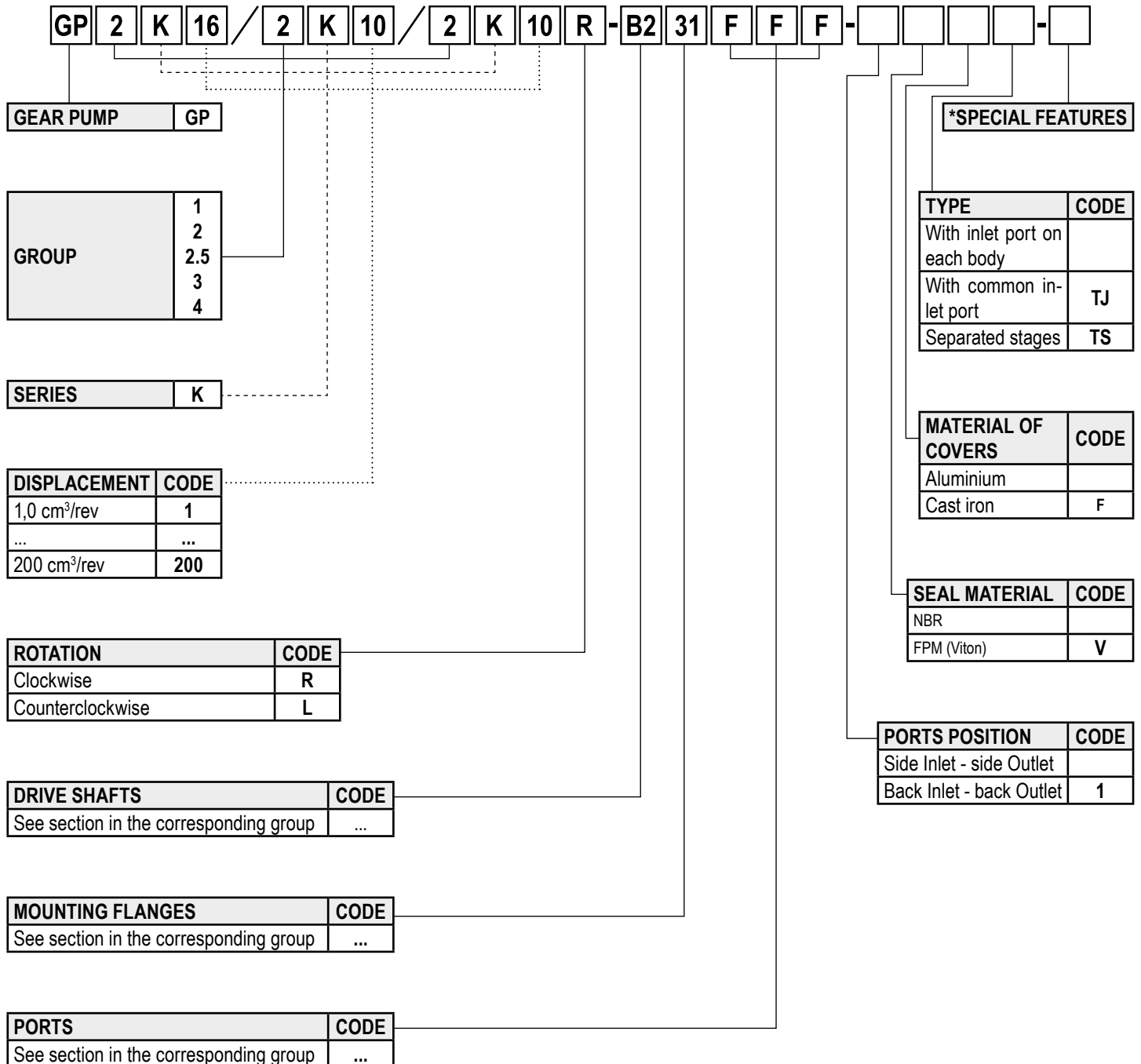
Type		GP4K63	GP4K71	GP4K80	GP4K90	GP4K100	GP4K112	GP4K125	GP4K140	GP4K150	GP4K160	GP4K170	GP4K180	GP4K190	GP4K200
Dimension A	mm	87,3	90,2	93,3	96,8	120	124,5	129	134,5	158	161,5	165,5	169	172,5	176
Dimension B	mm	43,65	45,1	46,65	48,4	60	62,26	64,5	67,25	79	80,75	82,75	84,5	86,25	88

Others dimensions see: C = page 65, G = page 67, F = page 68.

Overall and mounting dimensions are similar to single pumps.

A pump's torque is equal to the sum of all the pump sections' torques.

The total torque mustn't exceed the maximum permitted torque for a pump's driveshaft. For defining the maximum permitted torque of each section use the formula on page 7.

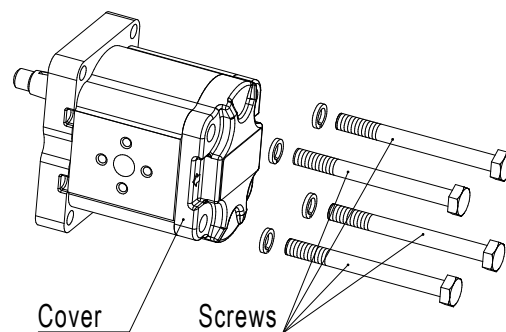


*Special features assigned if necessary

Process of change direction shown at the example for pump with clockwise rotation.

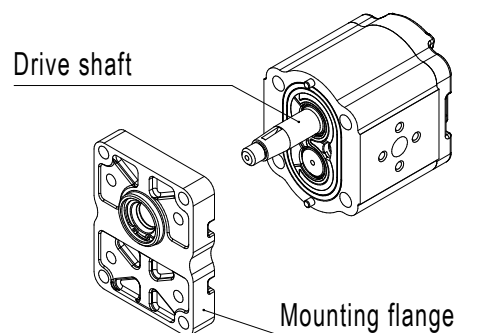
STEP 1

- 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.



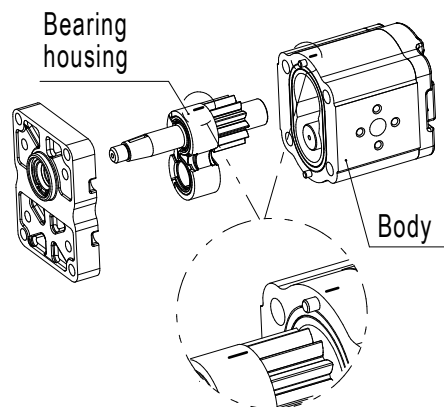
STEP 2

- Remove the mounting flange.
- Verify that the compensation seal is correctly located in the body seat.



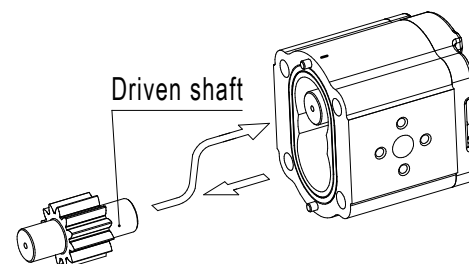
STEP 3

- 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.



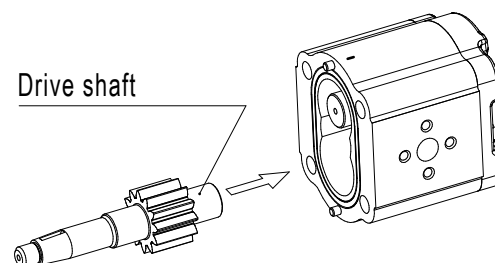
STEP 4

- Draw out the driven shaft from its housing.
- Re-locate the driven shaft in the position previously occupied by the drive shaft.



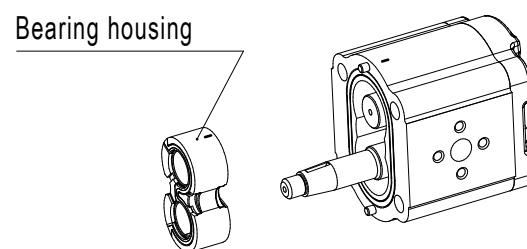
STEP 5

- Re-locate the drive shaft in the position previously occupied by the driven shaft.



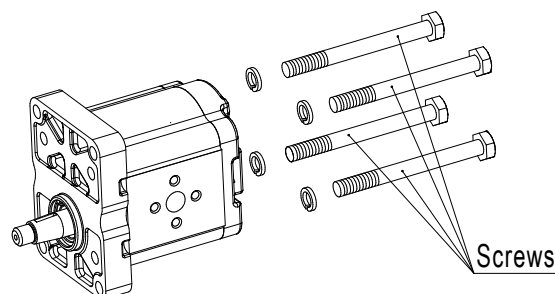
STEP 6

- Replace the bearing housing taking care that:
 - Marks shall be located as in the picture.
 - Compensation seal and anti-extrusion plate are correctly located.

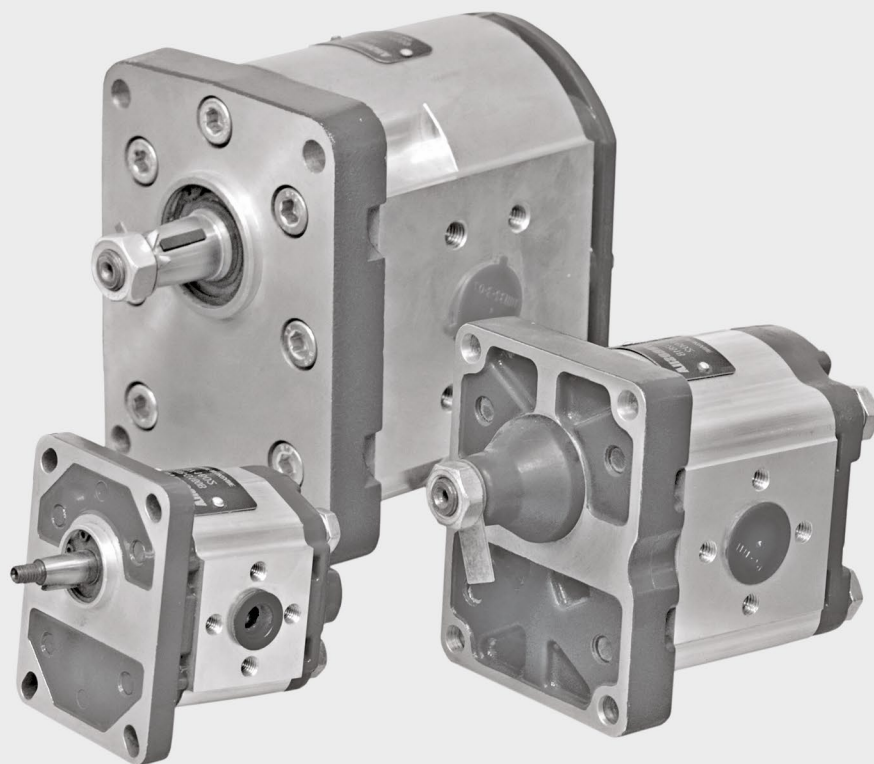


STEP 7

- 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.



IMPORTANT: TO AVOID A PERFORMANCE LOSS DO NOT CHANGE MOTOR ROTATION

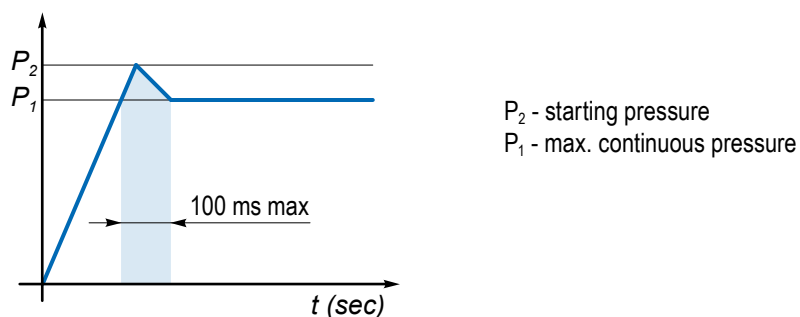


GEAR MOTORS SERIES "K"

FEATURES

Gear motors "K" series are presented in the second and third groups group (from 6,3 to 71 cm³/rev) with unidirectional or reversible rotation the drive shaft. These units have range of the shafts and mounting flanges according to international standards. Gear motors have a wide application for the different machines and mechanisms , such like fan drives, working bodies mowers, air seeders etc.

DEFINITION OF PRESSURES

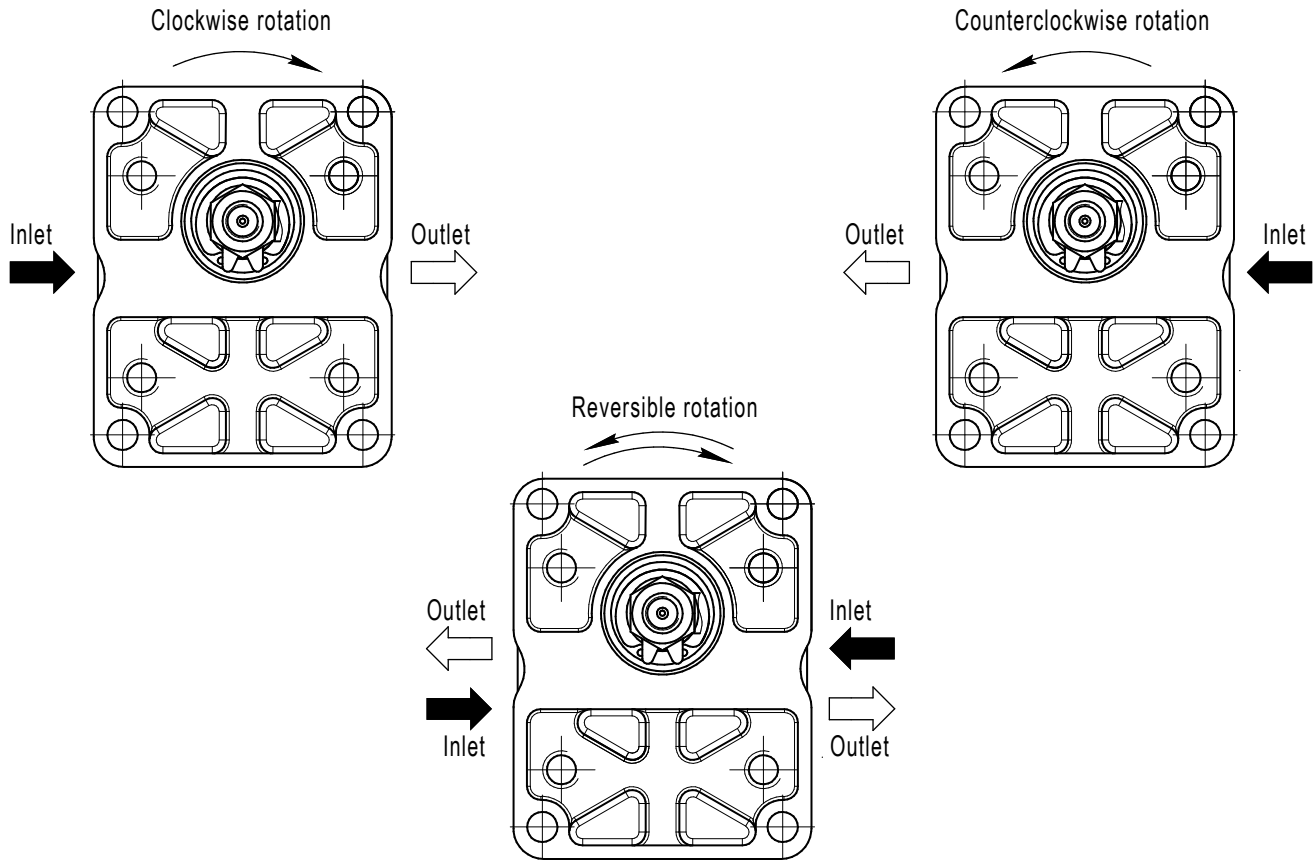


WORKING CONDITIONS

Minimum operating fluid viscosity	15 mm ² /sec
Max. starting viscosity (cold start)	1000 mm ² /sec
Fluid viscosity recommended range	17 ÷ 65 mm ² /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

FILTRATION INDEX RECOMMENDED

Maximum continuous pressure	>200 bar	<200 bar
Contamination class ISO 4406	18/15	19/16
Contamination class NAS 1638	9	10
Achieved with filter $\beta_x=75$	15µm	25µm



FORMULAS

Input flow

$$Q = \frac{q \cdot n}{1000 \cdot \eta_v} \quad [\text{l/min}]$$

Output torque

$$M = \frac{q \cdot \Delta p \cdot \eta_m}{20 \cdot \pi} \quad [\text{N} \cdot \text{m}]$$

Output power

$$P = \frac{Q \cdot \Delta p \cdot \eta_t}{600} \quad [\text{kW}]$$

q displacement (cm^3/rev)

n speed (min^{-1})

η_v volumetric efficiency (0,94 min)

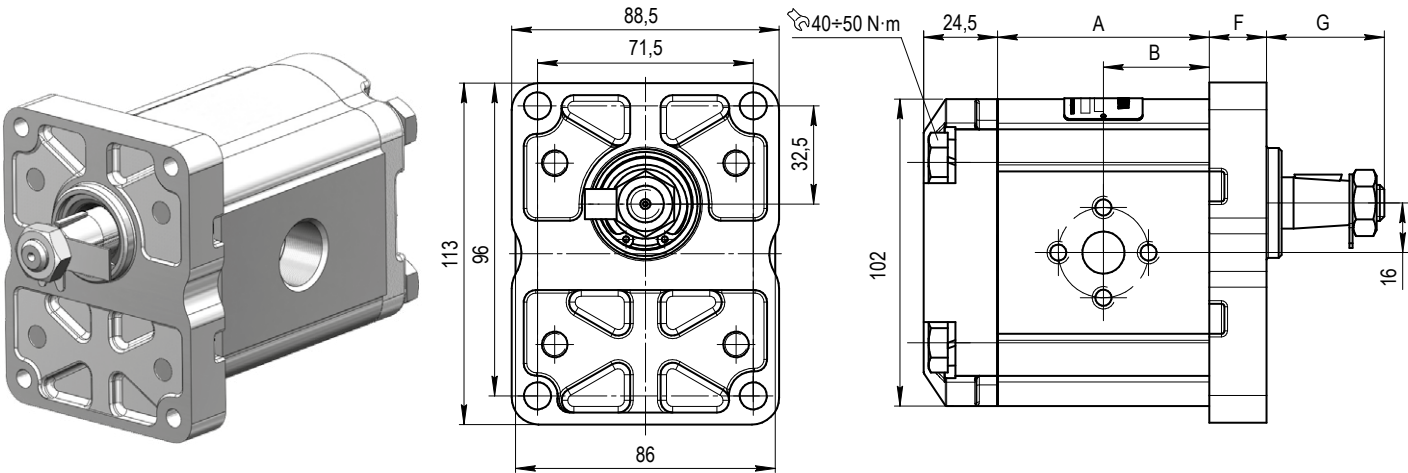
η_m mechanical efficiency (0,85min)

$\Delta p = P_{\text{out}} - P_{\text{in}}$ system pressure (bar)

$\eta_t = \eta_v \cdot \eta_m$ overall efficiency

TECHNICAL DATA AND ASSEMBLING DIMENSIONS

Type		GM2K6	GM2K8	GM2K10	GM2K11	GM2K12	GM2K14	GM2K15	GM2K16	GM2K17	GM2K19	GM2K20	GM2K23	GM2K25
Displacement	cm³/rev	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
Dimension A	mm	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
Dimension B	mm	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
Max. continuous pressure, P ₁	bar	250									220	210	190	170
Starting pressure, P ₂	bar	280									250	230	210	190
Min. speed at P ₁ ≤100 bar, n _{min}	min ⁻¹	700					600				500			
Max. speed, n _{max}	min ⁻¹	4000	3600	3500		3400		3200			3000		2800	
Output torque at P ₁	N·m	20,8	27,1	33,5	37,8	41,8	46,9	50,8	54,1	57,5	56,6	57,5	58,6	57,7
*Weight	kg	2,4	2,5	2,6	2,7	2,7	2,9	2,9	3,0	3,0	3,1	3,1	3,4	3,6

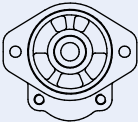
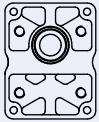
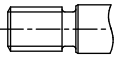
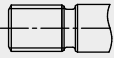
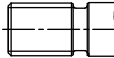
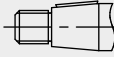
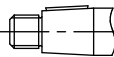
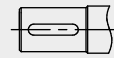
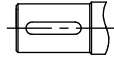
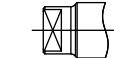
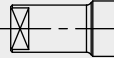
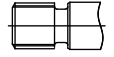


Ordering example
GM2K10R-G262B

Dimension G = see section "Drive shafts"
Dimension F = see section "Mounting flanges"

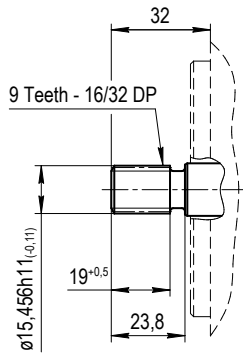
*Weight shown are for motors with aluminum covers. Weight for motors with cast iron covers should be refined

COMBINATION TYPES OF FLANGES & SHAFTS

GM2K	 SAE "A" 2 BOLTS	 EUROPEAN	 GERMAN Ø80	 GERMAN 2 BOLTS Ø50	 GERMAN 2 BOLTS Ø52
 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				
 GERMAN TAPERED 1:5			F2 81	F2 91 F2 92	
 EUROPEAN TAPERED 1:8		G2 61 G2 62			
 SAE "A" STRAIGHT Ø15,87	H2 31 H2 32	H2 61 H2 62			
 SAE "A" STRAIGHT Ø19,05	H8 31 H8 32				
 TANG DRIVE					K3 93 K3 94
 TANG DRIVE				K4 91 K4 92	
 DIN 5482 SPLINED (9 TEETH)			I2 61 I2 62	I2 81	I2 91 I2 92

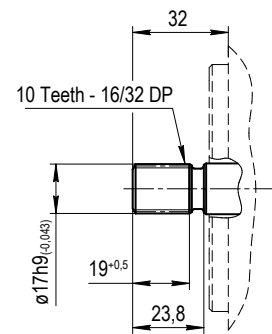
Present combination types of mounting flanges and shafts are used to serial production. The other combination and date of production, before ordering clarify with the manufacturer.

Max. torque 100 N·m



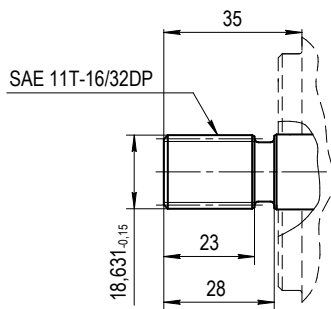
B2 SAE A SPLINED (9 TEETH)

Max. torque 130 N·m



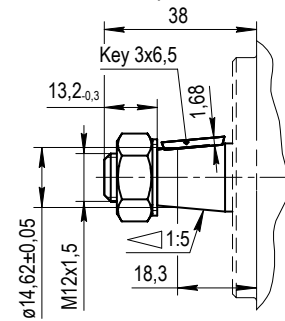
B3 SAE A SPLINED (10 TEETH)

Max. torque 170 N·m



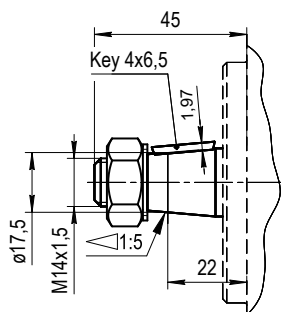
B4 SAE A SPLINED (11 TEETH)

Max. torque 140 N·m



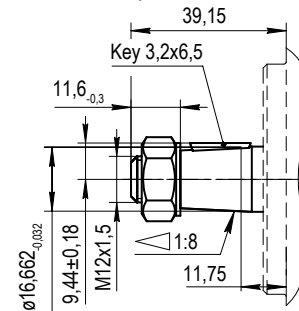
F2 GERMAN TAPERED 1:5

Max. torque 140 N·m



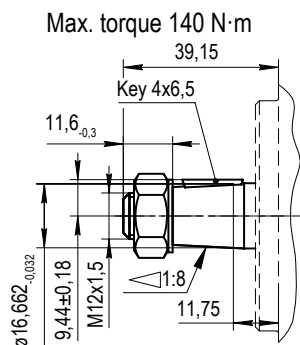
F6 GERMAN TAPERED 1:5

Max. torque 140 N·m

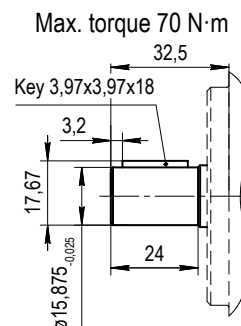


G2 EUROPEAN TAPERED 1:8

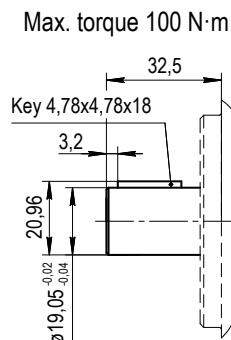
DRIVE SHAFTS



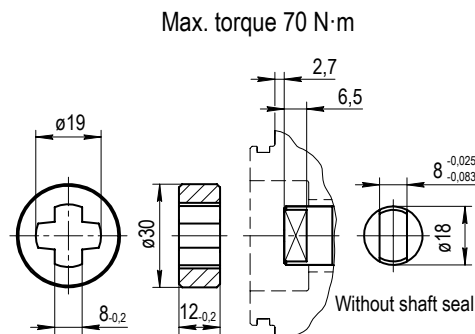
G6 EUROPEAN TAPERED 1:8



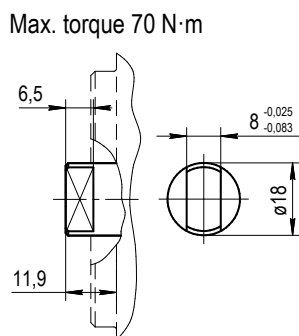
H2 SAE A STRAIGHT Ø15,87



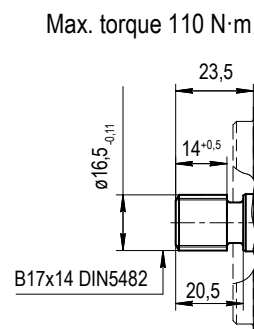
H8 SAE A STRAIGHT Ø19,05



K3 TANG DRIVE

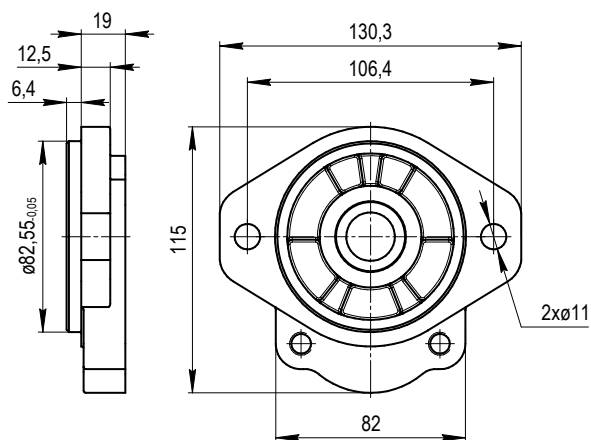


K4 TANG DRIVE



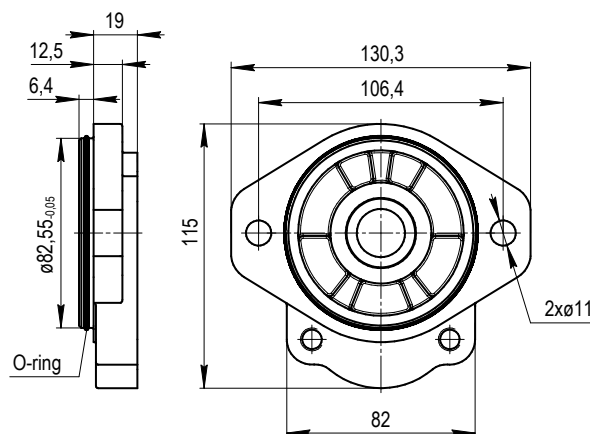
I2 DIN 5482 SPLINED (9 TEETH)

MOUNTING FLANGES



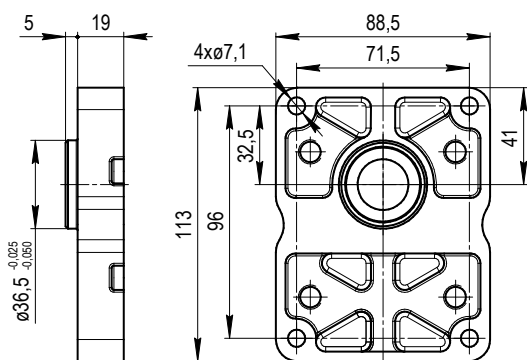
31

SAE A 2 BOLTS



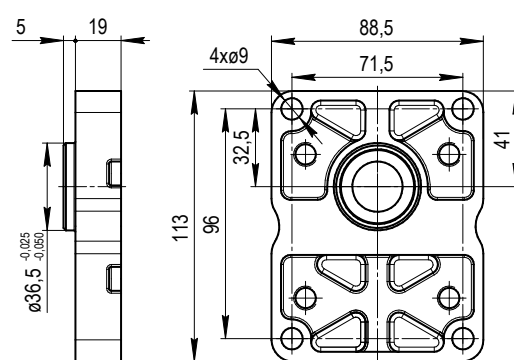
32

SAE A 2 BOLTS (WITH O-RING)



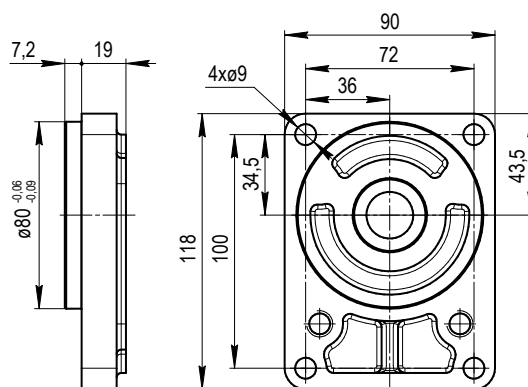
61

EUROPEAN ($\varnothing 7,1$)



62

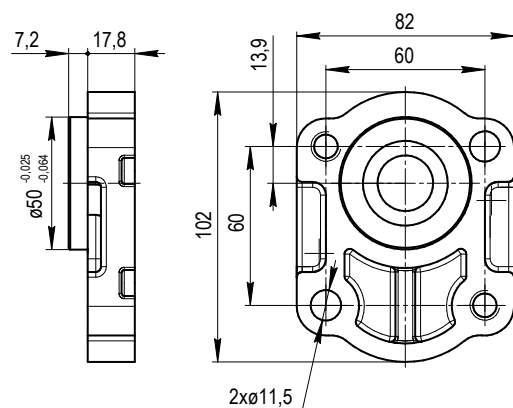
EUROPEAN ($\varnothing 9$)



81

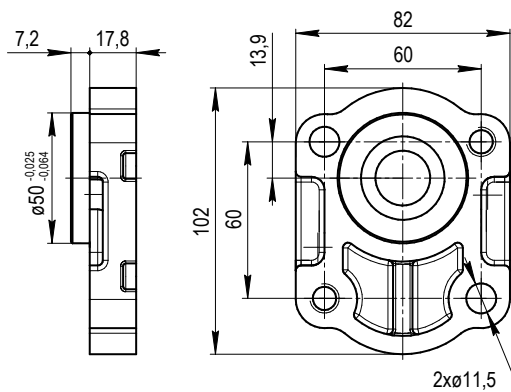
GERMAN $\varnothing 80$

MOUNTING FLANGES



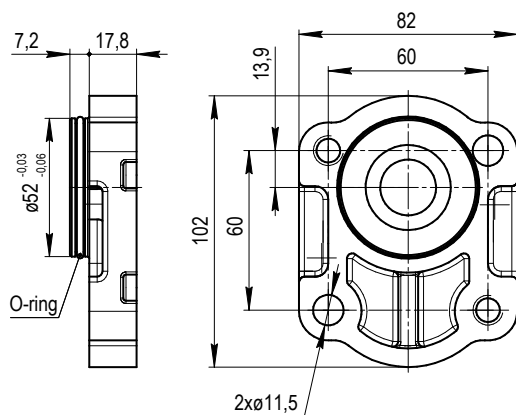
91

GERMAN 2 BOLTS Ø50



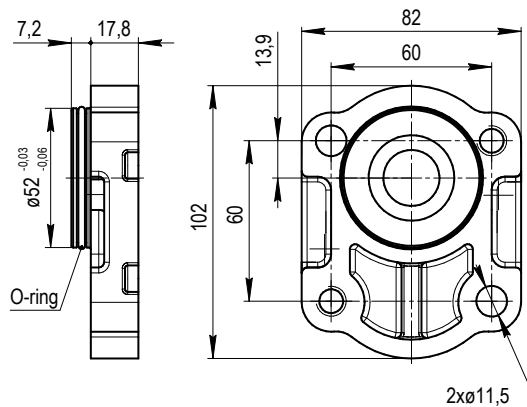
92

GERMAN 2 BOLTS Ø50



93

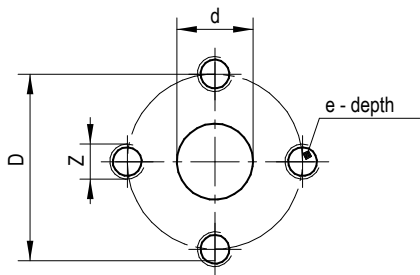
GERMAN 2 BOLTS Ø52



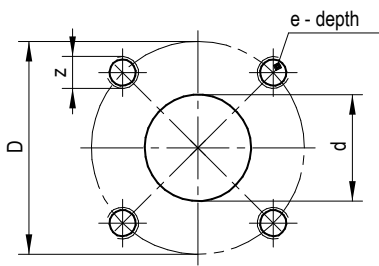
94

GERMAN 2 BOLTS Ø52

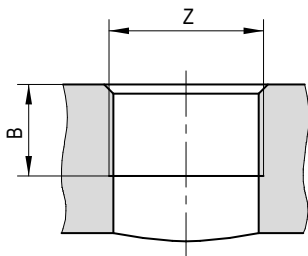
PORTS



B EUROPEAN FLANGE



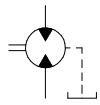
C GERMAN FLANGE



E METRIC THREADED

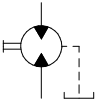
	Type	Inlet				Outlet			
		d	D	Z	e	d	D	Z	e
	GM2K6÷8	13	30	M6	13	13	30	M6	13
	GM2K10÷25	14				19	40	M8	

For reversible motors

	Type	Inlet				Outlet			
		d	D	Z	e	d	D	Z	e
	GM2K6÷12	13	30	M6	13	13	30	M6	13
	GM2K14÷25	19	40	M8		19	40	M8	

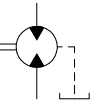
	Type	Inlet				Outlet			
		d	D	z	e	d	D	z	e
	GM2K6÷25	15	35	M6	13	20	40	M6	13

For reversible motors

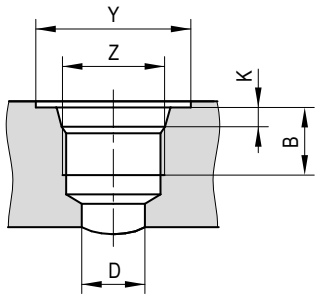
	Type	Inlet				Outlet			
		d	D	z	e	d	D	z	e
	GM2K6÷12	15	35	M6	13	15	35	M6	13
	GM2K14÷25	20	40			20	40		

	Type	Inlet		Outlet	
		Z	B	Z	B
	GM2K6÷8	M14x1,5	16	M18x1,5	16
	GM2K10÷12	M18x1,5		M22x1,5	
	GM2K14÷25			M27x2	

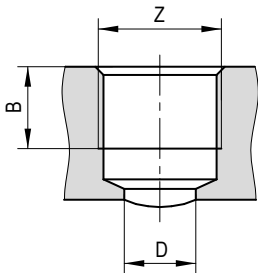
For reversible motors

	Type	Inlet		Outlet	
		Z	B	Z	B
	GM2K6÷12	M22x1,5	16	M22x1,5	16
	GM2K14÷25	M27x2		M27x2	

PORTS



F SAE THREADED (ODT)



G GAS THREADED (BSPP)

	Type	Inlet					Outlet				
		Z	B	K	D	Y	Z	B	K	D	Y
	GM2K6÷8	7/8-14 UNF (SAE #10)	14	2,5	13	34	7/8-14 UNF (SAE #10)	14	2,5	13	34
	GM2K10÷25						1-1/16-12 UN (SAE #12)				
								16	3,3	20	41

For reversible motors

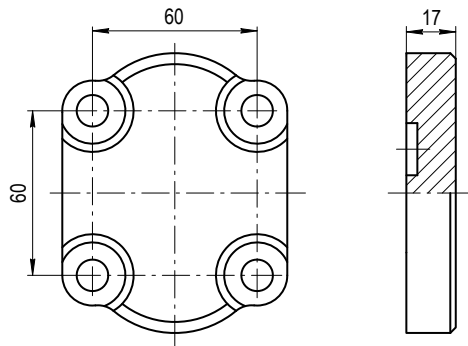
	Type	Inlet					Outlet				
		Z	B	K	D	Y	Z	B	K	D	Y
	GM2K6÷12	7/8-14 UNF (SAE #10)	14	2,5	13	34	7/8-14 UNF (SAE #10)	14	2,5	13	34
	GM2K14÷25	1-1/16-12 UN (SAE #12)	16	3,3	20	41	1-1/16-12 UN (SAE #12)	16	3,3	20	41

	Type	Inlet			Outlet		
		Z	B	D	Z	B	D
	GM2K6÷8	1/2" GAS	16	13	1/2" GAS	16	13
	GM2K10÷25				3/4" GAS	19	20

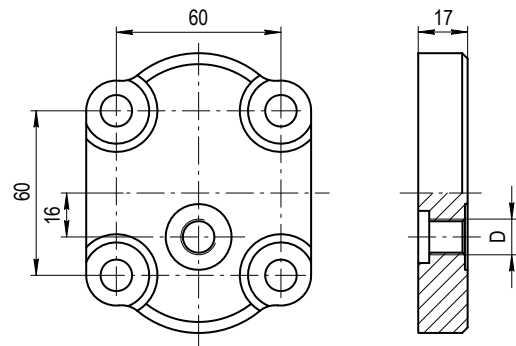
For reversible motors

	Type	Inlet			Outlet		
		Z	B	D	Z	B	D
	GM2K6÷12	1/2" GAS	16	13	1/2" GAS	16	13
	GM2K14÷25	3/4" GAS	19	20	3/4" GAS	19	20

REAR COVERS

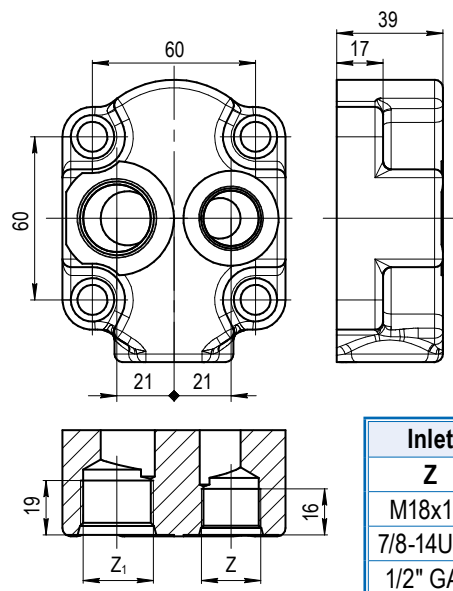


For unidirectional motors



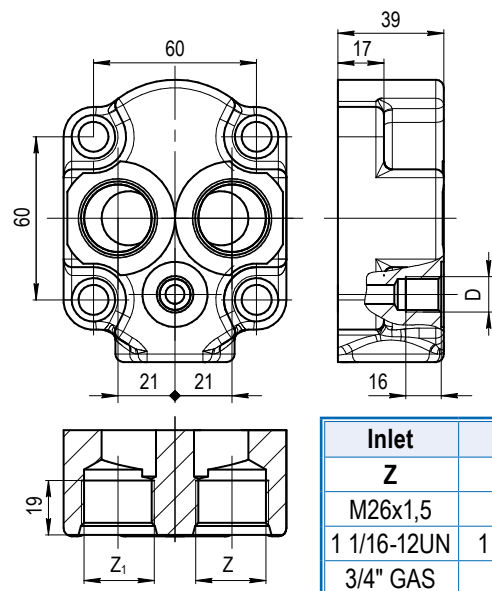
For reversible motors

STANDARD REAR COVERS



For unidirectional motors

Inlet	Outlet
Z	Z ₁
M18x1,5	M26x1,5
7/8-14UNF	1 1/16-12UN
1/2" GAS	3/4" GAS



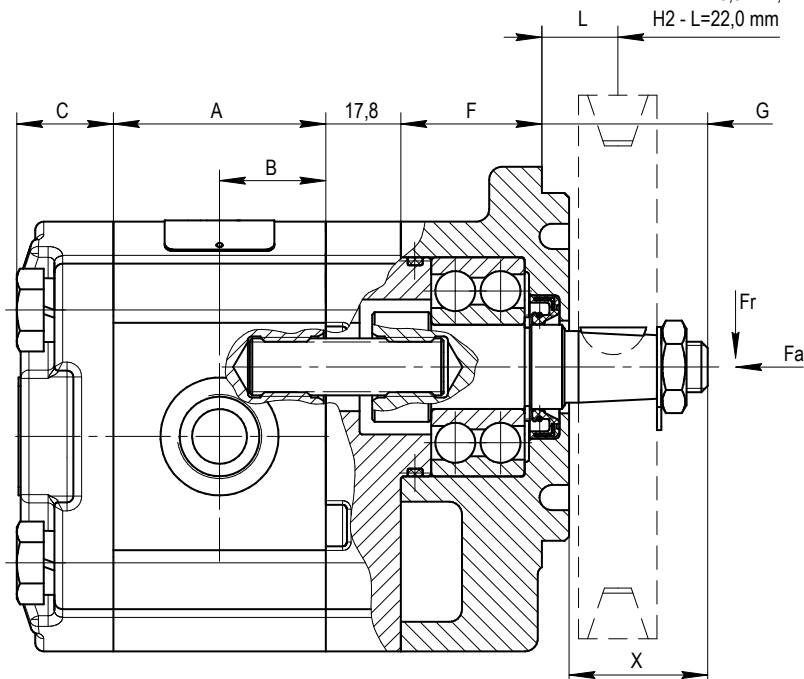
For reversible motors

Inlet	Outlet	Drain
Z	Z ₁	D
M26x1,5	M26x1,5	M12x1,5
1 1/16-12UN	1 1/16-12UN	9/16-20UNF
3/4" GAS	3/4" GAS	G1/4

1 REAR COVER WITH THREADED PORTS

VERSION WITH OUTRIGGER BEARING

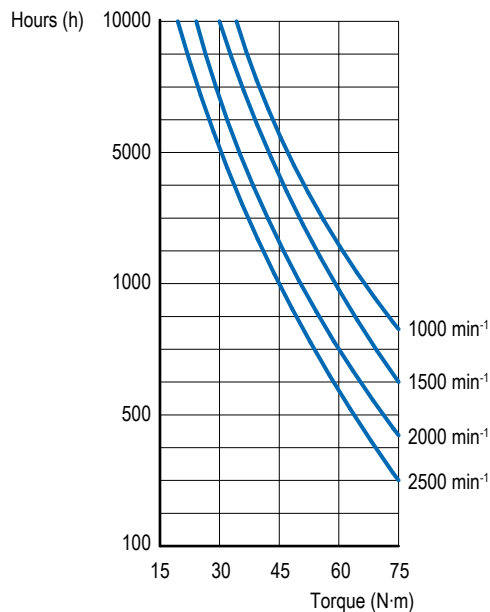
For drive shaft:
G2 - L=15,4 mm;
F2 - L=16,9 mm;
H2 - L=22,0 mm



Ordering example
GM2K12R-F2C9F

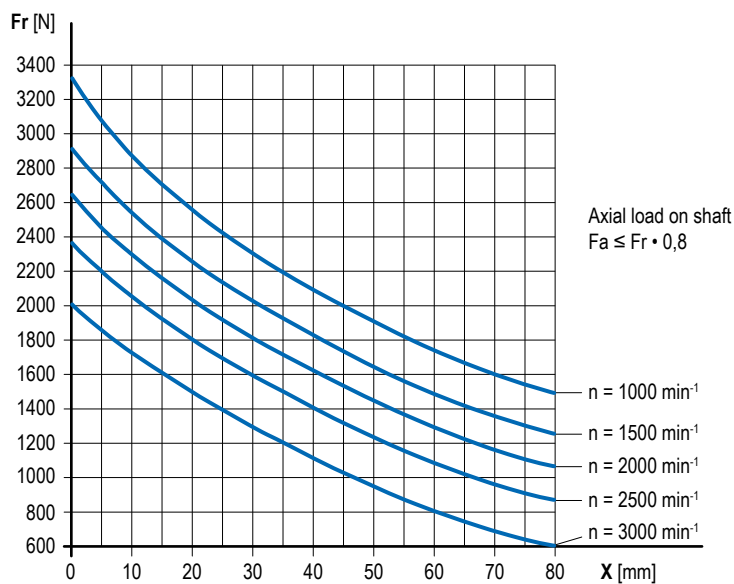
Service life under the following conditions:

L = 18 mm; pulley diameter = 90 mm.

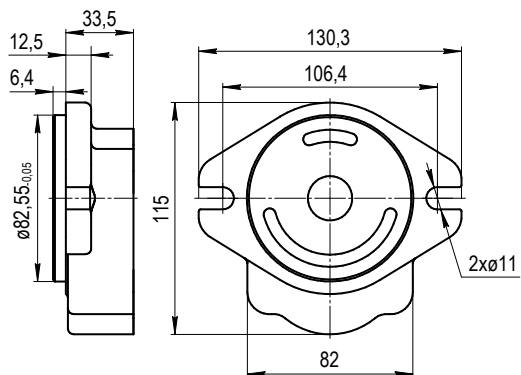


Dimension A and B = see section "Technical data"
Dimension G = see section "Drive shafts"
Dimension F = see section "Mounting flanges with bearing support"
Dimension C = see section "Rear covers"

Working characteristic of outrigger bearing

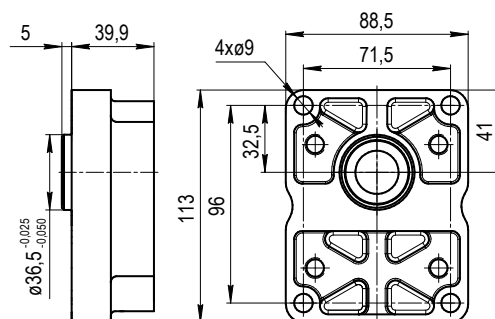


MOUNTING FLANGES WITH BEARING SUPPORT



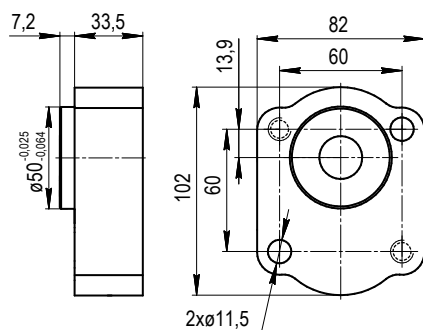
C3

SAE A



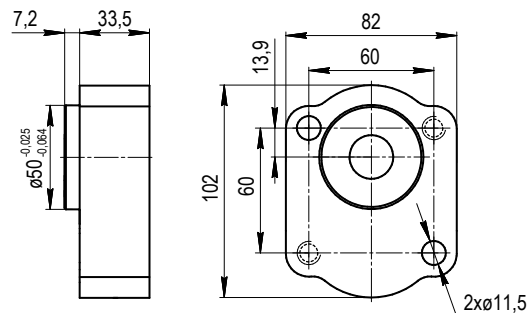
C6

EUROPEAN



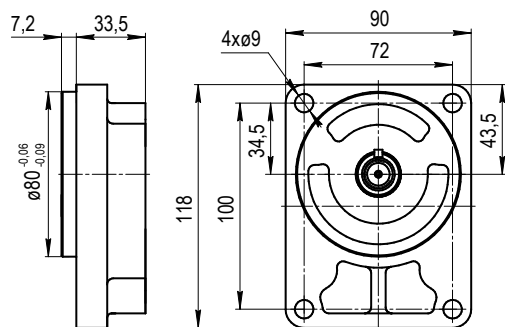
C7

GERMAN Ø50



C8

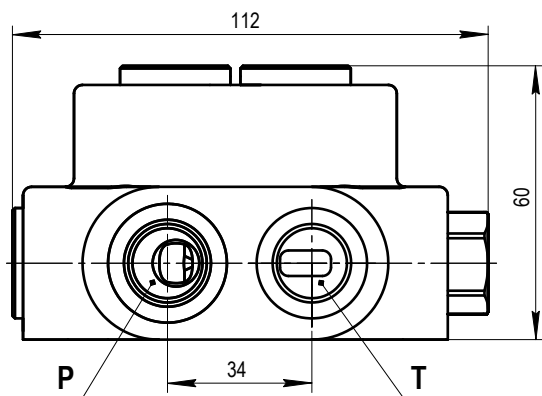
GERMAN Ø50



C9

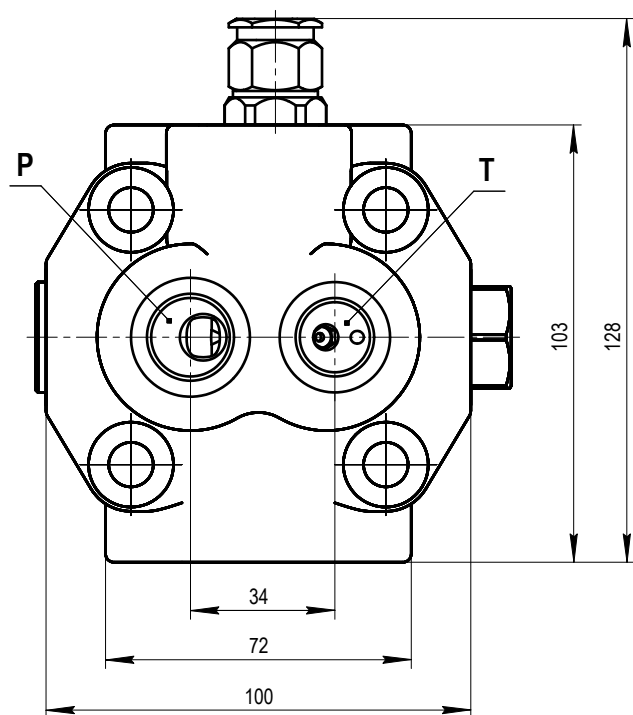
GERMAN Ø80

VERSION WITH VALVE IN THE REAR COVER

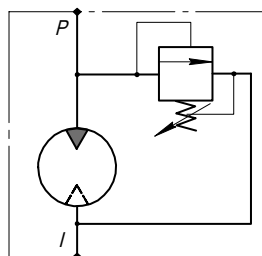


CODE	P	T
E	M20x1,5	M18x1,5
F	7/8"-14 UNF	3/4"-16 UNF
G	1/2" GAS	3/8" GAS

Pressure relief setting	bar	20÷280
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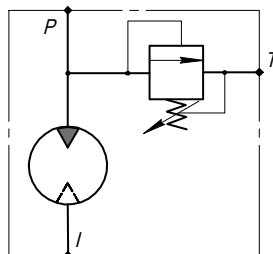


P - pressure line
T - drain



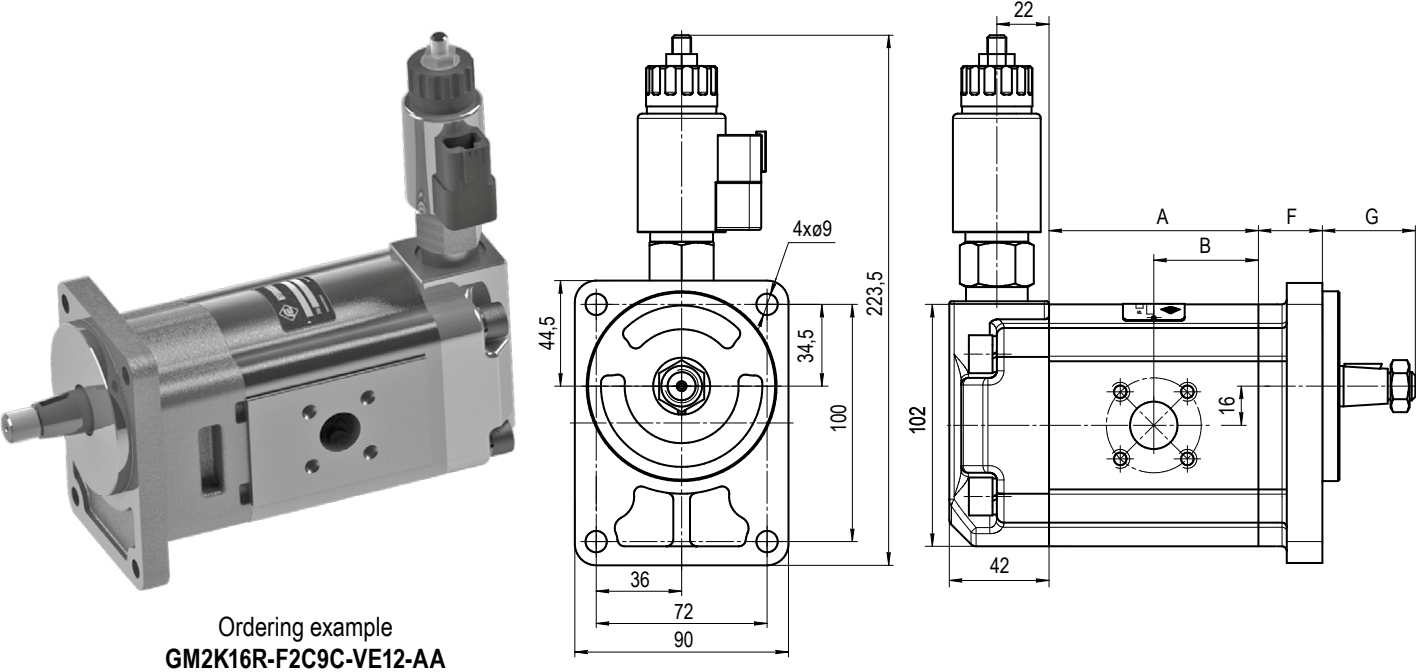
Return-to-outlet line relief valve

VR

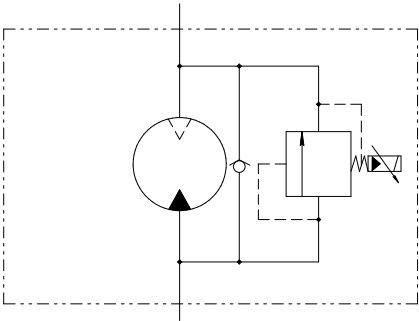


Return-to-tank relief valve

VR1



Dimensions A and B = see section "Technical data"
Dimension G = see section "Drive shafts"
Dimension F = see section "Mounting flanges"

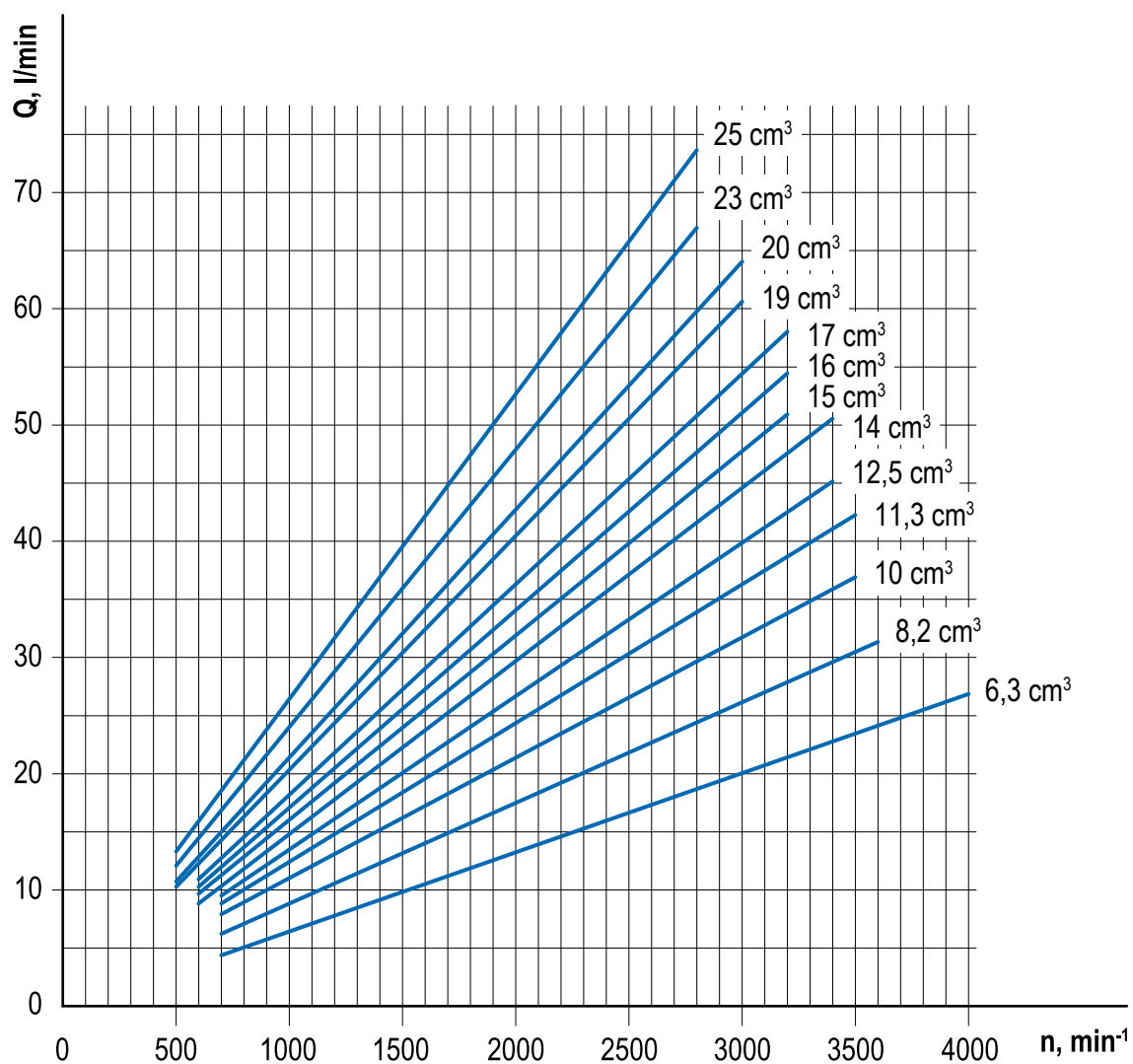


Power	1.4 A (12 VDC) 0.7 A (24 VDC)
PWM frequency	200 Hz
Coil resistance	7.2 Ω (12 VDC) 28.8 Ω (24 VDC)
Plug type	DIN 43650 Deutsch Lead wires AMP Jr

VE	ELECTRO-PROPORTIONAL RELIEF VALVE
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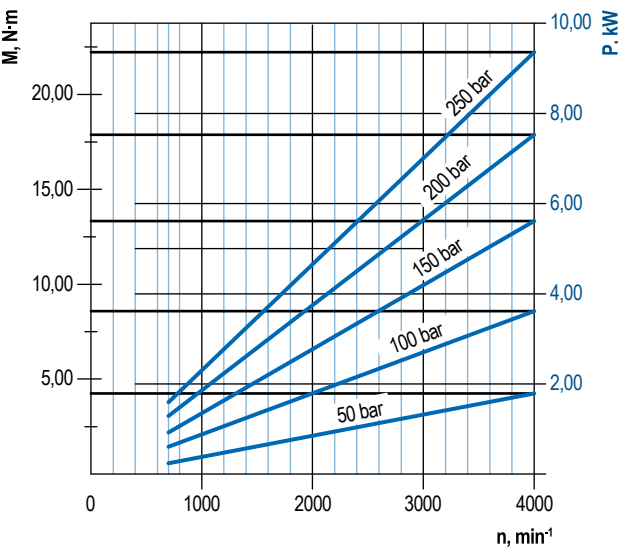
PERFORMANCE CURVES

Performance curves carried out with oil viscosity at 16 mm²/sec, oil temperature at 60°C and max. continuous pressures for each type.

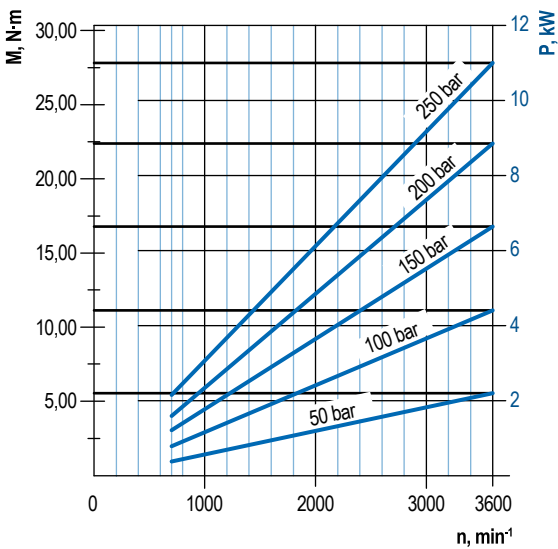


PERFORMANCE CURVES

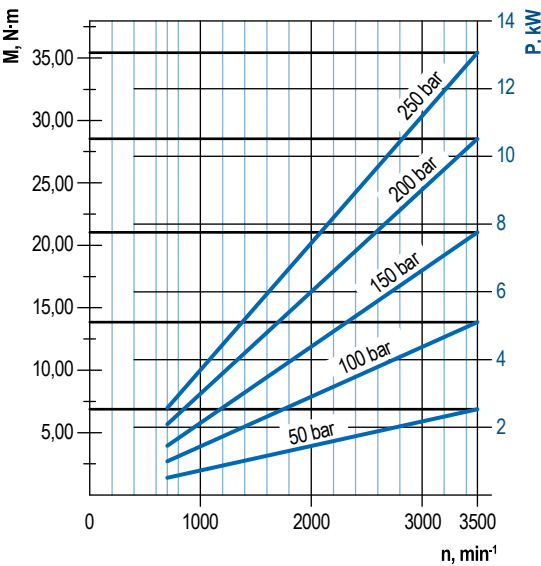
Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



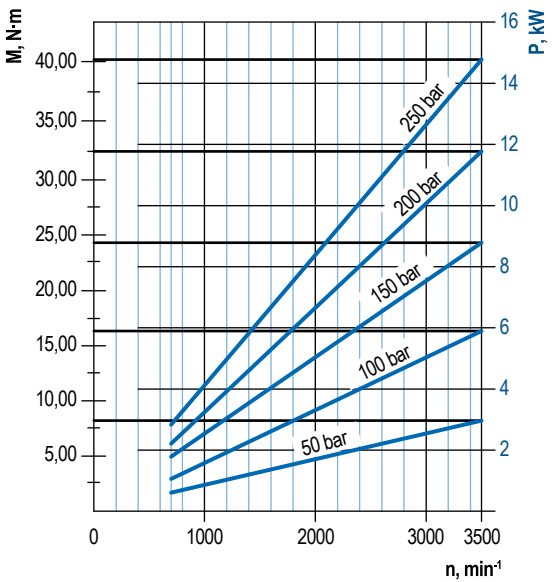
GM2K6



GM2K8



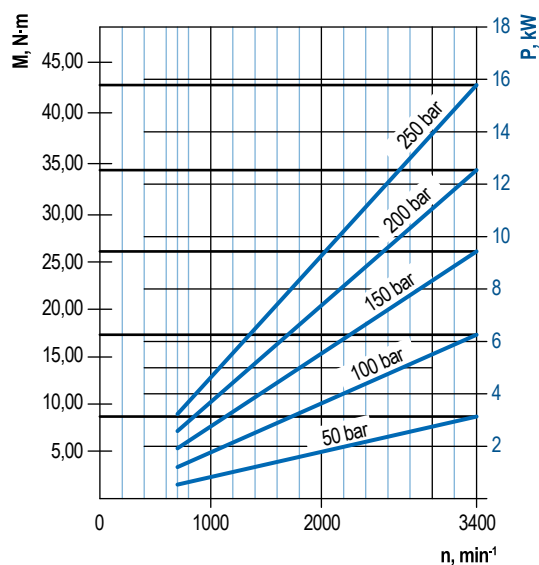
GM2K10



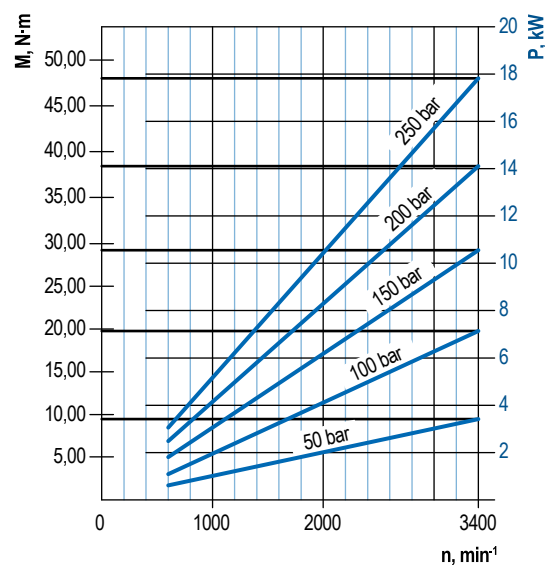
GM2K11

PERFORMANCE CURVES

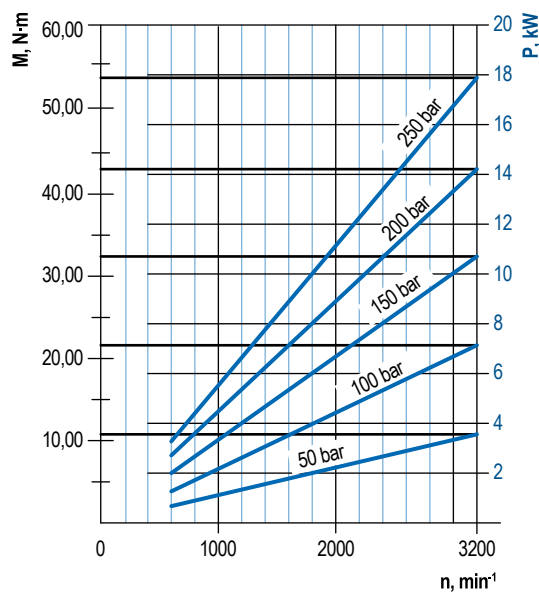
Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



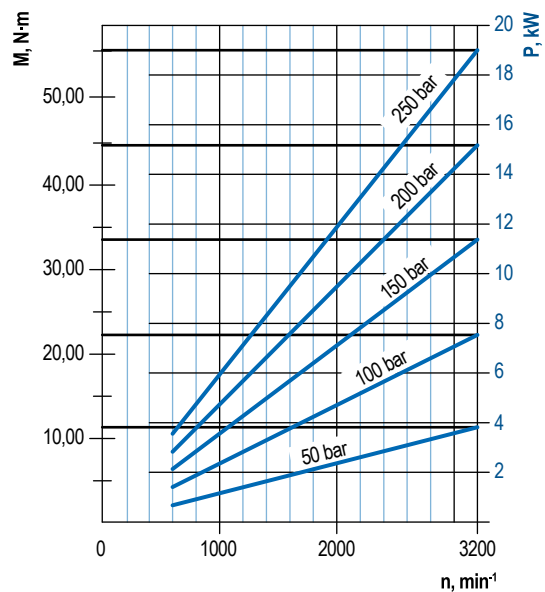
GM2K12



GM2K14



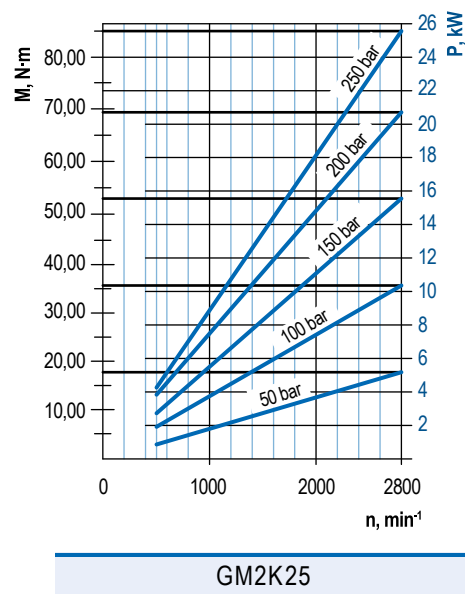
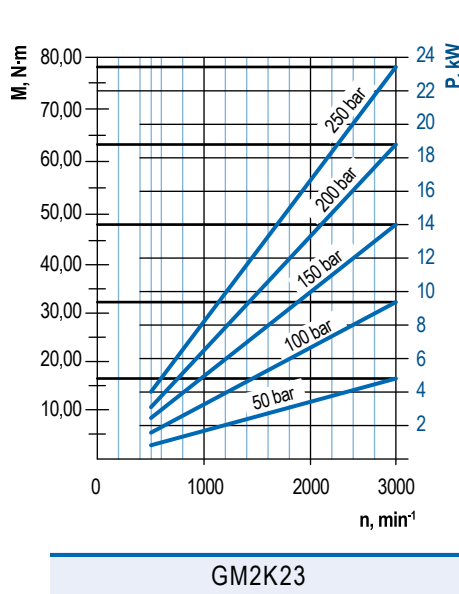
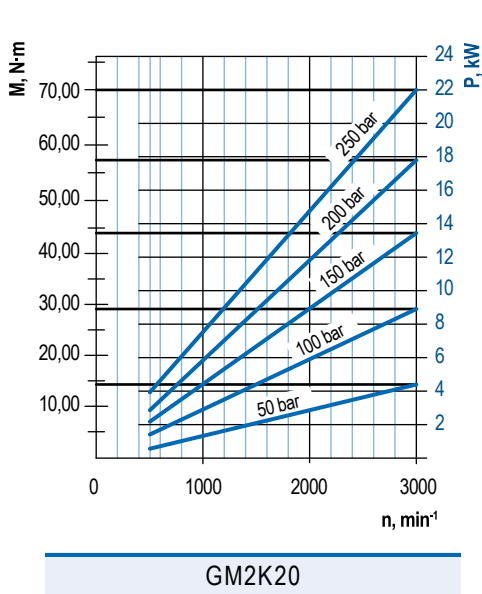
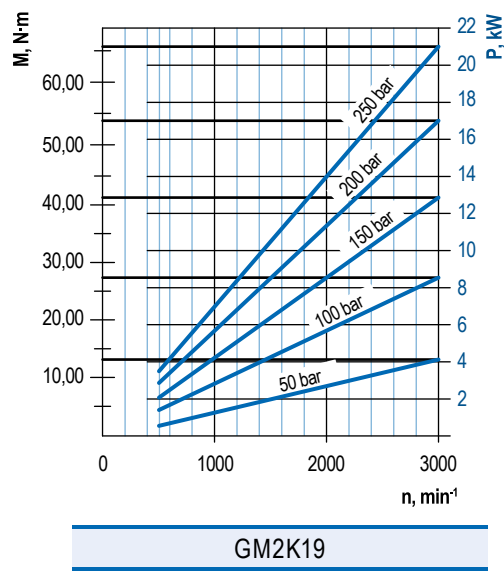
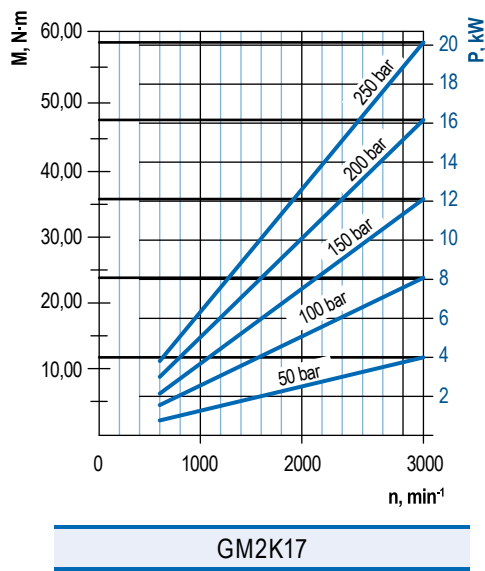
GM2K15



GM2K16

PERFORMANCE CURVES

Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



ORDERING INFORMATION

GEAR MOTOR	GM	2	K	16	R	B2	31	F				VE	12	AA	
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GROUP	2
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SERIES	K
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DISPLACEMENT	CODE
6,3 cm ³ /rev	6
8,2 cm ³ /rev	8
10 cm ³ /rev	10
11,3 cm ³ /rev	11
12,5 cm ³ /rev	12
14 cm ³ /rev	14
15 cm ³ /rev	15
16 cm ³ /rev	16
17 cm ³ /rev	17
19 cm ³ /rev	19
20 cm ³ /rev	20
22,5 cm ³ /rev	23
24,8 cm ³ /rev	25

ROTATION	CODE
Clockwise	R
Counterclockwise	L
Reversible	B

DRIVE SHAFTS	CODE
SAE A SPLINED (9 TEETH)	B2
SAE A SPLINED (10 TEETH)	B3
SAE A SPLINED (11 TEETH)	B4
GERMAN TAPERED 1:5	F2
EUROPEAN TAPERED 1:8	G2
SAE A STRAIGHT Ø15,87	H2
SAE A STRAIGHT Ø19,05	H8
TANG DRIVE FOR ELECTRIC MOTORS	K3
TANG DRIVE	K4
DIN 5482 SPLINED (9 TEETH)	I2

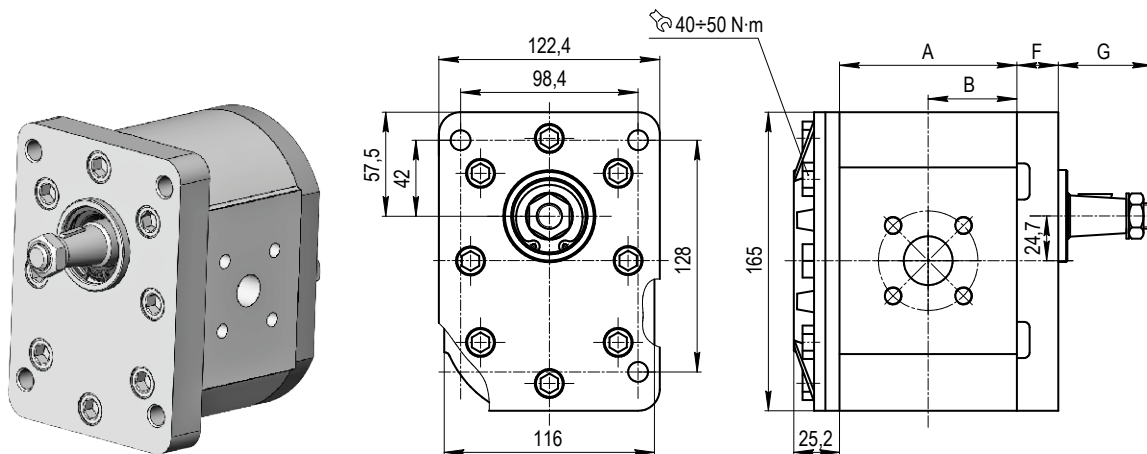
MOUNTING FLANGES	CODE
SAE A 2 BOLTS	31
SAE A 2 BOLTS (WITH O-RING)	32
EUROPEAN (Ø7,1)	61
EUROPEAN (Ø9)	62
GERMAN Ø80	81
GERMAN 2 BOLTS Ø50	91-92
GERMAN 2 BOLTS Ø52	93-94

*SPECIAL FEATURES	
CONNECTOR ELECTRICAL	CODE
DIN 43650	AA
Deutsch	DE
Lead wires	FL
AMP Jr	AJ
ELECTRICAL SUPPLY	CODE
1.4 A (12 VDC)	12
0.7 A (24 VDC)	24
TYPE OF VALVE	CODE
Valve of proportional pressure relieving	VE
Return-to-suction relief valve	VR
Return-to-tank relief valve	VR1
MATERIAL OF COVERS	CODE
Aluminium	
Cast iron	F
SEAL MATERIAL	CODE
NBR	
FPM (Viton)	V
PORTS POSITION	CODE
Side Inlet - side Outlet	
Back Inlet - back Outlet	1
PORTS	CODE
EUROPEAN FLANGE	B
GERMAN FLANGE	C
METRIC THREADED	E
SAE THREADED (ODT)	F
GAS THREADED (BSPP)	G
MOUNTING FLANGES WITH BEARING SUPPORT	CODE
SAE A	C3
EUROPEAN	C6
GERMAN Ø50	C7
GERMAN Ø50	C8
GERMAN Ø80	C9

*Special features assigned if necessary

TECHNICAL DATA AND ASSEMBLING DIMENSIONS

Type		GM3K20	GM3K23	GM3K25	GM3K28	GM3K32	GM3K36	GM3K40	GM3K45	GM3K50	GM3K56	GM3K63	GM3K71
Displacement	cm³/rev	20	23	25	28	32	36	40	45	50	56	63	71
Dimension A	mm	78,5	80,5	81,8	83,8	86,4	89	91,7	95,0	99	102	106,4	111,6
Dimension B	mm	39,25	40,25	40,9	41,9	43,2	44,5	45,85	47,5	49,5	51	53,2	55,8
Max. continuous pressure, P ₁	bar	250				240			230	210	200	190	170
Starting pressure, P ₂	bar	270				260			250	230	220	210	190
Min. speed at P ₁ ≤100 bar, n _{min}	min ⁻¹	700								600			
Max. speed, n _{max}	min ⁻¹	3000								2500			
Output torque at P ₁	N·m	70	80,6	87,6	98,1	107,6	121,1	134,5	145	147,1	156,9	167,7	169,1
*Weight	kg	6,9	7,0	7,1	7,2	7,3	7,5	7,6	7,8	8,1	8,3	8,5	8,8

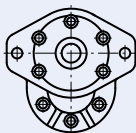
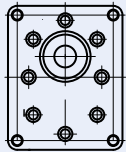
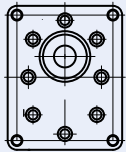
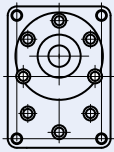
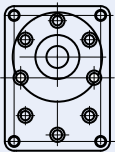
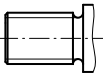
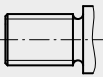
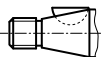
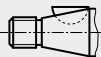
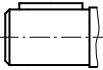


Ordering example
GM3K20R-B563B

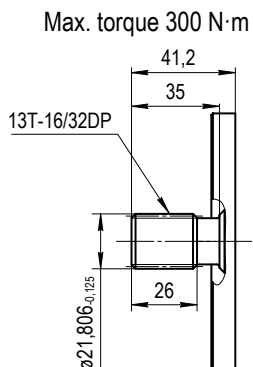
Dimension G = see section "Drive shafts"
Dimension F = see section "Mounting flanges"

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

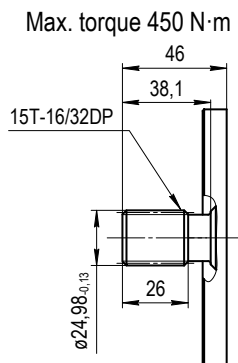
COMBINATION TYPES OF FLANGES & SHAFTS

GM3K	 SAE B 2 BOLTS	 EUROPEAN Ø50,8	 EUROPEAN Ø60,3	 GERMAN Ø105	 GERMAN Ø100
 SAE B SPLINED (13 TEETH)	B5 33				
 SAE BB SPLINED (15 TEETH)	B6 33				
 GERMAN TAPERED 1:5 (M16)				F4 88	F4 89
 GERMAN TAPERED 1:5 (M14)					F6 89
 EUROPEAN TAPERED 1:8 (M14)		G4 63	G4 64		
 EUROPEAN TAPERED 1:8 (M16)		G5 63	G5 64		
 SAE B STRAIGHT Ø22,2	H3 33				
 SAE BB STRAIGHT Ø25,4	H4 33				

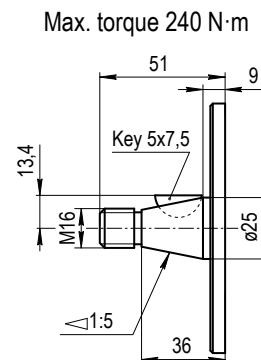
Present combination types of mounting flanges and shafts are used to serial production. The other combination and date of production, before ordering clarify with the manufacturer.



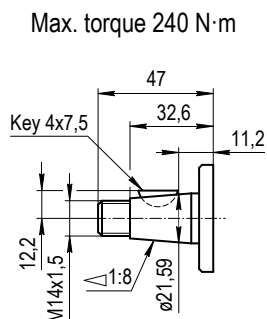
B5 SAE B SPLINED (13 TEETH)



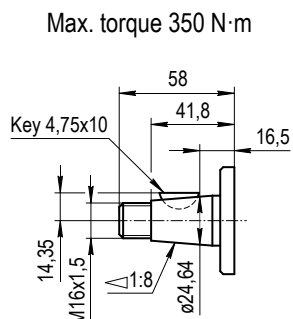
B6 SAE BB SPLINED (15 TEETH)



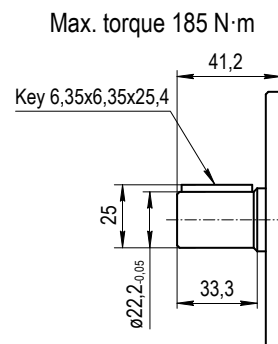
F4 GERMAN TAPERED 1:5



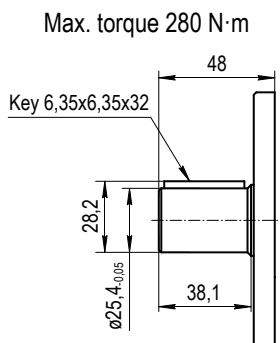
G4 EUROPEAN TAPERED 1:8



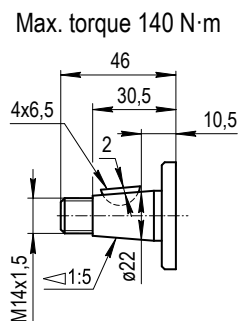
G5 EUROPEAN TAPERED 1:8



H3 SAE B STRAIGHT Ø22,2

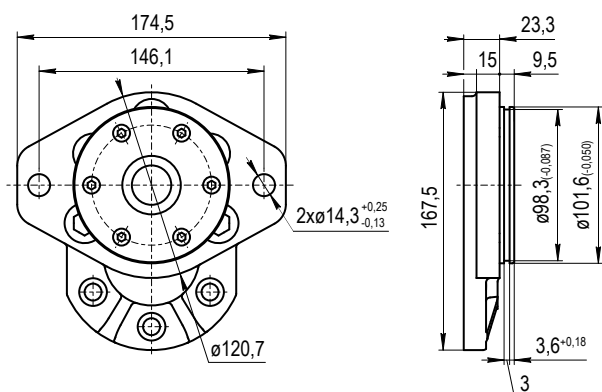


H4 SAE BB STRAIGHT Ø25,4

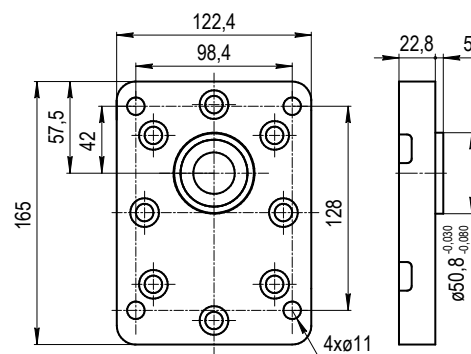


F6 GERMAN TAPERED 1:5

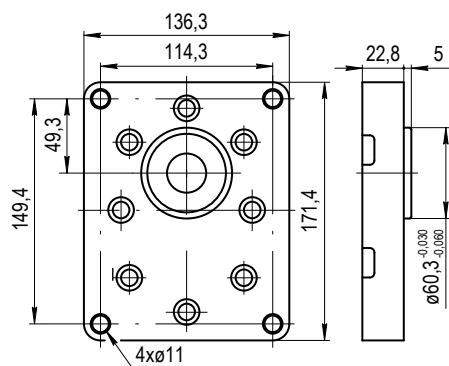
MOUNTING FLANGES



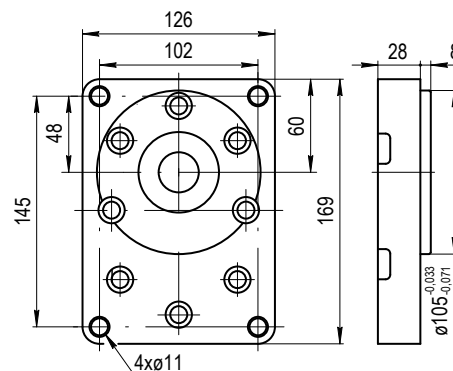
33 SAE B 2 BOLTS



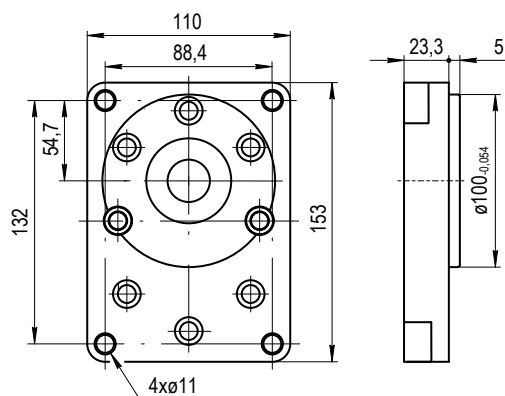
63 EUROPEAN Ø50,8



64 EUROPEAN Ø60,3

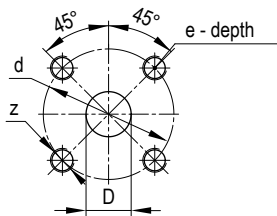


88 GERMAN Ø105

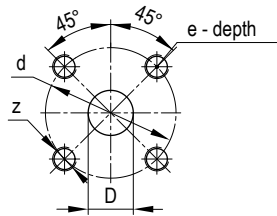


89 GERMAN Ø100

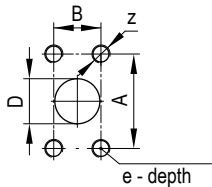
PORTS



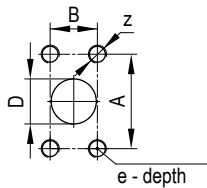
B EUROPEAN FLANGE



C GERMAN FLANGE



D SAE FLANGE (UNC)



W SAE FLANGE (METRIC)

	Type	Inlet				Outlet			
		d	D	z	e	d	D	z	e
	GM3K20÷56	40	19	M8	18	51	27	M10	18
	GM3K63÷71	51	27	M10		62	32	M12	

For reversible motors

	Type	Inlet				Outlet			
		d	D	z	e	d	D	z	e
	GM3K20÷56	51	27	M10	18	51	27	M10	18
	GM3K63÷71	62	32	M12		62	32	M12	

	Type	Inlet				Outlet			
		d	D	z	e	d	D	z	e
	GM3K20÷56	55	19	M8	16	55	27	M8	16

For reversible motors

	Type	Inlet				Outlet			
		d	D	z	e	d	D	z	e
	GM3K20÷56	55	27	M8	16	55	27	M8	16

	Type	Inlet					Outlet				
		A	B	D	z	e	A	B	D	z	e
	GM3K20÷32	47,6	22,2	19	3/8-16 UNC	16	52,4	26,2	25	3/8-16 UNC	16
	GM3K36÷56	52,4	26,2	25			58,7	30,2	32	7/16-14 UNC	
	GM3K63÷71	58,7	30,2	32	7/16-14 UNC		69,8	37,5	40	1/2-13 UNC	

For reversible motors

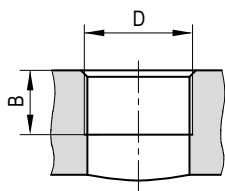
	Type	Inlet					Outlet				
		A	B	D	z	e	A	B	D	z	e
	GM3K20÷32	52,4	26,2	25	3/8-16 UNC	16	52,4	26,2	25	3/8-16 UNC	16
	GM3K36÷56	58,7	30,2	32	7/16-14 UNC		58,7	30,2	32	7/16-14 UNC	
	GM3K63÷71	69,8	37,5	40	1/2-13 UNC		69,8	37,5	40	1/2-13 UNC	

	Type	Inlet					Outlet				
		A	B	D	z	e	A	B	D	z	e
	GM3K20÷32	47,6	22,2	19	M10	16	52,4	26,2	25	M10	16
	GM3K36÷56	52,4	26,2	25			58,7	30,2	32		
	GM3K63÷71	58,7	30,2	32			69,8	37,5	40		

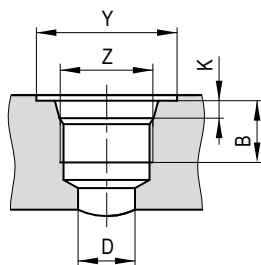
For reversible motors

	Type	Inlet					Outlet				
		A	B	D	z	e	A	B	D	z	e
	GM3K20÷32	52,4	26,2	25	M10	16	52,4	26,2	25	M10	16
	GM3K36÷56	58,7	30,2	32			58,7	30,2	32		
	GM3K63÷71	69,8	37,5	40			69,8	37,5	40		

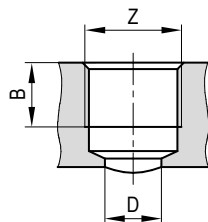
PORTS



E METRIC THREADED



F SAE THREADED



G GAS THREADED

	Type	Inlet		Outlet	
		D	B	D	B
	GM3K20÷25	M26x1,5	24	M26x1,5	24
	GM3K28÷50	M33x2		M33x2	
	GM3K56÷71	M42x2		M42x2	

For reversible motors

	Type	Inlet		Outlet	
		D	B	D	B
	GM3K20÷32	M26x1,5	24	M26x1,5	24
	GM3K36÷56	M33x2		M33x2	
	GM3K63÷71	M42x2		M42x2	

	Type	Inlet					Outlet				
		Z	B	D	Y	K	Z	B	D	Y	K
	GM3K20÷25	1 1/16-12 UN	19	20	41	3,3	1 1/16-12 UN	19	20	41	3,3
	GM3K28÷36						1 5/16-12 UN				
	GM3K40÷63	1 5/16-12 UN	20	23	49		1 5/8-12 UN	20	30	58	
	GM3K71	1 5/8-12 UN		30	58		1 7/8-12 UN		37	65	

For reversible motors

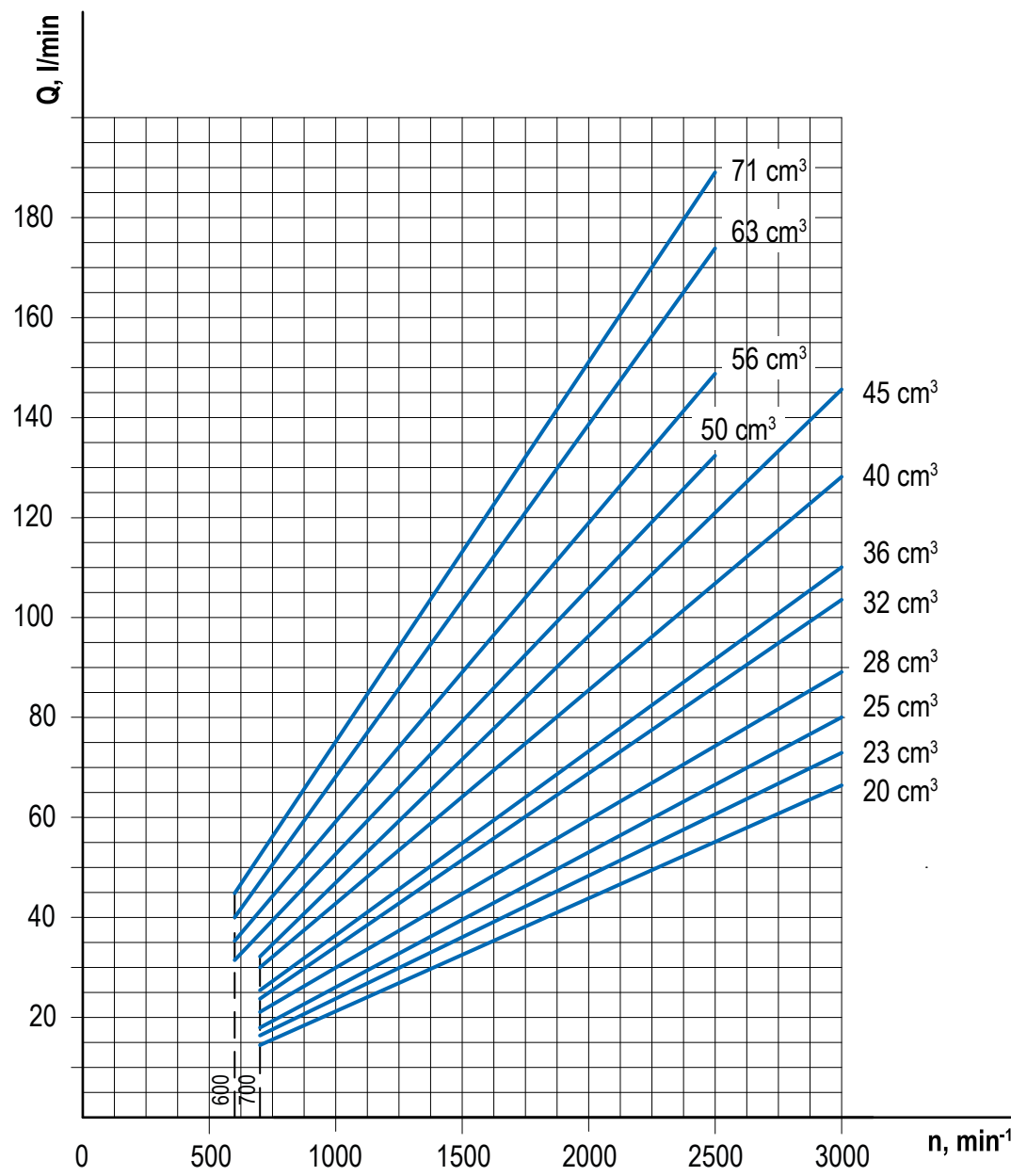
	Type	Inlet					Outlet				
		Z	B	D	Y	K	Z	B	D	Y	K
	GM3K20÷25	1 1/16-12 UN	19	20	41	3,3	1 1/16-12 UN	19	20	41	3,3
	GM3K28÷36						1 5/16-12 UN				
	GM3K40÷63	1 5/16-12 UN	20	23	49		1 5/8-12 UN	20	30	58	
	GM3K71	1 5/8-12 UN		30	58		1 5/8-12 UN		30	58	

	Type	Inlet			Outlet		
		Z	B	D	Z	B	D
	GM3K20÷25	3/4" GAS	19	20	3/4" GAS	19	20
	GM3K28÷50	1" GAS	21	27	1" GAS	21	27
	GM3K56÷71				1 1/4" GAS	21	33

For reversible motors

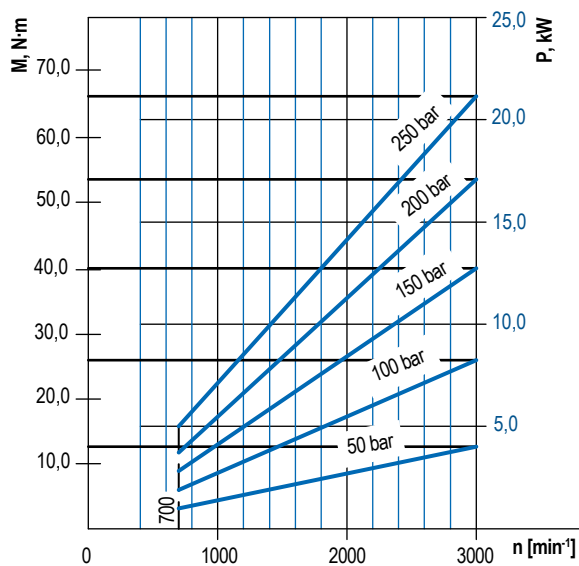
	Type	Inlet			Outlet		
		Z	B	D	Z	B	D
	GM3K20÷25	3/4" GAS	19	20	3/4" GAS	19	20
	GM3K28÷50	1" GAS	21	27	1" GAS	21	27
	GM3K56÷71	1 1/4" GAS	21	33	1 1/4" GAS	21	33

Performance curves carried out with oil viscosity at 16 mm²/sec, oil temperature at 60°C and max. continuous pressures for each type.

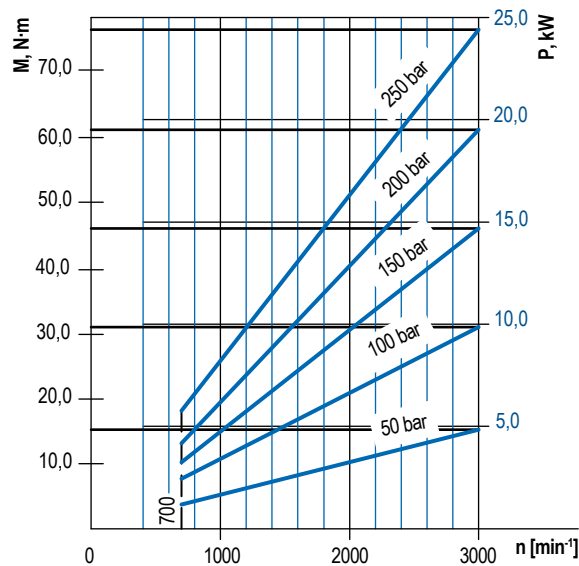


PERFORMANCE CURVES

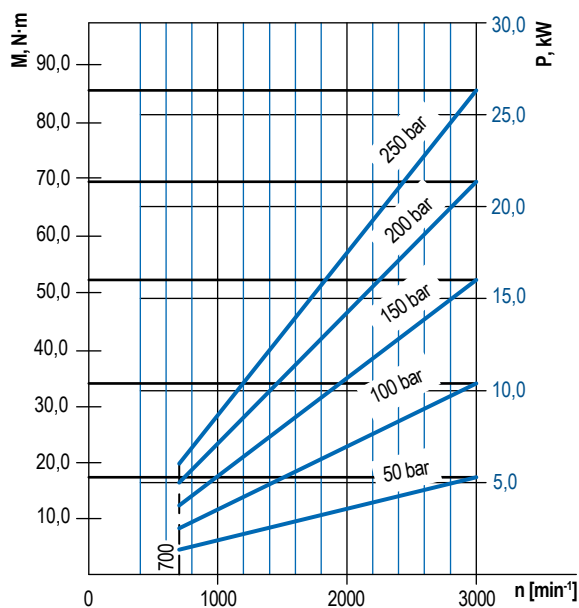
Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



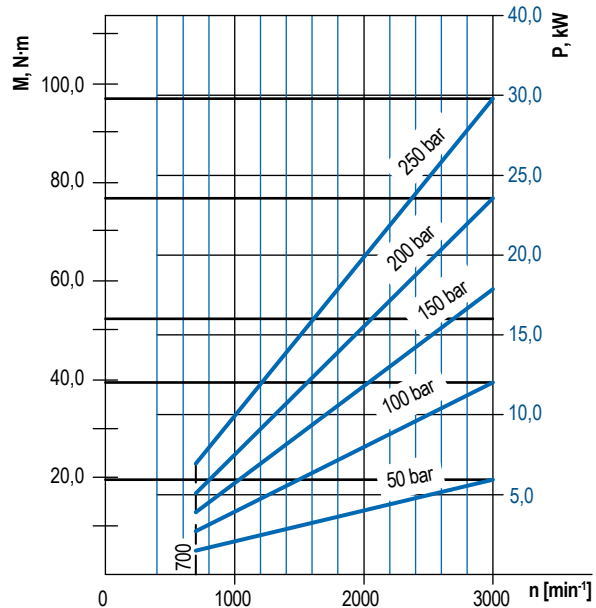
GM3K20



GM3K23



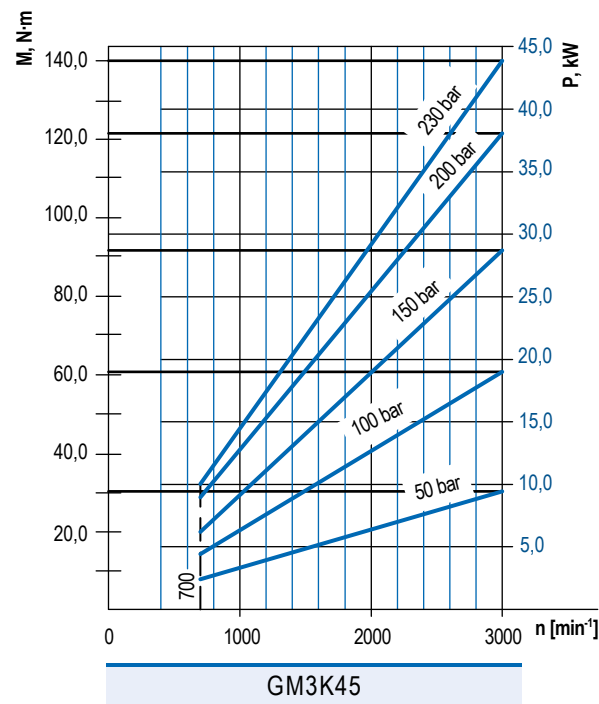
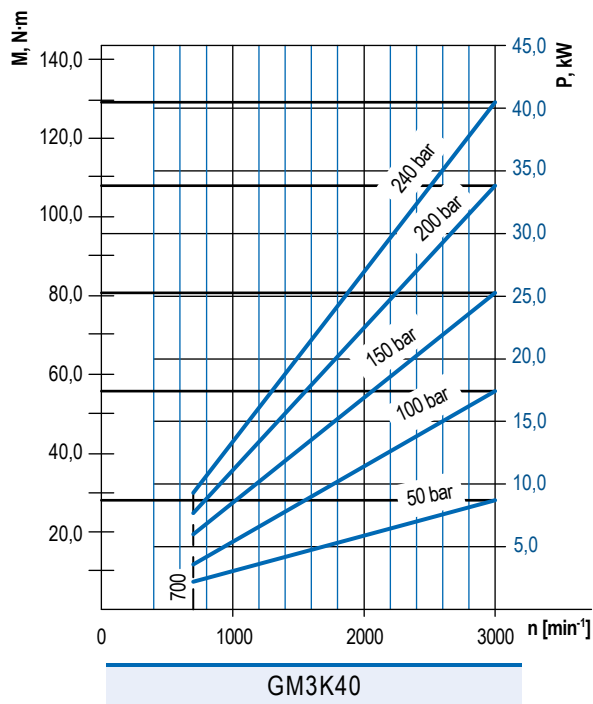
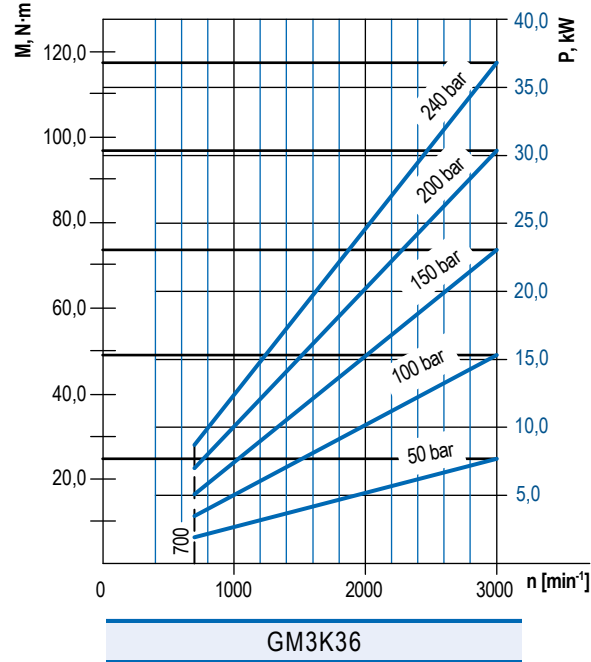
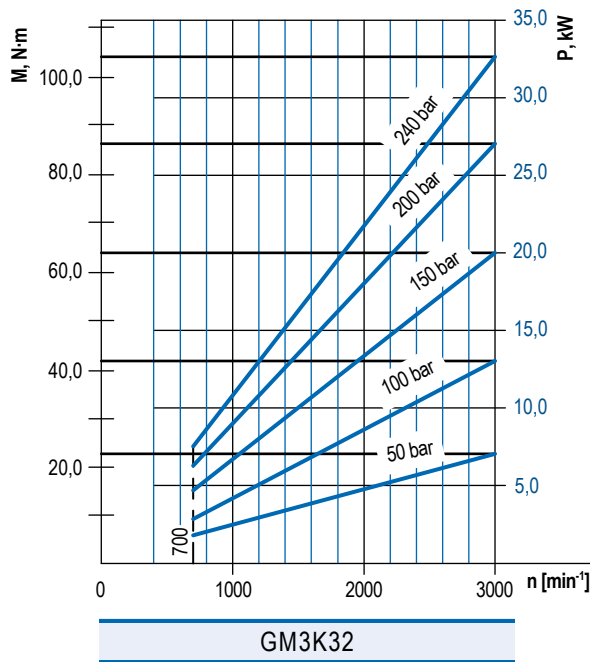
GM3K25



GM3K28

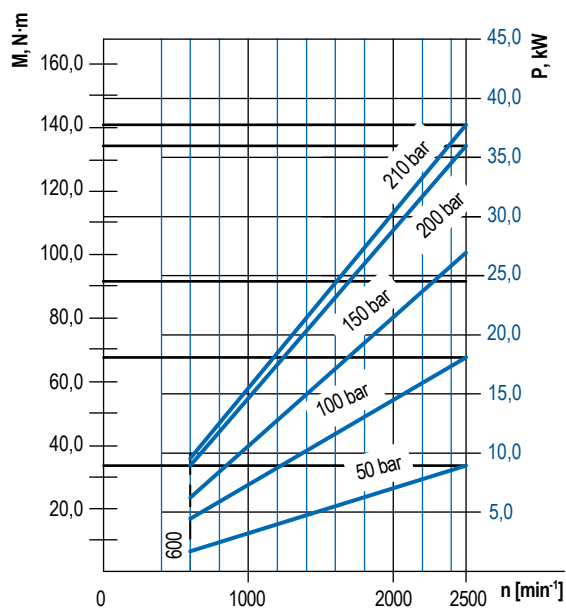
PERFORMANCE CURVES

Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.

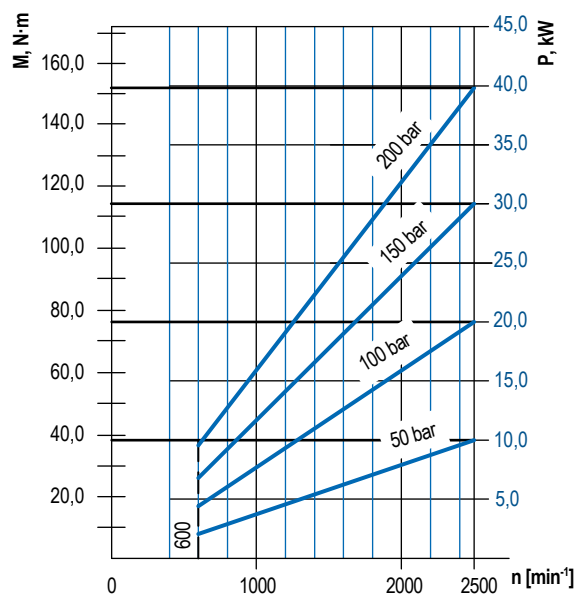


PERFORMANCE CURVES

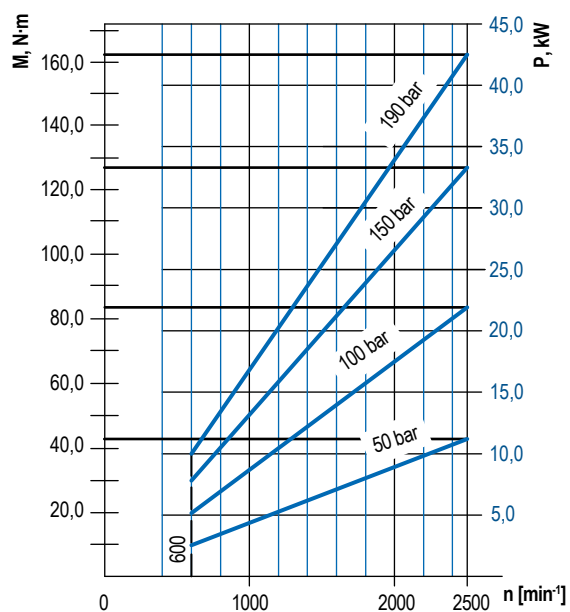
Performance curves carried out with oil viscosity at 16 mm²/sec and oil temperature at 60°C.



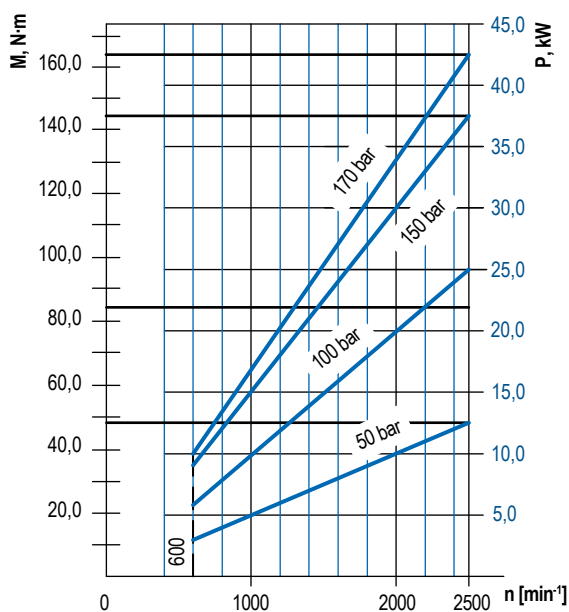
GM3K50



GM3K56

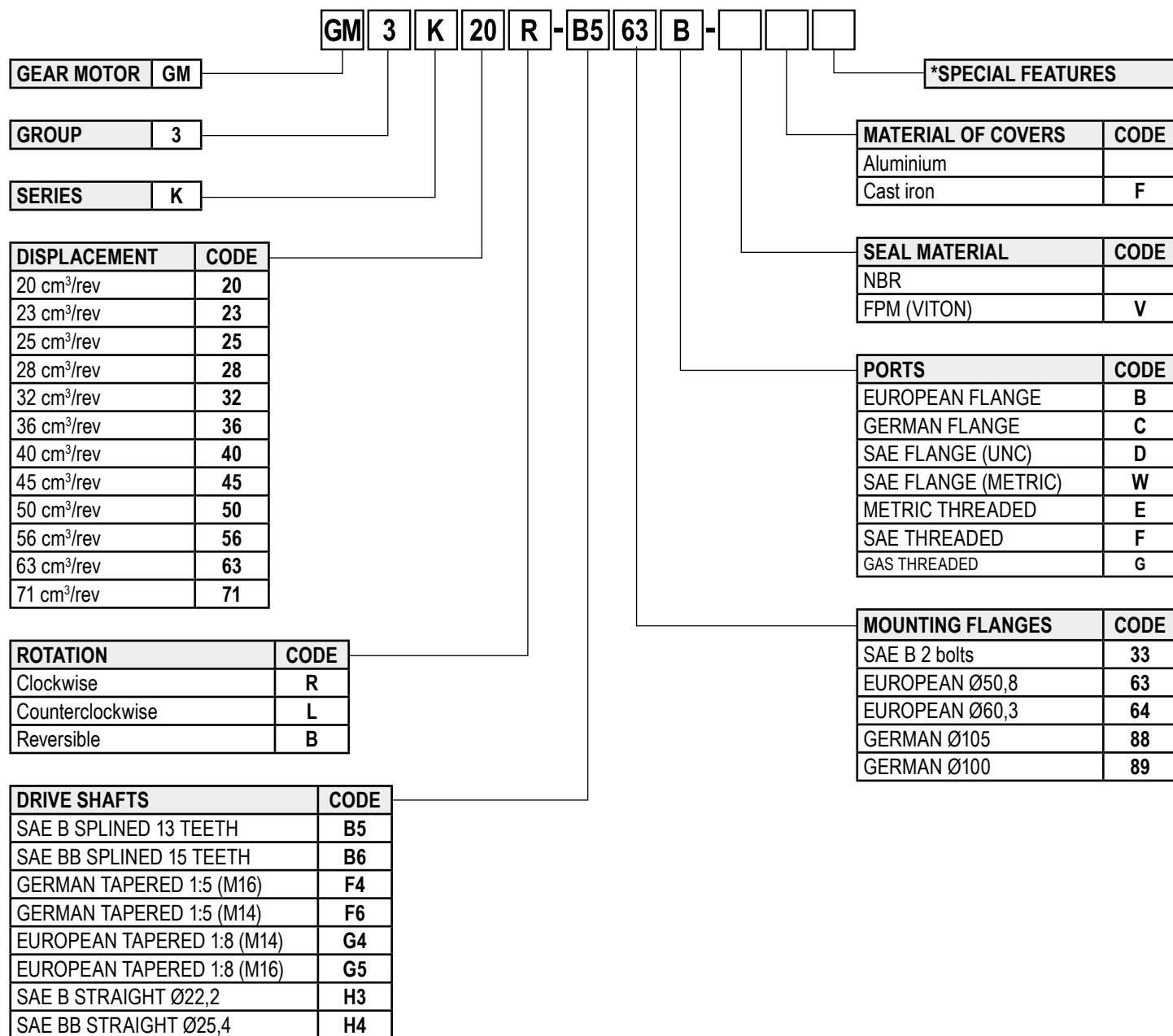


GM3K63



GM3K71

ORDERING INFORMATION



*Special features assigned if necessary

Before mounting a gear pump (motor), please, check the hydraulic system (all its components). Early pump (motor) breakdown may occur due to non-observance of usage rules and the condition of the system.

WHEN INSTALLING YOU SHOULD KEEP THE NEXT REQUIREMENTS:

1. Check the rotation of the pump (motor) to be consistent with the drive shaft one. To define the rotation direction, check the drive shaft: right - clockwise, left - counterclockwise.
2. The pump (motor) is mounted with the screws (nuts), avoiding warp, which can cause radial and axial loads. The screws should be fixed with lock washers.
3. When mounting corners, nipples and others clean the line and o-rings. Grease the o-rings. Inlet and delivery lines should be adjusted with the help of flange.
4. Check the fluid for contamination. If necessary change it. When changing the fluid, change the filter element and the tank valve.
5. After installation it's recommended to fulfill pump (motor) run in at low loads. Check all the components of hydraulic system.

NOTES

[illegible]

[illegible]

NOTES

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HS-GPK-07/022025