GP1

Displacement up to 9.8 cm³ (0.55 inch³) • $p_{max\ cont.}$ 250 bar (3600 PSI) • Speed from 750 to 3500 RPM

Technical Features

› Operating pressure 250 bar, Peak pressure 280 bar
› High-strength quality aluminum alloys pump with axial play compensation
› Low noise level in whole operating range
› High operational reliability and service life for 3000 operation hours
› High volumetric efficiency up to 98 %
› International standard flanges acc.to SAE, ISO, DIN

Symbol

Technical Data

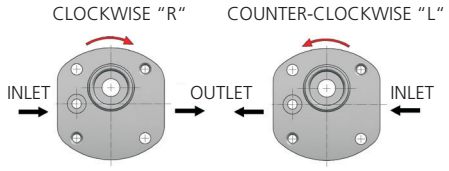
Nominal Size Parameters		Symbol	Unit	Displacement													
			Code	1	1,25	1,6	2	2,5	3,15	3,65	4,2	5	5,7	6,1	7,4	8	8,5	9,8
Actual displacement		V_g	[cm³]	1.0	1.25	1.6	2.0	2.5	3.15	3.65	4.2	5.0	5.7	6.1	7.4	8.0	8.5	9.8
			[in³]	0.061	0.076	0.098	0.122	0.153	0.192	0.223	0.256	0.305	0.348	0.372	0.452	0.488	0.519	0.598
Rotation speed	nominal	n_n	[min⁻¹]	1500														
	minimum	n_{min}	[min⁻¹]	750														
	maximum	n_{max}	[min⁻¹]	3500								3000		2500		2000		
Pressure at inlet	minimum	p_{1min}	[bar]	-0.2 (-2.9 PSI)														
	maximum	p_{1max}	[bar]	0.5 (7.3 PSI)														
Pressure at outlet	max. continuous	p_{2n}	[bar]	250									200		180	150		120
			[PSI]	3625									2900		2610	2175		1740
	maximum	p_{2max}	[bar]	270								260	220		190	155		130
			[PSI]	3915								3770	3190		2755	2248		1885
	peak	p_3	[bar]	280								270	230		200	160		140
			[PSI]	4060								3915	3335		2900	2320		2030
Nominal flow rate (min.) at n_n and p_{2n}		Q_n	[l·min⁻¹]	1.4	1.74	2.23	2.82	3.53	4.44	5.15	5.92	7.05	8.12	8.69	10.55	11.4	12.11	13.97
			[GPM]	0.37	0.46	0.59	0.74	0.93	1.17	1.36	1.56	1.86	2.15	2.30	2.79	3.01	3.20	3.69
Maximum flow rate at n_{max} and p_{2max}		Q_{max}	[l·min⁻¹]	3.26	4.07	5.21	6.58	8.23	10.36	12.01	13.82	14.1	16.25	14.49	17.58	15.2	16.15	18.62
			[GPM]	0.86	1.08	1.38	1.74	2.17	2.74	3.17	3.65	3.72	4.29	3.83	4.64	4.02	4.27	4.92
Nominal input power (max.) at n_n and p_{2n}		P_n	[kW]	0.73	0.91	1.16	1.47	1.84	2.31	2.68	3.08	3.67	3.38	3.62	3.96	3.56	3.78	3.49
Maximum input power at n_{max} and p_{2max}		P_{max}	[kW]	1.83	2.29	2.93	3.70	4.63	5.83	6.76	7.77	7.64	7.45	6.64	6.96	4.91	5.22	5.04

1) **p_{2n}** maximum continuous pressure - maximum working pressure, at which the pump can be operated without time limitation.
2) **p_{2max}** maximum pressure - maximum pressure permissible for a short time, max. 20 s.
3) **p_3** peak pressure - short-time pressure (fractions of a second) arising in case of a sudden change of the operating mode; any excess of this pressure during operation is impermissible.

Gear Pump / Size		GP1 - 1,0 ...9,8 ccm
Volumetric efficiency	%	92 ÷ 98
Mechanical efficiency	%	85
Fluid temperature range (NBR)	°C (°F)	-25 ... 80 (-13 ... 176)
Viscosity range	mm²/s (SUS)	16 ... 200 (75 ... 927), 1200 (5849) for cold start
Hydraulic fluid		Hydraulic oils of power classes (HL, HLP) to DIN 51524
Max. degree of fluid contamination for $p_2 \leq 200$ bar		Class 21/18/15 acc. to ISO 4406
Max. degree of fluid contamination for $p_2 \geq 200$ bar		Class 20/17/14 acc. to ISO 4406

Direction of rotation

Determine direction of rotation by looking at the drive shaft.
The pump can be used only in the specified direction of rotation.



Ordering Code

GP1 - ☐ ☐ - ☐ ☐ - ☐ ☐ ☐ - **N9** ☐

Gear pump serie 1

Displacement
1
1,25
1,6
2
2,5
3,15
3,65
4,2
5
5,7
6,1
7,4
8
8,5
9,8

Direction of rotation
Counter clockwise L
Clockwise R

Flange design
Customized
AC
AE
AG
RB
SA
*G

Ports orientation
S
A
C

Shaft Type
Customized
CB
CC
CD
DE
KC
KD
VE
*G

Inlet / Outlet ports
GBGB
GBPA
GCGB
GCGC
PAPA
UCUB
UDUC
HDHD

Seals
NBR

Shaft seal
No designation standard
04 without shaft seal

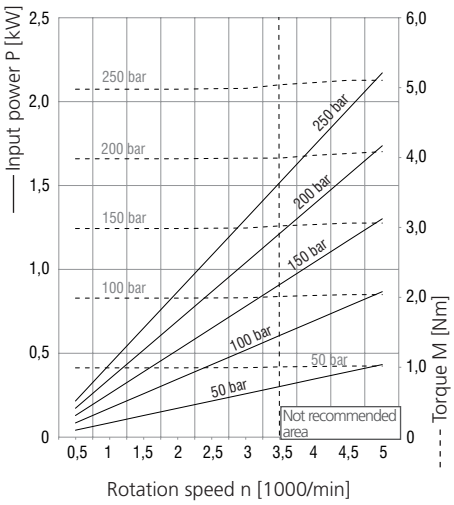
Combination of Flanges and Shafts

Code	Drive Shafts	Flange Design	RB	SA	AC	AE
CB, CC			●		●	
CD					●	●
KC, KD					●	●
VE				●		
DE					●	

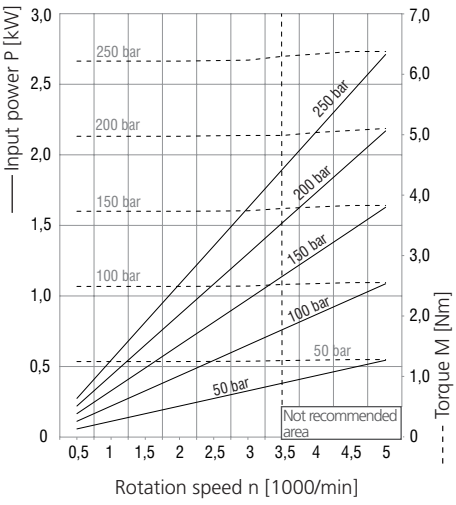
Ports orientation

S		A		C	

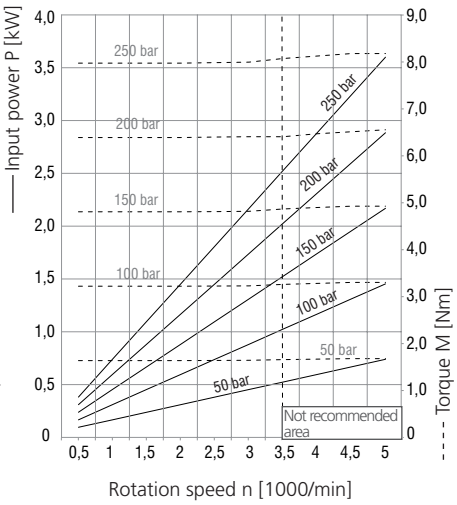
1 ccm



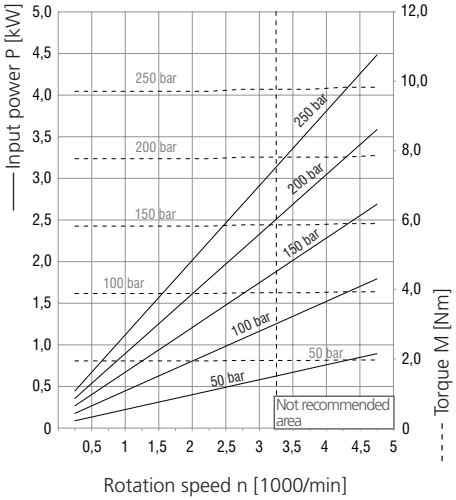
1,25 ccm



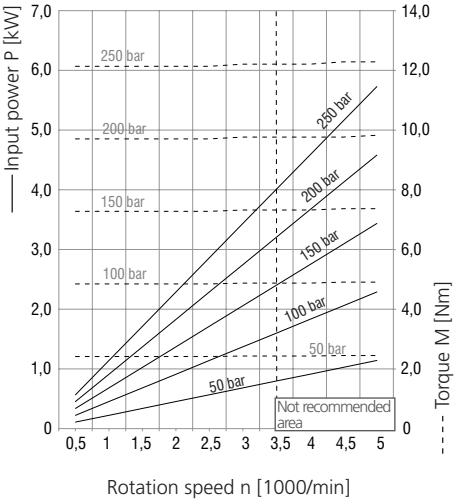
1,6 ccm



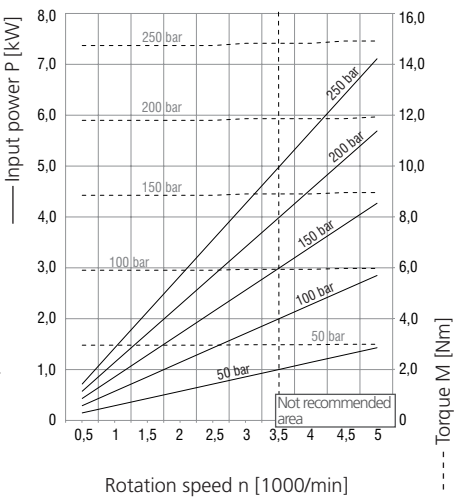
2 ccm



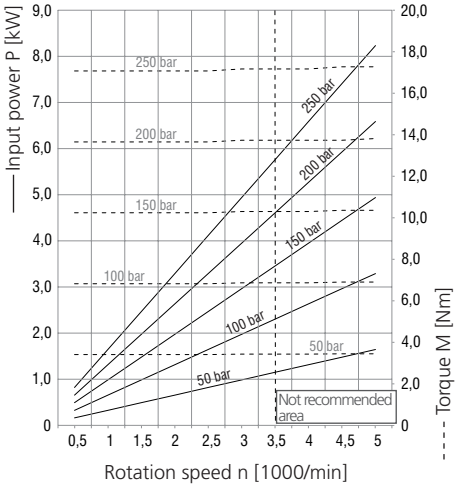
2,5 ccm



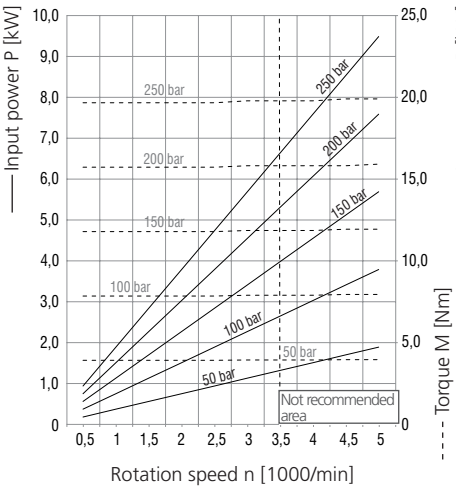
3,15 ccm



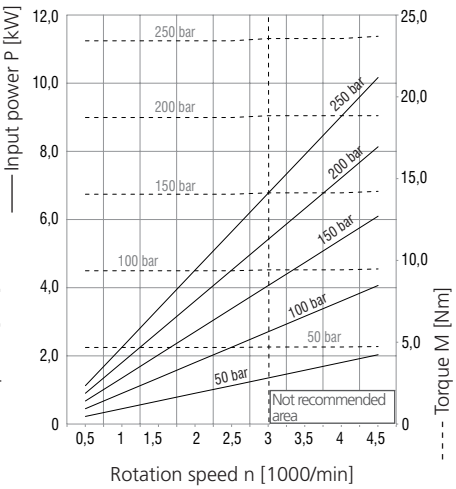
3,65 ccm



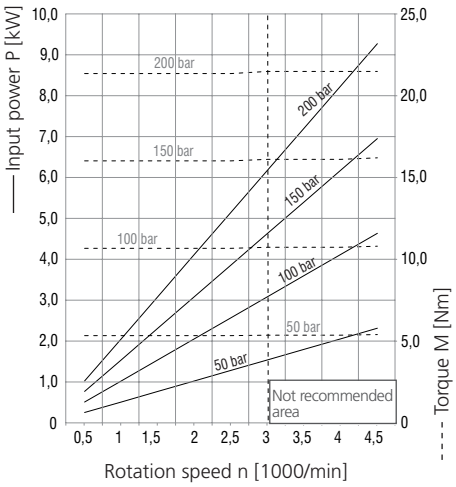
4,2 ccm



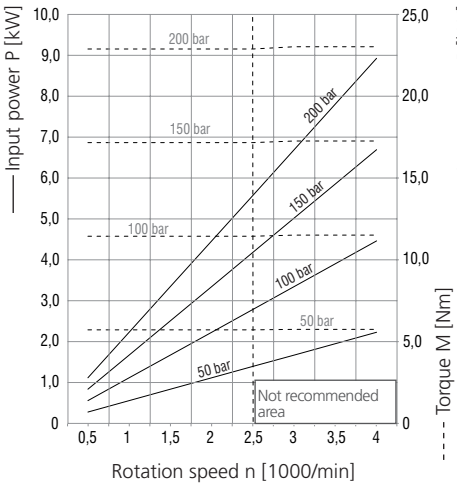
5 ccm



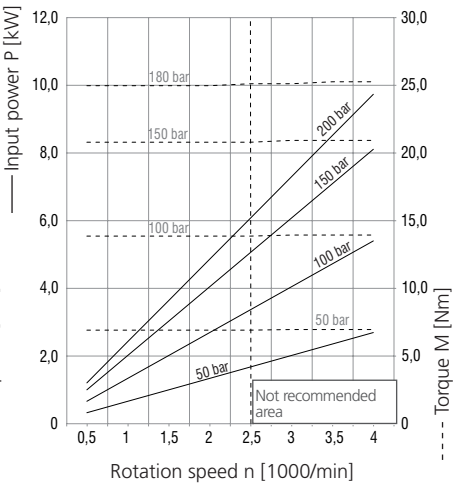
5,7 ccm



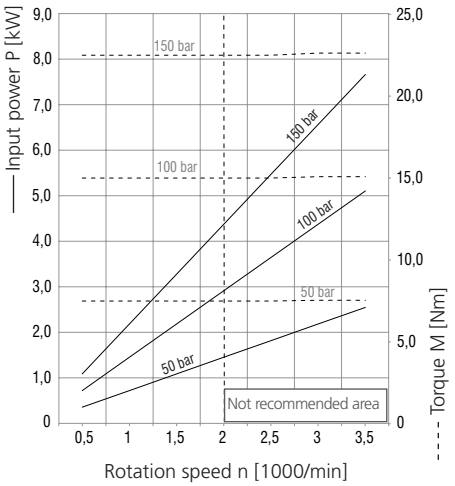
6,1 ccm



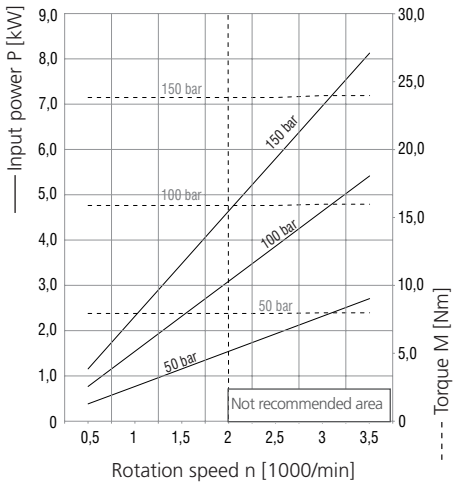
7,4 ccm



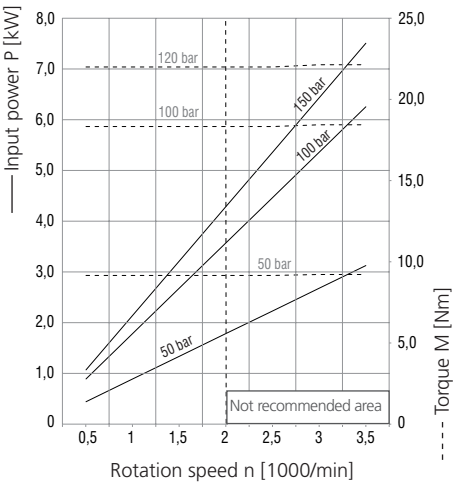
8 ccm



8,5 ccm



9,8 ccm



Ordering Code - Multiple Version

GP1 - 3,15 / 3,15 R - SA VE - S GBGB / GBGB - N9 04

Gear pump serie 1

Displacement
Front pump (shaft side)
Rear pump

Direction of rotation
Counter clockwise L
Clockwise R

Flange design
Customized
AC
AE
AG
RB
SA
*G

CB
CC
CD
DE
KC
KD
VE
*G

Shaft Type
Customized
S
C

Ports orientation
Use blind plug for not used suction ports

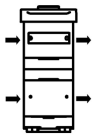
Inlet / Outlet ports
Front pump (shaft side) - inlet, outlet port
Rear pump - inlet, outlet port.

Seals
NBR

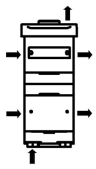
Shaft seal
No designation standard
04 without shaft seal

Ports orientation

S

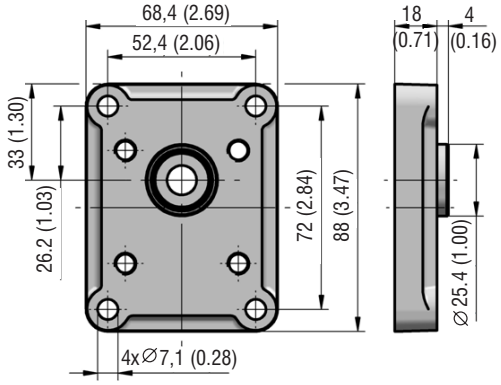


C

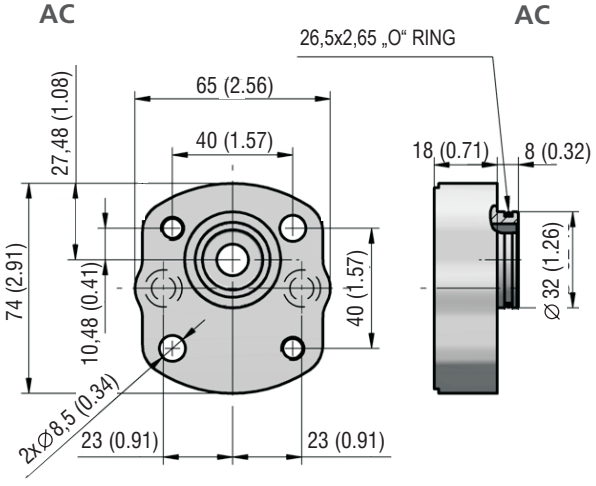


Flange design in millimeters (inches)

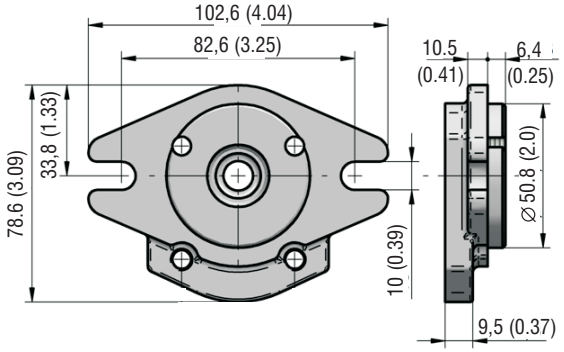
RB



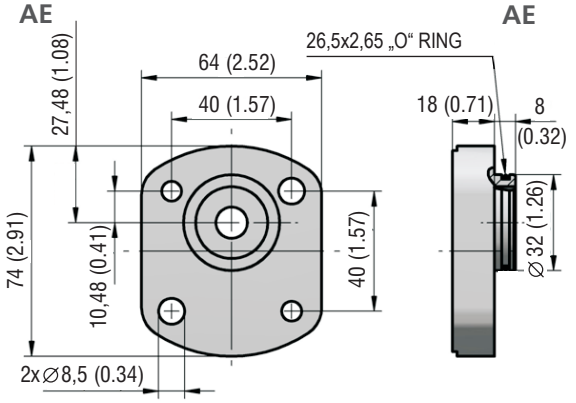
AC



SA

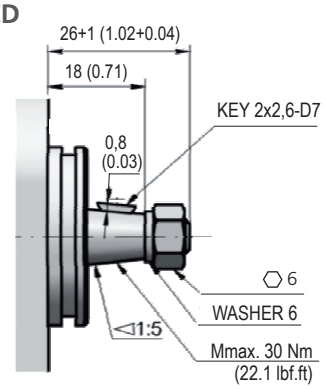


AE

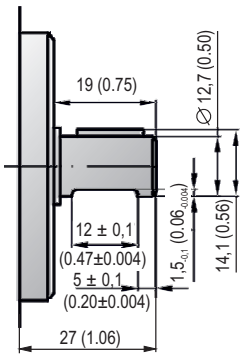


Shaft design in millimeters (inches)

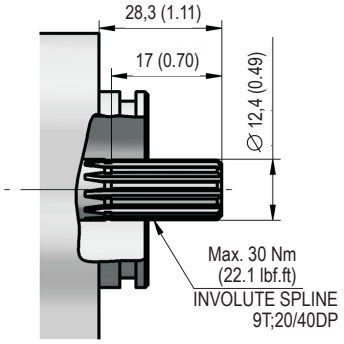
CD



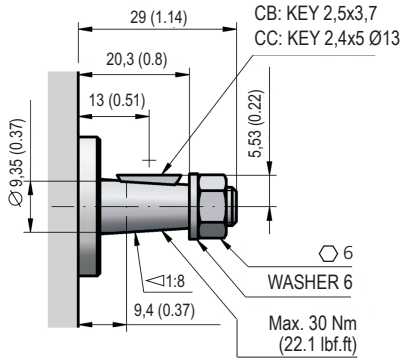
VE



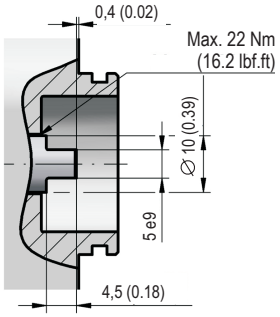
DE



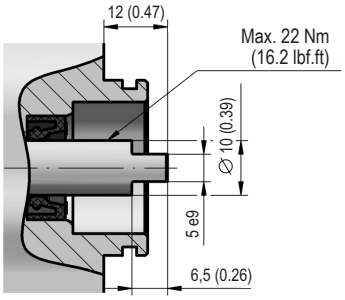
CB, CC



KC

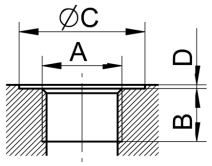


KD



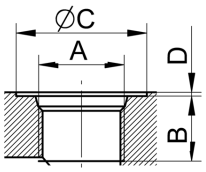
Ports design in millimeters (inches)

BSPP pipe thread according to 228-1



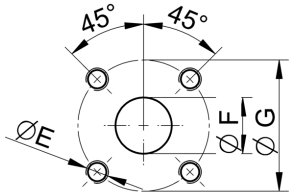
Displacement [cm³(in³)]	Inlet Code	Dimension				Outlet Code
		A	B	C	D	
1.0-2.5 (0.061-0.153)	GB	G 3/8	14 (0.55)	24 (0.94)	1 (0.04)	GB
3.15-9.8 (0.192-0.598)	GC	G 1/2		34 (1.34)		GB

UNF thread according to SAE



Displacement [cm³(in³)]	Inlet Code	Dimension				Outlet Code	Dimension			
		A	B	C	D		A	B	C	D
1.0-6.1 (0.192-0.372)	UC	3/4-16UNF	13 (0.51)	24.6 (0.94)	1(0.04)	UB	9/16-18UNF	13 (0.51)	24.6 (0.94)	1(0.04)
7.4-9.8 (0.452-0.598)	UD	7/8-14UNF	16 (0.63)	34 (1.34)		UC	3/4-16UNF	13 (0.51)	24.6 (0.94)	

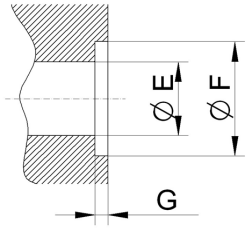
Flanged fittings according to DIN 8901/8902



Displacement [cm³(in³)]	Inlet Code	Dimension			Outlet Code
	E	E	F	G	
ALL	HD	M6	12 (0.47)	30 (1.18)	HD

Ports design in millimeters (inches)

Inlet / Outlet in flange

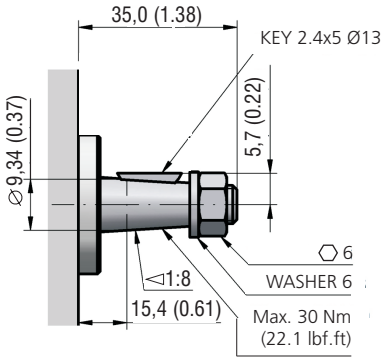


Code	Dimension		
	E	F	G
PA	8 (0.31)	12.4 (0.49)	1.4 (0.06)

GP1 Pumps - special design in millimeters (inches)

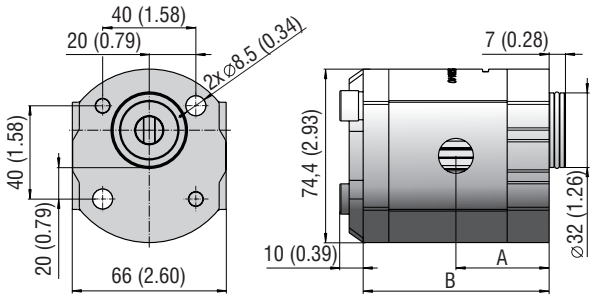
Single pump GP1-L-AGCG-AGBPA-N914**
Double pump GP1-/**L-AGCG-CGBPA/GBGBGB-N914**

914 - Special design for SMA 05 hydraulic units:
Flange AE with pressure port PA
Shaft prolonged



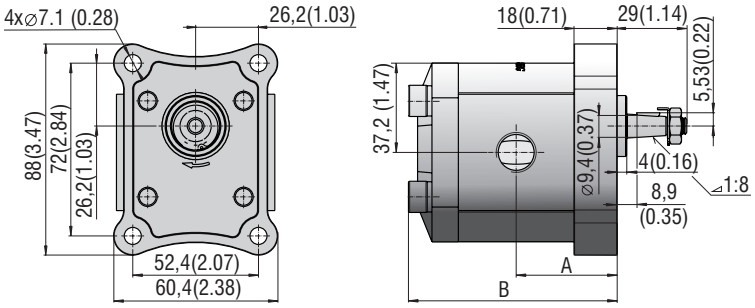
GP1 Pumps - basic design in millimeters (inches)

GP1-*R(L)-ACKC-SGBGB-N



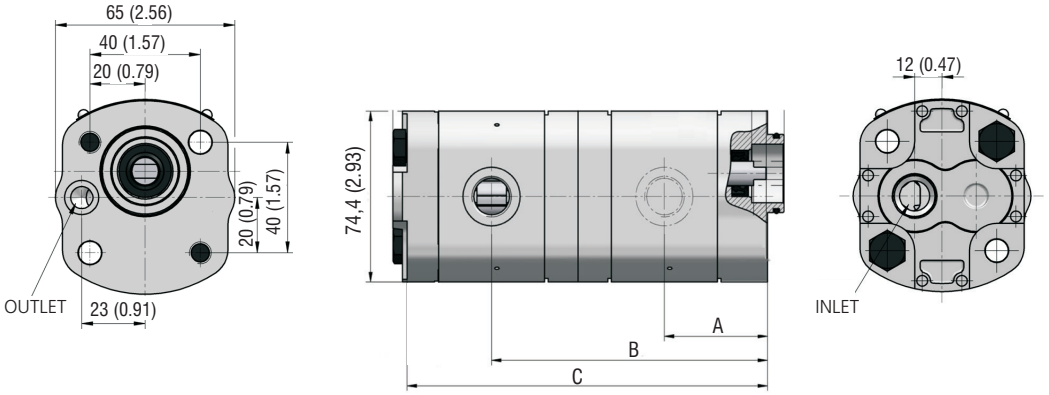
Displacement [cm³(in³)/rev]	A	B	Displacement [cm³(in³)/rev]	A	B
1 (0.06)	39.1 (1.54)	71 (2.79)	5 (0.31)	47.1 (1.85)	87.2 (3.43)
1.25 (0.08)	39.5 (1.56)	72 (2.83)	5.7 (0.35)	48.5 (1.91)	90.1 (3.54)
1.6 (0.10)	40.3 (1.59)	73.6 (2.87)	6.1 (0.37)	49.4 (1.95)	91.8 (3.58)
2 (0.12)	41.1 (1.62)	75.2 (2.95)	7.4 (0.45)	52.1 (2.05)	97.2 (3.82)
2.5 (0.15)	42.1 (1.66)	77.2 (3.03)	8 (0.49)	53.4 (2.10)	99.7 (3.89)
3.15 (0.19)	43.5 (1.71)	79.8 (3.11)	8.5 (0.52)	54.4 (2.14)	101.7 (3.98)
3.65 (0.22)	44.4 (1.75)	81.9 (3.19)	9.8 (0.60)	57 (2.24)	107 (4.21)
4.2 (0.26)	45.5 (1.79)	84.1 (3.31)			

GP1-*R(L)-RBCC-SGBGB-N



Displacement [cm³(in³)/rev]	A	B	Displacement [cm³(in³)/rev]	A	B
1 (0.06)	39.1 (1.54)	81 (3.19)	5 (0.31)	47.1 (1.85)	97.2 (3.83)
1.25 (0.08)	39.5 (1.56)	82 (3.23)	5.7 (0.35)	48.5 (1.91)	100.1 (3.94)
1.6 (0.10)	40.3 (1.59)	83.6 (3.29)	6.1 (0.37)	49.4 (1.95)	101.8 (4.01)
2 (0.12)	41.1 (1.62)	85.2 (3.35)	7.4 (0.45)	52.1 (2.05)	107.2 (4.22)
2.5 (0.15)	42.1 (1.66)	87.2 (3.43)	8 (0.49)	53.4 (2.10)	109.7 (4.32)
3.15 (0.19)	43.5 (1.71)	89.8 (3.54)	8.5 (0.52)	54.4 (2.14)	111.7 (4.40)
3.65 (0.22)	44.4 (1.75)	91.9 (3.62)	9.8 (0.60)	57 (2.24)	117 (4.61)
4.2 (0.26)	45.5 (1.79)	94.1 (3.71)			

GP1-*/*L-ACKA-CGBPA/GBGBGB-N



Displacement [cm³(in³)/rev]	A	B	C	Displacement [cm³(in³)/rev]	A	B	C
1.6 / 5 (0.10 / 0.31)	40.3 (1.59)	128.7 (5.07)	168.8 (6.65)	2.5 / 5 (0.15 / 0.31)	42.1 (1.66)	132.3 (5.21)	172.4 (6.79)
1.6 / 5.7 (0.10 / 0.35)	40.3 (1.59)	130.1 (5.12)	171.7 (6.76)	3.15 / 4.2 (0.19 / 0.26)	43.5 (1.71)	133.3 (5.25)	171.9 (6.77)
1.6 / 6.1 (0.10 / 0.37)	40.3 (1.59)	131 (5.16)	173.7 (6.84)	6.1 / 1.6 (0.37 / 0.10)	49.4 (1.95)	140.1 (5.52)	173.4 (6.83)
2.5 / 4.2 (0.15 / 0.26)	42.1 (1.66)	130.7 (5.15)	169.3 (6.67)				