

Gear Pump – Lightline Version

GP3L

Displacement up to 71 cm³ (4.30 inch³) • p_{max} 280 bar (4060 PSI) • Speed from 400 to 3500 RPM

Technical Features



- › Operating pressure 250 bar, Peak pressure 280 bar
- › Cost effective design for circuits with a lower operating pressure
- › High quality aluminum alloys pump with axial play compensation
- › Service life for 1800 operation hours
- › Volumetric efficiency up to 96%
- › International standard flanges acc.to SAE, ISO, DIN, GOST

Symbol	R, L	B

Technical Data

Nominal Size Parameters		Symbol	Unit	Displacement										
			[cm³]	20	22	26	33	39	46	50	52	55	63	71
Actual displacement		V _g	[in³]	1.22	1.34	1.59	2.01	2.38	2.81	3.05	3.17	3.36	3.84	4.33
Rotation speed	nominal	n _n	[min ⁻¹]	1500										
	minimum	n _{min}	[min ⁻¹]	600			500					400		
	maximum	n _{max}	[min ⁻¹]	3500		3000						2800		2500
Pressure at inlet*	minimum	p _{1min}	[bar]	-0,3 (-4.4 PSI)										
	maximum	p _{1max}	[bar]	0,5 (7.3 PSI)										
Pressure at outlet**	max. continuous	p _{2n}	[bar]	250			230			220		200		180
			[PSI]	3626			3336			3191		2901		2611
	maximum	p _{2max}	[bar]	265			250			240		230		200
			[PSI]	3844			3626			3481		3336		2901
	peak	p ₃	[bar]	280			270			260		250		220
			[PSI]	4061			3916			3771		3626		3191
Weight		m	[kg]											
			[lbs]											

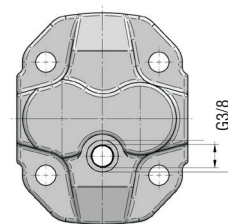
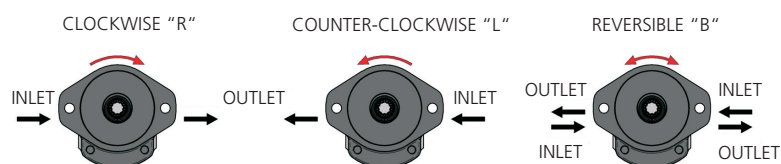
- 1) *Inlet pressure in the reversible design can be up to $p_1 = p_{2n} - 70$ bar max. External drainage must be used in case of the reversible design.
- 2) **Outlet pressure in the reversible design is 10% lower than shown in the table (depending on operating conditions).
- 3) p_{2n} maximum continuous pressure - maximum working pressure, at which the pump can be operated without time limitation.
- 4) p_{2max} maximum pressure - maximum pressure permissible for a short time, max. 20 s.
- 5) 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		GF3 - 20 ...71 ccm
Volumetric efficiency	%	89 ÷ 96
Mechanical efficiency	%	85
Fluid temperature range (NBR)	°C (°F)	-20...80 (-4...176)
Fluid temperature range (FPM)	°C (°F)	-20...120 (-4...248)
Viscosity range	mm ² /s (SUS)	20 ...80 (97 ...390), 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, reversible design

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

The pumps B codes (Bi-directional) have an external drainage with an orifice located in the cover or the flange.



Ordering Code

GP3 L -		-	-	-	-	-	-	-	-
Gear pump serie 3									
Lightline									
		46							
	20	50							
	22	52							
	26	55							
	33	63							
Displacement		39	71						
Direction of rotation									
Counter clockwise			L						
Clockwise			R						
Bi-directional			B						
Flange design				RL		CL			
				RN		CM			
				SC		DN			
						DP			
						VO			
						VP			
Shaft Type									
						S			
						R			
						C			
							MI		
							MJ		
							ML		
							MM		
							MP		
							GC		
							GD	HI	KC
							GE	HJ	KD
							GF	HK	KE
							UD	HL	KF
							UE	AB	SI
							UH	AC	SJ
							UI	AD	SK
							UJ	AE	SL
									Inlet / Outlet ports
									Ports orientation

Shaft seal
 No designation standard
 004 without shaft seal

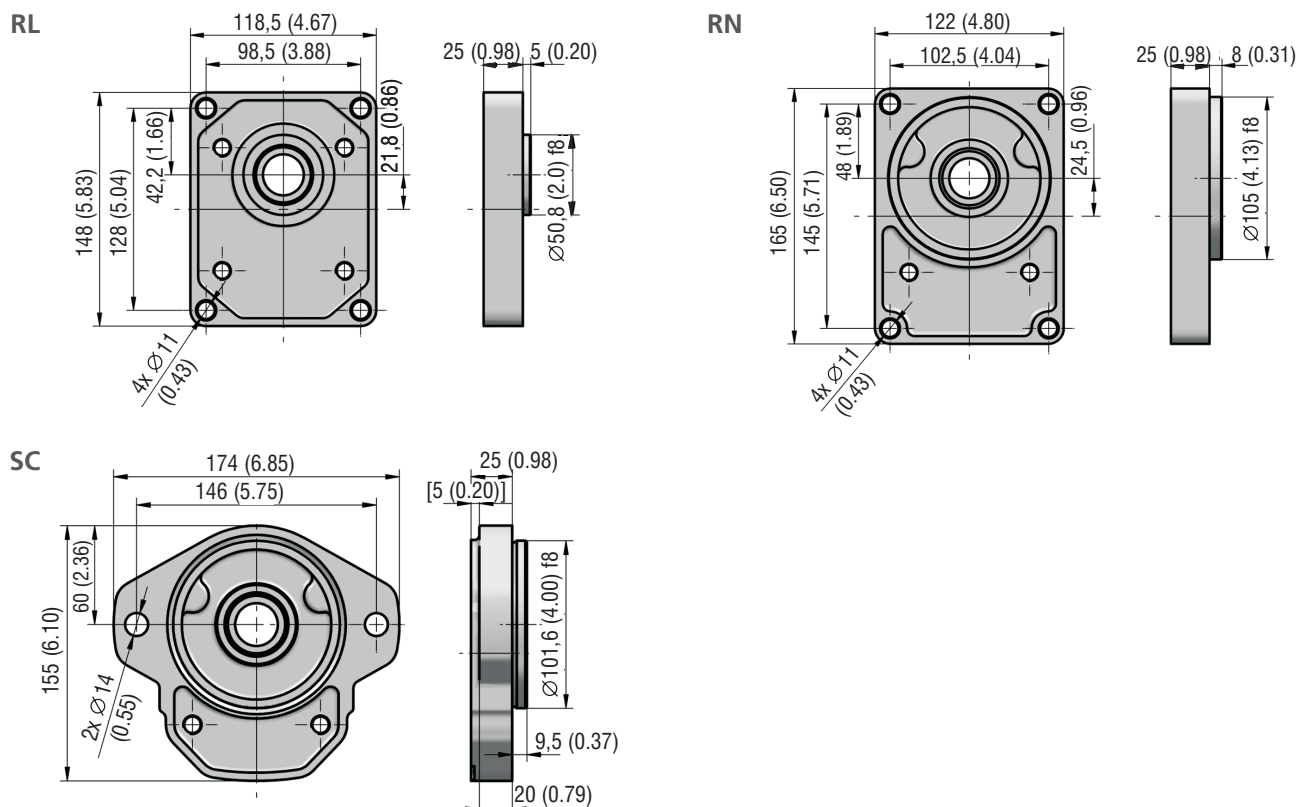
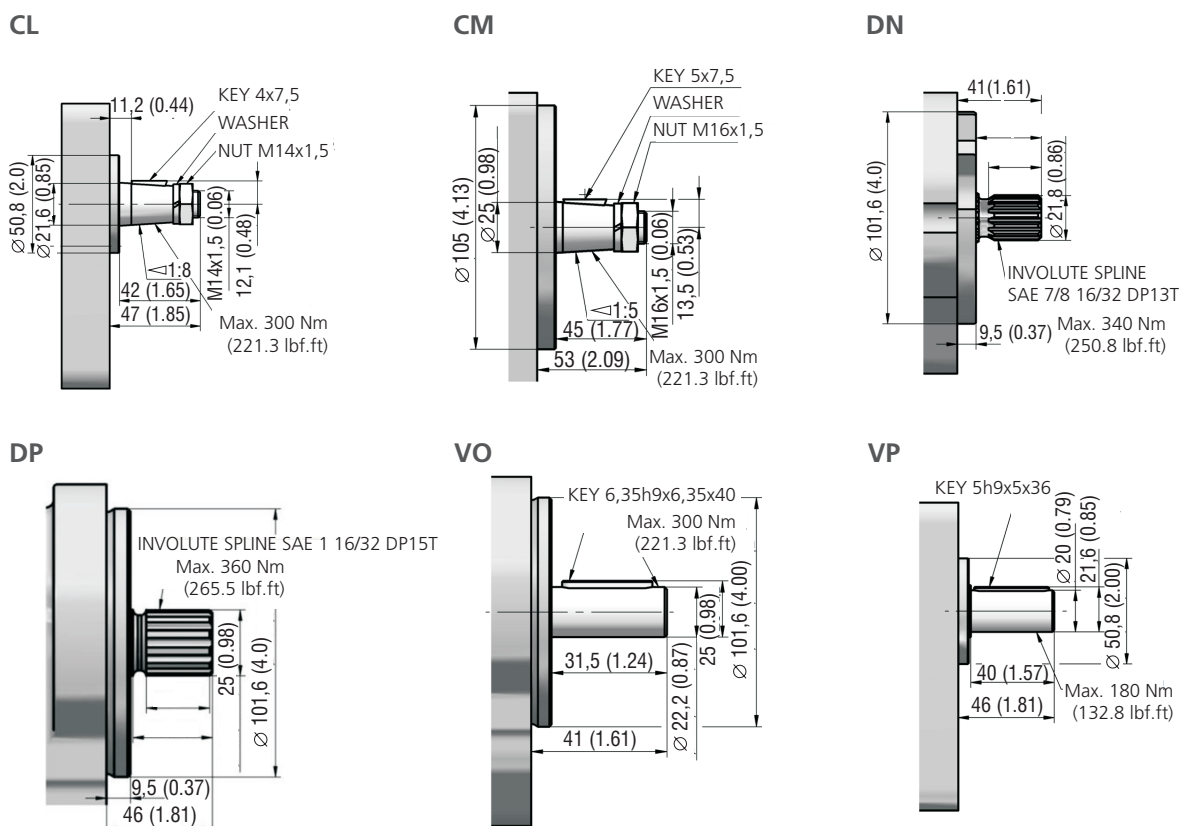
Seals
 NBR
 FPM (Viton)
 HNBR

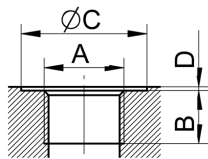
Combination of Flanges and Shafts

Flange Design	RL	RN	SC
Shaft Type			
CL	●		
CM		●	
DN			●
DP			●
VO			●
VP	●		

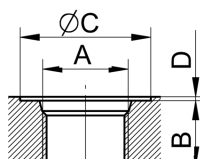
Port orientation

S		R		C	
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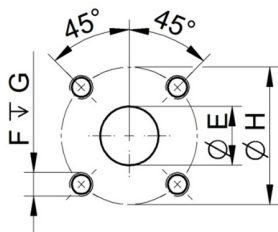
Flange design in millimeters (inches)

Shaft design in millimeters (inches)


Ports design in millimeters (inches)
BSPP pipe thread according to 228-1


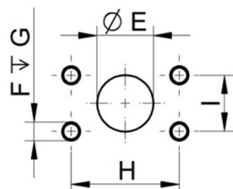
Displacement [cm³(in³)]	Inlet Code	Dimension				Outlet Code	Dimension			
		A	B	C	D		A	B	C	D
20 - 22 (1.22 - 1.34) including	GD	G 3/4	16 (0.63)	39 (1.54)	1 (0.04)	GD	G 3/4	16 (0.63)	39 (1.54)	1 (0.04)
26 - 39 (1.59 - 2.38) including	GE	G 1	18 (0.71)	45 (1.77)		GE	G 1	18 (0.71)	45 (1.77)	
46 - 63 (2.81 - 3.84) including	GF	G 1 1/4		57 (2.24)						
71 (4.33)	GH	G 1 1/2	24 (1.46)	60 (3.66)		GF	G 1 1/4			

UNF thread according to SAE


Displacement [cm³(in³)]	Inlet Code	Dimension				Outlet Code	Dimension			
		A	B	C	D		A	B	C	D
20 - 33 (1.22 - 2.01) including	UH	1-5/16-12UNF	23 (0.91)	49 (1.93)	1 (0.04)	UE	1-1/16-12UNF	19 (0.75)	41 (1.61)	1 (0.04)
39 - 52 (2.38 - 3.17) including	UI	1-5/8-12UNF 2B								
55 - 71 (3.36 - 4.33) including	UJ	1-7/8-12UNF				UH	1-5/16-12UNF			

Flanged fittings according to DIN 8901/8902


Displacement [cm ³ (in ³)]	Inlet Code	Dimension				Outlet Code	Dimension			
		E	F	G	H		E	F	G	H
ALL	HK	25 (0.98)	M8	16 (0.63)	55 (2.17)	HJ	18 (0.71)	M8		55 (2.17)

Flanged fittings according to SAE, UNC thread


Displacement [cm ³ (in ³)]	Inlet Code	Dimension					Outlet Code	Dimension				
		E	F	G	H	I		E	F	G	H	I
20 - 52 (1.22 - 3.17) including	AC	25,4 (1.00)	3/8-16-UNC	22 (0.87)	52,4 (2.06)	26,2 (1.03)	AB	19 (0.75)	3/8-16-UNC	22 (0.87)	47,6 (1.87)	22,2 (0.87)
55 - 71 (3.36 - 4.33) including	AD	30,5 (1.20)	7/16-14-UNC		58,7 (2.31)	30,2 (1.19)	AC	25,4 (1.00)			52,4 (2.06)	26,2 (1.03)

GPP Pumps - basic design in millimeters (inches)
GP3L-*R-RLCL-SG*G*-N

Displacement [cm ³ (in ³)/rev]	A	B	Displacement [cm ³ (in ³)/rev]	A	B
20 (1.22)	63 (2.48)	128 (5.04)	50 (3.05)	77 (3.03)	156 (6.14)
22 (1.34)	64 (2.52)	130 (5.12)	52 (3.17)	78 (3.07)	158 (6.22)
26 (1.59)	65 (2.56)	133(5.24)	55 (3.36)	79 (3.11)	160 (6.30)
33 (2.01)	68 (2.68)	139 (5.47)	63 (3.84)	83 (3.27)	168 (6.61)
39 (2.38)	72 (2.83)	146 (5.75)	71 (4.33)	86 (3.39)	175 (6.89)
46 (2.81)	75 (2.95)	152 (5.98)			

