

Gear Pump – Lightline Version

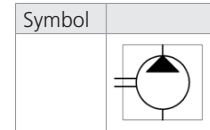
GPOL

Displacement up to 2 cm³ (0.12 inch³) • p_{max} 250 bar (3600 PSI) • Speed from 500 to 7000 RPM



Technical Features

- › Operating pressure 200 bar, Peak pressure 250 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



Technical Data

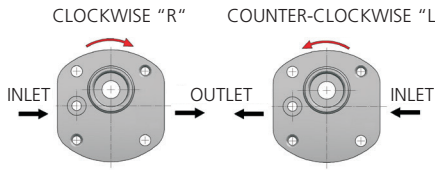
| Nominal Size Parameters | Symbol | Unit | Displacement | | | | | | | | | | | | |
|-------------------------|-----------------|--------------------|----------------------|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| | | | [cm ³] | 0,19 | 0,26 | 0,38 | 0,50 | 0,65 | 0,75 | 0,88 | 1,00 | 1,25 | 1,50 | 1,75 | 2,00 |
| Actual displacement | V _g | [in ³] | 0.011 | 0.016 | 0.023 | 0.031 | 0.040 | 0.046 | 0.054 | 0.061 | 0.076 | 0.092 | 0.107 | 0.122 | |
| Rotation speed | nominal | n _n | [min ⁻¹] | 1500 | | | | | | | | | | | |
| | minimum | n _{min} | [min ⁻¹] | 1000 | | | | | | 850 | 700 | 600 | | 500 | |
| | maximum | n _{max} | [min ⁻¹] | 7000 | | | | | | 6000 | 5000 | 4000 | | 3000 | |
| 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] | 200 | | | | | | | | 180 | | 160 | |
| | | | [PSI] | 2901 | | | | | | | | 2611 | | 2321 | |
| | maximum | p _{2max} | [bar] | 230 | | | | | | | | 210 | | 190 | |
| | | | [PSI] | 3625 | | | | | | | | 3336 | | 2756 | |
| | peak | p ₃ | [bar] | 250 | | | | | | | | 230 | | 210 | |
| | | | [PSI] | 3626 | | | | | | | | 3625 | | 3336 | |
| Weight | m | [kg] | 0,37 | 0,38 | 0,38 | 0,38 | 0,39 | 0,39 | 0,40 | 0,40 | 0,40 | 0,41 | 0,41 | 0,43 | |
| | | [lbs] | 0.82 | 0.84 | 0.84 | 0.84 | 0.86 | 0.86 | 0.88 | 0.88 | 0.88 | 0.88 | 0.90 | 0.90 | 0.95 |

- 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) **p₃** 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 | | GPOL - 0,19 ...2,0 ccm |
|---|--------------------------|--|
| Volumetric efficiency | % | 89 ÷ 96 |
| Mechanical efficiency | % | 85 |
| Fluid temperature range (NBR) | °C (°F) | -20...80 (-4...176) |
| 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 ≤ 200 bar | | Class 21/18/15 acc. to ISO 4406 |
| Max. degree of fluid contamination for p ₂ ≥ 200 bar | | Class 20/17/14 acc. to ISO 4406 |

Direction of rotation, reversible design

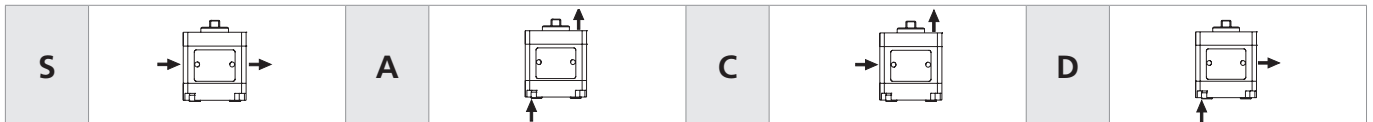
Determine direction of rotation by looking at the drive shaft.
The pump can be used only in the specified direction of rotation.



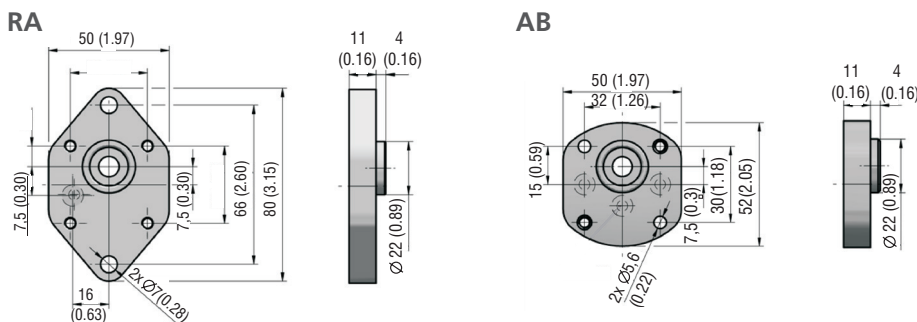
Ordering Code

| | | | | | | | | | | | | | | |
|--|-------|---|------|---|------|---|------|---|------|---|------|---|------|--------------------|
| Gear pump serie 0 | GPO L | - | | - | | - | | - | | - | | - | | |
| Lightline | | | 0,19 | | 0,26 | | 0,38 | | 0,50 | | 0,65 | | 0,75 | |
| Displacement | | | 0,88 | | 1,00 | | 1,25 | | 1,50 | | 1,75 | | 2,00 | |
| Direction of rotation | | | | | | | | | | | | | | |
| Counter clockwise | | | | | | | | L | | | | | | |
| Clockwise | | | | | | | | R | | | | | | |
| Flange design | | | | | | | | | | | | | | |
| Flange with two bolts M6 - centre ring Ø 22 mm (0,87 in) | | | | | | | | | | | | | | RA |
| Flange with two bolts M5 - centre ring Ø 22 mm (0,87 in) | | | | | | | | | | | | | | AB |
| screw pitch 30x32 mm (1,18x1,26 in) | | | | | | | | | | | | | | |
| Shaft seal | | | | | | | | | | | | | | |
| No designation | | | | | | | | | | | | | | standard |
| 004 | | | | | | | | | | | | | | without shaft seal |
| Seals | | | | | | | | | | | | | | |
| N | | | | | | | | | | | | | | NBR |
| Inlet / Outlet port | | | | | | | | | | | | | | |
| Flange side port | | | | | | | | | | | | | | |
| BSP G1/4 | | | | | | | | | | | | | | |
| BSP G3/8 | | | | | | | | | | | | | | |
| M10x1 | | | | | | | | | | | | | | |
| Ports orientation | | | | | | | | | | | | | | |
| S | | | | | | | | | | | | | | |
| A | | | | | | | | | | | | | | |
| C | | | | | | | | | | | | | | |
| D | | | | | | | | | | | | | | |
| Shaft Type | | | | | | | | | | | | | | |
| VZ | | | | | | | | | | | | | | |
| KA | | | | | | | | | | | | | | |

Ports orientation

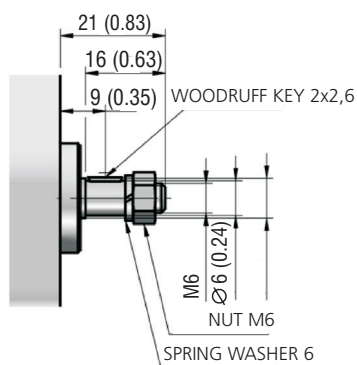


Flange design in millimeters (inches)

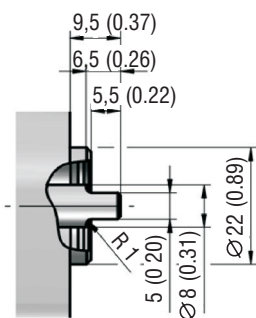


Shaft design in millimeters (inches)

VZ

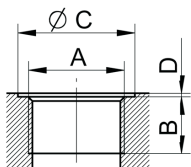


KA



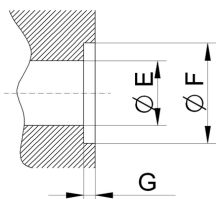
Ports design in millimeters (inches)

Dimensions of thread



| Displacement [cm ³ (in ³)] | Code | Inlet / Outlet | | | |
|---|------|----------------|-----------|-----------|----------|
| | | A | B | C | D |
| All | MA | M10x1 | 8 (0.31) | 15 (0.59) | 1 (0.04) |
| | GA | G1/4 | 13 (0.51) | 26 (1.02) | |
| | GB | G3/8 | | 24 (0.94) | |

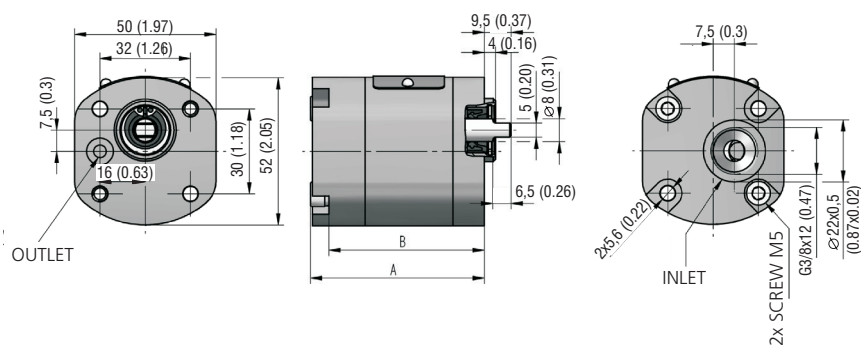
Inlet / outlet



| Displacement [cm ³ (in ³)] | Code | Inlet / Outlet | | |
|---|------|----------------|------------|------------|
| | | E | F | G |
| All | PA | 5,5 (0.22) | 9,6 (0.38) | 1,1 (0.04) |

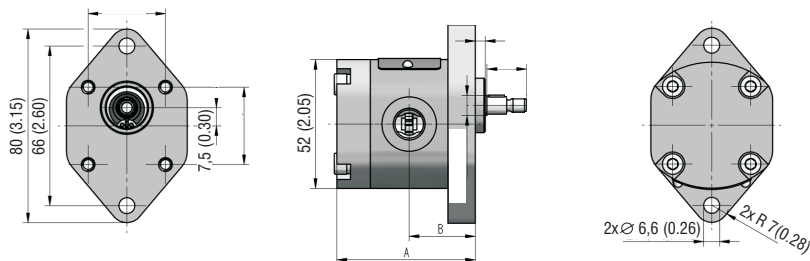
Pump design in millimeters (inches)

GP0-*L-ABKA-AGBPA-N



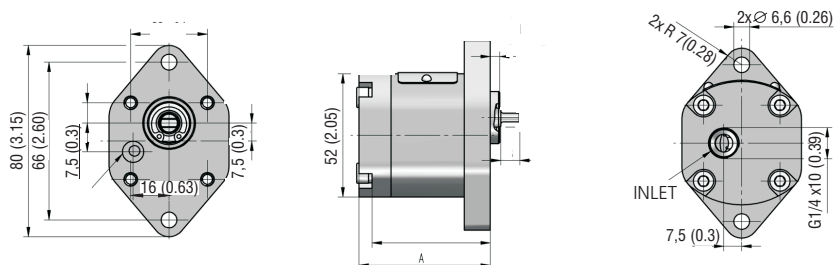
| Displacement [cm ³ (in ³)/rev] | A | B | Displacement [cm ³ (in ³)/rev] | A | B |
|---|-------------|-------------|---|-------------|-------------|
| 0,19 (0.011) | 60,0 (2.36) | 51,0 (2.01) | 0,88 (0.054) | 65,5 (2.58) | 56,5 (2.22) |
| 0,26 (0.016) | 60,5 (2.38) | 51,5 (2.03) | 1,00 (0.061) | 66,5 (2.62) | 57,5 (2.26) |
| 0,38 (0.023) | 61,5 (2.42) | 52,5 (2.07) | 1,25 (0.076) | 68,5 (2.70) | 59,5 (2.34) |
| 0,50 (0.031) | 62,5 (2.46) | 53,5 (2.11) | 1,50 (0.092) | 70,5 (2.78) | 61,5 (2.42) |
| 0,65 (0.040) | 63,5 (2.50) | 54,5 (2.15) | 1,75 (0.107) | 72,5 (2.85) | 63,5 (2.50) |
| 0,75 (0.046) | 64,5 (2.54) | 55,5 (2.19) | 2,00 (0.122) | 74,5 (2.93) | 65,5 (2.58) |

GP0L-*R(L)-RAVZ-SGAGA-N



| Displacement [cm ³ (in ³)/rev] | A | B | Displacement [cm ³ (in ³)/rev] | A | B |
|---|-------------|-------------|---|-------------|-------------|
| 0,19 (0.011) | 60,0 (2.36) | 27,2 (1.07) | 0,88 (0.054) | 65,5 (2.58) | 30,0 (1.18) |
| 0,26 (0.016) | 60,5 (2.38) | 27,5 (1.08) | 1,00 (0.061) | 66,5 (2.62) | 30,5 (1.20) |
| 0,38 (0.023) | 61,5 (2.42) | 28,0 (1.10) | 1,25 (0.076) | 68,5 (2.70) | 31,5 (1.24) |
| 0,50 (0.031) | 62,5 (2.46) | 28,5 (1.12) | 1,50 (0.092) | 70,5 (2.78) | 32,5 (1.28) |
| 0,65 (0.040) | 63,5 (2.50) | 29,0 (1.14) | 1,75 (0.107) | 72,5 (2.85) | 33,5 (1.32) |
| 0,75 (0.046) | 64,5 (2.54) | 29,5 (1.16) | 2,00 (0.122) | 74,5 (2.93) | 34,5 (1.36) |

GP0L-*L-RAKA-AGAPA-N



| Displacement [cm ³ (in ³)/rev] | A | Displacement [cm ³ (in ³)/rev] | A |
|---|-------------|---|-------------|
| 0,19 (0.011) | 60,0 (2.36) | 0,88 (0.054) | 65,5 (2.58) |
| 0,26 (0.016) | 60,5 (2.38) | 1,00 (0.061) | 66,5 (2.62) |
| 0,38 (0.023) | 61,5 (2.42) | 1,25 (0.076) | 68,5 (2.70) |
| 0,50 (0.031) | 62,5 (2.46) | 1,50 (0.092) | 70,5 (2.78) |
| 0,65 (0.040) | 63,5 (2.50) | 1,75 (0.107) | 72,5 (2.85) |
| 0,75 (0.046) | 64,5 (2.54) | 2,00 (0.122) | 74,5 (2.93) |