

MICRO-Axial piston pumps

Type AKP103/105

0,1 up to 0,3 cm³/rev,
up to 500 bar

Features

- High volumetric efficiency (also by very low speed rates)
- Low noise level
- Wide speed range
- Continuous self lubrication and cooling through the suction flow
- Small mounting dimensions
- Automatic venting by raising and lowering the pressure or by switching the motor on and off several times
- Venting time can be shortened essentially through a pre-filling

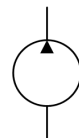


Design

- Offshore
- Oil and gas
- Oceanographic research devices, ROVs
- Handling systems
- Hydraulics systems with small displacements
- Usable even in unfavourable ambient conditions
- Small power units

Applications

- Design with 3 or 5 pistons
- Valve controlled on pressure and suction side (not usable as motor)
- Wobble shaft with amply dimensioned rolling bearings
- Rotating wobble plate



Technical data

Hydraulic fluid	mineral oil according to DIN 51524 (other fluids on request)
Fluid temperature range	-20 to 80 °C
Ambient temperature range	-30 to 50 °C
Viscosity range	5 to 220 mm ² /s
Max. operating pressure	500 bar
Operation pressure suction side	-0,2 bar to 0,5 bar gauge pressure
Filtration (recommendation)	according to NAS 1638 class 6 resp. ISO/DIN 4406 17/15/12
Weight	see product information
Axial force onto driving shaft	can't be taken up
Radial force onto driving shaft	on request
Max. rotation speed	5000 min ⁻¹
Direction of rotation	any
Installation position	according to mounting drawing
Material	housing: aluminium anodised pump head: steel browned

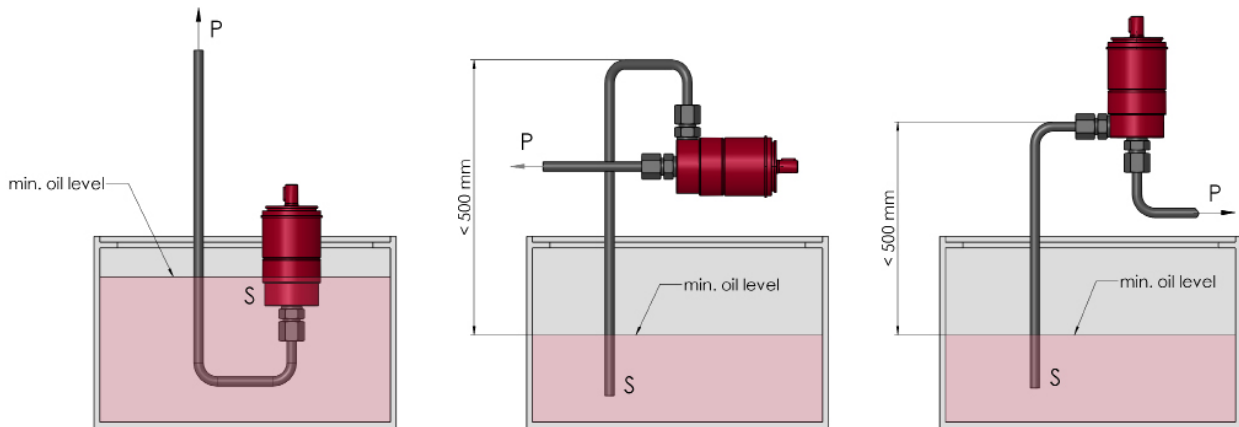
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up to 500 bar

Type code

Example	AKP 103 - 0,1 - 500 - V - A	00
MICRO-Axial piston pumps		Design 00 ... 99 for internal purposes
Size	103 105	
Displacement volume [cm³/rev] see overview „product information“		Index please leave blank for internal purposes
Max. operating pressure [bar] see overview „product information“		Design revision for internal purposes
Seal material	V FKM other seal materials on request	

Mounting



Suction filter recommended

Product information

size	displacement volume [cm ³ /rev]	max. operating pressure [bar]	max. speed [rpm]	number of pumping elements	weight [kg]	max. torque [Nm]	max. power [kW]	part no.
103	0,1	500	5000	3	0,9	1,05	0,55	3678021
105	0,3	500	5000	5	0,9	2,99	1,57	3678024

Note: The flange (part no. 3683105) has to be ordered seperately!

Calculation of driving motor power

$$P = \frac{p \cdot V_g \cdot n \cdot k}{\eta_t \cdot 600 \cdot 10^3}$$

P = driving power [kW]
 p = operating pressure [bar]
 V_g = displacement volume [cm³/rev]
 n = speed [rpm]
 η_t = efficiency approx. 0,75

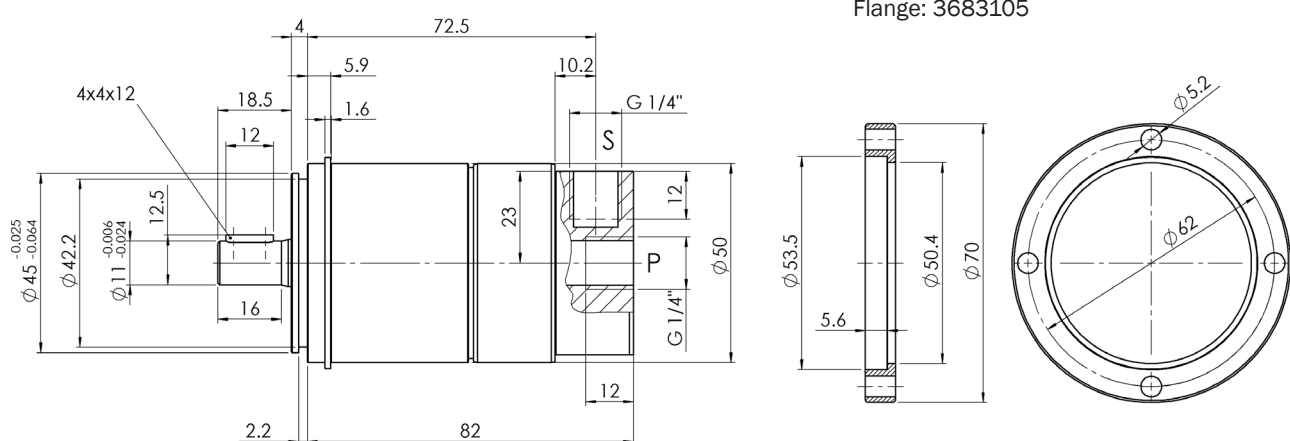
k = pulsation factor
 - with 3 pistons: k approx. 1,05
 - with 5 pistons: k approx. 1,02

Calculation of driving motor torque

$$M = \frac{p \cdot V_g}{62,8 \cdot \eta}$$

M = torque [Nm]
 p = operation pressure [bar]
 V_g = displacement volume [cm³/rev]
 η = efficiency approx. 0,75

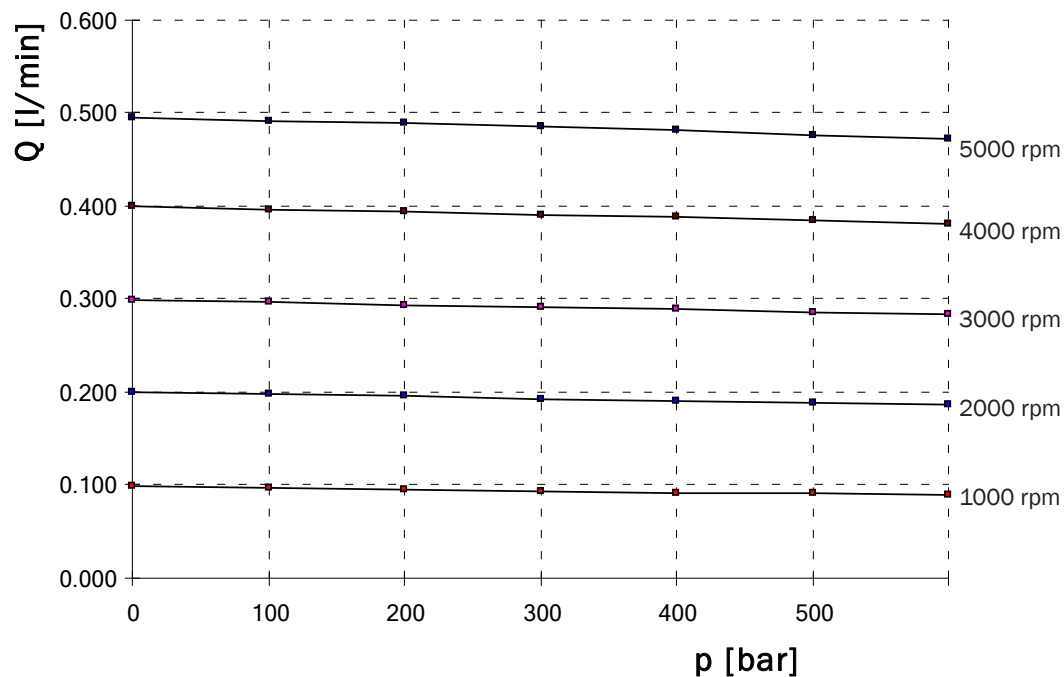
Dimensional drawing



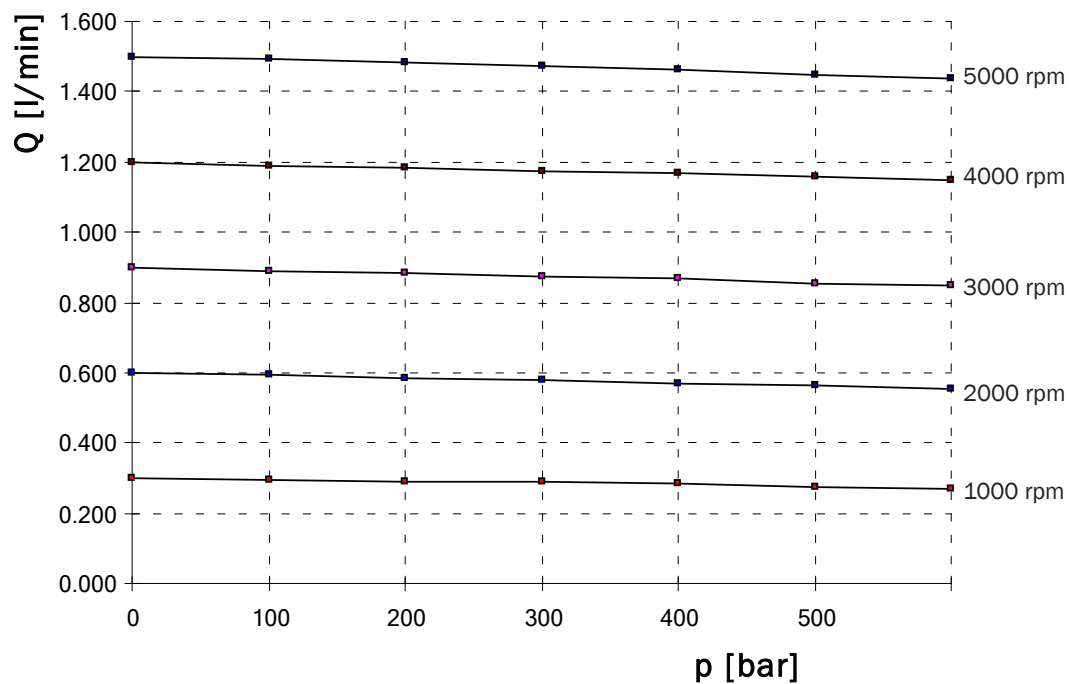
Characteristics

($v = 30 \text{ mm}^2/\text{s}$, $T = 40 \text{ }^\circ\text{C}$)

AKP103



AKP105



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The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.