BIERI
HYDAC INTERNATIONAL

MICRO-Axial piston pumps

Type AKP103/105

0,1 up to 0,3 cm^3/rev,
up to **500 bar**

Features

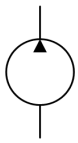
- High volumetric efficiency (also by very low speed rates)
- Low noise level
- Wide speed range
- Continuous self lubrication and cooling through the suction flow
- Small mounting dimensions
- Automatic venting by raising and lowering the pressure or by switching the motor on and off several times
-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

Type code

Example | AKP | 103 | - | 0,1 | - | 500 | - | V | - | A | | 00 |

MICRO-Axial piston pumps

Size 103 105

Displacement volume [cm³/rev]
see overview „product information“

Max. operating pressure [bar]
see overview „product information“

Seal material V FKM
other seal materials on request

Design
00 ... 99
for internal purposes

Index
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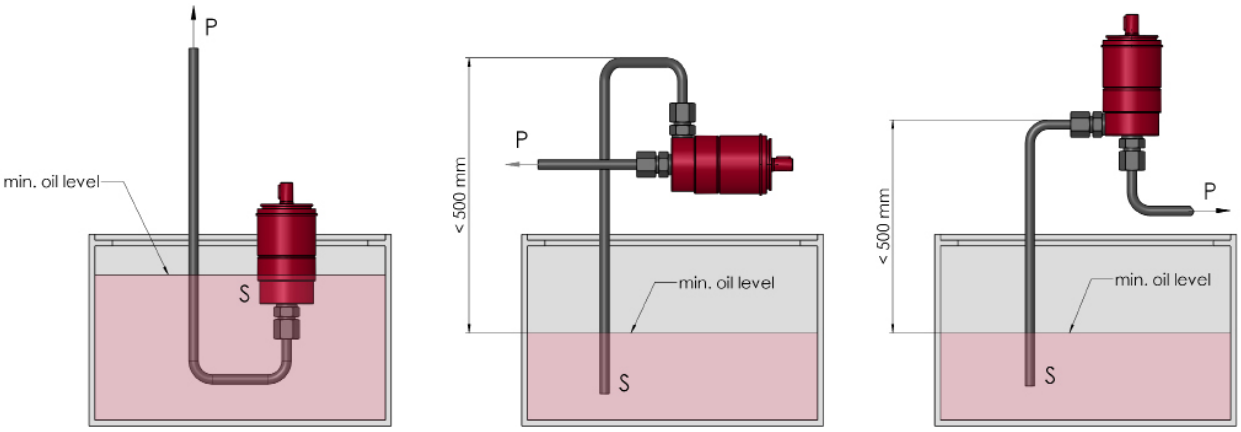
for internal purposes

Design revision
for internal purposes

Mounting



Suction filter recommended

Product information

size	displacement volume [cm³/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
103-Light	0,1	500	5000	3	0,69	1,05	0,55	4054819
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

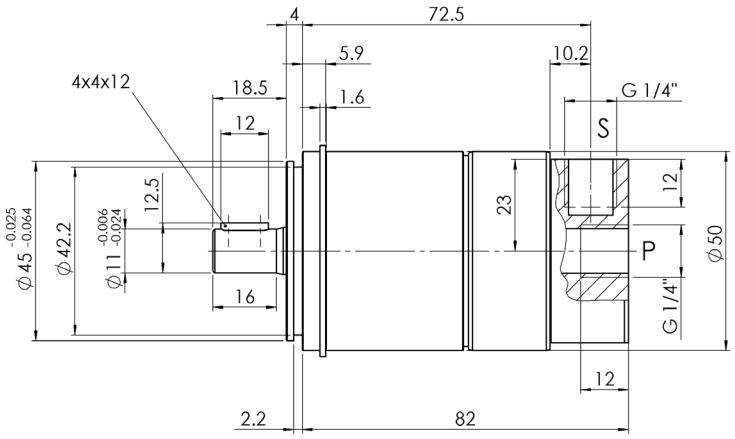
k = pulsation factor
- with 3 pistons: k approx. 1,05
- with 5 pistons: k approx. 1,02

Calculation of driving motor torque

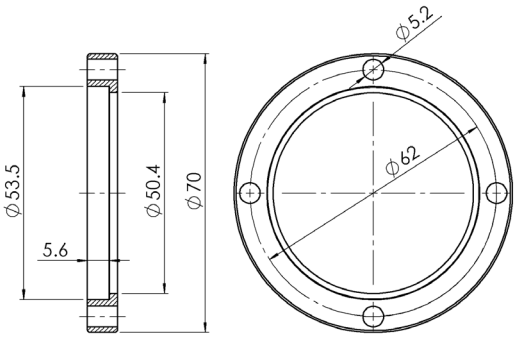
$$M = \frac{p \cdot Vg}{62{,}8 \cdot \eta}$$

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

Dimensional drawing



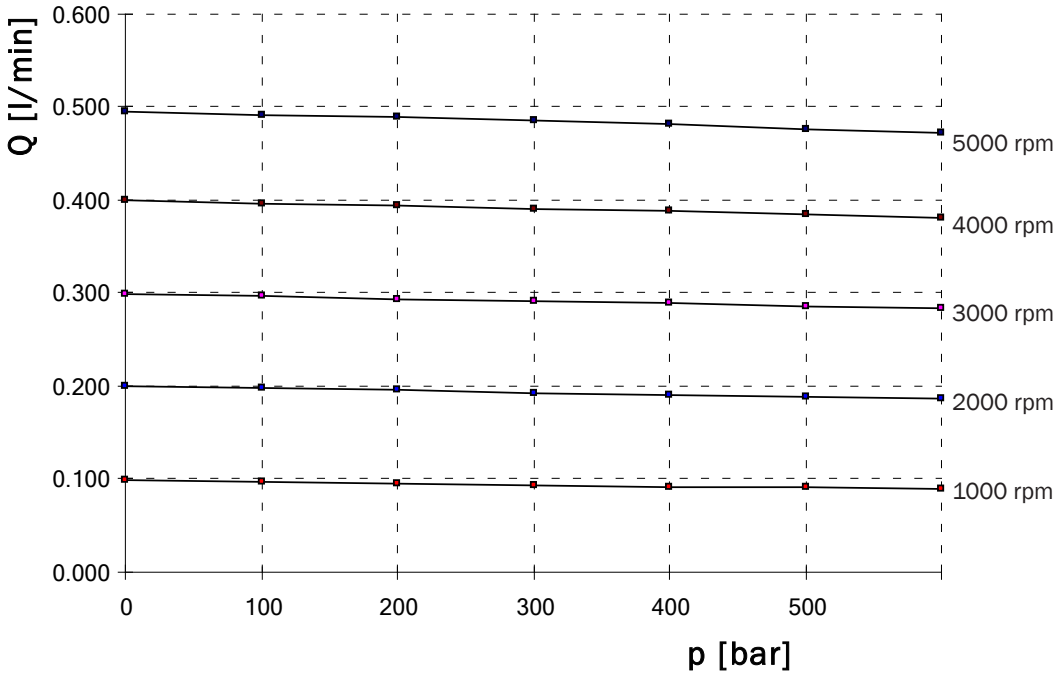
Flange: 3683105



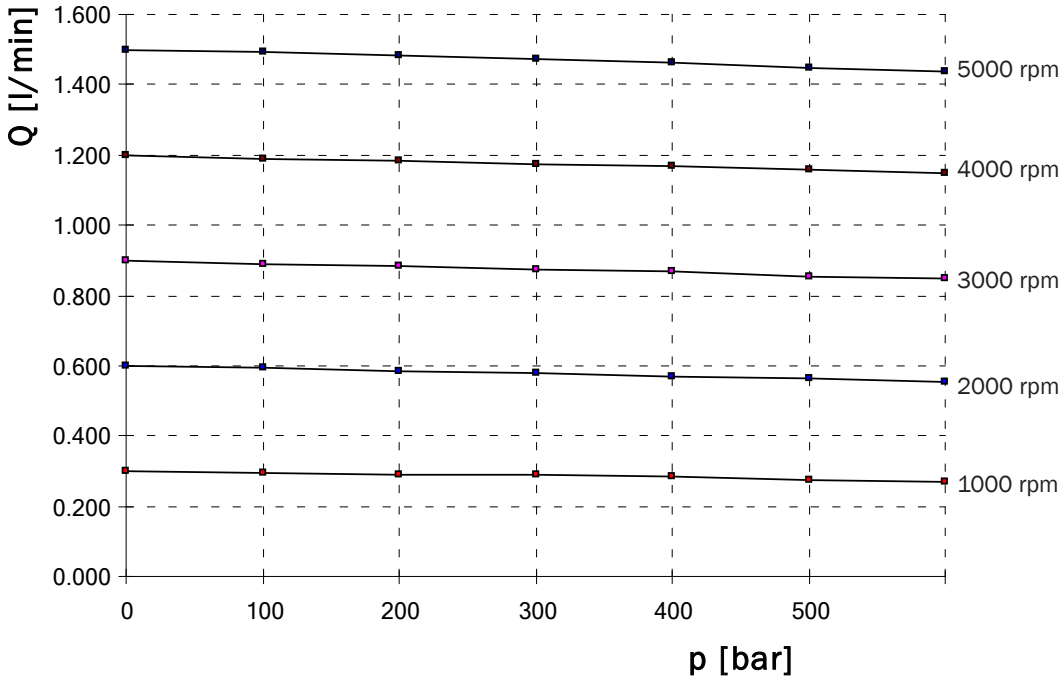
Characteristics

(ν = 30 mm²/s, T = 40 °C)

AKP103



AKP105



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