

Axial piston pump

Type AKP110

up to **1050 bar**

1,68 to 2,32 cm³/rev

Features

- High volumetric efficiency
- Self-venting and priming
- Robust design
- Use in all installation positions
- Self-lubricating construction
- Absolutely maintenance-free
- Low weight due to compact design
- CW and CCW usable
- Operation with low viscosity fluids
- External parts made of 1.4404 (AISI 316L)



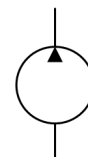
Applications

- Specially designed for demanding applications with continuous pressures up to 1050 bar
- Test benches
- Accumulator charging mode
- In use with frequency inverter
- Topside and under fulfillment of conditions in subsea applications hazardous
- Explosion hazard applications (according ATEX standard)
- Suitable for operation with media with poor lubricating capacity

Design

- Valve controlled on pressure and suction side (not usable as motor)
- Equipped with 5 pistons
- Rotating wobble plate
- Optimized piston design
- Optimized running surface
- Self-lubricating bearing
- 2-fold bearing-mounted wobble shaft

CE  II 2G Ex h IIC T4 Gb



Technical data

Hydraulic fluid	water glycol (HFC): approved for Castrol Transaqua HT2 and Mac Dermid Oceanic HW443 (others on request) mineral oil according to DIN 51524 (on request)	
Fluid temperature range	-20 to 60 °C	
Ambient temperature range	-20 to 40 °C	
Ignition temperature of hydraulic fluid	> 161 °C	
Viscosity range	2 to 220 mm ² /s	
Max. operating pressure	1050 bar	
Operation pressure suction side	-0.2 bar to 0.5 bar gauge pressure	
Displacement volume	1,68 to 2,32 cm ³ /rev	
Filtration (recommendation)	according to NAS 1638 class 6 resp. ISO/DIN 4406 17/15/12	
Axial force onto driving shaft	can't be taken up	
Radial force onto driving shaft	on request	
Max. rotation speed	1800 rpm	
Direction of rotation	CW and CCW	
Suction height	max. 500 mm	
Weight	see overview "Product information"	
Materials	pressure cover and housing:	steel 1.4404 (AISI 316L)
	driving shaft and pump body:	steel

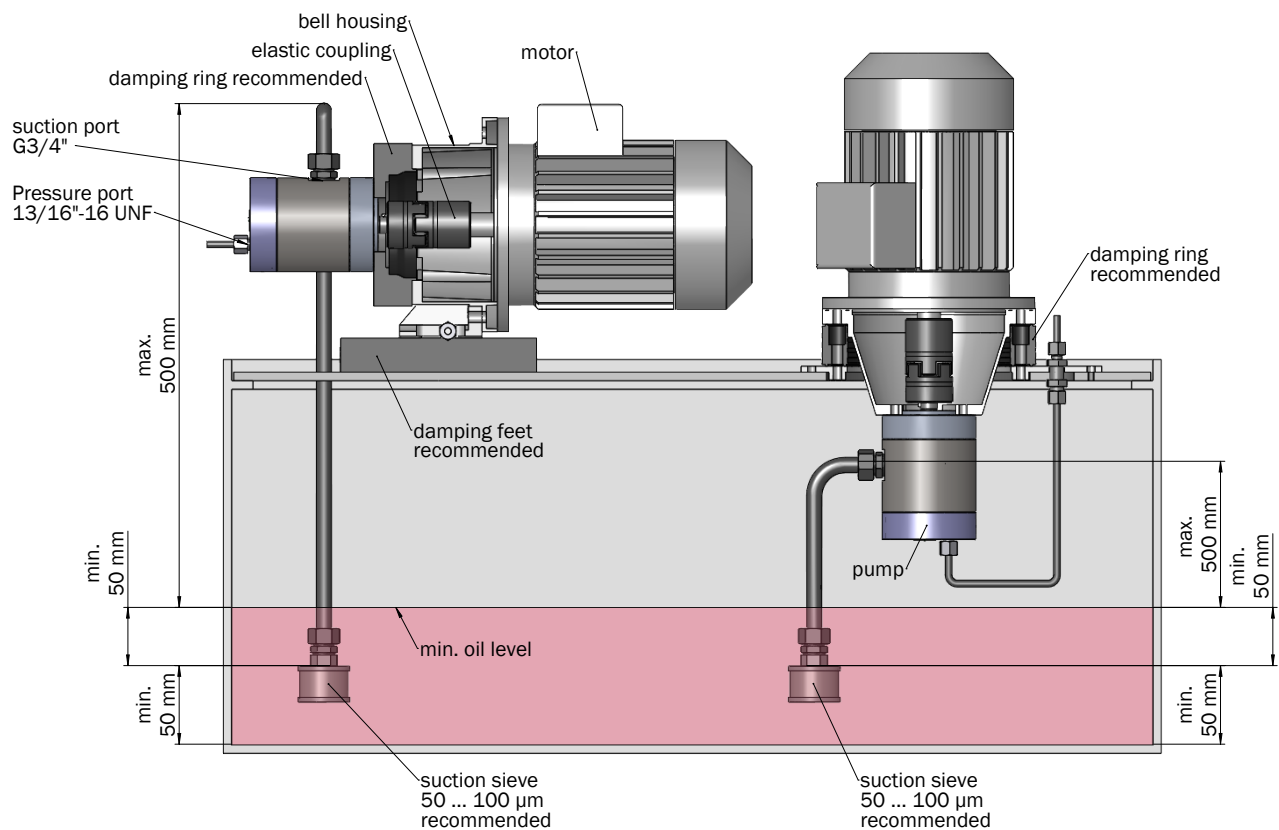
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Type code

Example	AKP 110 - ATEX - 1,68 - 1050 - P - A - 00									
Axial piston pump										Design 00 ... 99 For internal purposes
Size	110									
Version	ATEX									Index Please leave blank For internal purposes
Displacement volume [cm³/rev]	1,68 ... 2,32									
Max. operating pressure [bar]	1050									
Seal material	P NBR									Design revision For internal purposes

Mounting



size	displacement volume [cm ³ /rev]	max. operating pressure [bar]	number of pumping elements	weight [kg]	max. torque [Nm]	max. power [kW]	part. no.
110	1,68	1050	5	9,5	40,13	7,71	on request
110	2,11	1050	5	9,5	50,40	9,68	on request
110	2,32	1050	5	9,5	55,41	10,65	on request

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

P = driving power [kW]
 p = operating pressure [bar]
 V_g = displacement volume [cm³/rev]
 n = speed [rpm]
 η_t = efficiency approx. 0,7 (1050 bar)

k = pulsation factor
 5 piston: k approx. 1,02

$$M = \frac{p \cdot V_g}{62,8 \cdot \eta_t} \quad M = \text{torque [Nm]}$$

Technical drawing of a circular mechanical part, showing three views: front, side, and top.

Front View (Left): Circular flange with 8 holes (4 outer, 4 inner) and a central hole. Overall diameter is $\varnothing 110$. The distance from the center to the center of the outer holes is 23.

Side View (Middle): Shows the profile of the part. Key dimensions include:

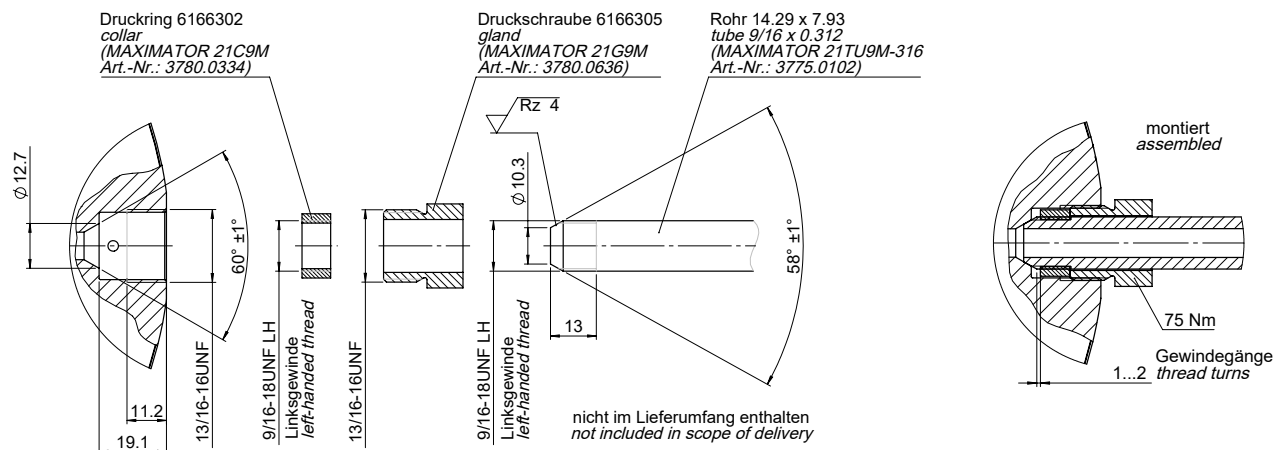
- Overall diameter: $\varnothing 110$
- Distance from the center to the center of the outer holes: 23
- Distance from the center to the center of the inner holes: 22.4
- Distance from the center to the center of the outer holes: 44.8
- Distance from the center to the center of the inner holes: 145.4
- Distance from the center to the center of the outer holes: 190.2
- Distance from the center to the center of the inner holes: 5
- Distance from the center to the center of the outer holes: 15.1
- Distance from the center to the center of the inner holes: 15.5 *
- Distance from the center to the center of the outer holes: 36.5
- Distance from the center to the center of the inner holes: 87
- Distance from the center to the center of the outer holes: 52
- Distance from the center to the center of the inner holes: $\varnothing 2.5$
- Distance from the center to the center of the outer holes: P
- Distance from the center to the center of the inner holes: 13/16" -16 UNF

Top View (Right): Shows the circular face with 8 holes (4 outer, 4 inner) and a central hole. Key dimensions include:

- Overall diameter: $\varnothing 80$
- Distance from the center to the center of the outer holes: $\varnothing 6 h9 \begin{smallmatrix} 0 \\ -0.030 \end{smallmatrix}$
- Distance from the center to the center of the inner holes: $\varnothing 63 f7 \begin{smallmatrix} -0.030 \\ -0.060 \end{smallmatrix}$
- Distance from the center to the center of the inner holes: $\varnothing 20 f7 \begin{smallmatrix} -0.020 \\ -0.041 \end{smallmatrix}$
- Distance from the center to the center of the outer holes: 3x 90°
- Distance from the center to the center of the inner holes: M8
- Distance from the center to the center of the outer holes: 45°

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Connection „P“ for MAXIMATOR piping 21...9M



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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.