Piston Accumulators
Series SK280

1. DESCRIPTION

1.1. FUNCTION

Fluids are practically incompressible and cannot therefore store pressure energy.

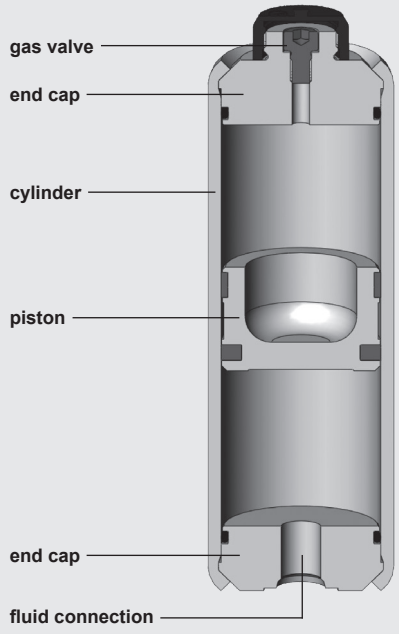
The compressibility of a gas (nitrogen) is utilised in hydraulic accumulators for storing fluids. HYDAC piston accumulators are based on this principle.

A piston accumulator consists of a fluid section and a gas section with the piston acting as the gas-proof screen. The gas section is pre-charged with nitrogen.

The fluid section is connected to the hydraulic circuit so that the piston accumulator draws in fluid when the pressure increases and the gas is compressed.

When the pressure drops, the compressed gas expands and forces the stored fluid into the circuit.

1.2. DESIGN



HYDAC piston accumulators consist of:

- a cylinder with very finely machined internal surface;
- end caps on the gas side and the oil side, sealed with O-rings;
- a floating steel or aluminium piston.
- a sealing system adapted to the particular application. The piston floats on two guide rings which prevent metal-to-metal contact between the piston and the accumulator wall. Suitable materials are also available for low temperature applications.

1.3. TYPE OF INSTALLATION

HYDAC can provide suitable accumulator clamps for the piston accumulator series SK280. The table at Point 3 lists the appropriate clamps for each individual diameter. In order to prevent deformation of the cylinder, we recommend that the accumulators are mounted using two clamps, one at each end cap.

1.4. ADVANTAGES OF THE SK280

- Optimized production process, saving on material and manufacturing costs
- Reduced-weight series
- Reduced installation space
- Standard gas valve M28x1.5 integrated into end cap (non-refillable version possible)
- Endurance tested (function and fatigue tests)

1.5. DESIGN PRESSURE

- Standard 280 bar
- Manufactured and tested to PED 97/23/EC

higher pressures on request

1.6. SEALING SYSTEM

- Piston type 3: NBR/PUR
- Temperature range: -30 °C ... +80 °C

others on request

1.7. COMMISSIONING

Please read the Operating Manual!

- Piston accumulators No. 3.301.CE

For further information, please turn to the section:

- Piston Accumulators Standard No. 3.301

2. TECHNICAL SPECIFICATIONS

2.1. MODEL CODE

Not all combinations are possible.
Order example. For further information, please contact HYDAC.

SK280 - 1 / 3218 U - 280 AAD - VB - 05 - 030

Series

Nominal volume [l]

Material and piston code

Piston design type
(see Point 1.6.)

Material: piston
2 = carbon steel

Material: cylinder and end caps
1 = carbon steel

Material: seals including piston seals
8 = NBR/PUR (polyurethane)

Certificate code
U = PED 97/23/EC

Permitted operating pressure [bar]

Fluid connection
AAD = Threaded connection to ISO 228
Size G 1/2

AAE = Threaded connection to ISO 228
Size G 3/4

AAF = Threaded connection to ISO 228
Size G 1

ACE = Threaded connection to SAE J 514
Size 9/16-18 UNF, SAE #6

ACF = Threaded connection to SAE J 514
Size 3/4-16 UNF, SAE #8

ACH = Threaded connection to SAE J 514
Size 1 1/16-12 UN, SAE #12

ACH = Threaded connection to SAE J 514
Size 1 5/16-12 UN, SAE #16

Gas side connection or gas valve
VB = Gas valve type M28x1.5/M8 integrated into gas side end cap
000 = Non-refillable version (see drawing, Point 3.1.) on request

Piston diameter
05 = 50 mm

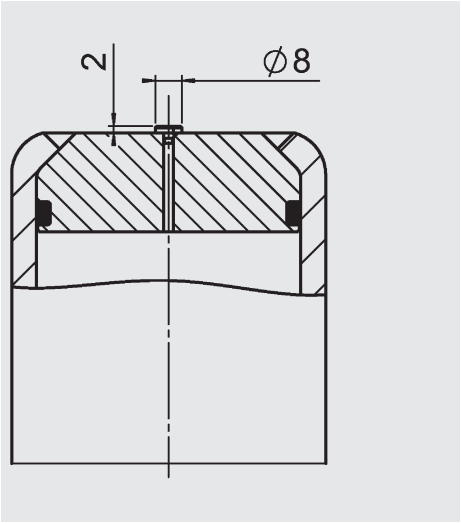
Pre-charge pressure p_0 [bar] at 20 °C, must be stated clearly, if required!

other sizes and versions on request

3. DIMENSIONS

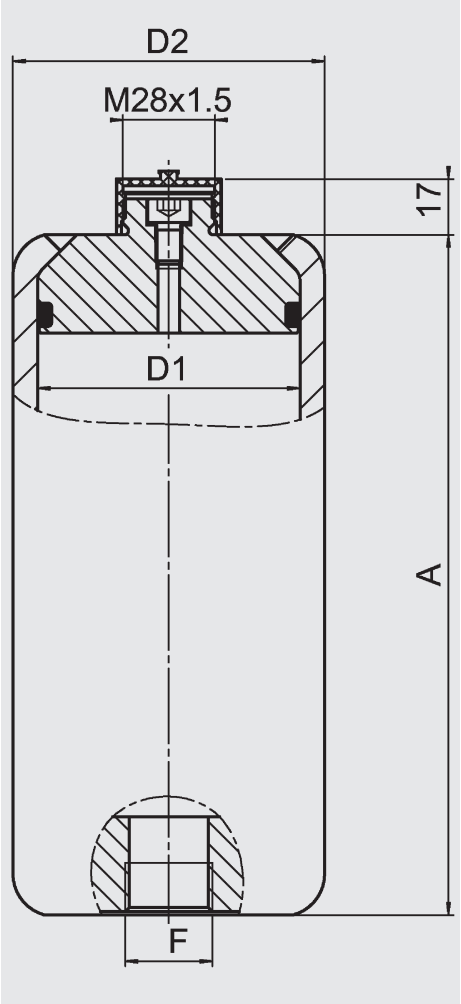
3.1. TYPE -000-

(non refillable)



3.2. TYPE -VB-

(refillable)



Nominal volume [l]	Permitt. oper. pressure [bar]	D1 [mm]	D2 [mm]	A ±3 [mm]	F to ISO 228	F to SAE J 514	Weight [kg]	Mounting clamps [1]
0.16	280	50	60	160	G 1/2	9/16-18UNF	2	3018442 HRGKSM 0 R 58-61/62 ST
0.32				240			2.5	
0.5				335		3/4-16UNF	3.1	
0.75				451			4	
1				590			4.8	
0.32	280	60	75	205			4	444912 HRGKSM 0 R 73-76/76 ST
0.5				265			4.7	
0.75				355			5.8	
1				445			6.9	
1.5				620			9.1	
2				800			11.4	
2.5				975			13.6	
0.5	280	80	95	210	G 3/4	1 1/16-12UN	6.5	444995 HRGKSM 0 R 92-95/96 ST
0.75				260			7.2	
1				310			8	
1.5				410			9.5	
2				510			11.5	
2.5				605			13	
3				705			14.5	
3.5				805			16	
4				905			17.5	
0.75	280	100	120	235	G 1	1 5/16-12UN	11.7	444505 HRGKSM 1 R 119-127/124 ST
1				265			12.5	
1.5				330			14.3	
2				395			16	
3				520			19.5	
4				650			23	
5				775			26.3	
6				900			30	

[1] Clamps must be mounted near the end caps in order to prevent deformation of the cylinder; for further information see following catalogue section:
- Supports for Hydraulic Accumulators No. 3.502

4. NOTE

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.

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