



Piston Accumulators

Series SK280

1. DESCRIPTION

1.1. FUNCTION

Fluids are practically incompressible and cannot therefore store pressure energy.

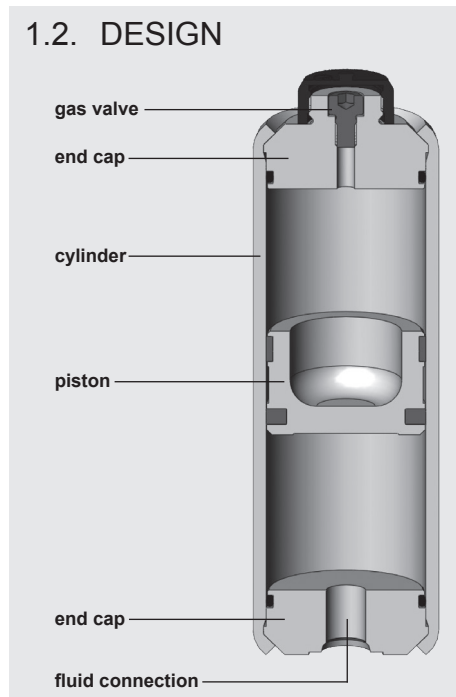
The compressibility of a gas (nitrogen) is utilised in hydraulic accumulators for storing fluids. HYDAC piston accumulators are based on this principle.

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 section 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 in accordance with European Pressure Equipment Directive (PED)

higher pressures on request

1.6. SEALING SYSTEM

- Piston type 3: NBR/PUR
- Temperature range:
 - 30 °C to ... +80 °C
 - Mobile special applications
 - 40 °C to ... +100 °C

1.7. COMMISSIONING

Please read the Operating Manual!

- Piston accumulators
No. 3.301.BA

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 section 1.6.)

Material: piston

2 = carbon steel

Material: cylinder and end caps

1 = carbon steel

Material: seals including piston seals

8 = NBR/PUR (polyurethane)

Certification code

U = European Pressure Equipment Directive (PED)

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

ACK = 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, section 3.1.) on request

Piston diameter

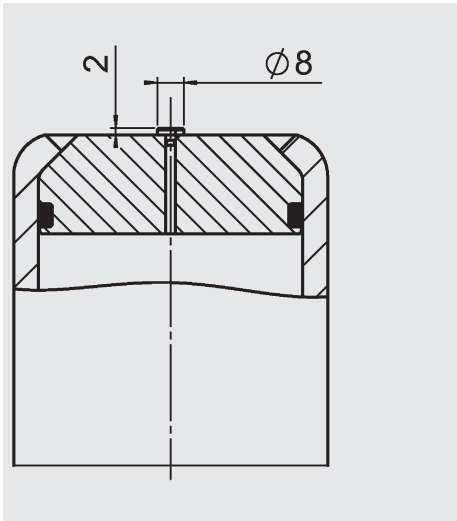
05 = 50 mm

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

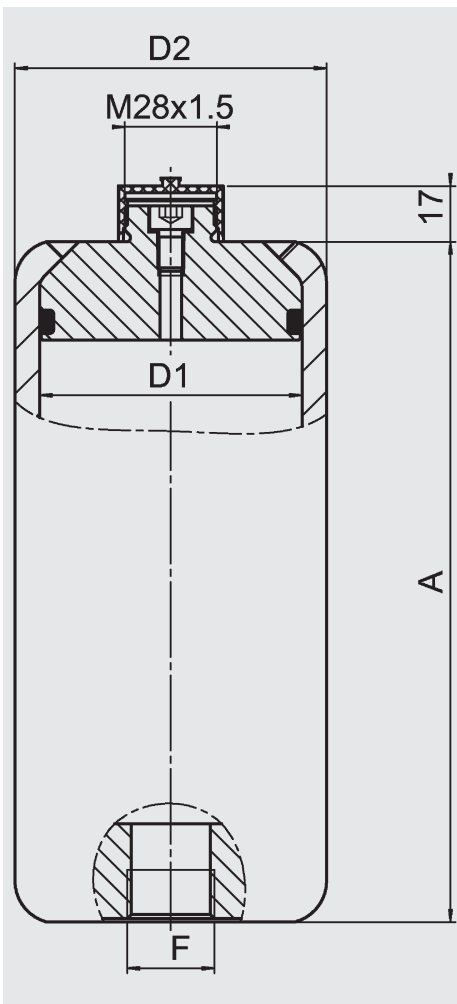
other sizes and versions on request

3. DIMENSIONS

3.1. TYPE -000- (non refillable)



3.2. TYPE -VB- (refillable)



Perm. operating pressure 280 bar (PED)
Carbon steel

Nominal volume [l]	D1 [mm]	D2 [mm]	A ±3 [mm]	F	Part no. ¹⁾		Weight [kg]	Mounting clamps ²⁾														
					to ISO 228	to SAE J 514																
0.16	50	60	160	G 1/2	3200525	9/16-	2	3018442 HRGKSM 0 R 58-61/62 ST														
0.32			3200521		18UNF	3.1																
0.5			3200528		3/4-																	
0.75			3200522						16UNF													
1			3200523		-					4.8												
0.32	60	75	205	G 1/2	3200524	3/4-	4	444912 HRGKSM 0 R 73-76/76 ST														
0.5			3200546		16UNF				6.9													
0.75			3200547							-												
1			3200548								9.1											
1.5			3200549									11.4										
2			3200550										13.6									
2.5			3200551											-								
0.5			3200552												1 1/16-	444995 HRGKSM 0 R 92-95/96 ST						
0.75	3200553	12UN	7.2																			
1	3200554			-	8																	
1.5	3200557					9.5																
2	3200558						11.5															
2.5	3200559							13														
3	3200560								14.5													
3.5	3200561									16												
4	3200562										17.5											
0.75	3200563											1 5/16-	444505 HRGKSM 1 R 119-127/124 ST									
1	3200564													12UN			11.7					
1.5	3200565																	3984528				
2	3200566																		3984529			
2.5	3984479																			3984530		
3	3200568																				3984531	
3.5	3984478																					3984533
4	3200569																					
5	3200570	3984555																				
6	3200571		3984556	23																		
4	125	150	445	G 1	4092344	1 5/16-	29	444321 HRGKSM 1 R 146-154/151 ST														
5			4092395		12UN				32.5													
6			4092396							4092420												
7			4092397								4092421											
8			4092398									4092422										
9			4092399										4092423									
10			4092400											4092424								
															4092445							
																4092446						
																	50					

¹⁾ Preferred models, others on request

²⁾ 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.

HYDAC Technology GmbH

Industriegebiet

66280 Sulzbach/Saar, Germany

Tel.: +49 (0) 68 97 / 509 - 01

Fax: +49 (0) 68 97 / 509 - 464

Internet: www.hydac.com

E-Mail: speichertechnik@hydac.com

