



Piston Accumulators Series SK280

1. DESCRIPTION

1.1. FUNCTION

Fluids are practically incompressible and cannot therefore store pressure energy.

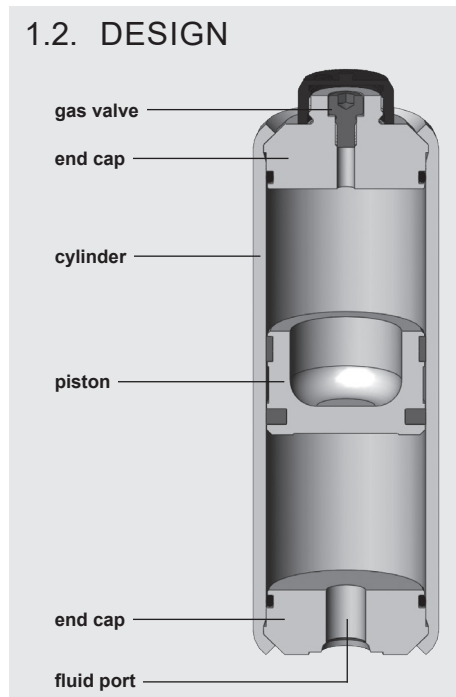
The compressibility of a gas (nitrogen) is utilised in hydraulic accumulators for storing fluids. HYDAC piston accumulators are based on this principle.

A piston accumulator consists of a fluid section and a gas section with the piston acting as a gas-tight separation element. 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 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. ADVANTAGES

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

1.4. TYPE OF INSTALLATION

HYDAC can provide suitable accumulator clamps for the piston accumulator series SK280. The table in 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.

1.5. DESIGN PRESSURE

- Standard 280 bar
- Manufactured and inspected in accordance with European Pressure Equipment Directive (PED)

Higher pressures on request

The specified values are maximum values and must not be considered as referring to a permanent load. The tolerable pressure ratio is influenced by the geometry, temperature, fluid and flow rate as well as any gas losses caused by physical properties.

1.6. SEALING SYSTEM

- Piston design 3: NBR/PUR
- Standard temperature range: -20 °C ... + 80 °C
- Extended temperature range: -40 °C ... +100 °C

For further information, please turn to the section:

- Piston accumulators
Standard design
No. 3.301

1.7. NOTICE

All work on HYDAC piston accumulators must only be carried out by suitably trained staff.

Incorrect installation or handling can lead to serious accidents.

The operating instructions must be observed!

No. 3.301.BA

Further information such as accumulator sizing, safety information and extracts from the acceptance specifications can be found in the following catalogue section:

- HYDAC Accumulator Technology No. 3.000

Relevant PDF documents can be accessed at:
www.hydac.com » Downloads » Documents » Accumulator Division

2. 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 (MC)

Piston design

(see section 1.6.)

Piston material

2 = carbon steel

Material of cylinder and end cap

1 = carbon steel

6 = carbon steel (low temperature)

Material of seals including piston seals

8 = NBR/PUR (polyurethane)

Certification code

U = European Pressure Equipment Directive (PED)

Permitted operating pressure [bar]

Fluid port

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 9/16-18UNF, SAE #6

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

ACH = threaded connection to SAE J 514 size 1 1/16-12UN, SAE #12

ACK = threaded connection to SAE J 514 size 1 5/16-12UN, SAE #16

Gas-side connection or gas valve

VB = gas valve type M28x1.5/M8 integrated into end cap

000 = non-rechargeable version (see drawing, section 3.1.) on request

Piston diameter

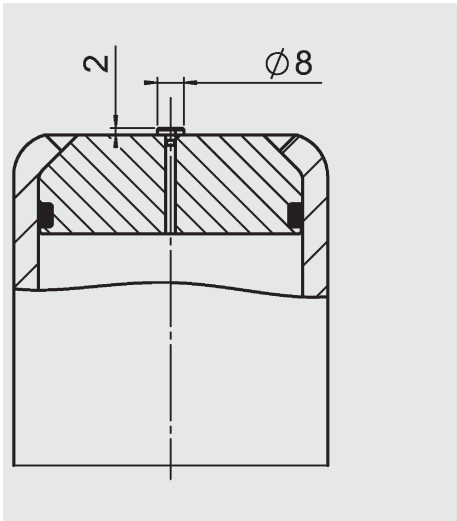
05 = 50 mm

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

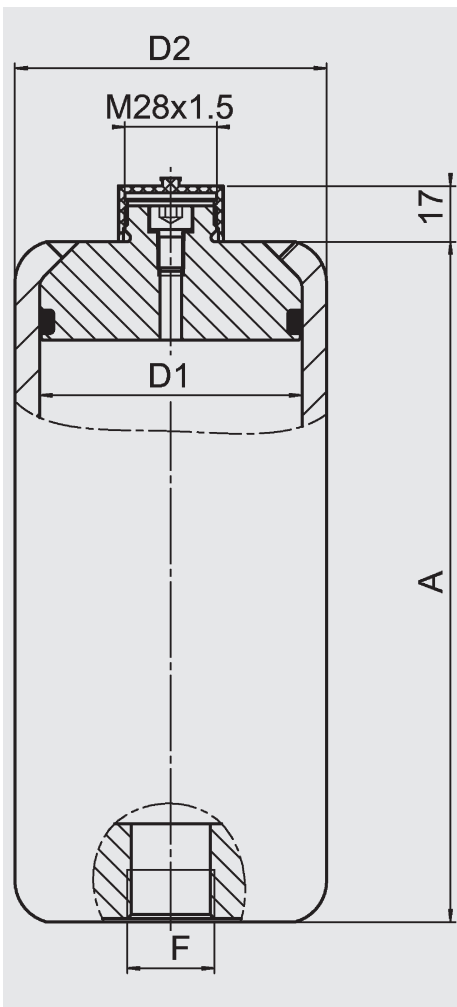
Other sizes and versions on request

3. DIMENSIONS

3.1. TYPE -000- (non-rechargeable)



3.2. TYPE -VB- (rechargeable)



Nominal volume [l]	D1 [mm]	D2 [mm]	A ±3 [mm]	Perm. operating pressure 280 bar (PED) Carbon steel, NBR/PUR				Weight [kg]	Mounting clamps ²⁾
				to ISO 228		to SAE J 514			
				F	Part no. ¹⁾	F	Part no. ¹⁾		
0.16	50	60	160	G 1/2	3200525	9/16-	-	2	3018442 HRGKSM 0 R 58-61/62 ST
0.32					3200521	18UNF	-	2.5	
0.5					3200528	3/4- 16UNF	-	3.1	
0.75					3200522		-	4	
1					3200523		-	4.8	
0.32	60	75	205	G 1/2	3200524	3/4- 16UNF	-	4	444912 HRGKSM 0 R 73-76/76 ST
0.5					3200546		-	4.7	
0.75					3200547		-	5.8	
1					3200548		-	6.9	
1.5					3200549		-	9.1	
2					3200550		-	11.4	
2.5					3200551		-	13.6	
0.5					80		95	210	
0.75	3200553	-	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	100	120	235	G 1		3200563			1 5/16- 12UN
1					3200564	3984529	12.5		
1.5					3200565	3984530	14.3		
2					3200566	3984531	16		
2.5					3984479	3984533	18		
3					3200568	3984534	19.5		
3.5					3984478	3984555	21.5		
4					3200569	3984556	23		
5					3200570	3984557	26.3		
6					3200571	3984558	30		
4	125	150	445	G 1	4092344	1 5/16- 12UN	4092420	29	444321 HRGKSM 1 R 146-154/151 ST
5					4092395		4092421	32.5	
6					4092396		4092422	36	
7					4092397		4092423	39.5	
8					4092398		4092424	43	
9					4092399		4092445	46.5	
10	4092400	4092446	50						
6	150	175	467	G 1	4289054	1 5/16- 12UN	-	39.4	444402 HRGKSM 2 R 172-180/178 ST
8					4289105		-	45.1	
10					4289106		-	50.8	
12					4289108		-	56.5	
15					4289109		-	65.1	

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 the following catalogue section:

- Mounting elements for hydraulic accumulators
No. 3.502

4. NOTE

The information in this brochure relates to the operating conditions and fields of application described. For applications and/or 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

