



## Piston Accumulators Series SK280

### 1. DESCRIPTION

#### 1.1. FUNCTION

Fluids are practically incompressible and cannot therefore store pressure energy.

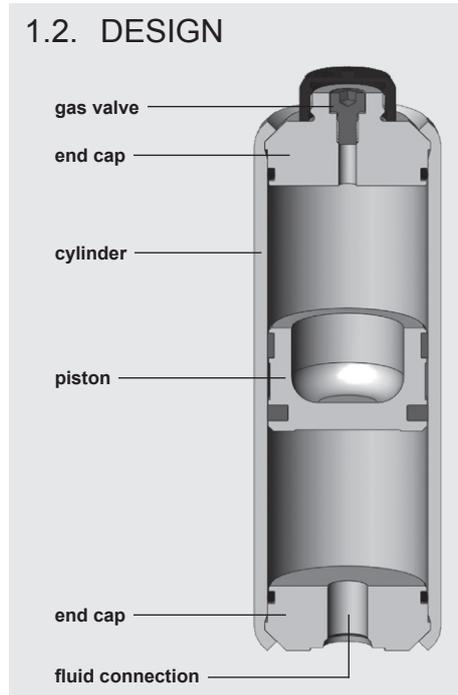
The compressibility of a gas (nitrogen) is utilised in hydraulic accumulators for storing fluids. HYDAC piston accumulators are based on this principle.

A piston accumulator consists of a fluid section and a gas section with the piston acting as a gas-proof 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. O-ring seals.
- 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

- 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)

#### 1.5. DESIGN PRESSURE

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

higher pressures on request

#### 1.6. SEALING SYSTEM

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

#### 1.7. COMMISSIONING

**The operating instruction must be observed!**

- Piston Accumulators No. 3.301.BA

For further information, please turn to the section:

- Piston Accumulators Standard No. 3.301

## 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

#### Piston design

(see section 1.6.)

#### Material: piston

2 = carbon steel

#### Material: cylinder and end caps

1 = carbon steel

6 = carbon steel (low temperature)

#### Material: 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

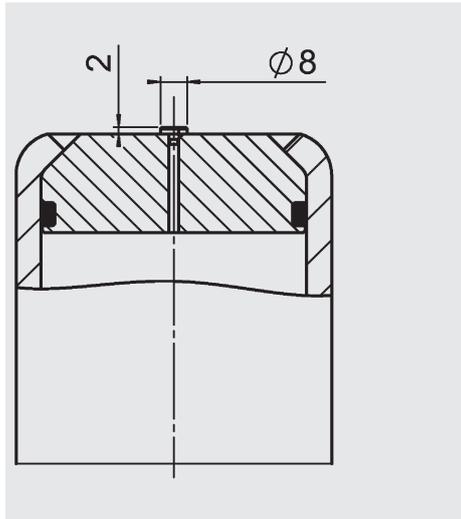
05 = 50 mm

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

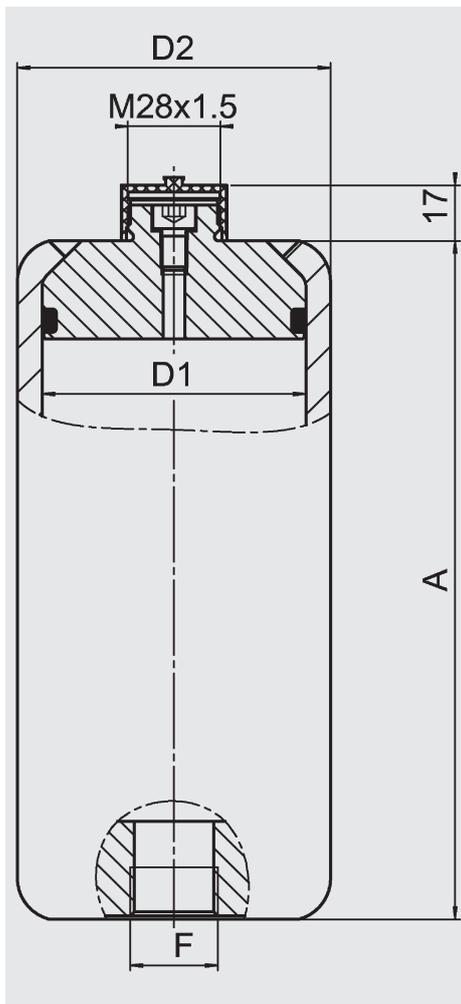
other sizes and versions on request

### 3. DIMENSIONS

#### 3.1. TYPE -000- (non-rechargeable)



#### 3.2. TYPE -VB- (rechargeable)



Perm. operating pressure 280 bar (PED)  
carbon steel

Nominal volume [l]	D1 [mm]	D2 [mm]	A ±3 [mm]	to ISO 228		to SAE J 514		Weight [kg]	Mounting clamps <sup>2)</sup>				
				F	Part no. <sup>1)</sup>	F	Part no. <sup>1)</sup>						
0.16	50	60	160	G 1/2	3200525	9/16-18UNF	—	2	3018442 HRGKSM 0 R 58-61/62 ST				
0.32			3200521		—		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			3200552		—		6.5						
0.75	3200553	—	7.2										
1	3200554	—	8										
1.5	3200557	—	9.5										
2	3200558	1 1/16-12UN	510	G 3/4	3200558	1 1/16-12UN	—	11.5	444995 HRGKSM 0 R 92-95/96 ST				
2.5	605		3200559		—		13						
3	705		3200560		—		14.5						
3.5	805		3200561		—		16						
4	905		3200562		—		17.5						
0.75	100		120		235		G 1	3200563		1 5/16-12UN	3984528	11.7	444505 HRGKSM 1 R 119-127/124 ST
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						

<sup>1)</sup> preferred models, others on request

<sup>2)</sup> 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 fields of application described. For fields of application and operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

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