



## Piston Accumulators Series SK280

### 1. DESCRIPTION

#### 1.1. FUNCTION

Fluids are practically incompressible and cannot therefore store pressure energy.

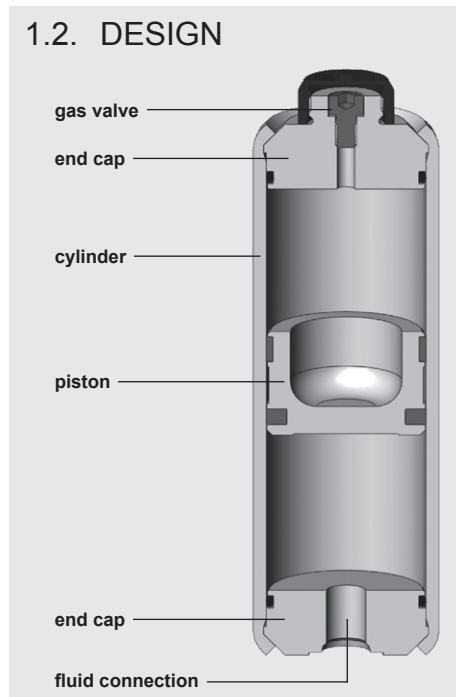
The compressibility of a gas (nitrogen) is utilised in hydraulic accumulators for storing fluids. HYDAC piston accumulators are based on this principle.

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

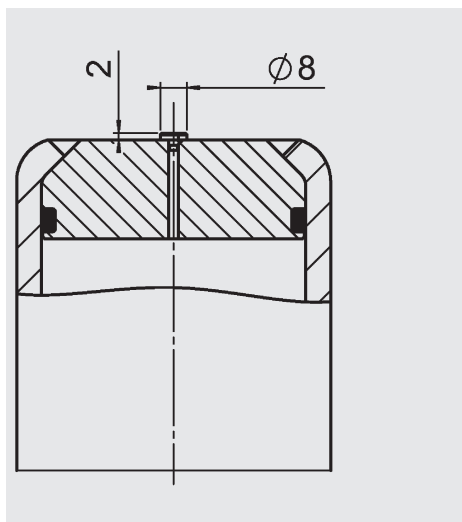
05 = 50 mm

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

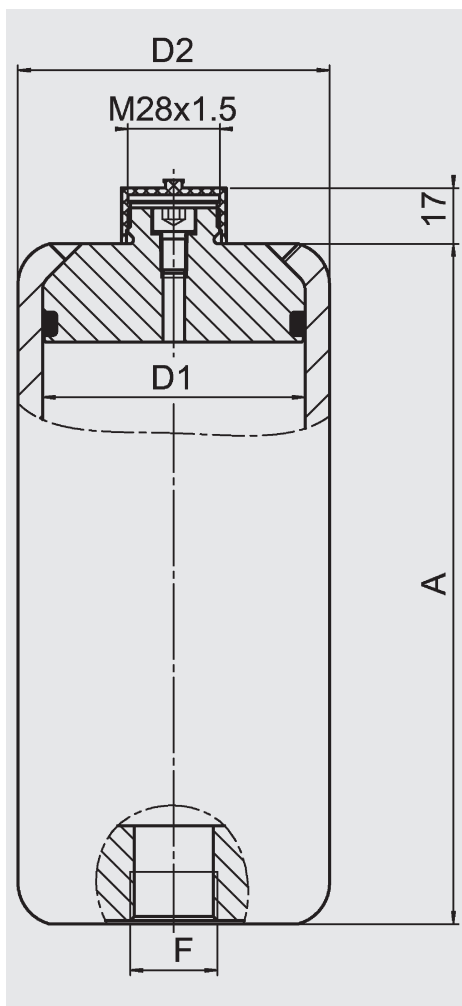
other sizes and versions on request

### 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			240		3200521		-	2.5						
0.5			335		3/4-16UNF	-	3.1							
0.75			460			-	4							
1			590			-	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			265		3200546		-	4.7						
0.75			355		3200547		-	5.8						
1			445		3200548		-	6.9						
1.5			620		3200549		-	9.1						
2			800		3200550		-	11.4						
2.5			975		3200551		-	13.6						
0.5			80		95		210	G 3/4		3200552	1 1/16-12UN	-	6.5	444995 HRGKSM 0 R 92-95/96 ST
0.75	260	3200553		-		7.2								
1	310	3200554		-		8								
1.5	410	3200557		-		9.5								
2	510	3200558		-		11.5								
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				265			3200564			3984529		12.5		
1.5				330			3200565			3984530		14.3		
2			395	3200566	3984531		16							
2.5			460	3984479	3984533		18							
3			520	3200568	3984534		19.5							
3.5			585	3984478	3984555		21.5							
4			650	3200569	3984556		23							
5			775	3200570	3984557		26.3							
6			900	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			528		4092395		4092421	32.5						
6			609		4092396		4092422	36						
7			691		4092397		4092423	39.5						
8			772		4092398		4092424	43						
9			854		4092399		4092445	46.5						
10	935	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			581		4289105		-	45.1						
10			695		4289106		-	50.8						
12			809		4289108		-	56.5						
15			980		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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