



## Piston Accumulators Series SK280

### 1. DESCRIPTION

#### 1.1. FUNCTION

Fluids are practically incompressible and cannot therefore store pressure energy.

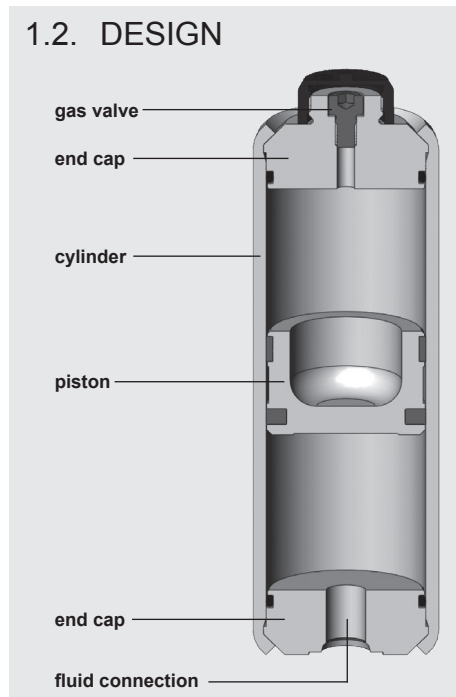
The compressibility of a gas (nitrogen) is utilised in hydraulic accumulators for storing fluids. HYDAC piston accumulators are based on this principle.

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 operating 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-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
- Temperature range:
  - 20 °C ... + 80 °C
  - Mobile special applications
  - 40 °C ... +100 °C

#### 1.7. COMMISSIONING

**The operating instruction must be followed!**

- 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 of 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 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 gas side end cap

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

**Piston diameter**

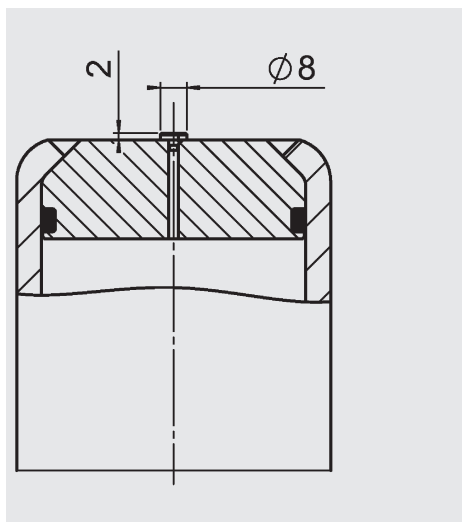
05 = 50 mm

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

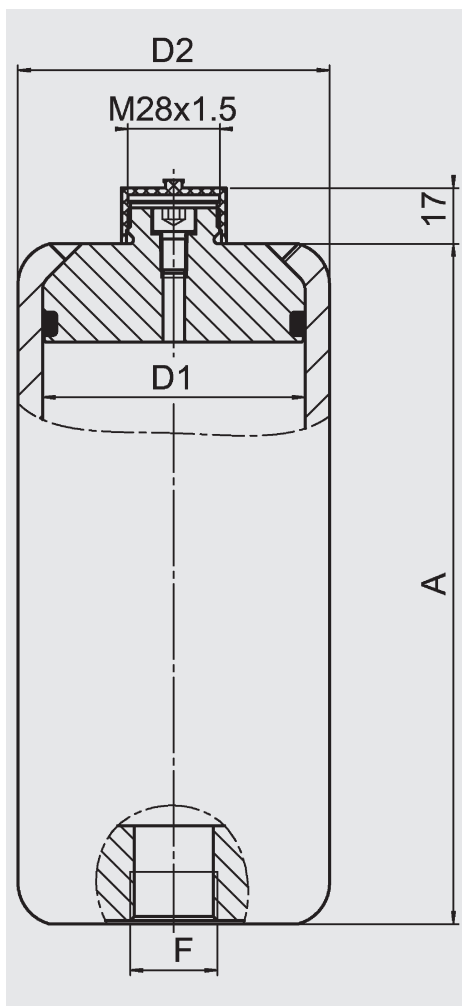
other sizes and versions on request

### 3. DIMENSIONS

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



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



Perm. operating pressure 280 bar (PED)  
Carbon steel

Nominal volume	D1	D2	A ±3	F	Part no. <sup>1)</sup>		Weight	Mounting clamps <sup>2)</sup>				
					to ISO 228	to SAE J 514						
[l]	[mm]	[mm]	[mm]				[kg]					
0.16	50	60	160	G 1/2	3200525	9/16-	2	3018442				
0.32			240		3200521	18UNF						
0.5			335		3200528	3/4- 16UNF						
0.75			460		3200522							
1			590		3200523							
0.32	60	75	205	G 1/2	3200524	3/4- 16UNF	4	444912				
0.5			265		3200546							
0.75			355		3200547							
1			445		3200548							
1.5			620		3200549							
2			800		3200550							
2.5			975		3200551							
0.5	80	95	210	G 3/4	3200552	1 1/16- 12UN	6.5	444995				
0.75			260		3200553							
1			310		3200554							
1.5			410		3200557							
2			510		3200558							
2.5			605		3200559							
3			705		3200560							
3.5			805		3200561							
4			905		3200562							
0.75			100		120				235	G 1	3200563	1 5/16- 12UN
1	265	3200564										
1.5	330	3200565										
2	395	3200566										
2.5	460	3984479										
3	520	3200568										
3.5	585	3984478										
4	650	3200569										
5	775	3200570										
6	900	3200571										
4	125	150	445	G 1	4092344	1 5/16- 12UN	29	444321				
5			528		4092395							
6			609		4092396							
7			691		4092397							
8			772		4092398							
9			854		4092399							
10			935		4092400							
											4092420	32.5
											4092421	36
											4092422	39.5
					4092423	43						
					4092424	46.5						
					4092445	50						

<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 applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

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