



Hydraulic Accumulator With Back-Up Nitrogen Bottles

1. GENERAL

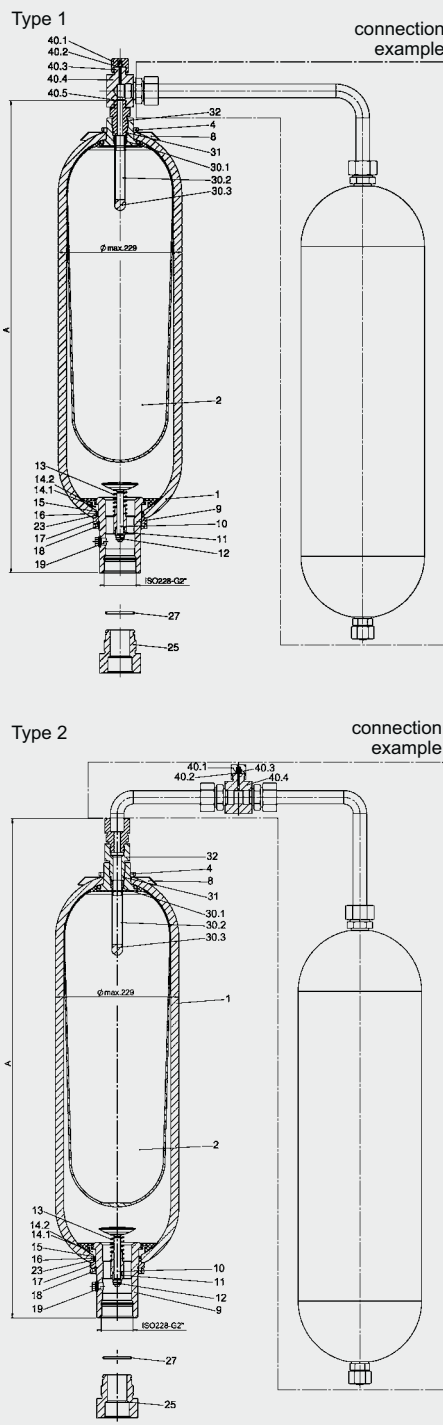
To complete the accumulator range, HYDAC provides a variety of useful accessory products. They guarantee correct installation and optimum functioning of HYDAC hydraulic accumulators. These include, amongst others, nitrogen bottles which can be used to back up bladder and piston accumulators. Nitrogen bottles used as back-ups increase the gas volume in the accumulator. This means that smaller accumulators can be used for the same gas volume and costs can be reduced. To assist selection the Simulation Program ASP can be downloaded from www.hydac.com.

2. BACK-UP MODEL ACCUMULATORS

2.1. CONSTRUCTION

Based on bladder accumulator models 20 ... 50 l, the gas-side of these transfer accumulators is designed especially for connecting to nitrogen bottles. A diffuser rod prevents damage to the bladder when the accumulator is charged. This construction can also be used for the separation of fluids (taking into account the volume ratios which apply to bladder accumulators).

2.2. DIMENSIONS



Nominal volume [l]	Effective gas volume	Weight [kg]	A max. [mm]
20	17.5	53.5	905
24	24	72	1070
32	32.5	89	1420
50	47.5	119.5	1930

2.3. SPARE PARTS

Description	Item
Repair kit consisting of:	
Bladder	2
Retaining nut	4
O-ring 7.5x2.0 ¹⁾	7
Washer	15
O-ring 80x5 ¹⁾	16
Seal ring	20
Back-up ring	23
O-ring 48x3 ¹⁾	27
O-ring 22x2.5 ¹⁾	31
O-ring 11x2 ¹⁾	33
Anti-extrusion ring	14
Diffuser rod	30
SB330/400A2-20 NBR	03119500
SB330/400A2-24 NBR	03119502
SB330/400A2-32 NBR	03119498
SB330/400A2-52 NBR	03119499

Recommended spare parts

¹⁾ For code 663 or 665 different dimensions

Item 1 not available as a spare part.
Item 25 must be ordered separately
Item 32 Type 1 is standard.

For other spare parts, see Point 3.

3. NITROGEN BOTTLES

3.1. DESCRIPTION AND CONSTRUCTION



HYDAC nitrogen bottles are used to take in and store nitrogen. HYDAC offers a wide selection of bottle types, such as forged accumulators, bladder or piston type.

3.2. ADVANTAGES

Using HYDAC nitrogen bottles provides the following benefits:

- Cost-effective increase of the accumulator volume and as a result
- Smaller accumulators for the same gas volume.

3.3. STANDARD BOTTLES

Description	Volume [l]	Part no.
SN360-50AA/010U-360DD	50	3176324
SN360-75AA/010S-210DE	75	3118950
SN360-75AA/010U-360DE	75	3233527
SN500-50AA/010U-500DD	50	3107549
SN600-50AA/010S-345DD	50	2105042

3.3.1 Model code (also order example)

SN360 - 50 AA / 010 U - 360 D D

Series _____

Code _____

No details = standard
 B = bladder accumulator shell ¹⁾
 K = piston accumulator cylinder ²⁾
 M = diaphragm accumulator half-sections ³⁾

Nominal volume [l] _____

Connection type _____

Connection type on connection side _____

A = ISO 228 (BSP)
 B = DIN 13 to ISO 965/1 (metric)
 C = ANSI B1.1 (UNF seal SAE)
 D = ANSI B2.1
 F = flange

Drain side (condensate) _____

A = ISO 228 (BSP)
 B = DIN 13 to ISO 965/1 (metric)
 C = ANSI B1.1 (UNF seal SAE)
 D = ANSI B2.1
 F = flange

1 = sealed with blanking plug
 2 = with condensate drain, hex. socket cap screw
 3 = with condensate drain valve
 4 = with Minimes valve

Material code _____

Material (of connection) _____

0 = no components
 1 = carbon steel
 3 = stainless steel
 4 = carbon steel with protective coating
 6 = low temperature steel

Material of vessel _____

1 = carbon steel
 2 = carbon steel with protective coating
 4 = stainless steel
 6 = low temperature steel

Seal material (elastomer) _____

0 = no elastomer used
 2 = NBR (Perbunan)
 4 = IIR (Butyl)
 5 = TT-NBR
 6 = FKM (fluoro rubber)

Certification code _____

U = PED 97/23/EC ⁴⁾

Permitted operating pressure [bar] _____

Size for connection side (see Table 3.3.2) _____

Size for drain side (see Table 3.3.2) _____

0 = for 1-4

¹⁾ see catalogue section: Bladder Accumulators Standard, No. 3.201

²⁾ see catalogue section: Piston Accumulators, No. 3.301

³⁾ see catalogue section: Diaphragm Accumulators, No. 3.100

⁴⁾ see catalogue section: Accumulators, No. 3.000, Point 3.

3.3.2 Connections

Type	A	B	C	D	F
	BSP ISO228	Metric DIN13 ISO965/1	SAE ANSI B1.1	NPT ANSI B2.1	Flange connection
Size					
A	G 1/4"	M12x1.5	7/16"-20UNF	1/4"	1/2" 3000 PSI Code 61
B	G 3/8"	M18x1.5	9/16"-18UNF	3/8"	3/4"
C	G 1/2"	M22x1.5	3/4"-16UNF	1/2"	1"
D	G 3/4"	M27x2	1 1/16"-12UN	3/4"	1 1/4"
E	G 1"	M33x2	1 5/16"-12UN	1"	1 1/2"
F	G 1 1/4"	M42x2	1 5/8"-12UN	1 1/4"	2"
G	G 1 1/2"	M48x2	1 7/8"-12UN	1 1/2"	1/2" 6000 PSI Code 62
H	G 2"	M14x1.5	2 1/2"-12UN	2"	3/4"
I	G 1 3/4"	M8			
K		M16x1.5			1 1/4"
L			7/8"-14UNF	5/8"	1 1/2"
M					2"
S	Special model				

4. CHARGING AND TESTING BACK-UP TYPE ACCUMULATORS

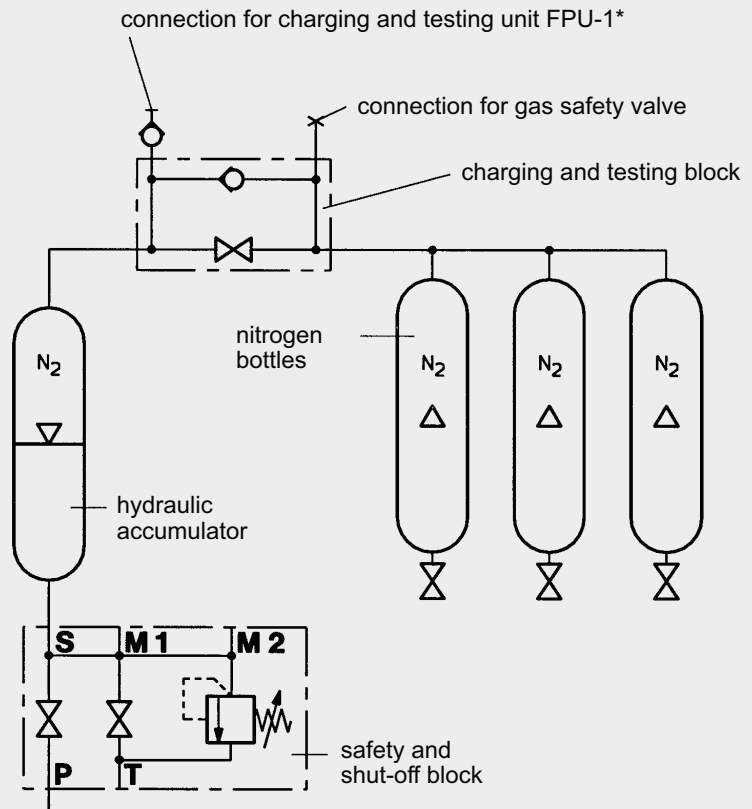
4.1. CHARGING AND TESTING BLOCK F + P

4.1.1 Description

The HYDAC charging and testing block F+P is used to charge and test back-up type hydraulic accumulators. It has connections for the charging and testing unit FPU-1 and for pressure gauges. As a safety function, a gas safety valve GSV6 (see catalogue section given below) can be fitted. In addition, it allows the back-up nitrogen bottles to be shut off from the hydraulic accumulator.

- Safety equipment for hydraulic accumulators No. 3.552

4.1.2 Hydraulic circuit with charging and testing block



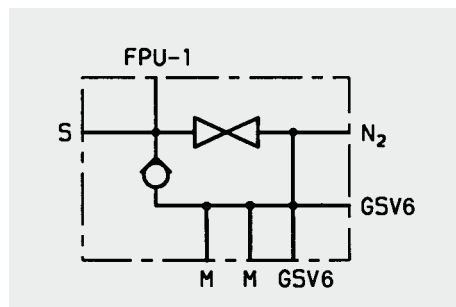
* For further information, see catalogue section:

- Universal charging and testing unit FPU No. 3.501

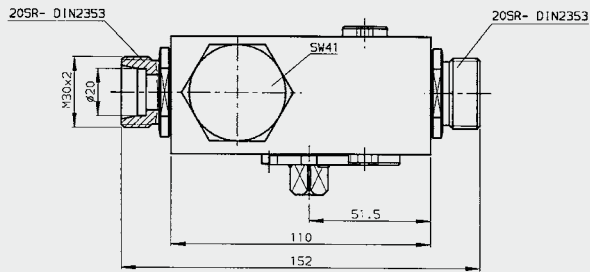
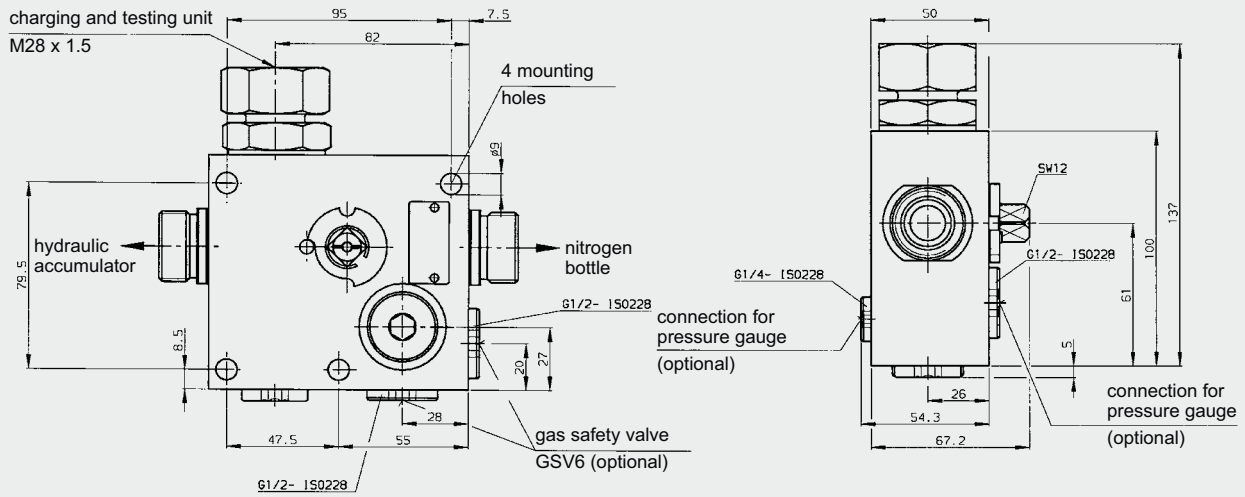
4.1.3 Standard types / Spare parts

Description	Max. operating pressure: [bar]	Weight [kg]	Part no.	Seal kit ¹⁾
F+P-16-20SR-6112-02X	400	4.3	850233	2115776
F+P-32-38SR-6112-02X	350	14	552193	2112088

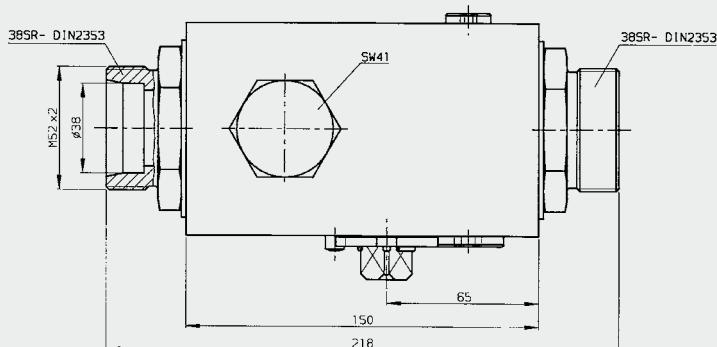
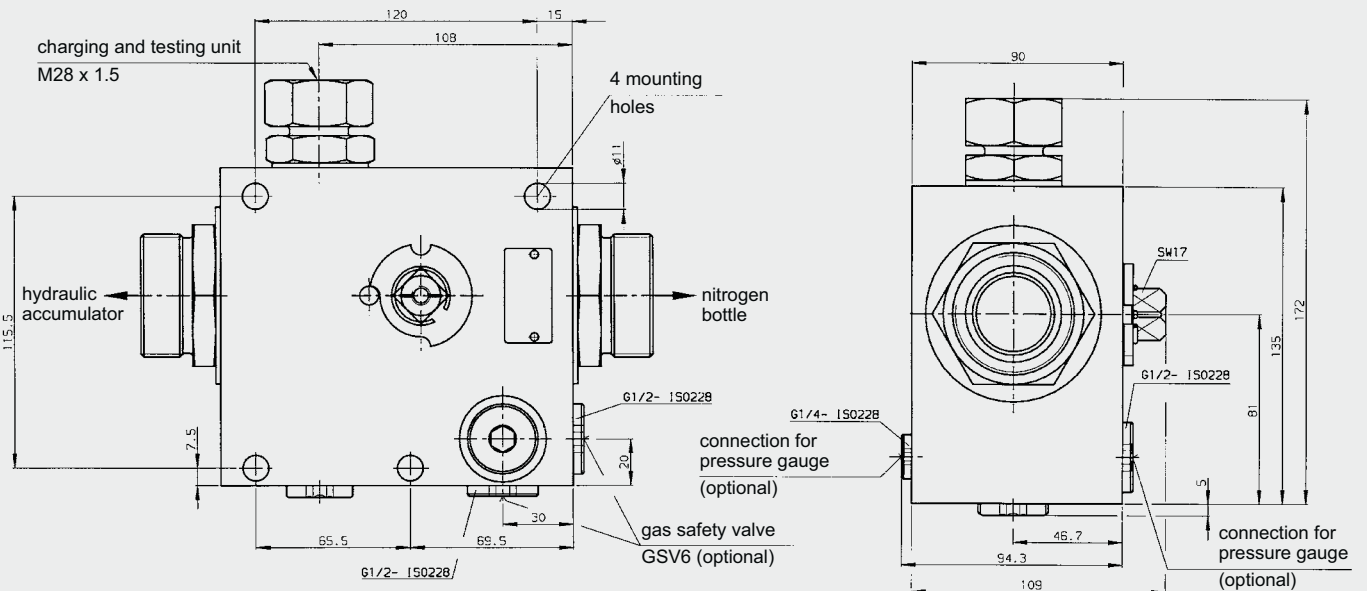
¹⁾ recommended spare parts



4.1.4 Technical specifications / Dimensions
Charging and testing block DN 16



Charging and testing block DN 32



4.2. NITROGEN CHARGING UNIT



HYDAC nitrogen charging units facilitate fast and cost-effective charging or testing of the required pre-charge pressures in bladder, diaphragm and piston accumulators. They guarantee optimum use of standard nitrogen bottles up to a residual pressure of 20 bar and a maximum accumulator charging pressure of 350 bar. Portable, mobile and stationary types of N₂-Server are available.

For further information and technical specifications, see catalogue section:

- Nitrogen charging units N₂-Server No. 2.201

5. 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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