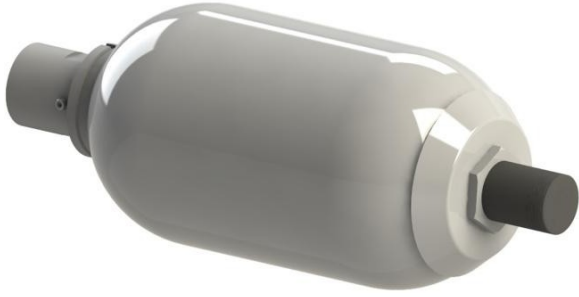


HBAC - 360

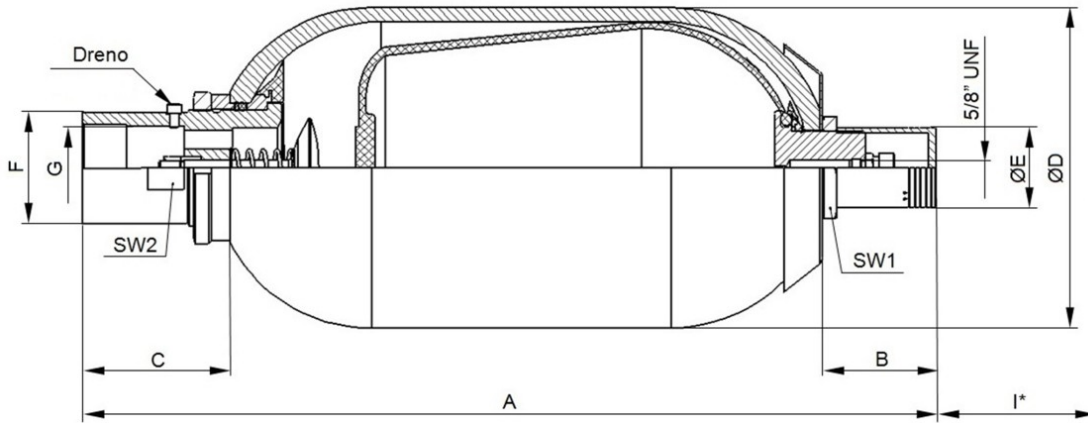
BLADDER ACCUMULATOR



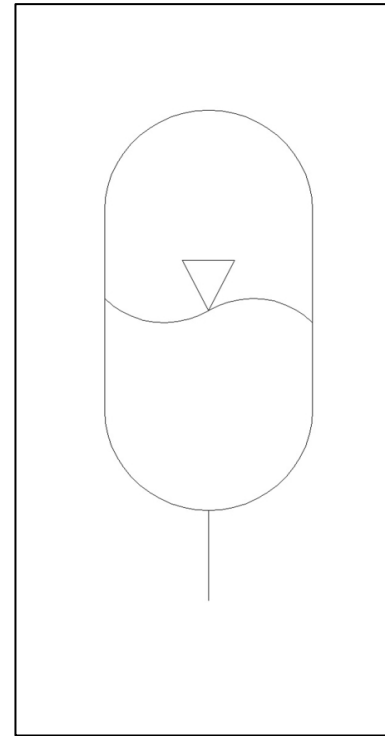
Max working pressure PS: 360 bar

Nominal capacity: 1 to 50 litres

1 - OPERATING PRINCIPLE



HYDRAULIC SYMBOL



- Gas-loaded accumulators are devices that allow, in hydraulic circuits, a notable energy concentration in limited spaces. Since liquids are practically incompressible and, because of that, are not allowed for energy concentration, the aim is achieved using the gases high compressibility. A potential energy accumulation which could be used in several cases as defined in catalog 092-100.

2 - DIMENSIONS

Model	Max. working pressure (bar)	Gas volume (litres)	Net weight (kg)	Fluid port G/P	A	B	C	ØD	ØE	ØF	H	I*	SW 1	SW 2
HBAC 1	360	1	5,2	3/4" (1/2")*	295 +-5	47	52	114 +-1	25	36	11	140	32	32
HBAC 1,5		1,5	6,3		355 +-5									
HBAC 3		2,95	11		553 +-8									
HBAC 4		4	13	1.1/4" (1")*	410 +-10	65	168 +-1,5	53	50					
HBAC 5		5	15		458 +-10									
HBAC 10		9,1	33	2" (1.1/2")*	590 +-15	82	101	224 +-2	55	77	70	70		
HBAC 15		14,5	43		740 +-15									
HBAC 20		18,2	48		895 +-15									
HBAC 25		23,5	59		1065 +-15									
HBAC 36		33,5	78		1412 +-20									
HBAC 50		50	108		1932 +-20									

* Highlighted values () are referring to the reduction applied to the fluid valve when manufactured in stainless steel.

3 – IDENTIFICATION

HBAC			360			-		-		-	10	-
------	--	--	-----	--	--	---	--	---	--	---	----	---

Carbon steel bladder accumulator

Nominal capacity (liters):
1 - 1,5 - 3 - 4 - 5 - 10 - 15 - 20
- 25 - 36 - 50

Bladder material⁶:
N = Standard nitrile
H = Hydrogenated nitrile
B = Butyl
P = Neoprene
V = Viton
E = EPDM

Working pressure (bar)

Shell material:
C = carbon steel shell
N = nickel coated carbon steel 25µ
R = Rilsan® coated carbon steel

Liquid/fluid port:
G = female thread BSP⁴⁻⁵ (standard)
N = female thread NPT⁴⁻⁵
R* = with adapter²⁻⁴
F = with flange³
S = thread SAE⁷

Gas/fluid valve material:
- = standard type 1 (standard carbon steel)
X = stainless steel⁴

Supplementary text if necessary

Series number:
Features and dimensions unchanged from 10 to 19

Gas valve type:
- = standard type 1*
* = other (specify according to bladder catalog)

- 1 - Complete only if the gas valve/fluid valve material is different from shell material.
- 2 - See in item 7 the equivalent code for the ordered thread (e.g.: R1, R2...)
- 3 - Inform flange reference in supplementary text.
- 4 - For stainless steel valves for 1 to 1.5 liter accumulators, the available threads are: G = 1/2" BSP female thread; N = 1/2" NPT and R female thread (except R2 and R4*). *Check table 7-Adapters
- 5 - For stainless steel valves for accumulators from 10 to 50 litres, the available thread are: G = Female thread 1.1/2" BSP; N = Female thread 1.1/2" NPT and R (except R5 e R10*). *Check table 7-Adapters
- 6 - See table item 2 for port dimensions according to accumulator volume.
- 7 - See catalog 092-100 item 3-14 for bladder material information.
- 8 - Inform thread in supplementary text.

4 – PERFORMANCE

Maximum working pressure PS	360 bar
Test pressure PT	PS x 1,43 bar
Temperature range min. and max. TS	-40°C a +120°C (it may suffer restrictions depending on the bladder material)
Nominal capacity	1 a 50 litres

5 – CONSTRUCTION FEATURES

The standard version includes:

- Hardened and tempered carbon steel shell, sandblasted and painted outside with anti-rust coating.
- Bi-chromatized carbon steel valves.
- Fluid port G with female thread ISO 228.
- Bladder and gaskets in standard nitrile rubber P.
- Testing and construction according to 97/23/CE standards.
- Precharged with nitrogen at +/- 15 bar (other values available if specified in order).
- Standard gas valve n° 1 with male thread 5/8" - UNF.

On request, the accumulator can be supplied with:

- Shell protected with a chemical nickel plating (thickness of 25 micron. Specify other thickness if required).
- Shell protected with a Rilsan® coating.
- Stainless steel valves.
- Fluid port connection with special thread¹.
- Adapter R with ISO 228 (BSP) thread for the diameters indicated on the table, with other threads to be specified or blind.
- Fluid port flanged connections (specify)¹.
- Gas port flanged connection for special applications¹.
- Safety valve in gas side, or fluid side, or only with this valve adapter¹.
- Fluid side special anti-pulsation connection¹.
- NR13 record.
- Special gas valve according to bladder catalog 098-190 or 098-220.

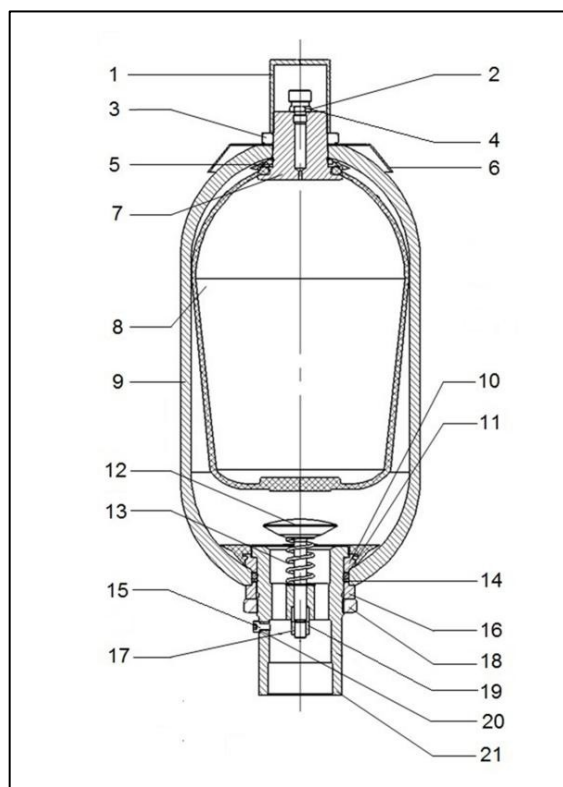
1 - Specify the feature on the accumulator identification code and order to our Technical Department the table of the available models.

6 – COMPONENTS AND SPARE PARTS

The following table provides a list of accumulator components and, for each model, the part number to be used when ordering spare parts. **THIS NUMBER IS VALID FOR STANDARD VERSIONS ONLY.**

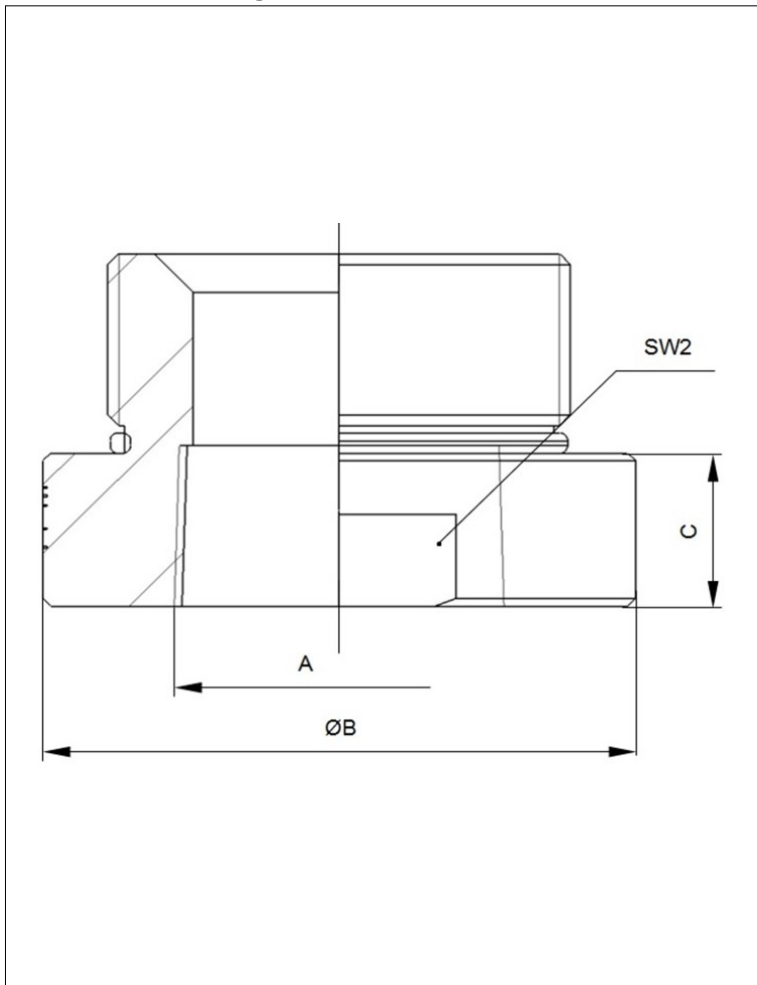
For all the other versions, it is necessary to give the manufacturer's serial number and the material.

The bladder must be ordered according to the instructions provided in catalog 098-190 or 098-220, or giving the accumulator identification code or the manufacturer's serial number.



Item	Description	Parts	Models						
			HBAC 1-1,5	HBAC 3	HBAC 4-5	HBAC 10-15-20-25-36-50			
1	Protection cap	1	H090101			H120101			
2	Gas-fill valve	1	H090201						
3	Gas valve locknut	1	H090301			H120301			
4	Gas valve seal	1	H090401						
5	Rubber-coated washer	1	H090501		H110501	H120501			
6	Name plate	1	H090601		H110601	H120601			
7	Gas valve body	1	H090701		H110701	H120701			
8	Bladder	1	See detailed designation in catalog 098-190						
9	Accumulator shell	1	Contact commercial department of HT						
10	Retaining ring	1	H091001	H101001	H111001	H121001			
11	O'ring	1	H091101	H101101	H111101	H121101			
12	Poppet	1	H091201	H101201		H121201			
13	Spring	1	H091301	H101301		H121301			
14	Supporting ring	1	H091401	H101401	H111401	H121401			
15	Bleed screw	1	H091501			H121501			
16	Space ring	1	H091601	H101601	H111601	H121601			
17	Selflocking nut	1	H091701	H101701		H121701			
18	Fluid port ring nut	1	H091801	H101801		H121801			
19	Brake bushing	1	H091901			H121901			
20	Seal ring	1	H092001			H122001			
21	Fluid port body	1	H092101	H102101		H122101			
Complete bladder valve assembly (itens 1,3, 5, 7)		1	H092201		H112201		H122201		
Complete fluid port assembly (itens 10 to 21)		1	H092301	H102301	H112301		H122301		
Gasket sets	1	H092401	H090401	H102401	H090401	H112401	H090401	H122401	H090401
			H091101		H101101		H111101		H121101
			H091401		H101401		H111401		H121401
Repair sets	1	H092501	H090401	H102501	H090401	H112501	H090401	H122501	H090401
			H091101		H101101		H111101		H121101
			H091401		H101401		H111401		H121401
			H091001		H101001		H111001		H121001
			H092001		H092001		H092001		H122001

7 - ADAPTERS



Volume	Reference	A	ØB	C	SW2	
1 - 1,5 (litres)	R1	3/8" BSP	36	11	32	
	R2	1/2" BSP				
	R3	3/8" NPT				
	R4	1/2" NPT				
	RE ¹	Special				
3 (litres)	R1	3/8" BSP				
	R2	1/2" BSP				
	R3	3/4" BSP				
4 - 5 (litres)	R4	3/8" NPT	53		11	50
	R5	1/2" NPT				
	R6	3/4" NPT				
	RE ¹	Special				
10 a 50 (litres)	R1	1/2" BSP	77	11		70
	R2	3/4" BSP				
	R3	1" BSP				
	R4	1.1/4" BSP				
	R5	1.1/2" BSP				
	R6	1/2" NPT				
	R7	3/4" NPT				
	R8	1" NPT				
	R9	1.1/4" NPT				
	R10	1.1/2" NPT				
RE ¹	Special					

1 - If the desired thread is not on the list, please indicate RE in Identification and inform the thread in supplementary text.

- 1 - For general information, accumulator selection and usual applications, consult 092-100.
- 2 - HT reserves the right to change information of this catalog without previous warning
- 3 - Copy is forbidden.
- 4 - If not indicated, dimensions in millimetres.

