

# ***SPEICHER ACCUMULATORS***



**TECNICAL CATALOGUE**

**INTERNATIONAL SERIES BOTTOM REPARABLE**

**Technical Features:**

**Maximum working pressure (PS) :** 350/330 bar

**Test Pressure (PT) :** PS x 1.43 bar

**Body:** forged steel, sand and painted

**Working temperature (TS) :** from - 20°C to + 80°C

**Standard bladder:** can be used whit mineral oils and non corrosive fluids

**Installation position:** vertical position (nitrogen valve upward)

**Compression ratio:**

- recommended:  $P2/P0 = 2.5$
- maximum:  $P2/P0 = 4$

**Mechanical life:** the number of cycles is inversely proportional to the increase of the compression ratio

**Warranty:** see dedicated page

**Spare parts:** see dedicated page

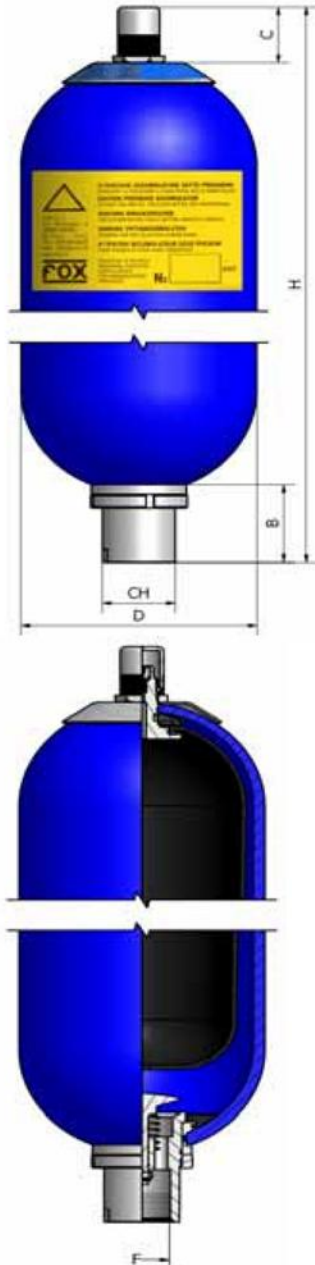
**Special execution:**

- inside and outside epoxy painted body
- inside and outside nickel, zinc, Teflon plated body
- bladders for working temperatures from -50 °C to +130 °C

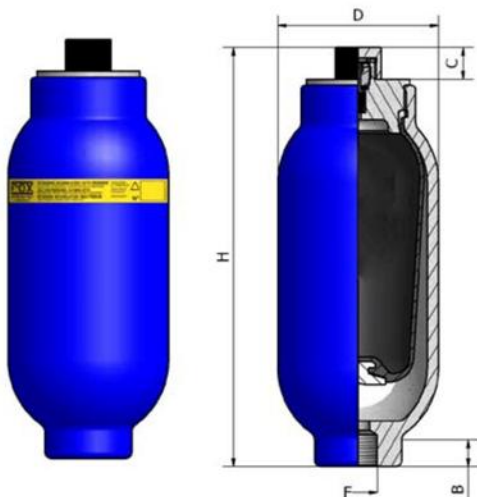
**According to:**

97/23/CE – PED

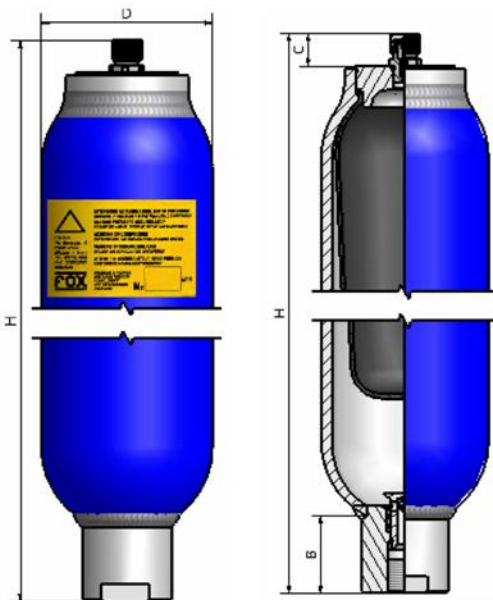
94/9/CE – ATEX Group II Cat 2



Type	Max Pressure Bar	Nitrogen Volume Litre	Max Preload Bar	H Mm	D mm	C mm	B mm	CH mm	Hydraulic Connection	Max Flow Litre/min	Weight Kg
<b>HB2.5</b>	350	2.5	230	495	114	25	60	50	1"¼ BSP	220	12
<b>HB4.5</b>	350	4	230	410	168	47	60	50	1"¼ BSP	400	16
<b>HB6</b>	350	6	230	505	168	47	60	50	1"¼ BSP	350	19.5
<b>HB10</b>	350	10	230	775	168	47	60	50	1"¼ BSP	300	36
<b>HB20</b>	330	18.5	230	870	223	60	100	70	2" BSP	600	53
<b>HB25</b>	330	24.9	230	1030	223	60	100	70	2" BSP	570	62
<b>HB35</b>	330	33.5	230	1400	223	60	100	70	2" BSP	540	84
<b>HB50</b>	330	49	230	1900	223	60	100	70	2" BSP	500	115

**TOP REPARAIBLE**


Drawing N°1



Drawing N°2

**Technical Features:**
**Maximum working pressure (PS):** 250/210 /150 bar

**Test pressure (PT):** PS x 1,43 bar

**Body:** made in painted carbon steel

**Working temperature (TS):** from - 20°C to + 80°C

**Standard bladder:** can be used with mineral oils and non corrosive fluids

**Installation position:** from vertical (nitrogen valve upward) to horizontal position

**Compression Ratio:**

- recommended:  $P2/P0 = 2.5$
- maximum :  $P2/P0 = 4$

**Mechanical life:** the number of cycles is proportional to the increase compression ratio

**Warranty:** see dedicated page

**Spare parts:** see dedicated page

**Available:**

- HTR .. T inside and outside zinc-plated body
- inside and outside epoxy painted body
- inside an outside nickel-plated body
- special bladder: FPM – EPDM – Hytrel – Alcryn ecc...
- bladders for working temperatures till 150 °C
- HTR .. LT series for utilization oil temperature to - 40°C
- hydraulic connection 1/2" BSP for the models marked with (\*)

**According to:**

97/23/CE – PED

94/9/CE – ATEX II 2 G



Type	Max Pressure Bar	Nitrogen Volume Litri	Max Preload Bar	H mm	D mm	C mm	B mm	Hydraulic Connection	Max Flow Lt./min	Weight Kg	Draw.
HTR0.3	250	0.3	150	185	72	15	20	M 18X1.5 *	40	2	1
HTR0.35	250	0.35	150	155	93	15	20	M 18X1.5 *	45	2.5	1
HTR0.7	250	0.75	150	220	92	15	20	M 18X1.5 *	40	3.7	1
HTR1.5	250	1.5	150	280	115	15	25	M 18X1.5 *	40	5.3	1
HTR2.5	250	2.5	150	483	115	15	50	3/4" BSP	110	11.5	2
HTR4.5	210	4.5	150	395	170	15	80	1" 1/4 BSP	400	15	2
HTR6.5	210	6.5	150	520	170	20	60	1" 1/4 BSP	350	24	2
HTR10	210	10	150	760	170	15	80	1" 1/4 BSP	300	31	2
HTR20	150	19.5	100	845	220	15	110	2" BSP	600	59	2
HTR35	150	35	100	1500	220	15	110	2" BSP	540	90	2
HTR50	150	50	100	1990	220	15	110	2" BSP	500	121	2

**Technical Features:**

**Maximum working pressure (PS) :** 300 bar

**Test pressure (PT) :** PS\*1.43 bar

**Maximum precharge admissible :** 210 bar

**Body:** made in painted carbon steel

**Standard nitrogen valve :** 5/8" UNF

**Constructive methodology:** two different parts united with a special threading that under condition of dynamic pressure tends to self-block

**Working temperature for standard execution:**

from - 20°C to + 90°C

**Standard diaphragm:** can be used with mineral oils and non corrosive fluids

**Installation:** in every position

**Compression ratio:**

- recommended: P2/P0 = 2.5
- maximum : P2/P0 = 6

**Mechanical life:** the number of cycles is inversely proportional to the increase compression ratio

**Warranty:** see dedicated page

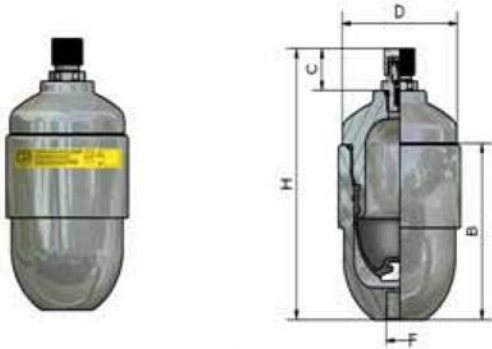
**Spare parts:** see dedicated page

**Available :**

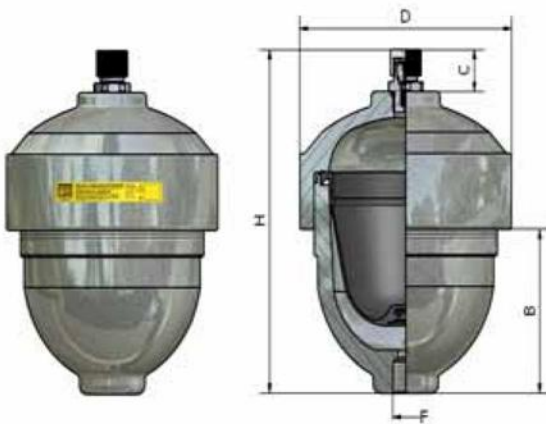
- **HST .. T** inside and outside zinc-plated body
- **HST..LT** with diaphragm suitable for working temperatures to -40 °C
- **HST .. M:** rechargeable with nitrogen valve M28x1.5
- **HST .. V:** not rechargeable with a fixed nitrogen preload in the factory
- **HST .. S:** separator of fluid execution

**According to:**

- 97/23/CE – PED
- 94/9/CE – ATEX



Drawing 1



Drawing 2



Type	Max Pressure	Nitrogen Volume	Max Preload	H	D	B	C	Hydraulic Connection	Max Flow	Weight	Draw.N°
	Bar	Litre	Bar	mm	mm	mm	mm		Litre/min	Kg	
<b>HST 0.04</b>	300	0.04	210	100	60	35	11	3/8" BSP	35	0.7	2
<b>HST 0.1</b>	300	0.12	210	141	80	94	22	M 18X1.5	45	2.1	1
<b>HST 0.35</b>	300	0.35	210	152	101	100	22	M 18X1.5	50	3.2	1
<b>HST 0.5</b>	300	0.5	210	175	124	120	22	M 18X1.5	60	5	1
<b>HST 0.7</b>	300	0.7	210	218	100	80	22	M 18X1.5	55	5.5	1
<b>HST 0.8</b>	300	0.8	210	185	138	85	22	M 18X1.5	60	5.8	2
<b>HST 1.3</b>	300	1.3	210	232	120	180	22	M 18X1.5	55	7.9	1
<b>HST 1.5</b>	300	1.5	210	270	138	160	22	M 18X1.5	55	8.7	2
<b>HST 2.3</b>	300	2.3	210	340	138	165	22	M 18X1.5	55	10.5	2

**PATENTED EXECUTION**

**Technical Features:**

**Maximum working pressure (PS):** 250 bar

**Test pressure (PT) :** PS x 1.43 bar

**Maximum preload:** 160 bar

**Body:** in cold formed steel

**Constructive methodology:** end parts welded in protected argon atmosphere

**Working temperature for standard execution:** from - 20°C to + 80°C

**Standard diaphragm:** non replaceable can be used with mineral oils and non corrosive fluids

**Installation:** in any position

**Compression ratio:**

- recommended:  $P2/P0 = 2.5$

- maximum:  $P2/P0 = 4$

**Mechanical life:** the number of cycles is inversely proportional to the increase of the compression ratio

**Warranty:** see dedicated page

**Spare parts:** see dedicated page

**Also available:**

- H.. LT series for working temperature till - 40°C

- diaphragm for working with aggressive fluids

**According to:**

97/23/CE – PED

94/9/CE – ATEX

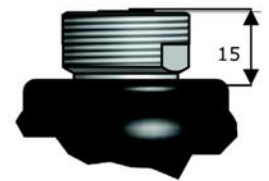
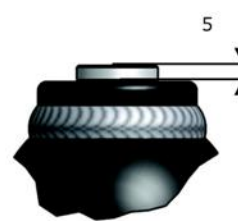
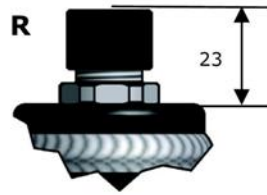


**Nitrogen connection parts:**

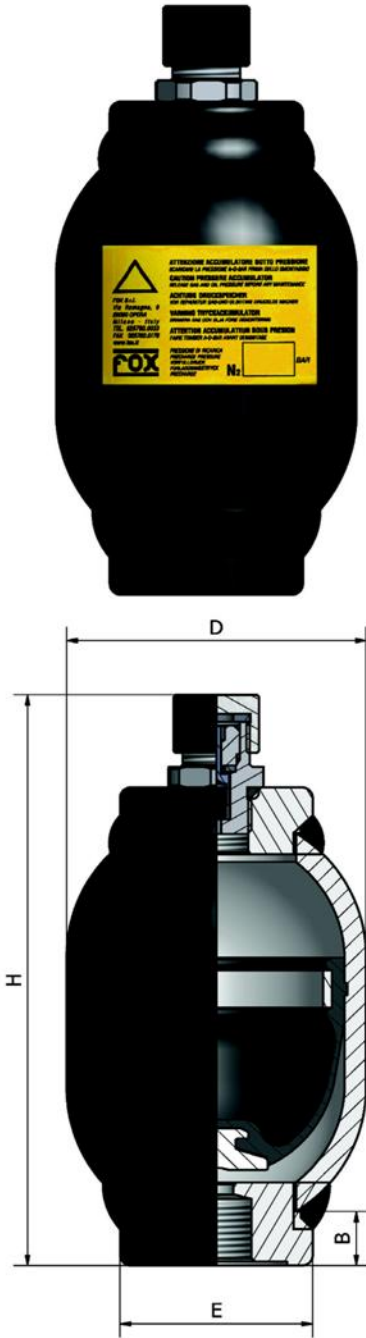
R = rechargeable  
5/8"UNF

V = non rechargeable

M = rechargeable  
M28x1,5



Dimensions with valve R type



Type	P. Max Bar	Nitrogen Volume Litres	Max Preload Bar	H mm	D mm	E mm	C mm	B mm	Hydraulic Connection	Max Flow Litre/min	Weight Kg
H100R	250	0.15	160	142	70	45	23	15	M 18X1.5	40	1.2
H350R	250	0.35	160	205	70	35	23	15	M 18X1.5	35	1.7
H500R	250	0.45	160	167	92	55	23	17	M 18X1.5	50	1.9
H700R	250	0.7	160	220	92	40	23	17	M 18X1.5	40	2.7
H1000R	250	1	160	200	115	60	23	19	M 18X1.5	50	3.5
H1400R	250	1.4	160	270	115	60	23	19	M 18X1.5	40	4.9
H2000R	250	2	160	350	115	60	23	19	M 18X1.5	40	5.8
H4000R	210	3.8	135	320	170	95	23	15	3/4" BSP	80	14

**Technical Features :**
**Maximum working pressure (PS) :** 250 (bar)

**Test pressure (PT) :** PS x 1,43 (bar)

**Working temperature (T):** from -20°C to +80°C

**Type:** "piston type accumulator , not repairable "

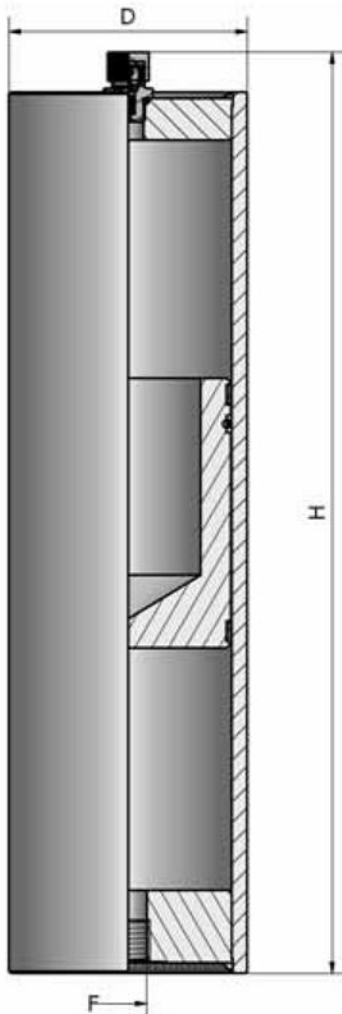
**Construction method :** plated carbon steel body with welded end-parts and a sliding internal piston ( in according whit European Directive 97/23/CE PED).  
Separation piston made in aluminium alloy.

**Seals:**  
 - standard execution : NBR  
 - made on request : Poliuretane – FKM – PTFE

**Installation position:** in any position.

**Spare parts :** "R" valve (for nitrogen preload)

**Warranty:** see dedicated page

**According to:**  
 97/23/CE – PED  
 94/9/CE – ATEX

**Notes :**  
 The model list illustrates the mainly requested execution.  
 Are available execution and capacity on request.

Type	Max pressure	Nitrogen volume	Max preload pressure	H	D	Hydraulic connection	Max flow	Weight
	bar	Litri	bar	mm	mm	F	Lt/minuto	Kg
<b>HP0,35</b>	250	0,35	150	277	70	½" BSP	80	3,2
<b>HP0,7</b>	250	0,7	150	387	70	½" BSP	80	6
<b>HP1</b>	250	1	150	487	115	¾" BSP	150	8.7
<b>HP2</b>	250	2	150	427	115	¾" BSP	150	11,3
<b>HP4</b>	250	4	150	682	115	¾" BSP	150	16,7
<b>HP6</b>	250	6	150	942	115	¾" BSP	150	23

**Technical Features:**

**Maximum working pressure (PS) :** 150 / 210 bar

**Test pressure (PT) :** PS\*1.43 bar

**Body:** in AISI 316L stainless steel

**Constructive methodology:** two or three different parts united with a special threading that under condition of dynamic pressure tends to self-block

**Diaphragm:** different types in relation to the used fluid:

- Perbunan (NBR)
- Butile
- Nitrile (NBR)
- Poliuretano
- EPDM
- Viton

**Installation position:** in every position

**Compression ratio:**

- recommended:  $P2/P0 = 2.5$
- maximum :  $P2/P0 = 4$

**Mechanical life:** the number of cycles is inversely proportional to the increase of the compression ratio.

For pulsation dampener applications, the nitrogen value must be from 60% to 80% of the working pressure also in relation with the working temperature.

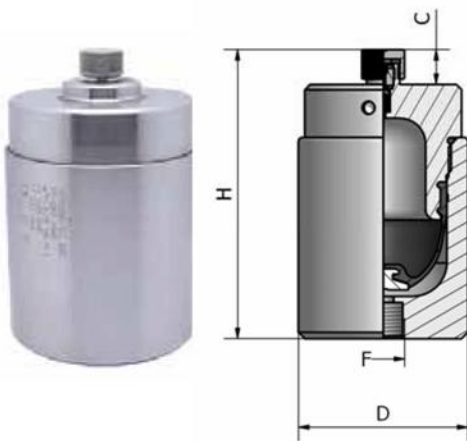
**Warranty:** see dedicated page

**Spare parts:** see dedicated page

**Also available:**

- execution for working pressure further 500 bar

**According to:**  
 - 97/23/CE – PED  
 - 94/9/CE – ATEX



Drawing N°1

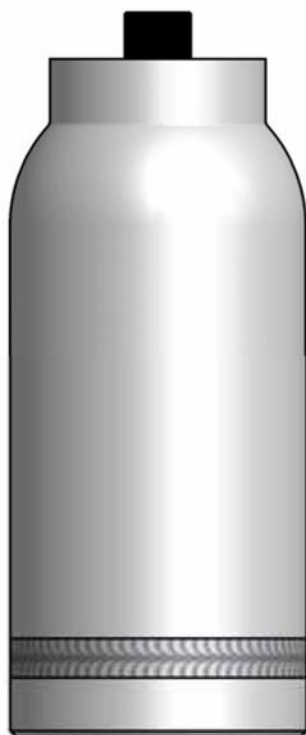


Drawing N°2



Type	Max Pressure	Nitrogen Volume	Max Preload	H	D	C	B	Hydraulic Connection	Weight	Draw.
	bar	litre	bar	mm	mm	mm	mm		Kg	N°
<b>HSTX 0.04</b>	210	0.04	150	100	60	11	35	3/8" BSP	0.7	2
<b>HSTX 0.1</b>	150/210	0.12	105/150	138	80	23	-	1/2" BSP	2.2	1
<b>HSTX 0.35</b>	150/210	0.35	105/150	152	100	23	-	1/2" BSP	3.7	1
<b>HSTX 0.7</b>	150/210	0.7	105/150	215	100	23	-	3/4" BSP	5	1
<b>HSTX 0.8</b>	150/210	0.8	105/150	180	138	23	77	3/4" BSP	6.1	2
<b>HSTX 1.5</b>	150/210	1.5	105/150	270	138	23	170	1" BSP	8.7	2
<b>HSTX 2.3</b>	150/210	2.3	105/150	360	138	23	170	1" BSP	10.5	2
<b>HSTX 4.5</b>	150/210	4.5	105/150	370	180	18	-	1" BSP	24	1
<b>HSTX 10</b>	150/210	10	105/150	740	180	18	-	1 1/4" BSP	45	1

Hydropneumatic bladder accumulator with stainless steel body AISI316L in welded execution. The HTRX series is suitable for the use with water and with the aggressive fluids used on the alimentary, chemical, pharmaceutical and petrochemical sectors.



### Technical Features:

**Maximum working pressure (PS):** 30 / 150 bar

**Test pressure (PT):** > 1.43 x PS

**Body:** in AISI 316L stainless steel

**Constructive methodology:** two (draw.1) or three (draw.2) different parts welded together

**Bladder:** different type in relation to the used fluid:

- Perbunan (NBR)
- Butile
- Nitrile (NBR)
- Poliuretane
- EPDM
- Viton
- Hytrell

**Installation position:** from vertical position (nitrogen valve upward) to horizontal

### Compression ratio:

- recommended :  $P2/P0 = 2.5$
- maximum :  $P2/P0 = 4$

**Mechanical life:** the number of cycles is inversely proportional to the increase of the compression ratio.

For pulsation dampner applications, the nitrogen value must be from 60% to 80% of the working pressure also in relation with the pump's type and the working temperature

**Warranty:** see dedicated page

**Spare parts:** see dedicated page

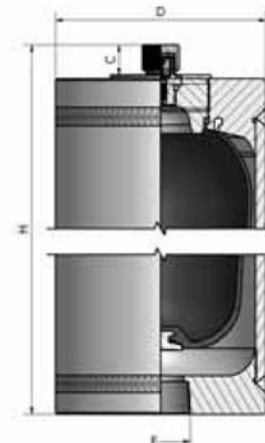
### According to:

97/23/CE – PED  
94/9/CE – ATEX  
ASME VIII<sup>o</sup> div.1

II 2 G/D



Draw. 1



Draw. 2

Type	Max Pressure Bar	Test Pressure Bar	Nitrogen Volume Litre	Max Preload Bar	H mm	D mm	C mm	Hydraulic Connection	Weight Kg	Draw. N.
HTRX 0.35	150	214.5	0.35	105	175	90	25	¾"NPT	2.8	1
HTRX 0.7	150	214.5	0.7	105	228	90	25	¾"NPT	4	1
HTRX 1.5	70	100.1	1.5	49	270	114	25	1"NPT	7	2
HTRX 2.5	70	100.1	2.5	49	405	114	25	1"NPT	9	2
HTRX 4.5	50	71.5	4.5	35	350	168	25	1½ NPT	15	2
HTRX 6.5	50	71.5	6.5	35	486	168	25	2"BSP	19	2
HTRX 10	50	71.5	10	35	720	168	25	2"BSP	25	2
HTRX 20	30	42.9	20	21	750	220	40	3"BSP	36	2
HTRX 35	30	42.9	35	21	1290	220	40	3"BSP	58	2
HTRX 50	30	42.9	50	21	1780	220	40	3"BSP	75	2



**TOP REPAIRABLE**

Bladder type hydropneumatic accumulators with body in AISI 316L stainless steel

**Technical features :**

**Maximum working pressure (PS):** 220 bar

**Test pressure (PT):** > 1,43 x PS

**Body :** in AISI 316L Stainless Steel

**Construction methods :** three different parts united whit a special threading that under conditions of dynamic pressure tends to self-block

**Bladder :** differently type due to the fluid utilized :

- Perbunan (NBR)    -Butil    -Nitrile (NBR)
- Poliuretano        -EPDM    -Viton

**Installation position:** vertical position, nitrogen valve upward

**Compression Ratio:**

- recommended: P2/P0 = 2.5
- maximum : P2/P0 = 4

**Mechanical life:** the number of the cycles is inversely proporzioned to

the increase of the compression ration.  
To be used as antipulsation dampner, the precharged pressure should be between 60%

and

80% of the working pressure depending also

to the

temperature value.

**Warranty:** see dedicated page

**Spare parts:** see dedicated page

**Available:**

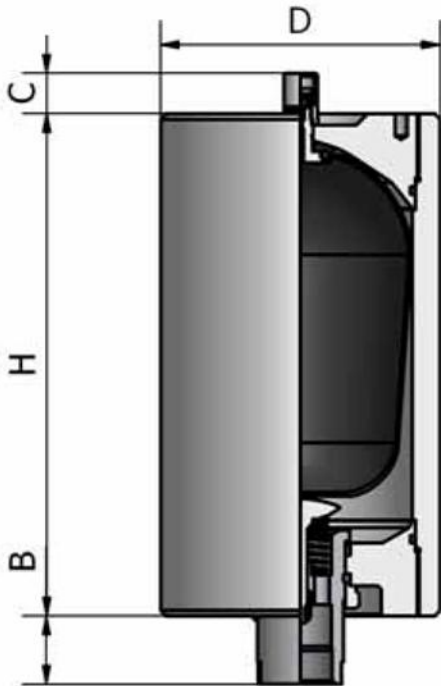
- flanged execution on requests

**According to**

97/23/CE – PED

94/9/CE – ATEX

ASME VIII° div.1



Type	Max Pressure	Test pressure	Nitrogen Volume	H	D	C	B	Hydraulic connection	Weight
	bar	bar	litri	mm	mm	mm	mm		Kg
<b>ACSX 10</b>	220	314.6	10	450	250	36	70	2"BSP	59.7
<b>ACSX 20</b>	220	314.6	20	735	250	36	70	2"BSP	99.2
<b>ACSX 25</b>	220	314.6	25	885	250	36	70	2"BSP	120.1
<b>ACSX 35</b>	220	314.6	35	1265	250	36	70	2"BSP	172.9
<b>ACSX 50</b>	220	314.6	50	1750	250	36	70	2"BSP	240.3

**Technical features:**

**Maximum working pressure (PS):** 210 Bar

**Test pressure (PT):** 315 Bar

**Body:** in AISI 316 L stainless steel

**Diaphragm :** in PTFE (Teflon)

**Working temperature:** -50°C ÷ +150°C

**Installation position:** from vertical (nitrogen valve upward) to horizontal position

**Preload pressure :**

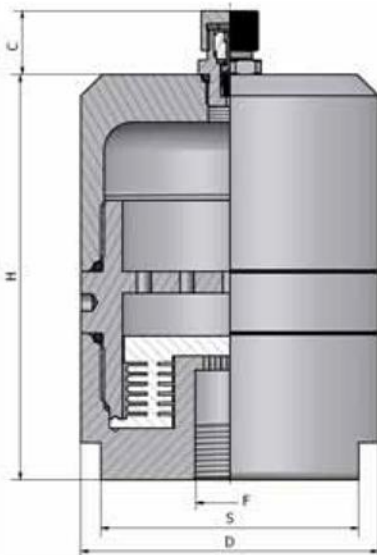
- P0 = 0.6 x P1 for SIMPLEX and DUPLEX pump
- P0 = 0.7 x P1 for TRIPLEX pump
- P0 = 0.8 x P1 for QUINTUPLEX and other pump

**Mechanical life:** the number of cycles is inversely proportional to the increase of the compression ratio.  
For pulsation damper applications , the nitrogen value must be from 60% to 80% of the working pressure also in relation with the working temperature

**Warranty:** see dedicated page

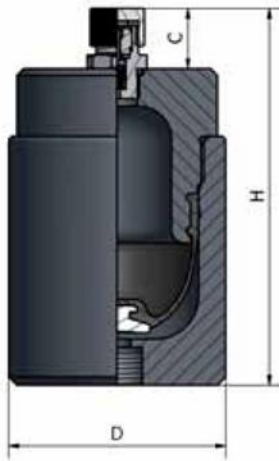
**Spare parts:** see dedicated page

**According to:**  
97/23/CE - PED  
94/9/CE - ATEX



Type	Max pressure	Test pressure	Nitrogen volume	H	D	C	S	Hydraulic connection (F)	Weight
	Bar	Bar	Litres	mm	mm	mm	mm	inch	Kg
<b>BTHX0.06</b>	210	315	0.06	82	104	22	90	¼" BSP	3.9
<b>BTHX0.15</b>	210	315	0.15	115	104	22	90	¼" BSP	5.2
<b>BTHX0.30</b>	210	315	0.3	135	104	22	90	¼" BSP	6
<b>BTHX0.50</b>	210	315	0.5	190	104	22	90	¼" BSP	7
<b>BTHX0.75</b>	210	315	0.75	232	104	22	90	¼" BSP	8
<b>BTHX1.00</b>	210	315	1	185	168	22	150	1 ½" BSP	11
<b>BTHX1.50</b>	210	315	1.5	211	168	22	150	1 ½" BSP	13
<b>BTHX2.00</b>	210	315	2	243	168	22	150	1 ½" BSP	15
<b>BTHX2.50</b>	210	315	2.5	276	168	22	150	1 ½" BSP	17

**Caratteristiche Tecniche:**



Disegno N°1

**Pressione massima di lavoro (PS) :** 10 bar

**Pressione di prova (PT) :** PS\*1.43 bar

**Corpo:**

- serie HSTPVC: in PVC
- serie HSTP: in POLIPROPILENE

**Metodologia costruttiva:** due componenti distinti uniti da una speciale filettatura che sottoposta a pressioni dinamiche tende ad autobloccarsi

**Temperatura massima di utilizzo:**

- serie HSTPVC: +50 °C
- serie HSTP: +70 °C

**Membrana:** differenti tipologie in relazione al fluido utilizzato:

- Perbunan (NBR)
- Nitrile (NBR)
- EPDM
- Hytrell "Du Pont"
- Butile
- Poliuretano
- Viton
- Alcryn "Du Pont"

**Montaggio:** posizione verticale (valvola azoto verso l'alto)

**Rapporto di compressione:**

- consigliato: P2/P0 = 2.5
- massimo: P2/P0 = 6

**Vita meccanica:** il numero di cicli è inversamente proporzionale all'aumento del rapporto di compressione. Per utilizzo come antipulsazione la pressione di precarica deve rientrare tra il 60% e l' 80% della pressione di lavoro in considerazione anche del valore della temperatura

**Garanzia:** vedi pagina dedicata

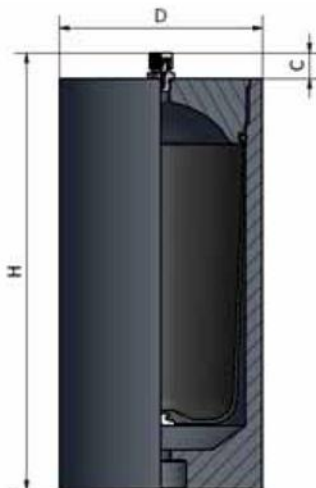
**Parti di ricambio:** vedi pagina dedicata

**Esecuzioni speciali :**

- **HSTPVC.C** : con corpo in PVC.C
- **HSTPVC.PVDF** : con corpo in PVC.PVDF
- con camicia di rinforzo per utilizzi sino a pressioni di 15 bar

**Conforme a:**

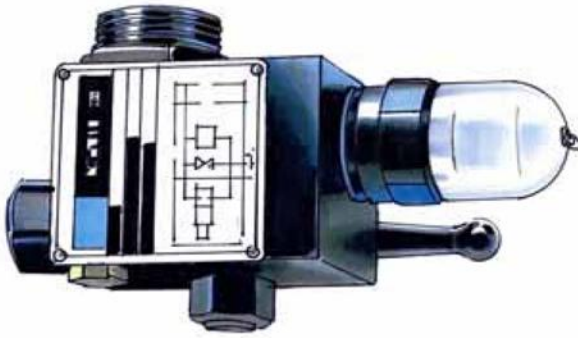
- 97/23/CE – PED
- 94/9/CE – ATEX



Disegno N°2



Tipo		Pressione Max	Volume Azoto	Precarica Max	H	D	C	Connessione idraulica	Peso	Dis.
		Bar	Litri	Bar	mm	mm	mm		Kg	N°
<b>HSTPVC 0.04</b>	<b>HSTP 0.04</b>	10	0.04	7	100	60	23	3/8"BSP	0.3	1
<b>HSTPVC 0.1</b>	<b>HSTP 0.1</b>	10	0.12	7	142	80	23	1/2" BSP	0.7	1
<b>HSTPVC 0.35</b>	<b>HSTP 0.35</b>	10	0.35	7	155	110	23	1/2"BSP	1.1	1
<b>HSTPVC 0.7</b>	<b>HSTP 0.7</b>	10	0.7	7	218	100	23	1/2"BSP	1.8	1
<b>HSTPVC 1.5</b>	<b>HSTP 1.5</b>	10	1.5	7	270	138	23	3/4"BSP	3.5	2
<b>HSTPVC 2.3</b>	<b>HSTP 2.3</b>	10	2.3	7	360	138	23	3/4"BSP	4	1
<b>HSTPVC 5</b>	<b>HSTP 5</b>	10	5	7	375	180	23	1"1/2 BSP	10	2
<b>HSTPVC 10</b>	<b>HSTP 10</b>	10	10	7	730	200	23	2"BSP	20	2



**Technical Features:**

**Maximum working pressure:** 330 bar

**Body:** in phosphated steel

**Standard execution:**

- Isolation ball valve
- Safety relief valve
- Drain port
- Gauge port

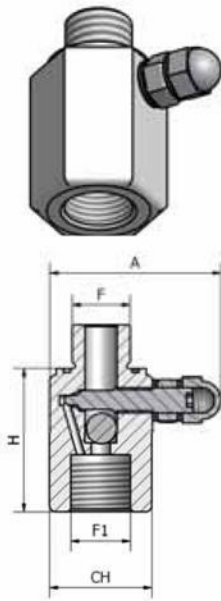
**Working temperature:** from - 20°C to + 80°C

**Special execution:**

- Safety valve /TÜV test inspected
- Safety valve/ I.S.P.E.S.L. test inspected
- Electric solenoid valve for accumulator discharge
- SAE and CETOP connecting flange for SB4 / SB5 / SB6 types
- Stainless steel housing



Type	Fox Compatible Accumulators	Hydraulic Connection Accumulator's side	Hydraulic Connection Installation's side	Fluid passage diameter	Note
				mm	
<b>SB1</b>	-	¾" BSP male	½" BSP female	10	
<b>SB2</b>	HB series till 10 litres, HTR series from 4.5 to 10 litres, HSTX10	1¼" BSP male	½" BSP female	10	
<b>SB3</b>	HB series from 20 to 50 litres, HTR20 HTRX10 HSTPVC10	2" BSP male	½" BSP female	10	Execution for high flow. Pre-designed for SAE and CETOP flange connection
<b>SB4</b>		2" BSP male	¾" BSP female	20	
<b>SB5</b>		2" BSP male	1" BSP female	25	
<b>SB6</b>		2" BSP male	1½" BSP female	32	



### Technical Features:

**Maximum working pressure:** 330 bar

**Body:** in zinc-plated carbon steel

**Use:** for an optimal use of an hydropneumatic accumulator is advisable to

have in the almost totality of the applications a regulation of the flow. The VSA series of flow regulators has been conceived for resolving in the most economic way this requirement

**Regulation:** the flow set point is controlled by means of a set screw without the need of an external control knob

**Installation position:** in every position

**Maximum flow without accumulator:**

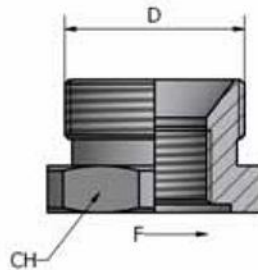
- VSA 18: 50 litre/min
- VSA 21: 50 litre/min
- VSA 34: 90 litre/min

**Maximum flow with accumulator:**

the flow increase following a directly proportional function to the value of the nitrogen preload

Type	Max Pressure	Max Flow Without Accumulator	Hydraulic Connection Accumulator's Side	Hydraulic Connection Installation's Side	H	A	Hexagon	Weight
	Bar	Litre/min			mm	mm	mm	Kg
<b>VSA 18</b>	330	50	M 18x1.5	M 18x1.5	45	53	32	0.3
<b>VSA 21</b>	330	50	M 18x1.5	½" BSP	45	53	32	0.3
<b>VSA 34</b>	330	90	¾" BSP	¾" BSP	57	65	36	0.45

### VS SERIES ADAPTORS



Type	D	F	Hexagon
			mm
<b>VS 21</b>	M 18x1.5	½" BSP	32
<b>VS 34</b>	1¼" BSP	¾" BSP	50
<b>VS 214</b>	2" BSP	1¼" BSP	70
<b>VS 234</b>	2" BSP	¾" BSP	70

### NS SERIES NIPPLES



Type	F1	F2	Hexagon
			mm
<b>NS15</b>	M 18x1.5	⅜" BSP	27
<b>NS21</b>	M 18x1.5	½" BSP	27

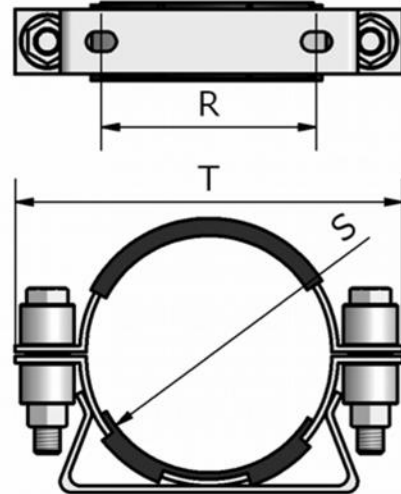
**CLAMPS AND BRACKETS**

Designed for specific use on accumulator installation, both clamps and brackets are supplied complete with rubber support to ensure rigid mounting

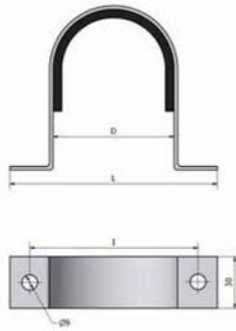
**CLAMPS CR SERIES**



Type	S	R	T
	mm	mm	mm
<b>CR 114</b>	114÷116	100	180
<b>CR 168</b>	168÷172	148	230
<b>CR 223</b>	223÷225	216	290



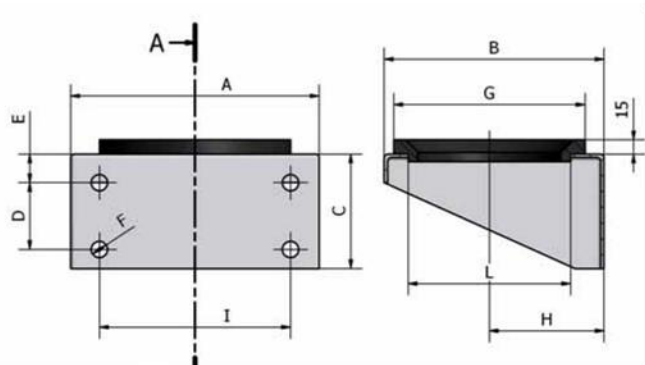
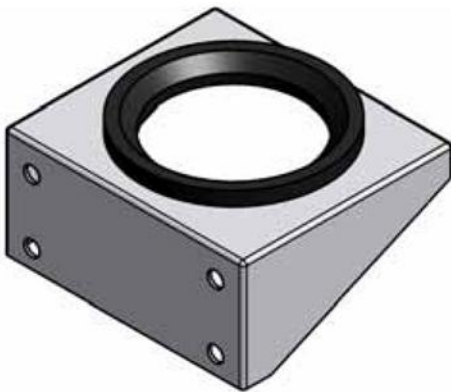
**CLAMPS CRE SERIES**

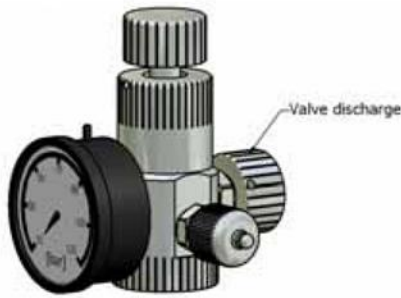


Type	L	I	D
	mm	mm	mm
<b>CRE 70</b>	120	94	70
<b>CRE 92</b>	145	120	92
<b>CRE 115</b>	180	155	115
<b>CRE 138</b>	210	185	138

**BRACKETS MRC SERIES**

Type	A	B	C	D	E	F	G	H	I	L
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
<b>MRC 168</b>	200	175	90	40	30	11	140	93	140	120
<b>MRC 223</b>	260	230	120	70	30	17	200	120	200	170





### Technical Features:

**Maximum working pressure :** 350 bar

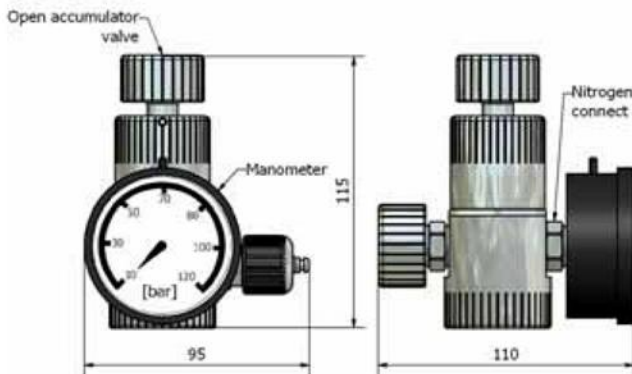
**Body:** in zinc-plated steel

**Standard execution:**

- manometer included
- useful dedicated handbag
- 2.5 m flexible pipe for cylinder nitrogen with thread connection of 3/8" BSP

**Warranty:** see dedicated page

**Spare parts:** see dedicated page



The equipment of preload AR is an essential tool for the operations of control and restoration of the pressure of the nitrogen in the accumulators

Type	Manometer Scale
	bar
AR 1.0	0 > 6
AR 1.1	0 > 16
AR 1	0 > 40
AR 2	0 > 60
AR 3	0 > 100
AR 4	0 > 160
AR 5	0 > 250
AR 6	0 > 400

### Instruction for use:

#### How To Check Nitrogen Pressure:

- a) If the accumulator is connected to the systems please check there is no pressure on the oil side. Turn anticlockwise the valve knob until it is fully disengaged and install it on the accumulator.
- b) Close the nitrogen discharge valve and turn the "AR" valve knob clockwise until the pressure gauge signals there is not internal pressure left or knob is fully turned clockwise in the event accumulator is fully discharged.
- c) Once nitrogen pressure is checked, gently unscrew discharge valve until pressure start decreasing. Once wanted nitrogen pressure is reached fully unscrew valve knob, open the nitrogen discharge valve to eliminate residual pressure and unscrew "AR" valve from the accumulator re-install protection cap of filling valve on accumulator turn strongly.

#### Filling Of Nitrogen:

Repeat A.M. operations connecting the nitrogen bottle quick release coupling before opening the valve knob. Start filling nitrogen very gently. We recommend to use a gas pressure reducer installed on the bottle in order to avoid over-pressurizations of the accumulator body during filling operation, especially when the precharge is low in pressure. Check nitrogen precharge every approx six months.

## NITROGEN VALVE R TYPE

### Technical Features:

**Body:** zinc-plated steel

**Maximum working pressure:** 400 bar

**Available also:**

- with body in AISI 316L stainless steel

**Installation:**

- accumulators
- control or variation of pressure in any system to gas or fluid
- drainage of the air in closed hydraulic circuits

