

AS-AF-AX

spherical accumulators



• Technical description

LEDUC spherical accumulators consist of two **hemispherical shells** which are screwed together and which hold a **diaphragm**. This diaphragm has a **metal stud** which closes off the operation hole when the fluid is **completely discharged**. There is therefore no danger of damage to the diaphragm.

The gas side port is fitted with a **charging valve** allowing the pressure in the accumulator to be checked or changed.

• Advantages

The diaphragm only changes position, the elastomer in fact works little.

The LEDUC spherical accumulator owes most of its qualities to its diaphragm and metal pin :

- excellent gas/fluid tightness.
 - possibility of **total and rapid discharge**.
- Can be **adapted** to suit a wide range of **fluids**.

• Various versions

AF version 500 bar

Shell of high resistance steel, for operation at low temperatures and/or high pressures.

Maximum service pressure : 500 bar.

AS version 400 bar

Carbon steel shell.

Maximum service pressure 400 bar (250 bar for AS 0.7 model).

AX version 250 bar

Shell made of stainless steel, operation possible with most corrosive fluids.

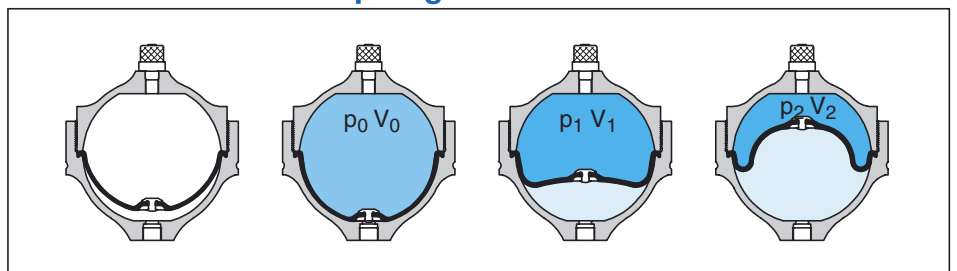
Maximum service pressure : 250 bar.

Available on request for AF and AS versions : **ARCOR® anti-corrosion treatment**.

• Examples of applications

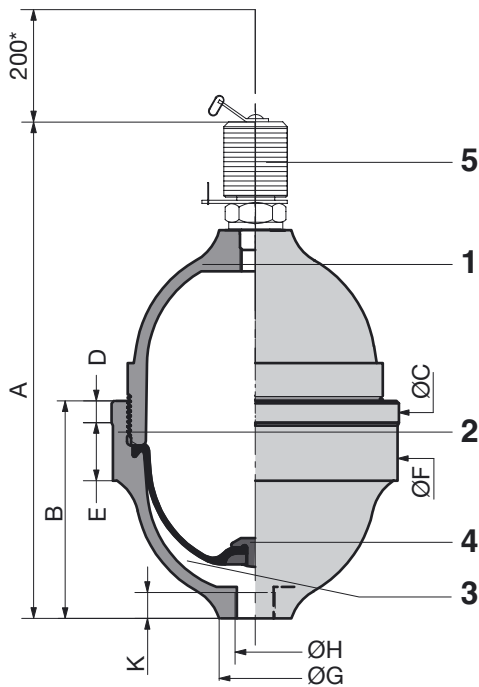
- Anti-pulsation
- Transfer of fluids

Deformation of the diaphragm

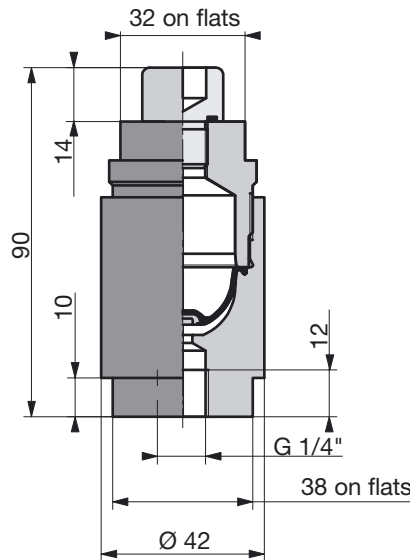


Spherical accumulators

AS-AF-AX



AC 00 02



Dimensions in mm

*dimensions with VGL 4 fitted

- | | |
|---|-----------------------|
| 1 | upper spherical shell |
| 2 | lower spherical shell |
| 3 | diaphragm |
| 4 | metal stud |
| 5 | charging valve |

• Extreme operating temperatures

shells

- AF type : steel, operation from - 40°C to + 120°C
- AX type : stainless steel, operation from - 35°C to + 120°C
- AS type and AC 0.02 : steel, operation from - 20°C to + 120°C

separators

- Standard : nitrile, operation from - 20°C to + 100°C
- Special : from - 40°C to + 120°C (dynamic use)

• Filling gas

Nitrogen only.

• Operating fluids

- Mineral-based hydraulic fluids : standard diaphragm.
- Corrosive or non-standard fluids : please consult our Customer Service Department.

• Volumetric ratio ($V_0 - V_2$)/ V_0

The volumetric ratio of this type of accumulator is 0.75.
For example : an AX 1 accumulator can take in a maximum volume of $0.75 V_0 = 0.75 \times 1 = 0.75$ litres.

• Accessories

Safety and shut-off blocks, see pages 12 and 13.
Clamps, see page 14.
Adaptors, see page 14.

• Order codes

See page 16.

Leduc part number	nitrogen capacity V_0 litres	maximum pressure bar	weight kg	A	B	ØC	dimensions (mm)					
				D	E	ØF	ØG	ØH	K			
AS 00 20 060932	0.19	400	1.2	150	69	84.5	9	20	83.5	29	G1/4"	12
AS 00 50 060972	0.45	400	2.8	184	89	114	12	23	112.5	40	G3/8"	16
AS 00 70 060782	0.65	250	3	197	89	119.5	9	24	118.5	30	G3/8"	13
AS 01 00 060110	1.1	400	5.5	197	112	163.5	50.5	50.5	163.5	40	M18 x 1.5	12
AS 02 50 060812	2.55	400	14	251	161	213.5	37	29	210	51	G3/4"	17
AS 04 00 060121	4.1	400	22	298	202	251	44	40	247	105	M33 x 2	20
AS 10 00 060141	10.19	400	53	391	268	339	52.5	52.5	333	105.1	M33 x 2	20
AC 00 02 060955	0.017	400	0.640	see drawing above								
AF 00 50 060972	0.45	500	2.8	184	89	114	12	23	112.5	40	G3/8"	16
AF 01 00 060110	1.1	500	5.5	197	112	163.5	50.5	50.5	163.5	40	M18 x 1.5	12
AX 00 50 060972	0.45	250	2.8	184	89	114	12	23	112.5	40	G3/8"	16
AX 01 00 060110	1.1	250	5.5	197	112	163.5	50.5	50.5	163.5	40	M18 x 1.5	12

Dimensions are given only as an indication.

ABVE

bladder accumulators

CE

see page 16

• Technical description

The ABVE bottle type accumulators consist of :

- a forged steel body,
- a bladder,
- a charging valve,
- an oil side orifice fitted with a poppet valve which prevents extrusion of the bladder, and an air bleed screw used during system start-up.

• Advantages

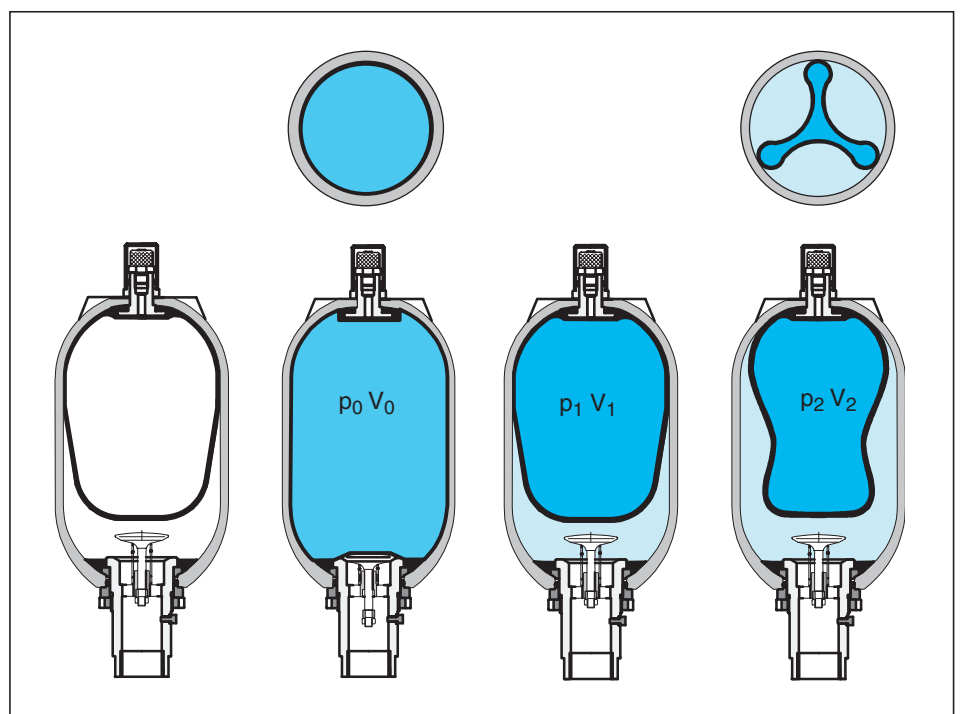
- bladder accumulator, component parts are **interchangeable** with those of major accumulators available.
- dimensions allow for easy installation and also **use in batteries**.

• Example of applications

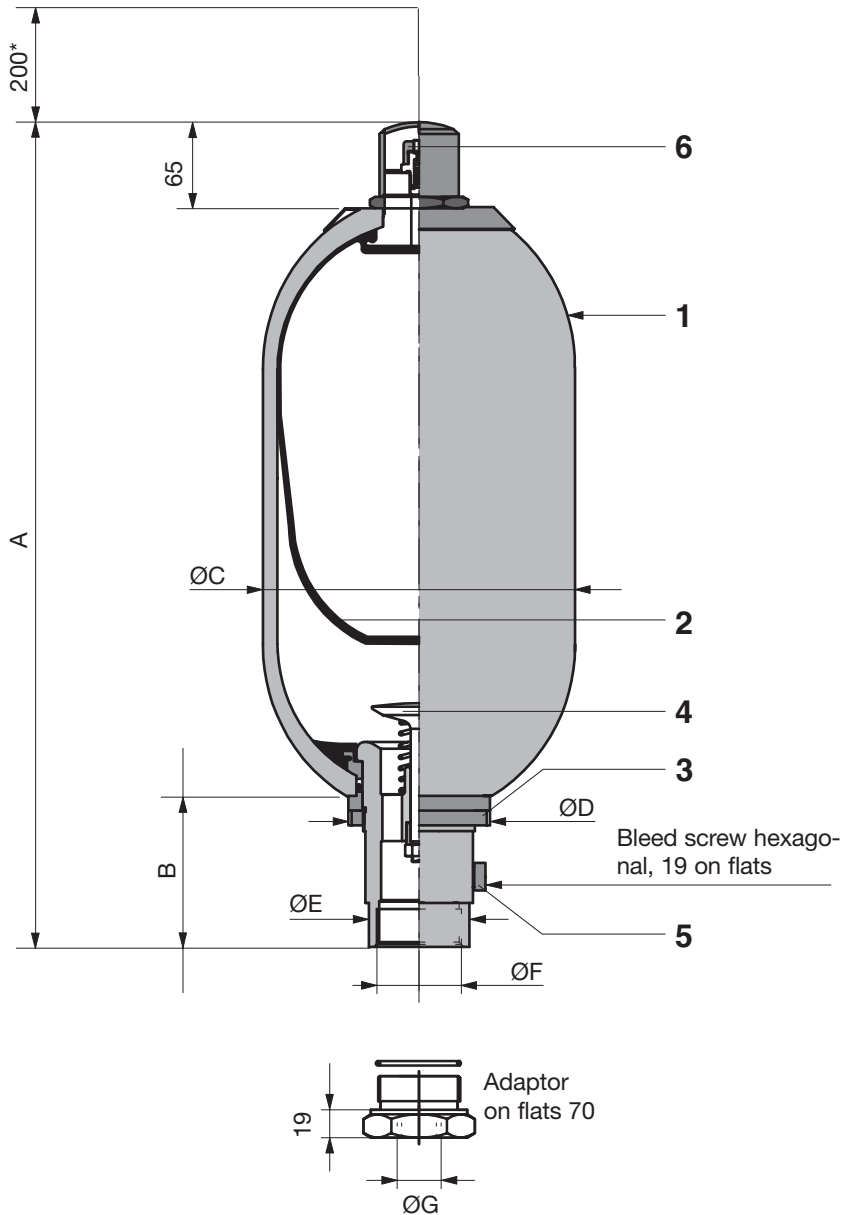
- Energy storage



Deformation of the bladder



Bladder accumulators



*dimensions with VGL 4 fitted

1	body
2	bladder
3	oil side orifice
4	poppet valve
5	air bleed screw on ABVE 10 to 50 litres
6	charging valve

- **Extreme operating temperatures**

From - 20°C to + 80°C

- **Filling gas**

Nitrogen only.

- **Operating fluids**

- Mineral-based hydraulic fluids : standard bladder.
- Non-standard and/or corrosive fluids : please consult our Customer Service Department.

- **Volumetric ratio $(V_0 - V_2)/V_0$**

The volumetric ratio of this type of accumulator is 0.75.
For example, an ABVE 4 accumulator can take in a maximum volume of $0.75 V_0 = 0.75 \times 4 = 3$ litres.

- **Accessories**

Safety and shut-off blocks, see pages 12 and 13.
Clamps, see page 14.
Adaptors, see page 14.

- **Order codes**

See page 16.

Leduc part number	nitrogen capacity V_0 litres	maximum pressure bar (CE)	weight kg	A	B	ØC	dimensions (mm)				
							ØD	ØE	ØF	ØG	
ABVE 4 066850	3.7	350	14	438	65	170	67	52.5	G1"1/4	G3/4" or full	
ABVE 10 066860	9.2	330	30	579	103	221	101	76	G2"	G3/4" - 1" or full	
ABVE 20 066870	17.8	330	50	879	103	221	101	76	G2"	G3/4" - 1" or full	
ABVE 32 066880	32	330	80	1400	103	221	101	76	G2"	G3/4" - 1" or full	
ABVE 50 066890	48.5	330	100	1914	103	221	101	76	G2"	G3/4" - 1" or full	

Dimensions are given only as an indication.

ACS

welded cylindrical
accumulators



• Technical description

The ACS type welded accumulators are made up of a shell in high resistance steel containing a fluid-gas separator. This separator is made of nitrile for the standard ACS range, and of hydrogenated nitrile for low temperature applications. The separator is fitted with an anti-extrusion stud, thus allowing rapid and total discharge of the accumulator.

• Advantages

- **Low temperature versions** suitable for operation at temperatures down to -40°C .
- **Interchangeable**, given outer dimensions, with most accumulators available.
- Completely modular from 0.7 to 4 litres. This design concept means easy addition of intermediate models if required.
- The bladder offers exceptionally good resistance to fatigue.
- Rapid and total discharge possible due to the anti-extrusion stud actually fitted onto the bladder.

• Gas charging

Two versions of the ACS are available :

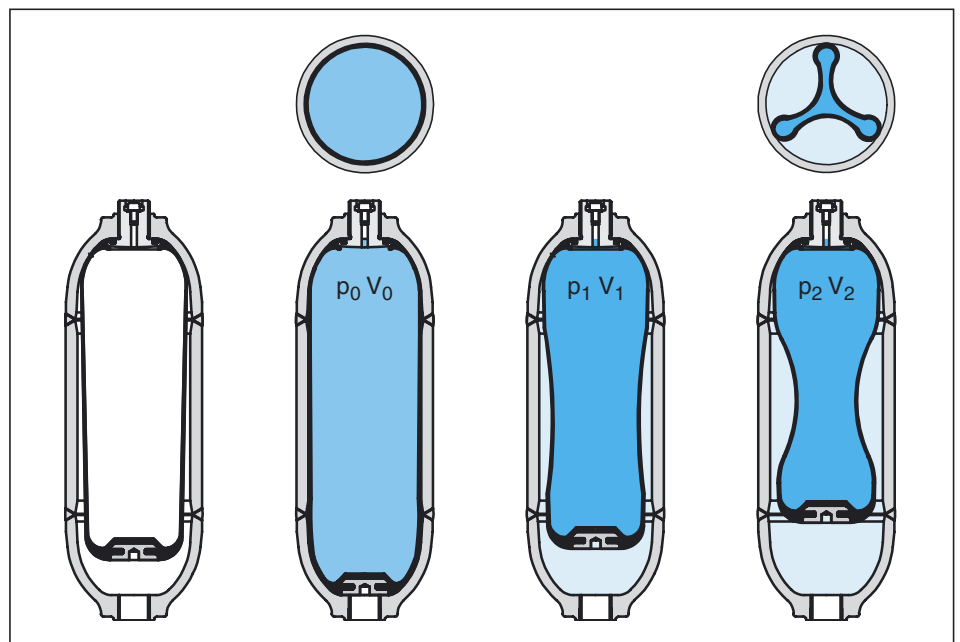
- with a charging screw,
- with a charging valve.

• Examples of applications

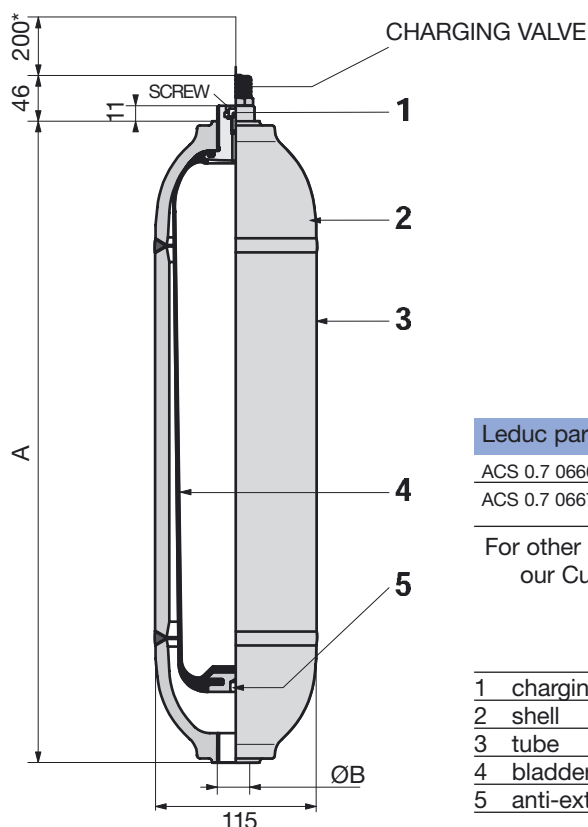
- Energy storage
- Suspension



Deformation of the bladder



Welded cylindrical accumulators



Leduc part n°	A	B	C	D
ACS 0.7 066695	M33 x 1.5	G1/2"	14	20
ACS 0.7 066735	M26 x 1.5	M14 x 1.5 (as per ISO 6149)	14	16

For other oil side threads, please contact our Customer Service Department

1	charging screw
2	shell
3	tube
4	bladder
5	anti-extrusion stud

*dimensions with VGL 4 fitted

• Extreme operating temperatures

- Standard version :
- 20°C to + 120°C
- "Low temperature" version:
- 40°C to + 120°C

• Filling gas

Nitrogen only.

• Operating fluids

- Mineral-based hydraulic fluids.
- Other fluids : please ask.

• Volumetric ratio $(V_0 - V_2)/V_0$

The recommended volumetric ratio of this type of accumulator is 0.75.
For example : an ACS 4 accumulator can take in a maximum volume of $0.75 V_0 = 0.75 \times 4 = 3$ litres.

• Accessories

Safety blocks, see pages 12 and 13.
Fixation devices, see page 14.

• Order codes

See page 16.

Leduc part number	nitrogen capacity V_0 litres	maximum pressure bar (CE)	weight kg	A	$\varnothing B$	gas side orifice
ACS 0.7 066445	0.7	330	4	176	G3/8"	screw
065975	0.7	330	4	176	G3/8"	P 1620 valve
066035	0.7	330	4	176	G3/4"	screw
066130	0.7	330	4	176	G1/2"	screw
066255	0.7	330	4	176	G1/2"	P 1620 valve
065950	0.7	330	4	176	M16 x 1.5	screw
065952	0.7	330	4	176	M18 x 1.5	screw
066110*	0.7	330	4	176	G1/2"	screw
066845**	0.7	330	4	176	3/4 - 16 UNF - 2B	screw
065947**	0.7	330	4	176	3/4 - 16 UNF - 2B	SCHRADER valve
ACS 1 065960	1.1	330	5.9	246	G3/4"	screw
065976	1.1	330	5.9	246	G3/4"	P 1620 valve
065964	1.1	330	5.9	246	M18 x 1.5	screw
066855**	1.1	330	5.9	246	3/4 - 16 UNF - 2B	screw
065965**	1.1	330	5.9	246	3/4 - 16 UNF - 2B	SCHRADER valve
ACS 1.5 065940	1.5	330	7.8	315	G3/4"	screw
065977	1.5	330	7.8	315	G3/4"	P 1620 valve
066840	1.5	330	7.8	315	M18 x 1.5	screw
066115*	1.5	330	7.8	315	G3/4"	screw
065945**	1.5	330	7.8	315	3/4 - 16 UNF - 2B	SCHRADER valve
066865**	1.5	330	7.8	315	3/4 - 16 UNF - 2B	screw
ACS 2 066705	2	330	9.9	393	G3/4"	screw
066675	2	330	9.9	393	G3/4"	P 1620 valve
ACS 2.5 065910	2.5	330	11.5	464	G3/4"	screw
065978	2.5	330	11.5	464	G3/4"	P 1620 valve
066120*	2.5	330	11.5	464	G3/4"	screw
066875**	2.5	330	11.5	464	3/4 - 16 UNF - 2B	screw
065915**	2.5	330	11.5	464	3/4 - 16 UNF - 2B	SCHRADER valve
066685**	2.5	330	11.5	464	1"1/16 - 12 UN - 2B	SCHRADER valve
ACS 4 065920	4	330	17.5	696	G3/4"	screw
065979	4	330	17.5	696	G3/4"	P 1620 valve
066885**	4	330	17.5	696	3/4 - 16 UNF - 2B	screw
065925**	4	330	17.5	696	3/4 - 16 UNF - 2B	SCHRADER valve
066690**	4	330	17.5	696	1"1/16 - 12 UN - 2B	SCHRADER valve

* with 50/flats - ** US version

Dimensions are given only as an indication.

Accessories

Safety and shut-off blocks

BS1

Symbol BS1 EQ

Fonction Q
Weight 3.5 kg

Fonction M
Poids 5,2 kg

Fonction E
Weight 1.3 kg

Connections for M and T ports
Ø 1/4" gas cyl. - Spot-facing Ø 25 depth 1
Connection on accumulator side - Ø A

Thread gas cyl. A	3/4"	1 1/4"	2"
C	30	30	96

Dimensions in mm

BS2

Symbol BS2 EQ

Fonction Q
Weight 7.2 kg

Fonction M
Weight 11.8 kg

Fonction E
Weight 1.3 kg

Connection on usage side
Standard version
4 threads holes M 12 depth 20
Cetop flange 1 1/4 400 bar
51.6 x 51.6 between axis

M port : 1/4" gas cyl. spot-faced Ø 17 depth 1
T port : 3/8" gas cyl. spot-faced Ø 28 depth 1.5

Dimensions in mm

BS

Thread gas cyl. A

Thread gas cyl. A	3/4"	1 1/4"	2"
B	16	20	24
C	30	30	96

Safety and shut-off Blocks

Description

These safety and shut-off blocks are designed to bring together in a single block the necessary safety organs required for the correct functioning of hydraulic circuits incorporating accumulators.

The basic block consists of :

- Ball valve with quarter turn closure, allowing the accumulator to be isolated from the circuit;
- Needle valve ensuring the manual decompression of the circuit;
- Pressure limiter (directly operated) set at the maximum operating pressure of the accumulator. This pressure limiter should never be used as the limiter to protect the hydraulic pump;
- Manometer plug;
- The E24 and E220 models are fitted with a 2 way, 2 position electro-valve, allowing decompression of the circuit by switching off the supply current;
- The Q version is fitted with a one-way adjustable flow limiter. Mounted on the main block, this limiter controls the accumulator outlet flow, whilst inlet flow remains unrestricted.

General technical characteristics

- Nominal crossing diameter : 16 mm (BS 1 Block), 24 mm (BS 2 Block);
- Maximum working pressure : 350 bar;
- Temperature range : - 20°C to + 70°C;
- Fluid : mineral based hydraulic oil (for other fluids please contact our Customer Service department);
- Supply voltage of the decompression : valve 220 V AC / 50 Hz - 24 V;
- Energy Input : AC : 50 VA; DC : 21 W;
- Flow : see pressure loss graph;
- Pressure limiter (nominal diameter) : 6 mm (BS1), 10 mm (BS2);
- Fitting of the BS2 Safety block, output side : welding-neck flange (CETOP 400 bar standard).

NB1 : the pressure limiter (0-400) is pre-set at 330 bar, but may be set at other values on request.

NB2 : as standard, BS2 is fitted with a 2" port (accumulator fitting).

NB3 : all safety and shut-off blocks have an electrical interface designed according to CETOP 3 standard, covered by a sealing plate except for models E24 and E220. The other models can therefore be used with other supply voltages, in such cases the end-user **should source and insert the necessary solenoids him/herself.**

The safety and shut-off blocks are available in a simplified version.

They consist of :

- Pressure limiter (directly operated) set at the maximum operating pressure of the accumulator. This pressure limiter should never be used as the limiter to protect the hydraulic pump.

General technical characteristics

- Nominal crossing diameter : 16 mm ;
- Maximum working pressure : 350 bar ;
- Temperature range : - 20°C to + 70°C ;
- Fluid : mineral based hydraulic oil (for other fluids please contact our Customer Service department) ;
- Pressure limiter (nominal diameter) : 6 mm.

Order codes for safety and shut-off blocks

Definition of product			Regulation and options		
BS	1	E24	Q	330	BQ
Size : _____					
1	= 16				
2	= 24				
Decompression control : _____					
M	= manual				
E24	= Elec. 24 v-cc				
E220	= Elec. 220 v-50 Hz				
Pressure limiter : _____					
Q	= with limiter				
Nothing written	= without limiter				
Setting the pressure limiter (0 to 400 bar) depending on type of accumulator : _____					
0 to 400					
Optional fitting for BS1 : _____					
A	: ACS 1 to ACS 4	(3/4")			
B	: ABVE 4	(1"1/4)			
C	: ABVE 10 to ABVE 50	(2")			
Optional fitting for BS1 fitted with flow limiter : _____					
AQ	: ACS 1 to ACS 4	(3/4")			
BQ	: ABVE 4	(1"1/4)			
CQ	: ABVE 10 to ABVE 50	(2")			

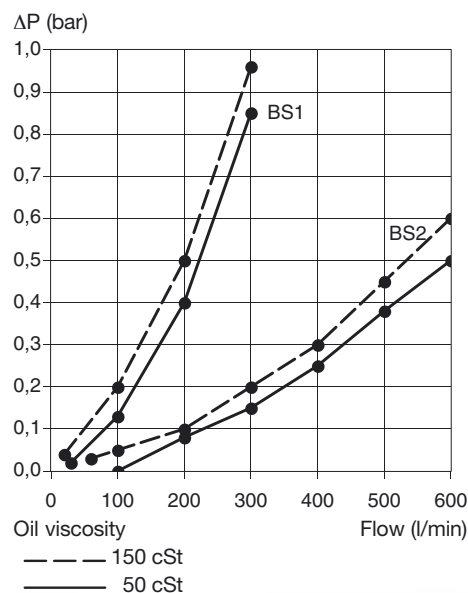
Nota : order codes for the simplified safety and shut-off blocks : BS + pressure setting of the pressure limiter.

Example 1 : a size 16 block, with control of electrical decompression 24V DS, with pressure limiter set at 330 bar, and fitting flange 1"1/4 : BS1E24Q330BQ.

Example 2 : a size 24 block, with manual decompression control, pressure limiter set at 250 bar : BS2M250.

Example 3 : (simplified safety and shut-off block) : a simplified safety and shut-off block with pressure limiter set at 330 bar : BS330

Graph of pressure drop as a function of flow



Clamps

For large capacity accumulators it is recommended to use seats. The number of fixation clamps used should be determined depending on the size of the accumulator.

fixation clamps	type of accumulator	clamp reference	dimensions (mm)						
			A	B	C	D	F	H	J
	AS 00 50/AF 00 50 AX 00 50/AS 00 70 ACS 0,7/1/1.5/2/2.5/4	254021	163	144	90	118.5	M8 x 80	77.81	3
	AS 01 00/AF 01 00 AX 01 00/ABVE 4	254022	210	200	130	168	M10 x 8 8.8	92	4
	type of accumulator	clamp reference	H	h	L	L1	L2	I	
	AS 04 00	254005	285.5	132	248	300	-	30	
	AS 02 50	254006	248	113	212	254	-	30	
ABVE 10/20/32/50	254007	-	119	216	254	297	30		

fixation clamps	type of accumulator	clamp reference
	ACS simplified clamp	065958

fixation seats	type of accumulator	seat reference	Ø	dimensions (mm)				
				A	B	C	d	e
	ABVE 4	254012	108	80	210	175	150	40
	ABVE 10/20/32/50	254008	152	100	260	225	200	40

adaptors	type of accumulator	adaptor outlet	reference
	AS 02 50	G1/2"	066451
	AS/AF AX 00 50 AS 00 70	G1/2 M18 x 1.5	EC1063 EC1069
	AS/AF AX 01 00	G1/2" G3/8"	EC 1054 EC 1056
	AS 04 00 AS 10 00	G3/4" G3/8" G1/2"	EC1061 EC1058 EC1059
	ABVE 4	G3/4" full	066305 066307
	ABVE 10/20/32/50	G3/4" G1" full	066074 066068 066069

Dimensions are given only as an indication.

Precautions for use, and maintenance recommendations

Installing and connecting your accumulator

The accumulator must be installed in an easily accessible place and should be fixed in place using robust collars : see page 14. It is important that the markings engraved on the accumulators remain visible.

Hydraulic connections : the dimensions of the connection ports are specified on the preceding pages, for each accumulator.

Pipes must not put any strains on the accumulator.

The accumulator must be connected to a hydraulic circuit using only mineral-based hydraulic oil or equivalent. For other fluids, please consult our Customer Service Department.

Any operation to modify the external appearance of the accumulator (welding, grinding, machining etc...) is strictly forbidden.

The accumulator should be suitably protected (paint or other protection) against external corrosion.

The circuit must include an isolation valve to isolate the accumulator, and also a means of checking that the hydraulic pressure never exceeds the maximum pressure engraved on the accumulator : see pages 12 and 13 regarding safety and shut-off blocks.

The accumulator must be connected to a pressure limiter set at a pressure not greater than the accumulator's maximum service pressure capability.

Charging

The pre-charge pressure must be less than the operating pressure engraved on the accumulator shell.

It is important to ensure the accessibility for a charging and gauging device (see page 15, charging equipment).

Pre-charge pressure must be checked before operation (see paragraph on "accumulator recommendations" below)

Use only nitrogen (N₂, minimum quality I).

If the nitrogen pressure of the installation connected - for the purposes of charging - to the accumulator is greater than the maximum acceptable pressure engraved on the accumulator, it is essential to install a pressure regulator between the bottle and the hose.

The influence of temperature on charging pressure should be taken into consideration.

A reference table is available from HYDRO LEDUC on request.

Start-up

Check that the hydraulic installation is able to withstand the maximum pressure engraved on the accumulator.

After the hydraulic connection to the circuit, the pipework must be bled carefully. Use the safety and shut-off blocks described on pages 12 and 13.

Use

The maximum hydraulic pressure must never exceed the operating pressure (PS) engraved on the accumulator shell : check using appropriate equipment (see page 15, charging and gauging kit).

The volumetric ratio $(V_0 - V_2)/V_0$ must not be exceeded, see the technical description for each accumulator.

Bleed the pipework of any air.

The accumulator must operate within the prescribed extreme operating temperatures.

Maintenance and control

Before intervening in any circuit which has a gas filled pressure vessel, the pressure must be discharged from the circuit.

Check the nitrogen pressure regularly, see the "accumulator instructions" below, and page 15 regarding charging equipment.

Check regularly that there is no external corrosion.

Recommendations concerning accumulators

Extract from instructions included with each accumulator delivered :

How our accumulators are delivered

- Either : pre-charged to a storage pressure of around 5 bar. In this case, before use charge to required nitrogen pressure using the charging assembly (VGL 4). Check the P 1620 valve or charging screw is airtight. Put the P 1620 back in place.
- Or : pre-charged with nitrogen to the pressure corresponding to that calculated for the working conditions of the application. In this case check that the pre-charge pressure marked on the label on the accumulator corresponds to the necessary calculated pressure.

Frequency of checks

The pre-charge pressure p_0 marked on the accumulator must be checked each time the accumulator is assembled in a system, and after every service. At least one check must be made during the first week of service.

The pre-charge pressure of the accumulator should also be checked at least once during the first week of service. Provided no gas leak is observed a further check should be made around 4 months later. Provided at this check there is still no gas leak, an annual check thereafter may be considered sufficient.

Checks

Ensure before any checks that the accumulator has been isolated from the circuit and decompressed on the oil side.

Use the LEDUC VGL 4 gauging device.

NOTE : use a manometer with a measuring range compatible with the nitrogen pressure you want to check.

Order code

- AC : Cylindrical / spherical
- AS : Standard spherical
- AF : Low temperature, high pressure, spherical model
- AX : Spherical model in stainless steel
- ACS : Welded cylindrical
- ABVE : Bladder type

ACCUMULATOR TYPE

CHARGING VALVES AND SCREWS (see page 15)

- S : Without protective treatment
 - P : ARCOR® anti-corrosion treatment
- PROTECTIVE TREATMENT (for AS, AC, AF)**

PRE-CHARGE PRESSURE (bar)

AS 0.7 060782 P E/1 310367 D 100

CAPACITY OF ACCUMULATOR (in litres), AND REFERENCE CODE

TYPE OF DIAPHRAGM

- E/1 : NBR (nitrile)
- E/2 : NBR (nitrile) stainless steel insert
- E/3 : ECO (epichlorhydrine)
- E/4 : EPM (epr)
- E/5 : FKM (viton®)

OFFICIAL APPROVAL

- S : unnecessary
- D : CE approval



Legislation

Hydraulic accumulators are gas pressure vessels. The manufacture of such products must conform to CE directive 97/23/CE. Local regulations and legislation must be strictly respected regarding the use of accumulators.

European legislation 97/23/CE

LEDUC accumulators of less than 1 litre capacity are supplied with a manufacturer's certificate. They cannot be stamped CE, but conform to the CE directive. LEDUC accumulators of 1 litre capacity or more are supplied with a CE certificate of conformity. They bear the CE stamp and the reference of the official organisation certifying their conformity.

Use of these accumulators in France is governed by decree dated 15 March 2000 (Official Bulletin n°96).

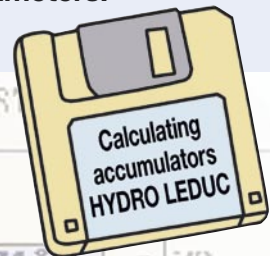
Useful addresses :

- French legislation and application of directive 97/23/CE : <http://www.admetnet.com/jo>
- European legislation: <http://europa.eu.int>

Independent approved organisations : ASAP, APAVE, TÜV, VERITAS...

Determining the right accumulator

Available on request, a disk to calculate the right accumulator as a function of your operating parameters.



Minimum operating temperature (°C)	T1°	=	20
Maximum operating temperature (°C)	T2°	=	20
Minimum operating pressure (bar)	Pmin	=	
Maximum operating pressure (bar)	Pmax	=	
Volume of fluid (l)	dV	=	
Volume of the accumulator (l)	V0	=	
Total restitution (yes=1/no=0)	Rep	=	0
Isentropic coeff. (slow restitution)	μ	=	
Pre-charge pressure at 20°C (bar)	P0	=	

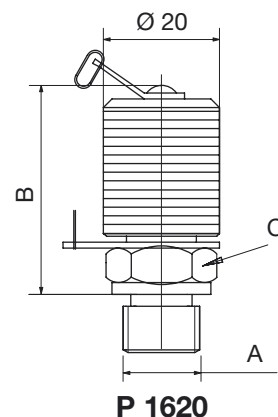
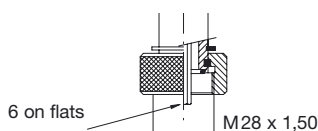
Charging equipment

Charging Valves

- P 1620 : standard valve, M 16 x 200 threads per inch.
- PX 1620 : stainless steel valve, M 16 x 200 threads per inch.

charging valve	Leduc part number	connection on gas side (A)	accumulator	Remark	charging device	Adaptor
P 1620	310367	G 1/4	ACS - AS	standard	VGL 4	M28x1,50 / M16x2,00
	310379	M10x1,50	ABVE	standard		
	310372	G 1/4	AS - AF - AX	INOX		
	V10N	1/2 20 UNF	ACS - AS - ABVE	old valve V10N		
Vis	066542	M8X1,25 with BS130331 ring	ACS	standard	VGL 4	without
Schrader	067210	G1/4	ACS - AS		VGL 4	M28x1,50 / 8V1
	067215	1/2 UNF	ACS - AS - ABVE	on request		
	067240	M10x1,50	ABVE	on request		

universal charging device with M28X1,50 female connection - hexagonal wrench.



Leduc part number	B	C on flats
310367	36	19
310379	38	17
310372	36	19
V10N	36	19

Charging kit

Reference : CGLU 4F/D* 066650

CGLU 4F : includes hose adapter for use on French nitrogen bottles.

*CGLU 4D : German (European) version, available on request, includes hose adapter for use on German nitrogen bottles.

The charging kit comprises :

- VGL 4 universal pressure charging and gauging device (M28 x 1.50 outlet)
- two pressure gauge kits : 0 to 25 bar and 0 to 250 bar, additional manometers on request (0-100; 0-400)
- adapters for connection to charging valves (M16x200 - 5/8" - G3/4" - 7/8" - 8V1)
- 2.50 m-long hose, for connection to a source of nitrogen, standard version for pressures up to 400 bar. For higher pressures, please contact our Technical Sales Department
- 6 mm A/F Allen wrench
- spare seal kit.

Charging and gauging device

Reference : VGL 4 066660

Description

The VGL 4 charging and gauging device is the essential instrument to check nitrogen filling pressure and to reduce nitrogen pre-charge pressure of accumulators, up to maximum working pressure of 400 bar.

Technical characteristics

Maximum pressure	: 400 bar
Accumulator connection	: M 16x200 - 5/8" 18UNF - G3/4" - M28 x 1.50 (7/8" 14 UNF - 8 V1 with CGLU 4)
Pressure gauges	: 63 mm diameter (glycerin-bath type) with G1/4" Cyl. rear outlet, fitted with a direct-connection to a rapid connector. Scale 0 to 400 bar (or other on request) with accuracy of 1.6.

