

КЛАПАН АВАРИЕН mun LB

HAWE
HYDRAULIK

Check valves Typ LB

The line rupture safety valves, type LB, are check valves. They are available as screw-in valves or with housing for in-line installation. The line rupture safety valves are best installed directly on the actuator (cylinder) which is to be safeguarded. This will prevent an uncontrollable, accelerated movement (drop) of a loaded cylinder when the hydraulic back-pressure is lost as a result of a rupture of the pressurized line or pipe connection. When the flow through the valve increases above the pre-set limit, the flow forces will exceed the opposing spring force and the valve will block the flow immediately. The valve element in these valves is a shim.

There are two different versions available. One valve design completely blocks the flow when actuated, whereas the other one allows a minimum flow (via an orifice) to slowly drop the load.



Nomenclature: Line rupture safety valve

Design: Screw-in valve with housing for in-line installation

Adjustability: Tool adjustable

p_{max} : 500 bar

Q_{max} : 4 ... 160 l/min

Basic types and general parameters

Basic type and size	Flow Q_{max} (l/min)	Pressure p_{max} (bar)	Connection thread	Symbol
LB 1	4 ... 25	500	G 1/4 (A)	Simplified
LB 2	6,3 ... 50		G 3/8 (A)	
LB 3	16 ... 80		G 1/2 (A)	Load holding
LB 4	25 ... 160		G 3/4 (A)	
Available orifice diameters	0,5 / 0,8 / 1,0 / 1,2 / 1,5 / 2,0 depending on type and size			

Additional versions

- Line rupture safety valve with housing featuring a thread reduction for special applications

- Versions with metric and UNF thread

Order examples

LB 4 C - 40

Line rupture safety valve size 4 as screw-in valve (coding C), factory set for a response flow of 40 l/min

LB 2 E - 25

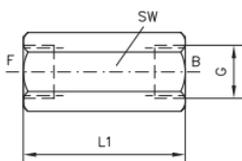
Line rupture safety valve size 2 with housing (coding E), factory set for a response flow of 25 l/min

Dimensions

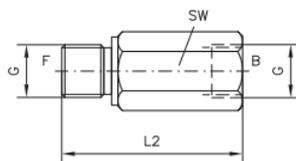
Screw-in valve



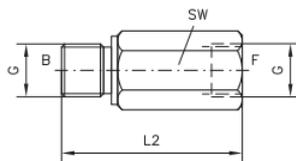
Type LB..G, valve with housing



Type LB..E, valve with housing



Type LB..F, valve with housing



Basic type	L	L1	L2	G	SW	m (g) ¹⁾
LB 1 (C, G, E, F)	17,5	48	50	G 1/4 (A)	a/f 19	6 / 70
LB 2 (C, G, E, F)	21	52	58	G 3/8 (A)	a/f 22	12 / 100
LB 3 (C, G, E, F)	25	60	65	G 1/2 (A)	a/f 27	21 / 170
LB 4 (C, G, E, F)	30,5	72	78	G 3/4 (A)	a/f 36	45 / 375

All dimensions in mm,
subject to change without notice !

¹⁾ Dimensions for screw-in valve and versions with housing

Further information

- Line rupture safety valve type LB
- Line rupture safety valve with metric thread

D 6990
Sk 6990 M

- see also section "Devices for special applications"
(Industrial trucks, Hydraulics for mobile applications,
Screw-in valves and installation kits)

For page and section of the devices additionally listed,
see type index

Pressure switches Type DG

Electro-hydraulic pressure switches are devices, which, when set under pressure close or open electrical contacts. They are widely used in applications in which it is intended that, once a pre-set pressure is achieved and exceeded, an electrical switching command or signal should be triggered for further working cycles.

Many different versions (with pressure setting on a dial, with main and secondary switch, screw-on pressure switches) enable their use in many applications.

There is a design related difference of 8... 20 % between the upper switching point and the lower switching point. Only the electronic pressure switch type DG 5 E gives provision to select two independent switch points.

Type DT is an analogous pressure sensor.



Nomenclature: Spring loaded pressure switch (piston type)

Design: Manifold mounting version
Screw-in version
Version for pipe connection

P_{max}: 4 ... 700 bar

Basic types and general parameters

Basic type and size	Brief description	Adjustable pressure P _{max} (bar) ¹⁾	Connection thread	Symbol
DG 1R	Adjustment via turn-knob at the dial	20 ... 600	G 1/2 or G 1/4A	
DG 8	Version with two pressure switches Main switch: Adjustment via turn-knob at the dial Secondary switch: Adjustment via set screw	20 ... 600 and 20 ... 180	G 1/2 or G 1/4A	
DG 33		200 ... 700		
DG 34	Compact design for manifold mounting	100 ... 350	G 1/4 or G 1/4A ²⁾	
DG 35		20 ... 210		
DG 365	Adjustment via set screw	12 ... 130		
DG 36		4 ... 12		
DG 5 E	Electronic pressure switch with two switch points	0 ... 250 0 ... 400	G1/4	¹⁾ The max operation pressure of 700 bar is not influenced by the max set pressure ²⁾ For versions with adapter only
DT 1	Analogous pressure sensor	0 ... 1000	G1/4A	

Pressure switches Type DG

Additional versions

- Pressure switches with bezel for switch board installation (DG 1)
- Pressure switches with various connection threads or connection pipe (DG 3.)
- Lockable adjustment knob (see also section "Further information")

Supply voltage 12V DC, 24V DC, 230V AC 50/60 Hz

Combination with various fittings

(see also section "Further information")

Order examples

DG 1 R

Pressure switch type DG 1, pressure range 40... 160 bar

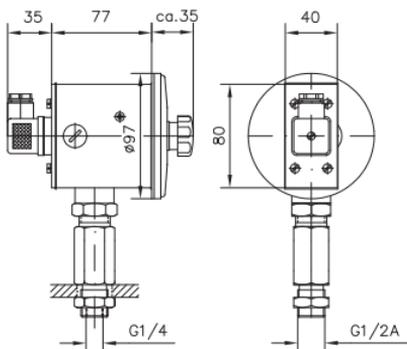
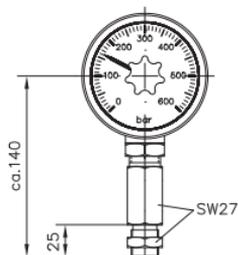
DG 35

Pressure switch type DG 3 including plug, pressure range 20...210 bar

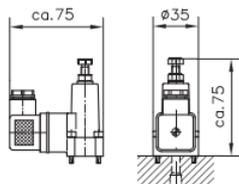
Dimensions

Type DG 1 R and DG 8

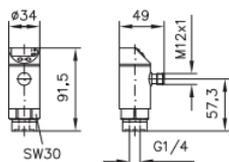
(see order examples)



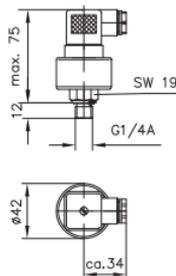
Type DG 3.. (see order examples)



Type DG 5E



Type DT1



Basic type	m (kg)
DG 1	1,3
DG 8	1,35
DG 3..	0,3
DG 5E	0,25
DT 1	0,15

All dimensions in mm, subject to change without notice!

Further information

- Pressure switches type DG
- Fittings type X
- Fittings type X84
- Electronic pressure switch type DG 5E
- Analogous pressure sensor type DT 1

D 5440
D 7065
D 7077
D 5440 E
D 5440 T

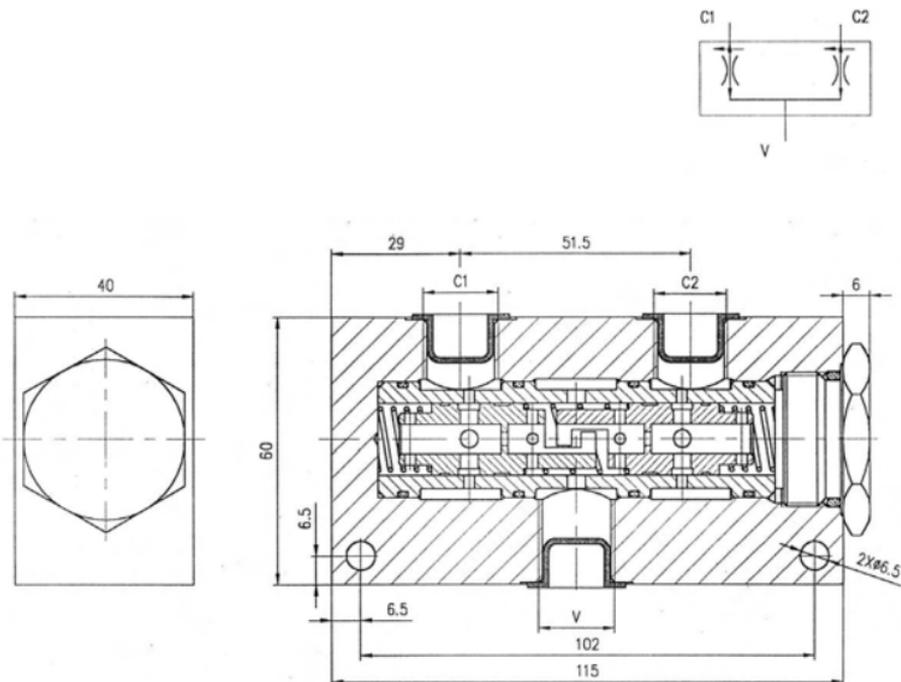
see also section Devices for special applications

(Hydraulics for clamping purposes, Press controls, Devices for up to 700 bar)

For page and section of the devices additionally listed, see type index

ДЕЛИТЕЛИ НА ДЕБИТ

Flow dividing/combining valve



Flow at conection "V - 4 - 40 L/min

Max. working pressure - 210 bar

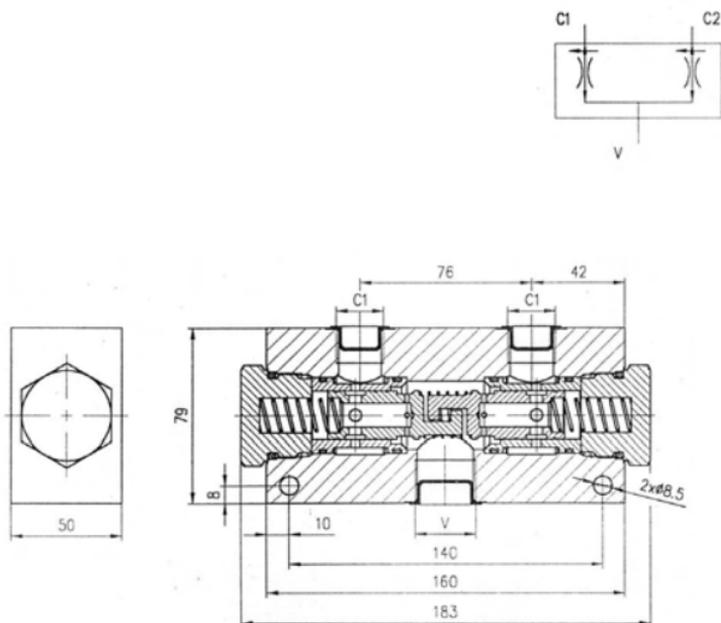
Flow dividing ratio - 1:1

Max. divergence 5% at pressure diff.120 bar
between C1 and C2

TYPE VDFR	L/min	V	C1	C2
TYPE VDFR 38-12	4-12	G3/8"	G3/8"	G3/8"
TYPE VDFR 38-24	12-24	G3/8"	G3/8"	G3/8"
TYPE VDFR 12-40	24-40	G1/2"	G3/8"	G3/8"

ДЕЛИТЕЛИ НА ДЕБИТ

Flow dividing/combining valve



Flow at conection "V" - 40 ... 150 L/min

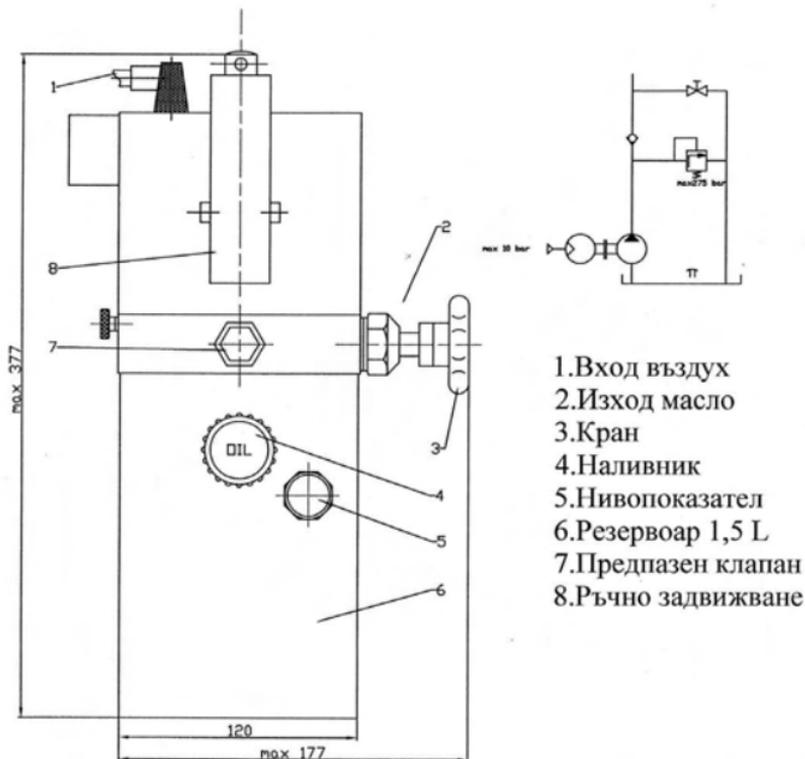
Max. working pressure - 210 bar

Flow dividing ratio - 1:1

Max. divergence 5% at pressure diff. 120 bar
between C1 and C2

TYPE VDFR	L/min	V	C1	C2
TYPE VDFR 34-90	40-20	G3/4"	G1/2"	G1/2"
TYPE VDFR 100-150	80-150	G 1"	G3/4"	G3/4"

ПНЕВМОХИДРАВЛИЧНА ПОМПА

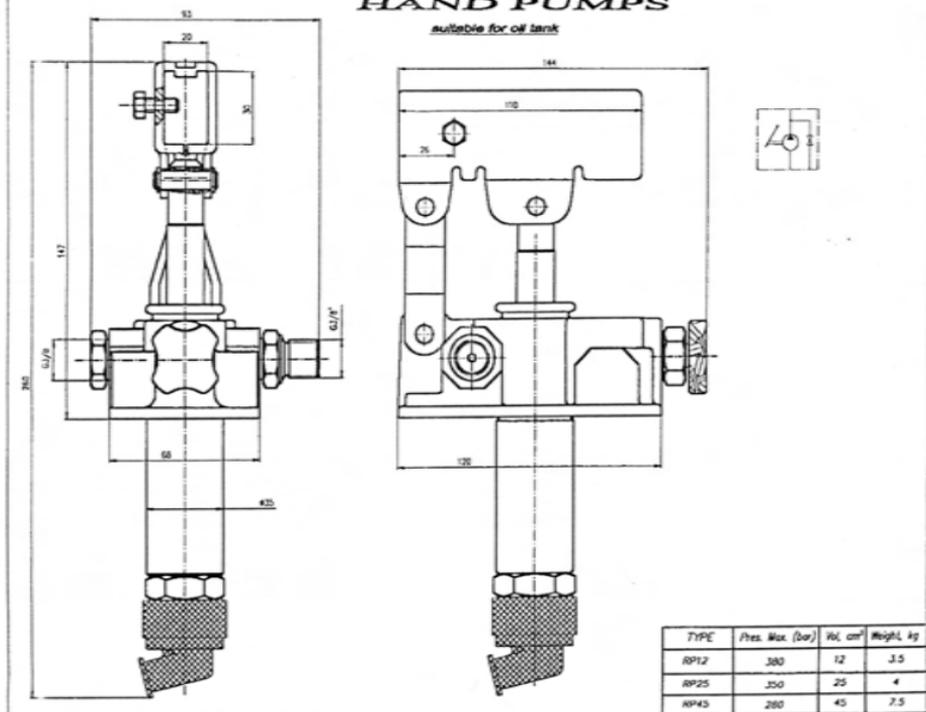


Налягане на въздуха 6 bar Налягане на маслото [bar]	Дебит [ml/min]	Консумация на въздух [l/min]
0	750	56
25	700	51
50	650	49
75	600	46
100	560	43
125	540	39
150	480	36
175	440	33
200	380	28

РЪЧНА ХИДРАВЛИЧНА ПОМПА

HAND PUMPS

available for oil tank



ХИДРОАКУМУЛАТОРИ

Technical features

Max working pressure:	330 bar
Test pressure:	max working pressure × 1.50
Temperature range:	-15°C ÷ +80°C (ISPESL: -10°C + 50°C)
Nominal capacities:	0.2 to 55 litres

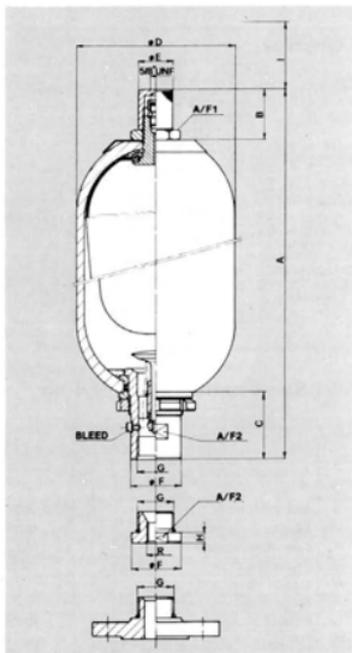
Construction features

IN THE STANDARD TYPE THE MAIN FEATURES ARE:

- Forged steel shell (35 CD4 for capacities 1-1,5-3-5-10 ÷ 55 litres and Fe 52.2 for capacities 0.2-0.7-1.5 litres) sand blasted and painted on the outside with a coat of rust inhibitor.
- Valves of steel C40, phosphated.
- The port fluid terminating in a B.S.P. female parallel thread (G).
- Bladder and gaskets in oil resistant, butadiene-acrylonitrile rubber (nitrile)
- Testing as required by Italian Standards (ISPESL), German Standards (TÜV) and French Standards (SdM).
- Precharged with nitrogen (when specified on order).

ON REQUEST the accumulator can be supplied with the following:

- SHELL PROTECTED with chemical/nickel coating (25 or 40 micron thickness).
- SHELL AND VALVES IN STAINLESS STEEL AISI 316.
In the stainless steel version, capacities of 0.6-1.5-3 litres are constructed with a forged or welded shell (max working pressure 70-150 and 210 bar) and for capacities 5-10-15-20-25 with a welded shell (working press.70 and 150 bar).
Manufactured to ISPESL standard, works tested.
- BLADDER IN BUTYL, NEOPRENE, ETHYLENE-PROPYLENE, NATURAL RUBBER, NITRILE FOR LOW TEMPERATURES (-40°C), NITRILE FOR HYDROCARBONS, EPICHLOROIDRIN, SILICONES, FOR FOOD.
- Bladder with valve TRANSFER version (See Page 21).
- ADAPTER with B.S.P. female parallel threads "R" for diameters shown on the Table, with different threading, if specified, or blind.
- LIQUID SIDE FLANGED CONNECTION (specify PN and DN and flange standard).
- GAS SIDE FLANGED CONNECTION for special applications (specify data of flange)
- SAFETY VALVE gas side or only the adapter to fit the above valve (See Page 23).
- SPECIAL ANTI-PULSATION CONNECTION on the liquid side (Page 22).
- TESTING RINA, LLOYD'S REGISTER on more, to be specified.



Sizes and dimensions

Type	Max work pressure (bar)	Gas volume (Litres)	Dry Weight (kg)	Fluid port connection R (B.S.P.)	Fluid port connection G (B.S.P.)	A	B	C	Ø D	Ø E	Ø F	H	I*	A/F 1	A/F 2
AS 0.2	330-210	0.2	1.4	1/2"	—	249	22	41	51	20	26	—	—	24	23
AS 0.7	330	0.65	3.9	3/4"	3/8"	280	47	52	90	36	53	11	140	32	50
AS 1	330	1	4.5			300			114						
AS 1.5	330-250	1.45	7.1	1 1/4"	3/8" - 1/2" - 3/4"	355	65	65	168	55	77	70	70	70	70
AS 3	330	2.95	11			550			220						
AS 5	330	5	13	2"	1/2"	455	101	101	220	55	77	70	70	70	70
AS 10	330	9.1	38			570									
AS 15	330	14.5	45	3/4"	1 1/4"	720	101	101	220	55	77	70	70	70	70
AS 20	330	18.2	53	1"		875									
AS 25	330	23.5	63	1 1/4"	1 1/2"	1050	101	101	220	55	77	70	70	70	70
AS 35	330	33.5	83	1 1/2"		1390									
AS 55	330	50	115	1 1/2"	1900	220	55	77	220	55	77	70	70	70	70

*1 Charging overall dimensions (all dimensions in mm)