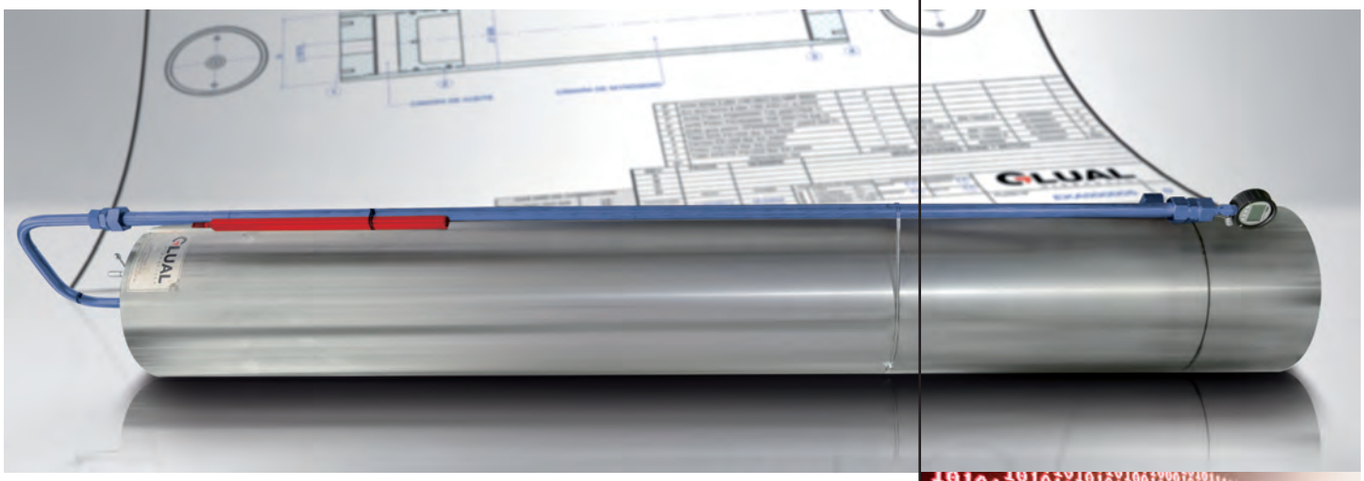

A world of solutions in piston accumulators

Hydraulic piston accumulators

97/23/CE | KA

ASME Section VIII div. 1

GLUAL HYDRAULICS


PETROBRAS 51

97/23/CE
ASME

KA

index

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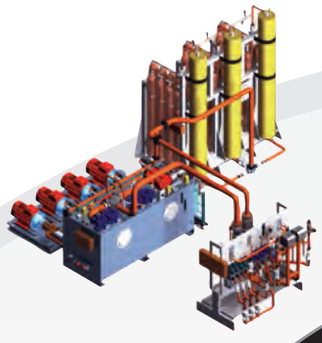
A world of so lu

PRODUCTS

top quality

More than 40 years experience in hydraulic products design, manufacturing and service. Commitment to customer satisfaction, production flexibility to accomplish customer needs.



SOLUTIONS

Hydraulic units
Electronic

Rotating joints

Accumulators

HYDRAULIC CYLINDERS

Servocylinder

Industrial

High performance

Premier

ISO

Customized

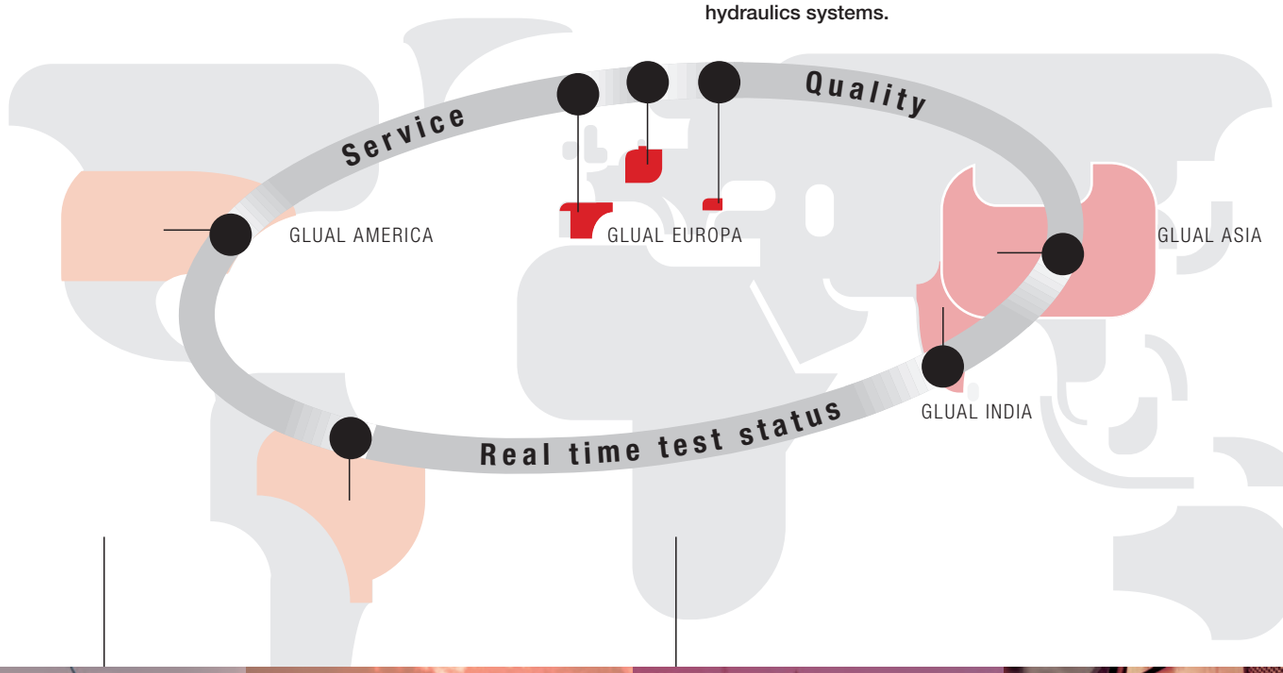
ISO

o lutions in hydraulics

THE GROUP

global coverage

As we are present in all the continents, we provide worldwide coverage to anything you may need for hydraulics systems.



I+D +i

TECHNOLOGY

GLUAL has a team of highly qualified and experienced engineers. We work with advanced design tools by graphical simulation of hydraulic drives and 2D/3D design. Our technical department in close collaboration with the technical office develops customer optimal solutions in hydraulic and electronic systems.

We invest every year in different R+D+i projects participating with companies and research centers to different markets and products.

After-sales service

SERVICE

As we are high experienced in hydraulics, we are able to provide any kind of service, from start up of a complete hydraulic system to any individual hydraulic component repair and maintenance service.

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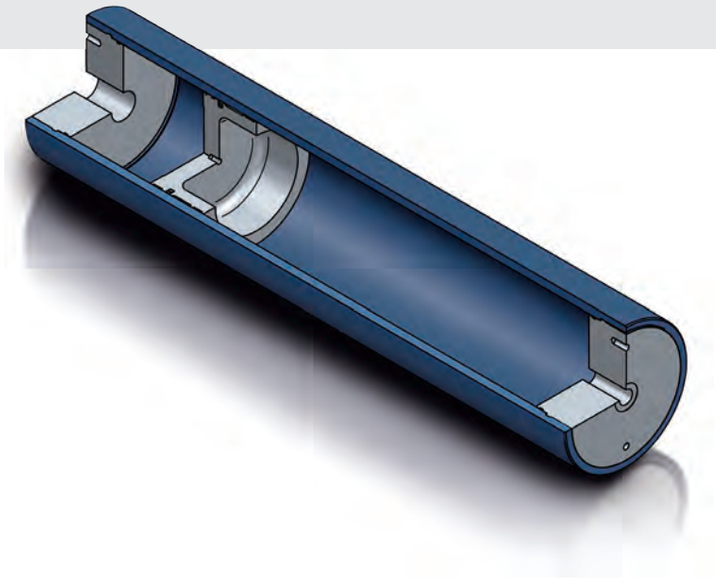
ASME



Overview

Piston accumulators are hydroneumatic accumulators with a sliding rigid piston to separate gas side (nitrogen) and operation fluid side

Glual piston accumulators operation is based on the considerable difference in compressibility between gas (nitrogen) and operation fluid (liquid). This enables a large quantity of energy to be stored in an extremely compact form.

The piston accumulators can be used in a wide variety of applications, some of which are listed below:
- Energy storage
- Pulsation damping
- Shock absorption
- Stabilize pressure and flow
- Leakage compensation
- …

The fluid side of the accumulator is connected to the hydraulic circuit and when the circuit pressure increases, the fluid enters in fluid side of accumulator and the gas is compressed. When the circuit pressure drops, the compressed gas expands and the stored fluid is forced into the circuit.

For the right choice of accumulator, is advisable to consider some parameters: operation fluid, pressure range, temperature, speed, response time, mounting orientation…

Advantages

There are different types of accumulators (piston, bladder, diaphagm …) and accumulators provide major advantages to hydraulic circuits:
- Reduce pump size
- Reduce installed electical power
- Energy efficiency
- Increase response time

…

Piston accumulators have advantages over other types:
- High compression ratio (Po ÷ Pmax)
- Horizontal mounting position
- Pressure and position monitoring possible
- Low permeation
- High oil flow rate
- Total discharge is possible
- In failure case, gradual gas loss
- Different sealing solutions (fluids, temperature, pressure, speed…)
- Optimal application solution (changing diameter and length)

Technical characteristics

Design pressure
- 250 bar or 375 bar

Temperature range
- Standard temperature range -20ºC to +80ºC.
- Low temperature range: -40ºC to +80ºC.
- Others on request

Volume
- 97/23/CE: 0.5 to 500 liters
- ASME: 10 to 500 literss

Fluids
- Mineral oil DIN51524 (HL, HLP).
- Phosphate ester (HFD-R).
- Other fluids

Gas load
- For safety reasons, for gas filling use only pure nitrogen 99,9%, class 4.0.
- Never use oxygen (this may lead to an explosion).
- See notes in «Operation and maintenance» manual

Fluid and gas connection
Different types of connections for oil and gas side are available.

Operation and maintenance
To avoid injuries and damage to the devices, it is important to read (operation and maintenance manual) before installation of the accumulator in a hydraulic system.

Characteristics

Material	**1**	Carbon Steel (Tmin=-20ºC)
	2	Stainless Steel
	3	Carbon Steel (Tmin=-40ºC)
	4	Nickel-plated (Tmin=-20ºC)
Volume (L)		From 0,5 to 500 Liters
Maximum working pressure		250 or 375 Bar according to model
Piston Diameter		Ø60, Ø100, Ø125, Ø180, Ø200, Ø250, Ø300, Ø360
Sealing type	**1**	Standard (mineral oil)
	2	Viton (example HFD fluids)
	3	NBR (for HFC)
Connections (oil side)	**1**	Threaded ISO 228-1 (G)
	2	SAE 6000psi –ISO 6162
	3	Others
Connections (gas side)	**0**	There are no GAS bottles, just GAS valve.
	1	Threaded ISO 228-1 (G) (If there is GAS Bottle)
	2	SAE 6000psi –ISO 6162 (If there is GAS Bottle)
	3	Others
Position control accessories	**0**	None
	1	Electric limit switch
	2	Piston position switch
	3	Piston position transducer
	4	Ultrasonic position sensor
Fluids	**M**	Mineral Oil DIN51524 (HL, HLP)
	V	Phosphoric Ester
	O	Other fluids according to customer needs
Acceptance		CE according to PED 97/23/CE
		ASME U Stamp (According to Section VIII div. 1)
		Others

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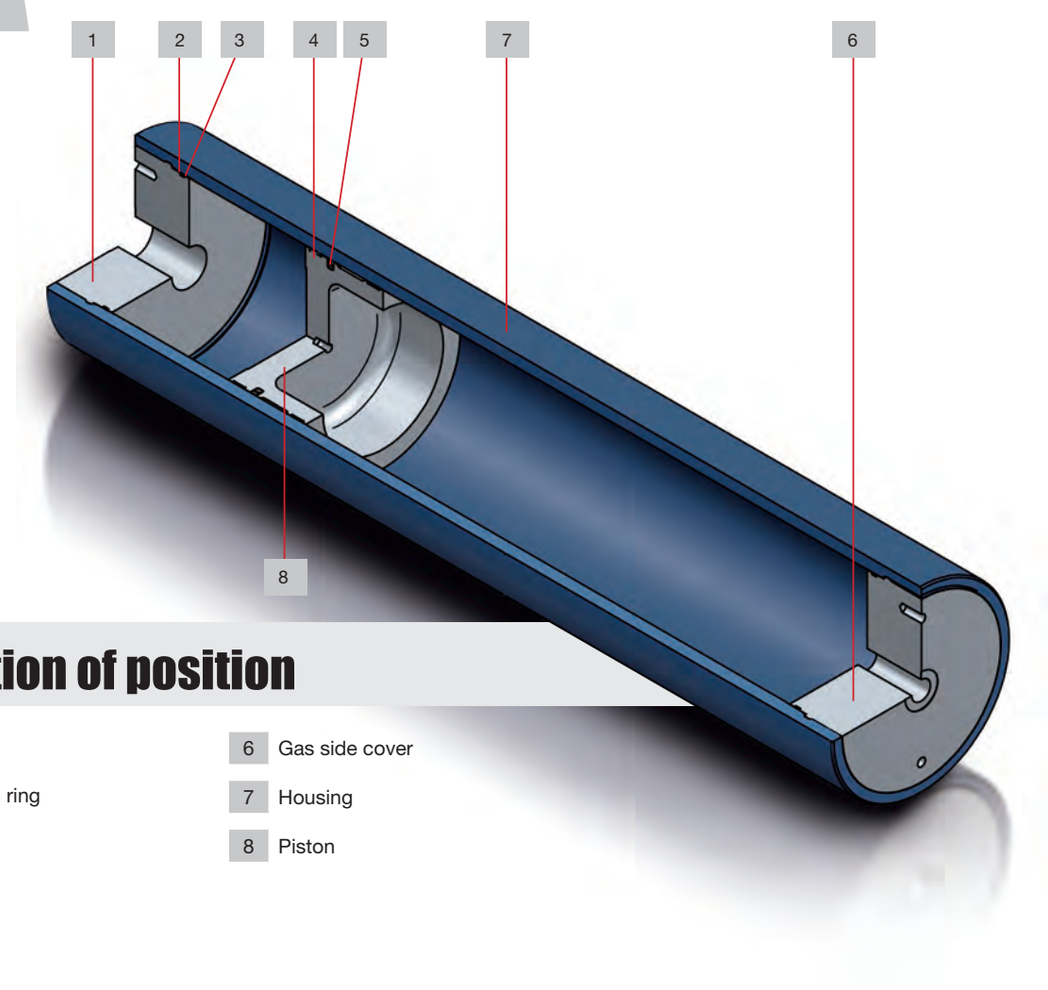
97/23/CE
ASME



Description of position

1 Oil side cover	6 Gas side cover
2 Anti-extrusion ring	7 Housing
3 O-ring	8 Piston
4 Guide ring	
5 Piston seal	

Spare kit of seals

Type

KA	97/23/CE
KAA	ASME Section VII div. 1

Piston diameter (mm)

Ø60, Ø100, Ø125, Ø180; Ø200, Ø250, Ø300; Ø360,

GS – KA – 250 – 60

Type of seals

S	Standard (mineral oil)
V	Viton (HFD fluids)
N	NBR (HFC fluids)
O	Others

Design pressure (bar)

250 or 375 bar

KA

97/23/CE
ASME

Type

KA	97/23/CE
KAA	ASME Section VII div. 1

Design pressure (bar)

250 or 375 bar

Volume (L)

0,5 to 500 liters

Piston diameter (mm)

Ø60, Ø100, Ø125, Ø180, Ø200, Ø250, Ø300; Ø360,

Type of seals

S	Standard (mineral oil)
V	Viton (HFD fluids)
N	NBR (HFC fluids)
O	Others

Material

1	Carbon steel (Tmin -20ºC)
2	Carbon steel (Tmin -40ºC)
3	Niquel plated
4	Sainless Steel

KA-250-20-60- S - 1 - 1 - N1 - 1 - 0 - CE

Fluid connection

1	Thread –ISO 228-1 (G)
2	SAE-6000 PSI-ISO 6162
3	Others

Gas connection

YES adapted nitrogen bottles

Y1	Thread –ISO 228-1 (G)
Y2	SAE-6000 PSI-ISO6162
Y3	Others

NO adapted nitrogen bottles

N1	Minimess M16x2
N2	Others

Gas valve

1	M16x2
2	Others

Piston position indicators

0	None
1	Electric limit switch
2	Piston position switch
3	Piston position transducer
4	Ultrasonic position sensor

Acceptance

CE	According PED 97/23/EC
U	ASME (Section VIII- div 1)
O	Others

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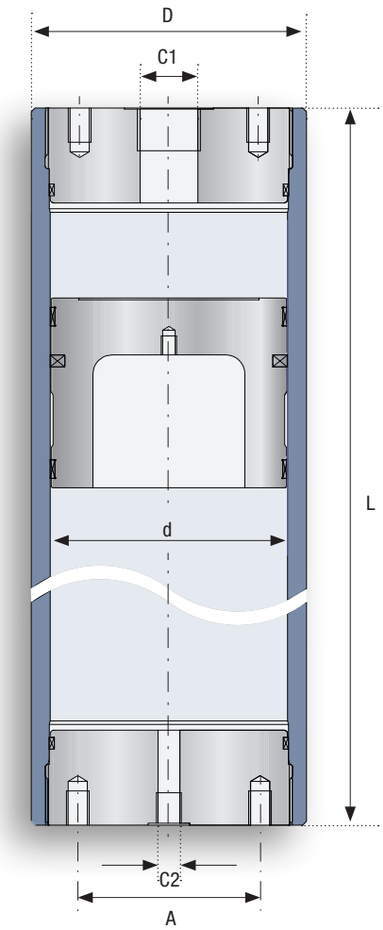
97/23/CE

250 BAR

Max working pressure



V	d	D	L	C1	C2	A		P-V-d
Volume (L)	Piston Ø (mm)	Outside Ø (mm)	Length (mm)	Connection OIL	Connection GAS	Fastening	Weight (Kg)	Type
0,5	60	72	295	1/2'G	1/4'G	M6 Ø45	5	KA-250-0.5-60
	100	116	245	3/4'G	1/4'G	M8 Ø80	12	KA-250-0.5-100
1	60	72	470	1/2'G	1/4'G	M6 Ø45	7	KA-250-1-60
	100	116	310	3/4'G	1/4'G	M8 Ø80	13	KA-250-1-100
1,5	60	72	650	1/2'G	1/4'G	M6 Ø45	8	KA-250-1.5-60
	100	116	375	3/4'G	1/4'G	M8 Ø80	15	KA-250-1.5-100
2	60	72	825	1/2'G	1/4'G	M6 Ø45	10	KA-250-2-60
	100	116	435	3/4'G	1/4'G	M8 Ø80	16	KA-250-2-100
2,5	60	72	1000	1/2'G	1/4'G	M6 Ø45	12	KA-250-2.5-60
	100	116	500	3/4'G	1/4'G	M8 Ø80	17	KA-250-2.5-100
3	60	72	1180	1/2'G	1/4'G	M6 Ø45	14	KA-250-3-60
	100	116	565	3/4'G	1/4'G	M8 Ø80	19	KA-250-3-100
	125	145	445	1/2'G	1/4'G	M12 Ø90	27	KA-250-3-125
4	60	72	1535	3/4'G	1/4'G	M6 Ø45	17	KA-250-4-60
	100	116	590	1/2'G	1/4'G	M8 Ø80	19	KA-250-4-100
	125	145	530	3/4'G	1/4'G	M12 Ø90	30	KA-250-4-125
5	60	72	1885	1/2'G	1/4'G	M6 Ø45	20	KA-250-5-60
	100	116	820	3/4'G	1/4'G	M8 Ø80	24	KA-250-5-100
	125	145	610	1'G	1/4'G	M12 Ø90	32	KA-250-5-125
6	100	116	945	3/4'G	1/4'G	M8 Ø80	27	KA-250-6-100
	125	145	690	1'G	1/4'G	M12 Ø90	35	KA-250-6-125
8	100	116	1200	1'G	1/4'G	M8 Ø80	32	KA-250-8-100
	125	145	855	1'G	1/4'G	M12 Ø90	40	KA-250-8-125
10	100	116	1455	3/4'G	1/4'G	M8 Ø80	38	KA-250-10-100
	125	145	1020	1'G	1/4'G	M12 Ø90	46	KA-250-10-125
	180	210	615	1 1/2'G	3/4'G	M12 Ø140	72	KA-250-10-180
	200	230	1180	1 1/2'G	3/4'G	M12 Ø160	134	KA-250-10-200
12	100	116	1710	3/4'G	1/4'G	M8 Ø80	44	KA-250-12-100
	125	145	1425	1'G	1/4'G	M12 Ø90	59	KA-250-12-125
	180	210	695	1 1/2'G	3/4'G	M12 Ø140	78	KA-250-12-180
	200	230	590	1 1/2'G	3/4'G	M12 Ø160	87	KA-250-12-200
15	100	116	2095	3/4'G	1/4'G	M8 Ø80	51	KA-250-15-100
	125	145	1835	1'G	1/4'G	M12 Ø90	73	KA-250-15-125
	180	210	810	1 1/2'G	3/4'G	M12 Ø140	86	KA-250-15-180
	200	230	655	1 1/2'G	3/4'G	M12 Ø160	92	KA-250-15-200
20	125	145	2240	1'G	1/4'G	M12 Ø90	86	KA-250-20-125
	180	210	1010	1 1/2'G	3/4'G	M12 Ø140	101	KA-250-20-180
	200	230	750	1 1/2'G	3/4'G	M12 Ø160	100	KA-250-20-200
25	125	145	2240	1'G	1/4'G	M12 Ø90	86	KA-250-25-125
	180	210	1205	1 1/2'G	3/4'G	M12 Ø140	115	KA-250-25-180
	200	230	910	1 1/2'G	3/4'G	M12 Ø160	112	KA-250-25-200
30	125	145	2650	1'G	1/4'G	M12 Ø90	100	KA-250-30-125
	180	210	1400	1 1/2'G	3/4'G	M12 Ø140	129	KA-250-30-180
	200	230	1070	1 1/2'G	3/4'G	M12 Ø160	125	KA-250-30-200
	250	290	925	1 1/2'G	3/4'G	M12 Ø210	197	KA-250-30-250
35	125	145	3055	1'G	1/4'G	M12 Ø90	114	KA-250-35-125
	180	210	1600	1 1/2'G	3/4'G	M12 Ø140	143	KA-250-35-180
	200	230	1230	1 1/2'G	3/4'G	M12 Ø160	138	KA-250-35-200
	250	290	1025	1 1/2'G	3/4'G	M12 Ø210	211	KA-25035-250
40	125	145	3465	1'G	1/4'G	M12 Ø90	127	KA-250-40-125
	180	210	1795	1 1/2'G	3/4'G	M12 Ø140	157	KA-250-40-180
	200	230	1385	1 1/2'G	3/4'G	M12 Ø160	150	KA-250-40-200
	250	290	1130	1 1/2'G	3/4'G	M12 Ø210	225	KA-250-40-250
45	180	210	2000	1 1/2'G	3/4'G	M12 Ø140	172	KA-250-45-180
	200	230	1545	1 1/2'G	3/4'G	M12 Ø160	163	KA-250-45-200
	250	290	1230	1 1/2'G	3/4'G	M12 Ø210	238	KA-250-45-250
50	180	210	2190	1 1/2'G	3/4'G	M12 Ø140	186	KA-250-50-180
	200	230	1705	1 1/2'G	3/4'G	M12 Ø160	176	KA-250-50-200
	250	290	1330	1 1/2'G	3/4'G	M12 Ø210	251	KA-250-50-250

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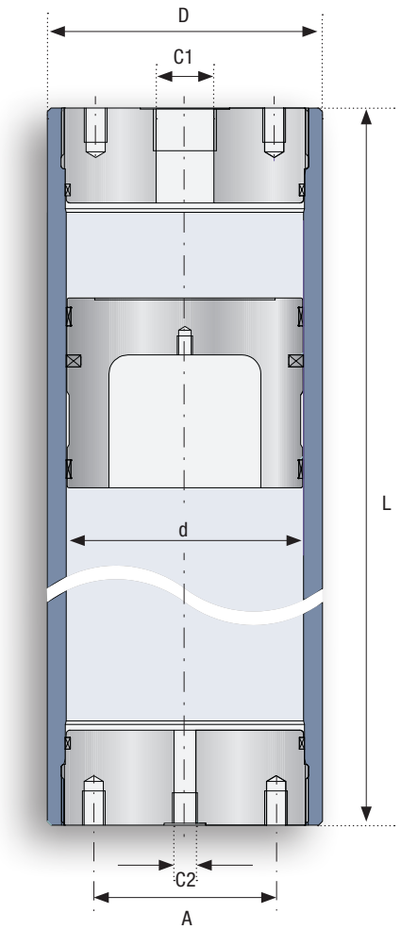

V	d	D	L	C1	C2	A		P-V-d
Volume (L)	Piston Ø (mm)	Outside Ø (mm)	Length (mm)	Connection OIL	Connection GAS	Fastening	Weight (Kg)	Type
60	180	210	2580	1 1/2'G	3/4'G	M12 Ø140	214	KA-250-60-180
	200	230	1865	1 1/2'G	3/4'G	M12 Ø160	188	KA-250-60-200
	250	290	1535	1 1/2'G	3/4'G	M12 Ø210	278	KA-250-60-250
70	180	210	2975	1 1/2'G	3/4'G	M12 Ø140	242	KA-250-70-180
	200	230	2500	1 1/2'G	3/4'G	M12 Ø160	239	KA-250-70-200
	250	290	1740	1 1/2'G	3/4'G	M12 Ø210	306	KA-250-70-250
	300	345	1345	1 1/2'G	3/4'G	M12 Ø240	371	KA-250-70-300
80	180	210	3370	1 1/2'G	3/4'G	M12 Ø140	270	KA-250-80-180
	200	230	2820	1 1/2'G	3/4'G	M12 Ø160	264	KA-250-80-200
	250	290	1945	1 1/2'G	3/4'G	M12 Ø210	333	KA-250-80-250
	300	345	1485	1 1/2'G	3/4'G	M12 Ø240	396	KA-250-80-300
90	180	210	3760	1 1/2'G	3/4'G	M12 Ø140	299	KA-250-90-180
	200	230	3140	1 1/2'G	3/4'G	M12 Ø160	289	KA-250-90-200
	250	290	2145	1 1/2'G	3/4'G	M12 Ø210	360	KA-250-90-250
	300	345	1625	1 1/2'G	3/4'G	M12 Ø240	421	KA-250-90-300
100	200	230	3455	1 1/2'G	3/4'G	M12 Ø160	314	KA-250-100-200
	250	290	2350	1 1/2'G	3/4'G	M12 Ø210	387	KA-250-100-250
	300	345	1770	1 1/2'G	3/4'G	M12 Ø240	447	KA-250-100-300
	360	420	1365	1 1/2'G	3/4'G	M12 Ø300	603	KA-250-100-360
120	200	230	4095	1 1/2'G	3/4'G	M12 Ø160	365	KA-250-120-200
	250	290	2760	1 1/2'G	3/4'G	M12 Ø210	441	KA-250-120-250
	300	345	2050	1 1/2'G	3/4'G	M12 Ø240	497	KA-250-120-300
	360	420	1560	1 1/2'G	3/4'G	M12 Ø300	659	KA-250-120-360
140	250	290	3165	1 1/2'G	3/4'G	M12 Ø210	495	KA-250-140-250
	300	345	2335	1 1/2'G	3/4'G	M12 Ø240	548	KA-250-140-300
	360	420	1760	1 1/2'G	3/4'G	M12 Ø300	717	KA-250-140-360
150	250	290	3370	1 1/2'G	3/4'G	M12 Ø210	522	KA-250-150-250
	300	345	2475	1 1/2'G	3/4'G	M12 Ø240	573	KA-250-150-300
	360	420	1855	1 1/2'G	3/4'G	M12 Ø300	744	KA-250-150-360
160	250	290	3575	1 1/2'G	3/4'G	M12 Ø210	550	KA-250-160-250
	300	345	2615	1 1/2'G	3/4'G	M12 Ø240	598	KA-250-160-300
	360	420	1955	1 1/2'G	3/4'G	M12 Ø300	773	KA-250-160-360
180	250	290	3980	1 1/2'G	3/4'G	M12 Ø210	603	KA-250-180-250
	300	345	2900	1 1/2'G	3/4'G	M12 Ø240	649	KA-250-180-300
	360	420	2150	1 1/2'G	3/4'G	M12 Ø300	829	KA-250-180-360
200	300	345	3185	1 1/2'G	3/4'G	M12 Ø240	700	KA-250-200-300
	360	420	2350	1 1/2'G	3/4'G	M12 Ø300	887	KA-250-200-360
225	300	345	3535	1 1/2'G	3/4'G	M12 Ø240	763	KA-250-225-300
	360	420	2595	1 1/2'G	3/4'G	M12 Ø300	957	KA-250-225-360
250	300	345	3890	1 1/2'G	3/4'G	M12 Ø240	826	KA-250- 300
	360	420	2840	1 1/2'G	3/4'G	M12 Ø300	1028	KA-250- 360
275	300	345	4245	1 1/2'G	3/4'G	M12 Ø240	889	KA-250-275-300
	360	420	3085	1 1/2'G	3/4'G	M12 Ø300	1098	KA-250-275-360
300	300	345	4600	1 1/2'G	3/4'G	M12 Ø240	953	KA-250-300-300
	360	420	3330	1 1/2'G	3/4'G	M12 Ø300	1169	KA-250-300-360
325	300	345	4955	1 1/2'G	3/4'G	M12 Ø240	1016	KA-250-325-300
	360	420	3575	1 1/2'G	3/4'G	M12 Ø300	1239	KA-250-325-360
350	300	345	5305	1 1/2'G	3/4'G	M12 Ø240	1079	KA-250-350-300
	360	420	3825	1 1/2'G	3/4'G	M12 Ø300	1311	KA-250-350-360
375	300	345	5660	1 1/2'G	3/4'G	M12 Ø240	1142	KA-250-375-300
	360	420	4070	1 1/2'G	3/4'G	M12 Ø300	1382	KA-250-375-360
400	360	420	4315	1 1/2'G	3/4'G	M12 Ø300	1452	KA-250-400-360
425	360	420	4560	1 1/2'G	3/4'G	M12 Ø300	1523	KA-250-425-360
450	360	420	4805	1 1/2'G	3/4'G	M12 Ø300	1593	KA-250-450-360
475	360	420	5050	1 1/2'G	3/4'G	M12 Ø300	1664	KA-250-475-360
500	360	420	5295	1 1/2'G	3/4'G	M12 Ø300	1734	KA-250-500-360

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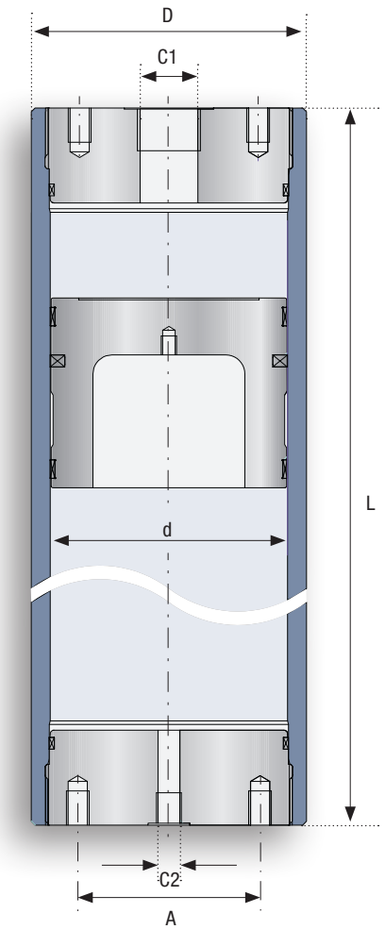
375 BAR

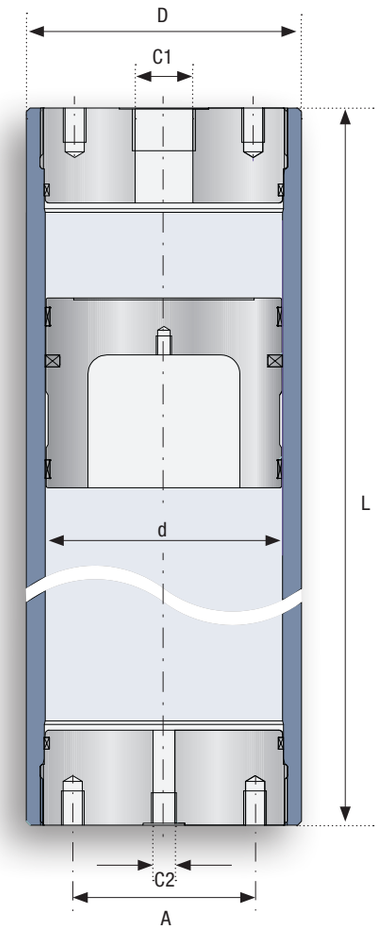
Max working pressure



V	d	D	L	C1	C2	A		P-V-d
Volume (L)	Piston Ø (mm)	Outside Ø (mm)	Length (mm)	Connection OIL	Connection GAS	Fastening	Weight (Kg)	Type
0,5	60	76	340	1/2'G	1/4'G	M6 Ø45	7	KA-375-0.5-60
	100	120	275	3/4'G	1/4'G	M8 Ø80	16	KA-375-0.5-100
1	60	76	515	1/2'G	1/4'G	M6 Ø45	10	KA-375-1-60
	100	120	340	3/4'G	1/4'G	M8 Ø80	18	KA-375-1-100
1,5	60	76	695	1/2'G	1/4'G	M6 Ø45	12	KA-375-1.5-60
	100	120	405	3/4'G	1/4'G	M8 Ø80	20	KA-375-1.5-100
2	60	76	870	1/2'G	1/4'G	M6 Ø45	14	KA-375-2-60
	100	120	465	3/4'G	1/4'G	M8 Ø80	21	KA-375-2-100
2,5	60	76	1045	1/2'G	1/4'G	M6 Ø45	17	KA-375-2.5-60
	100	120	530	3/4'G	1/4'G	M8 Ø80	23	KA-375-2.5-100
3	60	76	1225	1/2'G	1/4'G	M6 Ø45	19	KA-375-3-60
	100	120	595	3/4'G	1/4'G	M8 Ø80	25	KA-375-3-100
	125	150	465	1/2'G	1/4'G	M12 Ø90	34	KA-375-3-125
4	60	76	1580	3/4'G	1/4'G	M6 Ø45	24	KA-375-4-60
	100	120	720	1/2'G	1/4'G	M8 Ø80	28	KA-375-4-100
	125	150	550	3/4'G	1/4'G	M12 Ø90	37	KA-375-4-125
5	60	76	1930	1/2'G	1/4'G	M6 Ø45	29	KA-375-5-60
	100	120	850	3/4'G	1/4'G	M8 Ø80	32	KA-375-5-100
	125	150	630	1'G	1/4'G	M12 Ø90	41	KA-375-5-125
6	100	120	975	3/4'G	1/4'G	M8 Ø80	35	KA-375-6-100
	125	150	710	1'G	1/4'G	M12 Ø90	44	KA-375-6-125
8	100	120	1230	1'G	1/4'G	M8 Ø80	42	KA-375-8-100
	125	150	875	1'G	1/4'G	M12 Ø90	51	KA-375-8-125
10	100	120	1485	3/4'G	1/4'G	M8 Ø80	49	KA-375-10-100
	125	150	1040	1'G	1/4'G	M12 Ø90	58	KA-375-10-125
	180	222	655	1 1/2'G	3/4'G	M12 Ø140	104	KA-375-10-180
	200	240	630	1 1/2'G	3/4'G	M12 Ø160	116	KA-375-10-200
12	100	120	1740	3/4'G	1/4'G	M8 Ø80	56	KA-375-12-100
	125	150	1200	1'G	1/4'G	M12 Ø90	65	KA-375-12-125
	180	222	735	1 1/2'G	3/4'G	M12 Ø140	112	KA-375-12-180
	200	240	695	1 1/2'G	3/4'G	M12 Ø160	125	KA-375-12-200
15	100	120	2125	3/4'G	1/4'G	M8 Ø80	66	KA-375-15-100
	125	150	1445	1'G	1/4'G	M12 Ø90	75	KA-375-15-125
	180	222	790	1 1/2'G	3/4'G	M12 Ø140	118	KA-375-15-180
	200	240	655	1 1/2'G	3/4'G	M12 Ø160	121	KA-375-15-200
20	125	150	1855	1'G	1/4'G	M12 Ø90	92	KA-375-20-125
	180	222	950	1 1/2'G	3/4'G	M12 Ø140	134	KA-375-20-180
	200	240	750	1 1/2'G	3/4'G	M12 Ø160	131	KA-375-20-200
25	125	150	2260	1'G	1/4'G	M12 Ø90	110	KA-375-25-125
	180	222	1110	1 1/2'G	3/4'G	M12 Ø140	151	KA-375-25-180
	200	240	910	1 1/2'G	3/4'G	M12 Ø160	149	KA-375-25-200
30	125	150	2670	1'G	1/4'G	M12 Ø90	127	KA-375-30-125
	180	222	1440	1 1/2'G	3/4'G	M12 Ø140	185	KA-375-30-180
	200	240	1270	1 1/2'G	3/4'G	M12 Ø160	188	KA-375-30-200
	250	300	985	1 1/2'G	3/4'G	M12 Ø210	264	KA-375-30-250
35	125	150	3075	1'G	1/4'G	M12 Ø90	144	KA-375-35-125
	180	222	1640	1 1/2'G	3/4'G	M12 Ø140	206	KA-375-35-180
	200	240	1425	1 1/2'G	3/4'G	M12 Ø160	204	KA-375-35-200
	250	300	1085	1 1/2'G	3/4'G	M12 Ø210	281	KA-375-35-250
40	125	150	3485	1'G	1/4'G	M12 Ø90	161	KA-375-40-125
	180	222	1835	1 1/2'G	3/4'G	M12 Ø140	226	KA-375-40-180
	200	240	1585	1 1/2'G	3/4'G	M12 Ø160	222	KA-375-40-200
	250	300	1190	1 1/2'G	3/4'G	M12 Ø210	299	KA-375-40-250
45	180	222	2030	1 1/2'G	3/4'G	M12 Ø140	247	KA-375-45-180
	200	240	1745	1 1/2'G	3/4'G	M12 Ø160	239	KA-375-45-200
	250	300	1290	1 1/2'G	3/4'G	M12 Ø210	316	KA-375-45-250
50	180	222	2230	1 1/2'G	3/4'G	M12 Ø140	267	KA-375-50-180
	200	240	1905	1 1/2'G	3/4'G	M12 Ø160	256	KA-375-50-200
	250	300	1390	1 1/2'G	3/4'G	M12 Ø210	333	KA-375-50-250

KA

97/23/CE



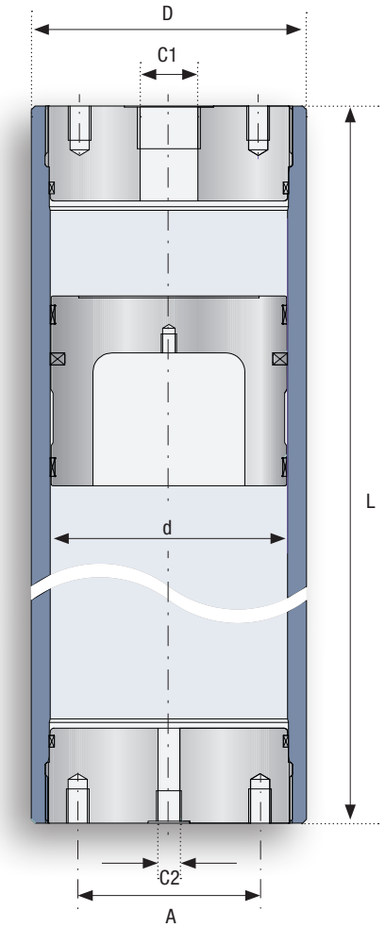
V	d	D	L	C1	C2	A		P-V-d
Volume (L)	Piston Ø (mm)	Outside Ø (mm)	Length (mm)	Connection OIL	Connection GAS	Fastening	Weight (Kg)	Type
60	180	222	2620	1 1/2'G	3/4'G	M12 Ø140	308	KA-375-60-180
	200	240	2225	1 1/2'G	3/4'G	M12 Ø160	291	KA-375-60-200
	250	300	1595	1 1/2'G	3/4'G	M12 Ø210	368	KA-375-60-250
70	180	222	3015	1 1/2'G	3/4'G	M12 Ø140	349	KA-375-70-180
	200	240	2540	1 1/2'G	3/4'G	M12 Ø160	325	KA-375-70-200
	250	300	1800	1 1/2'G	3/4'G	M12 Ø210	402	KA-375-70-250
	300	360	1415	1 1/2'G	3/4'G	M12 Ø240	515	KA-375-70-300
80	180	222	3410	1 1/2'G	3/4'G	M12 Ø140	390	KA-375-80-180
	200	240	2860	1 1/2'G	3/4'G	M12 Ø160	360	KA-375-80-200
	250	300	2005	1 1/2'G	3/4'G	M12 Ø210	437	KA-375-80-250
	300	360	1545	1 1/2'G	3/4'G	M12 Ø240	547	KA-375-80-300
90	180	222	3800	1 1/2'G	3/4'G	M12 Ø140	430	KA-375-90-180
	200	240	3180	1 1/2'G	3/4'G	M12 Ø160	394	KA-375-90-200
	250	300	2205	1 1/2'G	3/4'G	M12 Ø210	471	KA-375-90-250
	300	360	1695	1 1/2'G	3/4'G	M12 Ø240	583	KA-375-90-300
100	200	240	3495	1 1/2'G	3/4'G	M12 Ø160	428	KA-375-100-200
	250	300	2410	1 1/2'G	3/4'G	M12 Ø210	505	KA-375-100-250
	300	360	1840	1 1/2'G	3/4'G	M12 Ø240	619	KA-375-100-300
	360	435	1445	1 1/2'G	3/4'G	M12 Ø300	804	KA-375-100-360
120	200	240	4135	1 1/2'G	3/4'G	M12 Ø160	498	KA-375-120-200
	250	300	2820	1 1/2'G	3/4'G	M12 Ø210	575	KA-375-120-250
	300	360	2405	1 1/2'G	3/4'G	M12 Ø240	756	KA-375-120-300
	360	435	1640	1 1/2'G	3/4'G	M12 Ø300	875	KA-375-120-360
140	250	300	3225	1 1/2'G	3/4'G	M12 Ø210	643	KA-375-140-250
	300	360	2335	1 1/2'G	3/4'G	M12 Ø240	739	KA-375-140-300
	360	435	1840	1 1/2'G	3/4'G	M12 Ø300	949	KA-375-140-360
150	250	300	3430	1 1/2'G	3/4'G	M12 Ø210	678	KA-375-150-250
	300	360	2545	1 1/2'G	3/4'G	M12 Ø240	790	KA-375-150-300
	360	435	1935	1 1/2'G	3/4'G	M12 Ø300	983	KA-375-150-360
160	250	300	3635	1 1/2'G	3/4'G	M12 Ø210	713	KA-375-160-250
	300	360	2685	1 1/2'G	3/4'G	M12 Ø240	824	KA-375-160-300
	360	435	2035	1 1/2'G	3/4'G	M12 Ø300	1020	KA-375-160-360
180	250	300	4040	1 1/2'G	3/4'G	M12 Ø210	781	KA-375-180-250
	300	360	2970	1 1/2'G	3/4'G	M12 Ø240	894	KA-375-180-300
	360	435	2230	1 1/2'G	3/4'G	M12 Ø300	1092	KA-375-180-360
200	300	360	3255	1 1/2'G	3/4'G	M12 Ø240	963	KA-375-200-300
	360	435	2430	1 1/2'G	3/4'G	M12 Ø300	1165	KA-375-200-360
225	300	360	3605	1 1/2'G	3/4'G	M12 Ø240	1049	KA-375-225-300
	360	435	2675	1 1/2'G	3/4'G	M12 Ø300	1255	KA-375-225-360
250	300	360	3960	1 1/2'G	3/4'G	M12 Ø240	1135	KA-375-250-300
	360	435	2920	1 1/2'G	3/4'G	M12 Ø300	1345	KA-375-250-360
275	300	360	4315	1 1/2'G	3/4'G	M12 Ø240	1222	KA-375-275-300
	360	435	3165	1 1/2'G	3/4'G	M12 Ø300	1435	KA-375-275-360
300	300	360	4670	1 1/2'G	3/4'G	M12 Ø240	1308	KA-375-300-300
	360	435	3410	1 1/2'G	3/4'G	M12 Ø300	1524	KA-375-300-360
325	300	360	5025	1 1/2'G	3/4'G	M12 Ø240	1394	KA-375-325-300
	360	435	3655	1 1/2'G	3/4'G	M12 Ø300	1614	KA-375-325-360
350	300	360	5375	1 1/2'G	3/4'G	M12 Ø240	1480	KA-375-350-300
	360	435	3905	1 1/2'G	3/4'G	M12 Ø300	1706	KA-375-350-360
375	300	360	5730	1 1/2'G	3/4'G	M12 Ø240	1566	KA-375- 300
	360	435	4150	1 1/2'G	3/4'G	M12 Ø300	1796	KA-375- 360
400	360	435	4395	1 1/2'G	3/4'G	M12 Ø300	1886	KA-375-400-360
425	360	435	4640	1 1/2'G	3/4'G	M12 Ø300	1976	KA-375-425-360
450	360	435	4885	1 1/2'G	3/4'G	M12 Ø300	2066	KA-375-450-360
475	360	435	5130	1 1/2'G	3/4'G	M12 Ø300	2155	KA-375-475-360
500	360	435	5375	1 1/2'G	3/4'G	M12 Ø300	2245	KA-375-500-360

KAA

ASME

250 BAR

Max working pressure

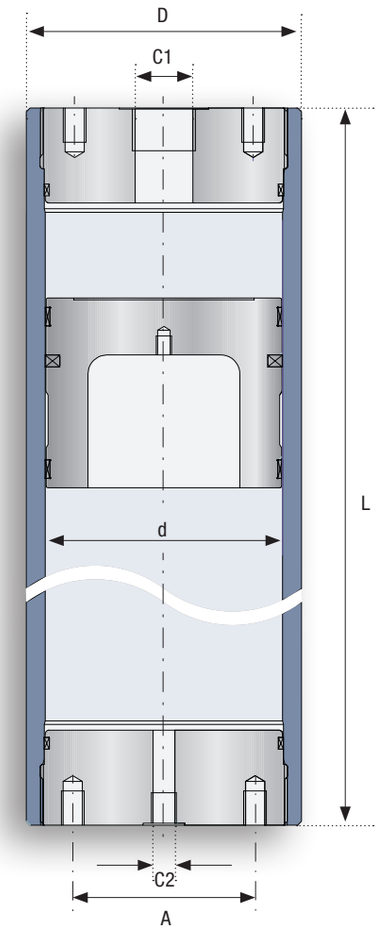


According to the Code, ASME acceptance is not necessary when the piston diameter is smaller than 150mm. For Ø≤150mm, Glual KA 97/23/CE accumulators are available.

V	d	D	L	C1	C2	A		P-V-d
Volume (L)	Piston Ø (mm)	Outside Ø (mm)	Length (mm)	Connection OIL	Connection GAS	Fastening	Weight (Kg)	Type
10	180	230	630	1 1/2'G	3/4'G	M12 Ø140	111	KAA-250-10-180
	200	255	600	1 1/2'G	3/4'G	M12 Ø160	135	KAA-250-10-200
12	180	230	705	1 1/2'G	3/4'G	M12 Ø140	120	KAA-250-12-180
	200	255	665	1 1/2'G	3/4'G	M12 Ø160	145	KAA-250-12-200
15	180	230	825	1 1/2'G	3/4'G	M12 Ø140	135	KAA-250-15-180
	200	255	760	1 1/2'G	3/4'G	M12 Ø160	160	KAA-250-15-200
20	180	230	1020	1 1/2'G	3/4'G	M12 Ø140	160	KAA-250-20-180
	200	255	915	1 1/2'G	3/4'G	M12 Ø160	184	KAA-250-20-200
25	180	230	1220	1 1/2'G	3/4'G	M12 Ø140	185	KAA-250-25-180
	200	255	1075	1 1/2'G	3/4'G	M12 Ø160	209	KAA-250-25-200
30	180	230	1415	1 1/2'G	3/4'G	M12 Ø140	210	KAA-250-30-180
	200	255	1235	1 1/2'G	3/4'G	M12 Ø160	233	KAA-250-30-200
	250	315	940	1 1/2'G	3/4'G	M16 Ø210	294	KAA-250-30-250
35	180	230	1610	1 1/2'G	3/4'G	M12 Ø140	235	KAA-250-35-180
	200	255	1395	1 1/2'G	3/4'G	M12 Ø160	258	KAA-250-35-200
	250	315	1040	1 1/2'G	3/4'G	M16 Ø210	316	KAA-250-35-250
40	180	230	1810	1 1/2'G	3/4'G	M12 Ø140	260	KAA-250-40-180
	200	255	1555	1 1/2'G	3/4'G	M12 Ø160	283	KAA-250-40-200
	250	315	1140	1 1/2'G	3/4'G	M16 Ø210	339	KAA-250-40-250
45	180	230	2005	1 1/2'G	3/4'G	M12 Ø140	284	KAA-250-45-180
	200	255	1715	1 1/2'G	3/4'G	M12 Ø160	307	KAA-250-45-200
	250	315	1245	1 1/2'G	3/4'G	M16 Ø210	363	KAA-250-45-250
50	180	230	2200	1 1/2'G	3/4'G	M12 Ø140	309	KAA-250-50-180
	200	255	1875	1 1/2'G	3/4'G	M12 Ø160	332	KAA-250-50-200
70	180	230	2985	1 1/2'G	3/4'G	M12 Ø140	408	KAA-250-70-180
	200	255	2510	1 1/2'G	3/4'G	M12 Ø160	430	KAA-250-70-200
	250	315	1755	1 1/2'G	3/4'G	M16 Ø210	478	KAA-250-70-250
	300	380	1355	1 1/2'G	3/4'G	M16 Ø240	593	KAA-250-70-300
80	180	230	3380	1 1/2'G	3/4'G	M12 Ø140	458	KAA-250-80-180
	200	255	2830	1 1/2'G	3/4'G	M12 Ø160	479	KAA-250-80-200
	250	315	1955	1 1/2'G	3/4'G	M16 Ø210	524	KAA-250-80-250
	300	380	1495	1 1/2'G	3/4'G	M16 Ø240	640	KAA-250-80-300
90	180	230	3775	1 1/2'G	3/4'G	M12 Ø140	508	KAA-250-90-180
	200	255	3145	1 1/2'G	3/4'G	M12 Ø160	528	KAA-250-90-200
	250	315	2160	1 1/2'G	3/4'G	M16 Ø210	570	KAA-250-90-250
	300	380	1635	1 1/2'G	3/4'G	M16 Ø240	687	KAA-250-90-300
100	200	255	3465	1 1/2'G	3/4'G	M12 Ø160	577	KAA-250-100-200
	250	315	2365	1 1/2'G	3/4'G	M16 Ø210	616	KAA-250-100-250
	300	380	1780	1 1/2'G	3/4'G	M16 Ø240	735	KAA-250-100-300
	360	455	1390	1 1/2'G	3/4'G	M16 Ø300	894	KAA-250-100-360

KAA

ASME



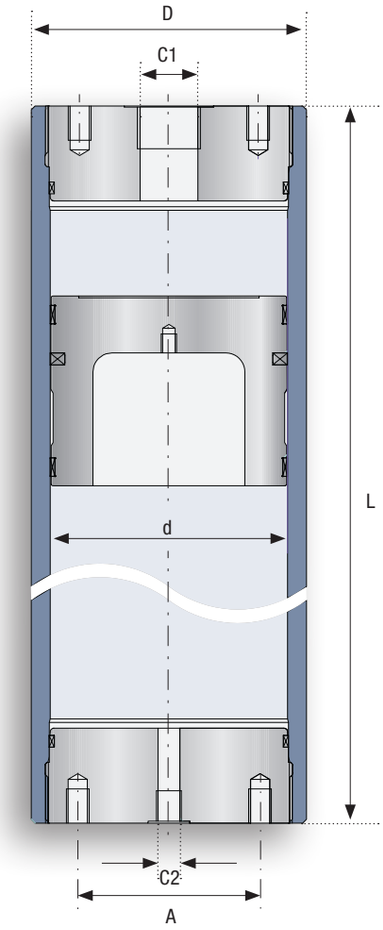
V	d	D	L	C1	C2	A		P-V-d
Volume (L)	Piston Ø (mm)	Outside Ø (mm)	Length (mm)	Connection OIL	Connection GAS	Fastening	Weight (Kg)	Type
120	200	255	4100	1 1/2'G	3/4'G	M12 Ø160	675	KAA-250-120-200
	250	315	2770	1 1/2'G	3/4'G	M16 Ø210	708	KAA-250-120-250
	300	380	2060	1 1/2'G	3/4'G	M16 Ø240	829	KAA-250-120-300
	360	455	1585	1 1/2'G	3/4'G	M16 Ø300	987	KAA-250-120-360
140	250	315	3180	1 1/2'G	3/4'G	M16 Ø210	801	KAA-250-140-250
	300	380	2345	1 1/2'G	3/4'G	M16 Ø240	925	KAA-250-140-300
	360	455	1785	1 1/2'G	3/4'G	M16 Ø300	1082	KAA-250-140-360
150	250	315	3385	1 1/2'G	3/4'G	M16 Ø210	847	KAA-250-150-250
	300	380	2485	1 1/2'G	3/4'G	M16 Ø240	972	KAA-250-150-300
	360	455	1880	1 1/2'G	3/4'G	M16 Ø300	1128	KAA-250-150-360
160	250	315	3590	1 1/2'G	3/4'G	M16 Ø210	894	KAA-250-160-250
	300	380	2630	1 1/2'G	3/4'G	M16 Ø240	1020	KAA-250-160-300
	360	455	1980	1 1/2'G	3/4'G	M16 Ø300	1175	KAA-250-160-360
180	250	315	3995	1 1/2'G	3/4'G	M16 Ø210	986	KAA-250-180-250
	300	380	2910	1 1/2'G	3/4'G	M16 Ø240	1114	KAA-250-180-300
	360	455	2175	1 1/2'G	3/4'G	M16 Ø300	1269	KAA-250-180-360
200	300	380	3195	1 1/2'G	3/4'G	M16 Ø240	1210	KAA-250-200-300
	360	455	2375	1 1/2'G	3/4'G	M16 Ø300	1364	KAA-250-200-360
225	300	380	3550	1 1/2'G	3/4'G	M16 Ø240	1329	KAA-250-225-300
	360	455	2620	1 1/2'G	3/4'G	M16 Ø300	1481	KAA-250-225-360
250	300	380	3900	1 1/2'G	3/4'G	M16 Ø240	1446	KAA-250-250-300
	360	455	2865	1 1/2'G	3/4'G	M16 Ø300	1598	KAA-250-250-360
275	300	380	4255	1 1/2'G	3/4'G	M16 Ø240	1565	KAA-250-275-300
	360	455	3110	1 1/2'G	3/4'G	M16 Ø300	1715	KAA-250-275-360
300	300	380	4610	1 1/2'G	3/4'G	M16 Ø240	1684	KAA-250-300-300
	360	455	3355	1 1/2'G	3/4'G	M16 Ø300	1832	KAA-250-300-360
325	300	380	4965	1 1/2'G	3/4'G	M16 Ø240	1807	KAA-250-325-300
	360	455	3600	1 1/2'G	3/4'G	M16 Ø300	1949	KAA-250-325-360
350	300	380	5315	1 1/2'G	3/4'G	M16 Ø240	1924	KAA-250-350-300
	360	455	3845	1 1/2'G	3/4'G	M16 Ø300	2066	KAA-250-350-360
375	300	380	5670	1 1/2'G	3/4'G	M16 Ø240	2043	KAA-250-375-300
	360	455	4095	1 1/2'G	3/4'G	M16 Ø300	2185	KAA-250-375-360
400	360	455	4340	1 1/2'G	3/4'G	M16 Ø300	2302	KAA-250-400-360
425	360	455	4585	1 1/2'G	3/4'G	M16 Ø300	2419	KAA-250-425-360
450	360	455	4830	1 1/2'G	3/4'G	M16 Ø300	2536	KAA-250-450-360
475	360	455	5075	1 1/2'G	3/4'G	M16 Ø300	2653	KAA-250-475-360
500	360	455	5320	1 1/2'G	3/4'G	M16 Ø300	2770	KAA-250-500-360

KAA

ASME

375 BAR

Max working pressure

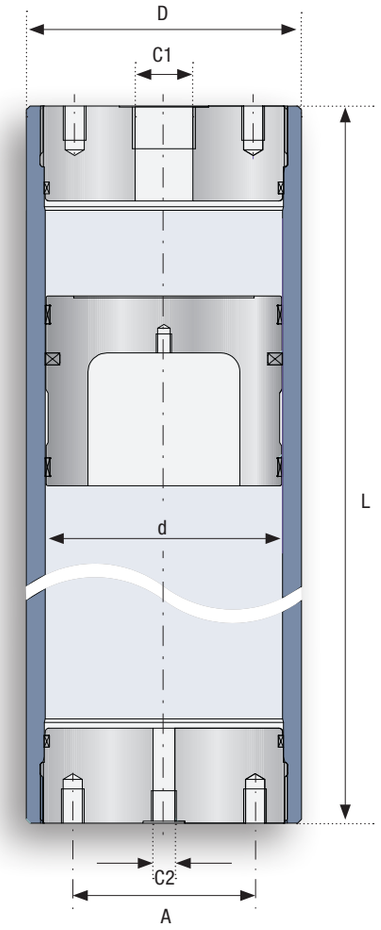


According to the Code, ASME acceptance is not necessary when the piston diameter is smaller than 150mm. For Ø≤150mm, Glual KA 97/23/CE accumulators are available.

V	d	D	L	C1	C2	A		P-V-d
Volume (L)	Piston Ø (mm)	Outside Ø (mm)	Length (mm)	Connection OIL	Connection GAS	Fastening	Weight (Kg)	Type
10	180	255	660	1 1/2'G	3/4'G	M12 Ø140	170	KAA-375-10-180
	200	285	630	1 1/2'G	3/4'G	M12 Ø160	211	KAA-375-10-200
12	180	255	735	1 1/2'G	3/4'G	M12 Ø140	185	KAA-375-12-180
	200	285	695	1 1/2'G	3/4'G	M12 Ø160	227	KAA-375-12-200
15	180	255	855	1 1/2'G	3/4'G	M12 Ø140	209	KAA-375-15-180
	200	285	790	1 1/2'G	3/4'G	M12 Ø160	252	KAA-375-15-200
20	180	255	1050	1 1/2'G	3/4'G	M12 Ø140	248	KAA-375-20-180
	200	285	950	1 1/2'G	3/4'G	M12 Ø160	292	KAA-375-20-200
25	180	255	1250	1 1/2'G	3/4'G	M12 Ø140	288	KAA-375-25-180
	200	285	1110	1 1/2'G	3/4'G	M12 Ø160	333	KAA-375-25-200
30	180	255	1445	1 1/2'G	3/4'G	M12 Ø140	328	KAA-375-30-180
	200	285	1270	1 1/2'G	3/4'G	M12 Ø160	374	KAA-375-30-200
	250	355	980	1 1/2'G	3/4'G	M16 Ø210	481	KAA-250-30-250
35	180	255	1640	1 1/2'G	3/4'G	M12 Ø140	367	KAA-375-35-180
	200	285	1425	1 1/2'G	3/4'G	M12 Ø160	413	KAA-375-35-200
	250	355	1080	1 1/2'G	3/4'G	M16 Ø210	520	KAA-250-35-250
40	180	255	1840	1 1/2'G	3/4'G	M12 Ø140	407	KAA-375-40-180
	200	285	1585	1 1/2'G	3/4'G	M12 Ø160	454	KAA-375-40-200
	250	355	1185	1 1/2'G	3/4'G	M12 Ø210	561	KAA-375-40-250
45	180	255	2035	1 1/2'G	3/4'G	M12 Ø140	446	KAA-375-45-180
	200	285	1745	1 1/2'G	3/4'G	M12 Ø160	494	KAA-375-45-200
	250	355	1285	1 1/2'G	3/4'G	M16 Ø210	600	KAA-375-45-250
50	180	255	2230	1 1/2'G	3/4'G	M12 Ø140	486	KAA-375-50-180
	200	285	1905	1 1/2'G	3/4'G	M12 Ø160	535	KAA-375-50-200
70	180	255	3015	1 1/2'G	3/4'G	M12 Ø140	643	KAA-375-70-180
	200	285	2540	1 1/2'G	3/4'G	M12 Ø160	696	KAA-375-70-200
	250	355	1795	1 1/2'G	3/4'G	M16 Ø210	800	KAA-375-70-250
	300	425	1405	1 1/2'G	3/4'G	M16 Ø240	951	KAA-375-70-300
80	180	255	3410	1 1/2'G	3/4'G	M12 Ø140	723	KAA-375-80-180
	200	285	2860	1 1/2'G	3/4'G	M12 Ø160	778	KAA-375-80-200
	250	355	2000	1 1/2'G	3/4'G	M16 Ø210	880	KAA-375-80-250
	300	425	1545	1 1/2'G	3/4'G	M16 Ø240	1029	KAA-375-80-300
90	180	255	3805	1 1/2'G	3/4'G	M12 Ø140	802	KAA-375-90-180
	200	285	3180	1 1/2'G	3/4'G	M12 Ø160	859	KAA-375-90-200
	250	355	2205	1 1/2'G	3/4'G	M16 Ø210	960	KAA-375-90-250
	300	425	1685	1 1/2'G	3/4'G	M16 Ø240	1107	KAA-375-90-300
100	200	285	3495	1 1/2'G	3/4'G	M12 Ø160	939	KAA-375-100-200
	250	355	2405	1 1/2'G	3/4'G	M16 Ø210	1039	KAA-375-100-250
	300	425	1830	1 1/2'G	3/4'G	M16 Ø240	1188	KAA-375-100-300
	360	505	1450	1 1/2'G	3/4'G	M16 Ø300	1399	KAA-375-100-360

KAA

ASME



V	d	D	L	C1	C2	A		P-V-d
Volume (L)	Piston Ø (mm)	Outside Ø (mm)	Length (mm)	Connection OIL	Connection GAS	Fastening	Weight (Kg)	Type
120	200	285	4135	1 1/2"G	3/4"G	M12 Ø160	1102	KAA-375-120-200
	250	355	2815	1 1/2"G	3/4"G	M16 Ø210	1199	KAA-375-120-250
	300	425	2210	1 1/2"G	3/4"G	M16 Ø240	1400	KAA-375-120-300
	360	505	1645	1 1/2"G	3/4"G	M16 Ø300	1550	KAA-375-120-360
140	250	355	3220	1 1/2"G	3/4"G	M16 Ø210	1358	KAA-375-140-250
	300	425	2395	1 1/2"G	3/4"G	M16 Ø240	1504	KAA-375-140-300
	360	505	1845	1 1/2"G	3/4"G	M16 Ø300	1704	KAA-375-140-360
150	250	355	3425	1 1/2"G	3/4"G	M16 Ø210	1438	KAA-375-150-250
	300	425	2535	1 1/2"G	3/4"G	M16 Ø240	1582	KAA-375-150-300
	360	505	1940	1 1/2"G	3/4"G	M16 Ø300	1778	KAA-375-150-360
160	250	355	3630	1 1/2"G	3/4"G	M16 Ø210	1519	KAA-375-160-250
	300	425	2675	1 1/2"G	3/4"G	M16 Ø240	1660	KAA-375-160-300
	360	505	2040	1 1/2"G	3/4"G	M16 Ø300	1855	KAA-375-160-360
180	250	355	4035	1 1/2"G	3/4"G	M16 Ø210	1677	KAA-375-180-250
	300	425	2960	1 1/2"G	3/4"G	M16 Ø240	1819	KAA-375-180-300
	360	505	2235	1 1/2"G	3/4"G	M16 Ø300	2006	KAA-375-180-360
200	300	425	3245	1 1/2"G	3/4"G	M16 Ø240	1979	KAA-375-200-300
	360	505	2430	1 1/2"G	3/4"G	M16 Ø300	2157	KAA-375-200-360
225	300	425	3595	1 1/2"G	3/4"G	M16 Ø240	2174	KAA-375-225-300
	360	505	2680	1 1/2"G	3/4"G	M16 Ø300	2350	KAA-375-225-360
250	300	425	3950	1 1/2"G	3/4"G	M16 Ø240	2373	KAA-375-250-300
	360	505	2925	1 1/2"G	3/4"G	M16 Ø300	2540	KAA-375-250-360
275	300	425	4305	1 1/2"G	3/4"G	M16 Ø240	2571	KAA-375-275-300
	360	505	3170	1 1/2"G	3/4"G	M16 Ø300	2729	KAA-375-275-360
300	300	425	4660	1 1/2"G	3/4"G	M16 Ø240	2769	KAA-375-300-300
	360	505	3415	1 1/2"G	3/4"G	M16 Ø300	2918	KAA-375-300-360
325	300	425	5015	1 1/2"G	3/4"G	M16 Ø240	2971	KAA-375-325-300
	360	505	3660	1 1/2"G	3/4"G	M16 Ø300	3108	KAA-375-325-360
350	300	425	5365	1 1/2"G	3/4"G	M16 Ø240	3167	KAA-375-350-300
	360	505	3905	1 1/2"G	3/4"G	M16 Ø300	3297	KAA-375-350-360
375	300	425	5720	1 1/2"G	3/4"G	M16 Ø240	3365	KAA-375-375-300
	360	505	4155	1 1/2"G	3/4"G	M16 Ø300	3491	KAA-375-375-360
400	360	505	4400	1 1/2"G	3/4"G	M16 Ø300	3680	KAA-375-400-360
425	360	505	4645	1 1/2"G	3/4"G	M16 Ø300	3870	KAA-375-425-360
450	360	505	4890	1 1/2"G	3/4"G	M16 Ø300	4059	KAA-375-450-360
475	360	505	5135	1 1/2"G	3/4"G	M16 Ø300	4248	KAA-375-475-360
500	360	505	5380	1 1/2"G	3/4"G	M16 Ø300	4438	KAA-375-500-360

KA

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Optional

Electrical limit switching device

Electric limit switch

The system consists in a N/C and N/O switch.

When the piston reaches the up switch position, the switch (N/C) is activated. When the oil pressure falls and the piston reaches down switch position, the switch (N/O) is activated.

The switch is reset by a spring and it allows any mounting position, but a vertical mounting is preferable.

In the limit switch stroke, the maximum piston speed should not exceed 0,5 m/s.

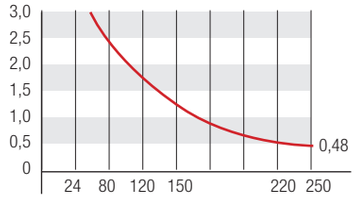
Electric switch characteristics:

- Compliance with the Directives
- Approval: USA/CAN
- Ambient conditions:
- Ambient temperature
  - Min. environmental temperature –25 °C
  - Max. environmental temperature +75 °C
- Protection class IP67 to IEC/EN 60529

Electrical data

- Switching voltage max. 250 VAC/DC
- Switching current max. 3 A
- Switching capacity max. 120 VA / W

Characteristic curve:



Piston position switch

The system consists in a magnet element that is moved with the piston.

The device is mounted on the gas side of the accumulator and according the piston reaches the switches position, the correspondent switch is activated. Depending the piston direction (up or down) the switches works as breaker or closing contact.

When the piston reaches the switch position, the switch is activated. Several switched could be mounted and the total stroke could be controlled.

The accumulator must only be installed vertically and gas side on top.

In the controlled stroke, the maximum piston speed should not exceed 0,5 m/s.

Electric switch characteristics:

- Compliance with the Directives
- Approval: USA/CAN

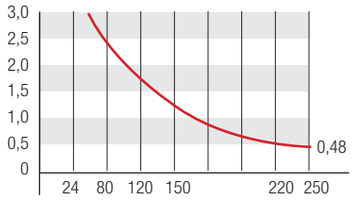
Ambient conditions:

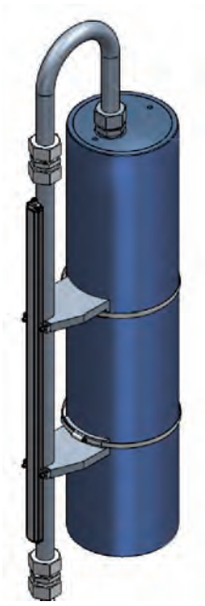
- Ambient temperature
  - Min. environmental temperature –25 °C
  - Max. environmental temperature +75 °C
  - Protection class IP67 to IEC/EN 60529

Electrical data

- Switching voltage max. 250 VAC/DC
- Switching current max. 3 A
- Switching capacity max. 120 VA / W

Characteristic curve:





Piston position transdcucer

The system consists in a magnet element that is moved with the piston.

The device is mounted on the gas side of the accumulator and according the piston is moved, the analogical output signal of the transducer can by displayed.

The accumulator must only be installed vertically and gas side on top (the casing is pressurised)

The total piston stroke could be controlled.

In the controlled stroke, the maximum piston speed should not exceed 0,5 m/s.

Position transducer characteristics:

- Compliance with the Directives CE
- Approval: USA/CAN cULus

Ambient conditions:

- Ambient temperature Ta min. -25 °C
- Ambient temperature Ta max. 70 °C
- Storage temperature min. -40 °C
- Storage temperature max. 100 °C

Electrical data

- Ripple 0.5 Vpp
- Current consumption (at 24 V DC) ≤ 150 mA
- Inrush current ≤ 3 A / 0.5 ms
- Overvoltage protected Up to 36 V
- Voltage-proof (GND – housing) 500 V DC
- Galvanic isolation No
- Output signal adjustable Via programming inputs
- Error signal output 1 10.5 V
- Programming inputs 10 … 30 V DC, High-active

Output signal . 0-10 v or 4-20 Ma
Electrical connection: 8-pin, M12 plug

Ultrasonic position sensor

The system consists in ultrasonic sensor. The sensors recognize the piston position by means of ultrasonic.

The sensors sound through the wall of the accumulator, so the installation is possible without process interruption.

Ultrasound is produced by an electrical impulse and is reflected at the rear wall of the accumulator and evaluated afterwards

Several switched could be mounted and the total piston stroke could be controlled.

The accumulator could be installed in any position.

Ambient conditions for sensors:

- Temperature of accumulator:: -20 ... +80 °C
- Ambient temperature: -20 ... +60 °C
- Storage temperature: -40 ... +85 °C
- Attention: The range of working temperature is further restricted by the absolute viscosity.

Electrical data:

- Protection class: IP 67, oil resistant
- Hydraulic fluid Mineral oil (HL, HLP), HFA, (HFB), HFC, HFD
- Max. absolute viscosity 100 cSt
- Out signal: NPN or PNP
- Power supply 18 ... 30 VDC, max. 80 mA, ripple 10 %
  - low voltage identification
  - inverse-polarity protection
- CE Conformity Ingress protection:
  DIN EN 60529:1991 + A1:2000
  EMC active: DIN EN 61326-1:2006
  EMC passive: IEC61000-4-2, -3, -4, -5, -6

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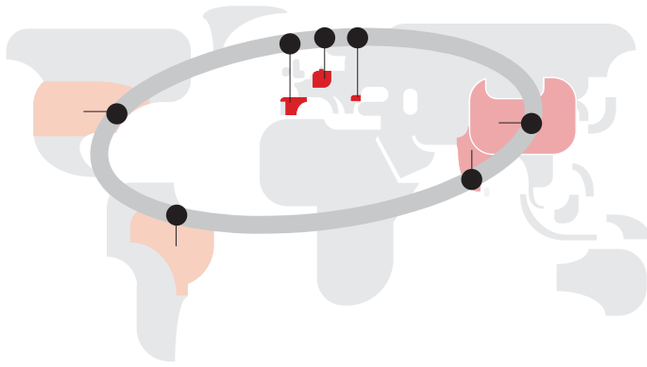

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