

HBA Series

Bladder
Accumulators

HBA Series



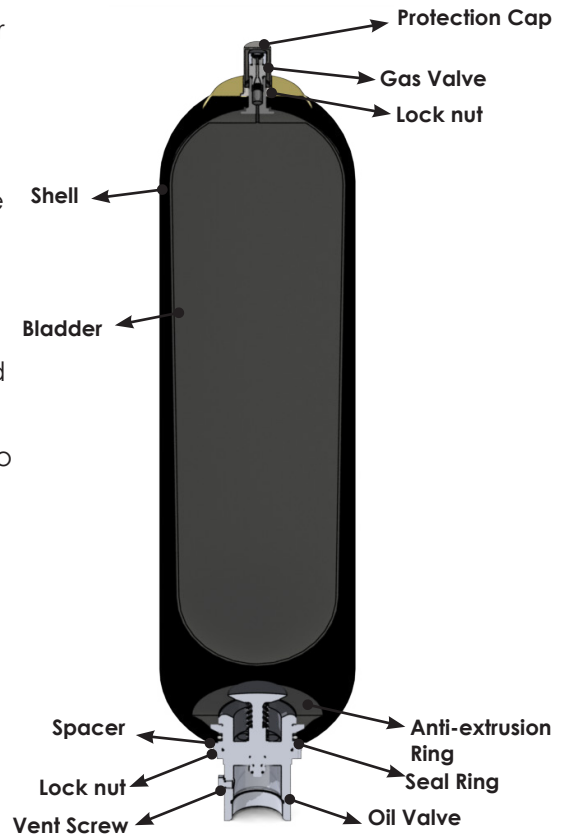
HBA Series

Introduction

HydroLync Bladder Accumulator (HBA) is designed for high-pressure hydraulic systems. Using nitrogen as the compressible medium, HBA offers efficient and reliable solution for energy storage under pressure. The HBA series consists of fluid section and a gas section with the bladder acting as the gas-proof separation element.

The fluid section is connected with the hydraulic circuit in order to draw in fluid when the pressure increases and the gas is compressed. When the pressure drops, the compressed gas expands and forces the stored fluid into the circuit.

The HBA series comes with an O-ring seal fluid port and 7/8" UNF gas connection as standard however other options are available. Options with a flanged SAE fluid port and for high flow rates are also available.



Shell and Bladder Material

The shell is available in Carbon (34CrMo4) and stainless steel (304/316).

The bladders are available as below:

Compound	Description	Comments
N28	Low ACN content nitrile	Low temperature
N33	Medium ACN content nitrile	Standard nitrile
N40	High ACN content nitrile	Gasoline (unleaded excluded) and high temperatures
NH1	HNBR	Better behavior than NBR at extreme high and low temperatures
ECO	Hydrin	Standard hydrin
EP1	EPDM	For phosphate-ester media
IIR	Butyl	Standard butyl
FKM	VITON®	Standard fluorocarbon from Dupont de Nemours

Application

- Energy storage
- Force equilibrium
- Volume compensation
- Leakage compensation
- Pulsation damping
- Shock absorption
- Vehicle suspension
- Hydraulic dampers

Nitrogen gas charging kit is available



Technical datasheet

Volume (L)	Pressure (bar)	STEM	øD	Oil Port	H (±12.5)	H1	H2	Weight	Max. Flow (L/sec)
1	350		114	G1 1/4	335		53.5	5	1.82
2.5	350		114	G1 1/4	545		53.5	10	3.60
4	350		168	G1 1/4	429		65.5	14	7.95
6	350	External: Ø7/8"- 14UNF 1A	168	G1 1/4	559		65.5	20	7.95
10	330		219	G2	577	74	102.2	39	18
20	330	Internal: Ø1/2"- 20UNF 2B	219	G2	887		102.2	58	18
24.5	330		219	G2	1024		102.2	74	18
32	330		219	G2	1412		102.2	92	18
42	330		219	G2	1552		102.2	114	18
50	330		219	G2	1927		102.2	124	18
57	330		219	G2	2014		102.2	150	18

***Notice:** The technical specifications of the **stainless shell** are determined by the customer's request.

Installation

HBA should be installed vertically and the oil port is at the bottom with supporting brackets and clamps. **MUST NOT WELD ANY SUPPORT TO THE ACCUMULATOR!** On certain applications listed below, particular positions are preferable:

- Energy storage: vertical
- Pulsation damping: any position from horizontal to vertical
- Maintaining constant pressure: any position from horizontal to vertical
- Volume compensation: vertical

If the installation position is horizontal, the effective fluid volume and the maximum permitted flow rate of the operating fluid are reduced.

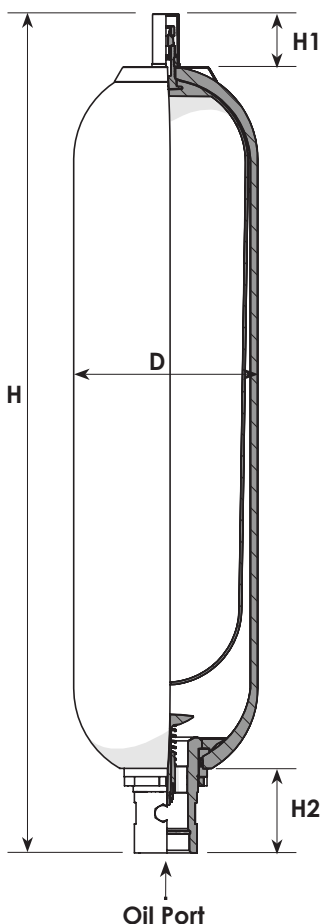
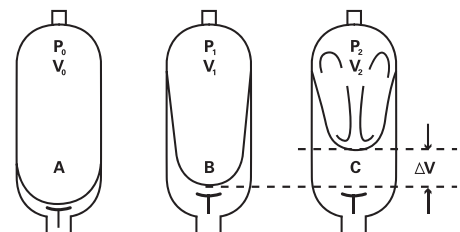
Precautions

HBA must only be charged with DRY NITROGEN. DO NOT USE OTHER GASES DUE TO RISK OF EXPLOSION.

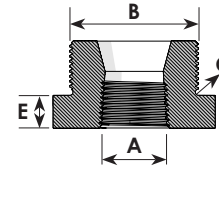
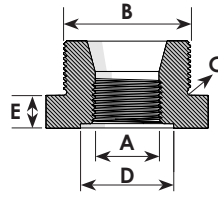
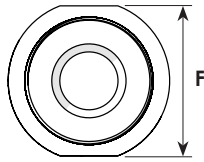
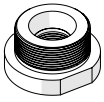
NEVER operate the accumulator over working pressure range or working temperature limits attached to the product.

Limits for gas precharge pressure

$p_0 \leq 0.9 \cdot p_1$
 with a permitted pressure ratio of:
 $p_2 : p_0 \leq 4 : 1$
 $p_2 = \text{max. operating pressure}$
 $p_0 = \text{pre-charge pressure}$



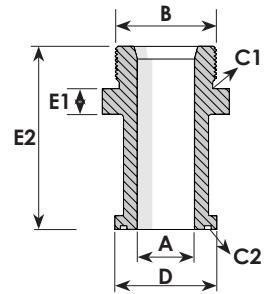
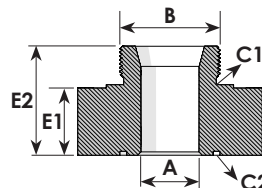
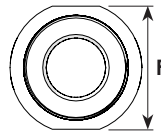
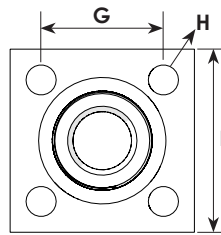
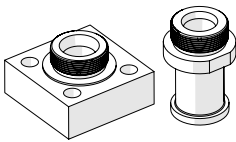
Bushing



Volume	Model		A	B	C	D	E	F
2.5 ~6L	B02		3/4"	G1 1/4"	Ø36.2x3.0	-	15	46
	B03	PT	1"	G1 1/4"	Ø36.2x3.0	-	15	46
	B14		1/2"	G1 1/4"	Ø36.2x3.0	-	15	46
	B08	PF(G)	3/4"	G1 1/4"	Ø36.2x3.0	35	15	46
	B09		1"	G1 1/4"	Ø36.2x3.0	44	28	46
10~57L	B04		1/2"	G2"	G55	-	15	70
	B05		3/4"	G2"	G55	-	15	70
	B06	PT	1"	G2"	G55	-	15	70
	B07		1 1/4"	G2"	G55	-	15	70
	B14		1 1/2"	G2"	G55	-	15	70
	B10		1/2"	G2"	G55	28	15	70
	B11		3/4"	G2"	G55	34	15	70
	B12	PF(G)	1"	G2"	G55	42	15	70
	B13		1 1/4"	G2"	G55	47	15	70
	B15		1 1/2"	G2"	G55	51	15	70

* 1L accumulator is using 3/4" plug only.

Flange



Standard

SAE

Standard

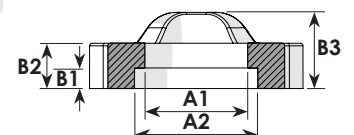
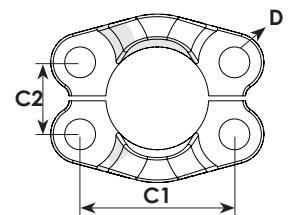
SAE

Volume	Type	Model	A	B	C1	C2	D	E1	E2	F	G	H
2.5~6L	110x110	R4	29	G1 1/4"	G55	G55	-	40	64	110	73	Ø18
	110x110	R10	35	G2"	G55	G55	-	40	64	110	73	Ø18
	3000psi	S34	34	G2"	G55	G55	60.3	15	104	70	-	-
10~57L	3000psi	S35	43	G2"	G55	P55	71.4	15	105.5	70	-	-
	6000psi	S64	34	G2"	G55	G55	63.5	15	108.5	70	-	-
	6000psi	S65	43	G2"	G55	P55	79.4	15	108.5	70	-	-

* For other options, please contact sales manager or distributors

Type	A1	A2	B1	B2	B3	C1	C2	D	
3000psi 40A	1 1/2"	50.8	61.1	7.5	16	25	69.85	35.72	Ø11.8
3000psi 50A	2"	62.75	72.25	9	16	26	77.77	42.88	Ø13.3
6000psi 40A	1 1/2"	51.6	64.3	12.1	30	43	79.38	36.52	Ø17
6000psi 50A	2"	67.6	80.2	12.1	37	52	96.82	44.46	Ø21

* For other options, please contact sales manager or distributors



Ordering Code

Example: HBA - FKM - 1 - 350 - TF - STS - P01 - GL

HBA
Bottom repairable type (standard)
HBTA
Top repairable type (Contact sales team)
HBHFA
High flow type (Contact sales team)
HBHFA
High pressure type (Contact sales team)

Bladder Materials

None -20-80 °C
NBR - Nitrile (standard)
ECO -32-115 °C
Hydrin (Contact sales team)
N28 -28-80 °C
Nitrile for low temp. (Contact sales team)
N40 -5-115 °C
Nitrile for high temp. (Contact sales team)
NH1
For extreme conditions (Contact sales team)
EP1 -40-120 °C
EPDM (Contact sales team)
IIR -15-120 °C
Butyl (Contact sales team)
FKM -10-130 °C
VITON (Contact sales team)

Nominal Volume

1 1 Liter
2.5 2.5 Liter
4 4 Liter
6 6 Liter
10 10 Liter
12 12 Liter
20 20 Liter
24.5 24.5 Liter
32 32 Liter
42 42 Liter
50 50 Liter
57 57 Liter

Pressure Design

330 330 bar
350 350 bar
Others
Contact sales for special pressure design

Shell Coating

None Standard for mineral oil
TF Teflon for water
Others
Contact sales for special coating

Certificates

ASME, ABS, CE, KR GL NK, DNV, BV, LR
Contact sales for others

Bushings

Volume	Model	Thread to line	Thread to fluid-port
1L	P01	PT 3/4"	-
	P02	PF(G) 3/4"	-
2.5~6L	B02	3/4"	G1 1/4"
	B03	PT 1"	G1 1/4"
	B14	1/2"	G1 1/4"
	B08	PF(G) 3/4"	G1 1/4"
	B09	1"	G1 1/4"
	B04	1/2"	G2"
	B05	3/4"	G2"
	B06	PT 1"	G2"
10~57L	B07	1 1/4"	G2"
	B14	1 1/2"	G2"
	B10	1/2"	G2"
	B11	3/4"	G2"
	B12	PF(G) 1"	G2"
	B13	1 1/4"	G2"
	B15	1 1/2"	G2"

Flanges

Volume	Type	Model	Inner diameter to line	Thread to fluid-port
2.5~6L	110x110	R4	29	G1 1/4"
	110x110	R10	35	G2"
10~57L	3000psi	S34	34	G2"
	3000psi	S35	43	G2"
	6000psi	S64	34	G2"
	6000psi	S65	43	G2"

Materials

Carbon steel(Standard), STS 316

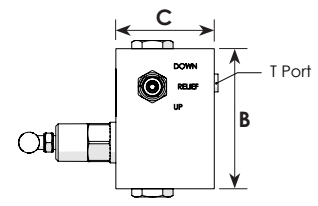
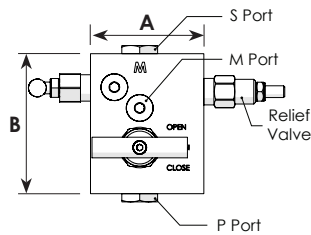
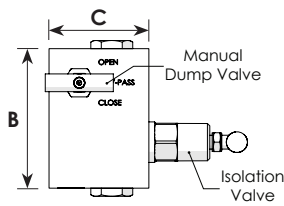
Fluid-port Material

None Carbon Steel (Standard)
STS Stainless Steel 304
Others Contact sales for special material

Notice:

Required gas pre-charge pressure must be stated separately

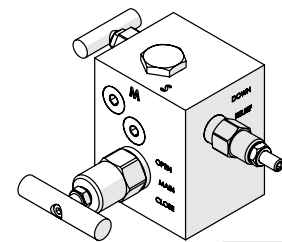
Safety and shut-off block



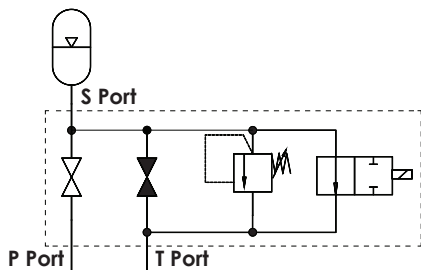
Model	S Port Accumulator	P Port Process	T Port Tank	M Port Gauge	A	B	C
HSB 12-1-N	G 1/2"	G 1/2"	G 1/4"	G 1/4"	76	94	66
HSB 20-1-N	G 3/4"	G 3/4"	G 1/4"	G 1/4"	89	100	89
HSB 32-1-N	G 1 1/4"	G 1 1/4"	G 1/4"	G 1/4"	88	115	88

Technical Data

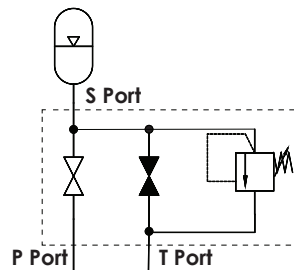
- **Max. Working Pressure:** 350 bar
- **Material:** Carbon Steel
- **Seals:** NBR (standard), Viton (option)
- **Working temperature range:** Solenoid -10 ~ 60 °C / Manual -10 ~ 80 °C
DC 24V / AC 110, 220V
- **Connections:** G threads (BSP) to BS2779 1986
- **Others:** Pressure relief valve for the protection
Manual dump to tank valve as standard
Optional electromagnetic dump to tank valve



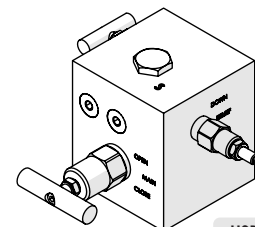
HSB 12-1-N



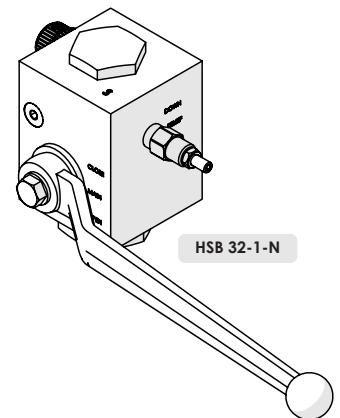
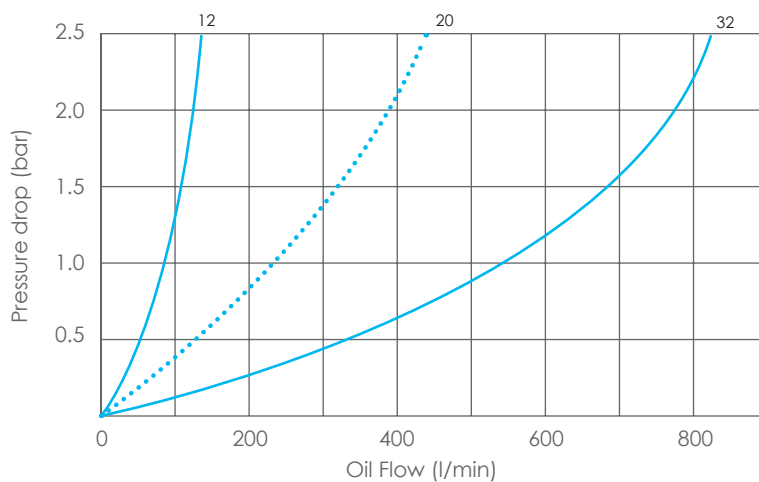
Manually and electrically operated



Manually operated



HSB 20-1-N



HSB 32-1-N

Ordering Code

Example: HSB - 12 - 1 - N - 24

HSB
Safety and shut-off
block series

Size	
12	12mm (1/2")
20	20mm (3/4")
32	32mm (1 1/4") (P,S port size)

Seal Material	
N	Nitrile
V	FKM (VITON)

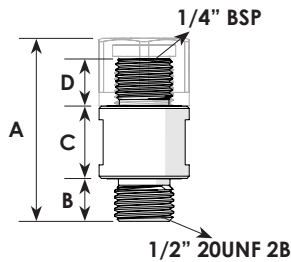
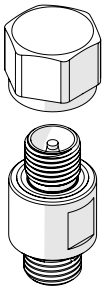
Solenoid Power	
None	
24:	DC 24V
110:	AC 110V
220:	AC 220V

Tank Valve	
1	Manual
2	Manual & Electrical

Gas Valve

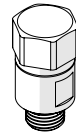
HGV-B01

Patent Registered. Patent No.: 10-10-210742 (Korean Intellectual Property Office)



- Material:** Stainless Steel / SUS303
- Features:**
 - 1) applied 'Leak-Free' sealing technique
 - 2) enhanced compatibility

Volume	A	B	C	D
1~57L	40.5	9.5	16	10.5

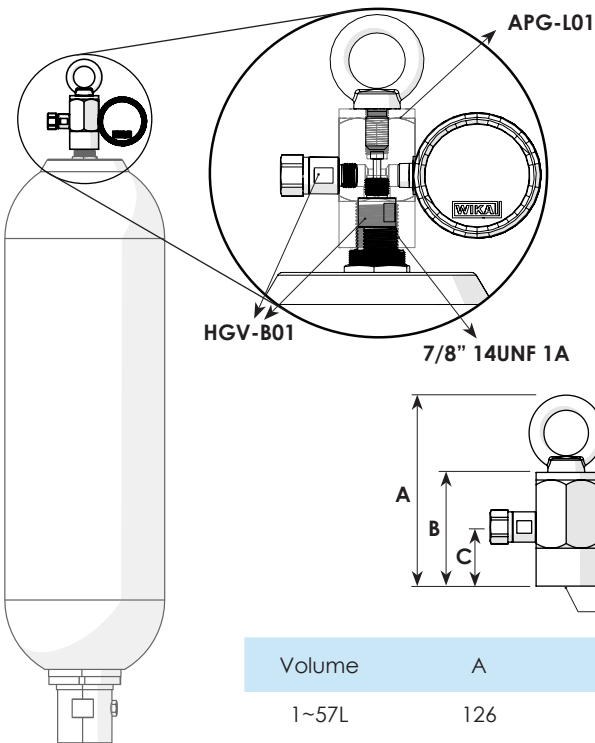
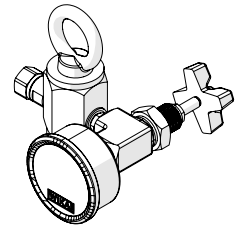


Permanent Gauge

APG-L01

- Material:** Carbon Steel - Zinc plated
- Features:** 'Ready-to-use' design with HGV-B01 gas valve made it possible for users to use APG(accumulator permanent gauge) immediately without inconvenient procedure such as discharging nitrogen gas, removing the gas valve, and using an APG adaptor.

Patent Registered. Patent No.: 10-10-210742 (Korean Intellectual Property Office)



Volume	A	B	C	D	E
1~57L	126	75	39	105	153

Ordering Code

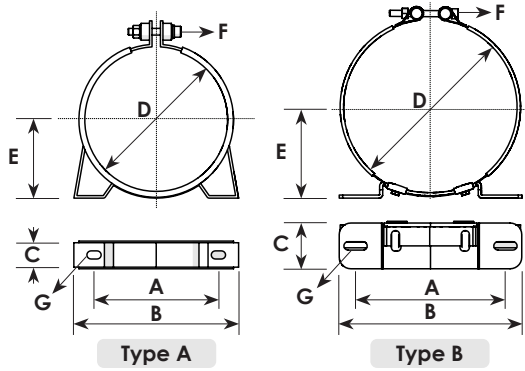
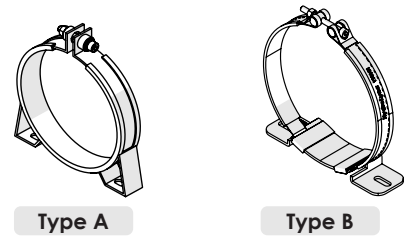
Example: APG - 250 - D

APG
Accumulator
Permanent Gauge

Gauge Type	
D	D type (Standard)
A	A type

Gauge Pressure	
250	250 bar (Standard)
25	25 bar
60	60 bar
100	100 bar

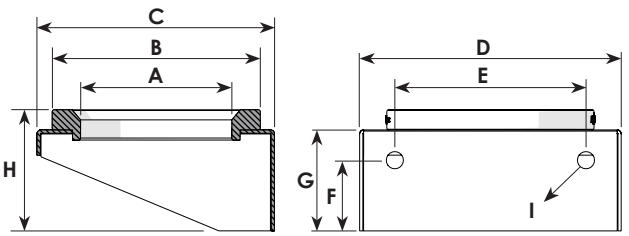
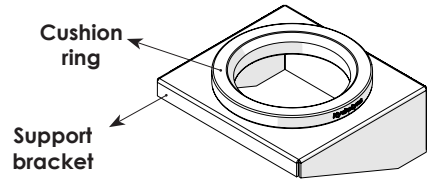
Clamp band



• **Material:** Carbon Steel (Zinc plated) / Stainless Steel

Volume	Type	A	B	C	D	E	F	G
1~2.5L	A	114	151	30	114	66	M8x55	10x17
4~6L	A	148	188	30	168	93	M8x55	10x17
10~57L	B	193	235	60	223	117	M8x80	11x30

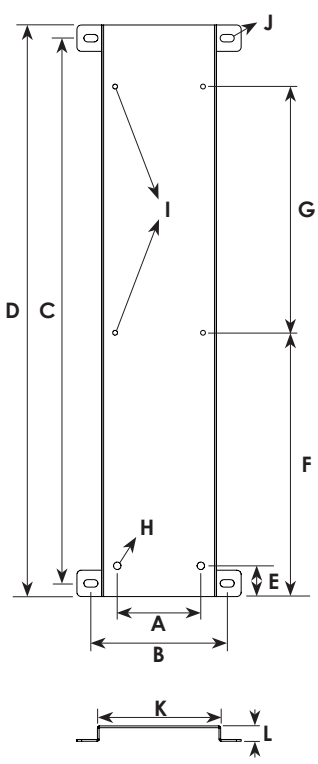
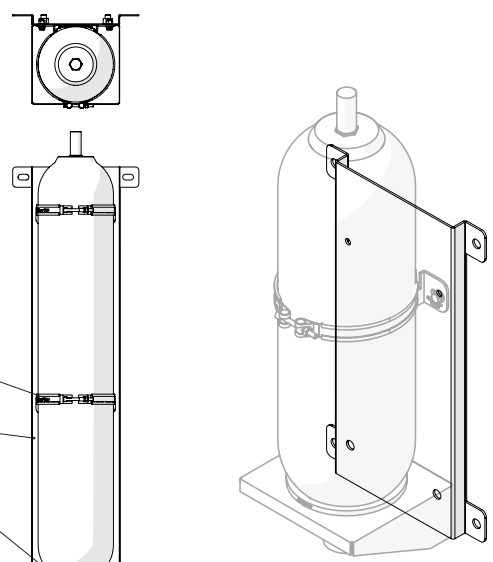
Support bracket



• **Material:** Carbon Steel (Zinc plated)

Volume	A	B	C	D	E	F	G	H	I
4~6L	108	136	30	114	160	55	80	95	17
10~57L	150	206	235	260	190	70	100	120	17

Mount bracket

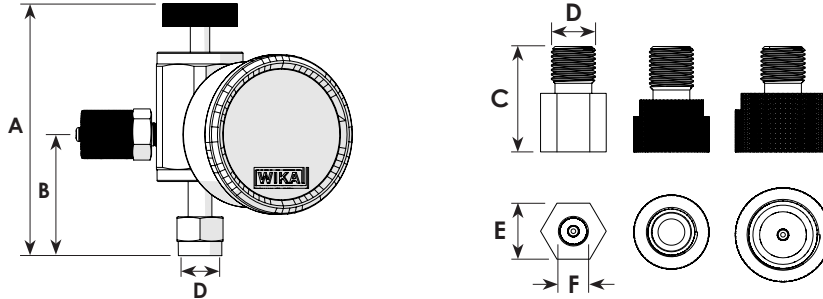


• **Material:** Carbon Steel (Zinc plated)

Volume	A	B	C	D	E	F	G	H	I	J	K	L
4~6L	160	260	240	300	55	280	-	17	11	17	210	30
10~24.5L	190	310	540	600	70	460	-	17	11	17	260	30
32~57L	190	310	1240	1300	70	600	560	17	11	17x32	260	30

N₂ Gas Charging Kit HCB

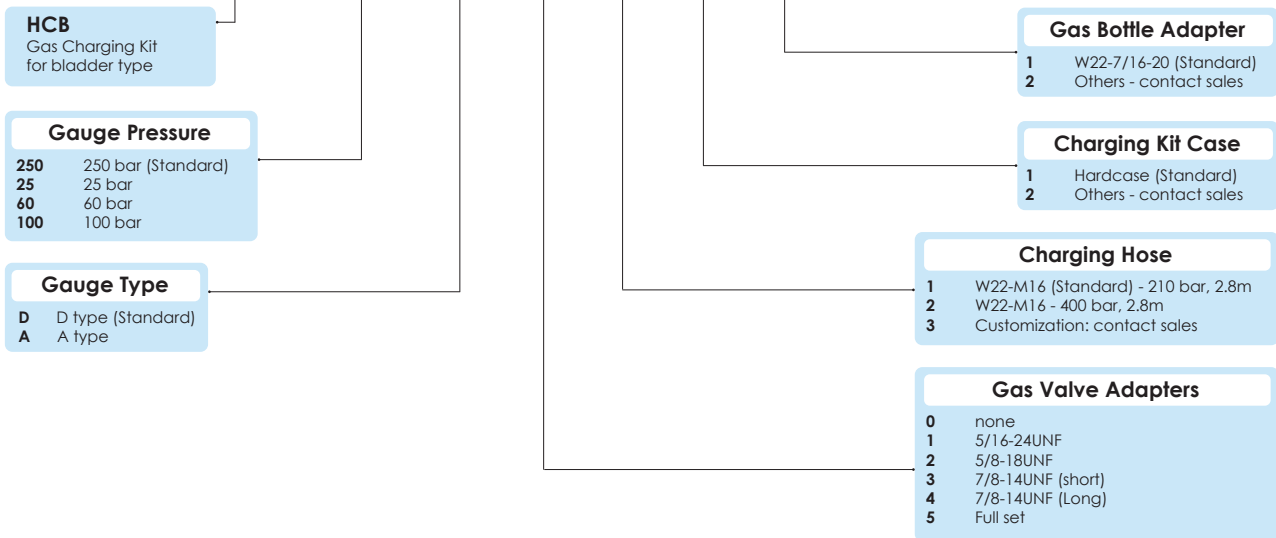
- Material:** Carbon Steel - Zinc plated
- Features:**
 - 1) Charging hose: length 2.8m, max. pressure 210 bar
 - 2) Highly compatible and can support third-party products



A	B	C	D	E	F
				18.5	5/16"-24UNF
107	51.5	31.5	G 1/4"	22.5	5/8"-18UNF
				28.5	7/8"-14UNF

Ordering Code

Example: HCB - 250 - D - 6 - 1 - 1 - 1



Charging Adapter Converting Adapters Charging Hose Full set



KakaoTalk



YouTube



Hydro Lync

Engineering Excellence



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