

# Diaphragm Accumulators



Proud Member of the Olaer Group



## Features and Benefits

- Can be mounted in any position
- Compression ratios of up to 8:1 attainable on standard models  
(*Compression ratio = Working pressure/Precharge pressure*)
- Diaphragm compounds with very low gas permeability allows longer intervals between recharging

The multi-functional and compact Diaphragm Accumulator can be used to increase efficiency in a number of areas:

- Shortening stroke time
- Energy storage
- Shock absorption
- Pulsation dampening
- Leakage compensation
- Thermal expansion



### Diaphragm locking ring

Completely protected metal clamping ring to ensure high pre-loading of the diaphragm. This eliminates leakage in relation to fluid or gas transfer. The metal ring is not effected by temperature influences, as might be possible with plastic locking rings.

### Shell

The shell is manufactured from high strength alloy steel with electron-beam welding. This non-repairable design reduces size, weight, and cost. The high endurance limit is >2 million cycles. It has a high bursting strength of >4X normal operational pressure.

### Diaphragm and Button

The flexible diaphragm provides superior gas and fluid separation. The diaphragm is available standard in Nitrile (NBR) compound. This provides low permeation, and thus a longer lifespan. Other diaphragm compounds are available upon request. To prevent diaphragm extrusion, the button will seal the fluid port when the accumulator is fully discharged. This flexible button allows for rapid diaphragm movement.

### Fluid Port

The standard fluid port is SAE straight thread allowing for easy installation and leak-free service. Almost any configuration is available including external threads and panel mounting options. Please consult factory for details.

**NOTE: REFER TO THE MODEL NUMBER CHART FOR OTHER AVAILABLE OPTIONS.**

# MODEL NUMBER CHART

Check product data sheets for standard products

I H M 0 0 5 - C 3 6 S E 0 B N

**INDICATES  
DIAPHRAGM  
ACCUMULATOR**

**MODEL/GAS CONNECTION**

IHM	Metric Gas Valve
IHA	Metric Gas Valve w/ Schrader Adaptor
IH	Welded Schrader Gas Valve <i>(Only two characters required)</i>
IHR	Repairable w/ Schrader Gas Valve
IHT	Repairable w/ Metric Gas Valve

**CAPACITY  
CUBIC INCHES**

005	5 C.I.
010	10 C.I.
020	20 C.I.
030	30 C.I.
045	45 C.I.
060	60 C.I.
085	85 C.I.
120	120 C.I.
170	170 C.I.
215	215 C.I.
00X	Special

**PRECHARGE PRESSURE**

Designate precharge requirements on purchase order. Use 4 digit code as shown below.

*Example:*

0000	No Precharge (<25 PSI)
0100	100 PSI
1000	1000 PSI
1250	1250 PSI

*Not to exceed 80% of rated pressure*

**SHELL MATERIAL**

C	Carbon Steel
S	Stainless Steel
A	Aluminium
X	Special

\*2

**PRESSURE RATING**

05	500 PSI
10	1000 PSI
15	1500 PSI
20	2000 PSI
30	3000 PSI
36	3600 PSI
XX	Special

\*2

**DIAPHRAGM**

B	Nitrile
C	Cold weather Nitrile
D	Hydrin
H	Hydrogenated Nitrile
T	Butyl
V	Fluorocarbon
X	Special

\*2

**EXTERNAL THREADS**

0	Without
1	M33X1.5
2	M45X1.5
X	Special

\*2

**FLUID PORT**

1st Digit	2nd Digit
S SAE Female	E SAE-6 (9/16"-18UNF)
M SAE Male	F SAE-8 (3/4"-16UNF)
X Special	G SAE-12 (1 1/16"-12UN)
	X Special

\*2

**SPECIAL**

Y	Special Order
N	Not a Special Order

\*2

\*2 If any of the designations are "X" then the last letter designation must be "Y" and description of the special requirements should be provided.

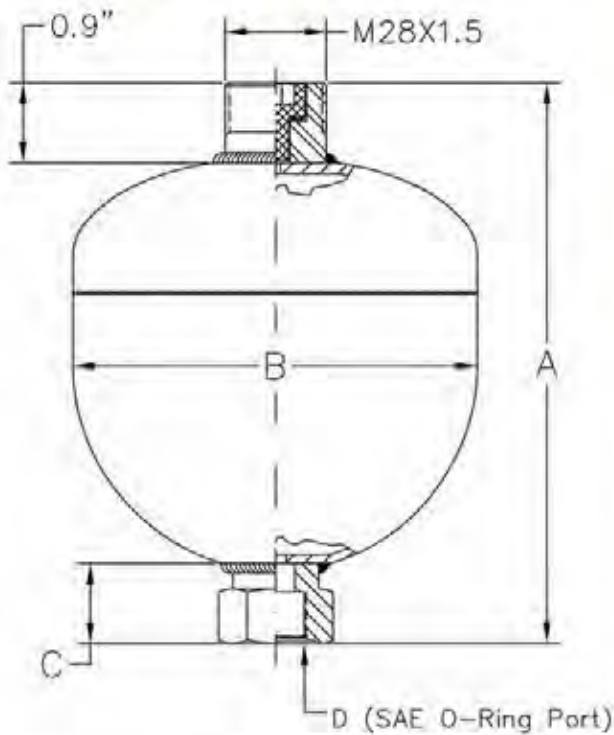
*Other options for Diaphragm Accumulators may be available, please consult factory.*

Phone: (714) 597-8000  
Fax: (714) 597-8000

1-800-4-A-Goil  
Houston, Texas 77061



## IHM Series



Note: Shown with standard protective cap.  
Adding gas valve adaptor assembly  
IHA-3-309 changes this  
unit to IHA Series.

## IHM Models and Dimensions

Part Number	Volume (in <sup>3</sup> )	Volume (L)	MAWP (psi)	Comp. Ratio*	Weight (lb)	A (in)	B (in)	C (in)	D size
IHM005-C36SE0BN	5	0.075	3600	8:1	1.5	4.4	2.5	0.8	-6
IHM010-C36SE0BN	10	0.16	3600	8:1	2.2	4.7	3.0	0.8	-6
IHM020-C30SE0BN	20	0.32	3000	8:1	3.1	5.3	3.4	0.9	-8
IHM020-C36SF0BN	20	0.32	3600	8:1	3.7	5.6	3.7	0.9	-8
IHM030-C30SF0BN	30	0.50	3000	8:1	4.0	6.0	4.1	0.9	-8
IHM030-C36SE0BN	30	0.50	3600	8:1	4.4	6.0	4.2	0.9	-8
IHM045-C30SE0BN	45	0.75	3000	8:1	5.7	6.5	4.8	0.9	-8
IHM045-C36SF0BN	45	0.75	3600	8:1	6.4	6.7	4.9	0.9	-8
IHM060-C30SF0BN	60	1.0	3000	8:1	7.7	7.1	5.4	0.9	-8
IHM085-C30XX0BN	85	1.4	3000	8:1	9.2	7.8	5.8	0.9	-8
IHM085-C36SF0BN	85	1.4	3600	8:1	13.2	7.9	6.1	0.9	-8
IHM120-C15SF0BN	120	2.0	1500	8:1	8.0	9.4	5.7	0.9	-8
IHM120-C36SF0BN	120	2.0	3600	8:1	16.5	9.9	6.1	0.9	-8
IHM170-C36SF0BN	170	2.8	3600	8:1	22.0	10.6	6.9	0.9	-8
IHM215-C36SF0BN	215	3.5	3600	8:1	24.3	12.1	6.9	0.9	-8

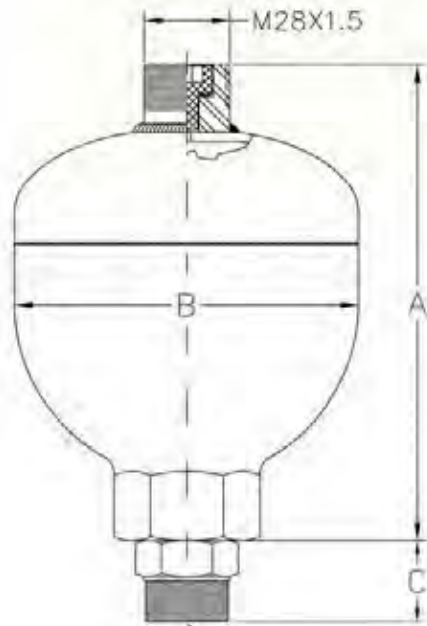
\*Compression ratio =  $\frac{\text{Maximum Pressure}}{\text{Precharge Pressure}}$  Exceeding the compression ratio may cause diaphragm to fail.

\*Numerous special connections and bladder compounds available, consult factory

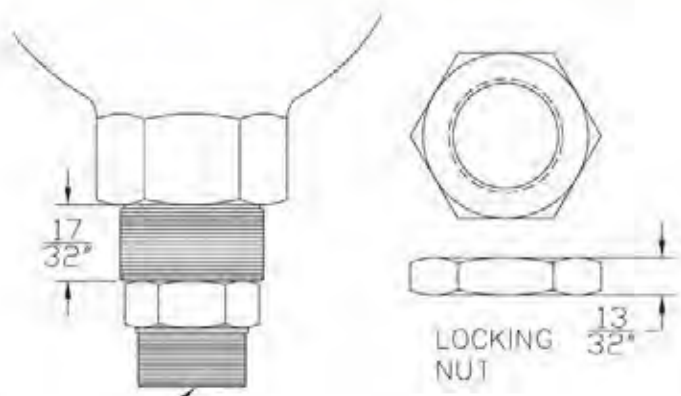
# IHM High Pressure Series

Phone: (770) 955-1500  
Fax: (770) 957-0430

1505 Wood Lake Road  
Marietta, Georgia 30067



OPTIONAL EXTERNAL THREAD WITH LOCKING NUT



BSP to SAE O-Ring male straight thread adaptor and numerous other adaptors available. Consult factory.

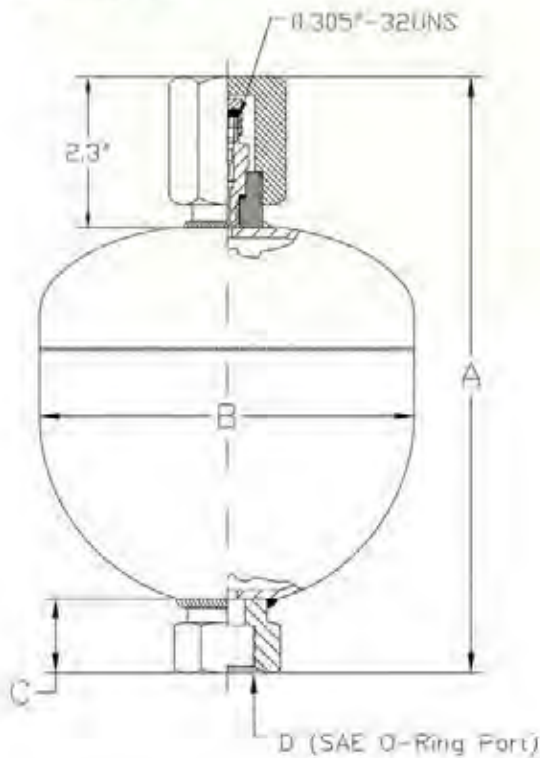
## IHM High Pressure Models and Dimensions

Part Number	Volume (in <sup>3</sup> )	Volume (L)	MAWP (psi)	Comp. Ratio*	Weight (lb)	A (in)	B (in)	C (in)	D size
IHM045-C50MF0BN	45	0.75	5000	8:1	10.0	6.6	5.2	0.9	-8
IHM045-C50MF1BN	45	0.75	5000	8:1	10.2	7.4	5.2	0.9	-8
IHM085-C50MF0BN	85	1.4	5000	8:1	16.6	7.8	6.3	0.9	-12
IHM085-C50MF1BN	85	1.4	5000	8:1	16.8	8.7	6.3	0.9	-12
IHM120-C50MG0BN	120	2.0	5000	8:1	25.3	8.6	7.1	1.1	-12
IHM120-C50MG2BN	120	2.0	5000	8:1	25.7	9.4	7.1	1.1	-12
IHM170-C50MG0BN	170	2.8	5000	6:1	31.9	10.4	7.1	1.1	-12
IHM170-C50MG2BN	170	2.8	5000	6:1	32.3	11.2	7.1	1.1	-12
IHM215-C50MG2BN	215	3.5	5000	4:1	36.3	12.8	7.1	1.1	-12

\*Compression ratio =  $\frac{\text{Maximum Pressure}}{\text{Precharge Pressure}}$  Exceeding the compression ratio may cause diaphragm to fail.

\*Numerous special connections and bladder compounds available, consult factory

# IHA Series



Note: Shown with optional metal protective cap.  
 Integrally welded Schrader gas valve connection available.  
 Model becomes IH Series.  
 Additional costs will apply.

## IHA Models and Dimensions

Part Number	Volume (in <sup>3</sup> )	Volume (L)	MAWP (psi)	Comp. Ratio*	Weight (lb)	A (in)	B (in)	C (in)	D size
IHA005-C36SE0BN	5	0.075	3600	8:1	1.6	5.8	2.5	0.8	-6
IHA010-C36SE0BN	10	0.16	3600	6:1	2.3	6.1	3.0	0.8	-6
IHA020-C30SE0BN	20	0.32	3000	8:1	3.2	6.7	3.4	0.9	-8
IHA020-C36SF0BN	20	0.32	3600	8:1	3.8	7.0	3.7	0.9	-8
IHA030-C30SF0BN	30	0.50	3000	8:1	4.5	7.4	4.1	0.9	-8
IHA030-C36SE0BN	30	0.50	3600	8:1	4.1	7.4	4.2	0.9	-8
IHA045-C30SE0BN	45	0.75	3000	8:1	5.8	7.9	4.8	0.9	-8
IHA045-C36SF0BN	45	0.75	3600	8:1	6.5	8.1	4.9	0.9	-8
IHA060-C30SF0BN	60	1.0	3000	8:1	7.8	8.5	5.4	0.9	-8
IHA085-C30XX0BN	85	1.4	3000	8:1	9.3	9.0	5.8	0.9	-8
IHA085-C36SF0BN	85	1.4	3600	8:1	13.3	9.2	6.1	0.9	-8
IHA120-C15SF0BN	120	2.0	1500	8:1	8.1	10.8	5.7	0.9	-8
IHA120-C36SF0BN	120	2.0	3600	8:1	16.6	11.3	6.1	0.9	-8
IHA170-C36SF0BN	170	2.8	3600	6:1	22.1	12.0	6.9	0.9	-8
IHA215-C36SF0BN	215	3.5	3600	4:1	24.4	13.5	6.9	0.9	-8

\*Compression ratio =  $\frac{\text{Maximum Pressure}}{\text{Precharge Pressure}}$  Exceeding the compression ratio may cause diaphragm to fail.

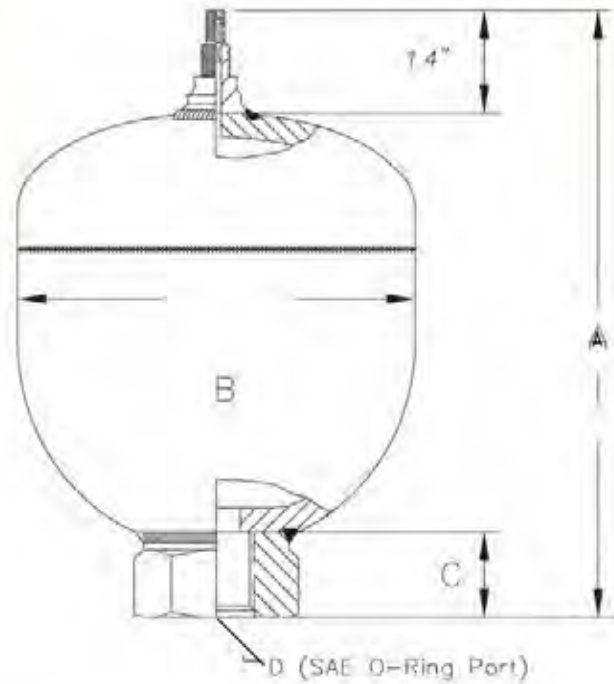
\*Numerous special connections and bladder compounds available, consult factory



High Quality Oil  
 (Vertical Text)

Vertical Text

# IH Series



Note: IH Series includes protective valve cap as pictured above.

## IH Models and Dimensions

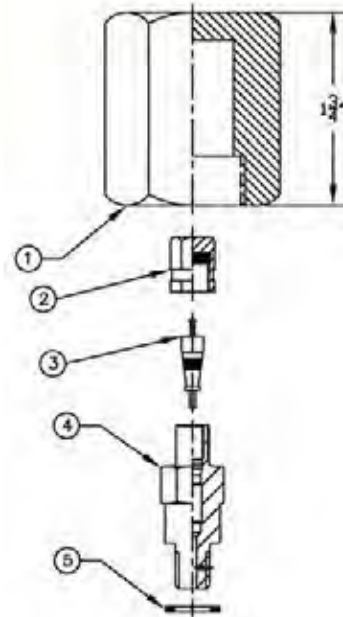
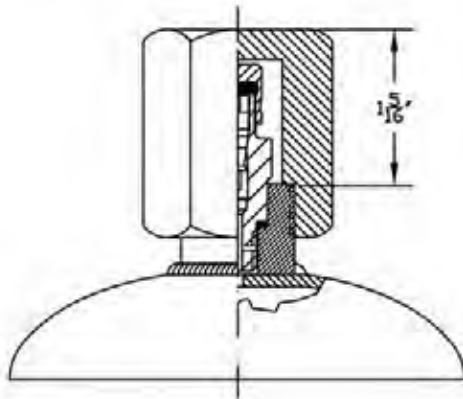
Part Number	Volume (in <sup>3</sup> )	Volume (L)	MAWP (psi)	Comp. Ratio*	Weight (lb)	A (in)	B (in)	C (in)	D size
IH005-C36SE0BN	5	0.075	3600	8:1	1.5	4.9	2.5	0.8	-6
IH010-C36SE0BN	10	0.16	3600	6:1	2.2	5.3	3.0	0.8	-6
IH020-C30SE0BN	20	0.32	3000	8:1	3.6	6.7	3.4	0.9	-8
IH020-C36SF0BN	20	0.32	3600	8:1	3.7	6.1	3.7	0.9	-8
IH030-C30SF0BN	30	0.50	3000	8:1	4.0	7.4	4.1	0.9	-8
IH030-C36SE0BN	30	0.50	3600	8:1	4.4	6.5	4.2	0.9	-8
IH045-C30SE0BN	45	0.75	3000	8:1	5.7	7.9	4.8	0.9	-8
IH045-C36SF0BN	45	0.75	3600	8:1	6.4	7.2	4.9	0.9	-8
IH060-C30SF0BN	60	1.0	3000	8:1	7.7	7.6	5.4	0.9	-8
IH085-C30XX0BN	85	1.4	3000	8:1	9.2	9.0	5.8	0.9	-8
IH085-C36SF0BN	85	1.4	3600	8:1	13.2	8.3	6.1	0.9	-8
IH120-C15SF0BN	120	2.0	1500	8:1	8.0	10.4	5.7	0.9	-8
IH120-C36SF0BN	120	2.0	3600	8:1	16.5	11.3	6.1	0.9	-8
IH170-C36SF0BN	170	2.8	3600	8:1	22.0	12.6	6.9	0.9	-8
IH215-C36SF0BN	215	3.5	3600	4:1	26.4	13.5	6.9	0.9	-8

\*Compression ratio =  $\frac{\text{Maximum Pressure}}{\text{Precharge Pressure}}$  Exceeding the compression ratio may cause diaphragm to fail.

\*Numerous special connections and bladder compounds available, consult factory

## Optional IHA Valve Adaptor Assembly

Item	Part Number	Description
1	IHA-306	IHA Protective Cap
2	11-303	Valve Cap
3	11-304	Valve Core
4	IHA-309	IHA Valve Adaptor
5	IHA-313	IHA Adaptor O-Ring



## Mounting Brackets

Part Number	Fits Diaphragm
BKT-095	IH*020-C30
BKT-106	IH*030-C30
BKT-124	IH*045-C30
BKT-136	IH*060-C29
BKT-136	IH*045-C50
BKT-147	IH*120-C30
BKT-155	IH*085-C30
BKT-155	IH*120-C15
BKT-160	IH*085-C50
BKT-174	IH*170-C30
BKT-174	IH*215-C30
BKT-180	IH*120-C50
BKT-180	IH*170-C50
BKT-180	IH*215-C50



OilAir Hydraulics Diaphragm Accumulators can be mounted directly onto the manifold. We strongly recommend mounting brackets and optional external mounting nuts to avoid failure due to high system vibrations.

## Accessories Available for Diaphragm Accumulator



Part Number: CG-3000

### CG-3000 Bill of Materials

*(Recommended for IH and IHA Series)*

Item	Part Number	Description
1	CG-3004	Swivel Connector
2	CG-3007	Hose
3	CG-3008	Gland
4	CG-3011	Nut
5	CG-3001	Gauge
6	CG-5002	Air Chuck
7	CG-3003	Adaptor
8	CG-3005	Tank Valve
9	CG-3009	Bleeder Valve
10	CG-BOX	Protective Carrying Case

### CG-Universal Bill of Materials

*(Recommended for IHM Series)*

Part Number	Description
OA 10703	Adaptor 1/4" BSP (F) To .302" X 32 TPI (M)
OA 202.141-22723	C&G ASSY Universal 250 Bar w/ Box, Hose, Fittings
OA CG-3011	Gland Nut C&G 3K & 5K
OA OL-CG-3008	Gland C&G 3K & 5K



Part Number: CG-Universal

Phone: (714) 947-8800  
Fax: (714) 947-0418

11505 West Lillie York  
Houston, Texas 77061

**GOIL**  
HYDRAULICS INC.

## Reference Materials

Diaphragm Material	Temperature Range [°C]	Permeation [cm <sup>3</sup> mm / m <sup>2</sup> h bar]
Standard - NBR (Nitrile) - *B	-15 ... 80	20
Special - NBR (Cold Weather Nitrile) - *C	-30 ... 80	15
HNBR - NBR (Hydrogenated Nitrile) - *H	-30 ... 130	16
ECO - (Hydrin) - *D	-40 ... 115	14
Butyl - *T	-40 ... 120	11
FPM - (Flouorocarbon) - *V	-20 ... 150	20
Multilayer - (Low Permeation) - *X	-30 ... 130	1

\* Denotes reference letter for model number chart.

### Maximum Flow Rates

Volume in Liters	Normal Operation		When Fully Discharging	
	LPM	GPM	LPM	GPM
0.075 to 0.16	40	11	10	2.6
0.32 to 1.40	100	26	40	11
2.00 to 2.80	160	42	60	16

### Certificate Codes

Hydraulic accumulators which are installed in certain countries might have the ability to be supplied with the test certificates required in that country. The user must be stated at the time of ordering. The permissible operating pressure can differ from the nominal pressure.

The following list contains names of the countries where additional certificates might be available:

Australia, Brazil, Canada, China, CIS, EU member states, Hungary, India, Japan, New Zealand, Poland, Romania, Slovakia, South Africa, Switzerland, USA, others on request.

Other Diaphragm Accumulators Available Include:



Non-Adjustable Diaphragm Accumulators



Top Repairable Diaphragm Accumulators

**GOIL AIR**  
 HYDRAULICS INC.

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 Houston, Texas 77041

Phone: (713) 937-8900  
 Fax: (713) 937-0498



11505 West Little York  
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www.fluidpower.com • www.oilairhydraulics.com

## THE OLAER-GROUP AROUND THE WORLD

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E-mail: sales@fch.co.uk



**Member of the Olaer Group**

Please note: Being a renowned manufacturer of cooling systems and accumulators for hydraulics, OilAir is constantly seeking ways to improve the specification and design of its products and alterations take place continually. The products in this catalogue may be updated, altered in any way or discontinued, without prior notice.