

## Water Hammer Arrestor - I Style

### Benefits & Features

- Installation in any position
- Suitable for water, air, special model for acid/alkaline or light oils
- Rechargeable air chamber for long life operation (compressed air)
- Body materials: Bronze (½"-4" screwed, 3"-12" flanged)
- Body materials: Ductile Iron (3"-12" flanged)
- Body materials: 304 Stainless Steel (½"-4" screwed, 3"-12" flanged)

### Specification

<b>Configuration</b>	Diaphragm absorbs media energy
<b>Port Sizes</b>	1/2" to 12", see table below
<b>Orifice</b>	see table below
<b>Media</b>	Air, gases, liquids etc. Subject to material compatibility
<b>Pressure ranges</b>	See individual data tables below
<b>Seals</b>	NBR (-5 to +80°C), VITON (-5 to +100°C), EPDM WRAS (-10°C to +100°C). Special order



### Technical Data

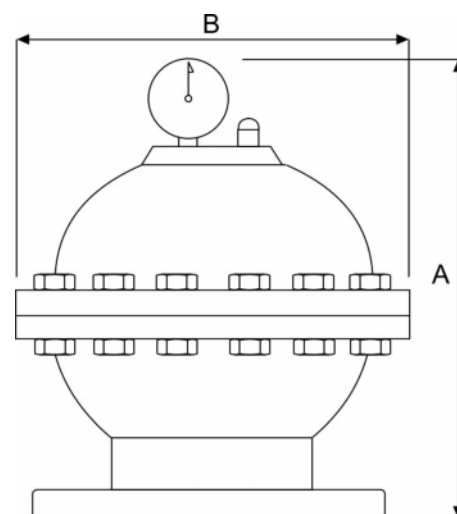
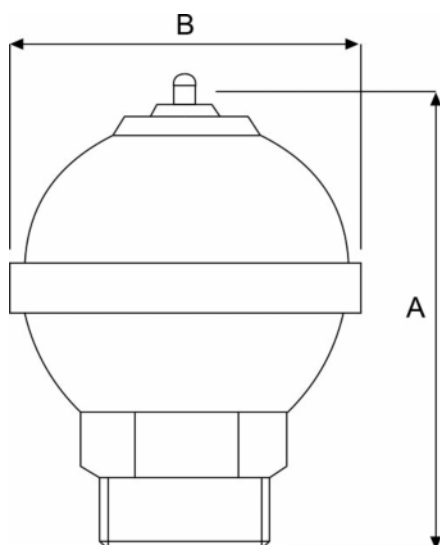
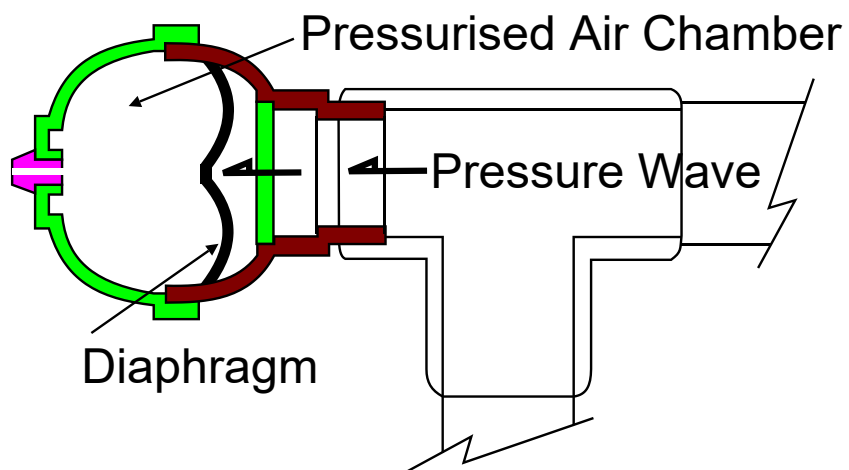
Model with Screwed Port Connection						Test Pressure Bar*/**	Max. Applied Pressure Bar */**/*	Air Chamber (cm³)
	A		B	C				
P14		15	F		1/2"	21/21	10/12	17
P14		20	H		3/4"	21/21	10/12	30
P14		25	L		1"	21/21	10/12	63
P14		40	O		1 1/2"	21/21	10/12	205
P14		50	P		2"	21/21	10/12	650
P14		65	Q		2 1/2"	21/21	10/12	1125
P14		80	R		3"	21/21	10/12	2000
P14		100	S		4"	21/21	10/12	4400
Model with Flanged Connection						* Bronze ** Stainless Steel *** Ductile Iron		
P14		80	FL		3"	21/42/21	12/20/12	2465
P14		100	FL		4"	21/42/21	12/20/12	5535
P14		125	FL		5"	21/42/21	12/20/12	5535
P14		150	FL		6"	21/42/21	12/20/12	15325
P14		200	FL		8"	21/42/21	12/20/12	27230
P14		250	FL		10"	21/42/21	12/20/12	27230
P14		300	FL		12"	21/42/21	12/20/12	67860

### Order Codes

A	Body	B	Port					C	Seals (fluid temp. min / max)
D	Ductile Iron	F	½" BSP	H	¾" BSP	J	3" NPT	0	NBR (-10°C to + 70°C)
H	304 Stainless Steel	L	1" BSP	N	1 ¼" BSP	S	4" BSP	1	VITON (-10°C to + 100°C)*
T	Bronze	O	1 ½" BSP	P	2" BSP			6	EPDM-WRAS (-10°C to + 85°C)**
		Q	2 ½" BSP	R	3" BSP			*/** Special order	

## Water Hammer Arrester - I Style

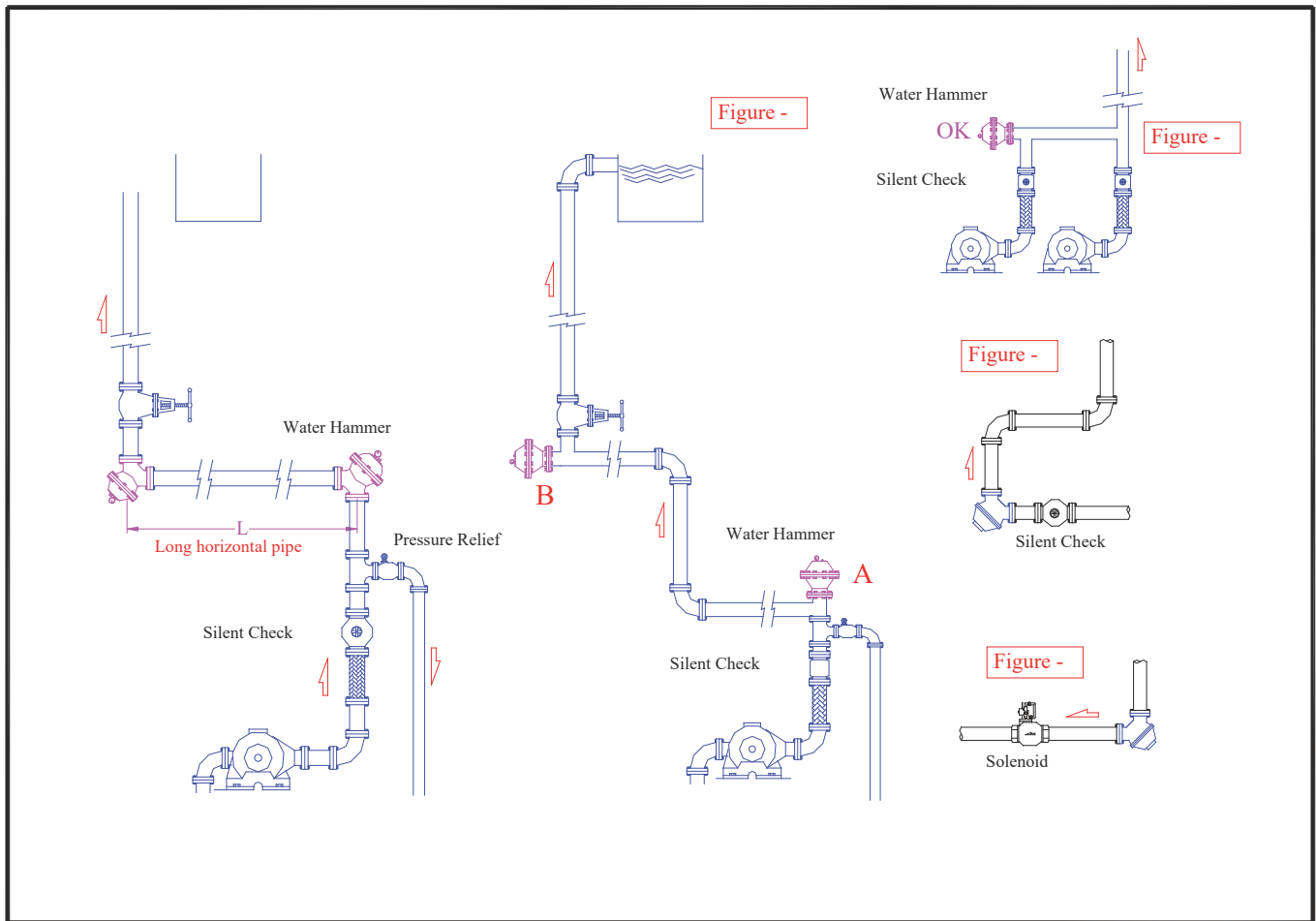
### Weights & Dimensions



Screwed Port	Weight Kg	Air Chamber (cm <sup>3</sup> )	Dimensions mm	
			A	B
1/2"	0.3	17	74	46
3/4"	0.4	30	82	52
1"	0.5	65	95	62
1 1/2"	1.4	250	120	110
2"	3.2	650	162	135
2 1/2"	3.9	1125	180	155
3"	6.5	2000	218	188
4"	18	4400	260	235

Flanged	Air Chamber (cm <sup>3</sup> )	Weight Kg	Dimensions mm	
			A	B
3"	2465	23	240	155
4"	5535	34	330	330
5"	5535	34	330	330
6"	15325	59	420	400
8"	27230	90	510	460
10"	27230	115	510	460
12"	67860	175	620	625

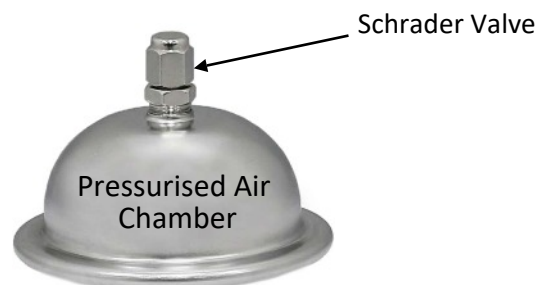
# Installation of Water Hammer Arresters



- Figure 1. This illustrates, the water hammer effect taking place above a check valve so installing a water hammer arrester can prevent the water hammer effect. If the length of horizontal pipe is longer than 50 meter in the figure 1, installing a water hammer arrester at the corner between the horizontal pipe and vertical pipe can avoid the water hammer effect.
- Figure 2. If the distance between A and B is longer than 50 meter, installing a water hammer arrester at B can reduce the water hammer effect.
- Figure 3. Two pumps are used alternately, installing a water hammer arrester at horizontal pipe can avoid water hammer effect.
- Figure 4. Here is a pipe line with a serious water hammer effect, due to the many bends. Installing a check valve at the lowest point and installing a water hammer arrester above check valve can reduce the noise and vibration made by the water hammer effect.
- Notes If there are gate valves like solenoid valves or air operated valves which close very fast and produce the water hammer effect, installing a water hammer arrester at the inlet of the valve can reduce the noise and vibration made by the water hammer effect.

## Air Chamber

- The air chamber is pressurised by means of a Schrader Type Valve
- Standard pressure is around 2.5 - 3 bar (36-44 psi), or 30-40% of working pressure
- A standard bicycle or car pump, for small arresters, preferably with a gauge fitted, can be used to top up the pressure. For larger models, use a compressor
- The pressure should be checked every 6 months, or as defined by a maintenance schedule, or the duty of the plant



# Maintenance of Water Hammer Arresters

## Recommended Maintenance - Diaphragm

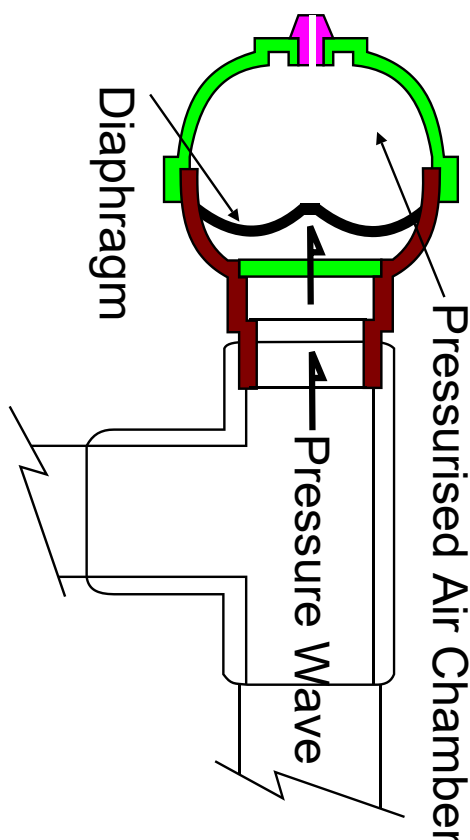
Where the application has clean fluids under 10bar, it is recommended to replace the diaphragm every two years. This is dependant on variable factors such as frequency of operation, environmental conditions etc.

## Recommended Maintenance - Air Chamber Top Up

It is recommended to top up the pressure chamber with compressed air (2.5bar using the schrader valve) every six months or so, depending on the application, frequency of operation etc.



## P14 - Spare Parts



### Diaphragm Spares - Order Codes

Port Size	Seal Material	
	NBR	*VITON
½"	KG/P14.15.0	KG/P14.15.1
¾"	KG/P14.20.0	KG/P14.20.1
1"	KG/P14.25.0	KG/P14.25.1
1 ½"	KG/P14.40.0	KG/P14.40.1
2"	KG/P14.50.0	KG/P14.50.1
2 ½"	KG/P14.65.0	KG/P14.65.1
3"	KG/P14.80.0	KG/P14.80.1
4"	KG/P14.100.0	KG/P14.100.1
5"	KG/P14.125.0	KG/P14.125.1
6"	KG/P14.150.0	KG/P14.150.1
8"	KG/P14.200.0	KG/P14.200.1
10"	KG/P14.250.0	KG/P14.250.1
12"	KG/P14.300.0	KG/P14.300.1



\*Special order, please ask as subject to minimum quantities