



Bladder Surge Tanks for Raw/Waste Water

Bladder Surge Tanks Introduction

Bladder Tanks

A bladder surge tank has the same function with regard to surge control as the traditional compressor tank.

The objective of this pneumatic solution is to simplify the method of regulation, given the difficulty in effective level control with waste water.

As in the case of a tank controlled by compressors, a pre-charge pressure is calculated to give the required elasticity to push the waste water into the system following a pump shut down or power cut.

The major difference being that the air is contained within a butyl rubber bladder. Therefore, as there is no contact between the compressed air and the liquid there is no dissolution. There is thus no requirement for a permanent regulation system including compressors, etc.

Once the tank has been commissioned and the correct precharge has been introduced, the tank will operate automatically emptying when called upon and refilling with the return waves until naturally finding its steady state balance.

Charlatte manufactures raw/waste water bladder tanks From 50 to 50000 liters.

Concept of a Bladder Tank for Raw/Waste Water

This type of tank is vertical. It is constituted of a steel tank containing a butyl rubber bladder with a protective coating resistant to aggressive waste water, and a flanged connection pipe equipped with anti-extrusion grid.

The bladder is attached to top of the tank and waste water is outside the bladder.

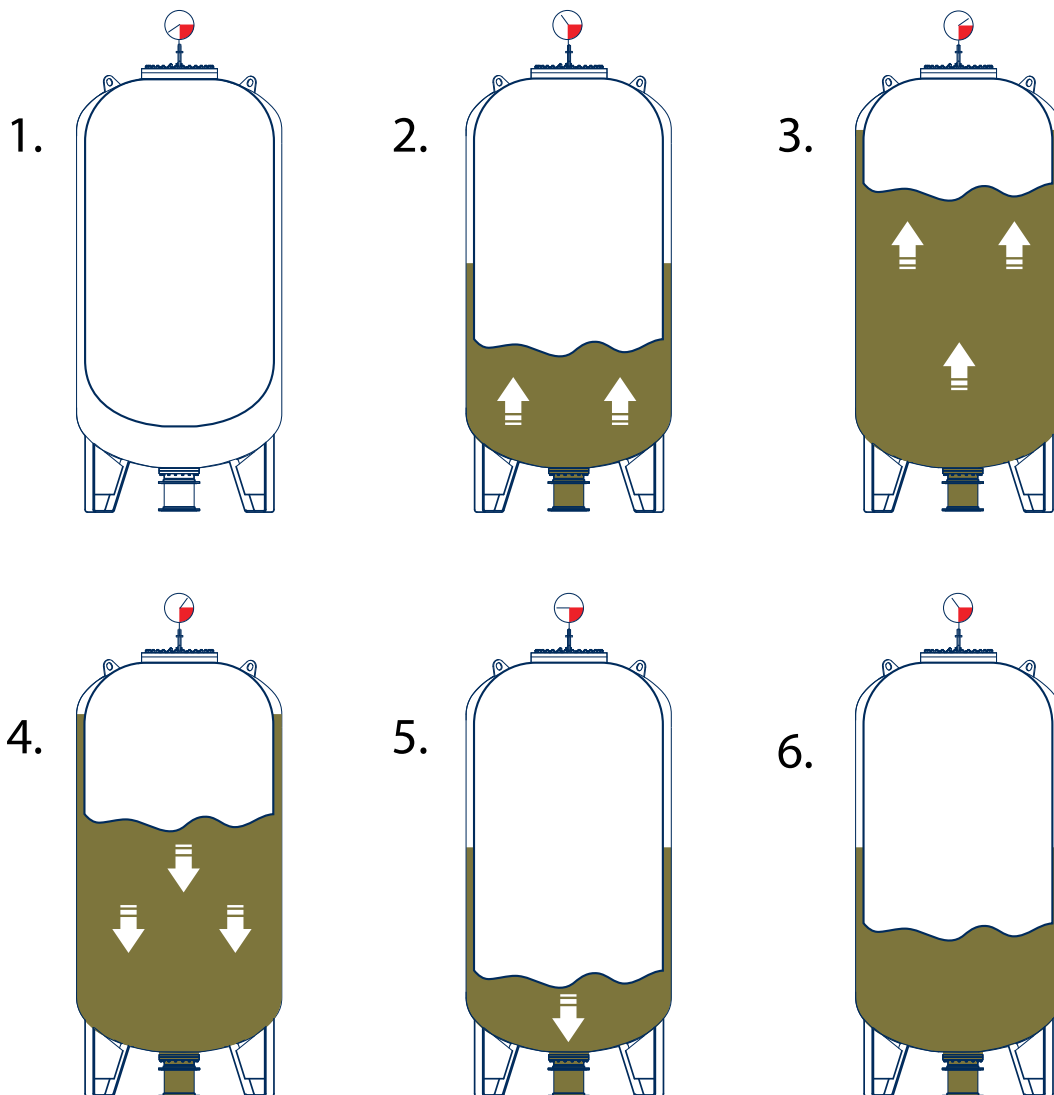
The tanks are treated internally with Epoxy paint as corrosion protection and externally to client specification.



Operation

The installation of such a surge tank is very simple, but must be performed with care. If well done, future checking of the tank will be very easy.

1. Initially the precharge pressure must be adjusted to the value resulting from the hydraulic analysis. At this stage the bladder occupies the full volume of the tank.
2. When the gate valve is opened the waste water will enter the tank under static conditions, and begin to compress the gas (static pressure is always higher than precharge pressure).
3. The waste water entering the tank will further compress the precharged gas until a balance between the liquid and the compressed gas is reached.
4. Immediately after a pump stop the pressure in the line will start to decrease and the elastic energy in the tank will discharge the waste water from the tank into the line. This prevents dangerous low pressure along the pipeline.
5. As the pressure may become very low, the flow will reverse, this will then enter into the tank. Several oscillations may occur before static state is reached.
6. When the pumping station will restarts, the tank will continue to fill until dynamic steady state is reached and it is then once again prepared for the next pump stop.



Bladder Surge Tanks

100 to 80,000 L

PAINT

Internal: Epoxy paint without solvents, colour white, thickness 100 microns.

External: Polyurethane lacquer colour red and anti corrosion polyurethane finishing, thickness 50 microns

REINFORCED BLADDER

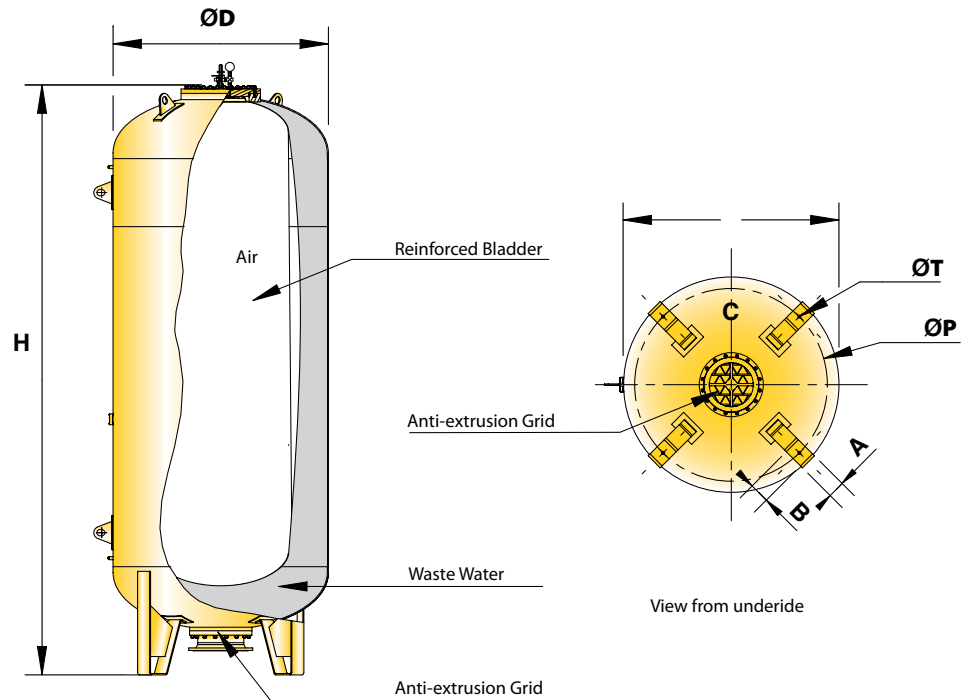
Interchangeable food quality butyl

WARRANTY

Not including parts subject to wear an tear and subject to use under normal conditions

PACKING

Craddles



Capacity L	Ø D	H	Ø P	Ø T	A (mm)	B (mm)	C (mm)
3000	1500	2900	1300	26	150	125	1670
4000	1500	3500	1300	26	150	125	1670
5000	1500	3500	1300	26	150	178	1670
6000	1900	3300	1700	26	150	178	2070
7000	1900	3700	1700	26	150	178	2270
8000	1900	4200	1700	26	150	178	2070
9000	1900	4500	1700	26	150	178	2070
9000	2100	3500	1800	26	150	276	2270
10000	2100	3800	1800	26	150	276	2070
12000	2100	4400	1800	26	150	276	2070
15000	2100	5300	1800	26	150	276	2270
20000	2500	5000	2000	26	500	500	2670
25000	2500	6000	2000	26	500	500	2670
30000	3000	5400	2550	26	500	500	3170
35000	3000	6100	2550	26	500	500	3170

Contact us for other capacities and pressre ratings. The dimensions shown are indicative and can be modified without warning.

