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WHISPER PUMPS
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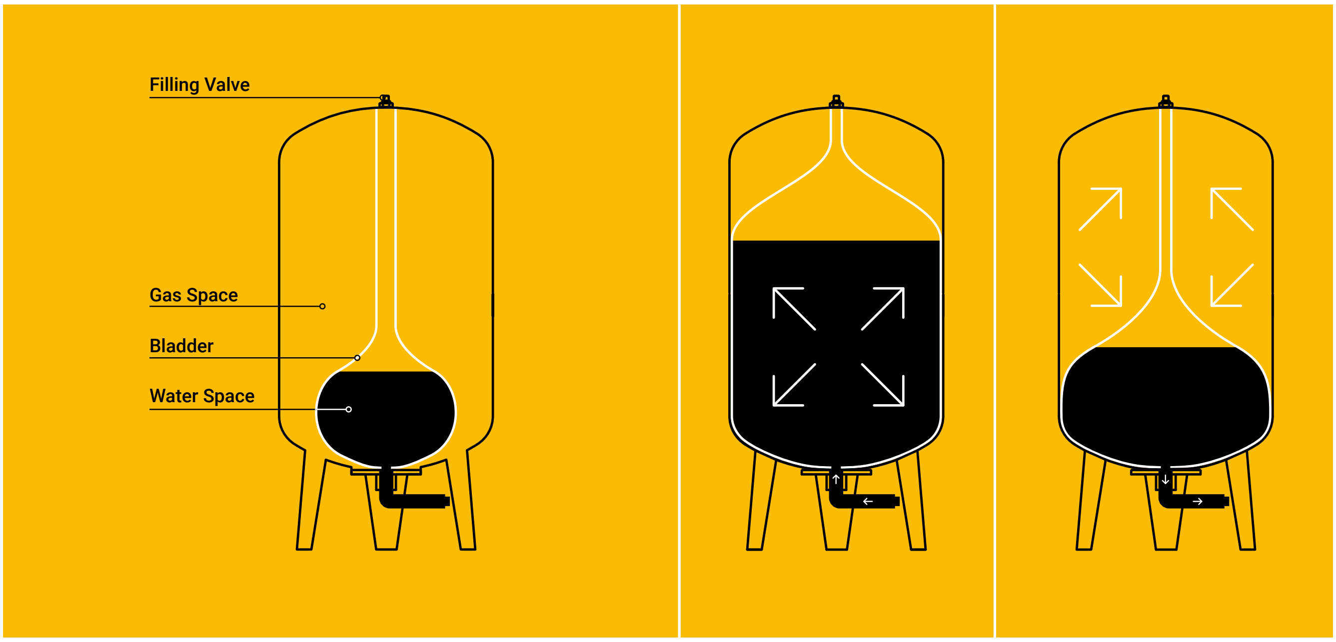
FUNCTION PRINCIPLE OF EXPANSION VESSELS

The correct pressure is a prerequisite for the proper operation of heating, solar power and cooling water systems as well as pressure booster systems. It is essential to maintain water at a stable balance, compensate for variations in volume at regulated pressure and prevent gas separation and cavitation.

Expansion vessels offer an easy but intelligent solution. No external energy is needed, neither electrical power, a compressor or a pump. The construction of an expansion vessel is simple:

A bladder divides the vessel into a water and a gas chamber and therefore prevents gas from diffusing into the water.

While the water chamber is linked to the system by a vessel connection, the correct pressure in the gas chamber is set by using a filling valve at the top of the expansion vessel. The gas pressure is needed to balance changing water volume or pressure differences.

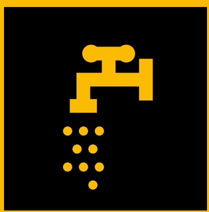


CE MARKING
AND DECLARATION OF CONFORMITY

CE marking is a part of the European Union's harmonisation legislation. It guarantees that products sold in the EEA have been assessed to meet high safety, health and environmental protection requirements.

All products meet the legal requirements for CE marking and can be sold throughout the EEA without restrictions.

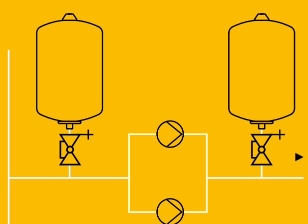
SCOPE OF APPLICATIONS



Water Supply
Applications

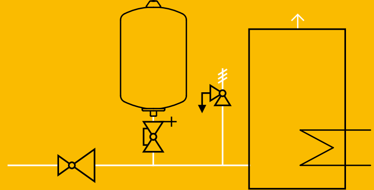
In booster systems, vessels are used as buffer tanks to intermediately store the difference between the pumped volume flow and the volume flow actually needed. Vessels are also required to decrease the switching frequency of a pump and reduce peak loads.

The pressurised cushion of air in the gas space is set approximately below the pump's switch-on pressure. When pressure falls below the switch-on pressure, the pump switches on and pumps water. If consumers remove a relatively small volume of water, the difference in the buffer vessel is stored until the pressurised cushion of air on the switch-off side has compressed and the booster system has switched off. When consumers take water, the interim water is taken from the buffer vessel until the pressurised cushion of air has fallen to the switch-on pressure and the booster system switches on again.



Sanitary Hot Water
Applications

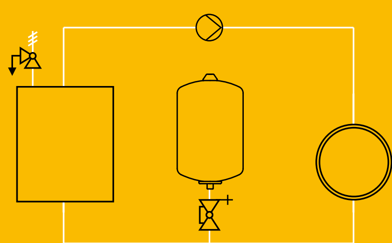
When heating sanitary water, pressure rises as the water expands. In the worst case, the excess pressure is decreased by a safety valve, losing valuable heated potable water. The use of a Nema expansion vessel remedies this situation by preventing the unnecessary opening of the safety valve and providing for a more efficient, resource-conserving operation of the system.



HVAC
Applications

In closed heating-cooling systems, the water expands or contracts as the system is heated up or cooled down. Expansion vessels are used to compensate for the fluctuations in volume between maximum and minimum temperature within a permissible range.

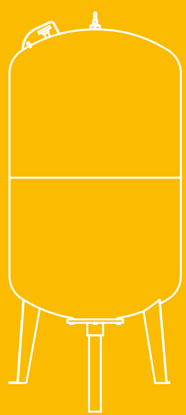
Nema expansion vessels are used to maintain pressure in heating, cooling and solar power systems. The pressurised cushion of gas supports the water column within the system and is set before a reserve of water is poured into the vessel. When the system heats up, the pressure rises and expansion water flows from the external system into the water space: the pressurised cushion of air in the gas space is compressed. When the system cools down and its pressure drops, this counter pressure pushes water from the membrane back into the system. This releases the pressurised cushion of air in the gas space.



Water
Supply
Applications

Sanitary
Hot Water
Applications

HVAC
Applications



300 or 500 Litre Vessel

BAR
10

MODEL

NEX

TYPE

Vertical

BLADDER

EPDM Air

1 0

Butyl Air

1 1

EPDM N_2

1 2

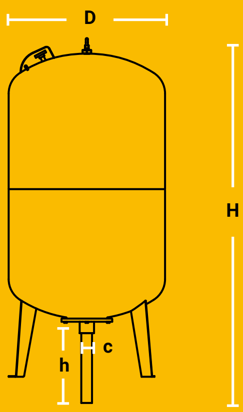
Butyl N_2

1 3

COLOUR

Red

1 0



- In accordance to 2014/68/EU Pressure Equipment Directive and TS-EN 13831 standards
- Interchangeable bladder according to DIN 4807-3 norms, EPDM standard, Butyl optional
- Electrostatic Powder Coating
- Maximum working temperature for bladder: -10 °C – 70 °C
- Maximum temperature allowed: +110 °C (+70 °C for sanitary hot water applications)
- Suitable for Water and Water-Glycol mixtures (max. 50% glycol, Fluid group 2 according to 2014/68/EU Directives)
- Manometer

PN	Art. No	V (lt)	Dia Ø (mm)	H (mm)	h (mm)	C (G ISO 228-1)	Weight (kg)	Precharge (bar)
10 BAR	**300 Litre Vessel**	300	634	1,296	150	1 ¼"	45.0	4
	500 Litre Vessel	500	740	1550	150	1 ¼"	60.0	4

WHISPER PUMPS LTD

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