

隔膜式气压罐

Diaphragm Type air pressure tank



> 工作原理 / Working principle

当外界有压力的水进入气压罐气囊内时，密封在罐内的氮气被压缩，根据波义耳气体定律，气体受到压缩后体积变小压力升高，直到气压罐内气体压力与水的压力达到一致时停止进水。当水流失后压力降低时气压罐内气体压力大于水的压力，此时空气体积膨胀将气囊内的水挤出气压罐补到系统中，直到空气压力与水的压力再次达到一致时停止排水。

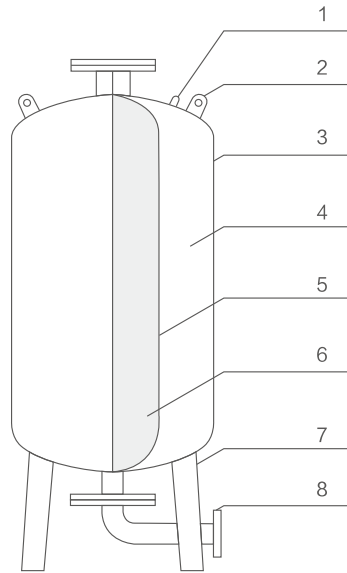
When pressurized water from the outside flows into the air sac of the air pressure tank, the nitrogen sealed in the tank is compressed. Based on Boyle Mariotte Law, when gas is compressed, its volume shrinks and pressure rises. Stop the water when the air pressure in the air pressure tank becomes equal to the water pressure. When the water is lost and the pressure reduces, the air pressure in the air pressure tank is larger than the water pressure. In this case, the air volume expands and squeezes the water out of the air sac to the system. The drainage stops when the air pressure and water pressure are equal again.

> 气压罐的构成 / Composition of air pressure tank

气压罐是由罐体、气囊内胆、进/出水口及补气口四部份组成。罐体一般为碳钢材质，外面是防锈烤漆层；也可选不锈钢材质罐体，外表是不锈钢本色，气囊材质为一般EPDM或丁基橡胶可选，气囊与罐体之间的预充氮气一般出厂时已充好，客户在使用时可根据实际工况选择充气还是放气，一般预充气体压力为系统最大压力的一半为宜。

The air pressure tank is comprised of four parts: tank body, air sac liner, water inlet/outlet and air supply port. The tank body is generally made of carbon steel with a coating of rust-proof baking varnish outside; stainless steel tank is also optional. The surface is the original color of stainless steel and the air sac texture is generally EPDM or butyl rubber. The precharged nitrogen between the air sac and the tank body is generally prepared before ex-factory. Customers may choose to charge or discharge based on the practical working condition upon use. In general, the precharged air pressure had better be half of the maximum system pressure.

> 结构图 / Structure chart



- 1: 充气口
Inflation opening
- 2: 吊环
Ring
- 3: 罐体
Tank
- 4: 气室
Air chamber
- 5: 橡胶隔膜
Rubber diaphragm
- 6: 水室
Water chamber
- 7: 支撑脚
Supporting legs
- 8: 进出水法兰
Inlet and outlet flange

> 产品特性 / Product feature

- ◆ 罐体为密闭装置，气水不接触，可保持水质不受外界污染；

The tank body is a sealed device in which the gas and the water are out of touch to keep the water from external contamination;

- ◆ 占地面积少、安装快、投资省、操作维修方便；
- The floor area is small, the installation is quick, the investment is saved and the operation and maintenance are convenient;

- ◆ 可取代生活消防及采暖、空调用的高位水箱（水塔），有利于建筑美观和结构抗震，降低建筑的造价；
- It can replace domestic fire control and HVAC head water tanks (water towers), which is good for architectural appearance and structural seismic resistance to reduce the building cost;

- ◆ 能自动消除管网中的水锤及噪音；
- It can automatically eliminate the water hammer and noise in the pipeline;

- ◆ 自动给水装置的水泵采用电接点压力表自动控制，无需专人管理；
- The pump for automatic water supply device is automatically controlled by the pressure gauge with electric contact and does not need management by special persons;

- ◆ 在热水采暖及空调系统中起膨胀水箱和自动补水作用。
- It expands the tank and automatically supplies water in HVAC systems.

> 气压罐压力等级 / Air pressure tank pressure level

- ◆ 气压罐等级有0.4、0.6、1.0、1.6、2.0、2.5MPa。在选择气压罐时，应保证气压罐的压力等级大于系统的最高工作压力的2倍。

The air pressure tank level includes 0.4, 0.6, 1.0, 1.6, 2.0 and 2.5MPa. When choosing the air pressure tank, the pressure level shall be guaranteed higher than 2 times the maximum working pressure of system.