

稳流罐

Steady flow tank



> 概述 / Overview

稳流罐又称稳流补偿器，是无负压供水设备的重要组成部分之一。无负压罐，负压罐的作用是与市政管网一体叠压消除负压，消除二次污染，智能补偿用水量。

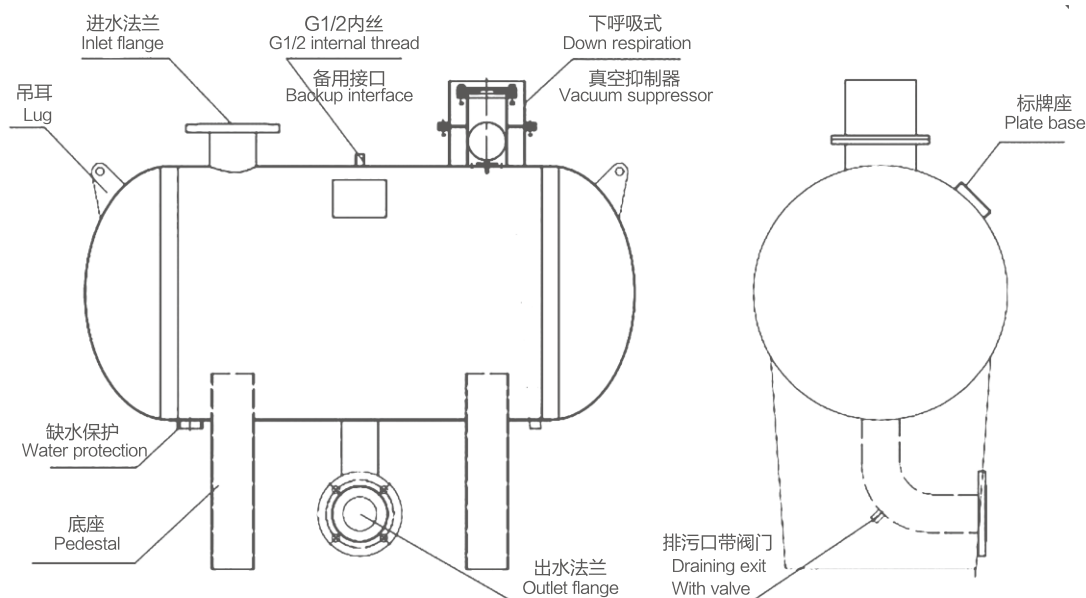
The steady flow tank is also known as the steady flow compensator. It is a vital part of the non-negative pressure water supply equipment. Non-negative pressure tank and negative pressure tank serve to eliminate negative pressure and secondary pollution and to intelligently compensate water flow when being integrated with the municipal pipeline.

> 工作原理 / Working principle

无负压供水设备投入使用，自来水管网的水进入稳流罐，罐内空气从真空抑制器排除，待水充满后，真空抑制器自动关闭。当自来水管网压力高于设定压力值时，压力变送器将管网压力反馈给变频控制柜，自来水可通过旁通管直接到达用户管网对用户进行供水。当市政管网压力变化或用户管网用水量变化使管压力低于设定压力时，压力变送器将管网压力反馈给变频控制柜中的PID控制器，通过PID控制器调整变频器的输出频率，启动水泵机组并调节水泵转速保持恒压供水；如果不能满足供水要求时，则控制柜将控制多台工频泵的启停和变频泵的转速，从而达到恒压变量供水的要求。

When the non-negative pressure water supply equipment is put to service, the water from the tap water pipeline flows into the steady flow tank and the air in the tank is removed from the vacuum suppressor. When the water is full, the vacuum suppressor is automatically closed. When the pressure in the tap water pipeline is higher than the set pressure, the pressure transmitter sends feedback on the pipeline pressure to the variable-frequency control cabinet. Tap water may be supplied to users directly into the user pipeline via the by-pass pipe. When the municipal pipeline pressure changes or user pipeline water consumption changes, making the pipe pressure lower than the set pressure, the pressure transmitter sends feedback on the pipeline pressure to the PID controller in the variable-frequency control cabinet to adjust the output frequency of the converter via the PID controller, start the water pump units and regulate the water pump RPM to supply water in constant pressure; if the requirements for water supply cannot be met, the control cabinet will control the startup & shutdown of multiple power frequency pumps and the RPM of variable-frequency pumps to reach the requirements for water supply in constant pressure variable.

> 结构图 / Structure chart



> 作用 / Effect

无负压供水设备是直接与市政管网串联，所以为了不会对管网造成过度抽吸，影响周围的用户用水，所以为了不对管网产生负压，无负压供水设备增加了稳流罐。当自来水管网的水进入稳流罐，排气阀开始排气，待水充满后排气阀关闭，当自来水自身的压力可以满足用水要求时，系统压力信号由远传压力表反馈给变频控制器，水泵运行并根据用水量的大小自动调节水泵转速，若自来水管网的水量小于水泵流量时，稳流罐内的水作为补充水源仍能正常供水，此时空气由排气阀进入稳流罐，罐内真空遭到破坏，确保了自来水管网不产生负压。

The non-pressure water supply equipment is in series connection with the municipal pipeline and therefore will not cause over suction on the pipeline or affect the water consumption of peripheral users. To free negative pressure from the pipeline, steady flow tank is added to the non-negative pressure water supply equipment. When the water from the tap water pipeline enters the steady flow tank, the exhaust valve starts to exhaust. When the water is full, the exhaust valve is off. When the pressure of the tap water itself can meet the requirement for water consumption, the system pressure signal is sent back to the variable-frequency controller via the transmissible pressure gauge. The water pump is activated and its RPM will be automatically adjusted based on the water flow. If the water flow from the tap water pipeline is smaller than the pump flow, the water in the steady flow tank can still be normally supplied as supplementary water source. In this case, the air enters the steady flow tank through the exhaust valve and the vacuum in the tank is damaged to ensure no negative pressure in the tap water pipeline.