



Pressure Vacuum relief Valve /Breather valve Specification



1.Summarize:

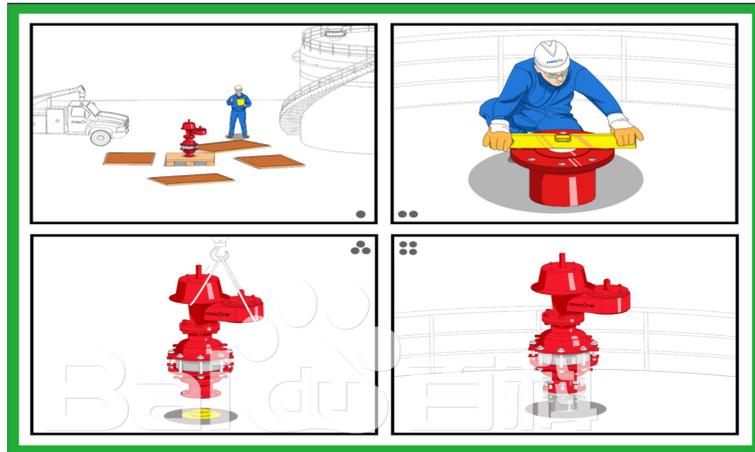
Pressure Vacuum relief Valve is a kind of valve which not only ensures that the tank space is isolated from the atmosphere within a certain pressure range, but also communicates with the atmosphere when the pressure range exceeds or falls below. The function is to prevent the tank from being damaged by overpressure or vacuum, and to reduce the evaporation loss of the storage liquid. It is mainly composed of valve seat, valve cover, protective cover and two groups of opening and closing devices controlled by vacuum and pressure. The opening and closing device includes disc, guide rod, spring, spring seat and sealing ring, etc. When the pressure in the tank reaches the rated positive exhalation pressure, the pressure valve disc opens and the vapor in the tank discharges. When the vacuum in the tank reaches the rated negative inhalation pressure, the vacuum valve disc opens and the air enters.

2.Function:

Pressure Vacuum relief Valve is a safe and energy-saving product to maintain the pressure balance of storage tank and reduce the volatilization of medium. Pressure Vacuum relief Valve makes full use of the pressure-bearing capacity of storage tank itself to reduce medium discharge. Its principle is to use the weight of positive and negative pressure valve disc to control the positive and negative pressure of exhaust gas of storage tank. When the medium is pumped out of the tank, the pressure of the upper gas space of the tank decreases to reach the negative pressure of operation of the Pressure Vacuum relief Valve. The atmosphere outside the tank opens the negative pressure valve disc which opens the breathing valve, so that the outside gas enters the tank, so that the pressure inside the tank does not continue to drop, and the pressure inside and outside the tank is balanced to protect the safety device of the tank.

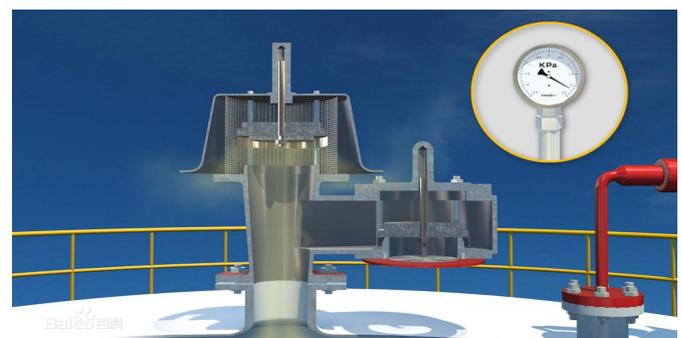
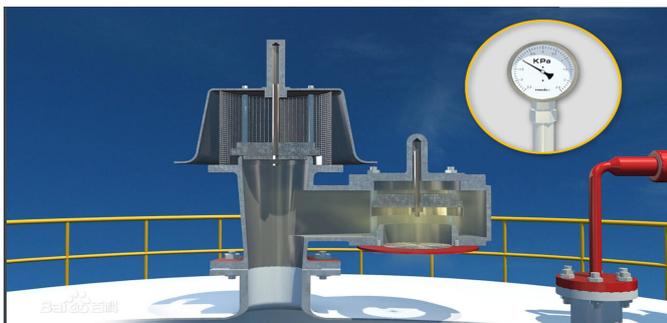
3. Installation :

1. Removing packaging and reading product instructions are critical.
2. When lifting the breathing valve, appropriate lifting tools should be selected to avoid damaging the protective cap of the valve disc.
3. Check the coaxiality and verticality of the pipe flange on the tank or water tank. The normal use of the Pressure Vacuum relief valve is very important.
4. Check the line surface of the pipe flange on the tank or water tank. It must be clean, free of scratches, corrosion, tool traces and flat.
5. Remove flange end cover and other packaging materials.
6. Check the gasket and make sure that the material is suitable for application.
7. Use bolt circles to center the washer.



4. Working principle:

1. When the pressure of the medium in the tank is within the control operating pressure range of the breathing valve, Pressure Vacuum relief Valve does not work and keeps the tank closed.
2. When the medium is added to the tank, the pressure of the upper gas space in the tank rises, reaching the positive pressure of the operation of the breathing valve, the pressure valve is opened, and the gas escapes from the exhaust outlet of Pressure Vacuum relief Valve, so that the pressure in the tank does not continue to increase.
3. The atmosphere outside the tank will open the negative pressure valve disc of Pressure Vacuum relief Valve.



5.Material:

Carbon steel breathing valves, stainless steel (304, 304L, 316, 316L) breathing valves, aluminum alloy breathing valves.

6.Acceptance criteria: API2000

7.Maintenance:

Pressure Vacuum relief Valve maintenance and maintenance once a month, twice a month in winter. The method is to open the valve cover gently, take out the vacuum valve disc and pressure valve disc, check whether there is oil and dirt in the sealing place between the valve disc and the valve disc, the guide rod and the guide rod sleeve of the valve disc. If there is oil and dirt, it should be cleaned up. Then it should be put back in place and pulled up and down several times to check whether the opening is flexible and reliable. If everything works, tighten the bonnet. In maintenance and maintenance, if abnormal phenomena such as scratches and abrasion are found on the disc, it should be replaced immediately or contacted with the supplier company so as to be solved in time.

8.Pressure test:

1. Test preparation: If Pressure Vacuum relief Valve is installed on the test bed correctly, the device should not leak, and the inner wall of the test tube should be smooth and smooth.
2. Detection medium: The detection medium of opening pressure, ventilation and leakage of Pressure Vacuum relief Valve is air, its absolute pressure is 0.1 Mpa, temperature is 20 C, relative humidity is 50%, density is 1.2 kg/m³. If the air is not in this state, it should be converted into the gas in this state. The testing medium for the pressure of the valve body of the fire-resistant Pressure Vacuum relief Valve is clear water at 5-35 C.
3. Pneumatic pressure detection: first detect its leakage, then step by step detect its sensitivity and ventilation.
4. Hydraulic pressure test: The pressure of Pressure Vacuum relief Valve for hydraulic test is 0.2 Mpa, and the holding time is 10 minutes.
5. Pressure detection: Install Pressure Vacuum relief Valve on the nozzle flange of the gas storage tank, adjust the valve to gradually increase or decrease the pressure in the gas storage tank, adjust the valve disc to make it open, read the pressure value on the connected micromanometer once a minute, and then rotate the valve disc 90 and 180 degrees respectively, repeat the above test, repeat three times in each working condition, and take its average value.
6. Leakage detection: The pressure of leak detection is 0.75 times of the operating pressure, which is read by the micro-manometer. The leakage value is read by the flowmeter (the accuracy of the flowmeter is 0.5-1.0 level) once per minute, three times in total, and the average value is taken.
7. Low Temperature Detection Respiratory Valve: Install the Respiratory Valve on the test stand and put it in the low temperature box. The temperature in the cryogenic chamber decreases to 4-15 C. Meanwhile, the relative temperature in the cryogenic chamber is continuously fed with ambient air of no less than 70%. Before opening the end of the valve disc, the temperature in the cryogenic chamber is reduced to -30 C. After 24 hours of constant temperature, one side of the test stand is connected to the microbarometer, and the other side is connected to the aerodynamic force through a pressure stabilizing tank with ambient air. When the disc of Pressure Vacuum relief Valve is open, read the pressure value. Repeat three times.