

Vent before a horizontal pump starts

The pump must pull out all the air in the pump before it starts.

It divides into two ways by pump suction condition. One is that the suction liquid level is lower than the pump shaft center, the other is that the suction liquid level is higher than the pump shaft center. Here, it is called "lift" where it is higher and "boost" where it is lower.

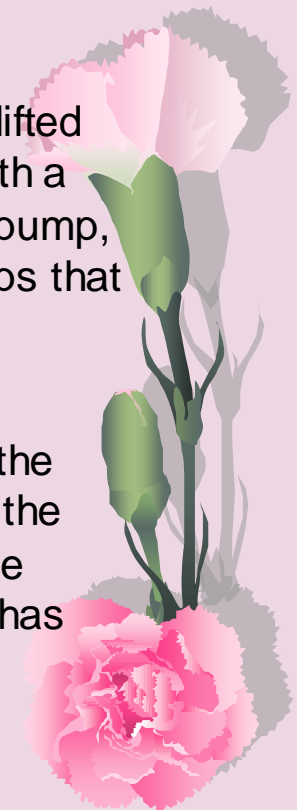
1 . Method of vent for "lift"

(1) Vacuum pump + priming detector

Piping at the uppermost part of the air in pump, and the pump handling liquid is lifted into the pump from the suction tank, while making to the vacuum in the pump with a vacuum pump. A priming detector is set up between the pump and the vacuum pump, and it detects in the pump becoming full of water. It is applied mainly to big pumps that treat water.

(2) Priming funnel + foot valve

Install a priming funnel in the part where air in a pump collects, a vent valve in the uppermost part where air in the pump collects, and a foot valve at the bottom of the suction piping. While the vent valve is opened, the pump liquid is poured from the priming funnel. It is understood that air in the pump came off because the liquid has leaked from the vent valve. It is applied mainly to small pumps that treat water.



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2 . Method of vent for "boost"

(1) Boost

When no check valve is installed and no back pressure works, the pump liquid is poured in the pump while full-opening a discharge valve and a suction valve.

When a check valve is installed and back pressure works, a bypass piping is installed connecting before and behind the check valve, and the by-pass valve is installed on the way of that. And the pump liquid is poured in the pump while full-opening the by-pass valve and a suction valve.

Both cases can apply for pump with self vent.

(2) Boost + vent valve

When the pump is not self vent, a vent valve is needed in the uppermost part where air in a pump collects.

When no check valve is installed and no back pressure works, the pump liquid is poured in the pump while opening the vent valve to come off the air and full-opening a discharge valve and a suction valve.

When a check valve is installed and back pressure works, a bypass piping is installed connecting before and behind the check valve, and the by-pass valve is installed on the way of that. And the pump liquid is poured in the pump while opening the vent valve to come off the air and full-opening the by-pass valve and a suction valve.



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3 . When the discharge pressure doesn't rise to a rated value after the pump starts

Though the vent is done by the above methods, when the discharge pressure doesn't rise to a rated value after the pump started, it might be thought that some of air still remains in the pump. Then following operation of the discharge valve (motorized valve or manual valve) is repeated.

Close for 1 to 2 seconds.

About 5% of the valve is opened and maintained for about five seconds.

Check the discharge pressure between those.

And, when the discharge pressure reaches a rated value, the vent is completed.

When the discharge pressure doesn't rise even if it repeats four or five times, the pump should be stopped and checked because other causes are thought.

It is dangerous for the pump with large shaft power such as high pressure pumps to close the valve completely. In such pumps, it exhales, the valve is opened by about 2%, then opened by about 5% is repeated.

