Spence Venter NAV Series

Introduction

This installation sheet covers the installation and maintenance of the Venter NAV Series Free-Floating Lever Air Vent.

Specifications

Available Sizes
1/2 and 3/4 NPT

Maximum Operating Pressure
1/8 in. / 3.18 mm: 175 psi / 12 bar
3/32 in. / 2.38 mm: 300 psi / 21 bar
5/64 in. / 1.98 mm: 400 psi / 28 bar

Maximum Operating Temperature
500°F / 260°C

Maximum Allowable Pressure
400 psig / 28 barg

Installation

WARNING

Personal injury, property damage, equipment damage or leakage due to escaping steam or bursting of pressure containing parts may result if this vent is over pressured or is installed where service conditions could exceed the limits given in the specifications or where conditions exceed any ratings of the adjacent piping or piping connections. To avoid such injury or damage, provide pressure-relieving or pressure-limiting devices (as required by the appropriate code, regulation or standard) to prevent service conditions from exceeding those limits.

CAUTION

Do not install air vents with an open discharge where a malfunction could cause damage.

1. Properly clean all piping before installing the Venter NAV Series. Clean the pipes by flushing to remove loose dirt. A strainer in the line leading to the air vent is recommended for dirty systems.
2. Ensure that Venter NAV Series is properly sized and located in the system. The inlet piping should be the same size as the piping connection on the body, and a full-port isolating valve should be installed upstream of the air vent.

WARNING

Do not exceed the maximum allowable pressures and temperatures noted on the label of the Venter NAV Series body.

3. Place the Venter NAV Series at a high point in the system or vessel where air can collect.
4. Install the air vent in level, vertical and with the inlet at the bottom. Make sure that the air vent is mounted in the proper direction, with the flow arrow pointing upward. This will allow the float mechanism to operate properly.
5. Install gate valves or full ported ball valves so the Venter NAV Series can be isolated from the system to permit servicing. Do not use globe valves.
6. Pipe the discharge to a safe visible point or drain via air break.
7. Use pipe dope or piping tape springly and on male threads only. Leaving the end thread exposed to avoid introducing sealant into the system.
8. Use only the hex-shaped fitting as wrenching surfaces when tightening a pipe into either the inlet or the outlet fittings of the Venter NAV Series. Do not use the venter body for a wrenching surface to screw the venter into position.
9. Install Uniflex union pipe couplings if the venter is installed in a closed piping arrangement.

Maintanance

The Venter NAV Series is a maintenance free valve, composed of corrosion resistant stainless steel components and a tamper proof, sealed welded body which will resist freezing. No gaskets or adjustments are necessary.

Troubleshooting

WARNING

To avoid personal injury, property damage or equipment damage caused by sudden release of pressure or explosion of accumulated gas, do not attempt any troubleshooting or disassembly without first isolating the equipment from system pressure and relieving all internal pressure from the air vent.

Air vents that have been disassembled for repair must be tested for proper operation before being returned to service. Only parts manufactured by Emerson should be used for repairing this air vents.

1. If the Venter NAV Series does not discharge, use the following scenarios to determine the correct troubleshooting procedure:
   a. Insufficient liquid coming to the air vent to permit discharge: Continue operation.
   b. It is normal on hydronic systems to have no discharge from the air vent, but this is not a proof that the air vent is functioning properly. To check the air vent, disconnect the outlet piping and observe the discharge from the unit. If the air vent is working correctly, a little air should escape, followed by a small amount of liquld. If the air vent is not operating properly, remove it from service and force water or air through the discharge fitting. Back flushing to remove scale and dirt often restores the air vent to its normal operating condition. If these procedures do not work, replace with a new Venter NAV Series.
   c. On new installation, an air vent may fail to open if the maximum operating pressure on the label is less than the actual pressure being encountered: If this is the case, replace the air vent with a properly sized Venter NAV Series for your higher maximum operating pressure.
   d. Differential pressure across air vent is too high: Check inlet and outlet pressure. If the difference exceeds the maximum pressure stamped on the Venter NAV Series, the air vent will remain closed. Reduce differential pressure if possible, or install properly sized Venter NAV Series.
   e. In some applications, an unusual increase in system pressure may cause the air vent to lock-up: Either eliminate the cause of the increased pressure or replace the Venter NAV Series air vent with one that can handle the peak pressures.
   f. Dirt or scale develops on valve or seat: Install strainer on inlet side, remove air vent from service, and replace with new Venter NAV Series.

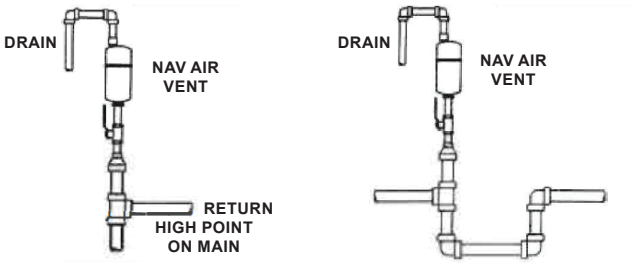

***Figure 1**. Venter NAV Series Installations*

   g. Venter NAV Series becomes filled with dirt or sludge: Install strainer on inlet side, remove air vent from service and replace with new Venter NAV Series. As with all air vents, dribbling may occur if the valve becomes fouled with dirt. For this reason, it is recommended that a pipe be fitted to the outlet discharge to drain or to a safe place where damage cannot occur.
   h. Strainer clogged: Clean strainer screen.
   i. Collapsed float: Replace with new Venter NAV Series.
2. If Venter NAV Series discharges continuously perform the following troubleshooting procedure:
   a. Worn valve seat: As the seat becomes worn, the seating area enlarges. Remove valve from the service and replace it with a new Venter NAV Series.
   b. Venter NAV Series was sized too small for application: Replace with new correctly sized Venter NAV Series.
   c. Abnormal amount of liquid coming through Venter NAV Series: Replace with new Venter NAV Series that has a larger capacity and will handle peak loads.

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