Automatic air vent and shut-off valve for solar systems
250 series

Function

Automatic air vents are used in the closed circuits of solar heating systems. They allow air contained in the fluid to be released automatically during the filling process, through a valve operated by a float in contact with fluid in the system.

The shut-off valves are used in combination with the automatic air vents to isolate them after filling the circuit of solar heating systems.

These series of products have been specially made to work at high temperatures with a glycol medium.

Product range

Code 250041A Automatic air vent for solar systems size 1/2" M NPT
Code NA29284 Shut-off valve for automatic air vent size 1/2" M NPT x 1/2" F NPT

Technical specifications of 250 series valve

Materials:
- body: brass chrome plated
- cover: brass chrome plated
- control spindle: stainless steel
- float: high resistance polymer
- seals: EPDM

Medium:
- water, glycol solutions
- 50%

Working temperature range:
- -20 to 360°F (-30 to 180°C)

Max. working pressure:
- 150 psi (10 bar)

Max. discharge pressure:
- 75 psi (5 bar)

Connection:
- 1/2" M NPT

Technical specifications of valve NA29284

Materials:
- body: brass chrome plated
- ball: brass chrome plated
- seals: P.T.F.E.

Medium:
- water, glycol solutions
- 50%

Working temperature range:
- -20 to 360°F (-30 to 180°C)

Max. working pressure:
- 150 psi (10 bar)

Connection:
- 1/2" F x 1/2" M NPT

Dimensions

<table>
<thead>
<tr>
<th>Code</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Weight (lb)</th>
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<tbody>
<tr>
<td>250041A</td>
<td>1/2&quot;</td>
<td>4&quot;</td>
<td>Ø2 1/8&quot;</td>
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<td>NA29284</td>
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<td>2 7/8&quot;</td>
<td>1/2&quot;</td>
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<td>0.5</td>
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Operating principle
The accumulation of air bubbles in the valve body causes the float to drop so the air vent valve opens.

This phenomenon occurs, and consequently, the valve functions correctly, as long as the water pressure remains below the maximum discharge pressure.

Maintenance
The 250 series automatic air vent is made to allow checking of the internal mechanism. Access to the moving parts that govern the air vent is attained by simply removing the top cover.
A shut-off valve must be installed before the 250 series device to allow shut off to simplify any maintenance work and for shutting off after the filling phase.

Construction details
Resistance to temperature
The high performance level of this series of automatic air vent valves, required in solar heating systems, is ensured by using materials that are highly resistant to temperature. The materials allow the vent function with glycol water temperatures up to 360°F (180°C).

Hydraulic characteristics
Discharge capacity when the system is being filled

![Discharge capacity graph](image)

Installation
250 series automatic air vents must be installed in a vertical position, typically on the top of the solar heating system panels and at points in the circuit where air bubbles gather that need to be discharged. They must always be installed in combination with a shut-off valve. This is necessary since the vent valves must be shut off after use to remove the air during the filling and starting up phase of the system.

SPECIFICATION SUMMARIES

250 series

Code NA29284