AUTOMATIC AIR VENT VALVES
MANUAL VALVES
FOR DISCHARGING AIR
FROM RADIATORS

MAIN FEATURES

ADVANTAGE OF BUILT-IN
MANUAL DISCHARGE
- Provision for controlling operation of the automatic discharge by pressing the manual discharge pin.
- By holding down the manual discharge, water flows through the orifice thus facilitating cleaning of the automatic discharge mechanism.
- Rapid venting of air when filling the system.
DESCRIPTION

The MXIVENT valves are inspectable thanks to the opening left by the cover after unscrewing it from the tank; therefore it is also possible to clean the internal parts (float and lever) in case of ingress of foreign matter in the valve. Tight seal between the tank and cover is thanks to the presence of an NBR rubber seal. Long-term efficiency and performance of the vent movement is ensured by the valve design features. The seal system is designed to withstand vibrations, therefore it is unaffected by any external vibrations.

APPLICATION

Thanks to its particular size, the MXIVENT valve finds application of automatic venting of air in large size water distribution pipes (e.g. distribution manifolds in the central system) and in all cases where it is necessary to eliminate large quantities of air from the system. The MXIVENT valve is provided with manual air vent.

OPERATION

Valve opening and closing is determined by the float movement (up-down). When there is air in the MXIVENT, the force of the float weight acts on the lever which is integral with the plug, thus causing it to move down. In such situation the seat is free and allows the air to be vented outside. When filling the system with water, the air entrapped in the water circuit is pushed towards the outside via the MXIVENT valve. As soon as all the entrapped air is discharged, the water, entering the tank, pushes the float up. Consequently the lever moves the plug to press against the seat thus ensuring tight sealing of the system.

INSTALLATION

The MXIVENT valve is normally installed:
- In the highest point of the air separator
- At the top of the columns installed in heating systems with expansion vessel
- In all points where there is risk of air building up
- At the top of the manifolds.

After installation, in order to allow perfect air venting, unscrew the protective cap by at least two turns (such condition ensures the vent characteristics as given in the previous diagram).

MAINTENANCE

Normally the MXIVENT valve does not require routine maintenance.

TECHNICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. discharge pressure</td>
<td>6 bar</td>
</tr>
<tr>
<td>Max. operating pressure</td>
<td>12 bar</td>
</tr>
<tr>
<td>Min. seal pressure</td>
<td>0.1 bar</td>
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<td>Max. operating temperature</td>
<td>115°C</td>
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Air discharge rate - Operating pressure

<table>
<thead>
<tr>
<th>Air discharge rate (NL/min)</th>
<th>Operating pressure (bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>100</td>
<td>2</td>
</tr>
<tr>
<td>200</td>
<td>3</td>
</tr>
<tr>
<td>300</td>
<td>4</td>
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<tr>
<td>400</td>
<td>5</td>
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<td>500</td>
<td>6</td>
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<tr>
<td>600</td>
<td>7</td>
</tr>
<tr>
<td>700</td>
<td>8</td>
</tr>
<tr>
<td>800</td>
<td>9</td>
</tr>
</tbody>
</table>

Overall dimensions (mm)

MXV - 3/4” - 1” - 1.1/4”
DESCRIPTION

The DUOVENT valves are inspectable by unscrewing the cover from the tank.

Tight seal between the tank and cover is thanks to the presence of an O-ring; therefore it is also possible to clean the internal parts (float and lever) in case of ingress of foreign matter in the valve. Long-term efficiency and performance of the vent movement is ensured by the valve design features. The seal system is designed to withstand vibrations, therefore it is unaffected by any external vibrations.

APPLICATION

The DUOVENT valve is a development on the automatic MINIVENT valve. In fact DUOVENT has the same functions as MINIVENT, i.e. it is used for automatic venting of air in water distribution pipes in order to avoid certain phenomena of damage (corrosion processes, cavitation) and loss of efficiency (air pockets in radiators) of the heating system, but it is provided with an additional device allowing manual air venting. The manual air vent device offers the following advantages:

a) It allows checking the valve for correct operation
b) It allows reducing times for discharging air from the system by increasing the discharge flow rate
c) Easier cleaning of the orifice by forcing water to flow through it.

The DUOVENT MVDR valve is provided with an automatic shut-off valve (Art. RIA) which allows removal of the vent valve without having to empty the system.

OPERATION

During automatic operation, valve opening and closing is determined by the float movement (up-down). When there is air in the DUOVENT, the force of the float weight acts on the lever which is integral with the plug, thus causing it to move down.

In such situation the seat is free and allows the air to be vented outside. When filling the system with water, the air entrapped in the water circuit is pushed towards the outside via the DUOVENT valve.

As soon as all the entrapped air is discharged, the water, entering the tank, pushes the float up. Consequently the lever moves the plug to press against the seat thus ensuring tight sealing of the system.

Manual venting is actuated by pushing down button (10); this can be done by exerting a pressure on the surface, for example with a screwdriver. Such operation shifts head (9) integral with O-ring (12) to a position lower than the seat, thus allowing air or water to flow along stem. When water flows both from orifice (A) and (B), this indicates that all the air has been discharged from the system.

TECHNICAL CHARACTERISTICS

| Nominal pressure | 12 bar |
| Max. operating pressure | 8 bar |
| Max. operating temperature | 115°C |

Air discharge rate - Operating pressure

(comparison between manual and automatic venting)

The automatic venting characteristics are similar to MINIVENT. The following diagram shows the automatic and manual venting curves in relation to pressure, assuming a manual plug movement of 1.5 mm. It is clear that the manual venting allows an appreciable increasing in the discharge rate of DUOVENT.
**INSTALLATION**

The DUOVENT valve is normally installed:
- In the highest point of the air separator
- At the top of the columns installed in heating systems with expansion vessel
- In all points where there is risk of air building up

In order to ensure maximum air venting efficiency, it is advisable to install the DUOVENT valve in those points where water speed is relatively low.

After installation, in order to allow perfect air venting, unscrew the protective cap by at least two turns (such condition ensures the vent characteristics as given in the previous diagram).

**MAINTENANCE**

Normally the DUOVENT valve does not require maintenance. If maintenance is required, remove the valve; the presence of shut-off valve RIA allows this operation without emptying the system.

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**Air discharge rate - Operating pressure**

(Pressure equal to 3 bar)

The flow rate in manual air venting varies according to the down movement of the plug, as shown in the following diagram, at a system pressure of 3 bar.

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**Overall dimensions (mm)**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>CH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>19</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>19</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>22</td>
</tr>
</tbody>
</table>

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**Diagram:**

- **MVD**
- **SIZE**
  - 1/4"
  - 3/8"
  - 1/2"
- **CH**
  - 19
  - 19
  - 22

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**Legend:**

- A. Automatic vent
- B. Manual vent
- 1. Body
- 2. Cover
- 3. Plug
- 4. Spring
- 5. Cap
- 6. Lever
- 7. Float
- 8. Seals
- 9. Plug head
- 10. Button
- 11. Spring
- 12. Seals
DESCRIPTION
The MINIVENT valves are inspectable by unscrewing the cover from the tank. Tight seal between the tank and cover is thanks to the presence of an O-ring; therefore it is also possible to clean the internal parts (float and lever) in case of ingress of foreign matter in the valve. Long-term efficiency and performance of the vent movement is ensured by the valve design features. The seal system is designed to withstand vibrations, therefore it is unaffected by any external vibrations.

APPLICATION
The MINIVENT valve is used for automatic venting of air in water distribution pipes in order to avoid certain phenomena of damage (corrosion processes, cavitation) and loss of efficiency (air pockets in radiators) of the heating system.

The MINIVENT MVR valve is provided with an automatic shut-off valve (Art. RIA) which allows the vent valve to be removed without having to empty the system.

The MINIVENT valve is used in independent, central, radiant panel heating systems, etc.

OPERATION
Valve opening and closing is determined by the float movement (up-down). When there is air in the MINIVENT, the force of the float weight acts on the lever which is integral with the plug, thus causing it to move down. In such situation the seat is free and allows the air to be vented outside. When filling the system with water, the air entrapped in the water circuit is pushed towards the outside via the MINIVENT valve. As soon as all the entrapped air is discharged, the water, entering the tank, pushes the float up. Consequently the lever moves the plug to press against the seat thus ensuring tight sealing of the system.

INSTALLATION
The MINIVENT valve is normally installed:
- In the highest point of the air separator
- At the top of the columns installed in heating systems with expansion vessel
- In all points where there is risk of air building up

In order to ensure maximum air venting efficiency, it is advisable to install the MINIVENT valve in those points where water speed is relatively low. After installation, in order to allow perfect air venting, unscrew the protective cap by at least two turns (such condition ensures the vent characteristics as given in the previous diagram).

MAINTENANCE
Normally the MINIVENT valve does not require maintenance. If maintenance is required, remove the valve; the presence of shut-off valve Art. RIA allows this operation without emptying the system.
DESCRIPTION

The MICROVENT valves are inspectable by unscrewing the cover from the tank. Tight seal between the tank and cover is thanks to the presence of an O-ring; therefore it is also possible to clean the internal parts (float and lever) in case of ingress of foreign matter in the valve. Long-term efficiency and performance of the vent movement is ensured by the valve design features. The seal system is designed to withstand vibrations, therefore it is unaffected by any external vibrations.

The MICROVENT valve is provided with a vacuum breaker tongue (close to the connection) designed for improving the air venting characteristics. However such vacuum breaker tongue is not fitted when the MICROVENT valve is supplied with shut-off valve which already incorporates the tongue.

APPLICATION

The MICROVENT valve is used for automatic venting of air in water distribution pipes in order to avoid certain phenomena of damage (corrosion processes, cavitation) and loss of efficiency (air pockets in radiators) of the heating system. The MICROVENT MKVR and MKLR valves are provided with an automatic shut-off valve (Art. RIA) which allows the vent valve to be removed without having to empty the system.

OPERATION

Valve opening and closing is determined by the float movement (up-down). When there is air in the MICROVENT, the force of the float weight acts on the lever which is integral with the plug, thus causing it to move down. In such situation the seat is free and allows the air to be vented outside. When filling the system with water, the air entrapped in the water circuit is pushed towards the outside via the MICROVENT valve. As soon as all the entrapped air is discharged, the water, entering the tank, pushes the float up. Consequently the lever moves the plug to press against the seat thus ensuring tight sealing of the system.

INSTALLATION

The MICROVENT valve is normally installed:
- In the highest point of the air separator
- At the top of the columns installed in heating systems with expansion vessel
- In all points where there is risk of air building up

In order to ensure maximum air venting efficiency, it is advisable to install the MICROVENT valve in those points where water speed is relatively low. After installation, in order to allow perfect air venting, unscrew the protective cap by at least two turns (such condition ensures the vent characteristics as given in the previous diagram). When it is necessary to mount a MICROVENT valve provided with vacuum breaker tongue on a RIA shut-off valve, merely lift out the tongue with two fingers.

MAINTENANCE

Normally the MICROVENT valve does not require maintenance. If maintenance is required, remove the valve; the presence of shut-off valve Art. RIA allows this operation without emptying the system.

DESIGN FEATURES

<table>
<thead>
<tr>
<th>Body</th>
<th>Brass OT 58</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover</td>
<td>Brass OT 58</td>
</tr>
<tr>
<td>Float</td>
<td>High density expanded polyethylene</td>
</tr>
<tr>
<td>Plug</td>
<td>Polyphenylene oxide</td>
</tr>
<tr>
<td>End cap</td>
<td>Polyphenylene oxide, glass fibre reinforced</td>
</tr>
<tr>
<td>Lever</td>
<td>Polyphenylene oxide, glass fibre reinforced</td>
</tr>
<tr>
<td>Seals</td>
<td>NBR rubber</td>
</tr>
<tr>
<td>Spring</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>Vacuum breaker</td>
<td>Polyacetal</td>
</tr>
<tr>
<td>Connections</td>
<td>M 3/8” DIN - ISO 228/1</td>
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</tbody>
</table>

TECHNICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Max. operating pressure</th>
<th>10 bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. operating temperature</td>
<td>110°C</td>
</tr>
</tbody>
</table>
Air discharge rate - Operating pressure

OPERATION

Automatic shut-off valve RIA allows the air vent valves (MINIVENT, DUOVENT, and MICROVENT) to be removed without having to empty the system. The RIA shut-off valve is fitted with a device for quick total emptying of the water from the valve.

RIA

Part No. Size
0259008 1/4" x 1/4"
0259010 3/8" x 3/8"
0259015 1/2" x 1/2"

Overall dimensions (mm)

DESIGN FEATURES

SMM

Manual valve for venting air from radiators with adjustable discharge nozzle, manual discharge opening with handwheel.

Part No. Size
0257106 1/8"
0257108 1/4"
0257110 3/8"
0257115 1/2"

TECHNICAL CHARACTERISTICS

Max. operating pressure 10 bar
Max. operating temperature 95°C
DESIGN FEATURES

<table>
<thead>
<tr>
<th>Component</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>Brass OT 58, chrome-plated</td>
</tr>
<tr>
<td>Screw</td>
<td>Brass OT 58, chrome-plated</td>
</tr>
<tr>
<td>Discharge nozzle and handwheel</td>
<td>Polyamide, reinforced with glass fibre</td>
</tr>
<tr>
<td>O-ring</td>
<td>NBR rubber</td>
</tr>
</tbody>
</table>

TECHNICAL CHARACTERISTICS

<table>
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<th>Parameter</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Max. operating pressure</td>
<td>10 bar</td>
</tr>
<tr>
<td>Max. operating temperature</td>
<td>95°C</td>
</tr>
</tbody>
</table>

The components and dimensional characteristics of the valves allow a perfectly tight seal associated with very easy operation.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>0256206</td>
<td>1/8&quot;</td>
</tr>
<tr>
<td>0256208</td>
<td>1/4&quot;</td>
</tr>
<tr>
<td>0256210</td>
<td>3/8&quot;</td>
</tr>
</tbody>
</table>

### VMM
- Manual valve for venting air from radiators with adjustable discharge nozzle, manual discharge opening either screw driver or coin or wrench CH.
- Part Numbers:
  - 0256206 1/8"
  - 0256208 1/4"
  - 0256210 3/8"

### PMC
- Manual valve for venting air from radiators with adjustable discharge nozzle, manual discharge opening either screw driver or coin or wrench CH to avoid manual tampering.
- Part Numbers:
  - 0256306 1/8"
  - 0256308 1/4"
  - 0256310 3/8"
  - 0256315 1/2"

### RSR
- Radiator drain valve for quick and easy emptying of the water contained in the radiator, without requiring emptying the entire system.
- Part Numbers:
  - 0256008 1/4"
  - 0256010 3/8"
  - 0256015 1/2"

### CH
- Wrench for valves RSR, VMM, PMC.
  - Part Number: 0256101

### PMC
- Valve handwheel PMC with opening by screw-driver, coin or wrench CH/VP.

### CH/VP
- Wrench flat for adjusting discharge nozzle body. Wrench CH/VP can be left inserted on the body.