Automatic air vent
for heating systems and radiators
series 501 - 5022 - 5024 - 5026 - 5027 - 5080

01090/22 NA
Replaces 01090/03 NA

Function

Series 501
Extra high capacity float type automatic air vent designed for use on large pipes where large quantity of air is required to be released from the system.

Series 5022 - 5023
High capacity float type automatic air vent designed for use on manifolds or pipes in sealed heating systems. Check valve on 5023 series allows an easy replacement of air vent without purging the system.

Series 5024 - 5026 - 5027
Float type automatic air vent designed to vent air that is released from the water while being heated. 5024 is horizontal relief. 5026 and 5027 is vertical relief. Check valve on 5027 series allows an easy replacement of air vent without purging the system.

Series 5080
Radiator air vent valve designed to remove automatically any air trapped inside the heat emitters both during the filling of the system and in normal operation.

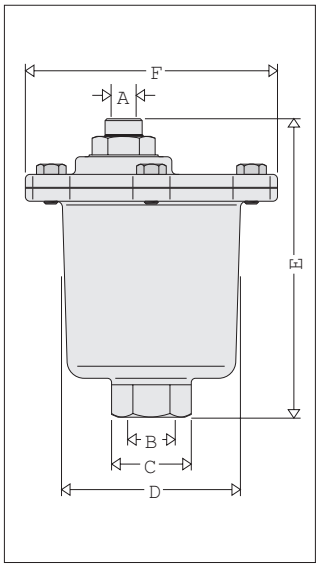
Product range

Series 501	Extra high capacity automatic air vent	Size 3/4” female NPT
Series 5022	High capacity automatic air vent	Size 1/2” male NPT
Series 5023	High capacity automatic air vent with check valve	Size 1/2” male NPT
Series 5024	Automatic air vent, horizontal relief	Size 1/4” straight thread
Series 5026	Automatic air vent, vertical relief	Sizes 1/8” - 1/4” male NPT, 3/8” - 1/2” straight thread
Series 5027	Automatic air vent with check valve	Sizes 1/8” - 1/4” male NPT
Series 5080	Automatic hygroscopic air vent for radiators	Size 1/8” male NPT

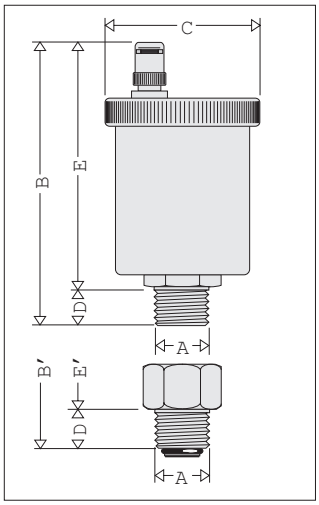
Technical specification

Series	501	5022 - 5023	5024 - 5026 - 5027	5080
Materials				
Body:	brass	brass	brass	chrome-plated brass
Float:	stainless steel	PP	PP	-
Mechanism stem:	stainless steel	brass	-	-
Mechanism seal:	viton	peroxide-cured EPDM	silicon rubber	-
Seals:	peroxide-cured EPDM	peroxide-cured EPDM	peroxide-cured EPDM	peroxide-cured EPDM
Performance				
Max. working pressure:	230 psi (16 bar)	150 psi (10 bar)	150 psi (10 bar)	150 psi (10 bar)
Max. venting pressure:	90 psi (6 bar)	60 psi (4 bar)	90 psi (6 bar)	-
Max. working temperature:	4 - 250°F (-20-120°C)	250°F (120°C)	240°F (115°C)	212°F (100°C)
Connections				
Max. working pressure:	inlet 3/4” female NPT	1/2” male NPT	1/8” & 1/4” male NPT	1/8” male NPT
Max. venting pressure:	exhast 3/8” female		1/4”, 3/8” 1/2” male	
Max. working temperature:	straight thread		straight thread	

Dimensions

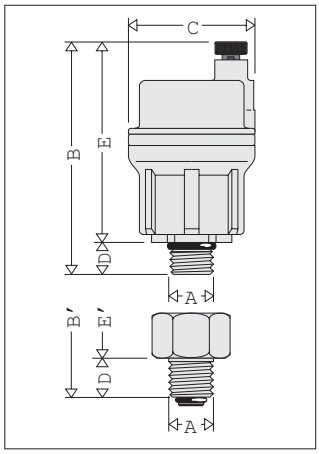


Code	A	B	C	D	E	F
501502A	3/8″	3/4″	1 9/16″	3 13/16″	6 1/4″	5 5/16″



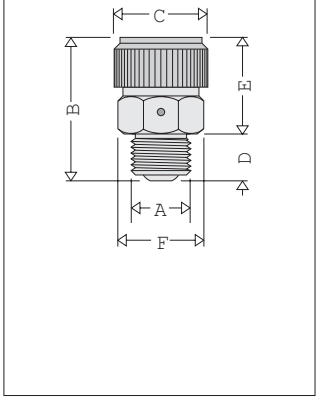
Code	A	B	C	D	E
502243A	1/2″	4″	2 3/16″	1/2″	2 1/2″

Code	A	B′	C	D	E′
502343A	1/2″	4 3/4″	2 3/16″	1/2″	3 1/4″



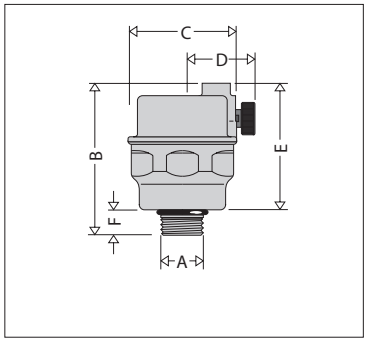
Code	A	B	C	D	E
502610A	1/8″	3 1/16″	1 9/16″	7/16″	2 5/8″
502620A	1/4″	3 1/16″	1 9/16″	1/2″	2 5/8″

Code	A	B′	C	D	E′
502710A	1/8″	4″	1 9/16″	1/2″	3 3/8″
502720A	1/4″	4″	1 9/16″	1/2″	3 3/8″



Code	A	B	C	D	E	F
508013A	1/8″	1 1/4″	11/16″	7/16″	13/16″	9/16″

Code	A	B	C	D	E
502630	3/8″	3 1/16″	1 9/16″	3/8″	2 5/8″
502640	1/2″	3 1/16″	1 9/16″	3/8″	2 5/8″

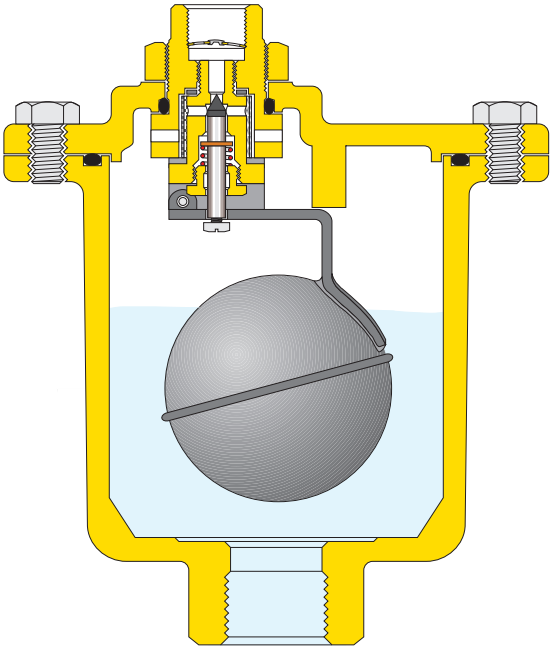


Code	A	B	C	D	E	F
502420	1/4″	2 5/32″	1 9/16″	1″	1 3/4″	3/8″

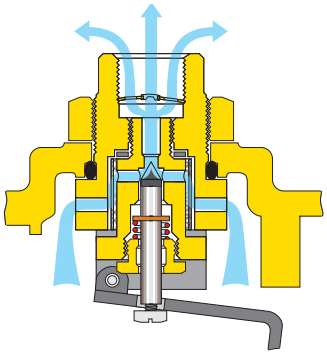
Construction details

501

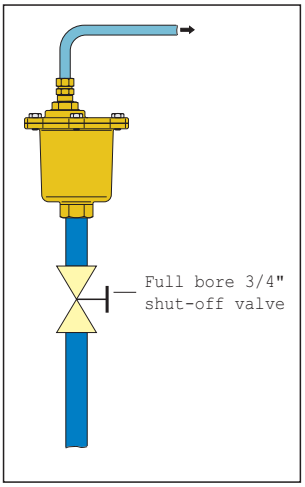
- **Stainless steel components.**
  The components used for the elimination of air like float, sliding guide zones, spring and mechanism stem are made of stainless steel. In this way they minimize the friction and ensure maximum reliability.
- **Protection device**
  The venting air is passed through a forced passage and a filter with a thin mesh strainer. This arrangement avoids the danger of leakage due to debris, that can be deposited between the seat and the mechanism.
- **High venting capacity**
  The size of this deaerator makes it suitable for applications on large pipes, particularly on horizontal sections (distribution manifolds in central boilers applications) or wherever it is required to release large quantities of air from the system.



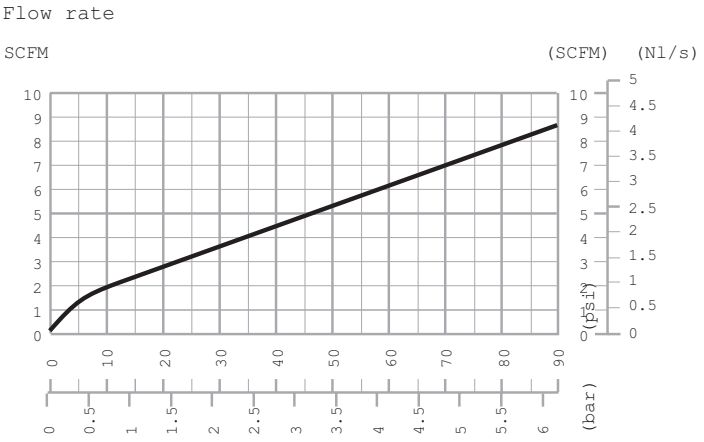
- **Threaded outlet**
  At the top of the device there is a 3/8" Female threaded exhaust connection which is suitable for connecting a conveying pipe.



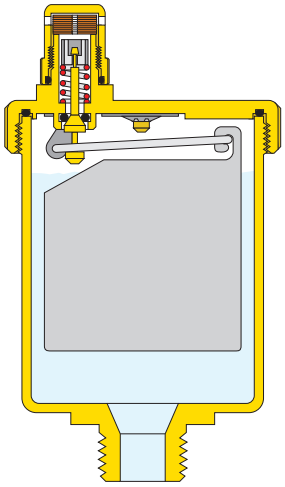
Installation



Air flow

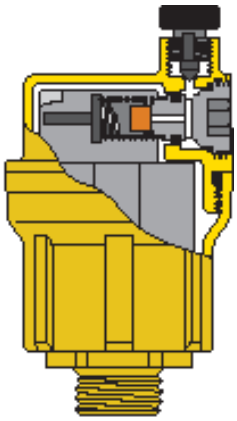


5022 - 5023

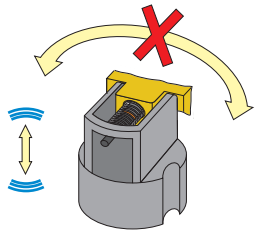


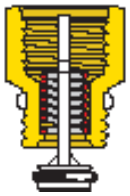
- **Operating mechanism**
  The air is vented by means of a stem mechanism protected against debris from outside.
- **Chamber**
  The height of the chamber for float movement is designed to collect high air volumes from water.
- **Hygroscopic cap**
  A safety hygroscopic cap automatically closes the air discharge in case of contact with water.

5024 - 5026 - 5027



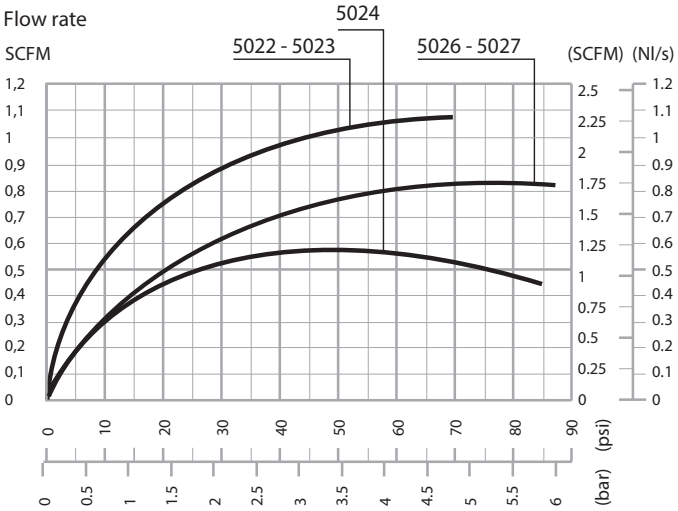
- **Operating mechanism**
  The function of this device is guaranted by an operating mechanism made of silicon rubber specially designed to vent when pressure reaches high values in the system.
- **Antivibration and antirotation system on the float**
  This system guarantees that in the rest position the air relief valve will not be affected by any movement of the float.





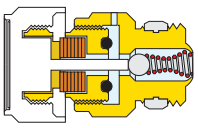
- **Check valve**
  The check valve on 5023 and 5027 series allows an easy maintenance or substitution of the valve without purging the system.

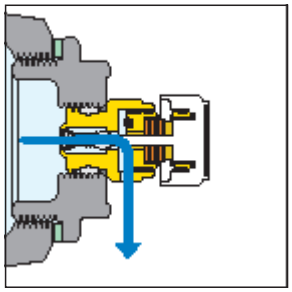
Air flow



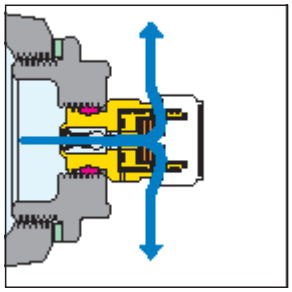
5080

Valve code 5080 can be used manually or automatically.
The **automatic** discharge is based on the property of the cellulose fibre discs forming the seal cartridge.



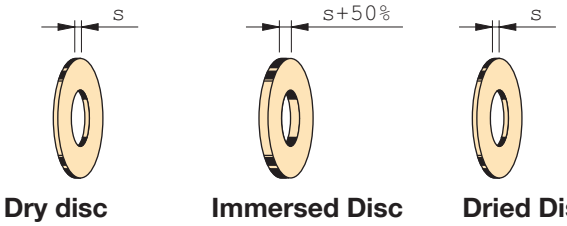


The **manual** discharge position is achieved by unscrewing the knob **approx. one turn**. Typical use of this method is when refilling the system.



The **automatic** discharge position is achieved with the knob fully closed.

The hygroscopic discs increase their volume by 50% when they are immersed in water.

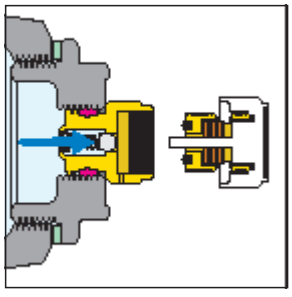


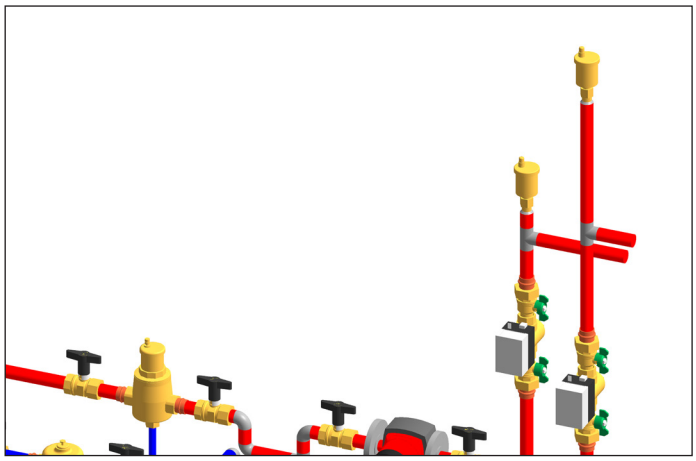
When the system is operating under normal conditions, the discs are immersed and, due to their increase in volume, they close the valve. However, when air is present, the discs dry out and allow the air to vent.

The hygroscopic discs close very quickly, in just a few seconds. The drying times are such that there are no problems with the cycle of formation and elimination of air.

Water	°C	40	50	60	70	80	90	100
temperature	°F	104	122	140	158	176	194	212
Times (hr)		6	5	2.5	1.5	1	0.5	0.25

Replaceable cartridge
The valve is constructed in such a way that the part containing the hygroscopic discs can easily be replaced without having to empty the heat emitter. This may be necessary because the discs can deteriorate in time if there is unfiltered or hard water present.





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SPECIFICATION SUMMARY

501 series
Automatic air vent for heating systems. 3/4" F threaded connection. Brass body and cover. VITON operating mechanism seal. Stainless steel float components and cover bolts. Seat and seal protected by a thin-mesh filter. Peroxide-cured EPDM seals. Maximum working pressure: 230 psi (16 bar). Maximum venting pressure: 90 psi (6 bar). Maximum working temperature: 250°F (120°C). With 3/8" F discharge connection.

5022 series
Automatic air vent. 1/2" M threaded connection. Brass body and cover. Brass valve stem. Peroxide-cured EPDM seals. Maximum working pressure: 150 psi (10 bar). Maximum venting pressure: 60 psi (4 bar). Maximum working temperature: 250°F (120°C). Vertical relief.

5023 series
Automatic air vent with check valve. 1/2" M threaded connection. Brass body and cover. Brass valve stem. Peroxide-cured EPDM seals. Maximum working pressure: 150 psi (10 bar). Maximum venting pressure: 60 psi (4 bar). Maximum working temperature: 250°F (120°C). Vertical relief.

5024 series
Automatic air vent. 1/4" M threaded connections. Brass body and cover. Silicone rubber operating mechanism. Peroxide-cured EPDM seals. Maximum working pressure: 150 psi (10 bar). Maximum venting pressure: 90 psi (6 bar). Maximum working temperature: 240°F (115°C). Antirotation and antivibration system of the float. Horizonal relief.

5026 series
Automatic air vent. 1/8" and 1/4" M threaded connections. Brass body and cover. Silicone rubber operating mechanism. Peroxide-cured EPDM seals. Maximum working pressure: 150 psi (10 bar). Maximum venting pressure: 90 psi (6 bar). Maximum working temperature: 240°F (115°C). Antirotation and antivibration system of the float. Vertical relief.

5027 series
Automatic air vent with check valve. 1/8" and 1/4" M threaded connections. Brass body and cover. Silicone rubber operating mechanim. Peroxide-cured EPDM seals. Maximum working pressure: 150 psi (10 bar). Maximum venting pressure: 90 psi (6 bar). Maximum working temperature: 240°F (115°C). Antirotation and antivibration system of the float. Vertical relief.

5080 series
Automatic hygroscopic radiator air vent. 1/8" M threaded connection. Chrome-plated brass body. Peroxide-cured EPDM seals. White POM heat resistant knob. Maximum working pressure: 150 psi (10 bar). Maximum working temperature: 212°F (100°C). Replaceable hygroscopic cartridge.

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