



Automatic air vents

501 - 551 - 502. - 250 - 251 series

www.caleffi.com




























- Automatic air vents are designed to remove the air that accumulates in heating and air conditioning systems without the need of manual intervention.
- Maintenance operations are simplified thanks to the automatic shut-off valve by shutting the water flow off when the valve is removed and also allow easy inspection of the air vent device.
- They prevent harmful phenomena that may compromise the life and performance of heating/cooling systems.
- They are installed in vertical position, on air separators, on hydraulic separators, on manifolds, on risers and generally in parts of the system where a concentration of air pockets is expected.
- All MINICAL and VALCAL range can be equipped with a hygroscopic safety cap.
- ROBOCAL series is equipped with anti rotation and anti vibration system float.



CALEFFI
Hydronic Solutions

PRODUCT RANGE AND TECHNICAL SPECIFICATIONS

	Air vents with medium-high discharge pressure			Automatic air vents of traditional type					
	501	551	5022	5020	5020	5020	5020	5021	5021
	MAXCAL	DISCALAIR	VALCAL	MINICAL					
									
									
Body material	brass		chrome plated brass	brass	chrome plated brass	brass	chrome plated brass	brass	chrome plated brass
Max. working pressure	16 bar	10 bar		10 bar					
Max. discharge pressure	6 bar	10 bar	4 bar	2,5 bar					
Max. work. temp.	120 °C	110 °C	120 °C	120 °C				110 °C	
Automatic shut-off	-	-	optional	optional		-		✓	
Hygroscopic cap	-	optional		optional		✓		optional	
Connections	3/4"	1/2"	1/4" - 3/8" - 1/2"	3/8" - 1/2"	3/8" - 1/2"	3/4" - 1"	3/4" - 1"	3/8" - 1/2"	3/8" - 1/2"

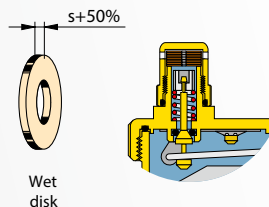
	Automatic air vents with float anti-vibration system			
	5024	5025	5026	5027
	ROBOCAL			
				
				
Body material	brass			
Max. working pressure	10 bar			
Max. discharge pressure	4 bar		6 bar	
Max. work. temp.	115 °C	110 °C	115 °C	110 °C
Automatic shut-off	-	✓	-	✓
Connections	1/4" - 3/8"	3/8"	3/8" - 1/2"	3/8"

	Automatic air vents for solar thermal systems		
	250	250	251
	-		DISCALAIR
			
			
Body material	chrome plated brass		
Max. working pressure	10 bar		
Max. discharge pressure	2,5 bar	5 bar	10 bar
Max. work. temp.	180 °C	180 °C	160 °C
Automatic shut-off	-	-	-
Connections	3/8"	3/8" - 1/2"	1/2"

Hygroscopic cap

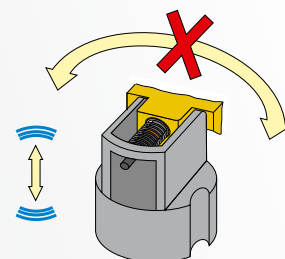
The operating principle is based on the properties of the cellulose fibre disks forming the retaining cartridge.

These discs increase their volume up to 50 % when they get wet, thus closing the valve. Instead, when air is present, the disks get dry and allow it to vent.



Float with anti rotation and anti vibration system

When the float is in rest position the obturator is not affected by any external movement.



REFERENCE DOCUMENTATION

501 series	- Technical broch. 01031
551 series	- Technical broch. 01124
5020-5021-5022 series	- Technical broch. 01054
5024-5025-5026-5027 series	- Technical broch. 01033
250 series	- Technical broch. 01133
251 series	- Technical broch. 01135

We reserve the right to make changes and improvements to our products and the related technical data in this publication, at any time and without prior notice. The website www.caleffi.com always has the most up-to-date version of the document, which should be used for technical verifications.

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Automatic air vents MINICAL® – VALCAL®

5020 - 5021 - 5022 series



01054/19 GB

replaces dp 01054/05



Function

Automatic air vents perform the function of eliminating the air which builds up inside climate control system circuits without any manual intervention. This prevents the appearance of negative phenomena that might prejudice the working life and performance of the heating system, such as:

- corrosion caused by oxygen;
- localised air pockets in the radiators;
- cavitation in the circulation pumps.



Product range

5020 MINICAL® series	Automatic air vent	sizes 3/8" and 1/2" M
5020 MINICAL® series	Automatic air vent, chrome plated	sizes 3/8" and 1/2" M
5020 MINICAL® series	Automatic air vent, with hygroscopic safety cap	sizes 3/4" and 1" M
5020 MINICAL® series	Automatic air vent, with hygroscopic safety cap, chrome plated	sizes 3/4" and 1" M
5021 MINICAL® series	Automatic air vent, complete with automatic shut-off cock	sizes 3/8" and 1/2" M
5021 MINICAL® series	Automatic air vent, complete with automatic shut-off cock, chrome plated	sizes 3/8" and 1/2" M
5022 VALCAL® series	Automatic air vent, chrome plated	sizes 1/4", 3/8" and 1/2" M

Technical specifications

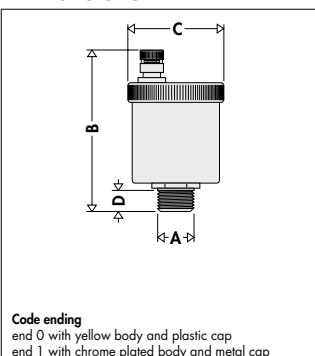
Materials:

Body and cover:	brass EN 12165 CW617N
Float:	PP
Obturator stem:	brass EN 12164 CW614N
Spring:	stainless steel
Seals:	EPDM
Shut-off cock seal:	PTFE

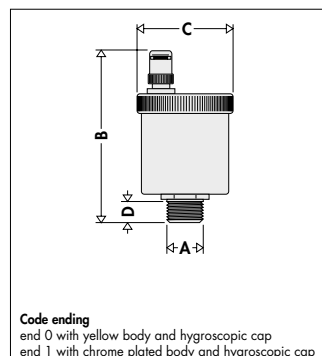
Performance:

Medium:	water and glycol solutions
Max. percentage of glycol:	30 %
Max. working pressure:	10 bar
Max. discharge pressure:	5020, 5021: 2,5 bar
	5022: 4 bar.
Max. working temperature:	5020, 5022: 120 °C
	5021: 110 °C

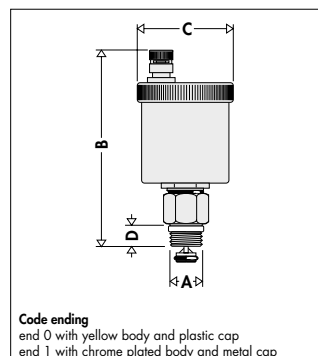
Dimensions



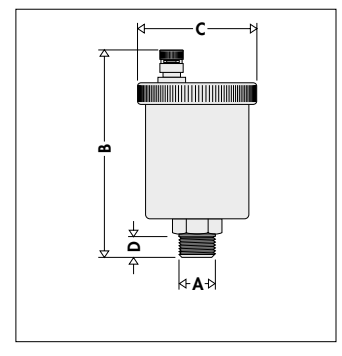
Code	A	B	C	D	Mass (kg)
50203.	3/8"	79	Ø 48	11	0,18
50204.	1/2"	79	Ø 48	11	0,18



Code	A	B	C	D	Mass (kg)
50205.	3/4"	86	Ø 48	11	0,18
50206.	1"	86	Ø 48	11	0,18



Code	A	B	C	D	Mass (kg)
50213.	3/8"	96	Ø 48	11	0,21
50214.	1/2"	96	Ø 48	11	0,23



Code	A	B	C	D	Mass (kg)
502221	1/4"	94	Ø 55	9	0,29
502231	3/8"	97	Ø 55	11	0,29
502241	1/2"	97	Ø 55	11	0,29

Operating principle

The accumulation of air bubbles in the valve body causes the float to drop and, as a result, the obturator to open. This action, as well as correct valve operation, is ensured as long as the water pressure remains under the maximum discharge pressure.

Construction details

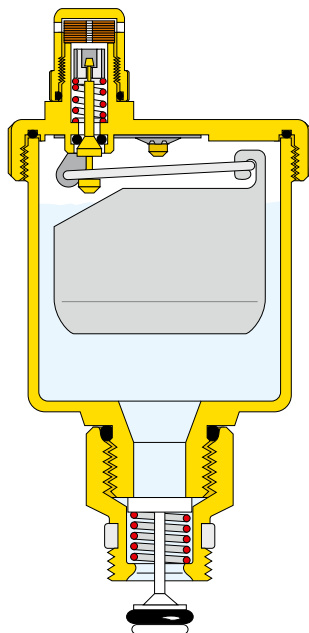
Hygroscopic cap

The hygroscopic safety is available for all MINICAL® VALCAL® series.

The operating principle is based on the properties of the cellulose disks forming the retaining cart. These disks increase in volume 50% when they come into contact with water, thus closing the valve. This avoids any damage in the event of water leakage.

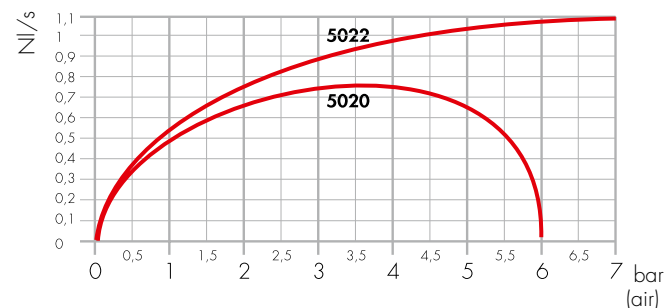
Versions with cock

The automatic shut-off cock, seal of which with the valve body is ensured by an EPDM O-ring facilitates servicing operations by blocking the flow of water when the valve is deactivated, and the cock does not affect the functionality of the valve device.



Hydraulic characteristics

Airflow (during system filling)



Installation

- The valve should be installed vertically on the separator, on the manifolds, on the riser columns and, more generally, at the points in the system where air pockets are likely to form.
- During operation, the top cap should be loosened in the normal version, while it should be fully tightened in the hygroscopic version.
- We advise against installing the valve in places that cannot be inspected.
- Installing the valve in places which may be at risk of freezing is prohibited; in this case, the Caleffi 501 series MAXCAL® automatic deaerator must be used.
- The **valve cap must be replaced with the Caleffi 5620 AQUASTOP® hygroscopic safety cap when installed in places that cannot be inspected.**

Accessories

- The 561 series shut-off cock is available for 5020 and 5022 series air vents. 3/8" and 1/2" connections. Yellow or chrome plated version. PTFE seal on thread.
- The 5620 series AQUASTOP hygroscopic safety cap is available for all MINICAL® and VALCAL® series in a chrome plated version and R59681 yellow version.
- The 5621 series anti-suction valve is available for the MINICAL® and VALCAL® series.



SPECIFICATION SUMMARY

5020 series

Automatic air vent. Threaded connections 3/8" M (or 1/2" M). Yellow or chrome plated. Brass body and cover, PP float, brass obturator stem, EPDM O-Ring seals. Medium: water and glycol solutions. Max. percentage of glycol 30 %. Maximum working pressure 10 bar, maximum discharge pressure 2,5 bar. Maximum working temperature 120 °C.

5020 series

Automatic air vent. Threaded connections 1/2" M (or 3/4" M). Yellow or chrome plated. Brass body and cover, PP float, brass obturator stem, EPDM O-Ring seals. Medium: water and glycol solutions. Max. percentage of glycol 30 %. Maximum working pressure 10 bar, maximum discharge pressure 2,5 bar. Maximum working temperature 120 °C. Complete with hygroscopic safety cap.

5021 series

Automatic air vent complete with automatic shut-off cock. Threaded connections 3/8" M (or 1/2" M). Yellow or Chrome plated. Brass body and cover, PP float, brass obturator stem, EPDM O-Ring seals. Medium: water and glycol solutions. Max. percentage of glycol 30 %. Maximum working pressure 10 bar, maximum discharge pressure 2,5 bar. Maximum working temperature 110 °C.

5022 series

Automatic air vent. Threaded connections 1/4" M (3/8", 1/2" M). Chrome plated with metal cap. Brass body and cover, PP float, brass obturator stem, EPDM O-Ring seals. Medium: water and glycol solutions. Max. percentage of glycol 30 %. Maximum working pressure 10 bar, maximum discharge pressure 4 bar. Maximum working temperature 120 °C.

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