Manual air separator for solar thermal systems

251 series

01197/11 GB

Function

The function of the manual air separator is to collect the air that accumulates in the hydraulic circuit of forced circulation solar thermal systems so that it can be eliminated manually.
This prevents the occurrence of problems that could adversely affect the life and efficiency of the system, such as: corrosive processes due to the presence of oxygen, cavitation in circulation pumps, noise and localised overheating.

This particular series of air separators has been specifically designed to work at high temperatures with glycol medium, typical condition of solar thermal systems.

Product range

Code 251093 Manual air separator for solar thermal systems size 3/4" F

Technical specifications

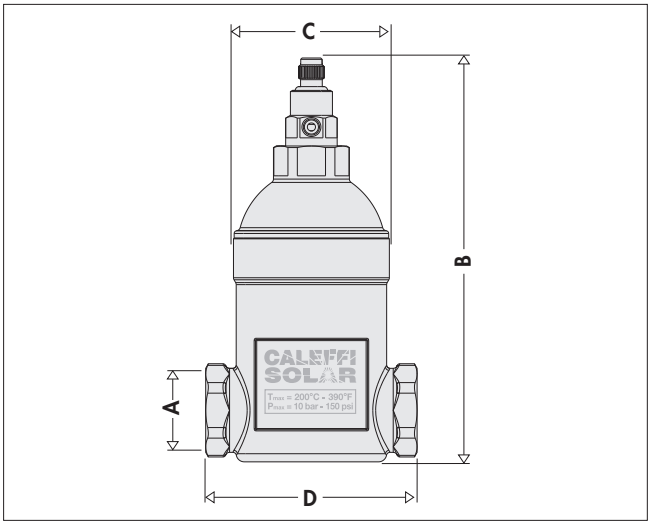
Materials

Body:	brass EN 12165 CW617N
Manual air vent:	brass EN 12165 CW614N
Hydraulic seals:	high-resistance elastomer

Performance

Medium:	water, glycol solutions
Max. percentage of glycol:	50%
Working temperature range:	-30–200°C
Maximum working pressure:	10 bar
Volume of water contained:	180 cm^3
Main connections:	3/4" F
Manual air vent:	1/2" F

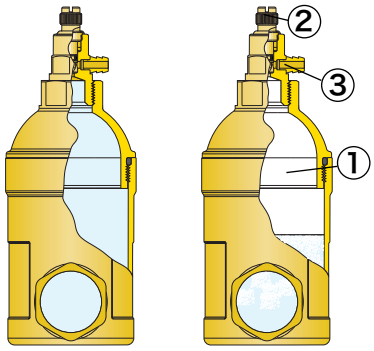
Dimensions



Code	A	B	C	D	Mass (kg)
251093	3/4"	147,5÷149	57,5	78	0,710

Operating principle

The manual air separator has a particularly large passage cross-section that reduces the circulation speed of the water as it passes through, thus allowing any air present in the thermal medium to separate from the water and collect in the upper part of the device (1). A specific manual air vent cock (2) allows to expel the accumulated air through the discharge valve (3), during the system filling phase.



normal operating condition

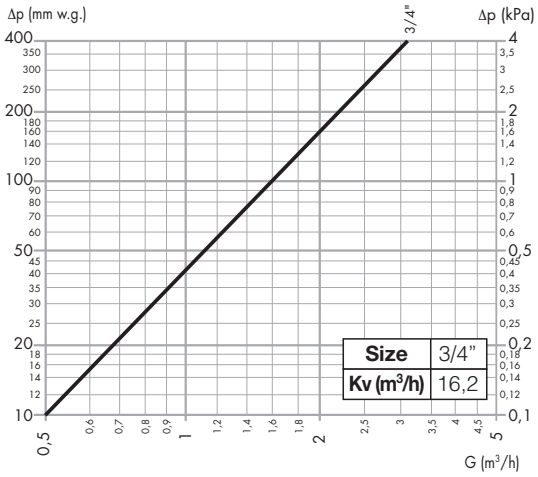
formation of air during operation

Construction details

Resistance to temperature

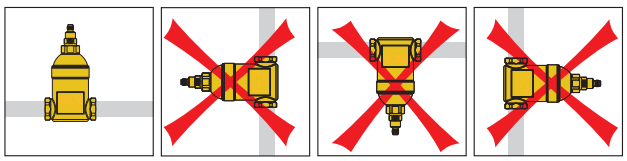
The high performance of this air separator series, requested in solar thermal systems, is guaranteed by the use of particularly temperature-resistant materials.
In fact they allow to keep the air separator functional characteristics with glycol water temperatures of up to 200°C.

Hydraulic characteristics



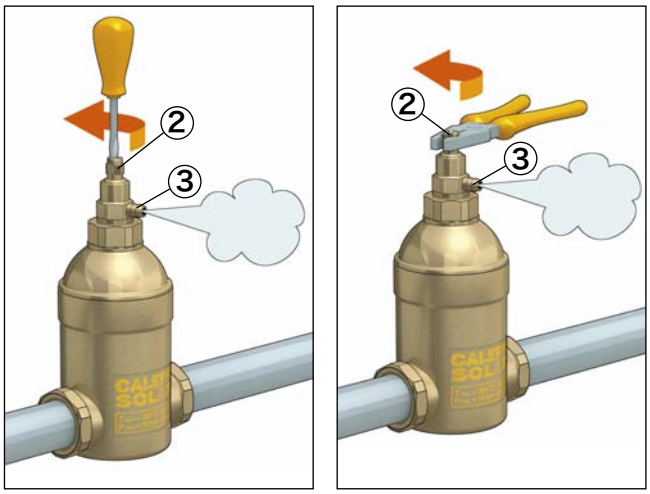
Installation

The manual air separator should always be installed in a vertical position and close to the solar panel outlet.
The flow direction of the thermal medium is not important in manual air separators.

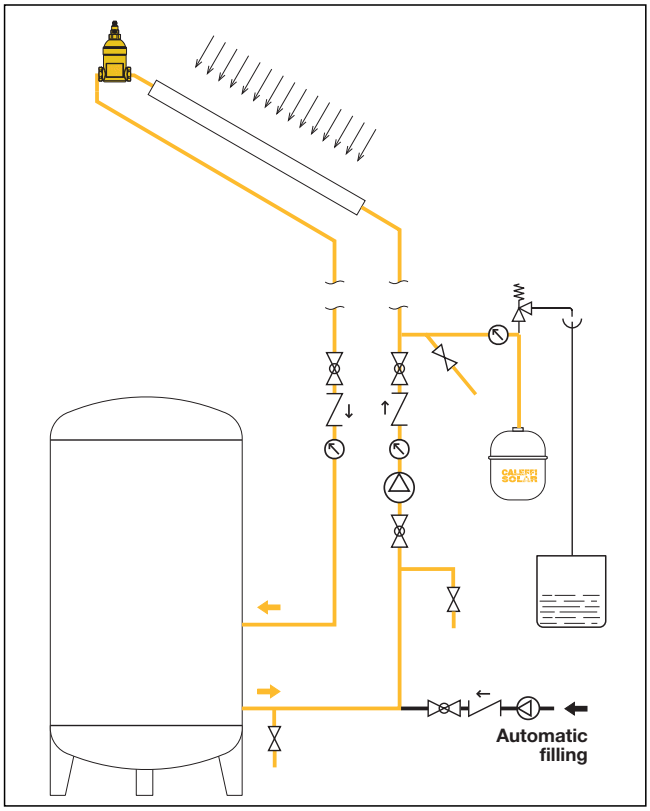


Using the air vent cock

To eliminate the air accumulated in the device, unscrew the air vent cock (2) with a screwdriver or pliers. Screw the air vent cock to the closed position after completing the operation. If this operation has to be performed in a high temperature circuit, do not perform the operation in front of the air vent (3), in order to avoid scalding.



Application diagram



SPECIFICATION SUMMARY

Code 251093

Manual air separator for solar thermal systems. Main connections 3/4" F; manual air vent connection 1/2" F. Brass body. Brass manual air vent cock. High-resistance elastomer hydraulic seals. Volume of water contained 180 cm³. Medium water and glycol solutions; maximum percentage of glycol 50%. Working temperature range -30–200°C. Maximum working pressure 10 bar.

CALEFFI

CALEFFI S.p.A. · S.R.229, N.25 · 28010 Fontaneto d'Agogna (NO) · Italy · Tel. +39 0322 8491 · Fax +39 0322 863723 · www.caleffi.com · info@caleffi.com ·