

SEP4™ 4-in-1 Air, Hydraulic, Dirt and Magnetic Separator

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5495 Series

Installation, commissioning and servicing instructions



Function

The Caleffi SEP4™ combination air, hydraulic, dirt and magnetic separator is a device that, incorporates high performance air and magnetic and non-magnetic dirt removal functionality into the hydraulic separation function which makes the primary and secondary circuits connected to it hydraulically independent, and can be used on hot or chilled water systems. The SEP4™ features an HDPE internal element that combines to continuously and automatically eliminate air micro-bubbles with the simultaneous removal of dirt particles as tiny as 5 microns. The air discharge capacity is very high, with the capability of automatically removing all the air present in the system down to the micro-bubble level. The 4 in 1 high performance functionality of the SEP4™ saves system installation and maintenance costs as there is no need to include separate air and dirt separators. In addition to removing sand and rust impurities, the added magnetic ring provides effective capture of ferrous particles.

Product range

54950 series SEP4™ air, hydraulic, dirt and magnetic separator in steel with union connections, drain and insulation: connections 1", 1-1/4", 1-1/2", 2" NPT female union

54959 series SEP4™ air, hydraulic, dirt and magnetic separator in steel with union connections, drain and insulation: connections 1", 1-1/4", 1-1/2", 2" sweat union



SAFETY INSTRUCTION

This safety alert symbol will be used in this manual to draw attention to safety related instructions. When used, the safety alert symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN A SAFETY HAZARD.**



CAUTION: All work must be performed by qualified personnel trained in the proper application, installation, and maintenance of systems in accordance with all applicable codes and ordinances.



CAUTION: If the SEP4™ is not installed, commissioned and maintained properly, according to the instructions contained in this manual, it may not operate correctly and may endanger the user.



CAUTION: Make sure that all the connecting pipework is water tight.



CAUTION: When making the water connections, make sure that the connecting pipework is not mechanically over-stressed. Over time this could cause breakages, with consequent water losses which, in turn, could cause harm to property and/or people.



CAUTION: Water temperatures higher than 100°F (38°C) can be dangerous. During the installation, commissioning and maintenance of the hydronic separator, take the necessary precautions to ensure that such temperatures do not endanger people.

Leave this manual for the user.

Technical specifications

Materials

Body:	epoxy resin coated steel
Air vent body:	brass EN 12165 CW617N
Air vent hydraulic seal:	EPDM
Air vent float:	PP
Int. element:	HDPE
Drain valve body:	brass EN 12165 CW617N
Magnetic induction of ring system:	2,600 Gauss

Performance

Medium:	water, glycol solution
Max percentage of glycol:	50%
Max working pressure:	150 psi (10 bar)
Temperature range:	without insulation 32-230°F (0-110°C) with insulation 32-210°F (0-100°C)

Connections

Threaded connections:	1", 1 1/4", 1 1/2", 2" NPT F with unions 1", 1 1/4", 1 1/2", 2" sweat with unions
Thermotap well connection:	1/2" F straight thread
Drain cock:	hose connections

Technical specifications of insulation

Material:	Closed-cell expanded PE-X
Thickness:	13/16" (20 mm)
Density:	- Inner part: 1.9 lb/ft ³ (30 kg/m ³) - Outer part: 5.0 lb/ft ³ (80 kg/m ³)
Conductivity (ISO 2581):	- at 32°F (0°C); .16 BTU/in (0.038 W/(m·K) - at 105°F (40°C); .26 BTU/in (0.045 W/(m·K)
Water vapor resistance coefficient (DIN 52615):	> 1,300
Temperature range:	32-212°F (0-100°C)
Fire resistance (DIN 4102):	Class B2

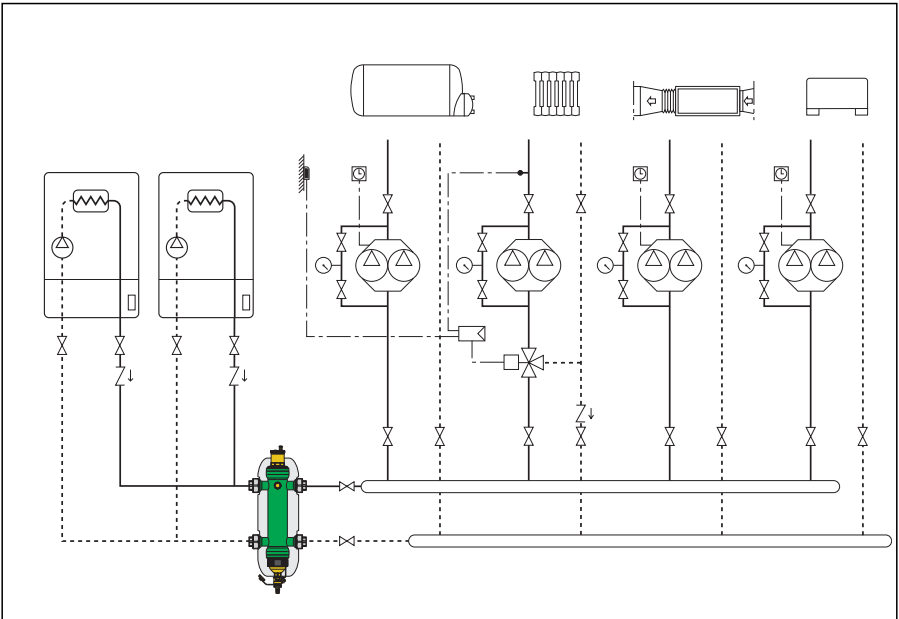
Hydraulic characteristics

The SEP4™ should be sized according to the maximum flow rate at the inlet. The selected value is the primary circuit flow rate, or secondary circuit flow rate, whichever is largest.

Size	1"	1 1/4"	1 1/2"	2"
GPM	11	18	26	37
m ³ /h	2.5	4.0	6.0	8.5
l/s	0.7	1.1	1.6	2.3
Gallons	0.5	0.7	1.3	3.5
liters	2.0	2.6	5.0	13.2

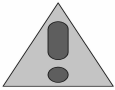
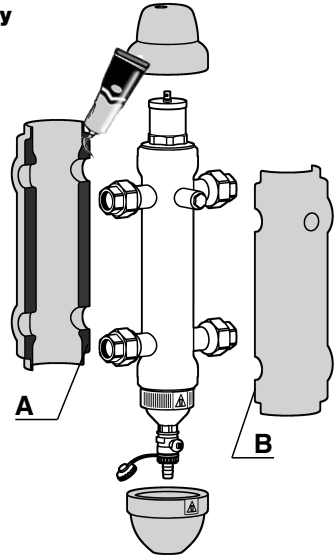
Installation

The SEP4™ should be installed only by qualified personnel in accordance with current local codes and legislation. The SEP4™ is installed between the primary and secondary circuits, always in a vertical position.



Procedure for installation and insulation assembly

1. Remove the two black head covers at the ends.
2. Open the two side sections.
3. Install the separator in the system.
4. For cooling applications, consider using a silicon caulk or sealant by spreading a thin layer of sealant over surfaces A and B.
Wait for the solvent to evaporate (approx. 10 minutes).
Note that once the sealant dries it may be difficult to remove the insulation shell in the future without destroying portions of the insulation.
5. Reassemble the two side sections.
6. Finish the assembly with adhesive tape (not supplied).
7. Complete with the two black head covers.



CAUTION: Corrosion or leakage can cause damage or injury. Periodically inspect for signs of corrosion or leakage. If corrosion or leakage is noted, the vent must be replaced. Failure to follow these instructions could result in property damage and/or personal injury.

Service Instructions

There is no service required for the SEP4™ 4-in-1 Air, Hydraulic, Dirt and Magnetic Separator.



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