



DISCALDIRT® Air & Dirt Separator

546 and NA546 series



546 series



NA546 series
Threaded shown

Function

Air and dirt separators are used to continuously remove the air and debris contained in the hydronic circuits of heating and cooling systems. The air discharge capacity of these devices is very high. They are capable of automatically removing all of the air present in the system down to the micro-bubble level. The DISCALDIRT® air and dirt separator also separates any solid impurities in the system. The impurities collect at the bottom of the device and can be removed through the drain pipe, to which a separately-sourced drain valve can be mounted. The circulation of fully de-aerated and cleaned water enables the equipment to operate under optimum conditions, free from noise, corrosion, localized or mechanical damage.

Product range

- 546 Series DISCALDIRT air and dirt separator in steel with flanged connections:
Size 2", 2 1/2", 3", 4", 5", 6" ANSI
- NA546 Series DISCALDIRT air and dirt separator in steel with flanged connections designed and built in accordance with Section VIII, Division 1 of the ASME Boiler and Pressure Vessel Code and tagged and registered with the National Board of Boiler and Pressure Vessel Inspector; CRN registered:
Size 2", 2 1/2", 3", 4", 5", 6", 8", 10", 12" ANSI
- NA546 Series DISCALDIRT air and dirt separator in steel with threaded connections designed and built in accordance with Section VIII, Division 1 of the ASME Boiler and Pressure Vessel Code and tagged and registered with the National Board of Boiler and Pressure Vessel Inspector; CRN registered:
Size 2", 2 1/2", 3", 4"

Flow rate

Size	2"	2 1/2"	3"	4"	5"
gpm	37.3	63.0	95.0	149.0	259.0
l/s	2.4	4.0	6.0	9.4	16.3

Size	6"	8"	10"	12"
gpm	380.0	625	980	1,410
l/s	24.0	40	62	89

546 and NA546 series

Reference documentation: Tech. broch. 01123/11NA

Technical specification

Materials:
 Body: epoxy resin painted steel
 Automatic air vent body: brass
 Internal element: stainless steel
 Seal: EPDM
 Side drain shutoff valve: brass
 Suitable fluids: water, glycol solution
 Max percentage of glycol: 50%
 Max working pressure: 150 psi (10 bar)
 Temperature range: 32-250°F (0 - 120°C)
 Particle separation capacity: to 5 µm (0.2 mil)

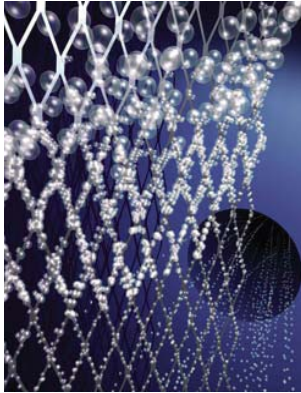
Connections:
 Flanged (ASME and CRN Registered):
 2" - 12" ANSI B 16.5 Class150 RF
 Flanged: 2" - 6" ANSI B 16.5 Class150 RF
 Threaded: (ASME and CRN Registered): 2" - 4"
 Drain Pipe: 2" - 4" : 1" NPT male
 8" - 12" : 2" NPT male

Operating principal

Microbubble air separation

The DISCALDIRT's internal element (1) creates the whirling movement required to facilitate the release of microbubbles and their adhesion to the internal element surfaces.

The bubbles, fusing with each other, increase in size until the hydrostatic thrust overcomes the adhesion force to the mesh. They rise toward the top of the unit from which they are released through a float-operated automatic air vent.

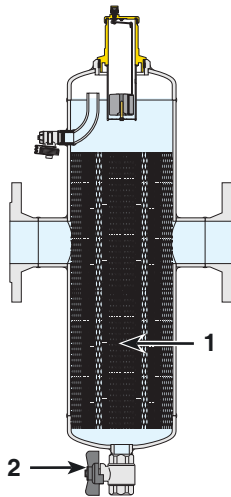


Microparticle dirt separation

Impurities in the fluid upon striking the surfaces of the DISCALDIRT's internal element (1), get separated and drop to the bottom of the body where they collect.

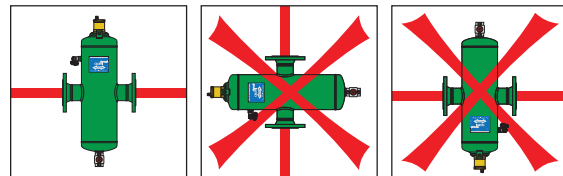
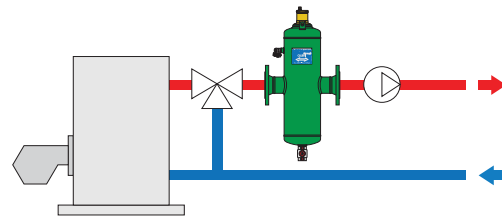
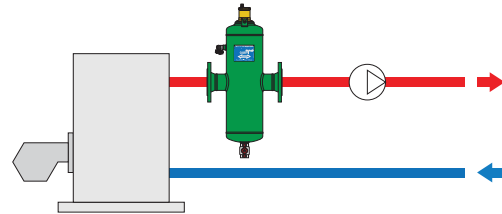
In addition, the large internal volume of DISCALDIRT slows down the flow speed of the fluid thus helping, by gravity, to separate the particles it contains.

The collected impurities are discharged by opening the separately-sourced drain valve (2) with the handle, even with the system operating.

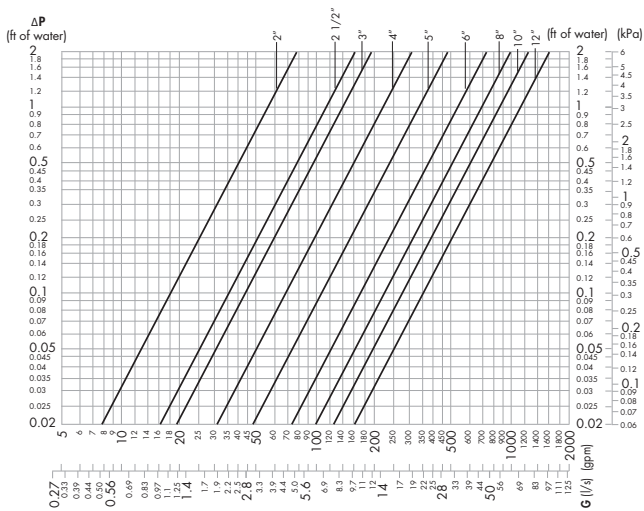


Installation

DISCALDIRT units may be used in both heating and cooling systems, to ensure the progressive removal of air and dirt which is continuously formed. Preferably, the units should be installed after the boiler and on the pump suction side, as these are the points where the formation of microbubbles is greatest. DISCALDIRT air and dirt separators must be installed vertically with the air vent at top. In installation conditions where inspection is not possible, it is recommended that the venting valve cap is replaced by a Caleffi part number R59681 hygroscopic safety vent. The standard replacement cap code number is 59199.



Hydraulic characteristics



We reserve the right to change our products and their relevant technical data, contained in this publication, at any time and without prior notice.

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