

HYDROCAL™ Combination Air, Dirt and Hydro Separator

549 Series With Flanged Connections

Submittal Data 02931 NA - Issue Date 11/2013



Application

The Caleffi HYDROCAL™ combination air, dirt and hydro separator is a device that incorporates high performance air and dirt removal functionality into the hydro 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 HYDROCAL product line combines an inert, glass-reinforced, nylon fiber mesh (not copper) coalescing material to continuously and automatically eliminate air microbubbles, with a proven stainless steel internal element to simultaneously remove 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.

Typical Specification

Furnish and install on the plans and described herein, a Caleffi HYDROCAL as manufactured by Caleffi. Each separator must be designed with an epoxy resin painted steel body, a brass blowdown drain valve and automatic brass air vent with brass shutoff valve. The separator must include ANSI B16.5 Class 150 RF Flanges. Each separator shall be Caleffi model 549 or approved equal. (See product instructions for specific installation information.)

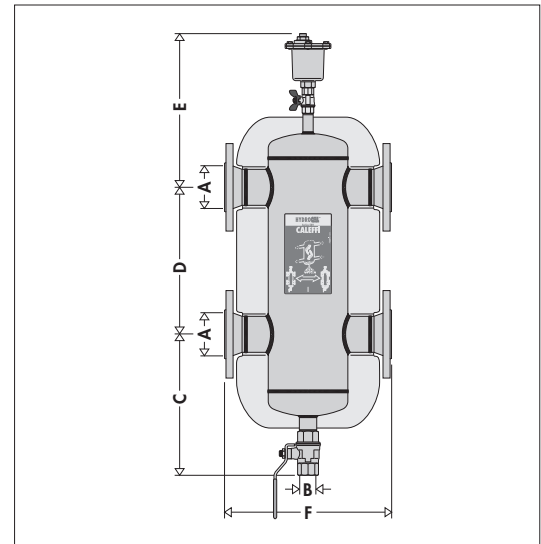
Technical Data

Separator: 2" - 4" ANSI B16.5 CLASS 150 RF FLANGED
 Connections:
 - Air vent relief: 3/4" NPT Female
 - Drain valve: 1 1/4" NPT Female
 Materials:
 - Separator body: Epoxy resin painted steel
 - Air vent body: Brass
 - Shut-off and drain valve body: Brass
 - Int. element: 300 series stainless steel
 - Air vent seal: VITON
 - Air vent float: Stainless steel
 Medium: Water and non-hazardous glycol solutions up to 50%
 Max operating pressure: 150 psi (10 bar)
 Temperature range: 32–250°F (0–120°C)
 Particle separation capacity: to 5 µm

Technical specifications of insulation

Inner part
 Material: rigid closed cell expanded polyurethane foam
 Thickness: 2 3/8" (60 mm)
 Density: 3 lb/ft3 (45 kg/m3)
 Conductivity (ISO 2581): 0.16 BTU/in (0.023 W/(m·K))
 Temperature range: 32–220°F (0–105°C)
 Outer part
 Material: Embossed aluminium
 Thickness: 7-mil (0.70 mm)
 Fire resistance (DIN 4102): Class 1
 Head covers
 Heat formed material: PS

Dimensions



Code	A	B	C	D	E	F
549052A	2"	1 1/4"	13"	13"	15"	14"
549062A	2 1/2"	1 1/4"	13"	13"	15"	14"
549082A	3"	1 1/4"	15"	17 3/4"	17"	18"
549102A	4"	1 1/4"	15"	17 3/4"	17"	18"

Code	Weight (lb)	(kg)	Flow (gpm)	(l/sec)	Volume (gal)	(l)
549052A	73.0	33.1	37.3	2.3	4.0	15.1
549062A	79.0	35.8	63.0	4.0	4.0	15.1
549082A	108.0	49.0	95.5	6.0	8.0	30.3
549102A	117.0	53.1	149.0	9.4	8.0	30.3

Hydraulic characteristics

The HYDROCAL should be sized according to the maximum flow rate at the inlet. The selected design value must be the greatest between the primary circuit and the secondary circuit.

Size	Flow Capacity			
	2"	2 1/2"	3"	4"
gpm	37.3	63.0	95.5	149.0
l/sec.	2.3	4.0	6.0	9.4

We reserve the right to change our products and their relevant technical data, contained in this publication, at any time and without prior notice. Contractors should request production drawings if prefabricating the system.

Job name	Size
Job location	Quantity
Engineer	Approval
Mechanical contractor	Service
Contractor's P.O. No.	Tag No.
Representative	Notes

HYDROCAL™ Combination Air, Dirt and Hydraulic Separator

NA549 ASME/CRN Series With Flanged Connections, 2" - 6"

Submittal Data 02930 NA - Issue Date 09/2014



Application

The Caleffi HYDROCAL™ combination air, dirt and hydro separator is a device that incorporates high performance air and dirt removal functionality into the hydro 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 HYDROCAL features a proven stainless steel 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 3-in-1 high performance functionality of the HYDROCAL saves system installation and maintenance cost as there is no need to include separate air and dirt separators.

Typical Specification

Furnish and install on the plans and described herein, a Caleffi HYDROCAL as manufactured by Caleffi. Each separator must be designed with an epoxy resin painted steel body, 300 series stainless steel internal coalescing mesh, a brass blowdown drain valve and automatic brass air vent with brass shutoff valve. The separator design must include ANSI B16.5 Class 150 RF flanges. The separator must be designed and built in accordance with Section VIII, Div. 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, and stamped for 150 psi (10 bar) working pressure, with ASME U stamp. Each separator shall be Caleffi model NA549 or approved equal. (See product instructions for specific installation information.)

Technical Data

Connections: 2"–6" ANSI B16.5 CLASS 150 RF FLANGED (ASME and CRN Registered)

- Air vent relief: 3/4" NPT Female
- Drain valve: 1 1/4" NPT Female

Materials:

- Separator body: Epoxy resin painted steel
- Air vent body: Brass
- Shut-off and drain valve body: Brass
- Int. element: 300 series stainless steel
- Air vent seal: VITON
- Air vent float: Stainless steel

Medium: Water and non-hazardous glycol solutions up to 50%
Max operating pressure: 150 psi (10 bar)
Max. connection velocity: 4 feet per second (1.2 m/s)
Vessel working temperature range (w/ins): 32–220°F (0–120°C)
Vessel working temperature range (w/o ins): 32–270°F (0–132°C)
Particle separation capacity: to 5 μm (0.2 mil)
Air separation capacity: 100% removal to micro-bubble level

Technical specifications of insulation

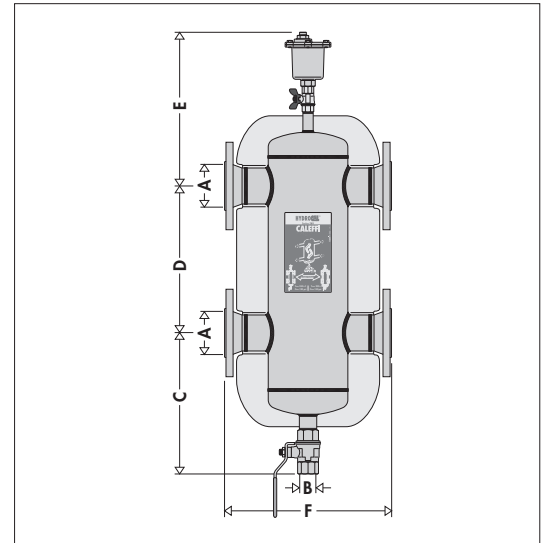
Inner part

Material: rigid closed cell expanded polyurethane foam
Thickness: 2 3/8" (60 mm)
Density: 3 lb/ft³ (45 kg/m³)
Conductivity (ISO 2581): 0.16 BTU-in/hr-ft²-°F (0.023 W/(m-K))
Temperature range: 32–220°F (0–105°C)

Outer part

Material: Embossed aluminium
Thickness: 7-mil (0.70 mm)
Fire resistance (DIN 4102): Class 1
Head covers

Dimensions



Code	A	B	C	D	E	F
NA549052A	2"	1 1/4"	13"	13"	15"	14"
NA549062A	2 1/2"	1 1/4"	13"	13"	15"	14"
NA549082A	3"	1 1/4"	15"	17 3/4"	17"	18"
NA549102A	4"	1 1/4"	15"	17 3/4"	17"	18"
NA548150A*	6"	1 1/4"	15"	22"	19"	25"

Code	Weight (lb)	(kg)	Flow (gpm)	(l/sec)	Volume (gal)	(l)
NA549052A	73.0	33.1	37.3	2.3	4.0	15.1
NA549062A	79.0	35.8	63.0	4.0	4.0	15.1
NA549082A	108.0	49.0	95.5	6.0	8.0	30.3
NA549102A	117.0	53.1	149.0	9.4	8.0	30.3
NA549150A*	231.0	104.8	380.0	24.0	23.2	87.8

*Without insulation.

Hydraulic characteristics

The HYDROCAL should be sized according to the maximum flow rate value at the inlet. The selected design value must be the greatest required flow rate of either the primary circuit or the secondary circuit.

Size	Flow Capacity				
	2"	2 1/2"	3"	4"	6"
gpm	37.3	63.0	95.5	149.0	380.0
l/sec.	2.3	4.0	6.0	9.4	24.0

We reserve the right to change our products and their relevant technical data, contained in this publication, at any time and without prior notice. Contractors should request production drawings if prefabricating

Job name
Job location
Engineer
Mechanical contractor
Contractor's P.O. No.
Representative

Size
Quantity
Approval
Service
Tag No.
Notes