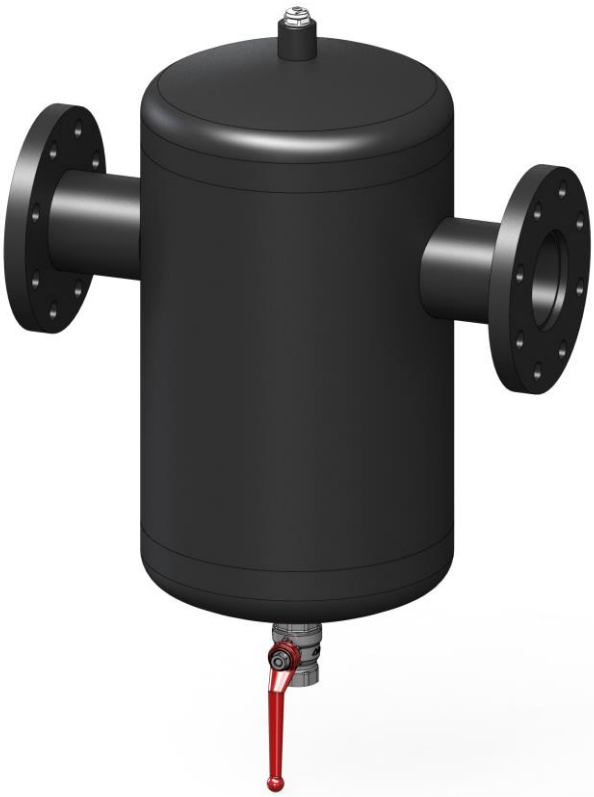
DIRTERM
FLANGED SELF-CLEANING DIRT SEPARATORS

CT2829.1_00
EN
May 2017



- Removes any impurity;
- Ensures system efficiency
- Self-cleaning;
- Bi-directional.

PRODUCTION RANGE

SELF-CLEANING DIRT SEPARATOR

Code	Size	Connections
2829.09.72	DN50	Flanged PN16
2829.10.72	DN65	Flanged PN16
2829.11.72	DN80	Flanged PN16
2829.13.72	DN100	Flanged PN16
2829.14.72	DN125	Flanged PN16
2829.15.72	DN150	Flanged PN16

DESCRIPTION

PURPOSE: The *RBM Dirterm dirt separator* series is used to remove the dirt inside the fluids circulating in heating and cooling systems. The continuous, constant action of these devices helps to eliminate impurities inside the system (sand - sludge - iron oxides - etc. ...) as well as to ensuring a more efficient operation thereof, reducing failures and malfunctions, with consequent advantages for the user in terms of:

- Energy consumption reduction
- Maintenance work reduction
- System management cost reduction

Unlike traditional filters, *Dirterm* dirt separators feature reduced head losses, the ability to separate and remove much smaller particles and are self-cleaning (just open the purge valve to remove accumulated dirt, even with the system running).

OPERATING PRINCIPLE:
Through its effective, constant action, *Dirterm* collects all the impurities present in the system (resulting both from decantation and the collision with the double internal septum), preventing them from circulating within it, thus avoiding wear and damage of all the components making up the system.
Dirt separators may allow the elimination of very small-sized particles that traditional purification filters are not able to eliminate.
Maintenance operations are quick and very easy:
The impurities stopped by the filter are accumulated on its bottom as long as the opening of the specific discharge valve allows the expulsion thereof.

CAUTIONS:
In order to function properly, the dirt separator must be installed in a **vertical position** with the impurity drain valve facing downwards.

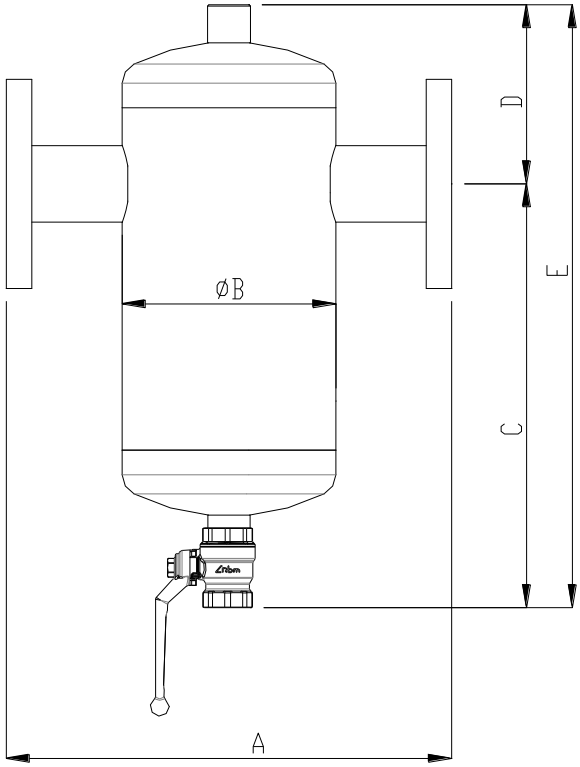
CONSTRUCTION FEATURES

• Body:	Steel painted on the outside
• Elastomers used:	EPDM PEROX and NBR
• Connections	Flanged PN16

TECHNICAL FEATURES

• Usable fluid:	Water Water + glycol 30%
• Maximum fluid temperature:	110°C
• Maximum operating pressure:	10 Bar (1000 kPa)

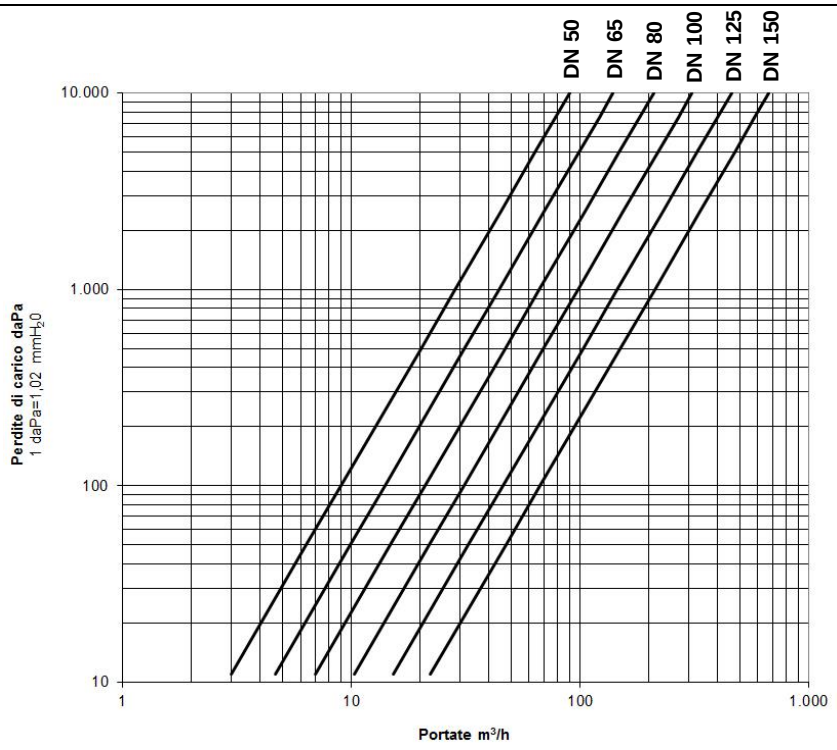
DIMENSIONAL FEATURES



Code	Size	A [mm]	Ø B [mm]	C [mm]	D [mm]	E [mm]	Weight [kg]
2829.09.72	DN50	350	168	334	148	482	14
2829.10.72	DN65	350	168	334	148	482	15
2829.11.72	DN80	470	273	402.5	216	618.5	25
2829.13.72	DN100	470	273	402.5	216	618.5	27
2829.14.72	DN125	635	323.9	501.5	270	771.5	53
2829.15.72	DN150	635	323.9	501.5	270	771.5	56

FLUID DYNAMICS FEATURES

Flow rate diagram - pressure drop



Size	DN50	DN65	DN80	DN100	DN125	DN150
Kv (m^3/h)	90.00	140.00	210.00	310.00	460.00	670.00

It is recommended to keep the maximum speed of the fluid in the pipe within the value of 1.2 m/s. Higher speeds might generate noise.

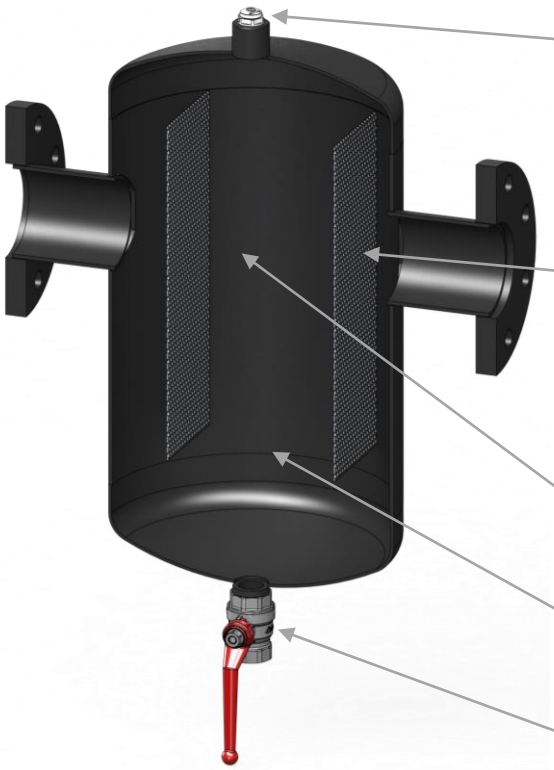
The table below shows the flow rates to meet the recommended speed of 1.2 m/s.

DN	Size	l/s	m^3/h
50	2”	2.36	8.48
65	2”1/2	3.98	14.34
80	3”	6.03	21.71
100	4”	9.42	33.93
125	5”	14.73	53.01
150	6”	21.21	76.34

STRENGTHS / WORKING PRINCIPLE

RBM Dirterm dirt separators feature a very solid structure, in which we can distinguish:

- a double perforated **flow breaker septum**;
- a **decantation chamber**;
- an **accumulation zone**.



Manual air venting valve:
This can be used to eliminate air that was not expelled during refill, or micro-bubbles that may form following processes that occur during the normal operation of the system.

Double flow breaker septum:
Consisting of 2 perforated **steel** sheets positioned at the flange inlets.

Designed to minimise the possibility of impurities running through, it offers little resistance to the flow passage (characterised by **very small head loss**). It does not hamper the dirt descent into the accumulation zone, so dirt particles do not risk being carried away by the flow running towards the dirt separator outlet.

Decantation chamber:
The sudden section increase slows down the inlet flow, thereby favouring the decantation of dirt particles.

Accumulation zone:
Large and very far from the flow passage, resulting in less frequent maintenance work.

Purge valve.

INSTALLATION GUIDE

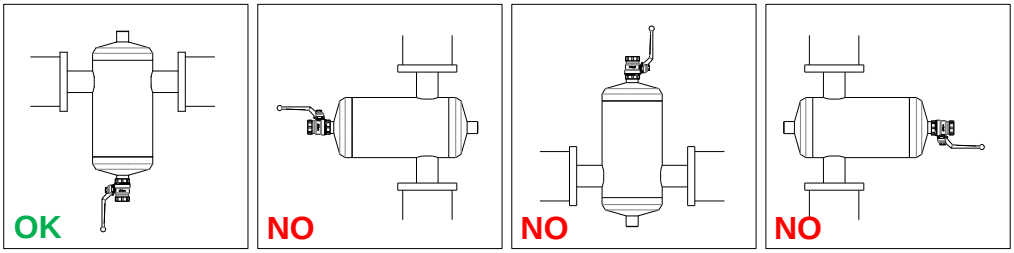
- It is recommended to install *Dirterm* on the primary circuit return **(boiler inlet)** and in any case upstream of the devices that it must protect (circulators, exchangers, etc.).
To allow subsequent maintenance work, make sure there is enough space around *Dirterm*.

- Empty the system and locate the return pipe. We suggest cutting the pipe by providing a suitable template for the size of the cut to be performed. Refer to the "Dimensional Features" section of this technical sheet to identify the exact length of the pipe to be cut (see the size indicated in Table A);

- Install **shut-off valves** upstream and downstream of the filter, in order to allow scheduled maintenance work and filter cleaning to be performed;

- Install *Dirterm* making sure that all connections are properly aligned.
Dirterm is a **bi-directional component**, therefore it has the same efficiency irrespective of the direction of the flow running through it. Screw the discharge valve to the bottom of the filter.

- In order to function properly, the *Dirterm* product must be installed in a vertical position (on **horizontal** pipes), with the impurity drain valve facing downwards.



- After completing the installation, make sure that there are no water leaks or other leakage with the shut-off valves fully open.

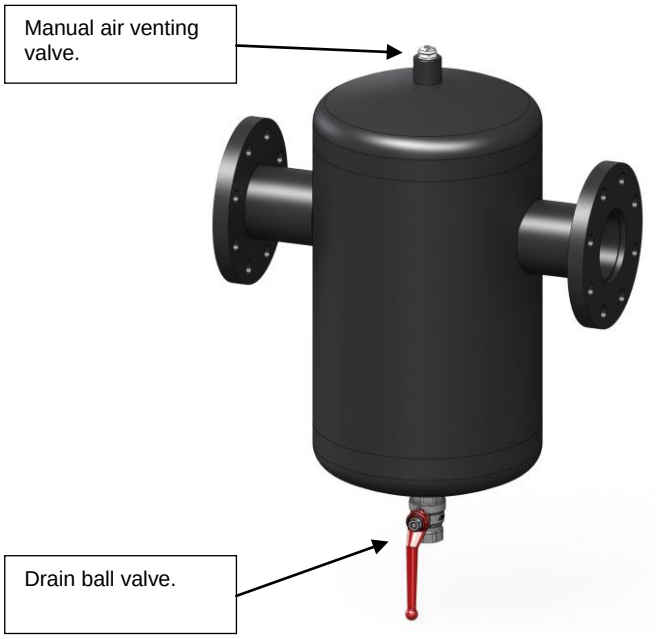
MAINTENANCE GUIDE

ROUTINE MAINTENANCE:
Filter purging can be performed with the system running, acting on the drain ball valve.

It is important to **perform the purge operation** at least **once a year**.

In case of first application, perform the first purge after a month.

In the upper part of the filter there is a manual air vent valve.
This can be used to eliminate air that was not expelled during refill, or micro-bubbles that may form following processes that occur during the normal operation of the system or during maintenance operations.



SPECIFICATION ITEMS

2829 SERIES
Filter for self-cleaning flanged dirt separator/deaerator model *Dirterm*, complete with discharge ball valve. Steel body painted on the outside EPDM PEROX hydraulic seals. PN16 flanged connections. The fluid can be used with water and water with glycol added to it, max. 30%. Maximum operating pressure 10 bar. Maximum operating temperature 110 °C. Available sizes DN50 ÷ DN150.

RBM Spa
Via S.Giuseppe, 1
25075 Nave (Brescia) Italy
Tel. 030-2537211 Fax 030-2531798
E-mail: info@rbm.eu – www.rbm.eu