

DIRTMAG® PRO dirt separator with dual magnets

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5463AM Series

Installation, commissioning and servicing instructions



Function

In heating and air conditioning control systems, the circulation of water containing impurities may result in rapid wear and damage to components such as pumps and control valves. It also causes blockages in the heat exchangers, heating elements and pipes, resulting in a lower thermal efficiency within the system. The dirt separator removes these dirt particles from the fluid, collecting them in a large collection chamber, from which they can be drained even while the system is in operation. This device is capable of efficiently removing even the smallest particles, with extremely limited head loss.

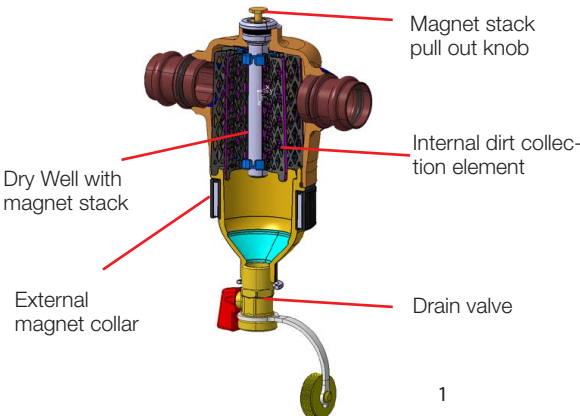
The DIRTMAG® PRO dirt separator with dual magnets extends the Caleffi dirt separator family by adding a powerful neodymium magnetic stack inside a drywell inserted into the top of the body within the flow stream. Additional magnetic flux increases the speed of magnetite (ferrous impurities) removal from the hydronic fluid for maximum protection.

Insulation shells are available separately.

This item is designed for use in closed hydronic systems. Do not use this item in plumbing applications. It does not meet the low-lead plumbing standards of U.S. and Canada.

Product range

- 5463AM Series DIRTMAG PRO dirt separator with dual magnets with NPT female threaded, sweat, and press connections sizes 1" - 2"
- CBN5462 Series Insulation shells for DIRTMAG PRO Series 5463AM, sizes 1" - 2".





SAFETY INSTRUCTION / CONSIGNE DE SÉCURITÉ

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.**

Ce symbole d'avertissement servira dans ce manuel à attirer l'attention sur la sécurité concernant instructions. Lorsqu'il est utilisé, ce symbole signifie **ATTENTION ! DEVENEZ ALERTE ! VOTRE SÉCURITÉ EST EN JEU ! NE PAS SUIVRE CES INSTRUCTIONS PEUT PROVOQUER UN RISQUE DE SÉCURITÉ.**



WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

AVERTISSEMENT: Ce produit peut vous exposer à des produits chimiques comme le plomb, qui est connu dans l'État de Californie pour causer le cancer, dommages à la naissance ou autre. Pour plus d'informations rendez-vous www.P65Warnings.ca.gov.



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.

ATTENTION: *Tous les travaux doivent être effectués par du personnel qualifié formé à la bonne application, installation et maintenance des systèmes conformément aux codes et règlements locaux.*



CAUTION: If the dirt separator 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.

ATTENTION: *Le séparateur de saletés n'est pas installé, mis en service et entretenu correctement, selon les instructions contenues dans ce manuel, il peut ne pas fonctionner correctement et peut mettre en danger l'utilisateur.*



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

ATTENTION: *S'assurer que tous les raccords sont étanches.*



CAUTION: When making the water connections, make sure that the dirt separator 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.

ATTENTION: *Lorsque vous effectuez les raccords d'eau, assurez-vous que la tuyauterie reliant disconnecte séparateur de saletés n'est pas mécaniquement des overstressed. Au fil du temps, ceci pourrait causer des ruptures, avec pour conséquence des pertes en eau qui, à leur tour, peuvent causer des dommages à la propriété et/ou les gens.*



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

ATTENTION: *Les températures de l'eau supérieure à 100°F peut être dangereux. Au cours de l'installation, mise en service et l'entretien de le séparateur de saletés, prendre les précautions nécessaires afin de s'assurer que de telles températures ne compromettent pas les gens.*



WARNING: Caleffi shall not be liable for damages resulting from stress corrosion, misapplication or misuse of its products.

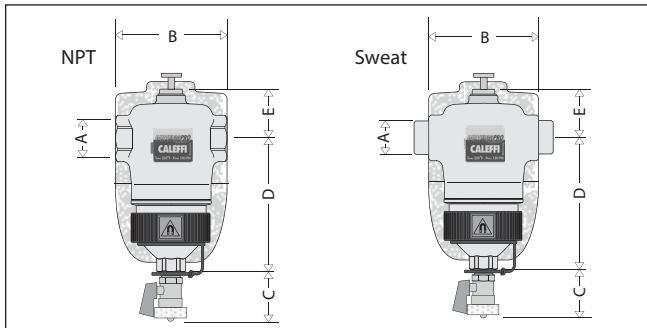
AVERTISSEMENT: *Caleffi ne sera pas responsable des dommages résultant de la corrosion sous tension, d'une mauvaise application ou d'une mauvaise utilisation de ses produits.*

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Technical specifications

Connections:	- Main:	1", 1 1/4", 1 1/2", 2" NPT female 1", 1 1/4", 1 1/2", 2" sweat
	- Top magnet probe drywell:	1", 1 1/4", 1 1/2", 2" press 1/2" NPT female
	- Drain:	3/4" garden hose connection vertical: hose connection
	- Lay length (press connections):	size 1 inch: 4 3/4" size 1 1/4 inch: 5 1/8" size 1 1/2 inch: 5 1/4" size 2 inch: 5 5/8"
Materials:	- Body, dirt collection chamber:	brass
	- Internal element:	glass reinforced nylon PA66G30
	- Hydraulic seal:	peroxide-cured EPDM
	- Drain valve:	brass
	- Magnets:	neodymium rare-earth
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)
Ferrous impurities separation efficiency:		100%

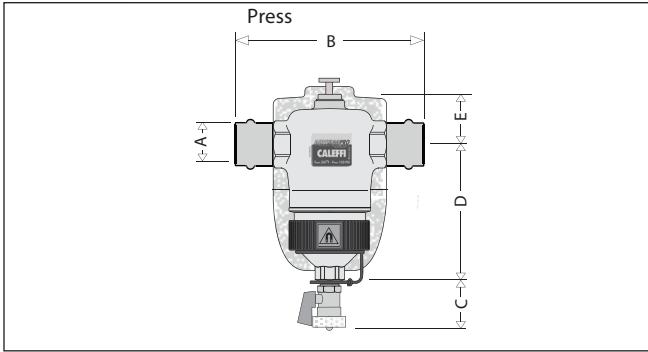
Dimensions



Code	A	B	C	D	E	Wt. lb (kg)
546306AM	1" FNPT	4 ⁵ / ₁₆ "	1 ¹ / ₄ "	5"	2"	4.7 (2.1)
546328AM	1" SWT	5 ¹ / ₁₆ "	1 ¹ / ₄ "	5"	2"	4.7 (2.19)
546307AM	1 ¹ / ₄ " FNPT	4 ⁷ / ₈ "	1 ¹ / ₄ "	6"	2"	5.8 (2.6)
546335AM	1 ¹ / ₄ " SWT	5 ³ / ₁₆ "	1 ¹ / ₄ "	6"	2"	4.7 (2.1)
546308AM	1 ¹ / ₂ " FNPT	4 ⁷ / ₈ "	1 ¹ / ₄ "	6"	2"	6.7 (3.0)
546341AM	1 ¹ / ₂ " SWT	5 ³ / ₄ "	1 ¹ / ₄ "	6"	2"	5.4 (2.4)
546309AM	2" FNPT	5 ¹ / ₈ "	1 ¹ / ₄ "	6"	2"	6.7 (3.0)
546354AM	2" SWT	6 ¹ / ₈ "	1 ¹ / ₄ "	6"	2"	6.0 (2.7)

The magnet stack is 4¹/₂" (115 mm) long. The minimum required space to extract the magnet for removing collected ferrous impurities (magnetite) is 4³/₄" (120 mm).

Dimensions

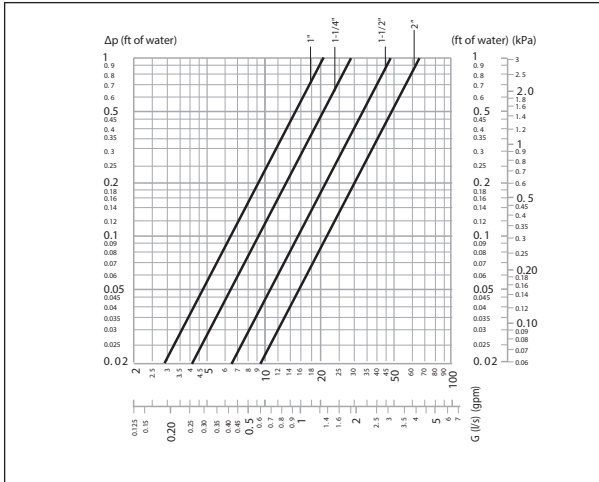


Code	A	B	C	D	E	Wt. lb (kg)
546366AM	1" press	6 3/16"	1 1/4"	5"	2"	4.5 (2.0)
546367AM	1 1/4" press	7 7/16"	1 1/4"	6"	2"	5.6 (2.5)
546368AM	1 1/2" press	8"	1 1/4"	6"	2"	7.0 (3.2)
546369AM	2" press	8 1/2"	1 1/4"	6"	2"	7.0 (3.2)

Lay length:
 size 1 inch: 4 3/4"
 size 1 1/4 inch: 5 1/8"
 size 1 1/2 inch: 5 1/4"
 size 2 inch: 5 5/8"

The magnet stack is 4 1/2" (115 mm) long. The minimum required space to extract the magnet for removing collected ferrous impurities (magnetite) is 3 3/4" (120 mm).

Hydraulic characteristics

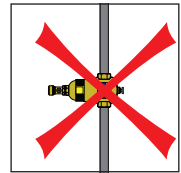
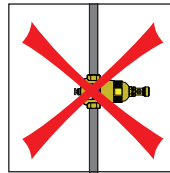
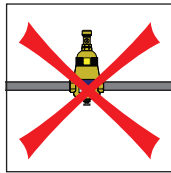
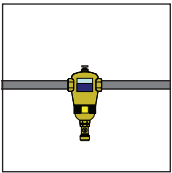
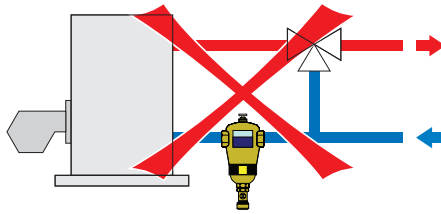
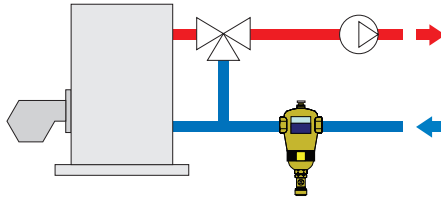
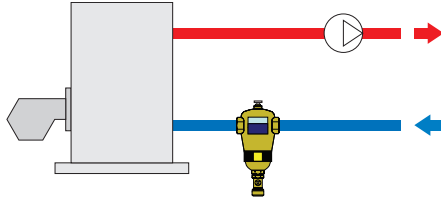


ft of water x .433 = psi

	MAX. FLOW RATE			
Size	1"	1 1/4"	1 1/2"	2"
GPM	14	21	31	54
Cv	32	45	69	104

Installation

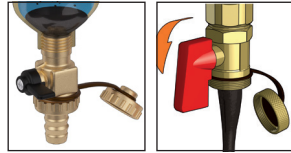
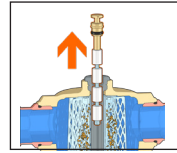
The dirt separator must always be installed in a vertical position, preferably on the return circuit upstream of the boiler (or chiller). This enables it to intercept dirt particles already present in the circuit, particularly when it is first started, before they reach the boiler (or chiller). Flow direction for the DIRTMAG PRO dirt separators is bi-directional; flow in either direction is permitted.




Draining off dirt and ferrous impurities

The dirt separator collection chamber has a drain valve. Using the handle provided it is possible to drain off the accumulated dirt particles without removing the element from the fluid.

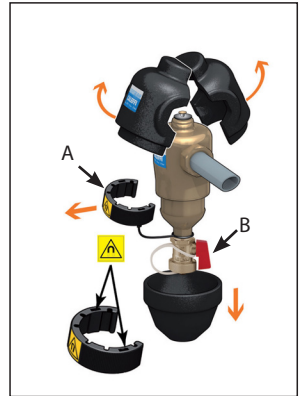
For the DIRTMAG PRO, captured impurities are easily flushed by unclamping the magnetic collar, pulling out the flexible magnet stack from the top-mounted brass dry-well and opening the drain valve. Allow for a minimum 4¾ inch space above the separator to completely remove the magnet stack. Aided by the system pressure, the dirt and ferrous impurities, including magnetite, flushes out quickly and effectively.



Procedure for removing insulation and draining dirt particles in the DIRTMAG PRO 5463AM series

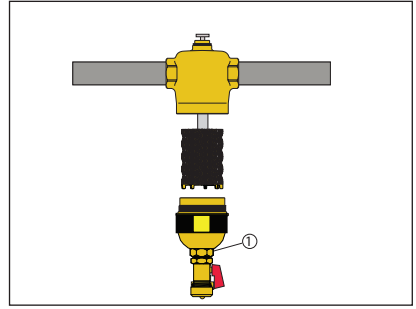
WARNING: The symbol  shown on the removable ring (A) indicates the presence of magnets that generate a strong magnetic field. This could cause damage to electronic devices kept in its proximity.

1. Turn off circulator
2. Remove the ring (A) containing the two magnets and pull out the flexible magnetic stack from the top drywell.
3. Open the ball shut-off valve (B) to drain the accumulated dirt and ferrous impurity particles.



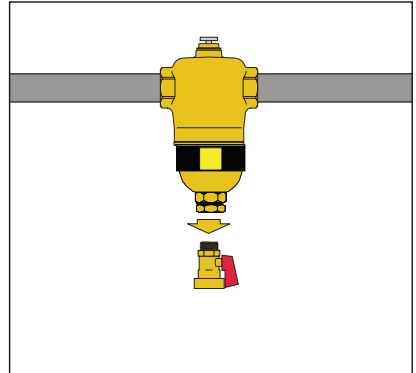
Maintenance

To perform annual inspection and maintenance, if needed, simply use a 26 mm hexagon wrench (1) to unscrew the dirt collection chamber, of the DIRTMAG PRO, to which the inner mesh element is connected for removal and cleaning.



Bottom connection

The DIRTMAG PRO comes complete with a drain valve installed on the bottom port, Caleffi code 538402 FD.





Safety

The dirt separator must be installed by a licensed plumber in accordance with national regulations and/or relevant local requirements.

Make sure that all connecting joints are water tight.

When making pipe connections take care not to damage the thread in the body of the valve by over tightening. Take care not to apply too much force to the body of the valve when making pipe connections.

Water temperatures greater than 120°F may cause serious burns. When installing, using and maintaining dirt separators take appropriate measure to ensure that these temperatures do not cause harm to persons.

LEAVE THIS MANUAL WITH THE USER.

Laissez ce manuel à la disposition de l'utilisateur.



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