

CalMag HF2 Filter Installation Instructions



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CALMAG HF2 FILTER 22mm

Why fit a CalMag filter? Radiator panels provide the largest surface area of a central heating system where they act as heat emitters. They are usually made of mild steel, which is highly reactive to corrosion. Even with a quality corrosion inhibitor installed, low levels of corrosion can occur. In the absence of air this is usually black magnetite, which is magnetic in nature and which can therefore be captured with a magnet. Although magnetite is seven times heavier than water and quite happy to sit in the bottom of the radiator from whence it came, some particles are dispersed around the system by the flow. If a magnetic filter does not collect these particles, they will surely end up trapped in the next device with electro-magnetic properties; the circulator pump where they will cause premature wear. The magnetic filter can also double as a sampling point to analyse the system water, or become the treatment point for liquid chemical additives. The table below shows some water conditions and suggested remedial action that can be determined from visual inspection of the contents of the filter canister:-

Water Condition	Suggested Remedial Action
Clear water, no magnetite	System appears to be corrosion free - inspect annually. Top up inhibitor every one to three years
Clear water, magnetite build up	System is corroding. Clean filter, add inhibitor, inspect every one to three months
Black water, magnetite build up	System is corroding badly. Clean the system - consider Power Flushing, then add inhibitor on final fill
Orange water, no magnetite	System is corroding due to ingress of air - investigate mechanical fault then clean the system then add inhibitor on final fill
Orange water, magnetite build up	System is corroding due to ingress of air and likely absence of inhibitor. Investigate mechanical fault. Clean the system - consider Power Flushing, then add inhibitor on final fill

Please retain these instructions for future use.

Do's:

- Install the filter upright to enable it to be fully evacuated of air during commissioning. The inlet and outlet can also be swapped to suit.
- Where the filter is fitted to the metallic building structure, Earth bonding continuity is required around it. All bonding connections must be accessible and labelled "Safety Electrical Connection - Do Not Remove".
- Service the filter annually (at boiler inspection) to remove any collected debris.
- Use the filter in conjunction with a scale and corrosion inhibitor.
- The inlet/outlet valves have PTFE valve seats, which can be initially stiff. (Operate with the hex end of the service spanner to loosen for hand operation:)

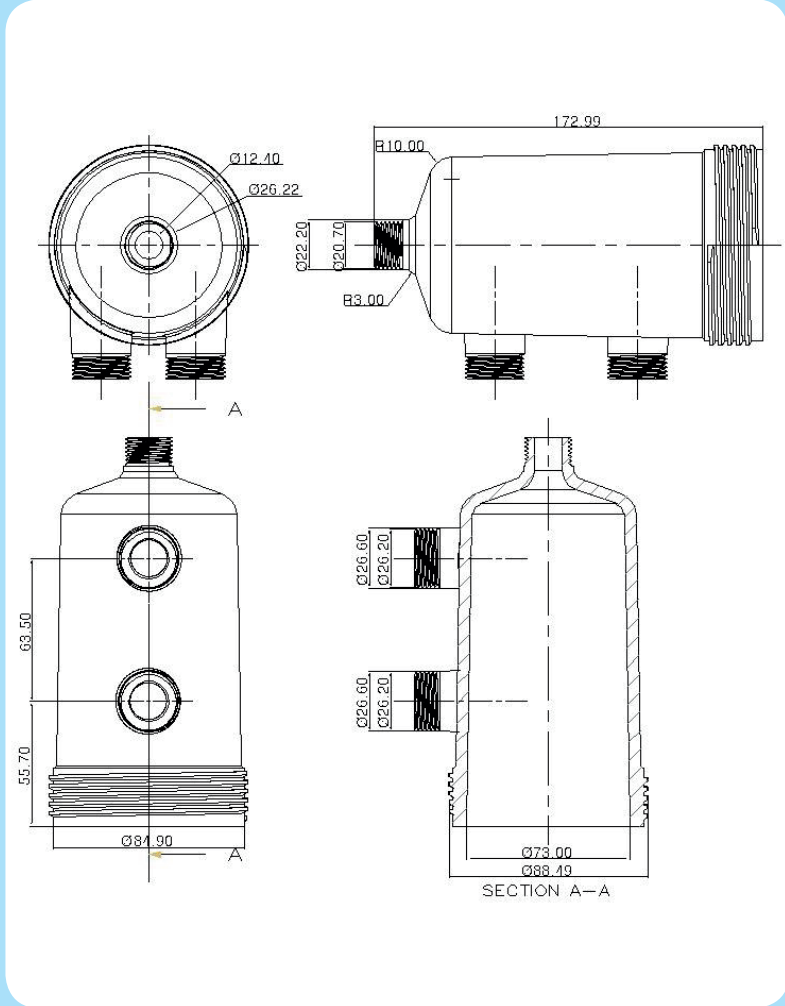


- When using the key/cap to bleed air from the system make sure you have a bucket handy to catch the spill. Screw key/cap onto drain valve as a drip cover.

Don'ts:

- Magnets may affect or interfere with sensitive mechanical and electronic instruments such as heart pacemakers, computers / magnetic media and watches. Always keep magnets at least 300mm (1 foot) away from such equipment.
- NEVER close the INLET or OUTLET isolation valves, OR UNDO the lid when the pump is running!
- Don't get scalded! Allow the system to cool before operating the device.
- Don't fit the device too close to the boiler - allow at least 300mm gap and sufficient space to service the unit.
- Don't tighten the lid with the service spanner - over tightening could damage the unit.
- Don't attempt to tighten (or loosen) the drain valve's union with the canister as this has been fastened into position with Thread Lock to form a permanent watertight seal. Consequently this is NOT a user serviceable connection.

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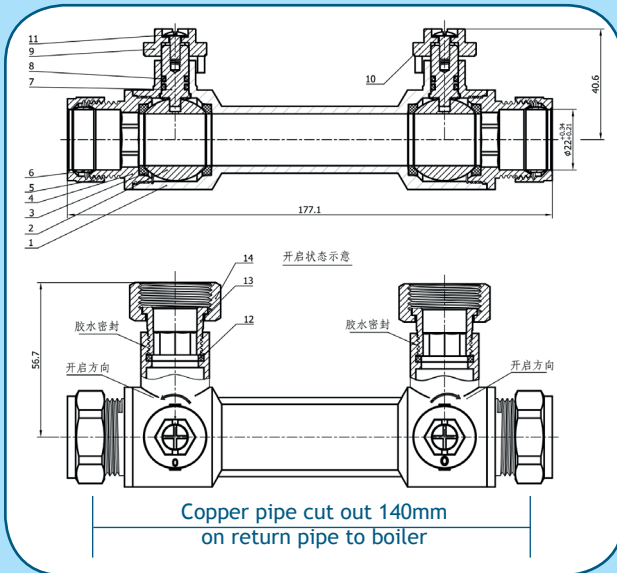
Only a competent person such as a qualified heating engineer should install the device.

1. Locate a suitable site for the filter to allow access and servicing. We recommend that you fit it on the return. Do not fit it between the boiler and the overflow on open vented systems.
2. Release heating system pressure and drain the pipe-run where the filter is to be located. (It may be necessary to drain the whole system).
3. **Vertical pipe runs:** measure and mark a 140mm section and remove the marked section with a rotary tube cutter.

ISOLATING VALVES SHOULD BE ACCESSIBLE IN ORDER TO ISOLATE THE UNIT

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4. Fit the manifold into cut out, and tighten the compression fittings.
5. Loosely secure the canister to the manifold ensuring the canister is upright and square. Don't fit the washers at this point as you are pre-assembling the filter to assess it for fit. Providing everything lines up proceed to the next step, otherwise make any necessary adjustments.
6. Loosen off the valve flange nuts and insert the washers. Thoroughly tighten the flange nuts, taking care not to over tighten. DO NOT leave the washers out.
Tighten the lid only by hand. Making sure the 'O' ring is still in position.
7. Refill the heating system, ensuring the inlet and outlet valves are both in the OPEN position, with the drain valve in the CLOSED position and the bleed screw on top of the unit open, when water is seen coming from bleed valve close the screw.
8. Start the heating system. Bleed the filter again after the system has come up to temperature. Take care when doing so as the water expelled will be hot. Observe the unit, checking that there are no leaks.
9. The unit has now been successfully commissioned. If fitted correctly it will be silent in operation. We suggest its serviced annually to remove any particulate matter that it has collected. This could be done at the same time the boiler is serviced.

NOTE: When the 2 isolating valves are off the system can be run as the filter has been bypassed.

Annual Servicing Requirement:

1. Before commencing any service work, turn off the boiler and isolate the electrical supply. Wait for the temperature to cool before undertaking any work to avoid scalding. Turn both isolating valves to the OFF position. Have a bucket ready to collect spillage and OPEN the drain valve to release internal pressure. CLOSE the drain valve again to free your hand.
2. Open the lid by turning anticlockwise using the service spanner. Remove by lifting upwards to withdraw the magnet and plastic sleeve.
3. Withdraw the plastic magnet sleeve. Some debris may stick to the non-magnetic sleeve but the remaining debris will fall to the bottom of the canister.
4. Have a bucket ready to collect spillage and reopen the drain valve to allow the debris to escape. Rinse out the canister with fresh water and clean the snorkel, lid, O-ring, magnet and mesh before reassembling.
5. Tighten the lid retaining-ring only by hand. Ensure the inlet and outlet valves are both in the OPEN position, with the drain valve in the CLOSED position. Refill the system to recommended pressure and bleed the unit using the bleed screw on top.
6. Have a bucket ready to collect spillage and open the drain valve to purge air from the filter. Close the valve once water begins to flow. Bleed the filter again after the system has come up to temperature. Take care when doing so as the water expelled will be hot. Observe the unit, checking that there are no leaks.

Chemical Dosing:

- At step 4 in servicing, carefully pour a bottle of water treatment corrosion and scale inhibitor (sufficient capacity is available to hold 500ml) into the canister. Replace lid with plastic sleeve covering the magnet.
- Continue with step 5 in servicing.
- Allow the system to circulate for 5 minutes to disperse the chemical treatment.
- Continue with step 6 in servicing to complete the operation.

Warranty:

The 5 year limited warranty is subject to the following terms and conditions:

- I. That the filter has been correctly installed and serviced in accordance with the instructions herein provided. The warranty does not cover damage or defects caused as a result of im proper installation or servicing.
- II. That the filter has not been tampered with or misused.
- III. That the filter has not been modified in any way.
- IV. That the filter's label and unique serial number has not been removed.
- V. That the filter is returned at the purchaser's own cost together with proof of purchase in the form of an original receipt or invoice (which will be returned).
- VI. The sole and exclusive remedy under this warranty is for the repair or replacement of the filter and no other remedy including but not limited to incidental or consequential damage or loss, irrespective of nature shall be available.
- VII. This warranty will not cover any associated installation costs incurred as a result of the filter being defective.
- VIII. Our decision on matters relating to warranty claims shall be final.

This warranty does not affect your statutory rights.

Phone: 01535 210320

Fax: 01535 210321

Email: sales@calmagltd.com

Web: www.calmagltd.com



Calmag Ltd
Riverview Buildings, Bradford Road,
Riddlesden, Keighley, West Yorkshire, BD20 5JH