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(To suit 1 1/2"-12" port sizes)



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While every effort has been made to ensure the accuracy of the information in this publication please note that specifications may change without notice. v4

# BoilerMag<sup>XL</sup>

Ultimate Heating System Protection

## Installation and Servicing Instructions



# 1 Introduction

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## 1.1 Range of application

The BoilerMagXL follows on from the standard Boilermag family and has all the same incredible benefits. The unit was developed to suit larger residential boiler systems and small commercial systems.

BoilerMagXL is designed to be installed on the return line to the boiler and will ensure that even sub micron magnetic and paramagnetic particles are removed before they can cause any expensive damage.

For further information relating to the standard benefits and operation please refer to the downloadable Boilermag brochure on our website – [www.boilermag.com](http://www.boilermag.com)

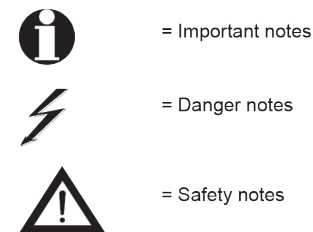
The filter is not to be used with a corrosive or aggressive medium.

**Pressure rating** – Standard filter is designed and tested to operate at 174 psi / 12 bar max line pressure. (145 psi / 10 bar max line pressure if using the automatic air vent option)

**Temperature rating** – Standard filter is designed and tested to operate between 41°F to 302°F / 5°C to 150°C (If using automatic air vent option the maximum operating temperature is 212°F / 110°C).

**Warranty** - To qualify for a 10 year warranty complete and return the card enclosed.

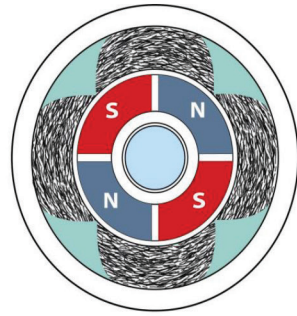
## 1.2 Used symbols



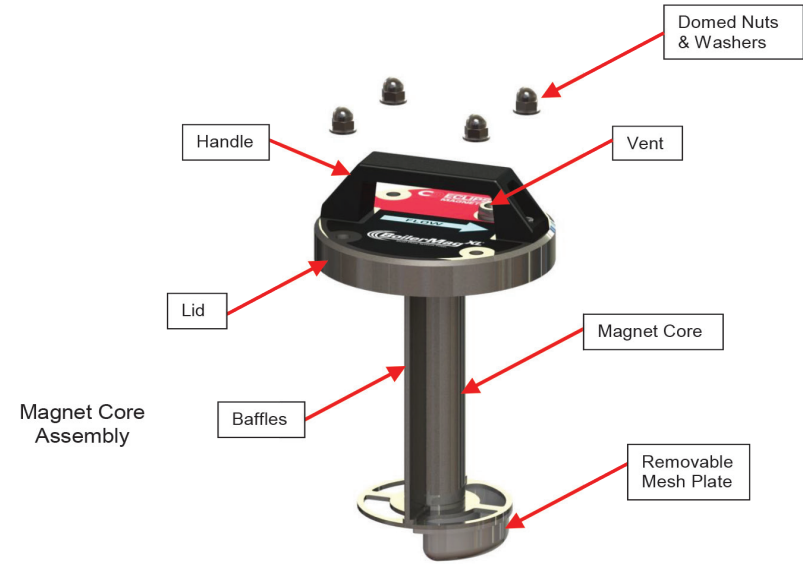
## 1.3 Legal basis

This device corresponds to the machine guideline 206/42/EC.

# 1.4 Overview of BoilerMagXL



Details of magnetic circuits showing open flow path through bowl even when core is fully contaminated.



Magnet Core Assembly



Filter Body



Magnet Core Assembly



Filter Body

## 2 Technical data

### 2.1 Performance data

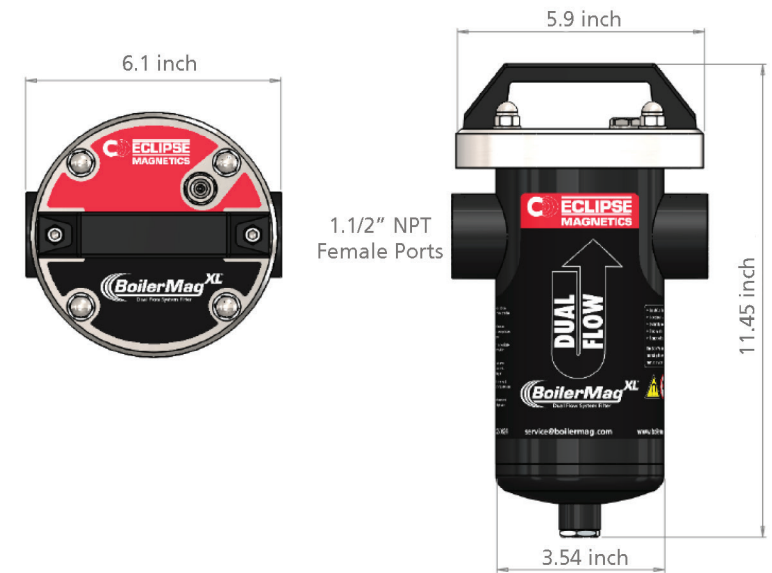
<b>Design Temperature:</b>	41°F to 302 °F / 5 to 150°C (Max 212°F / 110°C if using automatic air vent)
<b>Maximum Operating Pressure:</b>	174 psi / 12 bar (Max 145psi / 10 bar if using automatic air vent)
<b>Vessel Construction:</b>	Stainless steel
<b>Magnetic Material:</b>	NdFeB N42SH
<b>Port size:</b>	1.1/2" NPT
<b>Port size: Optional</b>	1.1/2" BSP
<b>Contamination capacity:</b>	2.2 lbs / 1kg
<b>Vessel Volume:</b>	0.33 gal / 1.24 Litres
<b>Vessel Weight:</b>	11.0 lbs / 5 kg

### 2.2 Noise data sheet

Sound pressure level, measurement according to DIN 45635:

Idling	< 70 dB(A)
Conveying	< 70 dB(A)

## 2.3 Dimensions



## 3 Design and method of operation

### 3.1 Method of operation

The single magnetic rod is integrated in a stainless steel housing and forms one unit e.g. fitted in series with the pipe-line. The flow is arranged in such a manner that the material that is to be cleaned is well distributed and comes intensively into contact with the magnetic field.

### 3.2 Constructional design

- Stainless Steel Construction
- Viton O Ring
- 1/2" Drain Plug
- High Intensity magnetic rod

## 4 Safety

### 4.1 Intended use

The BoilerMagXL filter is designed for installation into systems working at up to 174 psi / 12 bar (145 psi / 10 bar if using automatic air vent). All connections are to be installed accurately and sealed to prevent the loss of pressure/product. The lid seal is to be maintained in a good condition.

To ensure that the supplied magnets maintain their high level of performance, attention must be paid to the following conditions:

1. NO temperatures above the specific operating temperature
2. NO oscillating vibrations
3. NO impacts
4. NO strong external flux fields
5. Pay attention to the cleaning and maintenance of the system

### 4.2 General preventative measures

The rod is constructed with strong magnets. The handling of ferrous tools (e.g. with maintenance or cleaning) etc. can cause risk of injury for the personnel due to the magnetic attraction. Special measures regarding the presence of ferrous items have to be considered when handling magnetic material.

### 4.3 Dangers during neglect of the safety notes

Using this equipment in a manner not intended can present safety hazards.

### 4.4 Safety notes for operation and maintenance

Maintenance work is to be executed only by qualified personnel.

With work on pneumatic, hydraulic, pressurised or electrical services the supply lines are to be isolated prior to any cleaning or maintenance actions.

Prior to any maintenance work being carried out, the process, equipment used and personnel must be risk assessed and deemed suitable to conduct that task. All work is to be carried out in accordance with local and legislative regulations.

**WARNING!** This system incorporates strong permanent magnetic materials. Please pay attention to the safety notes in order to avoid personal injury or material-damage:

- Operators fitted with heart pace-maker's shall not come within 1m of the equipment.
- Oppositional poles of magnets attract each other with high clamping forces.
- Do not use steel/iron tools or other ferrous parts in the flux field of the system.
- Data carriers, credit cards, computer drives etc can be erased by the influence of the magnetic field. Keep electronic and sensitive mechanical units (i. e. watches) away from the magnet.
- Please contact our service department before welding or drilling works on the unit.

### 4.5 Notes on residual risks

Vent any trapped pressure from the process line prior to working on the unit.

BoilerMagXL is fitted with a manual vent, however, an additional automatic air vent is supplied in the box. If using the automatic air vent the pressure rating is 145 psi / 10 bar and maximum operating temperature is 212°F / 110°C.

### 4.6 Consequences with arbitrary change

With arbitrary change or repairs all warranties and assertions delivered by the manufacturer become void.

Only genuine O.E.M. parts are to be used in any repair to maintain the manufacturer's warranty.

### 4.7 Prohibited operation

The unit must not be subjected to any high external loads or induced vibrations.

## 5 Installation / Operation

### 5.1 Mechanical installation

For optimum performance the unit is to be installed as follows:

- Before installation ensure that all supplies are isolated.
- BoilerMagXL is to be installed vertically with the bowl pointing downwards; this allows fluid to drain out of the bowl prior to cleaning.
- It is recommended that BoilerMagXL is installed on the return line of the heating system just prior to the boiler.
- If the BoilerMagXL is to be installed using flexible hoses, please ensure the unit is suitably supported.
- The function of the magnetic core 'cartridge' is direction specific. When installing please ensure the mesh segment is on the outlet side of the pipework.
- If the system is subject to pressure surges install a pressure regulator set at 174 psi / 12 bar (145 psi / 10 bar if using automatic air vent) prior to the BoilerMagXL
- Seal mating piping joints effectively to reduce pressure/product loss
- Erect signage in the close proximity warning of hazards presented by permanent magnets, ie pace makers and the dangers of opening the magnet housing while product is flowing.
- Install in location with adequate free space to withdraw magnet cartridge from vessel for cleaning
- Consider manual handling regulations when deciding installation location



# Dismantling Instructions

## 5.2 Connections

- No external power sources required for this product

## 5.3 Setting of the operating parameter

- No customer adjustment available to this unit

## 5.4 Cleaning

If operated and cleaned correctly your BoilerMagXL will give many years of trouble free filtration with no consumable parts. The filter will remove even the smallest particle due to its high magnetic filed strength. Cleaning should take no more than a few minutes.

- Turn off the heating system
- Isolate the filter from the system flow
- Using Screwdriver, open the air vent in the top of the filter
- Remove the Drain Plug using Tool provided (see Fig 1 page 11)
- Fully drain contents into a suitable container
- Using the Tool provided, unscrew and remove M8 Domed nuts / Washers (see Fig 2 page 11)
- Lift the Magnet Cartridge Assembly out of the body and move it away to a cleaning station (see Fig 3 page 12)
- Non-magnetic contamination will remain in the bottom of the bowl and requires rinsing out
- Remove the Quick release Mesh Plate from the Magnet Core Assembly and rinse clean (see Fig 4 page 12)
- Using the cleaning tool provided, scrape the bulk of the ferrous contamination off the magnet core and into a suitable container – it is not essential to remove all of the collected contamination (see Fig 5 page 13)
- Refit the Mesh Plate to the Magnet Core Assembly
- Re-assemble the Magnet Cartridge Assembly into the body
- Refit and tighten M8 Domed Nuts / Washer
- Refit the Drain Plug
- Close vent
- Remove the Filter isolation
- Carefully open the air vent to release any trapped air
- Close Vent
- Switch on the heating system

**Do not use corrosive substances to clean the equipment**

(Fig 1)



Loosen Drain Plug using Tool Provided

Remove Drain Plug

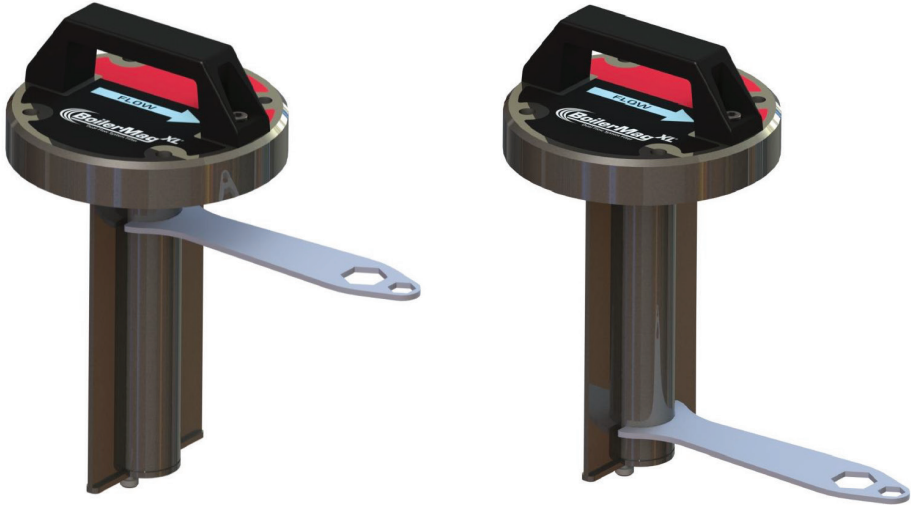
(Fig 2)



Unscrew and Remove Domed Nuts / Washers

Remove Core from Body

(Fig 3)



(Fig 4)



(Fig 5)



## 6 Maintenance

### 6.1 General notes

- Keep the system clean, especially the magnetic rods
- Regular check of the seal for defects
- Regular check of the housing and the tube surface for wear
- Do not clean with aggressive cleaner!
- Do not clean the rod with water!

**Moisture on the bar magnets leads to corrosion and possible damage to the system. It is strongly recommended that regular inspections are carried out to check for moisture and that appropriate action is taken to ensure the bar magnets are dried thoroughly.**

## 7 Service

### 7.1 Service address

#### Manufacturer:

Eclipse Magnetics Ltd  
Atlas Way, Atlas North  
Sheffield, S4 7QQ  
England

**Tel:** +44(0)114 225 0624

**Fax:** +44(0)114 225 0610

**E-mail:** [service@boilermag.com](mailto:service@boilermag.com)

**Internet:** [www.boilermag.com](http://www.boilermag.com)  
[www.eclipsemagnetics.com](http://www.eclipsemagnetics.com)

**Representative:**

## 8 Shipping, preservation, waste disposal, transport, storage

### 8.1 Shipping, preservation, waste disposal

1. Select a suitable packing depending upon type and range of the transmission (export, sea air freight, truck national, internationally). The packing must be selected in such a way that under normal transport prerequisites no damage to the commodity can occur.

2. National transmissions are packed exclusively truck-transportable depending upon scope, weight and condition of the commodity in cardboard, cardboard pallets etc.. When filling and protection material in the packing strengthened cardboard, cardboard, air cushion foil and shred paper used. On the packing outside warning labels are additional to attach, e.g.: 'Caution! High energy magnet. Do not throw'. The packing is locked with tape and with weights starting from 50 kg additionally with safety tape.

2a. International truck transmissions are packed accordingly to point 2, larger and heavier transmissions depending upon protection neediness also export-fairly in wooden boxes. To corrosion protection in the packing is to be paid attention. Easily corrosive sections are to be packed up before the packing in oiled paper or corrosion protection foil. It is to be made certain that the packed sections in the packing become secured against slipping.

2b. International air freight transmissions are to be packed accordingly in wooden boxes or in export packaging. You have to ensure that the maximum values of magnetic field strength are not exceeded, when sending by air-freight (IATA Dangerous Medium Prescript "Cap. 3.9.1.2. Magnetized Material"; ICAO Instructions "Packing Instruction 902"). On charge protection within the packing is absolutely to note (this can be achieved by screw connections or keying). Corrosion protection with susceptible sections is to attach (oiled paper, protective plastic film, corrosion spray etc.).

2c. Seaworthy export supplies are to be packed in seaworthy export crates. The crates are made particularly and accurate to size, relating to orders by drawer operations. Crates are to be laid out with oiled paper corrosion resistant and seawater. Commodity is to be protected from corrosion additionally with spray or protective plastic film.

It is to be made certain that the transmissions in the crate become secured against slipping (this can by woods, wood slats and additional screw connections takes place). After the packing the sea-crates are to be nailed correctly or bolted. The sea crates with safety tape become additional secured. With the loading it is to be guaranteed that the transmissions become correctly and surely stowed away and secured. The transfer and loading correct of the transmission on means of transport are by the carrier on the waybill to certify on the load list, etc..

3. Waste disposal: Observe the national waste disposal regulations.

### 8.2. Transport and Storage

1 In order to avoid injury or damage to the unit it must be handled properly. In addition to following the instructions below, general health and safety good practice and specific accident prevention guidelines should be observed.

2 For correct handling and storage comply with the following symbols:



Protect against moisture



Careful: glass



Up



Centre of gravity