

Diamante



Double action filter system for heating
and chilled water systems

MHS
BOILERS
Part of **elco** heating solutions

Efficient Filtering Can Avoid Costly and Disruptive System Failures

Specifically designed to arrest micro-particles including magnetite

The Diamante double action filter system is a "super" filter device which assists in arresting and removing fine particles from circulating water of heating and chilled water systems.

The unit has been developed to provide an effective and very efficient method of straining out black ferric oxides (magnetite) and other fine suspended solids that generally pass through conventional type strainers.

The Diamante filter incorporates a very fine stainless steel mesh strainer basket of generous surface area with a mesh size of 80 microns. Placed within this is a stainless steel frame carrying very high gauss polarized permanent magnets. The magnets are sheathed in stainless steel and are arranged in the form of rods extending the full depth of the strainer basket.

The need for efficient filtering

In a market place where boiler replacements in particular are becoming ever more frequent and retrofitted onto aged heating systems, the need for efficient filtering of system water to protect modern heating appliances from the very damaging effects of system sludge and debris is becoming a fundamental requirement.

Specification/description

The Diamante filter is fabricated from coated carbon steel and creates a large volume low velocity reservoir in which is positioned an 80 micron stainless steel mesh strainer basket. Positioned centrally within the strainer basket is a battery of vertically mounted stainless steel sheathed polarized permanent high gauss magnets anchored to a rigid stainless steel frame.

Cleaning/inspection access is via the "O" ring sealed removable flanged top. The flanged top is secured using eye nuts which allow for easy slackening/tightening using only a bar for leverage.

The strainer basket and magnets are securely anchored to the internal well using stainless steel fixings which are easy to access.

Basket and magnet removal for cleaning is via the top and the magnet frame includes a handle to assist.

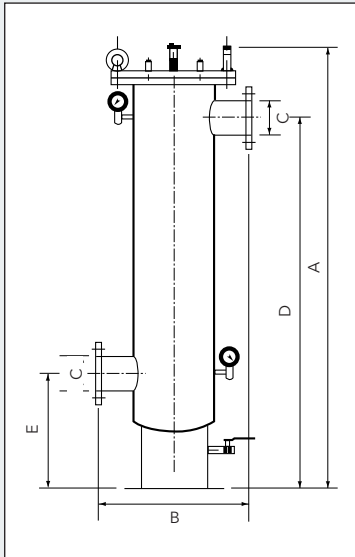


Each Diamante filter includes an automatic air vent, drain valve for emptying and cleaning, and inlet and outlet oil filled pressure gauges to indicate the need for cleaning.

Principle of operation

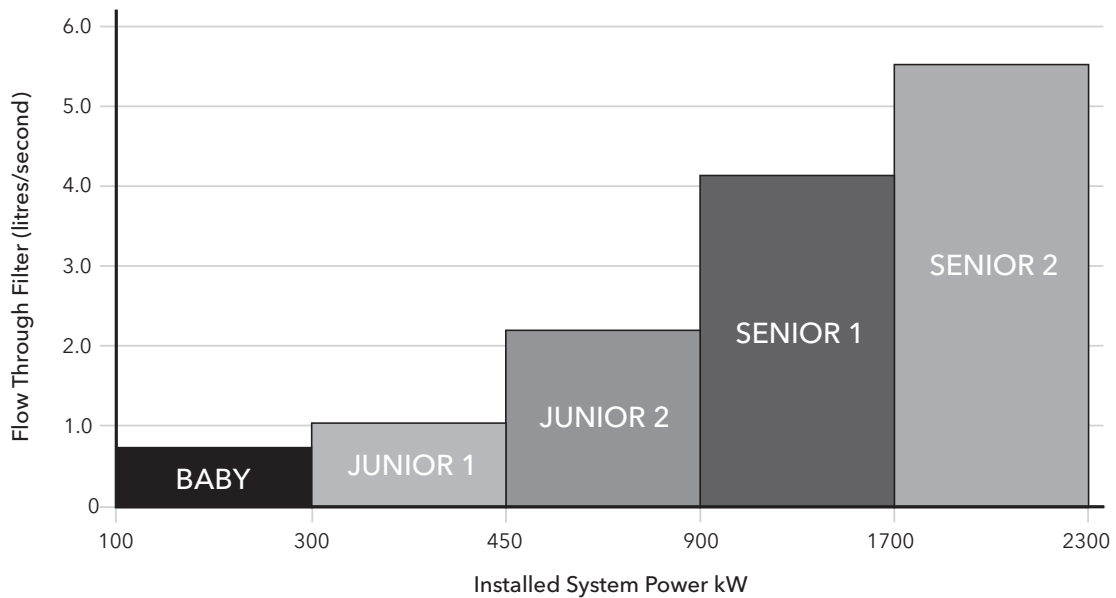
The Diamante filter should be installed as a side stream device where a proportion of the main mass flow rate is passed via a dedicated pump through the unit. The water to be filtered passes into the centre of the basket and flows around the high gauss magnets. Any magnetic ferric particle regardless of size will be arrested by the magnets, and any other particle > 80 micron will be trapped by the fine mesh of the very large capacity basket. Filtered water then passes out of the basket and back to the system.

Technical data

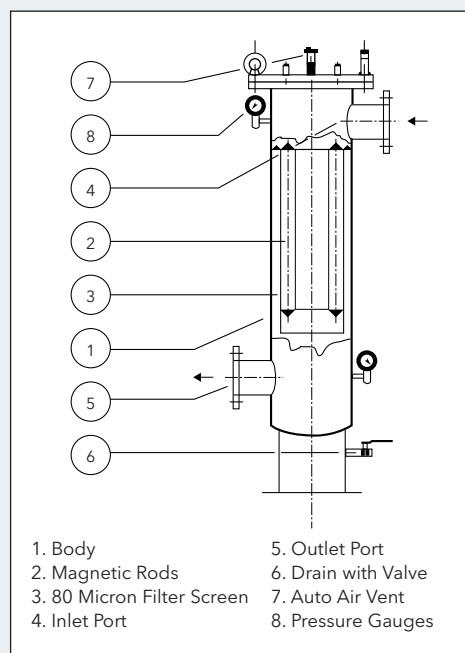
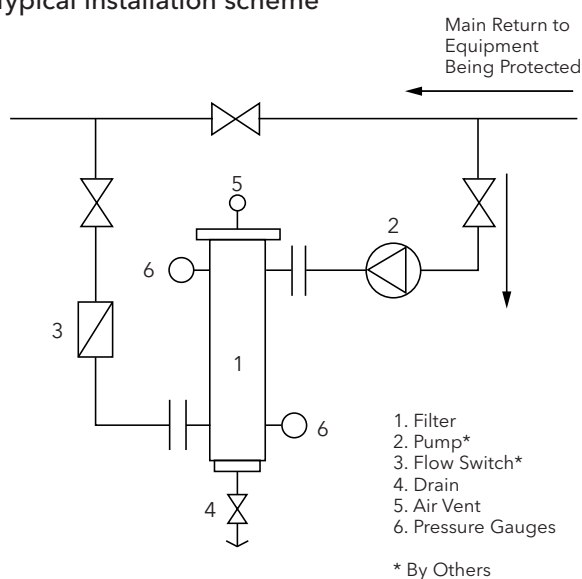


Model		Baby	Junior 1	Junior 2	Senior 1	Senior 2
System Power	kW	100-300	301-450	451-900	901-1700	1701-2300
Filter Flow Rate	l/s	0.75	1.02	2.22	4.16	5.55
Water Capacity	l	16	22	27	48	54
Weight	kg	63	69	83	108	118
Max Working Pressure	bar	6				
Hydraulic Resistance (clean)	kPa	30				
Filter Mesh Size	μ	80 micron				
Dimension A	mm	870	960	1230	1309	1427
Dimension B	mm	419	419	419	473	473
Dimension C	DN	50	50	65	80	100
Dimension D	mm	656	766	1006	1051	1181
Dimension E	mm	266	281	281	334	369
Flanged Connections	PN	10				
Clearance Above (for cleaning)	mm	400	500	750	720	820

Selection chart



Typical installation scheme



Installation

The filter should be installed as shown above and be positioned into the return pipe of the equipment that is to be protected. It is recommended that a flow switch (3) is incorporated to warn of "filter blocked". The included pressure gauges will give visual indication of the degree of filter blockage.

Cleaning frequency

Dependent on the level of contamination within the system will emerge a frequency of cleaning routine. The filter will arrest the largest quantities of suspended solids during the first few hours and days of operation. Due to the very efficient nature of the Diamante filter it may be necessary to clean the filter many times per day during the first few days of operation. The first few days of operation are most important to the cleansing of the system and the need to clean the filter should not be ignored.

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