

An effective solution for commercial systems

Keeping a commercial or industrial hydronic heating system operating at peak performance is absolutely crucial. Customer expectations, operating budgets and client comfort are all at stake.

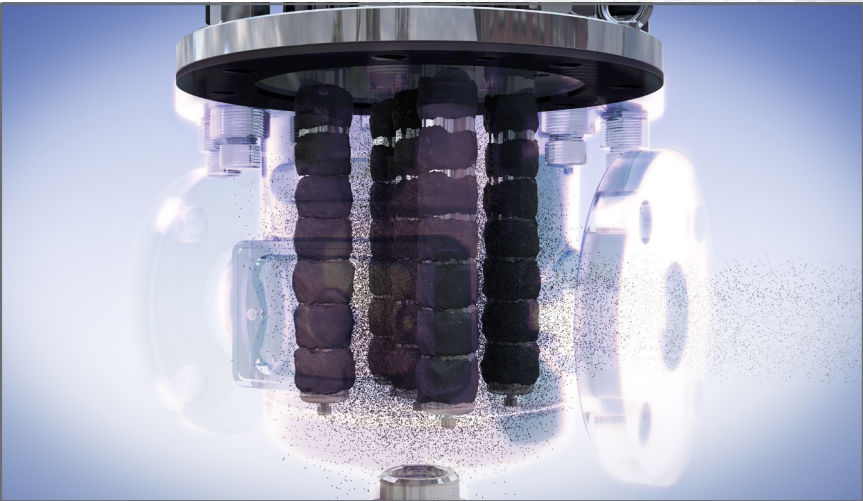
That's why it's vital to protect against a danger already lurking inside nearly every hydronic heating and cooling system – magnetite, commonly known as black iron oxide. An unavoidable result of oxidation inside untreated systems, black iron oxide forms on the surface of pipes and components where it deposits into the system water as microscopic particles, which combine to form a black sludge.

Even in small quantities, these particles can potentially cause expensive damage to plate heat exchangers, heat interface units, pumps, and valves. Within cooling systems, chillers are equally vulnerable to damaging iron oxide.

As sludge accumulates, system efficiency begins to suffer, and the following symptoms may begin to occur:

- Poor system circulation
- Excessive system noise
- Blocked system pipes and radiators
- Increased operating costs
- Frequent breakdowns and costly repairs

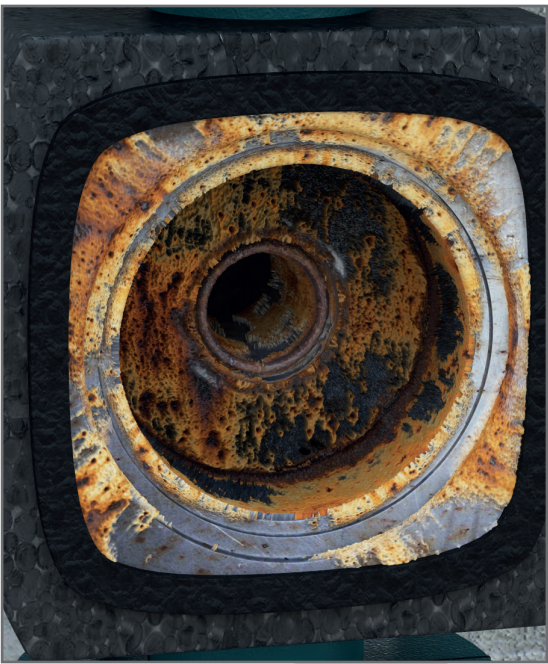
Computer simulation of the interior of the MagnaClean Commercial filter shows how five powerful magnets capture iron oxide sludge out of the water.



MagnaClean Commercial helps prevent the damage, and related symptoms, that can be caused by iron oxide sludge. It features a unique, patented magnetic filtration system that starts to work from the moment it's installed, removing virtually all of the suspended iron oxide that collects in hydronic heating systems.

The filter forces system water to pass through the central magnetic core, where iron oxide is drawn out by powerful magnetic rods. The rods can be removed individually for greater ease when servicing.

The only moving part in the ingenious design of the MagnaClean Commercial is the water flowing through it. The magnetic field generated by the internal rods does all the work, without the need of motors or other failure-prone parts.



Circulator pumps and other components can become coated in iron oxide inside an untreated hydronic heating system.

MagnaClean®

Technical specifications

MagnaClean

Maximum working pressure: 145 psi
Maximum working temperature: 212°F

Casing

Housing and lid material: 304L stainless steel (SA351CF3)
Drain: 1¼" FEMALE NPT hole, with 1¼" MALE NPT plug
Lid Seal: EPDM

Flow flanges

ASME B16.5 Class 150
Supplied with IBC gaskets (EPDM)

Magnets

Material: High power, NdFeB
Pocket sleeves: 304L Stainless steel (SA351CF3)

MagnaClean designed, manufactured and third party approved to ASME Boiler and Pressure Vessel Code Section VIII Division 1 - 2015

Inlet and outlet flanges

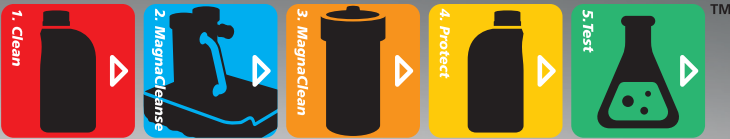
Size options: 2", 3" 4", 6", 8"
Flanges: ASME B16.5 Class 150

Filter size	Flange thickness (inch)	Bolt size	Bolt quantity	Bolt hole PCD (inch)
2"	0.79	5/8"	4	4.75
3"	0.98	5/8"	4	6.00
4"	0.98	5/8"	8	7.50
6"	1.02	¾"	8	9.50
8"	1.14	¾"	8	11.75

Product code	Filter size	Filter diameter (inch)	Inlet size (inch)	No. of magnetic rods	Filter volume (US gallons)	Filter dry weight (lbs)
FL1-03-2700	2"	6.30	2	5	0.83	54.7
FL1-03-2701	3"	8.27	3	6	1.84	88.6
FL1-03-2702	4"	8.50	4	7	2.18	103.4
FL1-03-2703	6"	12.76	6	9	7.4	211.4
FL1-03-2704	8"	12.76	8	9	8.7	241.4

Iron oxide sludge is one of the main causes of boiler failure. MagnaClean filters extend the life of hydronic heating systems when used as part of ADEY's Best Practice™ system process.

ADEY is the industry leader in hydronic heating system protection. Our unique cleaning products are designed to clean and protect your hydronic heating system, ensuring it achieves maximum performance season after season.



PROFESSIONAL HEATING SOLUTIONS

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A carbon neutral company

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Available in 2", 3", 4", 6", and 8" sizes

MagnaClean®

Hydronic heating system filter removes black iron oxide sludge



ASME-listed magnetic filtration system



PROFESSIONAL HEATING SOLUTIONS

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MagnaClean®

Commercial and industrial hydronic heating system protection

Protect your commercial hydronic heating system from damaging black iron oxide sludge with a *MagnaClean® Commercial™* filter. An exceptionally powerful line of magnetic filters in a variety of sizes, *MagnaClean Commercial* is designed to begin cleaning and protecting from the moment it's installed. Proven *MagnaClean* technology effectively removes iron oxide sludge, and maintains critical system efficiency.

MagnaClean Commercial high-performance filters not only maintain heating and cooling systems, but they also provide ongoing protection and contribute significantly to reduced energy, maintenance, and repair costs. *MagnaClean Commercial* filters can be used in installations across the following sectors:

Manufacturing – factories, production plants

Office buildings

Multi-family housing – apartment buildings

Large single-family housing

Healthcare – hospitals, nursing homes

Education – colleges, schools

Retail – stores, shopping centers

Institutional – municipal buildings, churches

Hospitality – hotels, motels

Precision design and flexibility

MagnaClean Commercial is manufactured to ASME Section 8 in five sizes to meet the demands of a broad cross-section of light commercial to heavy-duty applications.

MagnaClean Commercial delivers immediate benefits to improve performance and help to reduce maintenance costs:

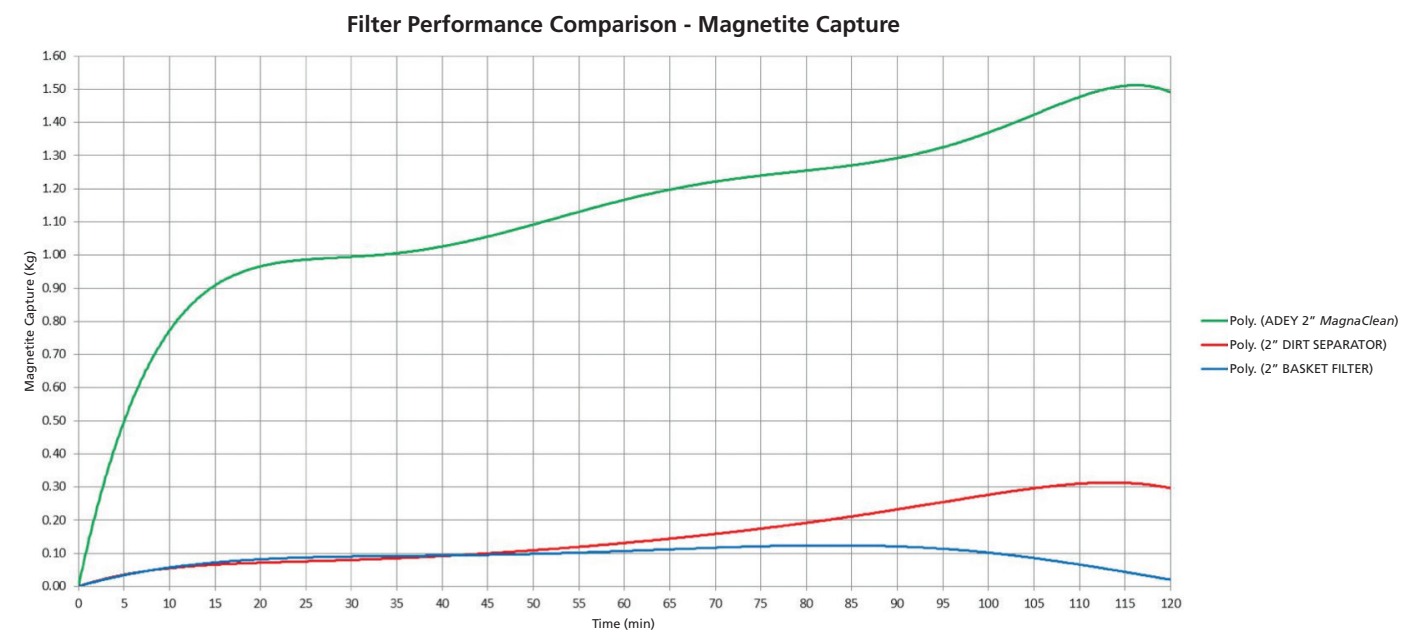
- **Exceptional magnetic capture** – Up to 80% better than tested traditional methods
- **Helps restore heating system efficiency and performance** – Up to 30% more efficient
- **Helps reduce ongoing maintenance costs**
- **Construction conforms to ASME Section 8**
- **Collects large and micro-particles**
- **Compatible with ALL hydronic heating and cooling systems**
- **Simple, trouble-free installation and servicing**

Proven performance

Extensive research has shown that magnetic filtration is the most effective means of sludge capture in maintaining and protecting commercial hydronic heating systems. When compared with a dirt separator and a basket filter, test results show that *MagnaClean Commercial* is up to 80% more effective in capturing damaging iron oxide sludge than these other forms of filtration, and at least 30% more energy-efficient.

Superior Iron Oxide Capture

A 2" *MagnaClean Commercial* collected over 3 pounds of magnetite during a two-hour cycle at a standard flow rate. By comparison, a 2" basket filter collected less than one ounce. A comparable dirt separator collected just over a half ounce of magnetite under the same flow conditions.* Once collected, the iron oxide does not wash off the *MagnaClean* filter — even at greater flow rates. That's because, once iron oxide sludge is captured, it can't be pulled back into the system, as it can with separators and baskets. Additionally, baskets and separators are prone to blockage. *MagnaClean Commercial* continues to remove sludge from the system even when the magnets are fully saturated with iron oxide.

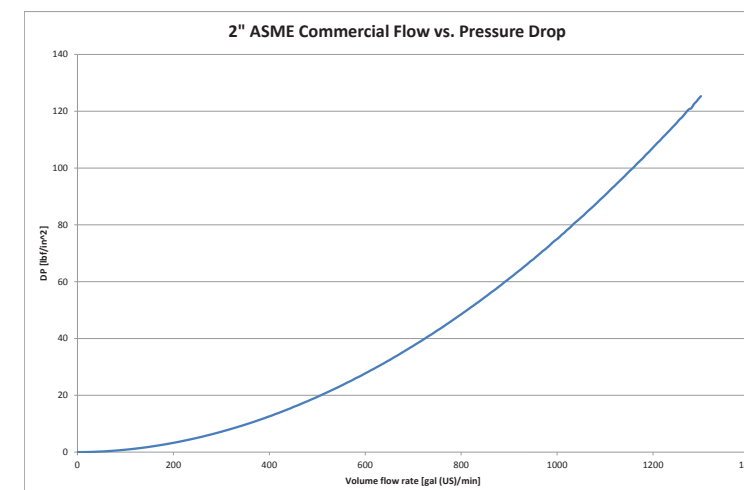


Graph shows the amount of magnetite captured by a 2" *MagnaClean Commercial*, a 2" dirt separator and a 2" basket filter.

Less Pressure Drop

MagnaClean Commercial also has a lower pressure drop than other tested methods of filtration. Even when fully loaded with trapped iron oxide sludge, there was nearly 54% less pressure drop across a *MagnaClean Commercial* filter than the dirt separator, and 68% less than the basket filter.* The differential pressure should be minimum so flow rates can remain at an optimum constant, ensuring that system efficiency is more steadily maintained and energy usage is lower.

*Data based on studies of European systems, using European version of *MagnaClean Commercial* product.



ADEY® Best Practice™ Solutions

MagnaClean Commercial filters are part of ADEY'S proven Best Practice Solutions. The 5-step process includes system cleaning, magnetic filtration, chemical water treatment and water testing. Each step of the process has been designed to protect your investment and extend the life of your heating or cooling system.

Visit adeyusa.com for more information on this and other ADEY Best Practice™ solutions.

MagnaClean Commercial Benefits

The unique, proprietary design of the *MagnaClean Commercial* line maximizes first-pass capture of magnetic debris by forcing system water flow past powerful magnets that 'ACTIVELY' trap any circulating iron oxide sludge, preventing potentially expensive damage to the system and its components.

MagnaClean Commercial filters not only begin cleaning almost immediately upon installation, but also provide ongoing protection over the life of the system.

MagnaClean Commercial filters are the clear choice for maintaining optimal system performance, and offer the following additional benefits:

- Highest quality, temperature resistant neodymium magnets for ultimate sludge capture
- Magnetic rods can be removed individually for easy servicing
- Flexible installation options
- Collects large and micro-particles of sludge that build up in the boiler
- Specification and construction conforms to ASME standards
- EPDM, full-face flange gaskets for maximum strength seal at high temperatures
- Drain valve with BSPT threads, ensuring effective seal and easy maintenance
- No moving parts – no ongoing operating costs
- Increased energy efficiency
- Decreased maintenance costs
- Restores peak system performance
- Extends system life

