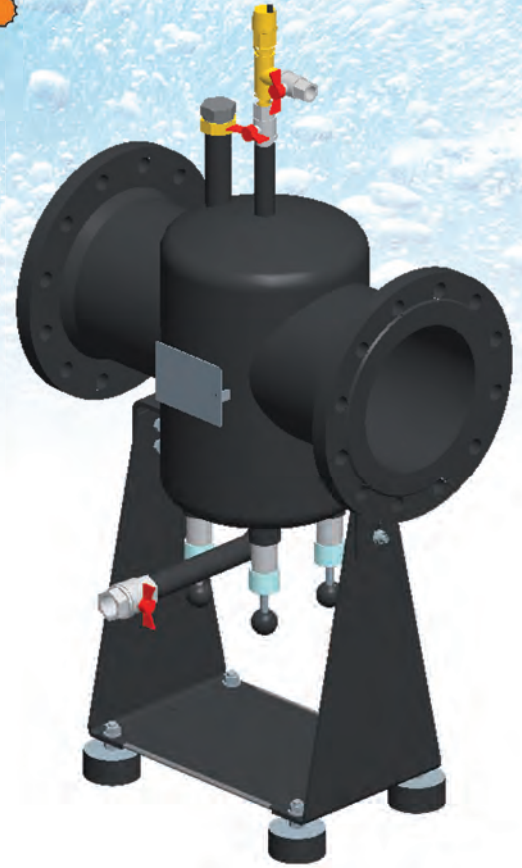


# FERROCLEAN



## Suspended Solids Sludge Separator with Integrated Venting System

**APPLICATIONS:** Captures and removes iron based suspended solids in Heating, Chilled & Steam Condensate Systems



**BEFORE:** Iron sludge contaminated circulation water



**AFTER:** once the magnets have been introduced, the entire magnetite sludge is quickly bound and can be flushed.

### The Problem

Iron suspended solids & sludge commonly known as magnetite and hematite create detrimental conditions within heating and cooling loops which can contribute to premature failures in piping, fittings, valves, regulators, pumps, bearings, seals, instrumentation & controls, boilers, chillers, heat exchangers as well as many other components within a system.

Should these iron deposits coat the heat transfer surfaces, operating costs increase due to the additional energy requirements (ie. natural gas or electricity) necessary to attain the proper temperature of the heat transfer fluid in the circuit.

The table below illustrates the effect of deposition on heat transfer surfaces. Note the loss of efficiency that occurs is dependent on the deposit thickness and type of deposit.

Typically chemical corrosion inhibitors are added to heat transfer fluids (ie. water, glycol, etc) to ensure corrosion rates remain

within specified industry standards (ie. mild steel < 2 mpy). If, however, high suspended solids are the norm then the inhibitor actually adheres itself to the particulate as opposed to corrosion inhibitor film formation solely on the actual piping system itself. This in turn promotes further corrosion to proliferate due to lack of proper corrosion protection on the system pipe.

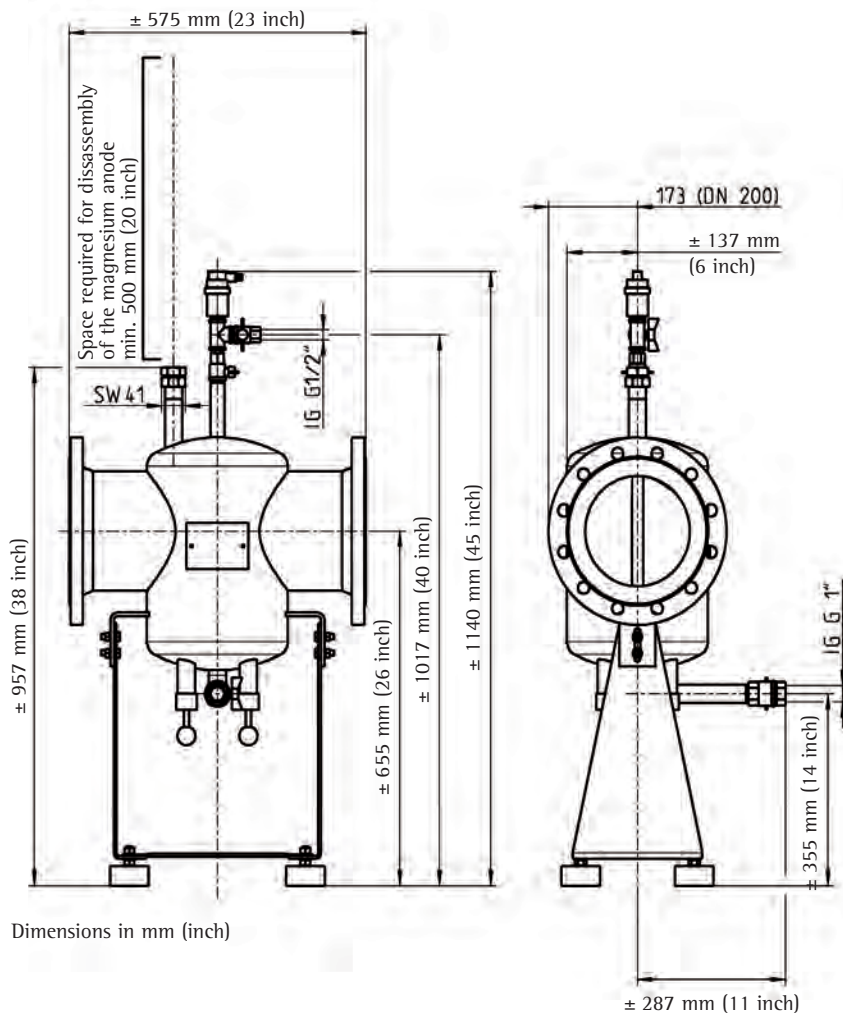
### Effect of deposition on heat transfer surfaces

	1/64" (0.4 mm)	1/32" (0.8 mm)	3/64" (1.2 mm)	1/16" (1.6 mm)
High Calcium Content	1%	2%	2.9%	3.8%
High Iron Content	1.5%	3%	4.5%	5.9%
High Iron & Silica Content	3.4%	7%	10.6%	14%



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Dimensions in mm (inch)

### Important notes:

A stop valve after the unit is required when flushing using own-media recirculation.

When flushing using fresh water via the integrated fresh water inlet valve, stop valves are required before and after the unit as well as a pipe separator in the fresh water inlet.

We recommend the JUDO HEIFI-FÜL refill unit with integrated pipe separator (Part no. 8060040).

The use of a bypass around the vessel is strongly encouraged.

### The Solution

JUDO's FERROCLEAN technology traps and retains magnetic suspended iron sludge via the use of special earth magnet rod assemblies encased in protective sleeves.

The iron bound sludge is removed from the unit by performing a simple purge in order to remove the detrimental material. To perform the purge process, the rods are demagnetized by removing them from their protective sleeves. This is accomplished by simply sliding the rods downward which allows the material to fall to the bottom of the vessel where it can then be easily flushed out of the bottom of the unit to the drain.

Two choices exist with respect to the purge procedure:

1. Using the existing system/circulation water to aid in suspended solids removal.
2. Using an external water supply via the integrated raw water connection valve.

### Advantages/Benefits

- ◆ Environmentally friendly, sustainable design, simple operation, no moving parts, satisfies green shift initiatives
- ◆ No consumable filter media to replace
- ◆ Low iron suspended solids levels maintained on a continuous basis
- ◆ Deposit free heat transfer surfaces ensure maximum energy efficiencies
- ◆ Trouble free instrumentation operation and control strategy
- ◆ Increased system component longevity is maintained
- ◆ Additional integrated magnesium anode present to ensure any oxygen in the heat transfer fluid is bound aiding in the corrosion inhibition process
- ◆ Installation can be inline or side stream dependent on the operation
- ◆ Integrated automatic venting system allows easy removal of harmful gases
- ◆ Vessel insulation available to ensure maximum energy efficiency is maintained and Health & Safety issues are addressed
- ◆ Floor mounting supports included
- ◆ High grade steel vessel with flanges
- ◆ Accommodates system pipe diameters from 2.5 to 8"

## Technical data

Size	2 1/2" / DN 65 (65 mm)	3" / DN 80 (80 mm)	4" / DN 100 (100 mm)	5" / DN 125 (125 mm)	6" / DN 150 (150 mm)	8" / DN 200 (200 mm)
Flow rate	52 gpm 12 m <sup>3</sup> /h	74 gpm 17 m <sup>3</sup> /h	132 gpm 30 m <sup>3</sup> /h	220 gpm 50 m <sup>3</sup> /h	352 gpm 80 m <sup>3</sup> /h	572 gpm 130 m <sup>3</sup> /h
Pressure loss	0.02 psi	0.03 psi	0.04 psi	0.05 psi	0.06 psi	0.08 psi
Max. flow pressure	145 psi 1000 kPa	145 psi 1000 kPa	145 psi 1000 kPa	145 psi 1000 kPa	145 psi 1000 kPa	145 psi 1000 kPa
Min/max Temperature	42 °F / 230 °F 6 °C / 110 °C	42 °F / 230 °F 6 °C / 110 °C	42 °F / 230 °F 6 °C / 110 °C	42 °F / 230 °F 6 °C / 110 °C	42 °F / 230 °F 6 °C / 110 °C	42 °F / 230 °F 6 °C / 110 °C
Weight	48 kg	52 kg	58 kg	64 kg	70 kg	76 kg
Part no.	8055070	8055071	8055072	8055073	8055074	8055075



Quality made in Germany

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