



PROTECTOR MINI

MANUAL

2022
IWTM



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DESCRIPTION & FEATURES

WHAT IS PROTECTOR MINI?

The Protector Mini is a product from our Marine partner IWTM.

Protector Mini is a unique side stream filtration device that engineers the system water to a non-corrosive state. It provides corrosion protection in both new and existing heating and cooling systems, by removing sludge, particles, oxygen and other corrosive products. Therefore the system is maintained in the best possible way, by constantly filtering and engineering the water.

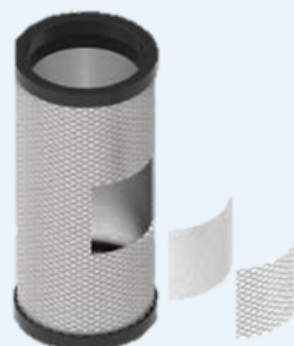
- Removes impurities
- Keeps the water clean in closed circulation systems and removes all particles.
- Protector is an "all in one solution"
- Creates a hostile environment for bacteria
- Controls the three key parameters of VDI 2035 ; pH, conductivity & dissolved oxygen.

PARTICLE FILTRATION

Protector Mini comes as standard with a robust stainless steel filter, which is 40 micron nominal (55 absolute) .

The stainless steel AISI 316, 55µm filter, has a large surface which gives a long operating time before cleaning and thus less flushing and refilling.

Optional bag filters are also available, with a filter degree down to 1 µm.



2-Layer S.S Filter

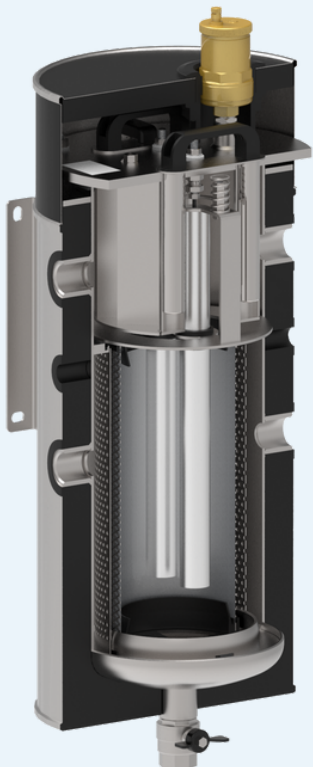


Bag Filter

DESCRIPTION & FEATURES

NEODYMIUM MAGNETS

The Protector Mini comes with two, double piece, short dry, powerful magnets. These are mounted in the centre of the filter and in front of the sacrificial anodes, so that magnetite is captured and not deposited on anodes. This provides longer service intervals as well as increased service life and better function. When the magnets are lifted out, all magnetite will be released and can be drained out.



SACRIFICIAL ANODES

Magnesium anodes that provide cathodic protection and lower the fluid's conductivity.

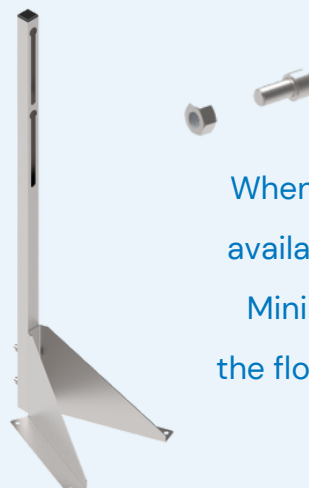
The anodes also scavenge oxygen and regulate the pH level.

For longer life expectancy, the anodes are encapsulated by the stainless steel filter basket, removing the need for individual anode screens.

WALL OR FLOOR FIXING SYSTEMS

The Protector Mini can easily be installed on the wall. The compact wall mounting bracket allows the unit to be fixed on the wall to save space in situations where space is important and limited. The system is included as a standard feature in the Protector Mini.

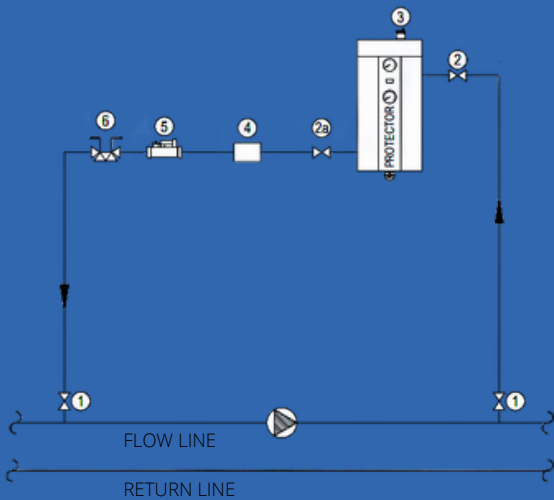
The wall fixing bracket and nuts are completely in stainless steel, very robust and resistant.



When wall space is not available, the Protector Mini can be fixed with the floor mount bracket as an alternative

INSTALLATION

SIDE STREAM INSTALLATION USING EXISTING PUMP



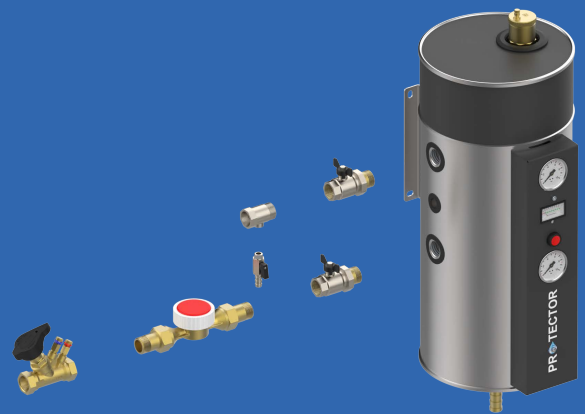
KEY

- 1. CLIENT IV's NOT SUPPLIED
- 2. DRAIN COCK LEVER IV MALE & FEMALE
- 2a. LEVER IV MALE & FEMALE
- 3. 551 CALEFFI UNIT AIR VENT
- 4. MECHANICAL WATER METER
- 5. FLOW REGULATOR
- 6. FLUSHING BY-PASS FOR PUROTAP LEADER

Protector Mini is to be mounted in a "bypass" installation over an existing circulation pump. (Separate circulation pump can be used if needed.)

-Pressure side on pump should be to the inlet on Protector unit.

-Suction side on pump should be to the outlet on Protector Mini unit.



INSTALLING CONNECTIONS

2 pc 1" female connections (inlet / outlet)

2 pc 1" plugs (for connections not in use.)

2 pc 1" ball valves

2 pc 1" plugs

1 pc 1" flowmeter

1 pc 1" regulating valve

1 pc 1/2" air vent

1 pc 1" drain valve

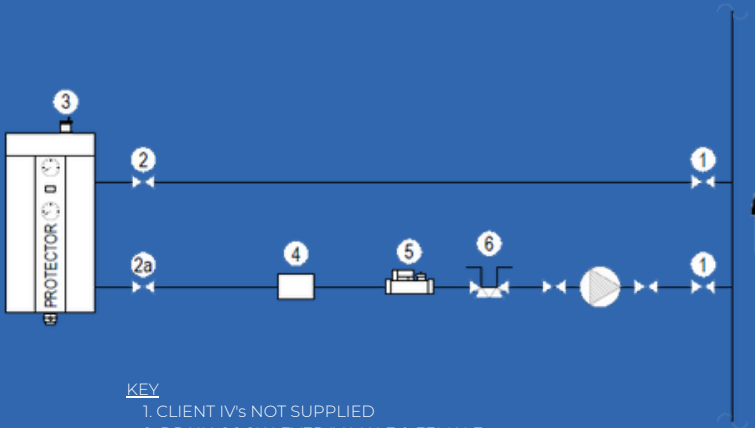
1 Test point valve

Make sure the top of Protector Mini is free of space for service.

Protector Mini – 50CM

INSTALLATION

SIDE STREAM INSTALLATION USING OWN PUMP



KEY

- 1. CLIENT IV's NOT SUPPLIED
- 2. DRAIN COCK LEVER IV MALE & FEMALE
- 2a. LEVER IV MALE & FEMALE
- 3. 55I CALEFFI UNIT AIR VENT
- 4. MECHANICAL WATER METER
- 5. FLOW REGULATOR
- 6. FLUSHING BY-PASS FOR PUROTAP LEADER



CONNECTIONS

Can be connected:

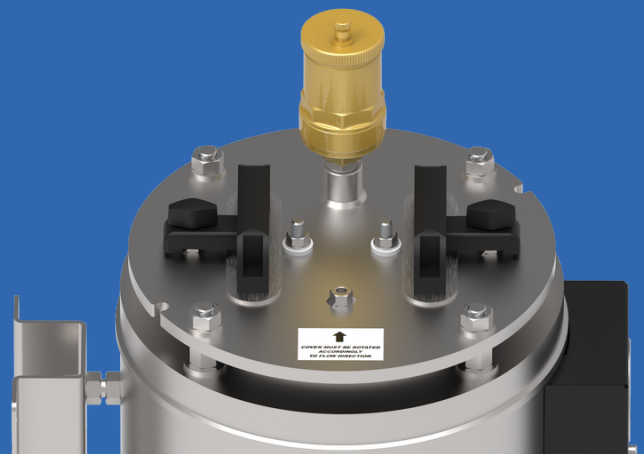
- IN from either left or right. (only on the top)

- OUT from left or right. (only on the bottom)

-Connections not in use, to be plugged. (1" female threads)

NB:

Top cover/ flange must be according to the water inlet (open and adjust accordingly)



**COVER MUST BE ROTATED
ACCORDINGLY
TO FLOW DIRECTION**

DATA & MEASUREMENTS

PROTECTOR MINI DATA

System Volume: – Max: 10m³ – Heating
7m³ – Cooling

Flow: 10 l/min

Empty Weight: 22KG

Full Weight: 42KG

Shipping Weight: 45Kg

Design Pressure – PN10

Max Temperature: 95 Celsius Tank

Volume of unit: 20L

Design code – PED 2014/68/EU

Connection: 1" female thread / BSPP

MATERIALS

Filter house: Stainless steel AISI 304

Filter element: Stainless steel AISI 316L

Gasket: EPDM

Insulation/Mantling: Armaflex /stainless steel

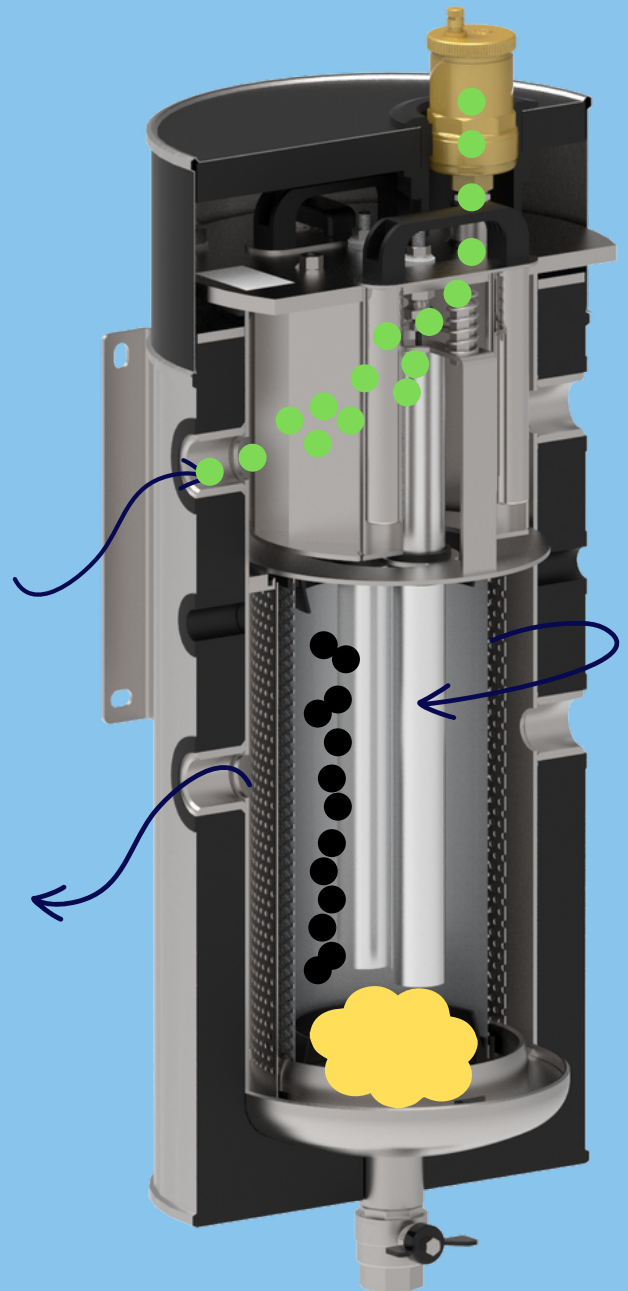
Anodes: Magnesium

Anode filter: Stainless steel

Magnet: Neodymium

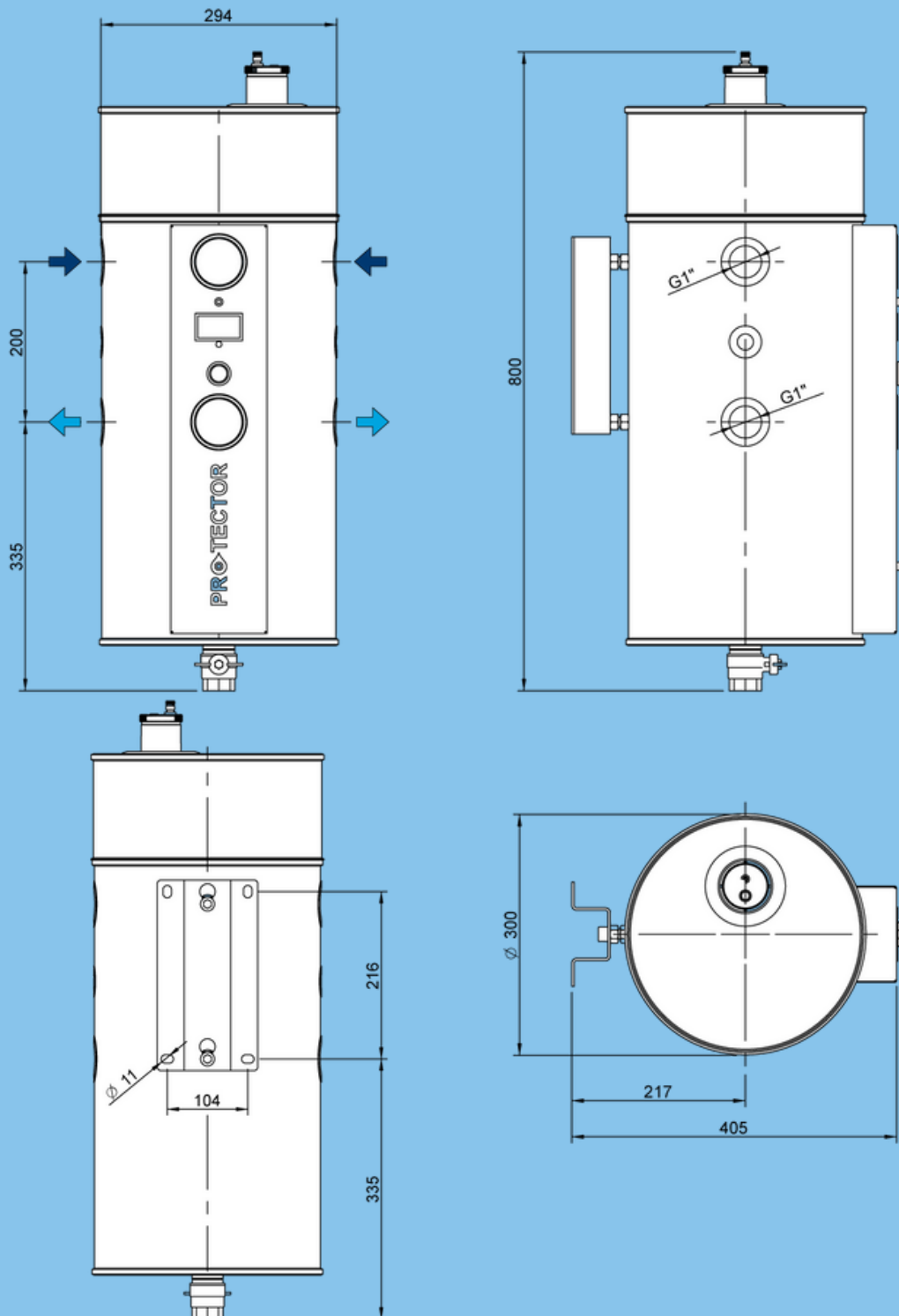
Surface treatment: Brushed stainless steel

Note: Talk to us for higher pressure or temperature projects.



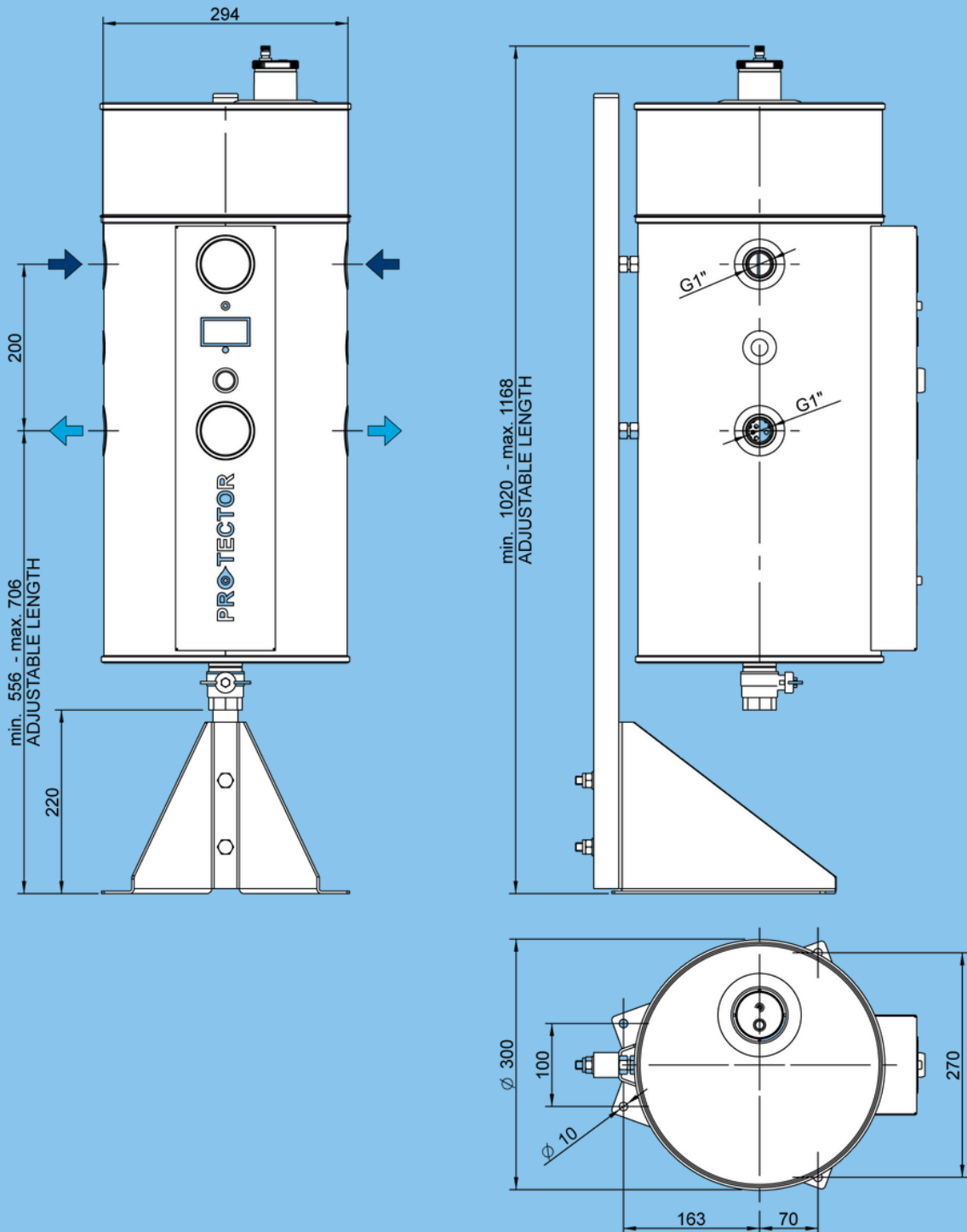
DATA & MEASUREMENTS

PROTECTOR MINI – WALL MOUNTING BRACKET



DATA & MEASUREMENTS

PROTECTOR MINI – FLOOR MOUNTING BRACKET



MAINTENANCE

DRAINING

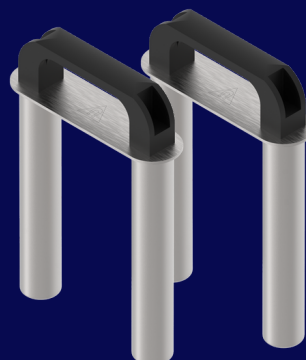
The Protector Mini unit needs to be drained frequently ; how often is dependent on the water quality.

The higher the starting conductivity level, the more sludge there'll be, resulting in a need for more frequent draining.

This to flush out the sludge and particles that have been collected in the bottom of the tank, from the magnet trap and the strainer.

The magnet in the Protector Mini comes as 2 pieces, shorter double magnets. The magnets are placed on top of the tank, on the flange lid.

- Close the inlet to protector.
- Pull out the magnets on top of tank.
- Open the drain valve in the bottom of tank and flush until the clear water is running.
- When done, close drain valve and put the magnets back in the holster.



MAINTENANCE

ANALOGUE GALVANOMETER & PUSH BUTTON

The analogue galvanometer shows the galvanic current in milliamps between the anodes and the cathode (the tank body), with the system water being the medium.

It's in a continuous reading position. When the switch is pressed, the instrument is short circuited and shows little or no reading- this function is only for testing the analogue meter itself.

Pure water is non conducting, therefore the more impurities and oxygen in the water, the more current will flow between the anode and the cathode.

When the water quality improves, the current diminishes and may measure even as low as 0.2 to 0.3 milliamps when the system water is fully passive.

The Protector Mini system is self-regulating, the anode automatically works harder with corrosive water than with water that is no longer reactive.



The needle swing lies between 10% and 100% (this is the normal operating region).

The lower the reading, the less the anode needs to work, and the less impurities are in the system water.

When the instrument shows 0, the magnesium anodes inside will most likely be consumed, or blocked by chemicals and will need cleaning on retro fit projects.

Open the tank and check the anodes, if they're consumed they will need to be changed.

While Elysator is increasing pH and scavenging oxygen the water gets less aggressive and the current will decrease and stabilize. (normally from 4-15 mA). If some chlorides or sulphates should interfere, resulting in higher conductivity or increased oxygen (feed water), the ampere & output will increase again.

MAINTENANCE

MAGNESIUM ANODES

The filter anodes are in a basket of stainless steel wire mesh, called the anode intensifier, and do not need any cleaning. Check the anodes for proper functioning (mA instrument)



TOOLS:

- Isolating screw dry side 13 mm spanner
- Isolating screw wet side 17 mm spanner
- Anode screw 10 mm spanner
- Flange cover 19 mm spanner

SERVICE

Service on the Protector Mini unit should be done once a year. However, this is also depending upon the quality of the system water.

If there has been an existing problem with sludge, sediments etc. before the Protector Mini installation, we recommend a first service after 3 months running.

It's also important to take a water sample out of the system, for analyses in a laboratory.

The isolation screw going through the flange has two TeFlon washers on both sides of the flange. Once opened, they **cannot** be reused. These washers are not part of the replacement kit. So please do not open the isolation screw.

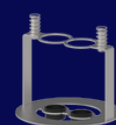
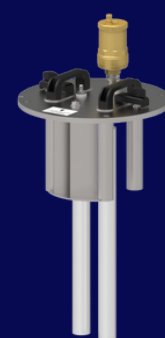
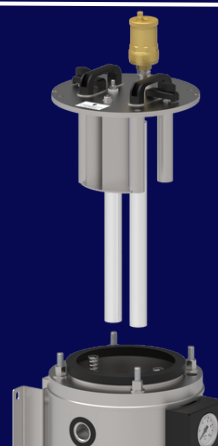
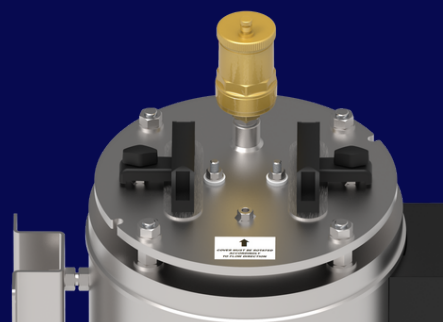
MAINTENANCE

SERVICE

- Close the inlet and outlet ball valve.
- Unscrew the air vent and empty the tank through the drain valve.
- Unscrew the flange lid.
- Lift up the lid, the anodes are attached to the lid.
- Check the anodes and the magnesium rods.
- Flush the anodes, if the magnesium is below 10mm diameter, replace with new ones.
- Take out the strainer and flush / clean.
- Clean the tank inside using a hose or a pressure gun.
- Check all parts belonging to the Protector Mini and clean them.
(Deairator, flowmeter, reg. Valve etc.)

When replacing the anode hold the isolation screw going through the flange and unscrew only the small inner screw at the end of the steel core of the anode. After mounting a new anode, make sure that all screws are tight and that the electrical wiring is properly reinstalled. If there's no indication on the meter, the Protector Mini is not working.

When done, put everything back in place and fill up the Protector Mini on the inlet. When the air vent stops letting out air, the tank is refilled and you can open on the outlet and start the circulation again. Check that the flowmeter is running.



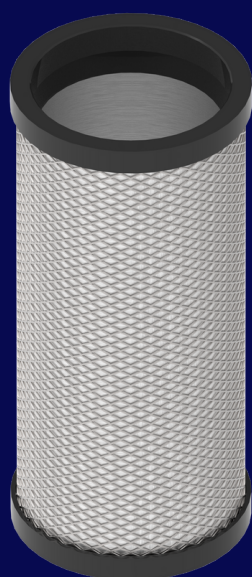
MAINTENANCE

PARTICLE FILTER

Inside the Protector Mini unit is installed a strainer filter, to catch and remove all sediments and particles.

- The filter is locked with a small metal clip in the bottom.
- Just twist the filter slightly top left and lift it out.
- Clean the filter with a water hose.
- Make sure all particles are removed from the filter.

When done just put it back, turn it slightly to the left and its locked again

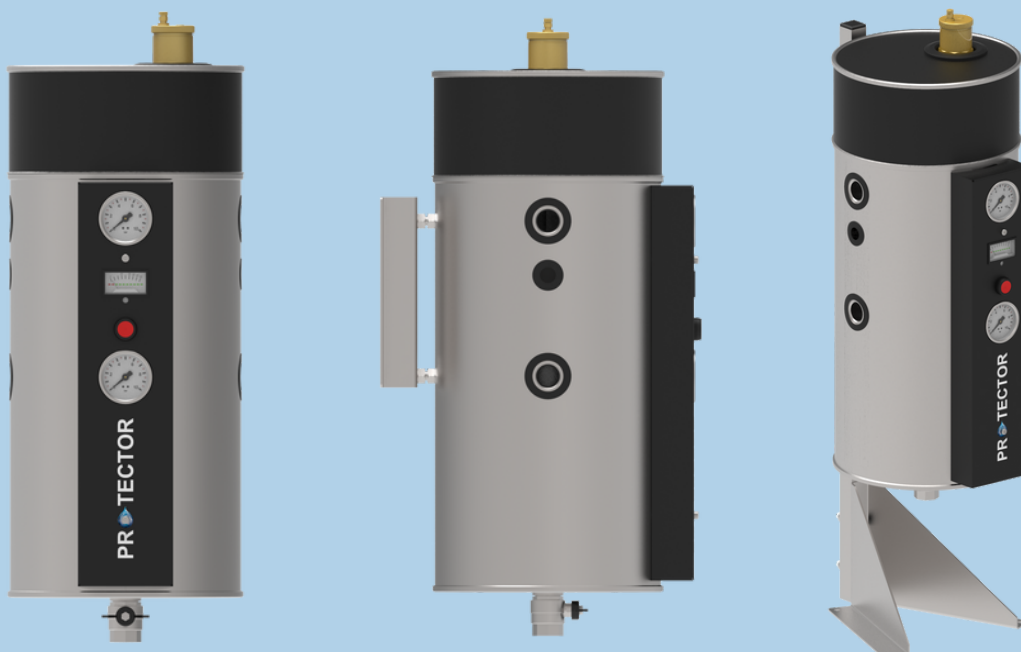


(AISI 316 with
110µm or 55µm
filter element.)



ACCESSORIES

Part No.	Descriptions
Protector – Complete Units	
101316	PROTECTOR MINI 1" F, AISI 304, SMALL WALL HANG MODEL,
100953	FLOOR MOUNTING BRACKET (FOOT FOR MINI)
Protector – Bag Filters	
101450	BAG FELT PES SIZE 02 Ø 178 x L 419 mm 1µm
101451	BAG FELT PES SIZE 02 Ø 178 x L 419 mm 5µm
101452	BAG FELT PES SIZE 02 Ø 178 x L 419 mm 10µm
101453	BAG FELT PES SIZE 02 Ø 178 x L 419 mm 25µm
Protector – SS Strainers	
101158	2LAY INOX FILTERKIT SIZE 6, 55µm
Protector – Gaskets	
101335	VESSEL GASKET Ø219.1 (EPDM)
Protector – Spare Anodes	
101140	ANODES 1 SET – MINI



Environmental Culture Change

be a part of it



clean | protect | prevent



PROTECTOR



LETTER OF COMPLIANCE

IWTM is the Marine Division Partner of Elysator and have developed models specifically suited to the higher demands of the Marine industry operating at higher pressures and higher temperatures.
Elysator 15, 25, 50, 75, 100, 260, 500, 800 and 1000L.
Manufactured by

The Marine products are provided worldwide on the World's largest cruise ships working with the leading operators in this sector. Having secured DNV approval in 2003, IWTM are still the only chemical free water treatment manufacturer to have this certification and approvals.

With over 30 years of experience in this technology IWTM has developed the Protector range of products. The Protector range is now available to Elysator UK's land-based customers.

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