

PROTECTOR 2022 IWTM MANUAL



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DESCRIPTION & FEATURES

WHAT IS PROTECTOR?

The Protector is a product from our Marine partner IWTM.

Protector 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.

Protector is completely insulated and clad to prevent heat loss and condensation.

In closed systems, typical installation will be in side stream, but it can also be installed in the main flow in a modular arrangement for larger systems. This provides a method of easy installation, operation and maintenance.

PARTICLE FILTRATION

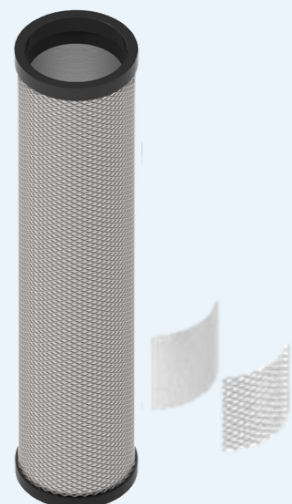
Protector comes as standard with a robust stainless steel filter, which is 40 micron nominal (55 absolute) .

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.



Bag Filter



2-Layer S.S Filter

DESCRIPTION & FEATURES

NEODYMIUM MAGNETS

One long, dry, powerful magnet is 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 magnet is 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.

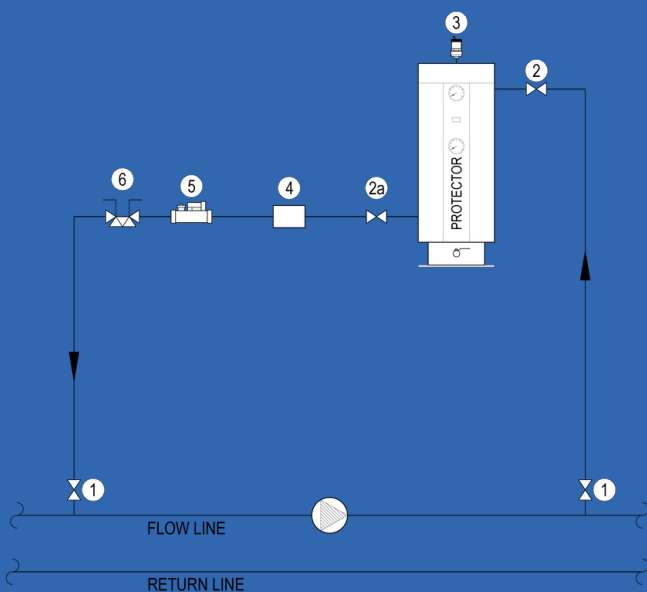
For longer life expectancy, the anodes are encapsulated by the stainless steel filter basket, removing the need for individual anode screens.

INSTALLATION



For larger volume systems, installation in series is possible.

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 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 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

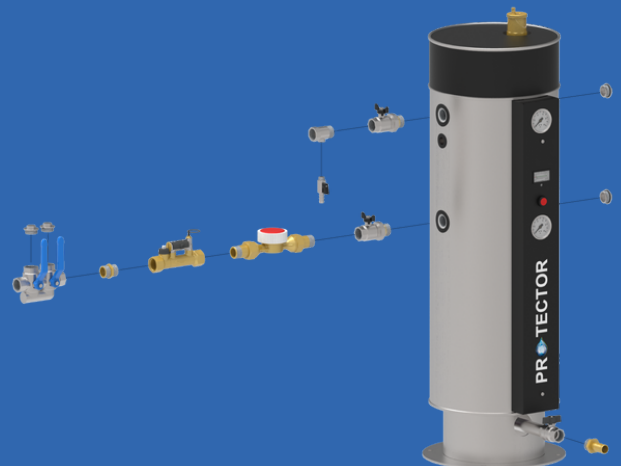
1 pc 1” Flowmeter

1 pc 1” Regulating Valve

1 pc 1/2” Air Vent

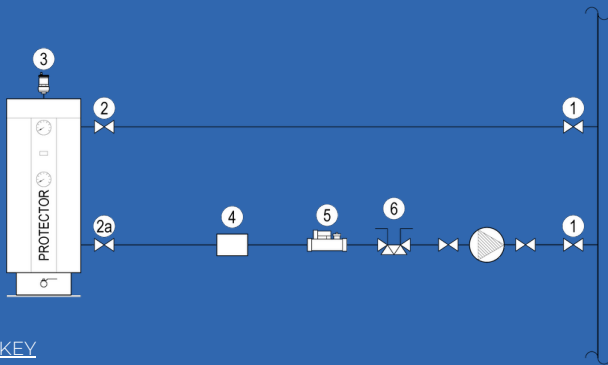
1 pc 1” Drain Valve

1 Test Point Valve



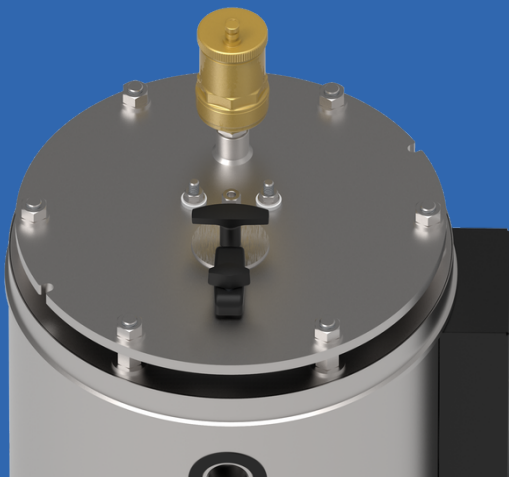
INSTALLATION

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. 551 CALEFFI UNIT AIR VENT
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- 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)



DATA & MEASUREMENTS

PROTECTOR DATA

System Volume: Heating - Max. 40m³

Cooling - Max. 30m³

Flow: Heating - 30m³ - 30l/min

- 40m³ - 40l/min

Cooling - 20m³ - 30l/min

- 30m³ - 40l/min

Empty Weight: 59KG

Full Weight: 116KG

Shipping Weight: 69KG

Design Pressure - PN10

Max Temperature - 95 Degrees Celsius

Volume of unit - 57L

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

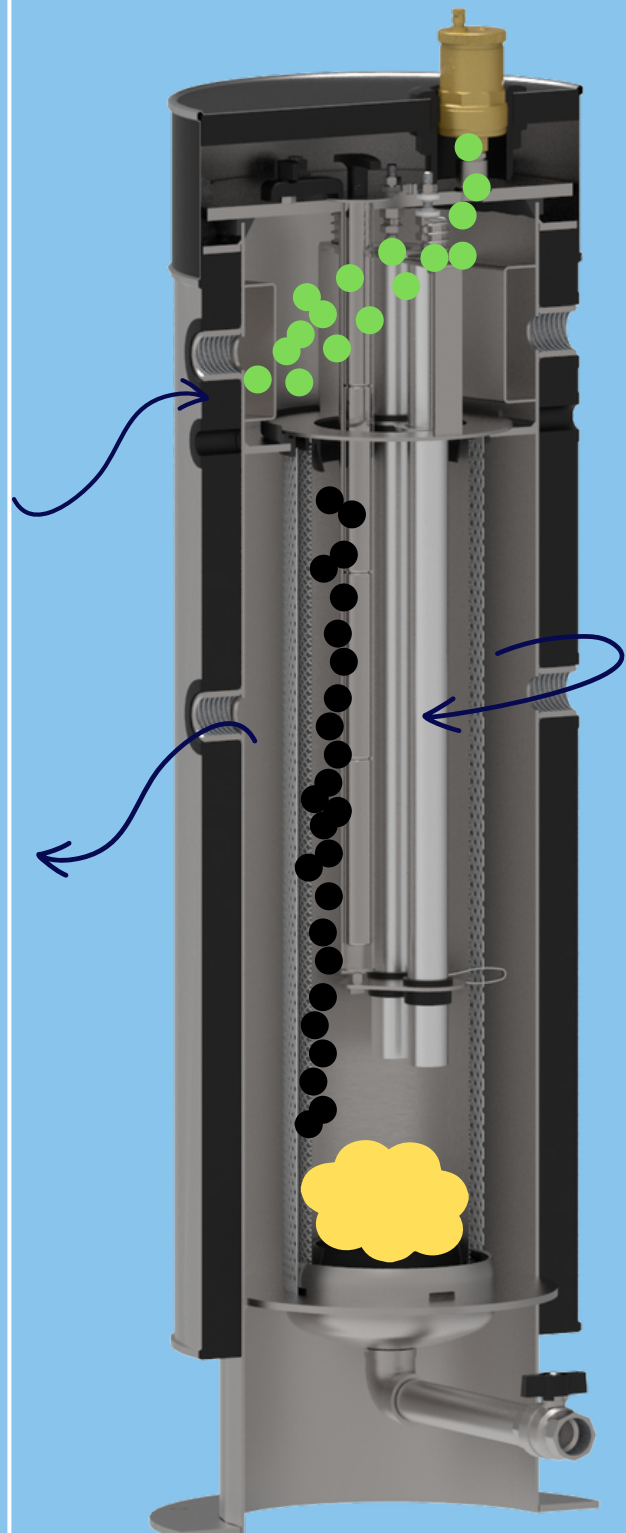
Insulation/Mantling: Armaflex /stainless steel

Anodes: Magnesium

Anode filter: Stainless steel

Magnet: Neodymium

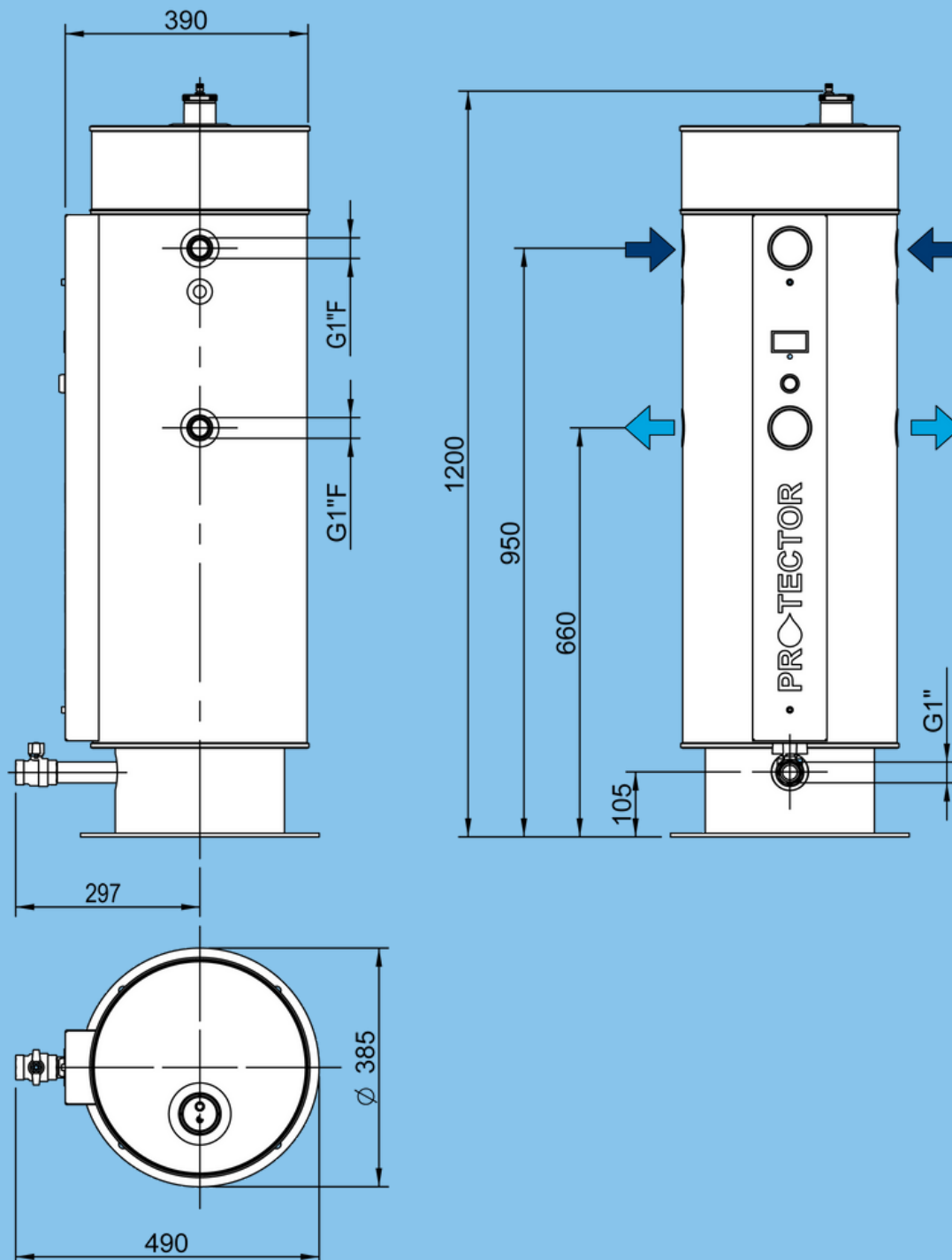
Surface treatment: Brushed Stainless Steel



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

DATA & MEASUREMENTS

PROTECTOR MEASUREMENTS



MAINTENANCE

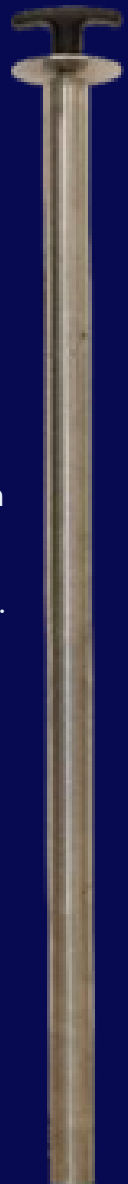
The Protector unit needs to be drained frequently ; how often is dependent on the water quality.

The higher the starting conductivity level, the more sludge there will 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 is a 1 piece long magnet, placed on top of the tank, on the flange lid.

- Close the inlet to protector.
- Pull out the magnet 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 magnet 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 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 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 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.

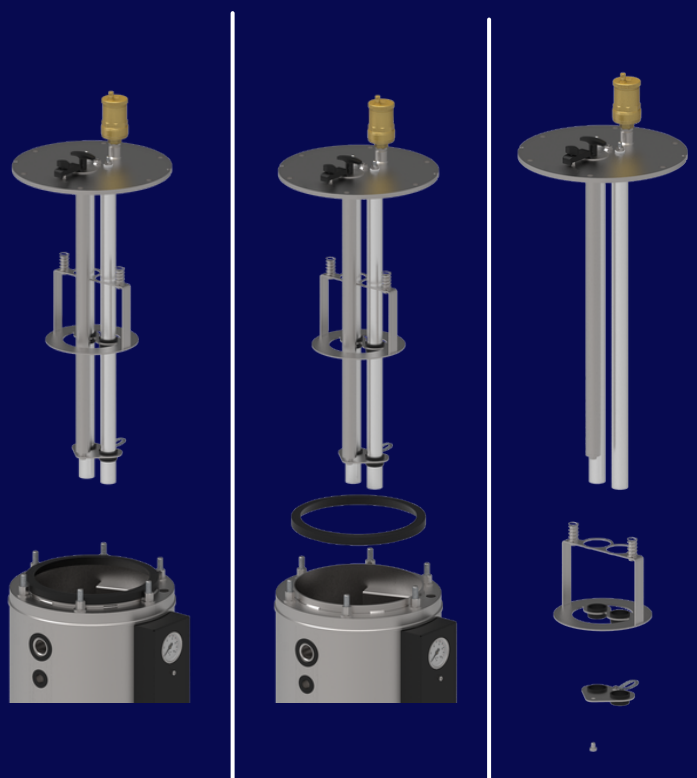
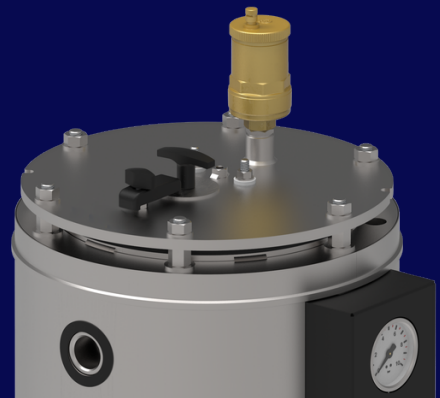
MAINTENANCE

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 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 is not working, so please check the wiring is correct.

When done, put everything back in place and fill up the Protector 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.



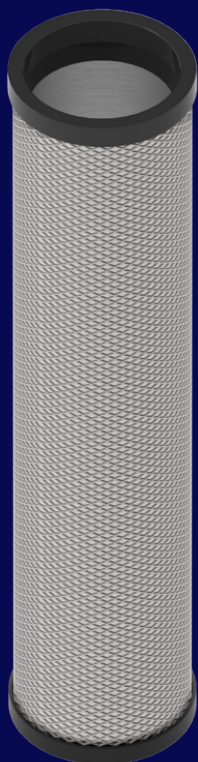
MAINTENANCE

PARTICLE FILTER

Inside the Protector 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

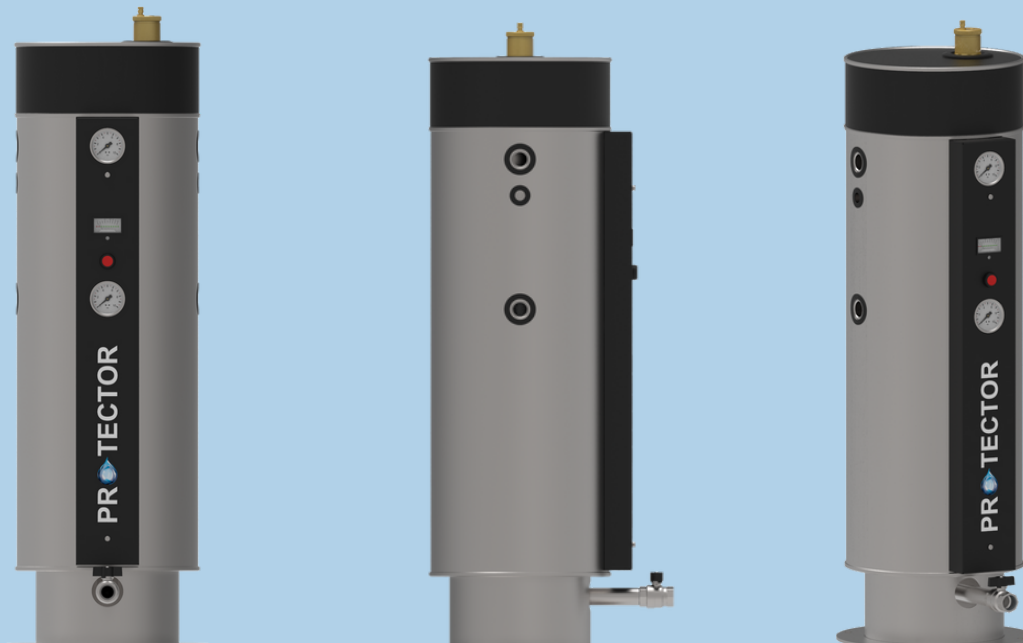


(AISI 316 with
110µm or 55µm
filter element.)



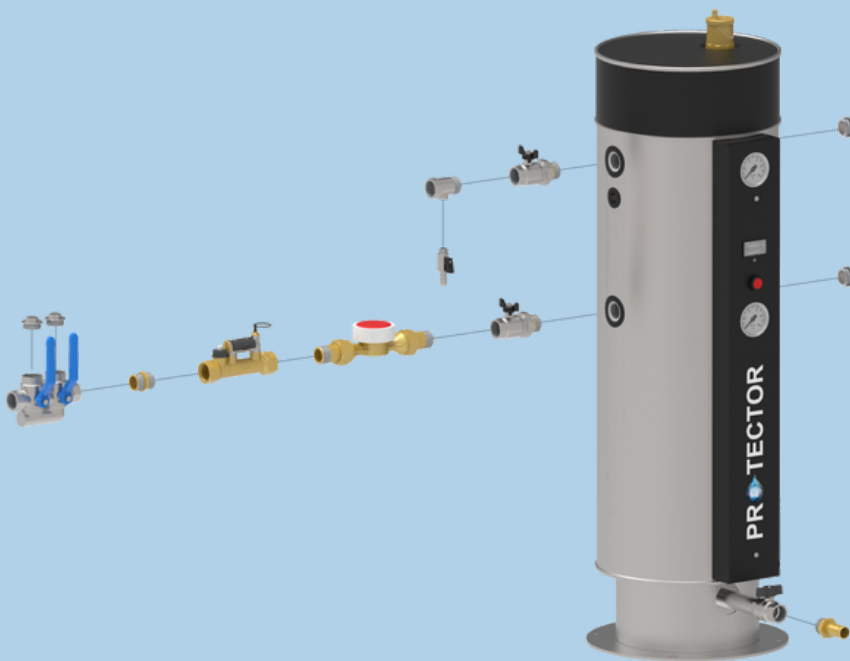
ACCESSORIES

Part No.	Descriptions
Protector - Complete Units	
101366	Protector 1" F, Insulated AISI 304
Protector - Bag Filters	
101147	BAG FELT PES SIZE 02 Ø 178 x L 813 mm 1µm
101146	BAG FELT PES SIZE 02 Ø 178 x L 813 mm 5µm
101145	BAG FELT PES SIZE 02 Ø 178 x L 813 mm 10µm
101144	BAG FELT PES SIZE 02 Ø 178 x L 813 mm 25µm
Protector - SS Strainers	
101155	2LAY INOX FILTERKIT SIZE 11, 55µm
Protector - Gaskets	
101159	VESSEL GASKET Ø273 (EPDM)
Protector - Spare Anodes	
101289	Anodes 1 Set - PROTECTOR



VALVE KIT

Inside the Protector box, will be the following supplied valve kit:



ELYSATOR **E**
engineering water

ecopipe



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

International Water Treatment Maritime AS
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.
Morten Ostby
Tor 4 Landheim
Project Manager

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.

PROTECTOR
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