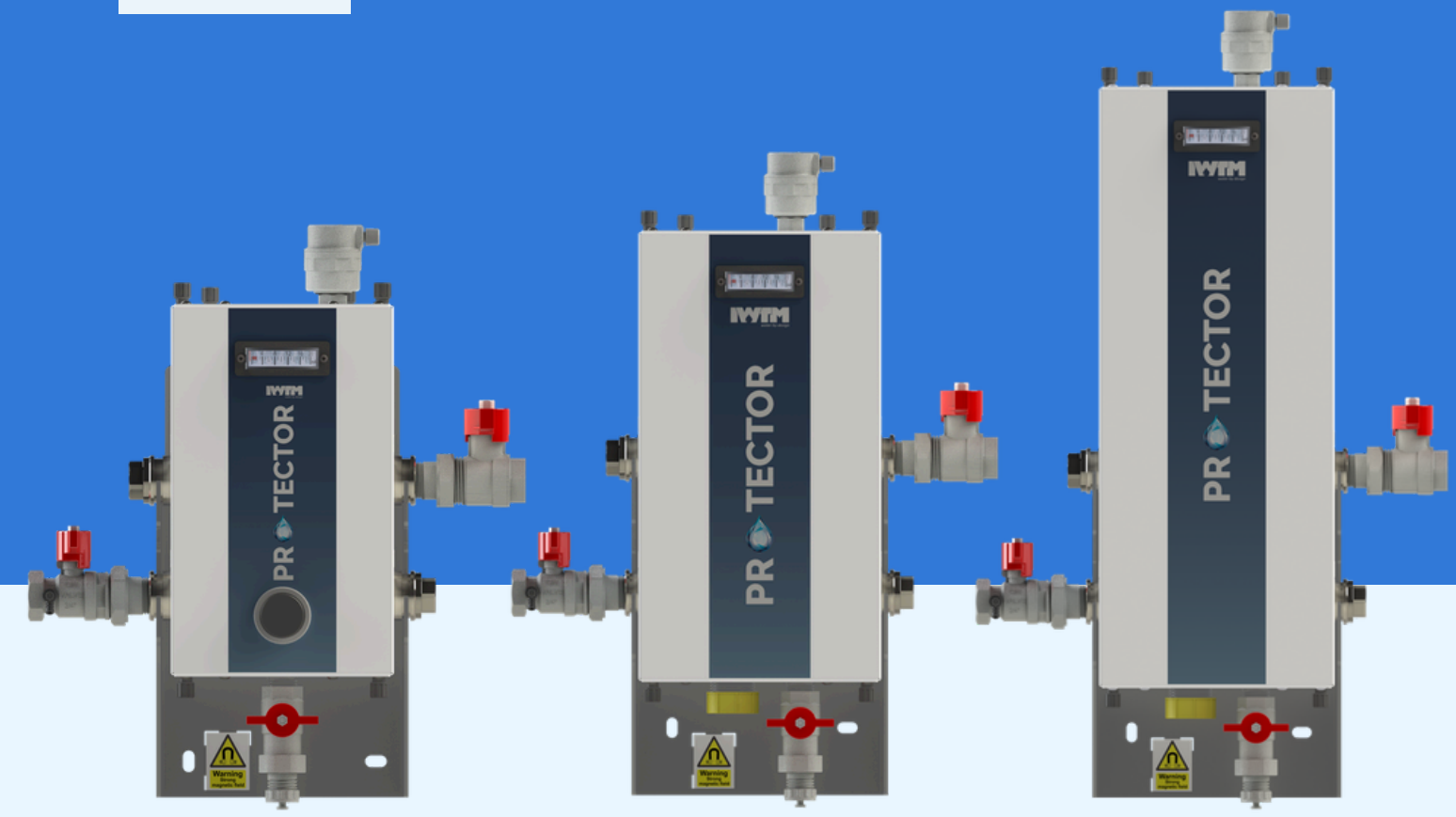
IWTM UK
water by design

PROTECTOR P1-P5



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TABLE OF CONTENTS

03 PROTECTOR P1-P5 DESCRIPTION

05 PROTECTOR P1-P5 FUNCTIONS

07 FILTERING ELEMENTS

08 CONNECTION OPTIONS

09 DETAILED INTERNAL AND EXTERNAL VIEW

11 DIMENSIONS

14 TECHNICAL DATA

15 VALVE KIT

16 HP VALVE KIT FOR P5 HP

UK PATENT PENDING:

PROTECTOR P1-P5 DESCRIPTION

ALL-IN-ONE FILTRATION AND WATER TREATMENT UNIT.

WHAT IS IT AND HOW DOES IT WORK?

Protector P1-P5 are the smallest models from our IWTM Protector™ range. There are three models, P1, P2 and P5. Each has two distinct separate treatment chambers, designed to remove the system impurities and to engineer the water to keep it in a non-corrosive state.
It provides a “hybrid/multipurpose function” that eliminates the use of chemicals, de-aerators, and magnetic separators.

The units provide faster clean-up of old systems and quicker compliance with pre commissioning targets on new systems due to the higher flow rates through the reaction tank (cathode) and the inbuilt strainer basket that enables finer filtration.

The system water enters the lower chamber where a dry powerful magnet holds in place any magnetite particles, these will be held in the lower chamber until the Protector is drained or blown down to release and remove them.

After the lower chamber, the water then passes into the upper chamber and is forced through a stainless-steel micron filter before going back into the system having been cleaned and treated. The micron filter will capture any non-magnetic particles and prevent them from re-entering the system. These particles will be held in the micron filter and will drop to the lower chamber when the Protector is being blown down to clear the collected debris.

Within the upper chamber, due to the process of cyclone filtration, air will be pushed upwards and released through the automatic air vent and discharged to atmosphere.

Within the upper chamber and in the middle of the micron filter is where the electrochemistry takes place. The Protector uses pure magnesium bare anodes and with the micron filter basket and tank being connected these two components increase the surface area of the cathode. This increased surface area of cathode produces a higher rate of electrochemical reaction which results in increased cleaning power and superior performance than other devices.

Protector P1-P5 is completely insulated and cladded to prevent heat loss and condensation. The Protector P1, P2 and P5 are designed for side-stream installation only.

The bare sacrificial anode consumes the dissolved oxygen by the process of corrosion, the fast corrosion rate of the bare anode quickly releases magnesium hydroxide into the water, and this provides an alkaline pH between 8.2 and 10. The consumption of the dissolved oxygen removes the threat of corrosion from the system water.
Compliance with VDI 2035 and CSA TM20 is maintained, as the anodes sit inside the basket to capture the magnesium residue when the anodes expire.

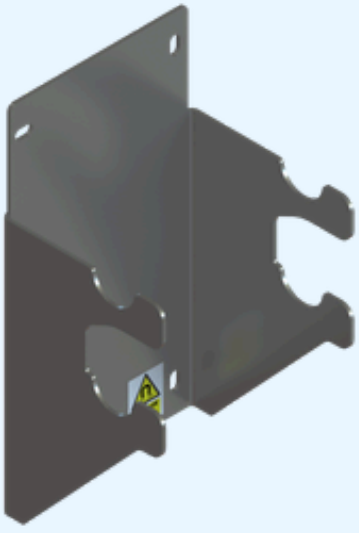
FIXING SYSTEMS + MAINTENANCE

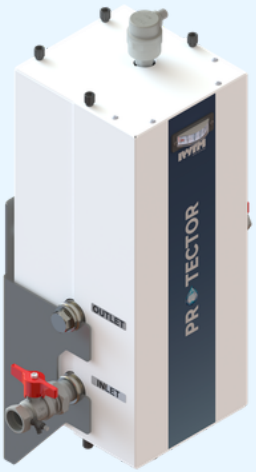
EASILY INSTALL THE PROTECTOR ON THE WALL

Protector P1-P5 has a compact wall fixing system; therefore the unit can be fixed on to the wall to save space in situations where space is important and limited. The system is included as a standard feature in the Protector P1-P5.

The wall fixing bracket is stainless steel, very robust and resistant.



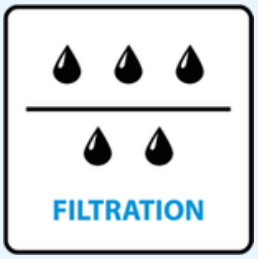




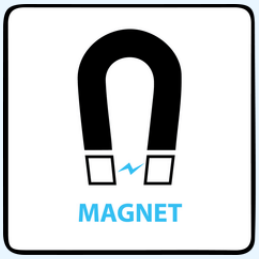
MAINTENANCE

When the progressive build-up of suspended solids retained by the stainless-steel screen causes a reduction in flow, the screen must be cleaned.
To perform the cleaning operations, there are two options either a normal backflush of the filter, or by complete removal and washing of the filter.

PROTECTOR P1-P5 FUNCTIONS



PARTICLE FILTRATION



MAGNETIC PROTECTION



REDUCES DISSOLVED OXYGEN



CORROSION PREVENTION

Prevents Corrosion

Protector's water treatment features prevent corrosion in the system. This is achieved thanks to magnesium anodes that lower oxygen, regulate pH, and reduce electrical conductivity.

All In One

Protector is an "all in one solution". It combines several different technologies in one single extremely functional and reliable device.

Traps Ferrous Particles

Protector is equipped with Neodymium Magnets that trap ferrous particles, drastically increasing the time before manual intervention is needed.

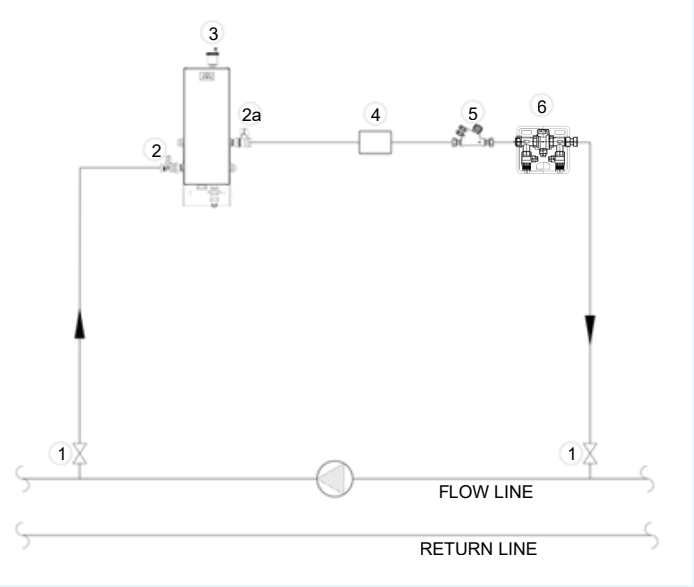
Removes Contamination

Protector cleans and restores recirculating systems by removing suspended particles.

+ PROVIDES	- REPLACES
Sludge and particle removal	Bag filters
Magnetite Removal	Magnet filters
pH adjustment	Chemicals
Oxygen consumption	Air separators
Anodic water treatment	Dosing pots + automatic dosing systems

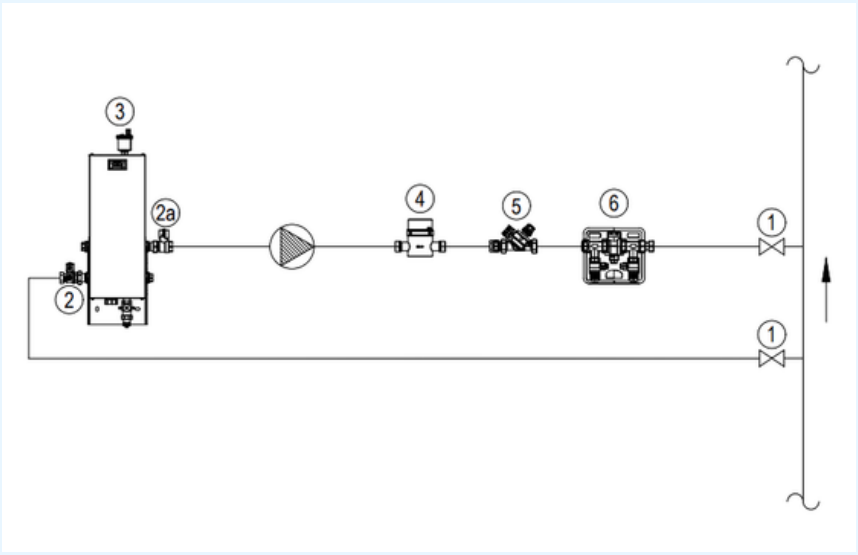
PROTECTOR P1-P5 FUNCTIONS

SIDE STREAM USING SYSTEM PUMP



Protector P1-P5 is completely insulated and cladded to prevent heat loss and condensation. The Protector P1, P2 and P5 are designed for side-stream installation only.

SIDE STREAM USING INDIVIDUAL PUMP



Protector P1-P5 keeps your system clean with the filtering element, removing suspended particles from the recirculating system.

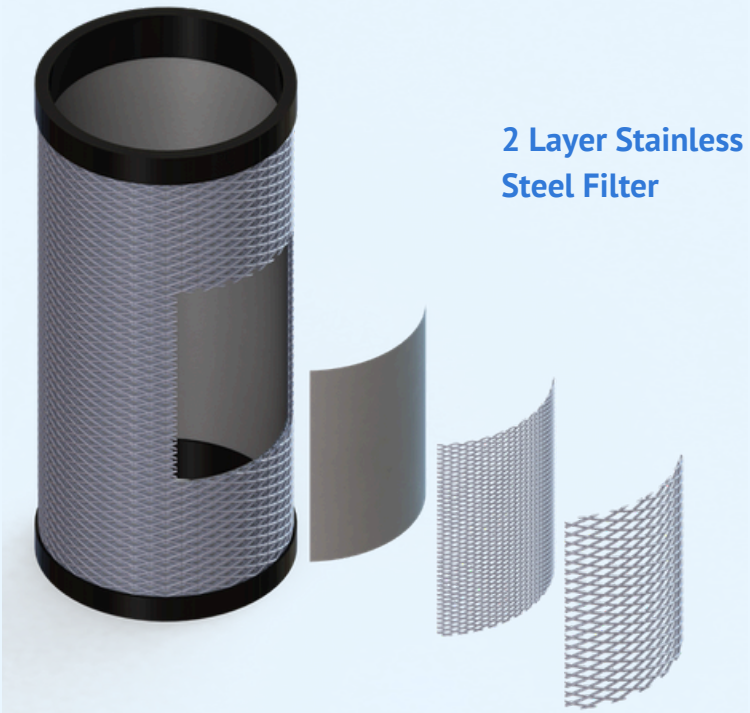
PROTECTOR P1-P5 FUNCTIONS & FILTER ELEMENTS

PARTICLE FILTRATION

The Protector P1 and P2 are supplied with 200-micron stainless-steel filters as standard, while the Protector P5 is supplied with a 100-micron stainless-steel filter.

An optional 40-micron stainless-steel filter is available upon request.

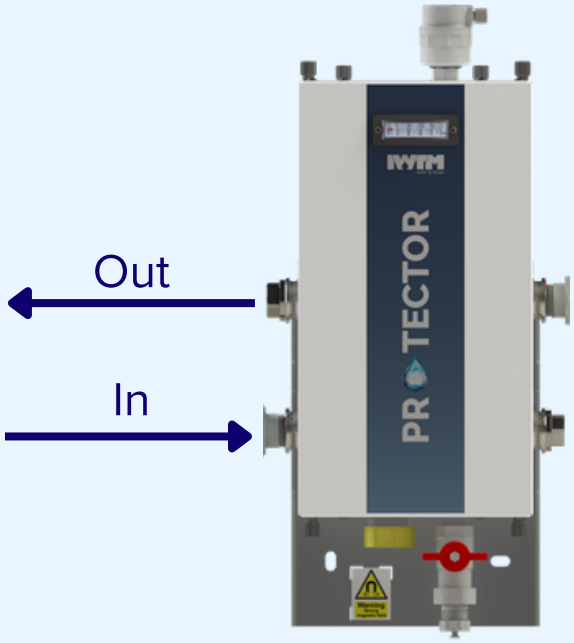
Stainless-steel micron filters are consumable components.

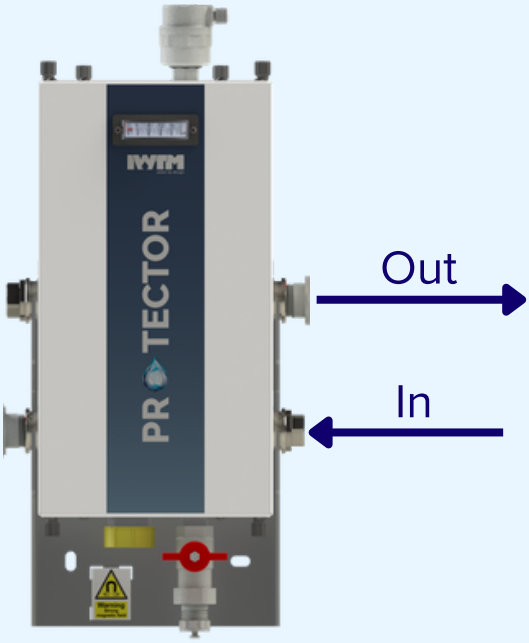


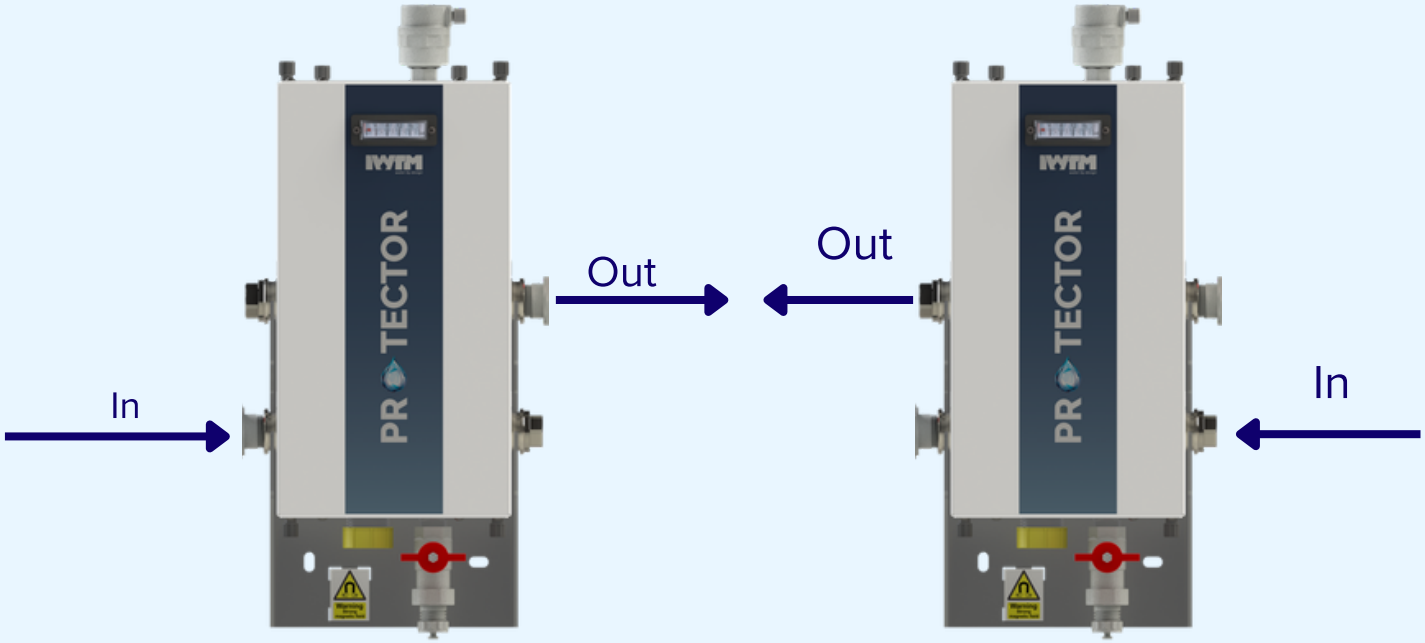
2 Layer Stainless Steel Filter

The filter has a large surface which gives a long operating time before cleaning and thus less flushing and refilling.

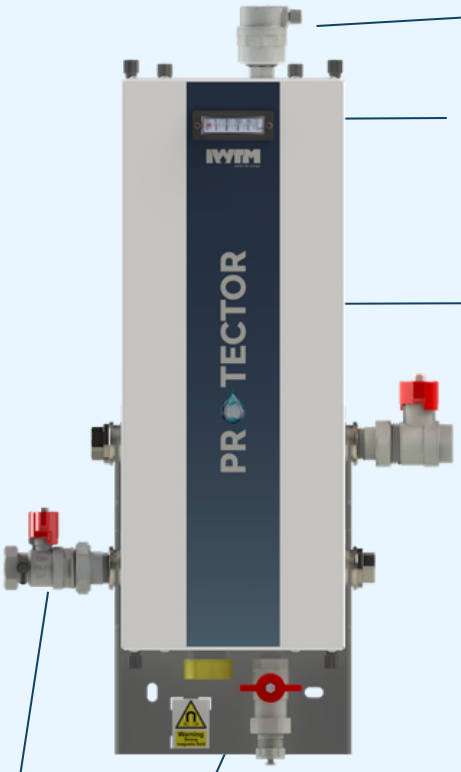
P1 - P5 CONNECTION OPTIONS







DETAILED INTERNAL & EXTERNAL VIEW P2 & P5



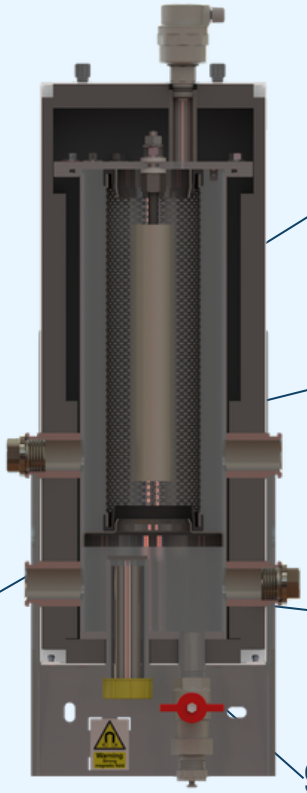
1 **Vent pipe + automatic vent valve:** An automatic vent valve is installed at the top of the vent pipe.

2 **Amp meter:** this indicator device measures the intensity of the current produced by the anode relative to the cathode, which is directly related to the corrosiveness of the system water.

3 **Vessel insulation and cladding:** External cladding in carbon steel and internal PE foam insulation against cold/hot to prevent condensation.

5 **Inlet valve with sampling point**

4 **Drain:** The filter is emptied with a manual valve in- stalled on the drainpipe. Can be easily connected to any existing drain manifold / pipe or automatic drain.



6 **Sacrificial Anode:** Magnesium Anodes that provide Cathodic protection and lower the fluids conductivity. The anodes also scavenge oxygen and regulate the pH.

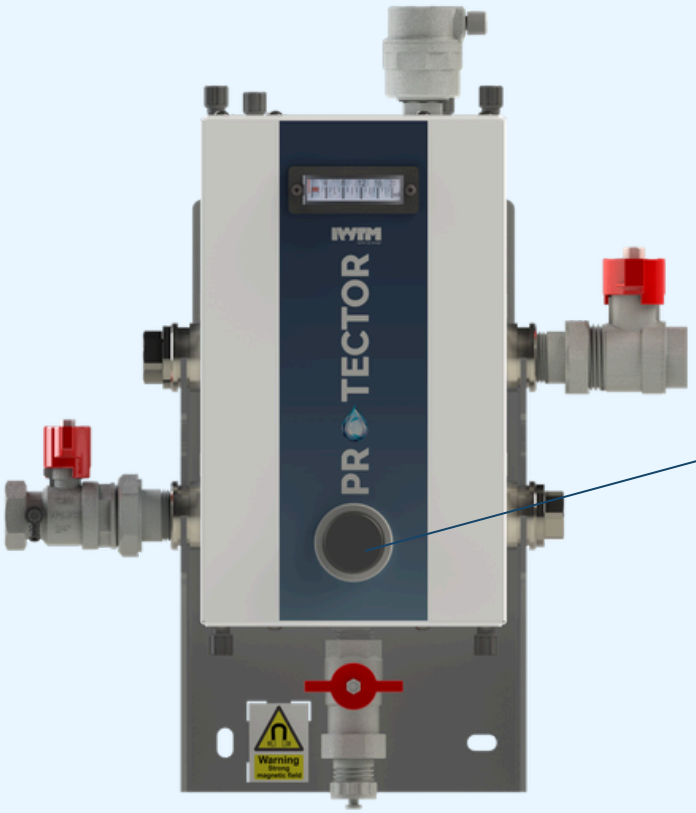
7 **Filter:** The Protector P1 and P2 are supplied with 200-micron stainless-steel filters as standard, while the Protector P5 is supplied with a 100-micron stainless-steel filter. An optional 40-micron filter is available upon request.

8 **Collection area:** The base design ensures circulation is retained for longer periods, lengthening the time before a manual clean of the filter.

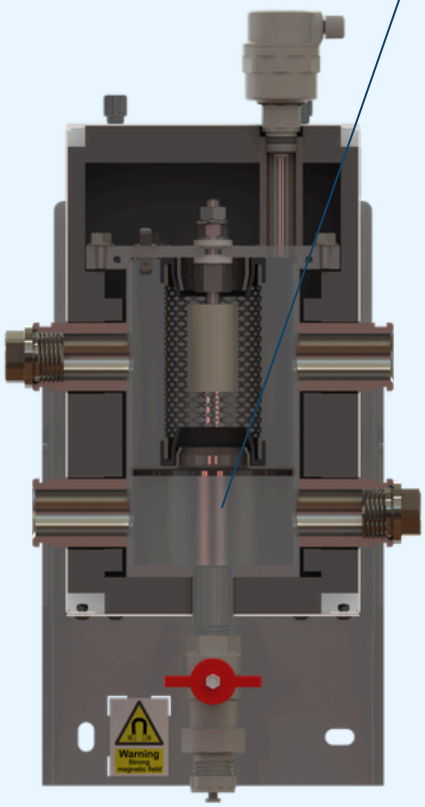
10 **Inlet :** Water entering the Protector is immediately directed towards the inner walls, accelerating the flow and creating a “vortex” that improves separation efficiency.

9 **Dry pocket magnet:** This dry magnet is installed beneath the sacrificial anode to protect it from ferrous particles, it sits inside a stainless-steel tube pocket, it does not require manual cleaning because, once extracted from the filter, the dirt precipitates into the base of the unit ready for removal by flushing.

DETAILED INTERNAL & EXTERNAL VIEW P1

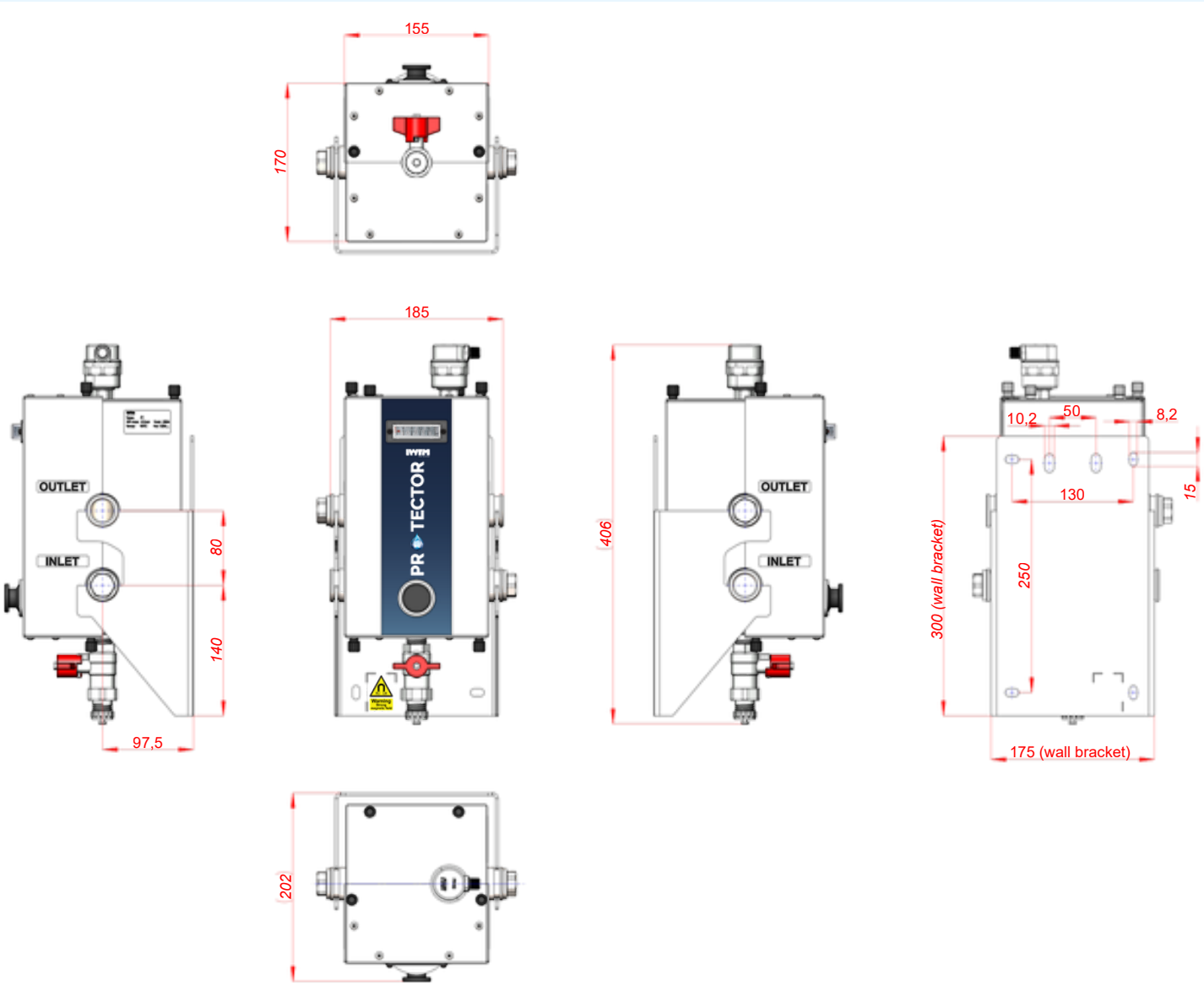


Surface mounted dry magnet: This dry magnet is installed beneath the sacrificial anode to protect it from ferrous particles, it does not require manual cleaning because, once extracted from the filter, the dirt precipitates into the base of the unit ready for removal by flushing.



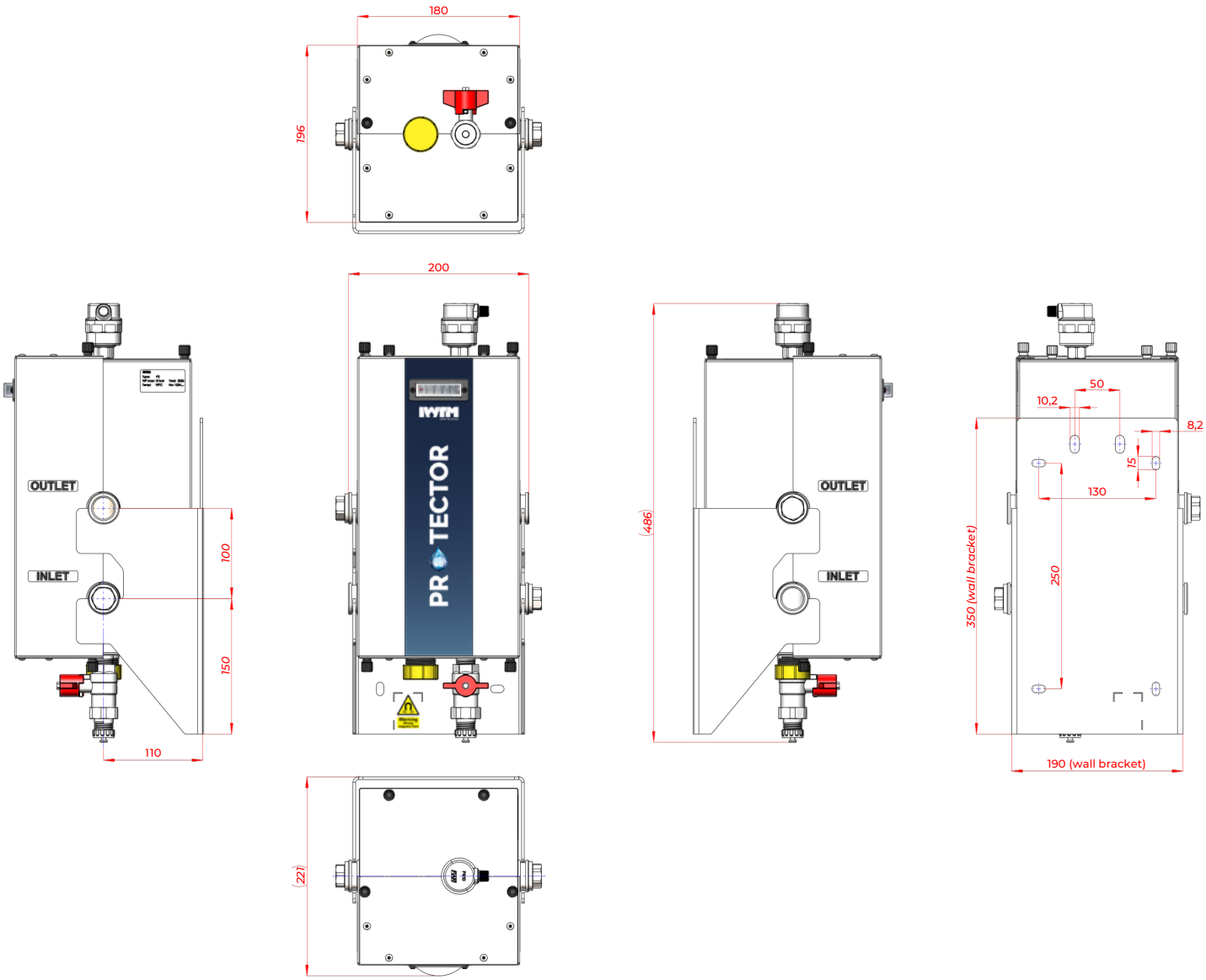
DIMENSIONS

PROTECTOR P1



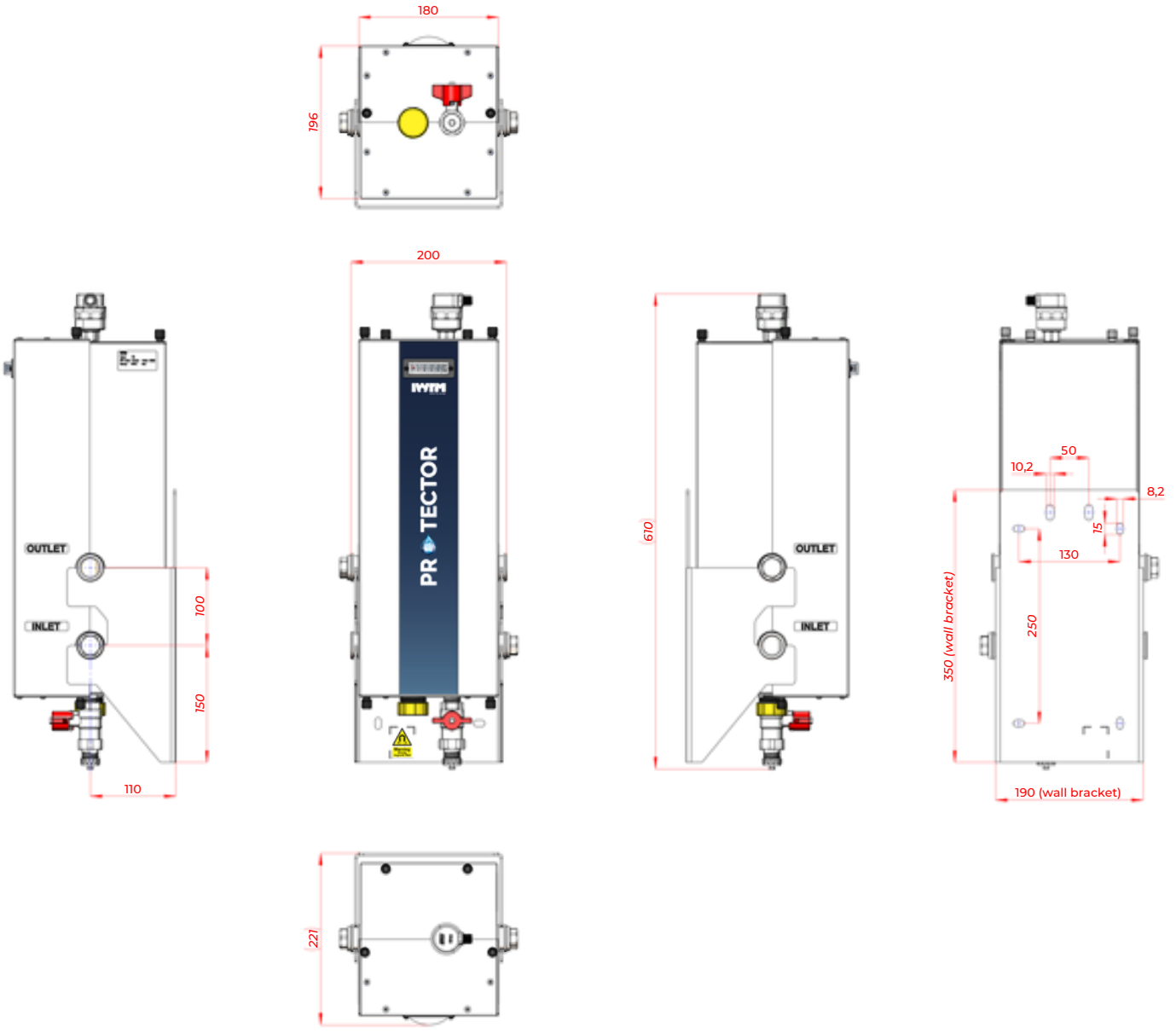
DIMENSIONS

PROTECTOR P2



DIMENSIONS

PROTECTOR P5



TECHNICAL DATA

	LTHW (litres)	Kw	Cooling (litres)	kw	Side Stream	Connections	Volume	Max temp	Max Pressure	Design code
P1	1,000	91	700	47	4 l/min	3/4"	0.9 L	95	10	PED 2014/68/EU
P2	2,000	182	1,400	94	5 l/min	3/4"	2 L	95	10	PED 2014/68/EU
P5	5,000	455	3,500	233	8 l/min	3/4"	3 L	95	10	PED 2014/68/EU

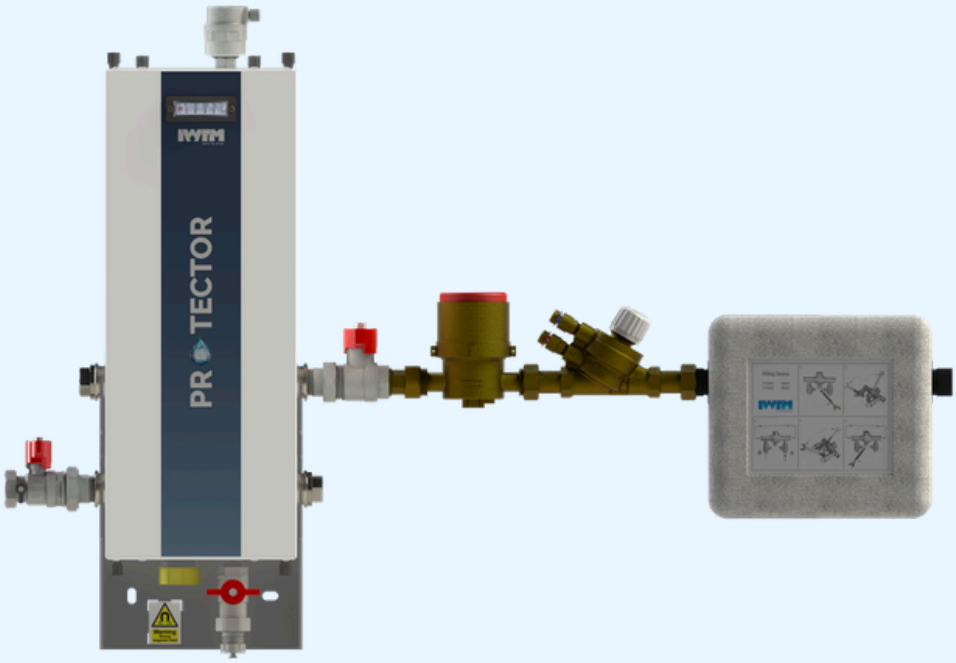
MATERIALS

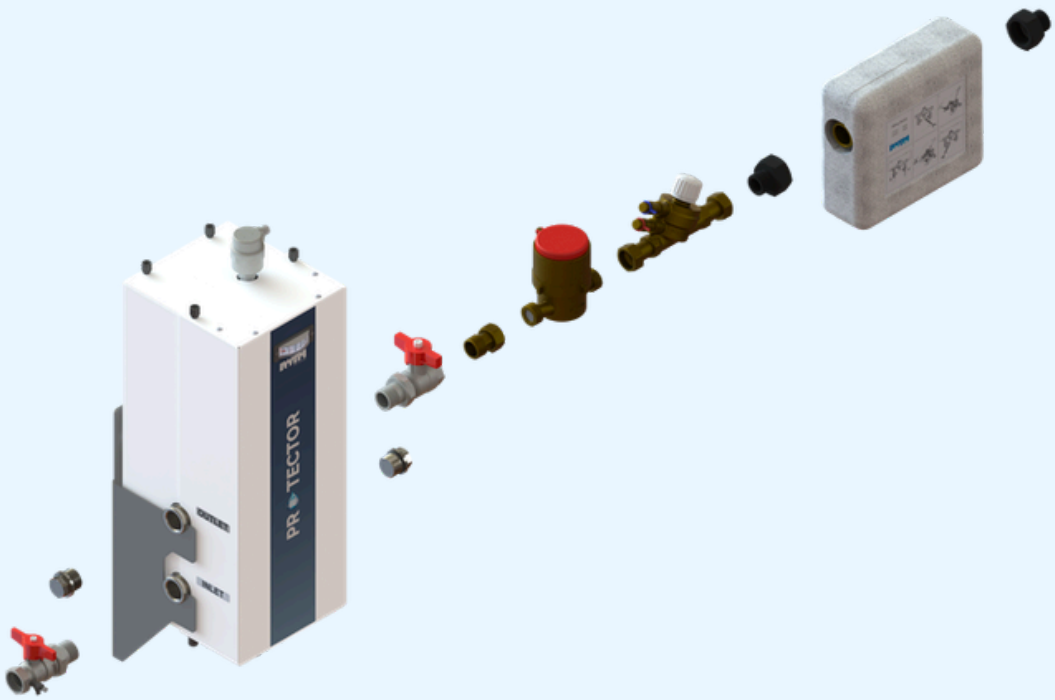
Component	Component Material
Filter Housing	Stainless Steel AISI 304
Filter Screen	Stainless Steel AISI 316L
O ring EPDM	EPDM
Insulation / cladding	PE Foam / Carbon Steel
Anodes	Magnesium
Magnets	Neodymium
Surface Finishing	Powder Coated

	Dry Weight (Kg)	Full Weight (Kg)	Shipping Weight (Kg)
P1	7.0	7.9	9.5
P2	9.1	11.2	12.3
P5	10.6	13.7	14

VALVE KIT

All Protector P1, P2 and P5 units are supplied with a valve kit as standard.



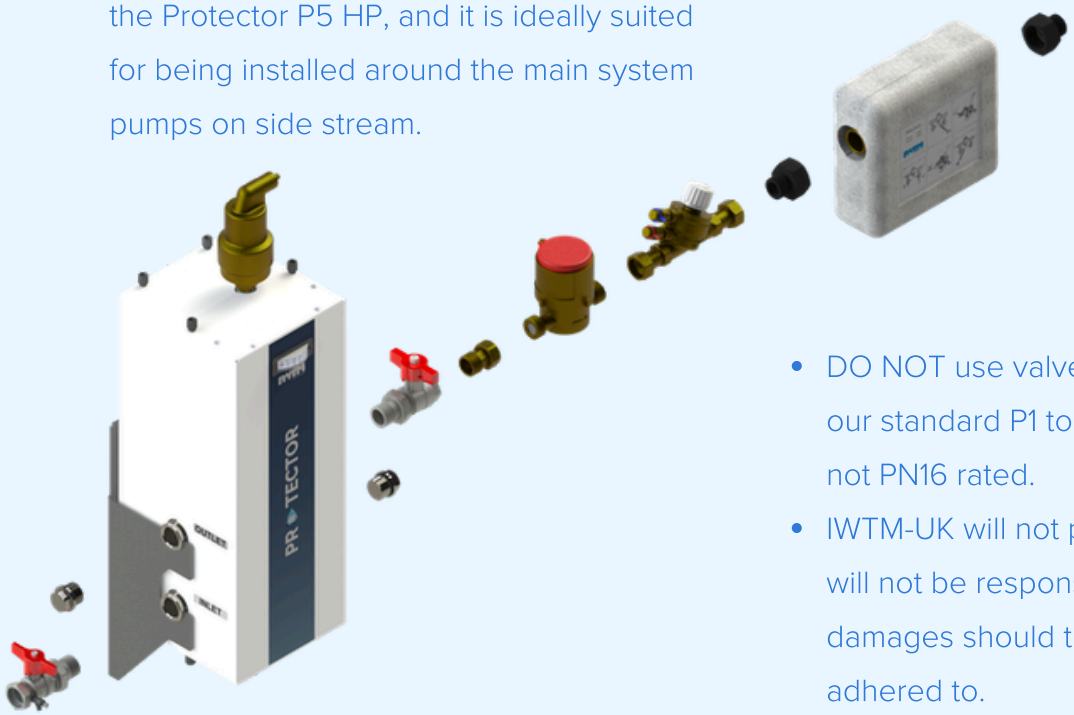


HP VALVE KIT FOR P5 HP

IMPORTANT:

- The Protector P5 HP is rated at 16 Bar (PN16). It is supplied with a different valve kit that is only for use with the P5 HP model.
- The fittings including plugs, valves and PICV are rated PN16 and if lost should never be replaced with other products that are not provided as part of the original valve kit.
- The internal factory fitted Spirotech AAV - SpiroTop AAV 0.5in 150deg 16bar is the only AAV to be used on the Protector P5 HP.
- We do not supply high pressure pumps for the Protector P5 HP, and it is ideally suited for being installed around the main system pumps on side stream.





- DO NOT use valves or components from our standard P1 to P5 range as these are not PN16 rated.
- IWTM-UK will not provide any warranty and will not be responsible for any loss or damages should the above not be adhered to.

IWTM UK
water by design

Environmental Culture Change

be a part of it





clean | protect | prevent



DNV

LETTER OF COMPLIANCE

CLEAN MARITIME
MACHINERY AND COMPONENTS

COMPLIANCE LETTER NO. 1

This is to certify that the

Water Treatment Units

with type designations

15, 25, 50, 75, 100, 260, 500, 800 and 1000L

Manufactured by

International Water Treatment Maritime AS

SLEMMESTAD, Norway

is found to comply with

Det Norske Veritas' Standards for Certification 2.17 (new), Standard for CLEAN Maritime Machinery and Components

HØVIK
June 4th 2003

for Morten Østby
Project Responsible

Tor Jo Landheim
Project Manager

DET NORSKE VERITAS

Founded in 1992, IWTM have been working with chemical free water treatment using electrochemistry for over 30 years and have offices in Norway, UK, Finland, Sweden, Canada, USA and a worldwide presence in the Marine sector.

We have developed models specifically suited to the higher demands of the marine industry operating at higher pressures and higher temperatures. 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, we are still the only chemical free water treatment manufacturer to have this certification and approval. DNV is a globally leading quality assurance and risk management company operating in more than 100 countries.

The IWTM Protector™ is our most recently developed product. The Protector range is now available to our land-based customers.

Version : November 2026

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In line with continued product development, we reserve the right to make any changes to this document without any given notice.