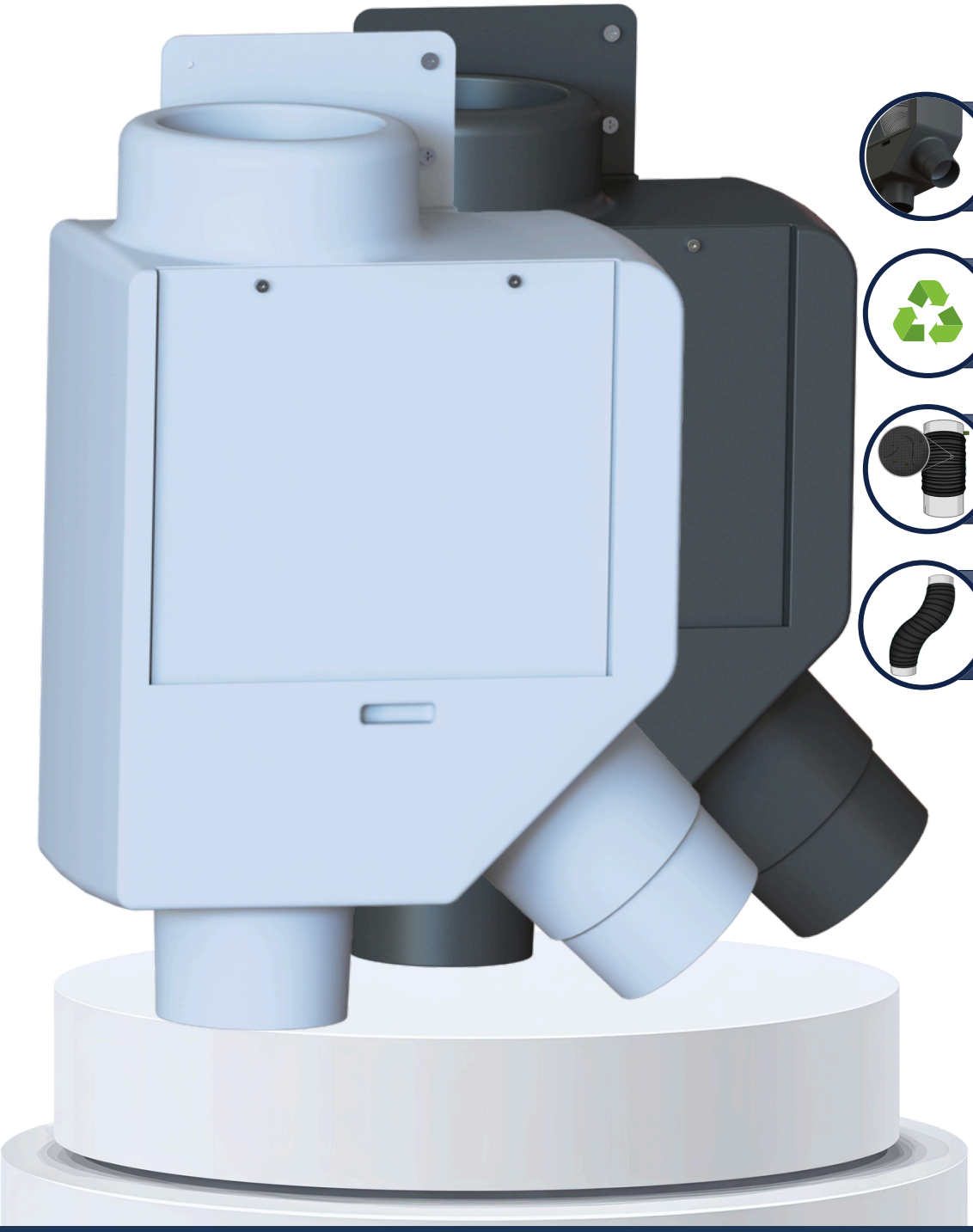
Monjolin® Smart Filter

for rainwater harvesting



- Self-cleaning
- 100% recyclable housing
- Super fine filter mesh
- Adaptable

Rainwater harvesting, reimagined

Product overview

The Monjolin® Smart Filter was developed to raise the bar for rainwater collection and filtration, combining quality, efficiency, and durability in a simple and practical way. Its operation is based on a filter element capable of retaining fine particles and impurities with minimal waste. The exclusive technology that adapts to different rainfall intensities ensures high performance, even during heavy rains. Every detail was designed to simplify use and reduce maintenance. From the new universal fitting system to the 100% recyclable plastic rotomolded body, the Monjolin® embodies WAAG Tech's commitment to innovation and the environment. With its structural robustness and functional design, the product is established as the ideal solution for residential, commercial, and industrial projects seeking long-term sustainability, efficiency, and reliability.

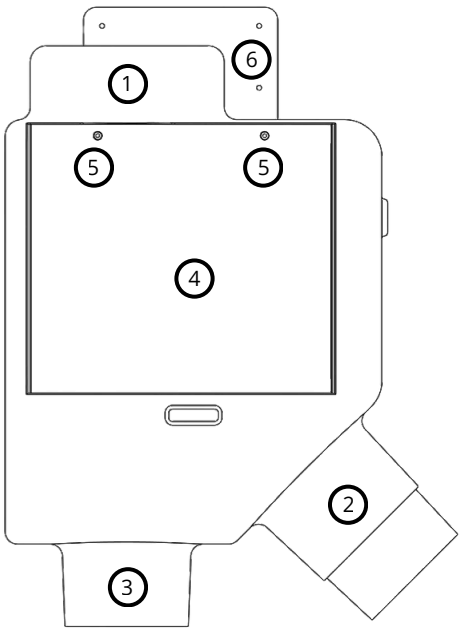
Main features

- **Universal Connection:** New fitting system that allows direct installation on 100 mm, 110 mm, and 4" SCH 40 pipes, without additional adapters.
- **Simplified Maintenance:** Removal and reinstallation of the filter element without tools, just by hand.
- **Anti-Splash Lid:** Prevents splashing and overflow in heavy rains, making it ideal for indoor installations.
- **Sustainability:** Housing made of 100% recyclable plastic, contributing to a greener future.
- **Greater Resistance:** Polyethylene body, more robust and impact-resistant, with greater durability.
- **Adaptation:** The Monjolin® Smart Filter is the only one on the market capable of automatically adapting to different rainfall intensities. This exclusive and patented technology guarantees high performance even in heavy rains, without loss of efficiency.
- **Fine Filter Mesh:** The Monjolin® Smart Filter uses an ultra-fine mesh available in 60 µm or 136 µm versions. Thanks to its adaptation system, even with a finer mesh, the filter maintains superior efficiency, ensuring the best filtration quality on the market.

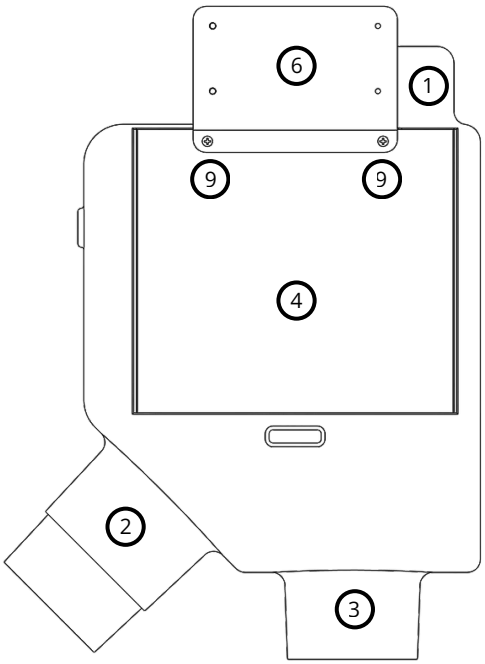
How the Monjolin® Smart Filter works

The Monjolin® Smart Filter channels rainwater from the roof through a fine mesh filter element (60/136 micron) that captures leaves, twigs, and solid particles. This process yields clean water suitable for non-potable uses.
The filter element dynamically adapts to rain intensity, ensuring high performance and continuous, efficient filtration even during the heaviest downpours.
Built with a roto-molded body and a functional design, it offers precise sealing and impact resistance. Its extremely simple installation makes it ideal for both residential and industrial applications, requiring minimal maintenance.

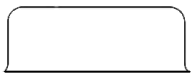
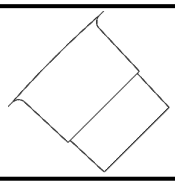
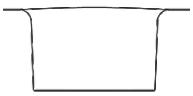
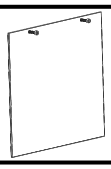
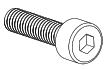
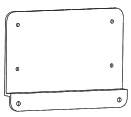
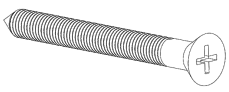
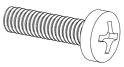
External components



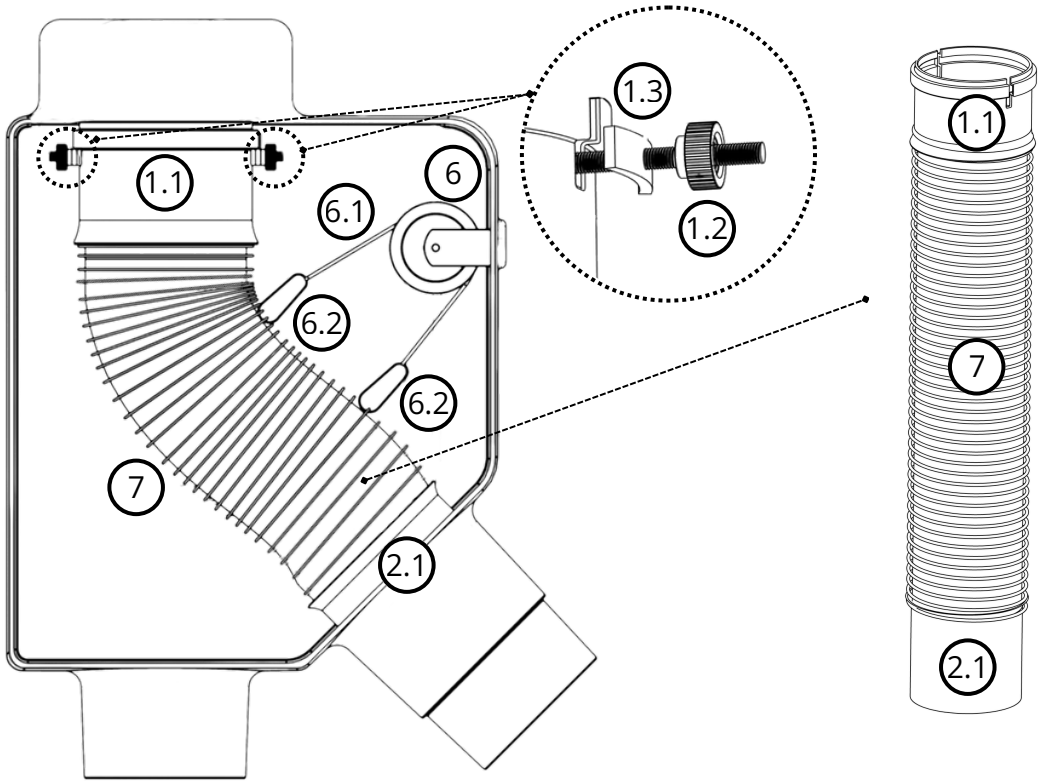
Front view

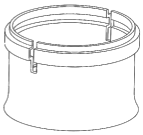
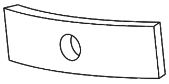
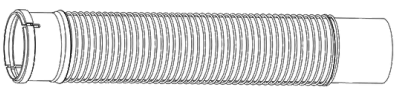


Rear view

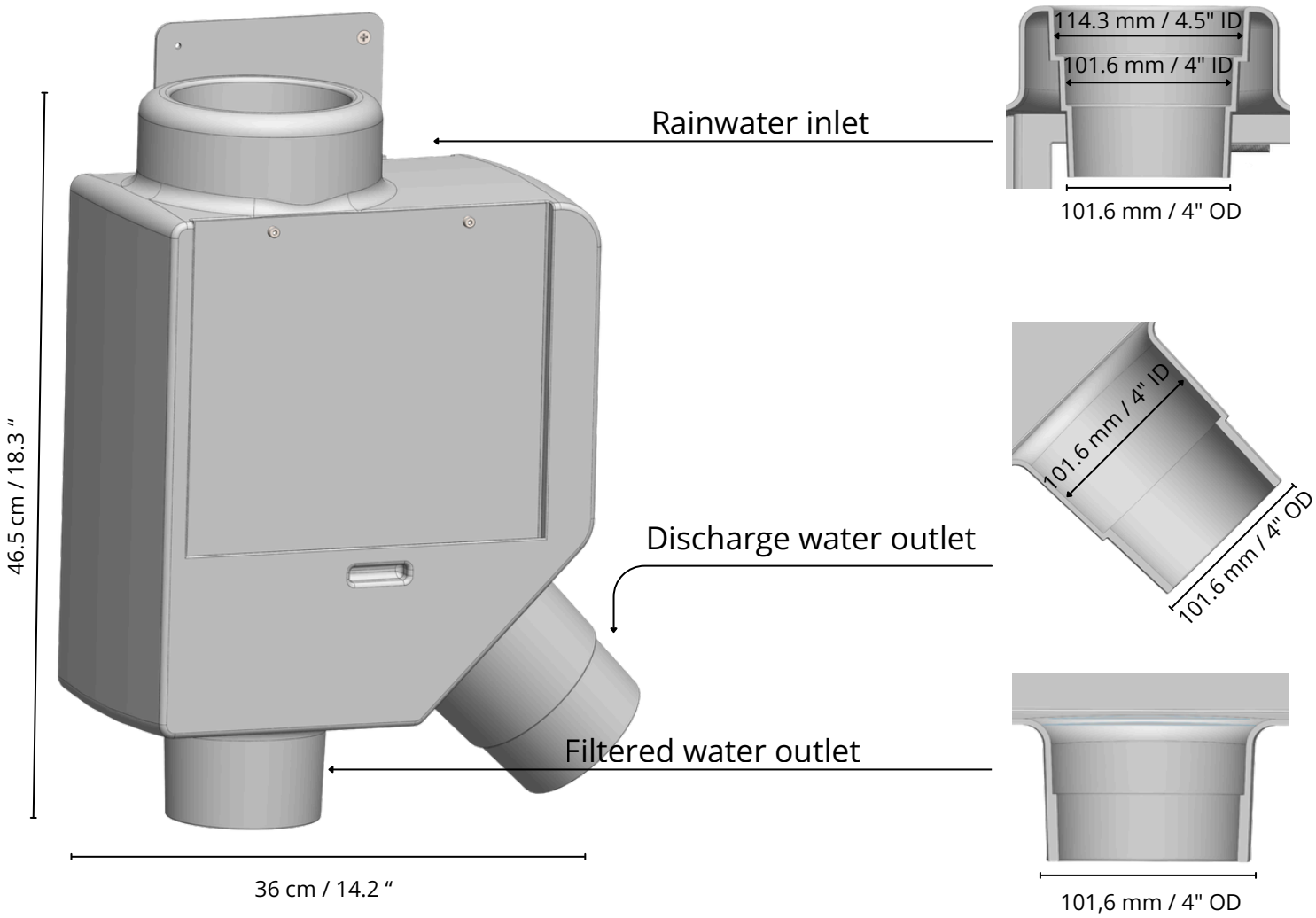
Item	Illustrative image	Id.	Material
Rainwater Inlet		1	Polyethylene
Discharge Water Outlet		2	Polyethylene
Filtered Water Outlet		3	Polyethylene
Inspection Lid		4	Polyethylene
Allen screw 4x12		5	Stainless Steel
Support Plate		6	Polyethylene
Phillips screw 4.8x50		8	Stainless Steel
Phillips screw 4x16		9	Stainless Steel

Internal components



Item	Illustrative image	Id.	Material
Upper Connector		1.1	PVC
Knob		1.2	Plastic and stainless steel
Easylock		1.3	Polyethylene
Lower Connector		2.1	PVC
Pulley		6	Nylon and Aluminum
Support Cable		6.1	100% polyester
Clips		6.2	Stainless steel
Filter Element		7	Stainless steel, Nylon and Polyester

Dimensions



Type of measurement	Dimensions
Height	46.5 cm / 18.3"
Width	36.0 cm / 14.2"
Depth	17.8 cm / 7.0"

Components	Dimensions
Rainwater inlet	114.3 mm - 101.6 mm / 4.5" - 4.0"
Filtered water outlet	101.6 mm / 4.0"
Discharge water outlet	101.6 mm / 4.0"

Adaptability

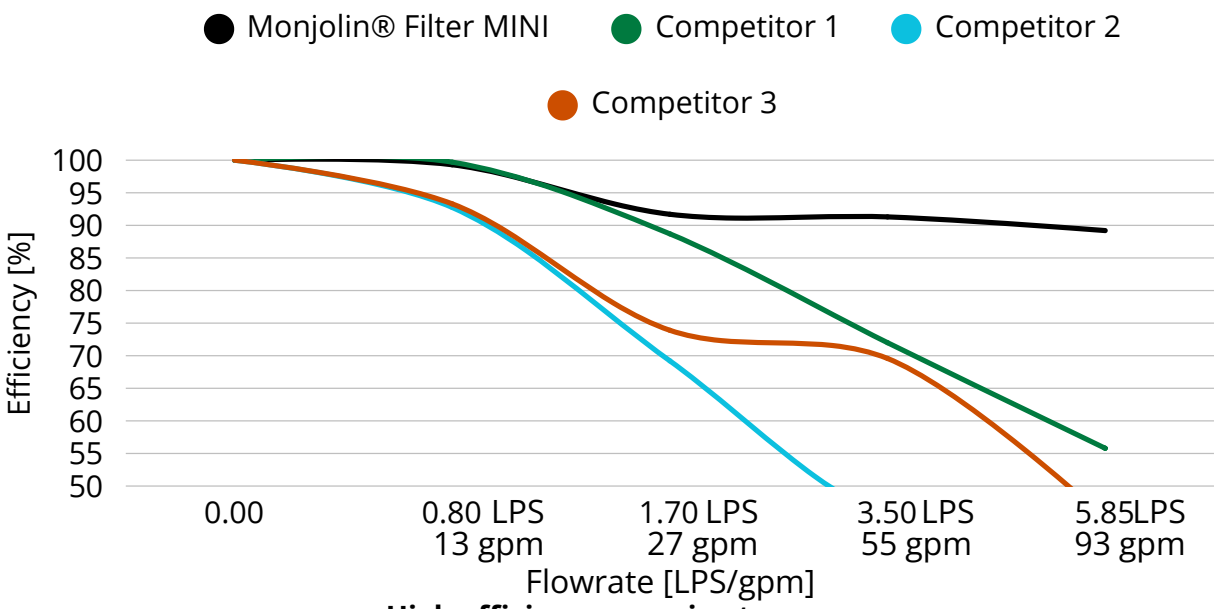
Light Rain

Heavy Rain

Filter element with technology that adapts to different types of rain.

Monjolin® vs. competitors

Efficiency Graph



High efficiency even in storms.

Filter mesh

136 µm mesh
Monjolin® Smart Filter

Mesh used by competitors

Capable of guaranteeing the best quality of rainwater.

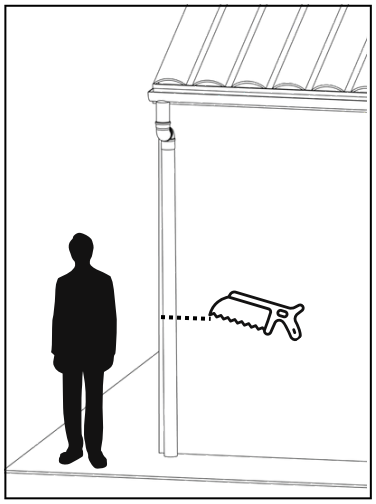
How to choose your mesh?

The Monjolin Filter is available in 60-micron and 136-micron filter mesh sizes. Both options are extremely fine, offering significantly superior filtration than the competition and delivering highly clean water, ready for a variety of uses or for additional treatments in more complex systems.
Choosing the ideal mesh size should consider the catchment area, the local pollution level, maintenance availability and the water's end use.

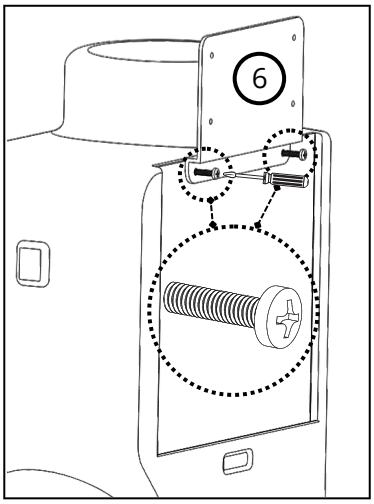
	60 micron mesh	136 micron mesh
Catchment Area Size	It becomes a good option for areas of up to 80 m², where a lower water flow allows the use of the finest mesh to obtain extremely clean water.	Ideal for areas over 80 m², where the large flow of water and impurities requires a more open mesh to maintain filtering capacity for longer periods.
Value	+3	
Score	**Ex: +3**	**Ex: +0**
Pollution Level	The 60 micron filter is better suited for use in areas remote from urban centers, which are characterized by low particulate matter (PM) pollution from vehicles and industry.	More attractive in large urban centers or places with oily dirt, as it requires less frequent maintenance than the 60 micron mesh.
Value	+2	
Score	**Ex: +0**	**Ex: +2**
Maintenance Availability	An excellent option when the user has the availability for more frequent cleaning, ensuring maximum efficiency in removing ultrafine particles.	Recommended when cleaning frequency needs to be lower, either due to unavailability or difficulty accessing the filter.
Value	+2	
Score	**Ex: +2**	**Ex: +0**
Rainwater Use	Suitable for indoor use (flushes, bathrooms, washing machines, etc.), as long as the conditions of the other factors are favorable.	Excellent for common outdoor uses (watering gardens, washing patios and garages, etc.).
Value	+1	
Score	**Ex: +0**	**Ex: +1**
Total Score	= **Ex: +5**	= **Ex: +3**

Ex: Catchment Area Size: 70 sqm (750 sqft); **Pollution Level:** located in the heart of the city; **Maintenance Availability:** employee available for cleaning; **Rainwater Use:** used outdoor for watering gardens and cleaning the garage and cars. **Results:** The total is 5 points for the 60 micron and 3 points for the 136 micron. 60 micron is the winner in this case.
NOTE: If a factor is more important to the customer than the one indicated in the table, they are free to change the weight and recalculate according to their needs. For example, if maintenance frequency is a more important factor, its weight can be changed from +2 to +4, for example, or even ignore the other factors and use only the one they consider most important as decisive for the choice.
Also, if the partner has a prefference for either mesh, he/she can choose a mesh size to offer as standard.

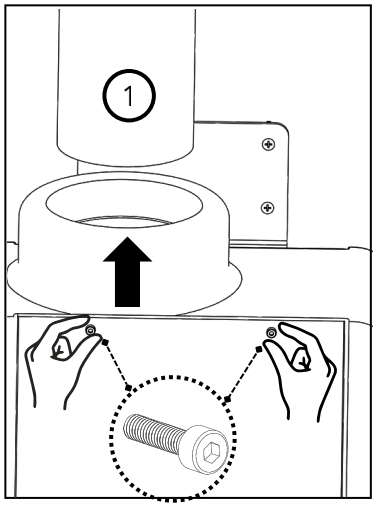
Installation



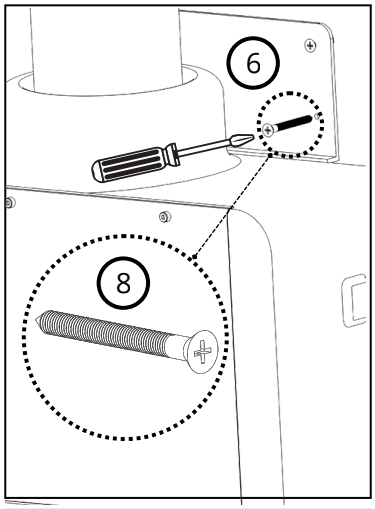
1. Cut the pipe at a suitable height to allow handling and maintenance of the filter housing and **Filter Element** (**7**). Avoid using glue on the connections to ensure future adjustments or removal of the product without risk of damage.



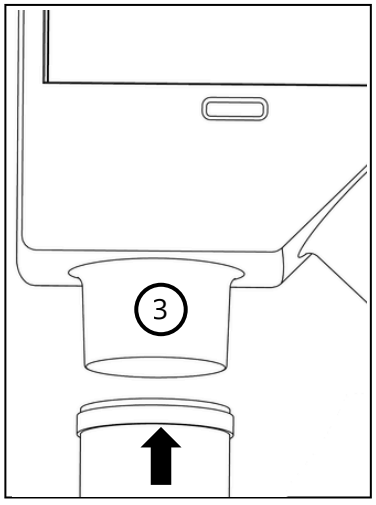
2. Choose the side where the Monjolin® Filter will be installed and then **fix the Support Plate (6)** to the lid that will be placed against the wall **with the Phillips screws 4x16 (9)**.



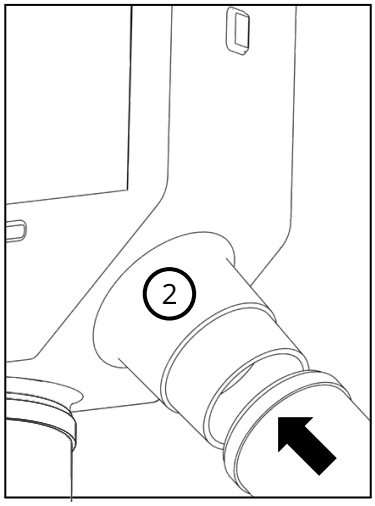
3. Fit the Rainwater Inlet (1) to the pipe prepared in step 1 and use the **Allen screws 4x12 (9)** to lock the front lid.



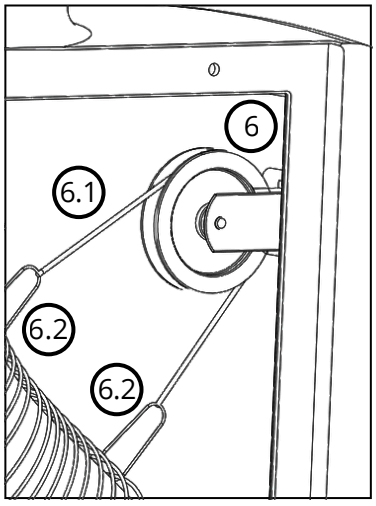
4. Mark the Support Plate (6) fixing points using two vertically aligned holes, **drill with an 8 mm (5/16") bit, and secure with the Phillips screws 4.8x50 (8).**



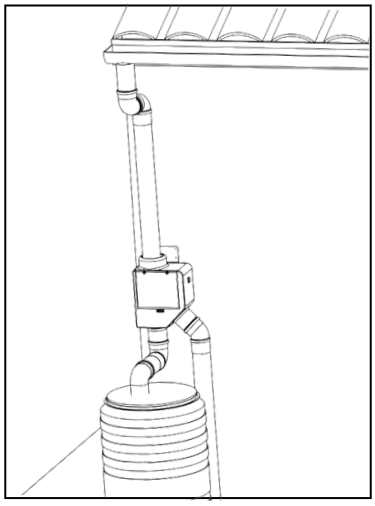
5. Connect the necessary piping to the Filtered Water Outlet (3) to direct it to the clean water reservoir.



6. Connect the necessary piping to the Discharge Water Outlet (2) to direct the impurities to the city's storm drain or other suitable destination.

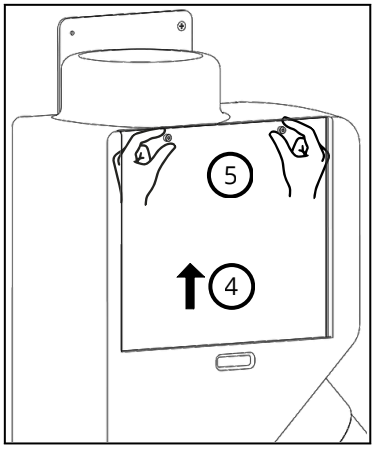


7. After completing the installation, open the **Inspection Lid (4)** and check that the **Support Cable (6.1)** is correctly positioned on the **Pulley (6)**. Check that the **Lower End (2.1)** is fully engaged.

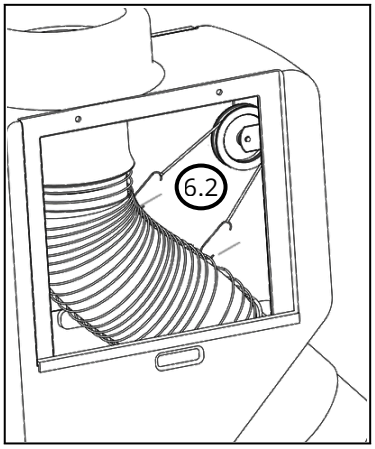


8. After completing all the previous steps, your installation should look similar to the one shown in the image on the side.

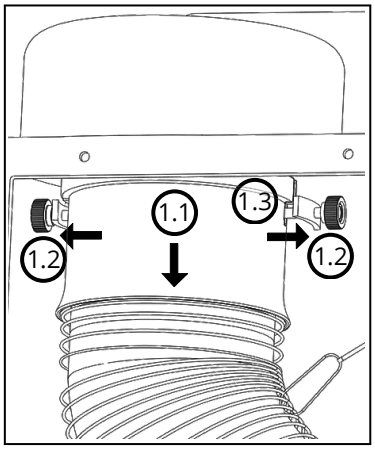
Removal of the filter element



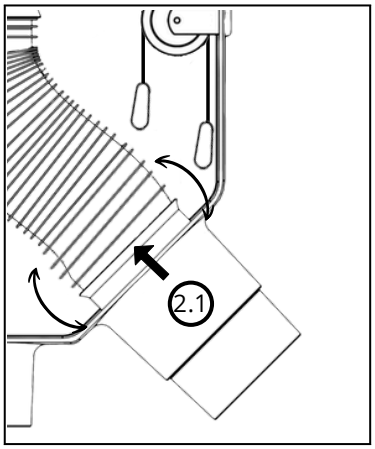
1. Remove the **Allen screws 4x12 (5)** and slide the **Inspection Lid (4)** upwards.



2. Remove the **Clips (6.2)** from the **Filter Element (7).**

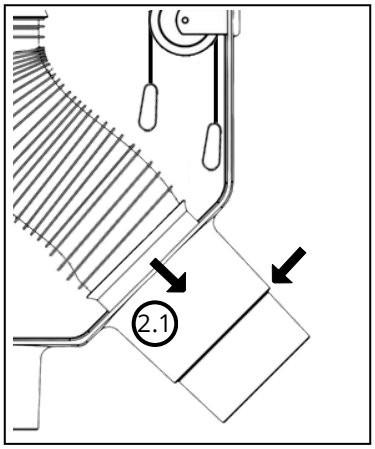


3. Loosen the **Knobs (1.2)** that secures the **Upper Conector (1.1)** without removing them, pull the **EasyLocks (1.3)** towards the **Knobs (1.2)** and pull down the **Upper Connector (1.1)**.

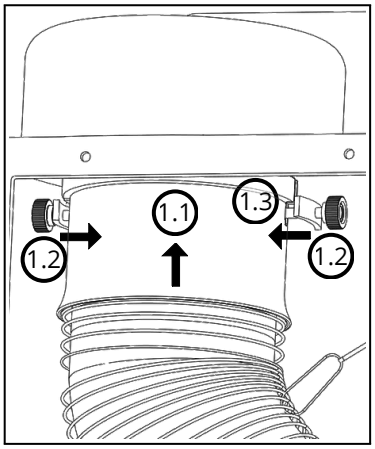


4. Pull the **Lower Connector (2.1)**. Remember to always apply force to the connections and, if necessary, make a swing motion to facilitate removal.

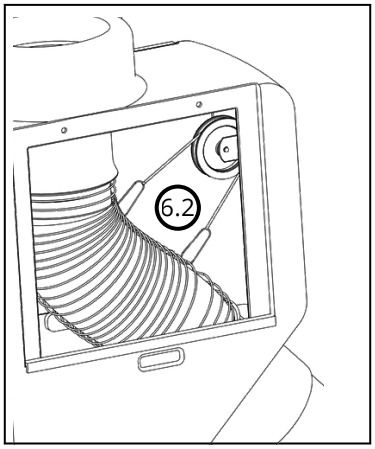
Reinstallation of the filter element



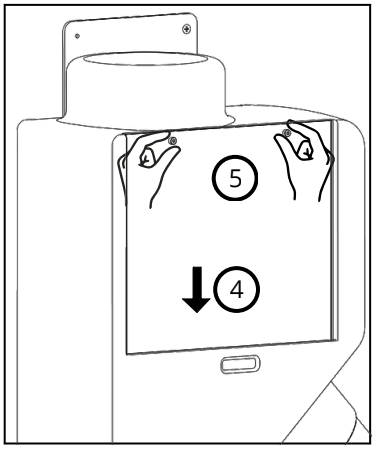
1. Properly align the **Lower Connector (2.1)** with the inner connection and push firmly until you feel it fully engage. Apply force only to the connections. A slight swing motion can help ensure a complete and secure fit.



2. Fit the **Upper Connector (1.1)** into the upper connection and push it all the way in. Slide the **EasyLocks (1.3)** until they fit completely and tighten the **Knobs (1.2)** to ensure a secure fit.



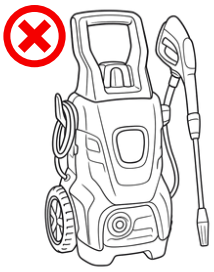
3. Reattach the **Clips (6.2)** onto the **Filter Element (7)**. Make sure they are positioned correctly within the marked spirals and firmly snapped into place to secure the assembly.



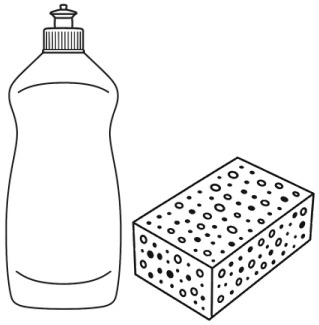
4. Place the **Inspection Lid (4)** over the Lid frame and slide it down to the inner stop. Tighten the **Allen screws 4x12 (5)** to secure the assembly and guarantee the Lid is closed and correctly aligned.

Cleaning the filter element

It is recommended to perform maintenance on the filter element after the first rains that occur after long periods of drought, to ensure better efficiency during the rainy season. An extra cleaning may be necessary throughout the rainy season.
Follow the recommendations for cleaning your filter element and ensure greater product durability.
Improper use of accessories may result in loss of warranty.

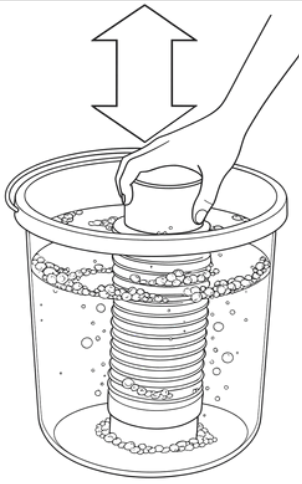


DO NOT USE!
Using a high-pressure washer may damage the filter element.

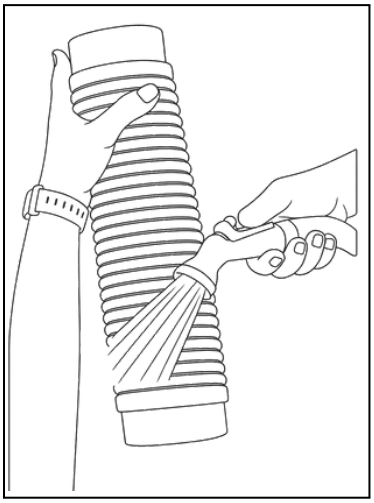


Always use a **neutral detergent** or **soap** to avoid damaging the filter mesh. Use a **soft sponge**. Never use abrasive sponges, as this can damage it.

Use a **bucket** that is deep enough to completely submerge the filter element. An **adapter** may be used to **pressurize the water**.



1. Hold the filter element at one end and submerge it completely in a bucket of clean water. Then, move it vertically, repeatedly plunging it to dislodge the larger debris from inside the filter.



2. Direct a high-pressure water jet toward heavily soiled areas of the filter element to facilitate the removal of persistent residue.

2.1. For a more thorough cleaning, use a neutral detergent and a soft sponge to scrub the **inside** of the filter element, focusing on the dirtiest areas. Then, rinse thoroughly and repeat the process if necessary.

2.2. If the dirt persists, soak the filter element in soapy water for at least 30 minutes. Then, rinse the filter element to remove any residue.

Special tips

Installation Tips

It is recommended to install the Monjolin® Smart Filter at a minimum vertical distance of 1.5 meter (5 feet) from the gutter.

This distance allows the water to gain sufficient speed to generate vibration inside the filter, enhancing the self-cleaning effect of the system.

If it is not possible to maintain this distance, the filter will continue to function normally, but with less benefit from the vibratory effect.

For catchment areas larger than 80 m^2, the use of an overflow is advisable, which prevents backflow and overloading of the system.

In larger installations, it is also recommended to have a hydraulic technician or responsible plumber supervise the installation, ensuring better sizing and efficiency of the system.

If there are trees with large leaves over the roof, a gutter guard can improve the system's efficiency. Although the Monjolin® Filter has a self-cleaning system, large leaves can obstruct the water flow, reducing the performance of the filter element.

Use of Chlorine in the System

Chlorine use must be strictly avoided near and before the filter element. Chlorine vapors react with the stainless steel of the filter, potentially causing oxidation and permanent material damage.

For rainwater disinfection, apply chlorine granules diluted directly into the reservoir. This ensures uniform, safe chlorination while avoiding contact with the filter and minimizing chlorine consumption.

To optimize rainwater harvesting and quality, it is recommended to:

1. Install an inlet baffle in the pipe feeding the reservoir to prevent turbulence and the resuspension of settled sediments.
2. Employ a floating suction device positioned approximately 15 cm (6 inches) below the surface. This ensures water collection from the cleanest zone, free from settled and floating debris.
3. Supplement the system with secondary filters (pleated, activated carbon, or ceramic, used alone or in combination). The high-quality pre-filtration provided by the Monjolin® Filter significantly extends the lifespan of these components.
4. For convenience, connect the floating suction device to a booster pump for simple, efficient and automatic use of the filtered water.

Which mesh size to choose: 60 micron or 136 micron?

- Both mesh sizes are extremely fine and highly effective at removing debris from the water flow.
- The 60 micron filter is an attractive option if the client has easy access to the unit and the capability to perform monthly maintenance on the filter element.
- Conversely, the 136 micron filter is the optimal choice for installations where the filter is difficult to access or frequent maintenance is not feasible. It ensures high water quality without the need for frequent cleaning.
- The "How to choose your mesh?" section serves both clients (by helping them select the best filter) and partners (by aiding them in standardizing their product offerings).

FAQ

- **Can the Monjolin® Smart Filter be installed in existing rainwater harvesting systems?**

Yes. Its installation is notably simplified because it was developed with aligned rainwater inlet and filtered water outlet connections. In most cases, installation requires only a simple horizontal cut in the downpipe (from the gutter), where the filter is then inserted and connected to the cut ends of the pipe.

- **Can it be used in industrial or commercial applications?**

Yes. Provided that the manufacturer's technical guidelines are followed and the appropriate model is selected according to the size of the catchment area and the specific demands of each system.

- **Is the water filtered by the Monjolin® Filter potable?**

No. The Monjolin® Smart Filter performs only physical separation, removing solid impurities equal to or larger than 136 micron or 60 micron, depending on the filter element used. It functions as a pre-filter, separating solid particles and preventing debris from overloading the system. The process of making water potable requires further procedures such as chemical treatment, disinfection, and/or chlorination.

- **Are tools required for maintenance?**

No. The Monjolin® Smart Filter features components that simplify access to its interior, allowing maintenance to be performed entirely by hand.

- **Is it necessary to replace the filter element after some time?**

The filter element of the Monjolin® Smart Filter is designed to be washable. Its original efficiency can be restored through simple, periodic cleaning. While the frequency of maintenance and eventual replacement may vary based on the catchment area's conditions and the impurity level, the same filter can be used for years with proper care during maintenance.

- **Can the filter be installed vertically and horizontally?**

The Monjolin® Smart Filter is designed exclusively for vertical installation.

- **Does the Monjolin® Filter require adapters?**

No. The Monjolin® Smart Filter features a universal connection system compatible with 100 mm, 110 mm, and 4" SCH 40 pipes, entirely eliminating the need for adapters and simplifying the installation process.

- **Can the Monjolin® Filter be installed indoors (such as in covered areas or garages)?**

Yes. The Monjolin® Smart Filter was designed with an anti-splash inspection lid that prevents leaks and runoff during heavy rainfall. This feature allows for its safe installation in indoor environments such as covered areas, garages, or utility rooms.

- **Is any technical knowledge required for installation?**

No. The Monjolin® Smart Filter was designed for simple and intuitive installation, allowing it to be mounted by anyone without the need for advanced technical expertise. The product manual provides clear, illustrated instructions, ensuring quick and safe assembly.

- **Does the filter come ready for installation, or does it need to be assembled?**

The Monjolin® Smart Filter is shipped ready for installation.

- **What does the Monjolin® Filter warranty cover?**

The warranty exclusively covers manufacturing defects and issues related to materials or the production process. Additionally, customers receive specialized technical support to clarify any questions regarding the installation, operation, and maintenance of the Monjolin® Smart Filter.

- **Are replacement parts available for separate purchase?**

Yes. Replacement parts for the Monjolin® Smart Filter are available for individual purchase directly from the manufacturer. Furthermore, the product is supplied with extra replacement components, ensuring greater convenience and durability for the system.

- **Does the Monjolin® Filter work in snowy locations?**

Yes, the Monjolin® Filter functions in locations with freezing temperatures. Filtration will resume once the water melts and begins flowing through the pipe again. The filter itself is not damaged by freezing.