

PRODUCT INFORMATION

Wyma's Complete Water Treatment and Recycling Solutions

Rotary Filter

Micron Filter

Mud Tower

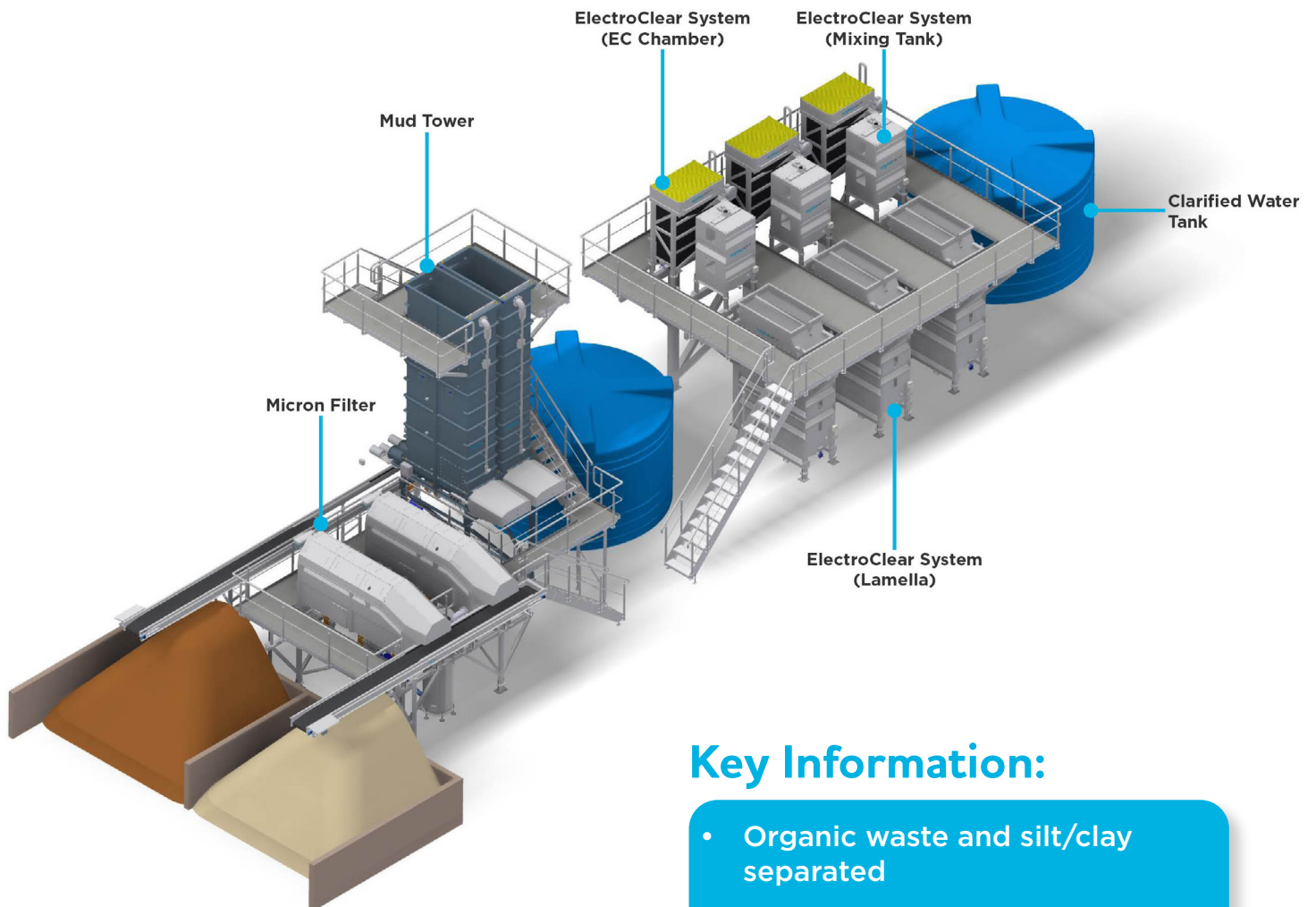
ElectroClear System

Game-changing water
treatment and recycling
solutions for fruit and
vegetable packhouses





Overview



Key Information:

- Organic waste and silt/clay separated
- Dirt extracted in a semi-solid conveyable state
- Fully automated system – no operator expertise required
- Modular easily scalable setup

General Information

At Wyma, we know the importance of managing water and waste for fruit and vegetable processors worldwide.

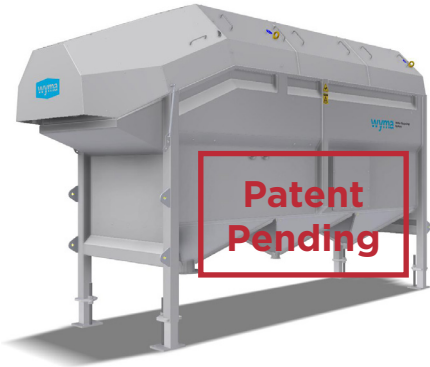
With solutions in-market since 2005 we have taken all we've learned and developed an industry game changer.

Whether you need a solution for small-scale fresh processing or a large industrial facility, our new scalable and modular system offers unparalleled capabilities in maximizing water re-use and achieving exceptional water clarity.

Using our patent-pending advanced filtration and separation technologies, our water treatment solutions effectively capture and eliminate impurities, suspended solids, and contaminants, resulting in water that is exceptionally clear, all without the use of chemicals.

Building a sustainable future powered by intelligent water management

Stage One



The Micron Filter is the first stage of the treatment process, removing organic and other debris from water streams in a single pass.

The filter removes solids to levels much finer than traditional first stage filters. This makes it easy to reuse water for various applications such as potato, carrot, parsnip, other root vegetables, citrus, pip fruit, food processing, industrial, and more.

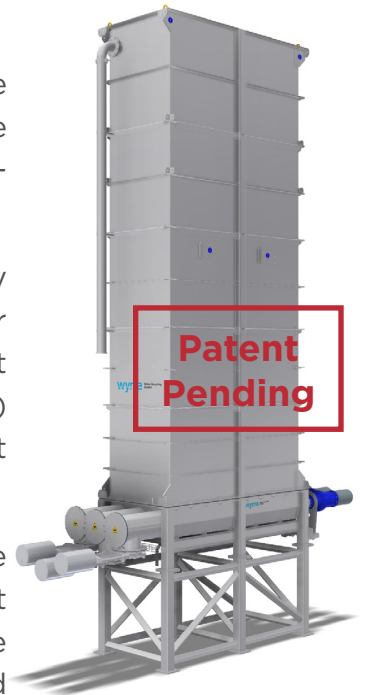
The Micron Filter has been shown to reduce Total Suspended Solids (TSS) by more than 60%, and peeling line BOD and COD by more than 50%, making it a highly efficient and cost-effective solution for first stage water treatment.

Stage Two

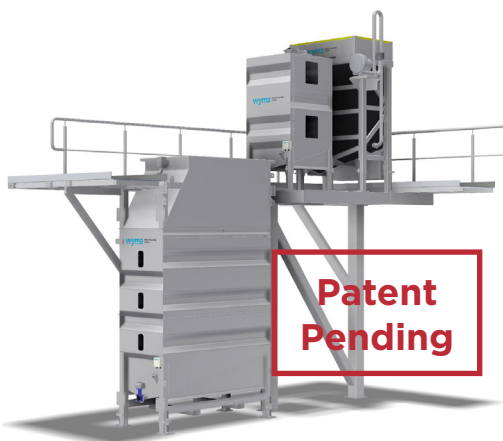
After passing through the Micron Filter, the water is then directed to the Mud Tower. The Mud Tower removes settleable solids from the vegetable wash-water or other soil laden water bodies and discharges them in a semi-solid form that is suitable for conveying or carting.

The Mud Tower is a specially designed gravity separator that automatically extracts settleable solids from the water as a solid, leaving clarified water suitable for reuse in early washing stages or to go for further water treatment processing. Combined with the Micron filter, Total Suspended Solids (TSS) extraction efficiency is typically between 70-85% depending on input conditions.

Together, the Wyma Mud Tower and Micron Filter provide a complete and automated water recycling solution, ensuring consistent and efficient removal of solids from water streams in vegetable processing plants. The system is easy to operate via the supplied control system, fully integrated with the Micron Filter option, chemical-free, and low maintenance.



Stage Three



The third and final stage is the ElectroClear, our advanced water treatment system designed to remove fine particles from wastewater. It uses electricity and sacrificial metal plates in the Electrocoagulation Chamber to treat wastewater effectively. The Lamella clarifier separates the clumped particles, reducing contaminants such as E-Coli, Phosphorous, Nitrates, BOD, and COD. Compact and easy to install, ElectroClear is a cost-effective solution with customizable settings for optimal performance in various wastewater conditions. Meet regulatory standards, reduce environmental impact, and save water usage with ElectroClear.

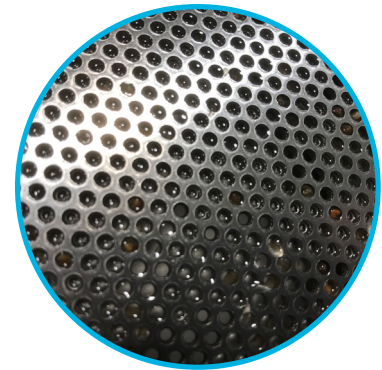
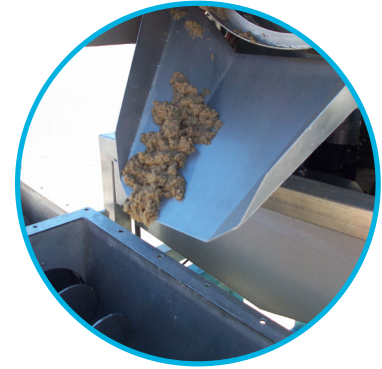


Additional To Stage One

Rotary Filter

The Rotary Drum Filtration System is used to remove organic and other debris from a water stream for water reuse or before finer filtration by the Micron Filter.

Potatoes • Carrots • Parsnips • Other Root Vegetables • Citrus • Pip Fruit • Food Processing • Industrial and more



General information

The Rotary Filter reduces freshwater consumption in vegetable washing, food processing and industrial use by up to 95% depending on the application. Wyma recommends the use of the Rotary Filter in addition to our Micron Filter (stage 1) where soil is rocky or the need for higher flow rates is required, due to the filtration screen being harder wearing.

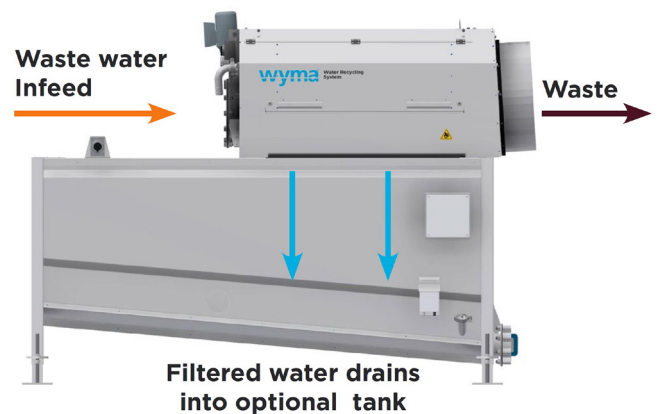
Filtration is by a rotating drum where influent flows into the centre of the drum and passes through a perforated drum screen to capture the organic matter and other debris. The filtered material is augured out of the machine to waste, while the filtered water is discharged, or captured in a purpose-built tank for reuse.

Capacities range from 30 to 400 l/s or 100 to 1,400 m³/hr (475 to 6,300 US gal/min).

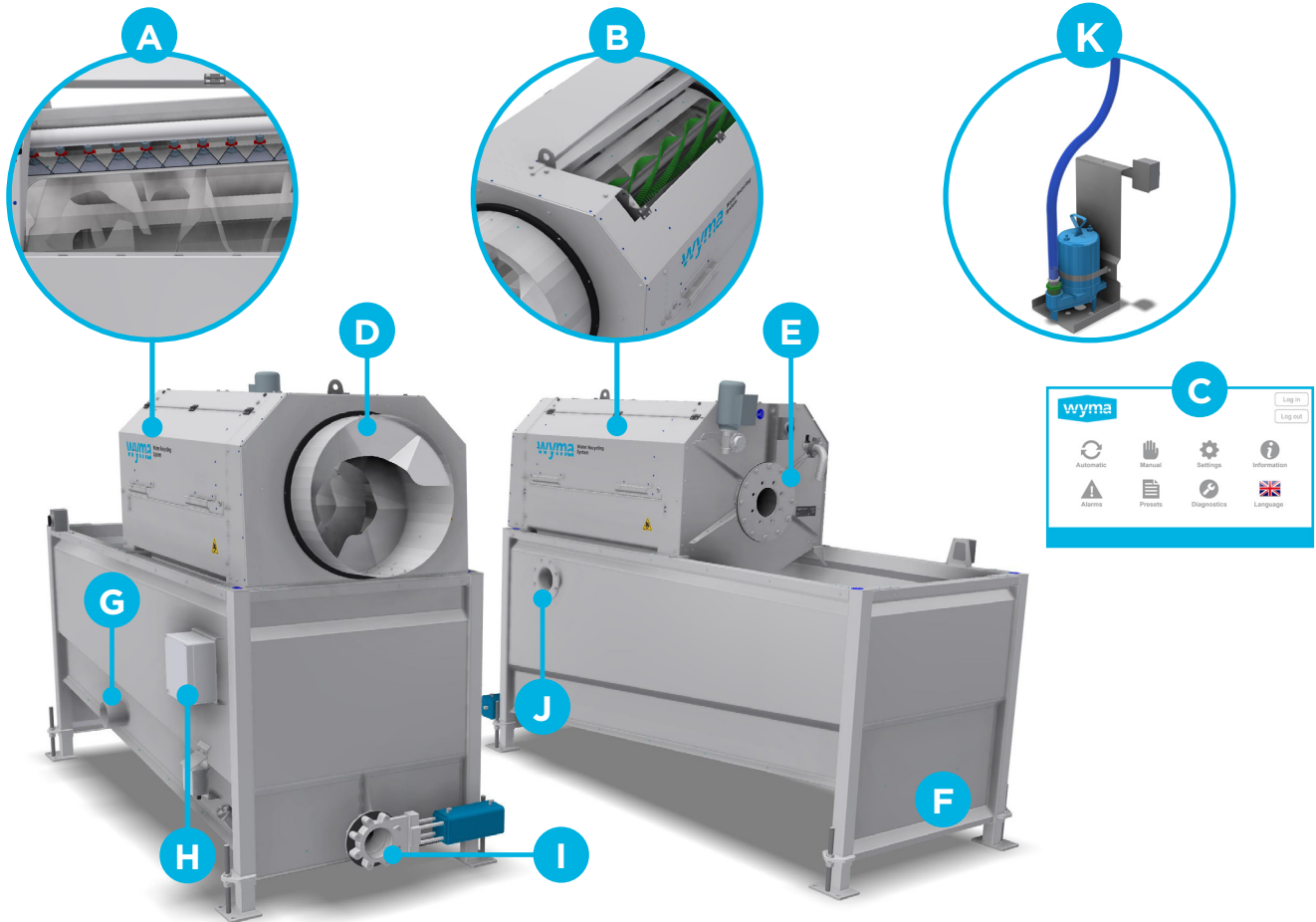
Filtration aperture sizes range from 1.5 to 4 mm (0.06 to 0.16 inches).

With optional tank, submersible or external pumps can be fitted to pump recycled water back to your process line for reuse, and the cycle repeats. Additional pump options are also available:

- For filter screen rinsing to prevent filter blocking.
- For cascading excess water to other parts of your processing line.
- To prevent solids building up in the tank, minimising tank cleaning time.



Features & benefits



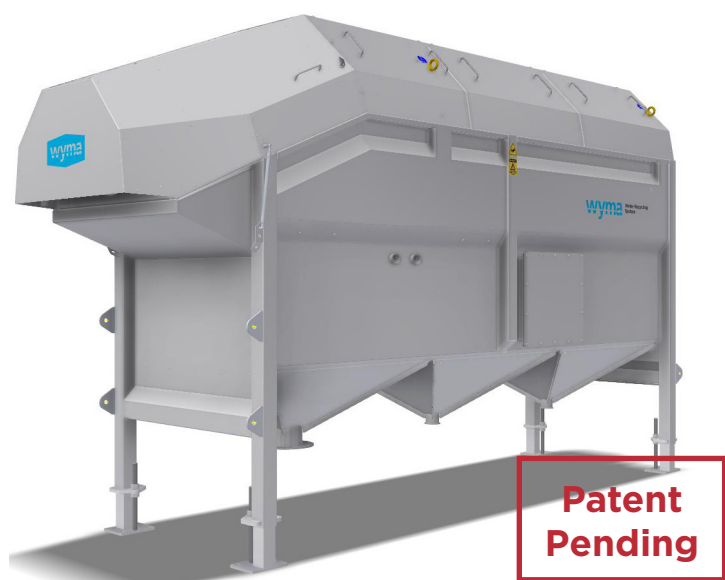
- A** Spray bar*
Spray bar and jets to periodically spray exterior of filter, if required, to keep filter clean. Fed from submersible pump or external water source.
- B** Rotary brush
Removes debris from the perforated screen.
- C** Control
Stand alone or integrated in line panel. The touchscreen control includes pneumatic solenoids for filling and drain valves, software routines for auto filling, auto draining, periodic water and sludge discharge routines, pump protection and pump automation.
- D** Waste outlet
Filtered material exits in a damp but not dripping state and can be directed to a waste bin or removed by a conveyor.
- E** Waste water inlet
Waste water entry point to the filter
- F** Tank*
Multiple tank sizes and frame heights are available to allow equipment to sit at different heights in the wash line.
- G** Balance Port*
Allows two tanks to be connected together.
- H** Pressure transducer
To detect water level for auto filling and top up, to protect pumps from low water, for automation of periodic water discharge and auto emptying.
- I** Pneumatic drain valve
Opens valve to flush sediment from the tank during running and to empty tank when required.
- J** Overflow
Allows excess water and floating debris to exit the tank. Can be connected to a site waste pipe or directed to floor drain.
- K** Submersible pump(s)
Multiple pump options available for recycling, cleaning filters, flume feeds, or rinsing infeed trays and cascading excess water to earlier stages in the line.
- Fill valve
Automatic or manual valve to fill tank.
- Safety
Filter and all pinch points covered and not accessible.

*Optional

Stage One Water Treatment Micron Filter

Ultra-fine, self-cleaning, large capacity, single pass, filtration system to remove organic and other debris from a water stream for water reuse.

Potatoes • Carrots • Parsnips • Other Root Vegetables • Citrus • Pip Fruit • Food Processing • Industrial and more



Patent Pending



General information

The Wyma Micron Filter is an ultra-fine, high capacity, self-cleaning, compact and cost-effective first stage water treatment solution. It filters to levels much finer than traditional first stage filters removing a significant amount of organic matter and debris from water in the first pass such that the water can be easily reused.

This unique filtration system, invented by Wyma, and currently in patent assessment phase, is exclusive to Wyma.

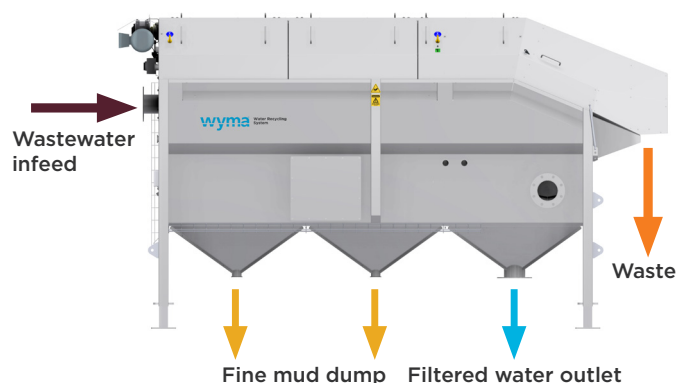
Filtration levels range from 0.075 to 2mm. Capacities at 150-micron (0.15 mm) filtration range from 4,700 to 38,000 gal per hour (5 to 30 litres per second, 18 to 108 cubic meters per hour). Capacity dependent on solids loading.

Total Suspended Solids (TSS) reductions of greater than 60%* have been recorded on wash line and processing line wastewater, as well as reductions of BOD and COD greater than 50%*. *Situation dependent.

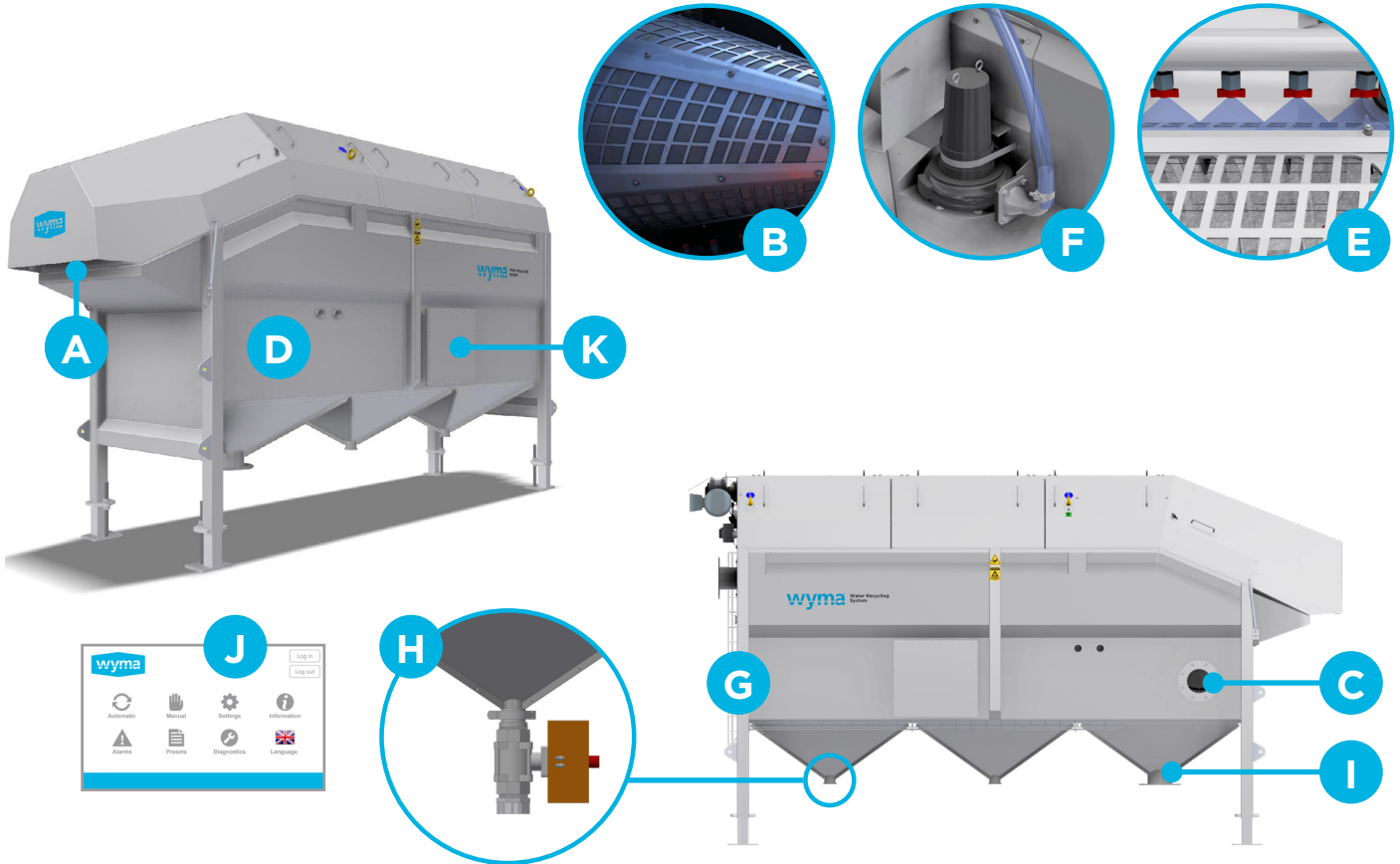
Dirty water or slurries are pumped directly into the filter from the base of washing systems such as a [Wet Hopper](#), [Barrel Washer](#), [Destoner](#), [Vege-Polisher™](#), [Peeler](#), or a collection pit/sump. The water passes through the filter and is collected in a purpose-built catchment tank. Filtered organics and debris are then extracted for disposal.

Submersible or external pumps are provided to pump the filtered water back to the process or wash line for recycling.

Other features include, auto emptying, auto water and dirt removal, automated self-cleaning and a system to prevent solids build up in the tank. Optional systems include separate CIP and hot water rinsing of fats or precipitating organic compounds that block the screens.



Features & benefits



A Waste outlet

Filtered solids extracted in a damp state and can be disposed into a waste bin or removed by a [conveyor](#).

B Filter panels

Interchangeable filter panels for easy maintenance or changing of filtration levels.

C Overflow

Allows excess water to exit the tank. Can be connected to the site waste pipe or into the floor drain.

D Tank

Recycled water catchment tank. Integral part of the filter. Tapered base to accumulate sediment for discharge to [Mud Tower](#) or to waste.

E Spray bar

Spray pipe and jets to periodically spray the exterior of the filter which uses the filtered water (no fresh water consumption required), keeping the filter clean.

F Pump and outlets(s)

Multiple pump options available for recycling, filter cleaning, and cascading water to early stages of the wash line.

G Pressure transducer

To detect water level for auto filling and top-up, to protect pumps from low water, for automation of periodic water discharge and auto emptying.

H Pneumatic dump valves

Opens to flush sediment from the tank during operation and to empty tank when required.

I Main filtered water outlet

Simple connection for recycled water reuse.

J Control

Standalone or integrated with line panel. Easy to operate via supplied control panel. Fully automated operation with pneumatic drain valves, and built-in automation including self-cleaning, auto draining, periodic water and sludge discharge, and end of day wash-down routines.

K Access hatches

Easy access to pumps and interior of tank for maintenance.

Self-cleaning

The Patent-pending design allows for high filtration rates with intrinsic self-cleaning, requiring no additional fresh water or mechanical cleaning mechanism.

Compact strong construction

Durable and robust construction to withstand forces and the harsh environment in which the filter operates.

Safety

All mechanical pinch points covered and not accessible. No additional safety guarding or fencing required.

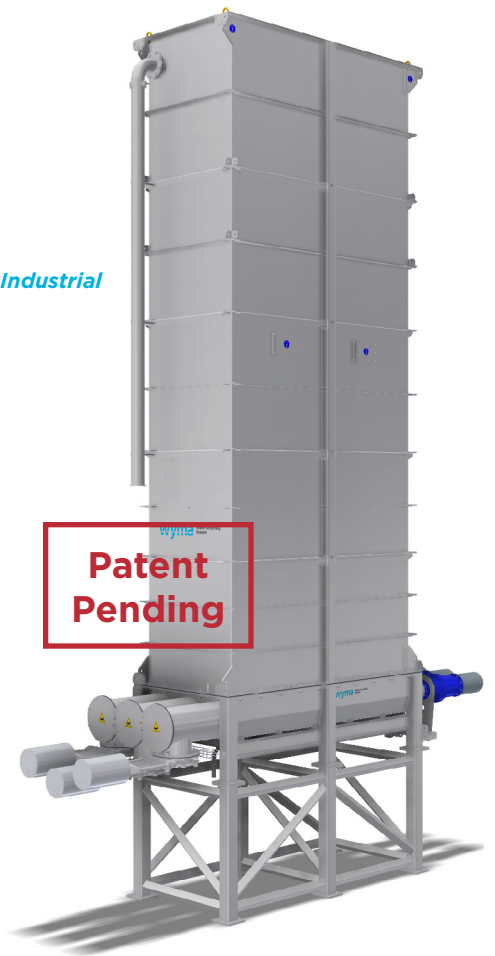


Stage Two Water Treatment

Mud Tower

Separates soil and other solids from wastewater. Soils are extracted as a semi-solid suitable for conveying or carting.

Potato Washline • Carrot Washline • Other Root Vegetable Washlines • Fruit Washline • Industrial and more



General information

The Wyma Mud Tower is a specially designed gravity separator, that removes settleable solids from vegetable wash-water (or other soil laden water bodies) and discharges them in a semi-solid form able to be conveyed or transported easily.

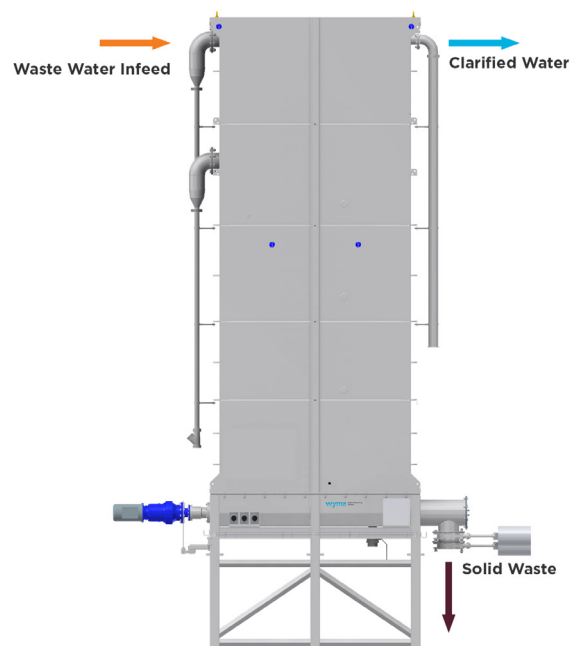
This unique separation system, invented by Wyma, and currently in patent assessment phase, is exclusive to Wyma.

The Mud Tower works in tandem with the [Micron Filter](#), which removes organics and larger solids from wastewater or slurries that are discharged directly from the base of washing systems such as a [Wet Hopper](#), [Barrel Washer](#), [Destoner](#), [Vege-Polisher™](#). The [Micron Filter](#)'s overflow is then pumped to the Mud Tower, where smaller soil particles are extracted from the water. The overflow from the Mud Tower is largely free from organics, settleable solids and sediment, making it suitable for reuse in all stages of washing except the final potable rinse.

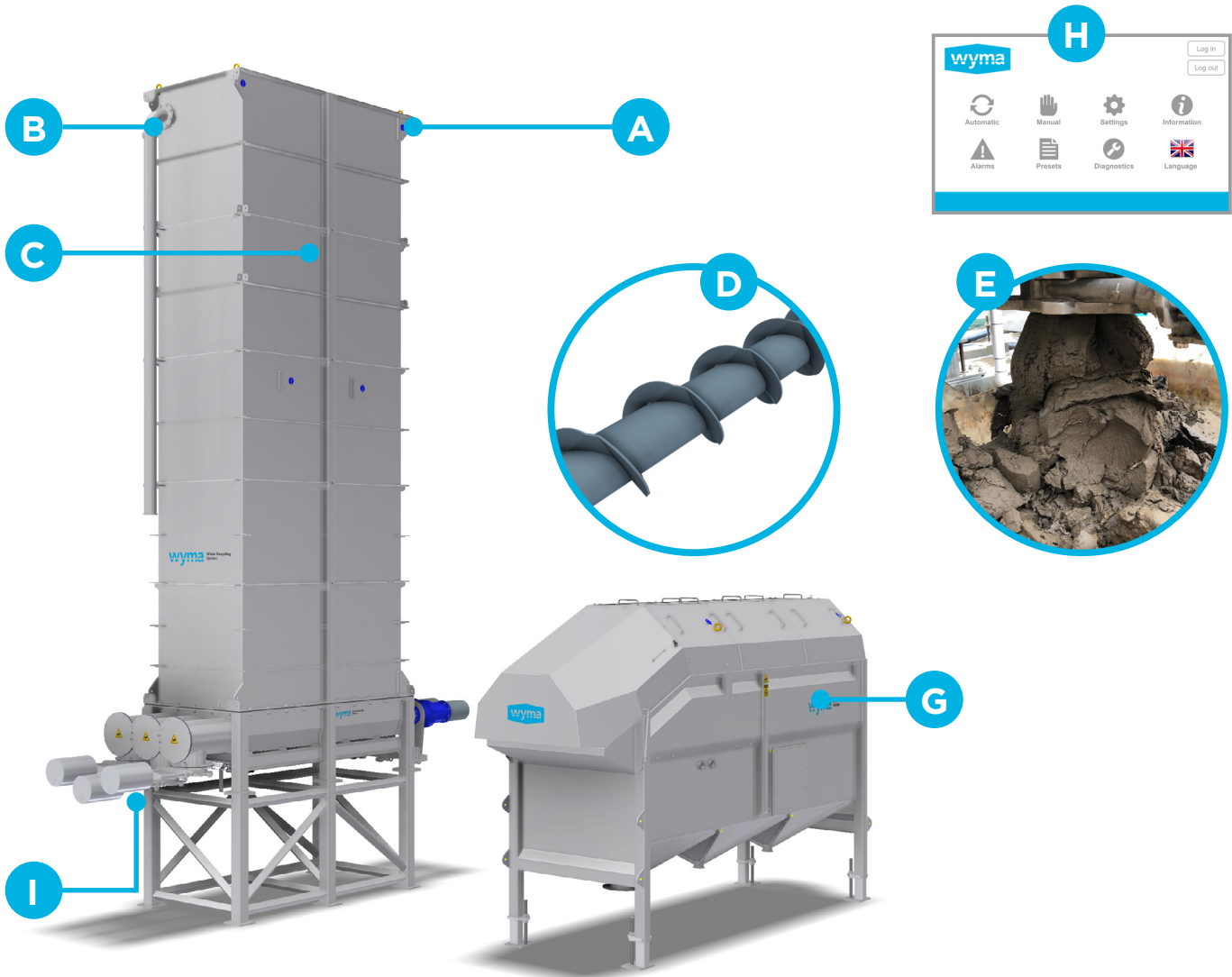
Total Suspended Solids (TSS) reductions of greater than 76%* have been recorded on Micron Filter filtered wash line water at throughput rates of 79 to 158 gal per minute (5 to 10 litres per second, 18 to 36 cubic meters per hour). *Situation dependent.

The unique design provides for efficient, consistent and automated extraction of soils in a solid form for easy handling and disposal. The system is fully automated, chemical-free and low maintenance.

The system is extremely versatile in its ability to cope with variable inputs of soil type and volumes of sediment. Multiple towers can easily be used to suit higher volume sites.



Features & benefits



A Water Inlet

Dirty water inlet location.

B Water Outlet

Clarified water outlet location.

C Tower

Self-standing extraction and settling tower.

D Built-in mud extraction augers

Integrated smart sensing is used to determine when the mud is sufficiently dry to be conveyable. This setting can be adjusted based on customer preference.

E Automated extraction

Extraction is consistent and totally automated. No sampling, testing or human intervention required.

F Frame

Frame and legs custom-made to suit site and conditions.

G Micron Filter (optional)

The Micron Filter is recommended pre-Mud Tower for removing organics or larger solids.

H Control

Easy to operate via supplied control system. Fully automated operation with pneumatic valves and smart soil extraction. Fully integrated with Micron Filter option.

I Mud/Waste Outlets

Waste is collected as it exists the waste outlets, the use of waste bins or conveyors are recommend.

Compact Strong Construction

Durable and robust construction to withstand forces or pressures from water and soil.

Safety

All mechanical pinch points are covered and not accessible. No additional safety guarding or fencing required.



Stage Three Water Treatment ElectroClear System

Advanced Chemical Free Water Treatment Technology for Sustainable Vegetable Packhouses.

Potato Washline • Carrot Washline • Other Root Vegetable Washlines • Fruit Washline • Industrial and more



Before and After Water Treatment

*Wastewater has passed through the Micron Filter and Mud Tower, free of organic fibres, sand and heavy dirt particles.

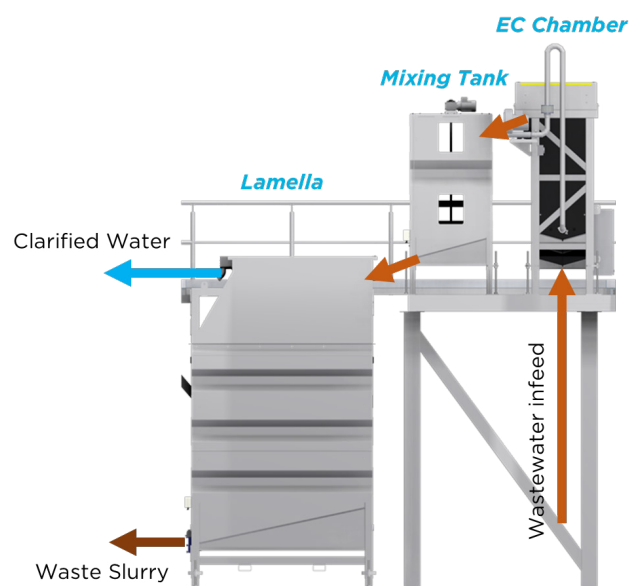


General information

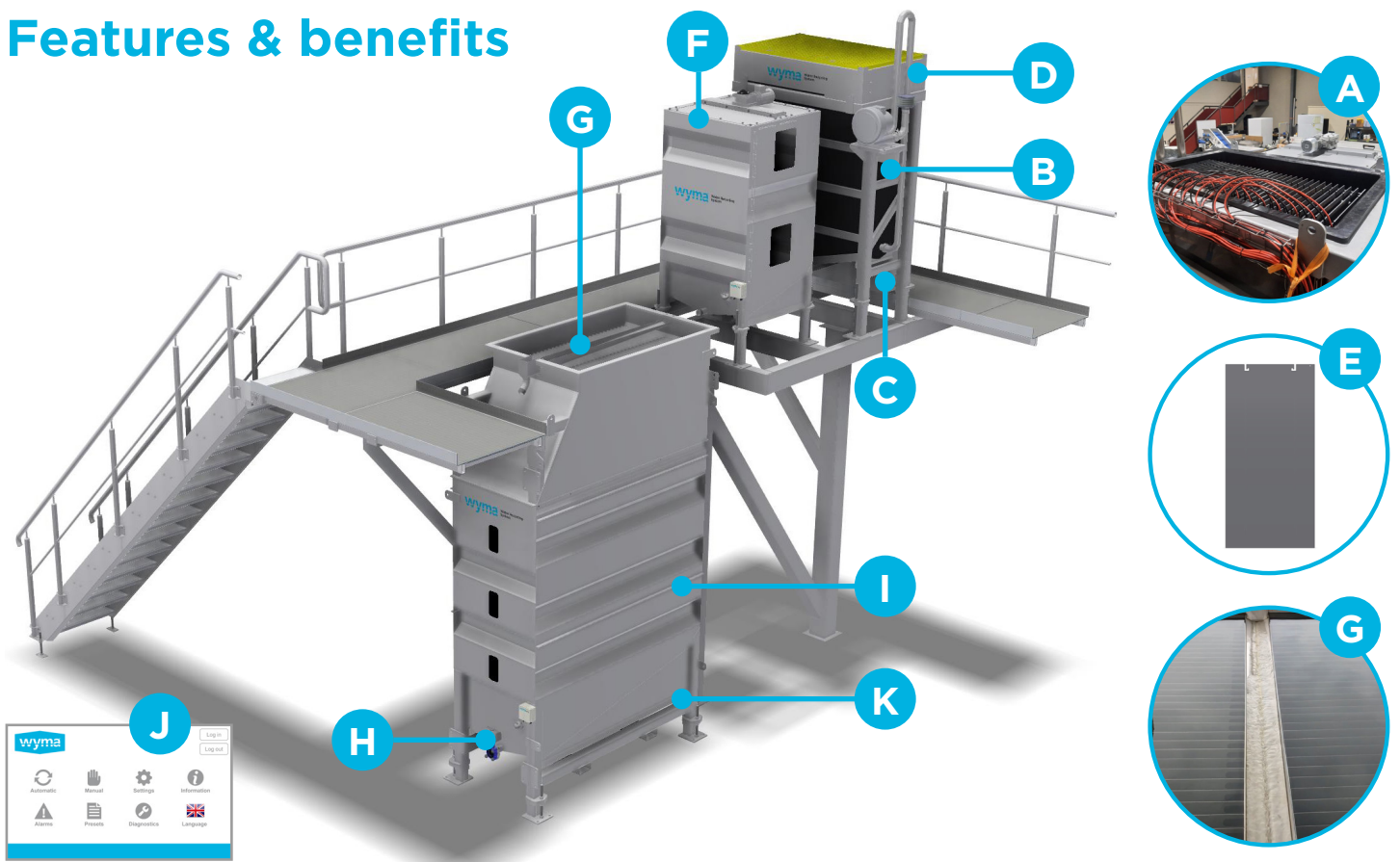
Our ElectroClear system is an advanced water treatment technology designed for removing fine particles from wastewater. It consists of an Electrocoagulation Chamber (EC Chamber), Mixing Tank and Lamella. The ElectroClear System is the third and final stage of Wyma's water treatment system, which comes after the water has been passed through a Micron Filter to remove organics and large sand particles and our Mud Tower to remove fine sands and silt.

Electrocoagulation is a process which uses only electricity and sacrificial metal plates to treat wastewater. The EC chamber consists of steel electrodes which have a direct current applied to them. This creates an electrolysis reaction, releasing metal ions into the wastewater which then interact with the suspended particles, causing them to floc together, producing large particles which can then be easily separated. The separation of these flocs is achieved by mixing the treated wastewater and then allowing the heavy particles to settle out in the Lamella clarifier. The process is highly effective, removing the vast majority of suspended solids and greatly reducing other contaminants, such as E-Coli, Phosphorous, Nitrates, BOD and COD.

The ElectroClear System is a compact and robust piece of equipment, designed for easy installation and operation. It has low maintenance requirements, making it a cost-effective solution for wastewater treatment. The settings of the EC Chamber can be customized to suit the specific needs of different wastewater conditions, ensuring optimal performance in each case. By using this technology, customers can reduce their environmental impact and water usage while meeting regulatory standards for wastewater discharge.



Features & benefits



A EC Plate Pack

Iron electrodes are used in the electrocoagulation process which are inexpensive and more sustainable.

B Insulated Tank

A specially designed holding chamber which houses the EC plate pack and the water being treated.

C Power Distribution

Robust power supply, delivering user specified current to achieve desired treatment level and providing even plate wear, maximising plate life.

D Self-Cleaning

Automated cleaning system as standard to clean the plates during operation ensuring optimal performance and maximising plate life.

E Single Electrode

Designed to maximise plate usage and in built lifting hooks for easy maintenance.

F Variable Mixing

Paddle design and shaft speed can be customized, interchangeable and varied to suit mixing requirements.

G Lamella Plate Pack

Designed to accelerate the settling process allowing higher flow rates through the settling tank with a smaller footprint.

H Single Waste Removal Port

No separate foam or floating particle removal process/equipment required. All waste removed through one drain valve in Lamella.

I Large Storage Capacity

Allowing for storage and thickening of waste slurry prior to our patent pending dewatering process.

J Automation

A control panel for setting and monitoring the current, voltage and other water properties.

K Durable Materials

All material used within the three pieces of equipment are tried and tested to ensure they are resistant to corrosion and require minimal maintenance for cost effective operation.

Optional Inline Sensors

To monitor influent and treated water properties, allowing for educated decisions on EC operating parameters.

Regulatory Compliance

Helps meet regulatory standards for wastewater discharge.

Sustainability Benefits

Significantly reduces water usage and environmental impact.

Advanced Technology

Advanced electrocoagulation technology for highly effective water treatment across a range of water properties.

Cost Effective

Increases operational efficiency and cost savings in the long term.

To discuss your water treatment needs, contact us:



THE BEST FROM EVERY HARVEST

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