

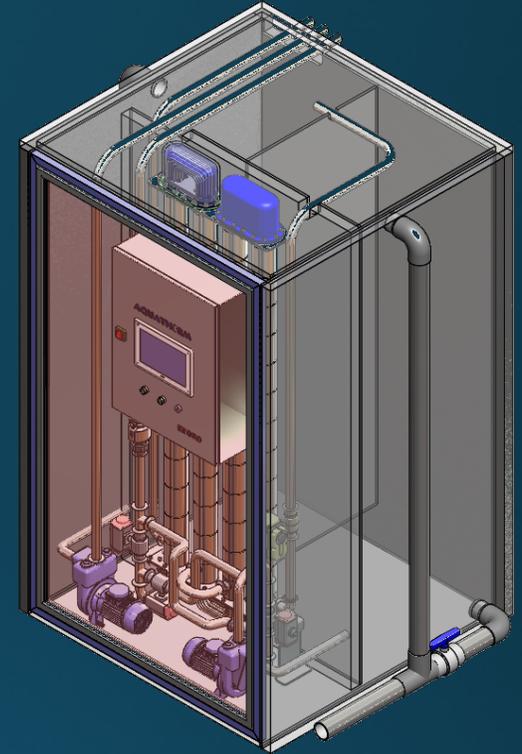


Aquatherm
International Limited

Micro Series

Aquatherm has been designing and building laundry energy and water systems since 1980, long before the pressures to reduce consumption and costs that we face today.

Decades later, and with numerous evolutionary upgrades, Aquatherm remains the most efficient and effective method on the world market for reducing the running costs and boosting the outputs of washing and drying systems of every type.

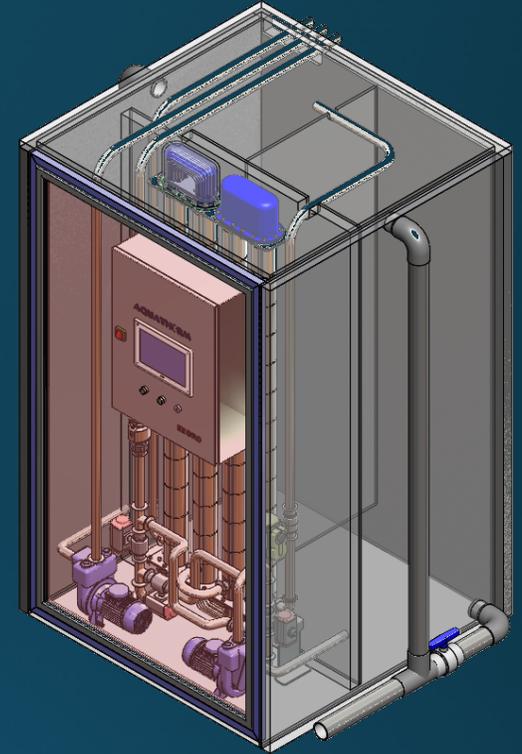




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Typically between 20 and 40% of the total energy used by a laundry is for the washing process. Aquatherm is a system which extracts as much as 90% of the energy from dirty laundry wastewater, reusing all of that energy to heat incoming cold freshwater, reducing the demand for 'new energy' and cutting consumption significantly.

The **Micro** system is a new development designed to address the needs of smaller operations, such as On Premise Laundries with water consumption rates from 1,000 to 6,000 litres per hour. The compact and efficient design coupled with the use of high quality low cost components sourced through our purchasing office in Shanghai has finally brought lower flow systems into the realm of affordability.



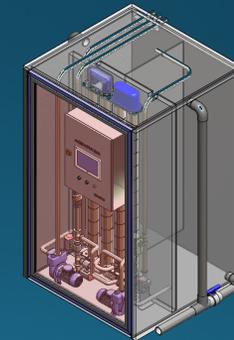
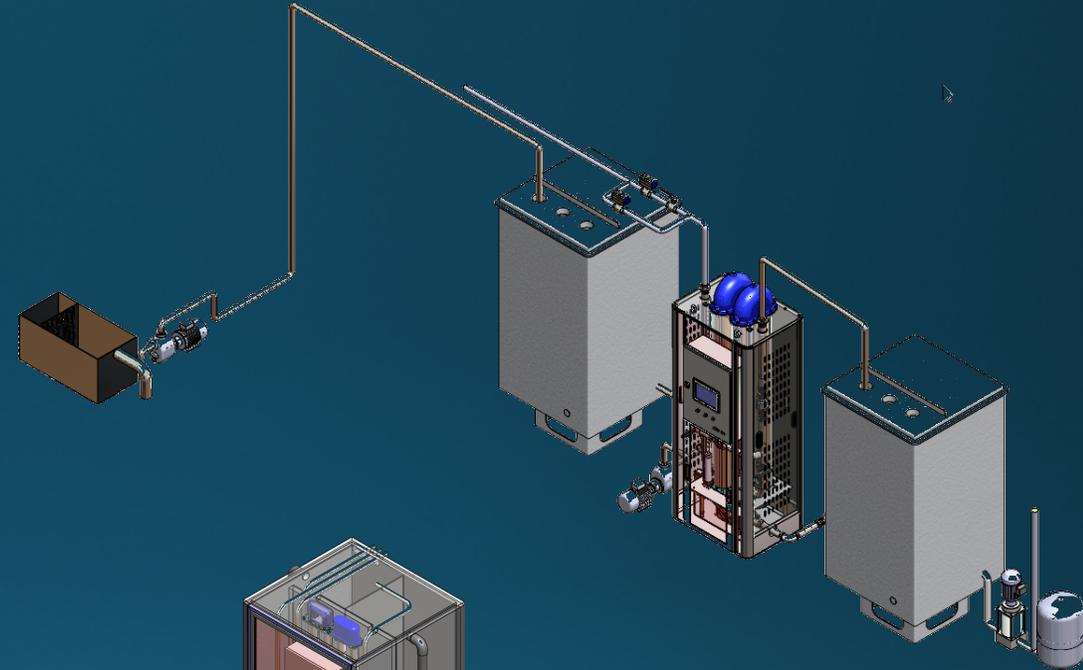
What is *different* about the Micro?

In order to get the most from conventional heat recovery systems, there is a requirement for separate buffer tanks for hot wastewater, and preheated freshwater, together with interconnecting pipework, valves, flowmeters and so on.

Integrating these systems into a working laundry can involve significant planning, installation cost and time.

In the **Micro** all of these elements are built in to a single package, interconnected and linked to the central control system. All that is needed for installation is a fresh water supply, compressed air and electricity.

Conventional System



Micro

What does it *do*?

Micro is a purpose designed heat and water supply for laundries with water consumption between 1,000 - 6,000 litres per hour designed to recover the maximum amount of energy from the hot wastewater, and use it to preheat the fresh water used for the washing process. Instead of hooking up washing plant to mains water, the supply now comes from the **Micro**, already preheated using otherwise waste energy.

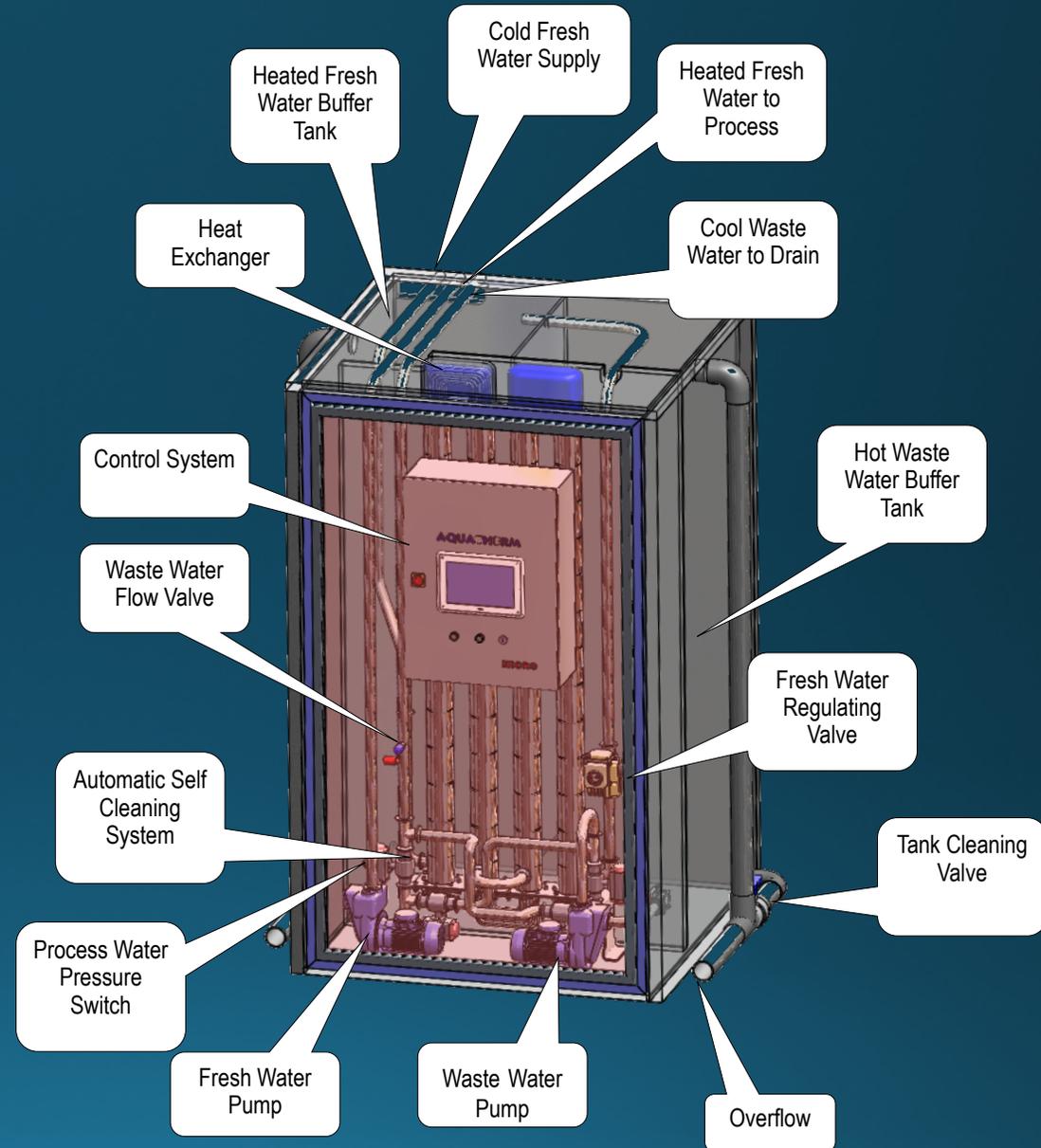
If water reuse is required, whether in its own right or together with heat recovery, refer to the **Aquascreen Micro** – see later in this bulletin.

Using heated water for the entire washing process is the most effective and efficient way to process. Heating this water using otherwise waste energy simply removes the additional cost from the equation

What is *different* about the Micro?

Buffer tanks for hot waste water and preheated fresh water are built in to the **Micro**.

Hot waste water can be collected from any number of locations in the laundry using 'on demand' scavenger pumps. The energy from this waste water is extracted and transferred to the clean process water and stored until needed. All the necessary pumps and controls are included.

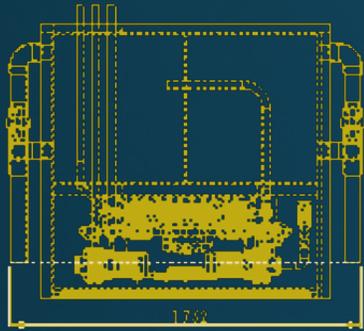


How can the **Micro** deal efficiently with such a wide range of flows?

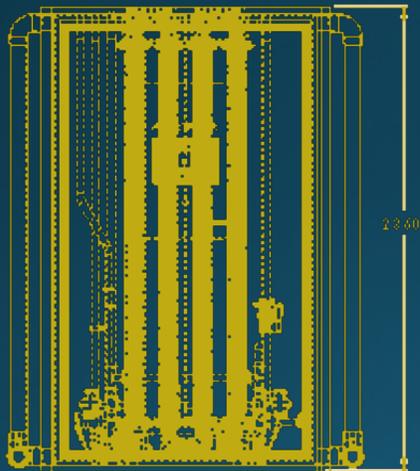
One of the key features of Aquatherm is its ability to match the demand for freshwater with the flow of wastewater through the heat exchanger. This ensures that the maximum amount of energy is extracted from the wastewater, which of course results in the greatest benefits.

The **Micro** is able to provide the same high-performance for flow rates of between one and 6 m³ per hour. so the control system will regulate the flows accordingly, automatically adjusting pump speeds to match the flows. Below 3 m per hour, the control will monitor the buffer tank levels, and run the micro for as many minutes are required to empty the wastewater buffer and fill the freshwater buffer, when it will stop and wait for the tanks to respectively fill and empty.

What does installation entail?



Measuring 1750 wide by 1400 front to back and standing at 2360 high, the entire system occupies about the same space as a medium capacity washer extractor.



If required this can be reconfigured to suit a particular space – long and thin or L shaped (at no additional cost but it will be built to order rather than ‘off the shelf’).

When positioned, connect to water, electricity and compressed air, link the process water outlet to the production machinery, connect the hot waste water to the buffer tank and pipe the cool waste water and overflows to drain.

Is it costly to run, and how much maintenance is needed?

All that is required is an electrical supply for 2 x 0.75kW pumps, and a small amount of compressed air to operate the various control valves. The system automatically self cleans, and no routine maintenance is required. In the event that there is an accumulation of dirt or debris in the wastewater tank, a large manually operated valve in the overflow line allows the tank to empty and the smooth composite surfaces can quickly be hosed clean.

Every system is equipped with the facility for remote access. Simply connect the control system to an Internet or network point, and Aquatherm will provide free system checking (and adjustment if needed) for the life of the system.

How much money will the system save, and how can I be sure that the savings are real?

That depends on the cost of energy, and how much water the plant consumes . Typically the micro will recover between 65% and 95% of the otherwise lost energy, whatever that is.

However, the micro can be used as a replacement for the existing process water system. Typically, a small laundry will use cold freshwater to fill the washers, which are then heated by steam or electricity to the required process temperature. This is very time-consuming as the machine control will not index until the required temperature has been attained. This can result in process times well in excess of an hour, which is very unproductive.

With the tank full of hot freshwater at the start of the day, production gets underway immediately, and as soon as the machine starts to discharge hot wastewater, the recycling process starts, continuing the momentum.

The freshwater buffer tank can be used as a receptacle for other waste energy – such as flash steam – or low-cost overnight electricity, using an immersion heater.

With unlimited hot water, there is no need for premium priced washing chemicals. All parts of the process can now use heated water, even rinses. Better rinsing can be achieved, taking less time and using less water. Extraction will be more efficient and drying times reduced. This is the ideal way to process, whatever the size of the laundry.

Typical Applications

Single CBW plants – a single machine producing 1,000 kg per hour may only require 4 – 6,000 litres per hour, even if there are one or more small washer extractors also in use, the **Micro** will reduce steam consumption by up to 80% and provide hot rinsing, improved extract and faster drying.



On Premise Laundries – Capable of handling as little as 1,000 litres per hour the **Micro** provides a source of heated water, reducing the heat up time and significantly increasing production output. Cut the 2 hours for an electrically heated machine to complete a cycle to 50-60 minutes, at a fraction of the cost. Although the Micro buffer tanks will only lose a few degrees over a weekend shut down, the plant will be ready for action within minutes of start-up. Additional low cost off peak electricity can further boost the tank temperature with a suitable immersion heater.



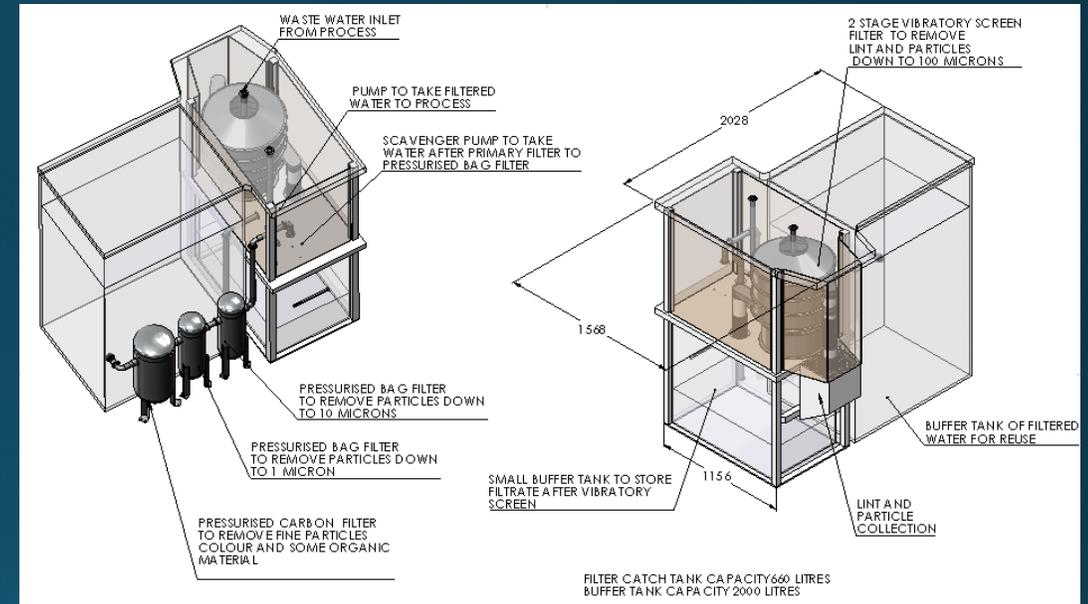
Larger laundrettes – the **Micro** can be used in conjunction with a heating source such as a gas or oil fired heater, or even steam if the plant is large enough to warrant it. The economics are dependent purely on the amount of water and heat energy being used, so for the smallest plants payback may require several years to recover the investment.



What about saving water as well as , or instead of, energy?

Aquascreen is a low cost and technically simple solution that recycles 30-40% of the water within the washing plant.

Currently able to filter to 100 μm field trials are ongoing with finer filtration devices which will make it possible to recover rinse water from the process down to 1 μm , and then store and reuse in the washing process.



What next?

As pioneers of laundry water and energy systems we have acquired decades of experience and knowledge in the field, and remain as passionate as we were from the start to find even better and more practical solutions that our customers can take pride in using for a generation ahead. Of course we are environmentalists, but we are also practical businessmen and realise that every investment must have a payback. In a situation where so much needless waste of energy and water is going on, there are many opportunities for us to combine both.

Whether you are involved with a small OPL, or a multi-tunnel industrial plant, We would be delighted to be your “expert resource” – please don't hesitate to contact us!

www.aquatherminternational.com