



 **Xtract**
FILTRATION SYSTEMS

www.xtractfiltrationsystems.com

XTRACT SOLIDS FROM LIQUIDS **XTRACT** LIQUIDS FROM SOLIDS **XTRACT** PROFIT FROM LOSS

Xtract Filtration Systems specialises in the design, manufacture, installation and commissioning of a comprehensive range of filtration systems for the recovery of valuable raw materials, purification of feedstocks and treatment of liquid waste.

Installed in Europe, Americas, Asia and Australasia, Xtract's systems have recovered many thousands of tonnes of raw material for its customers over the years.

Headquartered in Stoke-on-Trent in the UK, Xtract Filtration Systems is a subsidiary of Mantec Technical Ceramics Ltd, a diverse manufacturing technology company providing bespoke and innovative ceramic-based solutions to global industries.



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RECLAMATION SYSTEMS

Recovering valuable raw materials from liquid waste streams is a key area of Xtract's business. We have enjoyed success with the installation of Glaze and Slip Reclamation Systems across the international ceramics industry.

Our technology, which is based on crossflow filtration using specially designed robust ceramic membranes, has also been employed to recover valuable zirconia from waste slurry which results from metal pour filter manufacture in the investment casting industry.

The technology can also be used for many other industrial liquid waste streams, either for material recovery or for the concentration of waste for disposal.



Glaze Reclamation

Xtract's glaze reclamation systems can process dilute washings containing glaze overspray, delivering two liquid streams.

The first stream is the recovered glaze at such a density and consistency that it can be blended with virgin glaze for re-use, providing the customer with tangible savings from the moment the system is commissioned. The second stream is filtered water which can be used as clean process water within the factory, or can be safely disposed of.



Slip Reclamation

Slip reclamation is a major issue in the ceramic industry, particularly in the traditional sector, and Xtract has a proven track record in delivering outstanding results.

The Xtract slip recovery system can be operated as either a batch or continuous process. Excess slip is concentrated to much higher density levels which greatly increases solids recovery. The resulting concentrated suspension is reintroduced into the slip making process, significantly reducing raw material inventory and purchasing costs.



Zirconia Reclamation

The reclamation of zirconia lost within industrial processes can offer significant savings to the manufacturer. However, due to the viscous nature of the slurry, the reclamation process is enormously challenging.

Xtract has used its experience in the reclamation of submicron viscous slurries from industrial processes to develop a zirconia reclamation system, saving money every day for its clients.

System Benefits

Xtract offers its customers the opportunity to reclaim up to 100% of the raw material within the captured waste stream. The Xtract system provides precise density control in a reliable and simple to operate single process.

The Xtract system removes the necessity to discharge harmful constituents to drain and provides an assured quality of recycled water, enabling efficient re-use.

A black and white photograph of industrial liquid waste processing equipment. The image shows a large, dark, cylindrical vessel with various pipes, valves, and flanges. A large, conical filter or separator is visible at the top. The equipment is mounted on a metal frame. The background shows more industrial structures and a clear sky.

LIQUID WASTE PROCESSING SYSTEMS

Xtract's systems are sufficiently robust and technically capable of facing up to today's demanding liquid waste processing protocols.

Pre-treatment, large particle separation and Xtract crossflow filtration combine to achieve efficient waste concentration, reducing disposal volumes and costs. Produced filtrate is recycled into the process to reduce water consumption.

Xtract's innovative filtration solutions can also be applied to the treatment of contaminated water stored at licensed waste sites for treatment and safe disposal. Disposal of large quantities of waste is a growing problem for owners and operators as increasingly severe global legislation is focusing their attention on finding a cost effective and environmentally acceptable answer.

PURIFICATION SYSTEMS

Xtract offers bespoke systems and equipment to cover a full range of purification and clarification duties.

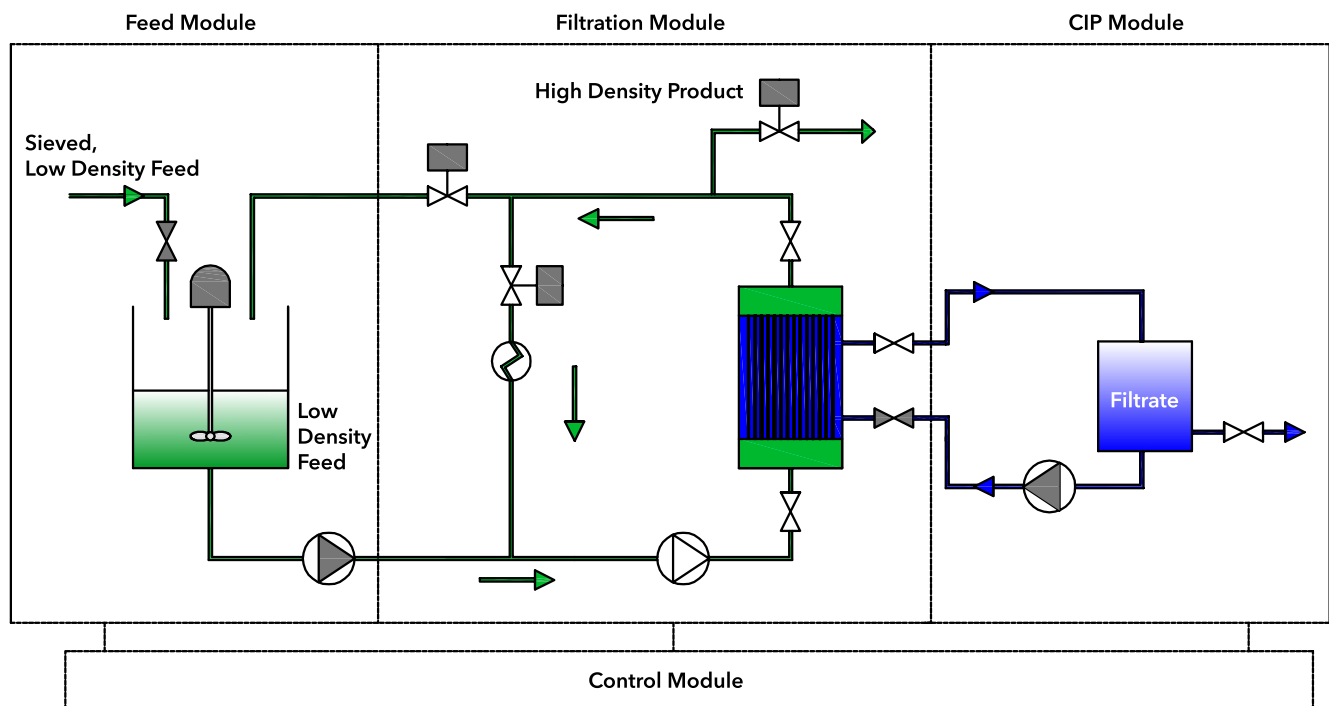
Most commonly, the equipment is employed in the purification of plant extracts (food and beverage sector) or fragrances (toiletries, cosmetics and personal care markets).

SYSTEM CHARACTERISTICS

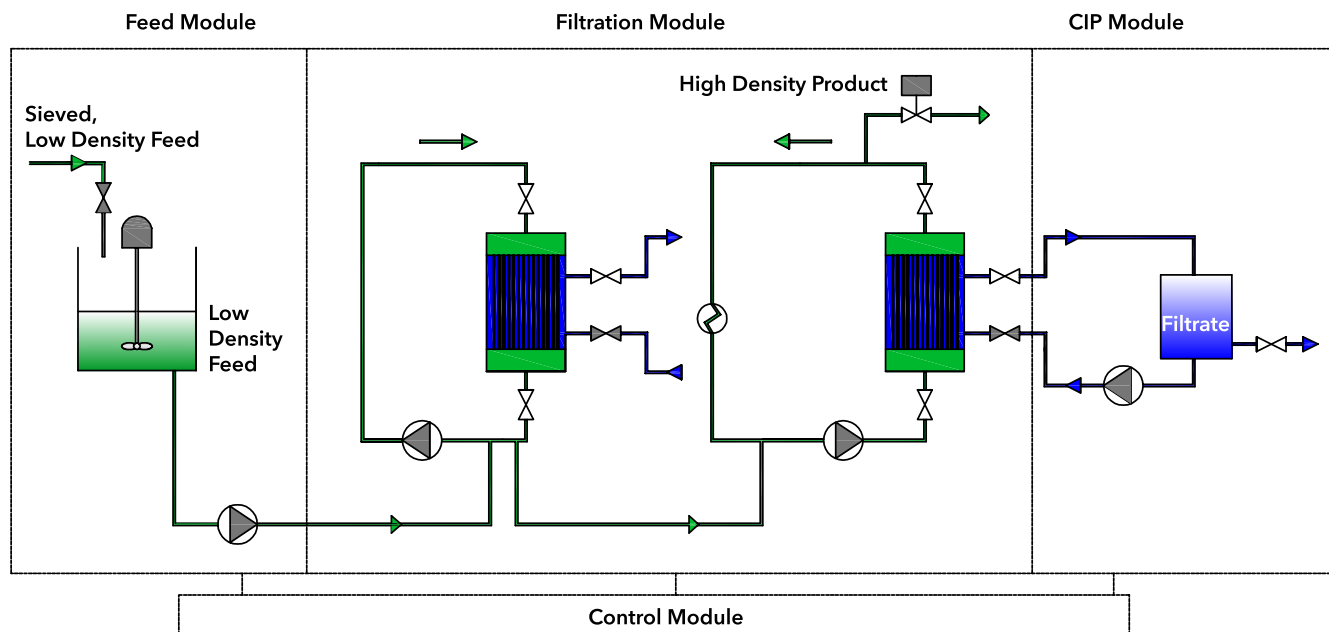
Xtract's systems have been robustly designed by its highly qualified and experienced engineers and conform to international standards. Depending on the processing parameters, various configurations are available, from a single loop batching system to a dual loop continuous system.

Single Loop System

Incorporating feed system, filter module, control module and cleaning in place (CIP) module.



Dual Loop Continuous System



PROJECT MANAGEMENT

Xtract offers a full range of project management services for prospective and current operators of its filtration and reclamation systems worldwide.

Product Trial and Evaluation

Pilot plant trials are essential in order to determine whether the properties of the filtrate, or indeed the retentate, are of the desired quality. Such trials are also crucial to optimise the filtration/separation process and are an important precursor to design and scale-up.

System Design and Manufacture

Xtract has many years of experience designing filtration systems. We can work with customers to take projects from concept to manufacturing.

Shipping and Logistics

Xtract has delivered its superior systems across the world and has the personnel, the experience and the coordinated approach necessary to respond to demanding delivery schedules.

Installation, Commissioning and Training

Significant expertise has been gained over the years in logistics, installation and commissioning of filtration systems. Training is also provided to the customer's plant operators and maintenance staff.





AFTER-SALES SUPPORT

Plant Servicing and Maintenance

Xtract's engineers regularly provide service visits and plant maintenance. This gives the customer peace of mind that the system will continue to operate at optimum efficiency, recovering valuable raw materials or carrying out essential filtration.

When carrying out a system health check, Xtract's engineers meticulously scrutinise all aspects of the plant, both electrically and mechanically.

Spare Parts

We carry a considerable selection of critical spare parts here at Xtract - ceramic filters, pumps, motors, seals, housings, meters etc - which we can supply to customers rapidly in order to minimise downtime on their plants.

A black and white photograph of industrial machinery, featuring a large, conical metal component in the upper center, surrounded by various pipes, valves, and structural frames. The image is slightly blurred, emphasizing the mechanical nature of the scene.

SECTORS - Liquid Waste Processing

Xtract's systems can be used in many industrial solid-liquid separation applications:

Cutting Oil

Our continuous filtration technology enables users to recycle spent machining cutting oil generated from many manufacturing operations. Apart from the environmental and cost benefits, filtration of this type removes the need to drain cutting oil sumps for sludge removal.

Oil/Water Separation

In some cases oil/water separation can reduce soluble oil disposal costs by as much as 75%, making the installation of an Xtract filter – either static or mobile – an extremely attractive prospect. These units are of particular benefit to chemical, gas, refining and petroleum process plants.

Industrial Effluent Treatment

Manufacturing, food, agricultural and other sectors all produce wastewaters and are subject to tough legislation. Xtract filters out the solid matter and produces a retentate that can much more easily, effectively and safely be disposed of.

Laundry Effluents

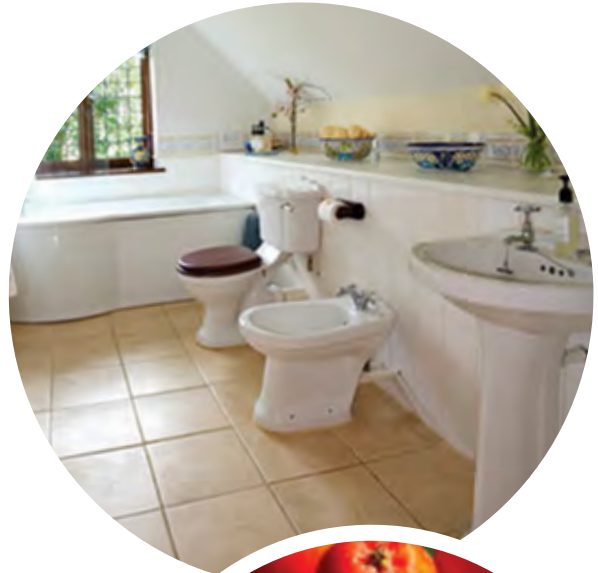
Laundry wastewater may contain a mixture of salts, surfactants, dirt particles, fat, oil and dyes. Xtract's ceramic filter array is a highly effective answer and helps address residual pollution and heavy metals where they occur. Once again, the process water is recycled.

De-watering of Radioactive Waste Sludge

While many devices can achieve effective de-watering of radioactive waste sludge, crossflow filtration using ceramic membranes is often favoured when taking into consideration maintenance, cleaning and decontamination conditions and process compatibility.

Ceramics

Many of the world's top sanitaryware, tableware and tile manufacturers are using Xtract's advanced technology to meet the highest of process standards and efficiencies. They are consistently enjoying significant cost savings due to the recovery of glaze and slip from their manufacturing process. This contributes ultimately to a zero waste policy.



Food and Beverages/Cosmetics – Filtration of Botanical Extracts

Xtract's technology is utilised in the filtration of efficacious extracts from many different botanicals. These extracts are used in a widely diverse product range from pharmaceutical activities in human medicinal formulations to food flavours, cosmetics and animal health care products.



Foundry

Ceramic foam filters used within the gating system of the casting mould are typically produced from zirconia. This is a high cost raw material and so reclamation of zirconia lost within the process offers the filter manufacturer significant savings. Xtract has used its experience in the reclamation of submicron viscous slurries from industrial processes to develop a zirconia reclamation system, saving money every day in the metal casting industry.





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