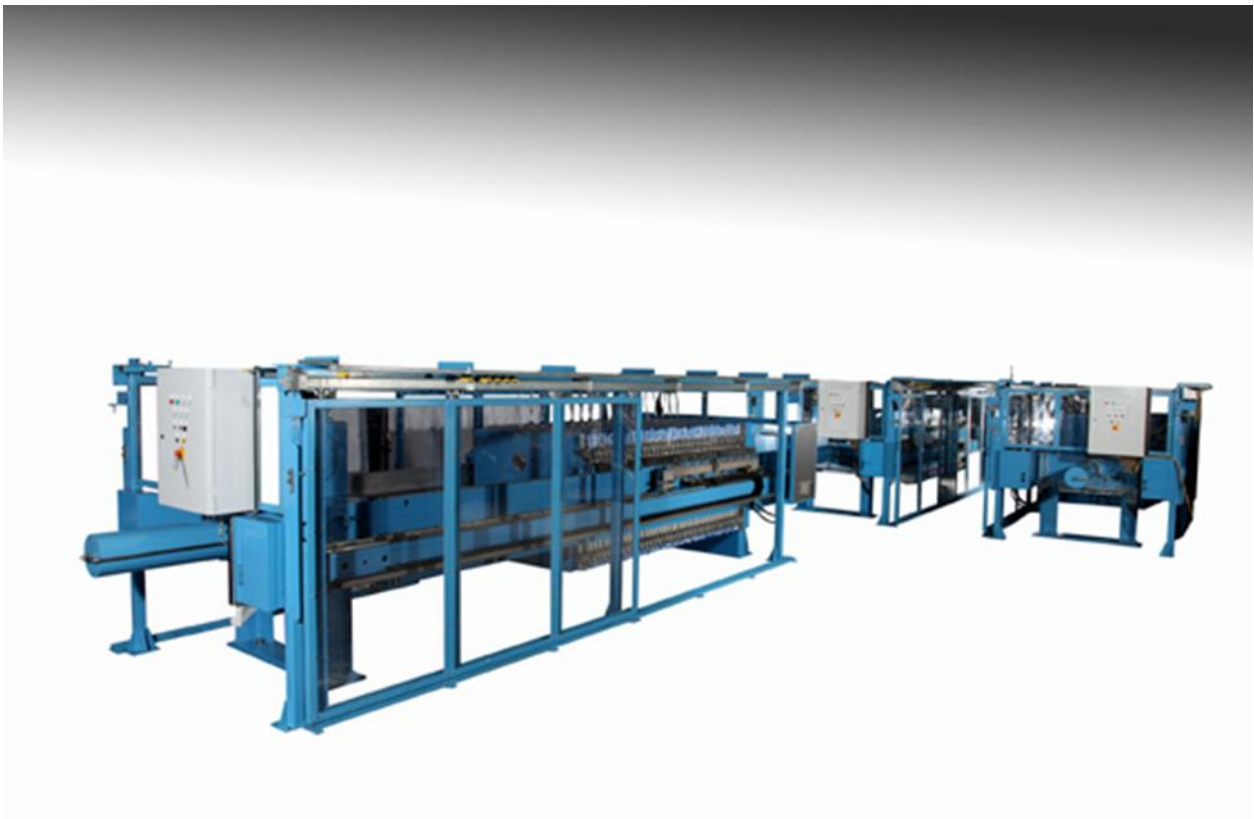




Latham Filtration Technology

WORKING TOGETHER TO PROTECT THE ENVIROMENT



2003/358

ABOUT US

Latham Filtration Technology Pty Ltd is recognized as a leader in the field of solid / liquid separation and pressure filtration systems. Environmental sustainability is one of our major concerns and through our 25 years of experience and constant innovation we are able to confidently supply product that is cost effective reliable and at the forefront of our industry.

Over the past 20 years numerous features now standard on filter press production originated within the Latham organization. Innovation in design and function and the resultant cost benefit continues to be core to our differentiation in the market.

Nowhere is this better illustrated than in our most recent copyrighted capability to deliver a fully automated **unmanned**, multi-plate discharge, filter press solution.

Already installed and proven on site by Latham engineers, this "unique" in today's world of pressure filtration technology can be **retrofitted** to the majority of legacy estates. Delivering an almost continuous process, labour free functionality previously associated with centrifuge and belt press solutions coupled with the delivery of the clearer filtrates and more compact, easy to manage cakes inherent to filter press technologies - this approach realises substantial operational cost and production benefits.

Another example of Latham's unique differentiation is illustrated in the provision of a self-diagnostic electrical fault monitoring facility as a standard aspect of all new Latham press fabrications and refurbishments. Also available as a retro fit to legacy estates, this feature immediately flags the "point of failure" and as such greatly reduces the turnaround time in returning to full operational capability.

Complementing our UK based engineering design, production and refurbishment capabilities on presses and pumps, we also offer a comprehensive single source supply capability across an extensive inventory of consumables, from spares through to plates and filter cloths.

Without sacrificing quality we believe our prices, are amongst the most aggressive in the industry.

FILTRATION TECHNOLOGY WORLDWIDE

DRIVING DOWN THE COSTS OF BETTER SOLID/LIQUID SEPERATION

Latham Filtration Technology Ltd are specialists operating at the forefront of today's pressure filtration technology. Our filter presses achieve a more efficient level of solid/liquid separation than alternative methods. Our success is founded on world class standards of service and know-how: developing tailor-made systems which drive down costs for our customers and deliver clearer filtrates from more compact, easy-to-manage cakes.

HIGH PERFORMANCE THROUGH INNOVATION

Since our foundation in 1995 we have established a position as world leaders in pressure filtration systems. Innovation is the key, responding to the demand for higher and higher levels of performance – often driven by environmental concerns. Available in fully automatic form or requiring no special skills to operate, our presses are reliable, easy to maintain, and engineered for continuous long life performance.

DESIGN. MANUFACTURE. INSTALL. REFURBISH

Our pioneering approach is backed up by a project management service geared to designing systems that match your precise filtration needs. The starting point is a detailed technical evaluation followed by design proposals and costs. Installation is carried out by our own highly qualified engineering team who will commission the system and train customer staff. Where refurbishment of existing plant offers a more cost effective solution, we will design and install the upgrade.

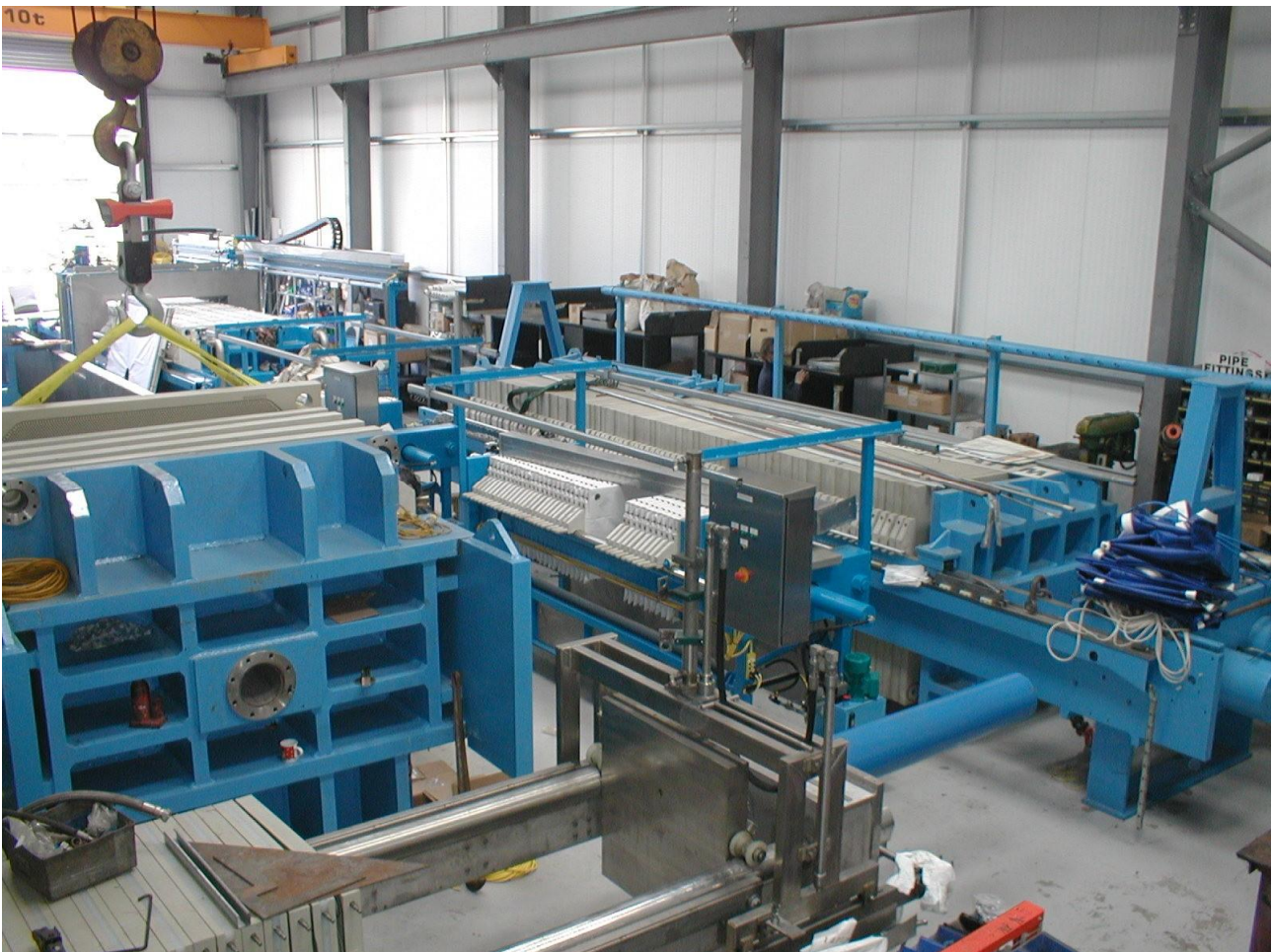
WORLDWIDE

Our customers span a wide range of industries: Mining & mineral processing, food and drink, brewing, chemicals, textiles, ceramics, plastics, paper, and mining, as well as water and sewage treatment and many more. We work as enthusiastically with smaller companies as with big "blue-chip" names. And with an international network of experienced agents now in place, we are able to take our special brand of high efficiency de-watering solutions anywhere in the world.



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Latham International Factory, Newcastle-under-Lyme, United Kingdom

Applications

Sewage Treatment Plants:

Municipal and industrial sludges.

Water Treatment:-

Alum and ferric sludges. Backwash water recovery.

Chemical Processing:-

Dyes and pigments. Titanium dioxide solid-liquid separation in the chemical and pharmaceutical industry.

Industrial:-

Plating and metal finishing, tannery waste, textiles, paint etc.

Metals, Minerals:-

Hydroxides, precious metal recovery, mining etc.

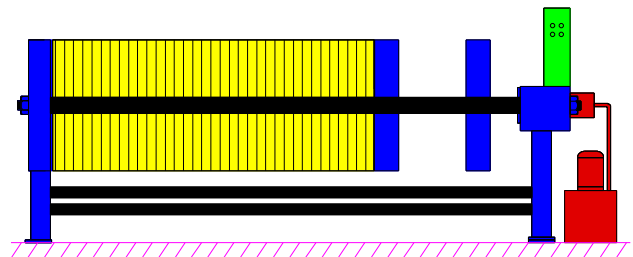
Ceramics:-

Body preparation and glaze recovery.

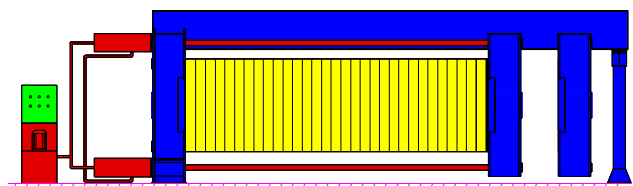
Food & Beverage:-

Sugar beet & cane treatment, Brewing, edible oils, waxes and fats etc.

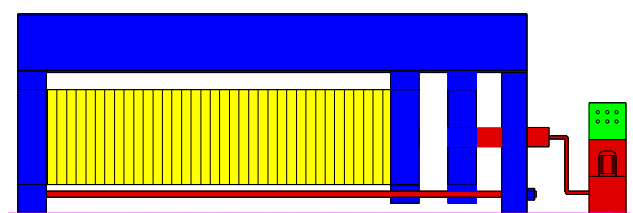
Range



Sidebar/push to close design
250mm²- 2.1m² single or twin ram.



Overhead/Pull to close design



Overhead/Push to close design

Automatic Cloth Washer

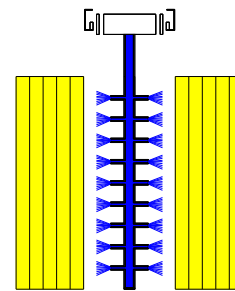
The unique Latham International low head automatic cloth washing machine is available on all its press sizes and can be retrofitted on to existing filter presses with minimal downtime.

Effective cloth washing results in better cake and filtrate quality, extended cloth life and no labour involvement.

Located either on each sidebar or overhead beam, the cloth washing machine operates as an integral unit with the plate separator. During the normal operating procedure, the cloth washer is parked at the moving end of the press. When the cloth wash is selected the automatic plate moving mechanism collects the cloth washer and locks it into position. The cloth wash cycle then begins with the wash arm individually washing one chamber at a time.

Spray pressure up to:- 100 bar

Traverse speed:- variable.



Sidebar Version Cloth Washer



Cloth Washing Machine Fitted to a 1500mm Sq Sidebar Filter Press

Plate Separator

The whole range of Latham International filter presses can be supplied with an automatic plate moving mechanism. On the sidebar version two carriages driven by a hydraulic motor powered from the main power pack pick up on each side of the plate, ensuring accurate and efficient plate movement.

On the overhead version a single carriage is mounted on the overhead beam, again driven by a single hydraulic motor. The carriage can be supplied in various forms to give the following functions:-

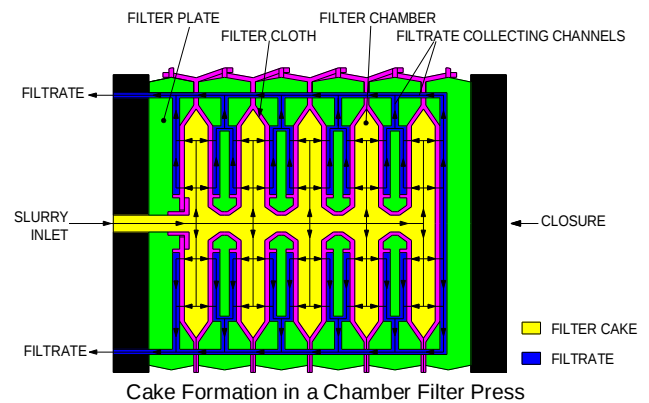
1. Built in hold back device ensuring only one plate is moved at a time.
2. Plate shaking device, enhancing cake discharge.
3. Multiple linking of plates giving quicker cake discharge.
4. Pendant control.
5. Fully automatic with photo electric light guards and lanyard reset.



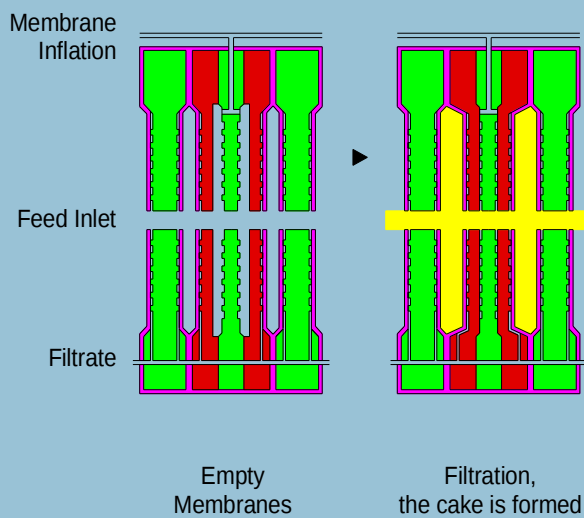
Platemech Carriage Operation

Filter Press Systems—Methods of Operation

Conventional Recessed Chamber Plates:



Membrane Chamber Plates:-



Membrane chamber plates are used on more difficult sludges. The use of membranes can considerably increase cake dry solids and reduce cycle times.

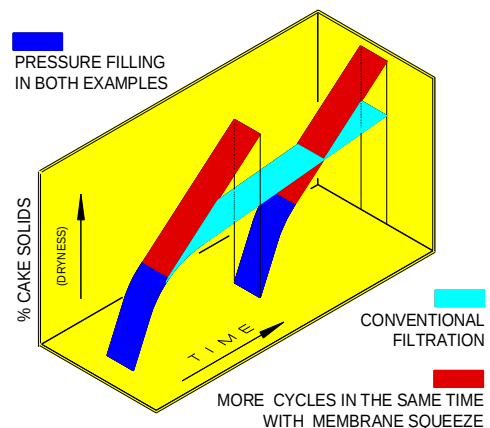
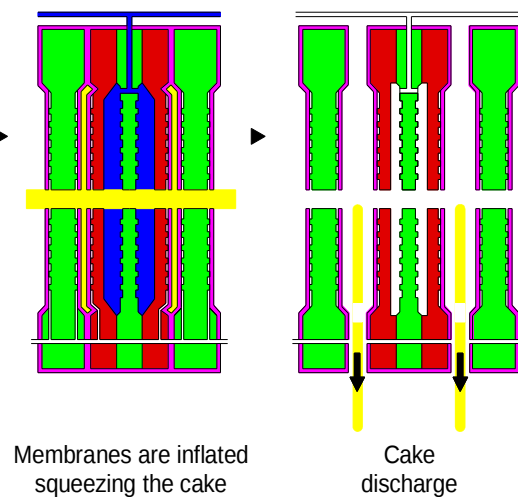
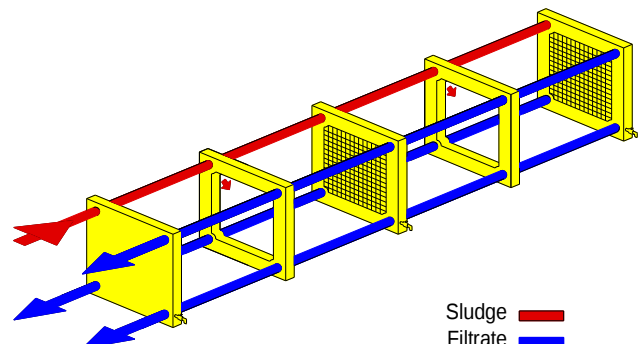


Plate & Frame

Generally only used for polishing applications where the use of a filter paper is required.



Fully Automatic Filter Press

Generally used on rapid cycling sludges where a good cake is formed. Can be adopted for conventional or membrane plates. Gives the following advantages:-

- No operator involvement
- Automatic cake discharge
- High throughput
- Reduce civil costs due to size of unit

The unique design of multiple linked and shaken plates ensures clean and consistent cake discharge.

The unit can be supplied in various sizes from 250mm² to 2.1m² with linked chambers.

Full automation would include a PLC to control all press functions and automatic valve actuation.

Cycle time can be monitored by filtrate flow back pressure or on a variable timer.



630mm² Unmanned, multi-linked shaker— Brazil



1500mm² Unmanned, multi-linked shaker— Norway

Latham International Range of New Presses

A full range of presses are available manual, semi-mechanised and fully mechanised.

Range 250mm² laboratory presses up to 2.1m² conventional membrane or plate & frame.

Pressures:- up to 30bar

Accessories:-

Automatic plate movement

Automatic cloth washing

Multiple cake discharge

Photo electric light guards

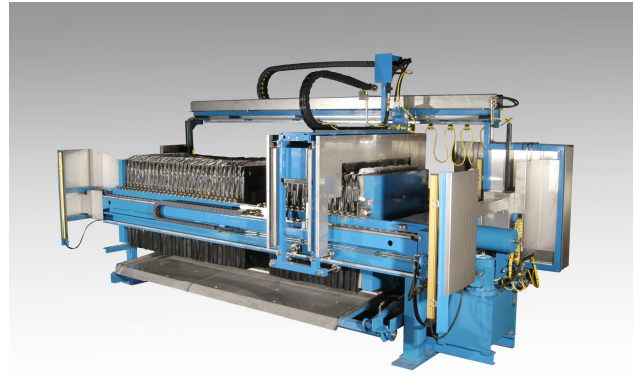
Automatic drip trays

PLC Control

Membrane inflation

Cake washing and air blow

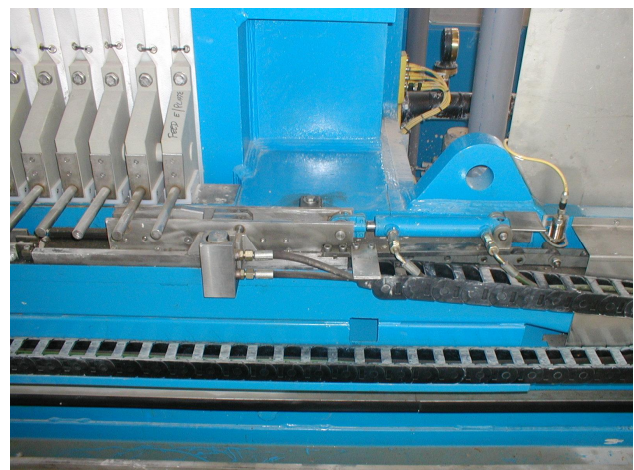
Core blow



1000mm² Fully Mechanised with Cloth Washing Machine—New Zealand



Plate Moving Mechanism with Shaker device for assisting cake discharge



Holdback device

Filter Plates:-

Highly heat stabilised Polypropylene up to 95°C
PVDF for higher temperature applications.

Cast Iron

Membrane Plates:-

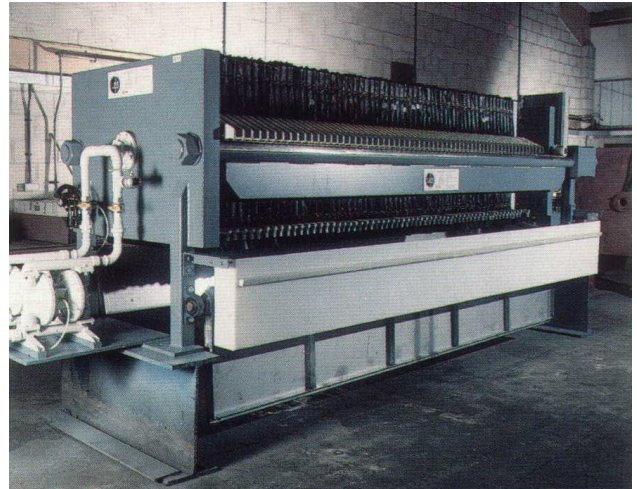
Integrally moulded Polypropylene

Detachable Polypropylene EP or EPDM

All presses are available in either side bar or
overslung version. Hydraulics can either be electro
or air operated for explosive environments.

Materials of construction:-

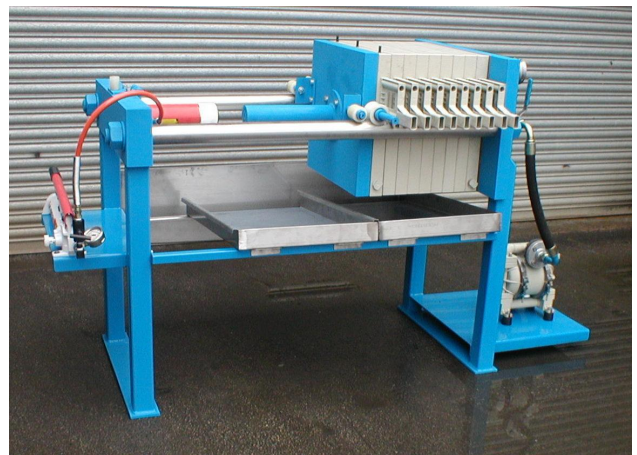
fabricated mild steel or stainless steel.



Semi-Mechanised—Egypt



Typical Filter Cake



Manual Filter Press



Filter Cake, Heineken, Netherlands



Mobile Filter Press, Jack on, Jack Off
Future Industrial Services, UK

Fully Refurbished Filter Presses and Upgrading of Existing Equipment

As well as being market leaders in the manufacture of new filter presses, Latham International also specialise in the field of fully refurbished presses and the upgrading of existing equipment.

Refurbishment:-

Latham International have many presses available for refurbishment. The refurbishment would bring the press up to a new standard and would include:-

- Replacement or upgrading of hydraulics
- Shot blast & paint press skeleton
- Replacement of plates
- Retrofitting of latest plate moving mechanism and washing machine (optional)
- New control system
- Up to 50% cost saving on new

Upgrading of Existing Equipment:

-

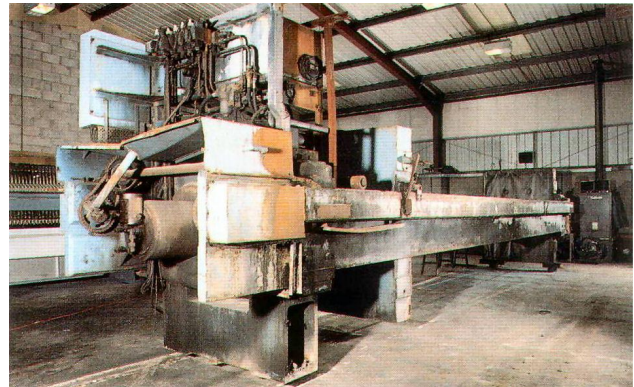
Installation of latest plate moving mechanism and auto cloth washer.

Filter plate replacement and membrane conversion.

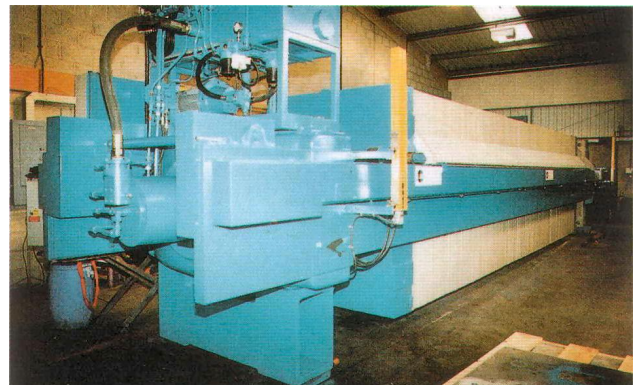
All onto client's existing equipment.

Feed pump systems.

Polyelectrolyte make up unit.



Before



After



Refurbished press in operation

Latham International Ram Pumps

This is a ram type reciprocating piston pump that is driven by a separate electrically powered hydraulic power unit.

The pump and hydraulic power unit form a single integrated pump set.

The pump is of robust, heavy-duty design and construction with an anticipated working life well in excess of 20 years. The pump body and the valve boxes are one piece steel fabrications. The sludge ram is manufactured from stainless steel. The sludge seals are maintenance free chevron rings, which are replaceable as a service item without the removal of the sludge ram.

The hydraulic cylinder driving the sludge ram is built to off shore specifications and is of a hardwearing design featuring a chrome piston rod. The hydraulic cylinder also features extensive internal guidance and support for the piston rod thereby eliminating lateral forces upon the hydraulic seals, which can promote oil leaks. The top of the hydraulic cylinder features internal, hydraulic cushioning to facilitate absolute control over the sludge ram at the top of the stroke where the ram changes direction from up to down. This contributes to the quiet operation of the pump.

This hydraulic unit comprises a hydraulic oil tank beneath which sits an electric motor driving through a bell housing and coupling to a variable speed, pressure compensated hydraulic oil pump.

Range (Ram Size)

- 110
- 160
- 267
- 320
- 415
- 495



Model 160 Ram Pump—Stainless Steel

Filter Presses in the Ceramic Industry

Being based in the Heart of the Pottery industry (Stoke-on-Trent, UK) Latham International has gained a vast knowledge of the ceramic industry. Both in clay body preparation and effluent control.

Pressure:-

7 – 30 bar (conventional or membrane)

Moisture:-

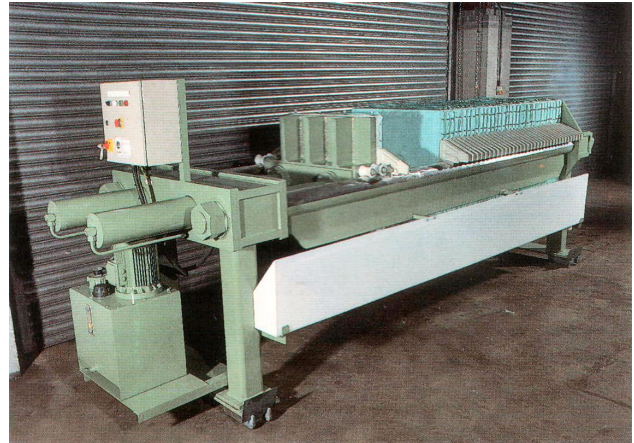
16-20% achievable

Application:-

Clay body preparation

Effluent dewatering

Glaze recovery



800mm² 16 Bar Filter Press—Saab, Sweden



2m x 1.5m Filter Press 30 Bar—WBB, UK

Filter Presses in the Mining Industry and Process Applications

For high volume and solid content sludges, Latham International have the capacity to manufacture filter presses with up to 25m³ press volume, giving some 50t/cycle capacity. With the use of air blow and membrane, moisture, contents of around 10% can be achieved on certain products.

For chemical and precious metal recovery applications maximum product recovery can be achieved on a filter press with the use of in situ cake washing.

Using the fully automatic filter press a high degree of security is achieved due to no labour involvement.

Whatever the applications Latham International will optimise a solution to give the best possible end results.

Range:-

Up to 2.1m² fabricated in mild steel or stainless steel

Co-polymer, polypropylene, copper stabilised or PDVF for high temperature applications.

Manual to fully automatic



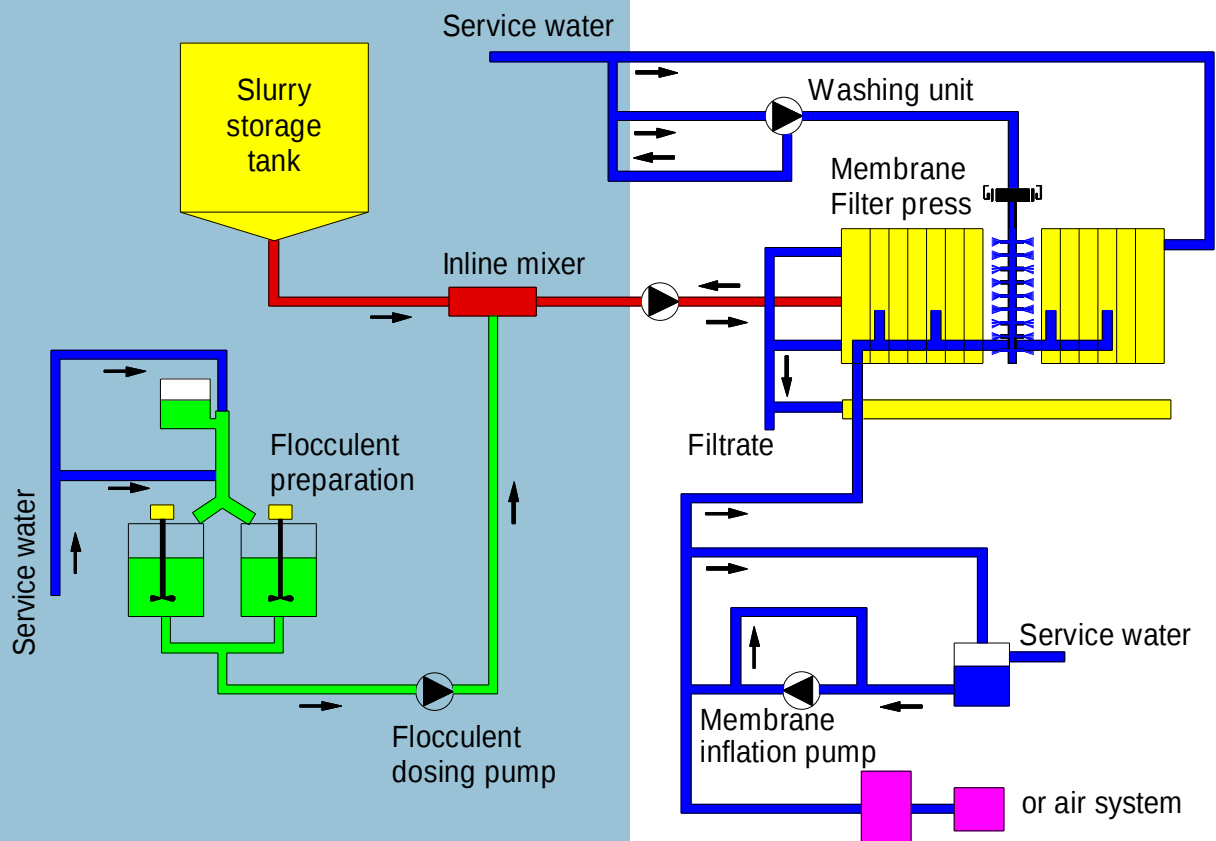
2m² Filter Press—Cleveland Potash, UK



1200mm² Stainless Steel Filter Presses—Unilever, UK

Turnkey Systems for Water and Sewerage Treatment

Sludges developed by municipal waste water treatment and the preparation of potable water contain finely dispersed organic or inorganic particles. Because of this, thickening is limited to a maximum of 8%. To reduce disposal costs the sludges must be dewatered.



The reduction of volume and weight significantly reduces costs for transport, disposal or incineration.

Using Latham International filter presses guarantees the maximum solids content at the lowest capital equipment and running costs. The nature of the sludge and desired output would determine press selection (membrane or conventional) to optimise performance. This would be determined by filtration trials on site or in-house.



Sludge de-watering building

Latham Filtration Technology have the facility to supply and install complete turnkey systems. Comprising:-

De-watering filter presses

Press feed pumps

Polymer, lime & ferric preparation units

Tanks

Pipework and valves

Conveyor systems

PLC Control

Installation, commissioning & training

Whether it be for a municipal waste water treatment plant or a small rural plant Latham International will have the most economical de-watering solution either with a static or mobile filter unit.



Installation of 2.1m² Filter Press—Foster Yeoman, UK

In House and Site Filtration Evaluation Trials

Latham Filtration Technology have facilities for filtration trials both in house and on site.

In house via our laboratory utilising pilot size equipment allowing basic trials to be carried out on small sample volumes.

On Site via our trailer mounted self contained test rig that requires no additional incoming services other than the material to be filtered.

Our mobile rigs allow for both conventional and membrane filtration up to 20 bar, along with inbuilt facilities for both cake washing and air blowing if required.



Trailer mounted self contained test rig

Spares and Service

Filter Press Parts

In order to maintain the filter press, we are able to provide spare parts, including:

Filter Plates

Sizes from 250mm² upto 2100mm².

Polypropylene, PVDF Stainless Steel.

Recessed, Plate & Frame, Membrane

Filter Cloths

Sizes from 250mm² upto 2100mm².

Tailored to suit individual requirements in a range of fabrics.

Spatulas (Cake Scrapers)

To manually aid discharge where sticky cakes are a problem.

Hydraulics

All hydraulic spares available, including cylinder seal kits, filters, valves, etc

Electrical

Photo Electric Safety Barriers, Control Panel Spares (switches, relays, etc), proximity switches, pressure transducers, and parts relating to the modular electrical wiring system on Latham International Filter Presses.

Pumps

We are able to source spares for a whole range of pumps that are supplied with Latham presses, including Air Operated Diaphragm Pumps, Ram Pumps, HP Wash Pumps.

Membrane Inflation/Leak Detector

The leak detector is fitted to each plate, usually directly into the Membrane connection. Used to detect membrane squeezing operation and detect the location of any leaks in failed membranes.

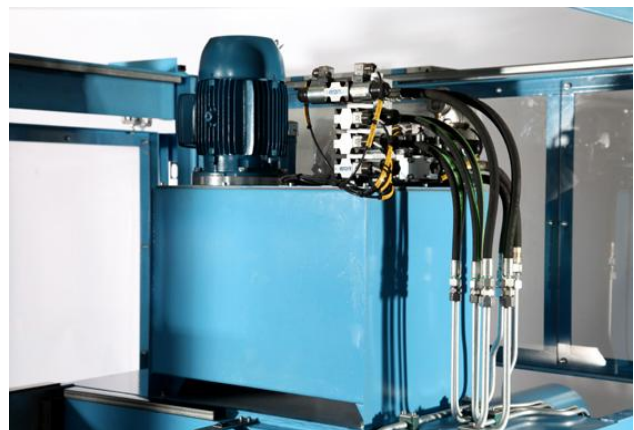
Service

Our engineers, who have many years of experience are able to provide service over the telephone or are available on call out, to carry out emergency repairs or general servicing

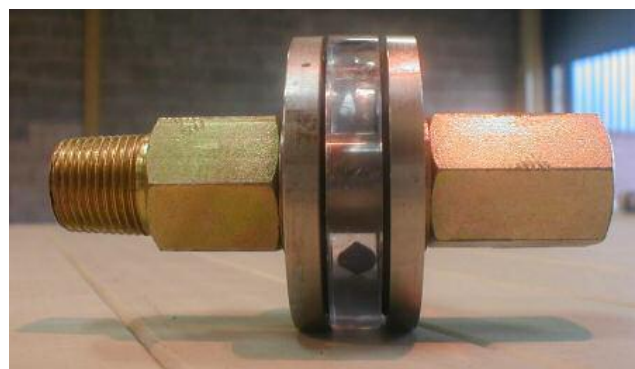
Several parts held in stock for same day despatch



Plates, Cloths and Spatulas (Cake Scrapers)



Hydraulics



Membrane Inflation/Leak Detector

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