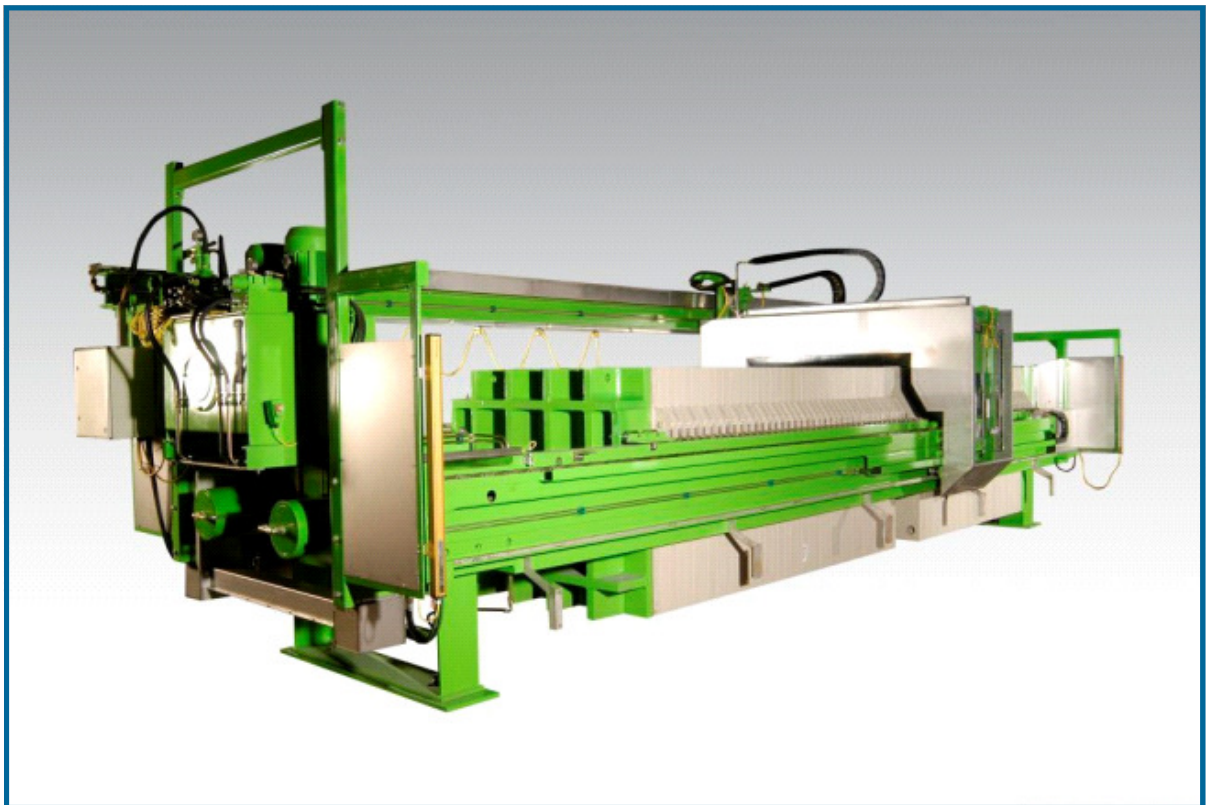


# LATHAM INTERNATIONAL

FILTRATION TECHNOLOGY WORLDWIDE



WORKING TOGETHER TO HELP  
PROTECT THE ENVIRONMENT



2003/358

# FILTRATION TECHNOLOGY WORLDWIDE

## DRIVING DOWN THE COSTS OF BETTER SOLID/LIQUID SEPERATION

Latham International 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 1981 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.

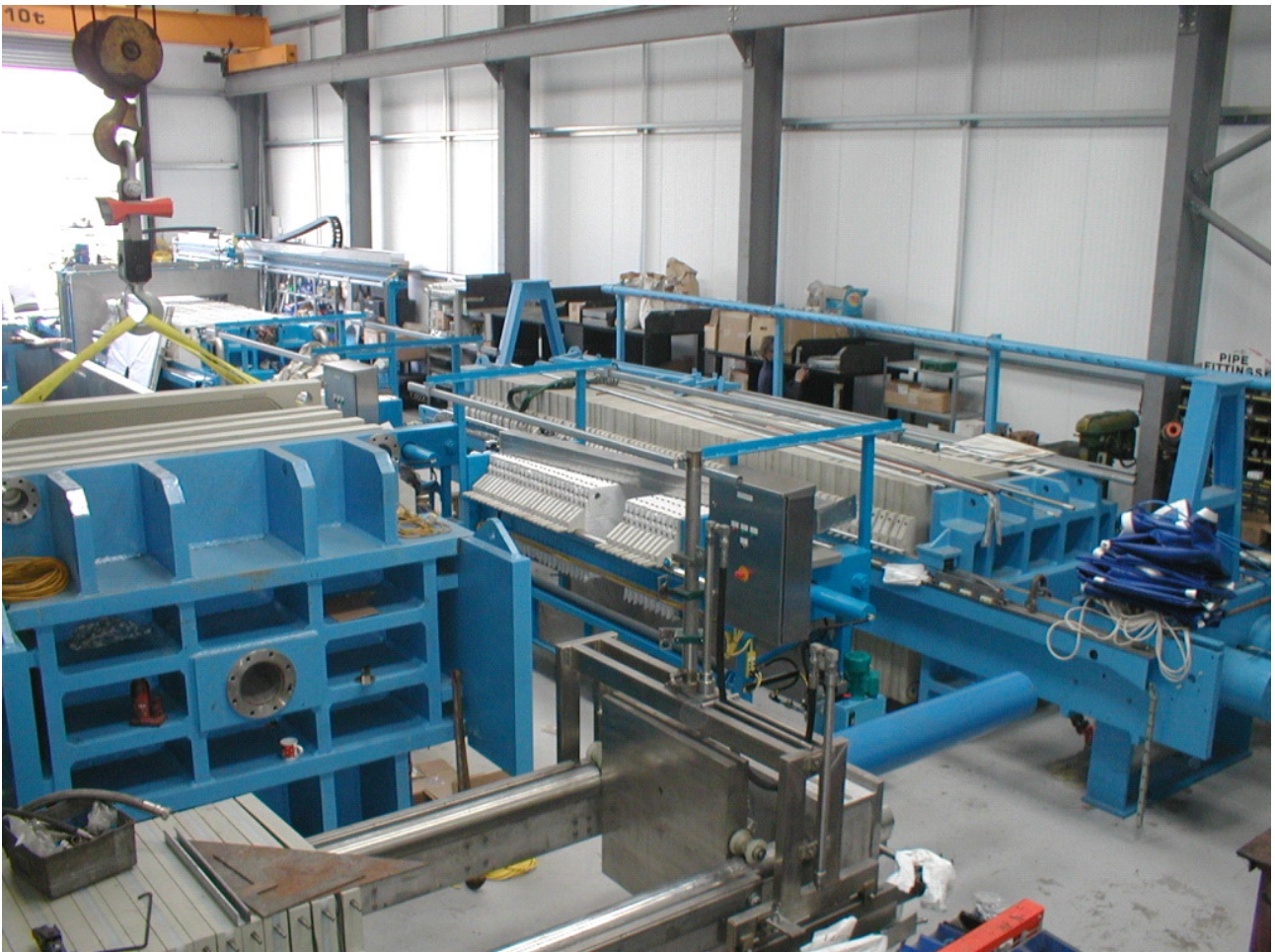
## WORLDWIDE

Our customers span a wide range of industries: 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.

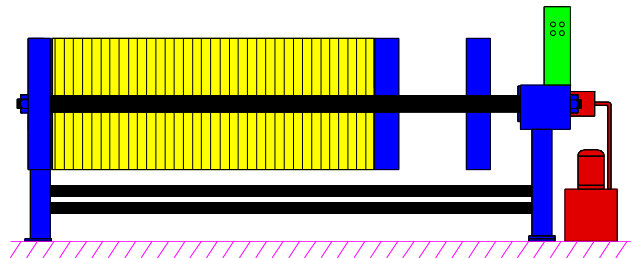
### Ceramics:

Body preparation and glaze recovery.

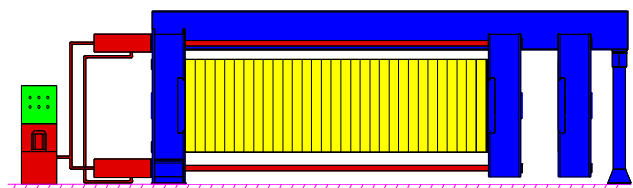
### Food & Beverage:

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

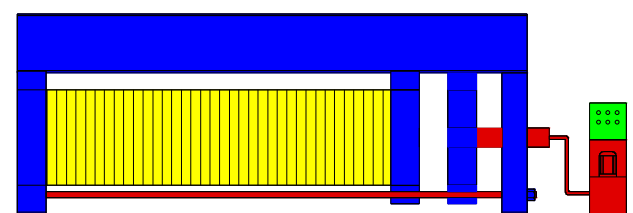
## Range



Sidebar/push to close design  
250mm<sup>2</sup>- 2.1m<sup>2</sup> single or twin ram.



Overhead/Pull to close design



Overhead/Push to close design



## Automatic Cloth Washer

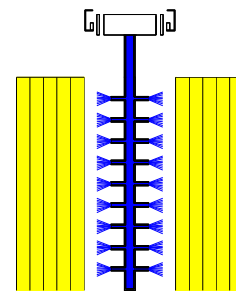
The unique Latham International low head automatic cloth washing machine is available on all its press sizes and can be retrofitted on to existing filter presses with minimal downtime.

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:-

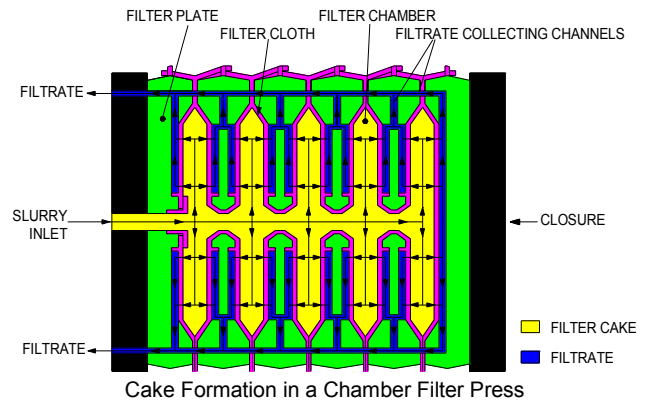
1. Built in hold back device ensuring only one plate is moved at a time.
2. Plate shaking device, enhancing cake discharge.
3. Multiple linking of plates giving quicker cake discharge.
4. Pendant control.
5. Fully automatic with photo electric light guards and lanyard reset.



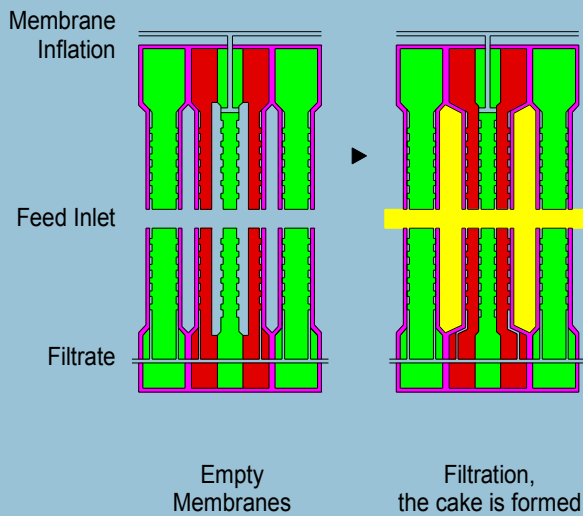
Platemech Carriage Operation

# Filter Press Systems—Methods of Operation

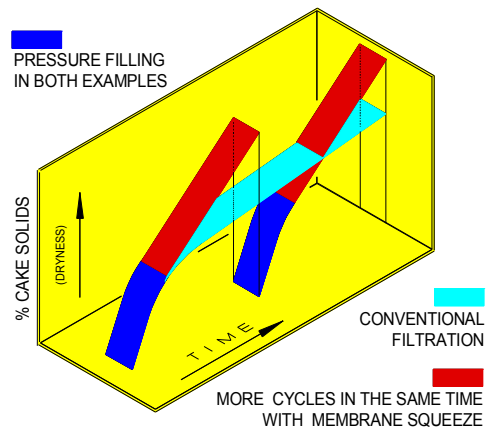
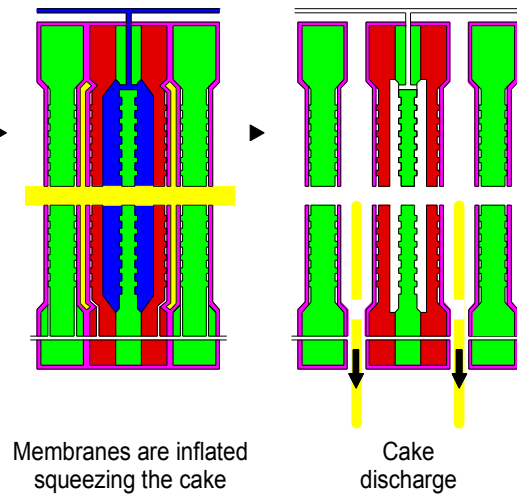
## Conventional Recessed Chamber Plates:



## Membrane Chamber Plates:

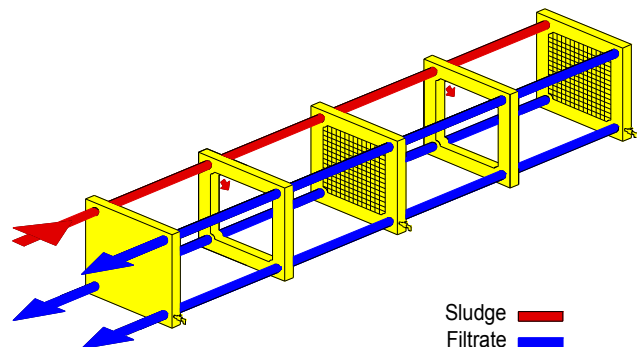


Membrane chamber plates are used on more difficult sludges. The use of membranes can considerably increase cake dry solids and reduce cycle times.



## 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:-

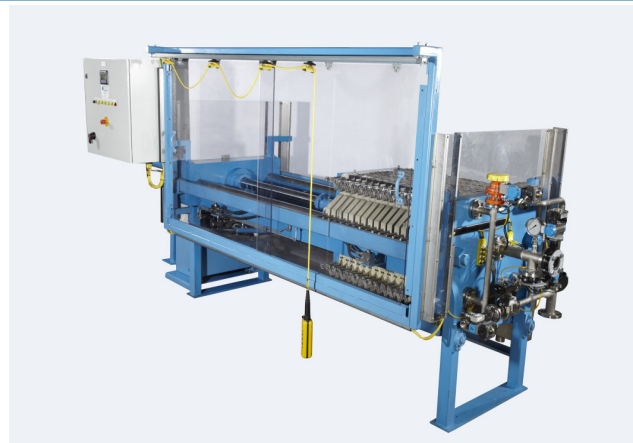
- No operator involvement
- Automatic cake discharge
- High throughput
- Reduce civil costs due to size of unit

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

The unit can be supplied in various sizes from 250mm<sup>2</sup> to 2.1m<sup>2</sup> with linked chambers.

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

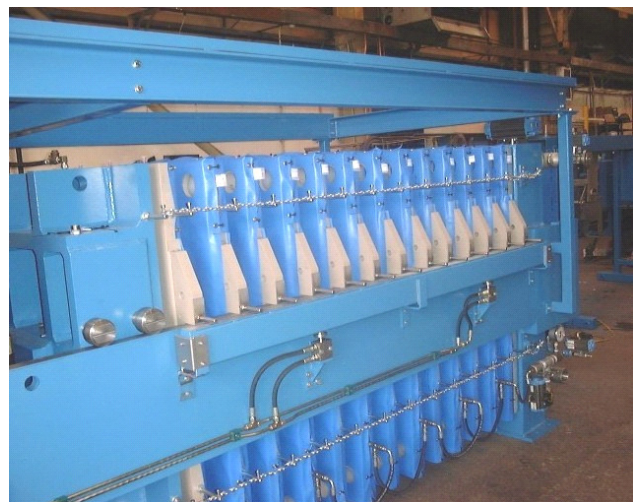
Cycle time can be monitored by filtrate flow back pressure or on a variable timer.



630mm<sup>2</sup> Unmanned, multi-linked shaker— Brazil



1200mm<sup>2</sup> Fully Automatic with shaker— Unilever, UK



1500mm<sup>2</sup> 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 250mm<sup>2</sup> laboratory presses up to 2.1m<sup>2</sup> conventional membrane or plate & frame.

Pressures:- up to 30 bar

## Accessories:

### Automatic plate movement

Automatic cloth washing

Multiple cake discharge

Photo electric light guards

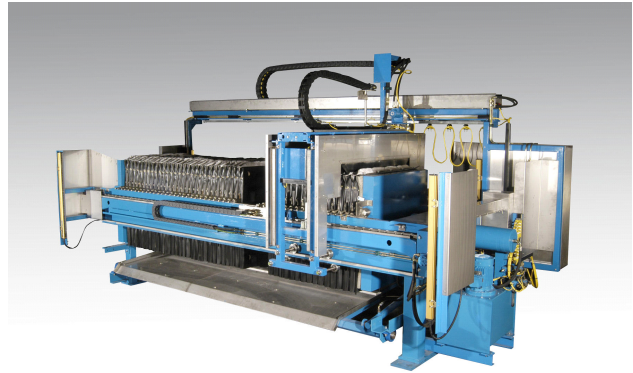
Automatic drip trays

PLC Control

Membrane inflation

Cake washing and air blow

Core blow



1000mm<sup>2</sup> Fully Mechanised with Cloth Washing Machine—New Zealand

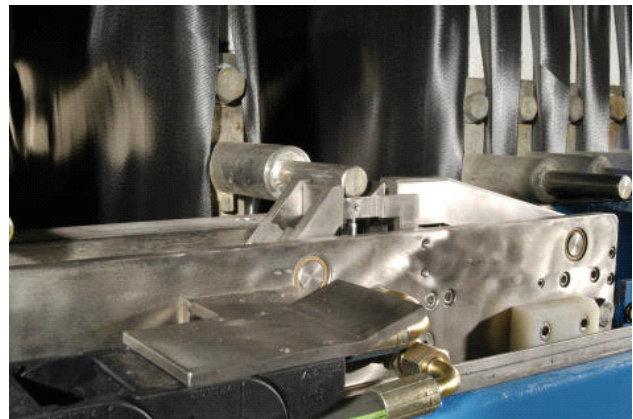
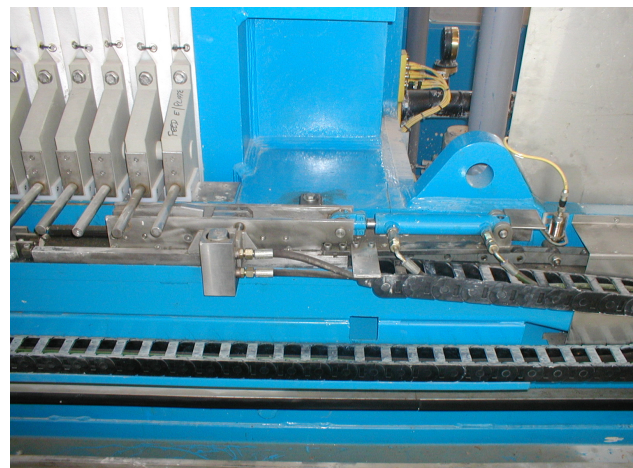


Plate Moving Mechanism with Shaker device for assisting cake discharge



Holdback device



### Filter Plates:

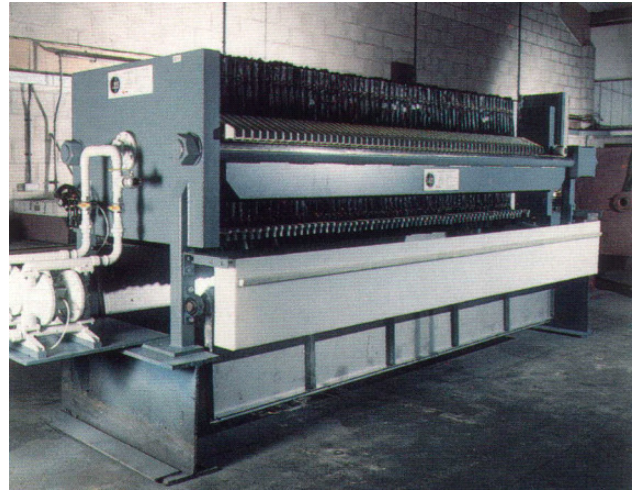
Highly heat stabilised Polypropylene up to 95°C  
PVDF for higher temperature applications.  
Cast Iron

### 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:

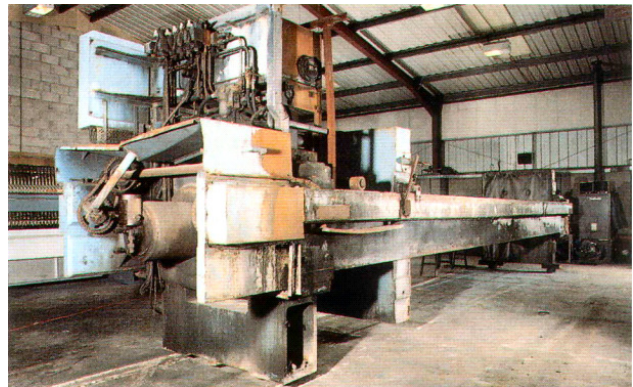
Installation of latest plate moving mechanism and auto cloth washer.

Filter plate replacement and membrane conversion.

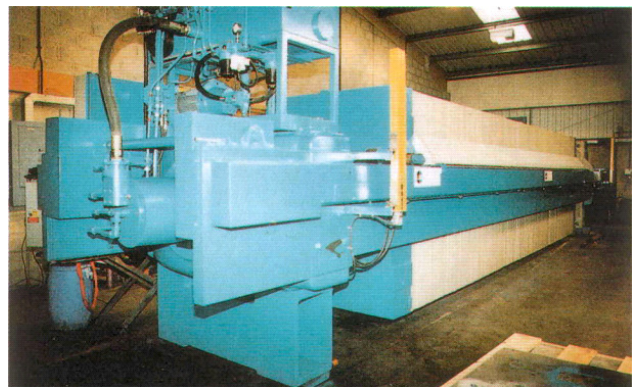
All onto client's existing equipment.

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



Row of Ram Pumps



Refurbished Ram Pump

## 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:

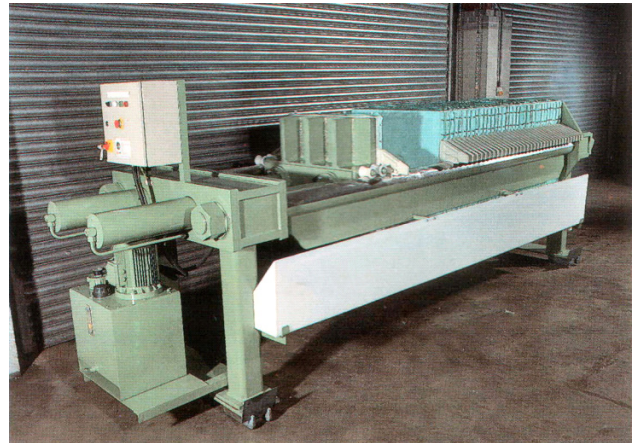
16-20% achievable

### Application:

Clay body preparation

Effluent dewatering

Glaze recovery



800mm<sup>2</sup> 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 25m<sup>3</sup> 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 2.1m<sup>2</sup> fabricated in mild steel or stainless steel

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

Manual to fully automatic



2m x 1.5m Filter Press (Gold Mine)



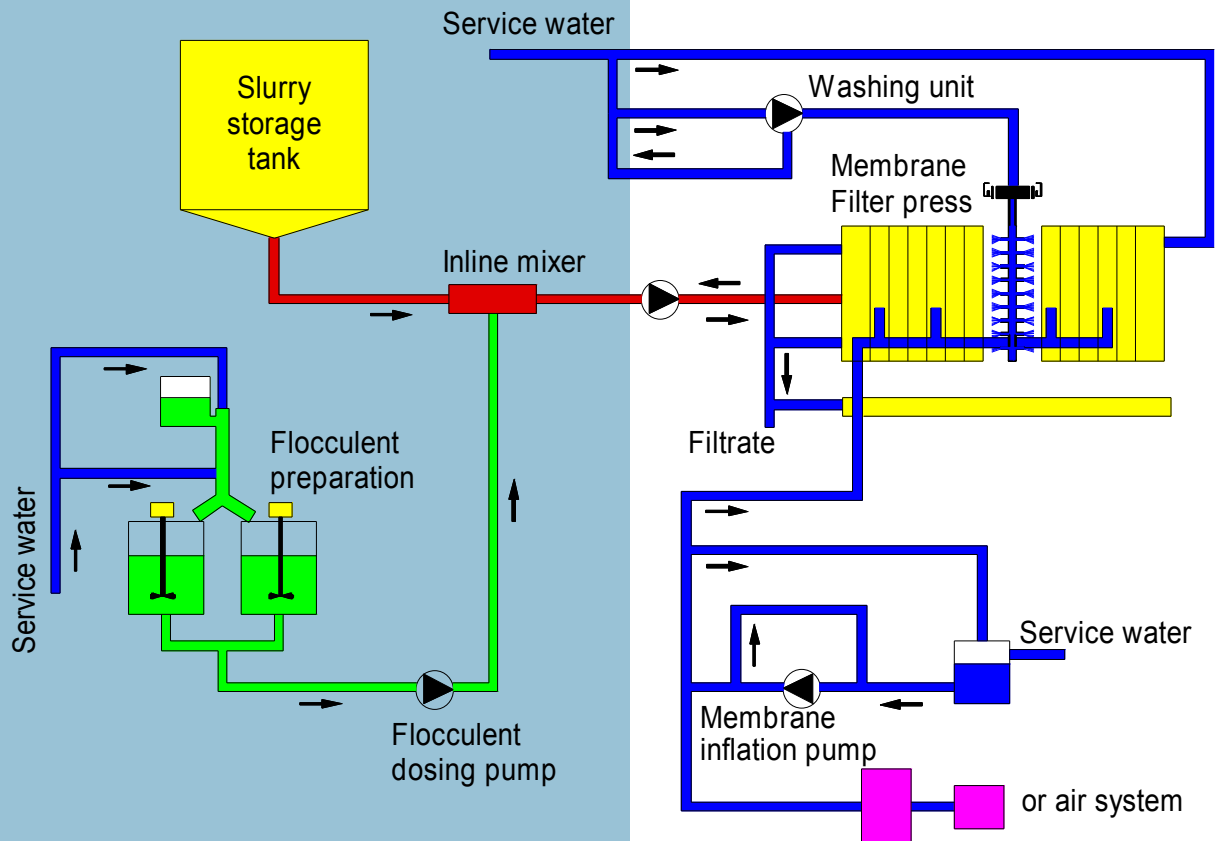
2m<sup>2</sup> Filter Press—Cleveland Potash, UK



1200mm<sup>2</sup> Stainless Steel Filter Presses—Unilever, UK

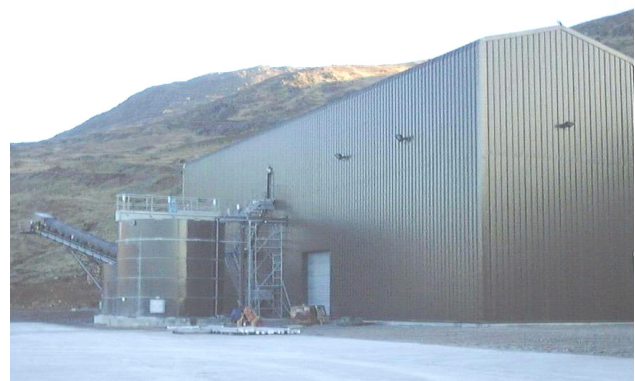
# Turnkey Systems for Water and Sewerage Treatment

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 International 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 2.1m<sup>2</sup> Filter Press—Foster Yeoman, UK

## In House and Site Filtration Evaluation Trials

Latham International 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 250mm<sup>2</sup> upto 2100mm<sup>2</sup>.

Polypropylene, PVDF Stainless Steel.

Recessed, Plate & Frame, Membrane

#### Filter Cloths

Sizes from 250mm<sup>2</sup> upto 2100mm<sup>2</sup>.

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.

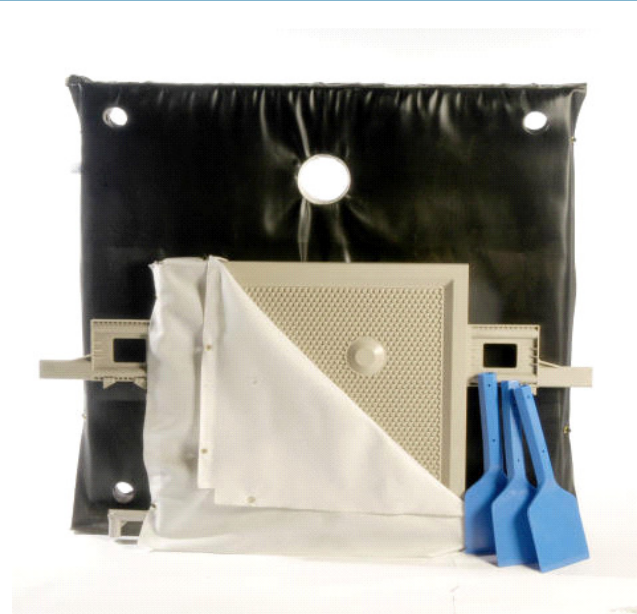
#### Membrane Inflation/Leak Detector

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

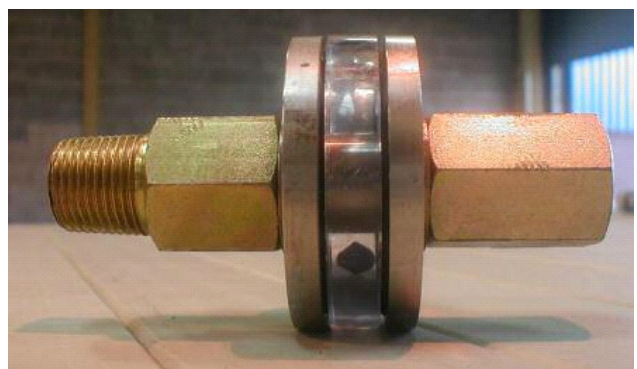
Several parts held in stock for same day despatch



Plates, Cloths and Spatulas (Cake Scrapers)



Hydraulics



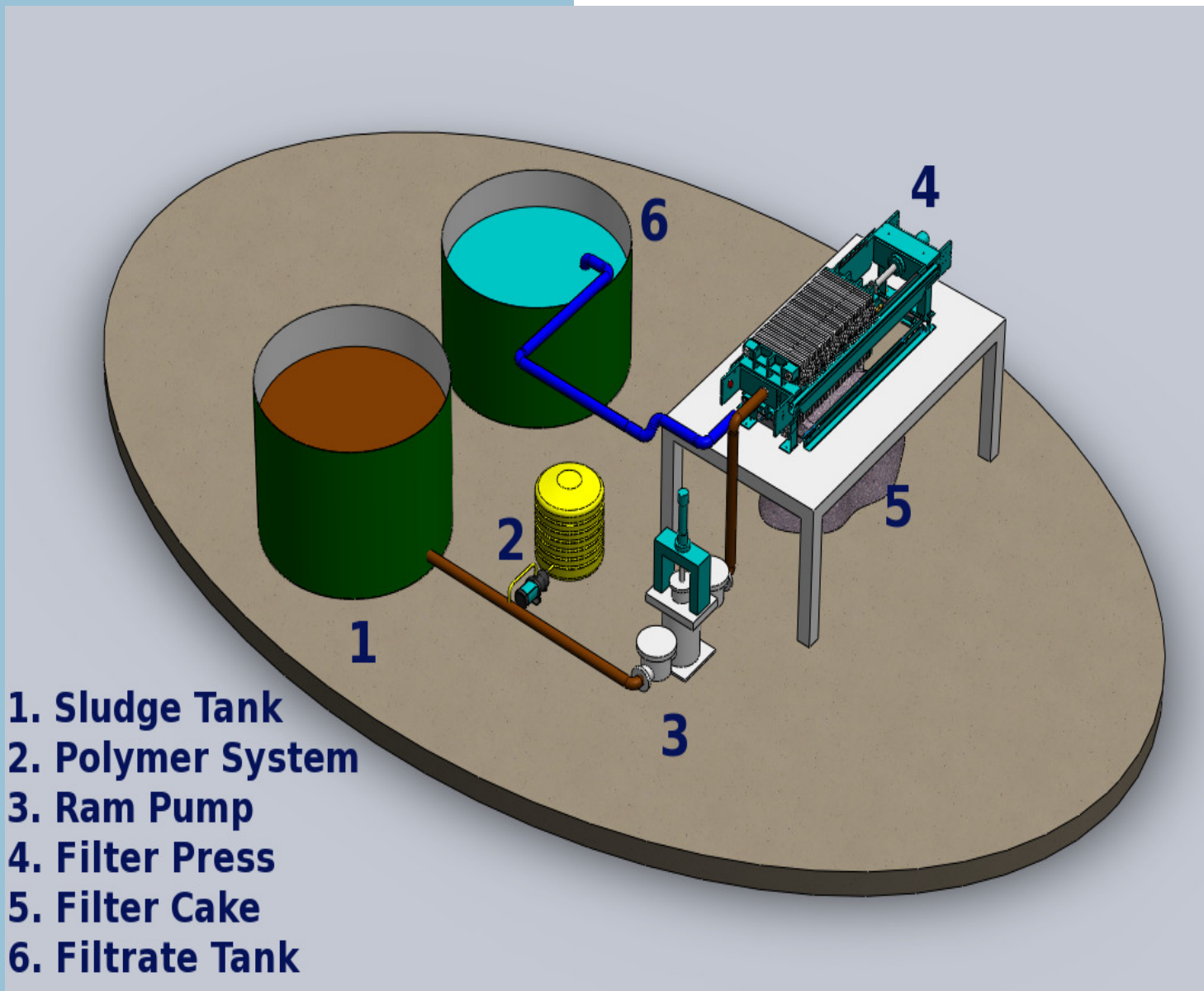
Membrane Inflation/Leak Detector



## A Filter Press Operation — How a Filter Press Works

### The Advantages of a Filter Press

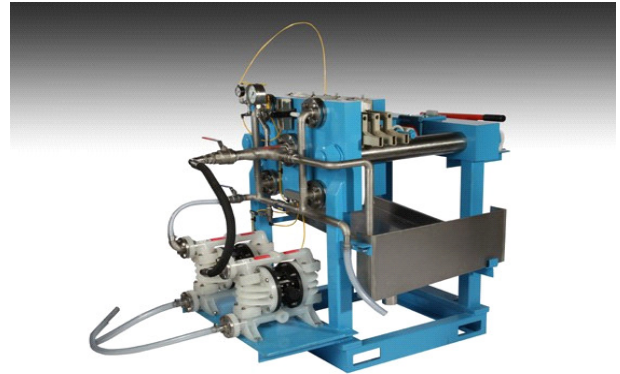
- Can filter hard-to-dewater sludges
- Limited moving parts on a Filter Press, so less maintenance required
- Drier cake produced than a Belt Press, Centrifuge or any other Sludge Separation Equipment
- Very High Solid Capture
- High solid content cake
- Only mechanical device capable of producing a cake dry enough to meet landfill requirements in some locations
- Filter Press Skeleton life of 25 years minimum
- Working Pressure from 7—30 bar



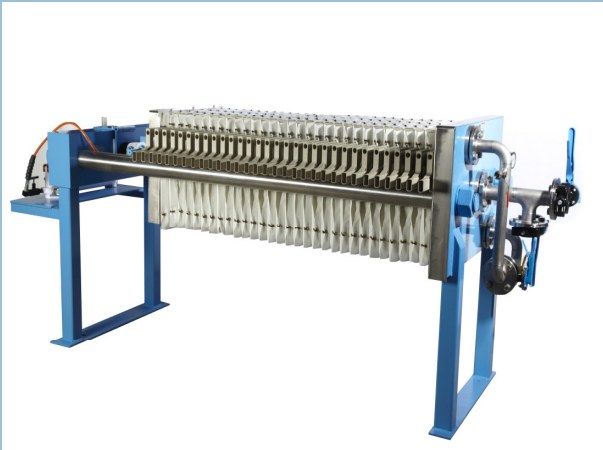
## Examples of Typical Filter Presses



250mm<sup>2</sup> Filter Press



470mm<sup>2</sup> Filter Press



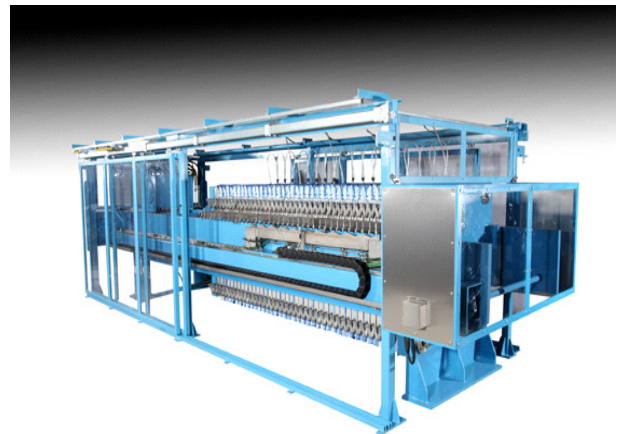
500mm<sup>2</sup> 15 Bar Filter Press



630mm<sup>2</sup> Double Acting Filter Press



1000mm<sup>2</sup> Overslung Filter



1200mm<sup>2</sup> Side-Bar Filter Press

# Agents

## Africa

### Latham Filtration Technology

Unit 46, Kya North Park Bernie Street,  
Kya Sands, 2163, South Africa  
Tel: +27 (11) 7082313 / Fax: +27 (11) 7081526  
E mail: albert@lathamafrika.co.za

## Hong Kong

### Water Confidence Technologies

Room 703, Henan Building, 90 Jaffe Road,  
Wanchai, Hong Kong.  
Tel: +852 93327488 Fax: +852 30201887  
E-mail: clarence.leung.hk@gmail.com

## New Zealand & Australia

### Jonassen Industrial Projects

85 Oteha Valley Road, Albany,  
Auckland, New Zealand  
Tel: +64 (09) 479 3952 / Fax: +64 (09) 479 3954  
Email: chris@jipl.co.nz / Web: www.jipl.co.nz

## Israel

### EST Projects

B.S.R. Tower 2 – 17th. Floor, 1 Ben Gurion St.  
Bnei Brak, Israel 51201  
Tel: +972 (3) 6142303 / Fax: +972 (3) 6142304  
Email: yossi@estprojects.com / Web: www.estprojects.com

## Canada

### Thurston Machine Inc.

806B – 56th Street East  
Saskatoon, SK, S7K 5Y8, Canada  
Tel: 250-763-7000 / Fax: 250-763-7025  
Email: djones@thurston.ca / Web: www.thurston.ca

## India

### Centrifor

305, Padmaprabha Heights, Karvenagar,  
Pune 411052, India  
Tel: +919881063433  
E-mail: centrifor@gmail.com

## Philippines

### Suplitech Machinery & Trading Corp

Unit 2B 441 Real St., Pulanglupa,  
Las Pinas City, Philippines  
Tel: 8747270 / Fax: 8748032  
E-mail: boyini16@yahoo.com

## Russia

### Latham Rus

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Moscow 125047, Russian Federation  
Tel: +7 (495) 6616715 / Fax: +7 (495)6616715  
E-mail: info@latham-rus.ru / Web: www.latham-rus.ru

## Turkey

### NKS Trade

Diemen Naci Cakir Mah  
752. Cad (eski liker 1. Cad)  
No: 5/5 Cankaya, ANKARA, Turkey  
Tel: +90 312 385 4501 / Fax +90 312 385 4601  
Email: n.sakinc@hotmail.com  
Website: www.nksfilter.com

