Amston Filter Press

Recessed Plate Filter Press

Key features & benefits

- Manual, semi-automatic and fully automatic options available
- All options ensure filtrate and treated sludge separation
- Capacities range from 10L to 3000L
- High cake dry solids concentrations

How we create value

- Sludge disposal costs reduced by up to 90%
- Unmatched quality and performance
- Fabricated for long life and reliability
- Lower polymer usage than belt presses
Amston Filter Press

How it works

The Amston filter press is a pressure filter used for dewatering sludge. A low dose of polymer is often required to assist dewatering. The Amston filter presses require a lower polymer input than belt presses due to their use of higher pressures and finer cloths.

The Amston filter press comprises a number of plates, each fitted with a durable permeable cloth. The recessed plates are pushed together in normal operation.

The pressure required for dewatering is provided by the feed pump. During the filtration cycle the sludge is initially pumped into the chambers at a high rate. This rate is reduced as the chambers are filled and the pressure builds. The cloths retain the solids, allowing water to pass through as filtrate.

Once the pressure in the press reaches a set point and the filtrate is reduced to a trickle the dewatering cycle is complete. The next stage of the process is to empty the press by opening the plate chambers and allowing the dewatered cake biscuits to drop out. This entire operation can be a manual, semi automated or fully automated process.

Once the press is empty the plates are returned to the closed position, ready for further batches.

Uncompromised Quality and Performance

The MH Series is a manual filter press unit fitted with a hand pump, and is ideal for small sludge volumes. The SA series is a semi-automatic filter press range, with a hydraulic pump for plate pack closing. The C Series is a fully automatic machine that includes automatic plate shifting, plate vibration and drip trays.

A number of options are available to assist ease of operation for all models, including the Air-Track plate shifter, membrane plates for increased filtration pressures and automatic bomb bay type drip trays.

The Amston range includes plate sizes from 470 x 470mm, through to 2000 x 1500mm. The plates are manufactured from high quality molded high density polypropylene. Filter cloths are available to suit a wide range of applications.

The filter press frame is fabricated from heavy duty mild steel, with a heavy industrial paint specification for long life and reliability.
How it works

High Quality Plates
The Amston filter press uses high quality polypropylene filter plates that conform to DIN7129. On request, other sources of supply can be used for low stress duties, which can reduce capital costs. Sizes are available between 470-1500mm². Membrane plates are also available for extra sludge squeezing and cake washing/blowing.

Superior Plate Pack Closure
High quality hydraulic cylinder and power packs are used for closing and sealing plate packs. End plate cross beams are made from high tensile steel for a deformation free operation.

Fully Automated Units
Automatic plate vibration and cloth washing options are available on fully automated units. This ensures full cake discharge and maintains clean cloths on programmable cycles.

Drip Tray Options
A range of devices are available to catch filtrate drops and any cloth wash water from the plate pack. Manual presses have a sliding drip tray. A bomb bay door assembly on pneumatic arms can be used for automated options. In units where a discharge conveyor is used the conveyor is reverse inclined, allowing drips to run back to a collection tray. All options prevent binned, dewatered cake from becoming wet by released filtrate water.

Applications
With many superior features and an extensive range of capacities, the Amston filter press leads the way in sludge dewatering technology.

Metal Sludges
Chemical Sludges
DAF Sludges
Clarifier Sludges
Paper Industry
Water Treatment Sludge
Mining and Tunneling Waste
Filter Press Sizing

Step 1
Determine the volume of dry cake that will be produced.

\[ V_w = \text{Volume of "wet" sludge} \]
\[ V_d = \text{Volume of dewatered cake} \]
\[ C_w = \text{Dry solids content in wet sludge} \]
\[ C_d = \text{Dry solids content in dry sludge} \]
\[ V_d = (V_w \times C_w) \times \left( \frac{C_d}{100} \right) \]

Step 2
Based on the level of automation and labor available, decide the number of operations per day.

\[ O_d = \text{Number of operations per day} \]
\[ P = \text{Filter press size} \]
\[ P = \frac{V_d}{O_d} \]

Specific gravity also influences sizes.

Once the size of the press is established, Ovivo will determine the most appropriate unit for each application. Contact Ovivo for details.

<table>
<thead>
<tr>
<th>Model</th>
<th>Volume</th>
<th>Plate Size</th>
<th># Plates</th>
</tr>
</thead>
<tbody>
<tr>
<td>05-4H</td>
<td>22</td>
<td>470x470</td>
<td>5</td>
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<tr>
<td>15-4H</td>
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<tr>
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<td>630x630</td>
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<td>60-15L</td>
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<td>1500x1500</td>
<td>60</td>
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*Dimensions and capacities are only a guide and are subject to change. Please confirm with your local Ovivo representative prior to using the above.