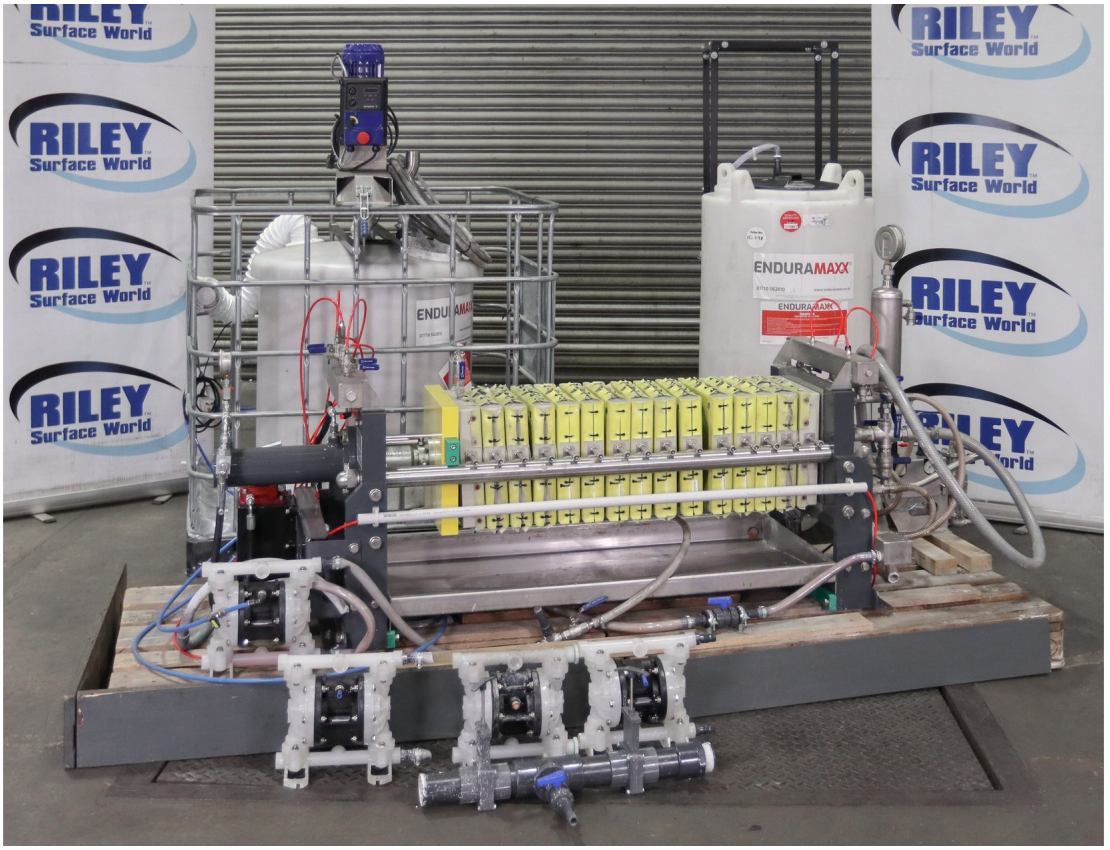
Autemi s.r.l. Lab 300 14 Plate Filter Press



Stock No	TE364
Manufacturer	Autemi s.r.l.
Model	Lab 300 SA2 / 3.8
Year of Manufacture	2023
Serial	203
Condition	From a working environment, Good Condition, Current Model
Work Envelope (WxDxH mm)	300 x 300 x 60mm x 14 Plates
Process Stages	3 Stage
Other Info	Construction 304 Stainless & Steel
Location	Our Central Warehouse, Aldridge, UK
External Dimensions (WxDxH mm)	2525 x 900 x 700mm

Description

The Autemi filter comprises of a set of 14 x 300mm square vertical, recessed membrane plates, pressed against each other by a hydraulic closing ram at one end of the set. Provided with high pressure pneumatic feeding pump (up to **15 bar**) for filterpress feeding and pressure multiplier to provide air pressure up to 16 bar for membrane squeezing, complete with a diaphragm pump.

Sludge de-watering using filter presses has become accepted as a reliable and efficient method of dewatering effluents

and sludges from industrial and municipal waste treatment processes. Some typical applications include:

- Metal hydroxide sludge
- Brine sludge
- Secondary biological sludge
- Water treatment alum sludge
- Oily sludge

One of the most difficult problems today is the disposal of sludges in waste treatment. Dewatered sludges from traditional dewatering equipment, (i.e. rotary vacuum drum filters, centrifuges and belt presses), are less acceptable for disposal in landfills and due to their high moisture content they are not economically feasible. The filter press process results in drier sludge that has proven to be an effective solution to this problem.

For example – sludges (such as alum sludge and waste activated sludge) that were previously considered difficult to dewater on traditional equipment can now be dewatered in a filter press sufficiently to produce a hard, dry, easily handled and autogenous material for incineration.

The filter press basically consists 14 x 300mm square filter plates (also referred to as recessed filter plate pack) mounted vertically on and between two sidebars or suspended from an overhead support beam. The support beam or sidebars are connected at one end to a fixed head, also known as a feed head, and at the other end to a closing head operated by a hydraulic ram, the recessed filter plate pack is compressed tightly together between the fixed feed head an a third head know as the moving or follower head, thus forming a compact filtering unit using recessed chamber filter plates.

The two faces of the filter plate have a drainage surface in the form of pips to allow filtrate to drain behind the cloth to the drainage port located in the bottom corner of the filter plates. These ports, in turn, connect to the corner eyes, which carry the filtrate drainage to the fixed end of the filter press.

Filter Press Feed Cycle

Step 1

Sludge is fed into the filter press by a suitable high pressure pumping system and passes through the feed eye of the succeeding plates along the length of the plate pack until all chambers are full of slurry. This is known as the fast fill portion of the filter cycle.

Step 2

Flowing under pressure, the solid particles begin to deposit on the surface of the filter cloth forming the initial layer of filter cake referred to as the pre-coat. Once applied, this pre-coat layer becomes the actual filtering medium.

Step 3

As filtering continues the cake thickness gradually increases, until the adjacent filter cake in each chamber touch or bridge. At this point of the filter cycle, the dewatering phase enters into final cake consolidation to achieve maximum cake dryness

Provided with high pressure pneumatic feeding pump (up to **15 bar**) for filterpress feeding and pressure multiplier to

provide air pressure up to 16 bar for membrane squeezing.

Final Cake Consolidation

During the consolidation step of the cycle, additional solids are being pumped into the filter chamber to displace more liquid. This results in a dryer, firmer and denser filter cake. This cycle normally continues until liquid flow from the press is reduced to virtually nil. At this point, the feed pump is stopped and the internal pressure within the filter plate pack is relieved.

Prior to discharging the filter cake, the cake may be further washed in place for extraction of impurities or neutralization purposes and/or the cake may be blown with air to further remove free moisture and to dry the filter cake.

Additional items

This set up comes complete with 3 feed diaphragm pumps that bring in contaminated sludge from up to three processes, this is deposited into a agitation / flocculant container, this solution is then fed into the press for processing as the steps above. Cleaned fluid is then pumped from the press into a 'silo' storage tank until it is recycled.

Photographs taken prior refurbishment. Our refurbishment service is not available on all machines.