

## Micronics Filtration Ltd Hydraulic Closing Filter Press

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Stock No	<u>TT076</u>
Model	Trent Filter Press
Serial	460
Work Envelope (WxDxH mm)	29 off 500 x 500 mm plates
Process Stages	3 stage sludge filtration
Other Info	De Watering filter press
Weight (kgs)	685kgs
External Dimensions (WxDxH mm)	2350 x 900 x 1450mm

### Description

Micronics Filtration Ltd Hydraulic Closing Filter Press

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 29 x 500mm Klinco chamber 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 Enerpac 50 bar (725psi) hydraulic ram, the recessed filter plate pack is compressed tightly together between the fixed feed head and a third head known 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

## 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.

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