



FTNON

Flotation Wash Line



The combination of special techniques gives an optimal washing result, while the product is treated as delicately as possible.

The flotation wash line is specially designed to wash and mix products such as cut salads, vegetables and herbs

Wash line standard configuration

The wash line consists of 2 washers placed behind each other. The product is transferred from the first washer to the second washer by a dewatering belt. The product is transferred from the second washer by a second dewatering belt. Below both dewatering belts, a filter is placed which will collect the water and filter it before it is circulated.

Washing

The product arrives in a water bath with a calm flow. Air is being injected into the water bath. This air injection creates a whirlpool effect. Thus the product is being massaged so that dirt comes loose without subjecting the product to great forces. The air injection ensures that the small(er), lighter particles will come to the surface, while the heavier dirt particles will sink. The product will rotate so the washing process is optimized. While the product is slowly flowing forward, the dirt settles down on the bottom in a calm zone under the air injection, from where it can be removed regularly with a drain, with minimal disturbance of the washing process.

Outfeed

On the outfeed side of the water tank, an accelerated water flow pulls the product out of the wash tank.

Dewatering belt

The product is being dewatered on a dewatering belt. After dewatering, the water is fed back to the filter from where it will be recirculated. The first dewatering belt has a swan neck end which is partially submerged in the water of the second washer, to ensure all product comes off the belt and brought into the second washer.

Fresh water spraying pipe

After the last dewatering, the product is rinsed off again with fresh water. This water will also be used for the refreshment of the system.

Parabolic filter

All the water is being filtered with parabolic filters. The water is buffered in the pump tank underneath the filters. The parabolic filters are situated above the pump tanks and the water coming from the dewatering belt flows through the filters. The dirt particles will remain on the filters.

The filters have to be cleaned manually.

Depending on the degree of dirt on the filters, the filters have to be cleaned frequently. A connection between the washers is created by means of an overflow of the 2nd filter tank towards the 1st filter tank.

Overflow water flows in counter flow with the product flow. The washer needs to be filled by a pipe mounted on the side of the washer. This pipe needs to be arranged by the customer.

Controls

Stainless steel control panel with:

- Main isolator
- Start-Stop buttons
- Emergency stop
- Reset button
- Pot meter(s) for frequency inverter(s) (to the extent applicable)

Technical specifications - Flotation washers

	FLW 060	FLW 090	FLW 150
EFFECTIVE LENGTH	3,150 mm - 124"	3,150 mm - 124"	3,150 mm - 124"
EFFECTIVE WIDTH	600 mm - 24"	900 mm - 35"	1,500 mm - 59"
HEIGHT OF WASHER EDGE	1,700 mm - 67"	1,700 mm - 67"	1,700 mm - 67"
NUMBER OF AIR PIPES	7	7	7
AIR CONTROL MANUAL VALVES	7	7	7

Technical specifications - dewatering belt - fresh water spraying pipe - filter

	FLW 060	FLW 090	FLW 150
DEWATERING BELT			
WIDTH	500 mm - 20"	800 mm - 31"	1,300 mm - 51"
LENGTH	1,800 mm - 71"	1,800 mm - 71"	2,800 mm - 110"
BELT TYPE	PVC mesh belt 1x1 mm, blue with stainless steel zip	PVC mesh belt 1x1 mm, blue with stainless steel zip	PVC mesh belt 1x1 mm, blue with stainless steel zip
FRAME TYPE	Steel plate without hollow sections	Steel plate without hollow sections	Steel plate without hollow sections
SIDE GUIDES	hingeable	hingeable	hingeable
DRIVE	drum motor	drum motor	drum motor
IDLE ROLLER	complete with quick release system	complete with quick release system	complete with quick release system
FRESH WATER SPRAYING PIPE			
VALVE	manual	manual	manual
SUPPLY FRESH WATER	pipe 1"	pipe 1"	pipe 1"
FILTER			
TYPE	parabolic	parabolic	parabolic
FILTER OPENING	wedge wire 750 µm	wedge wire 750 µm	wedge wire 750 µm

Hygiene

The flotation washer has a very open construction which makes the interior of the water tank completely accessible. The flotation washer empties very well so little product remains after production. The diameter of the valves permits a quick discharge of the water containing dirt and product remains. Some pipes are equipped with removable parts to assist cleaning. The dewatering belt is easy to clean because the belt can be de-tensioned with one simple movement. Also, the side guide are hingeable. This way, the belt frame underneath the belt is easily and completely accessible for cleaning. It is hardly possible for dirt to build up because the usage of bolted connections and horizontal surfaces in the construction has been minimized. At the positions where the connections are not completely welded, the space between the parts has been increased in order to make cleaning possible.

Options

1) Perforated bottom plates

In the water bath, perforated plates are mounted just above the air injection. These plates prevent relatively heavy products, like carrot strips and radish, from sinking to the bottom when the pump has been stopped. Small dirt and product particles will sink through the perforation and remain at the bottom of the washer. These plates are easily manually removable for cleaning purposes.

- Perforation: ø 3 mm

2) Separation drum floating particles

Halfway the flotation washer the floating product and dirt particles are being submerged by a large perforated drum, which rotates in the same direction as the water flow. Small particles, like small leaf parts and flies, that float in the layer of foam on the water surface, are being pushed by the air injection through the perforation of the drum. Inside the drum there is a strong cross flow, to push these parts through an exit in the side of the water tank. This water flows back to the filter.

TECHNICAL SPECIFICATIONS - SEPARATION DRUM FLOATING PARTICLES

DIAMETER Ø 950 mm - 37"

PERFORATION Ø 10 mm / Ø 15 mm - Ø 0,4" / Ø 0,6"
to be agreed

DRIVE Geared motor drive

3) Frequency inverter on separation drum floating particles

The separation drum can be executed with a frequency inverter so the retention time can be controlled more specific.

4) Lift system for separation drum floating particles

The separation drum for floating particles can be lifted. This way the products that are smaller than the perforation of the drum can also be washed. The lift system is provided with 2 pneumatic cylinders.

5) Fresh water spraying pipe on first dewatering belt

A fresh water spraying pipe similar to the fresh water spraying pipe on the last dewatering belt is mounted on the first dewatering belt.

6) Automatic electric valve for fresh water spraying pipe

The advantage of this electric valve is that when the pump stops, the valve automatically closes. This saves water. The manual valve remains, to set the flow.

7) Automatic filling valve

The washer can be executed with a fixed connection to an automatic filling valve. With this, the washer can be filled quickly and automatically.

The valve closes automatically when a high water level is reached in the system.

- Valve - pneumatic
- Supply fresh water, pipe 2"

8) Automatic drain valve

An automatic drain valve can be mounted on the drain point of the washer. Herewith it is possible to drain at a given time a small amount of washing water during the washing process. This way a part of the waste can be removed.

- Valve - pneumatic 4"

9) Rotating filter instead of Parabolic filter

All the recycled water is being filtered by means of a rotating filter. The rotating filter filters very fine, as a result of which the water needs to be refreshed less often. During production the filter does not require attention.

The filter system is executed as a rotating wedge wire drum through which the water flows.

Because of the wedge wire sieve profile, it is almost not possible for dirt to pile up in the filter gaps. The drum turns at a very low speed and dirt is scraped off from the outside. The water is buffered in the pump tank under the filter.

TECHNICAL SPECIFICATIONS - ROTATING FILTER

TYPE rotating

FILTER OPENING wedge wire 750 µm

DRIVE Geared motor drive

10) Cooling coil

In the pump tank, a cooling coil is mounted which is connected to a glycol cooling system. The heat generated by the pump and ventilator is absorbed by the water. Without cooling, the

temperature of the wash water would rise.

The cooling coil can keep the wash water at a constant temperature of 4° C (38° F). The cooling coil comes complete with flanges for easy connection.

TECHNICAL SPECIFICATIONS - COOLING COIL

WASH WATER TEMPERATURE +4°C (38°F)

GLYCOL TEMPERATURE IN -7°C (16°F)

GLYCOL COOLING SYSTEM Not included

GLYCOL CONTROL VALVE not included

TEMPERATURE SENSOR PT100 CONNECTION 1" (BSP) not included

PRODUCT TEMPERATURE IN max. 4°C (38°F)

REFRESHMENT WATER TEMPERATURE max. 4°C (38°F)

AMBIENT TEMPERATURE max. 4°C (38°F)

GLYCOL CONTROLS not included

11) Ventilator with air knife in dewatering belt

Product which does not automatically come of the last dewatering belt at the outfeed side will be removed by an air knife, which is mounted between the belt. The air knife is connected to a hygienic design ventilator.

12) Suction point on dewatering belt

A suction point is integrated into the dewatering belt of the washer. A special ventilator sucks air at high speed through the product, thus taking off droplets of water from the product and the belt. For the FLW 060 and 090 a single ventilator is used. For the FLW 150 a double ventilator is used.

13) Demister for suction ventilator

Only for washers FLW 060 (width 600 mm/24") and FLW 090 (900 mm/35") the demister collects the droplets of water from the exhaust of the suction ventilator. This water is fed back to the filter of the washer, thus reducing water consumption.

14) Platform next to washer

At one side of the washer a low platform can be mounted for improved access and view on the inside of the washer. The platform is complete with stairs.

- Dimensions platform 2,100 x 700 mm / 83"x 28"
- Top plates, stainless steel 304 crater plate

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