Screenings Treatment Systems

– Optimal systems for any application
– High dewatering efficiency
– Maximum washout degree
– Reduced disposal costs

Why screenings treatment?

Screenings are normally produced by screens in waste treatment plants (wastewater treatment plants, pumping stations, etc.) and predominantly consist of material similar to domestic waste, faeces, paper and mineral materials. The screenings volume produced is dependent upon the separation size of the screen, the sewer system and the preceding pumping stations.

The water content of municipal screenings varies between 10 % and 25 %, depending upon the type of screen used whilst the organics contained within the screenings amount on average to approx. 90 % of the dry residue [DR].

Due to the very high water content, the very heterogenous composition and unanesthetic appearance screenings must be pretreated prior to disposal. The best pretreatment systems are screenings wash presses that wash out faeces and suspended organic material through addition of wash water and mechanical energy. As a result, a BOD_5 load increase of up to 6 % at the inlet to the biological treatment stage can be expected. After washing, the screenings are compacted to achieve a significant reduction of the water content within the washed screenings and due to the washout of faeces screenings dewatering is often significantly improved. Dependent upon the selected washing process and press type a weight and volume reduction of up to 80 % can be achieved. The weight reduction reduces the screenings disposal volume and has thus a direct impact on screenings disposal costs.

Unwashed screenings

Washed screenings

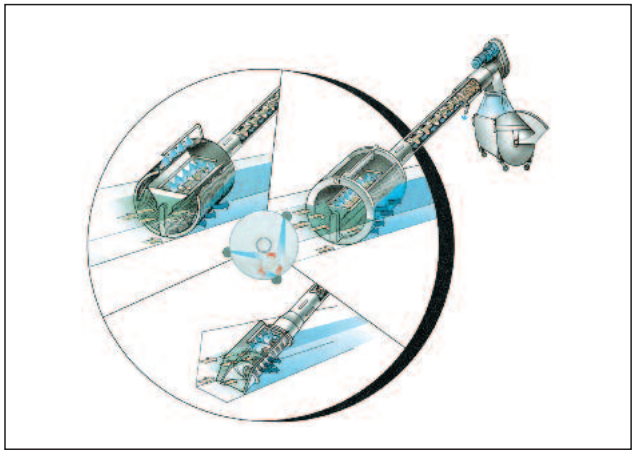
Integrated Screenings Washing System IRGA

Design and function

All ROTAMAT® screens can be equipped with the IRGA system that washes the screenings within the screen basket to remove virtually all faeces. The screenings press integrated in the ROTAMAT® screen's rising pipe dewaters the screenings to up to 40 % DR. Wastewater from the channel or process water can be used as wash water. The press liquor returns to the channel.

The user's benefits

- Increased dewatering performance of up to 40 % DS
- Volume, weight and disposal cost reduction by up to 70 %
- Easy retrofit



IRGA flow diagramm

Screenings Wash Press WAP

Design and function

The screenings to be treated are discharged directly from a screen or conveyor (e.g. screw conveyor) into the feed trough of the Wash Press. A robust conveying and compacting screw transports the screenings into the wash zone where they are exposed to directed and powerful turbulence created by automatic introduction of wash water (used water). The high turbulence guarantees perfect separation of organic particles and thus effective screenings washing. The washing intensity and cycles are individually adjustable.

The washed screenings are further conveyed in the rising pipe to the press zone where they are pressed and dewatered by the compacting screw to a DS content of 35 – 45%. The filtrate from screenings compaction is rich in carbon and returned to the wastewater stream. Automatic flushing of the wash water collecting tank under the machine is possible. The washed and compacted screenings are finally pushed through the conical discharge pipe into a container.

The user's benefits

- Dewatering performance of up to 45 % DR
- Volume, weight and disposal cost reduction by up to 75 %
- Screenings throughput capacity of up to 12 m³/h

Reliable and efficient – HUBER Screenings Wash Press WAP

- Completely made of stainless steel (including the compacting screw)
- Made of stainless steel for corrosion protection
- Return of carbon-rich filtrate to the wastewater
- Insensitive to coarse material
- Screened wastewater or process water can be used as wash water
- Flexible feed trough lengths
- High economic efficiency due to reduced transport and disposal costs
- Low investment costs

HUBER Wash Press WAP-L for launder channel operation

The screenings to be treated are discharged from a screen into a launder channel and flushed into the Wash Press. Service water is used as flush water. The transport water (free water) is returned to the system through a perforated plate. The screenings washing cycle starts when a defined amount of screenings has been introduced. The screenings are washed, compacted and conveyed into a skip via a conical discharge pipe. The carbon-rich wash water is discharged to the channel.

This cost-effective screenings transport and treatment system provides up to 40 m launder channel length and offers operating reliability and flexibility to provide customised solutions.

The user’s benefits

- Screenings wash press for increased dewatering with launder channel feeding system
- Dewatering performance of up to 45 % DR
- Throughput capacity up to 12 m³/h
- Individually adaptable discharge situations due to flexible launder channel arrangement
- Up to 40 m launder channel length

Redundant operation and optimal screenings dewatering with launder channel feeding system

- Screened wastewater or process water can be used as wash and flush water

Screenings Wash Press WAP/SL

Design and function

The WAP/SL operates in a batch mode. Screenings either drop into the launder tank directly from a screen or conveyor, or they are flushed into the tank through a launder channel. After a batch of screenings has been fed, the tank is filled up with wash water and agitated for an adjustable period by means of an impeller. The fecal matter is loosened and removed from the screenings by high turbulence and shear.

After the washing cycle has been finished, an automatic valve opens and the wash water drains through perforations in the trough. It returns, together with the fecal matter, to the wastewater flow. A screw in the trough conveys the screenings towards the mouth of a tube whereby they are, as an additional option, rinsed with spray water. The screw pushes the screenings through the pressure zone where they are compressed, dewatered and compacted before they are finally discharged through the discharge pipe into a dumpster or bagger.

Outdoor installation of a HUBER Screenings Wash Press WAP/SL

The user's benefits

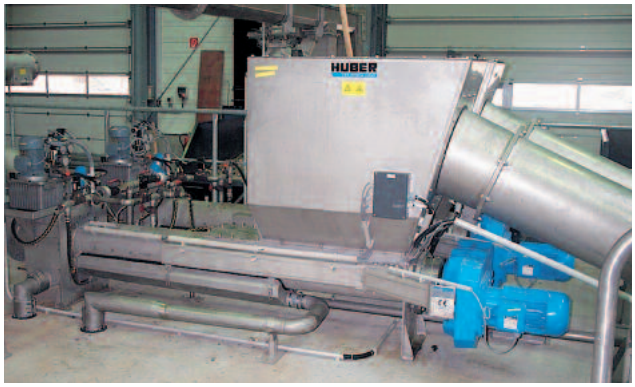
- Very clean screenings due to high-intensity washing in launder tank
- Dewatering performance up to 50 % DR
- Volume, weight and disposal cost reduction by up to 85 %
- Screenings throughput capacity of up to 6 m^3/h
- Return of carbon-rich filtrate to the wastewater
- Screened wastewater or process water can be used as wash water.
- Completely encased unit, no odour nuisance

Screenings Wash Press WAP/HP

Design and function

The screenings to be treated are discharged directly from a screen or conveyor (e.g. screw conveyor) into the feed trough of the Wash Press. A robust conveying and compacting screw transports the screenings into the wash zone where they are exposed to directed and powerful turbulence created by automatic introduction of wash water (service water). The turbulence achieves perfect separation of organic particles and thus effective screenings washing. The washing intensity and cycles are individually adjustable. The washed screenings are further conveyed in the rising pipe to the press zone where they are intensively pre-pressed by the compacting screw. In the following second press zone the screenings are compacted and dewatered under high pressure to a DS content of up to 60 %. Especially wear-resistant and solid materials in the conical high-pressure unit ensure reliable long-term operation of the plant.

The press water from screenings compaction is collected under the high-pressure unit and discharged along with the wash water which is rich in carbon. Automatic cleaning with water of the wear collecting tank under the machine and the complete high-pressure unit is possible. The washed and compacted screenings are finally transported through the conical discharge pipe into a container.



Increased DR with high pressure – the HUBER Screenings Wash Press WAP/HP

The user's benefits

- Dewatering performance up to 60 % DR
- Volume, weight and disposal cost reduction by up to 80 %
- Hydraulically controlled high-pressure zone
- Made of stainless steel for corrosion protection
- Insensitive to coarse material
- Compacting screw with reinforced flights for wear protection

HUBER Screenings Wash Press WAP/SL/HP

Design and function

The HUBER Screenings Wash Press WAP/SL/HP operates in a batch mode. Screenings either drop into the launder tank directly from a screen or conveyor, or they are flushed into the tank through a launder channel. After a batch of screenings has been fed, the tank is filled up with wash water and agitated for an adjustable period by means of an impeller. The feacal matter is loosened and removed from the screenings by high turbulence and shear. The washing intensity is selectable and can be adjusted to suit the specific screenings quality. After the washing cycle has been finished, an automatic valve opens and the wash water drains through perforations in the trough. It returns, together with the faecal matter, to the wastewater flow.

The washed screenings are further conveyed into the press zone where they are dewatered by means of a sturdy compacting screw. In the following automatically controlled second press zone the screenings are constantly compacted and dewatered under high pressure to a DS content of up to 60 %. Especially wear-resistant and solid materials in the conical high-pressure unit ensure reliable long-term operation of the plant. The press water from the screenings compaction is collected under the high-pressure unit and discharged along with the wash water which is rich in carbon. Automatic cleaning with water of the press and wash water collecting tank under the machine and the complete high-pressure unit is possible. The washed and compacted screenings are finally transported through the conical discharge pipe into a container.

The HUBER Screenings Wash Press WAP/SL/HP for optimal screenings treatment

The user's benefits

- Very clean screenings due to high-intensity washing in launder tank
- Dewatering performance of up to 60 % DR
- Volume, weight and disposal cost reduction of up to 85 %
- Hydraulically controlled high-pressure zone
- Return of carbon-rich filtrate to the wastewater
- Screened wastewater or process water can be used as wash water
- Insensitive to coarse material
- Made of stainless steel for corrosion protection
- Compacting screw with reinforced flights for wear protection

Installation Examples

HUBER Wash Press WAP-SL treating the screenings from a HUBER Rotary Drum Fine Screen Ro 2, high-efficiency screenings washing for optimal carbon return

Redundantly operated HUBER Wash Press WAP-SL units with launder channel feeding system. Totally enclosed, odour-free stainless steel design.

6 HUBER Belt Screen EscaMax® units with HUBER Wash Press WAP-SL: individually adaptable discharge due to flexible launder channel arrangement

HUBER Wash Press WAP fed by a ROTAMAT® Screw Conveyor Ro 8t for a dewatering performance up to 45 % DR

3 STEP SCREEN® Flexible SSF units and HUBER Wash Press WAP-HP with automatically controlled hydraulic counter-pressure unit for up to 60% DR

3 HUBER Wash Press WAP-SL units, size 12, maximum throughput 12 m³/h, with launder channel feeding system. Maximum available launder channel length: 40 m.

HUBER SE

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