



RAKING DEVICE WITH RACK GRID

STATE-OF-THE-ART TECHNOLOGIES AND WATER TREATMENT EQUIPMENT



DESCRIPTION

The raking device with rack grid is designed for sewage treatment from solid waste and is a part of the mechanical treatment package at wastewater treatment plants, and also provides protection of pumps at sewage pumping stations.

Solid waste is retained on the surface of screen and between its lamellae. Cleaning of its surface and openings of the filtering screen from the retained waste and their transportation to the upper part of the grate, to the place of unloading, is carried out by rakes. Both sides of a rake are attached to two closed leaf chains, which are driven by a geared motor through drive sprocket wheels. The retained waste is removed by the dropper from the rake and falls into a container or on conveyor.

The operation of device is fully automated. The automatic control system is based on a programmable logic controller. Removal of waste from the filtering screen is carried out periodically depending on the selected control scheme: by timer, on the level of water in the channel in front of the device, or by a mixed cycle (which of the events occurs earlier). Rotation of the geared motor (the speed of rakes) is controlled by means of a frequency-to-current converter.

The delivery kit includes a raking device assembly, a control cabinet and a local control panel, a level gauge and other elements of an automatic control system, a technical-and-operation data card, an operating and installation manual and accompanying documentation.

EFFICIENCY

High treatment efficiency is achieved due to the fact that:

- the design of filtering screen does not require the use of transverse stiffeners, which increase the hydraulic resistance and are a source of clogging of the screen with fibrous waste;
- the design of rake, the length and shape of its teeth allow to effectively clean not only the surface of filtering screen, but also the gaps along the entire depth of lamella profile.

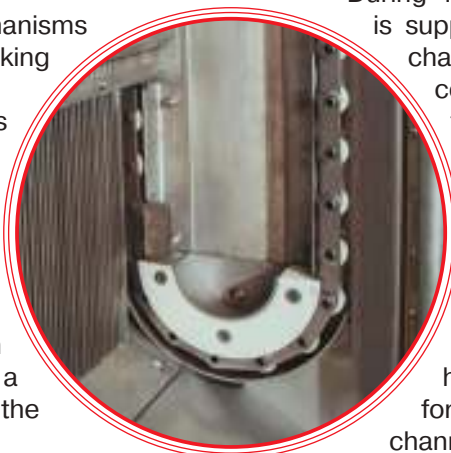


1. electric drive;
2. rake;
3. leaf chain;
4. filtering screen;
5. bottom rails;
6. consoles with turning joints;
7. non-contact control unit for rotation of the drive shaft.



MAJOR ADVANTAGE

- The frame of raking device, chain, filtering screen and other elements of the raking device contacting with wastewater are produced of corrosion-resistant steel grade AISI 304 and wear-resistant polymer materials with a low coefficient of friction.
- Absence of rotating mechanisms in the submerged part of the raking device.
- The raking device has two degrees of protection of mechanisms and parts: mechanical and electronic. Mechanical protection is provided by a clutch of friction type integrated into the geared motor. Electronic protection is triggered by the signal from a non-contact rotation sensor of the drive shaft.
- The filtering screen and rakes are knock-down, which makes it possible to replace any lamella of the filtering screen or any damaged tooth of the rake under conditions of operating device without demounting the raking device or its units.
- The chain tensioning mechanism is interlocked with the dropper, which permits not to adjust the position of the dropper at each chain tension.
- Intelligent system for automatic elimination of filtering screen clogging.
- Ability to display information about the state of



The rollers of the stainless chain and the bottom rails are made of a modern wear-resistant polymer with a low coefficient of friction.

raking device (operation, emergency shutdown etc.) or its full integration into the process control system using any standard communication protocols.

MOUNTING

During installation, the raking device is supported by its consoles on the channel side and fixed to the concrete floor or metal frame of the channel. Such fixing allows performing the installation of the raking device without emptying the channel. The consoles and the raking device are connected through swivelling joints, which allows the raking device to be placed horizontally above the channel for maintenance. Sealing in the channel is achieved by installing elastic sealing screens fixed on the sides of the raking device frame to the full depth of the channel.

SERVICE

We perform the whole range of installation and commissioning works, detailed training of the personnel, warranty and post-warranty service of the supplied equipment.

The raking device is guaranteed for 5 years.

ENGINEERING SPECIFICATION

Parameter	Amount
Channel width, mm*	400 – 2600
Channel depth, mm*	400 – 2400
Clearance between lamellas, mm	6; 8; 10; 12; 14; 16; 20; 40
Angle to the horizon *	75°
Dump height of collected waste, mm*	850; 1200; 1500
Speed of rake, m per min.	3.5 – 5.1
Three-phase drive (380 V, 50 Hz), power, kW	0.37; 0.55
Drive, ingress protection rating	IP 55 – IP 68

* Other sizes are supplied according to custom request of the customer.



WHY DO CUSTOMERS CHOOSE EQUIPMENT MANUFACTURED BY ECOPOLYMER?

- we have been successfully working in the sewage treatment market for already 27 years;
- our equipment ideally meets the criterion of QUALITY-PRICE;
- we provide a WARRANTY for the manufactured products;
- we provide INTEGRATED SERVICES including: advising and equipment selection, sales of individual components and complete sets up to subsequent maintenance service;
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- more than 1000 enterprises of the industry have already chosen the equipment manufactured by «EcoPolymer».
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