



SLUDGE SCRAPERS AND SUCTION DREDGERS FOR RADIAL-FLOW SETTLING TANKS ECOPOLYMER®

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



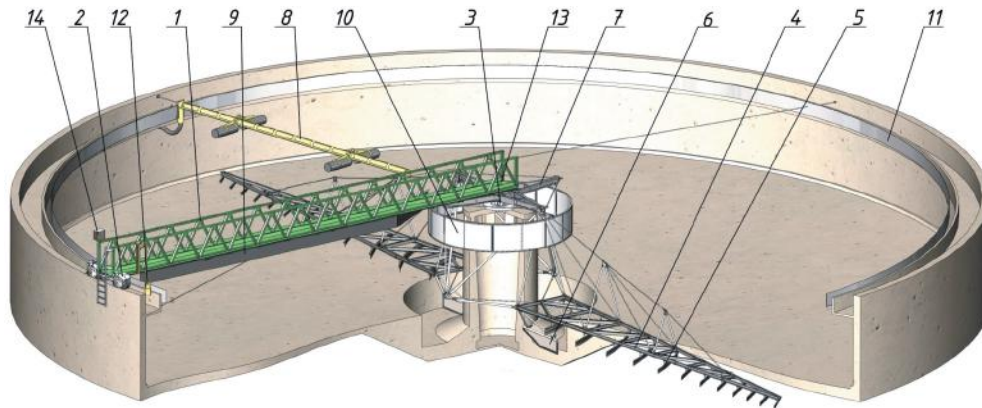
SLUDGE SCRAPER EIRP [ЭИРП]

It is installed within the primary radial settling tank, designed to collect sediments deposited on the bottom and substances floating on the surface and their removal from the settling tank.

A supporting-turning device represented by a bearing for hoisting mechanisms is installed on the central support of the primary settler. The frame of a suspension bracket of scraper

wings of the scraper blade is rigidly fastened to this bearing. The central part of a bridge leans on this frame through the special hinge. The peripheral part of the bridge leans on the edge of settling tank wall through the driven trolley.

The driven trolley rotates the bridge around the central support of the settling tank and, together with it, through the cable stretches, rotates the frame with the scraper wings



1. bridge; 2. driven trolley; 3. supporting-turning unit; 4. scraper wings; 5. peripheral scraper blades; 6. sump scraper blades; 7. a frame of a suspension bracket of scraper wings; 8. a semi-submersible pipe of surface scraper; 9. a semi-submersible blade of surface scraper; 10. guide cylinder; 11. semi-submersible board; 12. trimmer (optional); 13. rotary collector ring; 14. sludge scraper control cabinet.

suspended to it. Peripheral scrapers and scrapers of the sump are attached to the scraper wings.

The driven trolley is two-wheeled, with a direct drive from the geared motor to the rear wheel, which is due to the vector of loads arising during the operation of the scraper. The geared motor of the trolley is controlled by a frequency-to-current converter. The trolley is equipped with solid tires and a snow blower unit consisting of a snowplow and a rotating brush.

In its standard version, the bridge truss is produced in the form of a curved profile made of deformable aluminum alloy grade AMg3M, assembled with rivets made of aluminum alloy grade AMg5P. Optionally, the bridge truss can be produced entirely of stainless steel.

Underwater part of the scraper, the frame of suspension bracket of scraper wings, the guide cylinder and the surface scraper device are regularly produced of stainless steel grades AISI 304 and AISI 321.

The surface scraper has an original design and consists of a semi-submersible pipe and a semi-submersible scraper

fixed to the bridge and adjustable slide shoes of forced submerging.

Semi-submersible pipe has windows throughout its length. These windows are above the water level in the settling tank. When the bridge passes over a semi-submersible pipe, the sliding shoes forcibly pour it into water and the windows are occurred under water.

Floating substances collected from the surface of water by a semi-submersible scraper are washed into the pipe and removed from the settling tank.

On the bridge, above the draining tray of clarified water, a trimmer assembly consisting of a frame, drive and special brushes can optionally be installed. Adjustment of the position of trimmer is provided.

The control cabinet of the sludge scraper is located not far from the outer end of the bridge and ensures the operation of sludge scraper and all its units in automatic and manual modes. Power supply to the cabinet is fed through the rotary collector ring installed on the bridge over the central support of the settler.

MAJOR ADVANTAGE

The bridge of sludge scraper is a structure in the form of spatial truss, due to which its high strength and limited windage are achieved.

The assembly of surface scraper is a structure of original design providing an even collection and removal of floating

substances throughout the radius of settling tank.

The supporting-turning device is the developed structure ensuring operation reliability of the assembly during its running, as well as ease of installation and low requirements for its accuracy.

ENGINEERING SPECIFICATION

Parameter	Unit	Internal diameter of settling tank, m				
		18	24	28	30	40
Hydraulic depth	m	Up to 4			Up to 6	
Total weight of equipment, not more than	kg	4 100	5 400	6 300	6 700	8 600
Rotating velocity of the bridge*	rph	0,8 – 1,5				
Driving power of the trolley	kW	0,37	0,55		0,75	
Driving power of the snowblower brush	kW	0,37				
Driving power of the trimmer (optional)	kW	0,37				

* Controlled by means of frequency-to-current converter. At the request of customer, another range of control is possible.

SUCTION DREDGER EIRV [ЭИРВ]

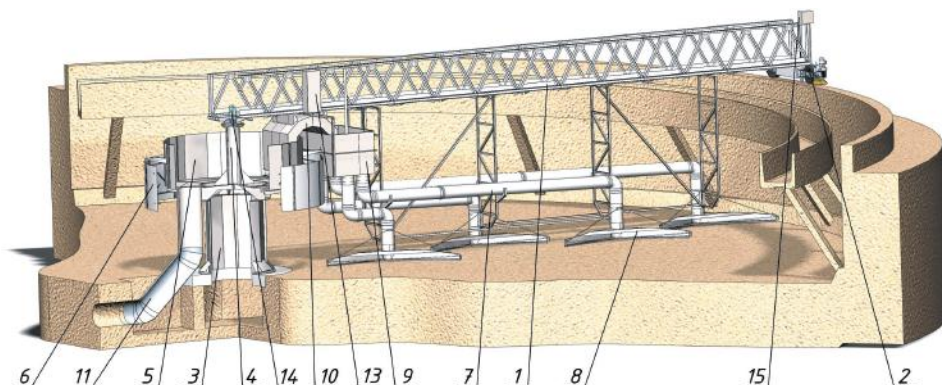
It is installed within the secondary radial settling tank, designed to collect active sludge settled to the bottom and remove it from the settling tank.

The central support of the suction dredger is installed above the inlet channel of the settling tank and fixed to its bottom by anchor bolts. A guide cylinder, a central bucket and a shaft with a supporting-turning assembly, which is

a bearing for hoisting mechanisms, are attached to the central support.

The central part of the suction dredger bridge is fixed to the support-turning assembly through the fork hinge. By its peripheral part the bridge rests on the wall of the settling tank through the driven trolley.

The driven trolley rotates the bridge around the



1. suction dredger bridge; 2. driven trolley; 3. a centre support of suction dredger; 4. shaft with supporting-turning assembly; 5. central bucket; 6. guide cylinder; 7. sludge pipe; 8. sludge collector; 9. sludge-collecting reservoir; 10. siphonal sludge pipe; 11. sludge removal pipe; 12. sludge flow regulator; 13. automatic siphon filling system; 14. rotary collector ring; 15. suction dredger control cabinet.

central support and together with the bridge the mobile parts of the sludge collection system suspended – the sludge collectors with sludge pipes, the sludge-collecting reservoir and the siphonal sludge pipe – rotate.

The driven trolley of the suction dredger is equipped and controlled similarly to the sludge scraper trolley, but unlike it, it has a direct drive to its front wheel, which is caused by the vector of loads arising during the operation of the suction dredger.

In its standard version, the bridge truss is produced in the form of a curved profile made of deformable aluminum alloy grade AMg3M, assembled with rivets made of aluminum alloy grade AMg5P. Optionally, the bridge truss can be made entirely of stainless steel.

The underwater part of the suction dredger, including the central bucket, the guide cylinder and the sludge-collecting reservoir are regularly made of stainless steel grades AISI 304 and AISI 321.

Due to hydrostatic pressure, the sludge settled to

the bottom of the settling tank flows through the sludge collectors and sludge pipes into the sludge collecting reservoir. Each sludge collector has its individual sludge pipe and sludge flow controller. The regulators are located in a place that is convenient for visual control over the concentration and flow of sludge and allow quickly adjust its flow.

Sludge pours from the sludge-collecting reservoir rotating together with the bridge into the stationary central bucket by means of the siphonal sludge pipe equipped with an automatic filling system based on a vacuum pump. For stable operation in winter, the siphonal pipe is insulated, the automatic filling system is mounted separately in a heated cabinet.

Like the sludge scraper, the sludge suction dredger can optionally be equipped with the trimmer.

The control cabinet of the suction dredger ensures its operation and all its units in the automatic and manual modes.

MAJOR ADVANTAGE

The suction dredger bridge is a structure in the form of spatial truss, due to which its high strength and limited windage are achieved.

The sludge collection system allows maintaining a high concentration of the sludge mixture, regulating and ensuring

the collection and removal of silt throughout the settler's radius.

The central support of the suction dredger is a designed structure ensuring reliable operation of the suction dredger during its running, as well as ease of installation and low requirements for its accuracy.

ENGINEERING SPECIFICATION

Parameter	Unit	Internal diameter of settling tank, m				
		18	24	28	30	40
Hydraulic depth	m	Up to 4			Up to 6	
Total weight of equipment, not more than	kg	4500	6150	6560	7100	9400
The number of sludge collectors	pcs.	2	3			4
Rotating velocity of the bridge*	rph	0,8 – 1,5				
Driving power of the trolley	kW	0,37	0,55		0,75	
Driving power of the snowblower brush	kW	0,37				
Heating capacity of the siphon filling system	kW	not more than 1.2				
Driving power of the trimmer (optional)	kW	0,37				

* Controlled by means of frequency-to-current converter. At the request of customer, another range of control is possible.

WHY DO CUSTOMERS CHOOSE OUR EQUIPMENT?

Due to the facts that:

- we have been successfully working in the sewage treatment market;
- our equipment ideally meets the criterion of QUALITY-PRICE;
- we provide a WARRANTY for the manufactured products;
- we provide INTEGRATED SERVICES including:
from advising and equipment selection, sales of individual components and complete sets to subsequent maintenance service;
- choosing our equipment, the Customer provides RELIABILITY AND COST-EFFECTIVENESS in operation of wastewater treatment plants;
- leading enterprises of the industry have already chosen the equipment manufactured by «Factory Ecopolymer».

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+7 (495) 710-86-22
E-mail: zavod@ecopolymer.com
www.ecopolymer.com

