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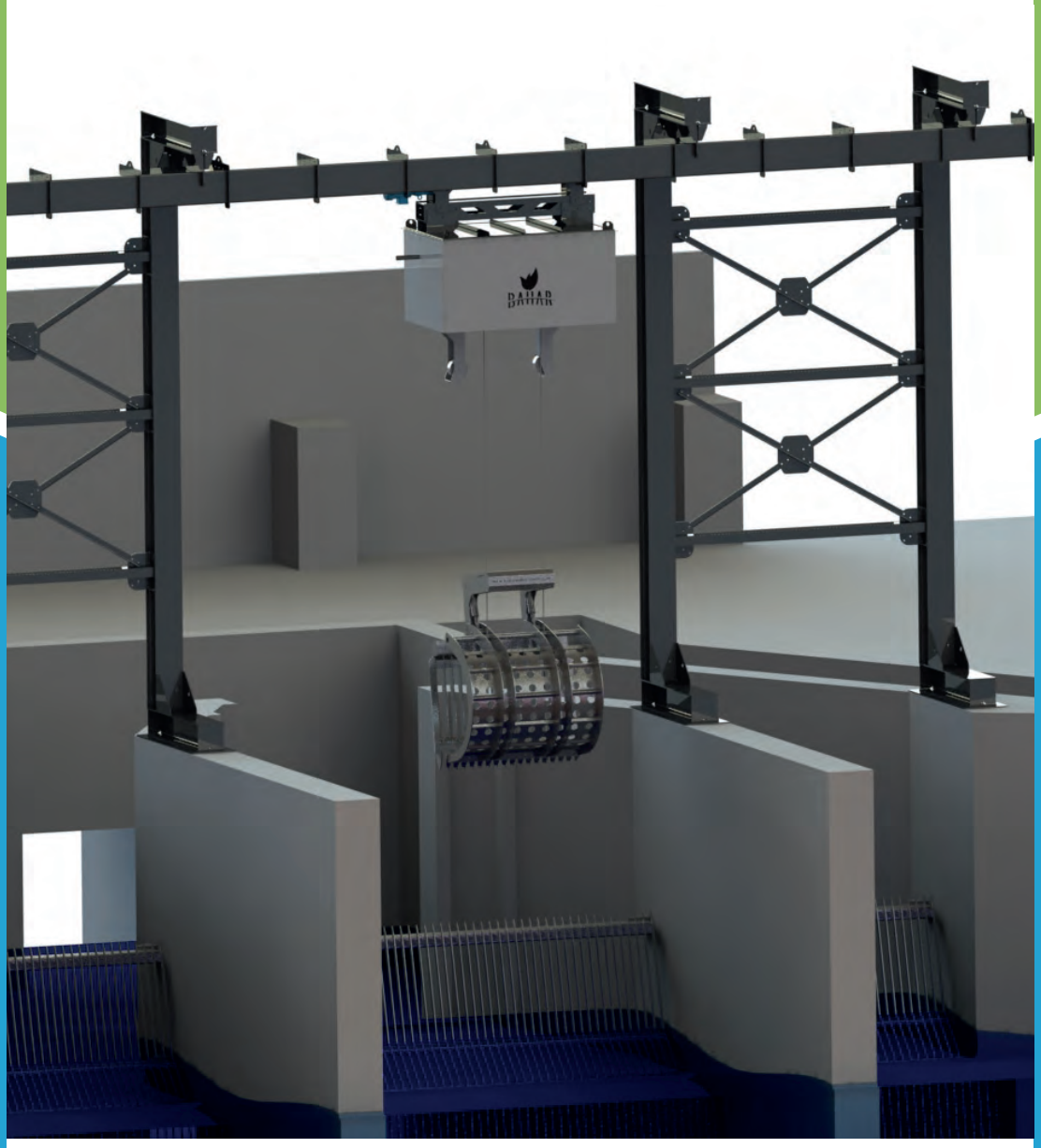
CLAMSHELL GRAB SCREENS



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CLAMSHELL GRAB SCREENS

General Description and Intended Use

Clamshell grab screens are mechanical equipment designed to remove undesired solids from the water received with wastewater from the free flowing channels. Thus, the cases such as blockage and malfunction in the pumps, valves and pipes are minimized and the pollution load of the wastewater is reduced and the treatment is performed with lower costs.

Since they can grab coarser wastes and assembled more vertical angles compared to other grab screen types, they are mostly preferred in the entry units and elevation centers of large scaled treatment plants.

Working Principle Of Equipment

In clamshell grab screens, the plates screening the wastes and the grab system which will clean the wastes between the plates are not assembled each other. The screen wastes grabbed between the screen plates which are fixed in the channel is cleaned with the help of a movable grab system.

The movements of the grab in direction of up and down are performed via a drum and rope system. While the grab moves in the open position over the screen bars to the bottom level of the channel, it also scrapes the wastes between the screen bars to the bottom level of the channel with its own weight. The grab reaching to the bottom level of the channel is harshly closed with the help of the hydraulic unit and the piston system. The wastes accumulated in front of the screen bars grabbed by the grab. Then, the grab is elevated to upper level of the channel with the help of the drum and cable system. Thanks to its perforated design, the grab returns the excessive water in the waste and water mixture when it is elevated over the water level. The grab elevated to the upper level of the screen channel continues to move in a single direction horizontally and when it reaches the position that it can discharge wastes, it is opened with the help of the hydraulic piston and discharge the wastes to the waste discharging area. The system continues to operate in this cycle according to the desired operation scenario.

Technical Specifications

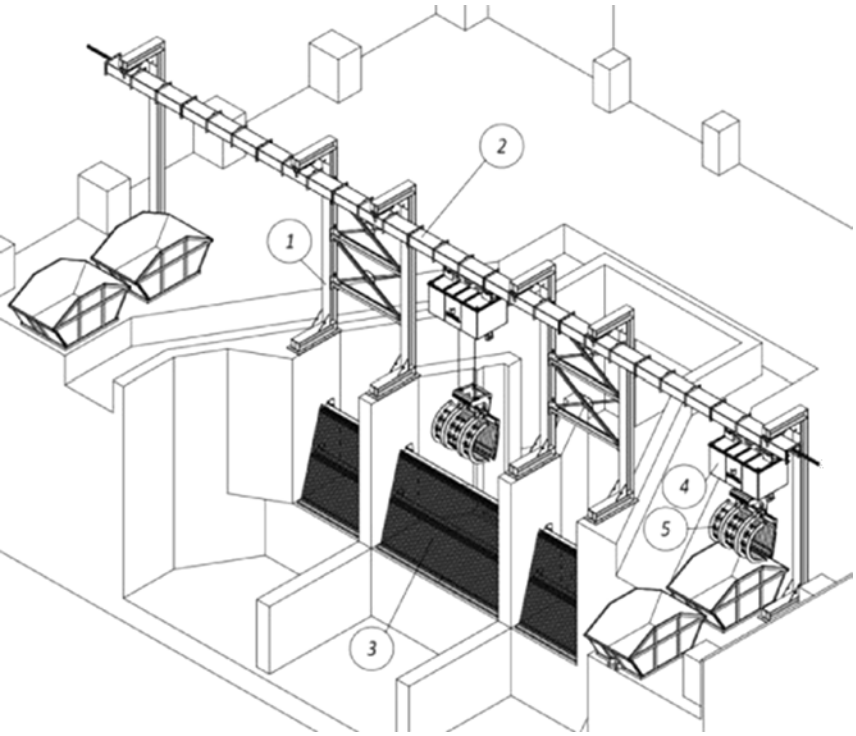
- It is manufactured to serve for wide channels optimum.
- Thanks to its special design, the grab scrapes the wastes between the screen bars effectively.
- The perforated grab system is used to discharge the water retained with the wastes.
- The channels in different numbers and the grab combinations in different numbers are operated together in accordance with the automation scenario.
- The grab is opened and closed to capture even very big wastes.
- The opening and closing of the grab is performed by a hydraulic piston and a hydraulic power unit system according to the size of the grab.
- The paths weighing the grab and assembling lugs for the paths are manufactured by considering the maximum weight of the full grab.
- The grab running and opening - closing drive mechanism is assembled in a protection sheet designed according to OHS rules. The risk of manual interference to the moving parts is minimized for the safety of the employee.
- The drum drive system providing up and down movement of the grab, the running system providing the left - right movement and the hydraulic system opening and closing the grab are above the water level and protected from environmental conditions by a custom-made casing.
- There are no movable parts requiring underwater intervention and maintenance.
- The grab width is selected according to the channel width to be cleaned. A single type grab can be used for channels in different widths.
- The frequency inverter start-up system and an automation scenario prepared professionally in order to make the grab move softly in vertical and horizontal direction.
- The grab movements are performed as fast as possible so that it will not prevent the system in order to shorten operation period.
- In case it is required, the grab running paths are built in a ring form and an additional grab is parked to serve for all channels.
- Position switches are automatically operated depending on the water level in the screen channel or time without needing an operator.
- They minimize the possible malfunction risks in other units of the plant because they grab big wastes in the inlet units in the wastewater treatment plants. They also reduce pollution load in the plant and provide economical operating.

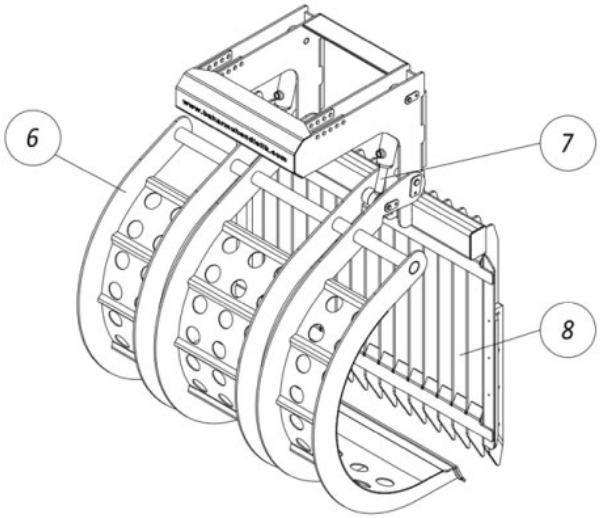
Material Details

- Grab Rake: They can be manufactured as DIN 1.4301 (AISI 304) or DIN 1.4401 (AISI 316).
- Screen Bars: They can be manufactured as DIN 1.4301 (AISI 304) or DIN 1.4401 (AISI 316).
- Grab Running Path: It is manufactured as s235JR + Hot Dipping Galvanized Coating or S235R + Epoxy Paint.

"Different materials can be preferred in accordance with the request of the customer."

No	Part Name
1	Grab Running Path Lugs
2	Grab Running Path
3	Screen Bars
4	Grab Running and Opening - Closing Drive Group
5	Grab Rake
6	Grab Joint Part
7	Grab Opening and Closing Pistons
8	Grab Flat Part





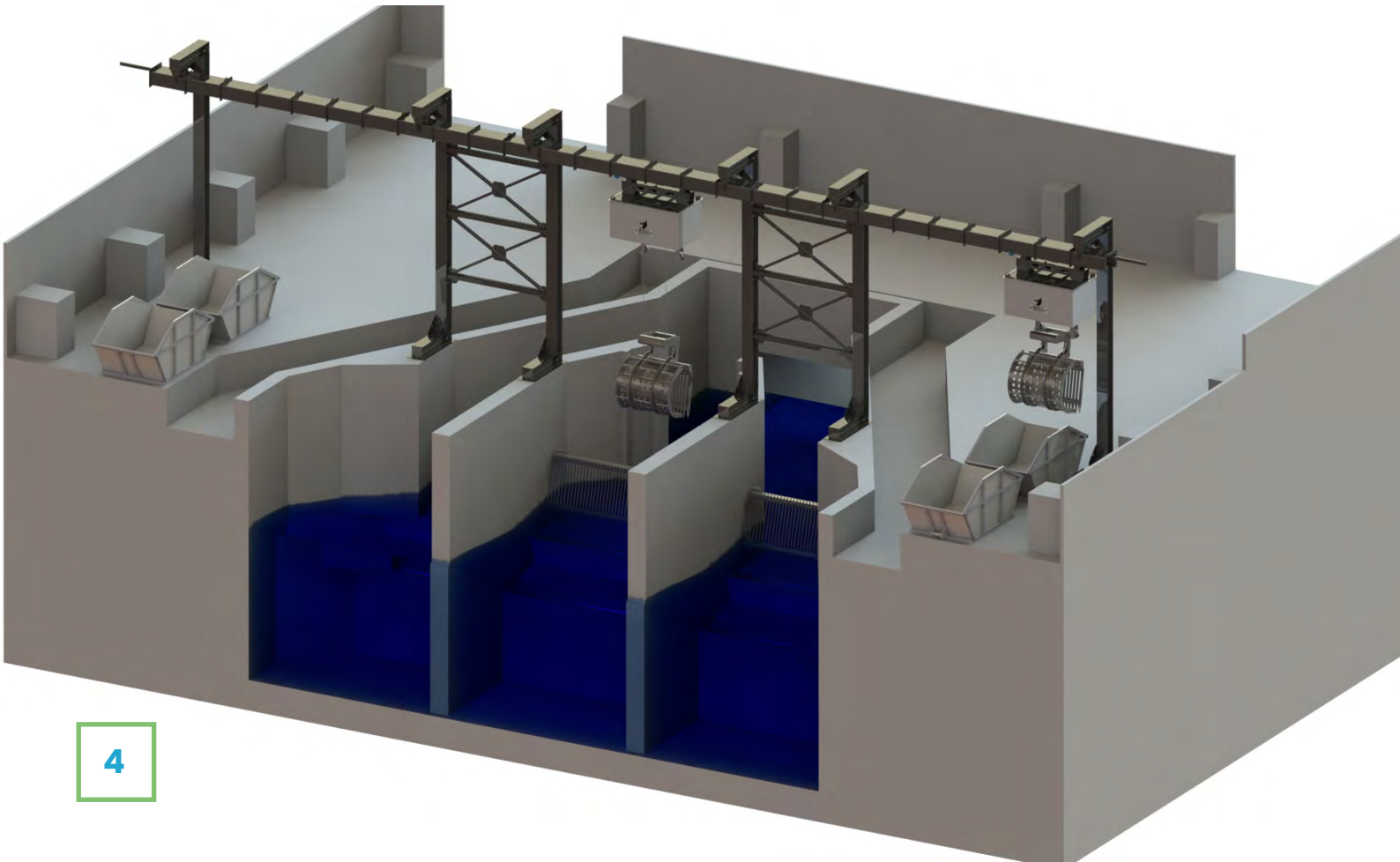
Accessories

- Grab Load Control System
- Reducer System with Brakes
- Emergency Button
- Cable Winding Drum Encoder
- Position Switches
- Spinning Switch
- Cable Breaking Switch
- Cable Loosening Switch
- Waste Container*
- Intervention and Maintenance Platform*
- Level Measuring Sensor*
- Local Power and Control Panel*
- Remote Control*

*Optional accessories are defined.

Advantages

- High Screening Efficiency in Large Diameter Wastes,
- Easy to Use in Wide and Deep Channels,
- Operation at High Flows,
- Possibility to Control and Follow the System Operation Over SCADA,
- Design for Different Combinations,
- Easy Maintenance Possibility,
- Resistant Heavy-Duty Design,
- Waste Disposal on Both Sides of the Same Channel,
- Design Without REQUIRING a Waste Carriage Equipment.



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