

Passavant®/Geiger® Cable-Operated Bar Screens COB

Passavant®/Geiger® Bar Screens with the cable-operated grab cleaners are typically installed at water intake systems and in deep pumping stations for large primary sewers or for stormwater channels. Bulky screenings and sediments such as sand/grit deposits can be removed efficiently.



The internationally renowned and maintenance-friendly COB-screens by Passavant-Geiger have been used in many hundreds of installations as coarse screens for seawater, riverwater, stormwater or wastewater.

These customized machines stand out for their high cleaning performance particularly as front-end solution to handle very large and bulky debris. Via an intelligent cleaning system the raking process of the grab cleaner can automatically be repeated as often as necessary in any position

along the bar rack. Deposits in front of the screen or screenings trapped between the screen bars are thus being removed by a continuous and controlled movement.

These machines are not only installed in new civil structures; they have also been widely applied to replace existing water intake systems.

In addition to the stationary machines, a traversing/moving version to handle multiple channels and bar racks can become an economical solution for example on seawater installations.

Benefits

- Installation Depth up to 50 m
- Robust and intelligent cleaning technique ensure highest level of operational reliability and cleaning performance
- Cleaning cycle can be restarted from any position of the grab cleaner along the bar racks
- Forced enclosing of the grab cleaner during the cleaning cycle due to 2 independent drive units and 3 cables
- Different speeds of the cleaner carriage during descent and cleaning cycle
- The innovation-award-winning polyamid cable-drums make our standard COB-C version easier to maintain
- Available as stationary or traversing machines (for multiple channels)
- Many hundreds of references worldwide and over 50 years of operational experience at numerous plants
- Highly reliable grabbing and removal of bulky screenings
- Fully automated cleaning operation with slack-rope control (COB-C version e.g. 3-cables)
- Manufactured in Germany (ISO 9001, 45001 and 14001 certified)

Function

Accumulation of screenings (debris) and a level difference of the water between inlet and outlet triggers a cleaning cycle and movement of the grab cleaner upwards a bar rack to take out the screenings from the water channels.

When the grab cleaner reaches the channel bottom, it inter-

feres properly into the screen bars. During the cleaning cycle the screenings are collected, transported to the discharge position and then pushed out by a scraping device into a container or onto a conveyor. After one or several cleaning cycles the grab cleaner returns to the parking position above operation floor.

Passavant®/Geiger® Cable-Operated Bar Screen COB-C

Passavant®/Geiger®
Stationary Cable-
Operated Bar
Screen COB-C
with Maintenance
Platform



The Passavant®/Geiger® COB-C Cable-Operated Bar Screens are equipped with two independent drive units for lifting and pivoting gears. The cleaner carriage runs in guideways and is actuated by means of pivoting and lifting cables/ropes.

These components are designed as a unit in such a way that, during the cleaning cycle. The lifting force acts as a lever on the grab cleaner and forces it to close properly. The resulting strong closing force of the grab cleaner enables it to transport bulky screenings and very heavy loads.

The automatic slack rope monitoring system detects a possible

blocking of the grab cleaner in case of floating refuse or deposits. This safety device temporarily interrupts the descent and hence restarts the cleaning cycle.

The intelligent cleaning technique allows the cleaning of the bar rack to be started from any position of the grab cleaner. Deposits on the invert or bulky screenings are removed layer by layer. In the case of blockage or overload, the installation is switched off by means of a special electro-mechanical safety control system. These features ensure highest operations reliability and optimum flow conditions.

Passavant®/Geiger® Traversing (Movable) Cable-Operated Bar Screen

Picture on the left:
Passavant®/Geiger®
Traversing Cable-Operated Bar
Screen in Action

Picture top right:
Movable Bar
Raking Machine
at the German
Production Site

Picture bottom
right:
Passavant®/Geiger®
Multi-channel-
Traversing Cable-
Operated Bar
Screen covering
multiple channels/
bar racks with a
movable upper
section and grab
cleaner in action
– at a power
plant in Sweden



Components

- Drive units with two gear motors for independent control of lifting and pivoting operation
- Mechanical/electrical overload protection
- Steel frame to bear the drive units
- Cleaner carriage with grab cleaner and replaceable comb plate
- Guide ways for accurate location of the cleaner carriage with grab cleaner
- Stripping device for removing the screenings from the grab cleaner at the discharge edge
- Discharge edge with chute
- Bar racks made of flat steel bars or, for better flow efficiency, specially-shaped steel bars

Material

Mild steel with inhouse manufactured and highly resistant surface coating

Stainless steel 304, 316, 316L, (Duplex or SuperDuplex)

Geiger® Cathodic Protection System (ICCP – impressed current corrosion protection system) for marine applications

Design sizes

Channel Width	0.9–6 m
Channel Depth	2–50 m
Height above Floor Level	3.7–6.2 m
Bar Spacing	10–150 mm
Discharge Height Above Floor Level	0–2.0 m
Inclination of Bar Screen	75°–90°

Control

- Automatic system with pressure differential control and operating timer
- Different cleaning cycle speeds thanks to pole-changeable drive units

Traversing Cable-Operated Bar Screen (Traversing Trash Rake)

For a multi-line water intake, a Passavant®/Geiger® Traversing Cable-Operated Bar Screen can become the more economical alternative to several stationary machines adjacent to each other. Its application area is extremely versatile: due to its exceptional adaptability the Traversing Trash Rake suits a wide variety of situations, e. g. in cooling water intakes or hydropower plants.

Especially in cases where the screenings volume fluctuates, it can be beneficial to clean a

number of bar screens using just one Traversing Trash Rake. In this case, it does not matter if the bar screens are adjacent to each other or installed at different places in the civil structure.

The Traversing Trash Rake's intelligent control system ensures that all bar screens are reliably cleaned when necessary. Like the stationary machine, the Traversing Trash Rake is equipped with the tried-and-tested, large-volume grab cleaner with forced closure.

Additional Options

- Simplified (2-ropes/single drive) grab cleaner – can be offered in specific cases (COB-HR version)
- Movable plates for cleaning the debris trough
- Installation, spare-parts, overhaul and maintenance services



Passavant®/Geiger®
COB Screens. View
on the channel
bottom

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