



purestream *ES*
LLC



AUTOMATIC SELF-CLEANING BAR SCREEN

Ideal for use in:

- Wastewater Treatment Plants
- Hospitals, Schools and Universities
- Zoos and Commercial Animal Feeding Operations (CAFO's)
- Screening River/Lake Water For Potable Water



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The **Purestream ES Automatic Self-Cleaning Bar Screen** is primarily used for screening influent wastewater before it enters the treatment plant reactors. It is a channel mounted unit, custom built for each specific application. The bar screen is made from the highest quality materials to maximize your investment.



Operation

The Automatic Self-Cleaning Bar Screen is set into an existing concrete channel at a 60° angle. The screening belt forms a barrier which allows water to flow through while catching particulates on the surface of the belt. As the screen becomes increasingly clogged, the water level in the channel will rise. Either manually or automatically* the belt screen is put into operation, rotating along the sprocket to lift the clogged section of belt out of the channel. This exposes a clean section of belt to start the screening process over again. As the belt turns, the brush mechanism will also spin in contact with the belt. This spinning will sweep the belt clean, and all particulates will be swept out of the head of the machine.

Also included, close to the brush, is a backwash bar which when operated, delivers jets of water to further clean the belt. This function requires an outside source of water, and is operated on a timed basis.

**In automatic operation, it is necessary to have either high water level probes installed in the channel at a pre-set height or to set up the control panel for timed operation depending on the individual application.*

For most applications, we offer screen opening sizes of 1, 3, 6 or 12 mm. Custom sizes are available depending on the specific application. As each bar screen is custom built per order, it is extremely important to assure that **Purestream ES** is provided with accurate measurements.

Screen Testing

Quality and reliability are a must for all **Purestream ES** products. Before your screen is shipped it must pass critical inspection points.

Visual Inspection:

The visual inspection consists of assuring integrity on all welds and material craftsmanship. Welds must be completed and free from "pinholes", and all measurements must be verified.

Mechanical/Operational Inspection:

During this phase of testing, the control panel is connected to the screen and turned on to assure proper wiring of the control panel as well as proper operation of the screen. The overload feature is also tested by applying a weight (weight varies depending on size of screen) to the screening belt. It

Mechanical Bar Screen Cleaning Brush In Action



Advanced Environmental Treatment Systems

must be able to carry the threshold weight up the length of the screen. When additional weight is added, the overload feature must activate and the screen must stop. Additionally, the overloading of the screen will shut down the equipment before the excess weight can do any harm and send out either a sonic or visual alert.

Maintenance

The **Purestream ES** Mechanical Bar Screen is mostly self-cleaning, and capable of running automatically. Nevertheless, maintenance must be performed on a daily and weekly basis to ensure the proper operation of your screen as well as to prolong the life of your investment. The maintenance to be performed is more of a cleaning process than anything else.

Daily Maintenance

1. The screening belt should be washed by means of the backwash bar for the duration of at least one rotation.
2. Throughout the day, there should be a visual inspection of the screened materials in the head of the machine as well as the materials in the hopper. Materials that may be caught on the interior of the screen head should be scraped into the hopper. *(It is VERY important that the mechanical bar screen is shut off during this quick procedure. Remember, safety first!)*

Weekly Maintenance

1. Remove the rear cover on the head of the screen for a visual inspection of the screening brush. *(Again, it is VERY important to shut off the screen before removing the rear cover).*
2. Depending on the condition of the screening brush, adjustments may need to be made. If the brush is worn and is losing contact with the screen, it is necessary to move the brush closer to the screen by way of the adjustment screws. The screening brush should come into contact with the screening belt with a small amount of pressure.
3. The backwash bar should be flushed once a week by opening the relief valve for approximately 15 seconds.
4. The collection hopper for the mechanical bar screen should be emptied.

The maintenance schedule listed above is meant as a guideline and the frequency of maintenance should be adjusted to each individual application.



Optional Equipment Includes: Full Covers (Insulated Or Not Insulated), Heaters, and Dewatering Equipment Such As A Screw Press, Or The Screw Conveyor. Shown here.



Special Features

The **Purestream ES** Automatic Self-Cleaning Bar Screen is a high quality piece of equipment designed with several important special features.

1. Durability

The use of high grade non-corrosive materials is a must in the wastewater treatment industry. The use of stainless steel frames and covers provide a strong foundation for achieving the durability required. The polyamide/fiberglass composite used in forming the screen is of aircraft grade and unsurpassed quality. The brush and sprockets are of a non-corrosive polyamide nylon to further protect your investment.

2. Performance

To guarantee that you have the right tool for the job, **Purestream ES** will custom design the right screen for each specific need. Because these screens are custom built, we can handle many factors which will ensure the success of your project. A large range of flows, various channel sizes, and varying sizes of screen openings are just a few of the factors used to design the right screen for each specific application.

3. Power Consumption

Power consumption is a main factor in the long-term cost of your investment. We know because we get daily inquiries about the power consumption of our products. That's why our bar screen uses only two motors for complete operation. Our screen has one of the lowest power consumptions per gallons treated of any screen on the market. For example, a screen in the Czech republic is in a channel almost 30 feet deep with 2 mm openings and is used to screen river water before being processed into potable water. This screen handles an average flow of 11 MGD. The total connected power for this screen is a nominal 3 Hp.

4. Ease of Operation

Not only is power consumption a factor in determining long-term costs, but so is operation and maintenance. With an easy to use control panel, automatic or manual operation, and two very effective methods of automatic self-cleaning, this screen basically runs itself! Aside from checking in on it once in a while, this screen will do the job you need it to do on a consistent basis with very little need for operator attention. The result? Additional capital direct to your bottom line.

As you can see, we here at **Purestream ES** have taken great care to bring you a screen that will not only perform to the most stringent standards, but will continue to perform and save you money for a very long time. Just like all **Purestream ES** products, the Automatic Self-Cleaning Bar Screen comes with a one (1) year warranty on materials and workmanship to further protect your investment.



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