

## MICRO-SEPARATOR “Bio-Screen”

Replaces multiple step pretreatment systems, improves effluent quality & reduces footprint

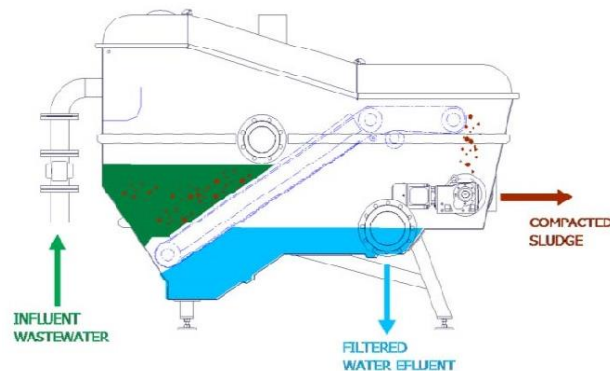
A low-energy, small-footprint rotating belt screen that delivers **exceptional solids removal** from wastewater, maintaining efficiency even at peak design flow rates. Enables municipal plants to increase efficiency and save money by decreasing energy and chemical use, **minimizing maintenance** costs, reducing power requirements for energy intensive downstream processes, reducing solids handling and disposal costs or recovering materials to be converted into energy.

The “bio-screen” is a mechanical micro-solids separator based on the ‘continuous band/tape- filtration’ principle that is used to remove solids from all kinds wastewater. This machine can remove organic and inorganic matter, such as food waste, tissue- paper, inert material, fat, grease, animal slaughter remains, fish-remains and other biodegradable suspended solids from a wide range of industrial wastewater as well as from common municipal sewage. The “bio-screen” is a **very compact and efficient separator** and due to its effective solids removal capacity which can go down to particles as small as 20 microns by utilizing the filtered cake, it can be used as part of a complete wastewater treatment facility. In fact the capability of the “bio-screen” to **remove very fine suspended solids** and consequently significant **biodegradable loads** from the incoming wastewater, offers an efficient alternative to the use of a fine-screen and a primary clarifier, commonly encountered in the treatment facilities. The WATEQ “bio-screen” can achieve similar results to the combined use of these two treatment processes (fine-screen + clarifier) but at a much smaller plan-foot area and in an odour-free way due to its fully closed compact design.



### Operation Principle

The “bio-screen” separator is a **fully automatic device** that through a continuously moving filtering-tape retains on its surface the fine particles that are suspended in the incoming wastewater. The ‘filtering tape’ is made from polyethylene or polyester material and comes in a range of mesh-sizes from 100-300 µm to suit the application.



An efficient “mechanical-scraper” and an “air/water-knife” mechanism clean the ‘filtering-tape’ while an additional hot-water back-washing system maybe incorporated in some applications to improve cleaning efficiency. The filtering-tape motion is activated automatically when the solids have accumulated on its surface and an automatic speed controller adjusts the separator’s flow-capacity. The “bio-screen” incorporates a sludge dewatering system that uses a ‘screw-compactor’ thus producing a dewatered waste-sludge cake with solids content of up to 30% - 40%.



## Applications

The “bio-screen” is a very versatile solids separator and can be used in a number of wastewater treatment applications, such as waste liquid effluents from:

- Slaughter houses
- Meat processing factories
- Fisheries & fish processing factories
- Food & Juice processing
- Septic Tank treatment facilities
- Municipal Sewage

The solids removal efficiency of the separator can reach 80 % depending on the nature of the wastewater and while being able to remove organic suspended matter, it can remove up to 20 % -50 % of the BOD5 load, depending of the wastewater type. The “**bio-screen**” can also be used after a coagulation & flocculation stage as a very **effective ‘physical-chemical’ separation process** that can provide COD removal in excess of 50% in certain applications.

## System Advantages

The Hete's “bio-screen” separator offers unique advantages compared to other primary wastewater treatment processes:

- Very compact design, only 10 % of the area is required compared to conventional systems
- Limited or no Civil Works
- Efficient TSS and COD reduction
- High Solids sludge concentration (30% - 40%)
- Significant Energy Savings (up to 50%) in the Treatment Facility after using the “bio-Catcher” TM
- Lower investment costs
- Elimination of odours
- Fully automated equipment
- Easy to operate and maintain

## System Capacities

The “bio-screen” is manufactured entirely in **stainless steel AISI 304 or 316 L** and is produced in four models as follows: Model BC-500

Model	BC-500	BC-1000	BC-2000	BC-3000
Hydraulic Capacity (m <sup>3</sup> /h), wastewater @ TSS~300 mg/l	50	100	200	300
Overall Dimensions in m (LxWxH)	1.6x1.4x1.5	1.7x1.6x1.5	2.1x2.0x1.5	2.6x2.5x1.6