

Headcell®

Advanced stacked tray grit separation

Product Summary

The HeadCell® is a stacked tray grit separator that retains 95% of all grit 75 µm and larger - guaranteed.

With a small footprint, no electrical requirements and no moving parts the HeadCell® delivers exceptional and economical solids removal for small, medium or large wastewater treatment plants.

Applications

- » New wastewater treatment plants
- » Treatment plant retrofits.
- » Industrial effluent degritting.
- » Pre-treatment for MBR and any other advanced processes.

Main Features

1. Distribution header
2. Settling trays
3. Underflow collection sump

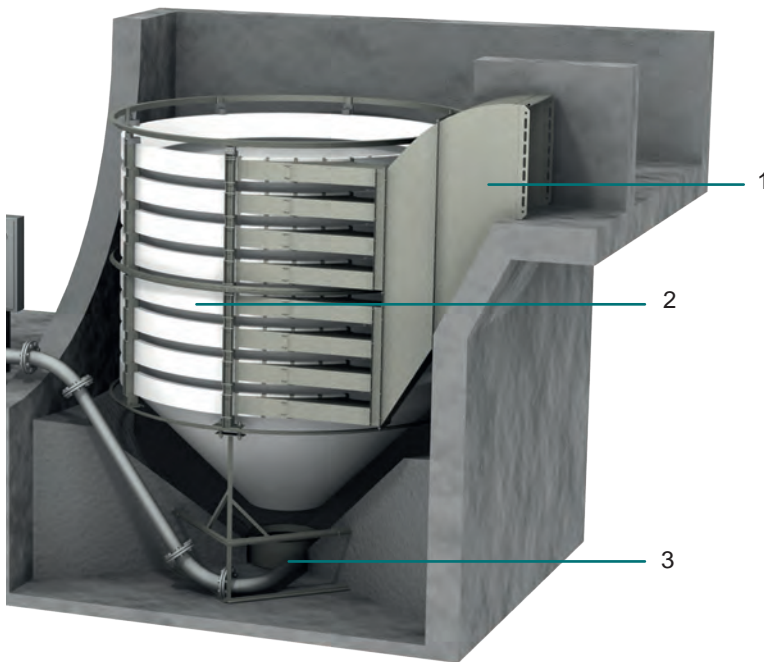


Fig.1 The Headcell® advanced grit removal system

Technical information

- » Removes 95% of particles equal to or greater than 75 µm (micron) at the design flow rate.
- » Typically less than 30 cm (12" inches) headloss at peak flow, alternate designs for lower headloss are available.
- » Less than 15% volatile solids and greater than 60% total solids when used with Hydro International washing and dewatering equipment.

Benefits

- » Large surface area in a small footprint.
- » No moving parts or external power source.
- » Evenly distributed influent eliminates short circuiting.
- » Double treatment capacity in the same footprint as existing equipment.
- » Continuous boundary layer flows over hydrophobic surfaces minimises grease buildup and keeps trays clean.
- » Short settling distances eliminate inefficiency and increase grit capture.
- » Economical to own and operate.
- » Easily accommodates high turndown ratios.

Protect equipment and processes from abrasive wear and sedimentation

The HeadCell® outperforms all other types of grit separation, particularly when it comes to fine grit removal. Anyone can capture the larger particles, but it is fine grit - as small as 75 µm - which causes the biggest problems for plants. The HeadCell® system can be guaranteed to capture 95% of all grit 75 µm and larger.

Maximise performance benefits and free up plant space

Structured flow and low velocity operation extend product life significantly. The HeadCell® operates all-hydraulically, and requires less than 300 mm of headloss to operate. Tray sizes and the number of trays can be modified to meet your site's specific flow and performance requirements and can often be retrofitted into existing basins. Multiple units can be provided to accommodate any flow and / or any turndown ratio.

Configurations

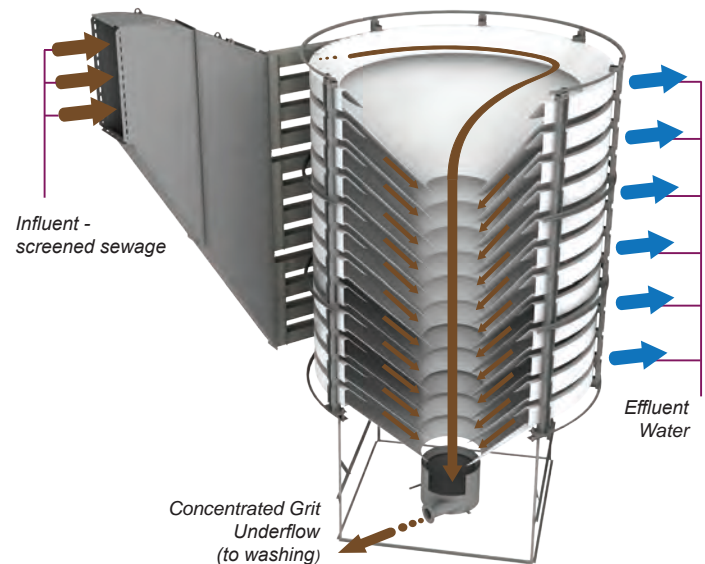
- » Typical configuration is in a square concrete tank downstream of influent screening eliminating the need for a long approach channel and complicated concrete design. Inlet and outlet orientation and location can be configured to meet many design requirements.
- » The HeadCell® can be retrofitted into existing basins which can significantly reduce total installed cost and can increase flow capacity and improve grit capture in the same footprint.
- » The HeadCell® can be designed for intermittent grit pump operation to reduce utility costs. A larger diameter and deeper grit sump is provided to allow for grit storage.
- » The grit sump fluidising water can be supplied by an optional submersible pump located in the HeadCell® basin. This option is not available when pumping intermittently.

How it works

The stack of hydraulically independent polyethylene trays are submerged in a concrete chamber. Screened sewage enters the influent duct and passes into the grit chamber. The influent duct directs the flow into the high efficiency distribution header to evenly distribute the influent tangentially into the modular multiple-tray system.

Tangential feed establishes a vortex flow pattern causing solids to fall into a boundary layer on each tray. Grit settles out by gravity along the sloped surface of each tray and are then swept to the center opening which allows them to fall to a common collection sump. Degritted effluent flows out of the trays, over a weir and into an effluent trough.

Often, the settled solids are continuously pumped from the grit sump to an open vortex grit washing system (GritCup®/TeaCup® and then dewatered by either a Grit Snail® dewatering escalator or SpiraSnail®, depending on grit load.



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To find out how the Headcell® can help you remove more and finer grit and cut maintenance and repair costs call 01275 878371 or visit:

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