Hydro International
A CRH COMPANY

HeadCell®

Advanced Stacked Tray Grit Separation

Product Summary

Best performance in the smallest footprint of any grit separation system.

The HeadCell® is the ideal grit separator for both new and retrofit applications. The HeadCell® is a multiple tray separator that can be sized to remove fine grit over a wide range of flows with less than a foot (30 cm) of headloss. The HeadCell® provides unparalleled performance in a small footprint.

Performance

- Removes 95% of particles equal to or greater than 75 micron (µm) at the design flow rate
- Less than 15% volatile solids and greater than 60% total solids when used with Hydro washing and dewatering equipment

Capacity

- Sized for peak flow at peak grit loads
- Virtually no turndown ratio limits
- Modular and expandable combinations to fit any size plant

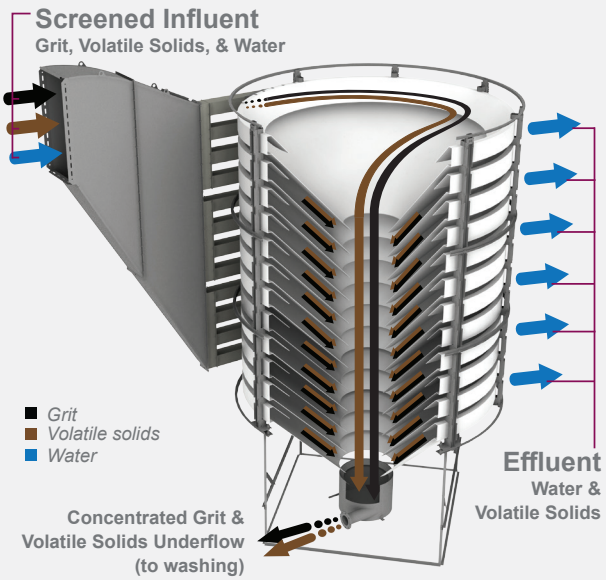
How it Works

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 then solids are 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 (TeaCup® / SlurryCup™) and then dewatered by either a Grit Snail® or SpiraSnail®, depending on grit load. An intermittent pumping configuration is also available.

HeadCell® Flow Pattern



Applications

- New wastewater treatment plants
- Treatment plant retrofits
- Sediment removal pretreatment for potable water
- Grit removal for industrial effluent
- Pre-treatment for MBR and any other advanced processes

Benefits

- Large surface area in a small footprint
- No moving parts or external power source
- Less than a foot (30 cm) of headloss to operate
- Double treatment capacity in the same footprint as existing equipment
- Economical to own and operate
- Easily accommodates high turndown ratios
- Proven design with over 1,100 units installed

Water & Wastewater Solutions
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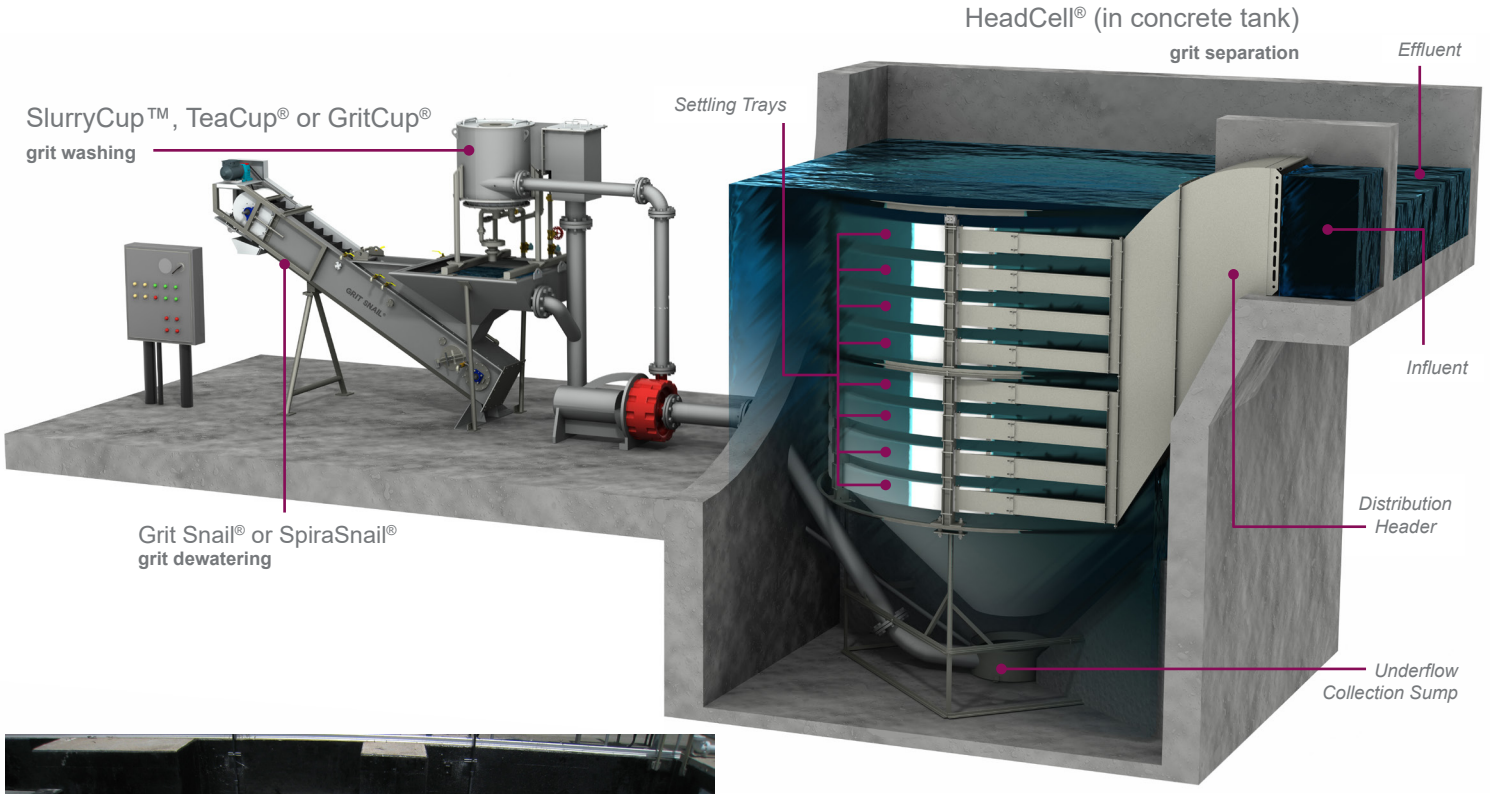
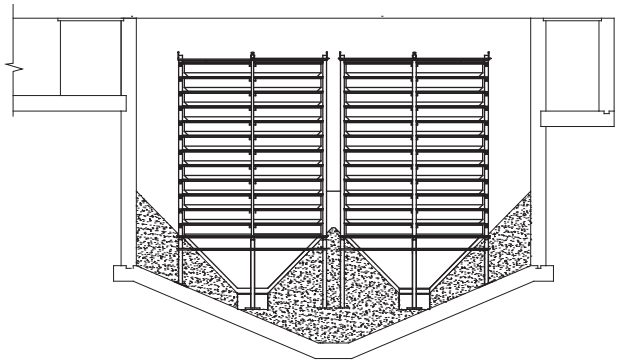
Configurations

- The HeadCell® is typically placed 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® may fit into existing basins which can significantly reduce total installed cost. A retrofitted HeadCell® system 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.

Design Notes

- Short settling distances eliminate inefficiency and increase grit capture
- Large surface area effectively uses plant space
- Evenly distributed influent eliminates short circuiting
- Continuous boundary layer flows over hydrophobic surfaces minimizes grease build-up and keeps trays clean
- All-hydraulic design with no moving parts ensures a long product life
- Design headloss is 12” (30 cm) at peak flow. Alternate designs for lower headloss are available





Two HeadCell® Units Retrofitted Into An Existing Grit Basin

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Hydro International
2925 NE Aloclek Suite 140 | Hillsboro, OR 97124
Tel: (866) 615-8130
Email: questions@hydro-int.com
Web: www.hydro-int.com

Learn more

Visit our website to learn how HeadCell® grit separation will protect your plant, reduce your operational costs, and improve the performance of your entire plant.

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Patents: hydro-int.com/patents V23.1