

SpiraSnail®

Grit Dewatering Classifier

Product Summary

Easy maintenance grit dewatering for smaller plants.

The SpiraSnail® is a high efficiency grit dewatering unit that captures and dewateres fine grit, sugar sand, silt, snail shells, and high density fixed solids. When combined with a Grit King® separation and washing system it provides a complete high performance fine grit removal system for smaller plants.

Performance

- » Guaranteed 95% capture of all grit 106 µm and larger

Capacity

- » 0.75 yd³/hr (0.6 m³/hr) conveying capacity

How it Works

Feed is pump or gravity fed from a Hydro International grit separator or washer. In the clarifier, a baffle forces the flow along a predetermined path through the clarifier, and prevents any short-circuiting. The rotary flow causes the grit to be conveyed towards the boundary layer at the wall of the clarifier cone where it is trapped while sinking towards the bottom of the clarifier.

Once grit has been removed, clarified water rises on the inside of the SpiraSnail® clarifier until it passes over the low velocity perimeter weir. Serrations in the weir help equalize the water level and provide a uniform discharge into the effluent channel. The clarified water is conveyed back into the wastewater stream.

After reaching the clarifier bottom, grit is removed by a slowly rotating screw. The grit is dewatered while it is transported towards the discharge chute from where it is deposited in the grit receptacle, ready for disposal.

Design Notes

- » All Stainless Steel heavy-duty design ensures long product life
- » Shafted screw design reduces wear and eliminates replacement of wear bars or liners
- » Optional explosion proof motor
- » Control panel VFD allows easy adjustment

SpiraSnail® Cutaway



Applications

- » Grit dewatering for new, expanding, and upgrading WWTP
- » Replacement for worn out / ineffective grit dewatering equipment

Benefits

- » Either intermittent or continuous operation
- » Requires no washwater
- » Fully enclosed design reduces odors
- » Shafted screw, external bearing and unique screw trough swivel feature allows easy maintenance
- » Improved maintenance accessibility with large internal clearances minimize the potential for obstruction
- » Heavy-duty stainless steel design ensures long product life



Innovative Clarifier Design

With its unique design, the clarifier on the SpiraSnail® optimizes the settling tank characteristics and grit capture. Built on the same hydraulic principles found in the HeadCell® grit separation system, the clarifier uses a conical shape to deliver the surface area required to remove fine grit particles and separate incoming grit from the exiting flow. Boundary layer forces assist in retaining fine and slowly settling grit particles.

Efficient Dewatering Design

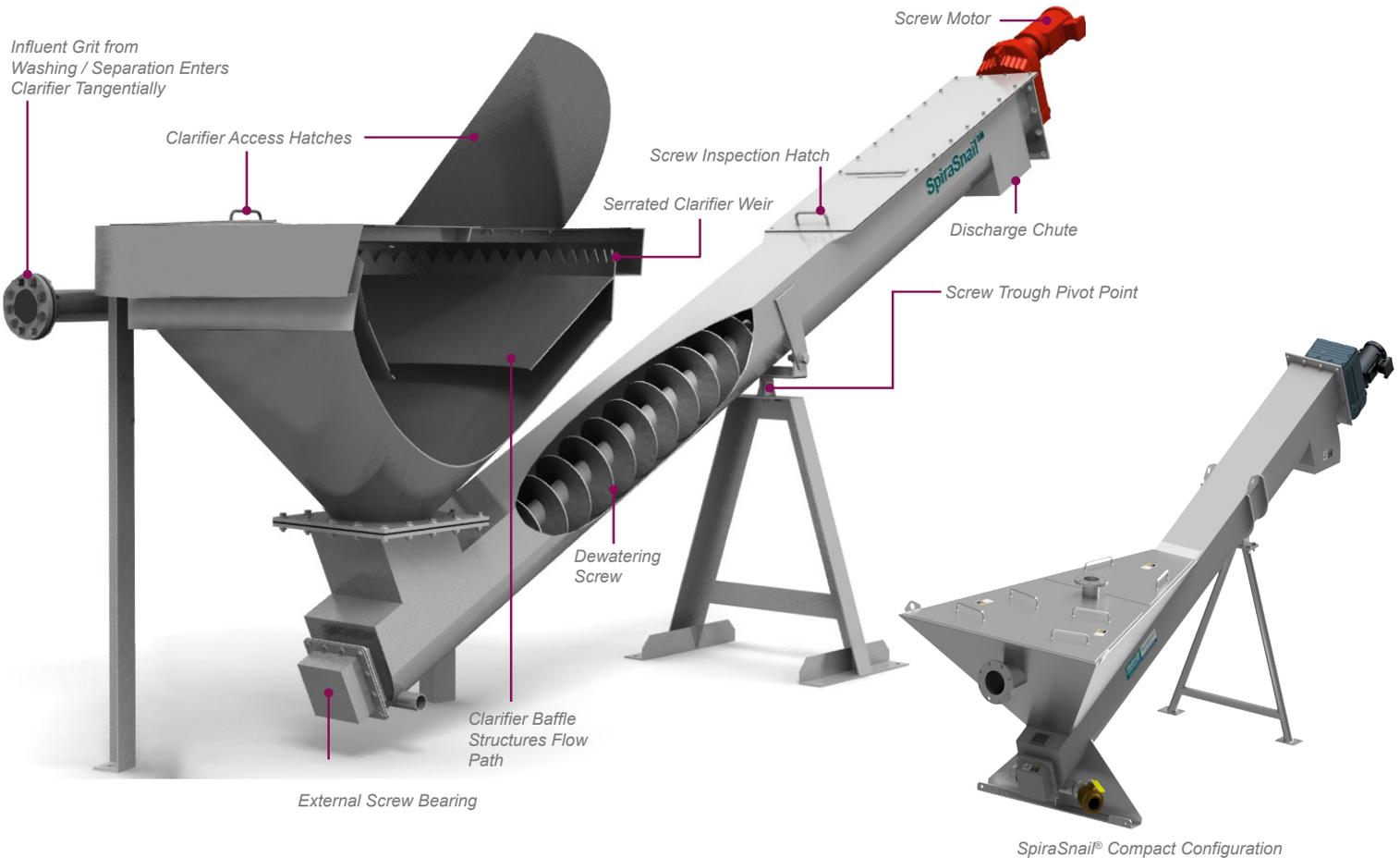
Most classifiers and grit washers are incapable of retaining fine grit particles due to the use of an undersized clarifier tank or rapidly turning screw. The SpiraSnail® has been designed to address these weaknesses. The innovative clarifier design provides increased surface area while the shallow incline and slow screw speed (2 rpm) delivers 95% capture of 106 µm and larger grit particles

Screw and Bearing Improvements

The SpiraSnail® uses a shafted screw design with an external lower bearing. Unlike classifiers with shaftless screws there is no need for liners or steel wear bars that are difficult to replace, typically requiring a complete disassembly of the unit. Instead, the SpiraSnail® is equipped with a long lasting 4 bolt lower bearing that can be accessed and serviced from the outside of the trough saving both money and downtime.

New SpiraSnail® Compact System

For plants with very tight space limitations, Hydro International also offers the SpiraSnail® Compact. The system utilizes the same shafted screw design as the original SpiraSnail® but has a smaller footprint and is also shorter than the standard SpiraSnail® system. By limiting design influent flows to ≤ 125 gpm (7.9 L/s) the SpiraSnail® Compact can achieve 95% capture of all grit 106 micron and larger.



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Learn more

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

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