Oldcastle Infrastructure™
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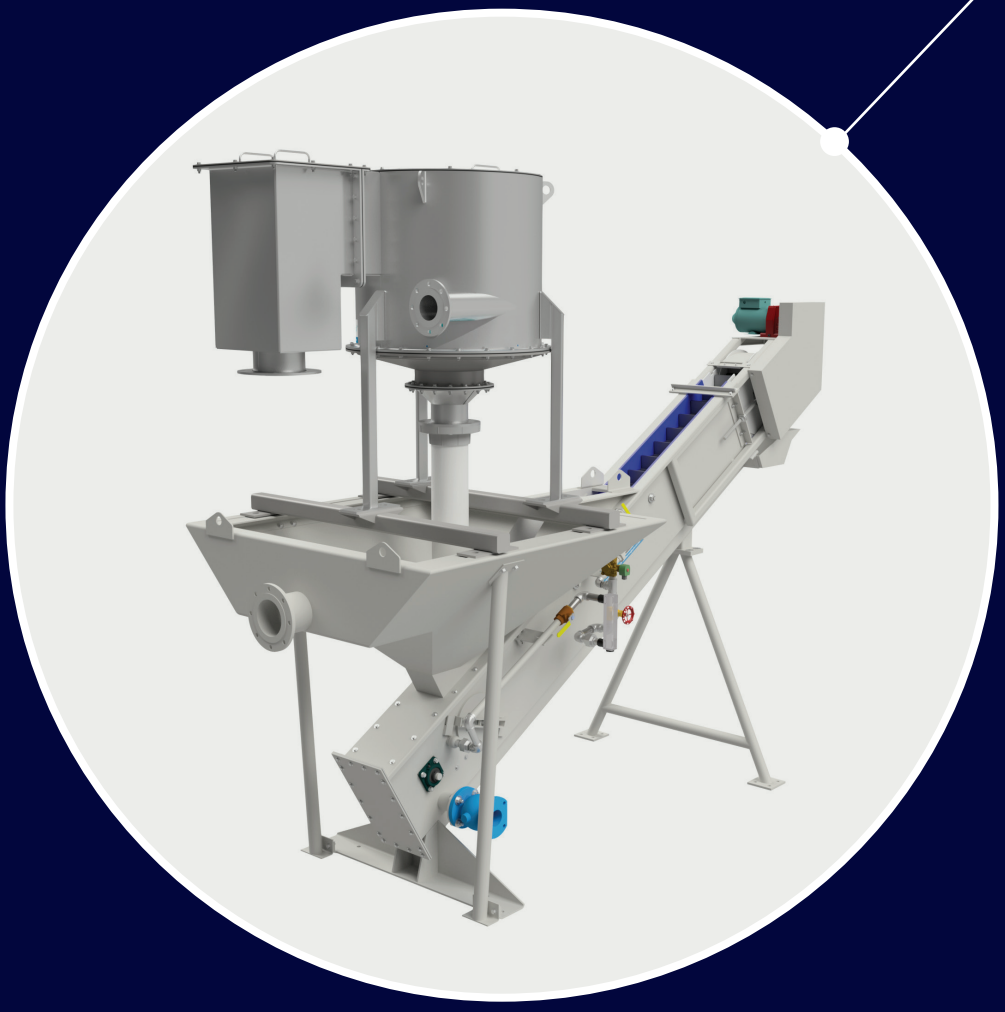
OpTeaCup®



Optimized TeaCup®
Classifier / Concentrator

Engineered by Hydro International®

OpTeaCup®

The next generation of TeaCup® grit concentration/classification

Engineered using Hydro International's 40 years of experience producing industry leading grit washing systems, Oldcastle's OpTeaCup® was developed to address the needs of modern treatment plants. Significantly expanded clearances prevent clogging from nuisance materials like flushable wipes and rags. Internal components have been minimized and streamlined to further increase throughput capabilities without reducing fine particle capture performance. The improved geometry eliminates the need for fluidizing water, actuated valves, or solenoids reducing utility requirements and maintenance.

An improved and easily accessible orifice plate simplifies long-term maintenance while also offering flexibility in how coarse organics are managed. Operators who prefer coarse organics (i.e. corn) to pass through to the bioprocess will utilize a smaller orifice which reduces organics going to dewatering. Operators who prefer coarse organics be removed with the dewatered grit will utilize a larger orifice so this material exits with the OpTeaCup® underflow.

Performance

- Removes 95% of particles equal to or greater than 75 micron (µm) at the design flow rate
- Less than 20% volatile solids when sufficient fixed solids are present in plant influent

Capacity

- OpTeaCup® handles solids concentration up to 1.5%, flow capacity may be subject to site specific conditions

Unit Ø	Flow (gpm)	Metric Ø	Flow (L/s)
24”	100-200	0.6 m	6-13
32”	150-400	0.8 m	10-25
42”	300-600	1.1 m	19-38

Configurations

- Inlet and outlet can be oriented to accommodate many existing piping configurations
- OpTeaCup® can be paired with Grit Snail®, SpiraSnail®, or SpiraSnail® Compact dewatering

Design Notes

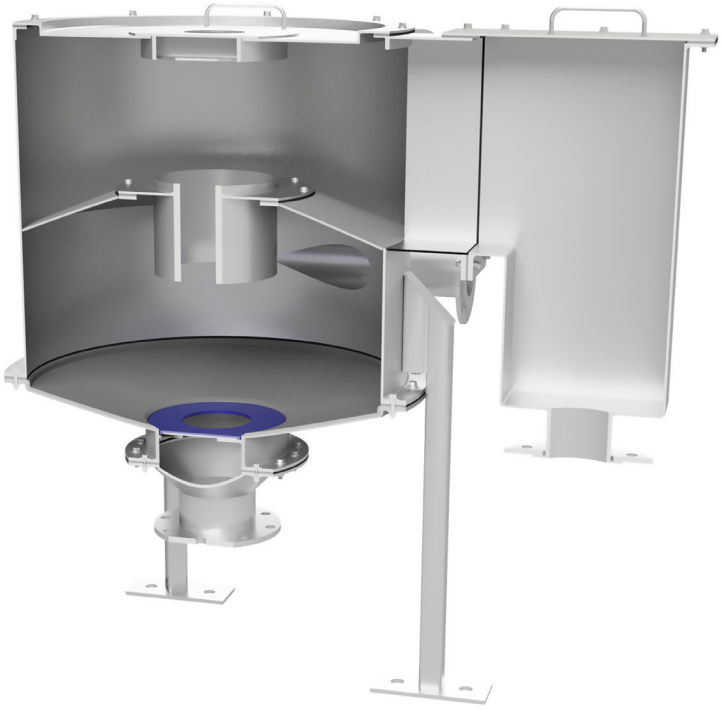
- Open free vortex design
- Simple operation, long product life
- Large diameter easily handles peak flow grit volumes
- Prefabricated modular components
- Continuous or intermittent operation
- Adjustable underflow rate allows optimization to maximize coarse organic retention after installation

Applications

- WWTP headworks grit classification / concentration
- Snail shell removal from trickling filters
- Grit system replacement and upgrades
- Potable water sediment removal pretreatment

Benefits

- OpTeaCup® offers a minimum 4” Ø (100 mm) clear opening from top to bottom to prevent clogging
- Optimized to prevent clogging of rags or wipes with no baffle plate and low profile internal studs and exposed fasteners
- No actuated valves required, reducing maintenance
- No fluidizing water or solenoid valves required
- An easily accessed and replaceable poly-coated orifice plate allows for ready adjustment of underflow rate and organics management to maximize operational flexibility



OpTeaCup® Internals Showing Expanded Clearances and Replaceable Poly Coated Orifice Plate (blue)

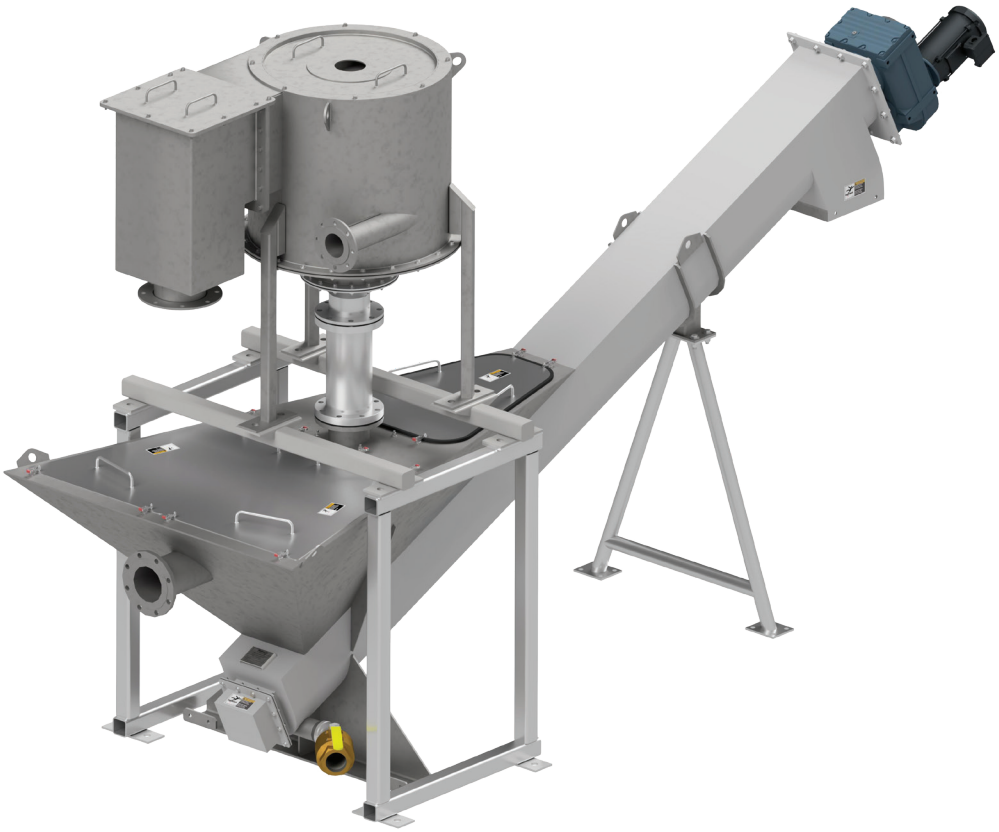
How it Works

Flow enters the stainless steel vessel tangentially at a controlled rate and velocity. The flow regime established in the device forms a free vortex which results in high centripetal forces and a thin predictable boundary layer. Grit is forced to the outside perimeter or held in suspension until it falls by gravity into the boundary layer which sweeps the grit into the centralized discharge at the bottom of the unit.

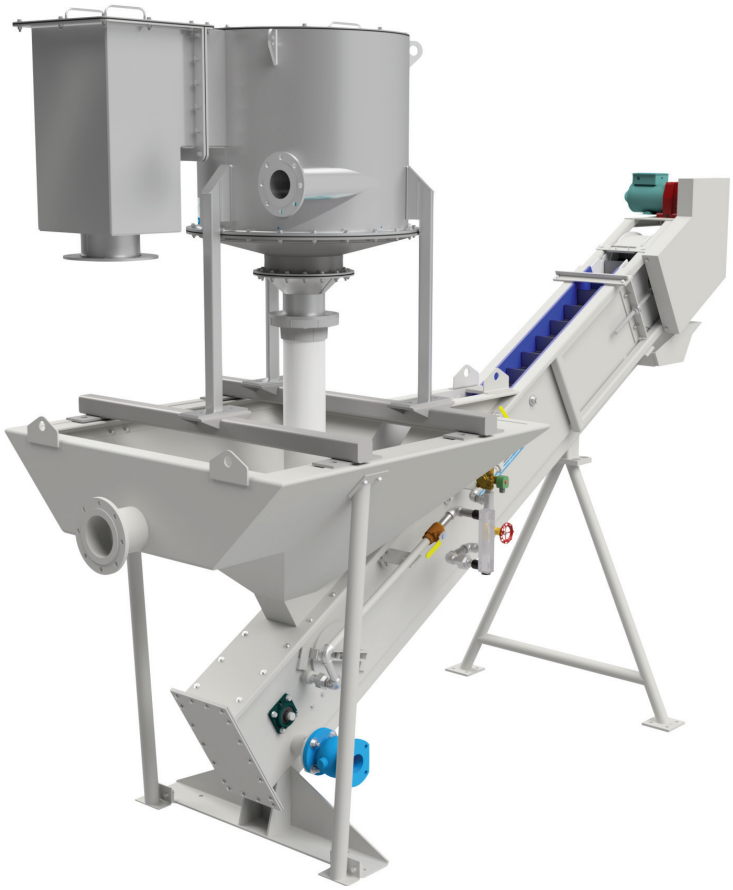
Volatile solids are lifted from the bottom of the unit and ejected out the system overflow and returned to the WWTP for treatment. The concentrated grit slurry exits the bottom of the unit. Periodically, flow to the system is paused to allow the vessel to drain and pass any large solids that might have stalled within the system.

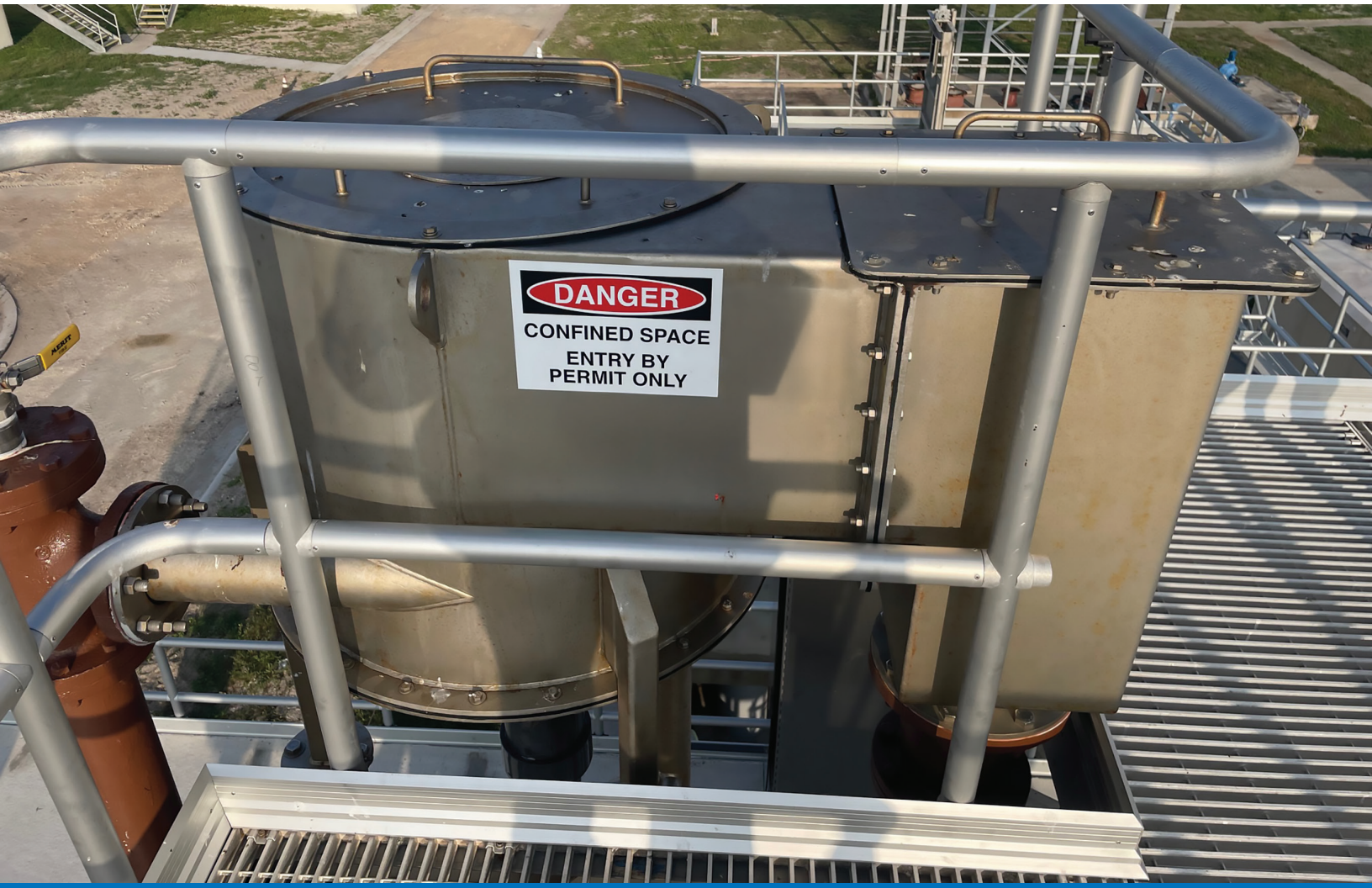
Visit the OpTeaCup® product page to learn more. OpTeaCup®

OpTeaCup® with SpiraSnail® Compact Dewatering



OpTeaCup® with Grit Snail® Dewatering





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