**Grit King®**

**Advanced Hydrodynamic Vortex Separator**

**Removes up to 15 times more grit than conventional systems.**

**Product Profile**

The Grit King® is an advanced hydrodynamic vortex separator that augments gravitational forces to separate grit from water. The Grit King® is an economical choice for new or existing municipal or industrial wastewater and water applications.

**Advantages**

- No moving parts.
- No external power source.
- Highly efficient over a wide range of flows.
- Minimal headloss.
- Small footprint.
- Low operating costs.
- Can be installed as a freestanding unit or as internal components for installation into a chamber.

**Applications**

- New wastewater treatment plants.
- Retrofit to existing treatment works.
- Grit removal for potable water.
- Grit removal for sand and gravel extraction plants.
- Grit removal for industrial effluent.
- Filter media recovery.

**How it works**

1. Flow is introduced tangentially to the Grit King® via a tangential inlet creating a rotational flow path around the outside of the dip plate.
2. The flow gradually spirals around the perimeter allowing the grit and sand particles to settle out by gravity (green arrow).
3. The grit collects in the grit pot as the centre cone directs flow away from the base and up around the centre shaft into the inside of the dip plate (blue arrow). The upward flow rotates at a slower velocity than the outer downward flow. The resulting ‘shear’ zone scrubs out the finer particles.
4. The concentrated grit underflow is pumped or gravity fed to a grit classifier for dewatering (yellow arrow).
5. When used with a Grit Cleanse the result is a clean dewatered grit with very low organic content.
Grit King® Process

Configurations

The Grit King® Separator can be supplied as a freestanding unit in stainless steel or the specialised internal components can be mounted in a concrete chamber for below ground installation.

Performance

- Typically sized to remove 95% of grit particles down to 200, 150 or 100 microns.
- Depending on site characteristics, moisture and faecal organic contents can be as low as 18% and 2% respectively when used with a secondary classification unit.
- Grit King® units can be designed for flow rates of 10 l/s to 1000 l/s per unit freestanding. Flows up to 5000 l/s can be treated in a single in situ separator.
- Turndown ratios in excess of 10:1 can be accommodated when the Grit-Cleanse™ system is utilised.
- Headloss across the Grit King® is typically less than 150 mm.

Design Requirements

- Average Flow / DWF / Maximum Flow
- Full Flow to Treatment
- Particle Removal Efficiency
- Available Grit Loading
- Site Location Drawing

Maintenance

In addition to the supply of new equipment, Hydro’s expert service teams provide plant condition assessment and planned maintenance programmes for our wide range of water and wastewater treatment equipment through tailored Service Agreements to meet the needs of each site.

Hydro maintains a comprehensive and well-managed store of spares for all its equipment. Hydro’s customers can be assured of speedy delivery of plant, helping to reduce the time our customers need to spend sourcing replacement parts.

To enable wastewater and water treatment operators to avoid interruption to their processes during planned downtime, Hydro offers a full equipment hire service for a wide range of primary, secondary and tertiary treatment plant, which can be operated on a stand-alone basis or integrated with existing equipment.

HX is Hydro Experience, it is the essence of Hydro; a stamp of quality and a mark of our commitment.
For further information call us on: 01353 645700
or visit www.hydro-int.com