

Description

Grit, a common component in most wastewater streams, is the cause of many long term operational problems. If left within a process stream, grit will cause accelerated equipment wear and tear and settle inside aeration tanks and digesters. The accumulation of grit inside these important process tanks reduces their volume and ultimately requires the affected tank to be taken out of service and cleaned.

Grit can now be efficiently removed at your plant's inlet works by using Aquatec Maxcon's AquaSwirl vortex grit removal system - an Australian designed and fabricated product.

AquaSwirl is a simple system which consists of a conical vortex grit chamber and grit paddle mixer that operates over a wide range of flows. Aquatec Maxcon's grit chamber design utilises a sloped transition section between the upper chamber and the central grit collection chamber. This transition assists grit particles to settle toward the central grit collection chamber and is complemented by the specially profiled vortex paddles that help to separate organic matter.

Design

Design Advantages

- Specially profiled "back swept" vortex paddle with hub above water level eliminates risk of fouling.
- Reduced odour due to light aeration action.
- The top of the grit chamber is permanently opened for easy maintenance and inspection.
- Combined circular and conical profiles to enhance natural vortex action.
- High removal efficiency and low power consumption.
- Robust slewing bearing with internal/ external gear to provide long lasting operation.
- Low organic content of removed grit.
- Compact footprint.

Design Features

The AquaSwirl vortex grit removal system combines natural vortex swirling action and gravity forces to settle grit within the central collection chamber. This eliminates undesirable grit accumulation and blockages even during power failures.

The AquaSwirl paddle creates the circulation and uplift at the centre so that lighter organic matter is kept in suspension to pass through the system without capture.

Fluidising of captured grit before pumping to remove any residual organic matter is performed by air or water prior to removal. Collected grit may be removed by either airlift pumps or vortex non-clogging grit pumps.

AquaSwirl can operate automatically on a 24 hour timer with controlled solenoid valves for grit fluidising and washing. Grit from the sump discharge will normally require dewatering by one of the following methods:

- Static hydraulic sieve bend.
- AquaGrit classifier.

Technical

AquaSwirl incorporates all R & D work carried out by Aquatec Maxcon over the past 10 years. Our design cannot be beaten for performance and is 100% Australian.

Removal*

95% of grit

85% of grit

65% of grit

Size

>0.3mm

<0.3mm, >0.2mm

<0.2mm, >0.15mm

Applications

- Wastewater treatment plant inlet.
- Removal of grit from industrial wastewater.

Services

Aquatec Maxcon has established and maintains a dedicated service department for scheduled maintenance and breakdown services.