- ***High Flow Rate***
- ***Fully Automatic***
- ***Adjustable Speed***

Description

Aquadecanter - R Type

The AquaDecanter-R rotary decanter is one of the most successful and reliable products in the range of wastewater treatment equipment available from Aquatec Maxcon.

During the settlement period of an intermittent aeration wastewater treatment process, activated sludge settles to the tank bottom, leaving clear treated supernatant on the top. The treated supernatant can be removed effectively with minimal carry-over of solids by the decanter without disturbing the sludge blanket at the bottom of the tank. The rotary decanter consists of a decant trough, weir, floating scum buffer, carrier pipes, rotary collection pipe, submersible support bearings and a drive mechanism.

In operation, the drive mechanism extends and retracts a drive shaft which actuates an eccentric link arm that rotates the trough up or down in an arc into the supernatant. The trough, carrier and collection pipes are supported at both ends by submersible bearings. The bearings are secured inside bearing housings which are bolted to concrete plinths. The supernatant discharge rate can be controlled over the weir by variable speed control to maintain optimum flow. The floating scum baffles prevents scum from approaching the weir.

The decanter drive mechanism consists of an electric motor, gearbox, jack mechanism and screwed drive shaft. The drive is typically fitted with internally actuated position indicators that allow drive limits to be set for BWL, top park position and over limit safety stops. Optionally positioned transponders can also be fitted. The drive mechanism is normally installed at the end of the tank.

Design

Design Advantages

- The decanting flow rate can be controlled and varied by adjustment of the drive speed.
- Decanting depth and park positions can be controlled through limit switch adjustment.
- During the aeration phase, the decanter trough is parked above the water level and prevents scum and floating objects from entering the trough.
- The screw jack and drive system is mounted above the water for ease of maintenance.
- The floating scum baffle prevents scum and floating objects from entering the decant

trough during the decanting phase.
- All underwater bearings are self-lubricated and corrosion resistant.
- AquaDecanter-R rotary decanter can be made of stainless steel or galvanised steel to suit customer requirements.
- Standard decanter trough lengths are available from 3m to 15m.
- Decant depth range is generally 1 to 2m. For higher flow requirements, multiple decanters arrangement can be used.
- The decanter is normally installed at the opposite side of the tank inlet.
- The weir loading index depends on the flow requirement, tank depth, treatment process and other factors. For general applications, the weir loading index is 25 to 40 litres per second for each linear metre of weir.

Technical

Structure and Operating Principle

The rotary decanter consists of a decant trough, weir, floating scum buffer, carrier pipes, rotary collection pipe, submersible support bearings, drive and transmission mechanism.

The rotary collection pipe receives the supernant from the decant trough and is supported at both ends by submersible bearings. The bearings are secured inside bearing housings which are bolted to concrete plinths. The decant trough is connected to the rotary collection pipe by the carrier pipes and is raised and lowered by turning the rotary collection pipe.

The drive and transmission mechanism consist of an electric motor, gearbox and screwed drive shaft. The drive mechanism is normally installed at the end of the tank with the drive shaft connected to an eccentric link arm on the rotary collection pipe.

In operation, the drive mechanism extends and retracts the drive shaft and rotates the rotary collection pipe. The decant trough consequently moves up or down and supernant is collected for discharge from the tank.

Controls

The geared motor can be controlled by a variable frequency drive and hence vary the decanting rate. Level switches are used to control the high water level, lower water level and decanter park position.

In addition to the level switches, a mechanical lock is also provided to prevent an overrun and mechanical damage to the decanter mechanism.

The AquaDecanter-R rotary decanter is particularly suitable for use in intermittent aeration processes such as:

- Sequential Batch Reactors (SBR)
- Intermittent Decant Aeration Lagoons (IDAL)
- Intermittent Decant Extended Aeration (IDEA) Processes

Key Installations

West Camden STP

South West Rocks STP

Forbes STP

Wyong South STP

Altona STP

Services

Aquatec Maxcon has over 47 years' experience in treating water and wastewater for both municipal and industrial applications. A leader of the water industry, Aquatec Maxcon has introduced a range of innovative process technologies to Australia including the first UASB, IC Reactor, Membrane Bioreactor and Circox Reactor. We have a successful track record in introducing new technologies and have diligently supported their implementation within Australian conditions.

Aquatec Maxcon Pty Ltd is part of the Aquatec Maxcon Group which provides a complete vertically integrated range of in-house services including:

- Design and construction;
- Project management, commissioning and operation;
- Installation and maintenance;

- Steel fabrication, sand blasting and painting;
- Machine and plant automation, system integration, electronic repairs and servicing and SCADA configuration.

Aquatec Maxcon can also provide different kinds of decanters to suit customer requirements. They are:

- Tilted weir decanter---- suitable for decanting depth less than 0.5m. This decanter must be installed on a concrete discharge channel.
- Double trough vertical decanter ---- suitable for reaction tanks with central fixed bridges. The decanting depth is less than 1m.

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

Services Home Page