

- **Reliable Solids Removal**

- *Scraper Mechanism for Circular and Rectangular Tanks*

- **State of the Art Suction Lift Clarifiers**

## Description

### AquaScraper

Aquatec Maxcon is one of Australia's most experienced manufacturers of scraper clarifiers with a long-standing manufacturing record spanning 50 years. Since building our first AquaScraper in the 1970's, Aquatec Maxcon has been committed to continuous research and development in design and performance delivering the most efficient technology available. Gravity sedimentation is one of the most frequently used processes in wastewater treatment.

Many wastewaters contain settleable suspended solids that can be removed under quiescent conditions. Particles that have a different density from that of the suspension medium (water), will settle downward because of gravity or rise to the top because of buoyancy.

In other cases where suspended materials do not settle readily, upstream unit processes are used to convert colloidal (nonsettleable suspended solids) and soluble pollutants into settleable suspended solids for gravity sedimentation removal. Suspended solids removal is important because of the pollutants associated with the removed solids, such as organics, nutrients (nitrogen, phosphorus), and heavy metals.

## Series C

### ***AquaScraper Series C - Peripheral Drive (PD) & Central Drive (CD) Bridge***

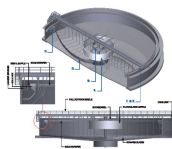
The AquaScraper Series C caters for all circular tank designs. The design incorporates either a centre drive (CD) or a peripheral drive (PD). Circular bridges can vary in size from a few metres up to 50m in diameter. Can be supplied in mild steel (epoxy coated and/or hot dipped galvanised), stainless steel, aluminium or composite materials

Appropriate for several design applications:

- Oxidation ditch processes
- Activated sludge processes
- Trickling filter processes
- Chemically assisted sedimentation
- Industrial wastewater treatment

## Design Advantages

- Peripheral drive units enable use of a central pivot to take up launder wall construction variations
- Adjustable bridge speeds can be achieved through a variable frequency controller
- Segmented scrapers pivot to match floor imperfections during installation, maximising sludge removal efficiency. A segmented scraper allows inspection, adjustment and replacement of the scraping rubber. Using segmented scrapers dispenses with costly floor topping minimising civil costs.
- Easily incorporated flocculating feedwells for nutrient removal plants
- Scum boxes with a submerged beach design are ideal for high scum loads due to *Nocardia amarae*
- Energy dissipating inlet (EDI) feedwell for optimised flocculation



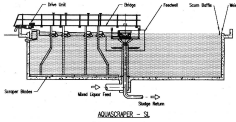
## Series SL

### ***AquaScraper Series SL - Suction Lift***

The AquaScraper-SL operates with a series of riser pipes fed by a hooded V scraper gliding across the tank floor. Collected settled sludge discharges from the riser pipes hydraulically through a control gate into a trough formed by the base of the bridge. Sludge then drops into a central discharge to feed the return sludge pump station. As the bridge trough is submerged within the clarifier, the discharge of sludge is driven purely by the hydraulic difference in water level between the clarifier and bridge trough.

### **Design Advantages**

- Intrinsic control of sludge flow from individual riser pipes eliminates the need for flow control devices downstream from the clarifier
- Allows for a flat floor construction providing civil works benefits
- Large diameter riser pipes to eliminate blockages
- Full control of sludge withdrawal across the entire clarifier floor
- Special flexible joints between the bridge and central support mechanism eliminates loadings induced by uneven tank construction ensuring longer bearing and seal life
- Optional hinged riser pipes allow movement in the suction end and hood assembly to optimise settings for uneven floor profiles and inspection
- Open bridge flooring provide operators with a clear view of their control gate adjustments
- Accommodates for both single peripheral and double internal launders
- Proven reliability dispenses with the need for standby clarifiers in small treatment plants



## Series R

### *AquaScraper Series R - Rectangular*

We have built many custom design rectangular scraper mechanisms over the past 70 years to suit our client's site specific requirements. R Series Scraper Mechanism Types include:

#### **1. AquaScraper R - CF Chain and Flight**

- For scum and sludge scraping applications
- Timber or GRP scrapers travel along the top of the liquid scraping scum to a collection point then return along the bottom to scrape sludge to the opposite end of the tank
- Utilise either metallic or plastic chains
- Plastic guide rails provide chain and flight support
- Anti-locking bearing design for idler wheels

#### **2. AquaScraper R - RF Stainless Steel Rope and Flight**

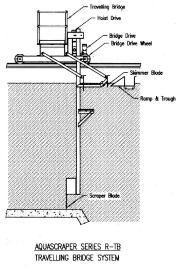
- For sludge scraping only
- S.S. wire rope is attached to a number of flights which scrape the floor in one direction only
- The rope travels a distance of 3m and then returns. On return, the scrapers are pivoted so that they rise above the floor, not performing any scraping action

#### **3. AquaScraper R - TB Travelling Bridge**

- Travelling bridge mechanisms have both floor and surface scrapers which lift up when returning to the starting end of the tank
- Scrapers can be pivoted or raised vertically
- Hoisting of scrapers activated by limit switches adjacent to the support rails
- Bridge bogie wheel and rail arrangement utilises current technology in overhead gantry crane design

#### **4. AquaScraper – Stainless Steel Rope & Suction Header**

#### **5. AquaScraper – Reciprocating Wedge Bottom Scraper**



## Design

### Design Features

Flow enters the feedwell zone where heavy sludge immediately settles into the sludge hopper and scum floats to the top. Scum exits through ports in the feedwell whilst lighter particles settle to the tank floor as flow moves to the peripheral outlet weir. Floating scum is collected via a skimmer blade running from the feedwell to the scum baffle located near the peripheral weir. Settled sludge is scraped into the central collection hopper.

- Utilises either continuous plate or segmented scrapers that approximates a log spiral curve
- Scraper depths supplied depend on sludge load and required removal rates
- Designs include half diameter, two-third diameter and full diameter scrapers
- Scum boxes can be of raised beach or submerged beach design
- Scum outlet pipes less than 45° are equipped with automatic flushing by means of a valve in the base of the scum box
- Drive units consists of a gearmotor/electro-mechanical torque overload coupling.
- Peripheral “V” notch or flat plate weirs are quickly and easily installed with our patented weir fixing system.
- Flow diversion baffles can be utilised to deliver reduced solids carried over to the weirs

## Key Installations

*Oxley WWTP  
Peripheral Drive Clarifier*

*Tully STP  
Secondary Clarifier*

*Lower Mologlo STP  
Secondary Clarifier*

*Luggage Point STP*

*Werribee STP*

## Services

Aquatec Maxcon has 50 years of 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 has established and maintains a dedicated service department for scheduled maintenance and breakdown services.

[Services Home Page](#)