



Large Diameter RBC Systems

Biological treatment stage for small to medium and large wastewater treatment plants.

General Features



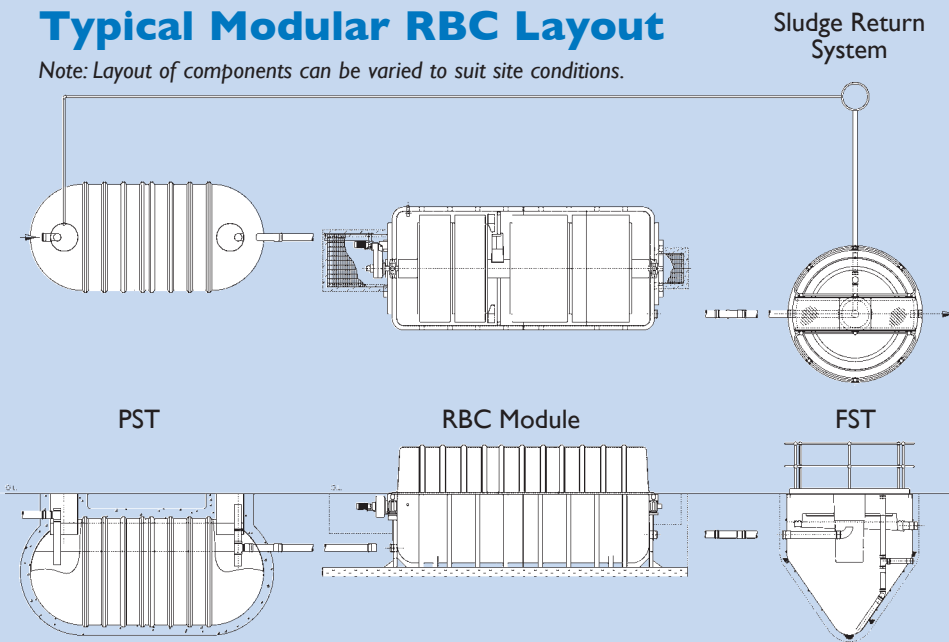
- Simplicity of design leading to considerable savings in civil engineering design and installation costs.
- Highly efficient proven performance and reliability.
- Standard modules and customised modules sized generally in accordance with current standards.
- Larger flows catered for by installation of multiple RBC modules, or larger diameter RBCs in concrete tanks.
- Cost effective.
- Low specific media surface area to volume density range for carbonaceous BOD removal.
- DC module range optimised for carbonaceous BOD removal.
- High specific media surface area to volume density range for nitrification.
- DN module range optimised for nitrification.
- Unique Managed Flow technology can be incorporated.
- Easy to install.
- Treatment for populations up to 750 persons equivalent within a single DC/DN module and up to 1500 persons equivalent with a single large diameter RBC.

Applications

- Intergrated biological treatment stage for small to medium and large wastewater treatment plants providing carbonaceous BOD removal and/or nitrification and/or denitrification and phosphorus removal.
- To replace, or supplement, existing overloaded biological treatment stages in domestic and industrial wastewater treatment plants.
- Used as biological treatment stage of integrated KEE Process Managed Flow Modular Treatment system - an economical, flexible and adaptable wastewater treatment package.

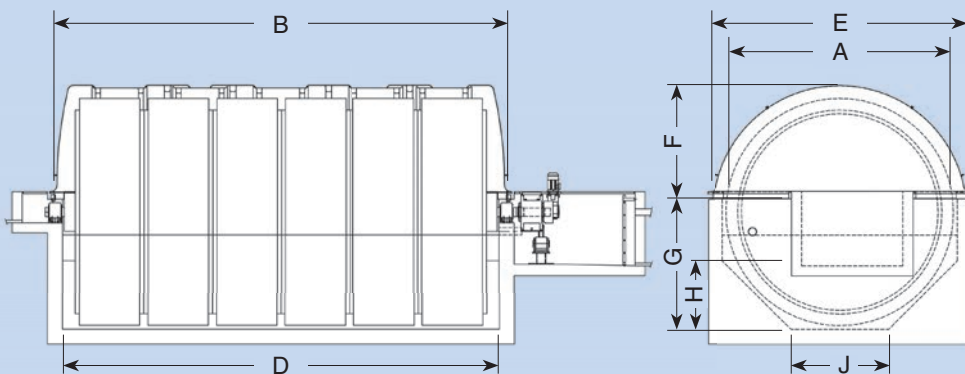
Typical Modular RBC Layout

Note: Layout of components can be varied to suit site conditions.



Large Diameter RBCs

Note: See table on Leaflet TSI a for dimensions.



RBC Construction

- Shaft constructed from hollow, circular steel section with stub shaft assemblies attached at both ends.
- Media - the biomass carrier - is supported on the RBC shaft through galvanised structural steel framework.
- The complete RBC shaft assembly is driven by a low power, direct coupled, shaft mounted electric geared motor.
- The design parameters and selection criteria for structural elements and electro-mechanical components are available on request.

RBC Configuration

- Single RBC unit can be configured with any one or combination of specific media surface area to volume density.
- Multiple RBC units can be tailored to suit process requirements.



RBC Modules and Large Diameter RBCs

An economical, flexible and adaptable treatment system that leads to considerable savings.

Specification/Design

RBC enclosure (housing) manufactured from durable, rot and corrosion proof, Glassfibre Reinforced Polyester (GRP) - combining outstanding strength with lightweight.

GRP casing designed as a structural element for above ground installation or underground installation to withstand hydrostatic and ground pressures.

Sectional GRP removable covers.

Hot dip galvanised steelwork.

Easy access to bearings and gearbox/motor for maintenance.

Compliance with Health and Safety Regulations.

Optional RBC installation in steel or insitu concrete tanks.

Manufactured under BS EN ISO 9001 Quality Management System Certification.



DN19S RBC

Kinallen WwTW, N.I.

LEFT: The multiple stream RBC Plant designed for a population of 1800 PE to treat combined domestic wastewater and surface water.

Bearings

- Spherical roller – self-aligning.
- Selection Criteria - 100,000 hrs life L_{10} basis.
- Cartridge auto lubrication system.
- Option of split self-aligning bearings also available.

Drive

- Direct coupled shaft mounted gearbox drive.
- Selected for continuous operation.
- Selection Criteria - 100,000 hrs life L_{10} basis.
- Option of synthetic lubricants for improved performance.
- Soft-start for enhanced life.

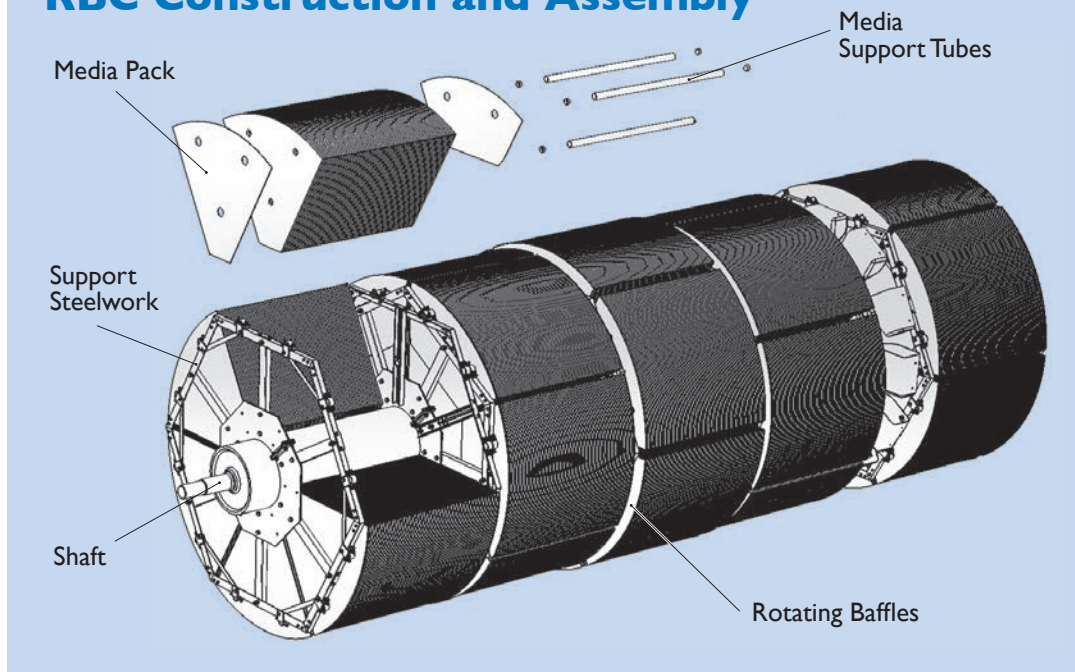
Main Shaft

- Shaft manufactured from circular hollow, mild steel structural section.
- Shot blasted and Zinc metal sprayed and sealed using vinyl acrylic sealer.
- Welding to British Standards and Welding Institute codes of practice.
- Designed for a 30 year fatigue life.

Media Framework

- Media framework attached to shaft via collars.
- Fabricated in galvanised mild steel.
- Designed for a 30 year fatigue life.
- Framework attached to the shaft using mechanically locking fasteners.

RBC Construction and Assembly



Media

- 100% virgin vacuum formed polypropylene co-polymer sheets.
- Stabilised against Ultra-Violet decay.
- High tear resistance.
- Media available at surface area to volume density of 150m²/m³, 180m²/m³, 210m²/m³ and 225m²/m³.
- Media is arranged and mounted on the RBC shaft through structural steel framework and media support tubes.
- Radial and annular separation of media to provide complete drainage.
- Media packs can be assembled and removed individually from the frame work.
- Media support structure and frames designed for a 30 year



KEE



Specialists in Domestic & Industrial Wastewater Treatment

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