

ROTATING BIOLOGICAL DISC CONTRACTOR



Efficient Wastewater Treatment System



Our Technology Ensure You A Better Water Quality



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Rotating Biological Disc Contactors are an efficient fixed-film wastewater technology well suited for secondary wastewater treatment. It consists of a series of closely spaced, parallel discs fixed on a revolving shaft and situated just above the water's surface. During the process, the treated effluent will come in contact with the surface of the discs to allow wastewater contaminants to be degraded before it is discharged into the environment.

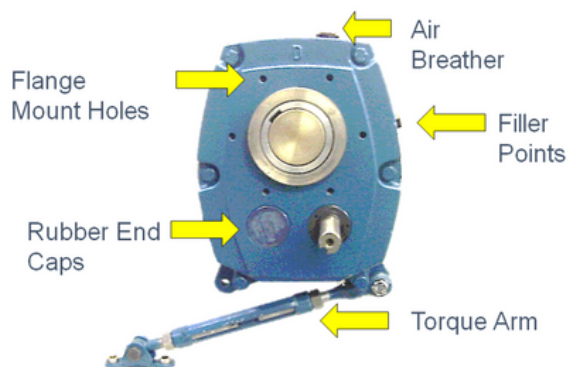
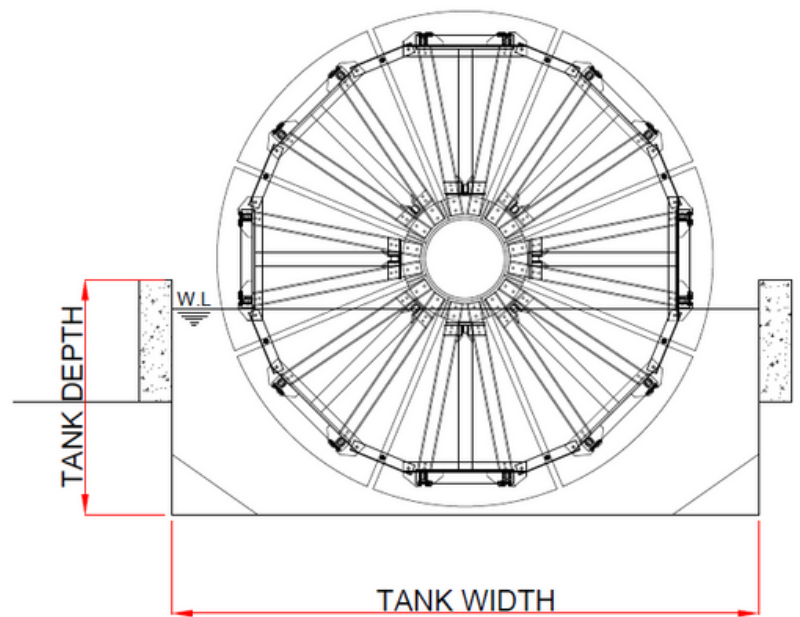


Illustration of gear motor



Principal of Rotating Biological Disc Contactor

- **Introduction of Wastewater:** The wastewater containing organic pollutants is introduced into the RBC tank. The tank contains a series of rotating discs that are partially submerged in the wastewater.
- **Biological Growth:** Microorganisms responsible for the biological treatment of wastewater start to grow on the surface of the contact media. These microorganisms form a biofilm, which is a slimy layer containing bacteria, fungi, and other microorganisms.
- **Oxygen Transfer:** As the medias are exposed to the air, a thin film of wastewater coats the surface of the discs. Oxygen from the air dissolves into this film and diffuses into the biofilm, providing oxygen for the microorganisms.
- **Organic Pollutant Removal:** As the wastewater flows over the media, the microorganisms in the biofilm consume the organic pollutants present in the wastewater as a food source. They metabolize and break down the organic matter into simpler compounds, such as carbon dioxide and water.
- **Media Rotation:** The media rotate continuously, allowing different sections of the biofilm to come into contact with the wastewater. This rotation helps to ensure a constant supply of oxygen and nutrients to the microorganisms and enhances the mixing and contact between microorganisms and wastewater.
- **Effluent Separation:** After passing over the rotating media, the treated wastewater, with reduced organic pollutant levels, is separated from the biofilm. This separation can be achieved using weirs or other mechanisms, allowing the treated effluent to be discharged.
- **Biofilm Maintenance:** The continuous rotation of the medias helps to prevent the build-up of excessive biofilm thickness. It also helps to slough off excess biomass, maintaining a healthy and active biofilm for effective organic pollutant removal.

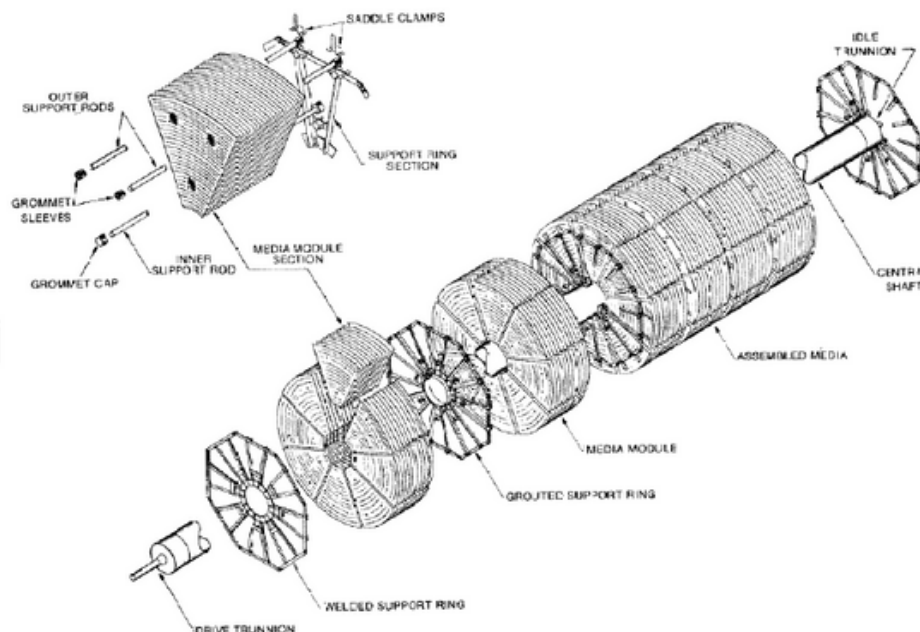


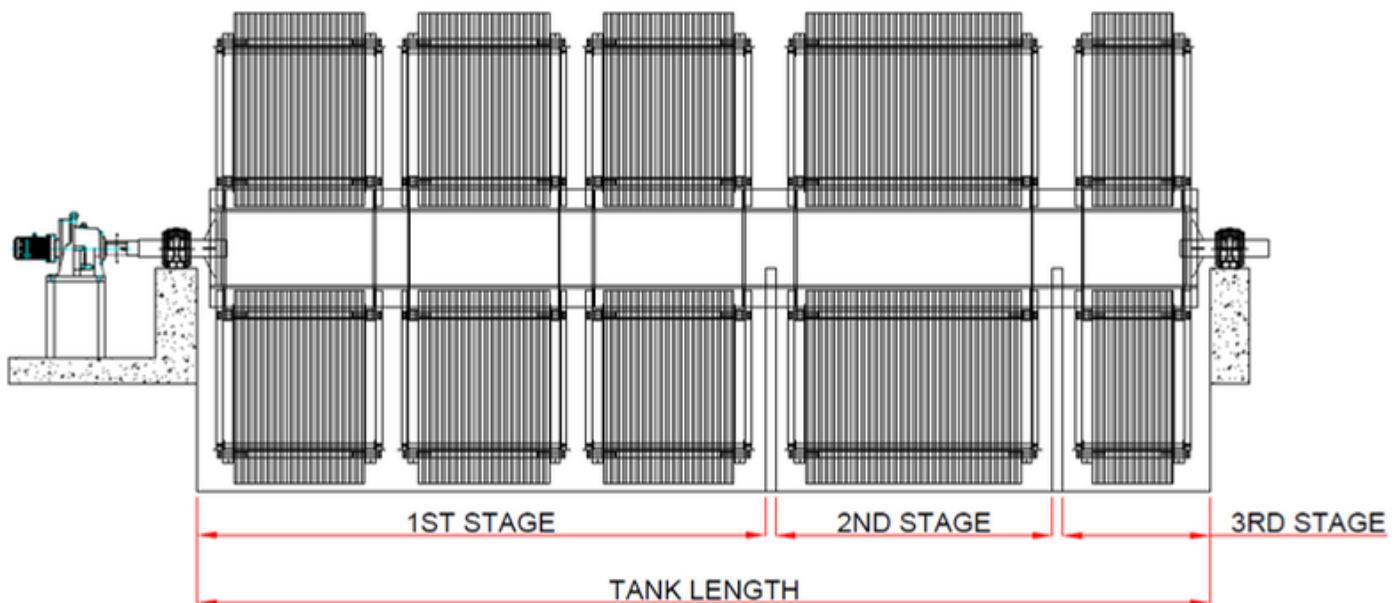
Illustration of RBD installation

Typical components of Rotating Biological Contactor

- The RBC tank is a cylindrical or rectangular structure that holds the wastewater and houses the rotating media. It is usually made of concrete, steel, or other suitable materials to provide structural integrity.
- The RBC consists of rotating medias that are mounted horizontally on a central shaft. These medias are usually made of plastic or other corrosion-resistant materials and have a series of closely spaced, parallel baffles or ridges on their surface. The contact medias are sized and spaced to provide sufficient surface area for the growth of the biofilm.
- The RBC requires a drive mechanism to rotate the discs. This mechanism typically includes an electric motor, a gearbox, and a drive shaft. The drive shaft is connected to the central shaft of the RBC, providing the rotational motion to the media.
- The wastewater distribution system ensures an even flow of wastewater over the rotating medias consisting of distribution pipes or troughs that are positioned above the media. These pipes or troughs distribute the wastewater evenly across the surface of the medias, allowing the biofilm to come into contact with the wastewater.
- After passing over the rotating medias, the treated effluent needs to be collected and separated from the biofilm. This is achieved using weirs or other mechanisms that allow the effluent to flow out of the RBC tank while keeping the biofilm within the tank.
- A control system is employed to monitor and regulate various parameters of the RBC, such as disc rotation speed, wastewater flow rate, and air supply. This system may include sensors, controllers, and automated valves to maintain optimal operating conditions.

Model	Diameter (meter)	Tank Width Range (meter)	Tank Length Range (meter)	Specific Surface Area (m ² /m ³)
CH-RBD 2.5	2.5	2.6 – 3.0	3 – 7.5	150 – 180
CH-RBD 3.0	3.0	3.2 – 3.7	3 – 7.5	150 – 180
CH-RBD 3.6	3.6	3.8 – 4.5	3 – 7.5	150 – 180

Technical Data	
Contact	Media
Specific surface area	150 – 180 m ² /m ³
Rotational speed	1RPM for optimum biological film development
Cover	FRP or metal shed with ventilation
Shaft or rotational frame material selection	• Carbon steel • Galvanised steel • Stainless steel
Torque arm	Included to protect and prolong gear motor lifespan
VFD	Included for slow start function



Key Benefits

- Low energy requirements
- Minimal operation intervention
- Low maintenance due to robust and durable technology
- Designed for optimal total expenditure

Why Choose Us?

- **Local Brand**
 - Immediate full support on maintenance and troubleshooting
 - Support “Made in Malaysia” product
- **Reliable gear motor**
 - Close partner with Sumitomo Japan & SEW Eurodrive
 - Reliable gear motor increases product lifespan
- **20 years of experiences in wastewater**
 - Established since 1999
 - Profesional experts in equipment design
 - Reliable brand