

SLIP RINGS FOR WASTEWATER

How Slip Rings are Used to Optimise Operations for Water Companies

When it comes to water management and treatment, system efficiency is of utmost importance. Unplanned downtime can be costly, both in financial terms and in service delivery. It can lead to disruptions in water supply, sanitation issues, and even health concerns.



For water companies, ensuring continuity of operations and minimising this unplanned downtime is a top priority. Planned downtime is an essential part of system servicing and maintenance schedules, the act of which contributes to reducing unplanned downtime.

One key solution is the use of slip rings. Whilst not contributing directly to a reducing downtime, they do allow the systems to run. Slip rings are electromechanical devices that allow the transmission of power and electrical signals from a stationary structure to a rotating part, consisting of stationary carbon brushes which maintains contact with a rotating ring (Some systems require alternate orientation, but this is the majority). Through this, electrical currents or signals can be transferred without interruption, ensuring continuous performance of the rotating system.

In this article, we'll explore the role of slip rings in the wastewater industry and discover how they play a part in optimising operations.

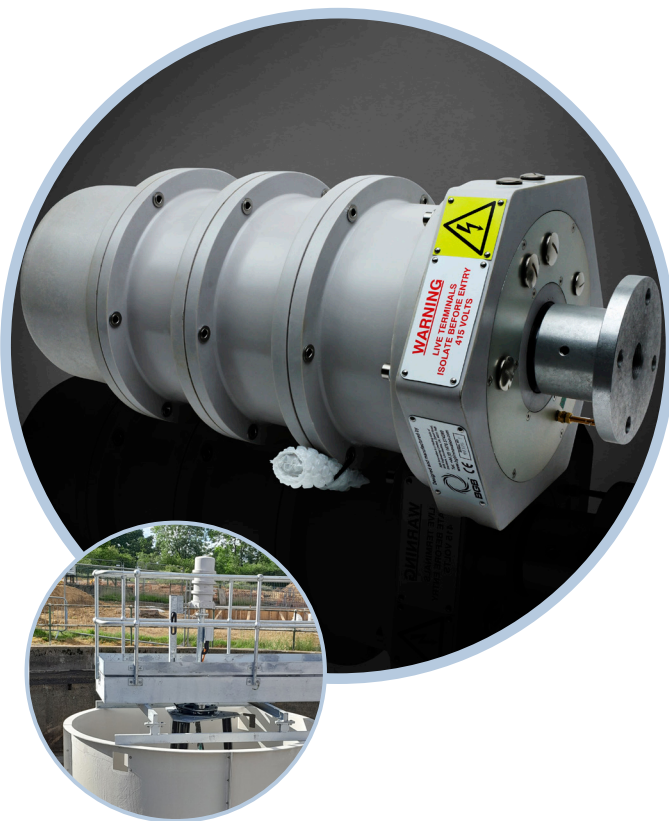


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How are Slip Rings Used in Wastewater?

Continuous rotation is necessary to ensure the effective treatment of wastewater. However, this constant movement poses a challenge – how can you maintain an electrical connection with something that's always in motion? This is where slip rings come into play.



BGB has been designing and manufacturing slip ring collector columns for half-bridge rotary scrapers and clarifiers (a.k.a mud scrapers, sludge scrapers or scum scrapers) since the early 1980's, working within industry standards and offering WIMES (2.01; section 6.12.2) compliant assemblies.

BGB manufactured units are predominantly used to allow the transfer of power and signals to the scraper bridge drive motor and bridge-mounted control panels, allowing for continuous system rotation and feedback. The slip ring allows the bridge/tank to slowly rotate around its axis providing constant contact throughout 360°.

Collector columns are available in a variety of combinations from 1-36 rings/channels in a standard format. More channels can be catered for via bespoke units designed to customer specification. Additional features such as; encoders, terminal boxes, fibre optic rotary joints etc... can also be included within assemblies.

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The treatment of wastewater is a complex process that involves numerous stages and components. Many of these stages, such as sedimentation tanks and filtration systems, rely on rotating machinery.

Here's how slip ring's benefit the wastewater industry:

Uninterrupted Power Supply

Many rotating components in wastewater treatment plants require a constant supply of power. If your system uses traditional wiring it can lead to wear and tear, causing unexpected breakdowns and, consequently, downtime. Regular service and maintenance of parts including slip rings ensure that these components receive an uninterrupted power supply, regardless of their rotation, therefore reducing the risks of sudden stoppages.

Data / Signal Transmission

Modern wastewater plants are equipped with sensors that monitor various parameters in real-time. These sensors are often mounted on rotating components. Slip rings facilitate the continuous transmission of data / signals from these sensors to the control room, ensuring that the plant operators are always aware of the system's status.

Predominantly the system requirements within the wastewater industry fall within the 4-20mA or ultrasonic data / signal range.



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Maintenance Simplification



Slip rings are designed for durability and are designed to handle the demands of the specified wastewater environments. This robustness means that they don't need frequent replacements or repairs. Consequently, the maintenance needs are reduced, and so is the associated downtime.

In Summary...

Downtime is a costly concern for water companies, both in terms of operational efficiency and the potential ripple effects on communities. By integrating slip rings into wastewater treatment systems, water companies can ensure that their processes run as smoothly as possible.

As the demand for clean water and efficient sanitation solutions grow, slip rings will continue to play an important role in system operation. BGB is proud to be a part of this journey, helping water companies across the UK enhance their operations and serve their communities better.

For water companies looking to ensure their operations run seamlessly, partnering with an experienced rotary solutions provider is crucial. At BGB, we deliver high-quality slip rings and slip ring assemblies tailored to the unique challenges of the wastewater industry. We also offer repairs, refurbishments and replacements.

With our expertise, we are well-positioned to assist water companies in optimising their operations.

Get in touch with our team today...

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