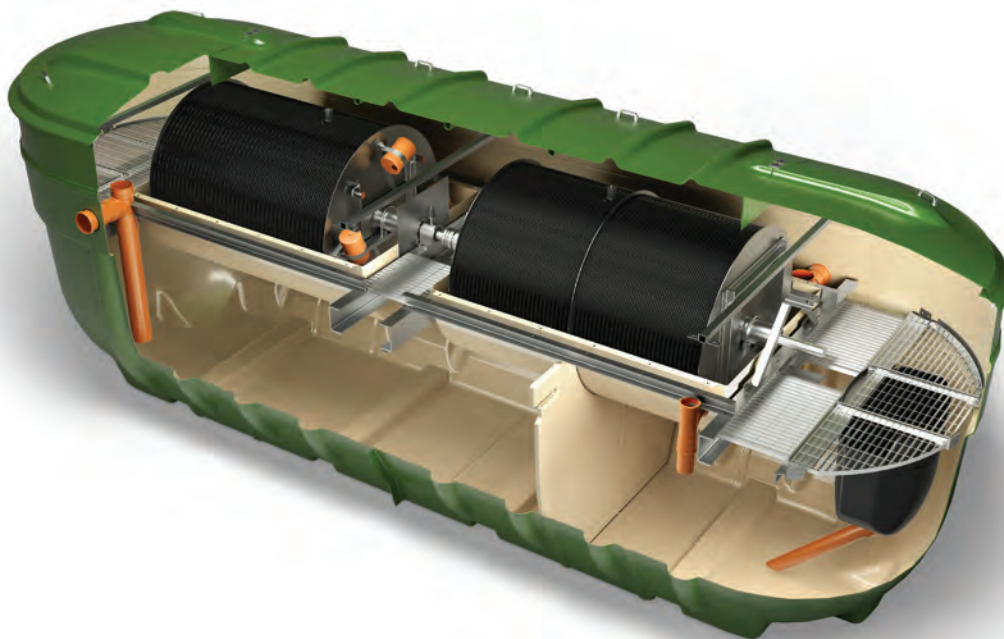




BioDisc® Commercial Wastewater Treatment Plant



Experience	Fully Compliant	Global
OVER 65 YEARS		



About Kingspan

At Kingspan, we pride ourselves on our longevity, experience, continued innovation and unrivalled customer service.

For over 85 years, Kingspan Water & Energy is a global market leader and trusted source of expert advice for rainwater harvesting, water storage, wastewater treatment and portable energy storage solutions in Australia. We have products for residential, commercial and rural projects.

With increasingly strict regulations surrounding the processing and release of wastewater from treatment plants, it's important to ensure you pick the right system to suit your off-mains wastewater needs.

Our wastewater treatment plants have been built using more than 65 years global experience and knowledge, so you can benefit from proven and trusted engineering and design.

Kingspan's wastewater range is perfect for where connection to a mains wastewater sewer is not possible. The whole range is available Australia wide.

Expert Technical Support

With over 65 years global experience in the design, manufacture and installation of project specific Packaged Wastewater Treatment Systems, you can rely on Kingspan Water & Energy to provide you with an efficient, cost effective Wastewater Treatment Plant, designed to meet the requirements of your local council or the EPA.

Upfront design is very important, to ensure a system meets the demands of the project and the local council.

Working with you or your consultant, Kingspan will calculate the daily incoming wastewater flow and organic load from the supplied or assumed user information and will design a system that will treat the incoming wastewater to a level that meets or surpasses the requirement.

System options can be provided, to show the requirement for any future proposed project expansion, thus ensuring ease of future site expansion, at minimal cost and disturbance.

If required, Kingspan, via a network of accredited partners, can provide professional project installation, commissioning and maintenance.

Please do not hesitate to contact our technical applications team today to discuss your project and receive a technical proposal and cost. Kingspan pride themselves in supplying cost effective solutions to meet your wastewater treatment needs.

Email: sales.au@kingspan.com



Commercial BioDisc® BL Treatment Plant
Kelmescott, Western Australia



Commercial BioDisc® Twin BM Treatment Plant
Suttor, Queensland

BioDisc® Commercial Wastewater Treatment Plant

We offer one of the largest and most technically advanced sewage treatment plant ranges available on the market. The Kingspan BioDisc® BE-BN wastewater treatment range benefits from a wealth of industry experience and knowledge that allowed us to bring to market the first Rotational Biological Contactor treatment system almost 50 years ago.

The unique design of the Kingspan Commercial BioDisc® BE-BN range has a proven track record for high-quality performance, superior reliability and low operational costs. Each system is delivered direct to your site and ready to install, giving you added peace of mind.

The BioDisc® is available up to 300EP in a single tank and larger than 300EP in a multi tank, modular system.



Product Benefits

- Unique RBC technology.
- Over 100,000 BioDisc® installed globally, over 50 year period
- Tried and tested technology offers robust and efficient wastewater treatment.
- Low running costs.
- Odour-free. Tested and fully approved in accordance with BSEN13725.
- Simple Motor Drive – Minimal System Maintenance.
- Noise free.
- Fully removable lid for easy desludging.
- Fully packaged system, delivered direct to site.
- 100% compliance with industry requirements across commercial sectors- including international regulations such as BS EN12255 and EN 12566-3 (up to 50 EP).
- Customised technical support offered from our in-house technical teams.
- Full range of effluent disinfection systems available.
- Domestic version tested and passed requirement for AS1546.3:2017.
- Solar power option available
- Modular design allows systems up to 3000 EP

Applications

The BioDisc® BE-BN range is suitable for a range of applications including:

- Leisure
- Public
- Hospitality
- Domestic
- Transport
- Offices
- Mine and Site Accommodation
- Agricultural

Key Safety Features

- Low profile lockable covers
- Fully removable covers simplify desludging without the need for restricted access provision – a requirement of the Safe Work Australia Confined Spaces Code of Practice
- Platform Access to major mechanical components
- Secure lockable control panel
- Integrated loss of rotation alarm

Low Energy Motor Drive

Plants are supplied with either a single phase or three phase direct-drive motor. The control panel features an included inversion device (BE-BN models only) which converts single phase power to three phase. The BioDisc® is the most energy efficient Commercial Wastewater Treatment Plant in its class.

Twin Bearing

By supporting the rotor at each end, the load and wear on the shaft and bearings is reduced. Each shaft also features long-life bearings with automatic grease capsules requiring annual replacement.

Rotor Design

The new Kingspan range includes the well-established Kingspan rotor design which is compact, structurally sound and built for long life. The flow is managed through the plant. It reduces the need for maintenance associated with sectional bolted assemblies.

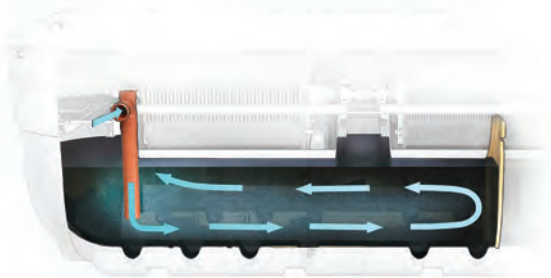
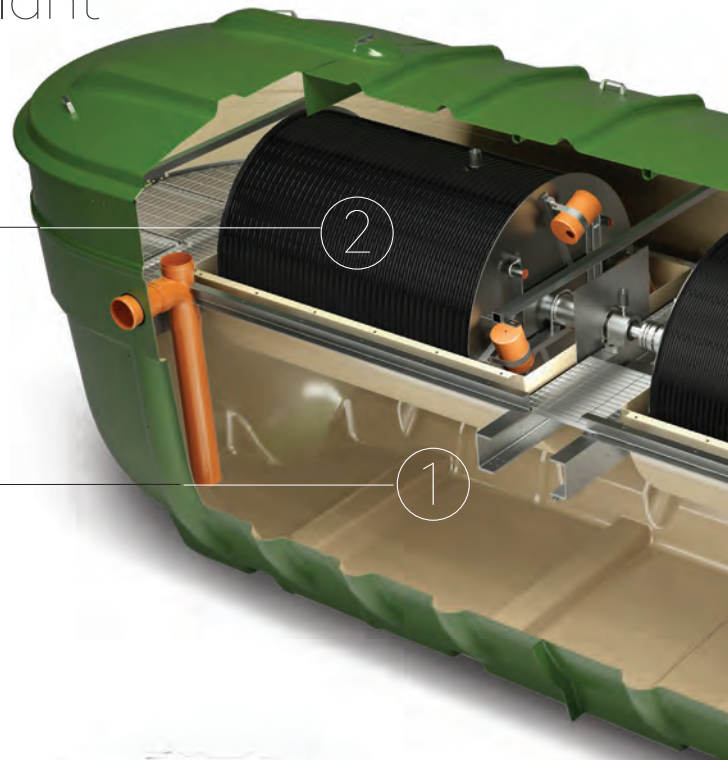
Monocoque Casing

All BioDisc® casings provide: lightweight, structurally strong GRP construction; integrated steel cradle providing a stable component platform; pre-engineered quality for exceptional performance and elimination of onsite assembly; full length ports for easy desludging; various invert depths, with only 150mm head loss; variable desludging cycles.

BioDisc® Commercial Wastewater Treatment Plant

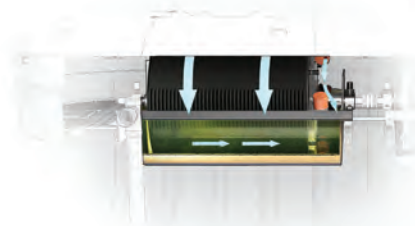
First Stage
Biological Treatment

Primary
Settlement Chamber



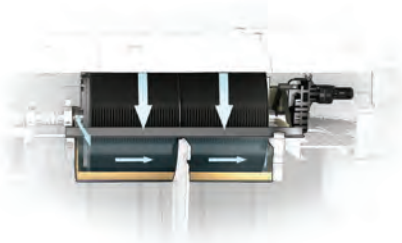
① Primary Settlement Chamber

Wastewater and sewage flows into the Primary Settlement Chamber where the large solids are retained for future removal. Liquid level in the Primary Settlement Chamber is allowed to fluctuate to absorb incoming flow surges.



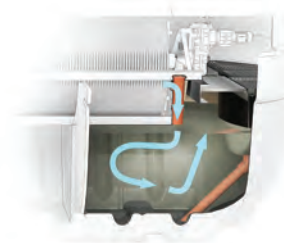
② First Stage Biological Treatment

The liquor and fine solids then flow into Biological Treatment Zone 1 where the first stage of treatment occurs. Unique managed flow system ensures peak performance by smoothing variable loads.



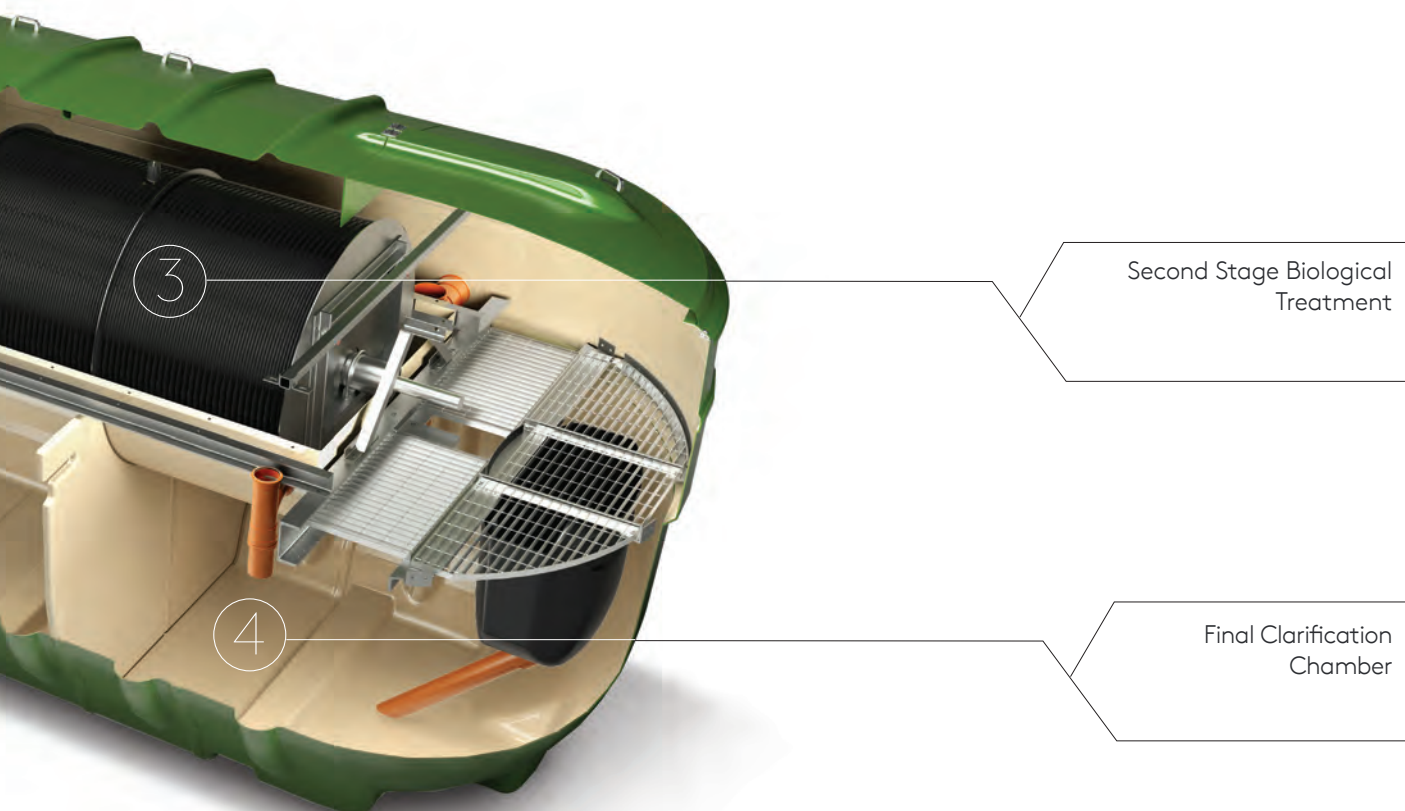
③ Second Stage Biological Treatment

The liquor is then fed forward at a controlled rate into Biological Treatment Zone 2 for further cleaning. This process ensures the whole media area available is utilised ensuring maximum efficiency.



④ Final Clarification Chamber

The surplus micro-organisms continuously slough off the discs and are carried forward to the final settlement where they settle out as a humus sludge, leaving a clear treated effluent to be discharged to the effluent distribution system. The settled humus sludge is returned to the Primary Settlement Chamber by the sludge return pump under timer control. The sludge return pump also removes any floating scum which helps to keep the final Clarification Chamber working efficiently.



Technical Specifications

Unit Reference	BE	BF	BG	BH	BJ	BK	BL	BM	BN
Population Equivalent (Std Flow)	35	50	70	75	100	125	150	225	300
Maximum Daily BOD (kg)	2.1	3	4.2	4.5	6	7.5	9	13.5	18
Maximum Daily Flow (m³)	7	10	14	15	20	25	30	45	60
Ø/Width (mm)	2450	2450	2450	2450	2450	2450	2450	2450	2450
Length (mm)	3340	4345	5235	7755	7755	7755	7755	10420	13100
Inlet Invert depth (mm)	600/1100	600/1100	600/1100	600/1000	600/1000	600/1000	600/1000	600/1000	600/1000
Depth Below Inlet Invert (mm)	1820	1820	1820	1790	1790	1790	1790	1790	1790
Outlet Invert Depth (mm)	1735	1720	1720	1640	1640	1640	1640	1640	1640
Overall Height (mm)	2825/3325	2825/3325	2825/3325	2830/3230	2830/3230	2830/3230	2830/3230	2830/3230	2830/3230
Height to Rim of Cover (mm)	2485/2985	2485/2985	2485/2985	2490/2890	2490/2890	2490/2890	2490/2890	2490/2890	2490/2890
Empty Weight (kg)	1200/1300	1315/1465	1660/1810	3000/3020	3100/3120	3200/3220	3300/3320	4200/4250	5500/5650
Standard Power Supply	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase
Optional Power Supply	3 phase	3 phase	3 phase	3 phase	3 phase	3 phase	3 phase	3 phase	3 phase
Motor Rating - 1/3 phase (watts)	180	250	250	370	370	370	370	550	2 x 370
Full Load Current 1 Phase (amps)	1.1	1.3	1.57	1.95	1.95	2.35	2.35	2.6	2 x 2.35
Full Load Current 3 Phase (amps)	0.35	0.42	0.63	0.68	0.88	1.35	1.35	1.5	2 x 2.35
Sludge Return Pump Rating watts)	-250	250	250	250	250	250	250	250	250
Electrical Power Consumption (Units/year)	1935.23	2609.75	2609.75	3812.82	3812.82	3812.82	3812.82	5547.3	7378.14

The Flows and Loads in the table are based on domestic applications and commercial projects should be discussed with your Kingspan sales or technical representative prior to purchase.

Modular systems are available to provide up to 3000EP

Case Studies



Suttor, Queensland

Application: Mine Site Accommodation

Project Partners: Commercial Plumber

Project: To serve a new 300-person accommodation camp, the client required a Twin BM BioDisc® Wastewater Treatment Plant. The treated final effluent is pumped to an above ground irrigation system on-site, following final disinfection.



Southern Downs Region, Queensland

Application: Aged Care Home

Project Partners: Hydraulic Consultant and Commercial Plumber

Project: Part of the major restructure of the aged care home, a BM BioDisc® Wastewater Treatment Plant was supplied to replace the current network of outdated septic tanks. As a result, the quality of the discharged effluent was improved greatly.



Western Sydney Airport, NSW

Application: Site Management Office & Visitor Centre

Project Partners: Hydraulic Consultant, Main Contractor and Commercial Plumbing Contractor

Project: A NJ BioDisc® Wastewater Treatment Plant was installed to serve the toilet and kitchen waste facilities from the Project Management Office and Public Visitor Centre, constructed to serve the construction of the new Western Sydney Airport. The treated effluent from the BioDisc® is further treated to Class A standard and is used to flush the toilets on site. The balance of treated effluent is used to irrigate the extensive planted areas on-site.



Somerset Dam, Queensland

Application: Rural Campsite

Project Partners: Specialist Wastewater Consultant and Commercial Plumber

Project: A BF BioDisc® Wastewater Treatment Plant replaced the current ineffective septic system serving the toilet and shower facility for this popular camp site on the banks of the wonderful Somerset Dam. High effluent quality was a priority, given the site's proximity to the dam.



Yallingup WA

Application: Hotel & Holiday Apartments

Project Partners: Specialist Wastewater Contractor

Project: A replacement for the current antiquated septic tank system was required by the client. The shared drainage was split to provide each building with a new BL BioDisc® Wastewater Treatment Plant and irrigation system.

Given the type of project, noise was a key concern for the client. The direct drive motor system from the BioDisc® offers noise free operation, one of the many reasons the solution was chosen over alternatives.

Other Products Available From Kingspan Water & Energy



Rhino Commercial Tanks



Rhino Rural Tanks

Our Australian made Rhino tanks are available from 26,000 to 2.3 million litres. Built tough in ZINCALUME® steel or in the full range of genuine COLORBOND®.



TruckMaster® Portable Diesel Storage & Dispensing

The TruckMaster range has been specifically designed for the safe transportation of diesel fuel. This robust, portable solution offers users the ultimate convenience by allowing them to refuel remotely on-site.



Made to Measure AQUAPLATE® Steel Water Tanks

Our Made to Measure water tanks are made in Australia and can be customised to suit your design, space and sustainability needs. Available in four different shapes where capacities range from 600L to 29,000L.

OUR LOCATIONS

SYDNEY

3 Herbert Place
Smithfield NSW 2164

Deniliquin Warehouse/Depot
Lot 2 Wakool Road
Deniliquin NSW 2710

MELBOURNE

55 Ricky Way
Epping VIC 3076

BRISBANE

Unit 2/59 Link Drive
Yatala QLD 4207

PERTH

54 Collopy Road
Hazelmere WA 6105

1300 736 562

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We take every care to ensure that the information in this document is accurate at the point of publication, but with continuous product development, details are subject to alteration without notice.

05/2021

