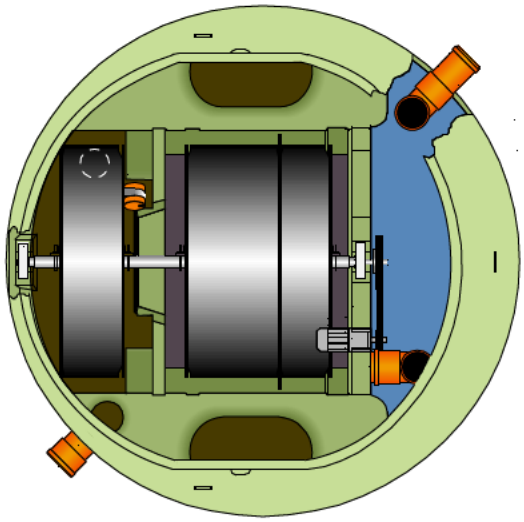
PD0093 Issue 18 August 2005

OWNERS HANDBOOK



MANAGED FLOW
BIODISC®
BA BB BC NB NC

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BioDisc is the registered trademark of Klargester Environmental

HEALTH AND SAFETY

These warnings are provided in the interest of safety. You must read them carefully before installing or using the equipment.

It is important that this document is retained with the equipment for future reference. Should the equipment be transferred to a new owner, always ensure that all relevant documents are supplied in order that the new owner can be acquainted with the functioning of the equipment and the relevant warnings.

Installation should only be carried out by a suitably experienced contractor, following the guidelines supplied with the equipment.

We recommend the use of a dust mask and gloves when cutting GRP components.

A qualified electrician should carry out electrical work.

Sewage and sewage effluent can carry micro-organisms harmful to human health. Any person carrying out maintenance on the equipment should wear suitable protective clothing, including gloves. Good hygiene practice should also be observed.

Covers must be kept locked.

Observe all hazard labels and take appropriate action to avoid exposure to the risks indicated.

The correct ongoing maintenance is essential for the proper operation of the equipment. Service contracts are available and recommended. Please contact Klargester for details of your local service provider.

Should you wish to inspect the operation of the equipment, please observe all necessary precautions, including those listed below, which apply to maintenance procedures.

BioDisc units contain rotating machinery and associated drive belts.

Ensure that you are familiar with the safe working areas and accesses.

Ensure that the working area is adequately lit.

The power supply to the equipment must be isolated at the control panel(s) before lifting the covers. Where a specific maintenance procedure requires the equipment to be running with the covers off, all care must be taken to avoid contact with moving parts and electrical components or conductors. Drive guards must be replaced and secured if removed during maintenance.

Once power has been isolated, the control panel must be kept locked shut to avoid accidental re-connection whilst work or inspection is being carried out.

Use only the designated access walkways. Do not walk on the cover or deep well safety mesh(es).

Take care to maintain correct posture, particularly when lifting. Use appropriate lifting equipment when necessary. Keep proper footing and balance at all times. Avoid any sharp edges.

Desludging should be carried out by a licensed waste disposal contractor holding the relevant permits to transport and dispose of sewage sludge. The contractor must refer to the desludge instructions in this Handbook, a copy of the instructions are fastened under the covers.

There are separate installation guidelines available to provide full instructions for installations.

DECLARATION OF CONFORMITY	
Description of Machine Model	B Range BioDisc Sewage Treatment Plant
Serial Number (see cover label)	.....
Year of Manufacture	.....
Name of Manufacturer	Klargester Environmental, College Road North, Aston Clinton, Aylesbury, Bucks, HP22 5EW.
EUROPEAN DIRECTIVES:	Machinery Directive 89/392/EEC Low Voltage Directive 73/23/EEC Electromagnetic Compatible Directive 89/336/EEC
We declare that the equipment covered in this manual conforms with the essential Health and Safety requirements.	
[redacted] PRODUCT MANAGER WASTE WATER 1 JUNE 1997	

CE

LLOYD'S REGISTER QUALITY ASSURANCE · ISO9002

Klargester Treatment Systems

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Wiring Diagrams

These are included in the BioDisc® Installation Instructions, supplied with the unit. A copy of the standard single phase BA/BB wiring diagram (510100) is provided at the back of this Handbook.

INTRODUCTION

Thank you for choosing a Klargester product. This manual will help you to keep it operating efficiently over a long service life. Please read this manual thoroughly, preferably before installation.

This manual should be referred to by:

The installer
The electrician
The commissioning engineer
The maintenance engineer
The desludge contractor
The owner/user

Service contracts are recommended. Details on request.

SECTION 1
TECHNICAL DATA

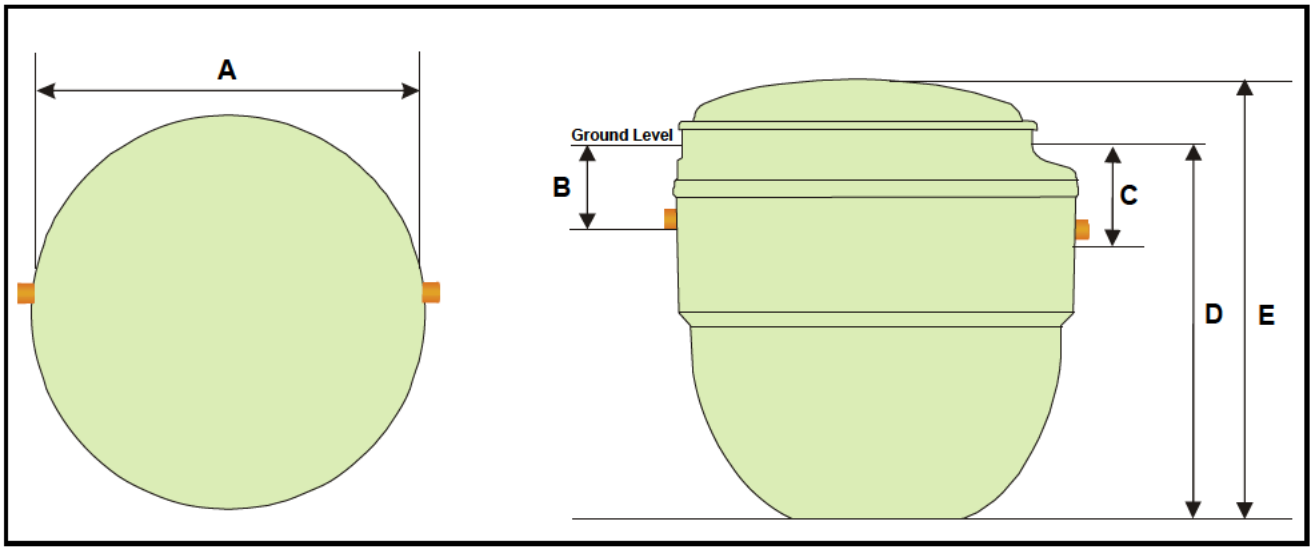


Fig. 1 General Dimensions

UNIT		BA/BB/NB			BC/NC	
Diameter A mm		1995			2450	
Inlet Invert depth B mm		450	750	1250	600	1100
Outlet Invert Depth C mm	Gravity discharge	535	835	1335	685	1185
	Pumped discharge	425	425	425	N/A	N/A
Depth Below Ground D mm		1850	2150	2650	2420	2920
O/A Height E mm		2160	2460	2960	2825	3325
Standard Power Supply		1 phase				
Optional Power Supply		3 phase				
Drive Motor Rating 1ph/3ph		60/60 watts			75/60 watts	
Sludge Return Pump Rating 1ph		480 watts (NB only)			480 watts (NC only)	
Integral Discharge Pump* Rating		480 watts (Not NB)			N/A	

*Optional

UNIT	BA	BB	BC
Maximum number of properties	1	2	Consult Klargester
Maximum Daily BOD kg	0.36	0.72	1.08
Maximum Daily Flow m^3	1.2	2.4	3.6
Peak Flow Rate * m^3/hr	0.15	0.3	0.45

(*) For ½ hour max. in any 2 hour period

All surface water must be excluded. These units should be used exclusively for the treatment of sewage from domestic properties. Contact Klargester if your sewage results, wholly or partly, from any commercial function.

In keeping with the Company policy of continuing research and development Klargester reserve the right to alter specifications and dimensions without notice

SECTION 2
DESCRIPTION AND PROCESS

1. Introduction

BioDisc systems are designed to accept crude domestic sewage and produce an effluent of suitable quality for discharge to a watercourse or soakaway system, subject to the approval of the appropriate regulatory authority. These BioDiscs are self-contained single piece units.

The main casing and cover of the BioDisc are constructed of Glass Reinforced Plastic (GRP). All steel parts are stainless, galvanised or surface coated to protect against corrosion. The discs are vacuum formed polyethylene.

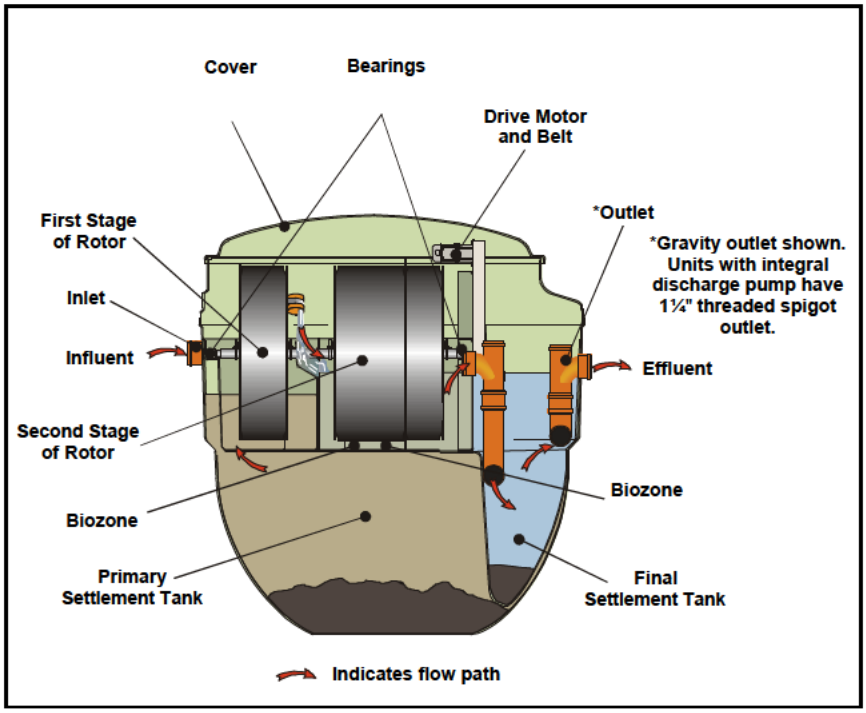


Fig. 2 - General Arrangement of BioDisc System

2. Primary Settlement Tank

Crude sewage enters the Primary Settlement Tank (PST), through an inlet pipe in the side of the BioDisc. Solids are settled out and retained for periodic desludging.

The PST is designed to have sufficient capacity to accept high flows over a short period and the patented Managed Flow System allows the liquid level to fluctuate to accommodate such surges.

3. Biozone

The Biozone contains the Rotor, which consists of corrugated polyethylene discs mounted on a horizontal shaft, supported by a bearing at each end. The rotor is slowly rotated by an electric motor and reduction gearbox with a belt drive.

A flat GRP walkway along either side of the Biozone contains a number of ports which give desludge access to the Primary Settlement Tank.

The surface of the discs becomes colonised by naturally occurring micro-organisms, which form a visible coating known as the Biomass. As the discs rotate, the Biomass is alternately submerged in the settled sewage and aerated by exposure to the atmosphere. Under these conditions the Biomass can efficiently break down the pollutants in the sewage.

The Biozone and discs are divided into two stages, separated by a fixed baffle. Settled sewage enters the first stage of the Biozone through a submerged transfer slot. The liquid level in this stage will fluctuate in the same way as in the PST and the bacteria are exposed both to the fluctuating liquid level and to fluctuations in sewage strength and concentration of domestic chemicals such as washing powders. One of the functions of this stage is to minimise the effect of such shock loads, which could otherwise inhibit the process.

The second stage of the Biozone is hydraulically sealed from the first stage and maintains a constant liquid level. Liquid is transferred from the first to the second stage, at a steady rate, by a series of buckets attached to the rotor. This controlled flow of effluent is at the heart of the patented Managed Flow System, which promotes healthy and balanced growth of the micro-organisms essential for efficient treatment.

Excess Biomass (also referred to as humus) sloughs off the surface of the discs and passes with the flow, to the Final Settlement Tank.

4. Final Settlement Tank

The Final Settlement Tank (FST) is situated under the drive motor and receives a steady flow of treated effluent from the Biozone. The humus settles out and is retained for periodic desludging.

In NB and NC units the settled humus is periodically returned to the Primary Settlement Tank, for co-settlement, by a timer controlled pump system.

Final treated effluent discharges from the FST through a dip pipe (excepting units with an Integral Discharge Pump).

5. Optional Integral Discharge Pump (BA/BB only)

The discharge pump sits within a moulded chamber, positioned in the Final Settlement Tank. Treated effluent flows into the chamber, by gravity from the FST. When the liquid in the chamber reaches a pre-determined level, a float switches on the pump which then pumps effluent out of the chamber. The same float also switches off the pump when the liquid level has been sufficiently lowered, thus protecting the pump from running dry. We do recommend when this option is purchased, that a high level alarm is also fitted to warn against pump mal-operation or failure.

6. Control Panel

The weatherproof control panel should be mounted adjacent to the BioDisc. All Klargester control panels are year 2000 compliant. Panel options are :

- Standard Control Panel: (and all panels) include a 3 amp circuit breaker which protects the installation wiring should there be an electrical problem within the BioDisc.
- Loss of Rotation Alarm Control Panel: This replaces the Standard Control Panel and also includes a Loss of Rotation (LOR) Alarm, which will activate if the rotor stops turning after a delay of 2-3 minutes (other than a failure in the power supply.) It has stop and run lights on the door, and where specified an optional alarm beacon on top. An additional remote slave beacon may also be fitted. The loss of rotation of the rotor is sensed by a reed switch mounted near the BioDisc motor in conjunction with a magnet attached to the rotor.
- Integral Discharge Pump Panel also includes an isolation switch for the discharge pump.
- Nitrification Unit Panels contain a timer and relay to control the operation of the sludge return pump and current overload protection for the pump motor.

All units will restart following a power cut, unless there has been a power surge greater than the pre-set limit of 3 amps. See Section 5, paragraph 3.

7. Alarms

Optional independent alarms are available, suitable for placing in any indoor location, up to 100 metres from the BioDisc and would usually be connected to a power supply independent of the BioDisc. They have an audible alarm, with mute button and a warning light; some independent alarms are fitted with a flashing beacon.

- Independent Remote Loss of Rotation Alarm Panel: This is fitted in addition to the Standard Control Panel and gives warning if the rotor stops turning for any reason.
- Independent High level Alarm: This may be fitted to units with an Integral Discharge Pump and gives warning if the level in the FST rises abnormally, indicating a pump failure.

SECTION 3

INITIAL START UP PROCEDURE

1. Introduction

Every care is taken to ensure that all mechanical components are correctly fitted, adjusted and lubricated prior to leaving the factory. However, subsequent handling during transportation and installation may result in the movement of components and a subsequent need to re-adjust prior to starting the unit. Your installing contractor should have thoroughly checked the unit but if, on inspection, you consider that any components require adjustment, please contact Klargester. We do recommend you purchase a commissioning service from an approved engineer.

Once the unit has been installed it should be left filled with water. Please switch on the motor, following the procedure below and leave the unit running, even if there is no sewage being fed into the plant. **If the unit has been installed with no operational power supply, then remove the motor/gearbox unit and store it in a dry or heated environment until such time as the unit is ready for permanent operation. The**

motor gearbox unit and drive belt should then be replaced and tensioned by Klargester or an experienced contractor.

We recommend that the system should be commissioned. Please contact Klargester. Where an immediate start-up is necessary, the following basic procedures should be carried out. Ensure that all Health and Safety precautions are observed.

2. Water

Check that the BioDisc is full of water to the outlet level.

3. Electrical

Check that the power supply is connected to the control panel. Check that all electrical components and conductors are earthed.

4. BioDisc

Check that the BioDisc is in order, with no obvious damage or misalignment of parts. If any problems are discovered, contact Klargester.

Check that all electrical components: Drive Motor, Sludge Return Pump and LOR Alarm sensor, (where applicable) are connected to the Control Panel.

NB/NC units only: Check that the Sludge Return Timer in the BioDisc Control Panel is set correctly, as Indicated in the diagram



Fig. 3 - Pump Position

Units with optional discharge pump: Check that the pump float and associated pipework are positioned as shown and that the float can move freely.

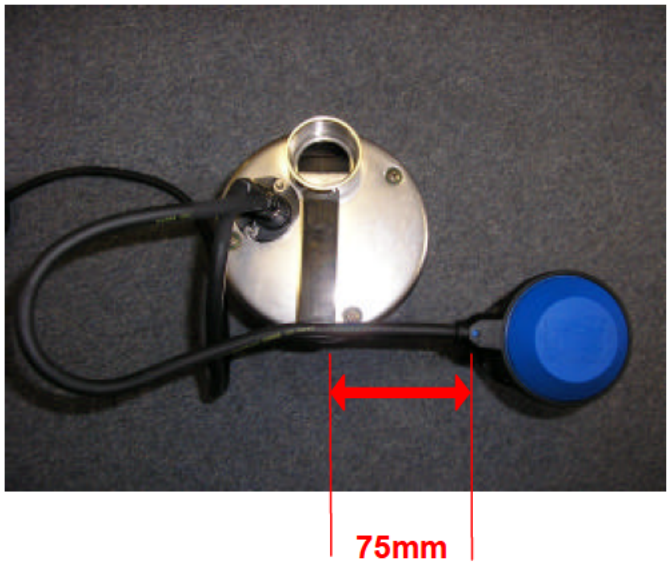


Fig. 4 - Float Setting

The float cable length is pre-set during assembly to a dimension of 75mm. Check that this dimension has not been altered. If for any reason the cable becomes disconnected from the retaining clip it should be replaced so that there is 75mm of cable between the clip and the float.

Note: Setting less free cable will cause the pump to operate more frequently and may shorten its working life.

Important: With the pump chamber empty of water the float must hang clear of the chamber floor. The correct float position and distance is essential. The float must not be able to either trap or tangle, as this will prevent its correct operation. The float must not jam.

5. Switch On

Open the Panel. Put the isolating switch and/or circuit breaker(s) into the “on” position. Close and lock the panel. Note: If the unit is fitted with a sludge return pump, this will start immediately and will run for the pre-set period.

6. Running Checks

Check that the rotor is running smoothly in the correct direction of rotation and is not contacting any part of the fixed structure.

Check that the forward feed buckets are discharging correctly from the first to the second stage of the Biozone.

Units with optional Discharge pump: Once the rotor is turning, a flow through the FST and into the pump chamber will be generated. Check that the pump switches on at high level and off at low level.

Note: The pump switch-on level must be below the pump chamber inlet.

7. Optional Loss of Rotation Alarm

The alarm sensor (reed switch) is mounted adjacent to the motor/gearbox assembly. The sensor may be supplied out of position, to allow for possible minor rotor movement during transport. Check the sensor position and if necessary adjust to provide a gap of 5 - 10 mm between the sensor and the actuator magnet.

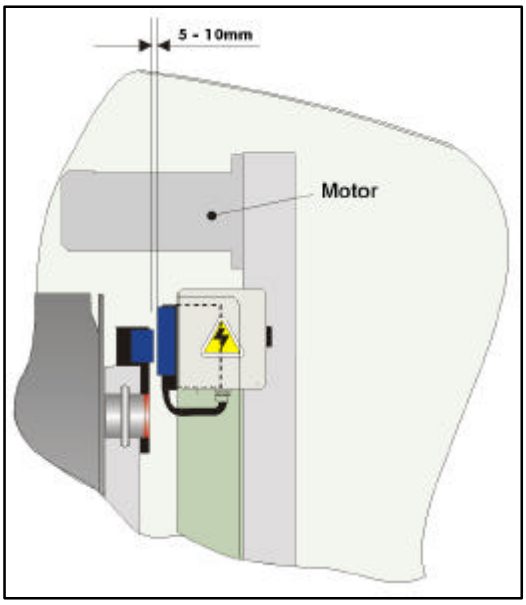


Fig. 5 - Alarm Sensor Adjustment
(position may vary)

Check operation of the Loss of Rotation (LOR) Alarm as follows:

a) Open the Control Panel and isolate the drive motor whilst maintaining power supply to the alarm circuit. For units with a combined Alarm Control Panel this can be done either by removing the motor fuse or by operating the motor overload trip (refer to wiring diagram). Where a remote independent alarm is fitted, simply isolate power supply at the BioDisc control panel. After a delay of 2-3 minutes the alarm should activate.
b) Push the reset button on the front of the Panel. The alarm beacon or sounder should cease and the red indicator light on the panel front should remain illuminated.
c) Re-connect power to the drive motor and close the Control Panel. The alarm should cease after approximately one minute.
d) Depress and release the “Beacon Off” button to reset it.

Malfunctioning of the LOR Alarm does not prevent operation of the BioDisc System, but it should be reported to your maintenance engineer for early rectification.

8. Process Initiation

During installation, the unit will have been filled with water. Allow sewage to enter the unit, this will gradually displace the clean water used during installation.

Colonisation by micro-organisms will commence naturally and an operating biomass will develop on the discs after approx. 3-6 weeks, depending on individual site conditions and season.

SECTION 4

OPERATION

1. Introduction

The biological treatment process of your BioDisc is self regulating and it requires no specialised operational knowledge, but it is important that you are aware of the following:

Your BioDisc system uses colonies of live natural micro-organisms (biomass), to break down the pollutants in the sewage. Many chemicals used in households and commercial establishments can inhibit or kill these micro-organisms; particularly if used in excessive amounts.

Bear in mind that treatment plants serving small populations do not have the benefit of dilution that occurs at a large sewage works. A bottle of bleach tipped down the toilet in Birmingham would be virtually lost amongst the millions of gallons of sewage arriving at the city's treatment works; a bottle of bleach in a plant serving one or two houses could be a lethal dose for the biomass.

If the biomass is damaged, it will usually recover in time. But in the meanwhile one of the more obvious symptoms may be an unpleasant smell, so it is in the operators interest to avoid this.

Generally speaking all common household cleaning fluids are acceptable, provided they are used in accordance with the makers instructions and stipulated concentrations. The following “Do’s and Don’ts“ includes the most common household chemicals, but it is not an exhaustive list and the golden rule is "If in doubt - leave it out."

Bear in mind too that it isn't only the toilet that is connected to the treatment plant; anything that goes down the sink, bath etc., also ends up there.

2. Do’s and Don’t’s

Washing machine and dishwasher detergents, washing up liquids:

These are generally all right to use in the normal concentrations and usage found in domestic housing applications. Problems can occur if, for instance, you are washing the jerseys of the local rugby club's five teams!

BioDisc incorporates a unique flow management system which enhances its ability to handle shock loads of detergent waste, but there are limits even to this, so if you have to do unusual amounts of clothes washing it would be a good idea to spread it over a few days.

Excessive use of Biological washing powders can cause degradation of the biomass. Non-biological detergents, without enzymes, may be substituted.

Floor cleaners, disinfectants and bleaches:

These are safe to use in accordance with the makers recommendations and in the minimum necessary concentration. Do not pour neat disinfectant or bleach down sinks or outside gullies. If these are smelly it usually indicates a build up of decaying material or a plumbing problem and should be dealt with accordingly.

Nappy disinfectants and bottle sterilising fluids e.g. Milton

When disposing of the used fluid, ensure that it is well diluted with water. The easiest way of doing this is usually to flush it away down the toilet.

Waste disposal units:

These do not inhibit the biomass, but, depending on use, they can present the treatment plant with considerable extra load. This can result in the treatment process becoming unbalanced, leading to problems. Much better to compost your vegetable peelings etc - it's cheaper and environmentally friendly.

Home beer and wine making.

This presents a similar problem to waste disposal units. The BioDisc has to work as hard to treat one pint of beer tipped down the drain as it does to treat all the normal waste produced by one person in 24 hours. See also the notes above regarding sterilising fluids.

THE FOLLOWING MUST NOT BE DISCHARGED INTO THE DRAINS

Motor oil, grease, anti-freeze, brake fluid etc.

Cooking oil and fat.

Weed-killers, insecticides, fungicides and other gardening chemicals.

Paint, thinners, white spirit, turpentine, creosote etc.

Chemical drain cleaners.

Acid based brick/stone floor cleaners.

Medicines

Take unused medicines to a pharmacist for safe disposal.

Photographic developing fluids.

Nappies, sanitary towels, rags, soft toys, tennis balls etc.

This may seem obvious, but it is amazing what gets flushed down the loo from time to time. Although such items are not directly damaging to the biomass they can cause problems, not the least of which is simple blockage of the drains.

Even so-called disposable nappies and sanitary towels often do not degrade fully in the treatment plant and can lead to malfunction, so it is best to dispose of them by other means.

3. Desludging and Maintenance

These are vital to the plant's ongoing operation and should be carried out in accordance with the guidelines in the maintenance section of this manual.

Maintenance contracts are available. Please contact Klargester for your local service provider.

SECTION 5

MAINTENANCE

1. Introduction

Klargester BioDisc units are designed and engineered for the minimum possible maintenance requirements, consistent with proper performance. Nevertheless, it is important that routine preventive electro/mechanical maintenance and de-sludging are carried out at the appropriate intervals by suitably qualified persons.

Please contact Klargester for your local service provider.

2. Customer Checks

As a back-up to routine servicing and to assist trouble-free operation, we recommend that you familiarise yourself with the operation of your BioDisc and make the following checks from time to time: (Refer to Fig. 6 for positions of parts mentioned.)

Your attention is specifically drawn to the Health and Safety section of this manual.

- Review the appearance of the Biomass. It may be light grey to grey at the first bank, gradually changing to brown in the second stage and dark brown at the drive end of the rotor. If the growth is excessively thick and the colour predominantly grey throughout, an overload condition is indicated.
- Visually check the general condition of the BioDisc.
- Check that the inlet and outlet pipes (C) are clear. Remove any debris if necessary.
- Check that the dosing bucket(s) (D) are transferring liquid consistently from the first to second biozone section.
- Units with an Integral Discharge Pump: Check that the pump float can move freely and switches the pump on and off as the level in the pump chamber rises and falls. If a high level alarm is fitted check that the alarm float can move freely.
- Units with Loss of Rotation Warning Device: Check for correct operation (see Initial Start Up Section).
- Familiarise yourself with the normal operating sound of your BioDisc. Report any unusual noises to your maintenance engineer.

If any malfunction is discovered, contact your maintenance engineer.

3. Failure of Power Supply or of Discharge Pump

BioDiscs with gravity discharge: In the event of a power failure, flow through the BioDisc will continue by gravity, although the quality of the discharge will gradually deteriorate. When power is re-established, check that the rotor has re-started and is turning correctly (see Section 3.0 paragraphs (5) and (6)). If the BioDisc has not been working for some time, the rotor may become unbalanced. This can cause the rotor to turn unevenly or prevent the unit restarting. In the event of any difficulties, contact your local service provider.

4 Low Voltage Power Supply

Motors may burn out if this condition is experienced. Consult electrician.

IMPORTANT - READ THIS. TAKE IMMEDIATE ACTION IF A PROBLEM ARISES

BioDiscs with pumped discharge (Integral or external pumps): During power cuts, or in the event of pump failure, the level of sewage in the BioDisc will rise and if unchecked will lead to overflowing and/or possible damage to the motor/gearbox. At normal flow rates, sewage will reach the level of the motor in about 40 hours (6 people) or 20 hours (12 people). If pump operation cannot be re-established within this time the sewage level in the BioDisc must be carefully monitored and incoming flow restricted. If necessary the BioDisc should be emptied by a licensed waste contractor to avoid sewage overflowing the internal baffles or damaging the motor. **Do not allow the motor/gearbox to come into contact with sewage.**

When normal operation is resumed, check for solids in the Biozone and FST and de-sludge if necessary. Check rotor rotation as above.

4. Sludge Removal from BioDiscs BA, BB, NB, BC AND NC.

Refer to the illustration below for recommended desludge positions.
(Note: Illustration is typical; individual units may vary).

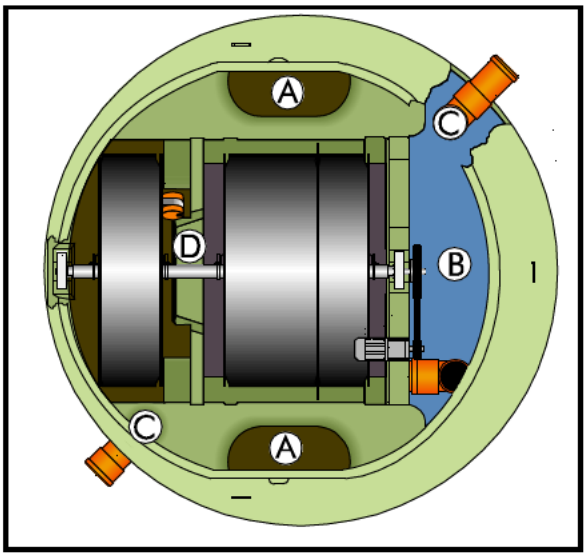


Fig. 6 - Desludge Positions

a) Isolate power to the BioDisc.

b) Undo the BioDisc cover latches and remove the cover. Hinged covers should be folded before removal.

c) Remove surface scum and about half the contents of the Primary Settlement Tank through the desludge ports [A] on either side of the rotor. Use the ports alternately. If port covers are fitted, keep the port not in use covered.

d) Empty the Final Settlement Tank [B]. **DO NOT** attempt to remove liquid from the discharge pump chamber (if fitted).

e) Remove remaining matter from the Primary Settlement tank.

f) **DO NOT** attempt to remove any liquid from the rotor section.

g) **DO NOT** attempt to clean off the gelatinous biomass growth on the rotor.

h) Ensure that the BioDisc inlet and outlet pipes [C] and the forward feed buckets [D] are free of debris. Ensure that the desludge port covers, if fitted, are replaced, then close and lock the BioDisc covers.

i) Re-connect the power supply. Ensure that the control panel door is locked shut.

j) Units with Loss of Rotation Alarms only: Wait for two minutes. If the alarm on the control panel does not activate, this indicates that the rotor has successfully re-started. If the alarm activates, switch off the power at the control panel and immediately switch on again. If the alarm continues to activate, isolate the power supply and notify the plant owner so that the problem can be investigated.

5. Desludge Volumes

Model	BA	BB/NB	BC/NC
Primary Settlement Tank	2200 litres (485 galls)	2200 litres (485 galls)	4580 litres (1009 galls)
Final Settlement Tank	400 litres (88 galls)	400 litres (88 galls)	850 litres (187 galls)
Desludge Period	12 months Maximum	6 months Maximum	7 months Maximum
You should not exceed the maximum desludge periods given above.			

TROUBLE SHOOTING GUIDE FOR BIODISC UNITS BA/BB/NB/BC/NC

SYMPTOM	CAUSE	ACTION
Strong odour	Excessive build up of sludge and scum	Desludge the unit.
	Grease (white/cream crust in primary tank and/or thick, smooth biomass[1])	De-sludge unit. If necessary hose off discs. Avoid excessive use of fats and oils. Please note removal of Biomass will reduce treatment until new Biomass establishes.
	Chemicals in the system (very sparse or no biomass[1])	In most instances, units will recover naturally from toxic inhibition events. Refer to section 4 of the Owners Handbook for general guidance on use of domestic chemicals.
	Excessive laundry use (thick, stringy whitish biomass[1] on first section)	Spread out laundry operations. Avoid biological powders where possible and use the minimum possible amounts of detergent. Refer to section 4.
	Unit overloaded (thick/grey biomass[1]) over most of rotor	Check section 1 of the Owners Handbook for the process capability of the unit. If in doubt, contact Klargester.
	Rotor stopped	See rotor stopped section below.
	Drains inadequately ventilated	Check that there is an open high level vent at the head of the drains (not “Durgo” valve or tile vent).
Rotor stopped	Switched off	Check that the motor switch on the panel is in the “on” position. Re-set if necessary.
	Power failure	Check the fuse/trip at the supply board. Replace/re-set as necessary. If the problem persists, contact Klargester.
	Wiring fault	Have the wiring to control panel checked by a competent electrician. If the supply wiring is OK contact Klargester.
	Drive belt broken	Contact Klargester.
	Drive motor faulty	Contact Klargester.
	Loose pulleys on rotor or gearbox output shaft	Contact Klargester.
Rotor fails to re-start after a stoppage	Rotor unbalanced	Hose off excess Biomass on the heavy side of the rotor. Note removal reduces treatment.
Rotor turns intermittently	Drive motor overheating	Contact Klargester.
Effluent discharge not to required standard	See strong odour and rotor stopped sections.	
	Managed flow system in-operative.	Check that bucket(s) are in place and discharging correctly into the biozone second stage.
	Sludge return pump inoperative (NB/NC only)	Contact Klargester.
Unit flooded (units with integral discharge pump)	Discharge pump not working.	Check that the pump switch on the panel is in the “on” position. Re-set if necessary. Check that pump control float is clear of obstructions and set at the correct length If the problem persists consider emptying unit to protect motor and gearbox and contact Klargester or service provider. (See Section 5).

1. Refer to Section 5 of this manual for guidance on the appearance of a healthy Biomass.

SPECIFICATION	PART No.	REF
* ENCLOSURE	80200001	
* KEY LOCK	80200041	
* MCB 3A 2 POLE	32100121	F1
* 5 MTRS 20mm FLEXIBLE CONDUIT	70300001	
* 2 – GLANDS FOR FLEXIBLE CONDUIT	70300011	
* 2 – 20mm LOCKNUTS	70300021	
* 2 – 20mm WASHER	70300031	
* 1 METRE GALVANIZED ANGLE IRON	92200001	
* 5.25 MTRS 4 CORE 1mm FLEX CABLE	72300001	
* CAPACITOR 3 uF	02400001	C1
* VINYL LABEL 'KLARGESTER'	K0033	
* VINYL LABEL 'DO NOT WALK ON COVER'	K0056	
* VINYL LABEL '230 VOLTS WARNING LABEL'	K0043	
* 2 – CABLE TIES	70500001	

PART No. E0180

ALL DIMENSIONS ARE IN MILLIMETRES – DO NOT SCALE

TITLE

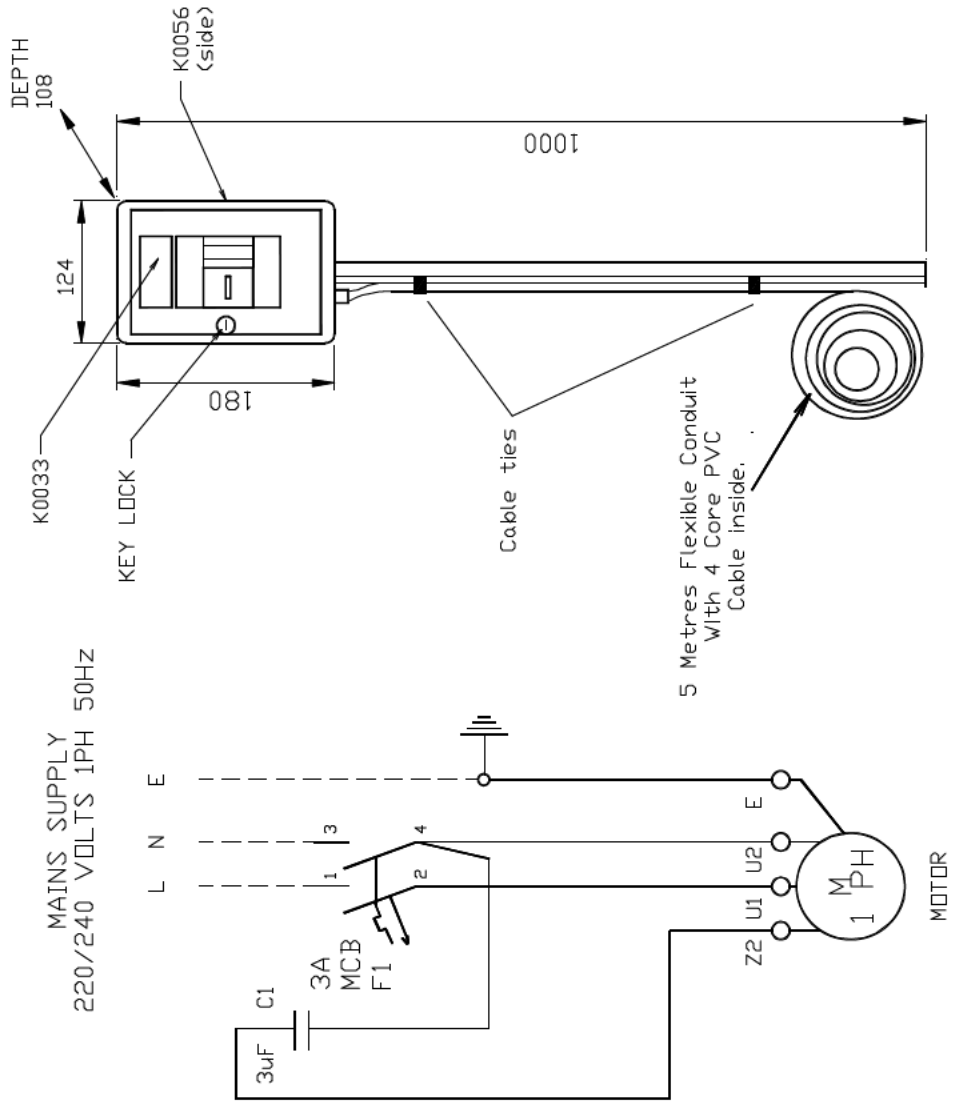
BA/BB BIODISC
1 PHASE
CONTROL PANEL

Klargester Treatment Systems

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SCALE 1:1 | SHEET SIZE A4

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3	02.06.03	A.L.	BORDER UPDATE
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1	01.07.01	M.P.C.	INITIAL ISSUE

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THIRD ANGLE PROJECTION