



This information is brought to you by
Owls Hall Environmental working in
partnership with Klargester products.



Excellent Treatment

0845 375 1801
www.ohel.co.uk

PD0064, Issue 1
March 1993

INSTALLATION INSTRUCTIONS

FOR

N3 to N5

NITRIFICATION BIODISCS

Introduction

Klargester BioDiscs are manufactured in Glass Fibre Reinforced Polyester (GRP). The finished products are light in weight, easy to transport and install. GRP is extremely robust, but can be susceptible to damage by sharp objects and from point loads. Care should be taken to avoid contact with sharp objects and point loads and the unit should be uniformly supported during transportation and installation.

Because of their light weight and large volume, there is a risk of buoyancy and movement during installation. The unit should be carefully strutted in position and ballasted with water in order to minimise these risks. On sites where the excavation is likely to be water logged the excavation must be kept free of water using suitable pumping equipment.

Klargester Environmental Engineering Limited will accept no liability for damage incurred through failure to comply with this procedure.

This document should be used in conjunction with the latest issue of the relevant General Arrangement drawing.

Site Planning

During the preliminary site planning stage ensure that an application for consent to discharge effluent has been approved by the National Rivers Authority (NRA). The ground conditions and water table should be examined, paying particular attention to soil porosity levels. A trial hole should be dug, if possible, in order to evaluate ground conditions. The siting of the BioDisc must not be prejudicial to the health of any person and should be within 30m of vehicle access for emptying without the contents being taken through a dwelling or place of work. Units should be positioned to comply with local regulations, normally 15 metres from habitable buildings. Plan the location of the control panel to be as near as possible to the unit to ensure that electrical isolation is possible before entry to the unit. Ensure that suitable equipment can be made available for lifting, excavating and, if necessary, pumping out. It is essential that free permanent access to the site is available for maintenance and desludging. If the unit is to be installed in acid soil, sulphate resisting concrete should be used. In very poor load bearing ground, the concrete surround may require reinforcement. Advice on these matters should be sought from the local building control officer.

Installation Procedure

CHECK: Drain invert depth and orientation of inlet and outlet drains. Relevant drawing and concrete specification SK296 are supplied with this document.

INSPECT: BioDisc for damage before installation.

DO NOT: Subject BioDisc to impact, contact with sharp edges or use metal chains, when lifting the unit.

1. The installation of any particular unit should be carried out in accordance with details shown on the relevant and current issue of the Klargest drawing. In particular, note the inlet and outlet pipe positions and levels relevant to ground level, the depth and size of the excavation.

2. Set out the excavation to size, in the correct position relevant to existing pipe positions. Allowance must be made for timbering or trench sheeting. When setting out the levels carefully note any slopes present on the site. The small fall between inlet and outlet inverts and the mechanical performance require that the unit must be installed level to within the tolerances shown on the relevant drawing.

3. Excavate the hole to the correct size and depth. For wet installations it will be necessary to dewater the excavation using suitable pumping equipment.

4. Lay a concrete base (sulphate resisting, if required) of suitable thickness to suit site conditions in accordance with concrete specification BS5328 (see drawing SK296) and level to the correct depth below drain invert. Reinforcement may be required for installations where a high water table is present.

5. Allow the concrete base to set.

6. Using webbing slings of suitable strength, lift the unit and lower onto the layer of wet concrete. Wedge the unit in position with timber wedges under the unit, set to the correct level and alignment of pipes. The level should be checked across the width and along the length of the unit, with a maximum tolerance of +/- 5 mm on all four corners. **It is essential that the unit is installed in a level plane - if the shaft is not level then undue stress will be exerted upon the bearing units.** Refer to the table below and use a theodolite and staff (measuring off the bearing caps) to ensure that the shaft is level to within the specified tolerances. Strut firmly with suitable timbers.

Unit	Tolerance on Bearing Cap Levels
N3	± 1.5mm
N4	± 1.5mm
N5	± 2mm

7. Begin to ballast the unit with water, starting with the Secondary Settlement tank and then the Primary. Backfill with concrete (sulphate resisting, if required) to invert level with a minimum thickness of 150mm. Raising the level of concrete in 200mm layers and tamping the concrete down between layers. Raise the water ballast level to keep pace with and slightly ahead of concrete backfilling.

N.B. Ensure that the levels of ballast water in the Primary Settlement tank, the Secondary Settlement tank and the Biozone casing are kept to within 100mm of each other. Refer to Fig. 1 for identification of the above items.

FIG. 1 KLARGESTER N3 to N5 BIODISCS - MAIN COMPONENTS

8. Carefully remove trench sheeting and strutting before the concrete fully sets and prevents their removal, ensuring that the unit's position is not moved during this operation.

9. Connect pipe work using a short length of pipe with flexible joints adjacent to the BioDisc to allow for any minor differential movement and lay cables into unit via a suitable duct, before backfilling up to final level as shown on relevant drawing.

10. Leave unit full of water on completion of installation. For wet installations dewatering should continue until the unit is full of water or the concrete has set.

11. Activate Greasomatic units (fitted to bearing caps) by screwing down the starter screws on the top of each unit.

12. Position the control panel close to the unit and set the legs in concrete, ensuring that protected cable can be fed into control panel via a suitable duct in concrete, if necessary. Wherever possible the LOR alarm cable should be laid in a separate duct to minimise interference between the power and alarm signal cables.

13. Using a competent electrician, connect control panel to motor and pump. Connect drive failure alarm, if fitted, and ensure that an effective and separate earth is used from the metal frame of the unit. Connect mains supply to control panel, making sure of an effective earth or, preferably, use an earth leakage circuit breaker protection device. Ensure all wiring complies with IEE regulations. Refer to wiring diagram supplied with the control panel.

Note: The alarm unit, if fitted, should normally not be located more than 50 metres from the BioDisc unit. A unit for up to 200 metres can be supplied if required.

14. It is essential to take precautions to prevent damage by site traffic. Superimposed loads from vehicles, etc. should not be permitted within a distance equal to the depth of the excavation, unless suitable structural protection is provided. If necessary, a suitable protective fence should be erected to prevent vehicles from approaching too close to the unit.

15. In the event of any problems please contact Klargest Environmental Engineering Limited at the address below.

KLARGESTER ENVIRONMENTAL ENGINEERING LTD.,
Customer Services Department,
College Road,
Aston Clinton,
Aylesbury,
Bucks. HP22 5EW Tel: (0296) 630190