BIODIGESTER

Projects, Consultancy, Service

Burnham Environmental Services Limited

INSTALLATION INSTRUCTIONS

BIODIGESTER SEWAGE TREATMENT PLANTS MODELS 90-500

The following instructions are for guidance purposes and are submitted without obligation or prejudice. The contractor is responsible for the suitability of the installation method and all matters in relation to health and safety.

1. CHECK LEVELS

   Refer to the plant drawing. If invert levels have not already been established these should be checked and the depth of the treatment plant and access covers determined.

2. PEDESTRIAN DUTY ONLY

   Biodigester sewage treatment plants are only suitable for pedestrian loads and should be installed accordingly. (If site conditions require greater loads please consult Burnham Environmental Services prior to order).

3. CHECK FOR DAMAGE

   Check the treatment plant for any damage sustained in transit.

4. OFF-LOADING AND HANDLING

   Always off-load and handle the treatment plant with extreme care. Glassfibre systems gain their full strength once the concrete surround has hardened. Do not place the plant on uneven ground or sharp stones.

5. EXCAVATION

   Excavate a hole to a depth of 200mm below the base level of the treatment plant. Hole to be 300mm longer and 300mm wider than treatment plant. Ensure that the base of the hole is level.

6. HIGH WATER TABLE

   If there is evidence of a high water table the concrete will need to be re-inforced and the thickness increased. Details should be checked with a structural engineer.

27 Brightstowe Road Burnham-on-Sea Somerset TA8 2HW
Direct Dial: 01278 788161 or Tel: 01278 786104 Fax:01278 793380 Email: mark.newbery@biodigester.co.uk Website: www.biodigester.com
Director M O'B Newbery BA. Company Registration No.3226565 VAT Registration No.510766462

7. CONCRETE BASE

Using C25 grade concrete install a base 200mm in depth. Ensure the base is level. If necessary de-water the area until the base has set. If necessary protect against frost damage.

8. POSITION PLANT

Once the concrete base has hardened sufficiently use sand for blinding and carefully place the treatment plant on the base. Check the orientation of the inlet and outlet are correct and that the plant is level.

9. CONCRETE SURROUND

Refer to the plant drawing and surround the plant with C25 grade concrete as shown. The depth over the upper half of the plant should be 150mm. It is absolutely essential to ballast all chambers of the treatment plant with water at the same rate as concrete is placed around the outside. The difference in level between the water inside and the concrete outside should never be greater than 150mm. The concrete must be placed around the treatment plant with the utmost care, it is not permissible to use a vibrator or compactor. Once the concrete has hardened, backfill around the top of the plant using pea shingle or similar material. Cut off turrets at required level, use concrete with or without brickwork to position access covers and frames over the turrets.

10. PLASTIC MEDIA

Place the ETA plastic media supplied in the third aeration chamber containing diffusers and pipework.

11. BIODIGESTER 'BONUS' SLUDGE RETURN

Where a Biodigester 'Bonus' is being installed connect the sludge return pipe from the humus or final settling chamber to the manhole immediately upstream of the primary settlement or septic tank. The minimum internal diameter is 32mm so long as the tanks are close together.

12. BLOWER HOUSING AND CONTROLS

Construct concrete pad with ducts for power cables and air hose as appropriate. This concrete pad for the housing should be installed so as to minimise the length of the air hose.
Secure blower housing and feed air hose and sludge return pump power cable through ducts from the plant to the control housing. The duct is essential to protect the air hose from damage.
Connect the air hose once the direction of air flow has been checked.

13. ELECTRICITY SUPPLY

Connect the electricity supply to the connection point within the control panel. The electricity supply should be fitted with an isolator and RCD. Connect power supply for Sludge Return pump. Refer to data for each plant size to determine power requirement and consequently the number of cores and cable diameter.

14. TEST OPERATION

Check that all the taps on the diffusers within the Biodigester are in the open position. Check the direction of air flow before connecting the air hose. Connect hose with clips provided and check for substantial aeration throughout the submerged aerated filter. Re-tighten hose clips after a few minutes operation. Check for air leaks. Check operation of sludge return pump.

15. LOCK

Make sure the plant is kept locked.

16. PERFORMANCE BUILD UP

Once sewage is discharged into the plant, biomass will build up naturally on the high surface area of the ETA random pack media. Peak performance will be achieved after about 6 weeks. If necessary humus sludge from an operational sewage treatment plant may be introduced to speed up the process. Consult supplier for advice.

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