



# BIODIGESTER

sewage systems for the modern world

## INSTALLATION

### T6 - T36 Range - 6-36 persons

T6S1



T12S1



T18S1



T24S1



T30S1



T36S1



### Delivery

BIODIGESTERS are delivered with integrated lifting eyes are provided. Do not lift the plant if it contains water or sewage. *Inspect the plant for damage on arrival and before signing the delivery note. After this inspection Burnham Environmental Svcs. Ltd. will not be responsible for complaints of damage.*



All BIODIGESTERS are delivered complete with plastic media (shown left - to be emptied into the central chamber on commissioning), air blower and 10m of airline. Longer air lines are available upon request, up to 30m.

#### Air Blower type(s):

T6 Biodigester	1 x Secoh 80
T12 Biodigester	1 x Secoh 120
T18 Biodigester	1 x Secoh 200
T24 Biodigester	1 x Secoh 200
T30 Biodigester	1 x Secoh 200 and 1 x Secoh 120
T36 Biodigester	1 x Secoh 200 and 1 x Secoh 120

#### Pump (T6P/T12P/T18P):

Surumi electrical submersible pump (fitted internally), with dry-type submersible induction motor - see our website for full datasheet.



Secoh 80

### Storage

The unit should be stored in a condensation-free environment. Care should be taken to anchor the plant to prevent damage by high winds. The air blower should also be stored in dry condensation free surroundings.

#### BIODIGESTER codes explained

- T** denotes the type of the plant.
- 6** (or other number) denotes the capacity in terms of persons
- S** denotes that the effluent discharge flows through the plant by gravity
- P** denotes that a submersible pump is internally fitted to discharge the treated effluent (T6/T12/T18 only)
- 1** denotes that the inlet drain depth is at 600 mm. This is standard on our stock item
- 2** denotes that the inlet drain depth is at 900 mm
- 3** denotes that the inlet drain depth is at 1200 mm
- 4** denotes that the inlet drain depth is at 1500 mm (T6/T12/T18 only)

### Siting your BIODIGESTER

Building Regulations state that septic tanks should **no be sited less than 7m from the house**; however they state that the discharge of a sewage treatment plant should not be less than 10m from the house. There is a wide range of interpretation of this regulation by various building control officers. As most sewage treatment plants do not smell there is no reason they cannot be installed closer but this will depend upon the Building Control Officer - in normal circumstances the 7m rule applies.

Sewage Treatment Plants should not be installed under a driveway. If this is necessary, the lodes of any traffic should be spread away from the BIODIGESTER.

*As most road tankers used for emptying sewage systems have a suction hose of 50m maximum you must ensure that the plant is sited within this distance. Remember these are heavy trucks.*

Also remember that if the access point is higher than the plant they may have problems with suction - **the maximum height differential is about 5 meters.**

If you are dispersing the treated effluent via a soakaway you must have enough space and gradient to build this. If you don't have enough space down gradient you may be able to pump the effluent to another part of your land where there is enough space or gradient. If you are discharging to a pond or stream, make sure you position the outlet above the highest flood level; otherwise you may flood your BIODIGESTER.

### Health and Safety

*United Kingdom Health and Safety at Work Act 1974 requires BIODIGESTER LIMITED to inform our customers on all aspects of safety and handling that are to be observed whilst installing, operating and servicing our products.*

#### Your attention is drawn to the following:

All sections of this manual must be read before working on the equipment. Suitably experienced contractors must carry out the installation. Normal safety precautions must be taken and appropriate procedures observed to avoid accidents.

#### Health

When working with sewage it is important to wear protective clothing. It is the client's responsibility to ensure that appropriate clothing/equipment is available.

There is a major type of medical hazard that can be associated with dirty water: *Leptospirosis*. There are two types

- *Weils disease*. This is a serious infection transmitted to humans by contact with soil, water or sewage that has been contaminated with urine from infected rats.
- *Hardjo-leptospirosis*. This is transmitted from cattle to humans.

#### Symptoms:

Flu-like illness with persistent and severe headache, muscle pains and vomiting. Jaundice appears about the fourth day of illness. The disease enters the body through cuts and scratches and through the lining of the mouth, throat and eyes. If you contract the symptoms described after coming into contact with sewage, seek medical advice immediately.

#### Precautions:

- Wash all clothing and boots thoroughly after use.
- Thoroughly wash all exposed skin with soap and water.
- Immediately clean any cuts and apply antiseptic and protective cover.
- Do not handle food, drink or smoke without first washing your hands.

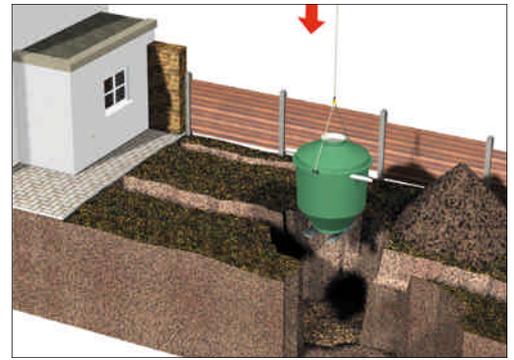
#### Safety

Sewage gases may be toxic and are potentially explosive. Do not enter any of the below ground compartments or manholes.

Before carrying out any maintenance work all equipment must be electrically isolated.

# Installation

The following instructions are submitted without obligation or prejudice. The installing contractor is responsible for the selection of the appropriate installation method.



Before you commence installation of the BIODIGESTER, you must establish the water table at the intended location. This must be the depth of the winter (peak) water table. Once you ascertain its depth, select one of the two methods of installation detailed below - "Wet Ground" or "Dry Ground".

If there is evidence of a high water table, at any time of year, it is essential to use the wet ground installation method. Please refer to the specific instructions contained in these notes. If in doubt details of your installation should be checked with a structural engineer or BES. Wet ground for the purposes of the installation of your Biodigester means that there is a possibility of the water

table rising above the level of the base of your plant. CHECK ALL LEVELS CAREFULLY BEFORE STARTING INSTALLATION.

## Excavation

Refer to specific installation diagram for the particular BIODIGESTER model and ground conditions. Excavate a hole to a depth of 200mm below the base level of the treatment plant. The hole is to have total dimensions 300mm greater than the dimensions of the BIODIGESTER. Ensure the base of the hole is level.

## Base

The BIODIGESTER must be positioned on a base of concrete to a minimum depth of 200mm. The unit must be placed in the wet concrete ensuring that the wet ground anchors are carefully worked into the concrete. Care must be taken to ensure that the concrete is supporting the entire exposed underside. In the case of a wet ground installation, the required amount of concrete, as specified in the appropriate datasheet, should then be used to cover the wet ground anchors.



## Positioning

Check orientation of inlet and outlet pipes. Check levels and depths and that the top of the plant is level. Connect inlet and outlet pipes.

## Dry Ground - Backfilling

Fill the Biodigester with water.

Backfill around the BIODIGESTER with '20mm to dust scalplings' to the required level. Alternatively any combination of concrete and scalplings can be used to backfill to the required level. It is not permissible to use a compactor or vibrator.

## Wet Ground - Backfilling

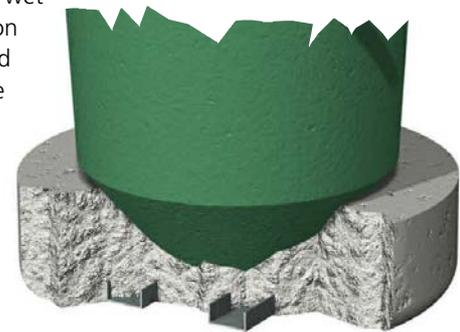
Fill the BIODIGESTER with water before commencing to ballast with concrete.

Concrete is to be poured to the required quantity for each size. Take care to ensure that the wet ground anchors under the Biodigester are covered by a minimum of 250mm. You have the option to continue to inlet invert level with concrete or to use '20mm to dust scalplings'. The wet ground anchors MUST be covered as on the specifications. It is not permissible to use a compactor or vibrator.



## Concrete required:

- T6 Biodigester minimum 3 m<sup>3</sup>
- T12 Biodigester minimum 4 m<sup>3</sup>
- T18 Biodigester minimum 5 m<sup>3</sup>
- T24 Biodigester minimum 10 m<sup>3</sup>
- T30 Biodigester minimum 12.5 m<sup>3</sup>
- T36 Biodigester minimum 15 m<sup>3</sup>



Refer to individual datasheets or contact us with any queries

# INSTALLATION

## T6 - T36 Range



### Sample chamber

Regulations state that a sample chamber is required when discharge is to be to a soakaway. A specific design is required

### Air Blower

The air blower is weather proof but should be protected from direct sunlight and flooding. The air blower may also be installed in an outbuilding provided there is adequate ventilation and it is within a suitable distance of the plant. Avoid unusually dusty locations.

The blower should be mounted on a concrete pad of at least 100mm thickness to prevent vibration and noise.

The air blower must be mounted at a level higher than

the Biodigester. Care must be taken to ensure that there is an continuous gradient between the blower and the tank, to ensure that in the event of sub zero temperatures, any condensation that may form does not freeze and block the air line. The air line should be ducted to the plant for ease of maintenance. If underground, the electrical supply must be armoured.

### Electrical Installation

The electrical supply to the air blower should have an RCD at source. A 3 core cable is required. Where it is underground it should be armoured. For the rating of each air blower, please refer to the information attached to these instructions. Remember the size of cable is also dependant on the distance required.

Where an effluent pumping station is incorporated or added, a separate power supply with a separate RCD is required. Four core rather than three core cable is required. If a high level alarm is to be included, a further separate supply and RCD are required using a five core cable.

### Commissioning

Ensure all taps are open and start the air blower.

There should be a vigorous circulation of air in the central chamber. Check that air is coming out of all diffusers.

### Electrical Ratings:

<b>T6 Ratings:</b>			
<b>Air Blower:</b>	240v	84w	Start current 0.47 amps
<b>Integral pump:</b>	240v	150w	Start current 2.9 amps
<b>T12 Ratings:</b>			
<b>Air Blower:</b>	240v	131w	Start current 0.76 amps
<b>Integral pump:</b>	240v	150w	Start current 2.9 amps
<b>T18 Ratings:</b>			
<b>Air Blower:</b>	240v	237w	Start current 1.21 amps
<b>Integral pump:</b>	240v	150w	Start current 2.9 amps
<b>T24 Ratings:</b>			
<b>Air Blower:</b>	240v	237w	Start current 1.21 amps
<b>T30 Ratings:</b>			
<b>Air Blowers: 1 at</b>	240v	131w	Start current 0.76 amps
<b>1 at</b>	240v	237w	Start current 1.21 amps
<b>T36 Ratings:</b>			
<b>Air Blowers: 1 at</b>	240v	131w	Start current 0.76 amps
<b>1 at</b>	240v	237w	Start current 1.21 amps

**Integral Pump Flow T6/T12/T18:**  
discharge fitting 32mm female thread BSP

150 litres/min max  
head: 5.2m max  
pipe size 32mm