Super TREAT SYSTEMS PTY LTD

SEWAGE TREATMENT SYSTEMS

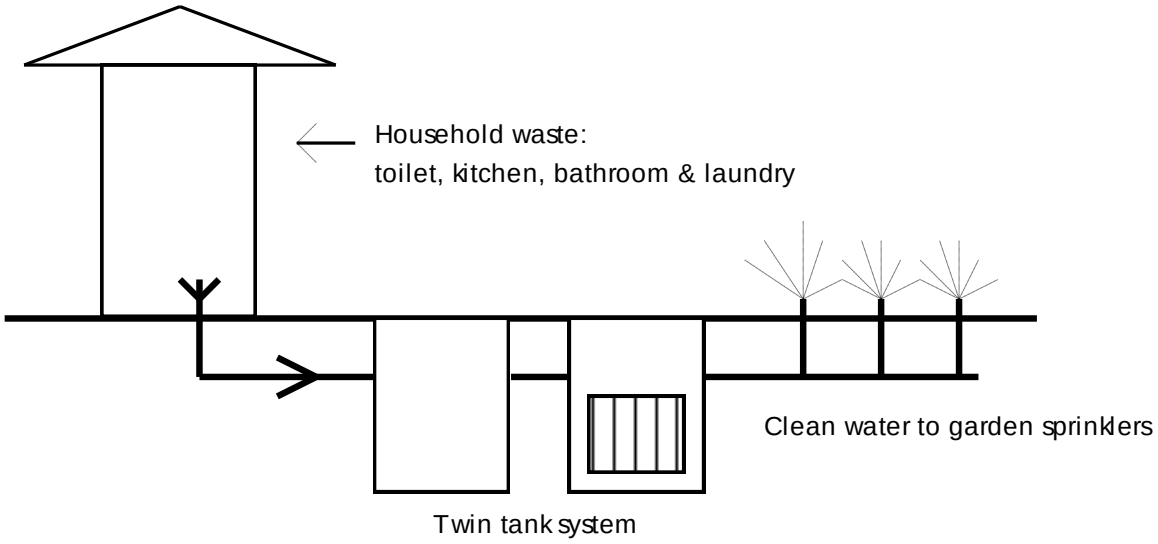
OWNERS OPERATION & MAINTENANCE MANUAL

Contents:

1. Introduction & Schematic Diagram

The Super-Treat system is a 10 person aerated wastewater treatment system designed to collect, treat, disinfect and irrigate up to 200 litres of wastewater per person per day.

Schematic Diagram.



2. Your Super-Treat System- How does it work?

- Your new Super-Treat Sewage Treatment System consists of two tanks. The first is a normal septic tank and the second is a special aeration tank which contains the treatment components.
- Wastes from all plumbing in the house receive 'primary' treatment in the septic tank before passing into the aeration tank for 'secondary' treatment.
- Before being sprayed out, the treated water is clarified and lightly disinfected.
- The water produced should have no smell and is safe for normal garden use.

3. The Septic Tank- What does it do?

- This is the first of the two tanks and is usually closest to the house.
- The septic tank breaks down and partially treats the wastes while retaining the solids. The resulting liquid, however, still contains high levels of unhealthy bacteria.
- An effective septic tank has a blanket on the surface and a sludge layer at the bottom with activity taking place in between.
- The tank may need to be partially emptied every few years to ensure it continues to work properly.

4. The Aeration Tank- What does it do?

- This is the second of the two tanks. It has a control box mounted on top which contains the power unit. Inside, wastes from the septic tank receive treatment in oxygen rich conditions, completing the cleansing process.
- From close by, you may hear a low hum and the sound of bubbling. This is the aeration system working. When the irrigation is spraying you may also hear the irrigation pump working.

- Your SuperTreat system is fitted with a sludge return component. Effluent entering the clarifier settles and collects excess activated sludge. As part of the Venturi system sludge is pumped to the primary tank inlet by compressed air. Attached to the top of this separation chamber is an air feed line which activates a pressure switch to give positive indication of aeration.
- Spray-out occurs automatically when the treated water reaches a preset level and continues for five minutes or so. Irrigation will be more frequent when showers are being used, a bath is being emptied or when the washing machine is operating.
- You may notice that the system stops running from time to time. This is quite normal. A built-in time clock is set to shut down for short periods during the day and night. These shut down periods are an essential part of the water treatment.

5. Alarms and Potential Problems

When the alarm goes off there is usually a problem with the pump. You may still flush the toilets but should keep water use to a minimum.

The system is supplied with an alarm plate which is usually located in the kitchen or laundry (or wherever convenient). It has a switch plate with a light.

The switch mechanism should be in the "on" (normal) position. If the alarm is tripped by any of the following:

- High water level
- Low air pressure or failed air supply
- False alarm (after a power failure the light may be activated)

The light will remain ON until the problem is fixed.

First you should check that the sprinklers are working or have worked recently, then you should proceed through the following list.

LOW AIR PRESSURE

Possible Cause	Remedy
Low Water Level (New Systems)	Turn on tap until system fills to normal working level

HIGH WATER

Possible Cause	Remedy

New system fill up before switched on	Level will eventually drop when power is switched on
Linked irrigation hose	Unkink hose
Blocked irrigation hose	Investigate and clear blockage- usually blocked sprays. Line may also need to be disconnected and flushed out.
Pump not working	Check that pump is plugged in and that there is power to the system. If unsuccessful contact agent.

EXCESSIVE FOAMING

Possible Cause	Remedy
Too many washes in a short period of time	Only do one or two washes per day
Use of excess or non recommended detergent	Reduce quantity used. Check recommended list.

ODOURS

Possible Cause	Remedy
Low pH	Where there is no dishwasher installed the pH can become low for proper purifying of the micro-organisms. Put one cup of agricultural lime (as used on roses) down the toilet each week for 4 weeks
Too much waster use	Avoid using the bath, shower, dishwasher and washing machine too close together
Possible Cause	**Remedy**
Septic Tank Zone inactive	All inactive septic tanks need treating or pumping out. This may become necessary when certain detergents or cleaners which are not favourable for micro organism growth, enter the system. The system can be restored by using "ACTIZYME" which boosts bacterial growth.

DO NOT USE any anti bacterial solutions (e.g. disinfectant, Handy Andy, Napisan, Toilet Duck etc)
DO NOT USE any bleaches (e.g. Domestos, White King, Glade etc)
DO NOT USE any toilet cleaners (e.g. Toilet Duck, Harpic, Ajax etc)

OTHER POTENTIAL PROBLEMS

Possible Cause	Remedy
Gurgling noise/odour from floor waste	S-Bend not sealed. Pour 10 litres of water down each floor waste
Joint between tank top and tank not properly sealed	Seal all exposed areas except inspection caps with sand and cement mix or silicone.
Water leaking from side of tank A) 50mm lifting holes not sealed by plumber/drainer	Seal with a putty made of cement and "SILASEC" available from most hardware stores.
B) 100mm inlet pipe has become dislodged.	Dig down to expose pipe to check and remedy. Usually caused by earth movement. May require plumber/drainer.

If your problem cannot be solved by any of these please call us on the number listed at the front of this manual.

6. Servicing Arrangements

It is a Council requirement that your Super-Treat Wastewater System is serviced on a quarterly basis. This will be carried out by our accredited service technicians.

A maintenance report will be completed by our technician at the time of service. A copy of this maintenance report will be emailed to yourself, your local council and a copy will be retained for our records.

Please call our office on the number listed at the front of this manual for the cost of servicing after the initial 12 month period. This amount will be charged to you in advance and is also G.S.T free. (GST is charged for labour and parts). This entitles you to quarterly services which will include:

1. A general inspection of tank area, irrigation and drainage.

2. Inspection of electrical equipment including timer, venturi, irrigation pump, aeration pump, warning lights and connections.

3. Inspection of holding well and septic tank including testing water sample, checking air lines, adjusting air supply (if necessary), operating de-sludging unit, resetting air control, operating submersible switch, checking bio-mass growth, checking sludge level.

4. Inspection of irrigation including lines, jets and outlets.

5. Replenish chlorine supply.

Between 3 - 9 years the tank will need to be de-sludged (pumped out) as with any septic tank. Cost of the de-sludging to the customer. Never pump out tanks in wet weather as floatation may occur. We do not do de-sludging but if you call us we can provide you with business contacts that specialise in this type of servicing.

7. General Do's and Don'ts

Don'ts

- Do not turn your system off
- Do not let cooking oils/fats be introduced to the system
- Do not use Bleach
- Do not allow items such as newspapers, napkins (sanitary or disposable), cotton buds, plastic bags, tampons or any sort of rubber product to enter the system.

Do's

- Call your service Agent when you encounter problems
- Scrape plates of all food before washing up.
- Only use gentle biodegradable products as listed previously.
- Try to avoid using showers, washing machines, dishwashers all at the same time.

8. Holiday Precautions

There are no precautions to take. Your Super-Treat System can be left to function automatically for up to three months. However if you are likely to be away from home for more than six weeks you may like to contact our office so we can make a routine check.

9. Council Requirements

- Now that your Super-Treat Wastewater System has been installed there are a few Council Regulations that must be adhered to.
- Irrigated water must not be allowed to run off onto other properties
- No fruit or vegetables grown on your property are to be irrigated with effluent from the system. The irrigated water is to be used only for irrigation purposes. It is not suitable for human or animal consumption.
- Use only sprinklers provided with the system for your waste water irrigation. The use of any others may result in confusion as to which is waste water and which is town or rainwater.
- The Council must approve that the area is turfed and landscaped to their standards.
- All storm water and seepage from higher levels should be diverted around the disposal area by a suitable drain.

10. Responsibility

As the owner of the system you are responsible for the correct operation and maintenance and to conform to Councils requirements.

11. Spreading of Hydraulic Loads

The Super-Treat System is designed to perform on premises under the following loads when the premises are occupied:

- A minimum flow of 150 litres / person/ day (Maximum of 2000 ltrs per system per day)
- BOD_5 and TSS of 70g/person/day on average (Maximum of 600g per day BOD_5)
- Nitrogen- 15grams/person/day on average
- Phosphorus- 2.5 grams/person/day on average

12. Suitable Plants for your Irrigation Area

If the natural topsoil is less than 150mm deep, it is recommended that the irrigation area be thoroughly dressed with river sand or wood chips to a depth of at least 200mm. This will greatly assist in retaining water with the area, allowing the plants to take up and transpire more efficiently.

- "Poorinda Royal Mantle" (Grevilla)

Prostrate x 6 metres. Full to partial sun. Tolerates frost but needs water in dry conditions. Dark red toothbrush type flowers in winter / spring.

- "Wiry Dog Rose" (Bauera Rubioides)

1-2 metres tall x 1-1.5 metres. Full, partial or no sun. Likes boggy conditions but is tolerant of most situations. Needs summer water. Attractive shrub with small leaves. Pink or white flowers most of the year. Low spreading form also available.

- "Wild Native or Ivy Leaf Violet" (Viola Hederacea)

Prostrate x 15cm x 1-2 metres. Full, partial or no sun. Tolerates frost, snow and wet conditions. Dense matt forming plant spreading long runners. Mauve and white flowers most of the year.

- Astartea Ambiqua

50cm x 1.5 metres. Full or partial sun. Tolerates damp conditions. Low spreading shrub with dense pink or white flowers on slender arching branches in spring and summer.

- "Spiny-headed Matt Rush" (Lomandra Longifolia)

50cm - 1metre x 1.2 metres. Full, partial or no sun. Tolerates wetness. Tuft with long green arching leaves. Scented cream flowers in Spring. Considered a "low storey" rain forest for cool conditions.

- "Bottle Brush" (Callistemon Cultivar)

Covers a large range numbering over 20 varieties. 1.5 - 6 metres. Some particularly suitable varieties are C. Viridiflorus, C Speciosis, and C. Subulatus.

- "Yellow Hakea" (Hakea Nodosa)

Up to 8 metres x 2.5 metres. Full or partial sun. Tolerates wet conditions. Long thin branches bear yellow flowers in Spring.

- "White Cloud Tree" (Melaleuca Bracteata)

5 -6 metres x 5 metres. Like all paperbarks will tolerate very wet conditions. Small white brushes in Spring and Summer.Vigorous root system. Has ability to absorb fats and phoshpates from soap and detergents. This plant is highly recommended for irrigation areas.

- "Feather or Thyme Honey Mytle" (Melaleuca Thymifolia)

60cm - 1 metre x 1.2 metres. Full or partial sun. Tolerates both dry periods and very wet conditions. Small bushy shrub with mauve / purple flower in Summer and Spring.

There are a large range of other trees and shrubs which are considered to be suitable for planting in irrigation areas served by secondary treated effluent. These include the following:
Eucalyptus Botryoides, Eucalyptus Robusta, Kennedia, Pannosus, Lonicera Japonica, Lacteus, Pandorea Jasminoides, Casis Bicapsularis, Cottoneaster Glaucophyllus and Euphorbia Milli.

Your local plant nursery should be able to advise you on specific plants, shrubs and trees particularly suitable to your area and climate.

13. Recommended Products.

What products are safe to use in the system?

WASHING POWDERS, LIQUIDS AND SOFTENERS.

We recommend 'Bennett's Environmental' Washing Powder or liquid (ask agent for details)
Other suitable products listed below.

Add Soft	Blue Gum	Blue Sno	Care	Castle
Cuddly	Cold Power	Dynamo	Ease	Embassy
Fab	Hurricane	Launda	Love & Care	Lux
More	Purlite	Rinso	Softly	Spree
Sunlight	Surf	Top Wash	Woolmix	

Watch out for soap powders with added bleaches and whiteners. These are harmful to the system.

DISHWASHING LIQUIDS.

Finish Powder for Dishwashers

Adds	Bushland	Kit	KwitCare	Greenapple
Morning Fresh	Palmolive	Sunlight	Top Wash	Trix

SURFACE CLEANERS.

We recommend 'Bennett's Environmental' Washroom Cleaner (ask agent for details)
Other suitable products listed below.

Jiff Crème Cleanser	Nifty	Spray & Wipe (In limited Quantities)
Shower Power	Swipe	Windex

DO NOT use any anti bacterial solutions (e.g. disinfectant, Handy Andy, Napisan, Toilet Duck etc)
DO NOT use any bleaches (e.g. Domestos, White King, Glade etc)
DO NOT use any toilet cleaners (e.g. Toilet Duck, Harpic, Ajax etc)

Your system works using bacteria so anything that kills bacteria is NOT suitable for your system. When the bacteria is not present the result will be a smelly system.
This can even be caused by a member of the family using Antibiotic medicine.

If anti bacterial solutions need to be used we suggest using them in a bucket and then discarding in the yard

DISCLAIMER:

These recommendations are made to the best of our knowledge and are not intended to Promote or discredit the product of any company

14. A Few More Helpful Hints.

Try to avoid products with ammonia and bleaches being put through the system. If you want to use spray-ons for the bathroom tiles, wipe most of it off with a cloth, but don't rinse this cloth out in the laundry sink. Rinse it in a bucket and discard it the yard away from the system.

To get nappies, socks or other whites cleaner, try using an air tight container and your normal washing powder/liquid. Soak the dirty socks in the container, giving it a shake every time you pass the bucket without opening the lid. This should do the trick.

For the bathroom, use Jiff applied with a soft brush and rinse off with hot water for the tiles, toilet bowl, bathtub and sink.

N.B. Each week many new products come onto the market, as well as changes to the composition of existing products. It is not possible for Super-Treat to keep track of all these products and/or changes. The ultimate responsibility for the use of the system is the owner/user of the system. Remember, the Super-Treat system, like all sewage treatment/disposal systems is biological, so that if a product kills bacteria in the house, it will kill the bacteria that do the sewerage treatment.

IF IN DOUBT, PLEASE ASK US

15. WARRANTY

Your "Super-Treat" Sewage Treatment System is guaranteed to be free of any defects in materials or workmanship at the time of installation.

Should any mechanical, electrical or manufactured part/s fail as a result of defect within twelve months of installation, the part/s will be replaced. The Contact chamber, Clarifier and Pump out drum are guaranteed for a period of 5 years against defects.

During the twelve months following installation, a cost free maintenance program is provided which includes the provision of necessary chlorine tablets.

The system has a minimum of 15 years service life.