



**OWNER'S  
OPERATING & MAINTENANCE  
INSTRUCTIONS  
FOR  
TURBOJET  
SEWAGE TREATMENT PLANT**

Thank you for purchasing our sewage treatment plant. Please take a few minutes to read this leaflet so that together we can ensure you receive many years of trouble-free service.

SEPTECH sewage treatment plants are the latest technology and have been designed to give excellent effluent results with low running and maintenance costs.

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## HOW OUR TURBOJET SEWAGE TREATMENT PLANT WORKS

All liquid wastewater from the household (bathroom, toilet, kitchen and laundry) is treated and, if required, lightly chlorinated. The clean, clear liquid is then automatically discharged by way of automatic electric pump to the designated area. All wastewater is gravity fed into a Primary Sewage Tank where the waste undergoes settlement and digestion during a retention period of approximately 24 hours. The settled wastewater then flows in to the Turbojet unit. This unit is divided into two distinct chambers - submerged contact aeration (SCA) chamber and humus chamber.

Effluent from the Primary Sewage Tank then flows into the SCA chamber. During regular time clock intervals, water and air are pumped in the SCA chamber by means of strategically placed jets. The jets are positioned so as to cause a vigorous overturning and turbulence of the tank contents. Effluent entering the SCA chamber is forced into a spiralling flow pattern. This biomass assimilates nutrients and oxygen from the water leading to gradual reduction of impurities as the effluent passes through the tank. The effluent and sludge particles then flow into the humus tank where the sludge particles settle to the floor of the tank and the effluent flows through a contact media. This contact media acts as a tertiary interception and removal centre of remaining BOD and suspended solids, thus further polishing the effluent before flowing into the contact sampling pit where it is further clarified and chlorinated before being automatically discharged by way of electric pump to the designated area. (This will vary from state to state or shire to shire but will be as directed by your local council environmental health officer.)

Settled humus chamber sludge is automatically returned to the inlet of the SCA chamber by means of a vortex lift, which in turn is driven by the main SCA circulation pump. Effluent and sludge particles are also recirculated through the primary sewage tank by means of a by-pass feed line from the main SCA circulation pump. This has a threefold purpose:

- (a) Excess sludge is returned to the primary sewage tank for storage and digestion.
- (b) Clean effluent is recycled through the plant which tends to suppress the activities of micro-organisms which emit odours.
- (c) By regularly recycling effluent, the circulating and fixed biomass in the SCA chamber is being fed with stored organics from the primary sewage tank. This keeps the micro-organisms at maximum population levels and reduces the problems of treatment plants not used for extended periods, e.g. vacations. Consequently, untreated effluent is prevented from being discharged from the unit when persons return from vacation, or the treatment plant has been disabled from an extended power failure.

## WARRANTY

**Septech Industries Australia Pty Ltd** as manufacturer of the sewage treatment plant or the agent supplier on behalf of **Septech Industries Australia Pty Ltd** warrants that the tanks supplied are manufactured to Australian Standard AS1546.3 and warrants to repair or replace such tanks requiring repair or replacement due to defective manufacture for a period of ten years from the date of purchase with the exception of fittings, pumps, irrigation lines and plumbing components for which period shall be 24 months from the date of purchase, it being understood that any failure of the system caused by the customer's non-compliance with the operating instructions or actual interference with the system or any of its parts will render such warranty null and void. Please note that maintenance does not include the replacement or repair of any mechanical, electrical or civil items outside the one year warranty period. The first twelve months servicing is incorporated into purchase price. However it is essential that the service contract is renewed as warranty will be null and void if not renewed.

## **SERVICING REQUIREMENTS**

At the time of commissioning, your sewage treatment plant will be checked for correct operation. State Health Authorities have determined minimum effluent qualities that may be discharged and the treatment plant has been designed to exceed these standards. It must be understood that mandatory quarterly servicing is to be carried out by an authorised person, at which time any necessary adjustments to the plant and the topping up of chlorine tablets (if required) will be carried out. Annual service contracts are available from your **Septech** service person at a moderate charge.

## **INSURANCE**

Be sure to include the two electric pumps of the sewage treatment plant in your household fusion policy, along with other electrical appliances (refrigerator, washing machine, etc.).

## **ELECTRONIC CONTROL PANEL**

The **Septech** system is fully automated by an intelligent microprocessor based controller, preprogrammed to optimize the performance and efficiency of the equipment. Adjustable settings and historical data are stored in battery supported memory and are accessible via the user friendly Liquid Crystal Display and keypad, or optional remote modem and software package which enables central monitoring of the sewage treatment plant via a telecommunications network. Once again putting **Septech** at the forefront of modern technology!!!

## **WARNING**

Your treatment plant has been designed to treat all household waste water. Do not place the following items in the toilet: sanitary napkins, tampons and their wrappers, paper nappies and liners, condoms, cigarette packets and the like. These items should be placed in suitable wrapping and disposed of with the garbage collection. For the same reason we advise against toilet cleaners/deodorants which are fitted to the toilet bowl. **FAILURE TO OBSERVE THESE BASIC REQUIREMENTS WILL SUBSEQUENTLY CAUSE BLOCKAGE TO THE PUMPS OR JETS AND NECESSITATE A SERVICE CHARGE.**

Please note that maintenance does not include the replacement or repair of any mechanical, electrical or civil items outside the one year warranty period.

Chlorine tablets should not be handled - avoid contact with eyes. If in contact with tablets, skin should be washed with warm running water. Store any unused tablets in container provided **AWAY FROM REACH OF CHILDREN**. Cleaning agents are amazing cocktails of chemicals. Many detergents are not readily biodegradable and may inhibit bacterial action in the treatment plant, as well as polluting the water cycle long after use.

All nappy soaking products are anti-bacterial. If these products are to be used for soaking, ensure the wash water does not enter the system.

Do not allow wash water to enter the system if using bleaches (sodium hypochlorite). Do not tip leftover paint, paint cleaners or other chemicals into the system. Do not discharge spa pools through the treatment plant.

Do not allow the treatment plant to become inaccessible by undergrowth, use as an incinerator or garbage storage pad, or allow excess dirt or debris around the treatment plant to fall into the various tank chambers.

Do not exceed the design parameters of the treatment plant according to the original specification.

Do not turn off the control panel. Any fault must be attended to immediately.

Do not turn off the treatment plant to save power.

Do not leave control panel and pump cover open to weather.

# HINTS AND RECOMMENDATIONS

Look for gentle biodegradable products AND READ THE LABEL - remember that pure soap flakes are 100% biodegradable. Excellent biodegradable products are available from supermarkets, health food shops and specialty outlets. Do not use excess cleaners or detergents - give cleaning products more time to work - use better cleaning tools, e.g. long-handled scrubbing brushes.

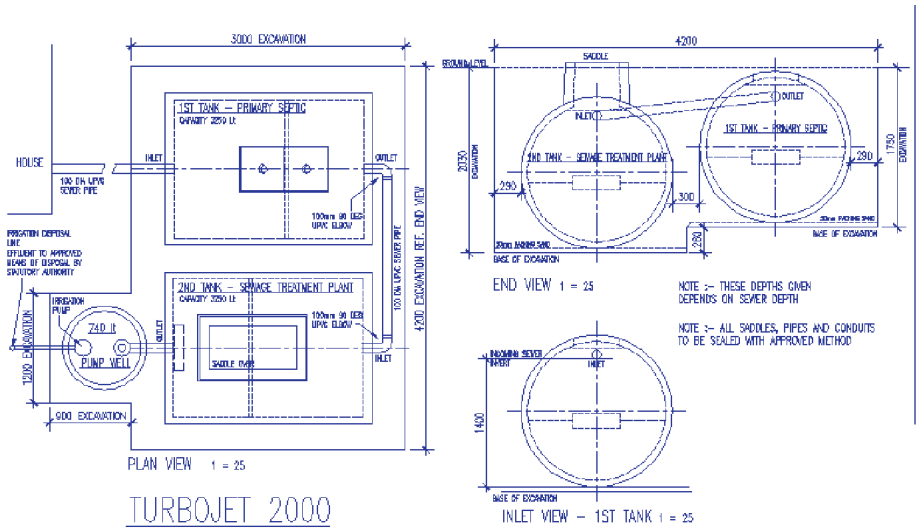
Machine Washing - use gentle biodegradable products. Pure soap flakes may also be used, firstly dissolved in very hot water before adding to the washing water. Soap residue or scum is a result of water hardness and is easily dealt with by adding a quarter-cup of washing soda to washing cycle (NOTE - WASHING SODA IS TOXIC IF SWALLOWED, SO KEEP OUT OF REACH OF CHILDREN OR PETS).

Toilet - Vinegar (purchased cheaply from the supermarket) is an excellent toilet bowl cleaner and will not affect the bacteria level essential for the operation of the treatment plant. Leave to soak for ten minutes, after which time limescale can be scrubbed off.

Bath - to clean the bath with a recommended biodegradable product, it is recommended the plug be inserted in the bath and most of the cleaning product used wiped out with a paper towel which should be disposed of in the garbage bin.

DESLUDGING - When required, desludging is to be arranged and paid for by the owner. Please observe advice given above in order to minimise the frequency of desludging of the primary treatment tank. Desludging will vary from one to 3 years (similar to a septic tank system) depending on use and maintenance treatment of the system. Poor quality effluent or odour problems may indicate this is necessary.

LANDSCAPING - When landscaping around your sewage treatment plant be sure to plant only small shrubs and ground cover. The use of pinebark is not recommended. Larger trees and shrubs with high moisture demands may cause damage to the treatment plant by intrusion of their root system. When planting out your irrigated area (if this method of disposal is directed by your local council or shire), high nutrient and high moisture tolerant plants should be chosen. It is suggested that advice be sought from your local nursery person regarding choice of suitable plants.



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