Owner's Manual 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. Icon-Septech’s sewage treatment plants are the latest technology and have been designed to give excellent effluent results with low running and maintenance costs.
HOW YOUR ICON SEPTECH TURBOJET SEWAGE TREATMENT PLANT WORKS

Congratulations on your purchase of one of the most advanced aerated wastewater treatment systems available!

Wastewater from your 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.

1. The wastewater passes into an anaerobic digestion tank. At this point the wastewater settles and anaerobic bacteria digest the solid particles. This is done in a low oxygen environment over a period of approximately 48 hours.

2. The primary treated water then passes into the second tank which is divided into two compartments. The first compartment is a submerged contact aeration tank (SCA), where treated wastewater is pumped with air into a spiraling patented vortex motion at regular time intervals. This generates a biomass of naturally occurring aerobic bacteria which further reduces wastewater impurities.

3. The effluent then passes into a humus chamber. At this stage all remaining particles of solid effluent are pumped back into the SCA chamber via a vortex lift. Sludge is also returned to the anaerobic chamber via a return line. Remaining wastewater passes through contact media on which biomass grows and further reduces the biological oxygen demand of the effluent. These processes have the following benefits:

- Excess sludge is returned to the primary sewerage tank for storage and digestion.
- Clean effluent is recycled through the plant which tends to suppress the activities of micro-organisms which emit odours.
- By regularly recycling effluent, the circulating and fixed biomass in the SCA chamber is being fed with stored organics from the primary sewerage tank.

4. The wastewater then gravity feeds into the final tank where it may be chlorinated at controlled levels to ensure sterilization. This may vary from state to state or shire to shire but will be as directed by your local council environmental health officer.

5. Crystal clear and odorless water is pumped out into an irrigation system in your garden or lawn.
Icon-Septechs multi-tank system minimizes the risk of cross contamination which could lead to the failure of the wastewater system.

These features keep micro-organisms at maximum population levels and reduce the problems of treatment plants not used for extended periods such as during 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**

Icon-Septech warrants that the tanks supplied are manufactured to Australian Standard AS/NZS1546.1

Icon-Septech warrants to repair or replace such tanks requiring repair or replacement due to defective manufacture for a period of fifteen years from the date of purchase with the exception of fittings, pumps, control panel, irrigation lines and plumbing components for which period shall be 12 months from the date of purchase, it being understood that any failure of the system caused by the customer’s noncompliance 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 servicing does not include the replacement or repair of any mechanical, electrical or civil items outside the one-year warranty period. However, it is essential that the system is serviced in accordance with the manufacturer’s specification at all times otherwise warranty will be null and void.

**SERVICING REQUIREMENTS**

At the time of commissioning, your sewerage treatment plant will be checked for correct operation. State Health Authorities have determined the 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 Icon-Septech at a moderate charge.

*Note: Service contracts are invoiced separately to the purchase of sewage treatment plant.*
INSURANCE
We strongly recommend that you include the two electric pumps of the sewerage treatment plant in your household fusion policy, along with other electrical appliances (refrigerator, washing machine, etc).

ELECTRONIC CONTROL PANEL
Icon-Septechs system is fully automated by an intelligent microprocessor-based controller, preprogrammed to optimize the performance and efficiency of the equipment.

Icon-Septechs control panel is robustly built with quality components with an easy to read interface and simple diagnostic tools that monitor and display high/low voltage levels and pump amperage.

WARNING
Your treatment plant has been designed to treat all household wastewater.

The treatment system is designed to achieve the effluent quality under normal operating conditions.

Where the influent contains a substance that is known to affect the performance of the biological process then that substance needs to be pre-treated or eliminated before entering the treatment system.

This includes grease, oils, fats or similar by an interceptor (correctly sized), acids, alkalis, toxins, metals, chemicals, medicines, yeasts and pathogens.

All of these may affect the treatment process and advice must be obtained if any of these or similar are likely to be present in the influent.
Do not place the following items or substances in toilets or plumbing that is connected to the Turbojet.

- sanitary napkins
- tampons and their wrappers
- paper nappies and liners
- condoms
- cigarette packets
- any foreign objects
- paint
- bleach (sodium hypochlorite)
- nappy soaking products

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 MAY SUBSEQUENTLY CAUSE BLOCKAGE TO THE PUMPS OR JETS AND NECESSITATE A SERVICE CHARGE!

If chlorine tablets are required, they should only be handled and administered by an authorized service technician. Please contact Icon-Septech on 1300 305 073.

HINTS AND RECOMMENDATIONS
Look for gentle biodegradable products and follow the manufacturer's recommendations. Remember that pure soap flakes are 100% biodegradable. Excellent biodegradable products are also 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).
GENERAL CLEANING GUIDELINES

Look for gentle bio-degradable products and remember to read the label carefully. 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 or backwash swimming 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.

Toilets

Vinegar (available from your supermarket) and hot water 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 lime scale can be scrubbed off.

Baths

To clean the bath, use a recommended biodegradable product. If harsh chemicals are required, it is recommended the plug be inserted in the bath and the cleaning product used wiped out with a paper towel which should be disposed of in the garbage bin.

Many products now carry the ‘septic safe’ logo on their label so keep an eye out for these.

*If in doubt, please do not hesitate to contact our friendly staff in the service department.
WHAT CLEANING PRODUCTS ARE SAFE TO USE?

Washing powders/liquids and softeners

- Softly
- Love and Care
- Surf A
- dd Soft
- More
- Omo
- Cuddly
- Launda
- Rinso
- Fab
- Lux
- Parry’s
- Topwash
- Spree
- Hurricane
- Castle
- Blue
- Sno Care
- Dynamo

*Watch out for soap powders with added bleaches and whiteners. The powdered bleach is harmful to the system.

Dishwashing Liquids

- Kit
- Sunlight
- Adds
- Palmolive
- Bushland
- Chitarra
- Trio
- Green Apple
- Towpath

*For dishwashers’ use ‘Finish’.

Surface Cleaners

- Jiff and other cream cleansers
- Spray and Wipe (use sparingly)

PRODUCTS THAT ARE NOT RECOMMENDED

Antibacterial Cleaners

- Nursil
- Milton Tablets
- Napisan
- Toilet Duck
- Pine-O-Clean
- Nappy Soft
- Nappy Plus
- Nappy Fresh

Bleaches

- Glade
- Lemon Budget
- Domestos
- White King
- Zero Premium
- Lemon Bleach

Toilet Cleaners

- Harpic
- Ajax
- Aussa
- BlueLoo

*These recommendations are made to the best of our knowledge and are not intended to promote or discredit the products of any company.
**Desludging**

All septic tanks require periodic cleanout to remove excess sludge. When required, desludging is to be arranged and paid for by the owner.

Please observe the advice contained in this manual 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.

**Irrigation Field**

When an irrigation field is installed it is the owner’s responsibility to inspect and maintain the field. You may be required to clean your filter between services, please refer to the instructions below

Locate irrigation pump well, filter assembly and flush tap at the end of the irrigation line.

Locate red irrigation tap in line with the white PVC pipe.

Turn irrigation tap to “off” position e.g. horizontal.
Locate filter flush tap on the side of the filter housing. Ensure the tap is in the “off” position. Flush tap may be red depending on filter model.

Turn flush tap to “on” position to allow excess water to be released.

Locate and release the “C” clamp.

Remove the “C” clamp.
Remove the top housing cover and expose filter. Bottom housing cover may be removed depending on filter model.

Remove the filter cartridge.

Clean the inside of the filter with a hose.

Clean the outside of the filter with a hose.

Clean inside the filter casing with a hose before returning the filter.
Insert the clean filter back into the clean casing.

Replace the top housing (or bottom housing) cover.

Ensure both parts of housing cover are fitted and locked together correctly.

Replace and tighten the ‘C’ clamp.

Return flush tap to ‘off’ position.
Turn irrigation tap to “on” position.

Locate irrigation line flush tap (purple lid). Found at end of irrigation field.

Remove the purple lid to expose the tap (colors may vary).

The tap should be in the “off” position.

Turn the tap to the “on” position. Leave the tap in the “on’ position for 24 hours to flush lines.
After 24 hours return the tap to the “off” position.

Remember to thoroughly clean and sterilize your hands after cleaning your irrigation filter or flushing your irrigation lines.
LANDSCAPING
When landscaping around your sewerage 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.

Grass is the preferred vegetation for subsurface irrigation as it has a high rate of transpiration and a shallow root system. The grass should be regularly cropped to maximize the overall rate of evapotranspiration, and the irrigation field should be located in an area that maximizes the exposure to sunlight.

LIST OF PLANTS SUITABLE FOR WET SOILS
Please consult your local council authority before finalizing the plant choices to suit your locality and site conditions.

Evergreen plants are suitable.

It is suggested that advice be sought from your local nursery person regarding choice of suitable plants.

Attached is a list of plants that may be suitable for your circumstances:
Trees
Angophora costata
Banksia integrifolia
Callistemon salignus “White Bottlebrush”
Callistemon viminalis “Red Bottlebrush”
Casuarina glauca “Swamp Gum”
Casuarina strica “Drooping Gum”
Eucalyptus Robusta “Swamp Mahogany”
Eucalyptus botryoides
Hakea Saligna
Leptosperum Laevigatum “Coast Tea Tree”
Leptosperum Petersonii
Melaleuca Armillaris-Sandy Soil
“Bracelet HoneyMyrtle”
Melaleuca Quinquenervia- Sandy Soil
“Broad Paperbark”
Melaleuca styphelioides- Clay Soil
Melaleuca linearifolia- Clay Soil
Nyssa Sylvatica
Photinea x Fraseri “Robusta”
Hakea Salicifolia
Tristaniopsis Laurina “Kanuka”
Climbers
Bougainvillea
Harenbergia “Purple Coral Sea”
Hibbertia Scandens “Snake Vine”
Kennedia “Dusky Coral Pea”
Lonicera Japonica “Japanese Honeysuckle”
Pandorea Jasminoides

Ground Cover
Acanthus Mollis
Coprosma x kirkii
Grevillea Poorinda “Royal Mantle”
Liriope Muscari
Ophiopogon

Shrubs
Abelia x Grandiflora
Acacia longifolia “Sallow Wattle”
Callistemon Citrinus
Cassia Bicapsularis
Ceratostigma
Chaenomeles Lagenaria
Cotoneaster lacteus
Cotoneaster pannosus
Correa alba
Ciphea Ignea
Euonymus Japonica
Euphorbia Millii
Euphorbia Pulcherrionia
Hebe Speciosa “Veronica”
Jasminum Nesnyi
Jasminum Polyanthum
Lantana Camara (Cultivars only)
Leptospermum Flavescens
Nerium Oleander
Plumbago Auriculata
Pyracantha Fortuneana
Thunbergia Alata
Westringia Fruiticosa

Perennials
Agapanthus Praecox
Aster novi-Belgii
Canna x Generalis
Chrysanthemum Maximum
Gazania x Hybrida
Salvia x Superba
Stokesia Laevis
Viola Hederacea
Note: System Specification may vary between Countries, States and Local Government areas. Consult our website for further details.