



Owner's Manual

Certified AS/NZS 1546.1



INCLUDING SECTIONS:

1. Start up, Cleaning
2. Maintenance Instructions
3. Troubleshooting
4. Inspection Records

SECTION 1: START UP

TANK FILLING PROCEDURE:

Care should be taken when using high volume pumps

1. Remove the primary tanks inspection hatch lids. Completely fill the system with water.
Fill the entire system from the front tanks only. Ensure that on completion of filling, water flows into the outlet junction,
2. With the system now full of water, complete back-filling around tanks with sand and pack down tightly,
3. Add Biomagic to the system.

DOSAGE FOR AUTO-INOCULATOR DOSING IS AS FOLLOWS;

Getting the system started – pour 200mL of **Biomagic** (mixed in with a bucket of water) down each pedestal.

First Month – Fill the Auto-Inoculator tank with **Biomagic**. Dilute **Biomagic** down to 1:4.
Note: Be sure to mix the **Biomagic** and water together very well.

After first month – Fill the Auto-Inoculator tank with **Biomagic**. Dilute **Biomagic** down to 1:20.

Note: Be sure to mix the **Biomagic** and water together very well.

Important – If using an existing Auto Inoculator be sure to clean out the tank thoroughly before use.

DOSAGE FOR MANUAL DOSING IS AS FOLLOWS;

Getting the system started – pour 200mls of **Biomagic** (mixed in with a bucket of water) down each pedestal

First month - Each week take note of the number of users and pour **Biomagic** equally down each pedestal (5mls of **Biomagic** for every one person mixed in with a bucket of water).

After first month - Each week take note of the number of users and pour **Biomagic** equally down each pedestal (2mls of **Biomagic** for every one person mixed in with a bucket of water).

Note: Be sure to mix the **Biomagic** and water together very well.

CLEANING

The use of harsh abrasive anti-bacterial toilet cleaners is not recommended

The treatment process of the Hybrid Toilet System is a biological process, which is a living system. It biologically breaks down the waste and reduces it to a useful state. Anti-bacterial and strong chemical cleaners have the potential to kill or severely reduce the effectiveness of the living treatment system in the system if poured into it. Antibiotics have also been known to kill the bacteria in the primary treatment tank. The surface of the toilet pedestal only may be cleaned with these products but alternative methods of cleaning are recommended.

RECOMMENDED CLEANING METHOD

- The toilet should be cleaned at least twice weekly with **Biomagic** and a soft brush. Dilute 1:1 in spray pack to wipe over all surfaces. Never leave surfaces wet for safety and to prevent slipping.

SECTION 2: MAINTENANCE INSTRUCTIONS

PIPEWORK & FITTINGS

Pipe work and fittings should be checked every 12 months for damage and cracks.

Fittings should be inspected for leaks at joints and tank connections.

Fly and mosquito screens should be checked for correct fitting and security. Clean when necessary.

GRAVEL BED TRENCH

The Gravel bed needs to be checked every 12 months.

The normal problem associated with the gravel bed is tree and plant roots.

To inspect for any possible problems, remove the inspection cover on the Effluent outlet chamber on the unit. If roots or a blockage is evident, try to clear by hand or by digging up the trench to access the blockage and clear it.

HOLDING TANK LEVELS

If the system you have installed is equipped with a holding tank rather than effluent being discharged to ground the discharge level should be monitored weekly. The holding tank is fitted with a float gauge. This float gauge is marked in 25mm graduations with each graduation represents 112 litres.

To calculate the volume, simply count the graduations and multiply by 112, this will give the total volume in the holding tank. In most instances the holding tank total volume is 5500 litres. Pump out must be carried out when the discharge volume reaches 4500 litres.

WIND OR SOLAR POWERED VENT SYSTEMS

If your system is fitted with a wind powered vent system you will need to check overtime if the connections to the building are tight and make sure the top Rotary Ventilator can spin freely or if it hasn't been damaged. Check every 12 months.

If your system is fitted with a solar powered vent system you will need to do the same checks as above and also have an electrician on site to make sure the solar panels are clean and all the connection properly functioning including batteries.

The solar system is design to supply power to the 12V fan alone and not any lightings for the building.

The 12V fan comes with two mozzie screens, located at the top and bottom of the fan. They can be fully removed and cleaned. Depending on the size and usage of the system, we recommend a weekly to monthly cleanup of the mozzie screens.

General check of the electrical components to be carried out every 6 to 12monts.

PUMP OUT

The Hybrid Toilet System over time will need to pump out to remove the excess sludge. Each system is supplied with a sludge gauge to achieve the correct measurement.

This operation will need to be carried out by a competent person on average between 5 to 10 years.

The steps are as follow:

1. Locate the tank manhole at the back of the building,
2. Open lid, (note: if a macerator pump will be used the entire lid and separator chamber will need to be removed)
3. Break up the crust so it can be pumped out,
4. Pump out approx. 80% of the primary tank, pumping from the top as much as possible,
5. Leave approx. 20% of the contents of the primary tank in the tank, if some of the sludge in the very bottom can be pumped out, that's ok,
6. Refill the primary tank with fresh (or salt) water until it overflows into the secondary tank,
7. Close lid, (re-install the separator chamber and lid if it was removed)
8. Add Biomagic as per above Dosage information.

SECTION 3: TROUBLESHOOTING

PROBLEM (I) - A PORTA POTTY HAS BEEN DUMPED INTO A HYBRID TOILET

This problem occurs in some situations and the first indication is usually an offensive odour. The chemicals used in these portable units are usually blue in colour and it may be possible to see the colour on the surface of the waste or water in the tank. These chemicals can include products like Formaldehyde and the like. They are designed to kill all of the bacteria in the Portable toilets. When they are introduced into a Hybrid they can have a significant effect on the system. If numbers of these loads are dumped into the unit they may kill the resident bacteria of the system. The chemicals may also have an effect on the pH balance of the unit.

Recovery

1. Immediately add 1kg / 1000l of Sodium Bicarbonate. E.g. 5kgs to a 5000l Primary tank.
2. We then recommend that the tank be super dosed with **Biomagic**. E.g. For a 25 person Primary tank we would suggest mixing two litres of **Biomagic** (mixed thoroughly in a bucket of water) down each pedestal.
3. Next spray all over the surface of the waste a full spray bottle (500ml) of **Biomagic** (1:1). This will significantly reduce the odour immediately.

For a 50 person unit double the quantities. Remember that a 50 person primary tank also forms a part of a 75, 100 and 150 person system. It would normally be only one of the tanks of the system that is affected. It is not necessary to anything to the second tank unless the contamination is extreme.

How long will this take?

From reports we have received back from clients who have experienced this problem we have been told it can take around 2 weeks to come back.

Some situations may be so bad as to be unrecoverable. We have not experienced this yet. The only way to deal with this situation at this point is to pump this tank out and restart the tank by adding the bacteria. This is the last resort.

PROBLEM (II) - THE HYBRID TOILET SYSTEM GOES UNDERWATER IN A FLOOD

Should the unit become inundated by water the air space of the tanks will completely fill. As the flood waters recede below the outlet point and presuming the unit is still intact, the extra liquid will drain out and the unit would be immediately useable.

PROBLEM (III) - STRONG SMELLS ARE RISING UP THE PEDESTAL

* Ensure the Ventilation System is operating correctly. To check the fan operation, simply place your ear against the vent pipe and listen for fan noise and feel for vibration. If no noise can be heard or no vibration is felt then a closer inspection of the fan will be necessary. Clear any buildup of insects etc., from around the fan and/or vent pipe. The system will still function without the fan but odors may become a problem. Replace the fan if necessary.

* Ensure that the Primary tank is operating correctly.

- If there is a blue-ish tinge to the water, this is evidence of dumping of a Porta Potty and killing of the essential bacteria. Go to Porta Potty dumping recovery sheet.

- If there is a large mass of paper and matter floating on the surface of the primary tank, then the system may either be overloaded or it may be evidence of a killing of the bacteria in the past. To check if it is overloading, please check the door counter numbers. If there are no door counters, you need to establish user numbers. If it is in a National Park or other Governmental controlled area, then this may be established by the number of campsites or vehicles passes to access that particular camping area. If it is established that the system is being continuously overused, the system may require large amounts of bacterial additives to combat this. To do this, see the section in this manual on Peak Period Care. Or it may require a sludge pump-out as a short term solution. Longer term solutions are to add new toilet block to that site. Please contact your local Hybrid Toilet System agent to discuss your requirements.

PROBLEM (IV) –THERE IS A BUILD UP OF RUBBISH IN THE PRIMARY TANK

Maintenance Access.

Access is provided in both the primary and the second tanks. The main access points are in the primary tank. These hatches are where the removal of the sludge takes place and removal of any foreign objects that have been placed in the unit. Flooding of the primary tank, due to a blockage is nearly impossible due to the design of the outlet junction and baffle. See drawings for details.

The Microflush option limits the introduction of foreign waste into the units.

PROBLEM (V) - HOW DO I REMOVE SLUDGE FROM THE SYSTEM?

Guidelines for sludge removal and disposal.

There are two options available for the removal of sludge and they are subject to local Authority and or the controlling Authority's approval. Generally, if access can be gained by a licensed waste removal contractor, sludge should be removed in this manner. If this is not possible due to remoteness of location or accessibility, consult your Approving Authority for their recommendation on sludge disposal.

In all cases the relevant approvals must be sought prior to the installation of the Hybrid Toilet System. Removal of waste by other than licensed persons in some states may be prohibited.

Once the sludge has been removed top up the primary tank with fresh or salt water up to the outlet level.

PROBLEM (VI) – THERE ARE FLIES COMING UP THE PEDESTAL

Ensure that the toilet seat is being left in a closed position, thereby stopping light penetrating into the Primary Tank. To assist this, we have produced a sticker that is adhered to the underside of the seat. If a sticker is not present on your seat, please contact your local Hybrid Toilet System agent to receive one.

Check & make sure that all fly mesh is still installed in all ventilation points on the system. If these have been damaged or removed, they need to be replaced. Also ensure that all manholes and access hatches are firmly closed.

To minimize the opportunities for the flies to breed, ensure that there is minimal floating matter in the primary tank. To do this, see the sections on Cleaning & Peak Period use and also Problem (iii)'s solution.

PROBLEM (VII) – THE MICROFLUSH FOOT PUMP IS NOT WORKING

If you are unable to lift water to the pump, check the following:

1. Have you filled the cistern?
2. Are all connections tight and not leaking air. If there is an air leak, the pump will not lift the water.
3. Check the hose lines to ensure there are no kinks in the lines.
4. Ensure that the Cistern Tank is sitting lower than the height of the pedestal.
5. If this is correct, ensure that the hoses from the pump are connected correctly. The suction line from the cistern must be connected to the suction side of the pump.
6. If no water can be lifted on any of the pumps, check to see that the inlet point in the cistern is not fouled.
7. Check the 1" inch non return valve is clean and installed correctly.

In the event of further problems, please contact your system supplier for further advice.

PROBLEM (VIII) – THE MICROFLUSH HAND PUMP IS NOT WORKING

If you are unable to lift water to the pump, check the following:

1. Have you filled the cistern?
2. Are all connections tight and not leaking air. If there is an air leak, the pump will not lift the water.
3. Check the hose lines to ensure there are no kinks in the lines.
4. Ensure that the Cistern Tank is sitting lower than the height of the pedestal.
5. If this is correct, ensure that the hoses from the pump are connected correctly. The suction line from the pump must be connected to the cistern. The suction line from the cistern must be connected to the front outlet of the pump when you look up from the bottom of the pump housing.

- 6. If no water can be lifted on any of the pumps, check to see that the inlet point in the cistern is not fouled.
- 7. Check the 1" inch non return valve is clean and installed correctly.

In the event of further problems, please contact your system supplier for further advice.

Section 4. Inspection Records

Date of Installation; **Size of System;**
Pedestal Type; **Venting System Type;**
Effluent Disposal Method;

6 Month Inspection

Date: Inspected by:

Vent System Operational? Yes / No If No, replacement Date: .../.../.....

Is there a floating crust? Yes / No Sludge level:

Sludge Pump Out? Yes / No If Yes, Date: .../.../.... Volume:

Approved cleaning products? Yes / No Biomagic or

Pipework Checked? Yes / No Gravel Bed Checked? Yes / No

Door Counter Operational? Yes / No Number of visitations:

pH Level: Comments:.....

..... Signature:.....

1 Year Inspection

Date:

Inspected by:

Vent System Operational? Yes / No If No, replacement Date: .../.../.....

Is there a floating crust? Yes / No Sludge level;

Sludge Pump Out? Yes / No If Yes, Date: .../.../.... Volume:

Approved cleaning products? Yes / No Biomagic or

Pipework Checked? Yes / No Gravel Bed Checked? Yes / No

Door Counter Operational? Yes / No Number of visitations;

pH Level:

Comments:.....

..... Signature:.....

2 Year Inspection

Date:

Inspected by:

Vent System Operational? Yes / No If No, replacement Date: .../.../.....

Is there a floating crust? Yes / No Sludge level:

Sludge Pump Out? Yes / No If Yes, Date: .../.../.... Volume:

Approved cleaning products? Yes / No Biomagic or

Pipework Checked? Yes / No Gravel Bed Checked? Yes / No

Door Counter Operational? Yes / No Number of visitations:

pH Level:

Comments:.....

..... Signature:.....

3 Year Inspection

Date:

Inspected by:

Vent System Operational? Yes / No If No, replacement Date: .../.../.....

Is there a floating crust? Yes / No Sludge level:

Sludge Pump Out? Yes / No If Yes, Date: .../.../.... Volume:

Approved cleaning products? Yes / No Biomagic or

Pipework Checked? Yes / No Gravel Bed Checked? Yes / No

Door Counter Operational? Yes / No Number of visitations:

pH Level:

Comments:.....

..... Signature:.....

4 Year Inspection

Date:

Inspected by:

Vent System Operational? Yes / No If No, replacement Date: .../.../.....

Is there a floating crust? Yes / No Sludge level:

Sludge Pump Out? Yes / No If Yes, Date; .../.../.... Volume:

Approved cleaning products? Yes / No Biomagic or

Pipework Checked? Yes / No Gravel Bed Checked? Yes / No

Door Counter Operational? Yes / No Number of visitations:

pH Level;

Comments;.....

..... Signature:.....

5 Year Inspection

Date:

Inspected by:

Vent System Operational? Yes / No If No, replacement Date: .../.../.....

Is there a floating crust? Yes / No Sludge level;

Sludge Pump Out? Yes / No If Yes, Date: .../.../.... Volume:

Approved cleaning products? Yes / No Biomagic or

Pipework Checked? Yes / No Gravel Bed Checked? Yes / No

Door Counter Operational? Yes / No Number of visitations:

pH Level:

Comments:.....

..... Signature:.....

***After the 5th Year Inspection, please contact the Manufacturer for an updated Owners Manual & 5 Year PLUS Service Record**

THANK YOU FOR CHOOSING 'THE HYBRID TOILET SYSTEM'

Should you have any problems with installation of this system or if you have any comments to add as to how to improve this instruction and installation, please forward this information to your supplier also. It is only by your response that we are able to improve. Please do not hesitate to contact:

Gough Plastics on Freecall 1800 069 805, (International 61 7 4758 6400) or your local Agent