HYBRID

TOILET SYSTEM

Owners Manual

INCLUDING SECTIONS:

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

V6.0

SECTION 1: START UP

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 the 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.

MCVENT POWER DRIVEN ROTARY VENTILATOR

These fans operate on extra low voltage 12 or 24volt systems. It does not require a licensed person to carry out maintenance and repairs on these low voltage systems.

DESCRIPTION

The design of the unit is such that there is no fan blades in the air stream and the electric motor is remote from the air stream. The unit operates more like a centrifugal pump sucking the air up the vent tube and expelling it at the top.

The McVent unit has been designed to place a negative pressure on the system and remove any odour that may have been generated by the bacterial process from the system. Strong excessive odour

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usually indicates a System digestive problem. See the relevant problem solving sections that discuss this in detail.

MAINTENANCE INTERVAL

It is desirable but not critical that these Powered ventilators are inspected on an annual basis.

PROCEDURE

1. With a portable Multi-meter / amp meter check the current draw on the power delivery side of the switch mode power supply. Current draw should be in the range of .208ma to .21ma in no wind conditions. The prevailing breeze will impact on the current draw lowering it relevant to the wind speed. Excessive current draw may indicate a problem.

2. On the Switch Mode power supply unit check to see the LED light is on. This indicates power to unit.

3. Perform a visual inspection of the ventilator. Look for balanced rotation and any build up of foreign material on the unit.

TROUBLE SHOOTING GUIDE

1. Turn off power supply to the unit.

2 Visually from the ground with binoculars if available inspect the unit for build up of spiders webs or other. This is unlikely but if it is excessive it may require removal.

3 Check for any visible surface corrosion. Again unlikely but if obvious it may require spraying with anti-corrosion type product.

4. If the unit has been hit by a branch it may have thrown the unit out of balance. It may require adjusting so that it runs in balance. Long term out of balance operation may reduce the unit's service life and draw more power to operate it.

5. If the current draw test shows excessive current draw and none of the above are obvious the unit may have an internal problem and it may require the unit to be brought to ground for checking.

6. The unit will only rotate in one direction. It will spin by wind assistance but not operate electrically with polarity reversed. Check polarity on wiring if unit is stopping in no wind conditions.

7. If the unit is spinning freely and you have checked all the above but still stops in low wind conditions check that the power supply is turned on to it.

8. If the power supply is on check the power source is working. If the unit is Solar powered see the section on solar panels and batteries. If the unit powered by a 240/12 or 24volt transformer ensure that the unit is working. If not replace it.

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At all times if you are required to access the ventilator be sure that you seek professional advice and follow all safety guidelines and requirements necessary when working at elevated heights.

If and when you have checked the above and are still experiencing problems please contact your supplier or help on 1800 308 302.

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. eg 5kgs to a 5000l Primary tank.

2. We then recommend that the tank be super dosed with **Biomagic**. Eg. 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 secondary 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.

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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 beard or no vibration is felt then a closer inspection of the fan will be necessary. Clear any build up of insects etc, from around the fan and/or vent pipe. The system will still function without the fan but odours 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 solutions. 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 secondary 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

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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.

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.

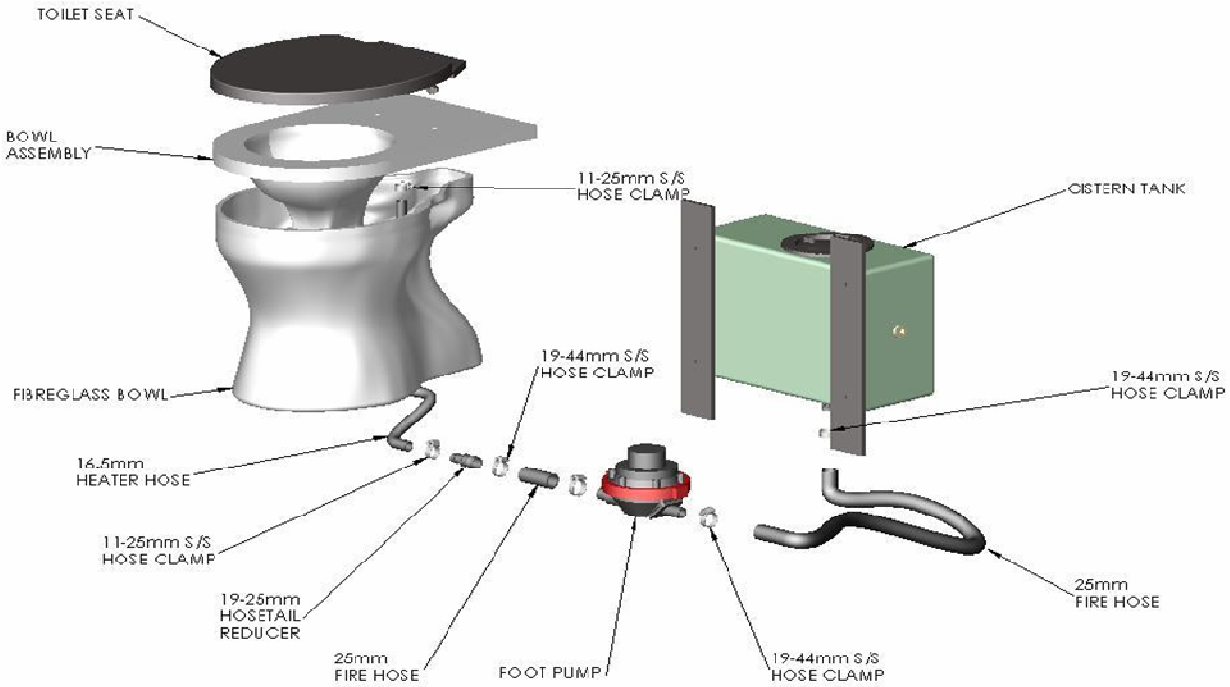
To minimise the opportunities for the flies to breed, ensure that there is minimal floating matter in the primary tank. To do this, see the section’s on Cleaning & Peak Period use and also Problem (iii)’s solution.

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.

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

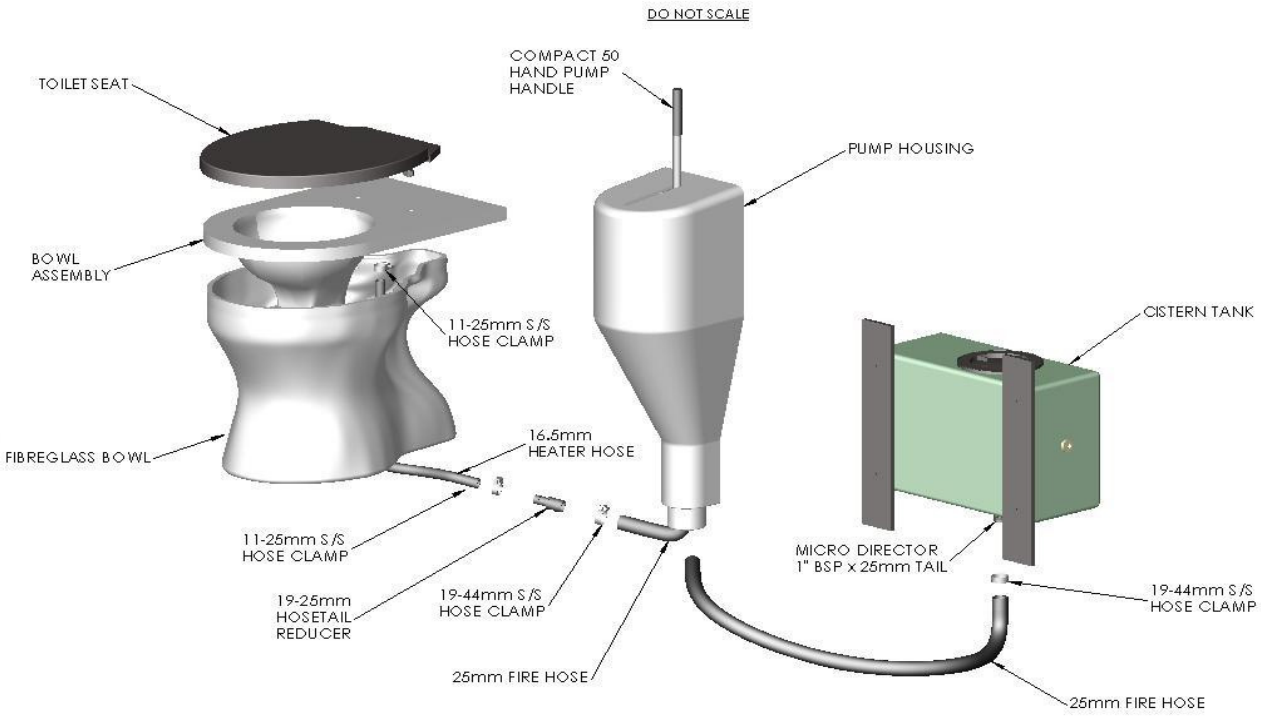


PROBLEM (VIII) – THE MICROFLUSH HAND PUMP IS NOT WORKING

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.

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:……

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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:……

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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:……

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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:……

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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;……

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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:…….

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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 308 302, (International 61 7 4774 7606) or your local Agent