Installation Guide
UBI Aqua Mark II Water Treatment System:
A Reference Guide for Installers

Thank you for Installing the UBI Aqua Mark II 6000 Litre Water Treatment System.

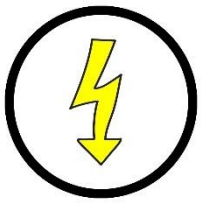
Please note: This tank is designed to cater for up to 8 equivalent people with a maximum of 1200ltrs per day.

Table of Contents

Feet on tank MUST be removed prior to installation

Safety Instructions

Please read the information provided.

	**PLEASE NOTE - Each State Government has regulations for Water Treatment System and they are required to be registered with your local council and comply with their required standards. The requirements may vary depending on location, soil type and proximity to water ways.** **A Quarterly Maintenance report is required to be sent to council** **DO NOT Enter the SEWAGE TREATMENT PLANT.** Risk of drowning or asphyxiation due to low oxygen environment is present. **Ensure all access lids are closed securely** after installation, servicing and accessing the treatment plant to prevent unauthorized or accidental access
	**PLEASE NOTE** – Follow all safety precautions and accident prevention guidelines during installation, use, maintenance and repair of the UBI Aqua Mark II Water Treatment Plant. All local safety precautions and accident prevention guidelines established in the area should also be followed.
	The waste water contained in the UBI Aqua Mark II Water Treatment Plant may contain harmful bacteria. Persons coming in contact with waste water must immediately wash and disinfect all exposed areas. Contact your personal physician for all health concerns
	WARNING! All electrical work required must be carried out by a licensed electrical contractor or authorised service professional. **NOTE: This must be on its own power circuit.**
	SLIPPERY WHEN WET! When Installing and Maintenance is being undertaken ensure children and animals are keep away from site. During cleaning, maintenance and repair work the surrounding area may become extremely slippery in some circumstances due to spilled water. Caution is to be taken when walking / standing near the UBI Aqua Mark II Water Treatment System when these activities are being conducted.

1. Warning

The UBI Aqua Mark II sewage treatment system is not to be used at all prior to being commissioned. This includes NO waste fed into the system by either contractors during the construction of the house or owners wishing to take up residence. If the system is used prior to commissioning, the owner will need to pay for the system to be correctly cleaned out.

The recommended rated operating temperature range for UBI Aqua MK II STS is for ambient air temperature of between 0°C and 38ºC and main treatment Chamber wastewater temperatures of 11-25ºC

2. Handling

- Move the tank by lifting, using the lifting lugs in the top
- Do not drop the tank.
- Do not roll it into the hole
- Do not drag tank across rough surfaces

3. Site Selection

- Must conform to local & statutory regulations
- Tanks should be sited with due consideration for future de-sludging operations and the sitting of either, any further effluent treatment unit, and or land application system.
- Where no regulations exist, the distance of the excavation from any structure must be equal to or greater than twice the depth of the excavation. (Zone of influence)
- Must be located so that tree roots will not interfere with the tank or its associated fittings & plumbing.
- Must not be installed where there is a possibility of the water table exceeding half the height of the tank
- Must not be installed where actual or potential garden beds exist.
- Must not be installed where it will be subject to surcharge loading within 2m of the perimeter of the tank. This includes driveways, storage areas, anywhere stacked

materials are placed, above ground pools & spas, high level residential footings, and anywhere that it is likely that people may congregate.

- Placement of the tank is permitted adjacent to footings of residential dwellings so long as the designer of such footings maintains vertical support to these footings below the zone of influence of the tank as per local council requirements.
- Note that the tank in this form does not have the ability to withstand significant surcharge loads placed above the tank (and within the zone of influence such as stacked / material and multiple human access.

4. Excavation

- Observe any local and statutory requirements for excavations
- (eg benching/battering/shoring)
- Hole must be 2880mm minimum deep (measured from the finished ground level, not necessarily the existing ground level).
- The installer shall take all reasonable precautions to ensure that the tank is not within the zone of influence of nearby existing structures, such as retaining walls, residential dwellings, commercial buildings, and the like. In such circumstances, advice from a suitably qualified structural engineer should be obtained.
- The base of the hole must be a minimum of 1500mm in diameter.
- The Slope 1.5:1 for Sand Gravel soil and Slope of 1:1 for Clay soil

See attached Figure 1 . 6000 litre Water Treatment Tank Installation Guide.

5. Placement of Tank

- Place the tank on a level bed of 100mm of sand bedding layer. This is to ensure that rocks & other debris in the excavation do not damage the tank.
- Ensure that the top of the tank the finished above ground level.
- Ensure that the rim around the opening is clean and dry.
- Secure the lid with stainless bolts as provided.
- Once the back fill reaches half the tank height fill tank with water up to 900mm below finished ground level.

6. Backfilling

- Soil pressures based on a backfill/subgrade material with density maximum of 20kN/m3 minimum density of 18N/m3

- Backfill material must have a minimum soil friction angle of 30°.
- Backfill material is to be compacted evenly around the perimeter of the tank to a minimum of 98% modified dry density ±2% optimum moisture content in compacted layers not greater than 200mm evenly around the tank during installation.
- Place fill slowly and evenly from both sides, and ensure that there are no voids, particularly underneath the hold down wings.
- Only hand held vibrating plate compactors may be used in the compaction process.
- Backfill cover over tank must be 400mm (300mm of backfill material and 100mm of topsoil is acceptable)
- Recommended backfill or foundation material is 10mm Blue metal or 10mm recycled concrete
- Ensure all caps and overflows are sealed prior to backfilling the excavation.
- Excessive dirt in the tank will cause line blockages and possible early pump failure.
- Connection pipes and couplings should be supported over the whole length of the trench.

See attached Figure 1 . 6000 litre Water Treatment Tank Installation Guide.

7. Tank Assembly

- The tank comes fully assembled with 4 chambers. A registered plumber needs to connect the following connections.
  1. The 100mm PVC pipe to the sewer inlet.
  2. The 25 mm poly pipe connect to the irrigation field (This is located at the top of the water treatment lid)
  3. **ENSURE that a non-return valve is placed on the 1" outlet on the outside of the tank to prevent backflow occurring. THIS IS CRITICAL AS THE PUMP WILL BE OVERWORKED**
  4. The only requirement is that the chlorine containers that are stored for transport in the electrical box, need to be placed in the chlorine application chamber inside the pump well.

8. Electrical Connections

All electrical work must be undertaken by a registered electrician in the installation of the UBI Aqua Mark II system in regard to connecting the system to the main electricity supply.

NOTE: This must be on its own power circuit. Connections MUST comply with current codes (AS/NZS 3000) and operate correctly. The electrician is to connect the power through the conduit that is provided on the tank to the main electricity supply.

9. UBI Aqua Commissioning

- All chambers must be **EVENLY** filled with water following installation.
- Bio Balls need to be in place in the aeration chamber.
- Place chlorine tablets in both chlorine dispensers (fill dispensers) (Note: chlorine dispensers are in the Electrical Box and need to be placed in the tank)
- Turn the *UBI Aqua* water treatment system on at the main power point and the two power points under the air pump cover.
- Secure the lid to the UBI Aqua water treatment system using the stainless steel bolts required.
- Ensure the air pump cover is in place and secure.

10. General

- **The stored liquid is to have a specific gravity of 1.0 only.**
- **The maximum surcharge loading for a person traversing across the lid of the tank is 510 kg.**
- **In addition to the above information we strongly recommend that the tank be kept at least 20% full of water in wet weather, or at any other time when the area around the tank may become waterlogged**
- **Care must be taken when pumping out the water treatment system it must be undertaken by a licensed maintenance contractor who MUST pump out the main chamber first prior to pumping out the remaining chambers.**
- **Contact your local council for further information on your regions requirement.**

11. Confined Space

- **Under Work Health and Safety Regulations those installing, operating and maintaining this UBI Aqua Mark II Water treatment system are obliged to follow "Confined Space" requirements.**
- However there should be **NO** need to enter the tank for installation, operation or maintenance purposes.

12. Safety

- **At no time should this tank be left in the ground unattended without the lid secured.**
- **Please see both local and state requirements for installations and worksafe requirements.**
- **At no time should the *UBI Aqua* water treatment system be left in the ground without ballast water.**
- **When pumping out the UBI Aqua water treatment system the main chamber MUST be pumped out first prior to pumping out the two remaining chambers**
- **A registered electrician MUST connect to main power.**

13. Servicing Arrangements

Your *UBI Aqua Mark II* Water Treatment System required regular service and maintenance inspections. This will be carried out by your certified technician who has undertaken the installation for the first 12 months at cost to you.
After the first 12 months this servicing will need to continue at cost to you.

A record sheet will be completed by the technician at the time of service and a copy provided to you for your record. A copy will be sent to your local council and a copy keep by the technician.

These inspections will include the following

1. *General inspection of tank area*, irrigation and drainage.

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

3. *Inspection of the Air system* including venturi / sludge return, air pump and diffuser.

4. *Inspection of holding well and water treatment tank* including testing water samples.

   Operating desludging unit, resetting air control and operating submersible switch. Checking bio mass growth, checking sludge levels.

5. *Inspection of irrigation* including flushing lines, outlets and jets

6. *Chlorine Supply* replenished.

Between 3-9 years the water treatment system will need to be pumped out this needs to be organised by the owners and a registered company of your choice. This is at cost to the owner of the water treatment system.

Quarterly Maintenance Record Sheet

Date	Test	Results
	Chlorine	
	PH Test	

Day Temperature _____ Water Temperature _____ Service No 1 2 3 4

General Inspection	Irrigation Area Tank Area Drainage	
Electrical Equipment	Timer Check and reset Venturi Operation Irrigation Pump Operation Aeration Pump Operation Warning Lights Operation Connections Check	
Holding Well	Sample Test Water Check Airlines Adjust air supply	

	Operate de-sludge unit	
	Reset air control	
	Operate submersible switch	
	Check bio-mass growth	
	Replenish chlorine	
	Check sludge level	
Irrigation	Inspect lines	
	Inspect Jets/ outlets	
	Pressure clean system	
Report Copies To	Customer	
	Council	
	Office Record	
	Maintenance Technician	Signature
	Name	

Remarks

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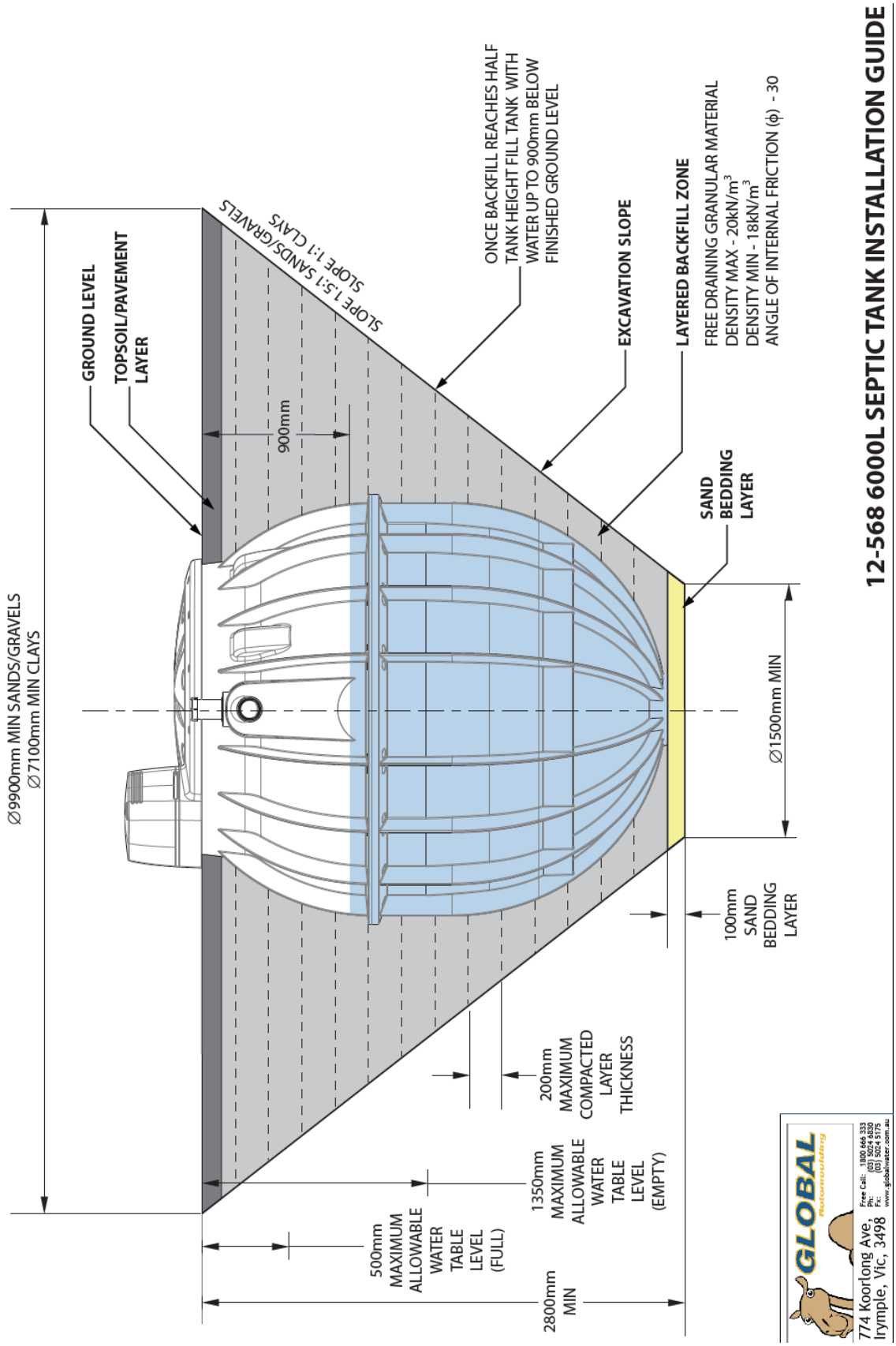
Figure 1. 6000 litre Water Treatment Tank Installation Guide.



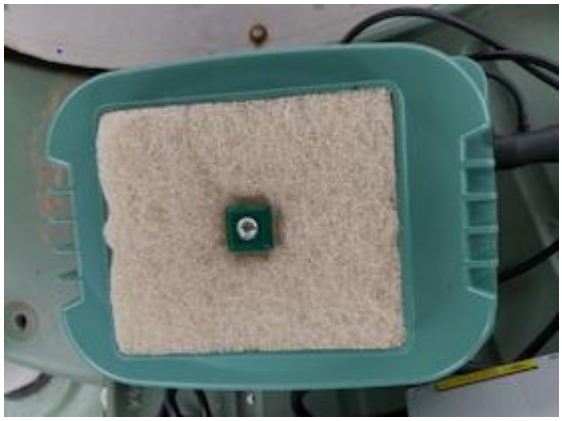
13. Appendix List of Components and Suppliers.

Electrical Control Box

OEM part.
Supplied by Green NRG
Purchase from Global Rotomoulding

Air Pump

Filter layout



Hiblow HP120
Supplied by Hiblow Australia
Purchase from Global Rotomoulding, Irrigation /plumbing stores

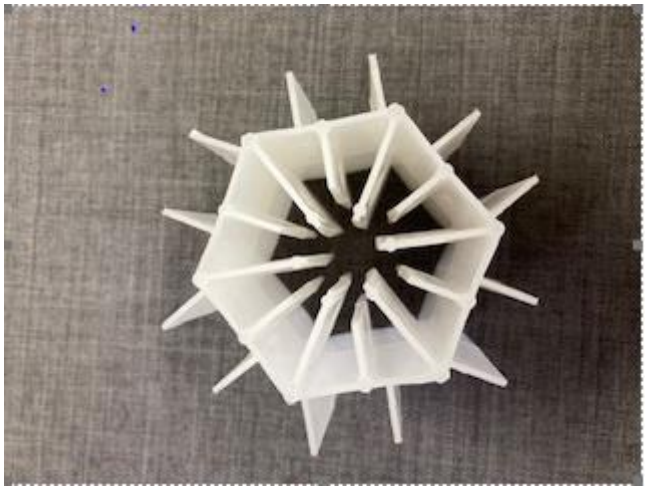
Discharge Pump

Davey D 42A/B3 Sump Pump.
Supplied by Davey Water Pumps.
Purchase from Global Rotomoulding, irrigation/plumbing stores

ADD- 230-9" Fine Bubble Air Diffuser (x2 Installed)

OEM part.
Supplied By Aquaflex
Purchase from Global Rotomoulding

Media Balls



OEM part.
Manufactured by B & C Plastics.
Purchase from Global Rotomoulding

15mm Ball Valve

Supplied by HR Products
Purchase from HR Products