GREEN LOO
DRY COMPOSTING TOILET
Owners – Installation – Operation Manual

for the

GT 330

Version III

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1. INSTALLATION PLANNING

It's all in the planning!

For proper operation of the toilet you should consider a number of issues during the building design stages to enable the natural composting processes the best chance to give trouble-free operation.

The design of the site and building needs to allow for:

• The location of the toilet pedestal in the building and any structures that may be required to have the composting container below floor level.
• Space for the composting container and a firm, dry and sheltered base for it to sit.
• Adequate access to service and maintain the toilet.
• Good ventilation to provide oxygen and evaporate liquids
• Electrical supply (240VAC or 12VDC) to the fan location

The GT 330 is supplied as a kit containing most of the components required and can be installed using basic building tools and materials available at plumbing suppliers or hardware shops

Space Required

There is no ideal set of measurements which will suit all applications, but you do need to provide enough space to locate and install the composting container, enough space to fit and maintain the air vent piping and fan and enough space to access and exchange the containers, so allow space to maneuver the bins. The GT 330 has been designed to achieve this with a 920mm minimum space requirement. However, the multi-chute allows for installations up to 1.4m high - and this can even be further extended with optional additional chutes.

General considerations and tips

- The composting container must be located directly below the toilet pedestal.
- Do not plan to install a light directly over the pedestal/waste chute as this will attract flying insects.
- Always close the lid of the toilet after use
- Do not use your bathroom fan! Its suction works against the suction of the fan of the GT 330.

a) Assembly of the GT 330 System's Composting Containers

For transport reasons, the GT 330 system arrives without the excess liquids drain camlock nipples in place. You will notice that there are 2 excess liquids drains outlet, either side of the container at the bottom. Choose which one of these works best for your situation and block the opposing one with the bung and seal provided. Do this with both containers. Simply lift the bin out and hand tighten the fitting or bung with seals supplied:

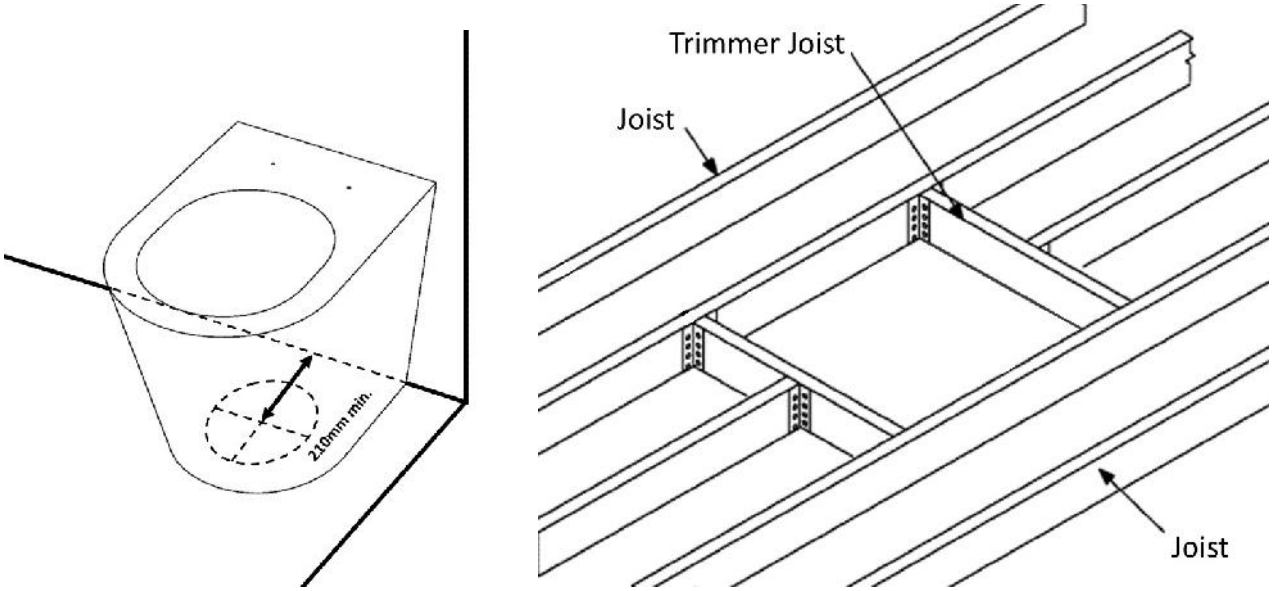
b) Positioning the Pedestal and composting container to ensure a vertical drop from the pedestal to the waste bins

The GT System is installed sub-floor. It may be installed under a concrete slab or bearer and joist floor, in a full or partial cellar as desired in the building design.

The first thing to do is to decide where in the toilet room you want to place the pedestal. Mark a centre position for the waste chute using the pedestal as a guide. Drill a small hole through the centre point and through the floor. Go to where the GT 330 is to be located below floor. Attach a plumb bob through the centre point hole and consider the position and ensure there is enough room to fix the vent piping and fan and there is adequate access to service the container.

Consider the spacing of joists or concrete slab penetrations to allow for the waste chute. Check you have clearance in the joists for the waste chute to pass through the floor. Install trimmer joists if necessary (this has to be carried out by a licensed builder). Ensure no piping or wiring encroaches on the cut out.

Do not cut out the waste chute hole in the floor until you are sure you have everything lined up in case you need to adjust the position.



c) Prepare a flat, level, and firm base for the composting container to sit on.

This can be a concrete pad but need not be - the main purpose is to have a level and firm foundation to support the composting container to slide the containers in and out.

A level dirt or gravel area will do just fine.

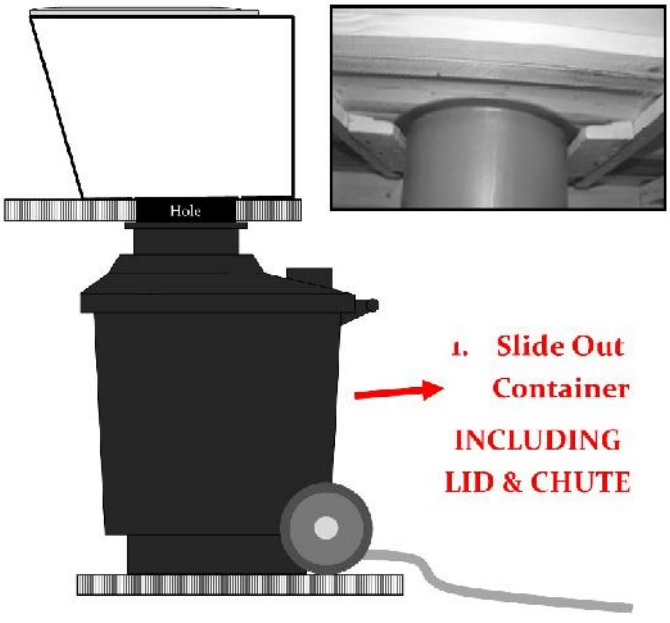
2) Choose Your Installation Options

The ingenious multi-chute that is included with the GT 330 system allows for 2 basic installation options. Which one you choose is up to you but as a general guideline, **installation option 1)** should be preferred if there is limited underfloor space, as it allows for the whole composting container to slide out. Installation option 1) is unique to Green Loo's GL and GT systems & there is no interpenetration of the chute with the bathroom floor. In this option the supplied wooden rails are used to create a sliding guide (see insert picture below) that holds the chute flange firmly against the underside of the floor when slid in place.

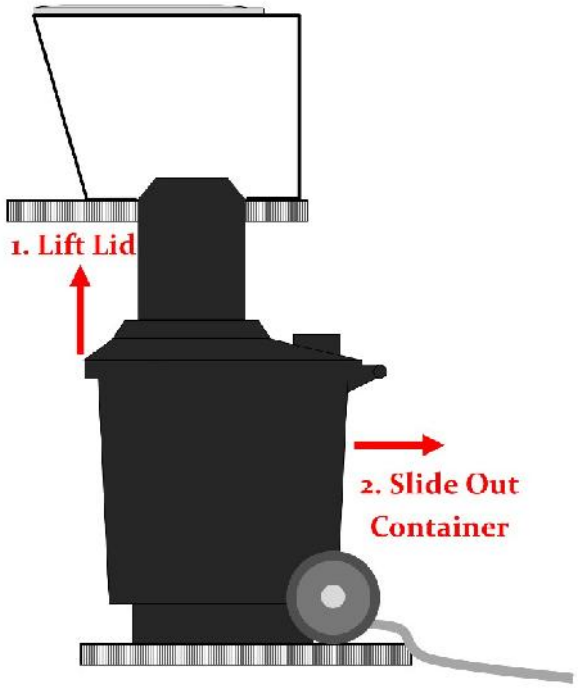
Installation option 2) is the more common of the 2 options, in which the chute is fixed in place and interpenetrates the bathroom floor. In this case the lid of the composting bin is slid up the chute when exchanging containers and the composting container is pulled out without the lid attached.

Choose your preferred installation option, taking installation height into consideration and personal preference.

Installation Option 1)
with Rails (see picture below right - but not shown in sketch below left) & Sliding Chute for minimum height requirement



Installation Option 2)
with Interpenetration of Chute and Toilet Floor

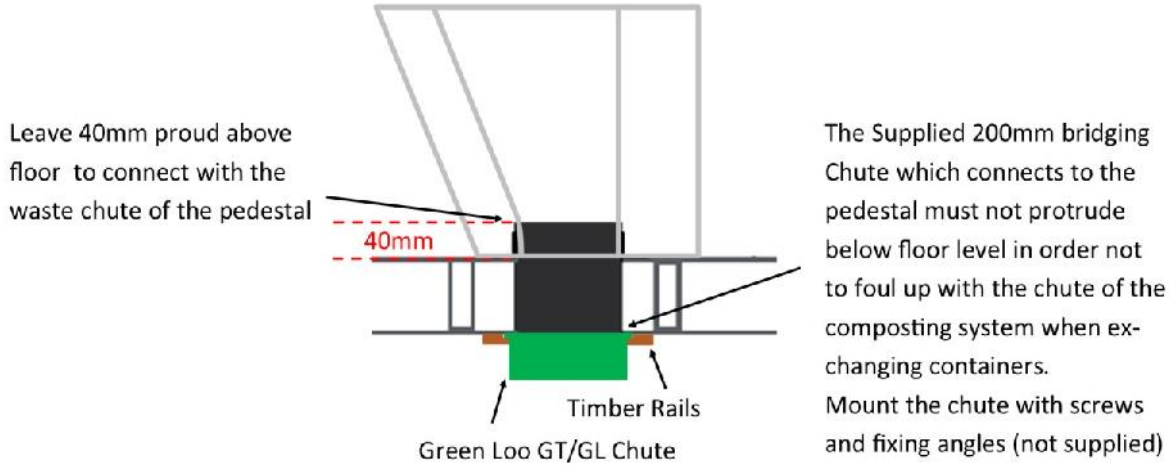


2.1 Installation Option 1

Placing the Pedestal and Cutting the Waste Hole:

Cut the waste chute hole in the floor. This hole should be larger than the throat of the toilet pedestal but smaller than the GT 330's chute, to ensure free fall of solid matter & clean drainage for liquids. We have supplied a short length of black 200mm pipe should you wish to line the hole with a bridging chute. This must not protrude below floor level in order not to foul up with sliding in and out the chute of the composting system (shown in **green**) when exchanging containers.

Above floor leave bridging chute 40mm proud to connect with the waste chute of the pedestal.

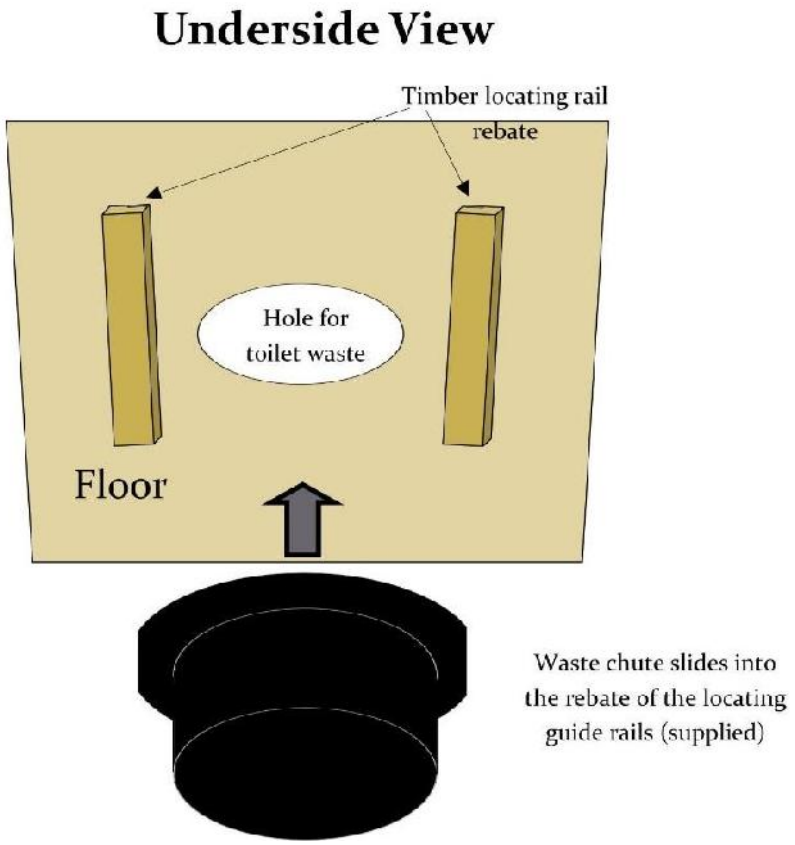


Installing the Guide Rails:

In this installation option, the most common way to install and service the GT 330 System is to push the container from the back of the toilet room to its position under the seat. To locate the waste chute, there are rails in the package to be installed on either side of the toilet waste chute hole (see picture below). These rails ensure that the shaft holds firmly in its place during use.

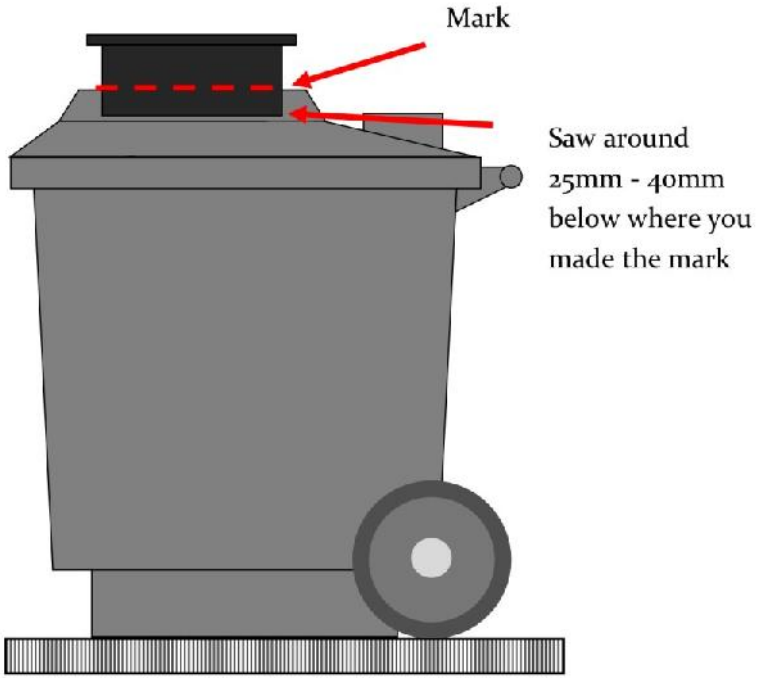
Install the rails parallel & exactly symmetrical either side of the hole allowing for the parallel sides of the waste chute flange (around 290mm) to glide in and out of the rebate of the timber guide rails.

Consider installing a 'stop' so the waste chute cannot be pushed in too far.

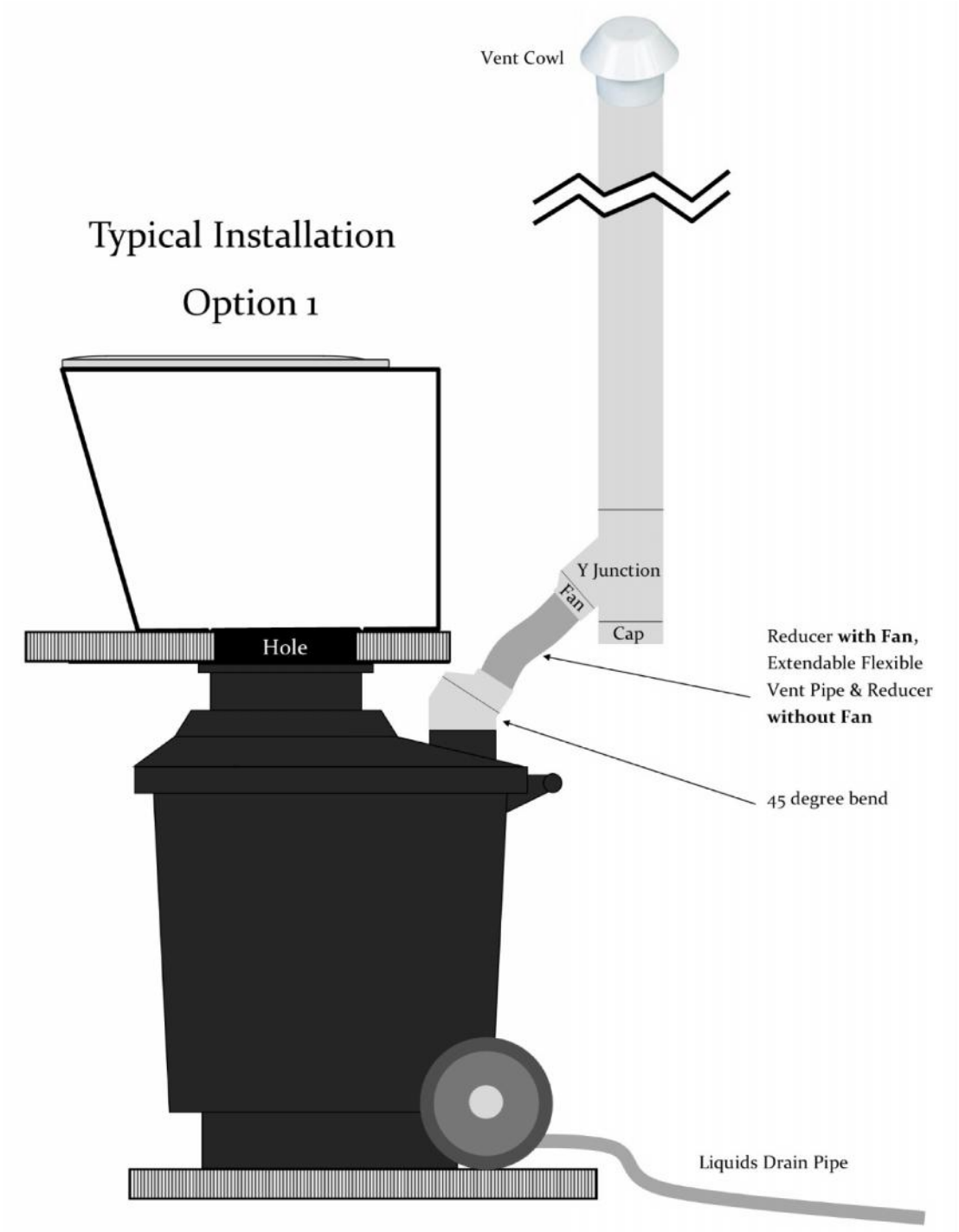


Sizing the chute:

Cut off the tapered end of the chute, allowing plenty of length remaining. Re-insert into the container. Slide the chute & container into place and mark where the chute meets the lid. Slide back out and cut off the excess length of the waste chute with a saw around 25mm - 40mm <u>below</u> where you made the mark.



Schematic drawing for installation option 1)



2.2 INSTALLATION OPTION 2)

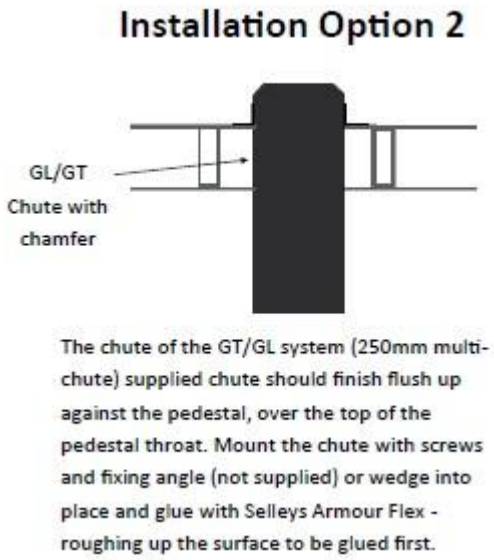
Placing the Pedestal and Cutting the Waste Hole:

Cut the waste chute hole in the floor - the size of the GT330's chute - 250mm (+/- 2mm).

Sizing the chute:

The purpose of this section is to cut the waste chute at the correct height for the pedestal, and correct depth for the composting container.

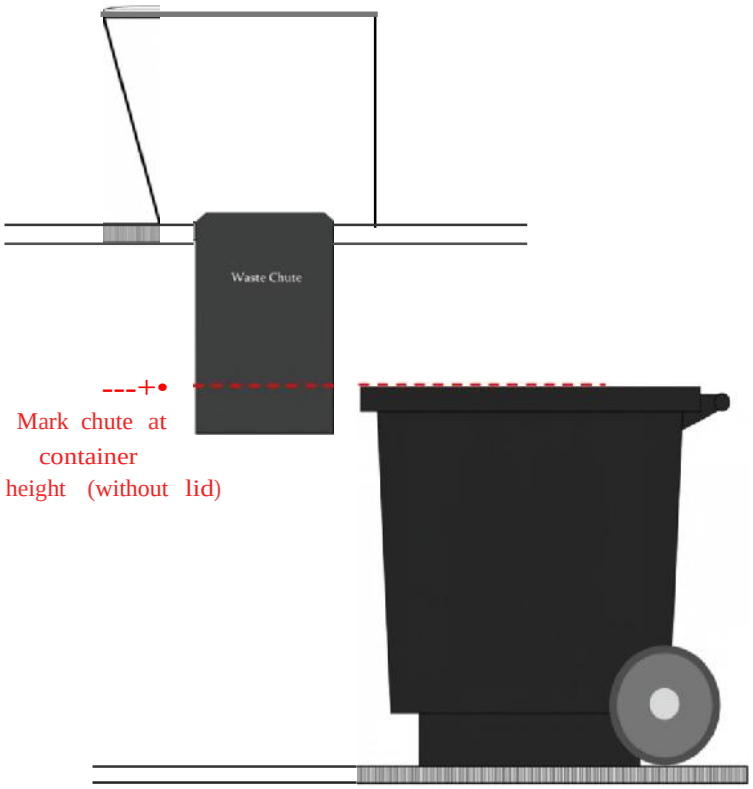
Cut the flange off the chute. Retain the tapered end of the chute. The porcelain pedestal's throat is around 200 mm - which is the same as the diameter of the taper. Affix the chute temporarily - protruding 40mm from the floor. See example below:



:

Slide the composting container <u>without lid</u> next to the chute and mark where the chute meets the top edge of the container. Slide chute back out and cut off the excess length of the waste chute with a saw around 50 mm <u>shorter</u> than where you made the mark. This means that the chute will clear the composting container when slid out at exchange of containers.

1)



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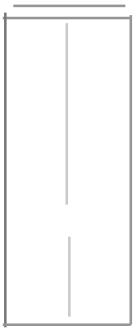
Mark chute at container height (without lid)

2)



Cut chute 50 mm shorter
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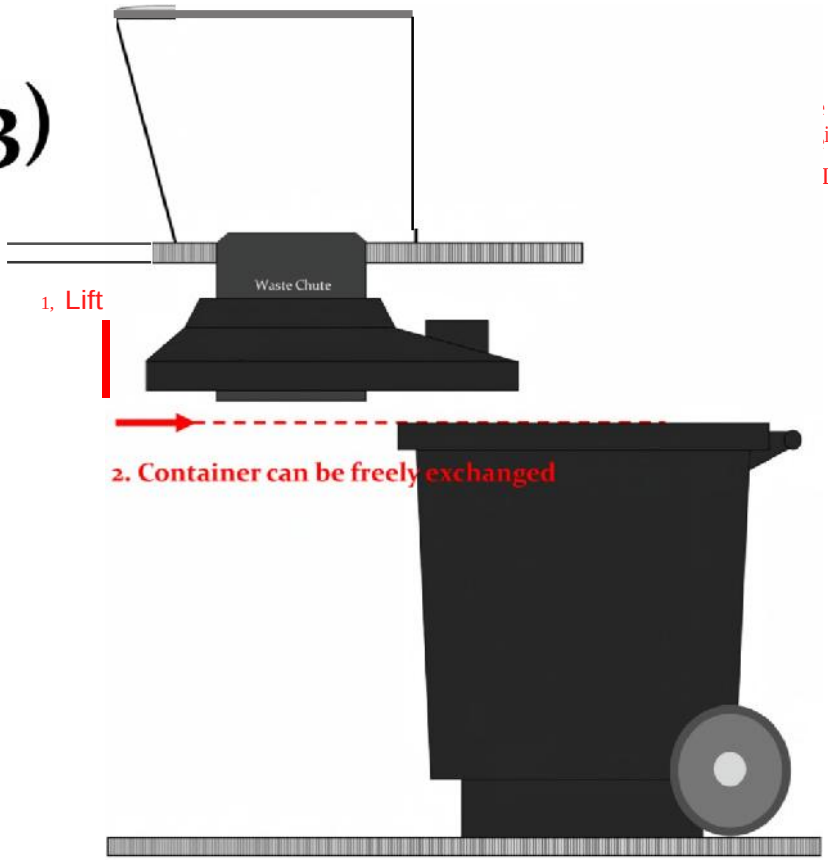
d)
Li

3)

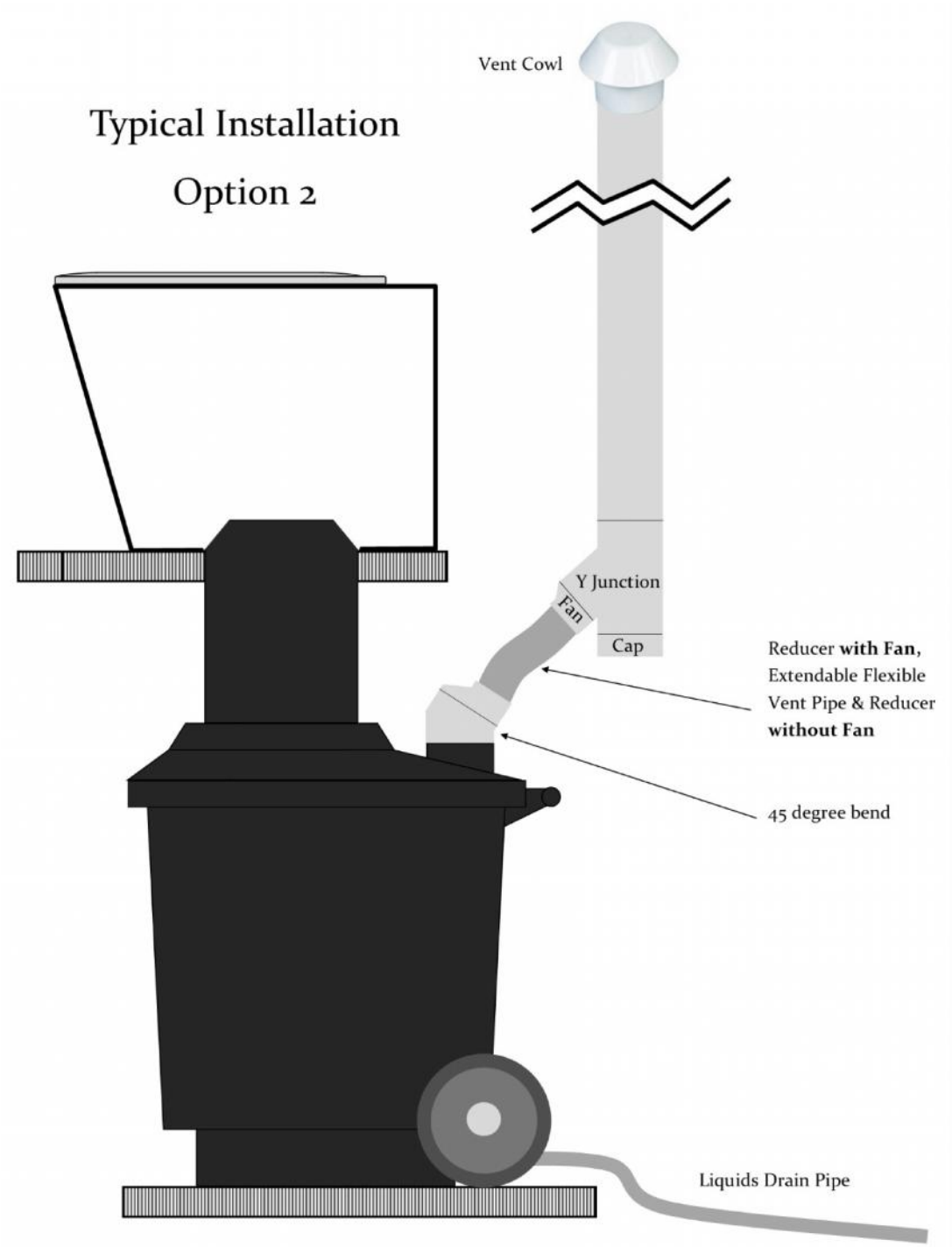


1, Lift

2. Container can be freely exchanged

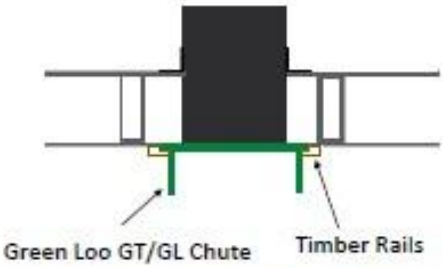
Re-insert the chute into the hole you cut. Fix to the floor at the previously measured height. Use metal brackets and Selleys Armour Flex to permanently fasten the chute to the floor.

See schematic drawing for installation option 2)



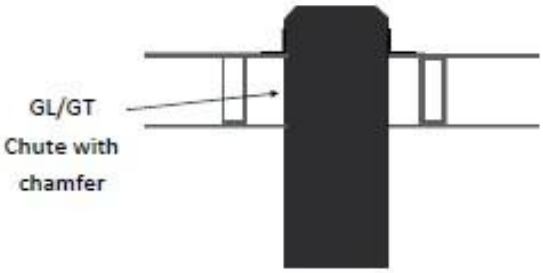
3. PEDESTAL INSTALLATION

Installation Option 1

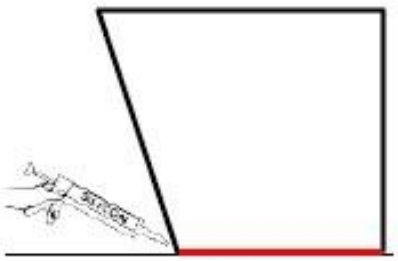


The supplied 200mm chute should finish flush up against the pedestal, over the top of the pedestal throat. Mount the chute with screws and fixing angle (not supplied) or wedge into place and glue with Selleys Armour Flex - roughing up the surface to be glued first.

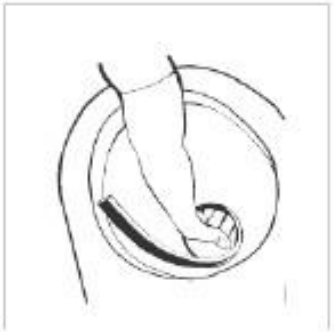
Installation Option 2



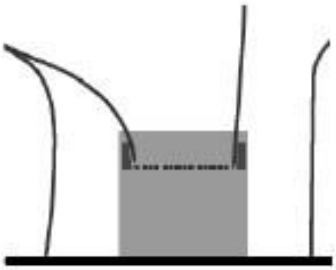
The chute of the GT/GL system (250mm multi-chute) supplied chute should finish flush up against the pedestal, over the top of the pedestal throat. Mount the chute with screws and fixing angle (not supplied) or wedge into place and glue with Selleys Armour Flex - roughing up the surface to be glued first.



Use Silicone or similar to fix the pedestal to the floor & fasten with supplied brackets.



Fix the supplied insulation strip between the chute and the outside of the porcelain outlet - making sure it is be-hind the porcelain outlet, not visible and not subject to soiling



The strip ensures maximum efficiency of the ventilation system

Oslo Pedestal Floor Installation

1} Ascertain whether you would lite the pedest.il to sit against the back wall, or some diS-Unce out from the w.iiJI

2} Ensure you haw enoucfl ~ce eithe< side of the pedestal to affix the fastening screws. Typic;ally this is 320mm to acc:ommodate the satws and dnll

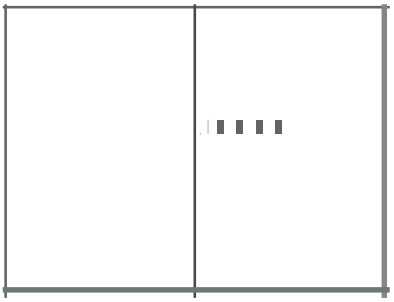
3) Mark your chute hole centre 210mm from the back position of the pedestal

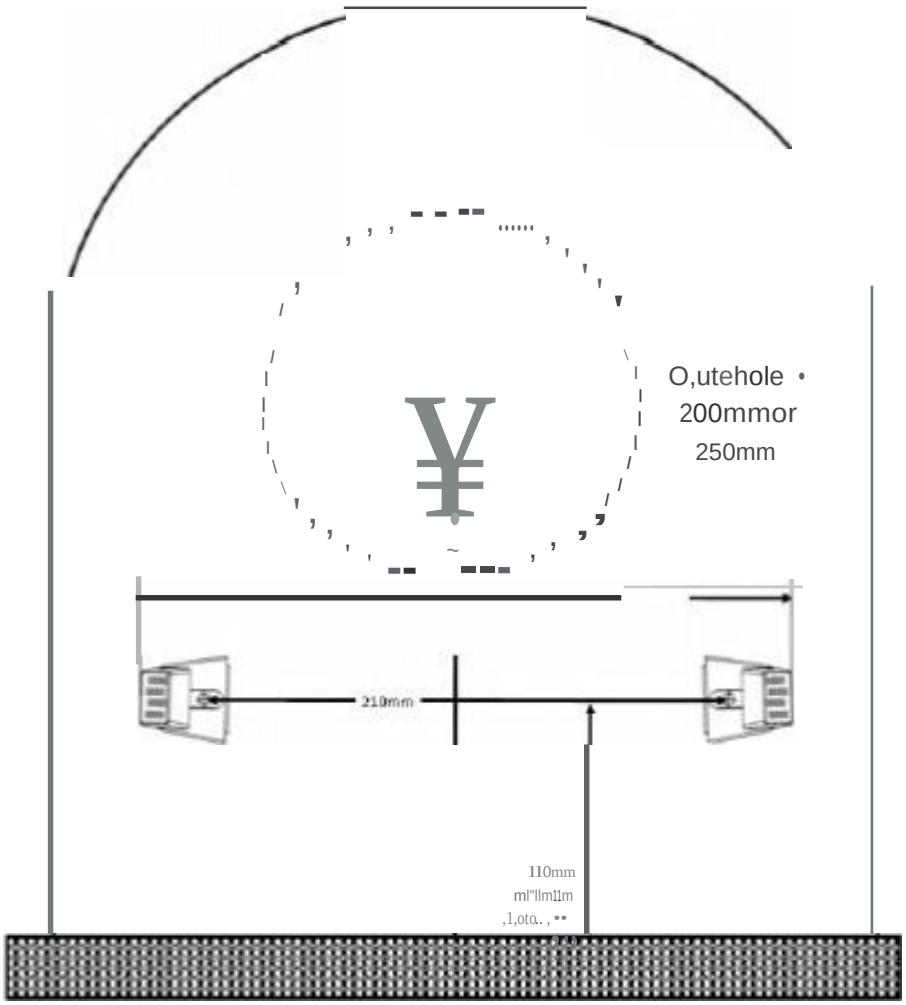
4) Affix mountirc bndtets asp« the below dr.wine, 110mm from tht back position of tM pedestal

S) When totalty sao~ d'IM ev-vthinc ls it! th• C0!ffct place, cut chute hole (200mm 04" 250mm, d~inc on inn-.tl1tion 09don l) or 2))

6) Pl1ce pedtsul into po$ffl0ft, P,e down with Silicone or similar if desired

7} Screw pedesul into place ~ ap with supplie,d white covers





4. VENT SYSTEM INSTALLATION

The GT's airflow requirement is provided by 100mm pipe and incorporates a continuous running fan (supplied). Consider how the fan will be powered (240VAC or 12VDC) and ensure the fan housing is accessible for maintenance. Ensure correct airflow of the fan **away from the toilet.**

Remember that warm air from the composting chamber (the composting process generates its own warmth) naturally rises, and that sharp bends restrict airflow – designing the vent piping correctly will improve natural operation. Avoid bends tighter than 45 degrees.

Ensure that the vent system doesn't interfere with the sliding in and out of the composting bins. Consider installing the condensate (moisture) trap with the 'arm' of the Y - Junction angled parallel with the outside of the wall and slightly off to one side.

Warm air, holding moisture, entering a cold vent can result in condensation. Consider insulating the outlet vent piping - and install the provided condensate trap as per drawings.

Vent Pipe Installation - The fittings have been preassembled with a cover to provide protection for the power adapter plug

The ventilation pipe should rise perpendicularly with as few curves and elbows as possible, the vent cowl placed on top. Don't use pipe cement below the Y - shaped joiner – the push fittings should be tight enough for this purpose, and this allows you to dismantle and service the vent system and empty the condensate (moisture) trap as required.

The following is an example as to a standard vent installation – there are many permutations possible and if in doubt, contact us for discussion and guidance:

1. Attach your venting pipe to the wall of the building, including vent cowl. Ensure that the vent system doesn't interfere with the sliding in and out of the composting bins. Consider installing the condensate (moisture) trap parallel with the outside of the wall and slightly off to one side.
2. Attach the Y joiner as per the picture. Finish with screwing on the cap. This is your moisture trap, which should be emptied every few weeks by undoing the cap, letting the water drain out and re-attaching the cap.
3. Slide the **fan end** of the fan/flexible vent pipe assembly (100mm to 65mm reducer with fan, black flexible vent pipe and 100mm to 65mm joiner without fan) into the Y joiner's 45°degree angled inlet. Push together (don 't glu e th is connect ion !) . Plug the fan into the power supply and ensure the airflow is away from the composting container, upwards towards the exhaust end.
4. Attach the 45 degree bend to the vent outlet of your GT container in situ, pointing towards the Y Junction.
5. Extend the black, variable length flexi hose.
6. Attach the reducer (the one without fan!) of the flexible vent pipe assembly to the 45 degree bend at the vent outlet of your GT container.
7. Ensure the flexible hose does not run downhill from the horizontal and ensure there are no kinks or restrictions to free air flow.

8. Once the system is installed to your satisfaction, shorten the flexi hose as much as possible, minimising any bends to achieve a smooth flow curve. This maximises air flow.
9. Congratulations, you are done!

5. WHEELS AND AXLE

There is one axle and set of wheels supplied per complete system - as they slide out of the rebate at the back bottom of the composting container for easy exchange, only one set is required.

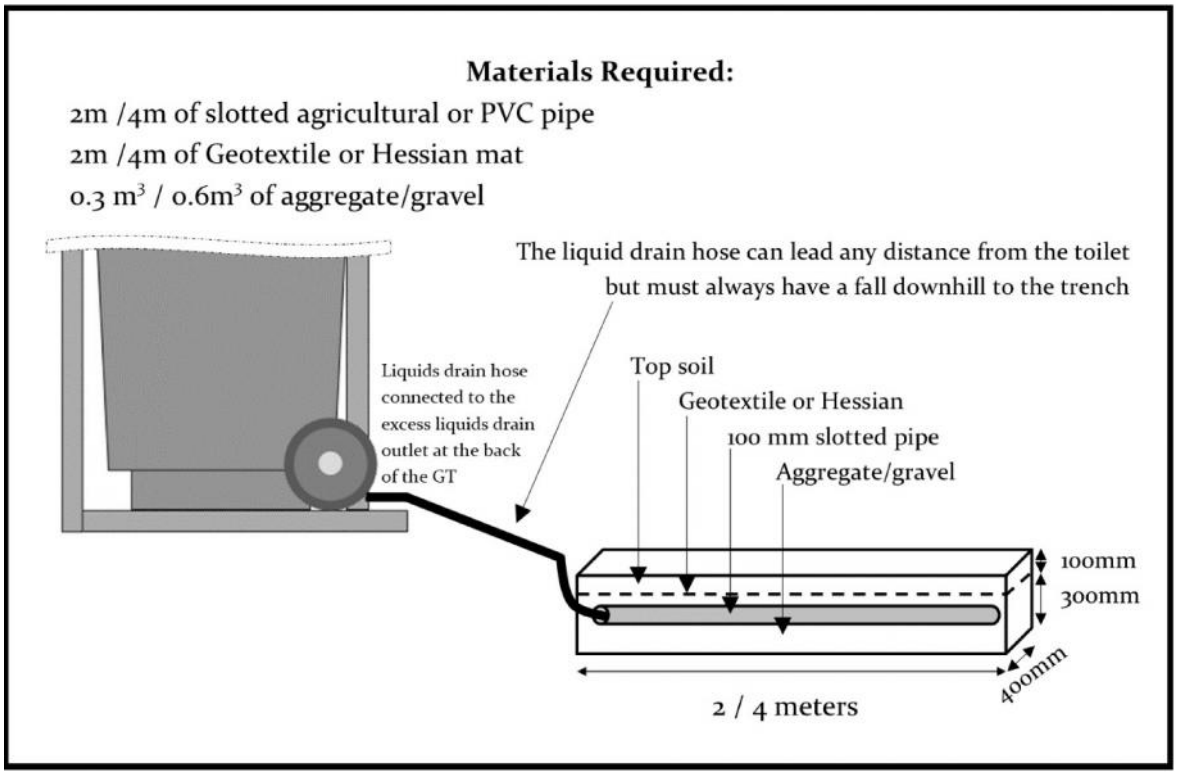
6. ABSORPTION TRENCH/EXCESS LIQUID

As a result of the capillary double base of the GT 330 System, 90-95 % of the liquid waste is used up in the composting process, as well as being evaporated through the vent system. An absorption trench is required to deal with any excess liquid.

The length of the trench is 2 m for the GT 330 (4-person permanent use) and 4 m for the GT 330 with an extra composting container (8-person permanent use). The trench is to be 400mm wide, 400mm deep.

However, dimensions must not be less than required by Regulation 50 of the Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974 or AS/NZS 1547. See diagram for a GT 330 installation overleaf.

Attach the threaded camlock fitting onto the grey joiner, connected to the grey, ribbed excess liquids hose, and tighten with the supplied hose clamp.

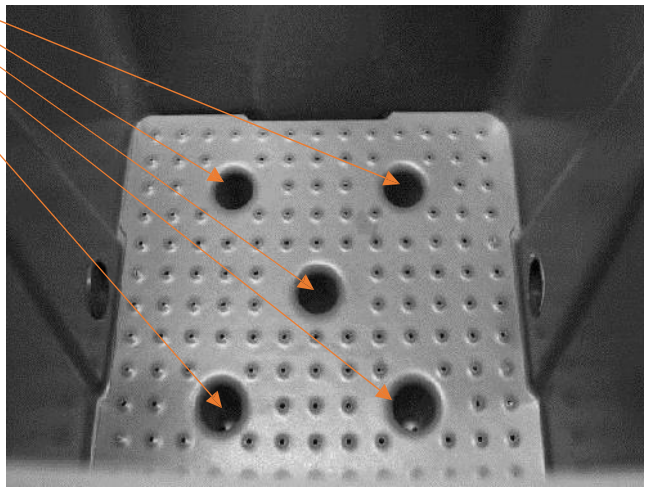


The excess liquids drain from the composting, fallow container can be connected into this drain or needs to be disposed of in the same way.

7. BEFORE USE

The composting power of the GT System is based on the capillary double base which works similar to under watering flower pots. A large part of the liquid waste is absorbed back to the composting mass through capillary action, thus boosting the composting process.

Before putting the system into use, fill the base with a 5-10 cm layer of our covering material Hemp. Ensure that the "legs" are also tightly filled with hemp. This enables the capillary feature to work. Also, after every emptying, remember to add a new layer of hemp before use and also re-stuff the base's "legs" again.



8. USE OF THE GT SYSTEM

The GT System can be used almost like any normal water toilet. Toilet paper can be thrown into the toilet, as it composts together with the waste. However, any items containing plastic, e.g. sanitary towels should be placed into a separate bin. A handful of covering material (Hemp, 1 cup) should be added after each bowel movement. The composting process can be enhanced even further by leveling and mixing the compost occasionally. Our compost starter/accelerator (biodegrader) may also be added.

9. SERVICE

a) Check the fan 1) monthly to ensure it is working or 2) if you notice unusual odour.
b) The average length of time until a container is full is around 3 / 6 months at 4 people full time use for the GT 330. Check through visual inspection.
c) Both the active and fallow container need to be secured to prevent tampering by young children. This can be achieved by keeping the containers in a locked area or by securing and locking a strap around the composting container that can not be undone by young children.
d) It is not vital that the fallow container is kept in the sun, however composting is accelerated by warmth. Therefore choosing a warm spot is helpful, as long as provision c) above is observed.
e) If there is excess liquid draining from this 'fallow' composting container, this can be connected into the existing dispersal system or alternatively needs to be disposed of in another excess liquids dispersal trench during the composting period.

10.EXCHANGE OF CONTAINERS

To exchange or empty the GT System, protective clothing, face mask, glasses and gloves must be worn at all times.

Tip the bin towards the excess liquids outlet before taking the excess liquids hose off and then raise the hose (once disconnected) so that any liquid is drained off. This prevents excess liquids from spilling out.

Disconnect the vent system from the GT 330 container.

If using installation Option 1):

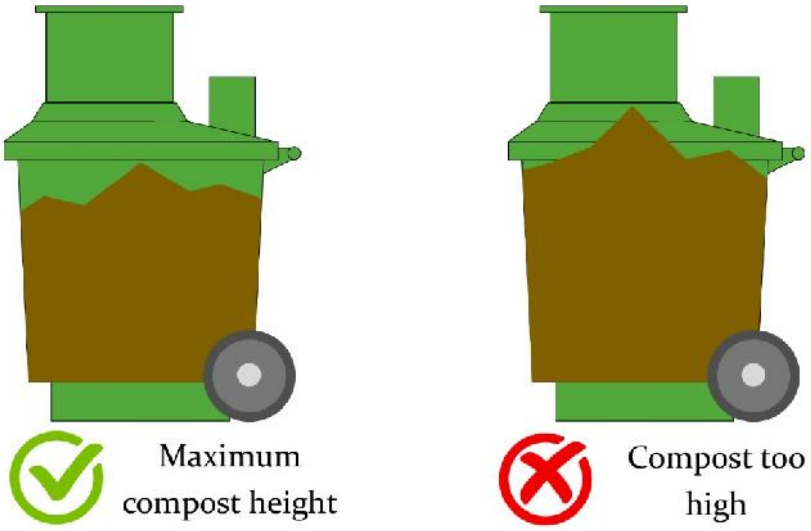
Pull the container out & exchange the lid onto the second, spare container. Move the second container in place (having prepared the container as per above). Set aside the first container and seal with the supplied lid. Insert the Mozzie proof vent cowl into the vent opening. The waste will finish composting in this container (2 - 3 months on average). Leave to compost until the second container is full in order to maximise composting time.

Re - attach both vent and excess liquids drainage systems.

If using installation Option 2)

Slide the lid up the chute - make sure it stays there. Pull the container out, and seal with the supplied lid. Insert the Mozzie proof vent cowl into the vent opening. Move the second container in place (having prepared the container as per above). Drop the lid onto the container. The waste will finish composting in the 'fallow' container (2 - 3 months on average). Leave to compost until the second container is full in order to maximise composting time.

Re - attach both vent and excess liquids drainage systems.



11.EMPTYING

For exchange of containers and the emptying of composted container (including wheeling the full container up or down slopes) 2 persons may be required. You can expect weights of 160kg for the GT 330. When emptying a container, wheel to the prepared disposal site. Gently lay the container on its side and start emptying the container with a spade or shovel. Always observe safe work methods. Clean the container by hosing if required.

12. USE OF COMPOST

a. Bury the contents of the container into a prepared area. Burial depth is a minimum of 300mm in soil that is not intended for human food cultivation for six (6) months, and
b. Burial should be a minimum of 30 metres from any water source and 6 metres from any sub-soil or open drainage system, or
c. Disposed of as directed by the Local Government.

PRODUCT & COMPONENT WARRANTY

Green Loo will furnish new parts to a customer whose toilet fails within the allotted warranty period for
the particular component, provided that our inspection shows such failure is due to defective material or workmanship. Any part supplied is warranted for the balance of the original warranty period. The warranty period for a part begins from the date the original product was dispatched (plus 10 working days for transportation).

Warranty Period:
Any electrical component including solar 1 year
Any rotomoulded component 15 years
Any porcelain component 4 years
Toilet seats 1 year
Any other component 1 year

This warranty does not cover:

• Damage resulting from neglect, abuse, accident, or alteration; or damage caused by fire, flood, acts of God or other causality.

• Damage resulting from failure of the purchaser to follow normal installation and operating procedures outlined in the manual or in any other printed instructions supplied with the system.

Items subject to a dispute, where photographic evidence is inconclusive, must be sent prepaid to Green Loo. The cost will be reimbursed by Green Loo should the claim be found valid.
In addition to the above, Green Loo will only replace a fan that fails during the warranty period under the following conditions:

• The fan has only ever been connected and powered by either a 12-volt transformer plugged into mains power or a solar system supplied by Green Loo. Connecting your fan directly to a power source other than one supplied or specified by Green Loo may result in damage to the fan and void the warranty.

• The fan and transformer must not be modified/altered in any way.

• The faulty fan is returned to Green Loo for inspection, if required.
Providing the above conditions have been met replacement fans are shipped the same or following business day free of charge by regular post.

Dear Friend,

Thank you very much for choosing our GT Bio Sanitation Systems. We hope that you enjoy many

years of fruitful, waterless and
trouble-free use.

Please don't hesitate to contact us with any questions, suggestions, we are here to help.

Feedback is always welcome and is an invaluable part of providing an excellent product and service!

Finally, thank you for being an integral part of the environmental solution. The Earth will thank you too!

The Team at Green Loo NZ

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