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**017906**  
**GAMMA Septic Tanks**  
**Installation & Operation Guidelines**

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**Enclosed Documents**

<b>DS1259P</b>	<b>GAMMA Septic Tank Sales Drawing – Gravity Discharge – Twin Stage</b>
<b>DS1260P</b>	<b>GAMMA Septic Tank Sales Drawing – Pumped Discharge</b>
<b>DS1267P</b>	<b>GAMMA Septic Tank Sales Drawing – Gravity Discharge – Single Stage</b>
<b>DS1322P</b>	<b>2000L GAMMA Septic Tank Sales Drawing - Gravity Dis- Single Stage</b>
<b>DS1323P</b>	<b>2000L GAMMA Septic Tank Sales Drawing – Gravity Dis- Twin Stage</b>
<b>DS1324P</b>	<b>2000L GAMMA Septic Tank Sales Drawing – Pumped Discharge</b>
<b>DS1261P</b>	<b>GAMMA Septic Tank Neck Trimming Details</b>
<b>DS1262P</b>	<b>GAMMA Septic Tank Isolator Wiring Diagram</b>
<b>DS1268P</b>	<b>GAMMA Infiltration Pipework Layout Drawing</b>



<b>Issue</b>	<b>Description</b>	<b>Date</b>
03	CC1340 & CC1375	March 2017

## HEALTH AND SAFETY

**These warnings are provided in the interest of safety. You must read them carefully before installing or using the equipment.**

It is important that this document is retained with the equipment for future reference. Should the equipment be transferred to a new owner, always ensure that all relevant documents are supplied in order that the new owner can become acquainted with the functioning of the equipment and the relevant warnings.

Installation should only be carried out by a suitably experienced contractor, following the guidelines supplied with the equipment.

A qualified electrician should carry out electrical work – Pumped Discharge Unit Only.

Sewage and sewage effluent can carry micro-organisms harmful to human health. Any person carrying out maintenance on the equipment should wear suitable protective clothing, including gloves. Good hygiene practice should also be observed.

Covers must be kept locked.

Observe all hazard labels and take appropriate action to avoid exposure to the risks indicated.

The correct ongoing maintenance is essential for the proper operation of the equipment. Service contracts are available and recommended. Please contact our Sales department for details of your local service provider.

Should you wish to inspect the operation of the equipment, please observe all necessary precautions, including those listed below, which apply to maintenance procedures.

Ensure that you are familiar with the safe working areas and accesses.

Ensure that the working area is adequately lit.

The power supply to the equipment should be isolated at the main RCD - Pumped Discharge Unit Only.

Take care to maintain correct posture, particularly when lifting. Use appropriate lifting equipment when necessary. Keep proper footing and balance at all times. Avoid any sharp edges.

Desludging should be carried out by a licensed waste disposal contractor holding the relevant permits to transport and dispose of sewage sludge. The contractor must refer to the desludge instructions contained in these guidelines.

Our GAMMA Septic Tanks are made from high quality Polyethylene. Our nationwide network of stockists ensures prompt delivery and complete after sales service to every customer.

**WHY YOU CAN INSTALL OUR TANKS WITH CONFIDENCE:**

- They are robust, with high impact resistance, and can withstand all common chemicals they are likely to encounter.
- Our Tanks are trouble-free. No chemicals are required for bacterial action to take place.
- Our Tanks are strong, easy to move and simple to install. Full installation instructions are supplied with every tank.
- Our modern design means that access for desludging is easier through the wide neck.
- Our Septic Tanks come in capacities of 2000 litres (**Scandinavia Only**), 2800 litres (620 gallons), 3500 litres (775 gallons) & 4000 litres (880 gallons) and meet all the requirements of the Water Act Consent Regulations and Building Control Regulations in Great Britain and Northern Ireland.
- All our Tanks carry a 12 month warranty from date of delivery.

Unit	Storage Volume (Litres)	Standard Overall Height (mm)	Standard Inlet Invert (mm)	Standard Outlet Invert (mm)	Length (mm)	Width (mm)
GST020SzGK	2000	1265 - 1765	500-1000	550-1040	3000	1180
GST028SzGK	2800	1755 - 2255	500-1000	550-1050	2480	1130
GST035SzGK	3500	1755 - 2255	500-1000	550-1050	3000	1180
GST040SzGK	4000	1755 - 2255	500-1000	550-1050	3360	1215

**BEFORE YOU BEGIN**

In Great Britain and Northern Ireland you must have approval to discharge before you install a Septic Tank. You must therefore submit plans of the location of both the tank and soakaway layout to your Local Authority, who may also be able to offer you advice if required.

Our GAMMA Septic Tanks comply with the principles set down in BS 6297:2007. The design also meets all the requirements of both the Water Act Consent and Building Control Regulations in Great Britain and Northern Ireland.

**WHAT ABOUT GROUND CONDITIONS?**

Prior to installation care should be taken to establish the depth to the water table and land drain facilities as ground conditions will determine the type of backfill materials to be used. In dry free draining soils where the ground is dry all year round i.e. the water table never rises above the base of the tank then use method of installation for DRY GROUND.

In clays, silts, heavy ground or badly drained ground where the water table rises above the base of the tank use method of installation for WET GROUND.

**WHERE SHOULD I SITE THE SEPTIC TANK?**

British Standard code of practice BS EN 12566-1 recommends that septic tanks should not be closer than 7 metres from a dwelling. The outlet from the tank should be well away from any source of water supply. Care should be taken to site the tank. Roads, driveways and vehicles should not be permitted

within a distance equal to the depth of the unit, unless suitable structural protection is provided to the installation, to avoid damage to the tank structure.

Don't forget that there must be access for service vehicles during installation and desludging. If the tank can only be installed where it will be subjected to a traffic load, then contact our sales team for details of any special requirements.

### HOW SHOULD I HANDLE THE TANK?

Care should be taken when handling the Septic Tank. The tank should be lifted using a rope or sling passed through the lifting points provided on the tank. The tank must be carefully lifted from the delivery vehicle and set down on to level ground. Do not roll the tank off the delivery vehicle. Carry out an inspection for any damage before accepting the tank, and inspect again prior to installation, paying particular attention to the inlet and outlet pipes. During storage of the tank on site do not allow it to rest on these pipes at any time. The tank should always be filled with clean water during backfilling. It is desirable to temporarily cover all openings in the tank to prevent the ingress of debris during installation.

### WHAT ABOUT EXCAVATION

INSTALLATION SHOULD ONLY BE CARRIED OUT BY A COMPETENT CONTRACTOR.

The septic tank is supplied with a standard neck extension giving an Inlet Invert of 500-1000mm from the top of the manhole cover to the bottom of the inlet pipe. Excavate a hole according to the table below. Normal safety precautions must be adopted during excavation. Excavate a trench for the inlet and outlet pipework noting; the inlet invert selected, and that the outlet pipe is 50mm lower than the inlet pipe.

If the excavation is in unstable ground, take particular precautions to avoid a collapse of the sides of the excavation. Guidance on excavation to these depths and the safety measures required are given in BS6031, BS8000: Part 1 and HSE Construction Summary Sheet. Make sure that any water collecting in the hole is pumped out during installation.

Tank Excavation Dimension

Tank Model	Standard Overall Height (mm)	Length (mm)	Width (mm)
GST020SzGK	1765	3500	1680
GST028SzGK	2255	2980	1630
GST035SzGK	2255	3500	1680
GST040SzGK	2255	3860	1715

### WHAT ABOUT DESLUDGING

The tank has been specially designed to allow easy access for ease of cleaning when required. The tank is desludged in the usual way by suction tanker.

When desludging, which should be undertaken at least once a year, care should be taken to avoid damage to the tank by the hose nozzle. The tank should not be emptied completely, so that a residual amount is left to provide the micro-organisms to break down the sewage. The tank should be refilled with water.

## HOW SHOULD I INSTALL THE TANK?

There are basically two ground types:

1. Dry ground conditions – In light, totally dry, free draining soils where the water table does not rise above the base of the tank;
2. Wet ground conditions – In clay or heavy soils where the water table can rise above the base of the tank.

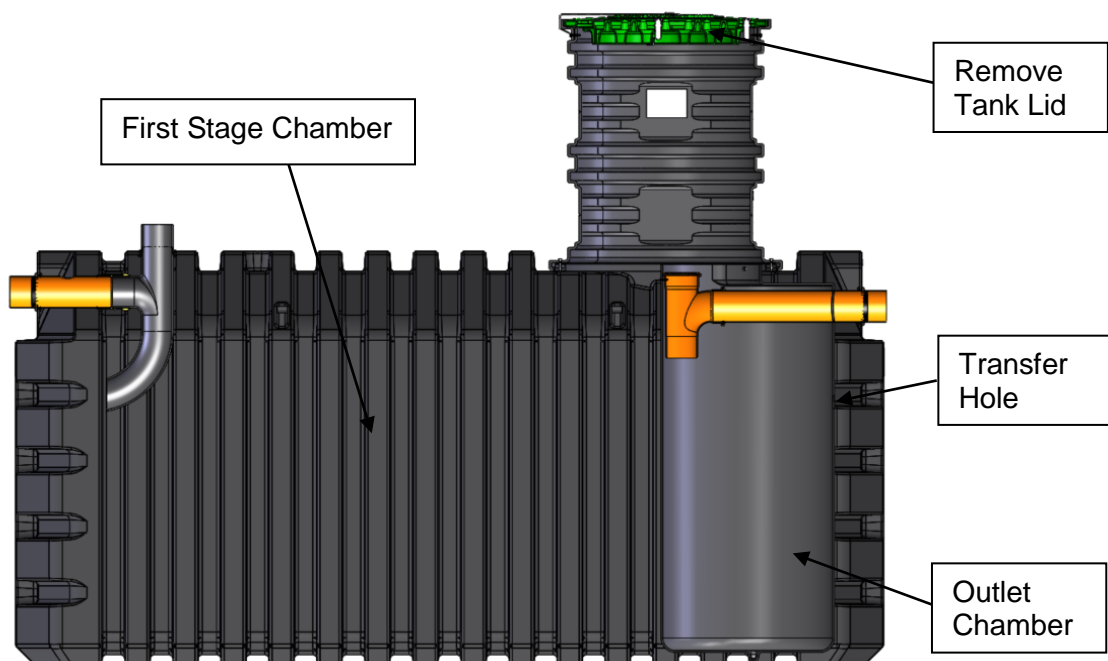
## INSTALLATION PROCEDURE

Please see installation drawings provided.

### DRY GROUND CONDITIONS

1. Excavate the site allowing for a minimum clearance on all sides and base of the unit of 250mm and level the base. If levelling pegs are used they should only be placed at the corners of the hole, well away from the septic tank.
2. Ensure that the hole is kept dry. Should any rain or surface water collect in the hole, this should be pumped out.
3. A base of at least 200mm of lean mix concrete should be provided.
4. Lower the septic tank into the hole using a rope sling through the lifting points provided on the tank. Under no circumstances should the sling be attached to the inlet pipe or outlet pipe.
5. Position the inlet pipe in line with the incoming drain. Note that the inlet and outlet pipes are clearly marked on the tank. The unique profile of the base will help to level the tank, but make sure the tank is in the truly upright position in order to maintain the 50mm head difference between the inlet and outlet pipes.
6. After any concrete in the base has taken up its initial set (usually after one day), ballast the tank by putting approximately 0.5m depth of water into it.

**IMPORTANT NOTE:** When adding water to **Twin Stage** or **Pumped Discharge** fill via the **Outlet chamber** as noted below. The water can overflow through the **Transfer Hole** into the **First Stage Chamber**.



7. Backfill the space around the tank with pea gravel or similar material (3-8mm). The backfill should be free from organic material, large stones, bricks or sharp objects.

Backfilling should be carried out in layers making sure that voids are not left under and around the sides of the tank and that there are no localised stress concentrations. It is most important that the installer progressively fills the tank with water to the level above the backfill in order to stabilise pressures on the tank.

8. Remove any temporary covers, and connect up the tank inlet and outlet pipe to your own pipework. Do not use reducers.
9. Backfilling can now proceed up to ground level.
10. Venting can be provided through a dedicated 110mm vent socket arrangement on the tank, additional venting can be provided via the inlet vertical pipe connections, if not used please blank off with socket and blanking cap..

### **WET GROUND CONDITIONS OR BADLY DRAINED GROUND**

The installation procedure for wet ground conditions is similar to that for dry ground conditions, though the following additional points must be considered:

1. A lean mix concrete base of minimum depth 200mm should be provided. In wet ground conditions the installer should ensure that the base is adequate to support the weight of the septic tank and its contents. If the base of the excavation is unstable i.e. running sand or similar, excavate an additional 250-300mm below the concrete levels and fill up with compacted hard-core. Place a sheet of polythene over the hard-core and up the sides of the excavation before putting in the concrete cradle.
2. Ensure that the water is pumped from the excavation during installation and that during backfilling the water is conveyed away from the hole.
3. Backfilling material should be lean mix concrete.
4. Ensure that the concrete is not too wet and that it is tamped in around the tank. Do not use a vibrating poker.
5. Only back fill with concrete up to the top of the body sphere. Do not surround the pipework with concrete.
6. It is most important that the installer progressively fills the tank with water to a level above the backfill in order to stabilise pressure on the tank.

**The Concrete Specification is a *general* specification, not a site specific installation design.**

<b>GENERAL CONCRETE SPECIFICATION IN ACCORDANCE WITH BS EN 206-1 ( BS 8500-1)</b>	
TYPE OF MIX	(DC) DESIGN
PERMITTED TYPE OF CEMENT	BS 12 (OPC): BS 12 (RHPC): BS 4027 (SRPC)
PERMITTED TYPE OF AGGREGATE (coarse & fine)	BS 882
NOMINAL MAXIMUM SIZE OF AGGREGATE	20 mm
GRADES: C25 /30 C25 /30 C16 /20	REINFORCED & ABOVE GROUND WITH HOLDING DOWN BOLTS REINFORCED (EG. FOR HIGH WATER TABLE) UNREINFORCED (NORMAL CONDITIONS)
MINIMUM CEMENT CONTENT	C30 C20 270 - 280 Kg/M <sup>3</sup> 220 - 230 Kg/M <sup>3</sup>
SLUMP CLASS	S1 (25mm)
RATE OF SAMPLING	READY MIX CONCRETE SHOULD BE SUPPLIED COMPLETE WITH APPROPRIATE DELIVERY TICKET IN ACCORDANCE WITH BS EN 12350-1
<b>NOTE: STANDARD MIXES SHOULD NOT BE USED WHERE SULPHATES OR OTHER AGGRESSIVE CHEMICALS EXIST IN GROUND WATER</b>	

#### **INSTRUCTIONS FOR TRIMMING OF ACCESS NECK**

Please see attached Neck trimming instructions drawing DS1261P provided.

**ELECTRICAL INSTALLATION – PUMPED DISCHARGE UNIT**

It is imperative that the electrical installation of this equipment is entrusted to a competent qualified electrician working to the latest IEE regulations.

It is not possible to state a specific installation configuration that would suit all sites. The selection of current protection devices must remain the responsibility of the installer who should select a suitable cable and current overload protection, taking into account the distance from the power source to the unit and any other relevant factors. (In many cases steel wire armoured (SWA) cable, minimum 1.5 sq mm will be suitable).

When installing the electrical supply to the unit, the following points should be considered:

The electric power supply to the tank should be by means of a dedicated circuit with isolation and protection devices consistent with the requirements for fixed equipment and in accordance with the latest regulations of the Institute of Electrical Engineers.

This power supply should be independent of all other household protection devices other than the supply authority's main fuse and that provided specifically for the power supply. In particular, earth leakage devices provided for normal domestic protection must not form part of the supply circuit to the tank.

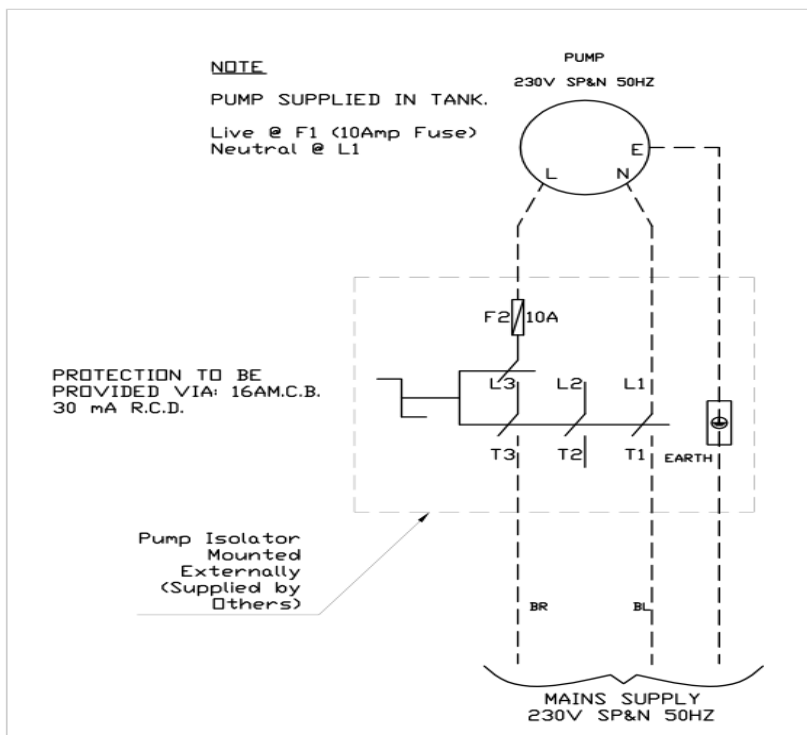
An earth leakage circuit breaker should be incorporated in the supply to the unit. A device with 30mA minimum trip current is recommended.

An appropriate Isolator IP65 rated (supplied by Contractor) needs to be mounted externally at a point where it is easily accessible.

The power supply cable should connect to the IP65 rated isolator socket mounted externally. Any terminal shrouds removed during the connection of cable cores must be replaced afterwards. A separate duct or conduit should be provided by others.

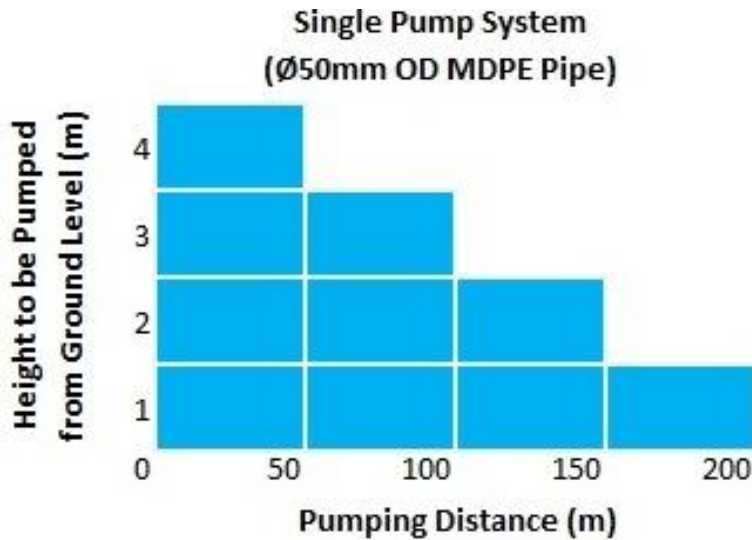
The pump power cable located in the tank needs to be connected to the Isolator as per the wiring detail below;

**Isolator Wiring Diagram – Pumped Discharge System – Sales Drawing - DS1262P**





**IPS PUMPING HEIGHT V's DISTANCE CHART**



**WARRANTY**

Taken from 'Kingspan's Terms & Conditions of Sale'

The company will replace or, at its option, properly repair without charge any goods which are found to be defective and which cause failure in normal circumstances of use within a period of twelve months from the date of delivery.

This warranty is conditional upon:

- (a) the Buyer notifying the Company of any claim within Seven days of the failure becoming discernible.
- (b) the Company being allowed a reasonable opportunity to inspect the goods so as to confirm that they are defective.
- (c) the goods not having been modified, mishandled or misused and being used strictly in accordance with any relevant instructions issued by the Company.

The Company's liability under this Clause is limited to the repair or replacement of the defective goods, and does not cover costs of transport, installation or associated site costs, if applicable.

The Company's liability to replace or repair the goods is in lieu of and excludes all other warranties and conditions, and in particular (but without limitation) the Company shall have no liability of any kind for consequential loss or damage.

For any further advice, please contact us.

A Warranty Form is included in this package, to register your unit for Warranty. Please complete ALL sections of the Form, and return it at your earliest convenience.

Also within this package is a Notice, describing the necessary maintenance of the plant in use. This should be fixed within the building.

**NOTICE:**



**GAMMA SEPTIC TANK**

The foul drainage from this property discharges to a Septic Tank and an irrigation system / soak-away.

The tank requires monthly inspections of the outlet chamber or sample chamber to observe that the effluent is free-flowing and clear. The soak-away should also be inspected regularly.

The septic tank requires emptying at least once every 12 months by a licensed contractor.

**THE OWNER OF THE PROPERTY IS LEGALLY RESPONSIBLE FOR ENSURING THAT THE SYSTEM DOES NOT CAUSE POLLUTION, A HEALTH HAZARD OR A NUISANCE.**

We recommend that a separate log is kept of all service visits, the log should detail the date and any action taken, e.g. Regular maintenance service and de-sludge volume removed.

This notice should be fixed by the owner within the building alerting current and future owners to the maintenance requirement. (Building regulation H2 (1.57))

**Please contact Kingspan Environmental Service on +44 (0) 844 846 0500 to arrange a maintenance service or to request replacement operating instructions.**



**Kingspan Environmental**  
**College Road North**  
**Aston Clinton**  
**Aylesbury**  
**Buckinghamshire**  
**HP22 5EW**  
**United Kingdom**

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**EN 12566-1 : Small wastewater treatment plant: prefabricated septic tanks**

**Polyethylene Septic Tank**

**GAMMA Septic Tanks 2000L, 2800L, 3500L & 4000L**

<b>Nominal Capacity</b>	Single Stage: 2.0m <sup>3</sup> (2,041 Ltrs) Twin Stage: 2.0m <sup>3</sup> (2,133 Ltrs)
	Single Stage: 2.8m <sup>3</sup> (2,843 Ltrs) Twin Stage: 2.8m <sup>3</sup> (2,829 Ltrs)
	Single Stage: 3.5m <sup>3</sup> ( Ltrs) Twin Stage: 3.5m <sup>3</sup> ( Ltrs)
	Single Stage: 4.0m <sup>3</sup> (4,010 Ltrs) Twin Stage: 4.0m <sup>3</sup> (4,010 Ltrs)
<b>Watertightness (Water Test)</b>	Passed
<b>Crushing Resistance (Pit Test) (for wet conditions also)</b>	Passed
<b>Hydraulic Efficiency</b>	99.83% (Single Stage 2000L) 99.91% (Twin Stage 2000L)
	99.81% (Single Stage 2800L) 99.97% (Twin Stage 2800L)