GL0070K

INSTALLATION, OPERATING & MAINTENANCE
GUIDELINES FOR PACKAGE PUMPSTATIONS
EFFLUENT / SEWAGE & GRINDER APPLICATIONS

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Enclosed Documents

		Ø1.0	Ø1.2	Ø1.8	Ø2.6
EFFLUENT APPLICATIONS					
DS0745K	**Effluent Pump Chamber Sales Drawing**	◆			
DS0752K	**Effluent Pump Chamber Sales Drawing**		◆	◆	◆
SEWAGE APPLICATIONS					
DS0750K	**Sewage Pump Chamber Sales Drawing**		◆	◆	◆
DS0755K	**A or B Pump Sewage Pump Chamber Sales Drawing**	◆			
DS0757K	**C or D Pump Sewage Pump Chamber Sales Drawing**	◆			
GRINDER APPLICATIONS					
DS0751K	**Grinder Pump Chamber Sales Drawing**		◆	◆	◆
DS0758K	**Grinder Pump Chamber Sales Drawing**	◆			

Issue	Description	Date
01		Dec 2005

HEALTH & 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 be acquainted with the functioning of the equipment and the relevant warnings.

INSTALLATION SHOULD ONLY BE CARRIED OUT BY A SUITABLY EXPERIENCED CONTRACTOR, FOLLOWING THESE GUIDELINES. ELECTRICAL WORK SHOULD BE CARRIED OUT BY A QUALIFIED ELECTRICIAN.

Sewage and sewage effluent can contain substances 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.

When covers are removed precautions must be taken against personnel falling into the unit.

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 & that the working area is adequately lit.

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.

The removal of sediment should be carried out by a contractor holding the relevant permits to transport and dispose of such waste. The contractor must refer to the guidelines in this document.

AS WITH ALL SITE WORK, THE DANGERS OF WORKING WITH WATER AND ELECTRICITY POSE SEVERE THREATS TO HEALTH, IF OBVIOUS AND FUNDAMENTAL PRECAUTIONS ARE NOT TAKEN. THEREFORE IF YOU ARE IN ANY DOUBT REGARDING ANY OF THE FOLLOWING, PLEASE DO NOT HESITATE TO CONTACT US.

CONTENTS

1.0 Operating Guidelines

1.1 Introduction

1.1.1 These Guidelines represent Best Practice for the installation of the above packaged pump stations (waste water application). It must be noted, however, that these Guidelines are of a general nature. It isthe responsibility of others to verify that they are appropriate for the specific ground conditions and in-service loads of each installation. Similarly, any information or advice given by employees or agents of the company regarding the design of an installation must be verified by a qualified specialist (e.g. Civil engineering consultant).

1.2 Handling & Storage

1.2.1 Care must be taken to ensure that units are not damaged during delivery and handling on site. Please take care and place unit so that it cannot fall and become damaged

1.2.2 The design requirements of the product will frequently mean that the centre of gravity of the unit is “offset”. Care must therefore be taken to ensure that the unit is stable when lifting and that loads are evenly distributed during lifting

1.2.3 When lifting units, use webbing slings of a suitable specification and position in line with the 'sling here' labels. Do not use chains.

1.2.4 Lifting equipment should be selected by taking into account the unit weight, length and the distance of lift required on site.

1.2.5 We accept no responsibility for the selection of lifting equipment.

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2.0 Tank Installation

2.1.1. Select a suitable location for the tank. This will normally be at the lowest ground level on the site so that the facilities can be drained into the tank.

2.1.2. Check that no other structure - or special access - is required over the selected position. Provision can be made, if necessary, to place the tank in a roadway, provided that the backfill, cover slab and access cover are designed in accordance with the anticipated loads. Does this mean that we will provide an accees cover suitable? I don't think so

2.1.3. Check that no underground cable, pipe or service duct lies beneath the selected position.

2.1.4. Excavate the minimum opening in the ground to receive the pumpchamber and pipework to be used. If a machine is used to remove the soil, then the sides of the excavation should be battered for stability and a sump left should it be necessary to dewater.

2.1.5. The depth of the excavation needs to be at most 150mm deeper than the overall tank depth. If it is dug by hand, the sides will need shoring up for safety, to prevent earth slippage.

2.1.6. A de-watering pump may be required to control any ground water present.

2.1.7. Place in position the concrete base, minimum thickness 150mm of concrete and allow to set.

2.1.8. Lower the pump chamber onto the dried concrete, ensuring that the inlet and outlet pipes are correctly aligned. ? No haunch

2.1.9. The unit then should be backfilled with either mass concrete, or a lean mix In areas where ground conditions are wet or unstable.The minimum surround thickness for this backfill should be 150mm.

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2.1.10. Connect up the site pipework to the inlet and outlet connections of the pump chamber.

2.1.11. Finish off the surface of the excavation to the required level, depending on the final surface finish required (see attached sketches, figures 1 & 2).Not seen

3.0 The Concrete Specification is not a site-specific installation design.

GENERAL CONCRETE SPECIFICATION IN ACCORDANCE WITH BS EN 206-1 (BS 8500-1)		
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^3 220 - 230 Kg/M^3
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
NOTE: STANDARD MIXES SHOULD NOT BE USED WHERE SULPHATES OR OTHER AGGRESSIVE CHEMICALS EXIST IN GROUND WATER		

4.0 Important Notes

4.1.1. When positioning the tank please check that sufficient cable has been ordered to allow the control panel to be placed in the required position.

4.1.2. It is most important that once the tank is in position, with all the inlet connections made and before installing the pumps, that the drainage system is flushed through and all sand, debris etc. is removed from the chamber.

FAILURE TO DO THIS MAY INVALIDATE THE WARRANTY ON THE PUMPSETS

4.1.3. A cable duct is required, free from sharp bends, minimum diameter 75mm.

5.0 Additional Notes

5.1.1. If the chamber is going to be subjected to traffic & or vehicle loads, it is essential that a cover slab is constructed so there is no direct load onto the chamber. Also a suitably rated access frame and cover must be obtained, and installed in such a manor that no loads bear directly onto the neck of the chamber.

5.1.2. When using a concrete backfill it is important to ensure that the mix is not to wet as this may exert floatation pressure on the pumpchamber.

5.1.3. In all instances the pumpchamber must be filled with clean water to keep pace with the backfilling process, this is in order to equalize the pressures exerted onto the unit and prevent the possibility of chamber deformation or flotation during installation.

IF IN DOUBT PLEASE CONTACT US FOR ADVICE.

IT SHOULD BE NOTED THAT THIS INFORMATION IS FOR GUIDANCE PURPOSES ONLY. IT IS THE RESPONSIBILTY OF THE CONTRACTOR TO ENSURE THAT THE INSTALLATION, IS CARRIED OUT TO THE SATISFACTION OF YOUR REGULATING LOCAL WATER AUTHORITY, IN ACCORDANCE WITH THE PREVAILING GROUND CONDITIONS.

6.0 Operational Description

6.1 Pump Control Panels

6.1.1. Twin Pump Panels are designed to operate from 4 float switches i.e. stop / duty pump start / duty - standby & high level alarm. Single Pump Panel installations are designed to operate on 3 float switches start / stop / & high level alarm.

6.1.2. Each pump may be run on its own by operating the respective “manual” switch mounted on the door.

6.1.3. In “auto”l the pumps will run under float switch control .

6.1.4. As the level rises the stop float contacts will close. When the start float switch contacts close, the duty pump will start. This pump will continue to run until the level falls below the stop float switch.

6.1.5. After each pump cycle the duty pump is alternate so that the other pump becomes the duty pump the next time the level reaches the duty pump start float.

6.1.6. Should the duty pump have failed or is running and the level continues to rise to the duty /standby pump start float, the second standby pump will start and continue to run until the level falls below the stop float switch.

6.1.7. If the level continues to rise to the high level float, the high-level alarm light will illuminate. This alarm may be reset once the level is below the high-level float switch. Under high level conditions this beacon will be illuminated to indicate that there is either a pump failure or that the volume of influent is exceeding the discharge capability of the pump. The high level alarm / beacon will need to be manually reset by the site operator once the cause of the high level condition has been identified and resolved.

6.1.8. Cable access is available from both the top & bottom end of the panel. Additional access can be gain from the sides but must be suitably glanded. The control panel has an IP54 rating. the cabling work and glanding to the panel needs to meet the same standard to maintain this rating.

PLEASE REFER TO WIRING DIAGRAMS SUPPLIED INSIDE THE CONTROL PANEL.