

PACKAGED PUMP STATION INSTALLATION GUIDE AND RECOMMENDATIONS

General Comment

Please take the time to read these instructions carefully ensuring that you understand the contents fully. If you experience any uncertainties or problems please contact southern pump services and obtain clarification prior to commencement of installation work. A brief telephone call at this stage save could you valuable time and costly remedial work in the future. Please ensure that all site work is carried out by qualified personnel in line with the Health and Safety at Works Act 1974.

Ground Preparation

The chamber should ideally be positioned at a common low point from all properties feeding the station, to allow proper drainage of sewage into the chamber. Having selected a suitable place for your pre-package pumping station, you should consider the type of ground in which you are proposing to install the tank. Ensure that the installation area is free from all services, if there is going to be vehicular access over the tank area please make sure the access frame and cover supplied as standard is suitably rated. (See attached sketch). In general we recommend concrete back filling of the area of excavation around the chamber right up to cover level.

Once you have satisfied this criteria, you are ready to begin the excavation work. You should dig out a hole 0.5m deeper and 0.6m wider than the tank. Ensure a low point is maintained in the excavation for the purposes of de-watering, should this be necessary. To ensure safety on site the walls of the excavation should be shuttered fully over its depth.

Control Panel

As the control panel is rated IP55, it must be mounted either on a covered vertical wall in a building (garage wall for example) or in a weatherproof kiosk. We are able to supply these kiosks in either mild steel or glass reinforced plastic (GRP). As the pumps and float switches are equipped with 10m of cable as standard, the panel should be mounted within a 5.0m radius of the chamber. As we establish this distance at quotation stage we would have taken account of any extra cabling requirements.

We strongly recommend the use of an anti-condensation heater in kiosks. If the panel is to be mounted indoors we recommend this is sited now. If you are using a kiosk, we cover the erection of the kiosk later but you can mount the panel onto the kiosk backboard at this stage.

Tank Installation

The excavation is now ready to receive the concrete base slab. This should be 200mm deep and be 20 kN/mm² strength; this is the same grade of concrete and thickness that we recommend for the back filling. When the concrete for the base has been poured it should be levelled and allowed to consolidate until ready to accept the tank base. Please remember that the tank base has a sealed and bolted seam that needs to be set into the concrete and so the base should only be allowed to consolidate enough to accept this.

When the tank is bedded and you have ensured it is still level you need to make the inlet and outlet connections and half fill the tank with water, this ensures that the tank is not buoyant when back filling. You should then pour another 1.0m of concrete around the base of the tank to ensure that the base

PACKAGED PUMP STATION INSTALLATION GUIDE AND RECOMMENDATIONS

slab and side walling of the excavation are bonded and holding the tank. At this point you must flush the inlets and remove any debris from the tank. This may mean pumping out the existing water fill with a

drainage pump and hand clearing the tank. Only do this when the surrounding concrete is set and when the tank is clear refill with clean water.

You can now connect the cable ducting to the tank and run it to where the control panel is to be situated, this duct must end as close to the control panel as possible. Please ensure that a means of drawing pump and float cables is left in the cable ducting. If you are using a kiosk you will now have to construct the support plinth in concrete. Also ensure that you leave anchor points for the kiosk and suitable ducting for the incoming electrical supply (with draw facilities as necessary).

You can now complete the back filling of the tank with concrete, ensuring enough water remains in the tank to offset buoyancy. The water should remain in situ until the concrete has set completely.

If the top of the tank is at ground level you will be able to set the access frame in place. If it is below ground level, brick up to ground level and set the access frame. Ensure the manhole has enough working area to allow you to install the pumps. Consideration must be given to the depth of a brick up stand when ordering the tank, as this should be kept to a minimum. If vehicular access is required over the tank the access cover and frame must be supported as the relevant sketch to reduce any implied load on the tank to minimum.

As with all back filling it is essential to ensure that there are no voids in the concrete as this will weaken the structure supporting the tank and may also render the installation unsafe with particular ground water conditions.

You are now ready to fit the kiosk to the concrete plinth (if applicable), set the kiosk into the plinth by bolting and grouting. It is important to ensure that the kiosk base is fully weatherproofed and sealed or the control panel may become exposed to moisture.

Pump Installation

Using the draw rope you had previously installed in the cable ducting, draw the pump cable(s) and float switch cables, from the tank through to the site of the panel and connect. A suitably sized earth cable must be connected to the fixed metal connections in the tank to bond to the incoming supply; this will also pass through the cable duct.

Connect the incoming supply observing all relevant electrical regulations.

Then turn on the main isolator on the control panel and run the pump(s) in manual for a short time (no longer than 2 seconds) to check the correct direction of rotation.

Once the correct direction of rotation is established you can fit the pump chain and coupling flange and lower each pump down the guide rail into place on the pedestal at the base of the tank. The top of the tank has a hook where the loose end of the chain can be fitted.

With the pumps in place ensure that any slack pump cable is taken up and secured at the top of the tank inside the access cover so it does not enter the pump suction during operation. Using the hand operation on the control panel pump out the existing water to a level of about 1.0m from the bottom of the sump for float switch testing.

PACKAGED PUMP STATION INSTALLATION GUIDE AND RECOMMENDATIONS

System Checking

Before allowing the system to be fully commissioned it is first necessary to check that the floats are set in accordance with the aforementioned sequences. Remove the floats from the sump, starting with the highest and keep them in order so you know which float does which job.

The table shown below gives the various duties of each float for a particular system.

System Type	Float 1	Float 2	Float 3	Float 4
Single Pump	Stop	Pump Start	Alarm	N-A
Twin Pump Duty Standby	Stop	Duty Pump Start	Alarm & Emergency Pump Start	N-A
Twin Pump Duty Assist	Stop	Duty Pump Start	Assist Pump Start	Alarm

Please note that it is necessary to have Float 1 switched at all times to ensure that any of the other floats will work. Float 1 is set at the lowest point and the float numbers are in sequence as you go higher up the tank. Ensure that all floats have weights fitted approximately 200mm up from the float ball.

You can adjust all the floats to suit the particulars of the site by loosening the gland nuts in the bracket at the top of the tank.

Re-install the floats and ensure that they are not tangled in any way and hang freely with any slack cable secured.

Once you have established that the correct floats do the correct job you may allow flow into the tank and allow the system to work as a fully automated unit.

The tank is vented via the cable ducting but alternative venting can be available if required, this would also be addressed at quotation stage.

General Maintenance

Periodic checking of the sump (every six weeks or so) is necessary to check the build up of grease and fat deposits, particularly on the float switches. If necessary the floats may need withdrawing for cleaning. At each sump cleansing we recommend that the walls and all internal fittings are hosed clean and that the pumps run half a sump full of clean water each. This not only cleans the pumps but also purges the rising main and station pipe work.

The pump itself employs service friendly components and in general would only need inspecting on an annual basis. We strongly recommend that a service contract for the pump maintenance is entered into by the end user as this will detect any potential problems before they become major headaches.

We have endeavoured to cover every aspect of tank installation but please remember we are only a phone call away should you run into problems of any kind.