

## Installation and Operating Guidelines

# **BLACKSUMP**<sup>TM</sup>



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## 1.0 Product Summary

The BlackSump™ is especially designed for the removal of groundwater from basement membrane systems. The system comprises of a polypropylene tank, circular locking access cover (pedestrian duty, not suitable for roadways) and a powerful wastewater submersible pump. The system is very versatile, enabling the installer to locate inlets to their specifications.

## 2.0 Installation Guidelines

It is important to note that these instructions are for guidance only and it is the contractor's responsibility to satisfy themselves that the installation procedure is in accordance with the site conditions and good building practice, to eliminate any potential damage to the system either during or after installation. The installer should also satisfy themselves that the system can be installed in conjunction with these guidelines, prior to work commencing.

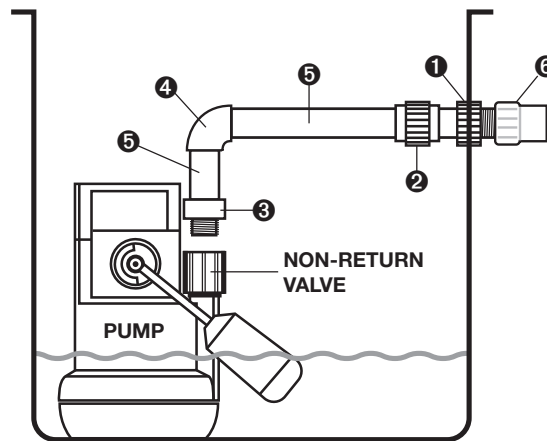
The tank is manufactured from polypropylene and as such is extremely robust. However, as with any preformed tank they are susceptible to floatation and hydrostatic pressures exerted in high water table conditions.

Please read these instructions in full prior to commencement of the installation. If you are unsure on any point then please ask for advice before proceeding. Our technical helpdesk is available on 0845 400 6666 from 8:30am – 5:30pm, Monday to Friday.

1. Select a suitable location for the pumping station. It is extremely important to site the system with permanent access in mind for routine maintenance of the system.
2. In all instances the tank must be positioned on a flat, level, set concrete base of dimensions sufficient to fully support the base of the tank. The thickness of the base should be adequate for the ground conditions and of minimum 150mm thickness. Carefully position the tank onto the base slab ensuring that no loose debris is inadvertently knocked onto the base slab, under the tank during this procedure. Position it such that the inlet and discharge pipework are correctly aligned and the access cover (pedestrian duty) is level with the finished floor level.
3. Once the tank is positioned connect the incoming pipe/s to the tank. To do this you must select the location and drill the appropriate sized inlet suitable for your incoming pipe/s (fitting not supplied, see section '6.0 Accessories' for inlet rubber seals). Please note that there are a number of markings located on the underside of the access cover, these should not be used.
4. Connection of the discharge pipework within the tank is as follows;

Fittings kit comes with the following as standard:

No.	Qty	Description
1	1	PVC 1¼" Tank Connector
2	1	PVC 1¼" Socket Union
3	1	PVC 1¼" Male Threaded Adaptor
4	1	PVC 1¼" Elbow
5	1	PVC 1¼" Class E Pressure Pipe 0.5 metres
6	1	32mm Female Threaded Adaptor



First select a suitable location for the pump ensuring that the float arm is not obstructed by for example the tank wall, inlets etc, at it's optimum reach. Remove the nut located in the pump switch and push the float arm into place ensuring that the nut is securely replaced. Prior to installing the internal pipework please check the Non-Return Valve is securely fixed to the pump outlet and ensure that the flap opens in the direction of the flow.

- a) Screw the Male Threaded Adaptor (3) into the Non-Return Valve located on the pump outlet.
- b) Cut a short length of 1 1/4" PVC pipe (5) and place into the Male Threaded Adaptor (3) (do not glue into place yet).
- c) Place the Elbow (4) onto the short length of pipe (5) and check the height at which the pipework will leave the tank and mark it where the Tank Connector (1) is to be connected (do not glue the Elbow (4) into place yet).
- d) Drill a 1 1/4" Hole where you have marked the tank and fix the Tank Connector (1) in place with the threaded part external to the tank.
- e) Place the Socket Union (2) over the plain end of the Tank Connector (1) (internal within the tank) and position the pump so that there is room for the float switch to activate.
- f) Now measure the length of PVC pipe (5) required between the Elbow (4) and the Socket Union (2) and cut to size.
- g) Check all the pipework is in place correctly and glue together with plenty of PVC Solvent Cement.

For connection of the external pipework you will be left with a 1 1/4" male thread on the outside of the tank, we recommend that you use 1 1/4" Class E PVC Pressure Pipe but should the installer wish to use 32mm Solvent Weld Waste Pipe (white) then a 32mm Female Threaded Adaptor (6) is supplied within the fittings kit which should be threaded onto the male thread on the outside of the tank.

5. It is recommended that an external 1 1/4" gate valve (see section '6.0 Accessories') be installed on the discharge line should the vertical lift exceed 3 meters and/or the discharge line be connected to a foul water outlet.
6. The electrical cables should be now drawn through a cable duct back to the electrical source via a 50mm rubber fitting (fitting not supplied, see section 6.0 Accessories).
7. In all applications the tank must be backfilled with a mass concrete mix of a minimum 150mm thickness and used in accordance with the ground conditions ensuring that it is as dry as practical to prevent additional floatation pressures being exerted on the tank.

The tank **MUST** be ballasted with water at the same rate as backfilling such that the level difference between the water and the backfill does not exceed 150mm at any time.

Please ensure that when pouring the concrete backfill, suitable steps are taken to prevent the concrete entering the tank and any incoming/discharge pipework.

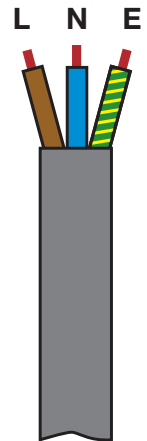
8. Where groundwater is present in the excavation, local de-watering of the ground must be undertaken throughout the installation procedure until the backfill has cured. Please note that the ballast water inside the tank should not be removed until the backfill has fully cured.
9. It is extremely important that once the tank has been installed and all the inlet connections made, before the pump is switched on, the system is flushed through and all sand, silt, rubble and general debris removed from the tank. **FAILURE TO DO THIS WILL INVALIDATE THE WARRANTY ON THE PUMP.**
10. Use the seal tape supplied to install on the inside lip of the tank. Then position the access cover ensuring that the holes in the cover line up with the tank and screw the self-cutting bolts supplied into place.

### Electrical Connection

A qualified person in accordance with the Institute of Electrical Engineers Regulations should connect the unit to the mains supply taking into account all the electrical information provided.

1. The pump should be connected to a 230V 5A fused spur.
2. Please ensure that there is suitable slack on the cable to allow for the pump to be removed for maintenance.

**L** Live (Brown)  
**N** Neutral (Blue)  
**E** Earth (Green/Yellow)



### High Level Alarm

1. Remove the 2 screws from the back of the sounder module and insert a 9 volt battery (alkaline recommended), being sure to press the clips firmly in place (battery not included).
2. Reassemble ensuring the 2 screws are firmly in place.
3. Press blue test bar and hold for 2 seconds. If the unit is properly assembled, the alarm buzzer will sound.
4. Use the suction cup to attach the sensor to the upper part of the tank ensuring that the activation of the pump is below the sensor. The buzzer will sound when water reaches the 2 metal contacts on the sensor.
5. The alarm sensor's buzzer may continue to sound even after it has been removed from the water. If so, remove the battery and allow the alarm sensor to dry for approximately 2 hours.

### 3.0 Technical Specifications

<b>Power Supply</b>	230V AC
<b>Rated Current</b>	1.5A
<b>Motor Rating</b>	340W
<b>Frequency</b>	50Hz
<b>Revolutions Per Min.</b>	2800rpm
<b>Max Vertical Output</b>	7m
<b>Max Horizontal Output</b>	50m
<b>Max Flow Rate</b>	132l/m
<b>Max Liquid Temp.</b>	<40°C
<b>Discharge Size</b>	32mm
<b>Cable Length</b>	5m
<b>Weight</b>	9kg
<b>Colour</b>	White

### 4.0 Dimensions

<b>Diameter</b>	450mm
<b>Height</b>	550mm

### 5.0 Parts List

Qty	Product Name
1	Tank
1	Access Cover, Locking (Pedestrian Duty)
1	Pump (Ama-Drainer 301 SE)
1	Float arm for pump
1	Fittings Kit (Pipework/Fittings)
1	Non-return Valve (attached to pump outlet)
1	HW-9 Low Voltage Water Alarm 9V DC
1	Lid fixings, bolts and seal.

### 6.0 Accessories

Product Name	Product Code
High Level Alarm (Mains Operated)	7001
High Level alarm (Mains/Battery Operated)	7002
Battery Backup Pump System	8007
1¼" Brass Gate Valve	9068
110mm Rubber Seal (Drainage Inlet)	8001
50mm Rubber Seal (Inlet/Cable Duct)	9089

## 7.0 Transport

The pump is shipped disconnected from the pipework and fittings to avoid damaged in transit. Carefully unpack the system from its packaging and inspect for any signs of damage. Should there be any damage present it must be reported immediately (no claim will be considered after 24 hours from time of delivery).

## 8.0 Maintenance

The system requires minimal maintenance, however it is strongly recommended that the unit is serviced quarterly during the first year. It is essential that the unit is serviced at least annually thereafter.

To clean out the unit you must first turn off the power supply and ensure that it cannot be inadvertently turned back on. (i.e. remove the fuse). Now remove the access cover to gain access to the pump. Next you must remove the pump from the tank by disconnecting the pipework and lifting the pump out. It is advisable to check the underside of the pump to ensure there is no build up of debris around the pump and the float switch as this can often lead to poor pump performance or damage to the pump itself. You must also clean out the tank ensuring that there is no debris in the bottom of the tank. Now that the tank is clean you must reconnect the pump to the pipework and check the function of the pump prior to replacing the access cover.

**In addition we strongly recommend that a service agreement be taken out, please refer to Section 11 for further information.**

## 9.0 Health and Safety

Please pay attention to the following regulations when installing the pump system or ask your qualified electrician/distributor.

### Safety Precautions

In order to minimise the risk of accidents in connection with the service and installation work, the following rules should be followed.

- Do not ignore health hazards. Observe strict cleanliness.
- Bear in mind the risk of electrical accidents
- Use a safety helmet, safety goggles and protective shoes.
- All personnel who work with sewage systems must be vaccinated against diseases to which they may be exposed.
- A first aid kit must be close to hand.
- Note that special rules apply to installations in an explosive atmosphere.

### Electrical Connections

- The following works should only be done by qualified and authorised electricians.
- Edincare and Wykamol disclaim all responsibility for work done by untrained and/or unauthorised personnel.
- Heed operating voltage (see name plate and additional labels).

- Take out the main fuses to isolate the mains supply from the control unit before repairs or any other works and ensure it cannot be energized again.
- As the pump is equipped with an automatic level control, there is a risk of sudden restart.
- Before starting check the efficiency of the protective arrangements of the pump and the monitoring equipment. Failure to heed this warning may cause a lethal accident.
- Do not put the lead ends into water! Irruption of water may cause malfunctions.
- If persons are likely to come into physical contact with the pump or pumped media, the earthed (grounded) socket must have an additional connection to an earth (ground) fault protection device (GFI).
- Use the pump only in accordance to the date stated on the pump's plate.
- Connection only to mains supply installed in accordance to the local regulations. For fusing of D.O.L. starting pumps use only appropriate slow fuses or automatic circuit breakers with D characteristics. This is because the motor's nominal voltage is measured at the terminal board of the pump; please consider the voltage drop of long supply cables.
- Replace the cable if the cable jacket is damaged. Do not pinch the cable or pull it around sharp bends.
- Always install the control unit in a dry and well ventilated room. Never install the control unit within the tank.

### **Earthing**

For safety reasons, the earth conductor should be approximately 50mm (2") longer than the phase conductors. If the motor cable is jerked loose by mistake, the earth conductor should be the last conductor to come loose from the first terminal. This applies to both ends of the cable. Ensure the correct earthing of the pump and control unit.

## **10.0 Guarantee**

### **12 month component Guarantee**

If within the guarantee period of a product any defect is discovered in respect of workmanship, construction or material, we will make good the defect or replace the defective part at our expense inside normal working hours at the company's premises providing, written notice is given immediately the defect is discovered and that, if required by us, the part or complete unit is returned to the company's premises carriage paid. Spares or repaired parts are delivered ex works exclusive of fitting. The guarantee does not apply to defects caused by incorrect installation, abnormal conditions of working, accidents, misuse or neglects. Our responsibility is in all cases limited to the cost of making good the defect or replacing the defective part at the company's premises inside normal working hours. We exclude all liability for any consequential or other damage or losses which may occur. We will not be liable if the pumping system fails due to it having been incorrectly specified (e.g. where the pump is inundated due to an inadequate waterproofing design or where the pump is used to discharge inappropriate media).



## 11.0 Service Agreement

All systems are manufactured to the highest standard and we have every confidence the product will serve you well. However as with most appliances of this nature, regular maintenance is essential in ensuring your system operates at its optimum level and fulfils the expected life span.

Our Service Agreement scheme is available at competitive prices, and we will undertake to service equipment at regular intervals. We will supply you with a full report on the work done and the condition of the pump/s and all related equipment each time our engineers attend site.

You can see significant benefits through:

- Reduced running costs including energy and maintenance
- Greater life expectancy for equipment
- Reduced risk of breakdown with its resultant problems and inconvenience
- Better plant utilisation
- Improved environmental conditions

Our Service Agreements consist of the following:

- Scheduled service visits per year
- Reduced hourly charges for un-scheduled call outs
- Fully trained service engineers

Should you require any further information please contact us on 0845 400 6666.

