

**This manual is to be left with the pump station or the pump station owner**



**Depth**

- 800mm
- 1000mm
- 1300mm
- 1500mm
- 1800mm
- 2000mm

**Pump/s**

- V3
- V4
- V6
- D10
- D11
- 612/2501
- Other: \_\_\_\_\_

**No. of Pumps**

- Single
- Dual

**Pump Mounting**

- Free Standing
- Guide Rail Mounted

**Alarm Panel**

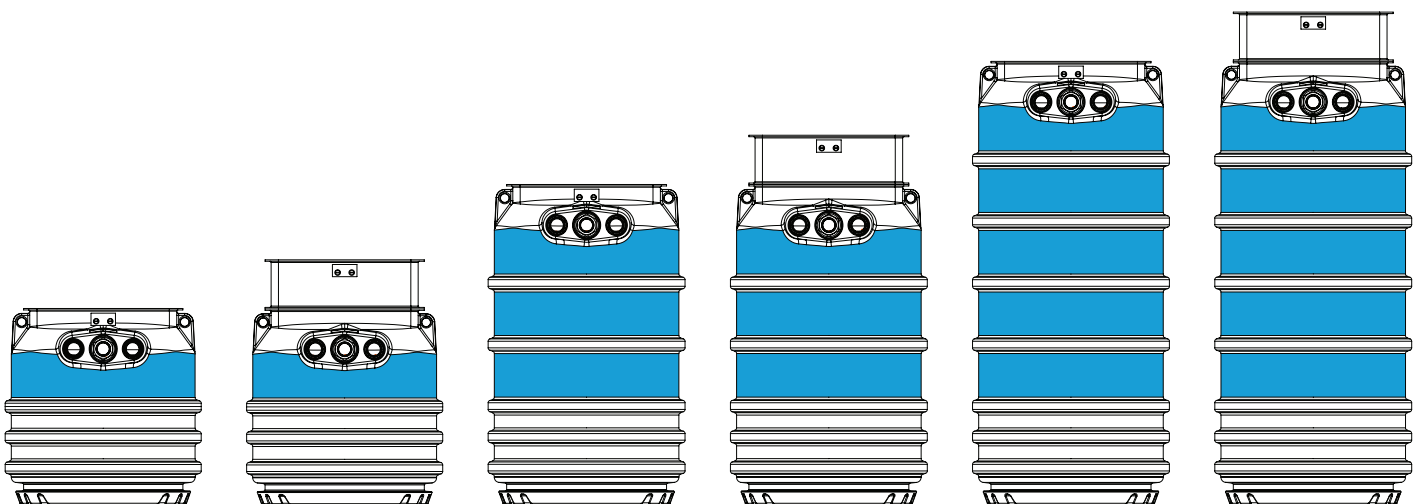
- AlertMaxx2

**Control Panel**

- Rego1
- 4-6A Metal Panel
- 6-10A Metal Panel

# 800 Series Pump Stations

## Installation Instructions



# 800 Series

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# 800 Series

## 1.0 800 Series Overview

The 800 Series is a pump station specifically designed for pumping ground, ground and surface or foul water when gravity drainage is not possible or economical to install.

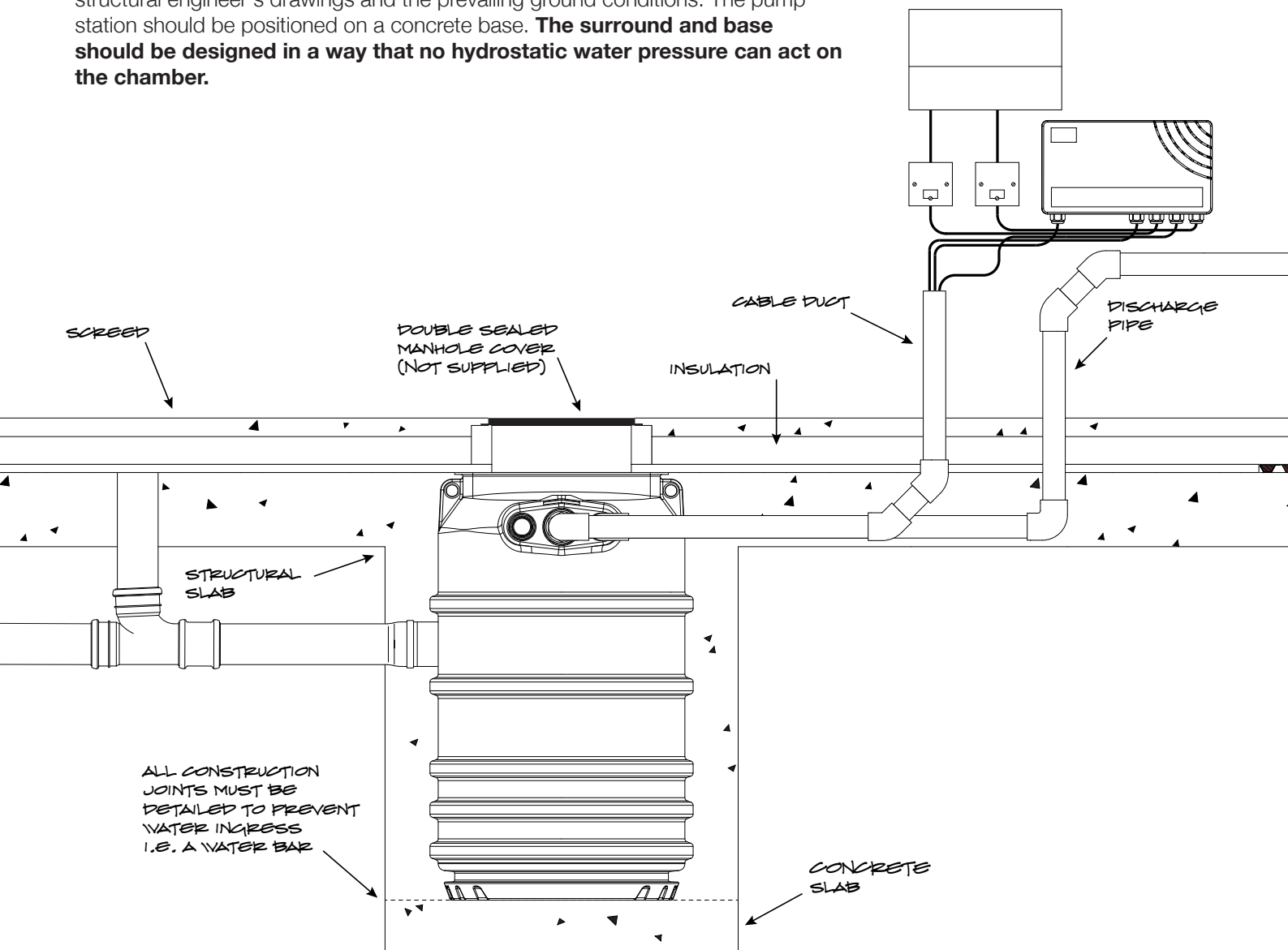
The system is suitable for installing either at the initial building stage or for retrofitting to existing buildings, assuming access enables chamber size to be installed.

The system consists of a chamber, internal pipework/fittings, a high level alarm or a control panel, floats, guide rails (if applicable) and one or two submersible pumps. The 800 Series is easy to install as inlets can be positioned to your requirements by drilling on site with the supplied inlet kit.

A battery backup is recommended to power the pumps during a power outage (not available for all pump types).

## 2.0 Overview - Ground Water/Cavity Membrane installation with dual auto pumps

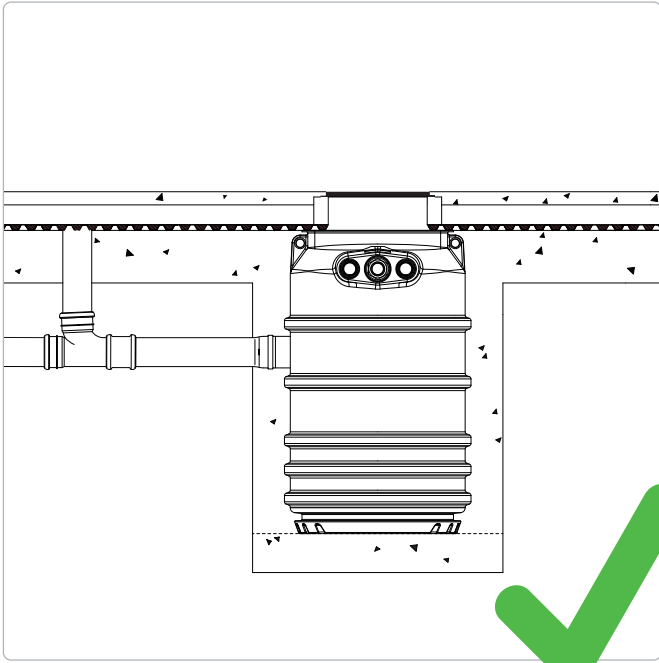
The pump station should be backfilled with concrete in accordance with the structural engineer's drawings and the prevailing ground conditions. The pump station should be positioned on a concrete base. **The surround and base should be designed in a way that no hydrostatic water pressure can act on the chamber.**





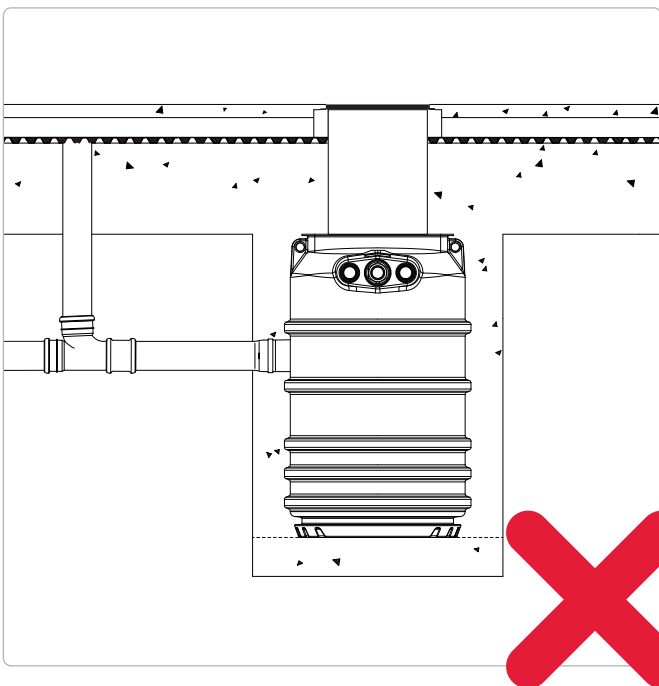
## 3.0 Pump Chamber Depth Limits

If the inlets do not allow the pump chamber to be within depth limits, please contact the PPS Technical Department on 0330 9000 999 to discuss chamber options.



< 500mm

The pump chamber must be installed no more than 500mm below floor finishes.



> 500mm

A pump chamber installed more than 500mm below floor finishes cannot be serviced safely in accordance with CDM regulations.

# 800 Series

## 4.0 Installation Guidelines

The following instructions are for guidance only and it is the contractor's responsibility to ensure that the installation is in accordance with the prevailing ground conditions and good building practice, to eliminate any potential damage to the pump station either during or after installation.

The chamber is manufactured from polyethylene and as such is extremely robust. However, as with any preformed chamber they are susceptible to floatation and hydrostatic pressures exerted in high water table conditions, therefore, must always be fully supported by a waterproof concrete base and surround, this will ensure that any pressure present is not transferred onto the chamber itself.

Furthermore, when constructing the reinforced waterproof concrete sump, it is important that adequate space is made for connections to the chamber, e.g. inlets, discharge, cable and vent ducts. Consideration must also be made regarding the depth and orientation of all connections to ensure that they line up with the chamber.

It is imperative that you consult with a structural and waterproofing engineer when designing the reinforced waterproof concrete sump and backfill, ensuring that it allows for the anticipated pressures and that they are not transferred onto the chamber. Regardless of the use of a reinforced waterproof concrete sump, the following installation method must be followed.

Please read these instructions carefully before installing the chamber. If there is anything unclear, the PPS Technical Department is available on 0330 9000 999.

## 5.0 Pump Station Location

This pump station requires routine maintenance. Therefore careful consideration must be taken to position the chamber in a location that allows permanent access to the chamber.

## 6.0 Lifting, Handling & Storage

When lifting the chamber, a suitable lift plan must be devised by the installer to ensure that there is no damage to the chamber during this process or health and safety risks associated with lifting and handling. Please adhere to all current legislative and training requirements and ensure the lifting equipment used is selected by taking into account all aspects of the pump station. Care must be taken to ensure that the pump station is not damaged during delivery and handling on site. The pump station can be stored outside, but the associated electrical items (pumps, control panels, etc.) must be stored inside in a dry storage facility.

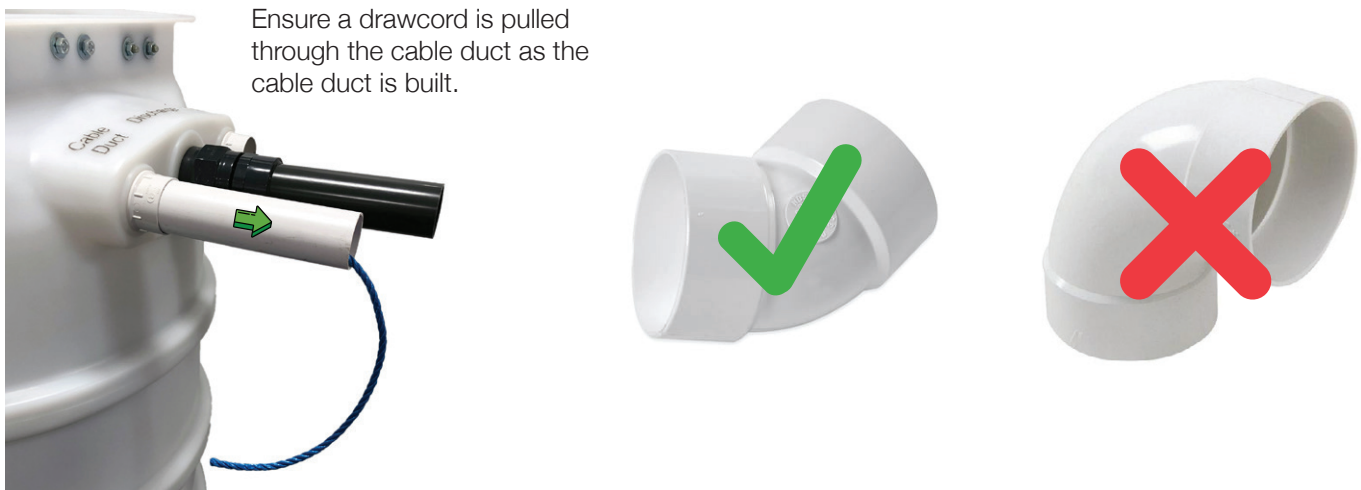
## 7.0 Introduction (please read first)

The 800 Series comes in two mounting configurations, 'Free Standing' and 'Guide Rail Mounted'. This instruction manual covers both configurations. Please check what mounting configuration you have (front cover) and follow the pages as detailed below.

- Guide Rail Mounted - go to page 11
- Free Standing - go to page 16

## 8.0 Cable Duct Guidance (inc. extensions)

As a rule of thumb, the cable duct should be the same diameter as the white male iron on the pump station. 800 Series pump stations typically require a 50mm cable duct. Ensure the cable duct is constructed with white waste pipe (grey high pressure pipe can also be used, but will require a high pressure grey male iron). It's imperative that long sweeping bends or 2 x 45° elbows are used for changes in direction. 90° elbows create bends that are too tight for cables to be pulled through during installation and after installation for maintenance purposes. The cable duct must not let water into the pump station. The maximum linear meters for a cable duct is 6m, please reference the cable extension document that can be found on the PPS Knowledge Base ([support.ppspumps.com](http://support.ppspumps.com)).



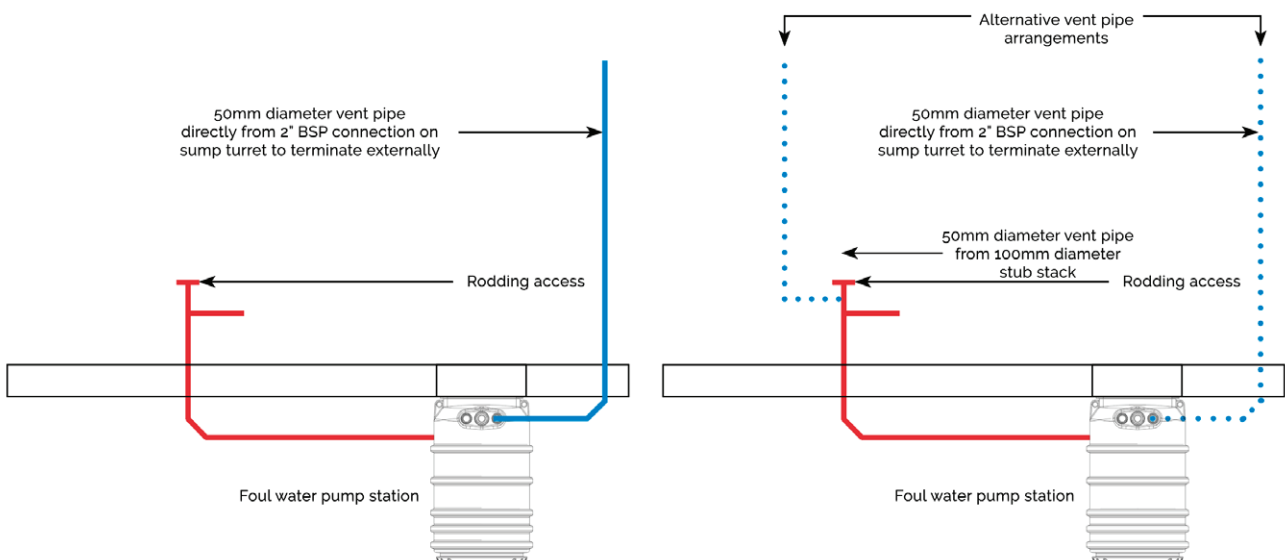
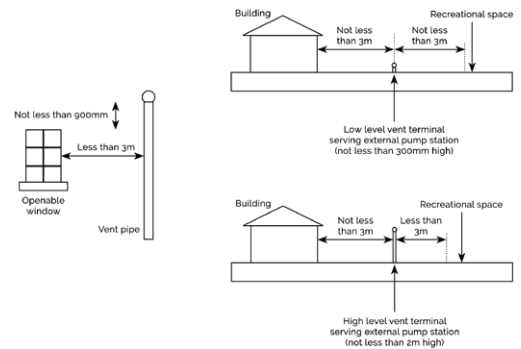
## 9.0 Vent Guidance (foul, surface water & sealed cavity membrane systems)

The purpose of sump ventilation is to;

- allow air to escape safely when the chamber is filling.
- allow air into the chamber while the system is pumping down.

The best situation is to provide a 50mm vent pipe connected directly to the sump at high level using the connection provided by the manufacturer. In some situations, it is acceptable to ventilate the sump via the drainage system. The use of an air admittance valve is **not** acceptable.

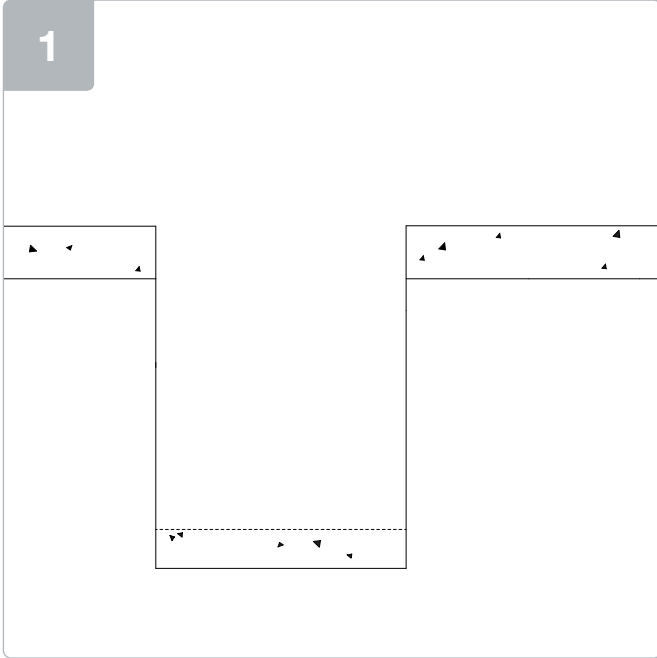
A vent is **not** required for ground water pump stations, as the system is vented behind the cavity membrane.



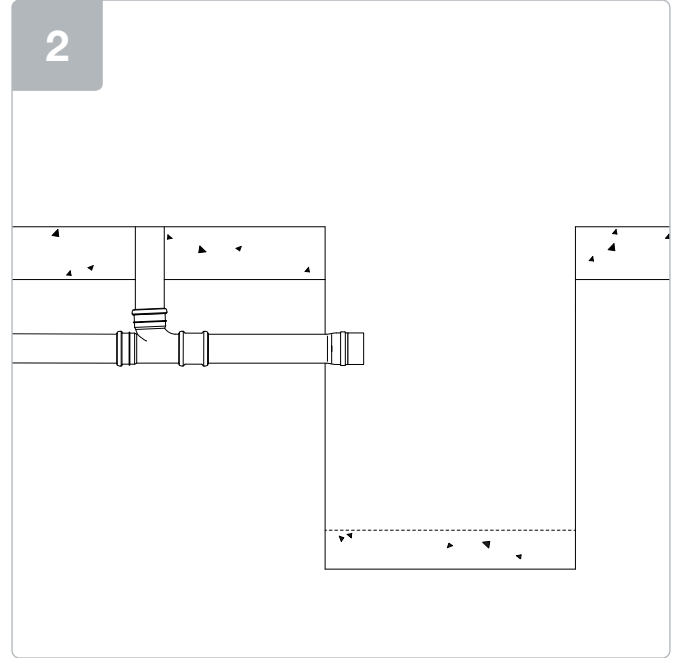
# 800 Series

## 10.0 Installation of Chamber

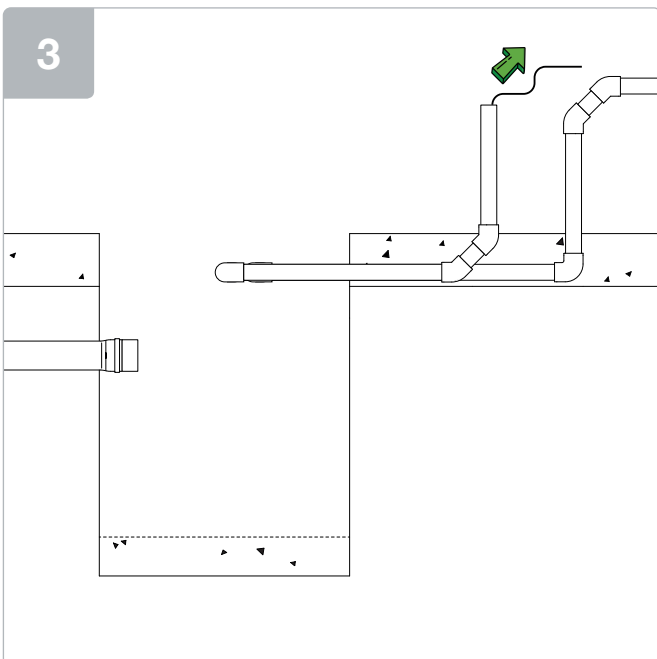
### Bare chamber installation guidance



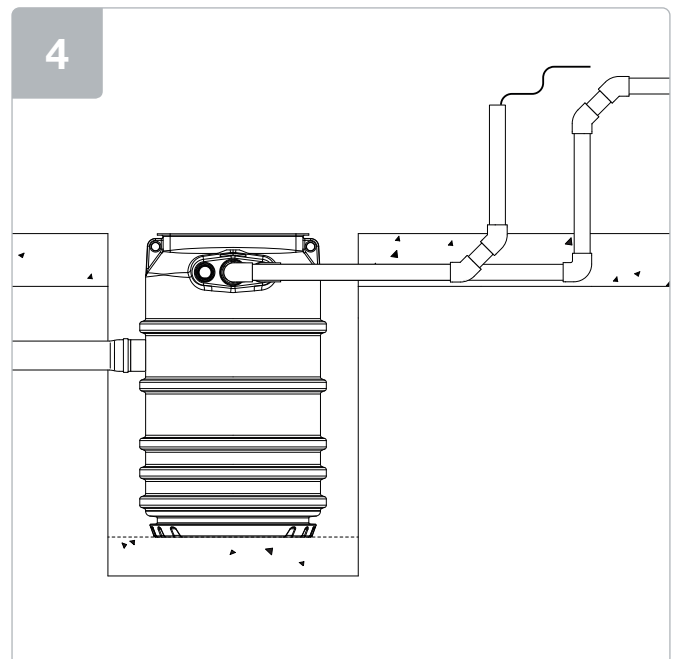
Excavate a 1200mm x 1200mm hole with a depth to suit the depth of the chamber (ensure to follow the guidance on page 5). Pour a 150mm concrete base for the pump station to reside on (follow structural engineer's drawings).



Lay the 110mm inlet pipe/s to specified falls.



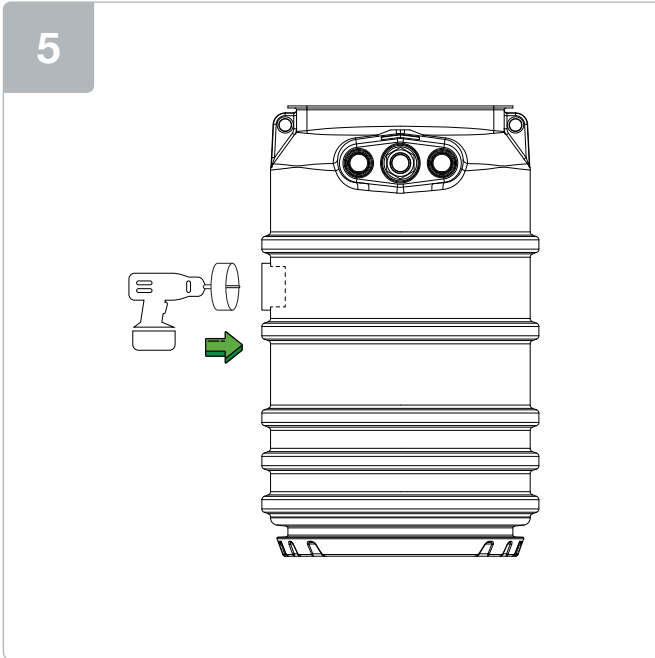
Lay the cable duct, vent (if applicable) and discharge pipework (high pressure Class C PVC-U). Ensure to install a drawcord into the cable duct pull through the electrical connections (covered in a later stage). The cable duct is to be a minimum of 150mm high from final floor level.



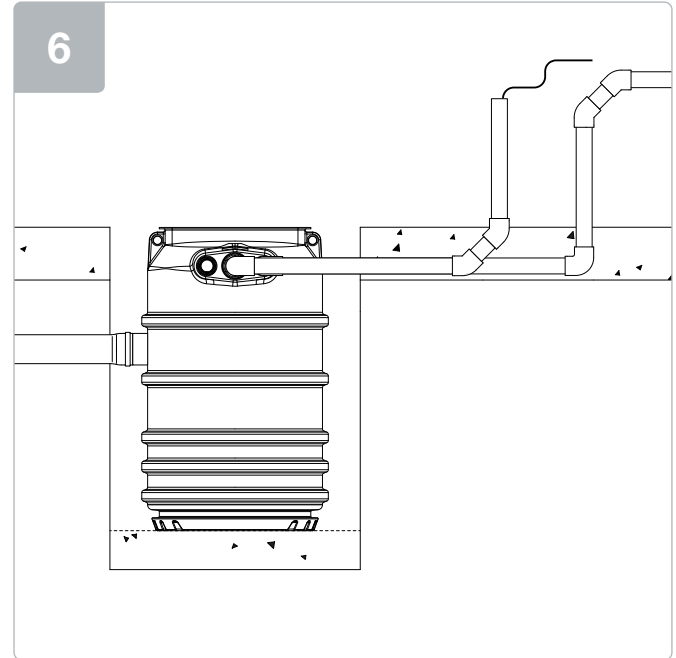
Position the chamber in the ground and check the positioning of the cable duct and discharge pipework. Mark the position of the inlets on the chamber and remove it for cutting (next stage).

## 10.0 Installation of Chamber cont.

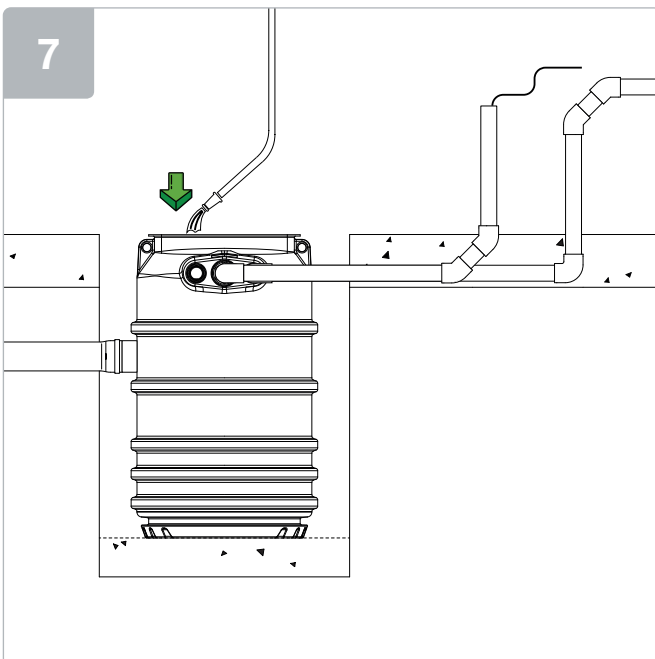
## Bare chamber installation guidance



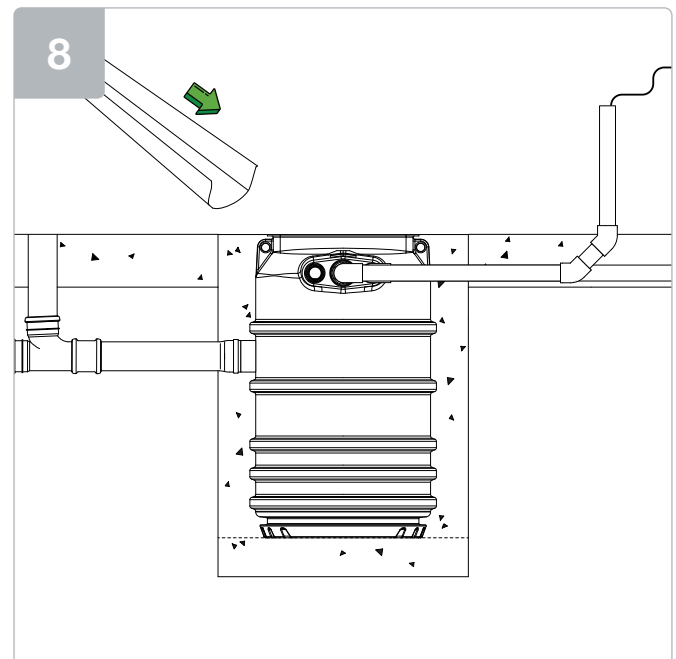
Using the inlet kit provided, drill the inlet/s in the chamber as required to suit the laid inlet pipe/s. Up to 5 inlets can be drilled into the chamber in the areas highlighted in blue on the front cover. Push in the rubber grommet/s.



Lower the chamber into the prepared cavity. Ensure no debris is knocked on to the concrete base. Inlet, discharge and cable duct pipework to be aligned with the holes in the chamber.



Connect all inlet and outlet pipes. Completely fill the chamber with water to act as a ballast and prevent flotation during backfilling. Ensure the drawcord terminates in the chamber.

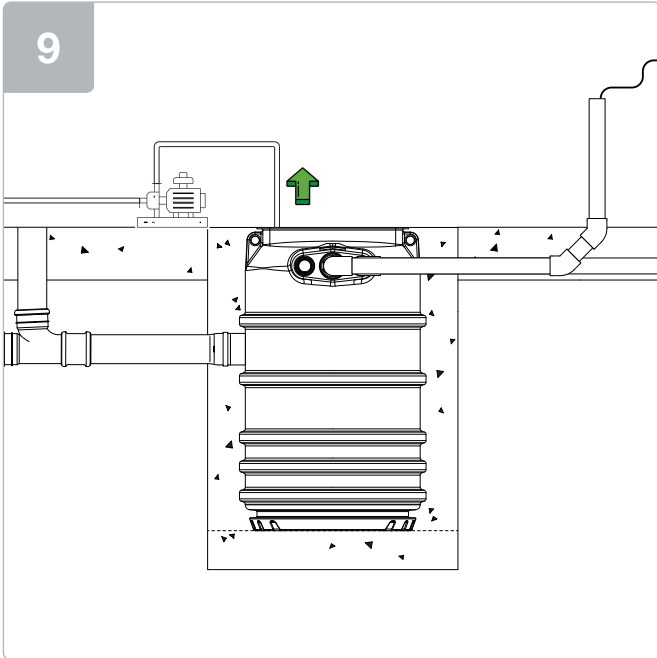


Backfill the excavated cavity with concrete (min. C35 grade). Ensure to follow the structural engineer's drawings and in accordance with the prevailing ground conditions. Allow to cure fully.

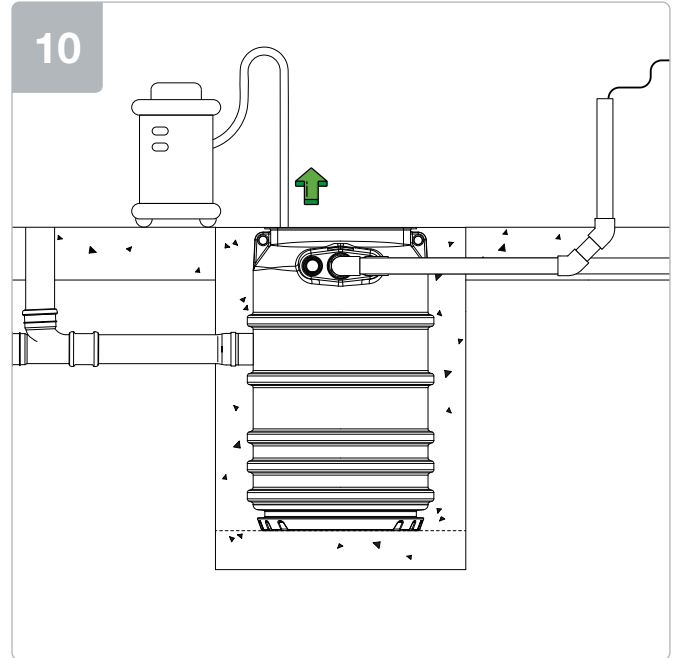
# 800 Series

## 10.0 Installation of Chamber cont.

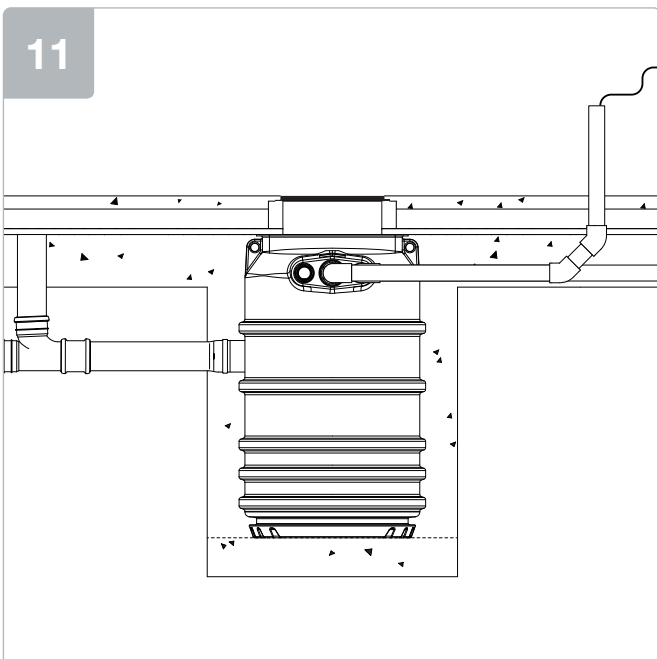
### Bare chamber installation guidance



When the concrete has fully cured, remove the water used to prevent flotation with a temporary site pump. **Do not use the final pump.**



When the water has been removed, use a wet vac to clean out any remaining debris and residual water. Failing to do this will invalidate the pump warranty.



Complete the fit out, including insulation, screed and final floor finish with a recessed double sealed manhole cover to the pump station.

## 11.0 Guide Rail Mounted - Pump Installation

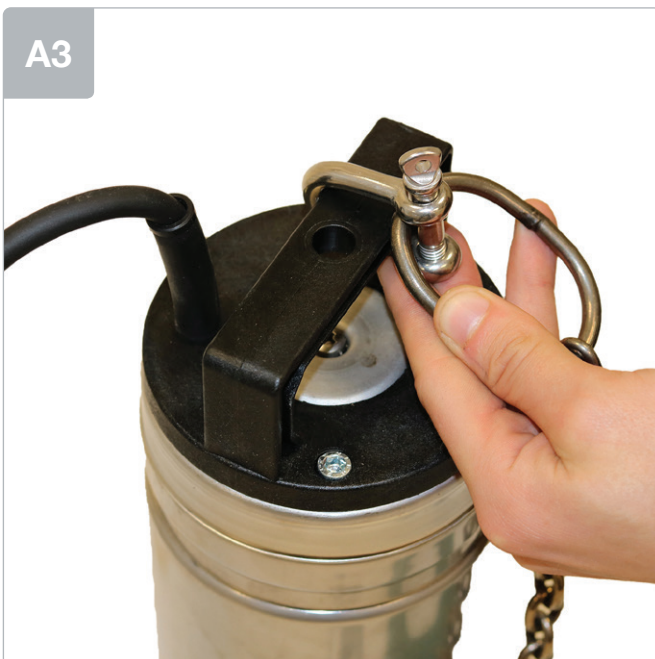
## Guide Rail Mounted 800 Series pump station installation guidance (D10)



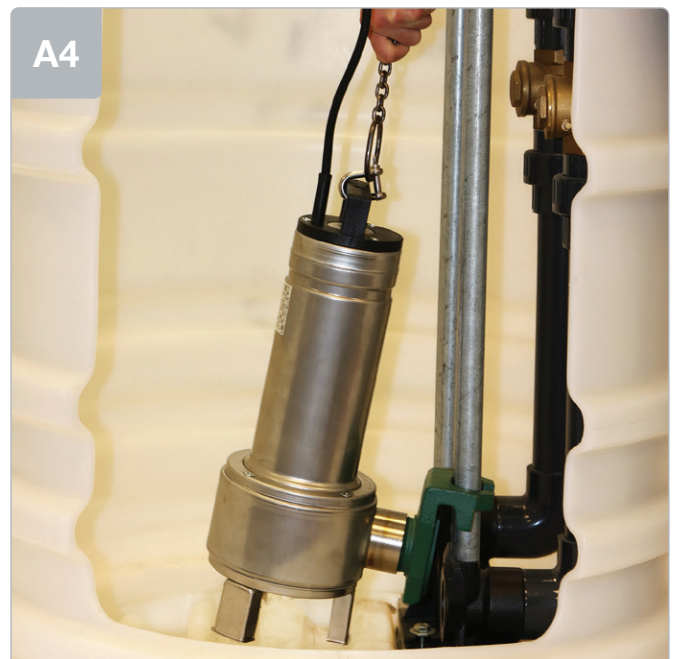
Wrap sufficient PTFE tape around the thread of each pump claw (two if dual or one if single).



Tighten the pump claw/s into the female threaded discharge on the pump - ensure to remove the yellow transportation bung first.



Fit the provided chain to the top of pump handle using a shackle. Ensure the length of the chain is sufficient for the depth of the pump station.



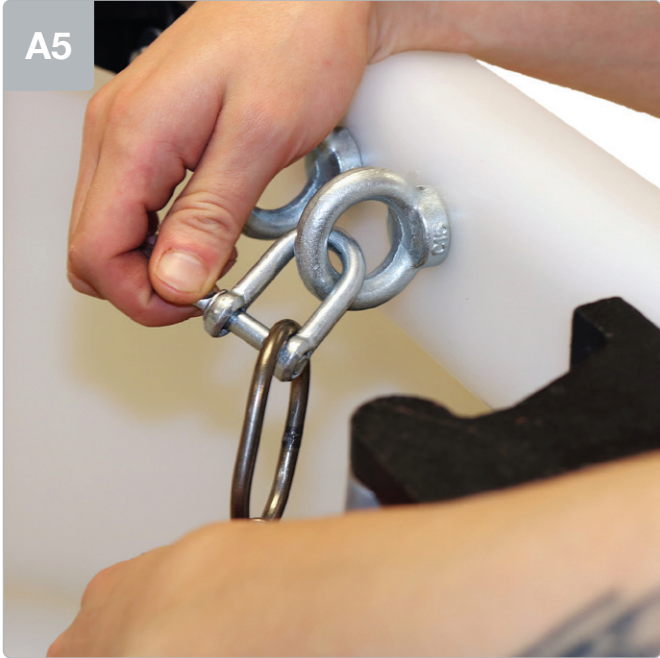
Lower the pump/s into the chamber using the chain attached to the pump handle.



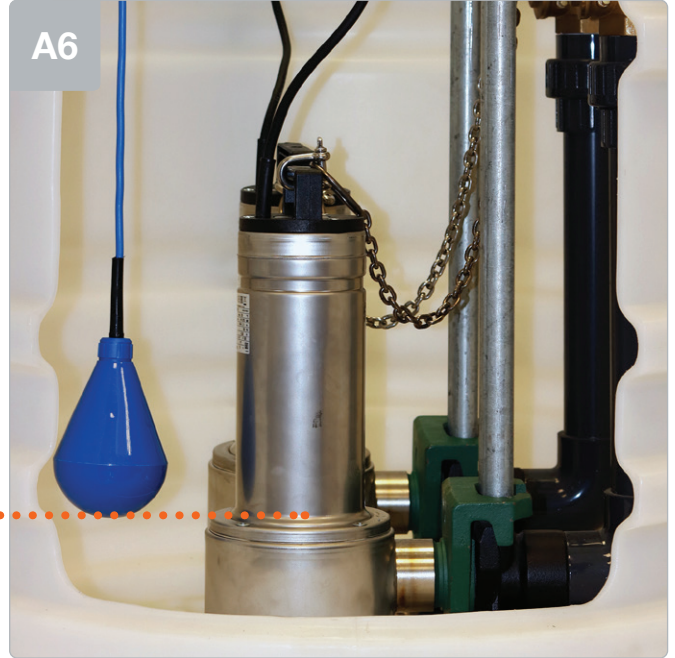
# 800 Series

## 11.0 Guide Rail Mounted - Pump Installation cont.

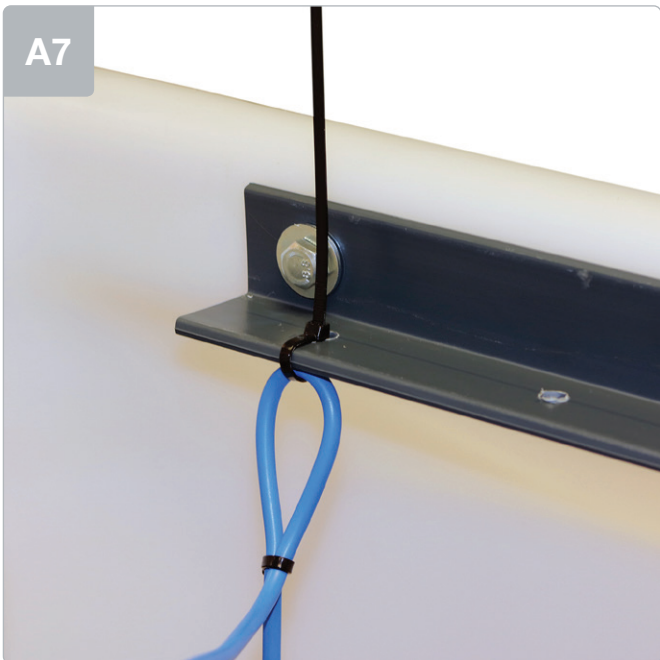
### Guide Rail Mounted 800 Series pump station installation guidance (D10)



Secure the chain using the supplied shackle/s to the loops pre-fitted to the chamber.



Setup the first float (LOW / STOP) so that the bottom of the float is level with the middle of the body of the pump. Use the dotted line above for guidance.



Create a loop in the float cable using a cable tie and attach it to the float bracket using another cable tie.



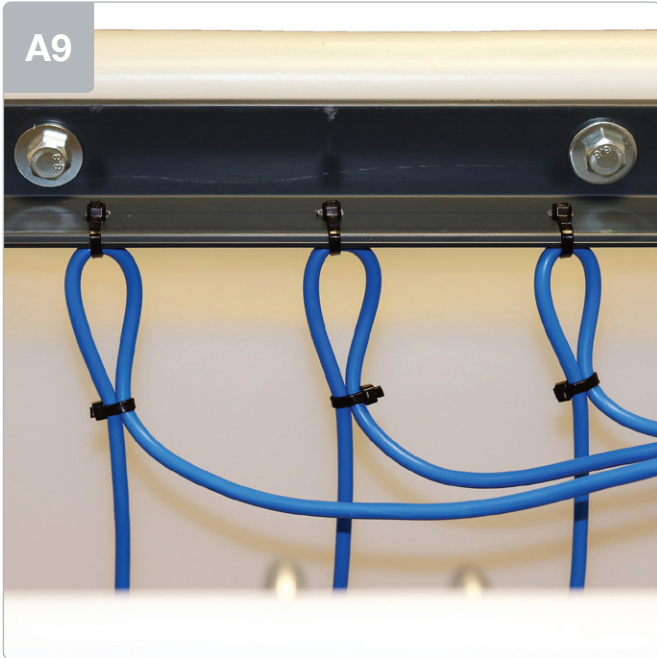
**When installing a single pump, follow Z3. Page 15**

Setup the other two floats so they are staggered with each other. Use the top of the last float for guidance on the height of the next. Be aware that float positions are subject to the incoming inlets and care should be taken to set up the floats correctly with that in mind.



## 11.0 Guide Rail Mounted - Pump Installation cont.

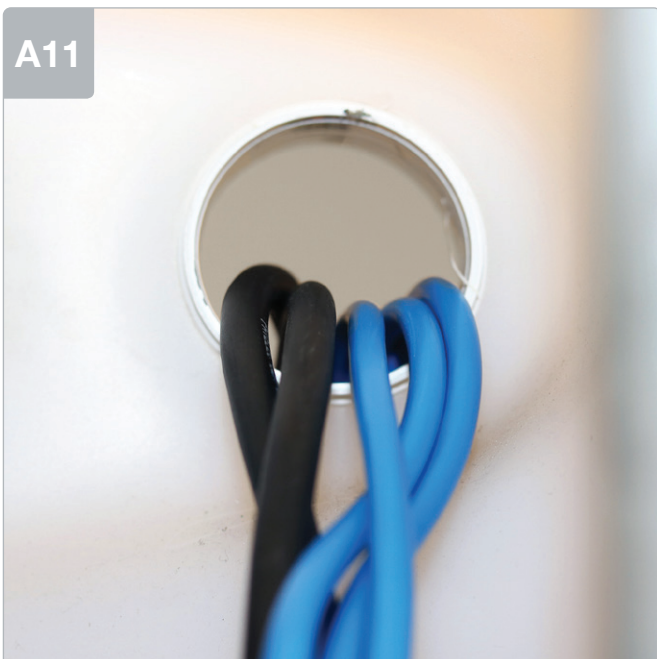
## Guide Rail Mounted 800 Series pump station installation guidance (D10)



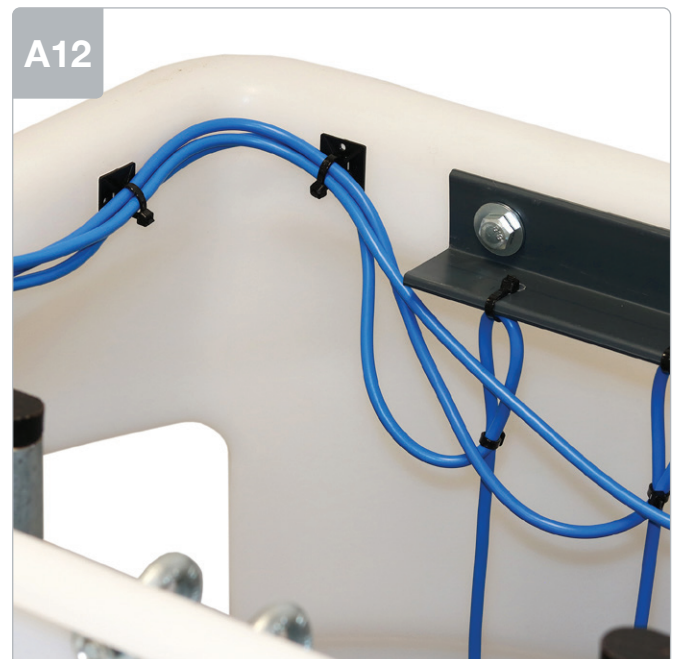
Use loops (as per step A7) to secure the two remaining floats.



Mark each float cable to help identify what float is what when the cables are pulled through the cable duct to their termination point.



Using the pre-installed drawcord (fitted during installation of the bare chamber), pull the cables through the cable duct to their termination point.



Tidy the cables inside the pump station to ensure the opening is as clear as possible for ongoing maintenance.

# 800 Series

## 11.0 Guide Rail Mounted - Pump Installation cont.

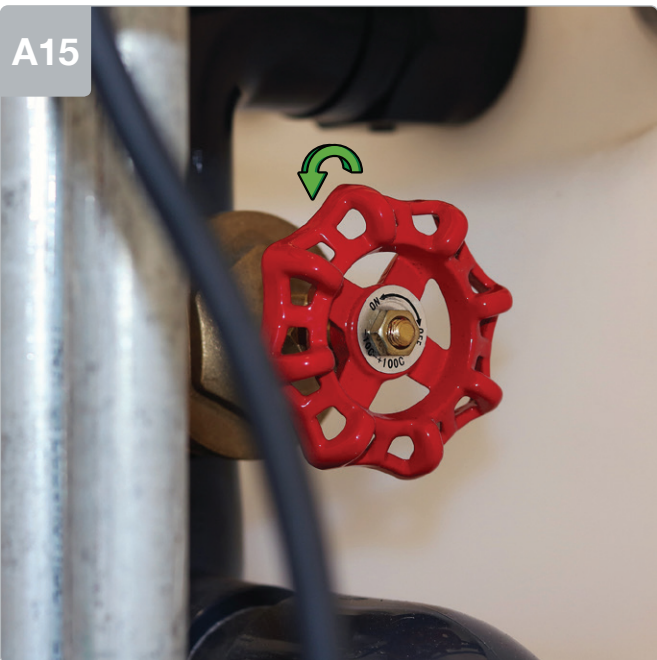
### Guide Rail Mounted 800 Series pump station installation guidance (D10)



Wire up the control panel following the control panel instruction manual. Typical control panel is shown (Rego1). Single pump stations will use an AlertMaxx2 high level alarm.



Fill the chamber half full with water. Raise and lower the pump/s to expel any air trapped in the pump using the chain.



Ensure the gate valve is open.



To complete setup (inc. testing), follow the control panel instruction manual, or AlertMaxx2 manual if installing a single pump system.

## 11.0 Guide Rail Mounted - Pump Installation cont.

## Additional instructions



Bolt the Adaptor Claw to the pump using the M12 nuts, washers and bolts (provided).



Screw the DSD2 claw onto the adaptor claw. Ensure to wrap PTFE tape around the thread of the pump claw (See A1).



When setting up a single pump system, the pump has a built in float switch to control it's activation. The high level alarm float should be set up as per the float highlighted in the orange circle - typically the bottom of the float should be level with the top of the pump handle.



# 800 Series

## 12.0 Free Standing - Pump Installation

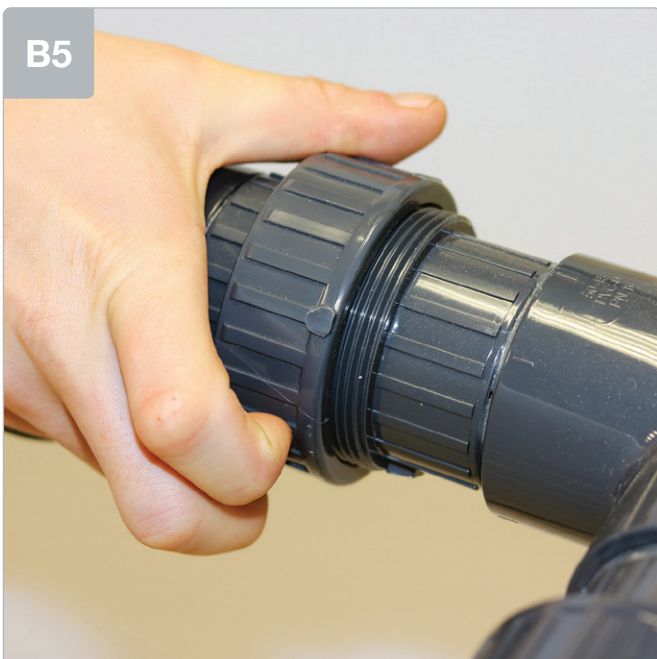
### Free Standing 800 Series pump station installation guidance (V3)



Wrap the thread of each male iron on the end of the discharge pipes with PTFE tape.



Screw the discharges arms into the non-return valve of each pump.



Unscrew the unions holding on the 90° bends. Ensure the 'O' ring stays seated in the Y piece side of the union.



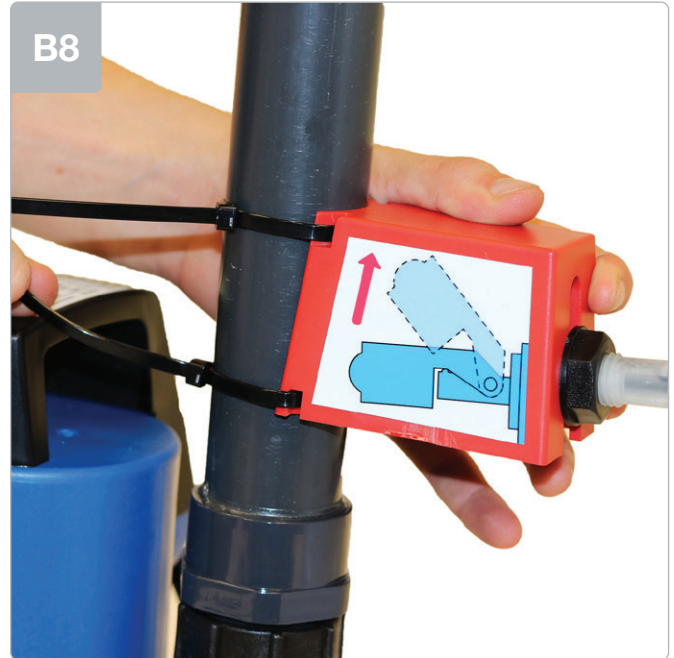
Using high pressure PVC glue, apply to both the discharge arm and the inside of the 90° bend. Push and twist the components together to expel any air - allow to cure.

## 12.0 Free Standing - Pump Installation cont.

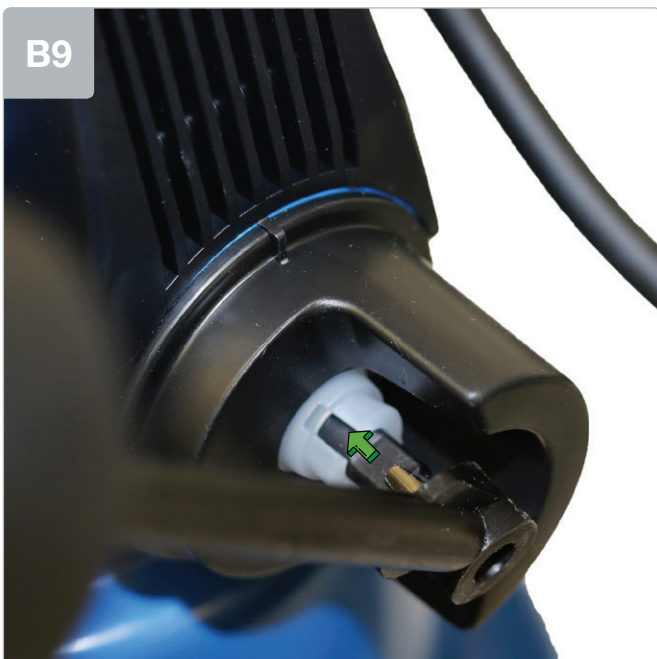
## Free Standing 800 Series pump station installation guidance (V3)



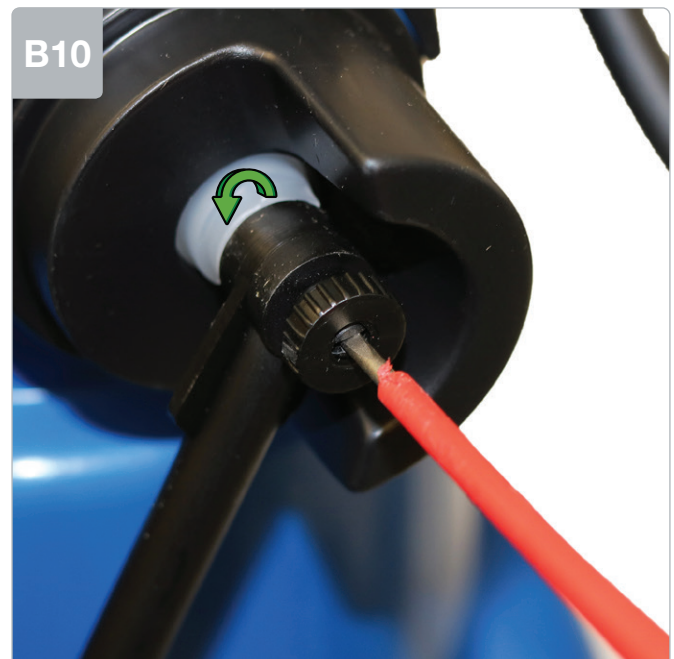
If you are installing an AlertMaxx2 high level alarm, fit the finger float inside the shroud.



Fit the float housing to the discharge arm of one of the pumps. **Ensure the float is set to activate in between pump 1 activation and pump 2 (see B9).**



Remove the nut from the threaded spigot on the float assembly. Fit the float arms to the pumps - ensure the notch lines up.



Refit the nut/s. Important - ensure to adjust one pump (2) so the float activates at a higher level than the other, this will be the assist pump. Loosen the nut slightly and use a small flat head screwdriver, turning 1/4 turn anti-clockwise. Tighten the nut.



# 800 Series

## 12.0 Free Standing - Pump Installation cont.

### Free Standing 800 Series pump station installation guidance (V3)



Fill the chamber half full with water (this will ensure the pumps are not air locked) and lower both the pumps into the chamber - ensure the float arms have free space to pivot independently and without obstruction.



Tidy the cables according to the picture, ensuring to leave approx. 500mm of cable coiled for each pump and the high level alarm - this will help with ongoing maintenance.



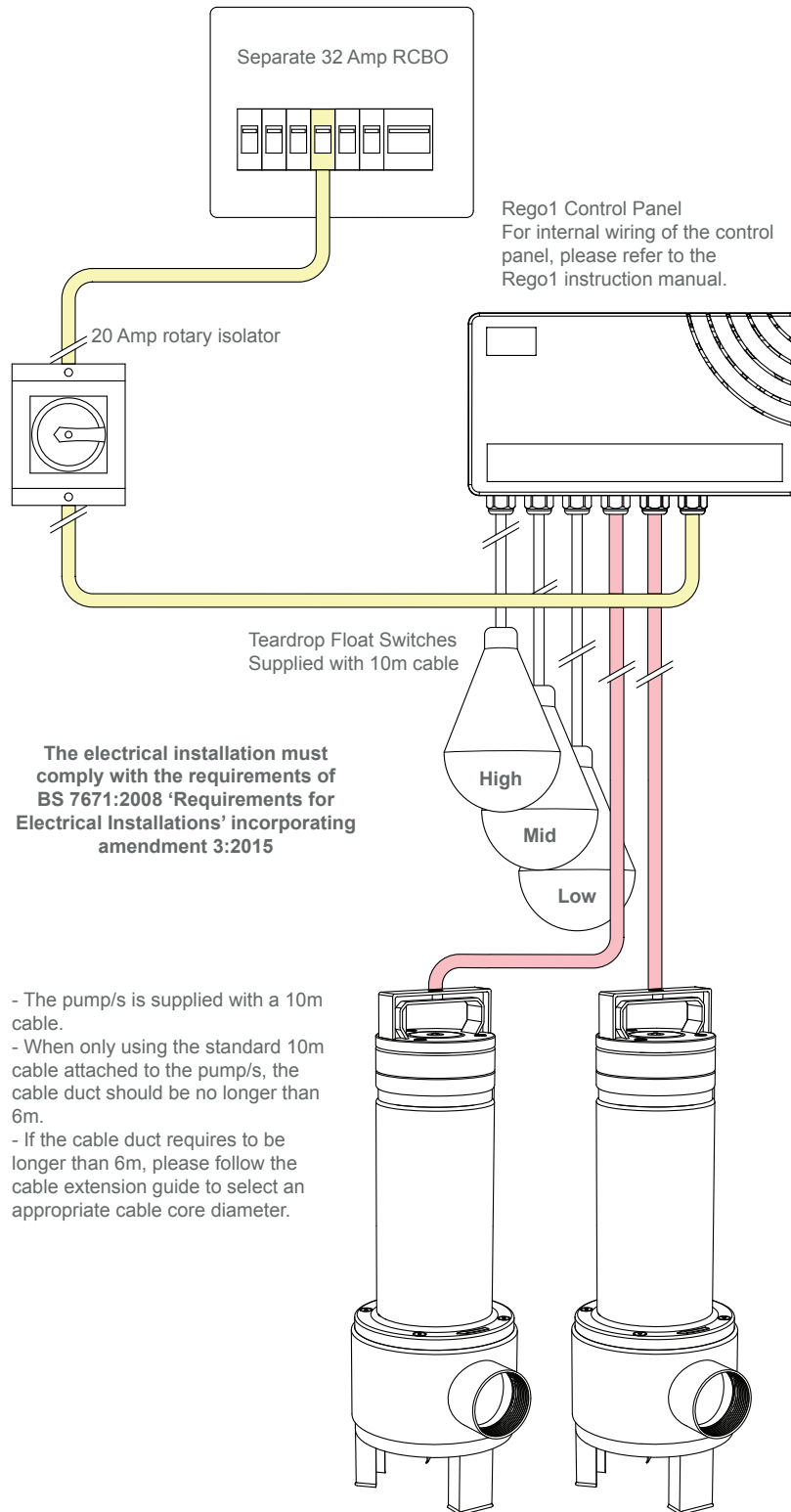
Using the pre-installed drawcord, pull the cables through the cable duct.



If you are installing an AlertMaxx2, wire up the high level alarm following the supplied instruction manual. If you are using the pump station without a high level alarm, ensure each pump is wired into a 13A non-switched fuse spur which should, in turn, be feed by a 16A RCBO (each).

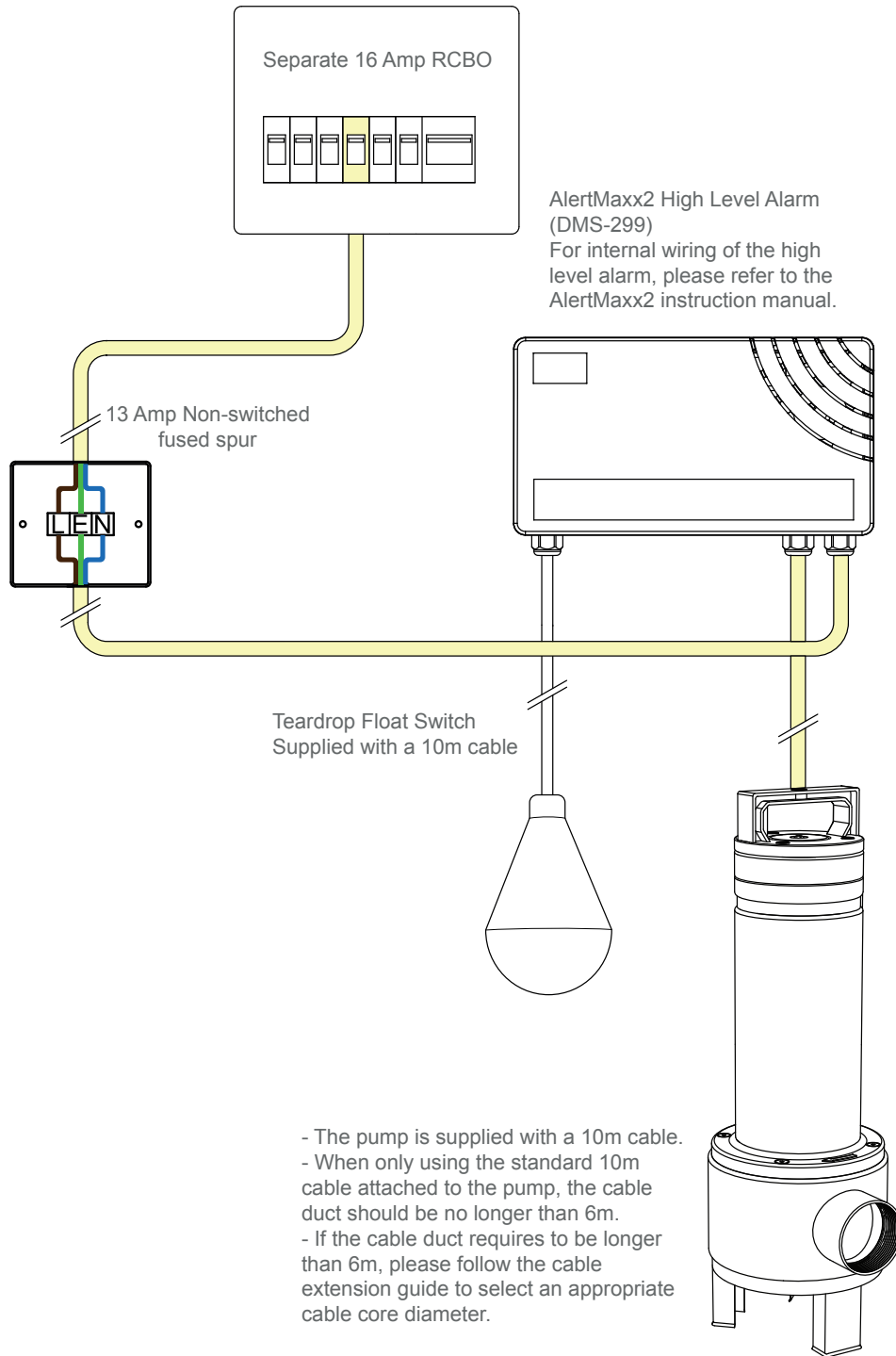
13.1 Guide Rail Mounted Pump - Typical Wiring Diagram

i.e. Dual D10, D11, 612



## 13.2 Single Guide Rail Mounted Pump - Typical Wiring Diagram

i.e. Single D10, 612

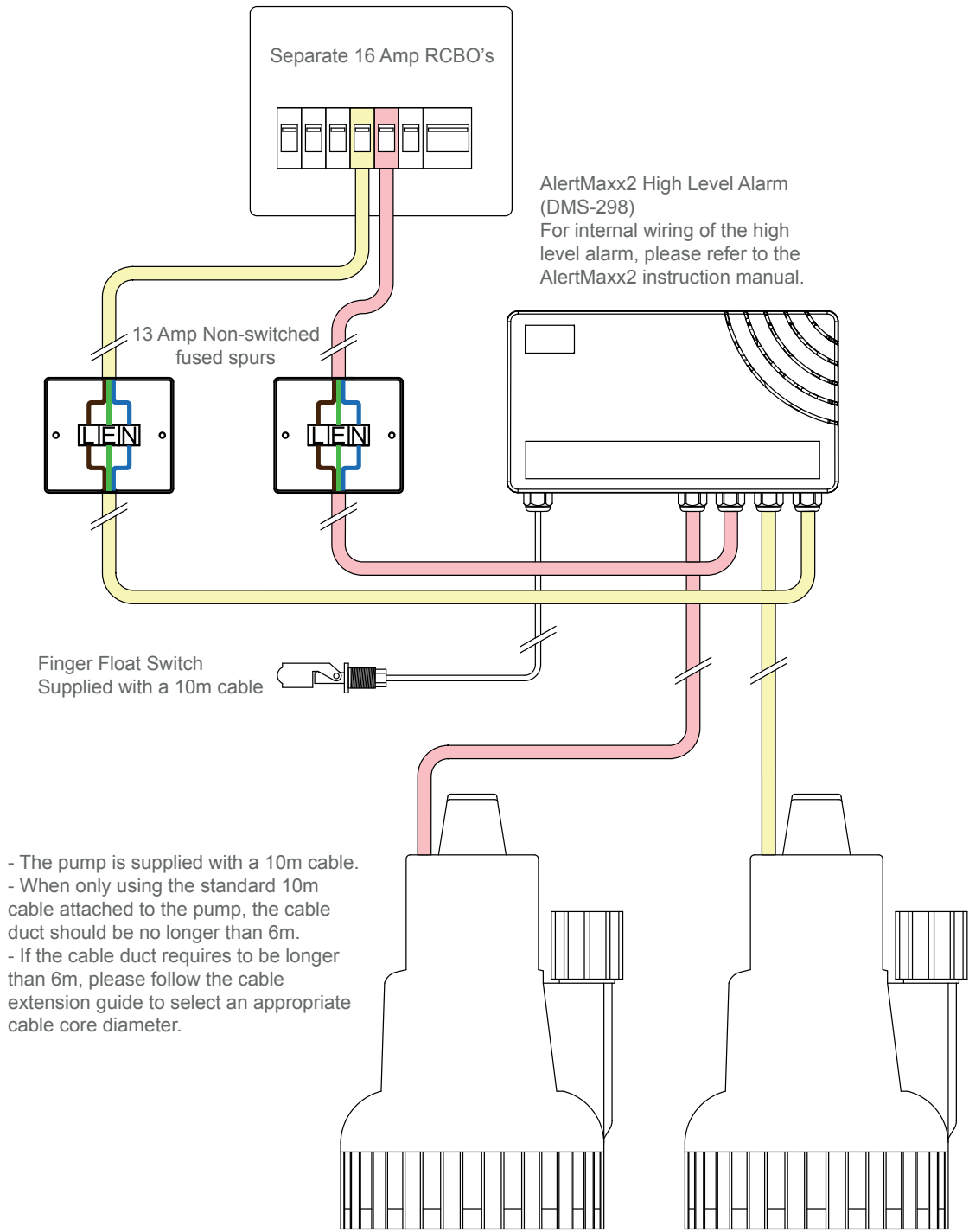


The electrical installation must comply with the requirements of BS 7671:2008 'Requirements for Electrical Installations' incorporating amendment 3:2015



**13.3 Free Standing Pump - Typical Wiring Diagram**

i.e. Dual V3, V4, V6

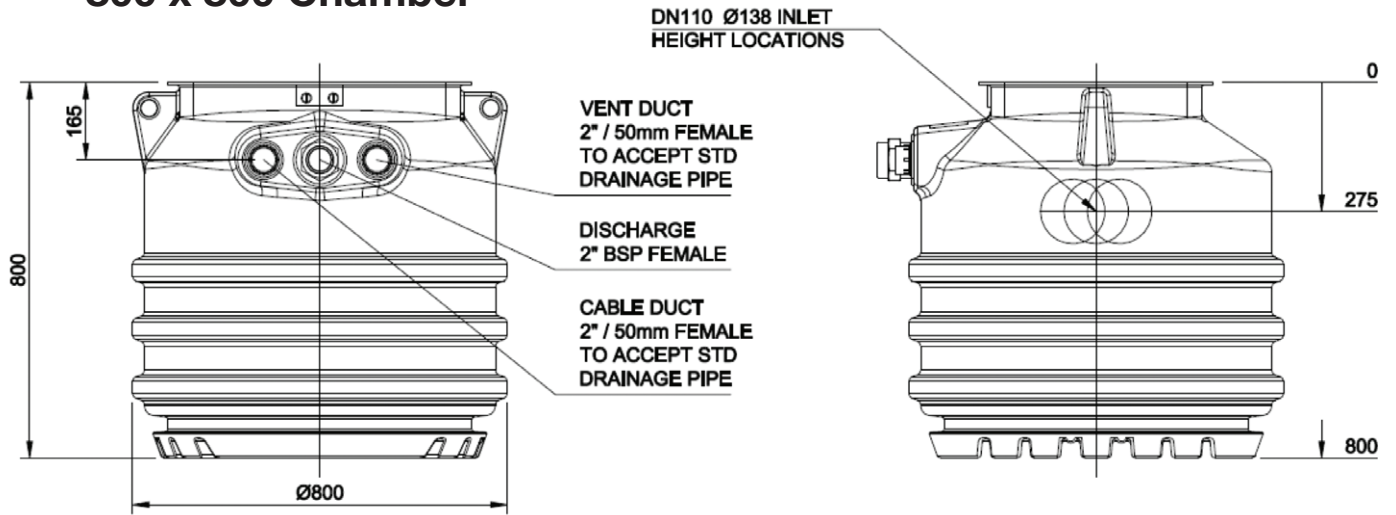


The electrical installation must comply with the requirements of BS 7671:2008 'Requirements for Electrical Installations' incorporating amendment 3:2015

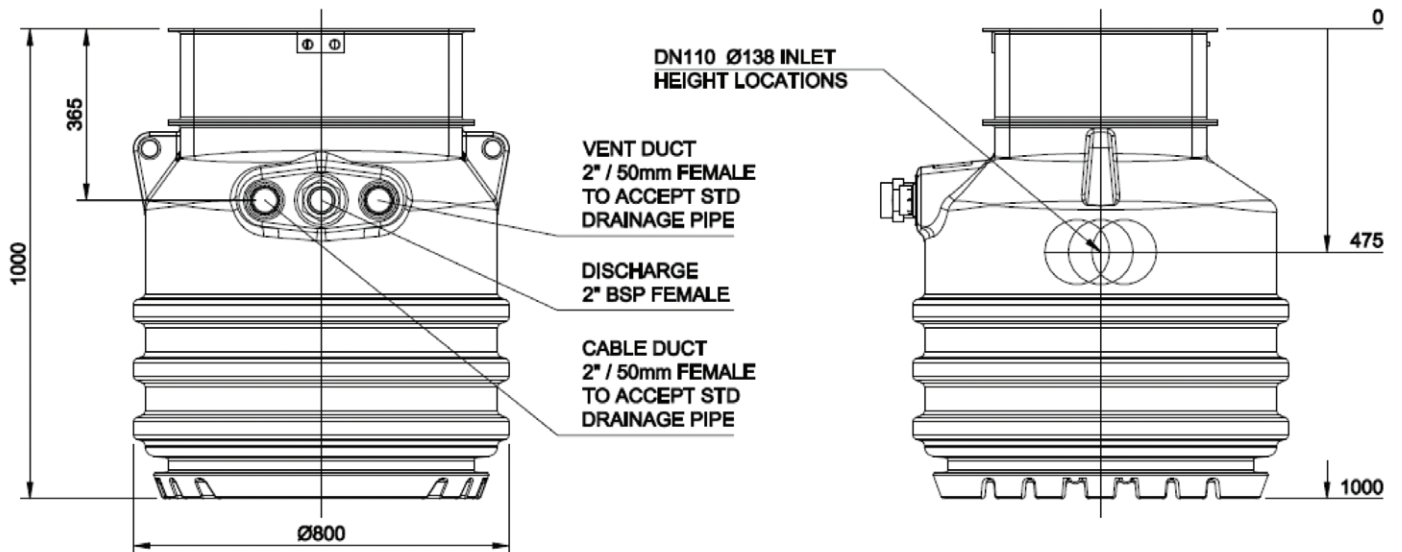
# 800 Series

## 14.0 Dimensional Drawings

### 800 x 800 Chamber

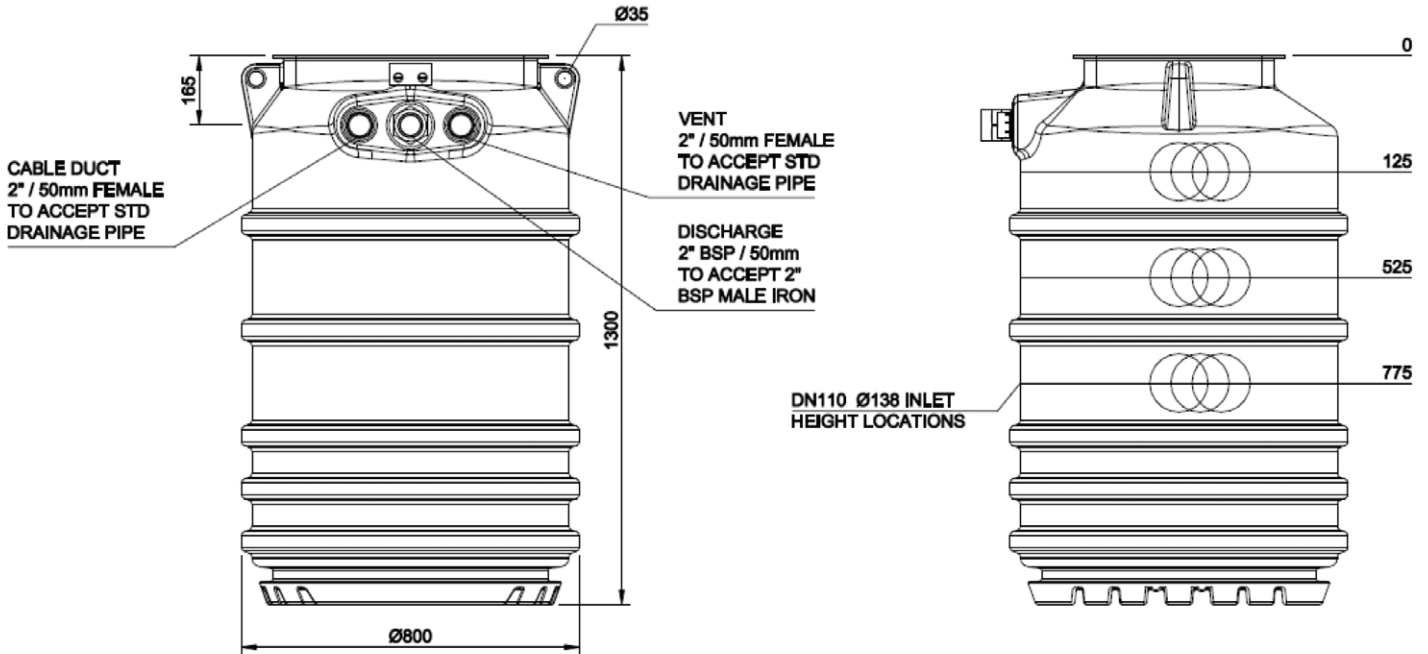


### 800 x 1000 Chamber

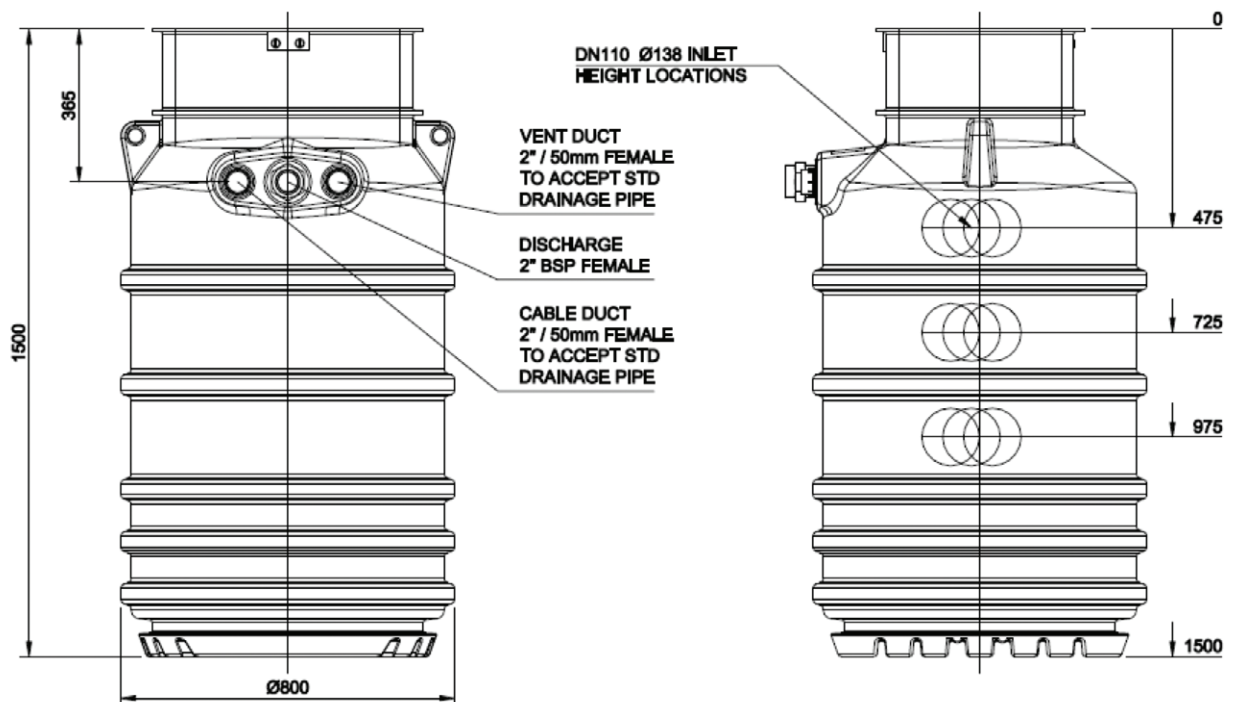


14.0 Dimensional Drawings cont.

800 x 1300 Chamber

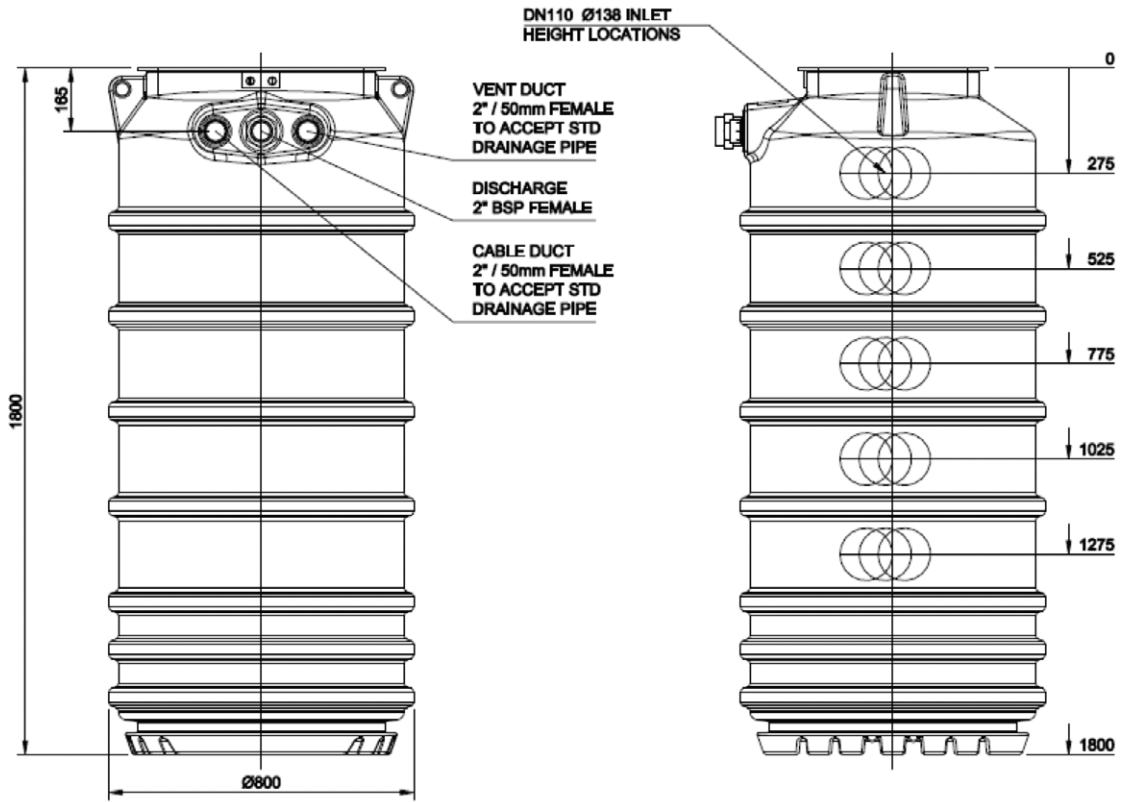


800 x 1500 Chamber

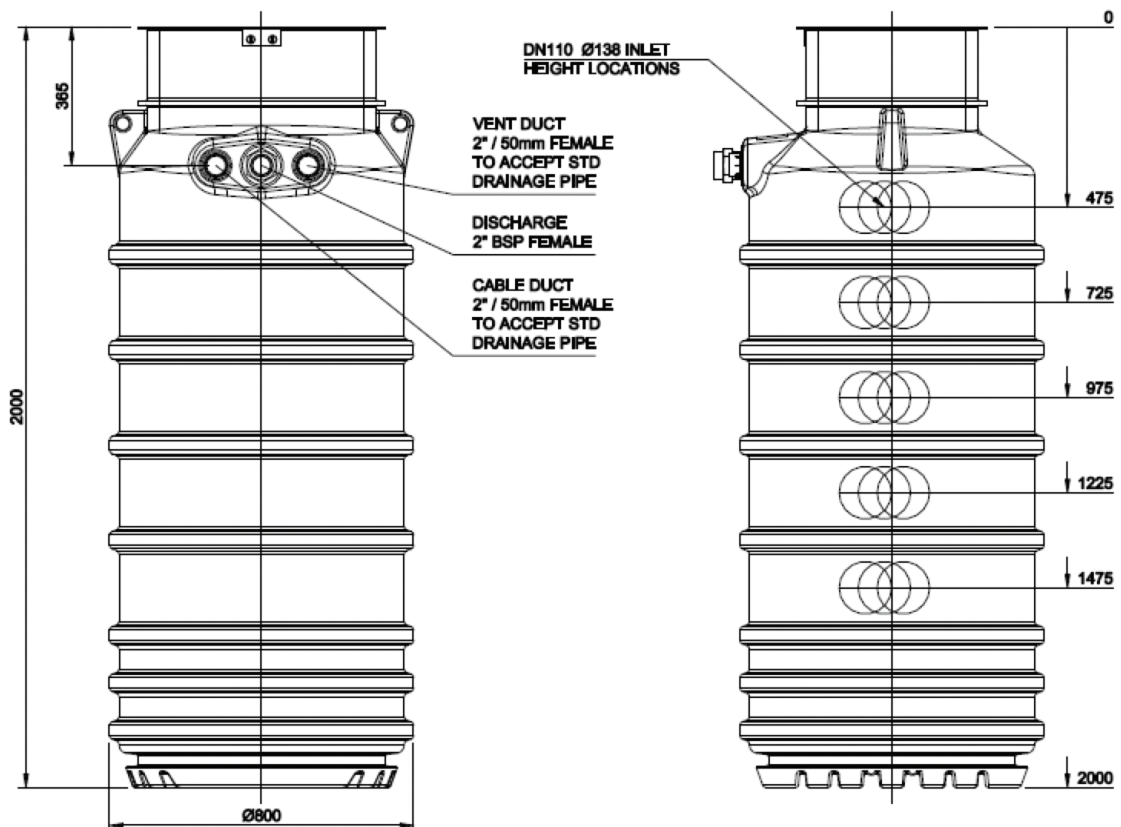


14.0 Dimensional Drawings cont.

800 x 1800 Chamber



800 x 2000 Chamber



## 15.0 Maintenance

In accordance with BS12056-4 and BS8102, sump pumps must be maintained. We recommend a qualified engineer examines and services equipment every year. Pumps running frequently due to higher water table, water drainage, or weather conditions should be examined more frequently, we recommend every 6 months. Sump pumps, being mechanical devices, may fail if not maintained, which could lead to a flooded basement and costly repairs.

Regular servicing of sump pumps will increase efficiency and extend the life of the pump. All PPS pump systems can be maintained by our Service Department ([www.ppspumps.com](http://www.ppspumps.com)) or by the installing contractor.

## 16.0 Health and Safety

In order to minimise the risk of ill health or accidents when installing and/or servicing pump chambers, workers must be fully trained, competent and follow the health and safety guidelines below:

- Do not work without a risk assessment being in place.
- Work in accordance with the control measures identified in the risk assessment.
- All personnel must be vaccinated against diseases to which they may be exposed to, i.e. Tetanus, Polio, Hepatitis A&B, etc.
- At the time of writing, due to there being no vaccine against leptospirosis/weill's disease, where rats may be present, ensure appropriate personal protective equipment (skin protection) is worn and ensure any cuts or abrasions are fully covered.
- There should be no eating or drinking during works and only afterwards following a change of clothing and washing.
- Ensure electrical power to the pump is turned off/isolated before carrying out installation or maintenance.
- A suitable first aid kit must be close to hand.

## 17.0 Guarantee

The 800 Series is offered with an 18 month component guarantee. This guarantee only covers any defects in workmanship, construction or material. This guarantee does not cover, defects caused by incorrect installation, installer error, abnormal working conditions, misuse or neglect.

Pump chambers that **have not** been commissioned have a 18 month component guarantee from date of delivery. Pump chambers that **have** been commissioned by PPS have an 18 month component guarantee from date of commissioning.

Any defects or malfunctions should be reported to PPS immediately to avoid any damage to other components. All broken components must be sent to PPS at the customer's cost.

To make a pump or accessory warranty claim, please visit: [www.ppspumps.com/help-support/log-a-warranty-claim](http://www.ppspumps.com/help-support/log-a-warranty-claim)

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 a pump is subjected to flow rates higher than recommended or where a pump is used to discharge inappropriate fluids/solids, such as building debris or materials).

# 800 Series

## 18.0 Technical Information at a glance

Pump Specification			
Pump Type	Dual V3	Dual V4	Dual V6
Typical Duty (l/s)	2.0l/s @ 3.5m	2.0l/s @ 7m	2.0l/s @ 9m
Voltage	230V	230V	230V
KW Rating P1 / P2	0.43 / 0.18kW	0.75 / 0.36kW	1.05 / 0.50kW
Power Phase	Single	Single	Single
Full Load Current	1.9A	4.0A	4.9A
Fuse Spur Rating (Non-Switched)	13A	13A	13A
RCBO Rating	16A	16A	16A
No. of spurs required	2	2	2
Cable Length	10m	10m	10m
Max. Temperature	50°C	50°C	50°C
Weight	5.64kg	6.70kg	6.90kg
Alarm Panel Model	AlertMaxx2	AlertMaxx2	AlertMaxx2
Battery Backup Model	PowerMaxx	Hi-PowerMaxx	Hi-PowerMaxx

Pump Specification (technical information per pump)						
Pump Type	Single D10	Dual D10	Single D11	Dual D11	Single 612	Dual 612
Typical Duty (l/s)	4.0l/s @ 6.5m	4.0l/s @ 6.5m	1.0l/s @ 18m	1.0l/s @ 18m	7.0l/s @ 7m	7.0l/s @ 7m
Voltage	230V	230V	230V	230V	230V	230V
KW Rating P1 / P2	1.14 / 0.75kW	1.14 / 0.75kW	1.50 / 1.1kW	1.50 / 1.1kW	1.25 / 0.75kW	1.25 / 0.75kW
Power Phase	Single	Single	Single	Single	Single	Single
Full Load Current	5.84A	5.84A	6.84A	6.84A	6.0A	6.0A
Fuse Spur Rating	13A Non-Switched	20A Rotary Isolator	13A Non-Switched	20A Rotary Isolator	13A Non-Switched	20A Rotary Isolator
RCBO Rating	16A	32A	16A	32A	16A	32A
Cable Length	10m	10m	10m	10m	10m	10m
Max. Temperature	35°C	35°C	35°C	35°C	40°C	40°C
Weight	13.4kg	13.4kg	20.8kg	20.8kg	22kg	22kg
Control Panel Model	AlertMaxx2	Rego1	AlertMaxx2	Rego1	AlertMaxx2	Rego1
Battery Backup Model	Hi-Power-Maxx-XL	Hi-Power-Maxx-XL	Hi-Power-Maxx-XL	Hi-Power-Maxx-XL	Hi-Power-Maxx-XL	Hi-Power-Maxx-XL

Notes

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