TRICEL

GENERATIONS OF INNOVATION

HydroLift Range

Installation and operating guidelines

Packaged pumping stations

Engineering a green future

1625718/0-UK-Mar-2026

1. Product summary

1.1 Range overview

HydroLift is a range of fully automatic wastewater pumping system suitable for pumping surface and/or ground water to a higher level when gravity drainage is not possible and/or economical to install.

It can accept wastewater from car parks, car washes, floor areas, down pipes, cavity membrane systems or similar, as well as treated effluent from a sewage treatment plant. It is not suitable for receiving untreated sewage.

It is available in six chamber sizes up to 800 mm diameter by 2000 mm deep.

Each system consists of a polyethylene chamber, one or two automatic wastewater submersible pumps and a pedestrian duty access cover. It discharges to solvent welded 1¼" Class E PVC.

HydroLift is easy to install as inlets can be positioned to your site's requirements.

1.1.1 Range summary

- Structurally-reinforced tank-grade MDPE/HDPE chamber
- One or two stainless steel automatic pumps
- Vortex impellor for high flow rates
- Pedestrian duty access cover
- Inlet and cable duct can be cut on site to suit project

1.1.2 Waste types

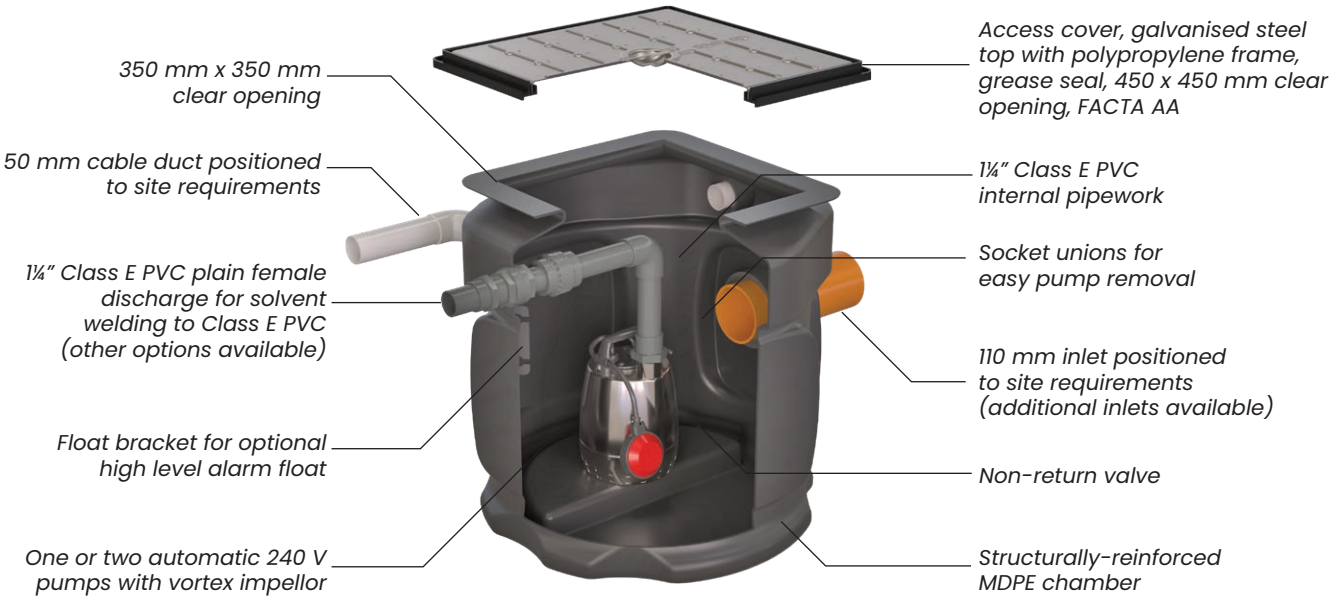
HydroMini Twin

HydroMidi Twin

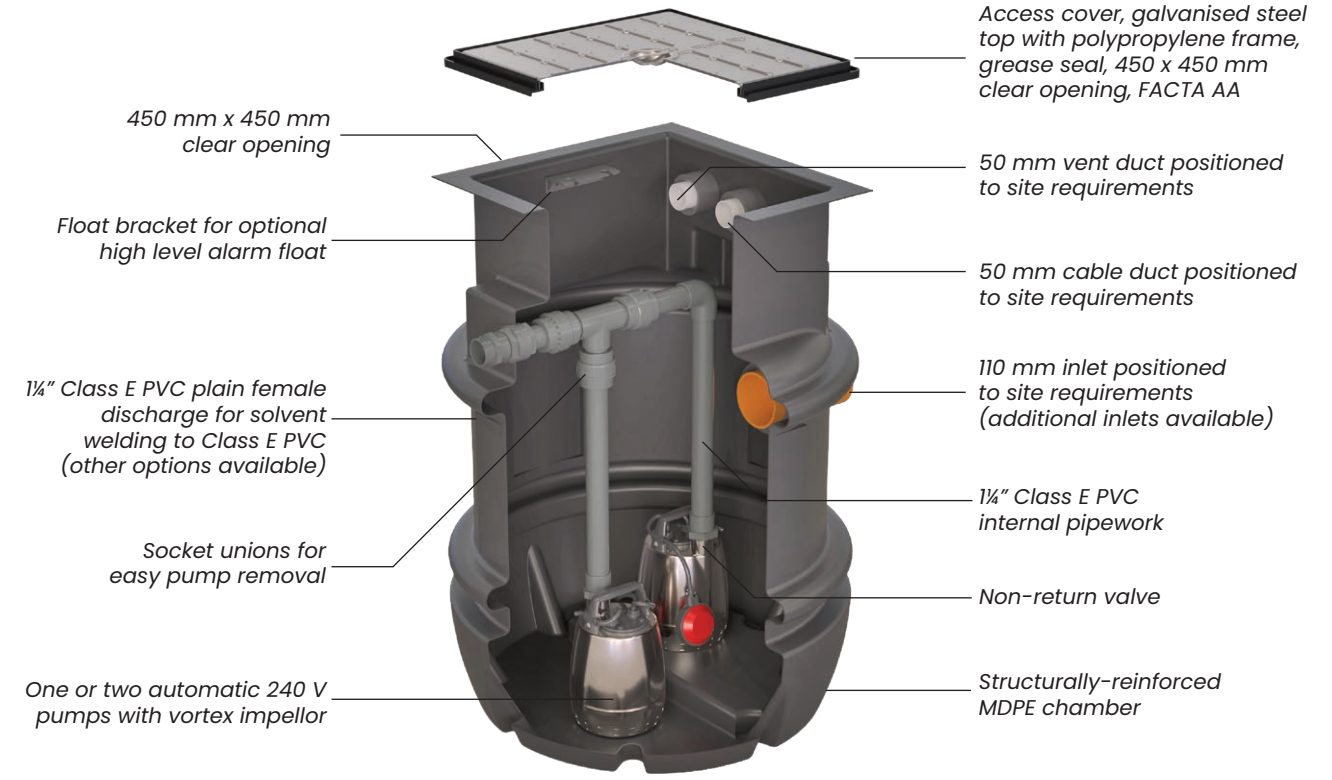
HydroMax Twin

1.2 HydroFlush range key features

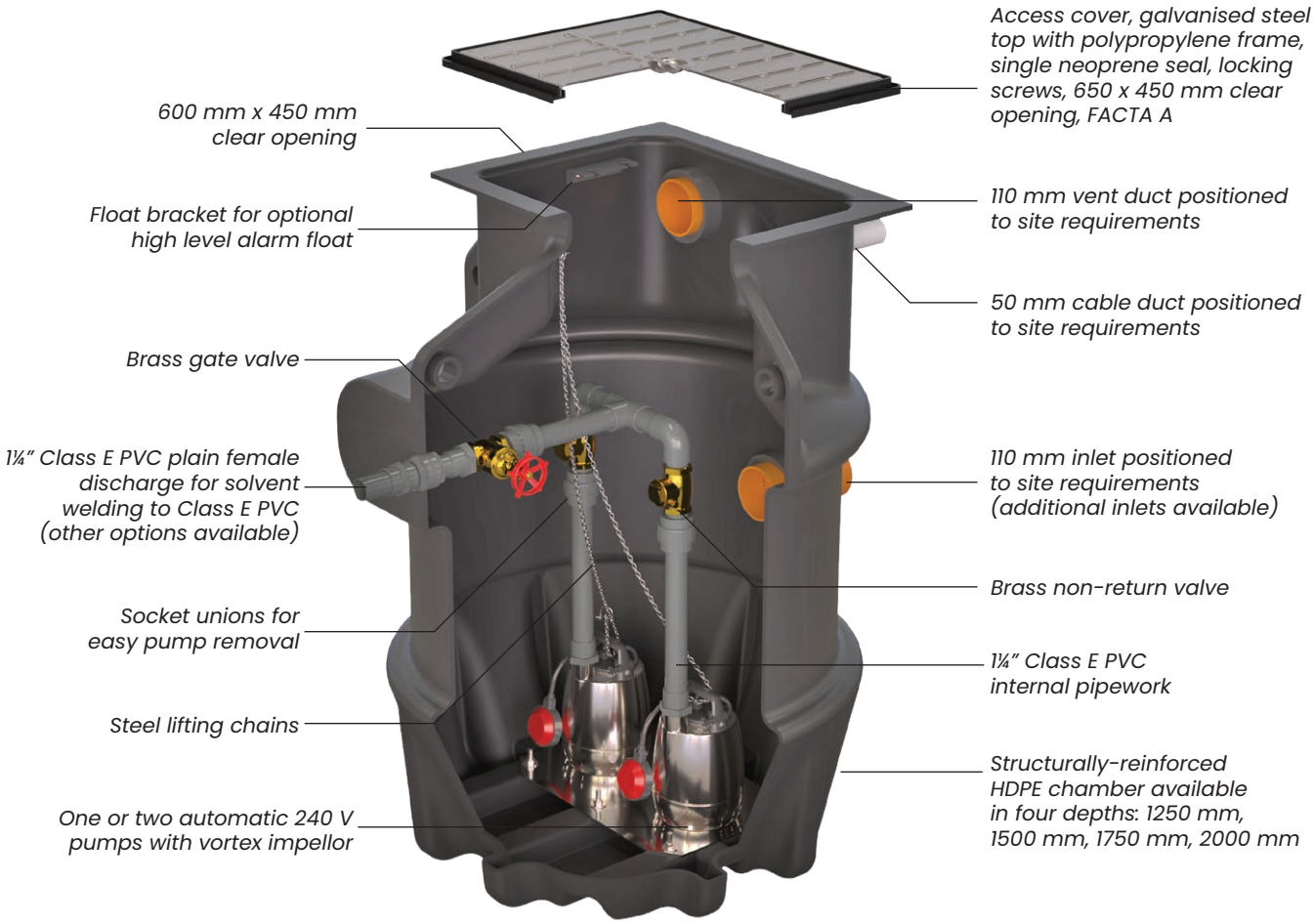
1.2.1 HydroMini key features

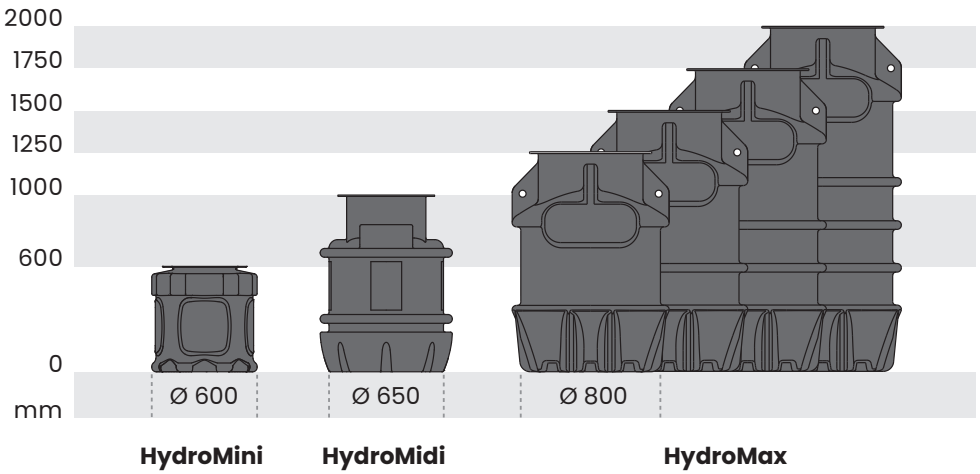


1.2.2 HydroMidi key features



1.2.3 HydroMax key features



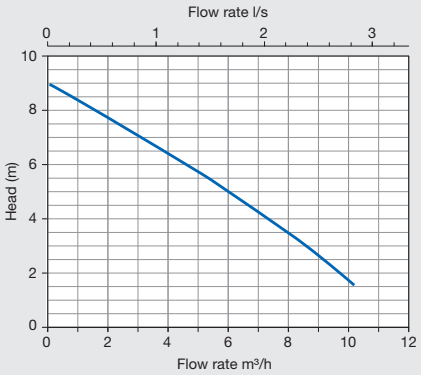


HydroMax is available in four chamber depths from 1250 mm to 2000 mm (Section 1.4.3)

1.3 Pump specification

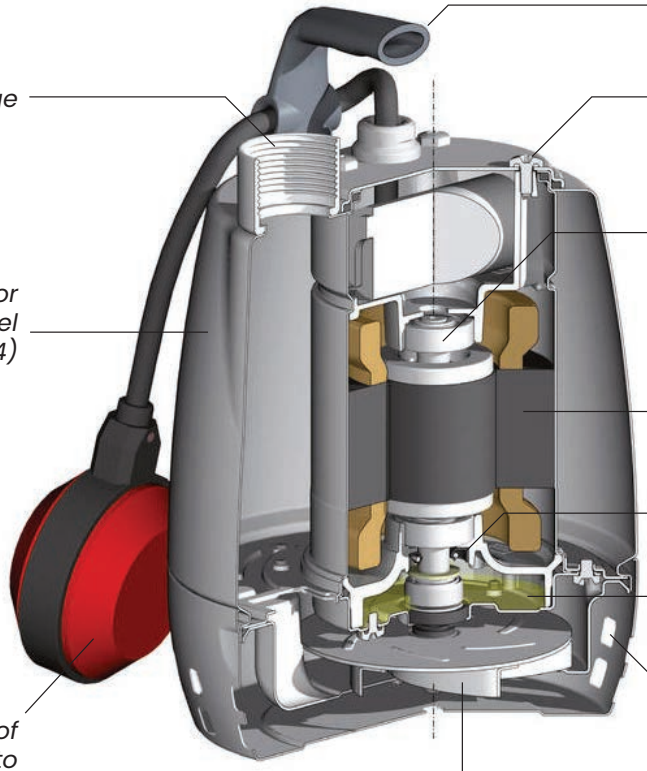
The Hydro Range uses the Calpeda GXRM-9 submersible pump.

Calpeda GXRM-9



Rated current	2.5 A
P1 power input	500 W
P2 motor rating	250 W
RCBO Type-C rating	10 A
Max. head	9.0 m
Max. flow rate	2.8 l/s
Discharge size	1¼"
Free passage	10 mm
Pump cable length	10 m

1.3.1 Calpeda GXRM-9 key features



Polypropylene handle.

1¼" vertical discharge

Inspection port for the capacitor area

Shaft in chrome-nickel stainless steel (304).

Outer casing and motor jacket in chrome-nickel stainless steel (304)

Motor cooled by the pumped water passing between the motor jacket and the external casing.

Ceramic stainless steel shaft sleeve

Oil chamber

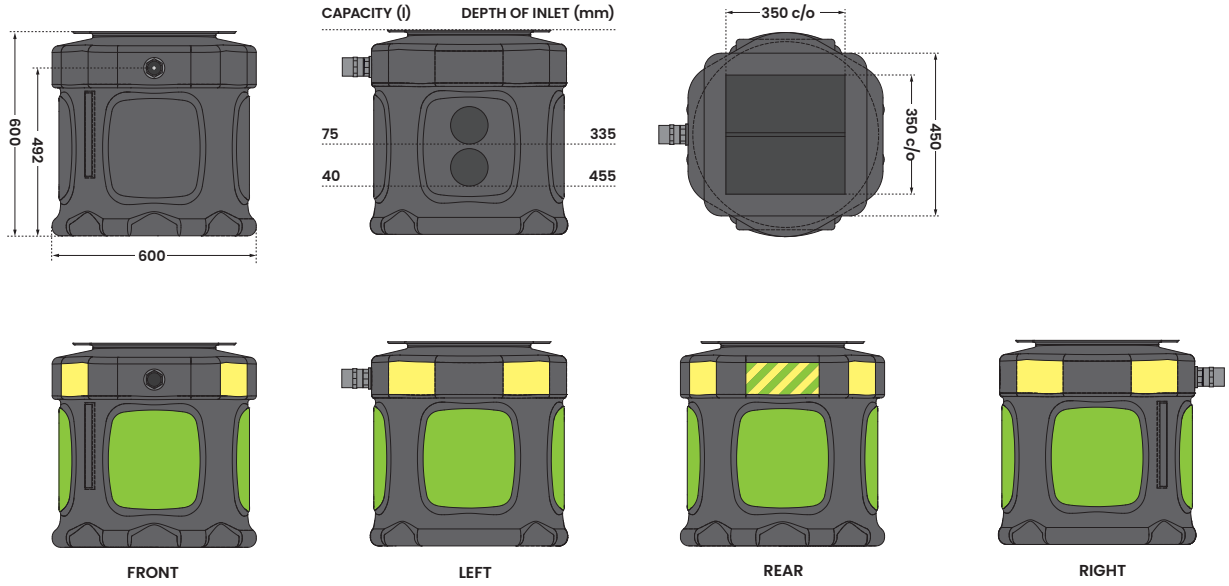
Suction strainer with a double row of holes, for extra safety against clogging. It allows the passage of solids up to 10 mm.

Easy adjustment of the float switch: to allow the adjustment of start/stop levels

Open impellor in chrome-nickel stainless steel (304)

1.4 Chamber specifications and permitted connections

1.4.1 HydroMini chamber



Internal pipework	1¼" OD Class E PVC
Discharge pipework	1¼" OD Class E PVC
Chamber material	Tank-grade MDPE
Lifting eyes	No

Inlets only

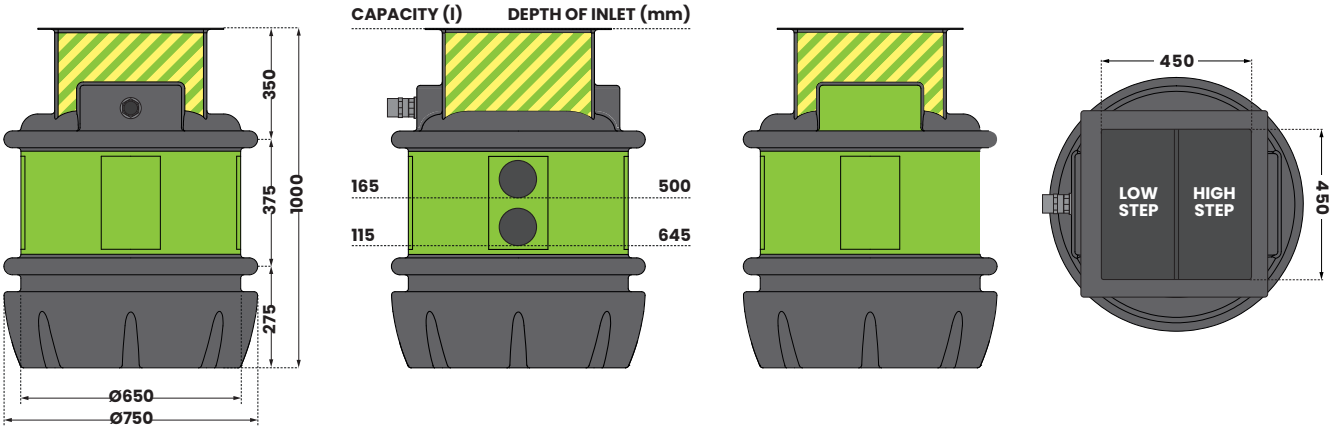
Cable ducts and vents

Cable ducts, vents and drainage channel inlets

All dimensions are in mm.
All capacities are in litres.

Indicative capacities are from inlet invert.

1.4.2 HydroMidi chamber



Internal pipework	1¼" OD Class E PVC
Discharge pipework	1¼" OD Class E PVC
Chamber material	Tank-grade MDPE
Lifting eyes	No

Inlets only

Cable ducts and vents

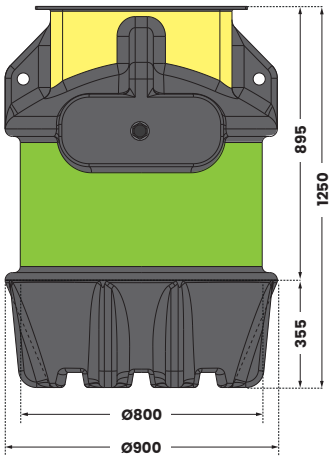
Cable ducts, vents and drainage channel inlets

All dimensions are in mm.
All capacities are in litres.

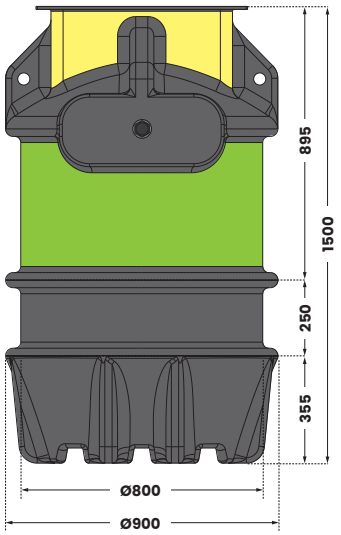
Indicative capacities are from inlet invert.

1.4.3 HydroMax chamber

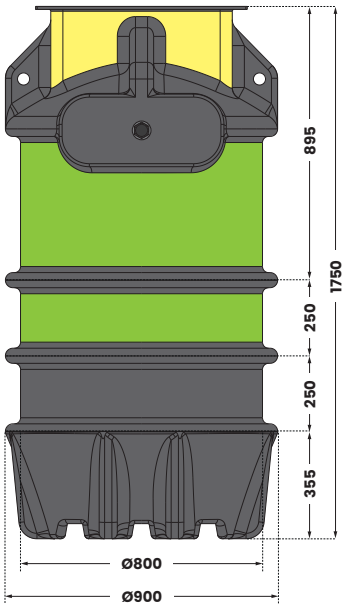
HydroMax 1250



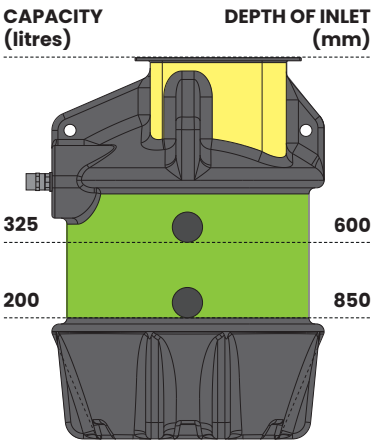
HydroMax 1500



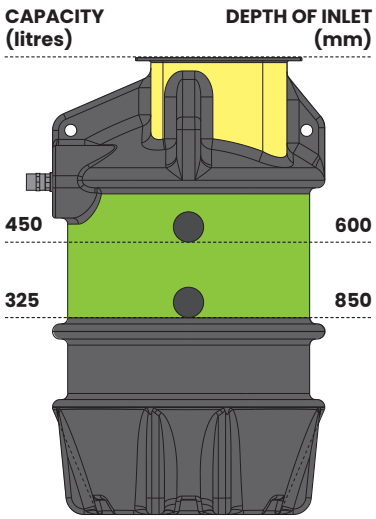
HydroMax 1750



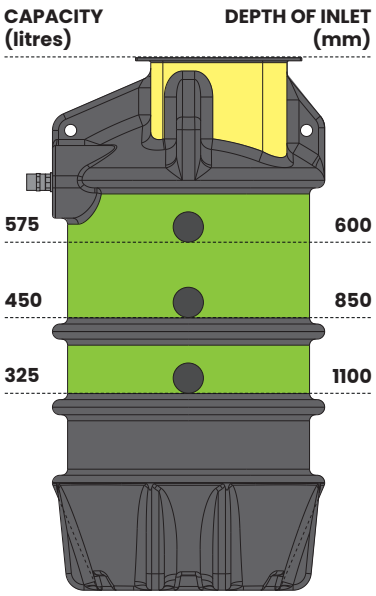
HydroMax 1250



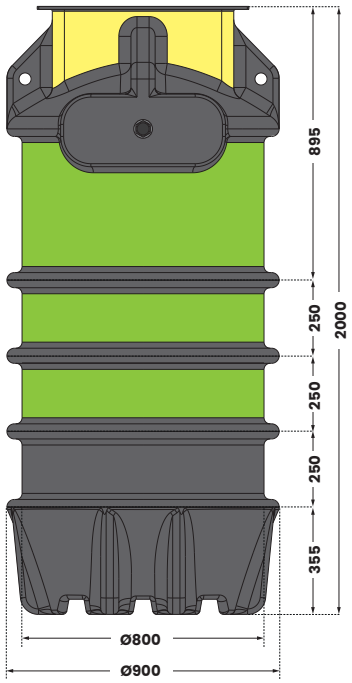
HydroMax 1500

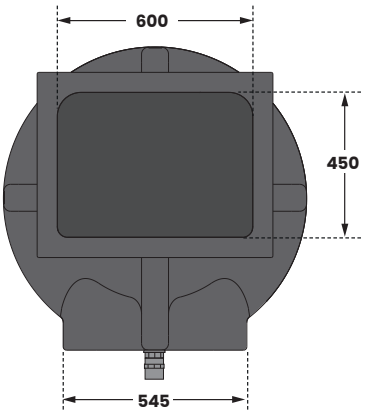


HydroMax 1750



HydroMax 2000





Inlets only

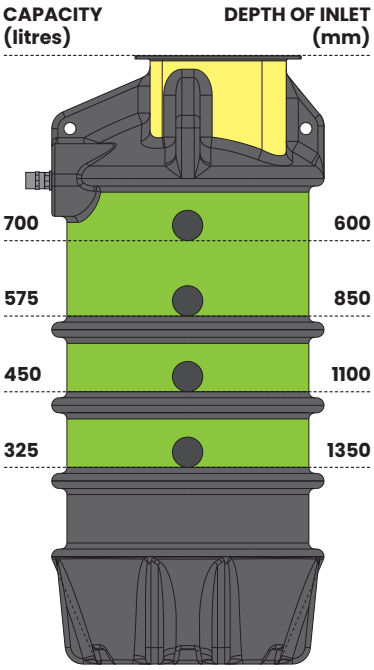
Cable ducts and vents

All dimensions are in millimetres (mm). All capacities are in litres (l).

All inlet depths shown are to the invert level (bottom of pipe).

INVERT LEVEL

HydroMax 2000



Internal pipework	1¼" OD Class E PVC
Discharge pipework	1¼" OD Class E PVC
Chamber material	Tank-grade MDPE
Lifting eyes	4no

1.5 Discharge connection

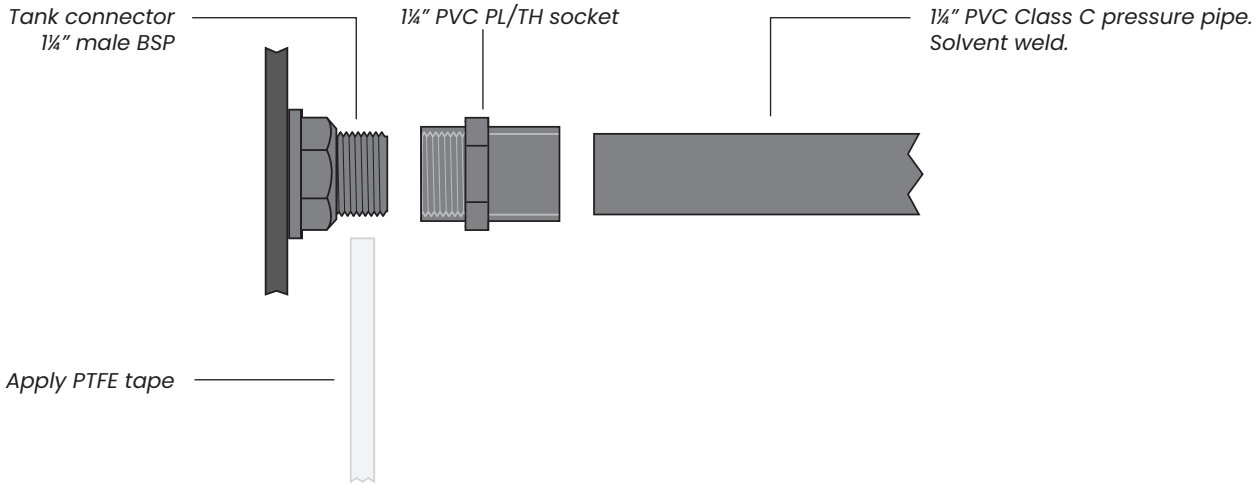
- **Never use push-fit fittings in the discharge line. It must be solvent welded.**
- **Do not discharge to white 36mm OD low pressure ABS waste pipe.**

1.5.1 Discharge to 1¼" uPVC Class C pressure pipe

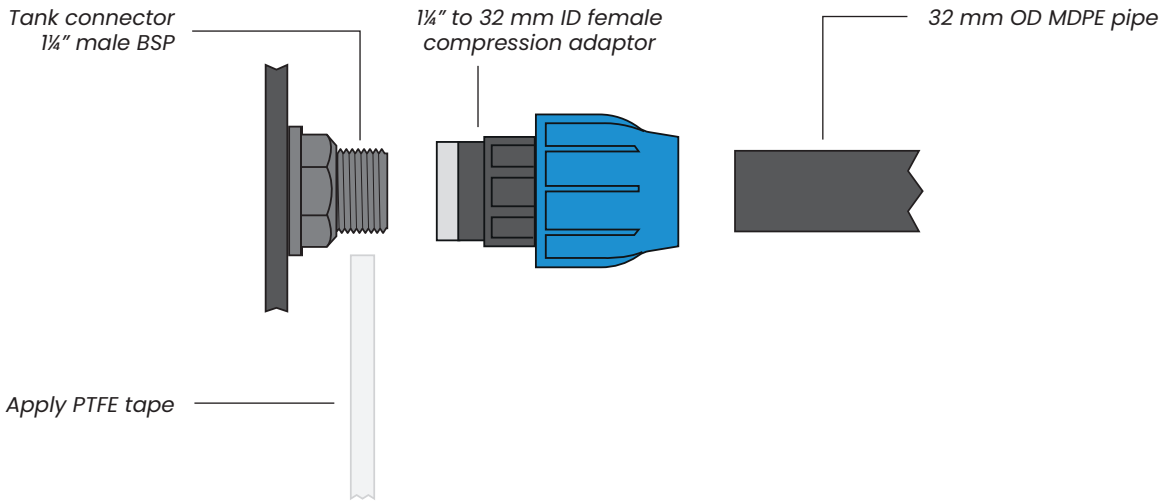
Tricel recommends discharging to solvent weld 1¼" PVC Class C pressure pipe.

The HydroMini is supplied with one male 1¼" BSP threaded discharge connection.

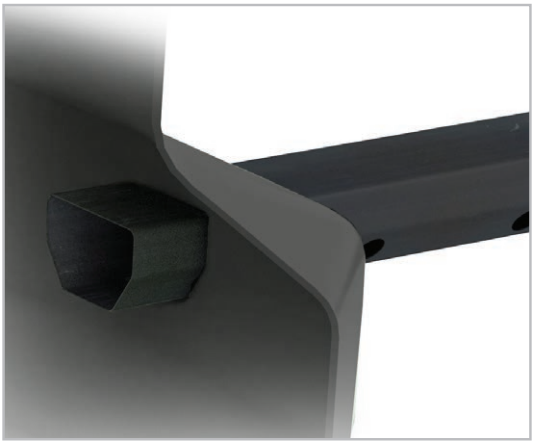
1. For each discharge connection, apply plenty of PTFE tape to the male thread of the tank connector.
2. Screw on the 1¼" PVC PL/TH socket (supplied loose).
3. Follow the instructions in Appendix A to solvent weld the 1¼" PVC Class C pressure pipe.



1.5.2 Discharge to 32 mm OD MDPE pipe (OPTIONAL)



1.6 Inlet options



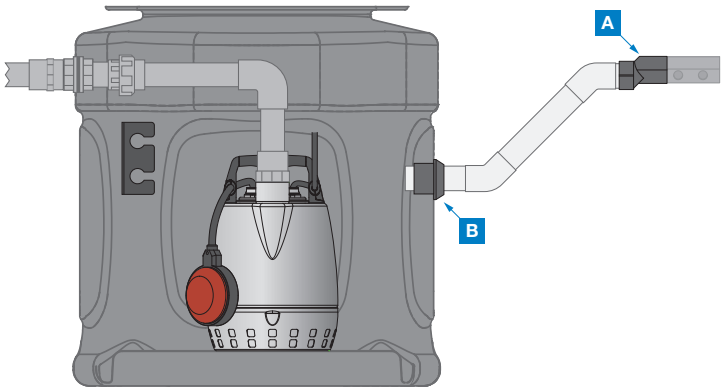
1.6.1 Direct connection to drainage channel parts

Mark the shape of the drainage channel onto the chamber wall at the approriate height. Drill holes inside the marked area at the corners then use a jigsaw to cut around the inside of the line.

Then push the drainage channel in so that approximately 50 mm of channel enters the chamber. This connection is push fit and does not require gluing.

Care must be taken to ensure the chamber is positioned so that the drainage channel remains perfectly level.

1.6.2 Standard 50 mm wastewater pipe inlets

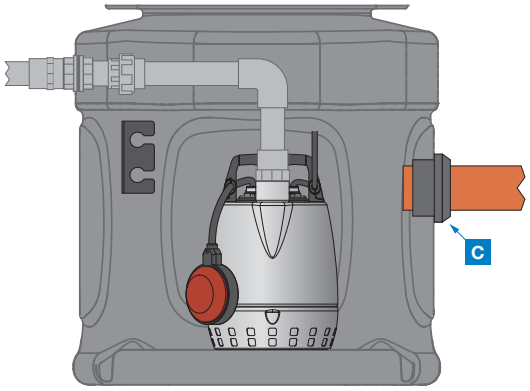


A Connect the floor drainage channel to a 50 mm ABS wastewater pipe via a 50 mm channel outlet piece.

B Connect the 50 mm ABS wastewater pipe to one of the chamber's inlet facias using a 50 mm rubber wall seal (76 mm hole cutter). See Section 9 Accessories.

The flanged side of the wall seal should face outwards.

1.6.3 Standard 110 mm soil pipe inlets



C Connect the 110 mm OD soil pipe to one of the chamber's inlet facias using the 110 mm rubber wall seal provided(140 mm hole cutter).

The flanged side of the wall seal should face outwards.

2. Site preparation and installation

2.1 General Advisory

These instructions are for guidance only. The installer is responsible for ensuring the installation procedure is appropriate for the site conditions and in accordance with good building practice to prevent damage to the system during or after installation.

Only qualified personnel should carry out the installation in accordance with the latest IET wiring regulations BS7671. All works should be in line with the Health and Safety at Works Act 1974.

Please read these guidelines in full before beginning installation and be satisfied that the system can be install in accordance with them. If you are unsure on any point then seek advice before proceeding.

2.2 Siting the system

2.2.1 Servicing

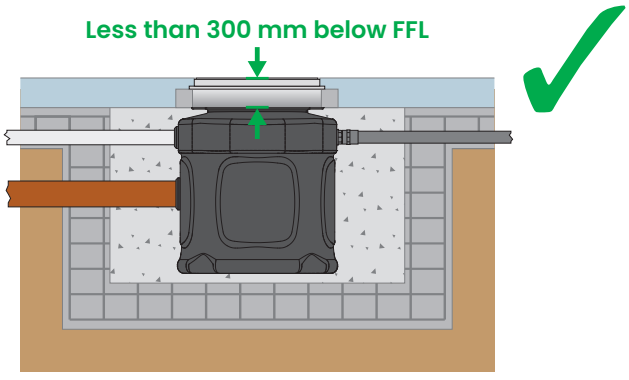
All pumping stations require regular maintenance. It is important that you site this product so that it will always be accessible and can be serviced safely in accordance with The Construction (Design and Management) Regulations 2015 (CDM).

2.2.2 Roadways

If possible avoid installing the pumping station in a roadway due to the need for periodic maintenance of the pumps. If the location is adjacent to a roadway or on a driveway take account of the imposed loads likely to be transmitted to the chamber by vehicles.

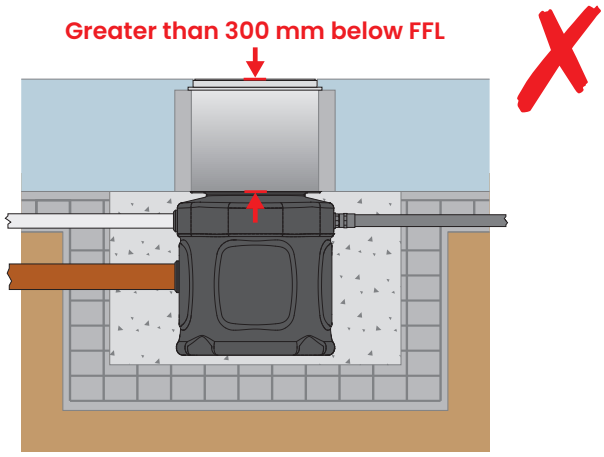
2.3. Chamber depth limits

The chamber should be installed less than 300 mm below the finished floor level (FFL) so that it can be serviced safely in accordance with The Construction (Design and Management) Regulations 2015 (CDM).



The top of the chamber is less than 300 mm below FFL.

This can be serviced safely.



The top of the chamber is greater than 300 mm below FFL.

It cannot be serviced safely in accordance with The Construction (Design and Management) Regulations 2015.

2.4 Cable duct guidance

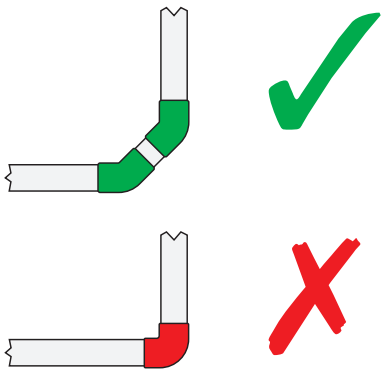
It is vital to pull a draw cord through the cable duct as it is being constructed so that pump cable and any high level float cables can be pulled through during installation. Ensure the cord's loose end cannot slip back into the duct.

2.4.1 Installing the cable duct

The cable duct for the Hydro Range should be 50 mm / 2" diameter. This can be low pressure ABS waste pipe or high pressure PVC. A 50 mm rubber wall seal is supplied to connect the cable duct to the chamber. The cable duct can be positioned on any flat face of the chamber neck. Please refer to Section 1.3.

To allow cables to be easily pulled through the 50 mm cable duct use sweeping corners instead of tight 90° degree elbows. These can be created by using two 45° elbows.

Pull a draw cord through the cable duct as it is being installed, ensuring the cord's loose end cannot slip back into the duct.



For 50 mm cable ducts, swept bends allow the cables to be pulled through without snagging.

2.4.2 Cable extensions

If cable extensions are required for the pump power cables or the float cable, a qualified electrical contractor must make all electrical connections.

2.5 Vent duct guidance

2.5.1 General vent duct guidance

A vent duct should be installed if the system accepts surface water, grey water or treated effluent. A vent duct is not required if the chamber only accepts groundwater from a cavity membrane.

This duct must be vented to atmosphere either via a dedicated pipe or by branching into a vent stack in accordance with Building Regulations Section H. Do not fit an air-admittance (Durgo) valve.

The vent duct's primary purpose is to equalise pressure within the chamber. It will also prevent any foul odours from the chamber from spreading to the room.

For HydroMini and HydroMidi systems, the vent duct should be constructed of 50 mm waste pipe or 2" PVC. Use the 50 mm rubber wall seal supplied.

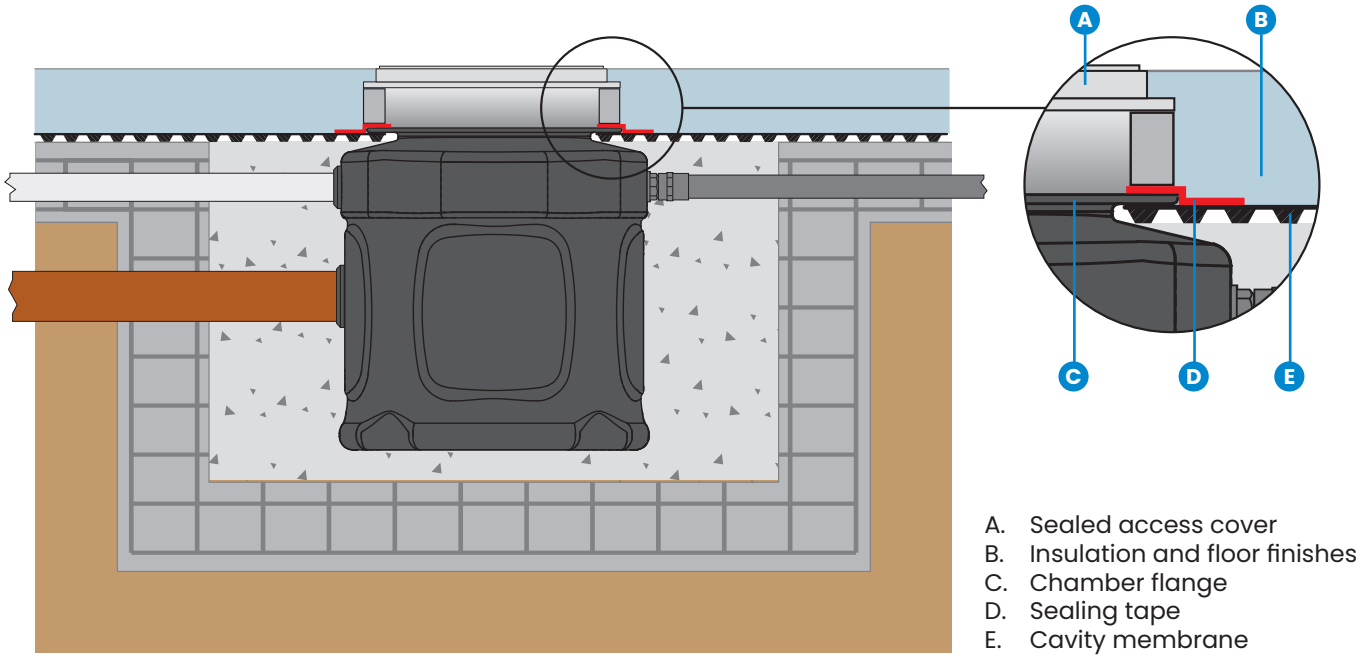
For HydroMax systems, the vent duct should be constructed of 110 mm soil pipe. Use the 110 mm rubber wall seal supplied.

The vent duct can be positioned on any suitable flat face of the chamber neck (see Section 1.4.)

See also Section 2.9 Sealing the access cover.

2.5.2 Installing in conjunction with a cavity membrane system

If a system receiving grey or surface water is installed in conjunction with a cavity membrane system, care must be taken to prevent foul odours from being transmitted to the cavity. Tuck the cavity membrane under the chamber's flange then seal with a suitable sealing tape available from a basement waterproofing products supplier.



A. Sealed access cover
B. Insulation and floor finishes
C. Chamber flange
D. Sealing tape
E. Cavity membrane

Installing the chamber in conjunction with a cavity membrane system

If the system accepts grey or surface water, failure to seal the chamber from the cavity membrane system will result in foul odours being transmitted throughout the room.

2.6 Lifting guide (HydroMax chambers only)

These instructions must be followed to prevent injury to operatives or damage to the product.

Create a lifting plan, noting the following specifics, to prevent injury to operatives or damage to the product during the lifting process.

Refer to the pallet / product's weight sticker and ensure the lifting equipment is suitable for this weight.

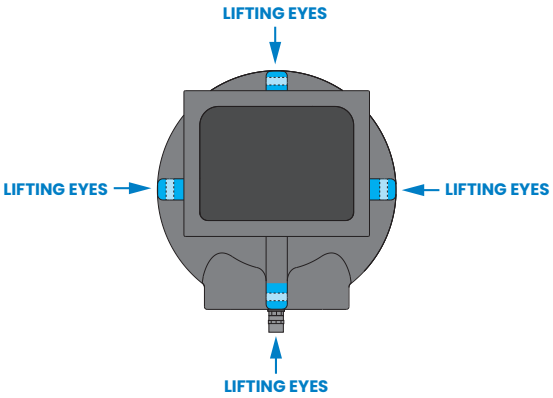
Inspect all the chamber's lifting eyes.

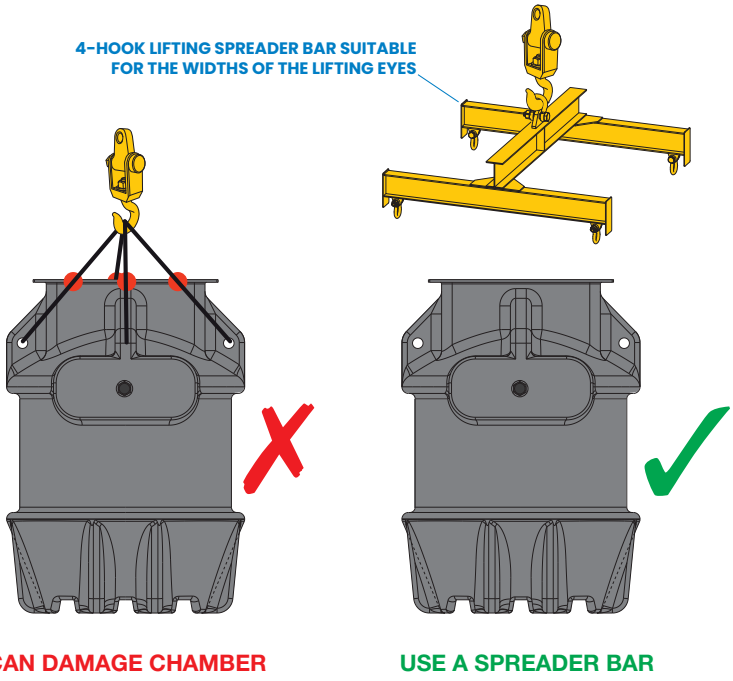
Do not use chains. The product must be lifted using a 4-hook lifting spreader beam with the correct length and breadth for the widths of the chamber's lifting eyes.

Under no circumstances should the lifting equipment impinge on the clear opening flange. This will apply pressure to the flange and will damage the chamber.

Adhere to all current legislative and training requirements.

If in doubt seek further advice before attempting to lift the product.





2.7 Installing the chamber

A structural and waterproofing engineer must be consulted to determine an appropriate installation method for the chamber. It is your responsibility to ensure the method you use is suitable for your project's site conditions.

The chamber is manufactured from tank-grade high density polyethylene and is extremely robust. However, as with all chambers that are installed below ground, it is susceptible to floatation and subject to hydrostatic pressures that are present in high water table conditions.

If the pumping station is to be installed where the base of the chamber is within the water table and/or it is being installed in a basement, always construct a waterproof reinforced concrete (RC) sump and backfill with concrete to prevent hydrostatic pressure from impinging on the chamber. Please refer to Section 2.7.

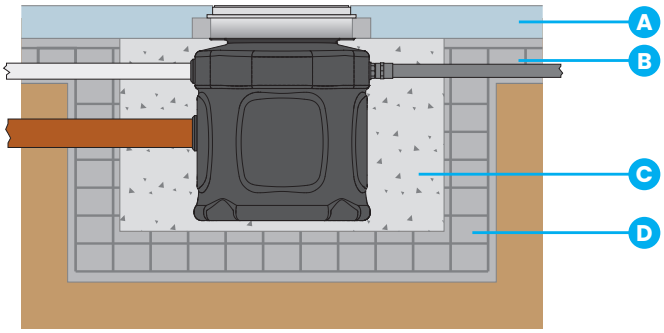
If you are certain the base of the chamber is above the water table and it is not being installed within a basement, a simple excavation with a hardcore base, backfilled with concrete is sufficient. Please refer to Section 2.8.

The base of the chamber is within the water table and/or it is being installed in a basement.

Waterproof reinforced concrete sump with concrete backfill.

A. Floor finishes
B. Reinforced concrete slab
C. Concrete backfill
D. Waterproof reinforced concrete sump

Please refer to Section 2.7.

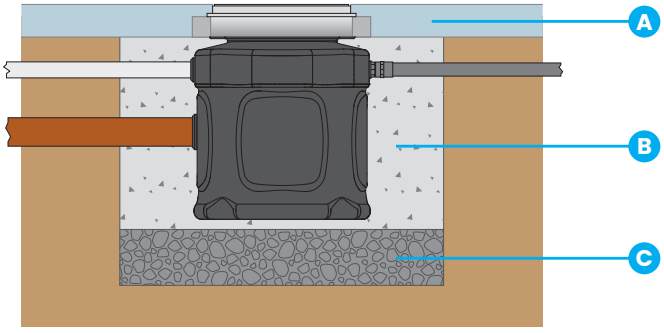


The base of the chamber is above the water table and it is not being installed within a basement.

Simple excavation with hardcore base and concrete backfill.

A. Concrete slab and floor finishes
B. Concrete backfill
C. Hardcore base

Please refer to Section 2.8.



2.8 Installation within a waterproof reinforced concrete sump

2.8.1 Constructing a waterproof reinforced concrete sump

The chamber is manufactured from tank-grade polyethylene and is extremely robust. However, as with all chambers that are installed below ground, it is susceptible to floatation and subject to hydrostatic pressures that are present in high water table conditions.

If the pumping station is to be installed where the water table is high and/or in a basement, always construct a waterproof reinforced concrete sump and backfill with concrete to prevent hydrostatic pressure from impinging on the chamber walls.

When sizing the waterproof reinforced concrete sump it is important that there is adequate space for all connections to the chamber e.g. inlets, discharge, cable duct and vent duct. You must also consider the depth and orientation of these connections to ensure that they line up with the chamber (see 1.4 Chamber specifications and permitted connections).

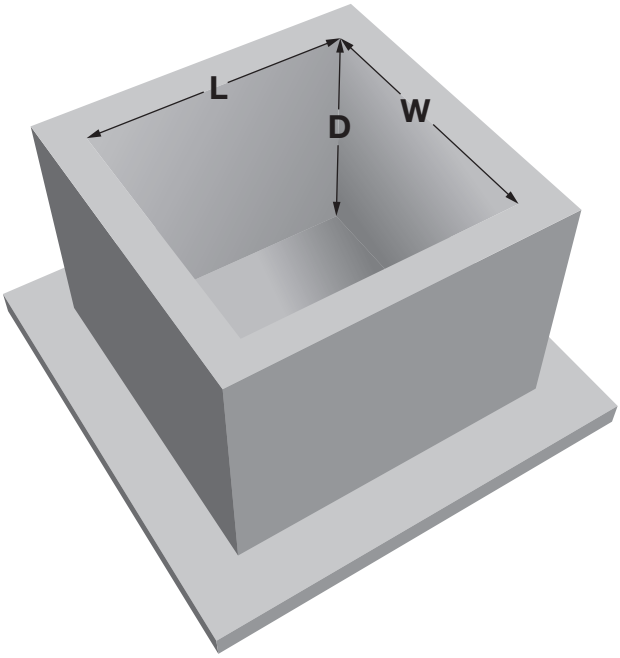
A structural and waterproofing engineer must be consulted when designing the reinforced waterproof concrete sump and specifying its backfill to ensure the prevailing hydrostatic pressures are not transferred onto the chamber.

2.8.2 Recommended RC sump dimensions

Please note that these dimensions are recommendations only.

Consider the size, type and orientation of connections and how the chamber can be installed taking into account site factors.

Always follow the advice of your structural and waterproofing engineer.



Recommended RC sump dimensions (mm)

Chamber	L	W	D
HydroMini	900	900	650
HydroMidi	950	950	1050
HydroMax 1250	1300	1300	1300
HydroMax 1500	1300	1300	1550
HydroMax 1750	1300	1300	1800
HydroMax 2000	1300	1300	2050

2.8.3 Chamber installation procedure

A structural and waterproofing engineer must be consulted when designing the reinforced waterproof concrete sump and specifying its backfill to ensure the prevailing hydrostatic pressures are not transferred onto the chamber.

The following installation method must be followed.

1. Select a suitable location for the pumping station. Where possible, installation of a pumping station in a roadway should be avoided due to the need for periodic maintenance of the pumps contained therein. If the location is adjacent to a roadway, the installation method should take into account the imposed loads likely to be transmitted to the chamber by traffic etc., please refer to point 12.
2. Construct a suitable waterproof reinforced concrete RC sump (see Section 2.6.1).
3. Lift the chamber into the RC sump and position it such that all connections are correctly aligned. Mark all connections and remove the chamber from the RC sump.
4. Install the rubber seals into the chamber wall for the 50 mm cable duct, 50 mm vent duct (if required, see Section 2.5) and inlet. The size and number of inlets is project dependent (one 110 mm rubber wall seal is supplied as standard for inlets). Please refer to site plans.

   All connections should be aligned square to the chamber to enable the seals to remain watertight.
5. Lay a WET mass concrete (in accordance with structural engineer advice, minimum 20 Nmm² tensile strength after 28 days) into the base of the RC sump to a thickness of 50 mm.
6. Lift the chamber into the RC sump and carefully position it onto the WET mass concrete base ensuring that no loose debris is inadvertently knocked onto the base under the chamber during this procedure. Manipulate the chamber to align the inlet(s), cable duct, and discharge connections.
7. Once the chamber is positioned, connect the 50 mm cable duct, 50 mm vent duct (if required, see Section 2.5) and inlet pipework to the chamber using the fittings supplied. The discharge pipework can then be connected. The discharge pipework should be able to withstand high pressure, please refer to product data sheet. Discharge pipework should be pressure tested.

   The vent duct (if required) should be vented to atmosphere without an air admittance (Durgo) valve.
8. Before pouring the concrete backfill, cover the opening of the chamber with a board or thick polyethylene sheeting to prevent concrete from entering the chamber.
9. Whilst the concrete base is still WET, backfill the space between the chamber and the RC sump to the top of the chamber with WET mass concrete (in accordance with structural engineer advice, minimum 20 Nmm² tensile strength after 28 days) in a single pour. The concrete must be evenly poured around the chamber and manually consolidated to ensure no voids are left within the concrete.

   During the backfilling process the chamber should be ballasted by steadily filling it with water. The difference in level between the concrete backfill and the water ballast should always be less than 300 mm.

   To prevent the chamber from floating up, the chamber must be ballasted with water at the same rate as backfilling. The level difference between the water and backfill must not exceed 300 mm at any time.

   Care must be taken to ensure that any pipes (or other connections) are not damaged. During the concrete pour, ensure that the chamber is vertical (by using a spirit level across the chamber's opening). Additionally, ensure that the chamber remains at the correct depth level.
10. Allow time for the concrete to cure completely, then remove the ballast water.

    The ballast water in the chamber should not be removed until the backfill has fully set.
11. Fit the access cover onto the top of the access shaft so that it is flush with finished floor level.

12. In a roadway application, the chamber should be installed with the top of the access shaft 300 mm below the finished cover level ensuring that the slab is supported by consolidated backfill. A suitably rated access cover should be embedded into the reinforced cover slab (access cover to be specified at time of order).

    It should not bear on undisturbed ground around the excavation nor directly onto the chamber, so that imposed loads are deflected away from the chamber. Design of the cover slab is the responsibility of the installer/structural engineer.

13. If a control panel or high level alarm is to be installed outside, it must be housed in a kiosk adjacent to the chamber. The kiosk should be fixed to a suitably-sized concrete plinth complete with cable ducts for the cabling from the chamber and the incoming power supply. If the control panel is not to be sited adjacent to the chamber, please advise us at time of ordering so that we can discuss cabling requirements.
14. Once the chamber has been installed and the ballast water has been drained, it is extremely important that all sand, silt, rubble and general debris is removed from the chamber.

Failure to remove sand, silt, rubble and all other debris from the chamber will invalidate the warranty on the pumps.

15. Partly refill the chamber with clean water for testing the system upon commissioning, and so that the discharge pipe can be flushed through.
16. Install the pumps and float switches and draw their cables through the cable duct using the draw cord.
17. Mount the control panel or high level alarm at the desired location.
18. Provide a suitable electrical connection in accordance with the wiring diagrams as per Section 3.
19. Make the final electrical connections to the control panel.

A qualified electrician must carry out all electrical connections.

21. Commission the pumping station.

2.9 Installation within a simple excavation

Only use this method if you are certain the base of the chamber is above the water table and it is not being installed within a basement. If you do not know the height of the water table relative to the base of the chamber or you are installing the chamber in a basement, you must install within a waterproof reinforced concrete sump.

A structural engineer must be consulted when designing the excavation and specifying its backfill. It is your responsibility to ensure the method you use is suitable for your project's site conditions.

The following installation method must be followed:

1. Select a suitable location for the pumping station. Where possible, installation of a pumping station in a roadway should be avoided due to the need for periodic maintenance of the pumps contained therein. If the location is adjacent to a roadway, the installation method should take account of the imposed loads likely to be transmitted to the chamber by traffic etc., please refer to point 15.
2. Excavate the minimum opening in the ground to receive the chamber and external connections. It is the installer's responsibility to measure the chamber before sizing the excavation. If a machine is used to remove the spoil, the sides of the excavation should be battened for stability. Where ground water is present in the excavation you must make a provision for a sump in one corner for dewatering purposes.
3. Where ground water is present in the excavation, de-watering must be undertaken throughout the installation procedure and until the backfill has completely set.
4. Lay clean compacted hardcore to the base of the excavation ensuring that when consolidated it has a minimum thickness of 200 mm, then lay a WET mass concrete base (in accordance with structural engineer advice, minimum 20 Nmm² tensile strength after 28 days) to a thickness adequate for the ground conditions (minimum 200 mm), on top of the hardcore.
5. Once the concrete base has cured lift the chamber into the excavation (please refer to Section 2.6, lifting guide) and position it such that all connections are correctly aligned. Mark all connections and remove the chamber from the excavation.
6. Install the rubber seals into the chamber wall for the 50 mm cable duct, 50 mm vent duct (if required, see Section 2.5) and 110 mm inlet. The size and number of inlets is project dependent (one 110 mm rubber wall seal is supplied as standard for inlets). Please refer to site plans.

   All connections should be aligned square to the chamber to enable the seals to remain watertight.
7. Lay a WET mass concrete (in accordance with structural engineer advice, minimum 20 Nmm² tensile strength after 28 days) into the concrete base to a thickness of 50 mm.
8. Lift the chamber into the excavation (please refer to Section 2.6) and carefully position it onto the WET mass concrete base ensuring that no loose debris is inadvertently knocked onto the base under the chamber during this procedure. Manipulate the chamber to align the inlet(s), cable duct, vent and discharge connections.
9. Once the chamber is positioned, connect the 50 mm cable duct, 50 mm vent duct (if required, see Section 2.5) and inlet pipework to the chamber using the fittings supplied. The discharge pipework can then be connected. The discharge pipework should be able to withstand high pressure, please refer to product data sheet. Discharge pipework should be pressure tested.
10. The vent duct (if required) should be vented to atmosphere without an air admittance (Durgo) valve (see Section 2.5).
11. Before pouring the concrete backfill, cover the opening of the chamber with a board or thick polyethylene sheeting to prevent concrete from entering the chamber.

12. Whilst the concrete base is still WET, backfill the space between the chamber and the excavation to the top of the chamber with WET mass concrete (in accordance with structural engineer advice, minimum 20 Nmm² tensile strength after 28 days) in a single pour. The concrete must be evenly poured around the chamber and manually consolidated to ensure no voids are left within the concrete. For non-typical installations including aggressive soils or structural applications, specialist advice on suitable concrete backfill should be obtained.

    During the backfilling process the chamber should be ballasted by steadily filling it with water. The difference in level between the concrete backfill and the water ballast should always be less than 300 mm.

To prevent the chamber from floating up when the excavation is backfilled, the chamber must be ballasted with water at the same rate as backfilling. The level difference between the water and backfill must not exceed 300 mm at any time.

    Care must be taken to ensure that any pipes (or other connections) are not damaged. During the concrete pour, ensure that the chamber is vertical (by using a spirit level across the chamber's opening). Additionally, ensure that the chamber remains at the correct depth level.

13. Allow time for the concrete to cure completely, then remove the ballast water.

The ballast water in the chamber should not be removed until the backfill has fully set.

14. Fit the access cover onto the top of the access shaft so that it is flush with finished floor level.
15. In a roadway application, the chamber should be installed with the top of the access shaft 300 mm below the finished cover level ensuring that the slab is supported by consolidated backfill. A suitably rated access cover should be embedded into the reinforced cover slab (access cover to be specified at time of order). All imposed loads must be deflected away from the chamber. Design of the cover slab is the responsibility of the installer/structural engineer.
16. If a control panel is to be installed outside, it must be housed in a kiosk adjacent to the chamber. The kiosk should be fixed to a suitably-sized concrete plinth complete with cable ducts for the cabling from the chamber and the incoming power supply. If the control panel is not to be sited adjacent to the chamber, please advise us at time of ordering so that we can discuss cabling requirements.
17. Once the chamber has been installed and the ballast water has been drained, it is extremely important that all sand, silt, rubble and general debris is removed from the chamber.

Failure to remove sand, silt, rubble and all other debris from the chamber will invalidate the warranty on the pumps.

18. Partly refill the chamber with clean water for testing the system upon commissioning, and so that the discharge pipe can be flushed through.
19. Install the pumps and float switches and draw their cables through the cable duct using the draw cord.
20. Mount the control panel at the desired location.
21. Provide a suitable electrical connection in accordance with the wiring diagrams supplied with the control panel. This is to be isolated and adjacent to the control panel.
22. Make the final electrical connections to the control panel.

A qualified electrician must carry out all electrical connections.

21. Commission the pumping station.

2.10 Sealing the access cover

If the system accepts surface water, grey water or treated effluent the access cover should be sealed to prevent the escape of foul odours. This is not required for systems that receive only groundwater.

The access cover supplied with the system can be sealed by applying manhole sealing grease to the groove in the frame.

1. Throughly clean the mating surfaces of the cover and the frame.
2. Apply grease evenly to the frame to the depth of about 3 mm leaving no gaps.
3. Reseal the cover and remove any excess grease squeezed from the mating surfaces.
4. Clean and re-grease the frames every time the cover is removed.

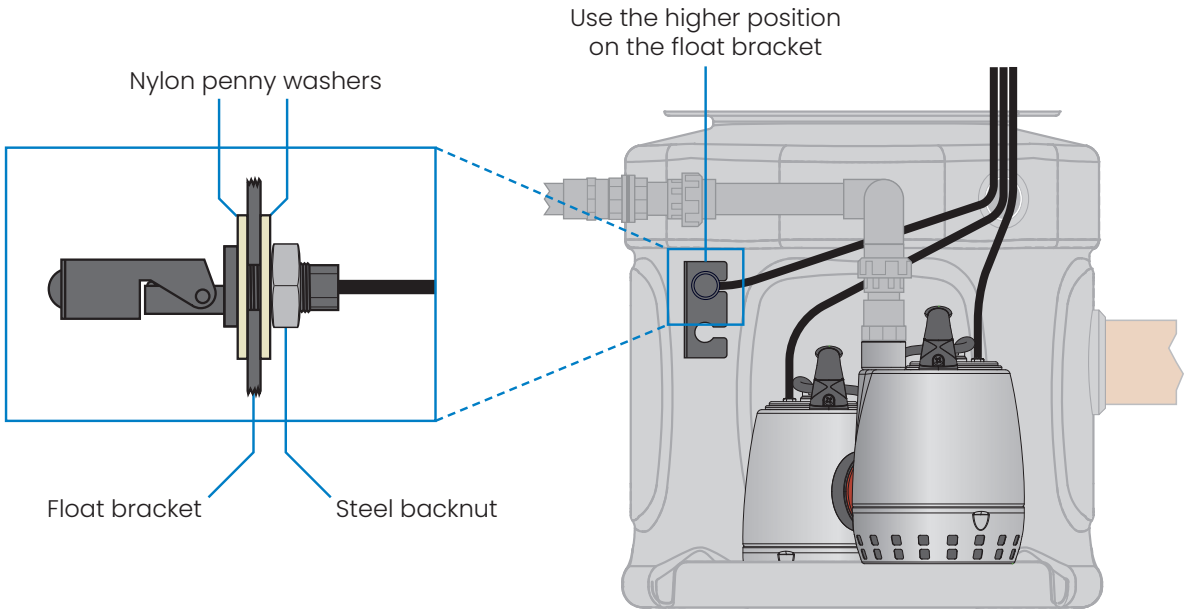
2.11 Electrical requirements

Only qualified electricians should carry out the electrical installation in accordance with the latest IET wiring regulations BS7671. All works should be in line with the Health and Safety at Works Act 1974.

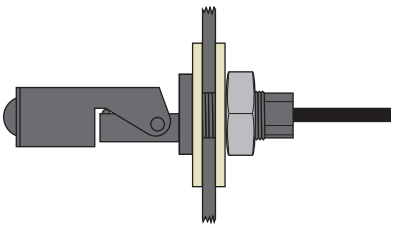
1. Each device (pump, timer control panel, AquaSafe Alarm, battery backup system) should be connected to its own 230 V unswitched fused spur. The fuse to be suitably rated based on the electrical specifications as detailed in the appropriate wiring diagrams (see Section 4).
2. All unswitched fused spurs should be sited adjacent to the pump station chamber / control panels. The unswitched fused spurs for the pumps should be minimum of 1 metre above the top of the pump station chamber.
3. Each unswitched fused spur must be powered via its own dedicated breaker within the distribution board. The breaker is to be suitably-rated based on the electrical specifications as detailed in the appropriate wiring diagrams (see Section 4). The devices should not be powered via a ring main or radial spur.
4. Ensure the dedicated breaker in the distribution board is clearly labelled for isolation of the connected device.
5. Ensure that there is enough slack on the cable to allow for the pump(s) removal for maintenance.
6. Please refer to the appropriate wiring diagrams (see Section 4).
7. Keep the connection isolated until you are ready to test the system.

2.12 Installing a high level alarm float

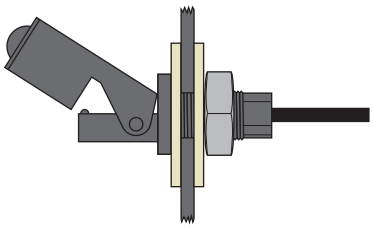
2.12.1 Installing a mini float switch in a HydroMini chamber for an AquaSafe Alarm



2.12.2 Mini float switch orientation for an AquaSafe Alarm (Mini)



Alarm OFF



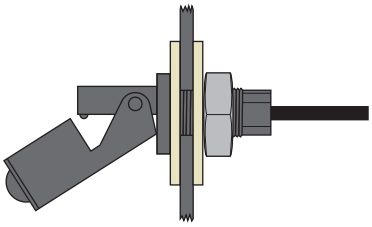
Alarm ON

*Mini float switch in the **NORMALLY CLOSED** orientation for the AquaSafe Alarm only.*

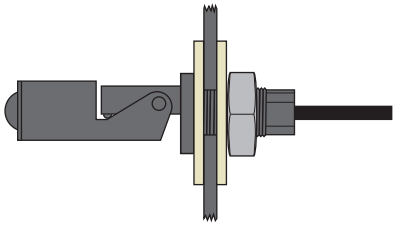
Please also refer to the AquaSafe Alarm installation and operating guidelines.

Once installed check the alarm is operating as expected.

2.12.2 Mini float switch orientation for other alarms



Alarm OFF



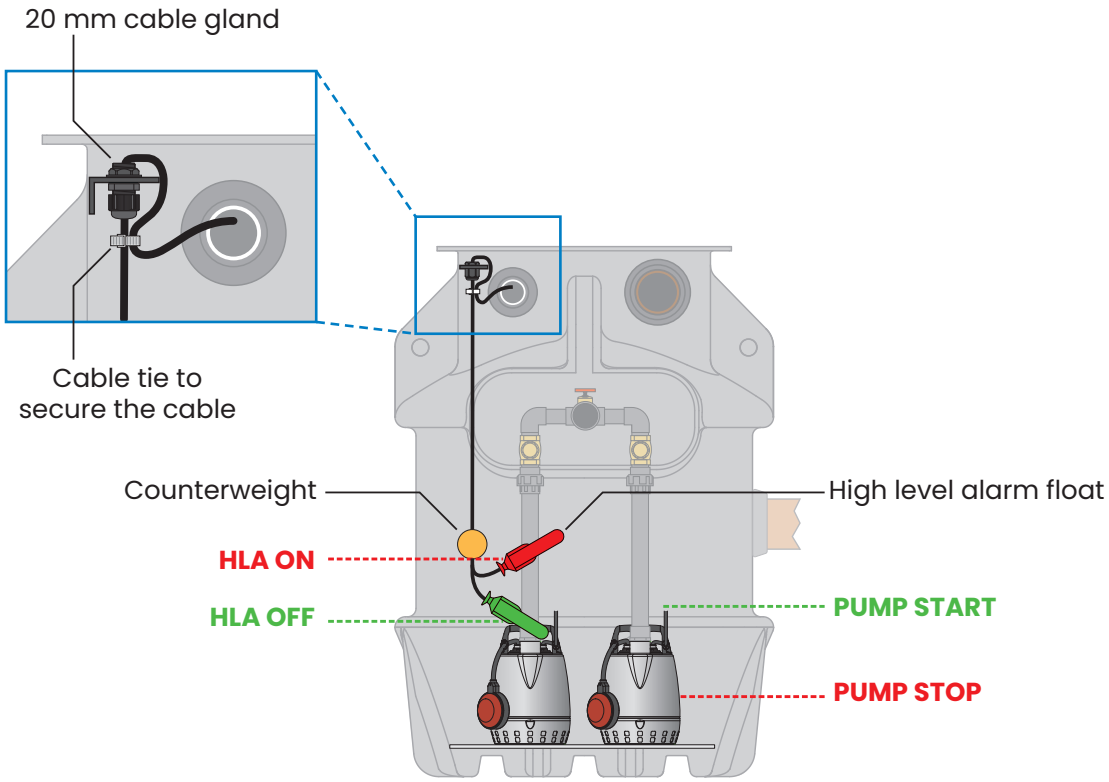
Alarm ON

*Mini float switch in the **NORMALLY OPEN** orientation for the AquaSafe Alarm only.*

Please also refer to the alarm installation manual.

Once installed check the alarm is operating as expected.

2.12.3 Installing a sump float switch in a HydroMidi or HydroMax chamber for an AquaSafe Alarm

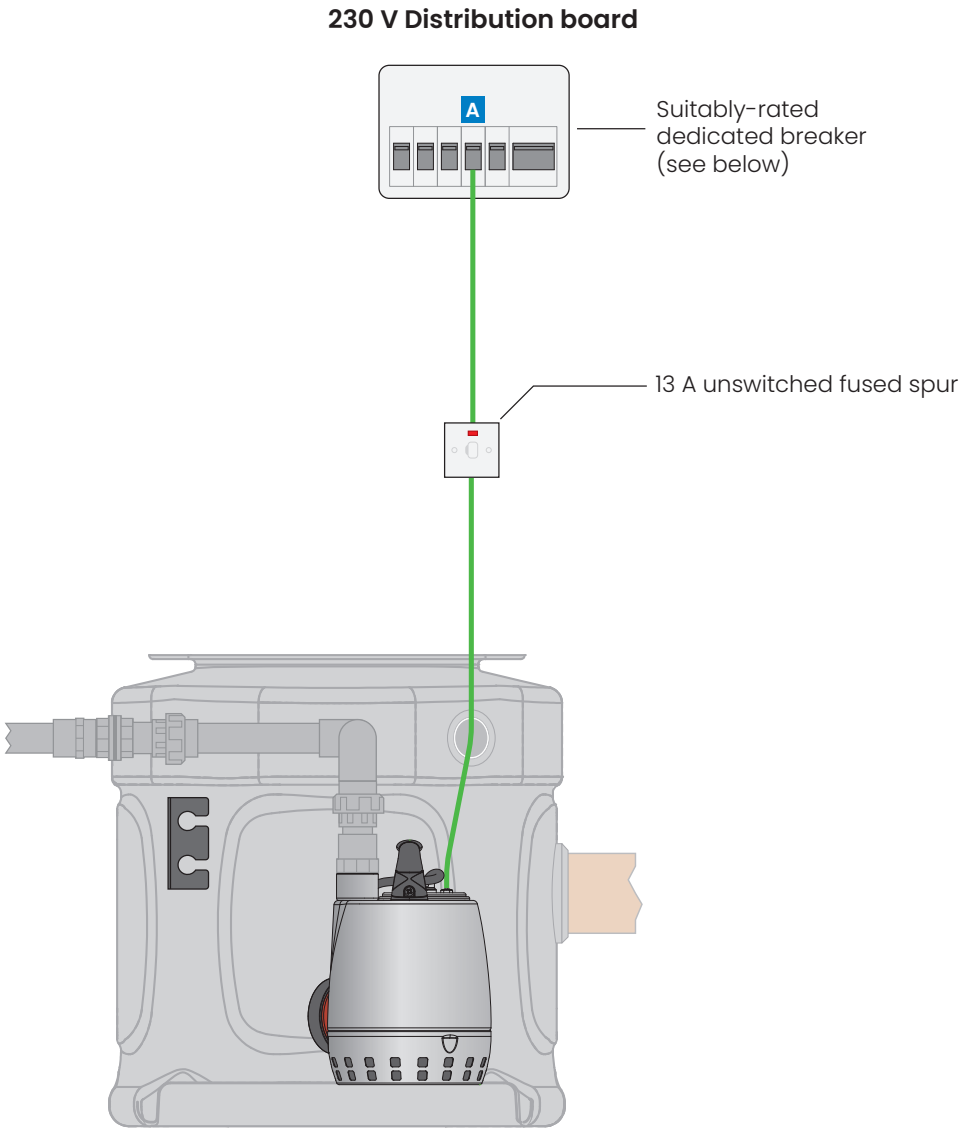


Installing the high level alarm

Use the 20 mm cable gland to fix the alarm cable to the float bracket and secure with a cable tie
Attach the counterweight approximately 70 mm from the top of the float.
The activation height of the alarm float should be set higher than the activation height of the primary pump.

3. Wiring diagrams

3.1 Single pump systems



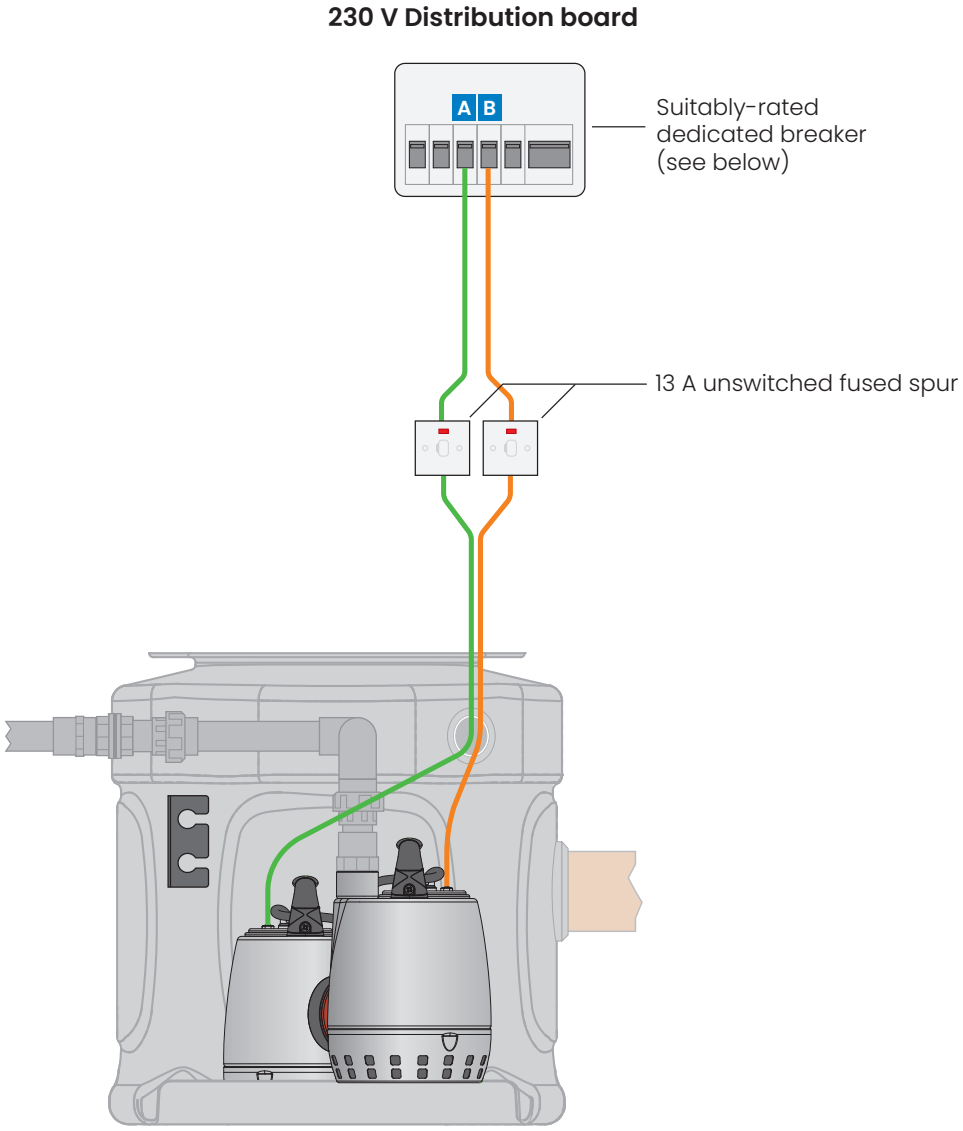
AquaMini

Breaker specification

Ref	Description	Breaker type	Rating
A	GXRM-9 pump	RCBO, Type-C	10 A

Only power pumps, battery backup devices or AquaSafe Alarm via dedicated breakers. Never power them via a ring main or radial spur.

3.2 Twin pump systems



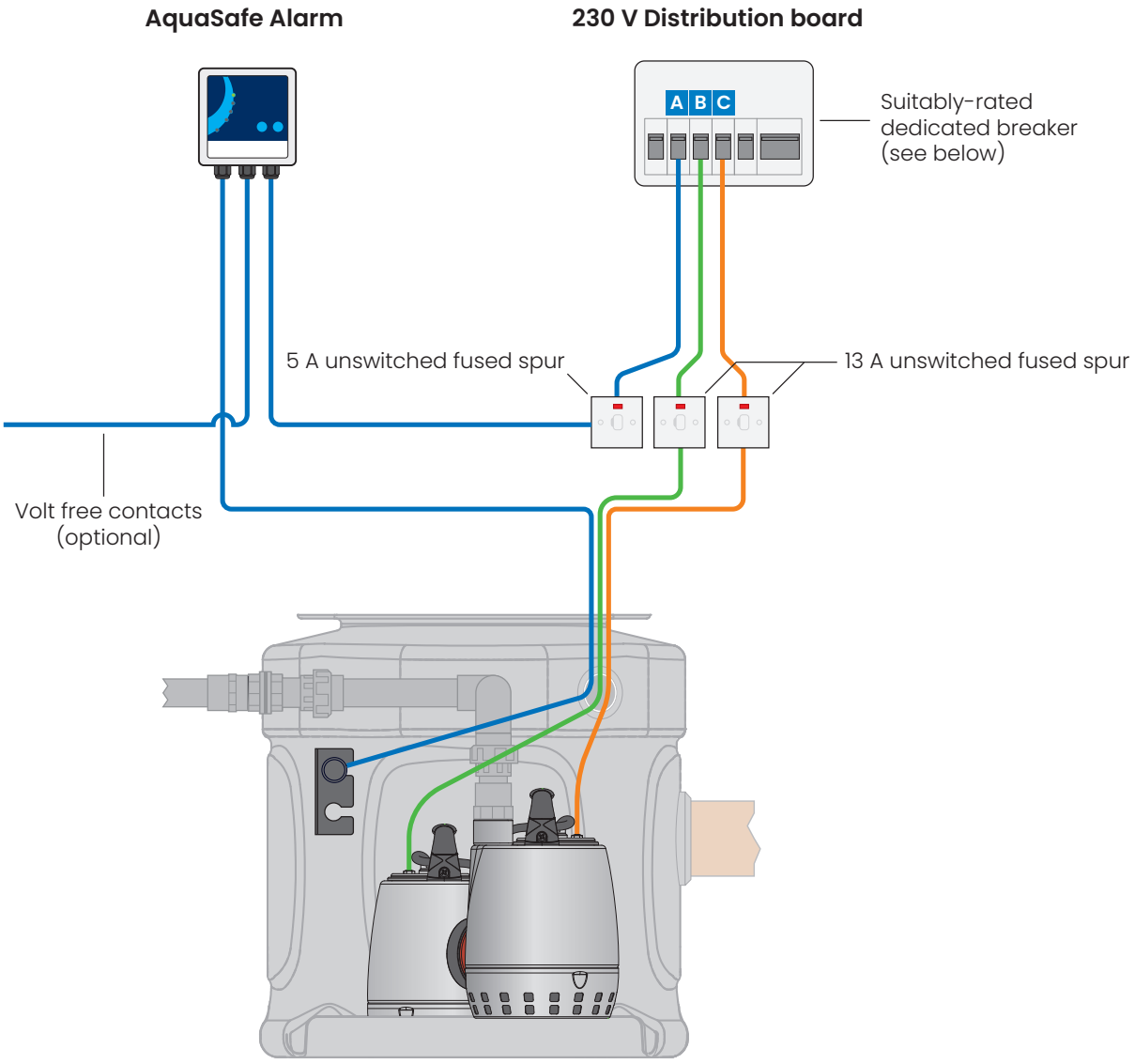
AquaMini Twin

Breaker specification

Ref	Description	Breaker type	Rating
A	GXRM-9 pump	RCBO, Type-C	10 A

Only power pumps, battery backup devices or AquaSafe Alarm via dedicated breakers. Never power them via a ring main or radial spur.

3.3 Twin pump systems with AquaSafe Alarm (Mini)



AquaMini Twin

Breaker specification

Ref	Description	Breaker type	Rating
A	AquaSafe Alarm	MCB	6 A
B	GXRM-9 pump	RCBO, Type-C	10A
C	GXRM-9 pump	RCBO, Type-C	10A

Only power pumps, battery backup devices or AquaSafe Alarm via dedicated breakers. Never power them via a ring main or radial spur.

4. Maintenance

All maintenance works (inspections and services) MUST be undertaken by a technically qualified/ competent company/engineer.

When undertaking works within the chamber suitable measures MUST to taken to ensure safe access in accordance with current safety regulations (see Section 6).

5. Troubleshooting

Please check the product has been installed thoroughly and correctly.

Fault	Cause
Water is leaking from the internal pipework.	The 'O' ring in the socket union is missing or not installed correctly.
	PTFE tape not applied to threaded connections of the internal pipework.
Pump isn't running.	The pump doesn't have power. Check the breaker at the distribution board. Check wiring with reference to Section 5 wiring diagram.
	The pump float isn't lifting. Check the float is free moving and not catching on something.
	Lifting the pump float does not turn the pump on. Call Edincare Pumps.
The pump is running but is not pumping water or is discharging very slowly (taking more than 40 seconds to empty the chamber).	Gate valve isn't open is partially closed – turn valve anticlockwise to open.
	The pump is air-locked. Fill the chamber to above the level of water to the top of the pump. Disconnect the pump at the socket union and it lower back into water. Lift the float to activate the pump before reconnecting to the socket union.
	The discharge pipe is blocked – a drainage company is required.
	The pump impeller is jammed. Turn off the power and isolate pump so that it cannot be inadvertently switched on. Remove pump from chamber and free impeller. **WARNING!** **Ensure mains power and pump is isolated before taking pump apart and seek advice from a qualified electrician / pump engineer.**
Pump is tripping.	Pump is wired incorrectly or has been installed on a ring main. Refer to Section 5 for wiring diagrams.
	Pump impeller is jammed – turn off power and isolate pump so that it cannot be inadvertently be switched on. Remove pump from chamber and free impeller. **WARNING!** **Ensure mains power and pump is isolated before taking pump apart and seek advice from a qualified electrician / pump engineer.**
High level alarm is not functioning.	Refer to the high level alarm installation and operating instructions.

6. Health and safety

Following these regulations when installing the product or ask your qualified electrician/distributor.

6.1 Safety precautions

To minimise the risk of accidents in connection with a service or installation these rules should be followed:

- Make sure there are no poisonous gases within the work area.
- Check the explosion risk before using electric hand tools.
- Do not ignore health hazards.
- Observe strict cleanliness.
- Bear in mind the risk of electrical accidents.
- Make sure you have a clear path of retreat.
- Use a safety helmet, safety goggles and protective shoes.
- If working at height or in confined spaces, please ensure you meet the current health and safety regulations.
- A first aid kit must be close to hand.
- No unauthorised modifications should be made.
- Operation should be in accordance with this guide.

6.2 Electrical connections

Anyone carrying out electrical work must ensure that reasonable provision has been made in the design and installation of the electrical installations in order to protect any persons who might use, maintain or alter the electrical installation of that dwelling from fire and injury, including electric shock, this should be done in accordance with the latest IET wiring regulations BS7671.

- The following works should only be done by qualified and authorized electricians.
- Safeguard Europe disclaims all responsibility for work done by untrained or/and unauthorized personnel.
- Heed operating voltage (as shown in Section 3 and additional labels).
- Take out the main fuses to isolate the mains power supply from the control system before repairs or any other works and ensure it cannot be energized again.
- 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). (See earthing)
- Connection only to a mains power supply installed in accordance to the local regulations. 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 above the backpressure level. Never install the control unit within the chamber.

6.3 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 system.

Only qualified electricians should carry out the electrical installation in accordance with the latest IET wiring regulations BS7671. All works should be in line with the Health and Safety at Works Act 1974.

7. Product guarantee

12-month guarantee from date of sale.

8. Servicing

Our service agreements consist of planned preventive maintenance visits at an agreed frequency. As part of all service visits, a detailed service check list is utilised that covers all visual inspections, working tests, system adjustments and electrical safety checks.

8.1 Why servicing is important

All pumping stations and their ancillary equipment such as battery backup systems and alarms should be serviced at least onece per year to remains fully operational and fulfils its life expectancy.

8.2 Service visit intervals

In accordance with BS EN 12056-4 the pump equipment should be maintained at intervals of:

Services per year	Building type
1	Single residential dwelling where there isn't a risk of flooding eg outside
2	• Single residential dwelling if there is a risk of flooding due to product failure (eg, basement applications) • Multiple residential dwellings
4	Commercial premises

8.2.1 Initial service visit for Type-C basement waterproofing systems

The first service visit should be scheduled within three months of the system being commissioned or on completion of any significant building works which may affect drainage.

This initial service will highlight any problems, allow for the removal of debris that may have been deposited in the drainage channels during the construction phase, and allow the service engineer to assess the potential risk posed by free lime and silt that may be deposited in the chamber.

8.3 Service agreement benefits

Service agreements consist of planned preventive maintenance visits at an agreed frequency. During each service visit a detailed schedule of works is followed that covers all visual inspections, working tests, system adjustments and electrical safety checks.

The key benefits of service agreements are:

- Validate your building insurance
- Reduce the risk of failure
- Increase equipment life expectancy
- Receive peace of mind
- Reduce running costs

9. Accessories

Calpeda GXRM-9
spare / replacement

105743

Tricel AquaSafe Alarm
with mini float switch

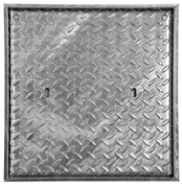
106994

Tricel AquaSafe Alarm
with sump float switch

106993

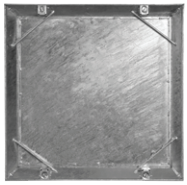
Rubber wall seal

110 mm	50 mm
107034	107035



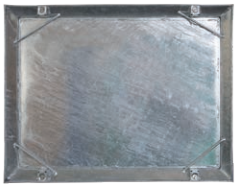
Access cover, inlay,
450 x 450 mm, galv,
locking, sealed, FACTA AA

106988



Access cover, inlay,
450 x 450 mm, galv,
locking, sealed, FACTA AA

106986



Access cover, inlay,
600 x 450 mm, galv,
locking, sealed, FACTA AA

106985

Compression adaptor for
32 mm MDPE discharge

110456

PVC discharge reducer kit

1½" to 1¼"	2" to 1¼"
110454	110455

10. Service record

Product name		Purchased from	
Product reference		Commissioning date	
Wastewater type		Commissioned by	
Chamber location		Serial # (Pump 1)	
Control panel location		Serial # (Pump 2)	
Distribution board location		Service interval	☐ Annually ☐ 6-monthly ☐ Quarterly

Date	Service carried out and parts replaced	Service company	Signed

Date	Service carried out and parts replaced	Service company	Signed

11. How to solvent weld PVC pipework and fittings

11.1 Precautions

- The jointing area must be well ventilated
- Do not allow a naked flame or smoking in the jointing area
- Ensure cement is used prior to its expiry date (shown on bottom of tin)
- Wear rubber or latex gloves when applying MEK cleaner and PVC cement
- Never dilute PVC solvent cement
- Always replace lids on tins when not in use
- Always use clean brushes
- Always use clean lint–free cloth or absorbent paper
- Use a shelter to keep jointing surfaces dry in wet weather

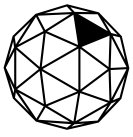
11.2 Solvent welding instructions

PVC cement is gap filling. PVC cement softens the inside of the fitting and the outside of the pipe to form a joint chemically. Strength of joint is reduced if surfaces are not cleaned and properly prepared.

1. Cut the pipe ends square.
2. Remove burrs and clean out swarf. A chamfer must be filed approx 3mm x 45°. This will prevent the layer of cement being scraped away as the pipe is pushed into the fitting.
3. Use a felt marker pen or pencil to mark the pipe at the distance which will penetrate the fitting socket to the root/stop.
4. Thoroughly clean the surfaces of both pipe and fittings with MEK cleaner on a clean lint–free cloth. Please note it is not necessary to abrade pipe or fitting unless pipes are discoloured/sun bleached.
5. Stir the PVC Cement thoroughly.
6. Use a clean brush approximately half as wide as the pipe to be jointed. Apply cement to the pipe and fittings using longitudinal strokes. The pipe should have as lightly thicker coating than the fitting. The prepared areas should be completely covered with cement.
   Note: It is important to apply cement quickly to enable assembly without excessive force being required.
7. Immediately after application of cement push pipe fully home to the stop in the fitting without rotating. Hold the pipe and fitting for up to a minute, depending on size, to ensure fitting does not slide off the pipe.
   Note: When working under cold conditions ensure the joints are free from frost and moisture and allow extra curing time.
8. Wipe off excess cement from both sides of the joint using a clean lint–free cloth.
9. Replace lids on tins.
10. Clean brush in MEK cleaner.

11.3 Installing threaded fittings using PTFE tape

1. Ensure all threads are clean.
2. Apply PTFE Tape to the male thread for 1 ½ turns in a clockwise direction.
3. Screw the female threaded fitting by hand onto the male thread.
4. It should be possible to screw the fitting on by hand for 2/3 of the thread length.
5. After tightening by hand add an extra ½ turn with a suitable tool i.e strap wrench. Do not force tightening of the joint under any circumstances.



TRICEL

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In accordance with Tricel's normal policy of product development these specifications are subject to change without notice.