Delta Foul V3 (DMS-165)

Installation Instructions

For Foul Water Applications

T. 01992 523523
E. info@deltamembranes.com
W. www.deltamembranes.com

Delta Foul V3

DFV3-M-V1-07.16

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Delta Foul V3

1.0 Foul V3 Overview

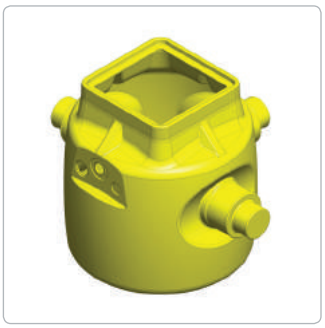
The Delta Foul V3 is a packaged pump station designed to collect foul water. Typically, the Foul V3 would be used to collect and discharge foul water from a basement fitted with a bathroom and utility room. This pump station is **not** designed to collect ground water from a cavity membrane system (see Delta Dual V3 - DMS 164). For kitchen applications we recommend fitting a grease trap prior to the pump station.

The pump station has been specifically designed for below ground applications. The chamber is manufactured from HDPE and when installed correctly, it is able to withstand hydrostatic forces encountered in high water tables.

The pump station is delivered as a complete package including all internal pipework and a 612SA foul vortex pump. It is designed to be installed by contractors with competent building, plumbing and electrical skills. The AlertMaxx (where fitted) will operate if the pump fails.

An AlertMaxx (DMS-269) is offered as a recommended extra to alert the property occupant when the water level in the chamber becomes too high. A Hi-PowerMaxx (DMS-364) is recommended to power the pump during power outage and a MessageMaxx (DMS-279) is recommended to notify the occupant of any issues that may arise when away. Please see section 2.1 for more details about optional extras designed for the Foul V3 pump station.

2.0 Parts Included



Chamber
902 x 800mm deep

2” Internal Pipework

612SA Pump
(DMS-114)

2” Vent, Cable Duct &
Discharge Male Iron
for temp. site installation

2.1 Optional Extras

AlertMaxx High Level
Alarm (DMS-269)

Hi-PowerMaxx Battery
Backup (DMS-364)

MessageMaxx Telemetry
(DMS-279)

2" Discharge Pipework
and various fittings
(see page 5)

3.0 Discharge Pipework & Fittings

A selection of discharge pipework and fittings are available for the Foul V3 pump station.

Should you require to place an order for any of these items, please complete the form below, scan and email to purchasing@deltamembranes.com to allow us to process your order.

Part Description	Part No.	Qty Req.
2" Pipe - 3m Length (Class E)	DMS-0154	
2" 90° Elbow - Plain/Plain	DMS-0155	
2" 45° Elbow - Plain/Plain	DMS-0156	
2" Socket - Plain/Plain	DMS-0157	
2" Socket - BSP Female Thread/BSP Female Thread	DMS-339	
2" Male Iron - Plain/BSP Male Thread	DMS-0153	
2" Male Iron - Plain/BSP Male Thread (Non-pressure)	DMS-335	
110mm to 2" Adaptor	DMS-341	
Saddle Clamp - 110mm to 2" (BSP Female Thread) including 2" Male Iron	DMS-0151	
Saddle Clamp - 160mm to 2" (BSP Female Thread) including 2" Male Iron	DMS-0152	
2" Pipe Clip	DMS-0159	
500ml PVC Solvent Cement	DMS-0158	

Name:	
Company Name:	
Site Address:	
Email:	
Phone No.:	**Mobile No.:**

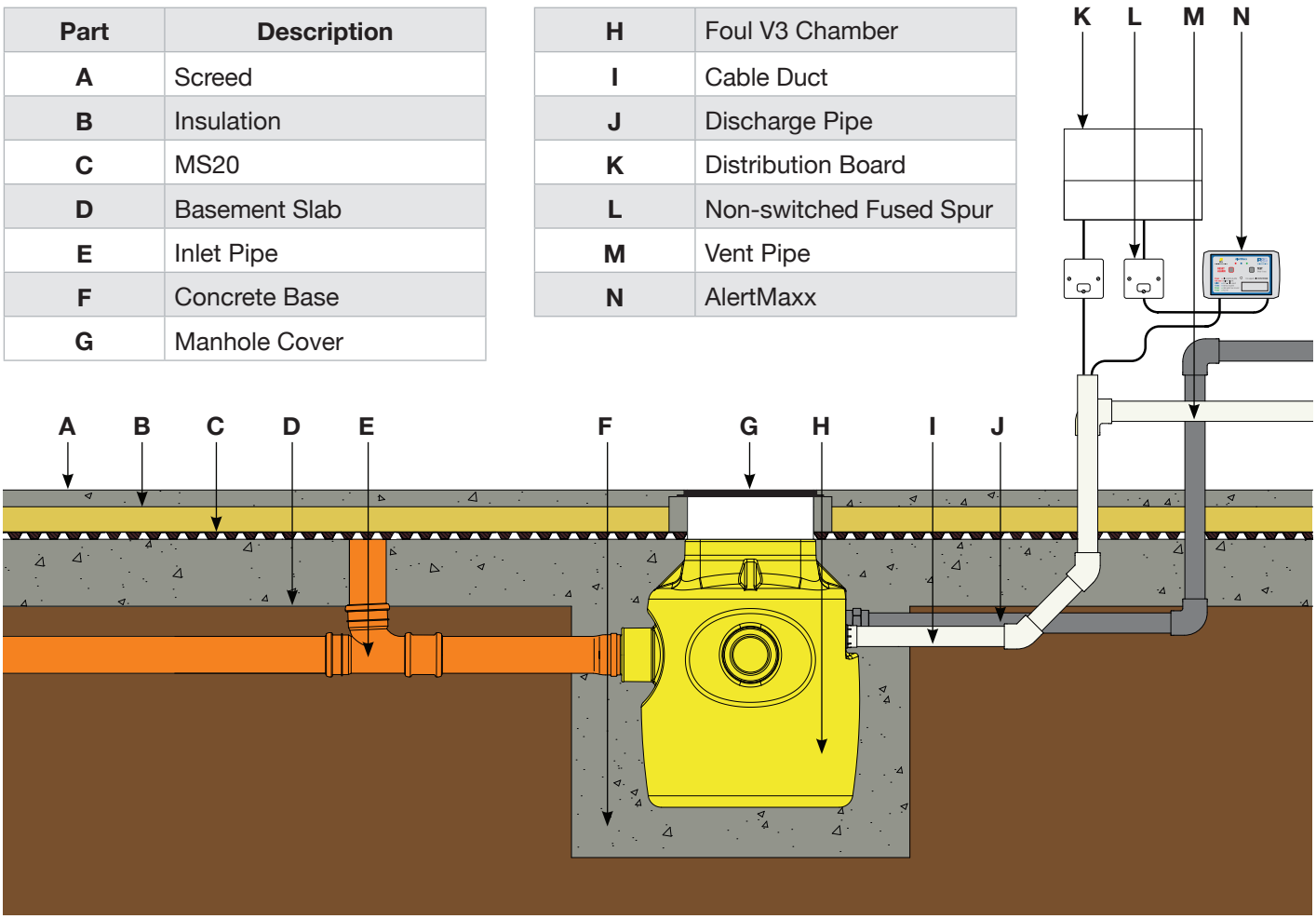
Sign:	**Date:**

Delta Foul V3

4.0 Chamber Overview

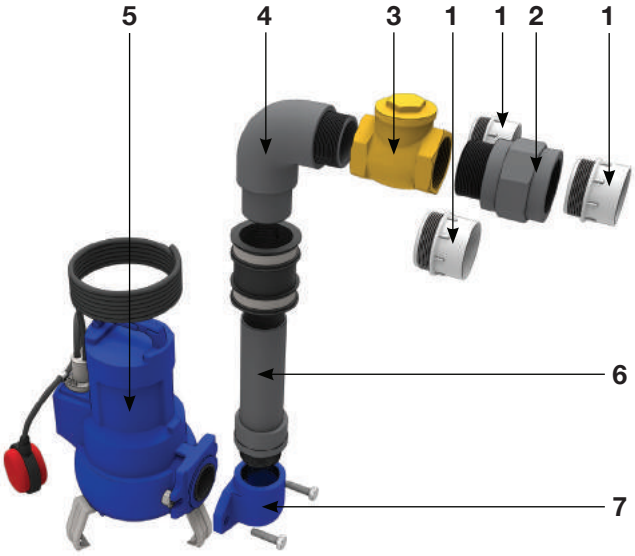
Part	Description
A	Screed
B	Insulation
C	MS20
D	Basement Slab
E	Inlet Pipe
F	Concrete Base
G	Manhole Cover

H	Foul V3 Chamber
I	Cable Duct
J	Discharge Pipe
K	Distribution Board
L	Non-switched Fused Spur
M	Vent Pipe
N	AlertMaxx



5.0 Spare Parts

Part	Description	Part No.
1	2" Male Iron (Non-pressure)	DMS-335
2	2" Female - 2" Male Adaptor	DMS-337
3	2" Non Return Valve	DMS-327
4	2" 90° Elbow Piece	DMS-334
5	612SA Pump	DMS-114
6	Discharge Arm c/w DC65 Connector	DMS-157
7	Feet & Elbow Kit	DMS-156



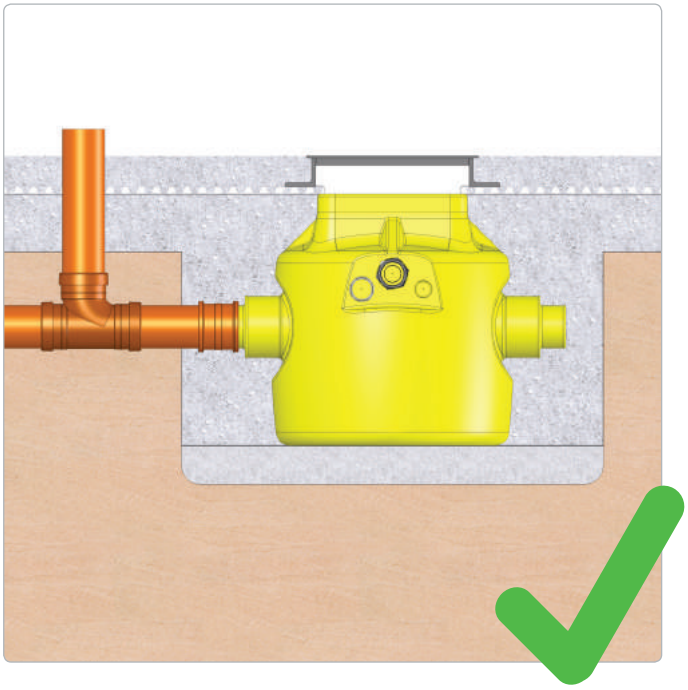
6.0 Technical Information

Pump Specification			
Pump Type			**612SA**
Typical Duty (l/s)	**Head (m)**	**2**	6.50
		4	5.75
		6	4.50
		8	3.25
		10	2.00
		12	0.00
Power		**P_1 (kW)**	1.25
		P_2 (kW)	0.75
Current (a)			6.0
Power Phase			Single
Fuse Spur Rating (a)			13
Max. Temperature (°C)			50
Weight (kg)			22

Chamber Specification		
Chamber Material	High Density Polyethnylene - ICO1314 grade	
Size (mm)	**Chamber Diameter**	660
	Overall Diameter	902 (across spigots)
	Depth	800
Volume (L)	**Below Inlet**	137
	Total	273
Inspection Cover	Not supplied	
Clear opening to chamber (mm)	310 x 310	
Fixed Inlets	3 x 110 / 160mm	
Cable Duct (mm)	50	
Vent (mm)	50	
Discharge Connection	2" / 50mm SP Male - External to chamber	
Internal Pipework Manifold	2" / 50mm BSP Class E	
RCBO Rating (a)	16	
Cable Length (m)	10	
Non-switched Fuse Spur Rating (a)	13	

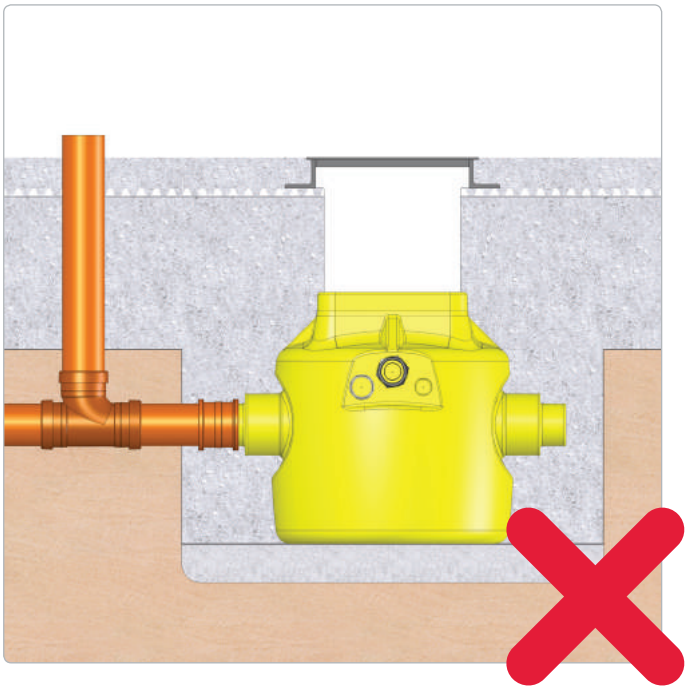
7.0 Pump Chamber Depth Limits

If the inlet does not allow the pump chamber to be within depth limits, please contact PPS on 01279 757400 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.

8.0 Installation Guidelines

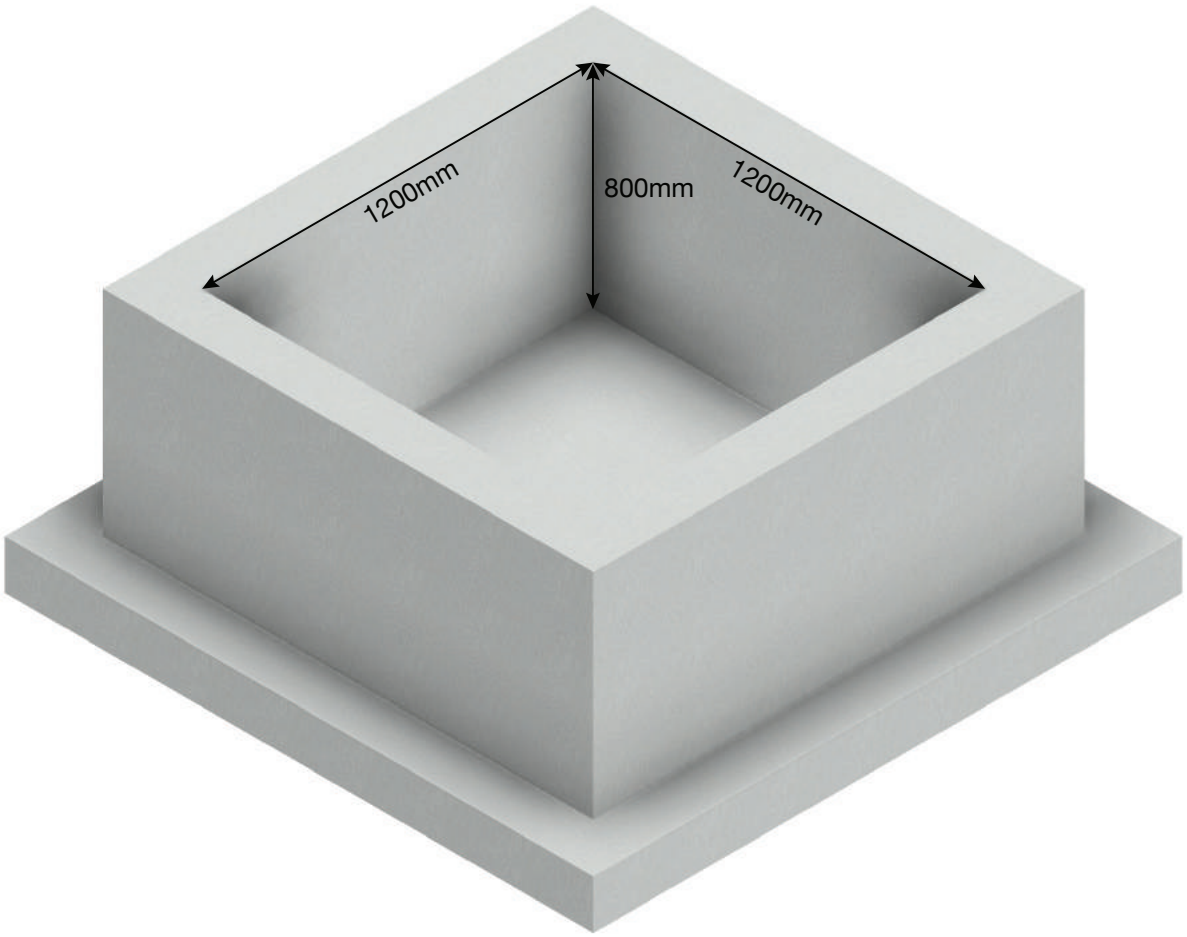
The following instructions are for guidance only and it is the contractors responsibility to ensure that the installation is in accordance with the prevailing ground conditions and good building practice, to eliminate any potential damage to the pump station either during or after installation.

Please read these instructions carefully prior to installing the chamber. If there is anything that is unclear, our technical help desk is available on 01279 757400.

9.0 Pump Station Location

This station requires routine maintenance, therefore it is important that careful consideration is taken to position the chamber in a location that allows permanent access to the chamber.

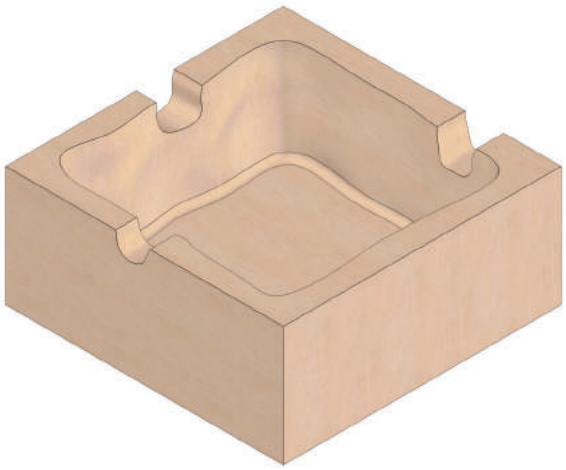
10.0 RC Box Dimensions



11.0 Installation of Chamber - Section A

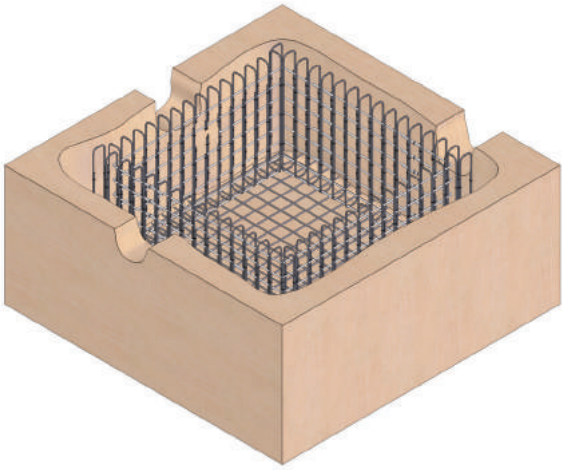
Construction of reinforced concrete box

1



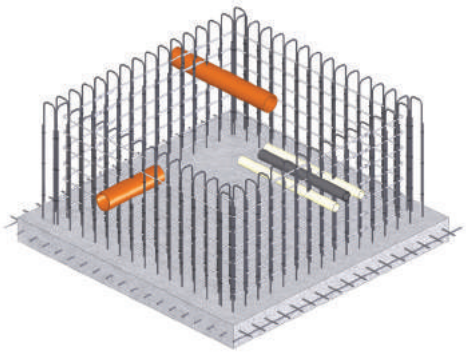
Excavate hole for chamber. Refer to section 10.0 for RC box internal dimensions.

2



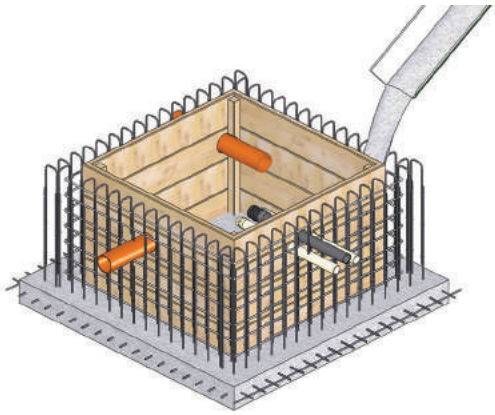
Install re-bar as per structural engineer's drawings.

3



Lay inlet and discharge pipework. Allow pipework to protrude into RC box by a minimum of 100mm.

4



Pour concrete to form RC box as per structural engineer's drawings.

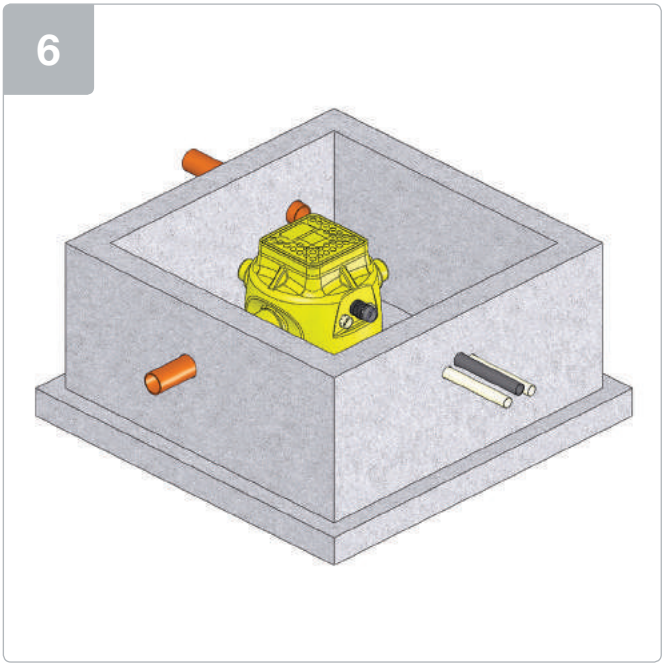
11.0 Installation of Chamber - Section B

Connecting 110mm inlet pipework

5

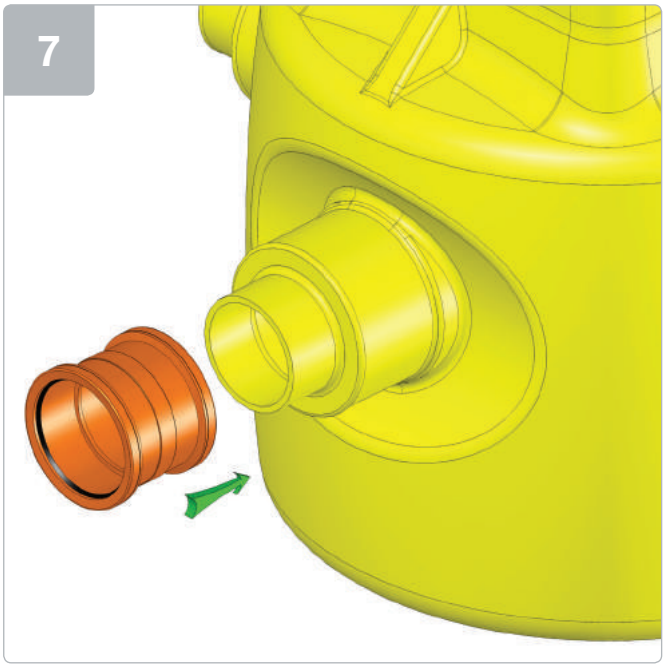
Saw off socket end/s, where inlet pipe/s are to be connected.

6



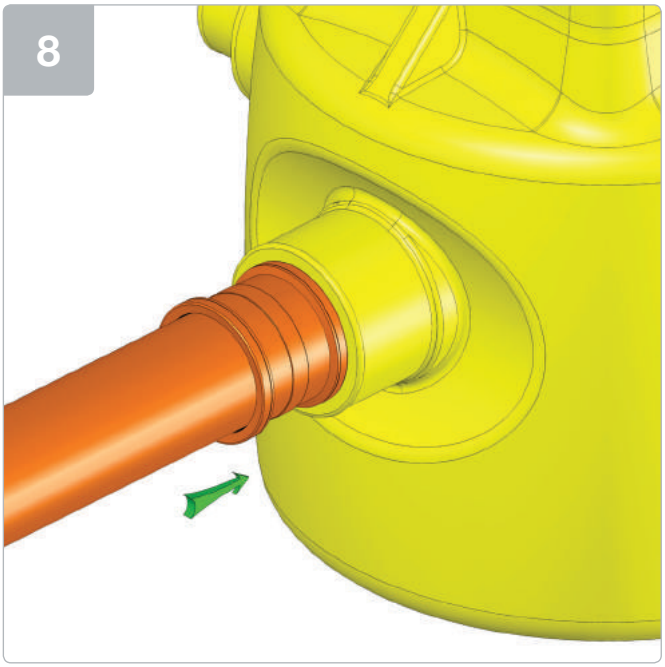
Position chamber in RC box.

7



Fit push fit coupler.

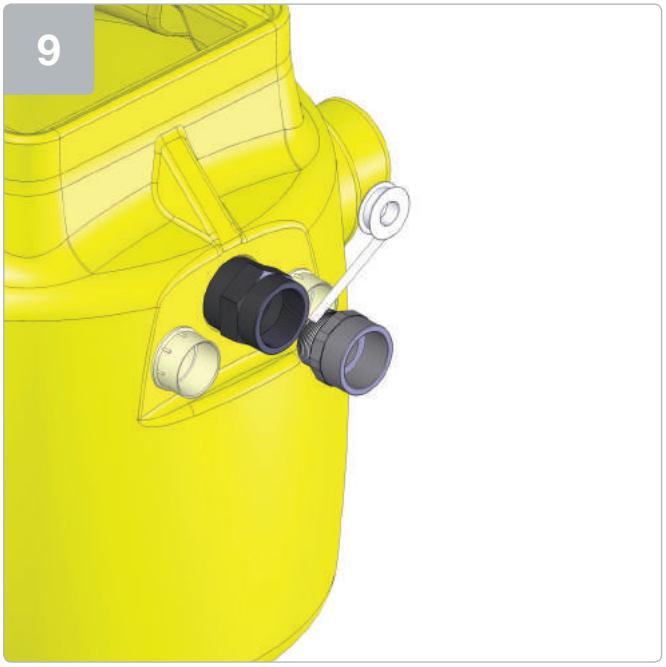
8



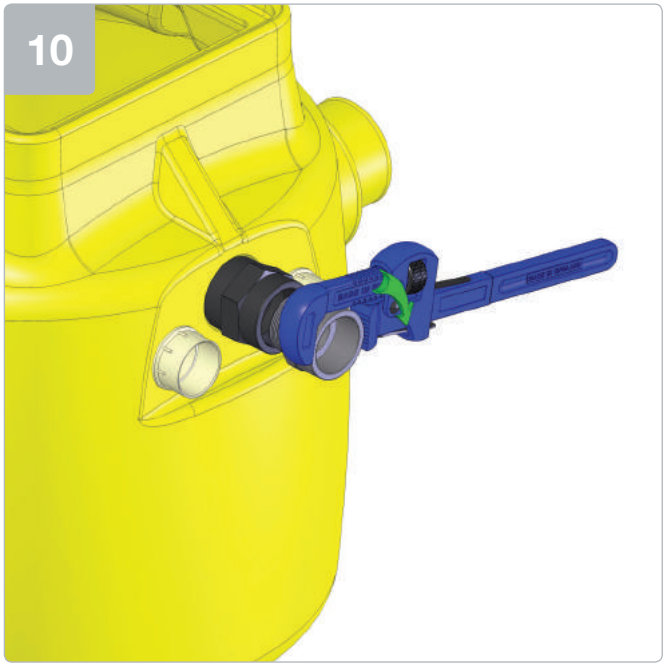
Connect inlet pipework to the required chamber spigot.

11.0 Installation of Chamber - Section C

Connecting discharge, cable duct and vent

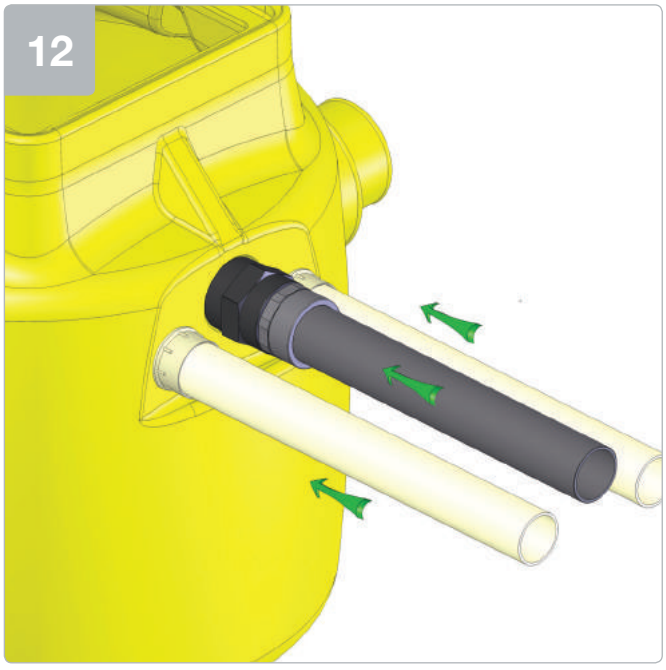


Wrap the thread on a high pressure male iron with PTFE tape.



Screw the high pressure male iron into the socket.

Apply high pressure glue around the first 20mm of the external face of the discharge, cable duct and vent pipe and internal side of their respective male iron.



Push discharge, cable duct and vent pipe into their respective male iron, twisting the pipe as it is pushed into the male iron to remove any trapped air.

11.0 Installation of Chamber - Section C cont.

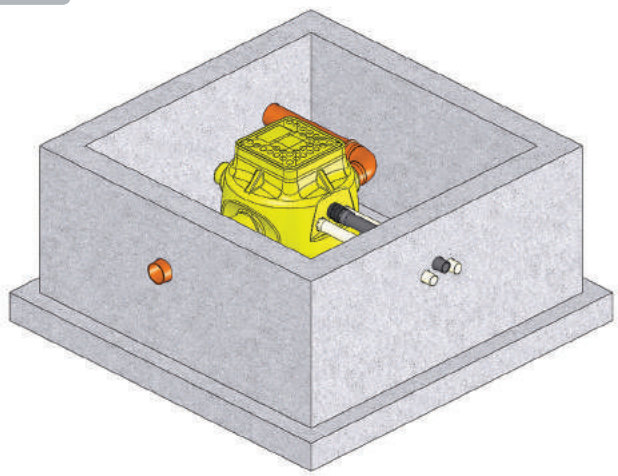
Connecting discharge and cable duct

Ensure a draw cord is pulled through the cable duct as the cable duct is built.

11.0 Installation of Chamber - Section D1

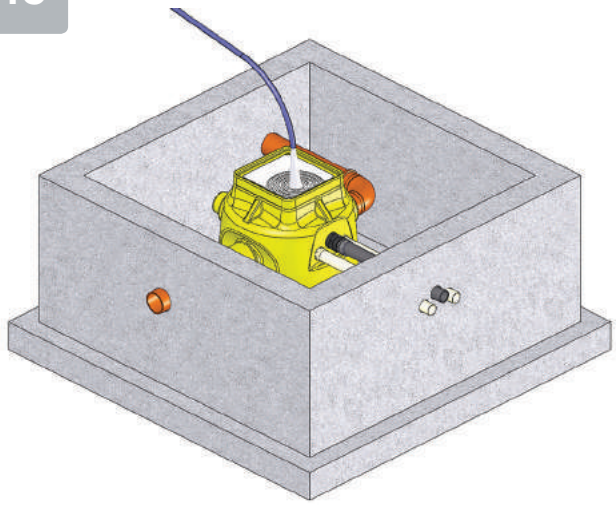
Backfill around chamber with concrete
To be followed when installing chamber in an RC box.

14



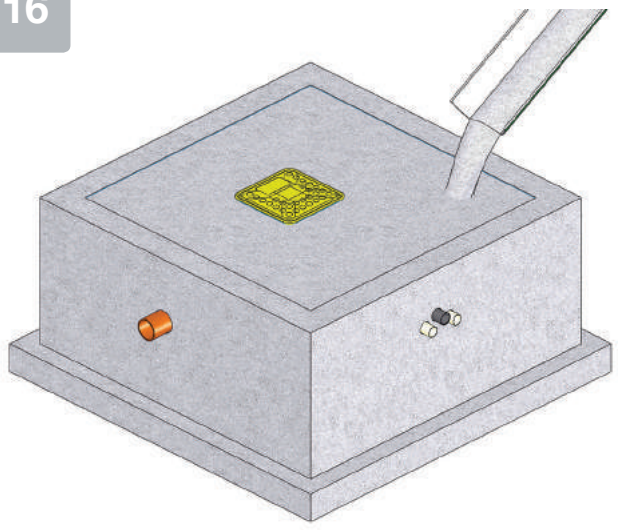
Check all pipes are connected to the chamber correctly.

15



Completely fill chamber with water.

16

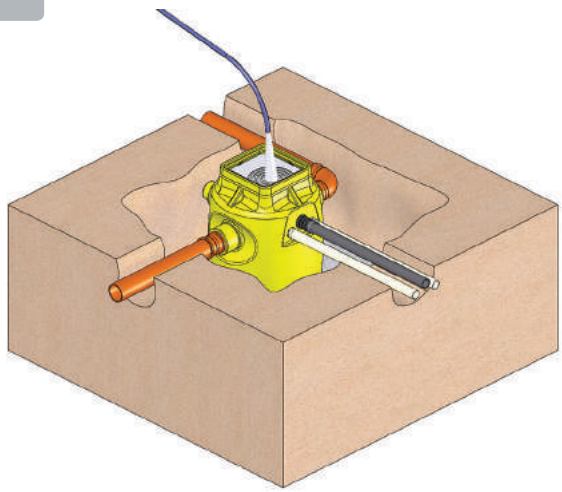


Fill void between RC box and chamber with concrete (min. C35 grade) or as per engineer's drawings.

11.0 Installation of Chamber - Section D2

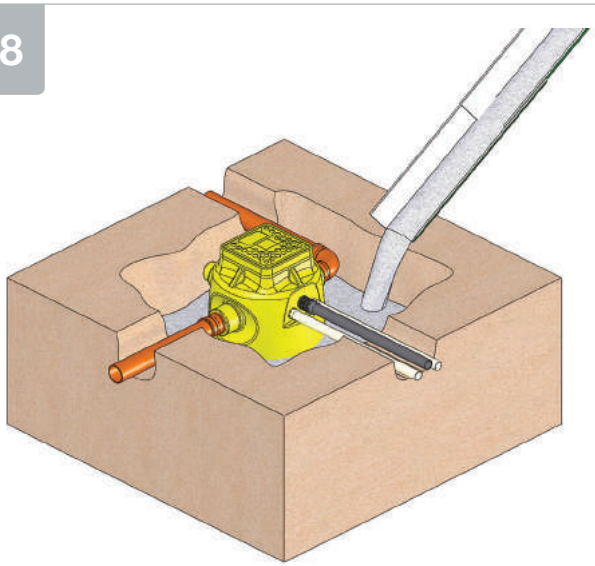
Backfill around chamber with concrete
To be followed when installing chamber in the ground.

17



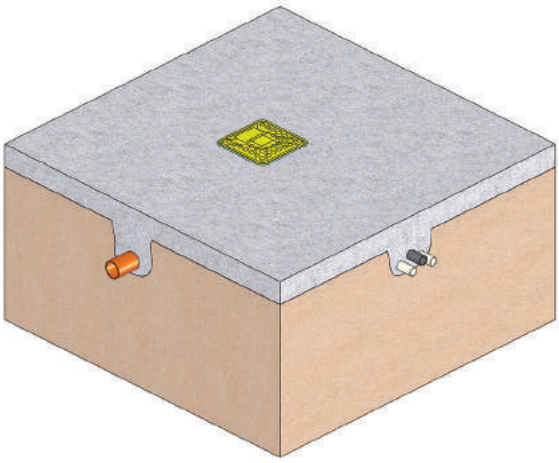
Completely fill chamber with water.

18



Fill void between soil and chamber with concrete (min. C35 grade) or as per engineer's drawings.

19

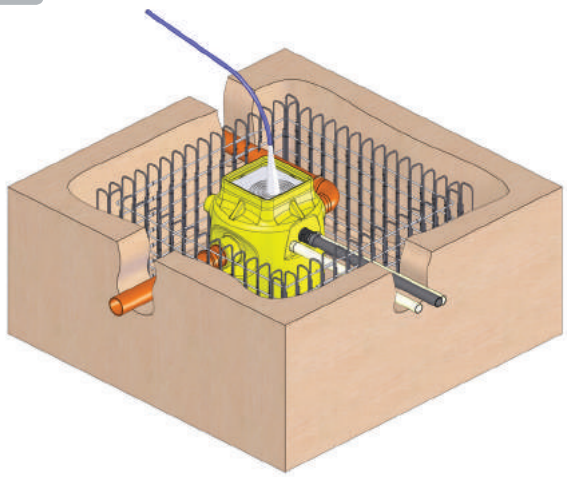


Allow concrete to cure.

11.0 Installation of Chamber - Section D3

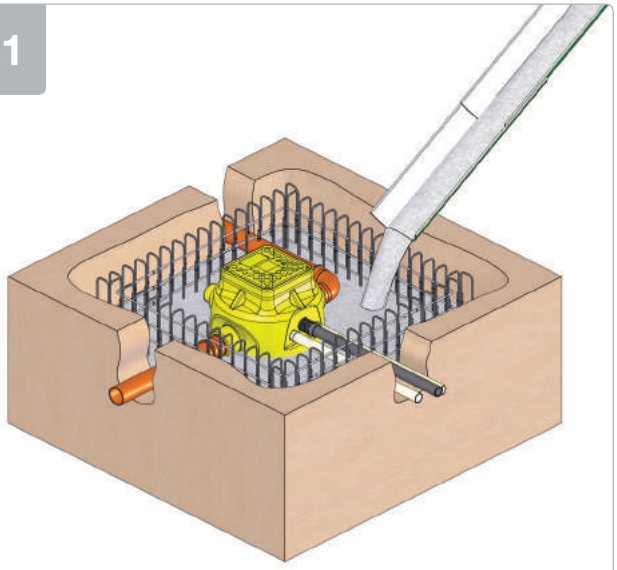
Backfill around chamber with concrete
To be followed when installing chamber in the ground with a reinforced cage.

20



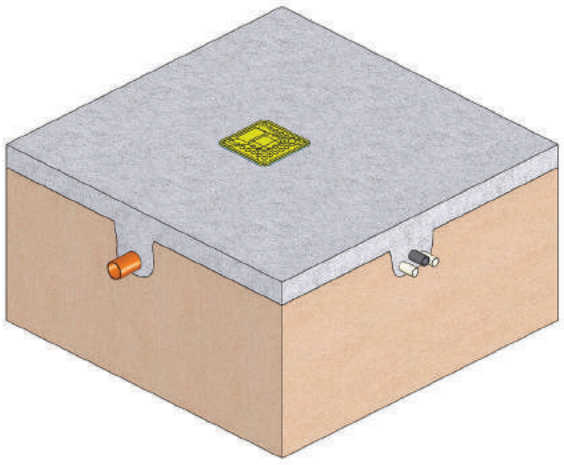
Completely fill chamber with water.

21



Fill void between soil and chamber with concrete (min. C35 grade) or as per engineer's drawings.

22

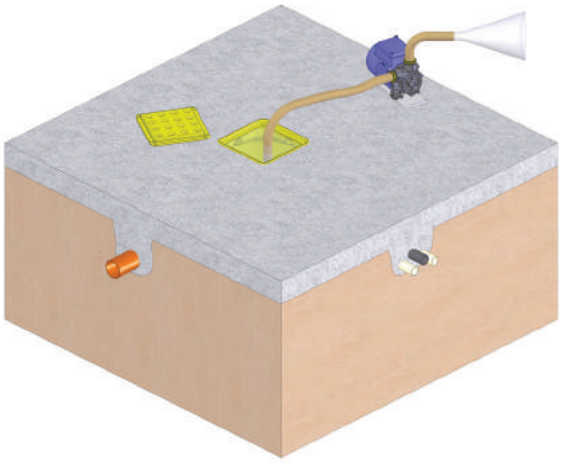


Allow concrete to cure.

11.0 Installation of Chamber - Section E

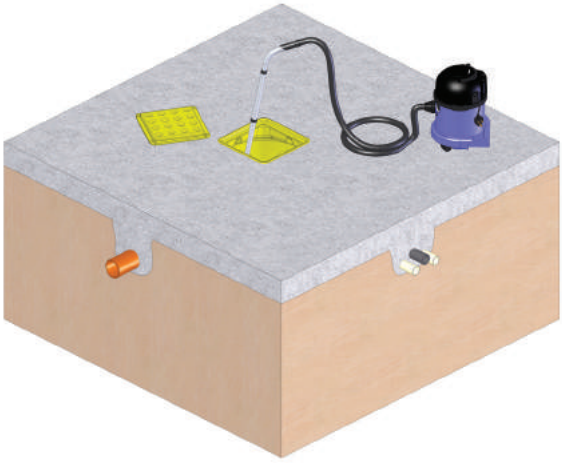
Preparing chamber for installation of pump

23



Pump out water from chamber.

24

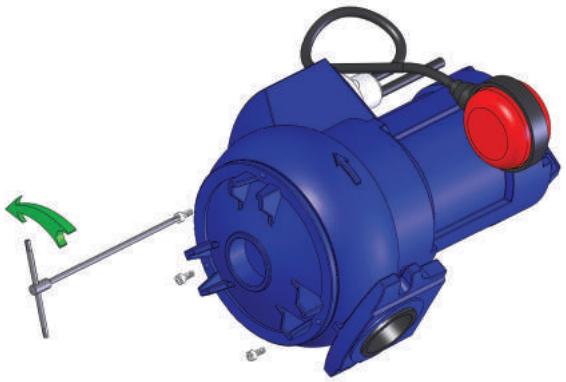


Manually remove any debris from chamber and residual water using a wet vac.

11.0 Installation of Chamber - Section F1

Fitting feet to pump

25

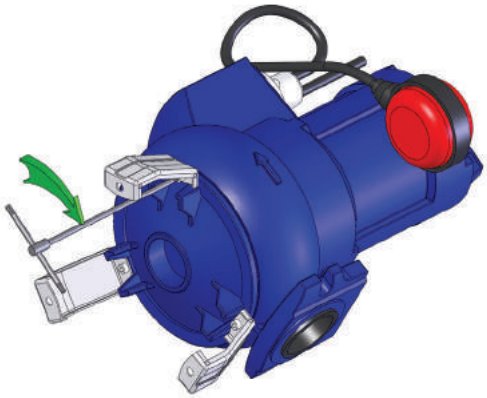


Remove the three screws holding on the suction cover of the pump (do not remove the cover).

26

Fit a foot to the underside of the suction cover and tighten the screw.

27

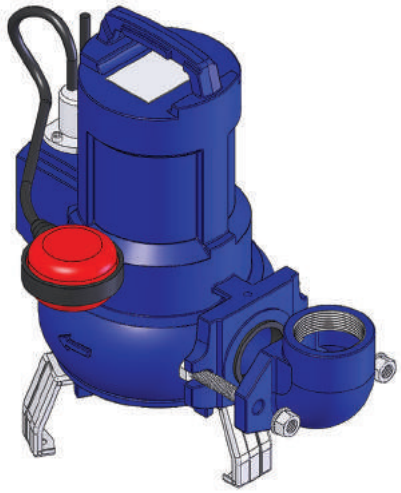


Fit all feet as per step 34.

11.0 Installation of Chamber - Section F2

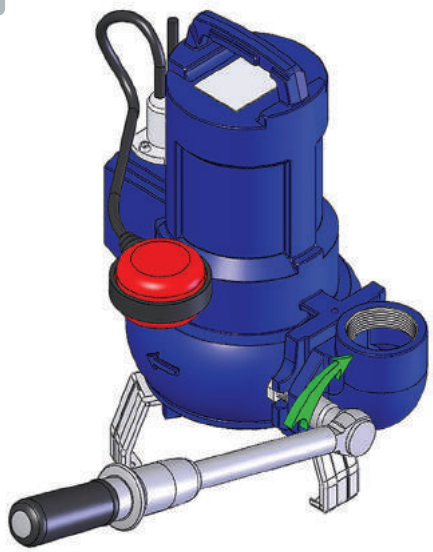
Fitting duckfoot bend and discharge pipe

28



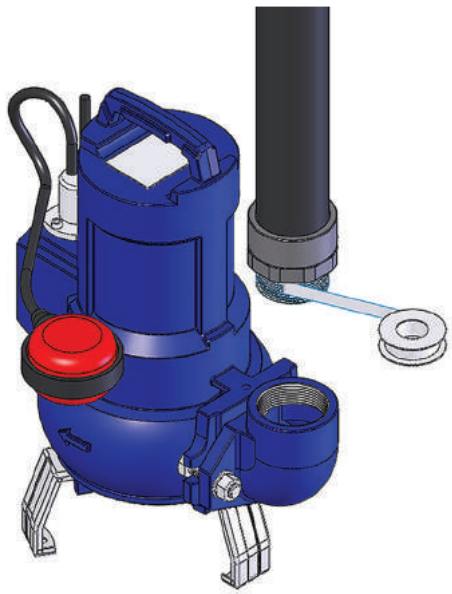
Fit the duckfoot bend with the provided nuts and bolts. Ensure the threaded discharge faces up.

29



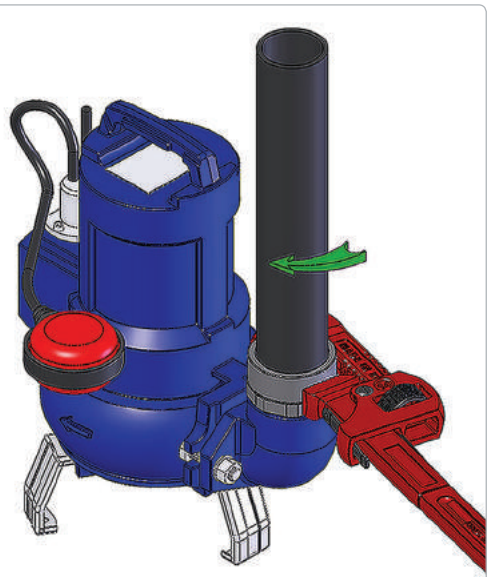
Tighten the nuts.

30



Wrap the thread on the male iron glued to the high pressure discharge arm with PTFE tape.

31

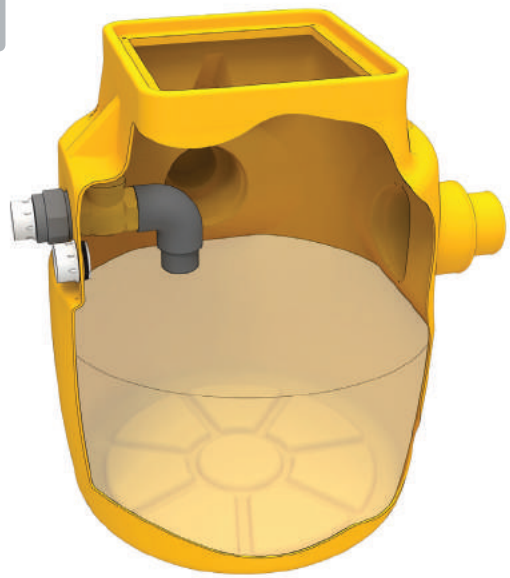


Tighten the discharge arm into the duckfoot bend.

11.0 Installation of Chamber - Section G

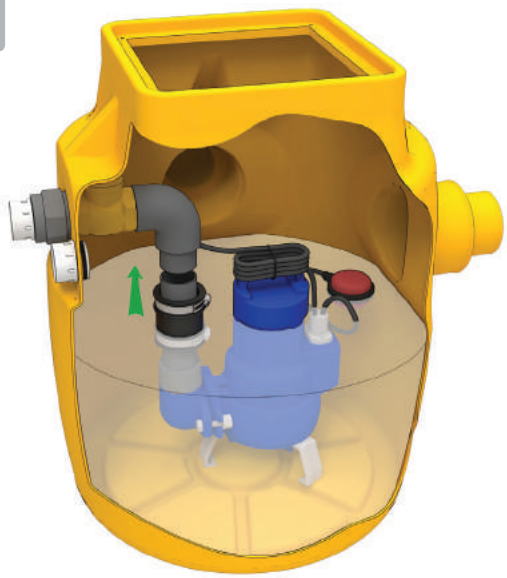
Installing pumps and high level alarm in chamber

32



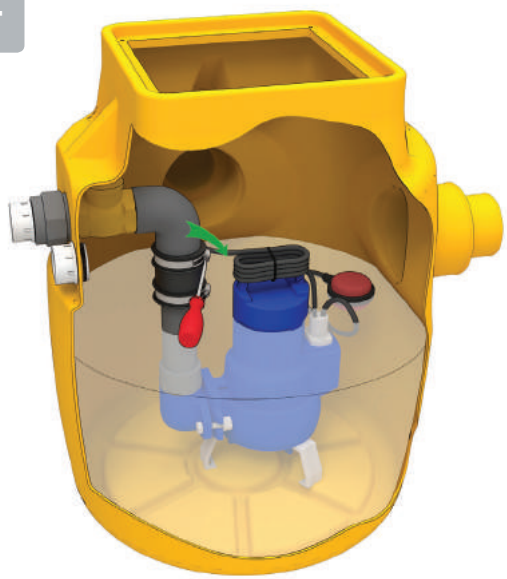
Fill chamber half full with water.

33



Slide the DC65 over the discharge arm and lower the pump in to chamber to release any trapped air. Slide the DC65 up to join the manifold to the discharge arm.

34



Tighten the two screws on the DC65 to seal the pipework.

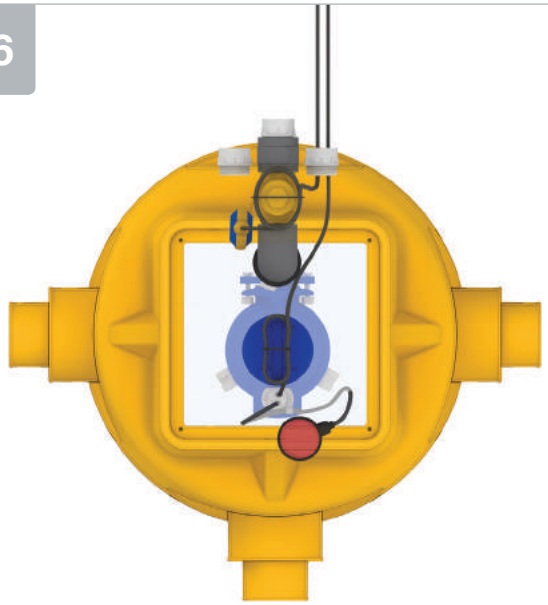
35

When installing a high level alarm, refer to the high level alarm installation instructions.

11.0 Installation of Chamber - Section G cont.

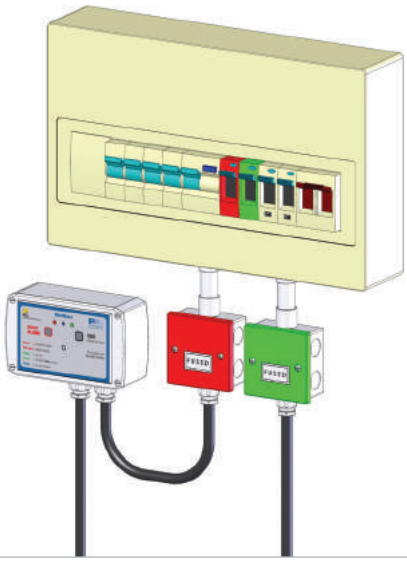
Installing pumps and high level alarm in chamber

36



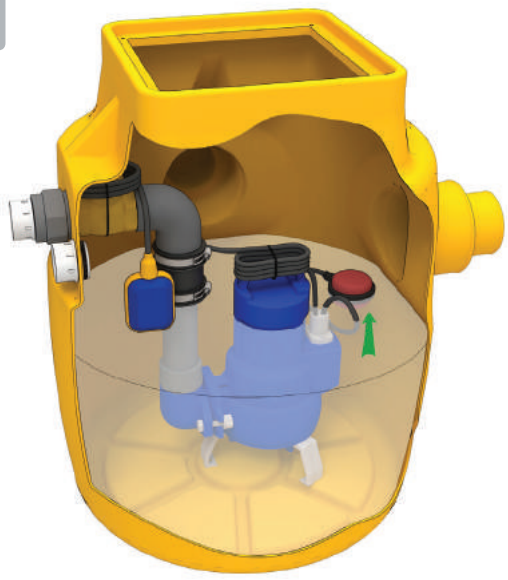
Pull the pump and high level alarm cables through the cable duct. Coil 1m of pump and alarm cable inside the chamber to allow for maintenance.

37



Isolate mains supply and connect the pump and high level alarm to separate non-switched fused spurs.

38

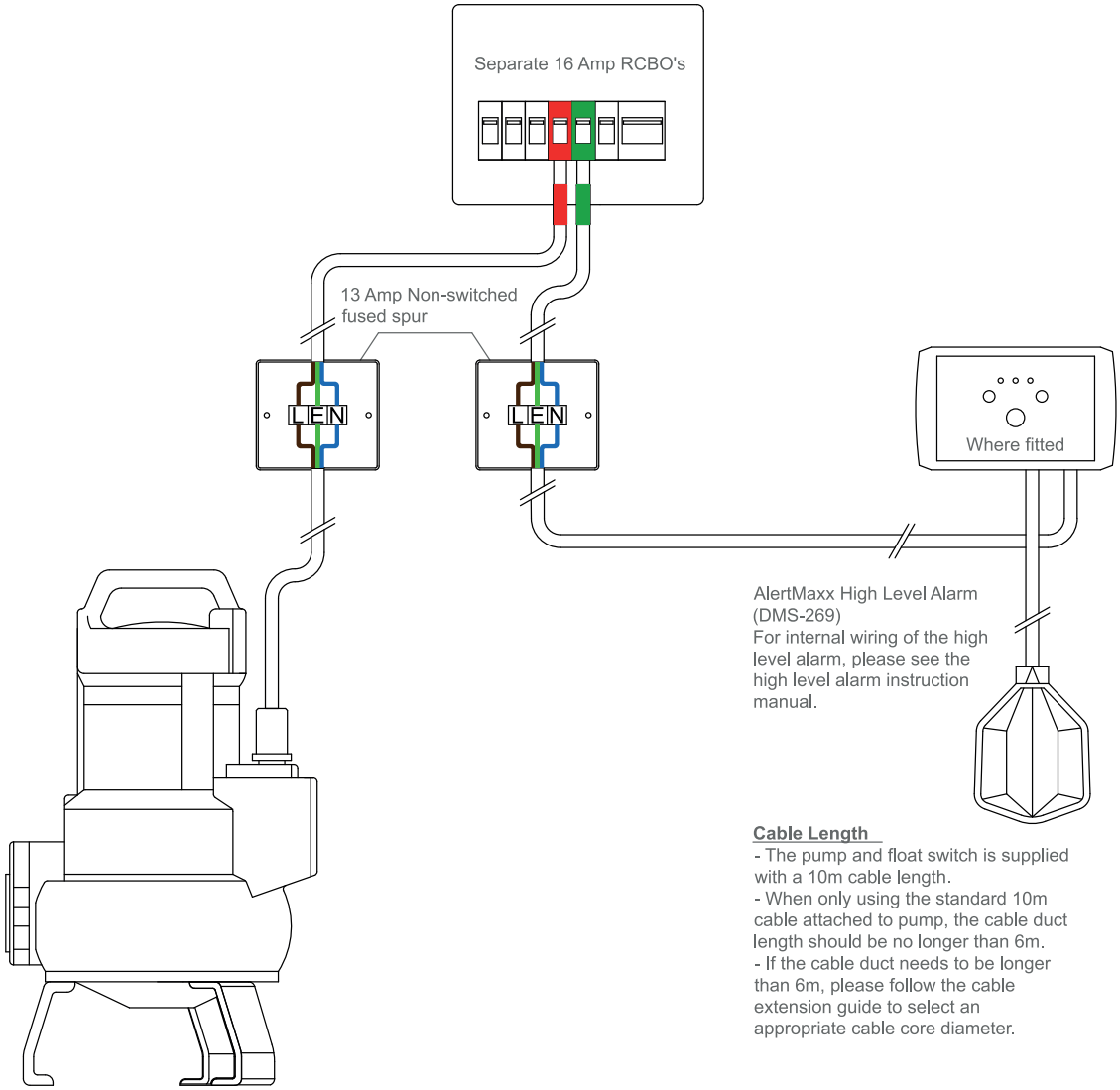


Turn mains supply on and lift the pump float to test the water is discharging correctly.

39

To test float switch, refer to the high level alarm installation instructions.

12.0 Wiring Diagram



Cable Length

- The pump and float switch is supplied with a 10m cable length.
- When only using the standard 10m cable attached to pump, the cable duct length should be no longer than 6m.
- If the cable duct needs to be longer than 6m, please follow the cable extension guide to select an appropriate cable core diameter.

13.0 Maintenance

British Standards requires pump chambers to be serviced on a regular basis to ensure reliable operation of equipment. PPS recommends that the pump station is serviced biannually.

PPS strongly recommends that a service agreement is taken out, please see the back page for further information.

14.0 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/weil'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.

15.0 Guarantee

The Foul V3 pump chamber comes with a 12 month component guarantee, which covers any manufacturing faults and defects as a result of poor workmanship.

Pump chambers that have not been commissioned have a 18 month component guarantee from date of delivery. Pump chambers that have been commissioned have a 12 month component guarantee from date of commissioning.

Any defects or malfunctions should be reported to Delta Membranes immediately to avoid any damage to other components. All broken components must be sent to Delta Membranes at the customers cost. Any pumps to be retuned must be returned complete with their cable attached.

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).

16.0 Troubleshooting

Please ensure the installation process has been completed thoroughly and all steps have been followed correctly.

Use the table below to assist with troubleshooting and if problems still occur, please contact PPS for further technical support on 01279 757400.

Fault	Cause
Water leaking from DC65.	Screws not tightened sufficiently.
Pump isn't running.	Pump hasn't got power - check wiring with reference to section 12.0 wiring diagram. Float isn't lifting - check float is free moving and not catching on chamber - make sure pump is positioned as diagram 41.
Pump running but not pumping water or discharging very slow (more than 25 seconds to empty chamber).	Pump is air locked - make sure there is a level of water to the top of the pump, remove pump from DC65 and lower back into water, lift float to activate pump before reconnecting the DC65. Discharge pipe is blocked - a drainage company is required. Pump impellor is jammed - turn off power and isolate pump, remove pump from chamber, unscrew suction cover and free impellor. **WARNING! - Ensure mains power and pump is isolated before taking pump apart and seek advice from a qualified electrician.**
Pump is tripping.	Pump is wired incorrectly or not on a separate supply - refer to section 12.0 wiring diagram. Pump impellor is jammed - turn off power and isolate pump, remove pump from chamber, unscrew suction cover and free impellor. **WARNING! - Ensure mains power and pump is isolated before taking pump apart and seek advice from a qualified electrician.**
High Level Alarm not functioning.	Refer to the high level alarm installation & operating instructions.

17.0 Self Commissioning

Name:	**Inspectors Name:**
Property Address:	**Company Name & Address:**
Property Contact:	**Company Contact:**
Date complete:	

Location of Chamber:	**Location of Alarm:**	**Location of Electrics:**
Pump Serial Number:		

Commissioning requirements	**Complete**
Chamber is clear of silt and debris.	
Check activation of pump float switch by hand, making sure it can operate without obstruction. Cable joining kits (if fitted) to be moved away from pumps/floats and secured.	
Fill chamber with water and check pump discharges in less than 25 seconds.	
Isolate pump, fill chamber with water and ensure high level alarm sounds. The float switch should be set 300mm from the base of the chamber.	
Check pipework is connected correctly (look for leaks).	
Check all cables are securely cable tied to manifold and clear of float switches.	
Check pump is wired to an individual 13A non-switched spur.	
Check each spur is wired to an individual 16A RCBO (not RCD).	
Label spurs using stickers provided.	
Check power is on.	
Check battery backup is switched on correctly if available (refer to manual).	
Any additional comments: (further space overleaf)	

Property Signature:	**Inspectors Signature:**
Print Name:	**Print Name:**
Date:	**Date:**

Please scan this commissioning form and email to service@ppsgroupuk.com

17.0 Self Commissioning

Further comments:

18.0 Notes

After Sales Service

All Delta Membrane pump systems are fitted & can be maintained by our partners, Packaged Pump Systems. With our long-term relationship we ensure that the system selected is fit for your requirements, is delivered on time, professionally installed & offers hassle free on-going operation & maintenance.

- **Fully stocked vans**
- **Emergency breakdown service**
- **Out of hours service**
- **Planned maintenance**
- **Factory trained engineers**

Precise Passionate Service

Precise
Fully trained in-house service engineers to maintain, enhance & replace equipment.

Passionate
Bespoke design, manufacturing & installation ensuring our equipment is fit for every requirement.

Service
From fitting to scheduled maintenance, we ensure your needs come first.

T. 01279 757400
E. info@ppsgroupuk.com
W. www.ppsgroupuk.com

Unit 12, Haslemere Ind. Est., Pig Lane, Bishop's Stortford. CM23 3HG

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