

Pumped Drainage



DELTA MEMBRANE SYSTEMS LTD



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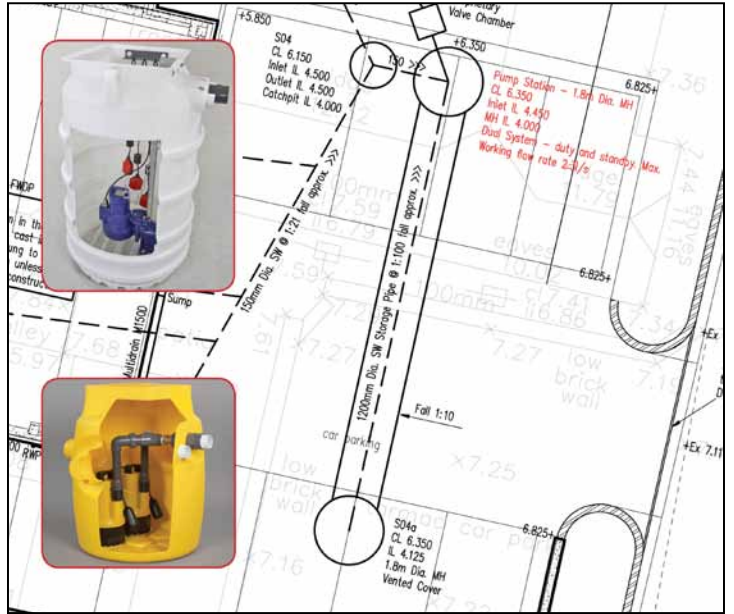


ABOUT US...

Most clients know us as leading manufacturers of cavity membrane systems and associated water proofing products, most do not realise we are the largest manufacturer of basement pumps in the UK. These two elements provides Architects, Engineers & Waterproofing Contractors one point of contact for design and no split responsibilities.

The Delta service

We have a team of application engineers who can assist with selection of ground, surface & foul water pump stations. This can be carried out against drawings, meetings on site & your offices or 'via net' viewer sessions.



Design team

A waterproofing specialist should be included as part of the design team so that an integrated waterproofing solution is created. The waterproofing specialist should also be responsible for the pumped drainage system. (extract from BS8102)

Delta can provide this service.

Why use Delta for pump stations?

All our pump stations are designed for their specific applications. The design process involves finite element analysis to model all possible scenarios i.e. high hydrostatic pressures for basement applications as well as feedback for our clients. The majority of pump stations are manufactured from tank grade virgin HDPE and moulded from our own tooling giving complete control over quality management.

To back this we maintain large stocks of pump chambers & accessories in stock for next day delivery throughout the UK, backed up by a team of service, commissioning and installation engineers.

DUAL V3 SUMP (DMS 164)

Overview

A packaged pump station designed to collect ground water via perimeter channel or 110mm pipes (129 detail) and / or clear opening to the top of the chamber. This chamber can also collect grey water from showers and wash hand basins, but not foul from a WC. (See Delta Foul V3 sump DMS 165). A typical application would be collecting ground water from a 150m² basement and surface water from a 12m² lightwell.

The Dual V3 pump station has been specifically designed for below ground applications. The chamber is manufactured from HDPE and able to withstand hydrostatic forces encountered in applications with high water tables.

The pump station is delivered as a complete package including chamber all internal pipe work and two powerful V3 pumps. A high level alarm is offered as a recommended option. It is designed to be installed by contractors with competent building, plumbing and electrical skills. We also recommend a battery backup (DMS 070) in case of power outage.



- Specifically designed for ground water applications.
- Simple to install
- Quiet in operation

Installation

The Dual V3 sump sits on a concrete base. Standard 110mm inlet pipes (if applicable) are connected using a 110mm coupler.

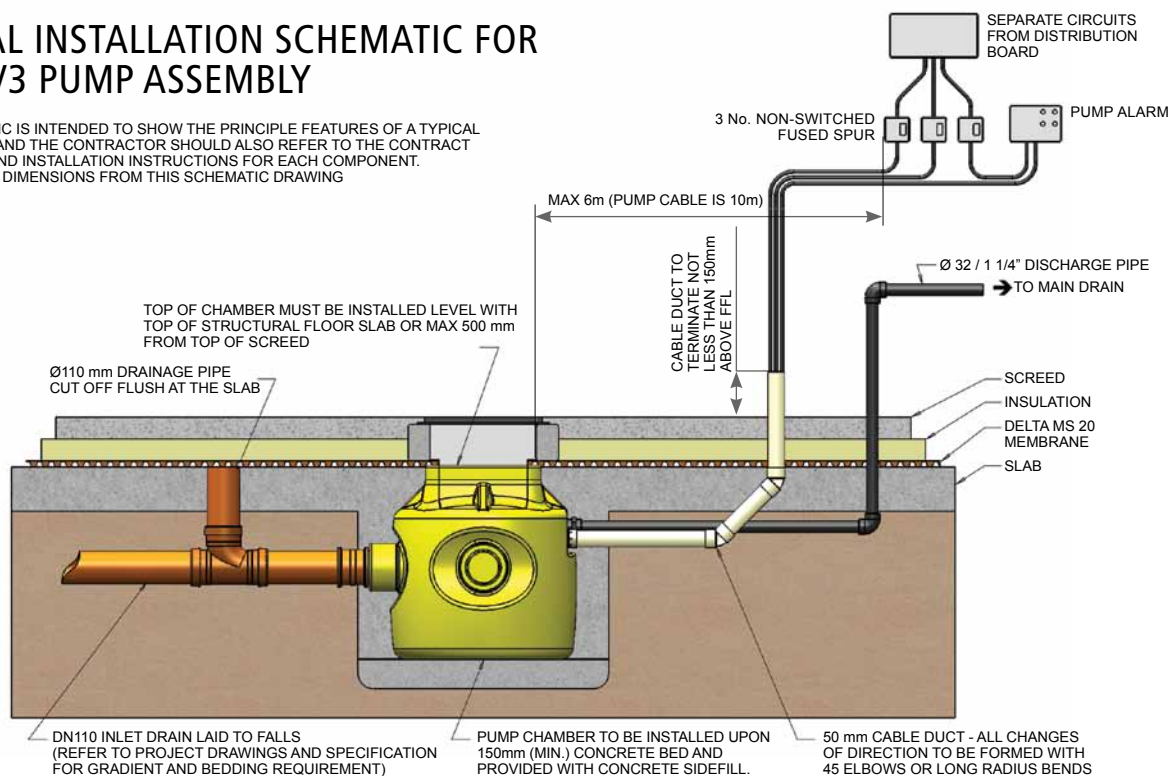
A 1 1/4" / 32mm discharge pipe is run from the chamber to a drain and 50mm cable duct installed with draw cord. The chamber is filled with water to prevent floatation and back filled with concrete to lock into structure.'

For full installation instructions see 'Dual V3 sump - Installation instructions & Technical Details', on our website.

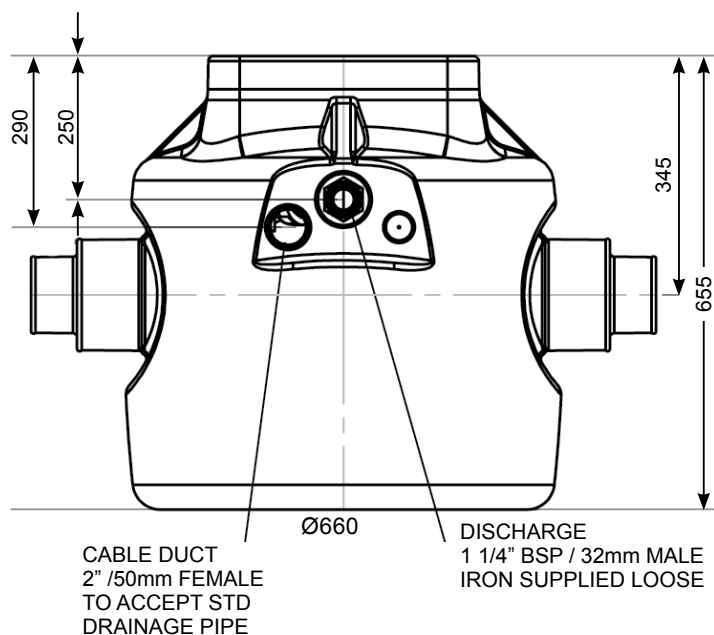
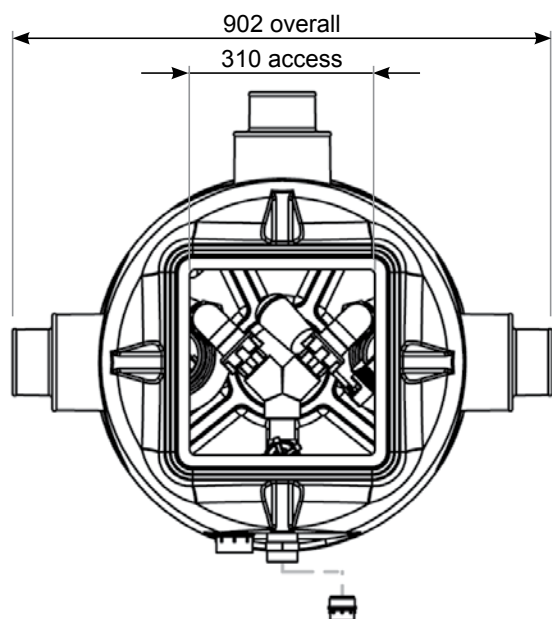
Typically a double sealed man hole cover is fitted in the final screed, this can be a tray type cover to accept the final floor finish, ie tiles or wood.

TYPICAL INSTALLATION SCHEMATIC FOR DUAL V3 PUMP ASSEMBLY

NOTE:
THIS SCHEMATIC IS INTENDED TO SHOW THE PRINCIPLE FEATURES OF A TYPICAL INSTALLATION AND THE CONTRACTOR SHOULD ALSO REFER TO THE CONTRACT DOCUMENTS AND INSTALLATION INSTRUCTIONS FOR EACH COMPONENT. DO NOT SCALE DIMENSIONS FROM THIS SCHEMATIC DRAWING

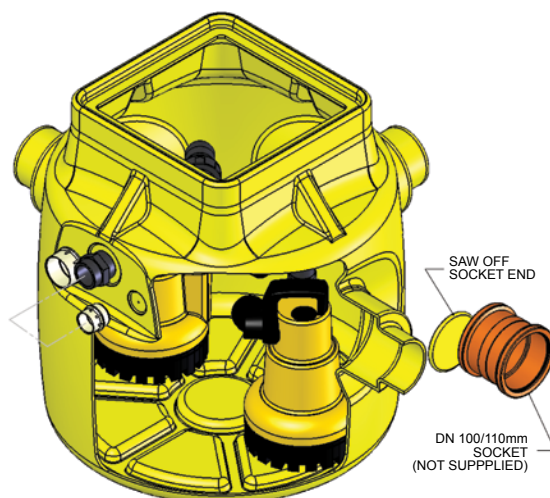


DELTA MEMBRANE SYSTEMS LTD.



| | |
|-------------------------------|-----------------|
| Pump Model | V3P |
| Voltage | 230 V |
| KW rating (P1 / P2) | 0.43/0.18KW |
| Full Load Current | 1.9 A |
| Fuse Rating spur | 13 A |
| Typical Duty | 2.2 L/S 3m Head |
| Chamber Storage Volume | 217 litres |
| Storage below Volume | 87 litres |

For full technical & performance information please refer to 'Drainage & Sewage Pumps - Technical Overview'



Accessories

Battery Backup



High Level Alarm



Telemetry System



Pipework



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FOUL V3 PUMP STATION [DMS 165]

Overview

A packaged pump station designed to collect foul water from basements and ground floor extensions where other facilities in the property discharge via gravity. A typical application would be the collection and discharge of 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 Dual V3 sump, DMS 164). For kitchen applications we recommend fitting a grease trap prior to the pump station.

The Foul V3 pump station has been specifically designed for below ground applications. The chamber is manufactured from virgin tank grade HDPE and is able to withstand hydrostatic forces encountered in applications with high water tables.

The pump station is delivered as a complete package including all internal pipe work and 612SA foul vortex pump. A high level alarm is a recommended option. It is designed to be installed by contractors with competent building, plumbing & electrical skills.

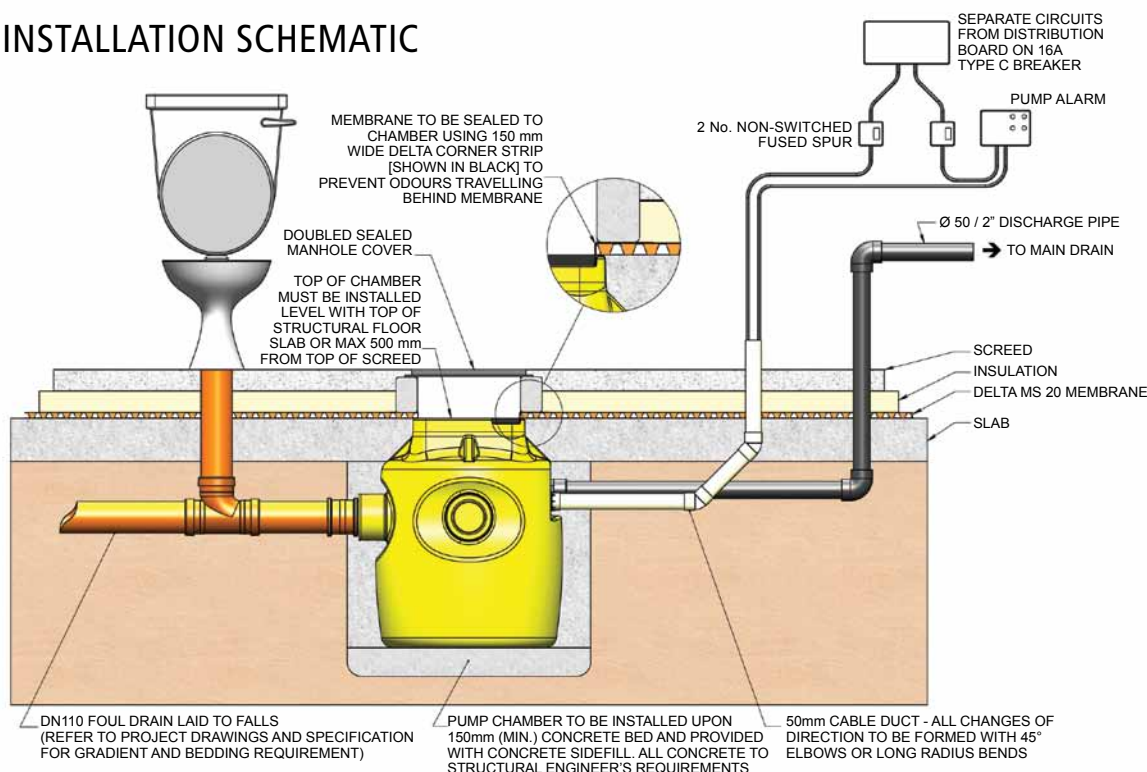


Installation

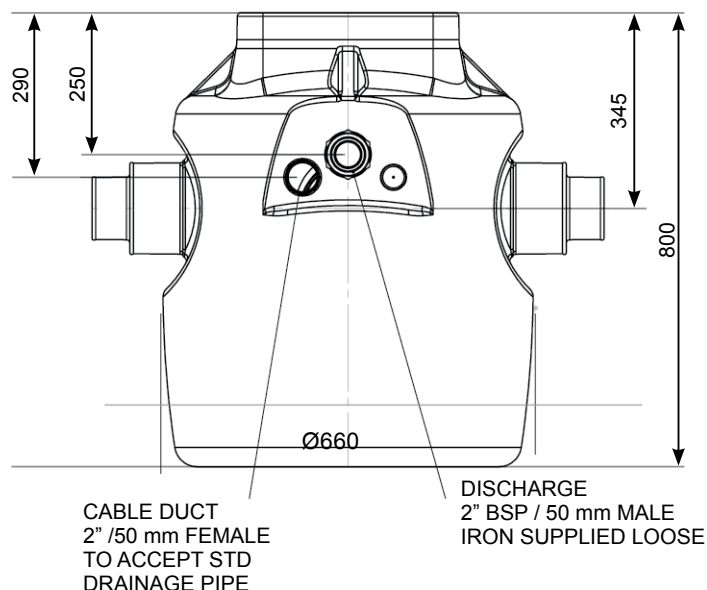
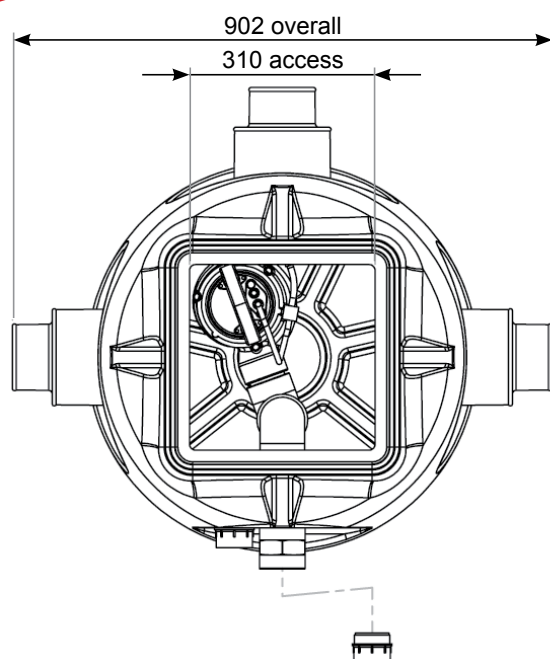
The Foul V3 sump sits on a concrete base. Standard 110mm inlet pipes are connected using a 110mm coupler. A 2" / 50mm discharge pipe is run from the chamber to a drain, 50mm cable duct installed with draw cord and 50mm vent to high level or SVP. The chamber is filled with water to prevent floatation and back filled with concrete to lock into structure.

Typically a double sealed man hole cover is fitted in the final screed, this can be a tray type cover to accept the final floor finish, ie tiles or wood. For full installation instructions see 'Foul V3 sump - Installation instructions & Technical Details'

TYPICAL INSTALLATION SCHEMATIC

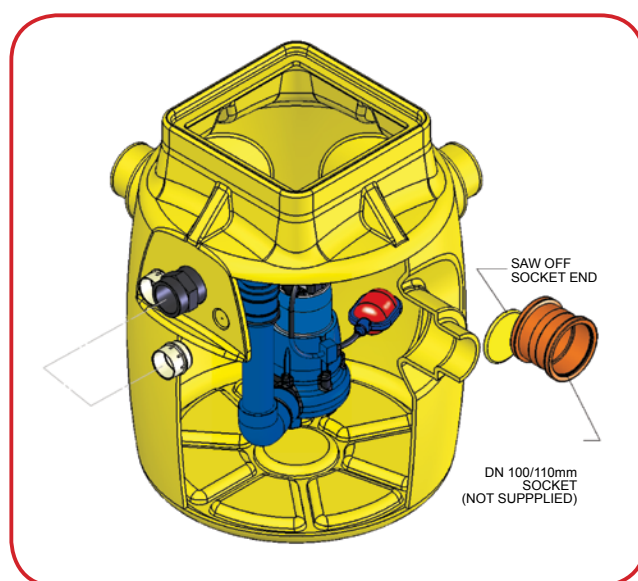


DELTA MEMBRANE SYSTEMS LTD.



| | |
|-------------------------------|------------------|
| Pump Model | 612SA |
| Voltage | 230 V |
| KW rating (P1 / P2) | 1.25KW / 0.75KW |
| Full Load Current | 6.0A |
| Fuse Rating spur | 13A |
| Typical Duty | 5.8L/S @ 4m Head |
| Chamber Storage Volume | 273 litres |
| Storage below Volume | 137 litres |

For full technical & performance information please refer to 'Delta Drainage & Sewage Pumps - Technical Overview'



Accessories

High Level Alarm



Telemetry System



Pipework



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DELTA SINGLE V3 PUMP STATION [DMS 047 & DMS 107]

Overview

The standard standard Single V3 (DMS 047) packaged pump station designed to collect ground water from a Delta cavity membrane system through the clear opening to the top of the chamber (DMS 047). This pump station would be selected where no running water is present or expected and therefore is for protection only, i.e. for non perishable areas.

The Single V3 sump with inlets (DMS 107) allows for one or two 110mm pipes to be connected into the side of the chamber, we recommend advice from one of our technical support engineers before selecting this product.

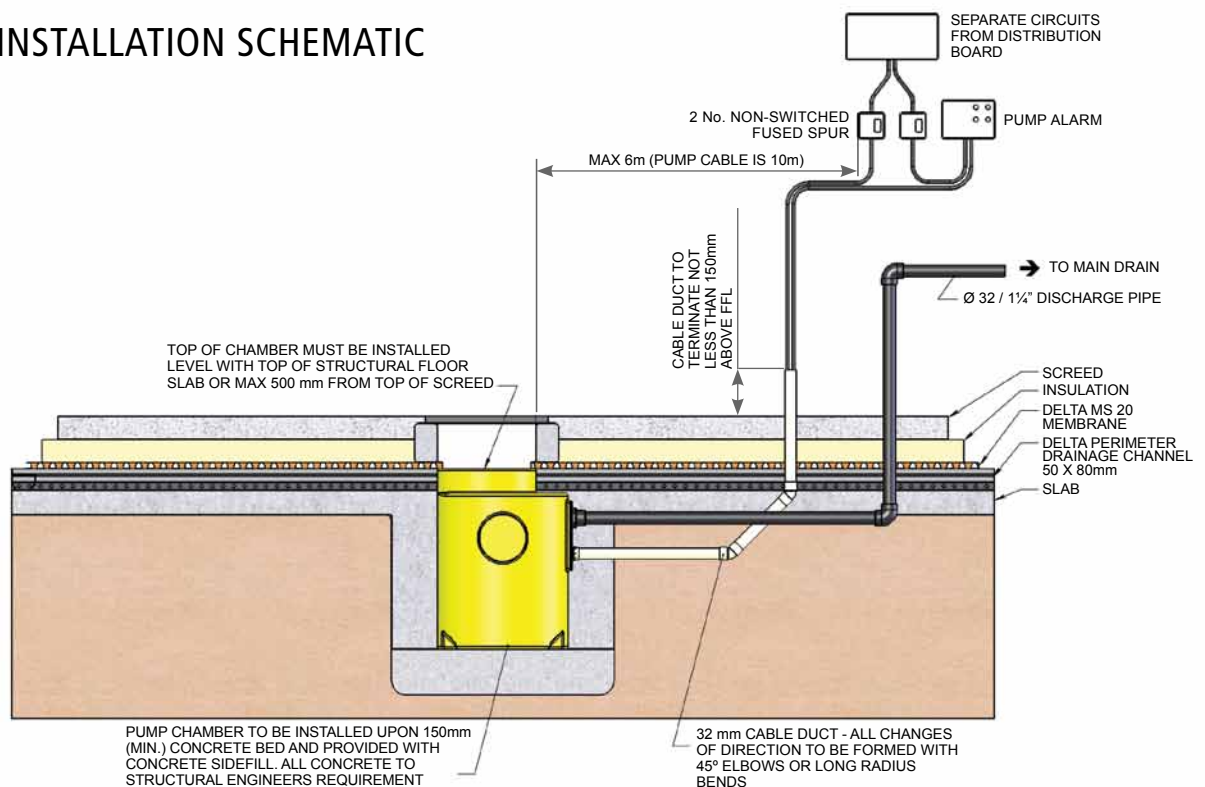
The Delta Single V3 pump station has been specifically designed for below ground applications. The chamber is manufactured from HDPE and able to withstand hydrostatic forces encountered in applications with high water tables.

The pump station is delivered as a complete package including chamber all internal pipe work and one powerful Delta V3 pump. A high level alarm is offered as a recommended option. It is designed to be installed by contractors with competent building, plumbing and electrical skills.

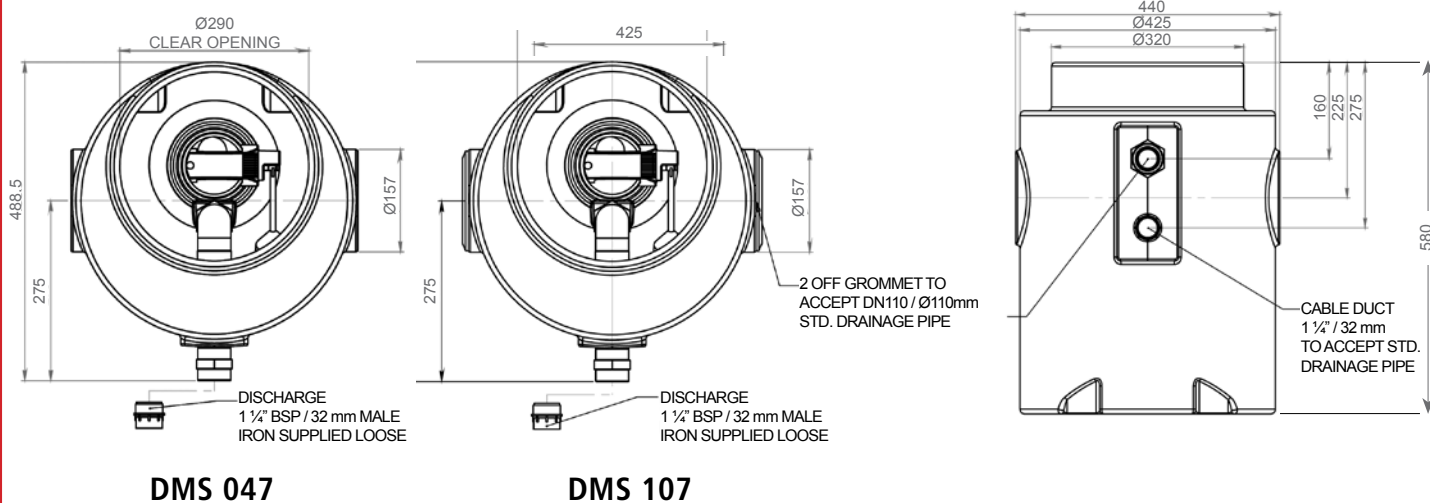


Installation

TYPICAL INSTALLATION SCHEMATIC

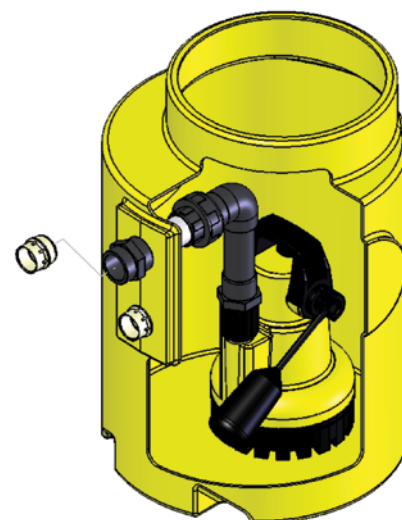


DELTA MEMBRANE SYSTEMS LTD.



| | |
|-------------------------------|-----------------|
| Pump Model | V3P |
| Voltage | 230 V |
| KW rating (P1 / P2) | 0.43/0.18KW |
| Full Load Current | 1.9 A |
| Fuse Rating spur | 13 A |
| Typical Duty | 2.2 L/S 3m Head |
| Chamber Storage Volume | 80 litres |

For full technical & performance information please refer to 'Delta Drainage & Sewage Pumps - Technical Overview'



Accessories

Battery Backup



High Level Alarm



Telemetry System



Pipework



Delta Membrane Systems Limited

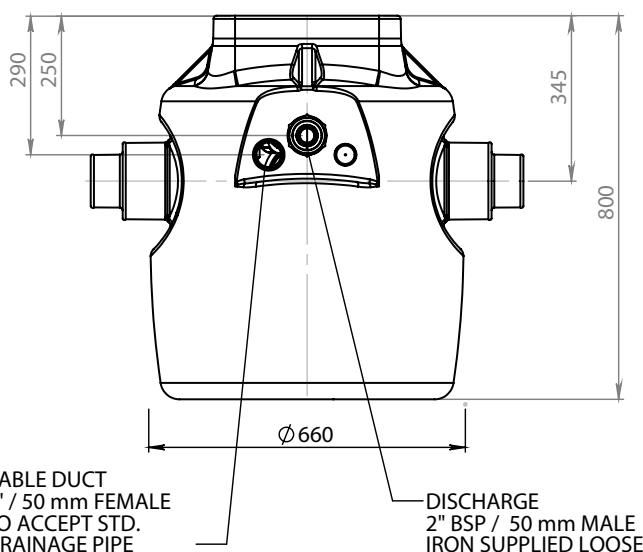
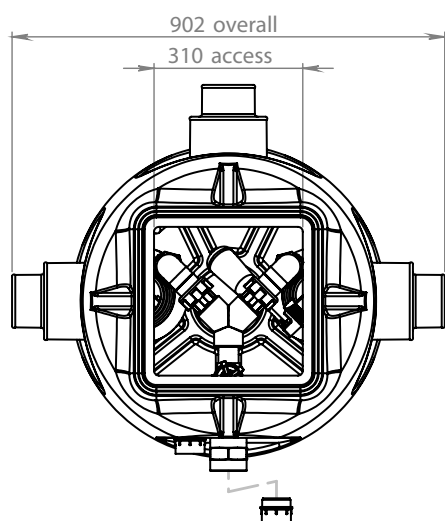
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DUAL V4 & V6

Overview

The Dual V4 & V6 are upgrades to the standard Dual V3 where higher discharge heads are required. Typically for double and triple depth basements or where long discharge runs are required resulting in higher than normal pipe work losses. The Dual V4 and V6 are suitable for picking up ground water from a cavity membrane systems and light wells, totalling up to 12m².



| Pump Model | V4P | V6P |
|----------------------|--------------|--------------|
| Voltage | 230 | 230 |
| KW Rating P1/P2 | 0.75 / 0.356 | 1.050 / 0.50 |
| Full Load Current | 4.0A | 4.9A |
| Fuse Spur Rating | 13A | 13A |
| Typical Duty | 2.0 l/s @ 7m | 2.0 l/s @9m |
| Total Storage Volume | 273 Litres | 273 Litres |
| Storage Below Invert | 137 Litres | 137 Litres |
| UPS | Power Plus | Power Plus |



Accessories

Battery Backup
Power Plus



High Level Alarm



Telemetry System



Pipework



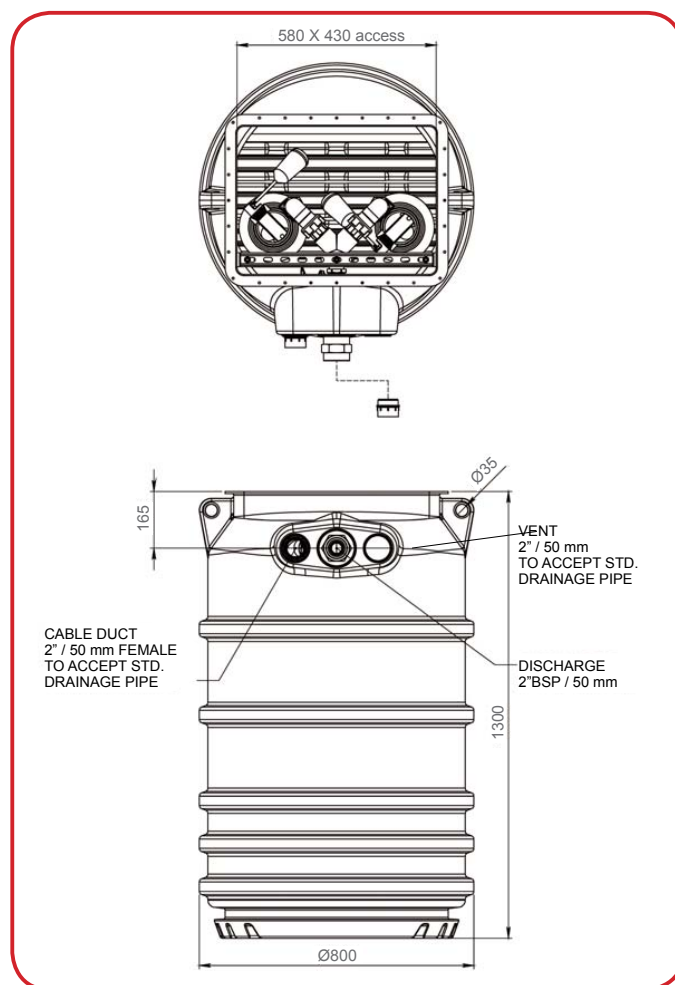
800x1300 Ground, Foul & Surface Water chambers

Overview

The 800mm x 1300mm deep range of chambers are typically used where inverts are required to be deeper than the standard Delta Dual V3, V4 & V6 & foul V3 (345mm from cover level). For example in buildings where drainage runs are long or drainage is running below floor slabs 250mm or thicker. Inverts can be up to 775mm from top of structural slab.



These chambers can collect ground, foul or surface water, dependent on the pump used, but not in the same chamber.



| Table 2 | Typical Duty | Ground / Surface Water | Foul Water | Solids Passage | Pump Installation | Pump Type | UPS |
|----------------------|----------------|------------------------|------------|----------------|-------------------|-----------|----------------|
| 2-800-1300-U-V3 | 2l/s @ 4m head | YES | NO | 10mm | Free Standing | V3 | Battery Backup |
| 2-800-1300-U-V4 | 2l/s @ 7m head | YES | NO | 10mm | Free Standing | V4 | Power Plus |
| 2-800-1300-U-V6 | 2l/s @ 9m head | YES | NO | 10mm | Free Standing | V6 | Power Plus |
| 1-800-1300-612SA-GR | 4l/s @ 7m head | NO | YES | 50mm | Guide Rail | 612SA | Not Available |
| 1-800-1300-2601SA-GR | 4l/s @ 5m head | NO | YES | 65mm | Guide Rail | 2601SA | Not Available |

Accessories

Battery Backup
Power Plus



High Level Alarm



Telemetry System



Pipework



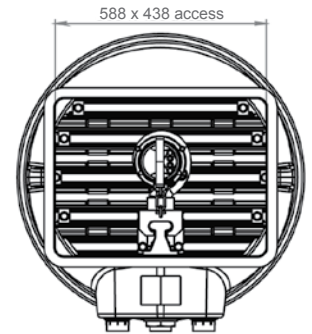
800 SERIES PUMP CHAMBERS

Overview

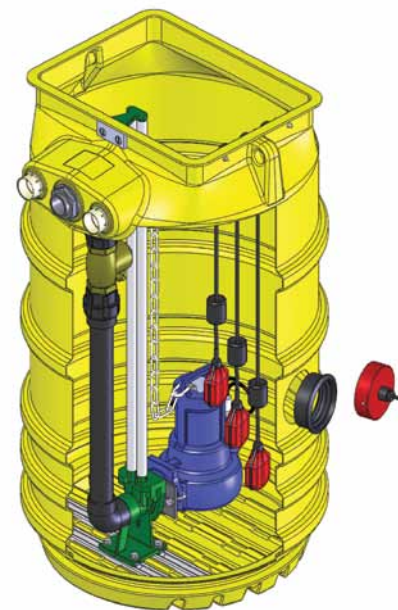
- Available in depths 800mm, 1000mm, 1300mm, 1500mm, 1800mm & 2000mm from stock
- Applications including ground, surface and foul water
- Accepts single & dual, guide rail or free standing 32mm, 50mm & 65mm pumps
- Inlets can be cut to suit with kit provided
- Designed for applications where high hydrostatic pressures are present
- Dedicated position for cable duct & vent
- Manufactured from tank grade ICO 1314 virgin polyethelene
- Accepts standard 450mm x 600mm covers or larger

| | | | | | |
|---|------|------|------|------|---------------------------|
| Dual and Single Freestanding Pumps Ground / Surface Water 1 ¼" Internal pipe work | V3 | V4 | V6 | | |
| Dual and Single Guiderail Pumps Ground / Surface / Foul Water 2" Internal pipe work | 2500 | 612 | 2502 | 2503 | 2545 macerator pump |
| Single Guiderail Pumps Ground or Foul Water 2 ½" Internal pipe work | 2601 | 2602 | 2603 | | |
| Dual and Single Guiderail Pumps Ground / Surface Water 2" Internal pipe work | 2308 | 2309 | | | |

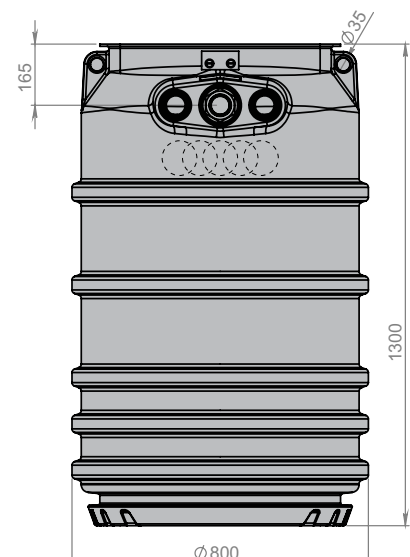
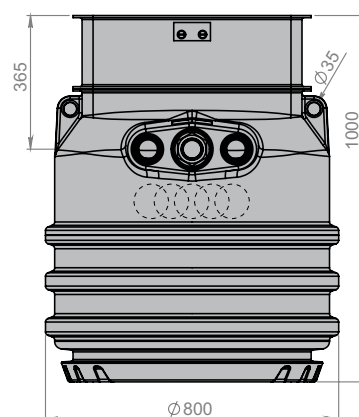
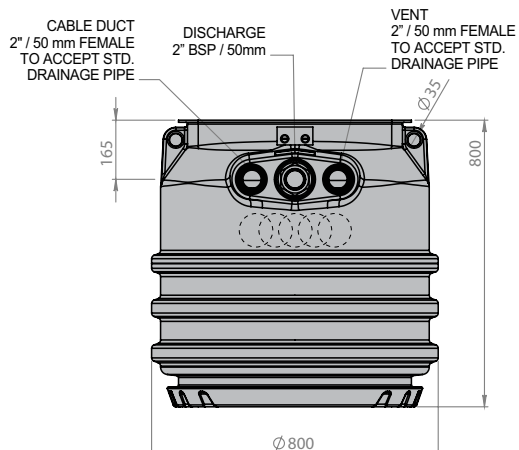
**800 diameter chamber
Single Guiderail**



**Cutaway view
800mm dia x 1300 deep
Single Guiderail
mounted pumps**



The full range of 800 series chambers



Accessories

Pipework



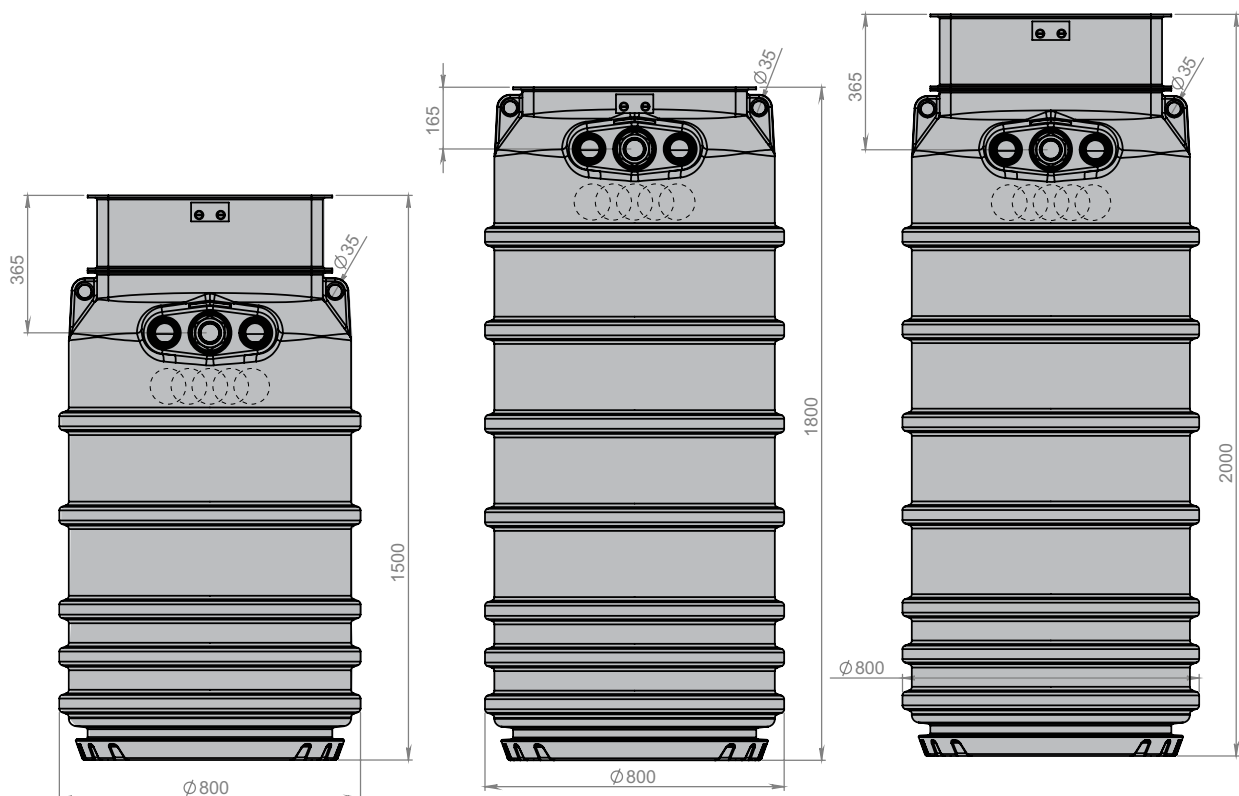
Landline or sim based telemetry providing remote monitoring



Battery backup



Standard and bespoke control panels



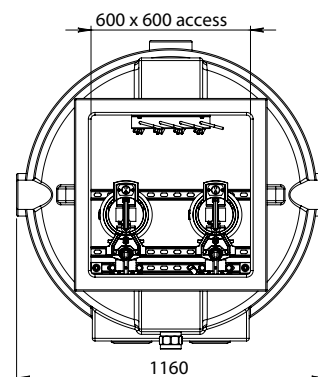
1160 SERIES PUMP CHAMBERS

Overview

- Available in depths 1140mm, 1540mm, 1940mm & 2630mm from stock (3000-5000mm to special order)
- Applications including ground, surface and foul water
- Accepts single & dual, guide rail or free standing 32mm, 50mm & 65mm pumps
- Pre installed 110mm & 160mm boses for inlets
- Additional inlets can be cut to suit with kit provided
- Designed for applications where high hydrostatic pressures are present
- 110mm bosses for cable duct & vent
- Manufactured from tank grade ICO 1314 virgin polyethelene
- Accepts standard 600mm x 600mm covers

| | | | | | |
|---|------|------|------|------|-----------------------------|
| Dual and Single Guiderail Pumps Ground / Surface / Foul Water 2" Internal pipe work | 2500 | 612 | 2502 | 2503 | TC 656 macerator pump |
| Single Guiderail Pumps Ground / Surface / Foul Water 2 1/2" Internal pipe work | 2601 | 2602 | 2603 | | |
| Dual and Single Guiderail Pumps Ground / Surface Water 2" Internal pipe work | 2308 | 2309 | | | |

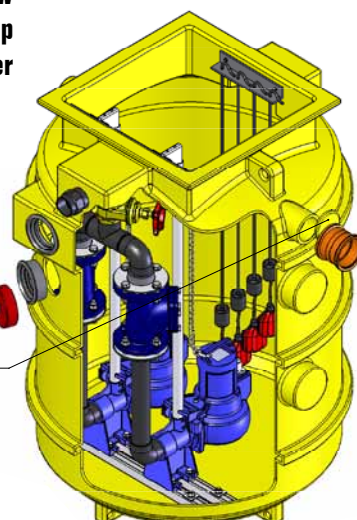
Plan view, 1160
diameter chamber
Dual Guiderail Chamber



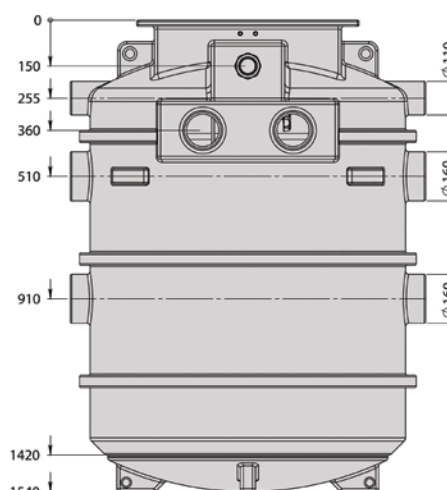
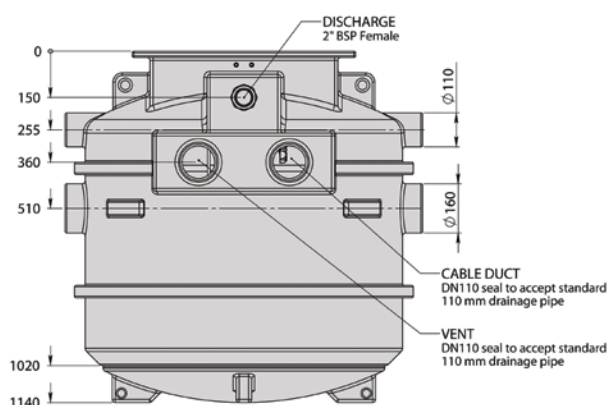
Cutaway View
typical 1540 deep
Dual Guiderail Chamber

Inlets cut on site
with kit provided

Simple installation of
110mm pipework using
proprietary sockets



The full range of 1160 series chambers



Accessories



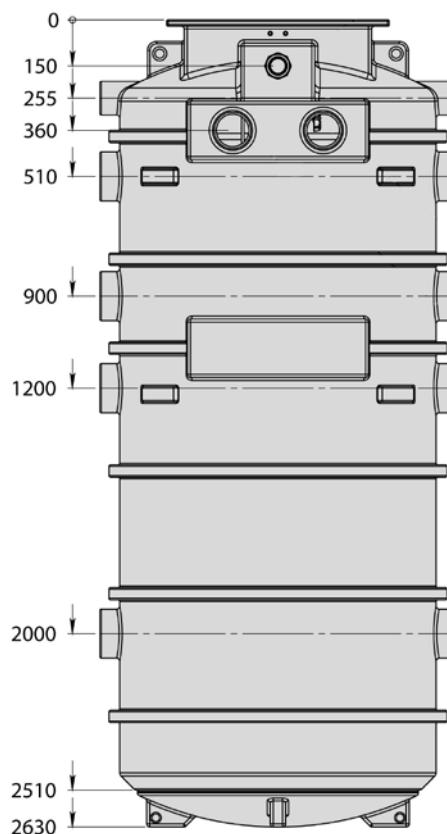
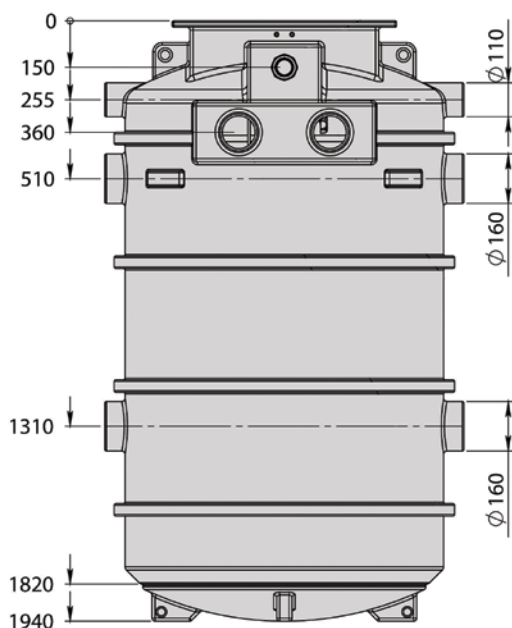
Pipework



Landline or sim based telemetry
providing remote monitoring



Standard and bespoke
control panels



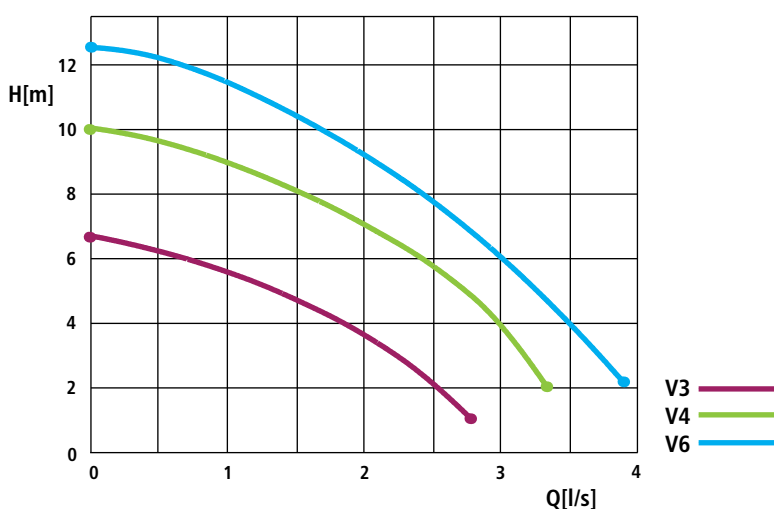
DELTA DRAINAGE AND SEWAGE PUMPS

Performance and electrical information

Overview

A range of drainage and sewage pumps fitted to our standard V3 products as well as larger 800 & 1160 series bespoke chambers. Featuring a range of single and three phase pumps with vortex impellers and macerator cutting systems. Pumps are generally available in automatic for control via an integral float switch or manual to be controlled via an external control panel. Applications covered include ground, surface and foul water, with the emphasis on high quality and low whole life costs. Pumps fitted to standard products are removed using quick release couplings, larger pump stations have pumps on 'guide rail' system with simple removal via lifting chains. We offer a range of accessories fitted as standard to our pump stations as stand alone products when fitting pumps inside pre cast chambers or concrete rings, including pipe work, gate and non return valves.

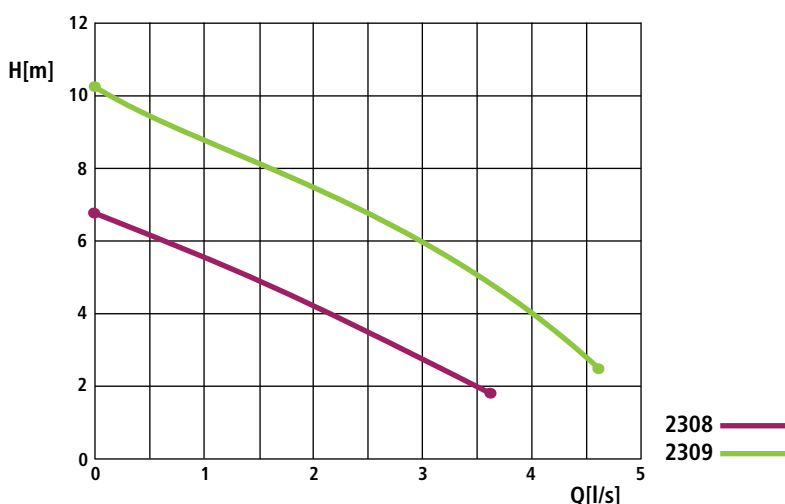
V3, V4 & V6 [Free Standing]



50Hz - 1 ~ 230V Discharge 1 1/4" BSP Female

| Model | P1 kW | P2 kW | In A | Part No. | Weight Kg |
|-------|-------|-------|------|-----------|-----------|
| V3 | 0.430 | 0.180 | 1.9 | DMS - 116 | 5.64 |
| V4 | 0.750 | 0.356 | 4.0 | DMS - 216 | 7.17 |
| V6 | 1.050 | 0.500 | 4.9 | DMS - 084 | 7.40 |

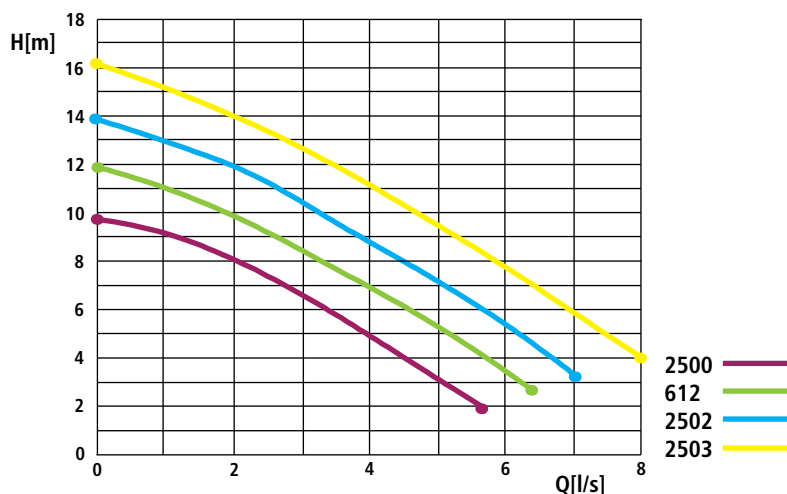
2300 series [Guide Rail]



50Hz - 1 ~ 230V Discharge 1 1/4" BSP Female

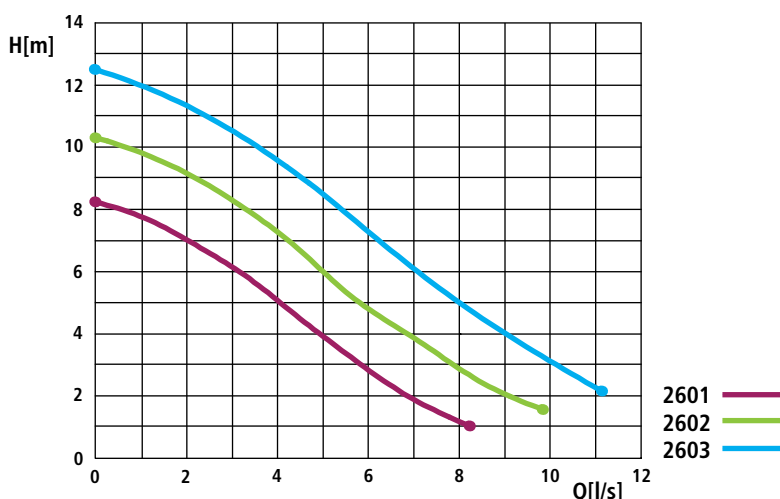
| Model | P1 MAX W | P2 Nominal kW | In A | Part No. | Weight Kg |
|---------|----------|---------------|------|----------|-----------|
| 2308 SA | 355 | 0.22 | 1.6 | 102-016 | 4.6 |
| 2308 SM | 355 | 0.22 | 1.6 | 102-017 | 4.6 |
| 2309 SA | 800 | 0.55 | 3.4 | 102-018 | 6.7 |
| 2309 SM | 800 | 0.55 | 3.4 | 102-019 | 6.7 |

2500 Series (Free Standing & Guide Rail Mounted)



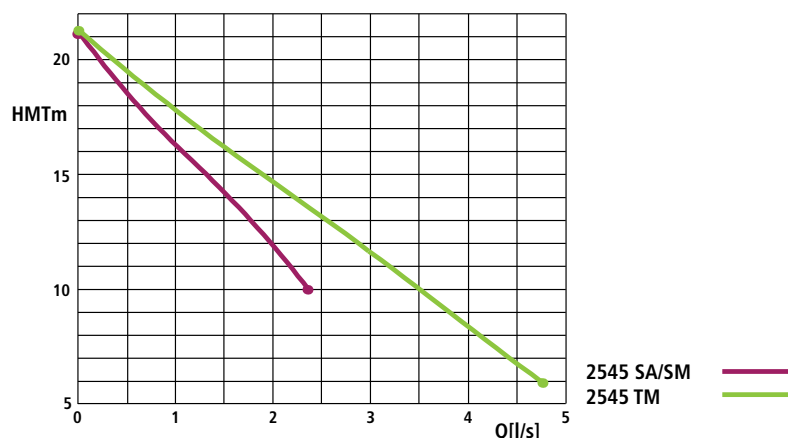
| 50 Hz - 1~ 230V Discharge 2" BSP Female | | | | | | |
|---|-------|-------|--------|--------|-----------|-----------|
| Model | P1 kW | P2 kW | IN (A) | ID (A) | Part No. | Weight Kg |
| 2500 SA | 1.0 | 0.55 | 5.0 | 18.2 | 102-031 | 22 |
| 612 SA | 1.25 | 0.75 | 6.0 | 18.2 | DMS - 114 | 22 |
| 2502 SA | 1.8 | 1.1 | 8.2 | 18.2 | 102-006 | 22 |
| 2503 SA | 1.9 | 1.1 | 8.2 | 18.2 | 102-008 | 22 |
| 2500 SM | 1.0 | 0.55 | 5.0 | 18.2 | 102-032 | 22 |
| 612 SM | 1.25 | 0.75 | 6.0 | 18.2 | 102-005 | 22 |
| 2502 SM | 1.8 | 1.1 | 8.2 | 18.2 | 102-007 | 22 |
| 2503 SM | 1.8 | 1.1 | 8.2 | 18.2 | 102-009 | 22 |
| 50 Hz - 3~ 400V Discharge 2" BSP Female | | | | | | |
| 2500 TM | 0.9 | 0.55 | 2.3 | 18.3 | 102-033 | 22 |
| 612 TM | 1.1 | 0.75 | 2.8 | 18.3 | 102-034 | 22 |
| 2502 TM | 1.5 | 1.1 | 3.0 | 18.3 | 102-035 | 22 |
| 2503 TM | 2.05 | 1.5 | 3.5 | 18.3 | 102-036 | 22 |

2600 Series (Guide Rail Mounted)



| 50 Hz - 1~ 230V Discharge 2 1/2" BSP Female | | | | | | |
|---|-------|-------|--------|--------|----------|-----------|
| Model | P1 kW | P2 kW | IN (A) | ID (A) | Part No. | Weight Kg |
| 2601 SA | 1.25 | 0.75 | 6.0 | 18.2 | 102-010 | 25 |
| 2602 SA | 1.8 | 1.1 | 8.2 | 18.2 | 102-012 | 25 |
| 2603 SA | 1.8 | 1.1 | 8.2 | 18.2 | 102-014 | 25 |
| 2601 SM | 1.25 | 0.75 | 6.0 | 18.2 | 102-011 | 25 |
| 2602 SM | 1.8 | 1.1 | 8.2 | 18.2 | 102-013 | 25 |
| 2603 SM | 1.8 | 1.1 | 8.2 | 18.2 | 102-015 | 25 |
| 50 Hz - 3~ 400V Discharge 2 1/2" BSP Female | | | | | | |
| 2601 TM | 1.1 | 0.75 | 2.8 | 18.3 | 102-037 | 25 |
| 2602 TM | 1.5 | 1.1 | 3.0 | 18.3 | 102-038 | 25 |
| 2603 TM | 2.05 | 1.5 | 3.5 | 18.3 | 102-039 | 25 |

2545 (Guide Rail Mounted)



| 50 Hz - 1~ 230V Discharge 2" BSP Female | | | | | | |
|---|-------|-------|--------|--------|----------|-----------|
| Model | P1 kW | P2 kW | IN (A) | ID (A) | Part No. | Weight Kg |
| 2545 SA | 1.8 | 1.1 | 8.2 | 18.2 | 102-040 | 26 |
| 2545 SM | 1.8 | 1.1 | 8.2 | 18.2 | 102-041 | 26 |
| 50 Hz - 3~ 400V Discharge 2" BSP Female | | | | | | |
| 2545 TM | 2.05 | 1.5 | 3.5 | 18.3 | 102-042 | 24 |

BATTERY BACKUP UNITS

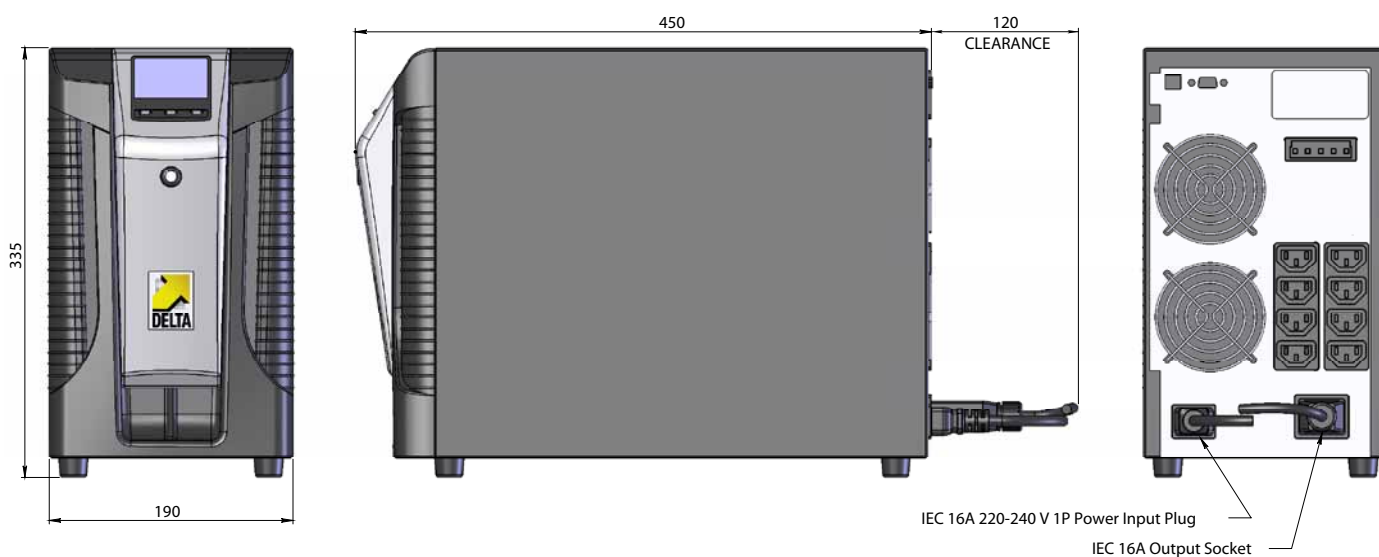
Designed to run our range of ground or surface water pumps in the event of mains power loss, for example during power outages or nuisance tripping. The units will continue to run the installed 240v pump without compromising the ground water evacuation rate from the pump station. When power is reinstated the unit will automatically recharge and return to standby mode.

The unit is continually trickled charged when on main power therefore is always ready to operate. Installation is very simple and does require an additional electrical supply. It is designed to be installed in a dry well vented environment (20-25°C) and is maintenance free. The range is designed to run our range of ground water pumps (V3, V4, V6, 308 & 309) for running times contact our office.

Standard battery backup



Power plus battery backup



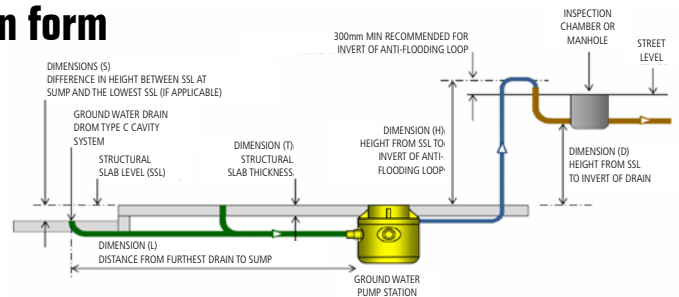
SELECTION GUIDANCE FORMS

A range of forms designed to request typical information required to select a pump station. Complete as much information as you have and we will do the rest.

Why not call us on 01992 523523 and we will assist with your selection. If drawings are available, send a copy with your inquiry to pumps@deltamembranes.com

Ground water pump station data collection form

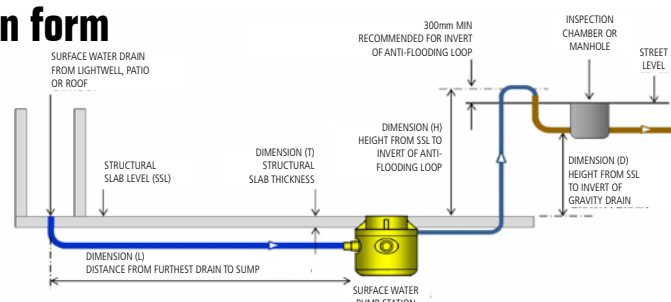
| | | |
|--|--|----------------|
| a) Approx floor area of Basement? | | M ² |
| b) Total perimeter length of Basement floor? | | M |
| c) Approx width of Basement? | | M |
| d) Approx length of Basement? | | M |
| e) What is the structural slab thickness (T)? | | mm |
| f) What is the furthest drain length (L)? | | M |
| g) Height of discharge anti-flooding loop (H)? | | M |
| h) Height of gravity drain invert above SSL (D)? | | M |
| i) Is the sump located in the lowest SSL area? | | Y/N |
| j) If above = 'No' what is dim 'S' slab? | | M |



| | | |
|---|----|------|
| k) Will this sump serve an external area? | No | Y/N |
| l) What is the size is the external area? | | |
| Void | | Void |

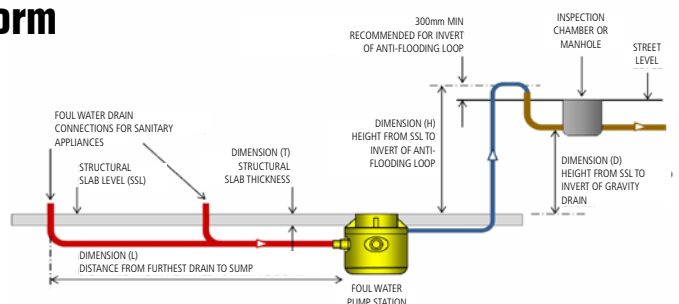
Surface water pump station data collection form

| | | |
|--|--|----------------|
| a) Total surface area to discharge to sump? | | M ² |
| b) What is the structural slab thickness (T)? | | mm |
| c) What is the furthest drain length (L)? | | M |
| d) Height of discharge anti-flooding loop (H)? | | M |
| e) Height of gravity drain invert above SSL (D)? | | M |



Foul water pump station data collection form

| | | |
|--|--|---------|
| a) Do you need 24 hour emergency storage? | | Y/N |
| FALSE | | No |
| c) Is only the Basement to be pumped? | | Y/N |
| d) Number of sanitary appliances in the building | | Number |
| please leave zero in each box if none apply: | | gravity |
| How many WC pans? | | |
| How many wash basins? | | |
| How many baths? | | |
| How many showers? | | |
| How many kitchen or utility sinks? | | |
| How many dishwashers? | | |
| How many (laundry) washing machines? | | |



| | | |
|--|--|----|
| How many urinals? | | |
| e) What is the structural slab thickness (T)? | | mm |
| f) What is the furthest drain length (L)? | | M |
| g) Height of discharge anti-flooding loop (H)? | | M |
| h) Height of gravity drain invert above SSL (D)? | | M |

PIPEWORK - PIPE, FITTINGS, VALVES

| Material: PVC-U Class C | Pressure Rating @ 20°C | In accordance with: |
|-------------------------|------------------------|---------------------|
| Pipe (Solvent Weld) | 9 Bar (130 PSI) | BS EN 1452 |
| Fittings (Solvent Weld) | 15 Bar (217 PSI) | BS 4316 part 1 |
| Fittings (Threaded) | 12 Bar (173 PSI) | BS21 ISO7. DIN 2119 |

All of our Packaged Pump Systems internal pipe work is constructed using grey PVC-U

90° Bend

| | | |
|------------|------------|-----------|
| 1 ¼" | 2" | 2 ½" |
| DMS - 0145 | DMS - 0155 | DMS - 315 |



Pipe

| | | |
|------------|------------|-------------|
| 1 ¼" x 3m | 2" x 3m | 2 ½" x 2.5m |
| DMS - 0144 | DMS - 0154 | DMS - 313 |



Plain Socket

| | | |
|------------|------------|-----------|
| 1 ¼" | 2" | 2 ½" |
| DMS - 0147 | DMS - 0157 | DMS - 317 |



45° Bend

| | | |
|------------|------------|-----------|
| 1 ¼" | 2" | 2 ½" |
| DMS - 0146 | DMS - 0156 | DMS - 316 |



Threaded / Threaded Socket

| | | |
|-----------|-----------|-----------|
| 1 ¼" | 2" | 2 ½" |
| DMS - 331 | MA2 - 200 | MA2 - 250 |



Plain / Threaded Socket

| | | |
|---------------|-----------|-----------|
| 1 ¼" | 2" | 2 ½" |
| F - MA6 - 125 | MA6 - 200 | MA6 - 250 |



"T" Piece

| | | |
|-----------|-----------|--------------|
| 1 ¼" | 2" | 2 ½" |
| DMS - 318 | T34 - 200 | T - 14 - 250 |



Union

| | | |
|-----------|-----------|-----------|
| 1 ¼" | 2" | 2 ½" |
| BO4 - 125 | BO4 - 200 | BO4 - 250 |



Saddle Clamps

| | |
|------------------------------|------------|
| 110mm (4")-1 ¼" bsp (female) | DMS - 0141 |
| 110mm (4")-2" bsp (female) | DMS - 0151 |
| 160mm (6")-1 ¼" bsp (female) | DMS - 0142 |
| 160mm (6")-1 ¼" bsp (female) | DMS - 0152 |



Adapters from 110mm to...

| | | |
|-----------|-----------|-----------|
| 1 ¼" | 2" | 2 ½" |
| DMS - 340 | DMS - 341 | DMS - 342 |



Non-Return Swing Check Valves (Brass)

| | | |
|-----------|-----------|-----------|
| 1 ¼" | 2" | 2 ½" |
| 109 - 009 | DMS - 327 | 109 - 004 |



Non-Return Ball Valves

| | | |
|---------------|-------------|---------------|
| 1 ¼" Threaded | 2" Threaded | 2 ½" Threaded |
| DMS - 328 | 109 - 003 | 109 - 005 |



Gate Valves Brass

| | | |
|-----------|-----------|-----------|
| 1 ¼" | 2" | 2 ½" |
| DMS - 329 | 109 - 007 | 109 - 008 |



Male Iron

| | | |
|------------|------------|-----------|
| 1 ¼" | 2" | 2 ½" |
| DMS - 0143 | DMS - 0153 | DMS - 314 |



High Pressure Glue

DMS - 0158



White Male Iron (Low Pressure)

| | |
|-----------|-----------|
| 1 ¼" | 2" |
| DMS - 332 | DMS - 335 |



Hose Tail & Clips

| | |
|----------------|-----------|
| 1 ¼" HOSE TAIL | DMS - 062 |
| 1 ¼" CLIP | DMS - 063 |



Semi Rigid Hose - 1 ¼"

DMS - 065



CONTROL PANELS AND ALARMS



High level alarms

A range of stand alone audible high level alarms. Powered via a 240v switch fused spur with backup on mains power failure via a trickle charged battery.
Supplied with 10m float switch.
For further information see data sheet...

DMS-097

Standard audible high level alarm

DMS-127

High level audible alarm with N/O & N/C volt free contacts



Telemetry - SIM based

A high level alarm with the facility to send a text message on high water level via a SMS message to 5 mobile/landline phones. Powered via 240v switch fused spur with backup on mains power failure via a trickle charged battery.

Supplied with 10m float switch.

For further information see data sheet...

DMS-134

SIM based high level alarm



Telemetry - Land line based

A high level alarm with the facility to send a voice message on high water level via a voice message to 5 mobile/landline phones. Powered via 240v switch fused spur with backup on mains power failure via a trickle charged battery.

Supplied with 10m float switch.

For further information see data sheet...

CP-001

Land line based high level alarm



Standard 4 float control panel

A range of panels to control duplex pumps via 4 floats (start, stop, assist and high level alarms). Options include volt free contacts for high level alarm & pump trip, land and SIM based telemetry and facility to connect UPS battery backup.
For further information see data sheet...

CP-002

Control panel with VF contacts for HL alarm

CP-003

Control panel with VF contacts for HL alarm and pump trips

CP-004

Control panel with VF contacts for HL alarm and pump trips, SIM telemetry

CP-005

Control panel with VF contacts for HL alarm and pump trips, land line telemetry



Bespoke control panels

Single panels to control multiple pump stations

Pump hour and run counters

Compartmental panels

Waterproof panels

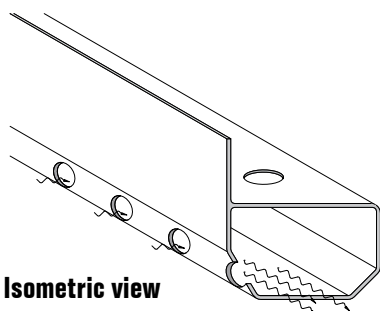
Landline SIM based telemetry

DRAINAGE CHANNEL & FITTINGS

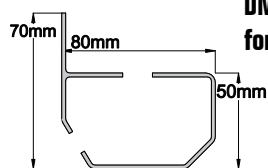
Channel



DMS208 (No upstand)
for off-wall or across floor applications



Isometric view



Section through channel



DMS207 (With upstand)
for perimeter walls

Fittings

The system also comes with four different connectors, which compliment the system and make it quick and easy to install. These are push-fit but can be solvent welded if required

DMS182 - Corner Connector

This fits internal and external corners to channel lengths and has a push-out eye for a jetting port APU (DMS094).



DMS310 - Straight Connector

This connector fits channel lengths together.



DMS183 - 'T' Piece Connector



DMS184 - End Cap

These are used to blank off ends of channel runs. They are also used to reduce the discharge to 40mm diameter before entering the sump.

This is done with standard Plumbing pipe, which is solvent welded onto the adaptor.



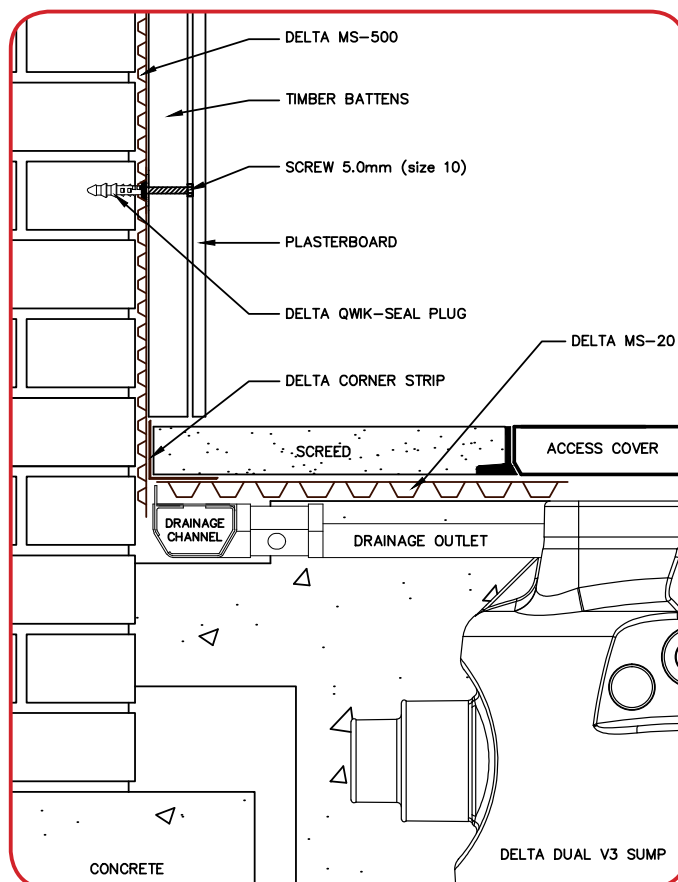
DMS094 - Jetting Eyes

Jetting Eyes can be installed onto the easy push out connectors using solvent weld.

These are used for easy access maintenance of the channels by water jetting any blockages.



Typical 'Perimeter Channel' installation



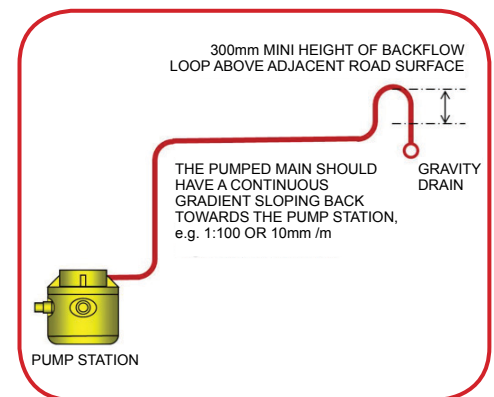
Typical installation showing interface between pump chamber and drainage channel

TYPICAL FAQs FOR PUMP STATION APPLICATIONS

1. If it's feasible for a Basement or Lower Ground Floor area to discharge by gravity drain to the sewer, is this acceptable?

If the floor level is below street level and contains habitable rooms then it is usually considered sensible to incorporate a sump station. The pumped main should be arranged to form a back flow loop so that it is higher than the flood level. If the flood level is unknown, we normally recommend the invert of the loop is at least 300mm above the surface of the adjacent road. This will provide the best flood protection in the event that the sewer becomes surcharged (full and pressurised).

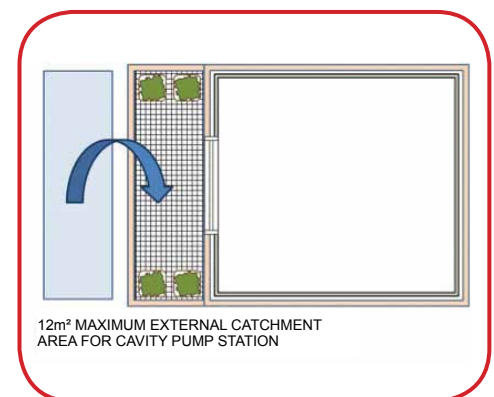
Please note that anti-flooding valves should only be used for flood protection when the rooms are of minimal importance and the occupants have access to other sanitary appliances above street level that do not discharge via the anti-flooding valve.



2. As a pump station is an essential part of a cavity drainage system designed to prevent ground water from damaging a Basement, what emergency provisions are recommended?

The sump must be provided with duplicate pumps together with UPS (uninterruptible power supply), usually consisting of an automatically trickle charged battery system. A high water level alarm is also essential, and if the property is frequently left unattended for long periods, then it would be wise to include a Telexmax SMS messaging system for remote warning.

Please note that remote warning should also be considered for rainwater and surface water applications.



3. Can pump stations be used for rainwater applications?

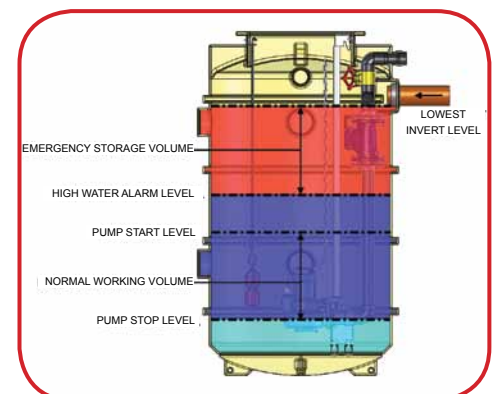
Small sheltered catchment areas up to 12m² (such as Lightwells or Stairwells) can normally be served by the same pump station that serves the cavity drainage system. For larger or more exposed catchment areas separate pump stations are advisable, and it is also important to ensure that adequate provision has been included to prevent internal flooding of the building in the event of a 24hr disruption, e.g. power failure. We will be pleased to provide further guidance if required.

4. When planning a foul water pump station for a dwelling, should emergency storage be included?

If all the sanitary appliances in a dwelling are reliant on the pump station, then Building Regulations ADH advises that 150L/person emergency storage should be provided. This is designed to ensure that the sanitary appliances remain functional for a 24hr period in the event of a disruption. If the anticipated water consumption is less than 150L/person because the sanitary appliances have been selected to comply with Building Regulation 17K or the Code of Sustainable Homes, then (subject to Building Control agreement) the emergency storage could be reduced as appropriate.

If only part of the dwelling is located below street level, and there are a sufficient number of appliances (based on BS 6465) on upper floors that discharge to the sewer by gravity, then (subject to Building Control agreement) it may be reasonable to consider that emergency storage is NOT essential for the pump station, because the users have sufficient alternative sanitary appliances.

Please note that for 'high end' projects, the client's Project Administrator may wish to consider that emergency storage should be provided to minimise any inconvenience during a disruption (e.g. power failure).



Minimum sanitary provisions for a single dwelling based on BS 6465

| Appliance | Provision |
|----------------|--|
| WC | 1 for up to 4 people 2 for 5 people or more |
| Wash basin | Not less than 1, but 1 adjacent to every WC |
| Bath or shower | 1 per 4 people |

COMMISSIONING AND INSTALLATION

We offer installation & commissioning services to ensure all pump stations are handed over to the client in full working order. We work with contractors to ensure the process is as smooth as possible and will always survey the site to make sure when our engineers attend everything is ready.

All our staff are fully trained and carry CSCS cards & are confined space trained. We work in accordance with the latest Health & Safety regulations and have CHAS accreditation. We are able to produce risk assessment & method statements for review prior to attendance.

Commissioning

Essentially final checks to pump equipment installed by others, typically the main contractor. We make a full range of mechanical & electrical checks to ensure all settings are within the tolerance set by the manufacturer. On completion, a commissioning certificate will be issued which also re-starts the one year manufacturer's warranty.

| DELTA MEMBRANE SYSTEMS LTD. | |
|--|---|
| COMMISSIONING CERTIFICATE | |
| PROPERTY ADDRESS Glynde Mees Walton Street London SW9 1SB | COMMISSIONING ADDRESS PPS Unit 12 Hawthorne Industrial Estate Pig Lane Bishop's Cleeve Hertfordshire CM23 3HG Tel: 01279 757400 Fax: 01279 508800 |
| CUSTOMER CONTACT DETAILS | |
| CONTACT TEL NO. | |
| EQUIPMENT INSTALLED | 2-800-1300-308 2-1800-2500-565 (on ABS class) 2-1500-2500-661 (on KSB class) |
| APPROVED INSTALLER | PPS Ltd |
| DATE OF COMMISSIONING | 21/11/2012 |
| COMMISSIONING ENGINEER | Steve Peters |
| STATUS | Fully commissioned in accordance with the manufactured instructions. |
| WARRANTY PERIOD | 12 Months from commissioning |
| CONDITIONS | Equipment must be on a current service agreement with PPS Group or equal and approved service organisation. Equipment to be serviced on a bi-annual basis. |

DELTA BBA
BBA Business Centre, Huddersley Way, North Weald, Essex CM8 6AA
Telephone: 01992 523523 Fax: 01992 524046
Email: info@deltamembranes.com www.deltamembranes.com
Registered Office: 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

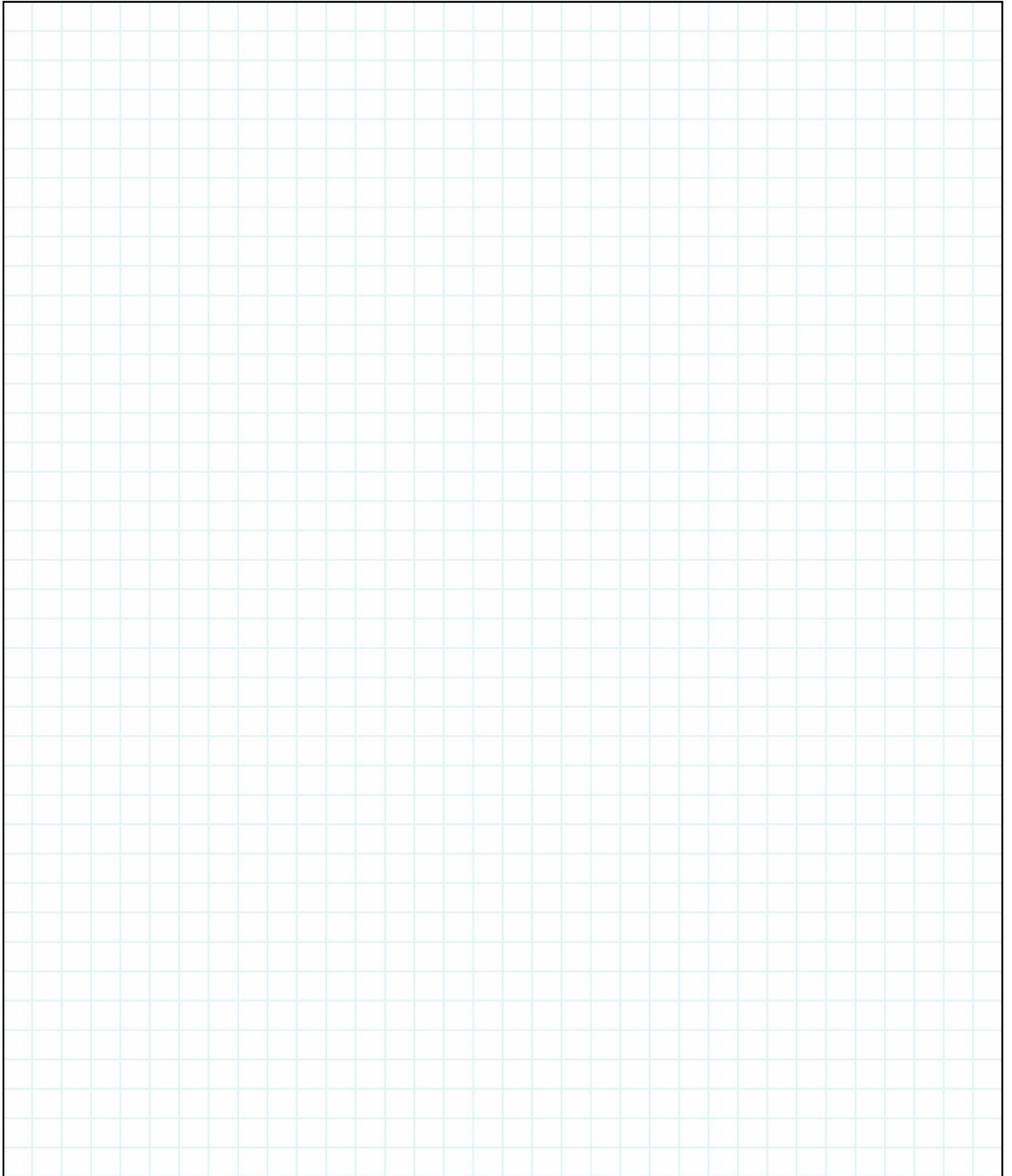


Installation

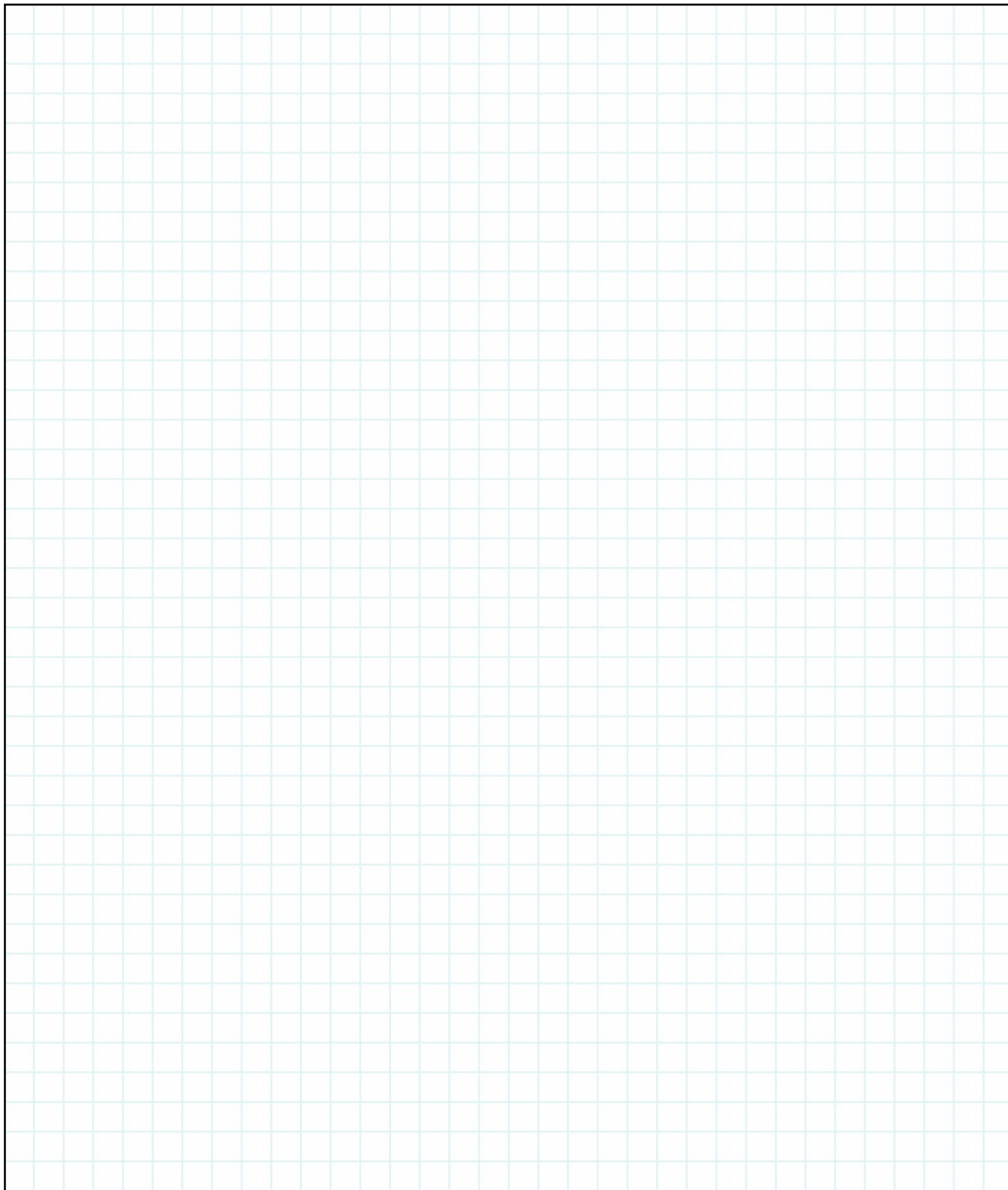
Our engineers visit site, install pumps into pump chambers, pull cables through ducts, mount electrical control panels, energise the system, test & commission. We are able to offer additional services which can be discussed at the pre order meeting.

Most site contractors see our engineers as an extension to their own operatives and we are keen to be flexible to ensure the work is completed within the schedule.

NOTES



NOTES



DELTA MEMBRANE SYSTEMS

Service Partner

PPS - Precise, Passionate Service



Precise

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

Passionate

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

Service

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

- Fully stocked vans
- Emergency breakdown service
- Out of hours service
- Planned maintenance
- Factory trained engineers
- Contact on **01279 757400**
or via www.ppsgroupuk.com



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DELTA HOUSE,
MERLIN WAY,
NORTH WEALD,
EPPING, ESSEX
CM16 6HR

t: **01992 523523**

e: pumps@deltamembranes.com

www.deltamembranes.com

Testimonials

"Dear Sir, I thought I'd drop you a quick note to say that Steve, the engineer who serviced our pump, was a delight to have in our home. He explained what was required, was smart, polite and even had a new part, which saved arranging another appointment. Thank you."

Mr P, Hertfordshire

