APD

Doing Good From The Ground Up

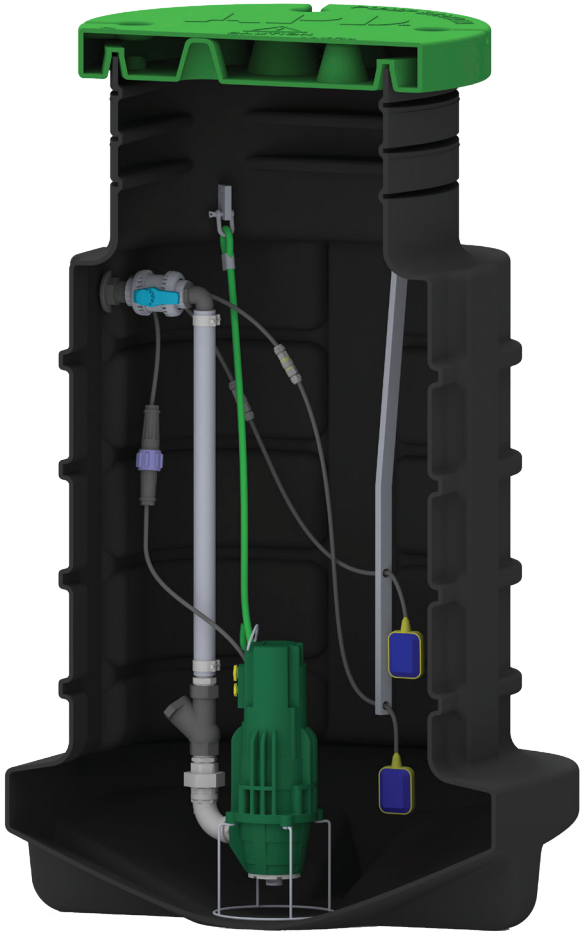
WasteWorx®

PUMPING STATION SOLUTIONS

When Gravity Just Won't Work.

WasteWorx® Installation Guide

Wastewater Removal System



WasteWorx® Installation Guide December 2024

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Doing Good From The Ground Up

Congratulations on the purchase of a WasteWorx® Pump Station. All of our WasteWorx® Pump Stations are sized and manufactured to meet your site requirements, allowing for easy installation and providing you with a dependable solution for your wastewater needs.

- WasteWorx® Pump Stations are supplied with internal pipework and high level float pre-fitted ready for pump to be connected.
- WasteWorx® wastewater pump stations are supplied with a suitable pump or pumps.
- Wall mountable pump controller included, with high level alarm and pump overload protection.
- Made from tough recycled polyethylene that will not rot or corrode.
- Anti-flotation design eliminates the need for concrete to be used during installation.
- Supplied with either an adjustable plastic lid for lawn installation or adjustable riser for installation of steel manhole cover in concreted/paved area or driveway.

Overview

1. Installer to install pump chamber as per APD installation details and this installation guide.
2. Installer to register the pump station on the APD website: www.apd.co.nz/pump-station-registration
3. When it is time to commission the pump station, it needs to be requested on the APD website: www.apd.co.nz/pump-commission-form
4. Pump station is commissioned by a licensed professional appointed by APD.

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Installation Requirements

Drawing Notes

These drawings shall be read in conjunction with all architectural, geotechnical and other consultants drawings and specifications and with such other instructions as may be issued during the course of the contract. All discrepancies shall be referred to the engineer for decision before proceeding with the work.

All dimensions relevant to setting out and off-site work shall be verified by the contractor before construction and fabrication is commenced. The engineers drawings shall not be scaled.

During construction the contractor shall be responsible for maintaining the stability of the structure until its completion and shall ensure that no part of the structure is overstressed by excessive loading.

Workmanship and materials shall be in accordance with the relevant New Zealand standards and local authority regulations, except where varied in contract documents.

The location, size, and details of all penetrations, holes, etc in structural members must be approved by the engineer prior to construction unless otherwise shown on structural drawings.

Substitution for or amendment of specified details or materials shall not be carried out without the approval of the engineer.

Tank Location - Proximity To Nearby Structures

The location of the chamber excavation is the responsibility of the contractor and owner. The contractor is to follow the limitations of the diagrams shown or notify a chartered professional engineer for a site-specific consultation. The contractor is to ensure nearby foundations of new and/or existing structures are not undermined by the excavation for the pump chamber.

Excavation Clearance

The contractor is to ensure a minimum of 50mm between edge of chamber and edge of excavation wall at the narrowest location.

Soil Conditions

This design assumes site soils will meet the requirements of NZS3604:2011 classification of of ‘good ground’ and AS2870:2011 soil expansivity class of either ‘S’, ‘M’ or ‘H2’. The contractor is to confirm the site exhibits these properties or notify a chartered professional engineer for consultation. For IL2, 50 years design life, Z <= 0.4

Temporary Support & Shoring

Temporary support and shoring during excavation and preparation is the responsibility of the contractor and should be in accordance with Health and Safety at Work Act 2015 (HSWA), the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016 (GRWM Regulations) and the Health and Safety in Employment Regulations 1995 (HSE Regulations), Regulation 24 for excavations with face more than 1.5m high (as below):

1. Subject to subclause (2) of this regulation, every employer shall take all practicable steps to ensure that, where any face of any excavation is more than 1.5m high, that face is shored
2. Subclause (1) of this regulation does not apply where:

    a. The face is cut back to a safe slope; or
    b. The material in the face is of proven good standing quality under all reasonably foreseeable conditions of work and weather; or
    c. By reason of the nature of the work and the position of any employee in the vicinity, there is no danger to any employee; or
    d. The provision of shoring is impracticable or unreasonable by reason of the nature of the work and the employer takes all practicable steps to ensure that other precautions are taken to make the face as safe as possible in the circumstances.

3. Every employer shall take all practicable steps to ensure that with any shoring used in any excavation at the place of work:

    a. The face is cut back to a safe slope; or
    b. Consists of materials that are suitable for the purpose for which they are to be used, of sound quality, and adequate strength for the particular use; and
    c. Has bracings, jacks, and struts that are securely held to prevent accidental displacement, and packings and wedges that are held by nails or spikes; and
    d. Is placed in a proper manner by an experienced person under competent supervision; and

Backfill & Basecourse

Backfill and basecourse material to be either:

Crushed stone or gravel: washed, with angular particle sizes no larger than 20mm with no more than 5% passing a 2.36mm sieve. Dry density must not be less than 1500kg/cubic metre. Approved backfill should not be mixed with sand or native soils. The use of non-specified backfill material could result in chamber failure. GAP20 is acceptable.

Or if crushed stone or gravel is not available, then specific quarry aggregate mix of:

Naturally rounded gravel: clean naturally rounded aggregate with particle sizes no larger than 19mm with no more than 5% passing a 2.36mm sieve. Dry density must not be less than 1500kg/cubic metre.

The contractor is to work in maximum backfill lifts of 200mm. After each lift, the contractor is to use long handled probe to work the backfill material within any ribs. All voids and spaces should be filled to ensure adequate support of chamber.

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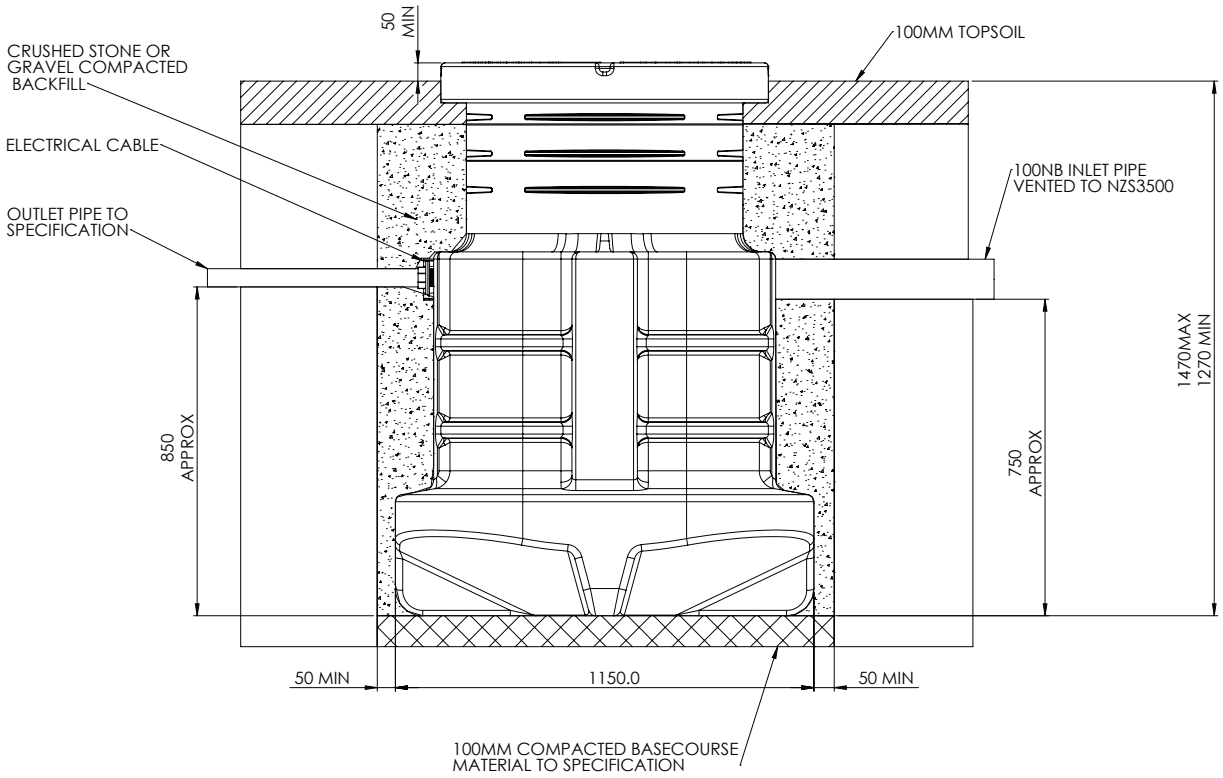
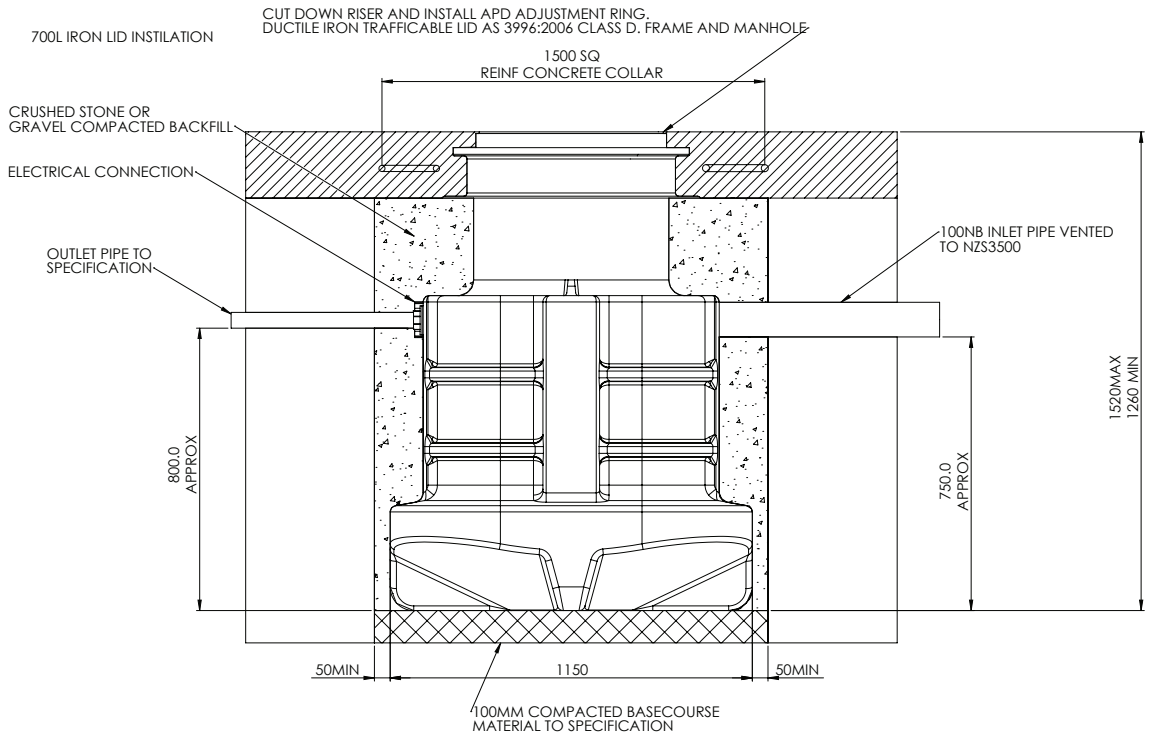
Installation Drawings

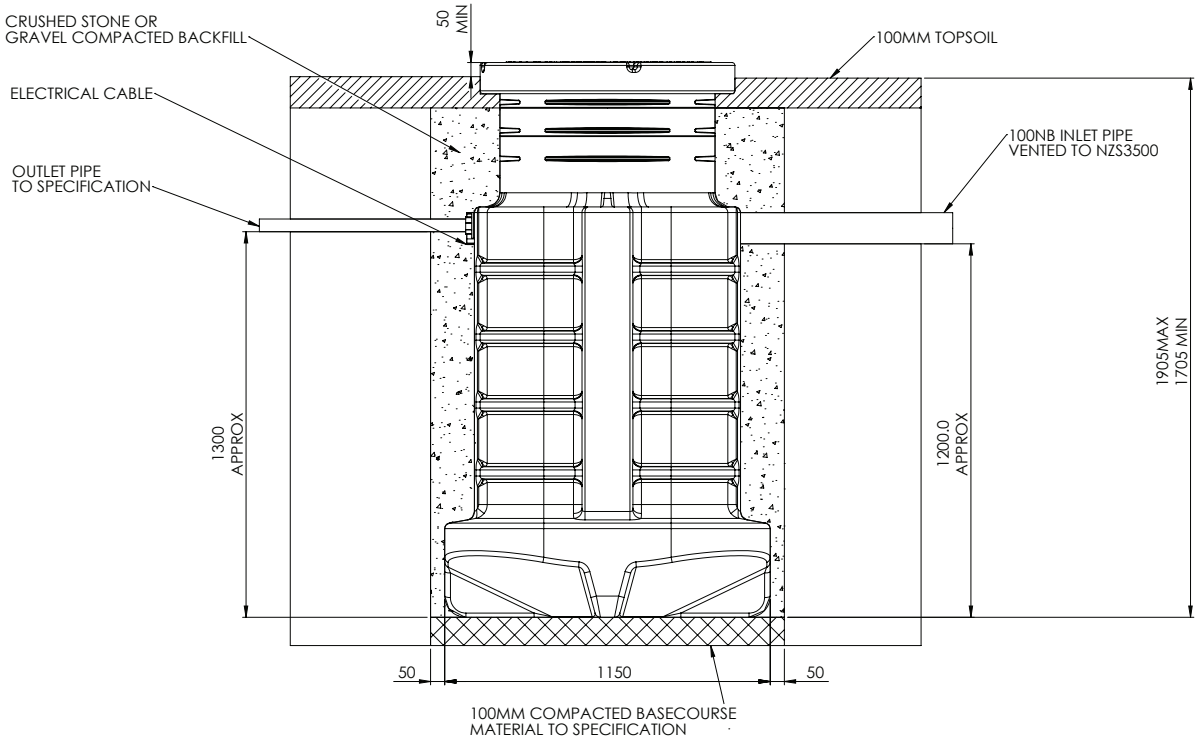
700L Garden (Green Lid)



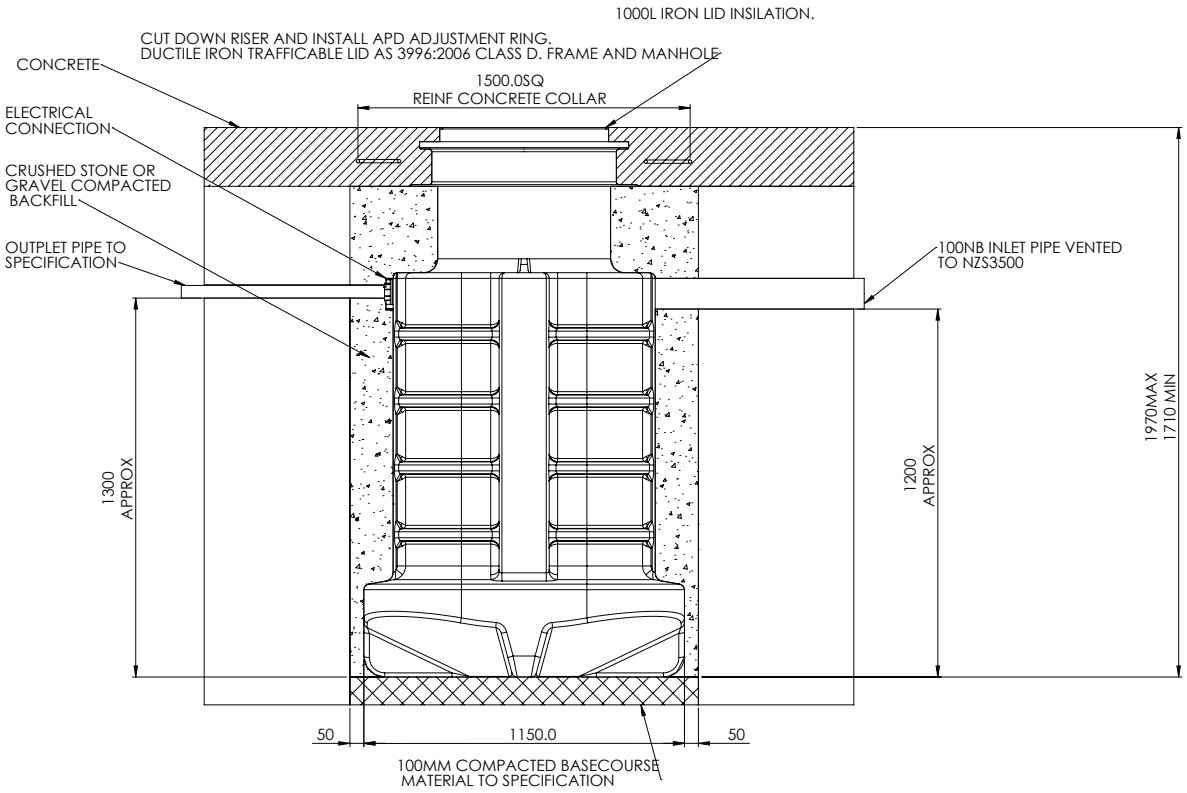
700L Pavement (Iron Lid)



1000L Garden (Green Lid)



1000L Pavement (Iron Lid)



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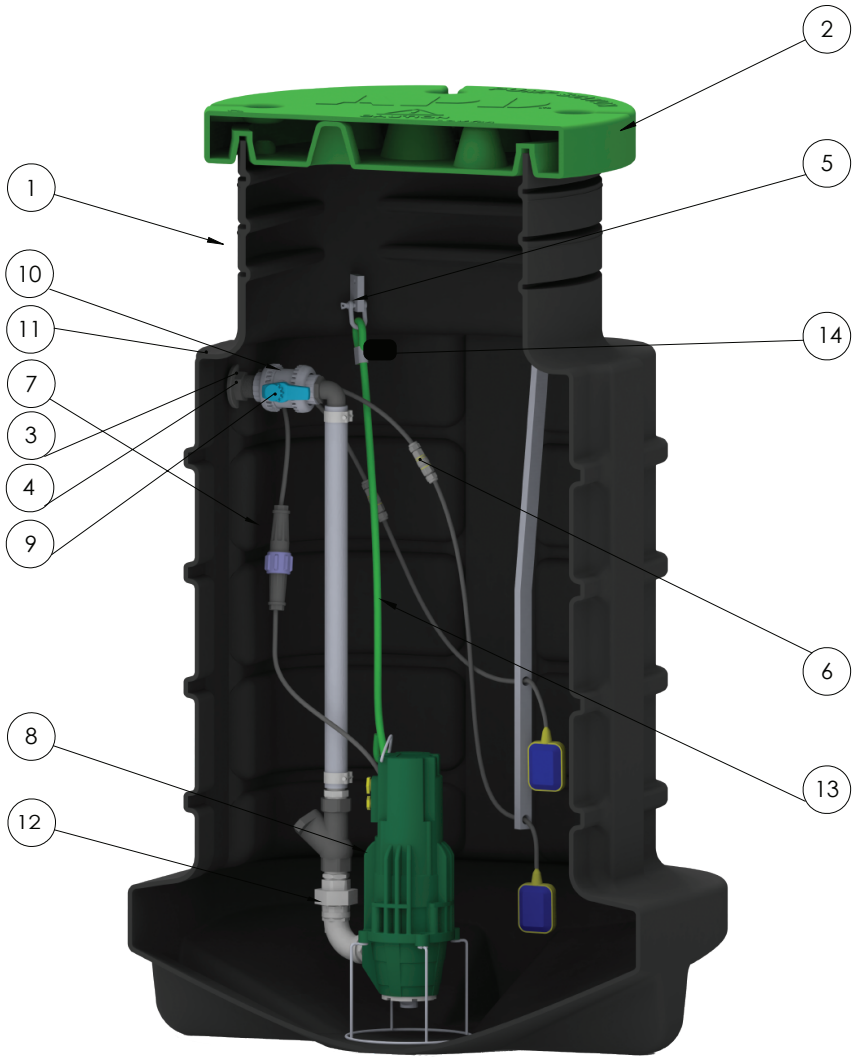
WasteWorx® Pump Station Diagram



ITEM NO.	DESCRIPTION
1	CHAMBER
2	CHAMBER GARDEN LID
3	CABLE BOX
4	CABLE GLAND
5	ROPE CLIP
6	HIGH LEVEL FLOAT CABLE
7	POWER CABLE
8	PUMP
9	BALL VALVE
10	BULKHEAD FITTING
11	ELBOW FITTING
12	NON-RETURN VALVE
13	ROPE

Full Installation Drawings & PS1

Full installation drawings and PS1 files are available on our website in the member's section: www.apd.co.nz/brochure-type/wasteworx. Please log in or apply for access.

Inlet Pipe Connection

- Select a location for the inlet pipe.
  - Ideally located on the raised sections on the side of the chamber but can be located on any flat surface with sufficient space to fit the seal.
  - Usually located towards the top of the pump chamber as the chamber vents through the inlet pipe, however if not practical, a separate vent will be needed.

- Drill the hole for inlet connection.
  - Use a 121mm hole saw and cut a hole in the required location (for Ø100mm inlet connection).

- Fit supplied rubber seal.
  - Clean and de-bur the hole.
  - Fit the supplied 100mm rubber seal.

- Prepare and fit the inlet pipe.
  - Chamfer the 100mm pipe with a file or similar tool to allow easier fitment.
  - Apply a film of liquid soap or pipe lubricant and push the pipe through the rubber seal.
  - The pipe should extend into the tank by a maximum of 100mm.

Note: No silicone sealers or epoxy mortars are required for the pipe connection. Once Inlet is connected, pump commissioning should be requested as the pump chamber will begin to fill. It is the installer's/owner's responsibility to ensure that the pump chamber does not fill up more than 30% of the storage capacity before commissioning takes place.

Discharge Pipe Connection

- Connect the discharge pipe (rising main) to the threaded fitting on the pump chamber.
  - The 40mm BSP female fitting on the pump chamber will accommodate a variety of pipe materials and fittings.
  - Discharge piping must be selected in accordance with local and national plumbing codes.
  - If polyethylene (PE) is pipe is used, a compression type fitting or an electro-fusion transition fitting that provides a smooth inner passage must be used.
  - Check with the local authorities for any specific regulations and requirements.

Cable Connections at the Pump Chamber

- The power cable for the pump and the float switch cable/s will already be fitted in the pump chamber.

- Uncoil the excess cable on the outside of the pump chamber and run the cable underground in a conduit to the location of the Control Panel.
    - 40mm rigid electrical conduit to be used underground. Do not use flexible conduit.
    - Do not use sharp 90-degree bends but rather sweeping bends.
    - The conduit must be connected to the electrical junction box on the side of the pump chamber.
    - The power cables and float switch cables must not be joined or extended.

- Check that there is sufficient length of the cable remaining within the pump chamber and that the cable glands are tightened.

Note: The pump power cable plug must be cable-tied up at the dedicated location on the float switch arm. The pump chamber MUST NOT be allowed to fill up to a level above the cable glands and plug at any time. The pump chamber MUST be 30% full with clean water when pump commissioning is going to take place.

Pump Controller Installation

- Pump Controller power requirements.
    - The pump controller needs to be supplied by an independent circuit from the house switch board.
    - A 20 Amp 'D' curve circuit breaker is required as a minimum.
    - No RCD (Residual current device) device is to be installed.
    - Power supply voltage to be 240V ± 10%.

- Choose mounting location.
    - Externally, typically within 5m to 15m from pump chamber.
    - At a suitable height to allow easy access, minimum 600mm from ground level.

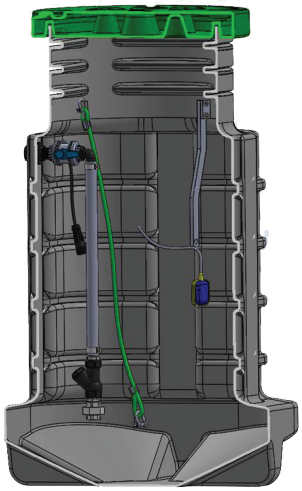
- Wire connections.
    - Cut pump power cable and float switch cable/s to the required length.
    - Connect wires as per the wiring diagram. This wiring diagram is also located within the Control Panel.

Note: Do not drill any additional penetrations into the Control Panel. Ensure conduits into Control Panel are fully sealed to stop condensation forming with Pump Controller.

- Overload setting.
    - Set the adjustable overload setting to suit the specific pump:
        - Low Head Pump – Lil Rippa AW150 – Set to 8.5 Amps.
        - High Head Pump – Zoeller 2701 – Set to 14 Amps.

Commissioning

Pump chambers are delivered without the pump.



Once the chamber is installed the commissioning action will need to be activated.

1. This can be done by completing the 'request for commissioning' form on the APD website: www.apd.co.nz/pump-commission-form
2. This will notify the commissioning agent to install the pump assembly and fully check operation.
3. A call out charge of $250 plus GST will apply if the chamber is not ready.
4. The commissioning agent then goes to www.apd.co.nz/pump-station-registration to register the operational pump station.

Note that any agreed remedial actions or corrective measures required to be undertaken by the commissioning agent will be at an additional cost.

The Pump Station is not ready for commissioning if:

- Any of the criteria questions in the 'request for commissioning' are not met.
- The pump chamber is more than 30% full with water and/or wastewater.
- The chamber has filled up completely at any time and submerged the power cable plug.
- There is debris (construction debris, stones, gravel etc.) in the bottom of the pump chamber.

Large dual ended pump station inground installation should follow our installation details for StormLite® tanks: www.apd.co.nz/brochure-type/stormlite

Full Installation Drawings & PS1

Full installation drawings and PS1 files are available on our website in the member's section: www.apd.co.nz/brochure-type/wasteworx. Please log in or apply for access.

To register your pump station

The following information needs to be filled out on our website - the form can be found at www.apd.co.nz/pump-station-registration

- Unique Chamber number
- Site address
    - Number
    - Street
    - Suburb
    - City
    - Postcode
- Owner's detail
    - Name
    - Email
    - Mobile phone
- Installing drainlayer's details and registration number, including the drainage PS3
    - Name
    - Email
    - Mobile phone
    - Registration number
    - Drainage PS3
- Date installed
- Station type
    - Full description from MYOB

To organise commissioning of a pump station

The following information needs to be filled out on our website - the form can be found at www.apd.co.nz/pump-commission-form

- Unique Chamber number (must match above)
- Station type
    - Full description from MYOB
- Site address
    - Number
    - Street
    - Suburb
    - City
    - Postcode
- Owner's detail
    - Name
    - Email
    - Mobile phone
- Building consent number
- Tank is completely installed
    - Yes / No
- Tank location
    - Add description
- Is the lid accessible
    - Yes / No
- Is the discharge line complete and connected to the boundary kit
    - Yes / No
- Household sewer drains are connected and complete to the sewer pump station
    - Yes / No
- Is the boundary kit installed
    - Yes / No
- Is power on at the property
    - Yes / No
- Is live power connected to the control panel
    - Yes / No
- Is the power connected to the tank
    - Yes / No
- Control panel is installed and visible from the tank access lid
    - Yes / No
- Is the control panel cable connected to the tank
    - Yes / No
- The tank is at least 30% full of water (not sewerage)
    - Yes / No

All questions must be answered and all answers must be yes before a call out will be placed.
If it is discovered during commissioning that one or more of these items are not correct a $250 call out fee will apply.

- Preferred commissioning date
- Requestee's contact detail
    - Name
    - Email
    - Mobile phone
    - Commissioned

Frequently Asked Questions

What size and depth of hole do I need to dig between the different units from garden to driveway?

Pump station	Excavation size
700L Garden	1250 SQ x 1370 - 1570mm High
700L Driveway	1250 SQ x 1360 - 1520mm High
1000L Garden	1250 SQ x 1805 - 2005mm High
1000L Driveway	1250 SQ x 1810 - 2070mm High

What comes with the chamber?
A: The Pump Chamber is supplied with internal pipework and high-level float switch pre-fitted, separate wall-mounted pump controller and required lid. The pump power and float switch extension cable sets can be supplied in either 8m, 10m or 20m depending on the location of the Pump Station.

Who does the commissioning?
A: The pump station is commissioned by a licensed professional appointed by APD.

How do I get it commissioned?
A: Register the pump station on the APD website (https://www.apd.co.nz/pump-station-registration) and request for commissioning.

What do I need to do as a drainlayer?
A: Install the pump chamber as per the APD Installation Details and connect the inlet pipe/s.

What do I need to do as an electrician?
A: Mount the Pump Controller. Run the pump power and float switch extension cables, in suitable conduit, from the pump chamber to the Pump Controller and connect. Connect Pump Controller to mains power.

What do I need to do as a concrete layer?
A: Follow the APD Installation Details.

What size re-bar or can I use mesh in the concrete?
A: Follow the APD Installation Details.