

---

Overview of the

## E/One Grinder Pump System

Waimakariri District Council Approved  
Wastewater Pump Systems for:



Supplied by – Ecoflow Ltd

19B Avenger Crescent

Wigram, Christchurch 8042

03 349 2506

[www.ecoflow.co.nz](http://www.ecoflow.co.nz)

---

ecoflow

e one  
SEWER SYSTEMS



## **E/One Wastewater Pump System**

### **Introduction**

As you will be aware, a sewer pump system is to be installed as part of the building works on all lots within the Beach Grove Subdivision. This sewer pump system will discharge wastewater into a pipe in the street and the onto the council sewer network.

The purpose of this document is to provide the homeowners and/or building companies with information on the sewer pump system.

### **The E/One Pump System**

The wastewater network for the subdivision has been designed to work with the E/One pump system. In New Zealand, the E/One system is supplied by Ecoflow Ltd.

The E/One pump system was designed in the late 1960's in the USA and over 670,000 have been installed worldwide. In New Zealand, there have been 19,000 E/One pump system installations since 2007. This system is approved by Waimakariri District Council and is a very robust and reliable piece of equipment as well as being very power efficient. The cost of power for the pump system averages \$25-\$35 per year and the homeowner is responsible for this cost.

### **Installation Information and Requirements**

Enclosed you will find information which covers the installation guide for the the pressure sewer pump system. Please note the following:

**Pump Chamber (tank) and boundary kit** - both of these items have been installed by the developer.

**Owners Responsibilities** - The following items will need to be installed by the owner/builder:

**Alarm Panel and 15m Pump Cable** – these items will be free issued to the owner/builder and must be collected from Ecoflow – 19B Avenger Crescent Wigram. Call Ecoflow to arrange collection 03 349 2506. The electrician will need to install these items as detailed in the installation guide. If a longer pump cable is required, additional charges will apply – contact Ecoflow to discuss.

**Sewer Lateral Connection to the tank** – the builder's drainlayer will need to connect the sewer lateral to the tank.

Contact Ecoflow if you have any questions on the installation 03 349 2506.

### **Commissioning of the System once Installed:**

The pump has not been installed and no water or wastewater is allowed to enter the tank until the system is commissioned. The Ecoflow's technician will install the pump and do a commissioning test once the sewer later is connected, the pump cable and alarm panel are installed. We suggested this commissioning test is done 2-3 weeks before the build is complete.

Enclosed you will find information which explains how to book in a commission visit.

### **Ownership and Operation of the System:**

All of the components of the E/One pump system on the section are owned and maintained by the homeowner. Enclosed you will find information the homeowner manual.

# ecoflow

Pressure Sewer Specialists





## ABOUT ECOFLOW

Ecoflow is New Zealand's largest pressurised sewer supplier. Founded in 2007 by two wastewater engineers, with their goal to become New Zealand's leading pressurised sewer system specialist.

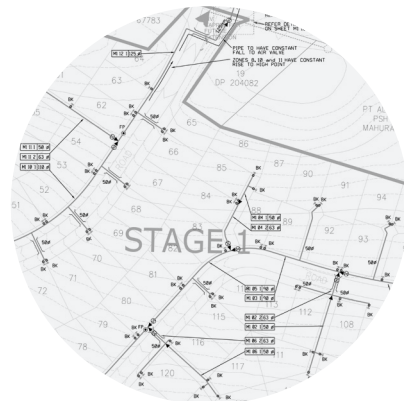
We are proud distributors of the Environment One (E/One) system, E/One are world leaders in low pressure sewer systems having over 600,000 grinder pumps operating globally in 42 countries.

Ecoflow have installed over 10,000 E/One pressure sewer systems throughout New Zealand in both council projects as well as green-field subdivisions.

Our success is simple, we are the most knowledgeable in our field using market leading equipment. We are focused on building strong relationships with our clients offering exceptional service and support.

## WHY COUNCILS AND DEVELOPERS ARE CHOOSING E/ONE PRESSURE SEWER SYSTEMS

- Better for New Zealand's environment
- Minimal impact on councils existing sewer networks
- Ideal alternative to deep gravity sewer mains
- More resilient to seismic activity – earth quakes.
- Eliminates large public sewer pump stations



## E/ONE QUALITY

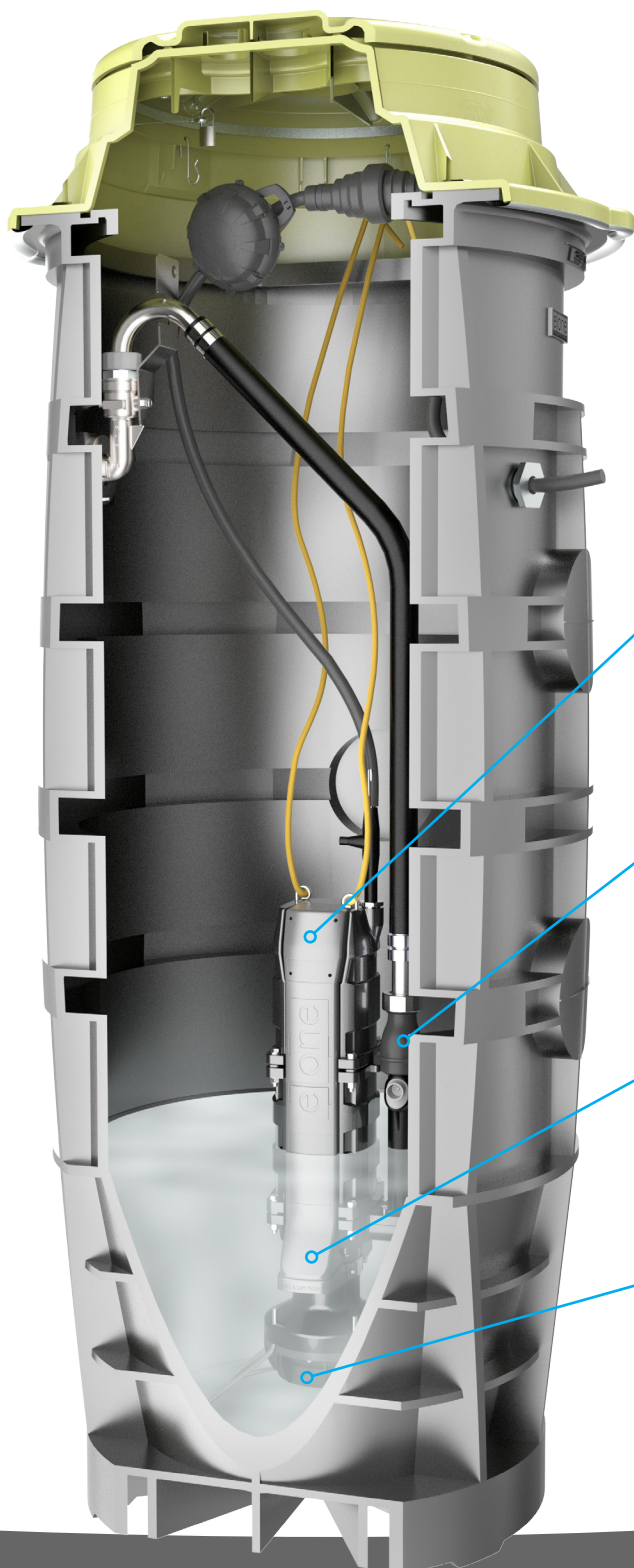
For over 50 years the E/One name is synonymous with reliable, maintenance free grinder pump systems, designed with longevity in mind. Before a product is released it is subjected to meticulous performance tests. The heavy duty cast iron grinder pump is ANSI/NFS 46 Certified. It's an industrial grade pump for residential use. E/One's tank is manufactured in New Zealand and is designed and certified to AS/NZS1546 specifications. It features an integrated stainless steel ball valve with pressure relief.

## SERVICE CAPABILITIES

Ecoflow is known for offering end-to-end service. We have close relationships with architects, housing companies, builders, plumbers, drain layers and electricians to achieve a superior level of customer service.

### SERVICES INCLUDE:

- Network Design
- Project Management
- Supply of Quality E/One Equipment
- On-Site Delivery
- On-site Installation Training – Approved Drain layers
- Pump Installation and Commissioning
- Supply of Warranty/Consent Documentation
- On-going 24/7 Service

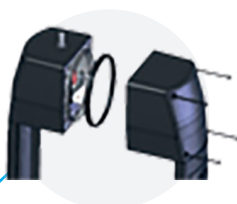


### E/ONE ALARM PANEL



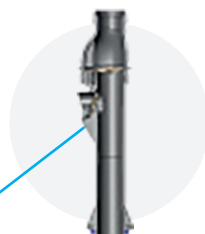
To maximise reliability and convenience, the E/One installation includes an IP65 weather proof alarm panel which also protects the pump from low voltage, running dry, and over pressure situations.

### PRESSURE SWITCH HOUSING



Pressure switches in the head of the pump for starting and stopping are similar to washing machine controls, eliminating the need for float switches which commonly fail due to fats, hair and rags.

### INTEGRATED VALVES



The integral non-return valve protects against system back pressure and the anti-siphon valve facilitates downhill pumping applications.

### PROGRESSING CAVITY PUMP



This deceptively simple design produces a nearly constant flow under a wide range of continuously varying conditions.

### GRINDER WHEEL AND SHREDDER RING



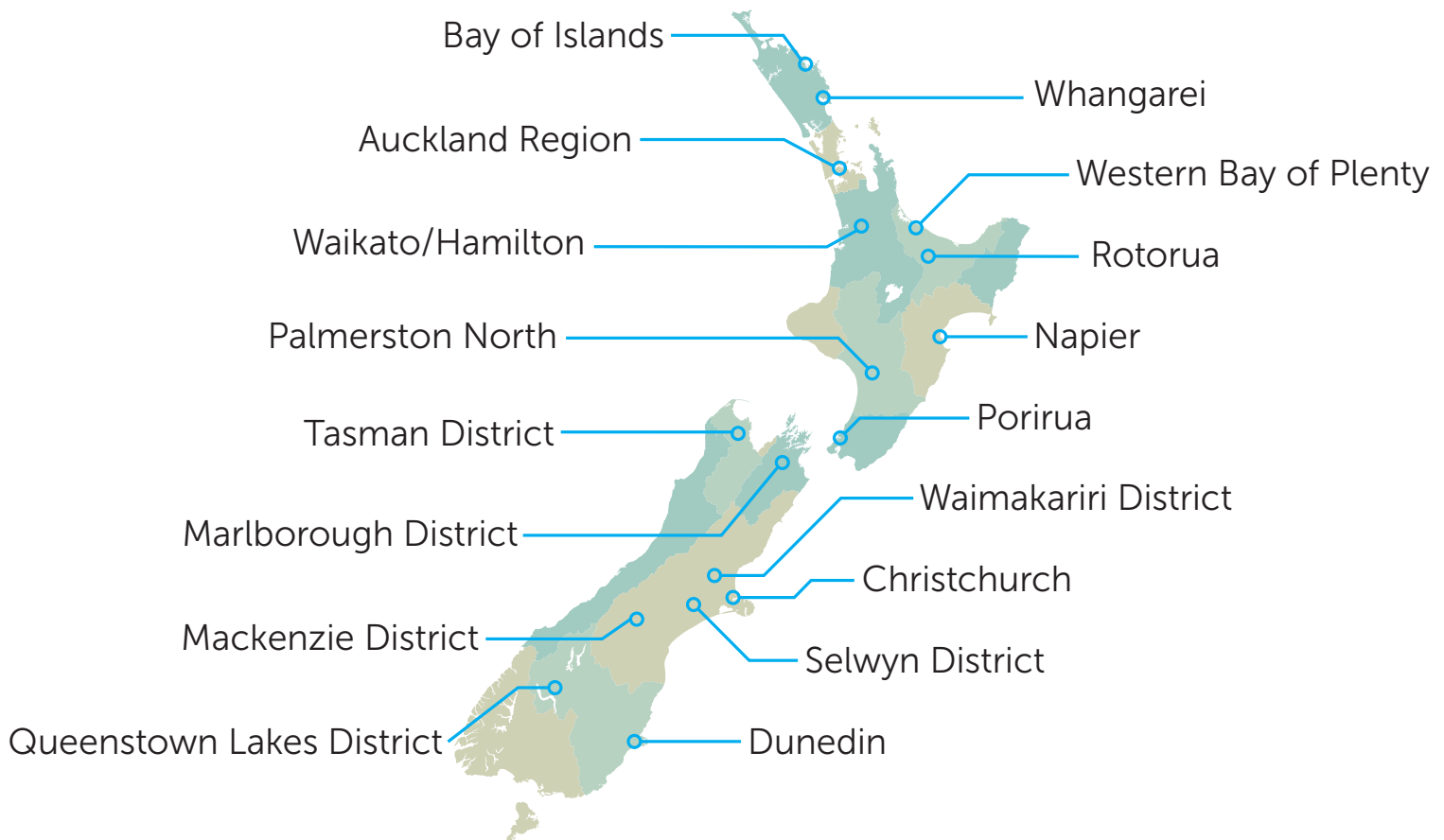
Hardened forged alloy steel cutter bars and teeth create a shearing action coupled with the high torque pump to help eliminate blockages.

- Environmentally friendly
- No preventative maintenance

- Unobtrusive, low profile installation
- Extremely low noise and odour levels

- 24 Hour emergency storage capacity
- Low power consumption \$20 to \$30 per annum

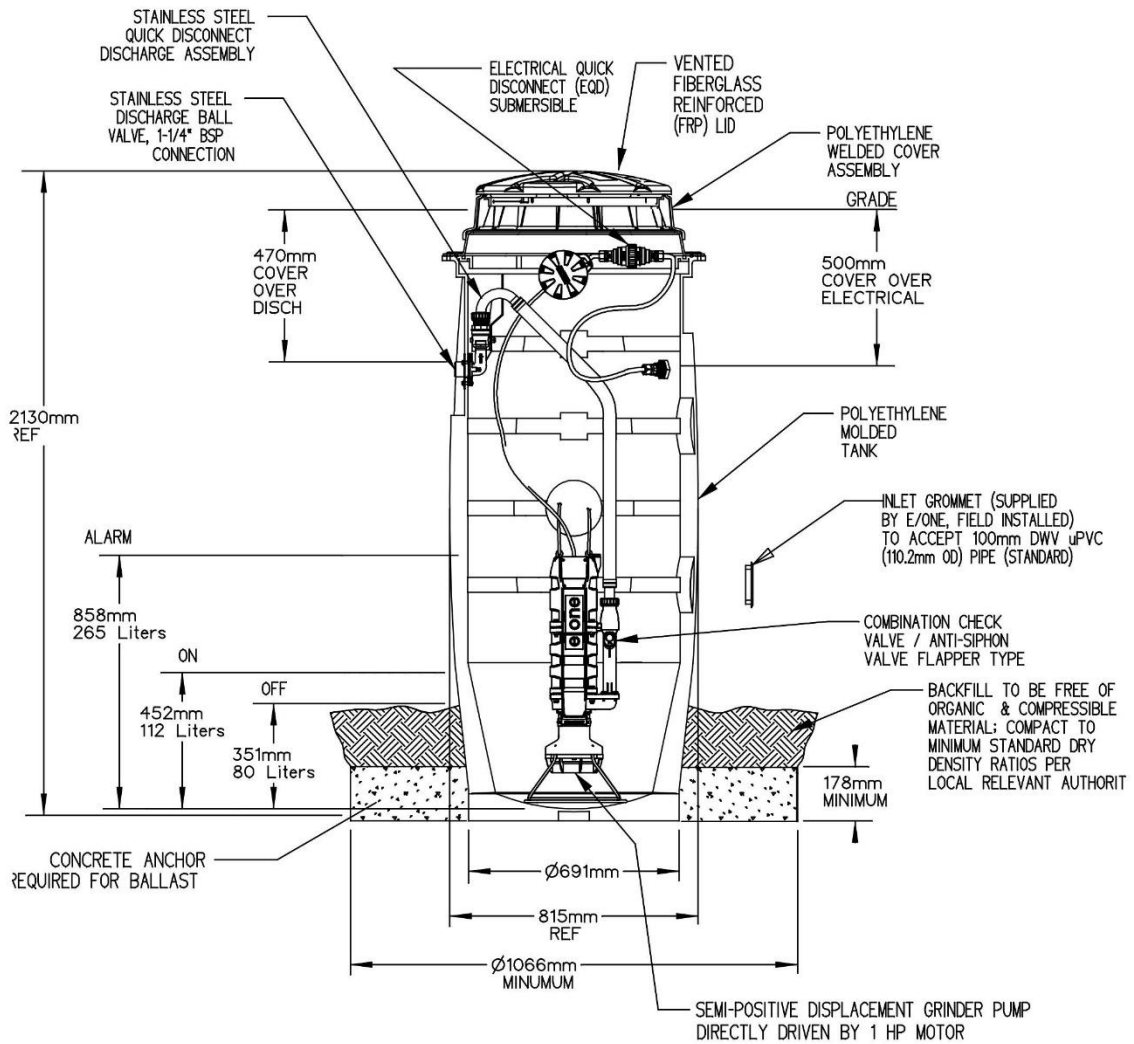
# NEW ZEALAND'S LEADER IN PRESSURE SEWER





# MODEL 2010iP

## 800 x 2100mm



### SPECIFICATIONS 2010iP - 800 x 2100

BASIN	Diameter (mm)	Height (mm)	Weight (kg)	Total Capacity (l)	Capacity Above Alarm (l)	Ballast (m3)	Inlet Pipe Size (mm)							
	800	2100	74	718	453	SEE DWG	100							
PUMP	Pump (s)	Dimensions (mm)	Weight (kg)	Nominal Pump Rate @ 0m TDH (lps)	Nominal Pump Rate @ 20m TDH (lps)	Nominal Pump Rate @ 42m TDH (lps)	Discharge Size (mm)	ELECTRICAL	Voltage (VAC)	Phase	Cycle (Hz)	Supply Cable (m)	Alarm Panel	
	Simplex (1)	330 X 800	47	.75	.63	.47	32		240	Single	50	As Specified	Simplex (1)	



Ecoflow Ltd.

16b Piermark Drive, North Harbour (NZ)  
 P.O Box 300-249, Albany, Auckland  
 Ph (09)447-1793 Fax (09) 447-3901

Environment One  
 Simplex 800x2100iP





## Drainage Connection Instructions

Please avoid construction debris from entering the tank when carrying out this work.

### Step 1: Choose an inlet location

Remove the lid from the tank. Choose an appropriate entry point for the 100mm PVC pipe. This must be above the tapered section of the tank (above the red line shown in the picture below). The inlet hole can be drilled in either the circular areas or in the recessed sections.



### Step 2: Cut the inlet penetration

Check that the tank isn't filled with water and then using a 127mm (5") hole saw, cut a hole in the chosen location.



### Step 3: Fit supplied rubber inlet grommet

Remove any burrs or shavings from the hole with a file or similar tool. Place the supplied rubber inlet grommet into the hole with the large flange to the outside of the tank. Rubber inlet grommet is cabled tied to the valve inside every tank.



Additional specially designed E/One rubber inlet grommets can be supplied by Ecoflow if more than one inlet is required. ***Please do not use other inlet grommets as they are thinner than the E/One grommet.***

### Step 4: Prepare the PVC inlet pipe

Chamfer the 100mm PVC inlet pipe with a file or similar tool. This will make it easier to push through the rubber inlet grommet into the tank.

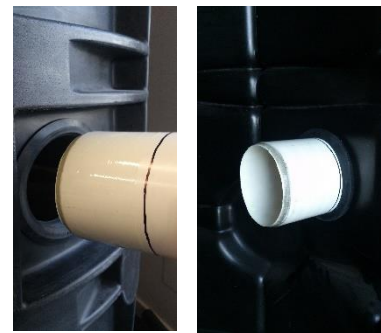


Draw a witness line on the pipe 80-100mm from the chamfered end. This line is where you will stop once it is visible inside the tank. Do not have more than 100mm and no less than 80mm inside the tank.

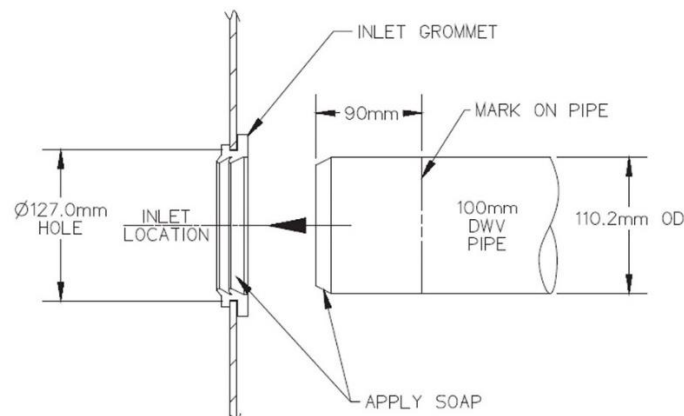
**Step 5: Fit the PVC inlet pipe**

Apply a film of liquid soap or pipe lubricant up to the witness line on the pipe from the chamfered end.

Push the pipe into the tank through the rubber inlet grommet. The flexible watertight seal is made once the PVC pipe has been pushed through. Pushing the pipe through will require some strength as it can be difficult.



Ensure the pipe has the required fall and check to make sure the rubber inlet grommet is seated correctly with the large flange hard up against the outside of the tank and is not pinched or rolled.



**Silicone's & Epoxy**

**Silicone's and epoxy mortar's are not required at any stage so please do not use them.**

The supplied rubber inlet grommet has been specially designed by E/One for the tank wall thickness, please do not use any other types as they won't seal correctly. The supplied rubber grommet creates a flexible watertight seal and allows for ground movement.



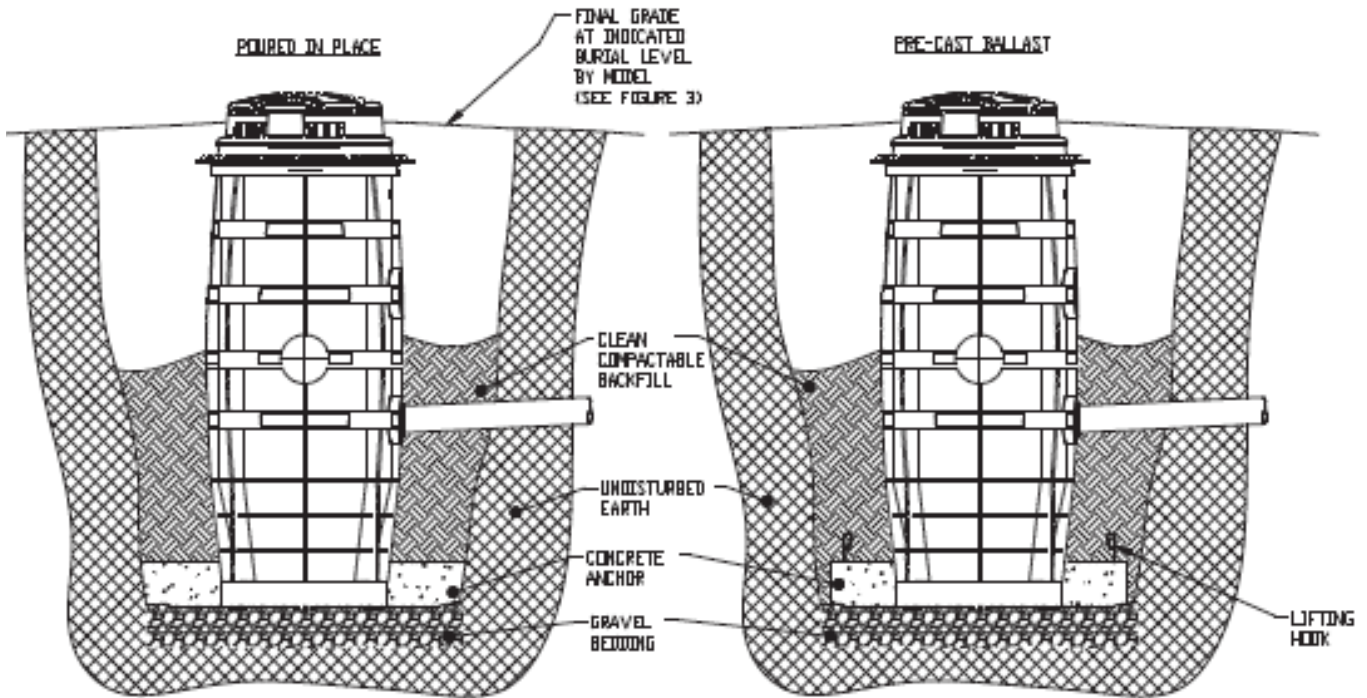
**Step 6: Discharge Pipe Connection**

Connect a 40mm OD PE100 PN16 discharge pipe the the 32mm (1 ¼ ") fitting on the chamber. Electrofitting fitting are to be used when connected to the discharge pipe onto a pressure sewer network or compressing fitting if connecting into a gravity sewer line.



**Tank Ballast Requirement and Backfill**

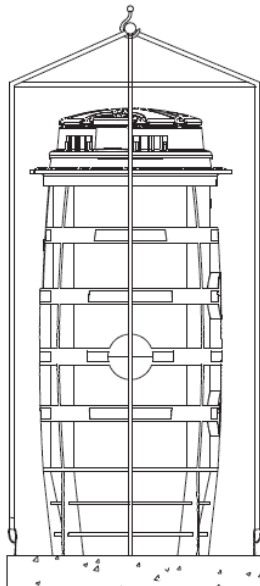
A concrete ballast anchor is required to prevent floatation of the tank. See the diagram below indicating the concrete ballast required. The tank can be pre-ballast if ground water is an issue. If pre-ballasting you need to installed lifting hooks to be used when lifting the tank in the hole. **Backfill** – Use clean compactable backfill which meets relevant local codes.



**Fig. 2 - Excavation and Ballast**

**Lifting Pre-Ballasted Tank Using Hook**

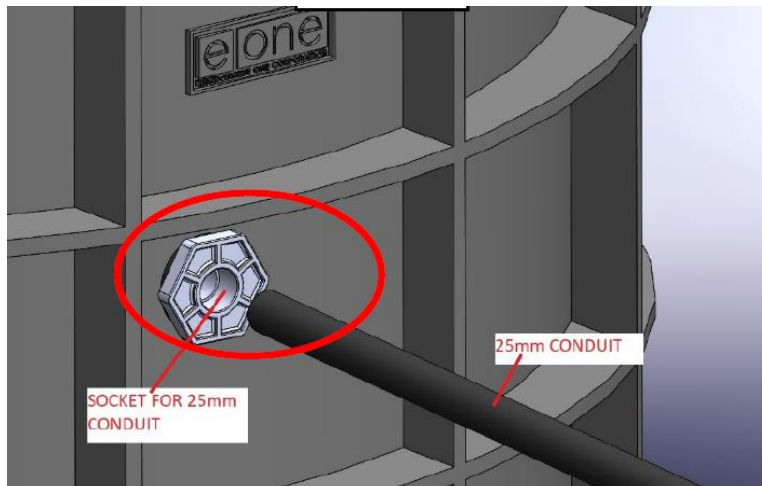
**Picture of Pre-Ballast Tank**





## Electrical Pump Supply Cable Instructions

**Step 1: Install Conduit** - Install 25mm electrical conduit into to the two electrical fittings on the tank wall as shown below – using pvc glue.

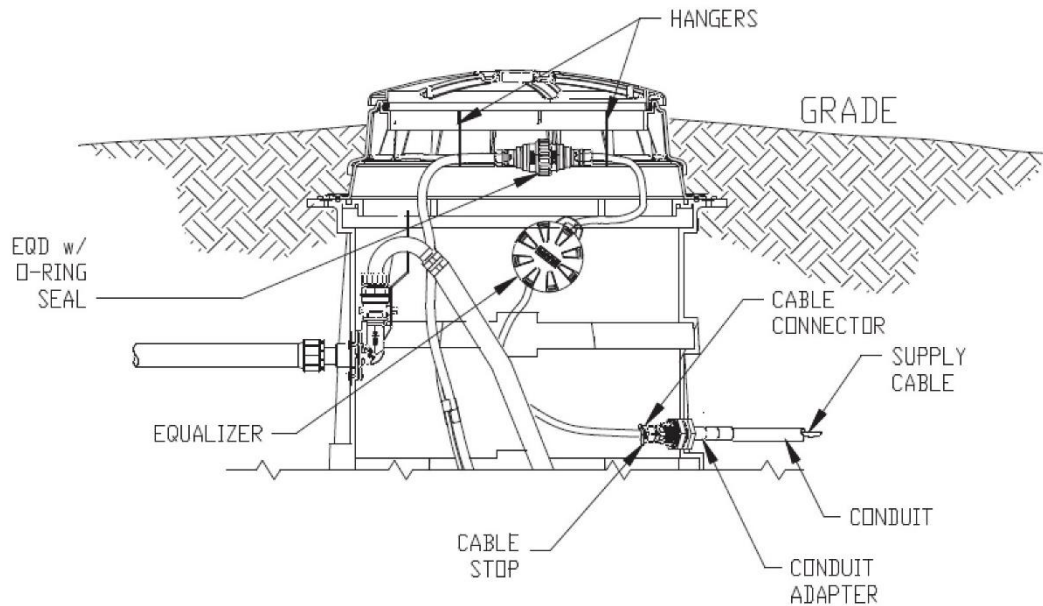


### **Step 2: Install the E-One pump supply cable**

Open the lid of the tank and locate the supply cable connector on the inside of the tank. Loosen the nut on the cable connector and feed the free end (end without the E/One 6-pin connector) through from the inside of the tank. Pull the supply cable out through the connector until it hits the metal crimped “stop” feature on the cable. Do not leave excess cable in the tank. The free end of the supply cable is to be cut to length (if needed) and connected to the Alarm Panel. Run the cable underground in a conduit to the location of the Alarm Panel. Retighten the supply cable connector nut inside the tank.

**Note:**

- Longer pump supply cables in lengths of 22m or 30m – can be supplied by Ecoflow for an additional cost.



## Alarm Panel Installation Instructions

### Alarm Panel Power Requirements

- The E/One Alarm panel needs to be supplied by an **independent circuit** from the house switch board.
- A **20amp 'D' Curve** circuit breaker is to be used for a Simplex (one pump) system
- A **30amp 'C' Curve** circuit breaker is to be used for a Duplex (two pump) system
- **No RCD device** to be installed.
- **240V +/- 10% to Alarm Panel (216V to 264V)**

### Step 1: Choose an appropriate mounting location

**The Alarm Panel must be mounted in an outside location and not inside the house.**

This will typically be on the outside of the house near other utilities, but can also be mounted on a post near the tank.

The Alarm Panel must be mounted at an appropriate height to enable the home owner easy access in the event of an alarm.

- **Minimum of 1200mm** to the base of the Alarm Panel from ground level.
- **Maximum of 2000mm** to the top of the Alarm Panel from ground level.

### **Please do not drill any extra penetrations into the alarm panel.**

- The Alarm Panel has a flange top and bottom to enable fixing to a wall or fence post.
- The Alarm Panel has two holes provided at the base of the panel for the power fed from the house and the pump power supply cable.
- Any extra holes made into the Alarm Panel may cause moisture to enter enclosure and may void warranty.
- Please use sealing conduit connecting glands for the cable penetrations at the base of the Alarm Panel.

**Step 2: Connect wires to Alarm Panel**

Cut power supply cables to required length. Connect the power fed from the house circuit board and the E/One pump supply cable from the tank to the alarm panel as per the wiring diagram on the following page. This diagram is also located on one of the plastic pages on the inside of each Alarm Panel door.

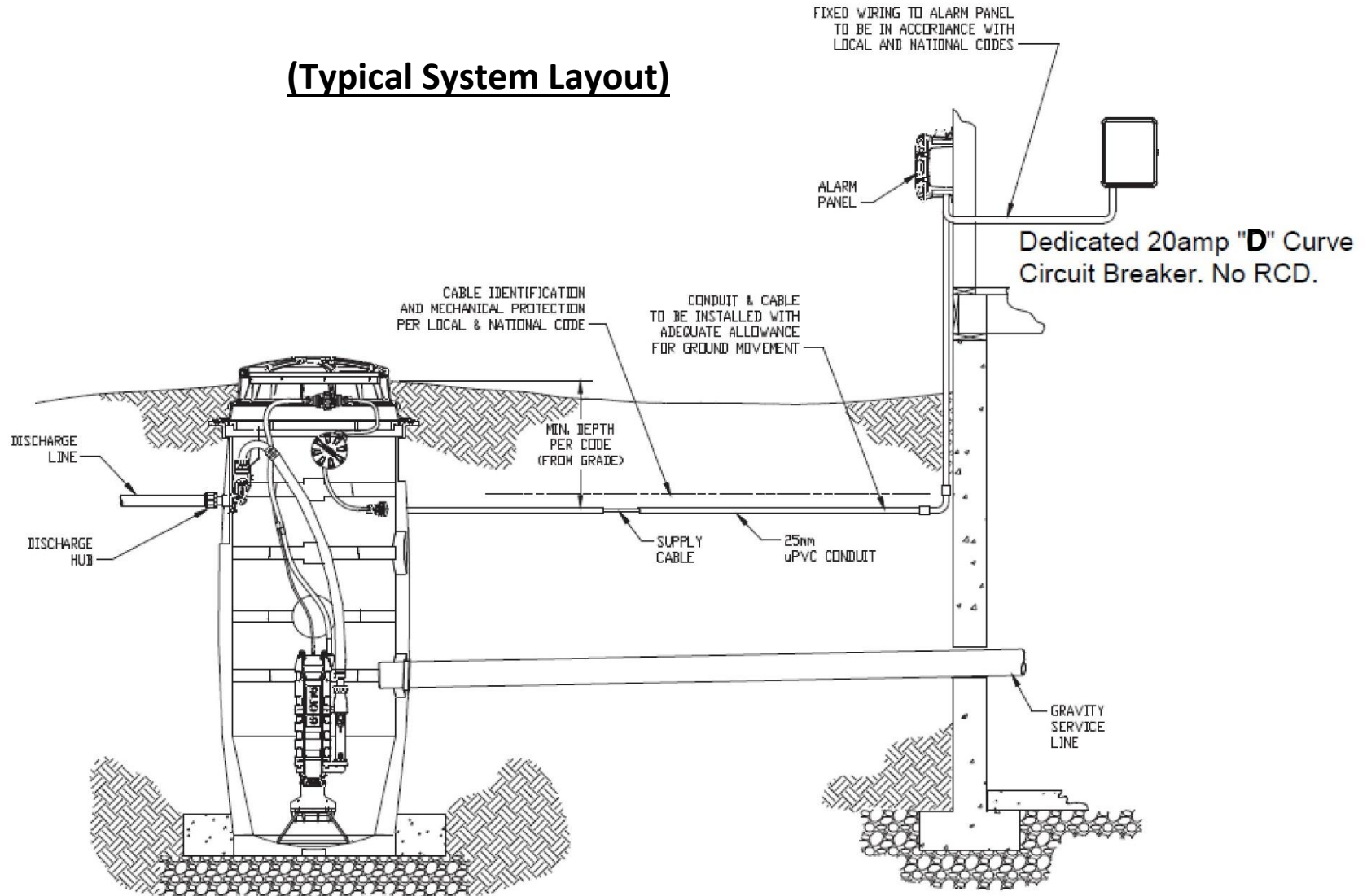


(Typical Alarm Panel Instalation)

**For any further technical advice please call  
Ecoflow Christchurch Office 03 349 2506**



### (Typical System Layout)



SUPPLY CABLE VOLTAGE DROP  
240 VAC PUMP = .308 VOLTS PER METER OF CABLE  
(MAXIMUM RECOMMENDED LENGTH = 30.5 METERS)

# Ecoflow Commission Requirements of the E/One pump supplied by Ecoflow:

Once completely installed, Ecoflow will come to site to do the commissioning. The building company/Drain layer needs to contact us to book in this commissioning.

Prior to commissioning. The system must be fully installed which includes:

- The drainage contractor has installed the E/One tank to the correct level
- All drainage connections are completed, including the PE discharge line connection at the boundary kit
- The boundary kit toby box is visible and accessible – as we need to check that the valve is open during our commissioning
- Your electrician has installed and fully wired the alarm control panel (wiring instructions are supplied with every panel). DO NOT DRILL HOLES INTO THE BACK OF THE PANEL. ALL PENETRATIONS MUST BE SEALED.
- The power is on at the site and power is on to the E/One control panel.
- We also need the chamber  $\frac{1}{4}$  -  $\frac{1}{2}$  full of potable water for pump testing and all cables tied up at the top of the tank out of the water using the stainless steel hooks.

*No wastewater is to enter the tank before the E/One pump system is commissioned otherwise a clean out charge of \$250+gst is chargeable additional to any callout.*

## **Booking an Ecoflow Commissioning Visit:**

Call to book in a commission date with us (Ecoflow 03 349 2506) – we require a 5-6 day lead time for all bookings or book a visit by email [CHCH@ecoflow.co.nz](mailto:CHCH@ecoflow.co.nz)

Normally within three working days after the commissioning visit, Ecoflow will supply the council required construction statement/PS3.

We advise that the commissioning visit is completed 2 weeks before completion and final inspection.

As part of Ecoflow's system pricing, we include a single commission visit. If for any reason we cannot complete the commissioning (no power, install not completed, no access to site, damaged boundary box...) we charge \$195+GST fee for a revisit.

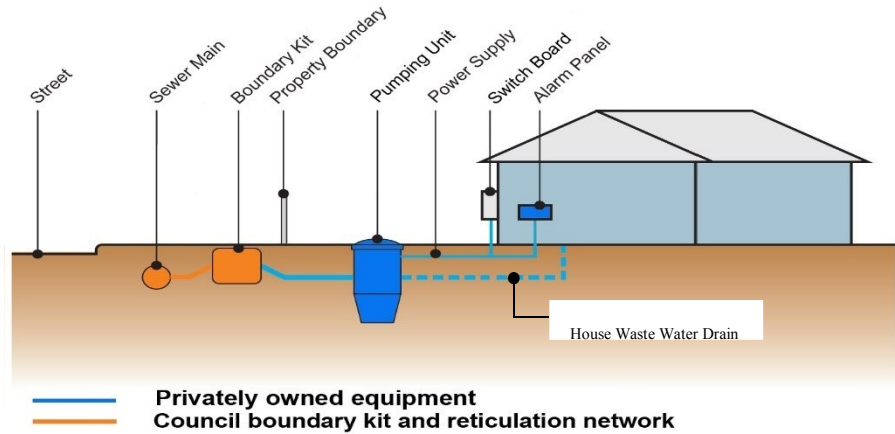
**\*\*\*Emergency commissioning Call Out - has an additional charge of \$250+gst\*\*\***

Contact Ecoflow if you have any questions 03 349 2506

# Using the System

There are a few things you need to know to ensure the system runs smoothly.

The system operates like a conventional gravity sewer, it takes waste liquids from your toilet, sink, shower, bath, dishwasher and washing machine. The pump grinds up solids and transfers all the waste off your property to the treatment plant. No treatment is done on site.



To avoid blockages and damage to the Pressure Sewer System the following items should **NOT** be put into the pump station:

- Glass / Metal
- Gravel, sand or aquarium stones
- Seafood or Egg shells
- Nappies, sanitary pads or tampons
- Baby or Flushable wipes
- Kitty Litter
- Flammable materials
- Oil / Grease
- Strong chemicals
- Petrol, diesel
- Storm-water
- Plastics

# The new Pressure Sewer System



The new system consists of a pumping unit on your property which is connected to a network of pipes from other properties in your area.

These pipes transfer wastewater to the off-site sewerage treatment plant.

From ground level to the alarm level you have approximately 24 hours of emergency storage. This means that even after the alarm sounds you can continue to use the system for around a day before it will overflow (however you are encouraged to minimise water use during this time).



# If the alarm sounds

The audible alarm can be turned off by pressing the rubber button underneath the alarm panel.

If the alarm light is still active after 15 minutes then call Ecoflow for assistance (refer to phone number on alarm panel). Please also call if the system re-alarms within the next few days.

Ecoflow will ask for your phone number and address and will have their service contractor respond to the situation.

The system has a built in 24 hour emergency storage capacity, so any repairs will be carried out within the 24 hour period. Whilst waiting for the unit to be repaired you should try to minimise the amount of waste going through the system.

If you notice any irregularity with the unit, i.e. the alarm frequently sounding, then contact Ecoflow and discuss your concerns with them.

Press the silence button  
located under the alarm panel.

Call: Ecoflow  
0508 528 3725

Give Ecoflow your name,  
address and contact number

If necessary an Ecoflow  
Service Technician will visit  
your site to solve the issue



# On your property

**THE SYSTEM IS DAMAGED AND NEEDS REPAIR?** (eg a pipe breaks) - If the alarm goes off, follow the alarm instructions (see above). Report the damage to Ecoflow and state if the damage is on yours or the council land.

**THE UNIT BECOMES SMELLY** - When operating normally there should be no noticeable odours coming from the unit. If it gets smelly the unit may need flushing. Just run clean water down your kitchen or bathroom sink for about 5 minutes. If the unit remains smelly contact Ecoflow.

**YOU NOTICE WET SPOTS AROUND THE UNIT OR ITS PIPES** - The pumping unit and the pipeline are totally sealed. If you notice wet spots around the unit or its pipes and there has not been any recent heavy rains, contact Ecoflow.

**THE ALARM KEEPS GOING OFF WHEN IT RAINS** - It means rainwater may be getting into the system and overloading it. Contact Ecoflow.

**THE NEIGHBOUR'S ALARM SYSTEM GOES OFF AND THEY ARE AWAY** - Telephone Ecoflow.  
Do not investigate the problem yourself.

**THERE IS A POWER FAILURE** - If there is a power failure, keep water use to a minimum. When the power is restored the system will reset itself.

**DO NOT** - Put heavy weights on the unit lid. The unit lid can be safely walked on but this should be avoided.

**DO NOT** - Touch the valves in the boundary kit.

**DO NOT** - Turn off the power to the pumps unless in response to a broken sewerage pipe or evacuation in an emergency.

**DO NOT** - Cover the pumping unit with any dirt / garden mulch etc.

**ENSURE ACCESS** - Is available to the pump at all times.

**CONTACT THE COUNCIL** - If you are making any modifications to your home which may effect the system.

**IF YOU ARE GOING ON HOLIDAY** - Even if only for a few days, you should flush the system. This is to avoid the possibility of the system becoming smelly in your absence and causing alarm to your neighbours. To flush the system, simply run a tap in the kitchen or bathroom sink for approximately 5 minutes.

**TAKE CARE IN THE GARDEN** - Be careful when digging in the garden near the pump unit or its discharge pipes. If you do accidentally break the pipeline, immediately contact Ecoflow and let them know what has happened. While waiting for Ecoflow to arrive, minimise the water use in the house.

**DO NOT ATTEMPT TO REPAIR THE SYSTEM YOURSELF.**