



Industries

**Installation and Maintenance Manual
for the Ri-Treat EP10
Secondary Treatment System**

South Australia's leading manufacturer of pre-cast concrete products
including Ri-Treat, trade waste arrestors,
septic tanks and rainwater tanks

www.ri-industries.com.au





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**Leaders in pre-cast concrete products
that enhance the environment**

Ri-Industries was established 1947. We are totally committed to achieving excellence in all that we do, which is why South Australian residents and businesses repeatedly buy our products and regularly recommend us.

www.ri-industries.com.au

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Warranty

The warranty will be void based on failing to install and maintain/operate unit as per the manufacturer's requirements. For example:

- Tank is not installed in strict accordance with the Ri-Industries Installation and Maintenance Manual for the Ri-Treat EP10
- Structural modifications in any form
- Aerobic unit is not serviced in accordance with SA Health guidelines for owner/operating an onsite wastewater system and in accordance with manufacturers' specified requirements
- Failure to undertake servicing and repairs by an approved SA Health servicing contractor and failure to maintain records for all services and repairs
- Owner/operator overloads the system by failing to meet all guidelines as specified in the General Information section of the Ri-Industries Householders Operational Manual for the Ri-Treat EP310
- Owner/operators use of unsuitable cleaning products as specified in the Ri-Industries Householders Operational Manual
- Damage caused to the unit from external forces such as but not limited to mother nature storm/fire/flood or planting proximity to tank
- Failure to ensure full details are passed over at the transfer of ownership and/or development of land.

Copies of the Householders Operational Manual and the Installation & Maintenance Manual can be found online at www.ri-industries.com.au

Preparation

Preparation for the delivery and installation of a Ri-Treat EP10

- The Ri-Industries' crane truck requires full and clear access onto the site and around the excavation.
- Site conditions should be dry and stable underfoot, and a level set-up area prepared for the truck.
- The crane truck will reverse up to the excavation, lift and slew the tank into position over the rear axle.

Note: Under no circumstances will concrete tanks be lifted over houses, sheds or other property of value, nor will they be lifted under low power lines. Unloading on awkward and dangerous sites will be at the driver's discretion.

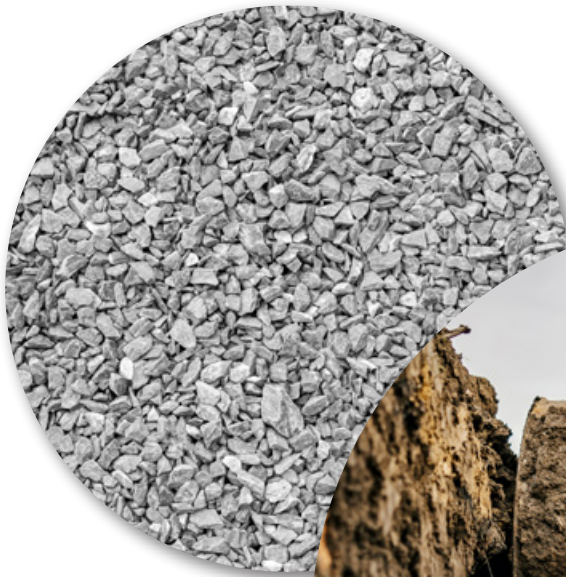
Ri-Treat EP10 • 6565kg



Excavation

Preparation of the excavation

- The width of the excavation is to be a minimum of 3 metres x 3 metres.
- Over excavate by a minimum of 300mm all round to all sides for backfill.
- To prepare the base, excavate a flat, uniform surface to a depth of 100mm below the required level and backfilled with 10-12mm gravel for bedding of the tank.
- Where natural ground is extremely soft, over excavate by 200mm, compact 100mm of 50-75mm ballast into the surface and backfill to the required level with 10-12mm gravel.
- **DO NOT** place unit on a rocky or uneven base.

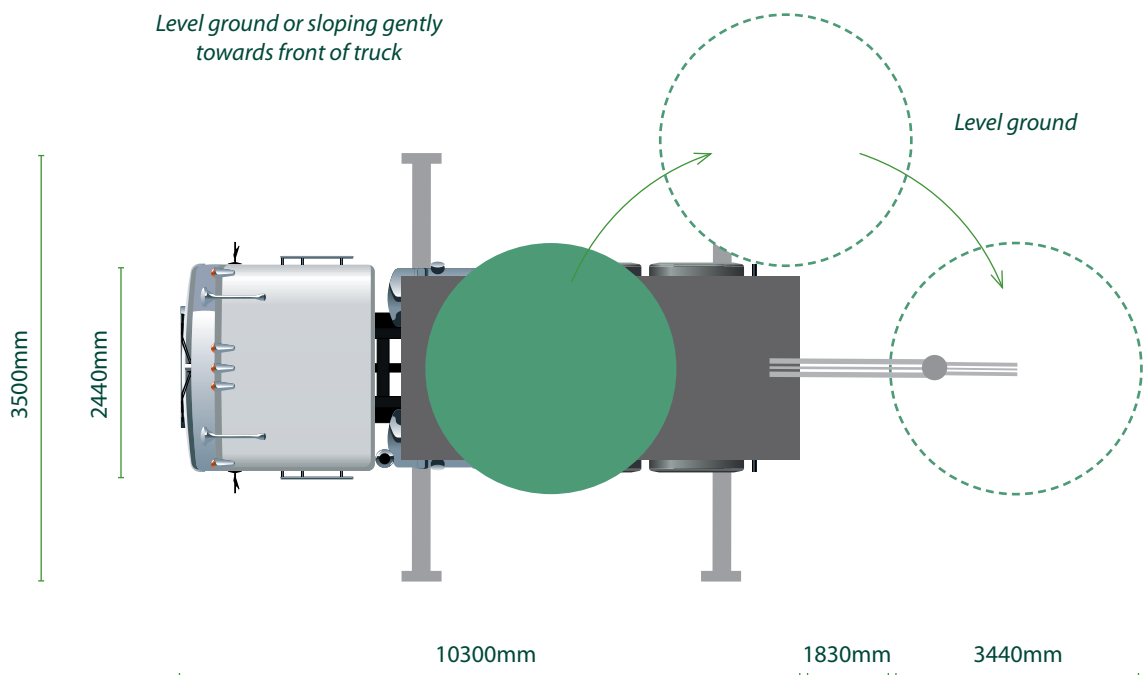
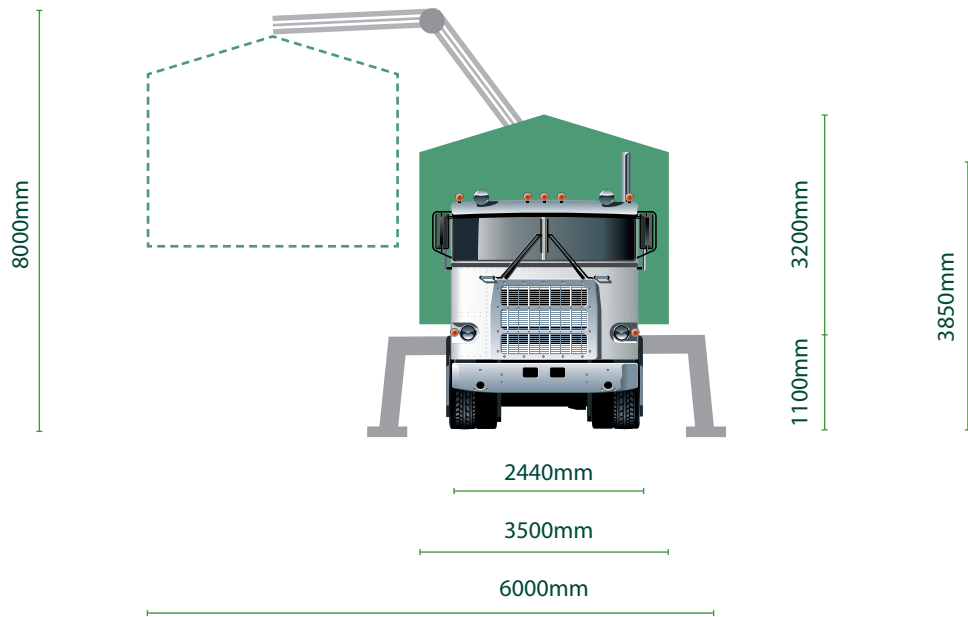


Delivery

We offer a FREE on-site visit to advise on tank location and delivery assessment.

Delivery instructions

The truck would need to reverse up to the hole. A clear level site is required to unload the tank into your prepared excavation. Easy access is very important, ie. NO overhead trees, wires, etc. NO benching out of the hole.



Installation

All Ri-Treat EP10 units have been factory water tested in a controlled environment prior to delivery.

- **The Ri-Treat EP10 must be installed by a licensed plumbing contractor.**
- The tank must be level when installed. The lid of the tank must sit above ground level at the seal.
- **Do not, under any circumstances, commence filling the EP10 with water until the external backfilling has been completed.**
- Backfill with approved granular material such as sand compacted in 150mm layers to 90% maximum dry density in accordance with AS 3798.
- **Do not use rock as backfill.**
- Backfill must be raised evenly around the tank with a maximum backfill height differential of 400mm at any time.
- Care must be taken to ensure that excavated material and backfill does not fall onto the lid of the tank, as material may fall into the tank, clogging the diffusers and irrigation pump.
- The inlet connection is a standard 100mm sewer pipe.
- The electrical connections are 240 volts for pumps and 12 volts for the alarm panel.
- **If the tank is not filled with water, it could hydraulically lift out of the ground in wet conditions.**

Failure to strictly follow these instructions will void the warranty, please refer to the warranty details.



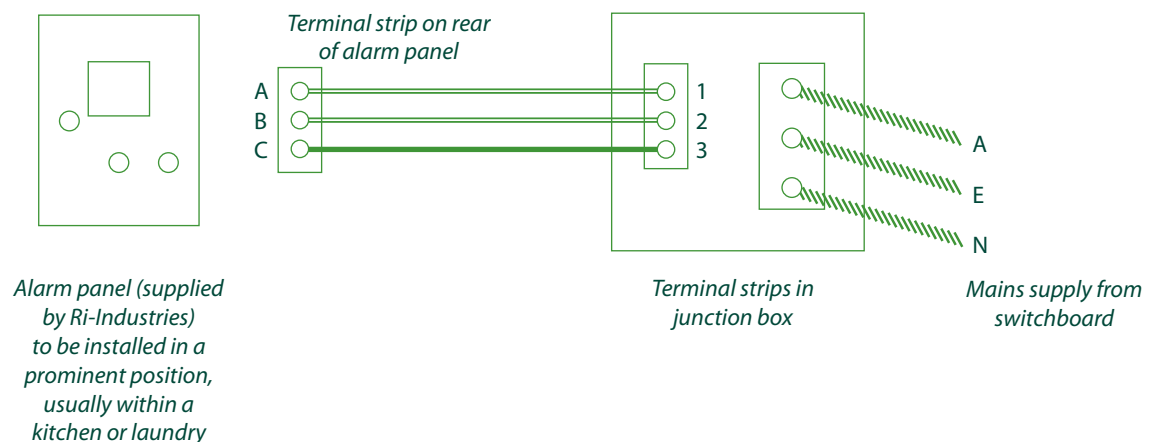
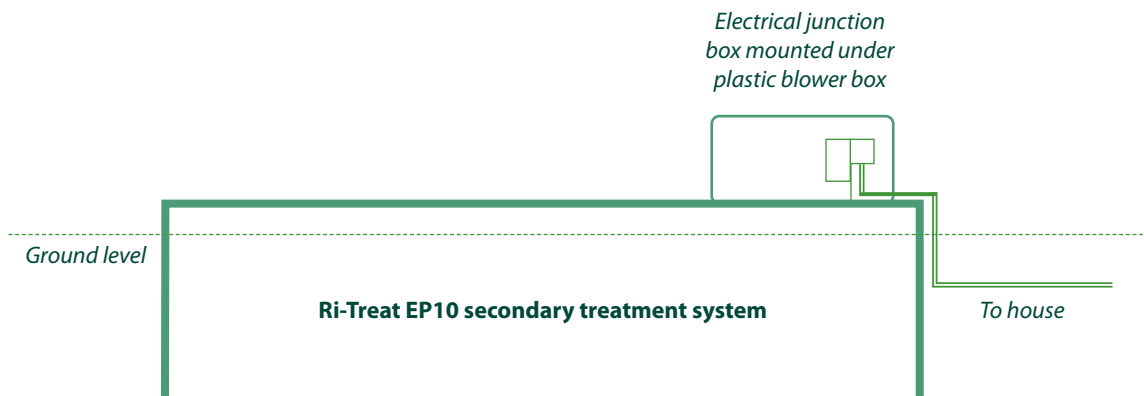
Electrical

All electrical connections must be carried out by trades persons who are experienced and licensed for such work.

Within the premises' switchboard, we recommend the use of an independent and dedicated circuit of 16 Amp (minimum) being serviced with its own ELCB (residual current device) to supply power to your Ri-Treat EP10.

Note: Ri-Industries' alarm panels will reset automatically and are 12 volt AC powered from a transformer within the control box mounted to the top of the tank. The green light indicates that there is power to the system. Low voltage for **your safety**. Auto reset for the least inconvenience and peace of mind.

Below is a diagram for the electrical installation:



Note: All electrical connections must be carried out by an experienced and licenced tradesperson.

Commissioning

The Ri-Treat EP10 will be supplied fully commissioned and ready for use. Once the unit is installed, it is important that the electrical power is provided to the system and the unit is filled to the correct levels with clean water.

The recommended operating temperature range when fully buried is for an ambient air temperature of between -1°C and 41°C .

The following steps must be completed prior to the use of the unit:

Installer's responsibility

- The Ri-Treat EP10 is to be filled to 50% capacity with clean water or until both sides of the aeration filter media are covered.
- Drain from the residence is connected.
- Outlet pump is installed and connected to the irrigation/dispersal field.
- Irrigation placement of sprinklers and drippers.
- Electrical power is connected.

Owner's responsibility

- Make contact with an accredited service agent to arrange the ongoing servicing of the unit. If you are unsure who the service agent is, please contact Ri-Industries on (08) 8444 8100.



Servicing the Ri-Treat EP10

Servicing of the Ri-Treat EP10 should only be carried out by an SA Health Accredited Service Agent. Contact Ri-Industries to find a service agent in your area.

Please refer to the warranty details.

Instructions

Remove the plastic cover over the air blower and electrical control box. Look for any chafed electrical cables which may cause problems. Remove the air filter cover from the air blower. Clean or replace the air filter as required and check the intake to the air blower is clear. Check that the joining tube is not too rigid or damaged. If necessary, replace it. Sweep out any foreign matter from under the plastic cover.

Using the 'swift lift' 1.3t, lift the concrete covers from above the septic chambers (small cover) and check that the liquid level is similar on both sides of the baffle. If the levels are different, the crossover opening may be blocked; clear as necessary. Take notice of the 'crust' thickness in the primary septic chamber. This is an indicator of how the system is running, or if it may have been overloaded.

The crust within a septic system gradually develops over time. The natural bacteria break the crust down over time, however if the system is overloaded this function may be slowed or stopped. Excessive crust may have to be removed (by vacuum tanker).

The natural bacteria can be affected by:

- Excessive amounts of water
- Excessive biological load
- The use of antibacterial substances
- The use of antibiotics by a number of people at the same time
- The use of chemicals, petrochemicals or excess cooking oils or fats

The system is designed to cope with the occasional, short term overload. Due to the recirculation circuit within the system, it is able to recover from most minor overloads during periods of lower loads.

Remove (larger) cover over the septic to aeration chamber baffle. Remove the filter from the filter housing and hose down the filter, making a note if the filter is blocked. Replace the filter annually or as required. Replace and cover when completed.

Remove the large centre square cover to expose the two aeration chambers. Check that the air flow appears to be similar in both the chambers. If not, adjust the flow using the red handled taps within the system. There may be a development of scum within the aeration chambers. If excessive, this should be vacuumed off and returned to the primary or inlet chamber. (It is best to be returned to the inlet, which is below the PVC cover). This cover should also be removed to check that the inlet to the system is not blocked.

The 'sludge-return' (at the outlet to the aeration chamber) should be checked to ensure that it is not blocked, as this can cause the whole system to flood. It is easily cleared with a pressure garden hose to flow through the inlet pipe and the bio-medium within the unit. Within this sep-return there is a sludge return, which will return any trapped scum back to the inlet. This is controlled with an air tap (which is located inside the tank) whilst servicing. This tap should be opened fully for several minutes, which clears the chamber. It should then be returned to a position where air is allowed to very slowly bubble through. This flow can be checked by looking at the water return flow at the inlet of the tank. Remove the filter from the filter housing and hose down the filter, making a note if the filter is blocked. Replace the filter annually or as required.

The cubes of bio-medium also can build up with bio-mass. If excessive, this is best dislodged using a pressure garden hose to wash the bio-mass off the blocks. This of course releases bio-mass from the blocks, which will be required to be transferred back to the primary chamber, either by vacuum or by the internal sludge return. The risk is that too much may block the septic return and cause flooding within the system. The use of a wet and dry vacuum is useful.

From the aeration chamber, the liquid flows into the settlement chamber. Within this chamber there is a sludge return, which will return any floating and settled scum back to the inlet. This is controlled with an air tap (which is below the PVC inspection cover). When servicing, this tap should be opened fully for several minutes, as this clears most scum and sludge from this chamber. It should then be returned to a position where air is allowed to very slowly bubble through. This flow can be checked by looking at the return flow at the inlet to the tank.

Remove the final concrete cover. From the settlement chamber, the liquid flows into the pump out chamber. Here it passes through the chlorine canister and is stored, ready for automatic irrigation. With the cover off this chamber, check the liquid level, the pump and alarm cables, and the clarity of the liquid. Usually you will be able to see into the liquid several hundred millimetres in depth. This is only a guide to quality.

Tests to be performed as part of a regular service

1. Take a sample of liquid from the first sprinkler by tripping the pump float to discharge. The amount of liquid should be enough to fill a turbidity tube, or large beaker. Perform a pH test and residual chlorine test, using the appropriate swimming pool test kits.
2. Using a turbidity tube, view the liquid at varying depths to find the corresponding numbers for the clarity of liquid. Calculate the probable B.O.D.S. from the clarity.
3. Using the thermometer, check the temperature of the primary and aeration chambers (if the temperature is high, the absorption of oxygen is greatly reduced, causing poor quality of waste water).
4. Using a dissolved oxygen meter, check the increase of oxygen from the primary to aeration chambers. If there is a low reading in both chambers, look for causes.

5. pH tests give an indication of the system being unstable. A pH neutral reading is ideal. Levels that are too acidic or too alkaline will make the system not function properly and produce offensive odours.

On start-up of systems there may be slight odours. If you wish, adding a small amount of “dynamic lifter” soaked in water to the inlet of the system may help to kick start the system. If the system becomes too acidic, you may add a little dehydrated lime to reduce the pH. If the system becomes too alkaline, it is possible to add a little hydrochloric acid – but be careful when doing this.

The system operates naturally and usually with very little addition of chemicals, etc.

- Top up the chlorine. *Please note: use stabilised chlorine tablets only (tri-chloro-iso-cyanuric acid).*
- Replace all covers.
- Replace the plastic blower box cover.
- Check the land application area (irrigation area) is working correctly and the pump is discharging correctly.
- Check the “re-claimed warning” signs are positioned, mounted and visible.
- Wash hands thoroughly with either antiseptic or disinfectant hand cleaner.

Complete a service report stating the test results, any defects found and general condition of the system. Leave a copy of the report on site with the owner or authorised land agent, create a second copy to be sent to Council, and a third copy to be retained by the service agent.

Should you have any problems or queries in relation to the system, please feel free to contact Ri-Industries.

Recommended maintenance tools

1. Swift lift 1.3t lifting clasp to remove the concrete covers
2. Cordless drill or screwdriver with Phillips head adaptor to remove the screws on the plastic blower box and PVC trap screws
3. Medium sized flat head screwdriver
4. Broom
5. Wet and dry vacuum
6. Rubber gloves

Recommended instruments

1. Turbidity tube
2. Swimming pool pH test kit
3. Swimming pool chlorine test kit
4. Floating thermometer
5. Dissolved oxygen meter
6. Sludge judge

Ri-Treat and Ri-Scape bristle filter

The Ri bristle filter is fitted as a standard item in our secondary treatment systems and can be incorporated with our septic tanks and holding tanks for better quality effluent.

We recommend cleaning the filter quarterly, with replacement annually or as required.

Poor maintenance or factors such as garbage disposals and excessive laundry may result in more frequent inspections/servicing or replacement of the filter.

Features

- Keeps out hair, lint, tissue, seeds and other items that can clog pumps and soakage trenches.
- Provides excellent filtration.
- Offers over 300 cubic inches of open area to reduce clogging.
- Flexible filters can be used in hard-to-reach Tees or baffles, etc.
- Made from twin 2.5mm galvanised wire with black UV-stable polypropylene bristles for superior filtration of your septic tank.

Installation and removal

To install

Push the Ri bristle filter into the top of the PVC tee inside the tank until the 90-degree wire handle touches the top of the tee. The filter is now 'installed', as shown in the picture.

To remove for cleaning or replacement

Remove the filter by pulling up on the filter handle. We recommend hosing down the filter over the inlet chamber. If replacing, put the used filter in a plastic bag for proper disposal.





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