



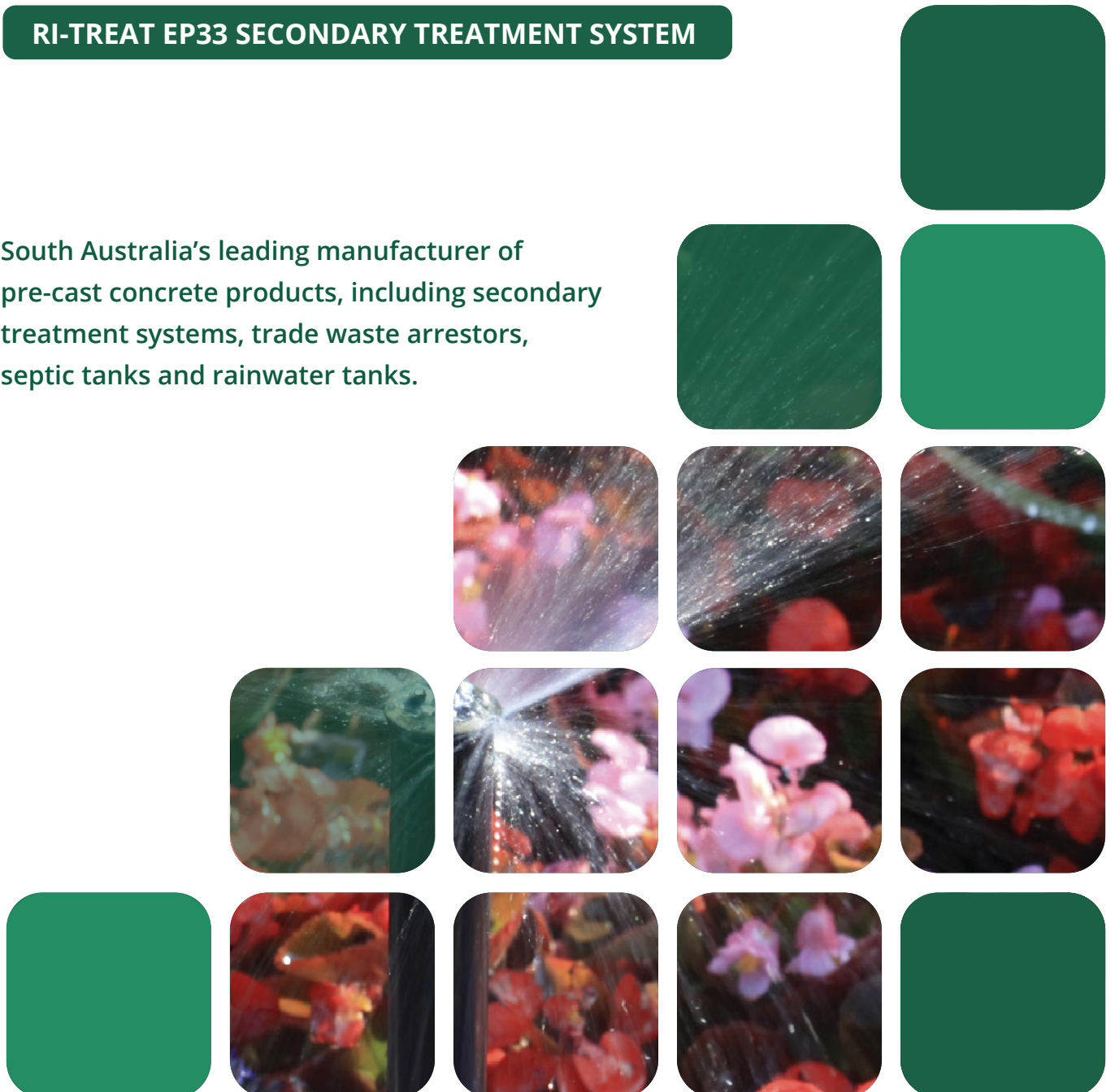
Ri-Industries

For servicing of your STS unit please
telephone the service agent.

Installation and Maintenance Manual

RI-TREAT EP33 SECONDARY TREATMENT SYSTEM

South Australia's leading manufacturer of
pre-cast concrete products, including secondary
treatment systems, trade waste arrestors,
septic tanks and rainwater tanks.





Ri-Industries

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ri-industries.com.au

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Warranty

The warranty will be void if the unit is not installed, maintained, or operated according to the manufacturer's requirements. Examples include:

- Failure to install the tank in strict accordance with the Ri-Industries Installation and Maintenance Manual for the Ri-Treat EP33.
- Any form of structural modification.
- Failure to service the aerobic unit in compliance with SA Health guidelines for onsite wastewater systems and the manufacturer's specified requirements.
- Failure to undertake servicing and repairs by an approved SA Health servicing contractor or failure to maintain records of all services and repairs.
- Overloading the system by not following the guidelines outlined in the General Information section of the Ri-Industries Householders Operational Manual for the Ri-Treat EP33.
- Use of unsuitable cleaning products, as specified in the Ri-Industries Householders Operational Manual.
- Damage to the unit caused by (but not limited to) planting too close to the tank or external forces such as storms, fires, and floods.
- Failure to provide full system details during the transfer of ownership or land development.

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 EP33

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

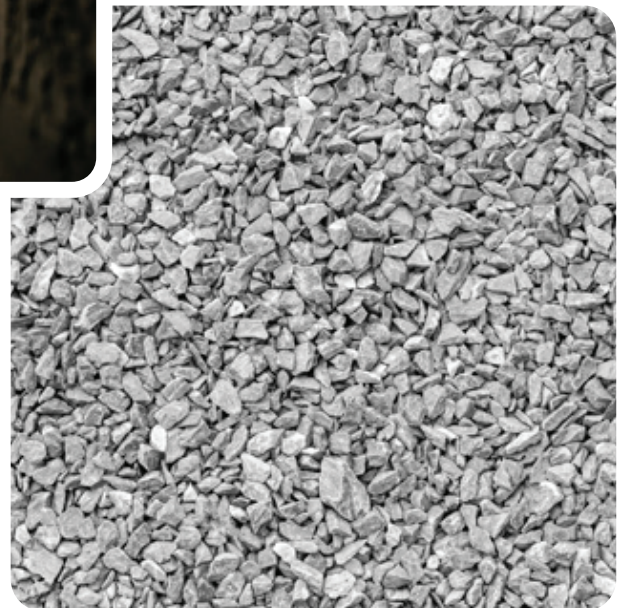
Note: Under no circumstances will concrete tanks be lifted over houses, sheds, or other valuable property, nor will they be lifted under low power lines. Unloading on difficult or hazardous sites will be at the driver's discretion.



Excavation

Preparation for excavation

- The excavation area must be a minimum of 3.5 metres x 10.5 metres.
- The base of the excavation must consist of a 100mm layer of levelled 10mm gravel.
- **DO NOT** place the unit on a rocky or uneven base.

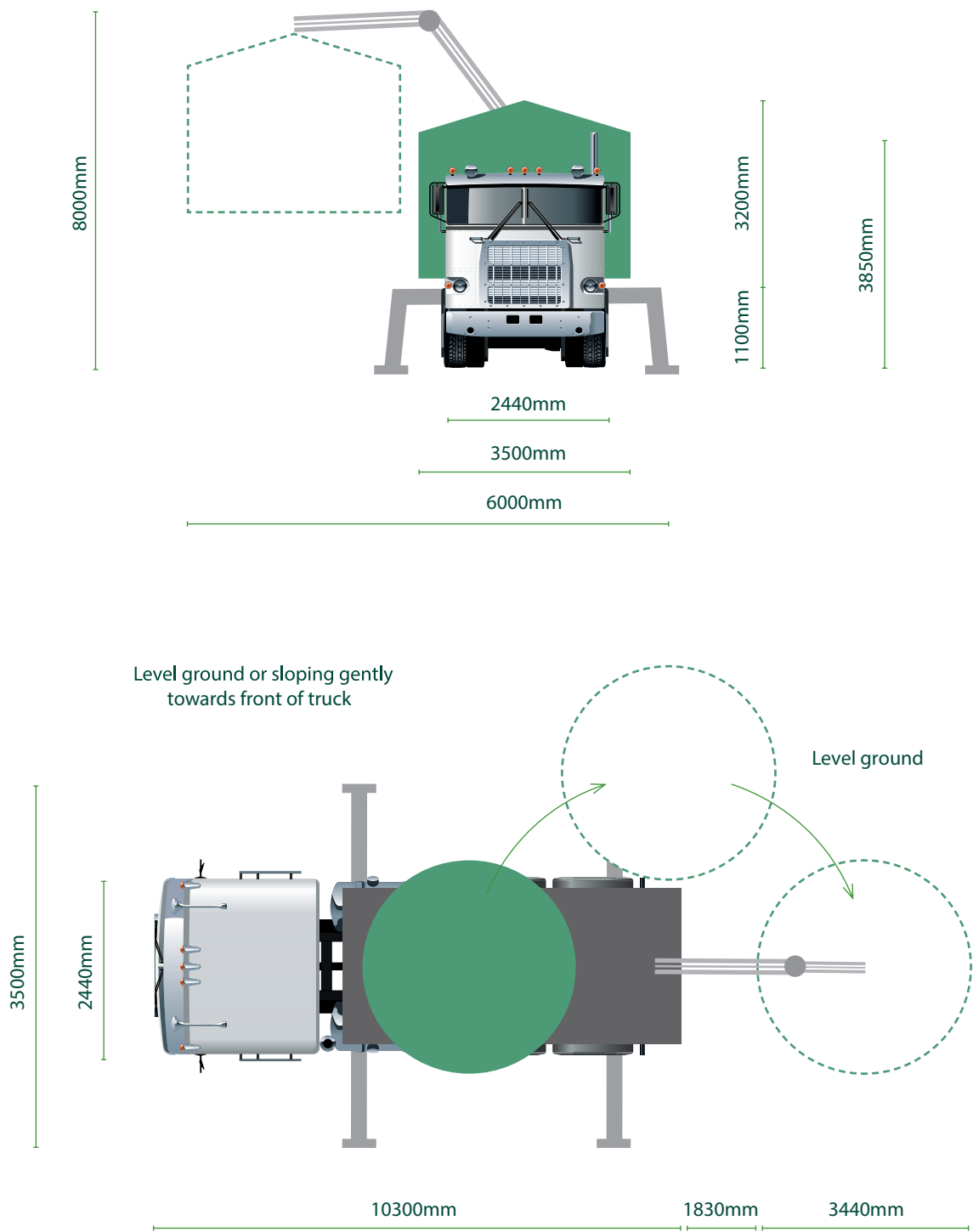


Delivery

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

Delivery Instructions

The truck will need to reverse up to the excavation. A clear, level site is required to unload the tank into the prepared hole. Easy access is essential - no overhead trees, wires, or other obstructions. Benching out of the hole is not permitted.



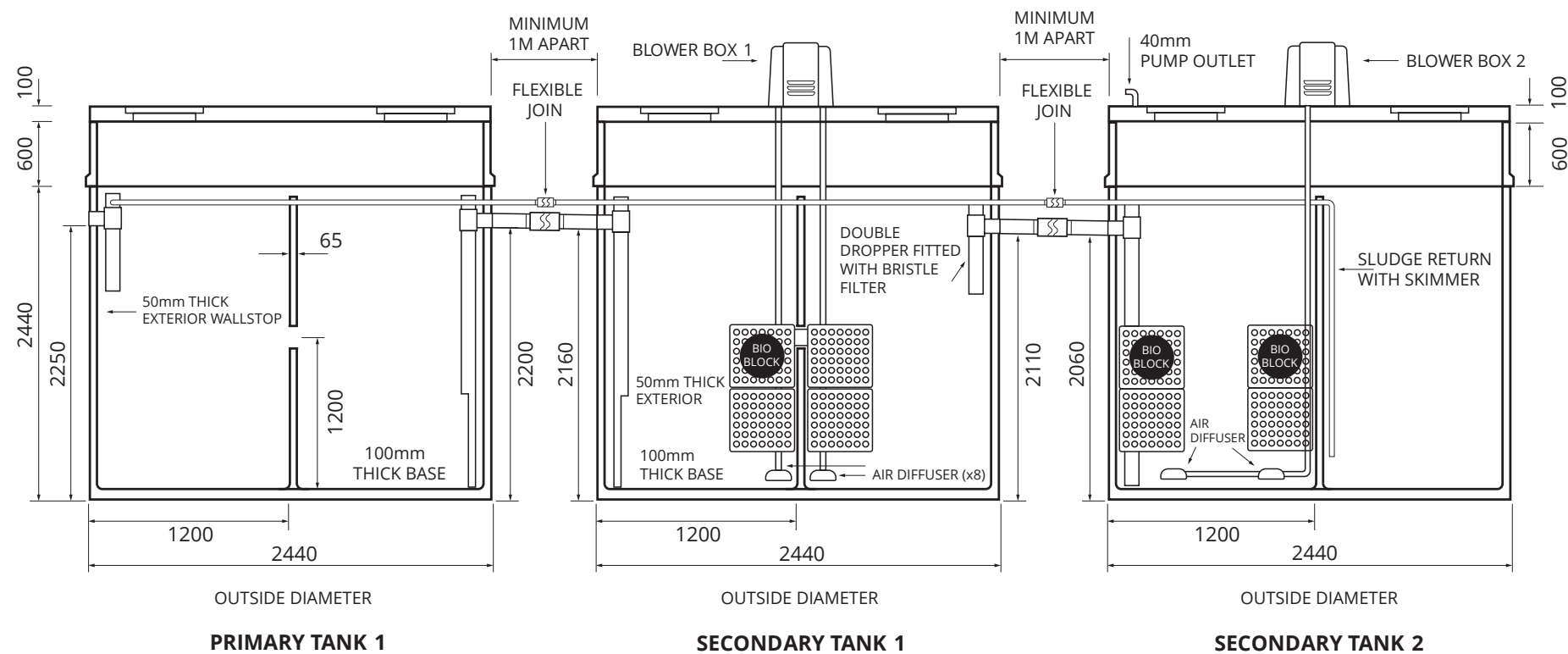
Installation

- **The Ri-Treat EP33 must be installed by a licensed plumbing contractor.**
- The tank must be level when installed.
- Ensure excavated material and backfill do not fall onto the lid of the tank, as debris may enter the tank and clog the diffusers and irrigation pump.
- The inlet connection is a standard 100mm sewer pipe. The connections between the tanks are 100mm and 40mm. It is recommended to join the tanks using a flexible joiner (not supplied).
- Electrical connections are 240 volts for pumps and 12 volts for the alarm panel.
- Backfill around the tanks with gravel or excavated material/good soil. Complete the backfilling with approved granular material, such as sand, compacted in 150mm layers to 90% maximum dry density, in accordance with AS 3798.
- Backfilling should be raised evenly around the tanks, with a maximum backfill height differential of 400mm at any time. The lids of all three tanks must sit above ground level at the seal.
Rock must not be used as backfill.
- Tanks must be completely filled with clean water to the operating level.
- **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.



Installation technical specifications



Electrical

All electrical connections must be carried out by licensed and experienced tradespeople.

Within the premises' switchboard, we recommend using an independent and dedicated 16 Amp (minimum) circuit, serviced by its own ELCB (residual current device), to supply power to your Ri-Treat EP33.

Alarm system components

The alarm system consists of three units:

1. Auxiliary control box (located on secondary tank 1)

- Contains a double GPO for the two Mac 100 air blowers.
- Has cables connecting the auxiliary panel to the main alarm panel for alarm system operation and power supply.
- Includes a 7.2Ah SLA battery for alarm operation during power outages.

2. Main control box (located on secondary tank 2)

- Contains the PLC (Programmable Logic Controller), sensor interfaces, and the alarm cancel button.
- Has a double GPO for the two Mac 100 air blowers.
- Features a "dial home" device that can send an SMS to up to 10 configurable mobile numbers with an alarm message and location details in case of a fault.
- These 10 numbers can also remotely cancel the alarm via SMS.

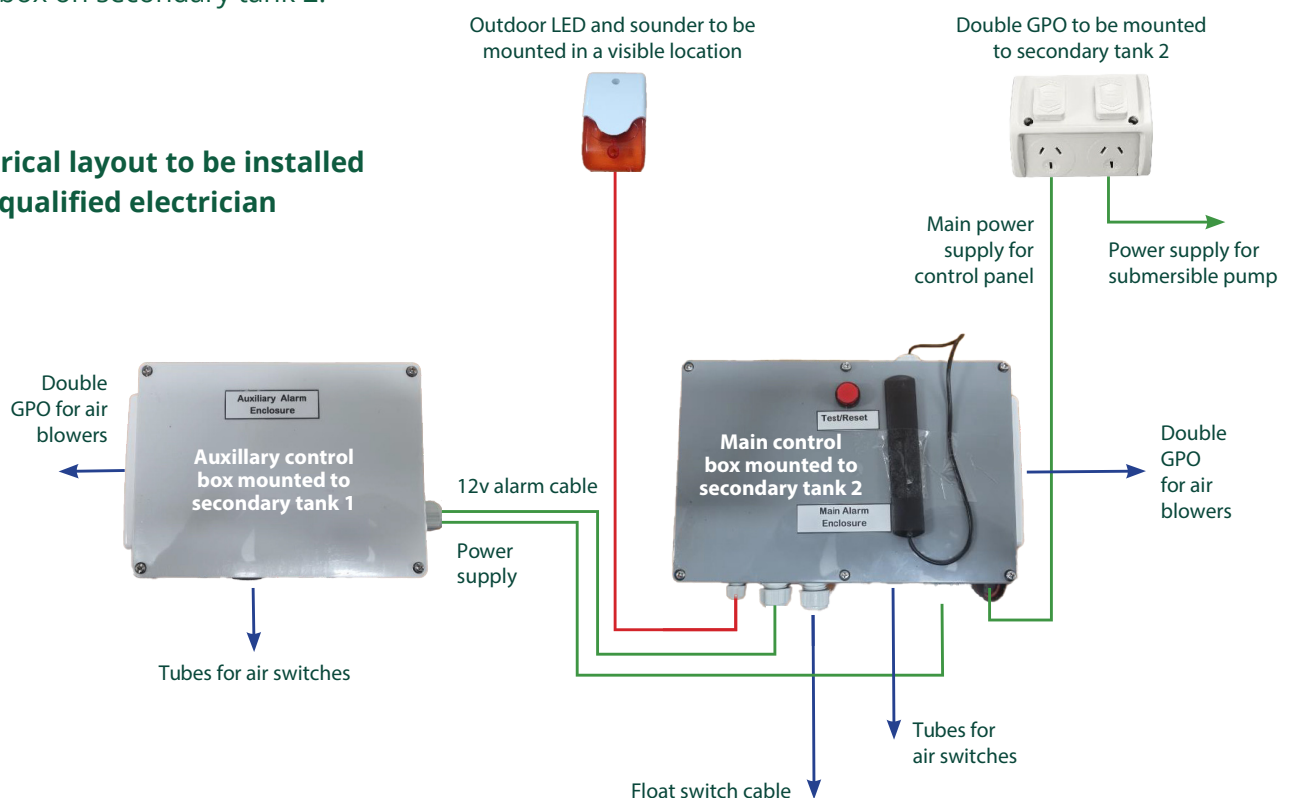
3. Audible/visual alarm (mounted outdoors near the unit)

- Includes an illuminating LED and sonalert sounder to alert if the system has a fault.

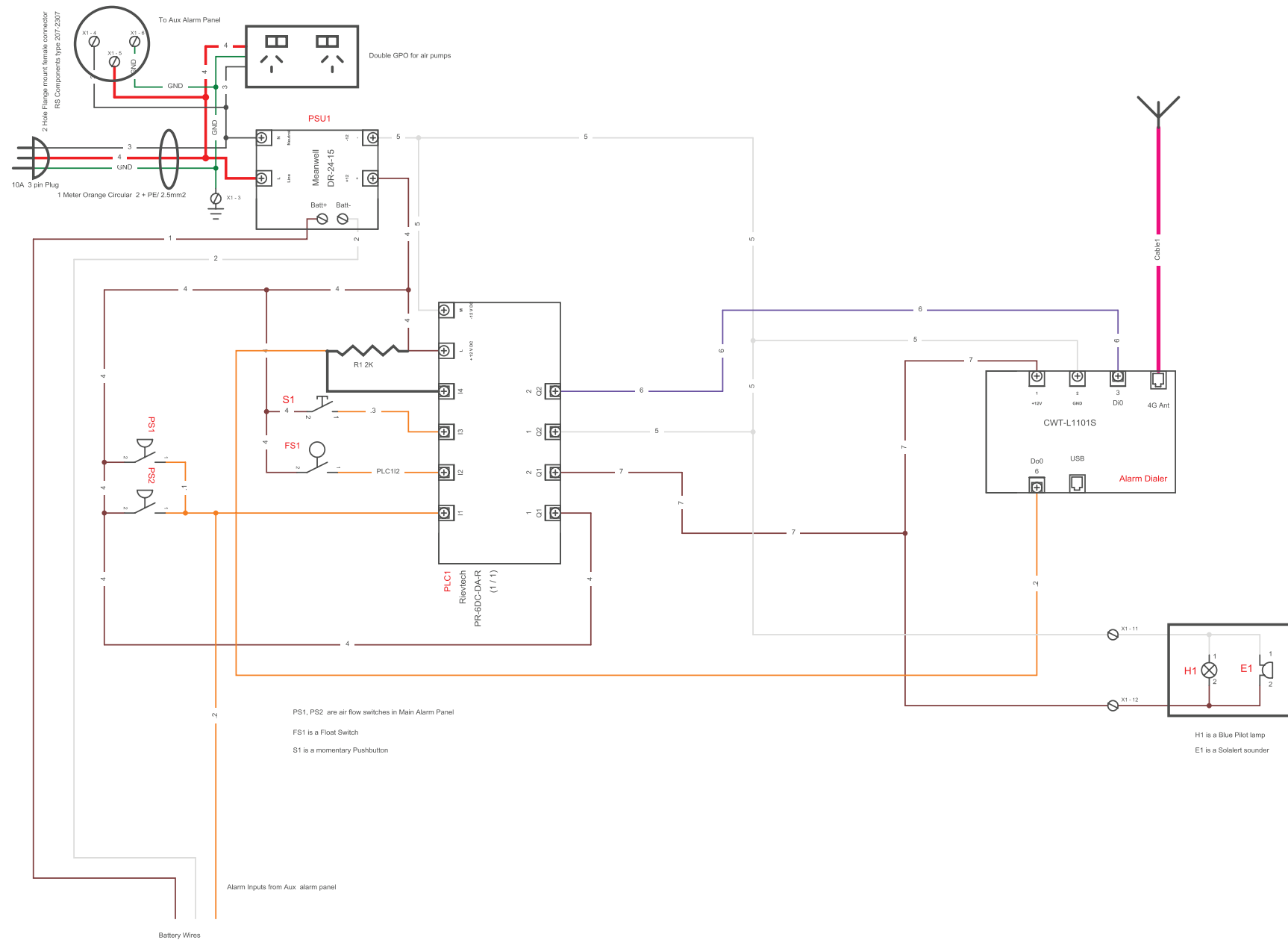
Secondary tank 2

- ## Secondary tank 1

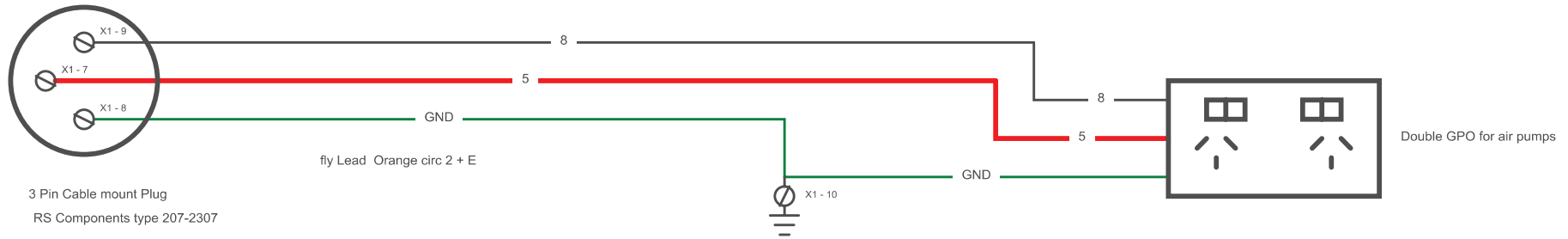
- Electrical layout to be installed
by a qualified electrician**



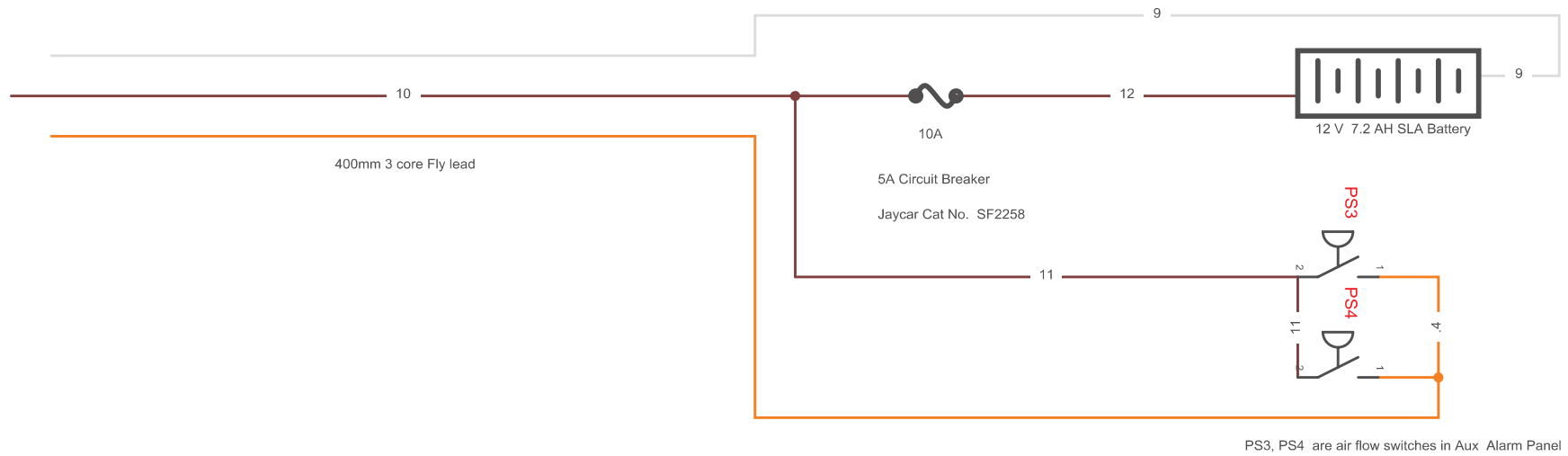
Main control box wiring diagram



Auxiliary alarm panel



3 Pin Cable mount Socket
RS Components type 207-2327



Setting up the auto dialler

The Ri-Industries auto dialler is located in the main control box and is designed for the Ri-Treat EP33. It operates on the 4G cellular network to notify owners and maintenance personnel when an alarm is triggered.

The alarm system also includes a local warning lamp and loud sounder to alert people nearby.

Alarm triggers

The alarm is activated by the following failures:

- Failure of any installed air blowers
- High float alarm (when fitted)
- Power failure

Alarm notifications

- The auto dialler has a backup battery that powers the alarm system for approximately 30 hours. The battery is charged by an onboard charger.
- Up to 10 mobile phone numbers can be programmed to receive an SMS notification if an alarm occurs.
- These phone numbers can also remotely silence the lamp and sounder by sending an SMS command to the auto dialler.
- The unit only sends SMS alarms between 6am and 8pm. If an alarm occurs between 6am and 8pm, an SMS will be sent, and the local lamp and sounder will activate.
- Alarms that occur outside these hours will be stored and sent at the next available time.
- The sounder will operate for one hour, then silence for three hours on a repeating cycle until the alarm is turned off remotely via SMS.

To temporarily disable the alarm sounder, send the word **Stop** (capital S, no quotes) via SMS to the system phone number. This will silence the alarm for 24 hours, preventing unnecessary disturbances to neighbours.

Alarm reset and test functions

- The unit will generate an alarm if an issue persists for more than three hours and will monitor the alarm status every hour to prevent multiple SMS messages for short-term issues like minor power outages.
- A manual reset button is located on the front of the main control box.
 - Pressing the button once will silence the local lamp and sounder for 24 hours (same as the SMS Stop command).
 - Holding the button for 10 seconds will send a test SMS to the pre-programmed numbers and activate the indicator light for 10 seconds, indicating that an SMS attempt has been made.

Commissioning

The Ri-Treat EP33 is supplied fully commissioned and ready for use. Once installed, it is essential to provide electrical power to the system and fill the unit to the correct levels with clean water.

The system cannot be commissioned unless power is available at the unit.

Steps to complete before using the unit

Installer's responsibility:

- The Ri-Treat EP33 must be completely filled with clean water to the operating level.
- Connect the inlet drain and ensure the tanks are properly joined together.
- Install and connect the outlet pump to the irrigation/dispersal field.
- Ensure proper placement of sprinklers and drippers for irrigation.
- Connect electrical power.

Owner's responsibility:

- Contact an accredited service agent to arrange 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 EP33 should only be serviced by an SA Health accredited service agent. Contact Ri-Industries for a service agent in your area. Before servicing, refer to warranty details.

Primary tank 1

This is an anaerobic tank, so minimal servicing is required.

- Remove the two concrete manhole covers using two 1.3t swift lift clutches.
- Check sludge levels on both sides of the baffle.
- Ensure the inlet, sludge return, and outlet to secondary tank 1 are clear.
- Observe the thickness of the crust in the primary septic chamber, as this indicates how the system is functioning and whether it may be overloaded. A natural crust forms in the septic system over time, and bacteria break it down gradually. However, if the system is overloaded, this process may slow or stop. Excessive crust buildup may need to be removed using a vacuum tanker.

Natural bacteria can be affected by:

- Excess water or biological load .
- Antibacterial substances, antibiotics, chemicals, petrochemicals, or excess oils/fats

The system is designed to recover from minor short-term overloads.

Secondary tank 1

- Remove the plastic cover over the air pumps and electrical control box.
- Check for any chafed electrical cables that may cause problems.
- Remove the air filter cover from the air blowers.
- Clean or replace the air filters as required and ensure the intake to the air blowers is clear.
- Check that the joining tubes are not too rigid or damaged. Replace if necessary.
- Sweep out any foreign matter from under the plastic cover.
- Using two 1.3t swift lift clutches, lift the manhole covers and check that the airflow from the blowers through the diffusers is consistent in both chambers.
- Inspect the diffusers for wear and replace them if necessary.
- Remove the two bristle filters and clean or replace them as needed. Once cleaned, place them back into the filter holders in the tank.
- Check sludge levels on both sides of the baffle.

Secondary tank 2

- Remove the plastic cover over the air pump and electrical control box.
- Check for any chafed electrical cables that may cause problems.
- Remove the air filter cover from the air blowers.
- Clean or replace the air filters as required and ensure the intake to the air blowers is clear.
- Check that the joining tubes are not too rigid or damaged. Replace if necessary.
- Sweep out any foreign matter from under the plastic cover.
- Remove all access covers using a 1.3t swift lift clutch and inspect the airflow from the diffusers in the aeration chamber.
- Check for biomass buildup on the bio-medium cubes. If excessive, use a pressure garden hose to wash the biomass off the blocks.
- Ensure dislodged biomass is transferred back to the primary chamber, either by vacuum or the internal sludge return. Be cautious, as releasing too much at once may block the septic return and cause flooding.

Sludge return check

- Check the sludge return at the outlet of the aeration chamber to ensure it is not blocked, as this can cause the system to flood.
- Clear any blockages using a pressure garden hose, flushing through the inlet pipe and bio-medium within the unit.
- Within this return, a sludge return system sends trapped scum back to the inlet of primary tank 1. This is controlled by an air tap (located inside the tank).
- Open the air tap fully for several minutes to clear the chamber, then adjust it to allow a slow bubbling flow.
- Check the flow by observing the water return at the inlet of primary tank 1.
- Remove the bristle filter from the filter housing in the settlement chamber, hose it down, and check for blockages. Replace the filter annually or as required.
- Liquid from the settlement chamber flows through the chlorine canister and is stored in the pump-out chamber for automatic irrigation.
- Check the liquid level, pump, alarm cables, and clarity of the liquid.
- Normally, the liquid should be clear enough to see several hundred millimetres in depth, though this is only a general guide to quality.
- Top up the chlorine canisters with approved tablets as required.

Tests to be performed as part of a regular service

Liquid sample testing

- Take a sample of liquid from the pump-put chamber or settlement chamber.
- Collect enough liquid to fill a turbidity tube or large beaker.
- Perform a pH test and residual chlorine test using the appropriate swimming pool test kits.

Turbidity test

- Use a turbidity tube to assess liquid clarity at varying depths.
- Record the corresponding numbers for clarity and calculate the probable B.O.D.S. (biochemical oxygen demand score).

Temperature check

- Use a thermometer to measure the temperature of the primary and aeration chambers.
- High temperatures can reduce oxygen absorption, leading to poor wastewater quality.

Dissolved oxygen test

- Use a dissolved oxygen meter to compare oxygen levels in the primary and aeration chambers.
- Low readings in both chambers may indicate an issue that needs further investigation.

pH testing

- Check pH levels, as they indicate system stability.
- A neutral pH is ideal; excessively acidic or alkaline conditions can cause system malfunction and offensive odours.

System adjustments

- On start-up, slight odours may occur. Adding a small amount of Dynamic Lifter (soaked in water) to the system inlet may help kick-start the process.
- If the system becomes too acidic, add a small amount of dehydrated lime to raise the pH.
- If the system becomes too alkaline, add a small amount of hydrochloric acid, but handle it with care.

System operation and final checks

The system operates naturally and typically requires minimal chemical additions.

- Top up the chlorine using stabilised chlorine tablets only (tri-chloro-iso-cyanuric acid).
- Replace all covers.
- Replace the plastic blower box cover.
- Check that the land application area (irrigation area) is functioning correctly and that the pump is discharging properly.
- Ensure the “reclaimed water” warning signs are positioned, mounted, and clearly visible.
- Wash hands thoroughly with antiseptic or disinfectant hand cleaner.

Service report

Complete a service report detailing:

- Test results
- Any defects found
- General condition of the system

Leave a copy of the report on-site with the owner or authorised land agent, send a second copy to Council, and retain a third copy for the service agent’s records.

If you have any problems or questions about the system, contact Ri-Industries.

Recommended maintenance tools

- Two swift lift 1.3t lifting clasps and cast-iron lifters to remove the concrete covers
- Cordless drill or screwdriver with Phillips head adaptor to remove the screws on the plastic blower box and PVC trap screws
- Medium-sized flat head screwdriver
- Broom
- Wet and dry vacuum
- Rubber gloves

Recommended instruments

- Turbidity tube
- Swimming pool pH test kit
- Swimming pool chlorine test kit
- Floating thermometer
- Dissolved oxygen meter
- Sludge judge

Ri-Treat and Ri-Scape Bristle Filter

The Ri Bristle Filter comes standard in our Ri-Treat and Ri-Scape tanks and can be incorporated into septic and holding tanks to enhance effluent quality.

We recommend cleaning the filter quarterly and replacing it annually or as needed.

Poor maintenance or factors such as garbage disposals or excessive laundry may require more frequent inspections, servicing, or replacement of the filter.

Features

- Effectively filters out hair, lint, tissue, seeds, and other debris that can clog pumps and soakage trenches
- Provides excellent filtration performance
- Offers over 300 cubic inches of open area to minimise clogging
- Flexible design allows installation in hard-to-reach tees, baffles, and similar components
- Constructed from twin 2.5 mm stainless wire with black UV-stable polypropylene bristles for superior filtration and durability

Installation and removal

To install:

1. Push the Ri Bristle Filter into the top of the PVC tee inside the tank until the 90-degree wire handle rests on the top of the tee.
2. The filter is now installed, as shown in the picture.

To remove for cleaning or replacement:

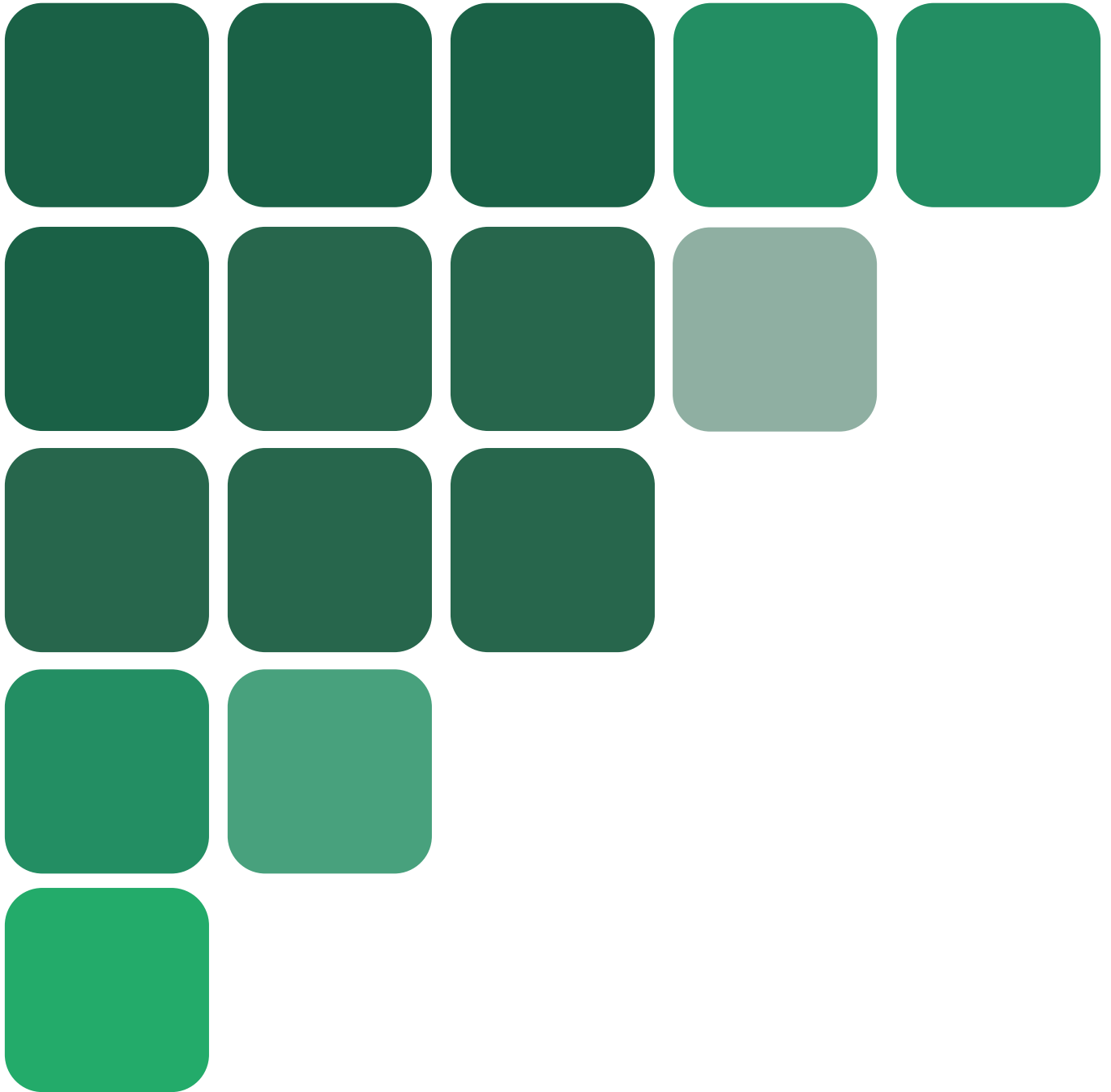
1. Pull up on the wire handle to remove the filter.
2. Hose down the filter over the inlet chamber to clean it.
3. If replacing, place the used filter in a plastic bag for proper disposal.

To order

Please contact Ri-Industries

- sales@ri-industries.com.au
- 8444 8100





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