

AQUA-MARE GRINDER PUMP ASSEMBLY

Installation Instructions

1. Install the Grinder Pump Tank as close as is reasonably possible to the Marine Sewage Treatment System to minimise piping and fluid retention problems between the two systems.
2. Both the Grinder Pump Tank and the Marine Sewage Treatment System should be installed with the tops of the tanks at approximately the same level or with the Grinder Pump Tank higher than the Marine Sewage Treatment System to prevent fluid flowing back into the Grinder Pump Tank.
3. All hose connections should be double clamped, and the tanks and pumps tested for leaks with fresh water prior to commissioning.
4. A 100mm diameter Waste Inlet Pipe is provided in the tank wall for connection to the toilets. On request, an additional overflow pipe (100mm max diameter) can also be provided in an agreed location in the tank.
5. The Tank is supplied with the Grinder Pump installed and the pump outlet connected to one of the four screwed fittings by an internal hose. The location of the outlet can be changed by unscrewing the fittings and moving the fittings and hose to the preferred location.
6. Fit a hose tail to one of the remaining three screwed fittings and connect the hose tail to a through-hull vent using suitable waste resistant hose and a 38mm skin fitting, to allow external venting of the tank during filling and discharge. This hose should rise constantly from the tank fitting to the external vent; it must be adequately supported along its length and should not be allowed to 'sag' at any point, as fluid will potentially condense and accumulate in this area, blocking the 'breather' pipe.
7. The sensor tube for the air-pressure switch should be fitted to one of the remaining screwed fittings (preferably one of the central fittings). The rubber switch housing can be fixed to the side or top of the tank with a silicone adhesive or similar, once the electrical connections have been completed.
8. If a second (high-level warning) air pressure switch is to be fitted, fit this to the remaining screwed fitting (preferably centrally located once again).
9. Wiring instructions for the Grinder Control Panel:
 - a. Connect the neutral (blue) wire from the external 240v power supply to the screw-in connection marked 'In N'.
 - b. Connect the neutral (blue) wire from the grinder pump to the screw-in connection marked 'Out N'.

- c. Connect the active (brown) wire from the external 240v power supply to the screw-in connection marked 'In A'.
 - d. Connect the active (brown) wire from the grinder pump to the screw-in connection marked 'Out A'.
 - e. Connect two wires from the 'Tecma' fluid level air-pressure switch (remove the white cover from the base of the rubber housing to access the connections) to the two screw-in connections marked 'LS1' and 'LS2'.
 - f. Ignore the two 'trigger' connections as they are not used in this application.
10. The grinder pump will turn on automatically when the grinder pump tank becomes approximately 75% full, with the switch on the control panel set to 'auto'.
11. Setting the switch to 'man' will start the pump and immediately transfer any waste to the Sewage Treatment System.
- 12. Setting the switch to 'off' will disable the grinder pump and may allow the Grinder Pump Tank to over-flow if the toilets remain in use. *The use of this setting is not recommended.***
13. The connection of the second fluid level switch to an appropriate alarm/warning system is recommended to provide advance notification of any blockages and/or over-filling occurring within the Grinder Pump Tank.
14. The second (smaller) set of wires from the grinder pump tank provides notification of an internal leak within the grinder pump, if connected to a suitable alarm/warning system.

Grinder Pump Controller Schematic

	<p>N Out: 240V Neutral to Pump A Out: 240 volt Active to Pump</p>	
<p>A In: 240v Active Power In.</p> <p>N In: 240 v Neutral Power in.</p>		<p>Timing Pot: 0-60 secs OR 0-60 minutes</p> <p>Timing switch: Up: seconds Down: minutes</p> <p>Switch Sensor: Up: switch on ON Down: switch on OFF</p>
<p>T+: + Trigger for Dosing pump</p>	<p>T-: - Trigger for Dosing pump</p> <p>LS2: Fluid Level Sensor Switch Input 1</p> <p>LS1: Fluid Level Sensor Switch Input 2</p>	

DIP Switches:

Timing switch: Up (away from Auto/Man switch) - Timing Pot operates in seconds

Timing switch: Down (away from Auto/Man switch) - Timing Pot operates in minutes

Trigger switch: Up (away from Auto/Man switch) - Triggers on 'power on'

Trigger switch: Down (away from Auto/Man switch) - Triggers on 'power off'

Note: Trigger Switch functionality is not used for Grinder Tank Control