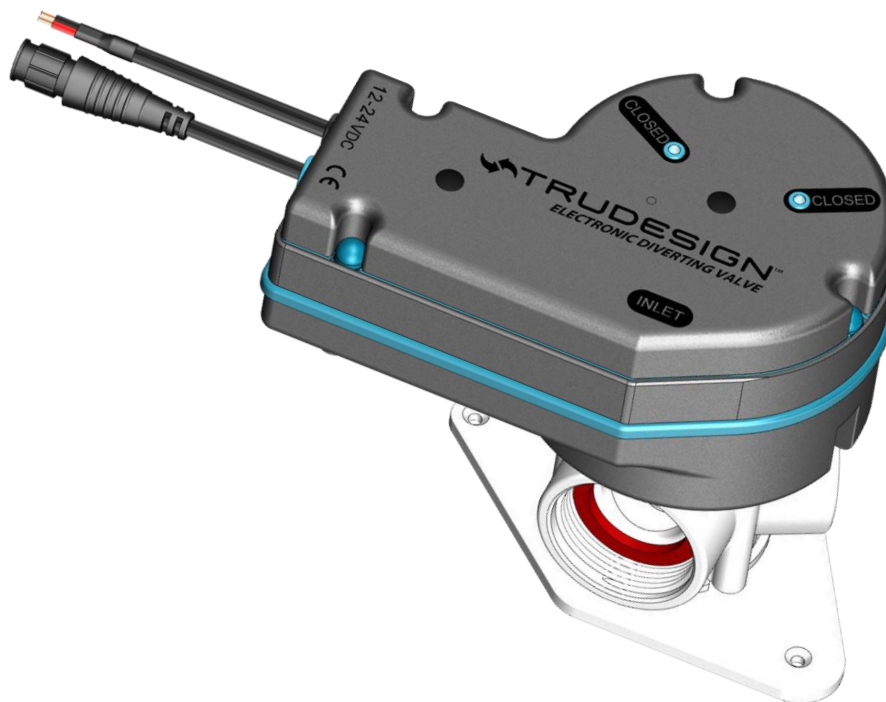


Contents

- Operating Instructions
- Care and Maintenance
- Trouble Shooting
- Installation
- Box Contents



Operating Instructions

The TruDesign Electronic Diverting Valve is designed for marine or RV applications where remote “Push Button” diversion of toilet black water to “overboard” or “holding tank” is desired.



Changing Valve to Overboard or Holding Tank.

Press either “Holding Tank” or “Overboard” button to select your desired port position. The Position Indication LED’s indicate which position the Valve is currently located in – Holding Tank, Overboard or Locked.

Locking the Valve to “Holding Tank” -The Valve can be locked in “Holding Tank”.

- Place Valve in Holding Tank Position – Press Holding Tank Button
- Lock Valve – Press LOCK button for 3-4 seconds. The LOCK and HOLDING TANK lights show that the valve is locked. The OVERBOARD button (option) is not available.

Unlocking the Electronic Diverting

Press LOCK button for 3-4 seconds. The LOCK light will turn off. The HOLDING TANK and OVERBOARD buttons / options are now available.

Locking the Valve to “Overboard” - You can also lock the valve in “Overboard”

- Place Valve in “Overboard Position” – Press Overboard Button
- Lock Valve – Press LOCK button for 3-4 seconds. The LOCK and Overboard lights show that the valve is locked. The Holding Tank button (option) is not available.

Unlocking the Electronic Diverting

- Press LOCK button for 3-4 seconds. The LOCK light will turn off. The HOLDING TANK and OVERBOARD buttons / options are now available.

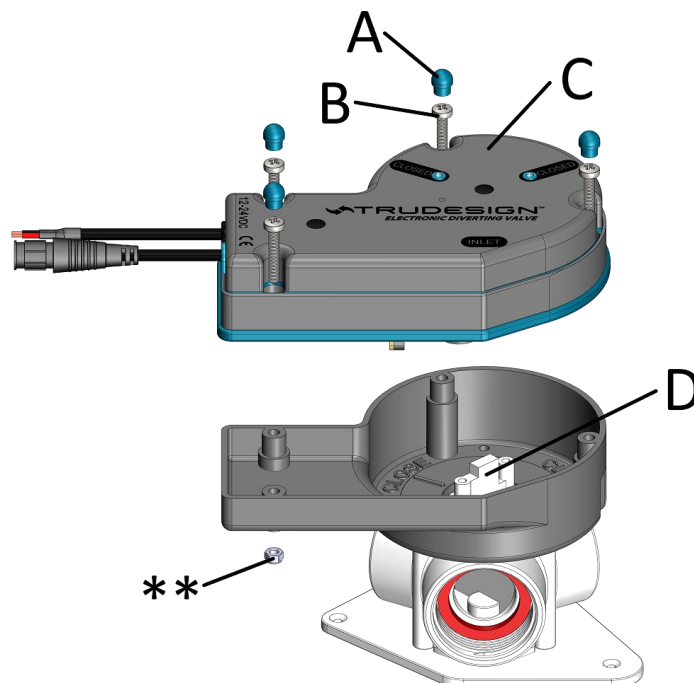
Care and Maintenance.

Hoses and valves in sanitation systems should be cleaned periodically to avoid calcium build up. This “build up” will make your diverting valve harder to turn, clog the system and eventually make marine toilet pumping harder. We recommend the valve be lubricated and cleaned annually.

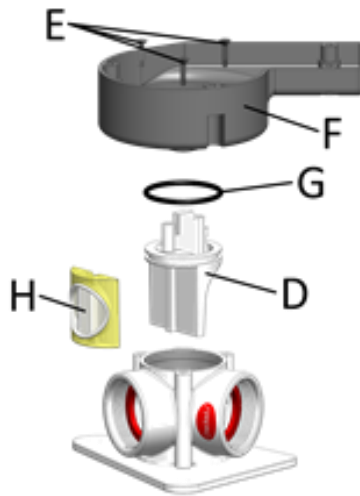
Cleaning and lubricating the Rotor Seal & Removal of Motor Drive Module

Ensure inlets and outlets are drained. **Note:** Handling of raw effluent is hazardous. Take all necessary hygiene precautions such as gloves and protective clothing. Empty tanks and hoses and flush with clean water.

- Disconnect Power
- Remove the 4 x blue screw covers (A) by prying out with a flat bedded screwdriver and then unscrew the 4 screws (B) by using a Phillips Screwdriver. Note ** unscrewing drops a nut out the bottom of the unit directly below.
- Lift the Motor Drive Module (C) off the Valve Body and place this upside down in a safe location.
- Take note of (or take a pic of) the position of the Rotor (D). The Rotor must be returned to this position to enable reassembly.



Remove the Valve Seal Rotor (D) by twisting and pulling outwards.



Clean the seals with a cloth or paper towel then lubricate the O-Ring (G) and Silicon Seal (H) with Silicon Grease. Replace the Silicon Seal and or O-Ring if damaged. It is recommended lubrication of the sealing components once per year. A service kit is available; part number 90316. The silicon lube case is also available as a standalone item; part number 90976.



- Clean any excess Calcium “build up” on the inside of the valve by scrapping this out with the backside of a hacksaw blade (by example) then lubricate the inside of the Valve Body with Silicon Grease.
- Refit Valve Seal Rotor back into the same position noted before disassembly – this ensures Motor Drive Module engages when assembled.
- Fit bottom cover F in the same position noted before disassembly. Screw back into place then fit the Motor Drive Module, taking care not to pinch the seal. Screw the Motor Drive Module together.
- Fit the screw covers and confirm the operation of the Valve by moving by hand.
- Tip – check you can see the three base mounting screws – for screwdriver access.







Trouble Shooting

Power Loss - Manual Operation.

If power is lost, you can operate the valve manually by taking the Motor Drive Module off. Then use the Socket and Spanner provided to change ports on the valve. To access the valve – see “Cleaning the Rotor Seal & Removal of Motor Drive Module” page 3 .



Control Panel Fault Conditions (LEDS Flashing)

	Fault	Holding Tank	Overboard	Lock
1	Low Voltage			
2	Valve rotation speed slow / will not change			
3	Valve Position lost			
4	No LED lights on			

- **Low Voltage.** The voltage supply is too low during the process of valve turning. Check supply voltage.
- **Valve rotation speed slow.** The valve rotation speed is too “slow” or the supply voltage is incorrect. Lubricate Valve and check voltage.
- **Valve position lost.** Turn power off and then back on again to help lubrication or lubricate seals -see Care and Maintenance – lubrication of seals.
- **No LED lights on.** Check Data Cable – there is no power going to the control panel. Check J1 and J2 plug wire connections.

Holding Tank and Overboard positions incorrect.

See - Allocating Port Positions – Holding Tank and Overboard. Page 8

Installation

The TruDesign Electronic Diverting Valve cannot be used in place of a sea cock, ball valve or through hull connection. The valve is designed for low pressure applications. For vacuum installations the valve should be positioned in the “non vacuum” side.

Warning

Disconnect power during installation and before performing maintenance or attempting to dislodge blockages. The valve contains a powerful electric motor. There is a risk of serious harm if the motor operates while fingers or objects are near moving parts.

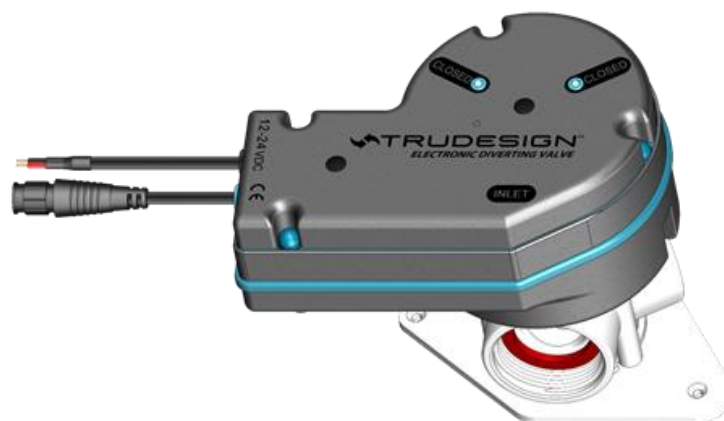
Mounting of the valve

Attach the Electronic Diverting Valve securely to a flat surface using the three large screws supplied. The Valve can be orientated in any direction and must be installed above the bilge flood area and above the toilet to prevent water sitting in the valve for long periods of time

Connecting the Hoses

The Inlet hose is labelled on the cover and the two other ports can be connected to either Holding Tank or Overboard hoses. You can assign either of the outlet ports to best suit hose orientation and then tell the Control Panel to reflect this plumbing configuration - see “Allocating Port Positions – Holding Tank and Overboard” – page 8

TruDesign recommend using two hose clamps on all the hoses to avoid inadvertent disconnection or leaks.



Hose Tail Options - Hose tails are supplied separately.

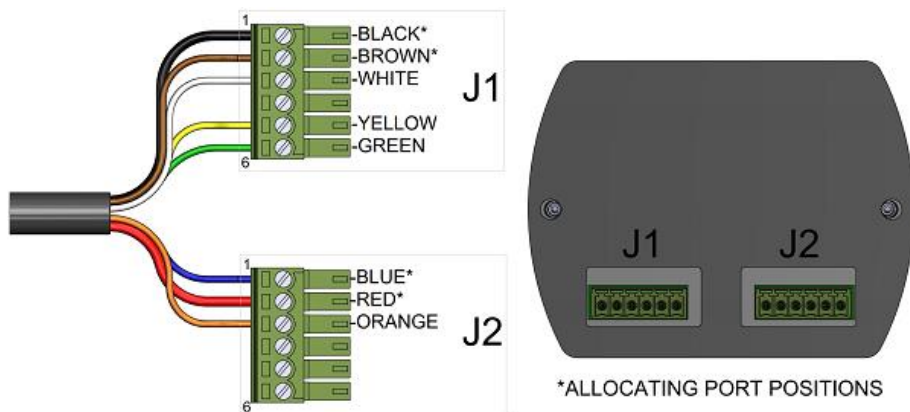
Note the 90° and 120° tails are supplied with a Blue sealing ring. The Valve body is supplied with an Orange sealing ring. By swapping the Orange sealing ring for the Blue sealing ring will give the option to orientate the tail in a different direction to suit hose routing. Do not use both sealing rings on the same port. Attach the desired tails to the Valve and orientate in the direction that best suits. There is no need to use thread tape or sealant

Black Part #	White Part #	Discription
90249	90251	Aquavalve Tail 19mm 1½" BSP
90260	90262	Aquavalve Tail 25mm 1½" BSP
90280	90283	Aquavalve Tail 32mm 1½" BSP
90288	90294	Aquavalve Tail 38mm 1½" BSP
90466	90259	Aquavalve Tail 90° 25mm 1½" BSP - includes Blue Seal
90293	90299	Aquavalve Tail 90° 38mm 1½" BSP - includes Blue Seal
90465	90258	Aquavalve Tail 120° 25mm 1½" BSP - includes Blue Seal
90297	90298	Aquavalve Tail 120° 38mm 1½" BSP - includes Blue Seal

Mounting the Control Panel

Dry fit the control panel using the Control Panel gasket as a location template.

- Drill a 20mm diameter hole in the bulkhead for the Data Cable.
- Feed the Data Cable through the 20mm hole Black Connector first.
- Connect the Data Cable to the Electronic Diverter Valve
- Secure the Data Cable so that it cannot be damaged.
- Fit the Control Panel gasket to the Control Panel
- Connect the 2 plugs to the Control Panel J1 has 5 wires and goes on the left side looking from the back J2 has 3 wires and goes on the right side looking from the back
- Screw the Control Panel onto the bulkhead using the two small screws supplied.



Power Connection.

Warning do not apply power until the valve is fully installed. There is a risk of serious harm if the motor activates whilst fingers or objects are near the moving parts.

Connect the 12-volt or 24-volt supply. Positive to the red wire and negative (ground) to the black wire. The valve can operate on a voltage of between 12 and 24-volts DC. The recommended DC fuse rating is slow blow 20A and must always be used.

Checking your Electronic Diverting Valve Operates Correctly

On applying power, the valve will cycle between ports before returning to the starting port. If the valve is powered continuously, it will automatically cycle between ports at regular intervals of 4-6 weeks. This is to ensure lubrication of the seal.

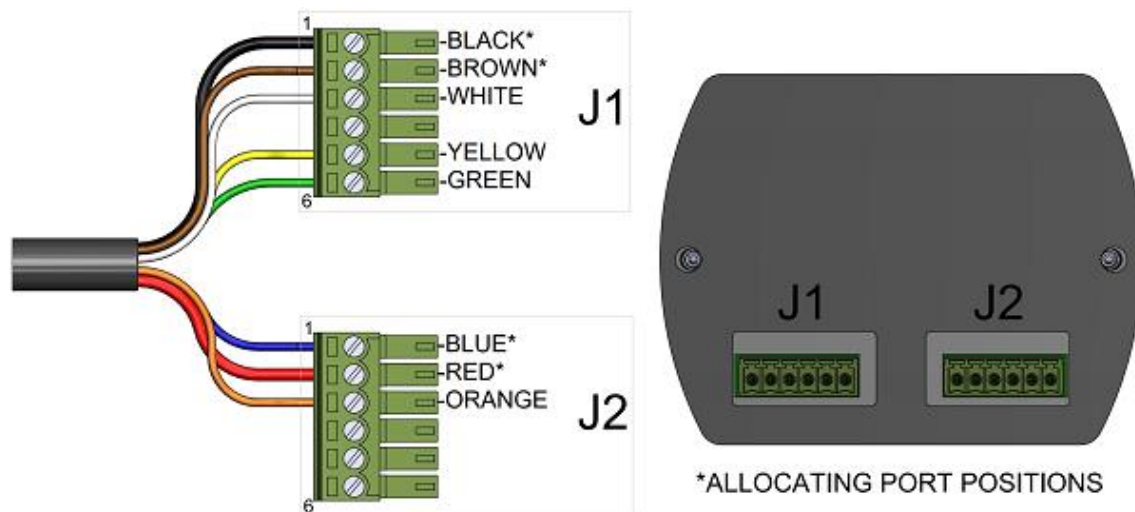
Allocating Port Positions – Holding Tank and Overboard.

Check when the “Overboard Button” on the control panel is selected, that the flow is indeed “Overboard”. Do the same for “Holding Tank”.

If the hoses are connected to the wrong port. Unplug cable plugs (J1 and J2) from the back of the control panel then

- Swap the brown and black wires over on plug J1
- Swap the red and blues wires over on J2

The Control panel should now correctly show and rotate to the correct overboard and holding tank positions.



Check locking function.

- Place Valve in Holding Tank Position – Press Holding Tank Button
- Lock Valve in Holding Tank Position – Press LOCK button for 3-4 seconds. The LOCK and HOLDING TANK lights show that the valve is locked. The OVERBOARD button (option) is not available.
- Press LOCK button for 3-4 seconds. The LOCK light will turn off. The HOLDING TANK and OVERBOARD buttons / options are now available.

Special Considerations

- On applying power, the valve will cycle between the two ports before returning to the starting port. If the valve is powered continuously it will automatically cycle between ports at regular intervals of 4-6 weeks, and then return to the starting port. This is to ensure lubrication of the seal.

Box Contents

- 1 x Electronic Diverting Valve
- 3 x Mounting Screws
- 1 x Control Panel
- 1 x 5-meter Data Cable
- 1 x Spanner
- 1 x Owner's Manual
- 1 x O-ring Lube pack

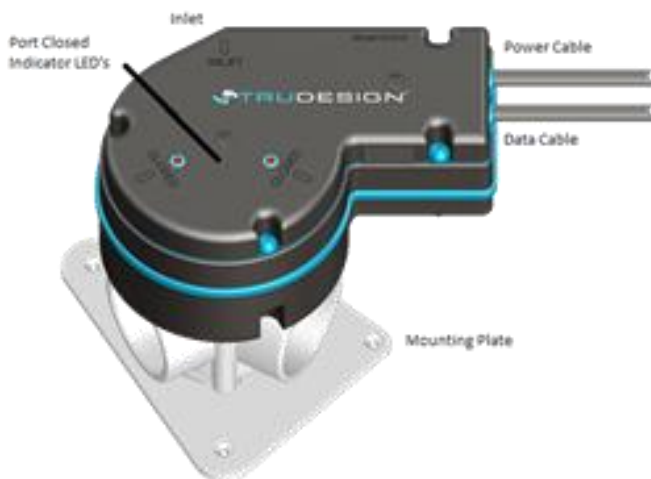
Electrical Specification

Supply voltage 12 to 24 VDC
 Standby Current 50mA Typical
 DC supply Voltage wire Gauge- 16 AWG
 Fuse rating 20A

Environmental Specification

Electronic Valve - IP55
 Control Panel – IP55

Parts and Components.



The 5-meter Data Cable has an Amphenol type LTW 8-way female plug and two 6 way green plugs on the other – J1 and J2.