



Continuity, Function and Connection Test: Jet Thruster Single

Connection and Continuity Test

Make sure all connections are according to the installation manual or verified with following Checklist:

Make sure all batteries are fully charged

Terminal Connections on Pump Unit

A and B: From Joystick **A B** connection, to Pump unit **A B** Screw Terminal Connection.

If unmarked: ABCD can be recognized at Pump Unit Blue Finder Relay socket by:

A B, joystick connection: Run to/from diode side on relay relay socket 94.74

C D Valve connection: Run to/from crossed cable side on relay socket 94.74

C D E: From pump unit **C D E** connections, to 3-Way Valve **C D E** screw terminal connection.

E: E is internally connected with the Coil at Finder or IDEC Mini Relay and will receive power from the 3-Way valve after it has turned.

F: Powered by the Mini Relay or IDEC Relay at the pump, **F** engages the Contactor solenoid and provides auxiliary power to connect an optional Series Parallel Switch and/or Electrical Air valve.

G: Ground, connect with Battery Minus. **G** is the main ground position in the control circuit. It should be connected to the Negative of the primary Jet Thruster battery which also should be connected to the ground of any other battery on board. The Optional Series Parallel switch and/or Electrical Air valve grounds are also connected to **G**

+: **12v +**, from primary side of Joystick.

Note: For safety reasons, the Jet Thruster is protected with a Thermal overload protection. The Finder Mini Relay or IDEC Relay at the pump unit is grounded to the Pump Unit via by Thermal Protection Sensor. This sensor is located inside the DC pump motor.

In case of a overheated Pump Motor, this sensor, as it functions as ground for the Mini Relay, will break ground and therefore the Control circuit cannot engage. When the motor has cooled down, the sensor automatically restores ground to the Finder Mini Relay.

Note: (accidently) providing 12V+ to the Thermal sensor will immediately damage it.



Continuity check

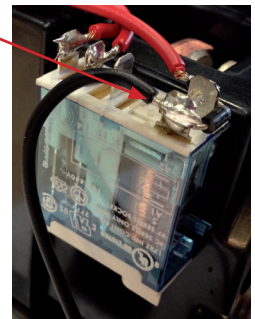
Step 1: Using a multimeter, measure the 12V+ (Service Battery which should be used to power the control circuit) and **G** screw connector. This should read 12V

If not: Battery minus needs to be connected to **G**.

Note: Between +, and G Screw Connector at Pump Unit a minimum of 12 volt and maximum 14 volt should be measured. The system operates at 12V. **24V will damage the control circuit.**

Step 2: Push the button at the Joystick panel and check for blue light.

Measure (+) connector and Thermal sensor at Pump Unit: This should read 12V (Thermal sensor connection can be reached at the Mini Relay ,the ground connection of this relay at the diode side (black wire)



No voltage: Thermal protection defective: Needs to be replaced. System will not work without it.

Or Jet Thruster Pump Unit is not grounded

Step 3: Let someone hold the joystick in continuous position to port or starboard.

- Measure **G** and **A** or **B** (+12V)
- Measure **C** and **D** (+12V or -12V) Voltage inverts when changing joystick from port to starboard.

Step 4: Let someone hold the joystick in continuous position to port or starboard.

Measure **G** and **E** (+12V)

If there is not a +12V to **E**: Check CDE connection on the valve

If Correct CDE on the valve: Reverse valve motor connection Red and Black.

Step 5: If there is a 12v+ plus to **E** but system does not activate:

Measure **G** and **F** (+12V)

In case of no +12V plus signal to **F**:

- Or - Mini relay defective
- Or - no +12V to + screw terminal connection
- Or - Thermal Protection defected

In case of a 12V plus signal to **F, but no engagement of Pump Unit:**

Or - Defective Contactor-solenoid, loose/damaged connection.

Or - Main fuse, or Main switch to pump unit defective of not engaged

Or - Wrong connected Jet Thruster Battery(s)