

## MPC-12 FRESH WATER FLUSH VALVE STUCK

All MPC equipped systems have an electric solenoid actuated one way fresh water flush valve on the outlet of the charcoal filter. At the conclusion of each 'Automatic Run' cycle, or when the 'Auto Store' button is pressed, the MPC controller initiates a fresh water flush. The fresh water flush cycle begins by energizing the fresh water flush solenoid, which allows fresh water from ship's domestic water supply to flow through the feed pump, Clark Pump and membrane(s).

Depending on the age and model of the system in question, the feed pump will cycle on and off, run continually at a reduced speed, or some combination or both. The fresh water flush solenoid valve, however, will remain engaged for the duration of the flush. MPC 5000 systems all use 12 vdc solenoids, regardless of whether the MPC control voltage is 12 or 24vdc. MPC 3000 systems use solenoids that match the line voltage to the MPC control system.

If the solenoid is engaged, ie there is voltage going to the valve, but there is no fresh water being fed through the system, first check to make sure that there is water in the domestic supply tanks, the domestic fresh water pump is on and primed, and that any shut-off valves on the inlet side of the charcoal filter are open. First check to make sure the controls are sending the signal. Put your voltmeter on "GND" and "FWV" on the printed circuit board. Start the fresh water flush cycle and watch the meter, the voltage should go to 12 or 24. If the voltage is good remove one of the wires from its terminal and use your ohm meter to check for continuity through the valve coil. 12 volt valves should read about 10 ohms, 24 volt valves around 38 ohms. 12 volt valves have black wires coming out of the, 24 volt valves have white wires. If the ohm reading is very high then there is a loose or broken wire or the solenoid coil has failed.

If the signal and coil are good but the valve still won't open the valve may be stuck shut and need to be cleaned. Disconnect the plumbing fittings from the inlet and outlet of the solenoid valve. There is a black plastic cap on top of the solenoid coils (the opposite end from the plumbing connections), using a small flathead screw driver, gently pry the cap loose. This exposes a 3/4" retaining nut that keeps the solenoid coils in place remove the nut and set it aside. You will now be able to pull the black solenoid coil off of the valve. Under the coil is a disc with two holes in it for a spanner. Use needle nose pliers or snap ring pliers to unscrew the disc. Inside the valve you will find a plunger, a spring, and a rubber o-ring. Try not to disturb the o-ring. Remove the plunger and spring and clean them thoroughly. Clean inside the plunger housing as well. Apply a light coat of waterproof grease before to the spring and plunger when reassembling. Reassemble in reverse order.

*Note: Newport MkII systems use a manifold system; therefore the fresh water flush solenoid does not have plumbing fittings attached, and are threaded directly into the intake manifold.*