



BACKGROUND: When a problem in the fuel supply system causes an engine shutdown on open water, particularly in heavy sea conditions, even changing a fuse can be extraordinarily difficult, let alone replacing a defective fuel pump, troubleshooting an oil pressure safety switch, or changing a partially clogged filter or pickup tube strainer. The primary purpose of our emergency backup fuel pump is to provide an easy way to deal with all of the above conditions with the mere flip of a manual switch, enabling you to make your way to a safe harbor where a more proper repair can be effected. Given the risk of leakage when pumping fuel through a defective mechanical fuel pump, this kit is intended to be used only in conjunction with an electric fuel pump as the primary pump.

IMPORTANT NOTE: This system is not approved by the USCG for normal/continuous use. When using the back-up pump, inspect the rest of the fuel system frequently for leaks, and discontinue using the system when out of harm's way.

MOUNTING AND PLUMBING THE PUMP: Using the 12 gauge pan headed screws provided in the kit, mount the pump on a bulkhead ahead of the primary filter (between the filter and the tank). In this location, and plumbed in series with the primary pump, the emergency pump will add a nominal 4 psi at the front end of the fuel system when switched on manually. Brass fittings and hose barbs are provided to connect the pump to 5/16" or 3/8" ID rubber fuel hoses.

NOTE 1: In this location, the pump can also be used to manually transfer fuel to prime the fuel system after a filter change or other fuel system maintenance while the engine is not in operation.

ELECTRICAL CONNECTIONS: Mount the manual switch using two 10 gauge pan-headed screws provided in the kit near the engine compartment for easy access in the event the emergency pump is needed in dealing with a fuel system failure.

Power to the switch should come directly from the large battery terminal on the starter solenoid, through the 10 amp fuse provided, then to one side of the manual emergency switch, and then directly to the pump. Tan 14 gauge wire is provided for this circuit. A 3/8" by 14 gauge ring terminal is preassembled to one side of the fuse holder, and a butt splice and spade terminal ends are provided for completing the circuit through the switch to the pump. Wire ties are provided to secure the tan wire to the water hose in the front of the head and other places depending on the exact location of the pump.

NOTE 2: It might seem strange to fuse an emergency circuit, but if something were to happen to a FACET pump that causes a 10 amp fuse to blow, it will be dysfunctional in any case. In this situation the 10 amp fuse is provided to keep a bad situation from getting worse.

GROUNDING: To complete the installation, black 14 gauge wire is provided as a ground wire which gets connected between the mounting foot of the pump and the engine, usually to one of the 1/4 - 20 retaining bolts on the flywheel cover. Appropriately sized ring terminals are provided in the kit for the ground wire.



TROUBLESHOOTING AFTER AN UNEXPECTED SHUTDOWN:

The following checklist illustrates how a backup electric fuel pump can be integrated into a procedure for dealing with unexpected shutdowns under critical sea conditions.

STEP 1 - Close the raw water through-hull valve, and reopen it only after the engine starts.

STEP 2 - Remove the coil lead from the distributor cap and hold it approximately ¼" from the cylinder head as the helmsman tries to restart the engine. If you DO see a normal secondary arc (at least 1/2"), go directly to STEP 7 (the beginning of fuel system checks). If you do NOT see a normal secondary discharge from the coil lead, continue to STEP 3.

STEP 3 - Install a 12 or 14 gauge jumper wire between the positive terminal on the coil and the big battery cable on the starter solenoid.

STEP 4 - Try to start the engine. If the engine starts, keep the jumper wire installed and treat it as you would an auxiliary ignition switch; connecting it only to run the engine, and disconnecting it to shut off the engine. If the engine will not start remove the jumper wire and continue to STEP 5.

STEP 5 - Install a 12 volt test light between the primary terminals on the coil. If the test light turns on and off as attempts are made to start the engine, go to STEP 6. If the test light does not illuminate or remains on continuously, clean the contacts of the points with a piece of cardboard, or replace the electronic ignition module. If the test light now turns on and off, and the engine still won't start, go to STEP 6.

STEP 6 - Replace the coil. If you do not have a spare coil, remove the old coil from its mounting bracket and suspend it away from the engine block using a nonconductive cord. If there is still no secondary arc from the coil, sail to a safe harbor, or set an anchor and arrange for a tow.

STEP 7 - Remove the fuel fill cap from fuel tank. If engine starts, let the fill cap off and proceed to a safe harbor. If the engine will still not start, continue to STEP 8.

STEP 8 - Tap the side of the carburetor with a small hand tool while trying to start the engine. If the engine starts, proceed to a safe harbor. If the engine still does not start, proceed to STEP 9.

STEP 9 - Activate the emergency backup electric fuel pump. If the engine starts, proceed to a safe harbor. **CAUTION:** When using a backup fuel pump, check the lines, filters, and valves of the fuel supply system frequently for leaks. If at any time a fuel leak is discovered, it's best to set an anchor and shut the engine off until the source of the leak can be remediated. If there is no backup fuel pump installed, continue to STEP 10.

STEP 10 - Check the fuse in the electric fuel pump circuit. If the fuse is blown, replace it with a 5 or 10 amp fuse and proceed to a safe harbor. If the fuse is not blown, continue to STEP 11.

STEP 11 - Install a jumper wire between the fuel pump side of the oil pressure safety switch and the positive terminal of the coil. If the engine will still not start, remove the jumper wire and continue to STEP 12.

STEP 12 - Remove the ½" hex-headed main passageway plug from the bottom of the float chamber and allow the fuel to drain into a clean glass jar. Check for water or other contaminants and operate the fuel pump (using priming lever on mechanical pump or manual emergency pump), catching the fuel in the glass jar until the fuel is clean. Replace the main passage plug and operate fuel pump to fill carburetor. If the engine will still not start, proceed to STEP 13.

STEP 13 - Separate the fuel line between the pump and the fuel tank and blow back toward the tank to clear any partial restriction. If the fuel supply lines cannot be opened, or the engine will still not start, sail to a safe harbor, or set an anchor and arrange for a tow.