INSTALLATION AND OPERATIONS MANUAL

“EARLY WARNING SYSTEM”

P/N ADK1986-2,3
12 VOLTS DC

“DIESEL ENGINES ONLY”
THE INSTALLATION AND SETUP SHOULD BE PERFORMED BY A QUALIFIED TECHNICIAN

OPERATION

The Early Warning System (EWS) was designed to allow the crew to monitor the filter condition while underway. When the primary filter starts to clog the engine driven lift pump will increase suction (vacuum) that can be measured by the vacuum gage, when the needle is in the yellow band the filter is starting to clog and should be changed. The remote Early Warning Panel (EWP) will also warn the crew when the vacuum reaches approximately 7” hg, the “check filter light” will illuminate on the EWP indicating that the filter is clogging. With the installation of a filter shutoff valve, the crew can check the system for leaks and operation prior to departure.

PREINSTALLATION—WARNING—READ FIRST

1. This EARLY WARNING SYSTEM (EWS) is designed to be installed on your existing primary fuel filter’s outlet port. The shut off valve is installed at the inlet port.
2. Turn off ships power and disconnect the negative (ground) battery cable.
3. Turn off the fuel at the fuel tank. Eye protection is recommended and have drip pans and absorbent shop cloths available to anticipate spill clean up.
4. Do not smoke or allow open flames near the installation, turn off engine
5. Use adequate light and ventilation.
6. Before drilling holes or installing mounting hardware make sure the back side is clear of obstructions such as fuel / hydraulic lines, electrical harnesses, fuel and water tanks, water lines, ships hull?
7. Use proper type fuel lines and connectors, double clamp fuel hose connections with stainless steel hose clamps, use approved pipe thread sealant (fuel compatible) on pipe thread connections. (Do not use Teflon tape).
8. USE PROPER TOOLING TO INSTALL FITTINGS AND DO NOT OVER TORQUE.
9. The EWS panel is mounted in the cockpit or an area that is easy to view.
10. The EWS comes with a amber LED “check filter” light, and a green LED “pump on” light. Only the amber LED is used in this installation; the green LED light can be used if a electric fuel pump is installed.

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INSTALLATION/OPERATIONS GUIDE

INSTALLATION : (SEE FIG. 1)

1. Remove the primary fuel filters inlet and outlet connections. Remove filter and drain,
2. Install EWS tee manifold in the outlet port using thread sealant. Tighten tee manifold so vacuum switch will end up on the bottom.
3. If it is possible, relocate the filter For or Aft so that one of the original fittings can be use without having to trim the tubing. Install filter assembly.
4. Trim and install inlet and outlet fuel lines.

INSTALLATION OF THE REMOTE EARLY WARNING PANEL (EWP): (SEE FIG. 2)

Locate an area near the helmsman that can be easily seen, easy access for installing, and the thickness of the material is 1/4" or less. Use tape to position the template and mark the center or center punch the two holes to be drilled. Using a 13/64" drill, drill the two required holes (make sure the area behind the holes are clear of wire, hose's, tanks, etc…) when finished, de-bur the holes. Apply a small amount of sealant to the backside of the EWP, install the green and orange LED's into the panel, position the panel assembly over the previously drill holes and feed the led wires and lights through the holes, install the lock washer and nut recheck alignment and tighten nuts (the led has plastic threads do not over tighten). Wipe off excess sealant.

WIRING: (SEE FIG. 3) 12V DC

Note: Run wires in a protected area, support wiring harness with wire ties–run harness away from moving parts and hot areas. Use approved wire connectors or solder- protect connections from corrosion. Use marine grade wire and proper gage for connections.

1. Connect a fused protected (2 Amp) 12 volts positive (+) wire to one of the spade connectors on the vacuum switch.
2. Connect a wire to the remaining spade connector on the vacuum switch and run it to the Early Warning Panel, connect it to the red wire on the AMBER LED. Connect a 12 volt negative (-) wire to the black wire on the AMBER LED.
3 If using an electric fuel pump connect a wire from the outlet side of the pump switch to the GREEN LED red wire and connect the same 12 volt negative that is connected to the AMBER LED black wire to the GREEN LED black wire.

BLEEDING SYSTEM/OPERATIONAL CHECK

1. Turn on fuel and reconnect power, service filter with fuel and bleed fuel system per engine manufactures procedures. Start engine and check for proper operation. And fuel leaks. Check vacuum/pressure gage, the needle should be around zero psi, on some installations the vacuum could be higher because of tank fuel tank location.
2. With the engine running, close the filter shut off valve. Looking at the gage you will notice an increase in vacuum, at 7" hg ± 3" the check filter LED will come on. Shut off the engine and check if the vacuum remains steady. A quick rise will indicate a leak in the fuel system between the lift pump and the filter. Most leaks are at the connection of the engine lift pump.
3. If the check filter light illuminates and the fuel leak check is satisfactory, rotate the filter shut off valve to the open position. Restart the engine and check full power operation. If operation is normal shutdown engine.
4. Re-inspect the installation and close up.

INSPECTION AND CARE

1. Perform the operational check as part of your pre-departure check, it only takes a few minutes and will test the indication system and also for system leaks. Air can enter the system if there are any loose connections when the filter starts to clog, causing loss of power or engine shut down.
2. Check system electrical connections for security and corrosion.
3. Check fuel connections for leaks and security.
4. Use a light oil (WD-40) and wipe down system.

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