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SERVICE BULLETIN (Non-Certified Aircraft) NO.: 2069 Rev A

TO: Non-Certified Aircraft Owners
DATE: May 6, 2020
SUBJECT: Kavlico Pressure Sensor Inspections for G3X/G3X Touch Equipped Experimental Aircraft
CERTIFICATION AUTHORIZATION: Experimental/LSA

PRODUCTS AFFECTED

G3X/G3X Touch systems installed in experimental aircraft with Kavlico pressure sensor part numbers P4055-15G-E4A, P4055-50G-E4A, or P4055-150G-E4A are affected.

PURPOSE

Garmin has received reports that a small number of Kavlico manufactured fluid pressure sensors have leaked.

DESCRIPTION

This service bulletin includes instructions for inspection of existing installations and provides improved guidance to prevent affected pressure sensor leaks (as described in the G3X/G3X Touch Installation Manual 190-01115-01, revision AM or later).

COMPLIANCE

Mandatory: Compliance with this service bulletin is mandatory within 30 calendar days of the published date of this bulletin, or at the next scheduled service interval; whichever occurs first. After 30 days, it must be completed before the next flight.

REFERENCES

Refer to the G3X/G3X Touch Installation Manual, 190-01115-01 Rev. AM or later

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MANPOWER

Not estimated.

WARRANTY INFORMATION

This modification is not warranty reimbursable. If a sensor is found to be leaking Garmin will replace it at no charge.

INSTRUCTIONS

1. Record the sensor part number(s) in Table 1.



NOTE

Sensor part numbers are located on the brass housing. The maximum operating pressure is provided by the center segment of the sensor's part number. For example, the maximum operating pressure for p/n P4055-15G-E4A is 15 psi.

2. Before cleaning the sensor and surrounding area, inspect for fuel and oil leaks.



NOTE

Fuel leaks may exhibit stains from the fuel dye or areas below cleaned by dripping fuel. Oil leaks may exhibit oil residue or drips.

3. If a leak is suspected but not apparent, use standard operating procedures to clean and pressurize the sensor.
4. Inspect for leaks again.



WARNING

If a leak is found, do not fly the aircraft until it has been repaired. Fuel leaks may result in fuel exhaustion or fire.

5. Repair fitting or line leaks using accepted practices.

6. If the sensor is leaking contact Garmin Support immediately at 866-854-8433 or aviation.support@garmin.com.



NOTE

Do not remove the sensor or alter the aircraft.

Be prepared to provide Garmin with the following:

- G3X internal Data Log from the SD card folder "fdr_log" (export per the G3X/G3X Touch Installation Manual 190-01115-01 Section 35.4.31)
 - Closeup picture of the sensor at the electrical connector
 - Closeup picture of the sensor at the fitting
 - Broad picture that captures where and how the sensor is mounted
7. If no leaks are found, check "Complete" in Table 1 and proceed to Step 8.
 8. Make sure fuel system operating pressure does not exceed the sensor's rated operating pressure.
 9. Use standard operating procedures to pressurize the fuel system in such a manner that results in the highest pressure.
 10. Monitor the applicable G3X pressure gauge for the highest pressure.
 11. Record the highest observed fuel system operating pressure in row 2 of Table 1.
 12. Make sure pressure is not caused by thermal expansion of fluid and vapor in the pressure sensor line.
 13. If a fuel-selector, check valve, or other valves are installed that might trap fluid, complete the warm-up inspection described next. If valves are not installed that can trap pressure, line through row 3 in Table 1 and proceed to Step 18.



NOTE

Conduct the following inspection with the cowling on and consider using a ground power source to prevent battery discharge.

14. Use standard operating procedures to warm the engine to operating temperature.
15. Shutdown the engine using normal procedures.
16. Monitor the applicable pressure gauge(s) for 5 minutes.
17. Record the starting and end fuel pressures observed in a 5-minute period in row 3 of Table 1.
18. Make sure all affected sensors are not mounted directly to the engine.
19. Make sure the sensor wires are secure and have enough slack to prevent mechanical strain on the wires and sensor.
20. Check "Complete" in Table 1 for each affected sensor.
21. Review the results recorded in Table 1.
22. If the highest pressures observed did not exceed the sensor's maximum operating pressure, check "No exceedance" in row 5 of Table 1 and complete the Return to Service Procedure below.

23. If the pressures observed exceeded the maximum sensor pressure, the system or sensor must be corrected to prevent overpressure.



NOTE

Alternate sensors with a higher operating pressure may be available, refer to the G3X/G3X Touch Installation Manual, Table 24-1 or contact Garmin Support.

24. When the overpressure has been corrected, check “Modification...” and record a brief description of the modification in Table 1.
25. Proceed to the Return to Service Procedure.

Table 1. Inspection Record

Aircraft Make:		Model:	
Registration Number:		SB Completion Date:	
Inspection	Oil Pressure p/n P4055-_____	Fuel Pressure p/n P4055-_____	_____(Other) p/n P4055-_____
1. Leak Inspection	<input type="checkbox"/> Complete	<input type="checkbox"/> Complete	<input type="checkbox"/> Complete
2. Fuel System Operating Pressure	Not applicable	_____ psi	_____ psi
3. Thermal Expansion	Start _____ psi	Start _____ psi	Start _____ psi
	End _____ psi	End _____ psi	End _____ psi
4. Location and Wires	<input type="checkbox"/> Complete	<input type="checkbox"/> Complete	<input type="checkbox"/> Complete
5. Inspection Results	<input type="checkbox"/> No Exceedances	<input type="checkbox"/> No Exceedances	<input type="checkbox"/> No Exceedances
	<input type="checkbox"/> Modification to resolve pressure exceedance: _____ _____	<input type="checkbox"/> Modification to resolve pressure exceedance: _____ _____	<input type="checkbox"/> Modification to resolve pressure exceedance: _____ _____
Modifications made to eliminate pressure exceedance, if applicable:	_____ _____ _____	_____ _____ _____	_____ _____ _____

RETURN TO SERVICE TEST PROCEDURE

1. Remove all non-flight equipment, prepare for ground checks, and obtain visual access to fittings, lines, hoses, and sensors.
2. If a system was modified or a sensor was replaced, make sure the system is functioning as intended, wiring is secured, and the G3X/G3X Touch is configured for the new sensor.
3. Use standard operating procedures to pressurize the systems and complete a final leak check.
4. Make sure the pressure indications are accurate.
5. Return aircraft to service using normal procedures.