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SERVICE INFORMATION LETTER

SIL T-074
Revision 1

DATE: August 12, 2024

1. SUBJECT: Fuel Cell (Bladder) Assembly

2. MODEL: 480, 480B

3. EFFECTIVITY: S/N 5007, 5013 and Subsequent (Equipped with P/N 4122052 Fuel Cells)

4. BACKGROUND:

This Service Information Letter (SIL) is intended to make operators aware of additional guidance to ensure proper torque of all fasteners pertaining to the assembly and installation of the left- and right-side fuel cells, Enstrom P/N 4122052.

This SIL also presents additional fuel cell maintenance tips and provides an updated list of fuel cell assembly part numbers.

Revision 1 clarifies text and adds new part numbers (4122052-103 and 4122052-104) to Table 1, Parts List.

5. COMPLIANCE:

To ensure optimal performance of the fuel system, Enstrom recommends incorporating the fuel cell torquing guidance provided in paragraphs 6.1 and 6.2.

Other general fuel cell maintenance tips are provided in paragraph 7.

Refer to Table 1 for the current fuel cell part number list.

NOTE: Perform all related maintenance in accordance with the TH-28/480 Series Maintenance Manual (MM).

6. TORQUE GUIDANCE:

NOTE: Paragraph 6.1 applies to the buildup procedure of a replacement fuel cell. The fuel cell has foam installed, but the oval flange plate, fuel fitting assembly (sump), and mounting flange (fuel quantity probe) are not installed.

6.1 Fuel cell assembly (pre-installation)

NOTE: For instructions to install a new foam assembly, refer to SIL T-054, latest revision. Prior to installing the foam, inspect the bladder cavity for debris.

NOTE: This procedure augments paragraph 10-7 of the TH-28/480 Series MM. Do not safety wire bolts until instructed by this procedure

NOTE: Refer to the TH-28/480 Series Illustrated Parts Catalog Figure 5-1 for component item numbers listed in parentheses.

6.1.1 Ensure that the captive nut plate threads are free of debris or sealant.

6.1.2 Ensure that the sealing surfaces are clean and dry.

6.1.3 Oval flange plate installation:

6.1.3.1 Install a new gasket (3). If needed, install 2 to 4 studs, hand tight, into the flange ring to hold the gasket in place on the fuel cell.

NOTE: The studs referenced above are made by removing the heads from appropriate length AN4-XXA bolts and deburring the cut shank.

6.1.3.2 Install the flange plate (4) (raised surface forward) with bolts (6) and washers (5). Torque (25-30 in-lb/2.8-3.4 Nm) in a crisscross torque pattern (for 24 bolts), making three full rounds to ensure proper gasket seating. Remove the studs as required when installing the bolts and washers.

6.1.3.3 Ensure that there is no movement of the washers. If there is movement, back out the bolt and recheck the threads for debris or sealant. Re-install and torque.

6.1.4 Install the screws to secure the fuel fitting assembly (7, 8) to the fuel cell (1 or 2, as applicable) and torque (25-30 in-lb/28-3.4 Nm).

6.1.5 Install a new gasket (11) and install the bolts and washers to secure the mounting flange (12 or 30, as applicable) to the fuel cell and torque (25-30 in-lb/28-3.4 Nm).

6.1.6 Allow several hours (preferably overnight) after installation of the oval flange plate, fuel fitting assembly and mounting flange components and retorque the hardware.

6.1.7 Safety wire as required.

6.2 Fuel cell installation:

NOTE: This procedure augments paragraph 10-8 of the TH-28/480 Series MM. Do not safety wire bolts until instructed by this procedure.

NOTE: Refer to the TH-28/480 Series Illustrated Parts Catalog Figure 5-5 for component item numbers in parentheses.

6.2.1 Ensure sealing surfaces are clean and dry.

6.2.2 Prior to connecting the overboard vent crossover line (3 or 45 and 46, as applicable) and crossover line (9), inspect the nipples for restrictions and damage.

6.2.3 Install the fitting assembly to support structure, the overboard vent and crossover lines, fuel port, fuel probe cover, gaskets, and hardware in accordance with the MM.

6.2.3.1 When installing clamps (4) (10), do not over torque. Allow the rubber about an hour to relax, then retorque (18 in-lb/2 Nm). Over torquing will result in damage and leaks.

6.2.4 Allow several hours (preferably overnight) after the fuel cell has been completely installed and retorque the hardware.

6.2.5 Safety wire as required.

7. GENERAL FUEL BLADDER MAINTENANCE

7.1 Inspection

7.1.1 Before removing a fuel cell, isolate areas of possible leaks by tracing the wetness or staining as far as visibly possible.

7.1.2 Check gaskets for tightness and ensure no gasket cement has been used.

7.1.3 Check all hose clamped connections for tightness, damage, and leaks.

7.1.4 Check fittings and flanges (sumps, fuel quantity probe, and fuel port) for cracks or leaks.

7.2 Removal

7.2.1 After draining the fuel, loosen the clamps on the vent lines and allow the rubber to relax.

7.2.2 Nipples may be softened by applying a hot, moist cloth to ease removal of crossover lines

7.2.3 When possible, remove fuel bladders when the ambient temperature is at least 70°F/21°C.

7.2.4 Once the fuel bladder is removed, wipe out any fuel residue and miscellaneous hardware.

7.2.5 Do not apply oil to the fuel bladder if moving the fuel cell to long term storage.

7.3 Longevity and Storage

7.3.1 Maintain a full fuel level in the fuel bladder rather than a low or nearly empty fuel level.

7.3.2 Use of unauthorized fuels or additives may cause rubber deterioration.

7.3.2.1 Refer to MM Table 4-3 for the listing of approved, alternate, and emergency fuels and as well as approved anti-icing additives.

7.3.3 Store removed fuel bladders in a bag or box to protect the rubber from UV, ozone, heat, and/or humidity.

8. PARTS LIST

Table 1. Parts List

PART NUMBER	DESCRIPTION	QTY PER ASSY	EFFECTIVITY	
			480	480B
4122052-7	. Fuel Bladder Assembly, L/H (with foam)	1	X	X
4122052-8	. Fuel Bladder Assembly, R/H (with foam)	1	X	X
4122052-3	. Fuel Bladder Assembly, L/H (with foam) (Superseded by 4122052-7)	1	X	X
4122052-4	. Fuel Bladder Assembly, R/H (with foam) (Superseded by 4122052-8)	1	X	X
4122052-103	. . Fuel Bladder, L/H (without foam)	1	X	X
4122052-104	. . Fuel Bladder, R/H (without foam)	1	X	X
4122052-101	. . Fuel Bladder, L/H (without foam) (Superseded by 4122052-103)	1	X	X
4122052-102	. . Fuel Bladder, R/H (without foam) (Superseded by 4122052-104)	1	X	X
4122052-5	. . Fuel Bladder, L/H (without foam) (Superseded by 4122052-101)	1	X	X
4122052-6	. . Fuel Bladder, R/H (without foam) (Superseded by 4122052-102)	1	X	X
4122052-1	. . Fuel Bladder, L/H (without foam) (Superseded by 4122052-101)	1	X	X
4122052-2	. . Fuel Bladder, R/H (without foam) (Superseded by 4122052-102)	1	X	X
4122058-901	. . Foam Assembly, L/H	1	X	X
4122058-902	. . Foam Assembly, R/H	1	X	X

9. SPECIAL TOOLS OR EQUIPMENT: None

10. MAN-HOURS: N/A

11. WARRANTY: Per Enstrom policy

12. WEIGHT CHANGE: N/A

13. LOG BOOK ENTRY: As required for maintenance actions

14. REPETITIVE INSPECTIONS: None