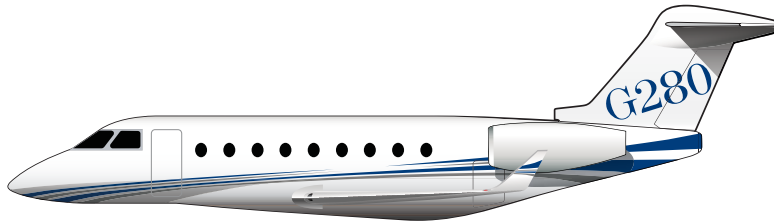


Gulfstream G280



SERVICE BULLETIN

NUMBER 280-53-287

SUBJECT

FUSELAGE (ATA 53) – FUSELAGE – FORWARD
FUEL TANK PROBE CLEARANCE
VERIFICATION

RECORD ONLY
SEPTEMBER 26, 2019

SERVICE BULLETIN

FUSELAGE - FORWARD FUEL TANK PROBE CLEARANCE VERIFICATION

PLANNING INFORMATION

1. Effectivity

Aircraft serial numbers 2001 through 2184

2. Concurrent Requirement

None

3. Reason

During check of the forward fuel tank it has been found that the distance between the probe to the forward fuel tank structure doesn't meet the minimum 8.0 mm (0.31 inch) requirements (probe No. 1 to the lower skin and probe No. 3 to the upper skin and angle P/N 30P371126800-501).

4. Description

This service bulletin provides instruction to access to the forward probe No. 1 and aft probe No. 3 fuel probes in the forward fuel tank in order to measure each probe's distance to the adjacent skin, and if the minimum 8.0 mm (0.31 inch) distance requirement is not met, implementation of this service bulletin's rework instructions are required.

5. Compliance

Compliance with this service bulletin is mandatory no later than November 30, 2022.

6. Approval

This service bulletin has been reviewed by the Civil Aviation Administration of Israel (CAAI). The design content herein complies with the applicable Civil Aviation Regulations and is CAAI-approved.

7. Manpower

The following information is for planning purposes only:

Estimated man-hours: 20

8. Weight and Balance

None

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9. Electrical Load Data

No Change

10. Software Accomplishment Summary

None

11. References

G280 Aircraft Maintenance Manual (AMM), chapters 12, 20 and 28.
Gulfstream Aerospace LP G280 TC design change MOD G25-10077
Doc. 30P045/060794, table 3-1 and table 8-2
Doc. 30P650/071366 para 5.2.6

NOTE: This Service Bulletin incorporates design data approved under G280 TC design change MOD G25-10077 for installation on the standard type certificated aircraft. Approval for any deviation from the instructions contained in this service bulletin should be obtained, if required, from the local regulatory authority in accordance with the local relevant regulations.

12. Other Publications Affected

G280 AMM
G280 IPC

NOTE: Data concerning this service bulletin will be published in a future revision of the affected manual(s). This service bulletin will provide technical data until the revisions are published.

13. Interchangeability or Intermixability of Parts

None

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MATERIAL INFORMATION

1. Material - Availability

The parts required to accomplish this service bulletin are available by contacting Spare Parts Sales at 800-810-GULF (4853) or 912-965-4178.

2. Warranty Information - Structure

Labor and materials will be at no charge for this service bulletin if the aircraft is still within the related warranty period as of the original issue date of this service bulletin and work is accomplished within the recommended compliance time, as stated in this document, at a Gulfstream Authorized Warranty Facility or Factory Authorized Service Center with related aircraft model certification. *

*Coverage is granted per the terms and conditions of the Gulfstream Aircraft Sales Agreement to the original purchaser or subsequent owner with appropriate Assignment of Warranties on file with Gulfstream.

NOTE: Additional labor hours incurred due to aircraft configuration or mechanical difficulties must be charged as a separate discrepancy and submitted for warranty consideration.

3. Material Necessary for Each Aircraft

A. Material to be Procured:

<u>New P/N</u>	<u>Keyword</u>	<u>Old P/N</u>	<u>Qty</u>
30P371100008-501A01-505	Sensor bracket assembly	-	1
30P371100008-501A01-507	Sensor bracket assembly	-	1
30P371100008-501A01-509	Sensor bracket assembly	-	1
NAS1802-3-10	Screw, hex head, cruciform recess, non-lock	-	3
NAS1149C0332R	Washer, flat, plain, #10 size, 0.032 inch	-	A/R
NAS6703U3	Bolt, tension, hex head	-	3
NAS1149C0363R	Washer, flat, plain, #10 size, 0.063 inch	-	A/R

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<u>New P/N</u>	<u>Keyword</u>	<u>Old P/N</u>	<u>Qty</u>
NAS1802-3-16	Screw, hex head, cruciform recess, non-lock	-	1
NAS1149C0316R	Washer, flat, plain, #10 size, 0.016 inch	-	A/R

B. Materials Supplied by the Operator:

PR1750 sealant or equivalent

4. Reidentified Parts

None

5. Special Tooling

Fuel Quantity Test Set, GSE 2800142 or equivalent

Fuel Quantity Measurement System (FQMS), GSE 2820595 or equivalent

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ACCOMPLISHMENT INSTRUCTIONS

CAUTION: PROTECT WIRE BUNDLES, CONNECTORS AND SURROUNDING STRUCTURE DURING ANY MAINTENANCE PROCEDURES FROM SHAVINGS, DEBRIS AND CONTAMINATION. MAINTAIN A PROPERLY CLEANED WORK AREA THROUGHOUT THE PROCEDURE TO ENSURE THE INTEGRITY OF THE AFFECTED COMPONENT/SYSTEM. VISUALLY INSPECT WORK AREA USING ADDITIONAL LIGHT AS NECESSARY TO VERIFY ABSENCE OF ANY DEBRIS PRIOR TO COMPLETION OF PROCEDURE. FAILURE TO COMPLY MAY RESULT IN DAMAGE TO COMPONENTS AND/OR SYSTEMS.

1. Prepare aircraft for safe maintenance. Refer to Aircraft Maintenance Manual (AMM), Chapter 20.

CAUTION: MAKE SURE ELECTRICAL POWER IS DISCONNECTED FROM AIRCRAFT. FAILURE TO COMPLY MAY RESULT IN INJURY TO PERSONNEL AND/OR DAMAGE TO AIRCRAFT.

2. Disconnect external electrical power from aircraft. Refer to AMM, Chapter 20.
3. Defuel forward tank if required and drain forward fuel tank. Refer to AMM, Chapter 12.
4. Open forward fuel tank access panels 123BR, 123ER, 123FR and 152DR to access fuel probes No. 1 and No. 3. Refer to Figure 1.
5. Measure the gaps between the probes No. 1 and No. 3 and fuel structure (upper skin, lower skin and stringers).
 - A. If all gaps measured are equal to or greater than 8.0 mm (0.31 inch), proceed to step 9.
 - B. If any gaps measured are less than 8.0 mm (0.31 inch), proceed to the next step for that gap.
6. Remove forward fuel tank probes No. 1 and No. 3 as required. Refer to AMM, Chapter 28 and Figure 2.
7. Install forward fuel tank probe No. 3 as follows:

NOTE: For screw, nut and bolt Installation refer to AMM, Chapter 20.

- A. Install sensor bracket assembly, P/N 30P37110008-501A01-509 (1) using flat washer, P/N NAS1149C0332R (2) and bolt, P/N NAS6703U3 (3). Refer to Figure 3.

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- B. Install upper part of probe No. 3, P/N 30P884200200-001 on sensor bracket assembly as follows:
 - (1) Install screw, P/N NAS1802-3-16 (4) with flat washer, P/N NAS1149C0332R (5) and adjust the gap between the probe and the fuel tank upper skin to be between 8.0 - 9.0 mm (0.31 - 0.35 inch) using washers, P/N NAS1149C0332R (6), P/N NAS1149C0363R (7) and P/N NAS1149C0316R (8) as required.
 - (2) Reinstall lower part of probe No. 3, P/N 30P884200200-001 to its original position using screw, P/N NAS1802-3-10 (9), and flat washer, P/N NAS1149C0332R (10).
 - (3) Adjust the forward probe to attain 8.0 - 9.0 mm (0.31 - 0.35 inch) distance from inner surface of the fuel tank upper skin and stiffener, P/N 30P371126800-501.
 - (4) Ensure gap between probe and lower skin is equal to or greater than 8.0 mm (0.31 inch).
 - C. Record the measured gaps from steps 7.B.(1) and 7.B.(3).
8. Install forward fuel tank probe No. 1 as follows:
- A. Install sensor bracket assembly, P/N 30P371100008-501A01-505 (11) and P/N 30P371100008-501A01-507 (7) as follows (Refer to Figure 4):
 - (1) Install bolts, P/N NAS6703U3 (13), with flat washers P/N NAS1149C0332R (14) and screw, P/N NAS1802-3-10 (15) with flat washer, P/N NAS1149C0332R (16).
 - (2) Install sensor bracket assembly, P/N 30P371100008-501A01-507 (7).
 - B. Reinstall probe No. 1, P/N 30P884200000-001 in place using bolt, P/N NAS6703U3 (17) with washer, P/N NAS1149C0332R (18), and screw P/N NAS1802-3-10 (19) with washer, P/N NAS1149C0332R (20).
 - C. Ensure gap between the aft probe and the fuel tank upper and lower skins is equal to or greater than 8.0 mm (0.31 inch).
 - D. Record the measured gaps from step 8.C.
9. Install all fuel tank access panels removed in Step 4. for forward fuel tank probes removal.

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10. Perform Fuel Quantity Measurement System – Capacitance / Resistance Check Adjustment / Test for the Forward Fuel Tank Probes as follows:

CAUTION: DAMAGE TO SENSITIVE COMPONENTS MAY OCCUR IF ELECTROSTATIC DISCHARGE SAFETY PRECAUTIONS ARE NOT OBSERVED.

Tank Unit (Fuel Probes) Capacitor Checks

- A. Select the POWER ON / OFF switch to the ON position.
- B. Verify there is no indication of a low battery in the display window.
- C. Wait 3 minutes before starting the test.
- D. Select the FUNCTION SELECT knob to the MEASURE EXT Position.
- E. Select the MEGGAR SELECT knob to the TU position.
- F. Connect a ground cable from the CHASSIS connector of the fuel quantity test set to aircraft ground.
- G. Connect test harness connector to forward tank connector 84YP.
- H. Connect the interface test harness connector J9 to the fuel quantity test set to TANKS UNITS LO-Z connector.
- I. Connect the interface test harness connector J7 to the fuel quantity test set to TANKS UNITS HI-Z connector.
- J. Verify all the switches on the interface box are selected to the GROUND position.

NOTE: In order to check each probe value, only select the applicable tank unit (fuel probe) to TEST position. After reading capacitance value, return the switch to the GROUND position.

- K. Select applicable interface box switch (SW-1, SW-2 or SW-3) to the TEST position to check each tank unit (fuel probe) capacitance value. After reading each capacitance value, return the switch to the GROUND position.

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- L. Verify the measured tank units (fuel probes) capacitance values are with the specified ranges per the following table:

Table 1:

FORWARD TANK UNITS (FUEL PROBES) CAPACITANCE VALUES			
Tank Unit (Probe)	Switch	Minimum (pF)	Maximum (pF)
1Q	2	149.30	165.10
2Q	1	113.00	125.10
3Q	3	76.10	84.20

Forward Tank Wiring Checkout

NOTE: Reading of 0 ohm indicates a short circuit.

An indication of “-Or.-” while reading the SHIELD positions is an acceptable reading as this reading is infinitely higher than what can be read on the display for any SHIELD position and meets the requirement.

- M. On the fuel quantity test set FREQUENCY SELECT knob, select MΩ.
- N. On the interface box, select SW-1, SW-2 and SW-3 to the MEGGAR position.
- O. Select SW-1 to the TEST position.
- P. Verify measured values are as specified in Table 2.
- Q. Select SW-1 back to the MEGGAR position.
- R. Select SW-2 to the TEST position.
- S. Verify measured values are as specified in Table 2.
- T. Select SW-2 back to the MEGGAR position.
- U. Select SW-3 to the TEST position.
- V. Verify measured values are as specified in Table 2.
- W. Select SW-3 back to the MEGGAR position.

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- X. For each of the fuel tank harnesses, the following MEGGAR SELECT switch positions are to be checked to verify that forward fuel probes insulation resistance are within the required values:

Table 2:

TEST POSITION	MINIMUM VALUE (MΩ)
LO-Z/HI-Z	0.43 - 2.25
LO-Z/SHIELD	100
HI-Z/SHIELD	100
SHIELD/GND	100
LO-Z/GND	100
HI-Z/GND	100

11. After rework completion perform leakage test as follows:

- A. Refuel the forward tank per AMM, Chapter 12 and verify that the maximum fuel quantity reading of the forward tank is within the required range (refer to the relevant row in table below according to the fuel type and temperature)

Table 3: Fuel Quantity for FWD Fuel Tank

<u>Fuel Tank</u>	<u>Fuel Type</u>	<u>Fuel Temperature</u> [°C]	<u>Minimum Fuel Quantity</u> (LBs)	<u>Maximum Fuel Quantity</u> (LBs)	<u>Fuel Quantity results (LBs)</u>
FWD TANK	Brayco	0 – 9	1450	1600	
	JET A	0 – 9	1390	1550	
	Brayco	10 – 30	1350	1560	
	JET A	10 – 30	1370	1510	
	Brayco	31 – 40	1310	1520	
	JET A	31 – 40	1350	1470	

12. Check for fuel leaks around work area and access panel(s) per the following requirements:

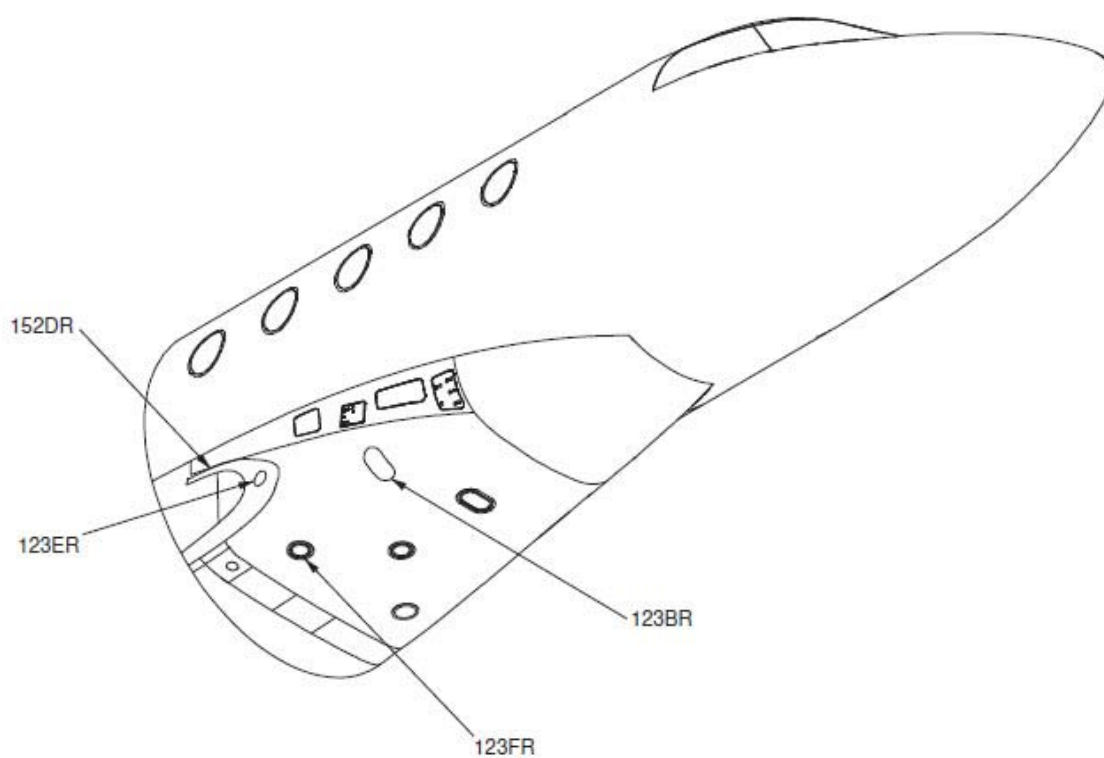
- (a) If fuel leak is detected, repair source of fuel leak.

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- (b) Use lint free cloth to clean all spilled fuel on aircraft and / or floor.
- (c) Use compressed air to dry hard to reach areas.
- 13. Ensure work area is clean and clear of foreign objects (FOD).
- 14. Record compliance with this service bulletin in the aircraft's permanent maintenance records and return aircraft to flight status.
- 15. Report compliance with this service bulleting to Gulfstream Computerized Maintenance Program (CMP) by uploading the attached service reply card, along with the CMP task card(s) sign-off using MyGulfstream, MyCMP Document Upload or e-mail to cmp.docproc@campsystems.com.

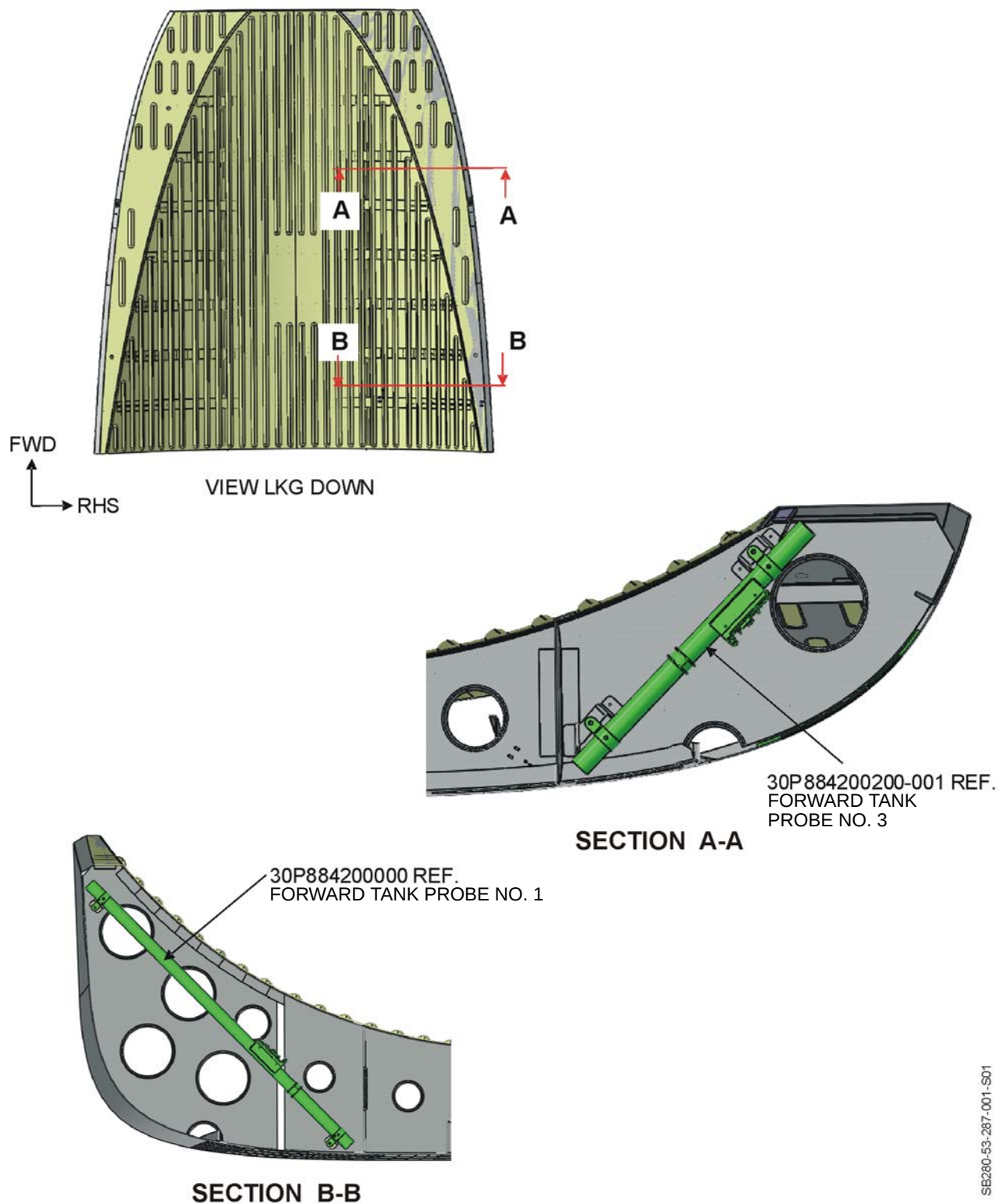
If technical assistance is required, contact your area Gulfstream Field Service Representative or call Gulfstream Customer Support at 800-810-GULF (4853).

SERVICE BULLETIN



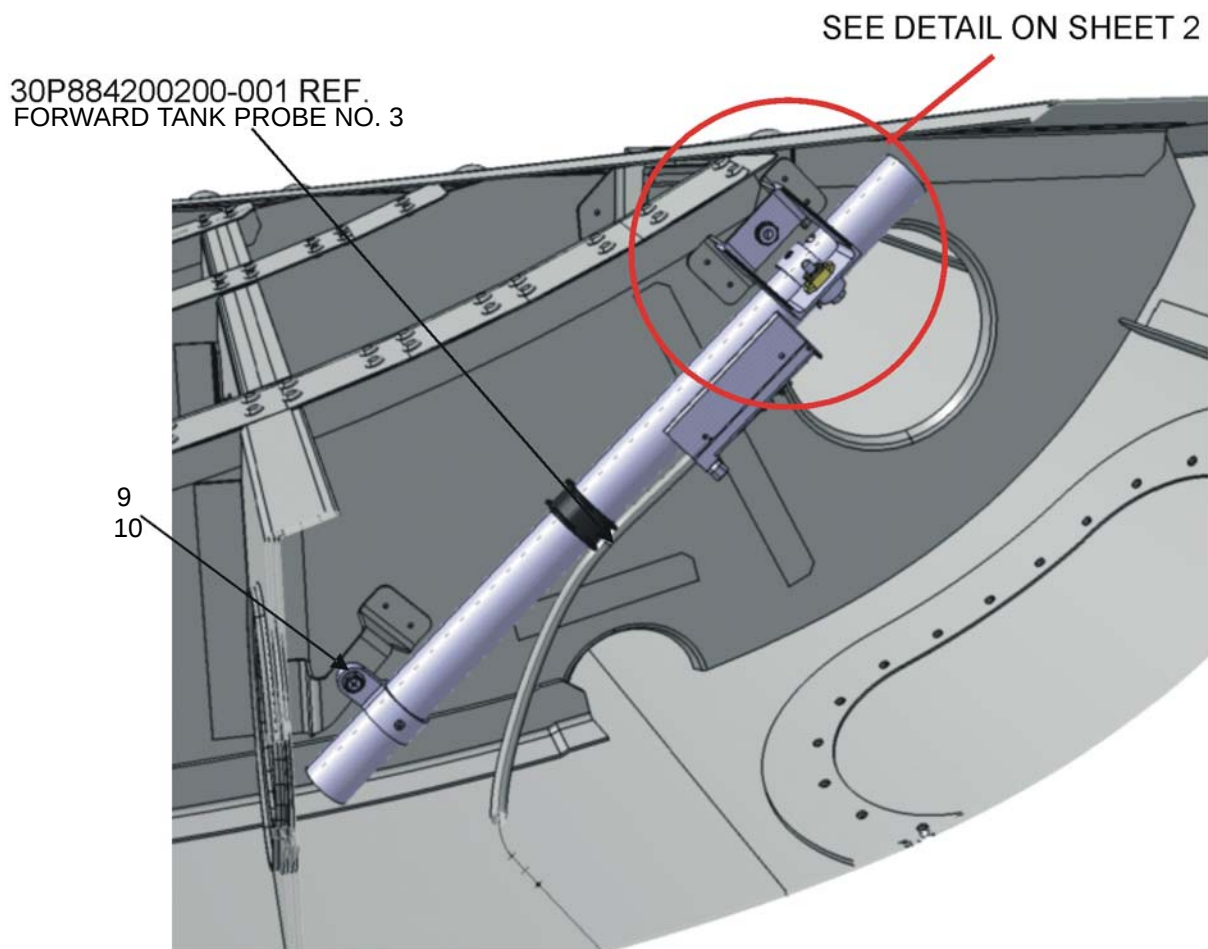
Access Panel Location
Figure 1

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FWD Fuel Tank Probe No. 1 and No. 3
Figure 2

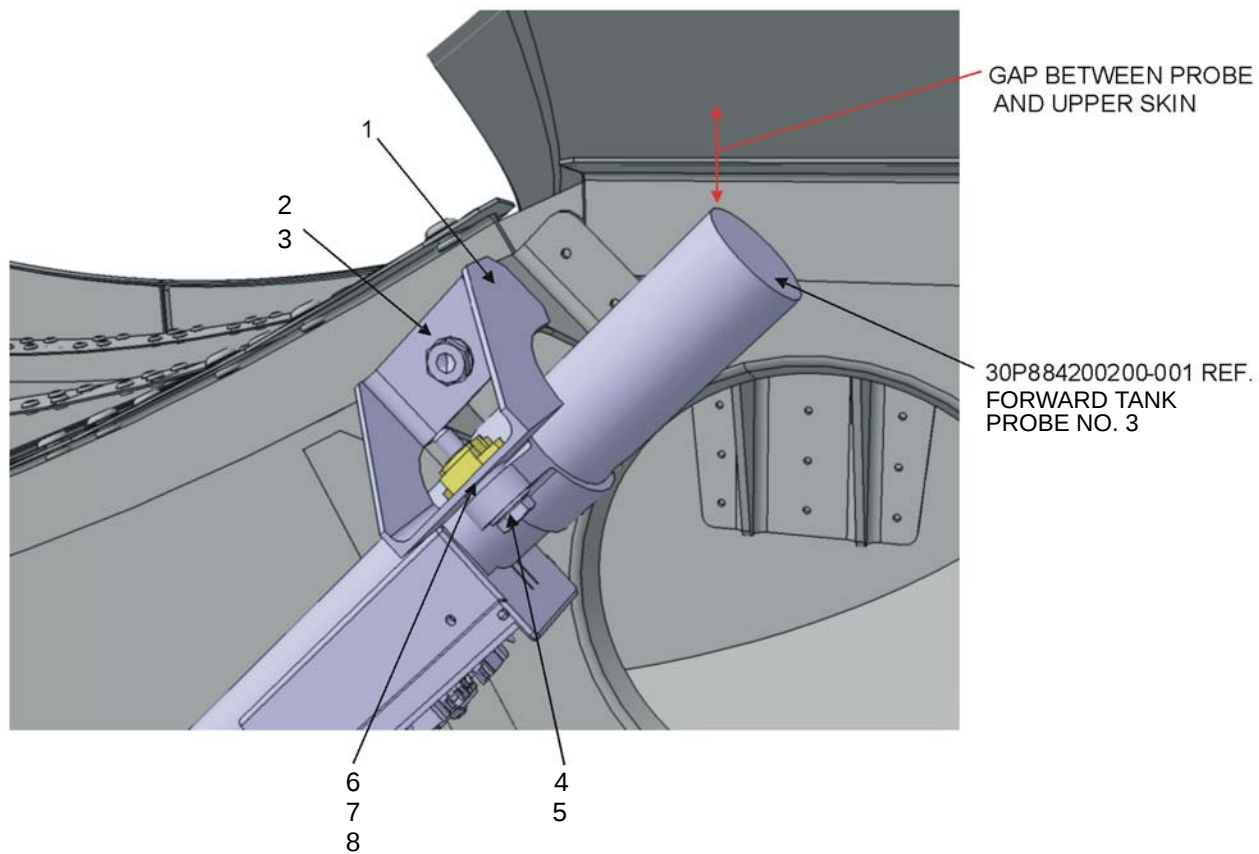
SERVICE BULLETIN



SB280-53-287-002-S01

Probe No. 3 - Installation Rework
Figure 3 (Sheet 1)

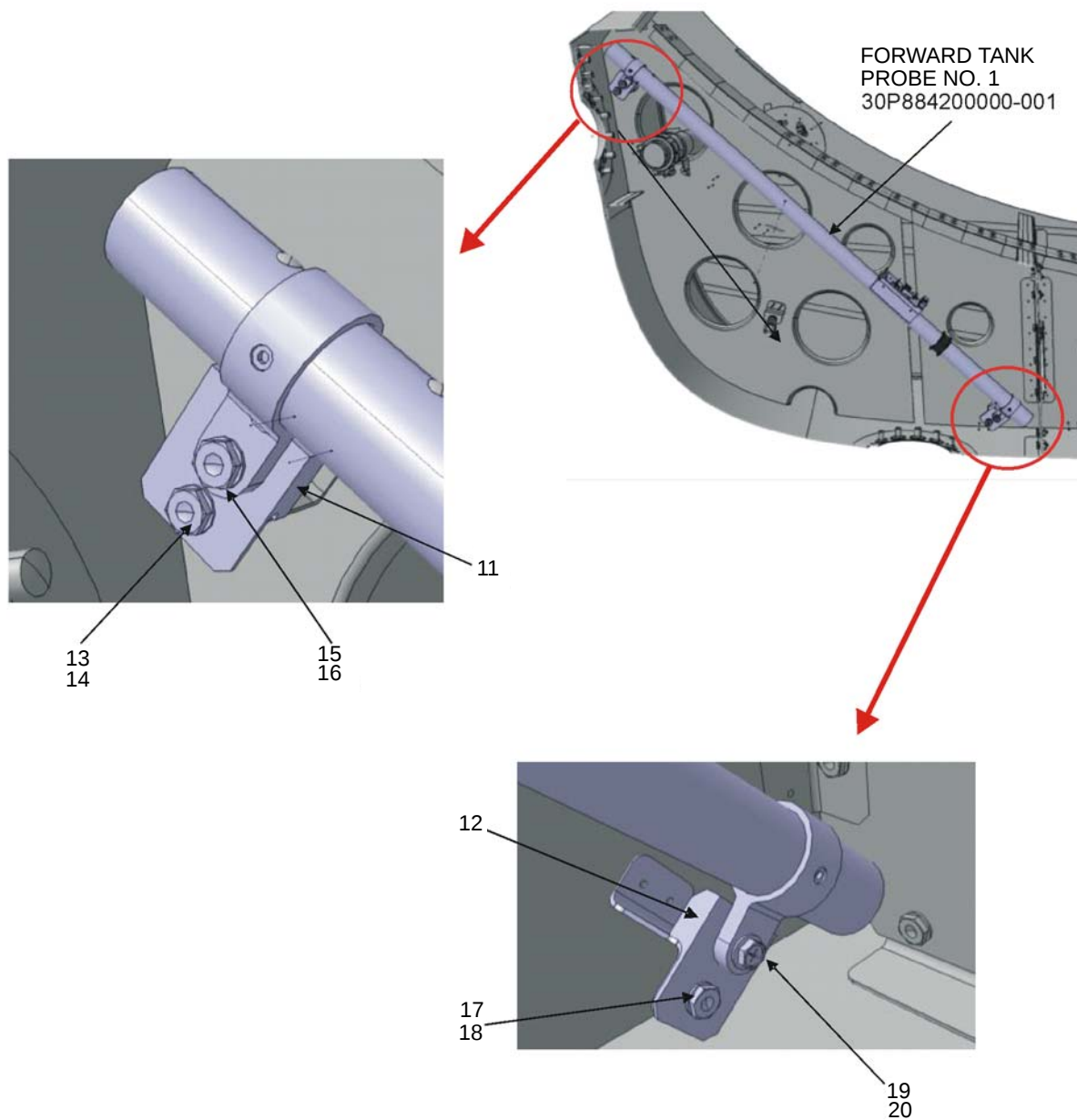
SERVICE BULLETIN



SB280-53-287-002-S02

Probe No. 3 - Installation Rework
Figure 3 (Sheet 2)

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SB280-53-287-003-S01

Probe No. 1 - Installation Rework
Figure 4

RECORD ONLY SERVICE BULLETIN
GULFSTREAM G280
SERVICE BULLETIN NO. 280-53-287
SERVICE REPLY CARD

Please upload this page, along with the CMP task card(s) sign-off using MyGulfstream,
MyCMP Document Upload, or e-mail to cmp.docproc@campsystems.com

This is a Record Only Service Bulletin with its own unique CMP code. Operators that have accomplished this SB and want to show compliance in CMP must contact their CMP analyst to have this custom code entered into CMP.

The following Service Bulletin (SB) has been addressed:

SB CMP NUMBER	A/C	AIRCRAFT TYPE	COMPLIANCE DATE
982870		Gulfstream G280	

Aircraft Hours _____

Aircraft Landings _____

This Service Bulletin is not applicable because:

_____ Serial Number not affected

_____ Equipment not installed

_____ Previously complied with (annotate method of compliance below)

_____ Other (explain reason below)

SIGNATURE	TITLE / CERTIFICATE NUMBER	COMPANY

COMMENTS / SUGGESTIONS / ACTIONS TAKEN:

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