

## GARMIN G1000 ATTITUDE HEADING REFERENCE SYSTEM - REMOVAL/INSTALLATION

### 1. General

- A. This section gives the maintenance practices procedures for the removal and installation of the G1000 Garmin GRS Attitude Heading Reference System (AHRS) LRUs shown below. For a general overview of the AHRS system refer to Garmin G1000 Attitude Heading Reference System - Description and Operation.
- GRS 77 and GRS 79 AHRS Unit (1 and 2)
  - GRS 77 and GRS 79 ARHS Configuration Module (Unit 1 and 2)
  - GMU 44 Magnetometer (Unit 1 and 2)

### 2. Tools and Equipment

- A. Tools and Equipment
- None.
- B. Special Consumables
- None.
- C. Reference Material
- Chapter 6, Access Plates and Panels Identification - Description and Operation
  - Chapter 20, Electrical Bonding - Maintenance Practices
  - Chapter 25, Flight Compartment - Maintenance Practices
  - Garmin G1000 Attitude Heading Reference System - Description and Operation
  - Refer to Garmin G1000 Integrated Avionics System - Adjustment/Test
  - Attitude Heading Reference System - Adjustment/Test.

### 3. Setup

- A. Prepare the Airplane
- (1) Put the BATTERY switch to the OFF position.
  - (2) Put the AVIONICS switches to the OFF position.
  - (3) Disconnect external electrical power from the airplane.
  - (4) Disengage the applicable circuit breaker(s) given in Table 401.

**Table 401. Circuit Breakers**

LRU	Circuit Breaker Name	Circuit Breaker Location
AHRS Unit 1	AHRS 1	Avionics Circuit Breaker Panel
AHRS Unit 2	AHRS 2	Avionics Circuit Breaker Panel
GRS 77/79 AHRS Unit 1 Configuration Module	AHRS 1	Avionics Circuit Breaker Panel
GRS 77/79 AHRS Unit 2 Configuration Module	AHRS 2	Avionics Circuit Breaker Panel
GMU Unit 1	AHRS 1	Avionics Circuit Breaker Panel
GMU Unit 2	AHRS 2	Avionics Circuit Breaker Panel

- (5) For AHRS 1, remove the end cover from the copilot's avionics rack.  
**NOTE:** The copilot's avionics rack is found in front of the copilot's door under the instrument panel.
- (6) For AHRS 2 do the steps that follow:
  - (a) Remove the copilot's seat. Refer to Chapter 25, Flight Compartment - Maintenance Practices.
  - (b) Remove access panel 232BR. Refer to Chapter 6, Access Plates and Panels Identification.

### 4. AHRS 1 Unit Removal

- NOTE:** If the mounting screws that attach the mounting rack to the airplane structure are loosened after post-calibration has been completed, the GRS 77/79 AHRS must be calibrated again. Refer to Attitude Heading Reference System (AHRS) - Adjustment/Test.

A. Remove the AHRS 1 Unit (Refer to Figure 401).

- (1) Disconnect the electrical connector from the AHRS unit.
- (2) Loosen the thumbscrews/captive screws that attach the AHRS unit to the mounting tray.
- (3) Lift the unit out of the mounting tray.

## 5. AHRS 1 Unit Installation

A. Install the AHRS 1 Unit (Refer to Figure 401).

**NOTE:** If a new AHRS unit is installed, the software must be loaded. Refer to Garmin G1000 Integrated Avionics System - Adjustment/Test.

**NOTE:** If the mounting screws that attach the mounting rack to the airplane structure are loosened after post-calibration has been completed, the GRS 77/79 AHRS must be calibrated again. Refer to Attitude Heading Reference System (AHRS) - Adjustment/Test.

- (1) Put the AHRS unit in its correct position in the mounting tray.
- (2) Tighten the thumbscrews that attach the AHRS unit to the mounting tray.
  - (a) For GRS 77, torque the thumbscrews to between 22 and 25 inch-pounds (2.48 and 2.82 N-m).
  - (b) For GRS 79, torque the captive screws to between 15 and 20 inch pounds (1.70 and 2.26 N-m)
- (3) Connect the electrical connector to the AHRS unit.
- (4) Engage the applicable circuit breaker(s) given in Table 401.
- (5) Do the AHRS post-maintenance checks.

## 6. AHRS 2 Unit Removal

**NOTE:** If the mounting screws that attach the mounting rack to the airplane structure are loosened after post-calibration has been completed, the GRS 77/79 AHRS must be calibrated again. Refer to Attitude Heading Reference System (AHRS) - Adjustment/Test.

A. Remove the AHRS 2 Unit (Refer to Figure 401).

- (1) Disconnect the electrical connector from the AHRS unit.
- (2) Loosen the thumbscrews/captive screws that attach the AHRS unit to the mounting tray.
- (3) Lift the unit out of the mounting tray.

## 7. AHRS 2 Unit Installation

A. Install the AHRS 2 Unit (Refer to Figure 401).

**NOTE:** If a new AHRS unit is installed, the software must be loaded. Refer to Garmin G1000 Integrated Avionics System - Adjustment/Test.

**NOTE:** If the mounting screws that attach the mounting rack to the airplane structure are loosened after post-calibration has been completed, the GRS 77/79 AHRS must be calibrated again. Refer to Attitude Heading Reference System (AHRS) - Adjustment/Test.

- (1) Put the AHRS unit in its correct position in the mounting tray.
- (2) Tighten the thumbscrews/captive screws that attach the AHRS unit to the mounting tray.
  - (a) For GRS 77, torque the thumbscrews to between 22 and 25 inch-pounds (2.48 and 2.82 N-m).
  - (b) For GRS 79, torque the captive screws to between 15 and 20 inch pounds (1.70 and 2.26 N-m)
- (3) Connect the electrical connector to the AHRS unit.
- (4) Engage the applicable circuit breaker(s) given in Table 401.

## 8. GRS 77/79 AHRS Configuration Module Removal

A. Remove the Configuration Module (Refer to Figure 402).

**NOTE:** The removal and installation of the configuration modules is typical for the pilot's and copilot's GRS 77/79 units.

**NOTE:** The configuration modules are installed in the electrical connectors of the GRS 77 units (PF300 / AHRS 1, PF301 / AHRS 2).

**NOTE:** The configuration modules are installed in the electrical connectors of the GRS 79 units (PF307 /

### AHRS 1, PF315 / AHRS 2).

- (1) Get access to the applicable GRS 77/79 unit.
- (2) Disconnect the applicable electrical connector. Refer to Cessna Model 208/208B Wiring Diagram Manual.
- (3) Remove the screws from the electrical connector cover and remove the cover from the electrical connector.
- (4) Disconnect the connector on the cable harness from the configuration module.
- (5) Carefully remove the configuration module from the electrical connector.

## 9. GRS 77/79 AHRS Configuration Module Installation

- A. Install the Configuration Module (Refer to Figure 401).

**NOTE:** The removal and installation of the configuration modules is typical for the pilot's and copilot's air data computers.

- (1) Examine the connector pins on the cable harness for damage.
- (2) Carefully put the configuration module in position in the electrical connector.
- (3) Connect the connector on the cable harness to the configuration module.
- (4) Put the electrical connector cover in position on the electrical connector.
- (5) Install the screws to hold the electrical connector cover on the electrical connector.
- (6) Connect the electrical to the applicable GRS 77/79 AHRS unit.
- (7) Install the pilot's or copilot's GRS 77/79 AHRS unit.
- (8) Engage the circuit breaker(s) given in Table 401.

## 10. GMU 44 Magnetometer Removal

- A. Remove the GMU 44 Magnetometer (Refer to Figure 403).

**NOTE:** The removal procedures for the left and right magnetometers are typical.

**CAUTION:** Do not use magnetized tools or screws around the magnetometer. Use of magnetized tools or screws can cause an incorrect heading indication.

- (1) Remove the access plates 523AB for left wing, 623AB for right wing) to get to the magnetometer. Refer to Chapter 6, Access/Inspection Plates - Description and Operation.
- (2) Remove the screws that attach the magnetometer to the flux detector bracket.
- (3) Disconnect the electrical connector.

## 11. GMU 44 Magnetometer Installation

- A. Installation the GMU 44 Magnetometer (Refer to .Figure 403).

**NOTE:** The installation procedures for the left and right magnetometers are typical.

**NOTE:** If a new unit is installed, the software must be loaded.

- (1) Make sure the electrical connector and connector pins have no damage.
  - (a) Replace the electrical connector or connector pins if applicable. Refer to the Model 208 Wiring Diagram Manual and the Garmin G1000 Line Maintenance Manual.
- (2) Connect the electrical connector.
- (3) Attach the magnetometer to the flux detector bracket with the screws.
  - (a) Put the magnetometer in position on the flux detector bracket, temporarily aligned parallel to the longitudinal axis of the airplane.
- (4) Engage the circuit breakers given in Table 401.

## 12. AHRS System Post-Maintenance Checks

- A. Do the AHRS Post-Maintenance Checks.

- (1) Do an electrical bond check (Type I) between the AHRS unit and the airplane structure. Refer to Chapter 20, Electrical Bonding - Maintenance Practices.
- (2) If a new LRU is installed, do the G1000 Baseline Software/Configuration Load. Refer to Garmin G1000 Integrated Avionics System - Adjustment/Test.
- (3) If a new LRU is installed do the Magnetometer Calibration. Refer to the Attitude Heading Reference System (AHRS) -

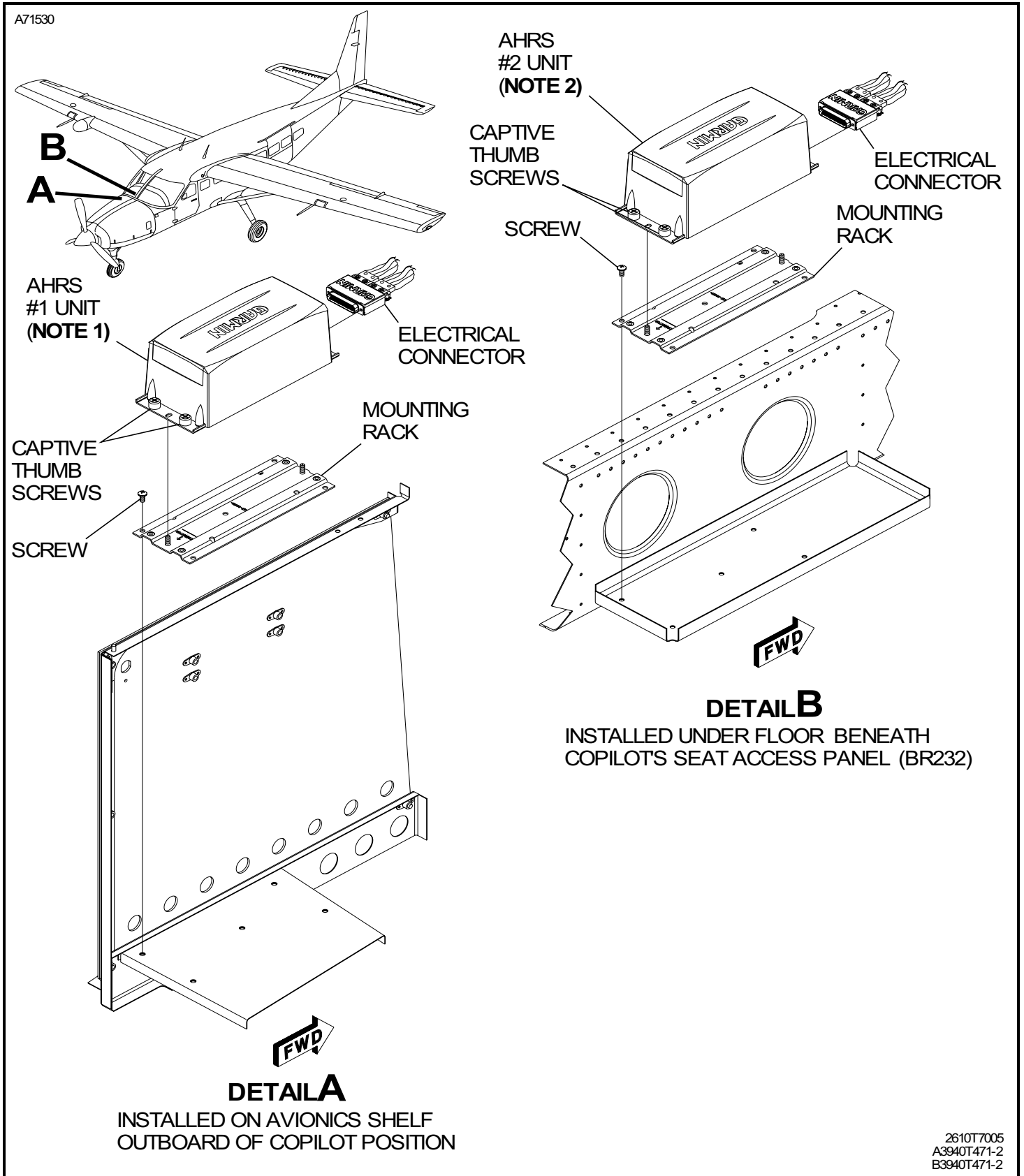
Adjustment/Test .

- (4) Do a check to make sure the AHRS System and related Garmin components status is correct. Refer to Garmin G1000 Integrated Avionics System - Adjustment/Test G1000 Architecture Verification Check.
- (5) Do the AHRS installation calibration. Refer to Attitude Heading Reference System (AHRS) - Adjustment/Test.
  - (a) If the mounting screws that attach the mounting rack to the airplane structure have been loosened after post-calibration has been completed, you must calibrate the AHRS unit again.

**13. Closeout**

- A. Put the Airplane Back to its Initial Condition.
  - (1) Do the steps that follow as necessary:
    - (a) Install the end cover from the copilot's avionics rack.
    - (b) Install the access panel.
    - (c) Install the copilot's seat.

Figure 401 : Sheet 1 : Attitude Heading Reference System (AHRS) Installation



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Figure 402 : Sheet 1 : GRS 77/79 AHRS Configuration Module

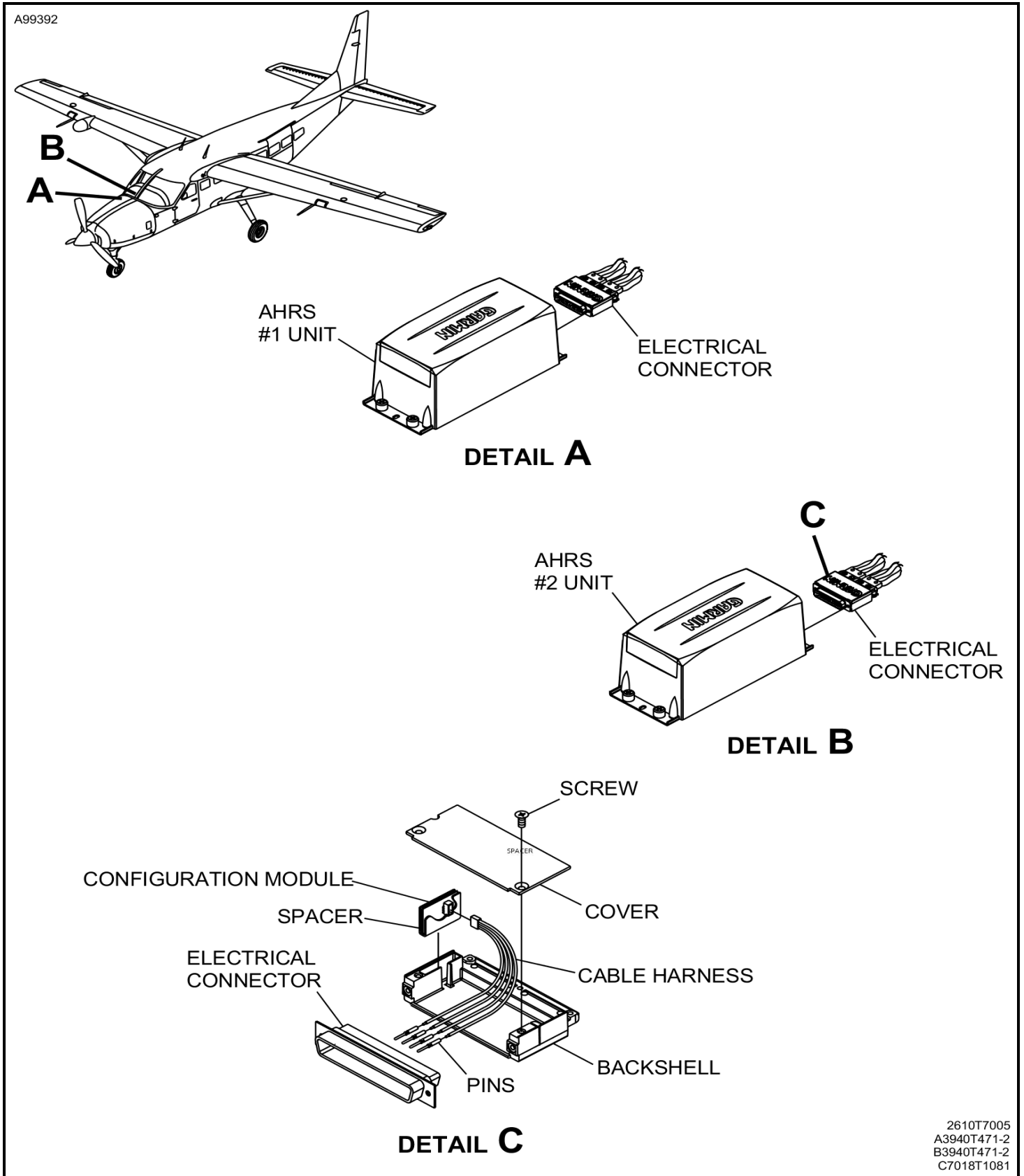


Figure 403 : Sheet 1 : Magnetometer Installation

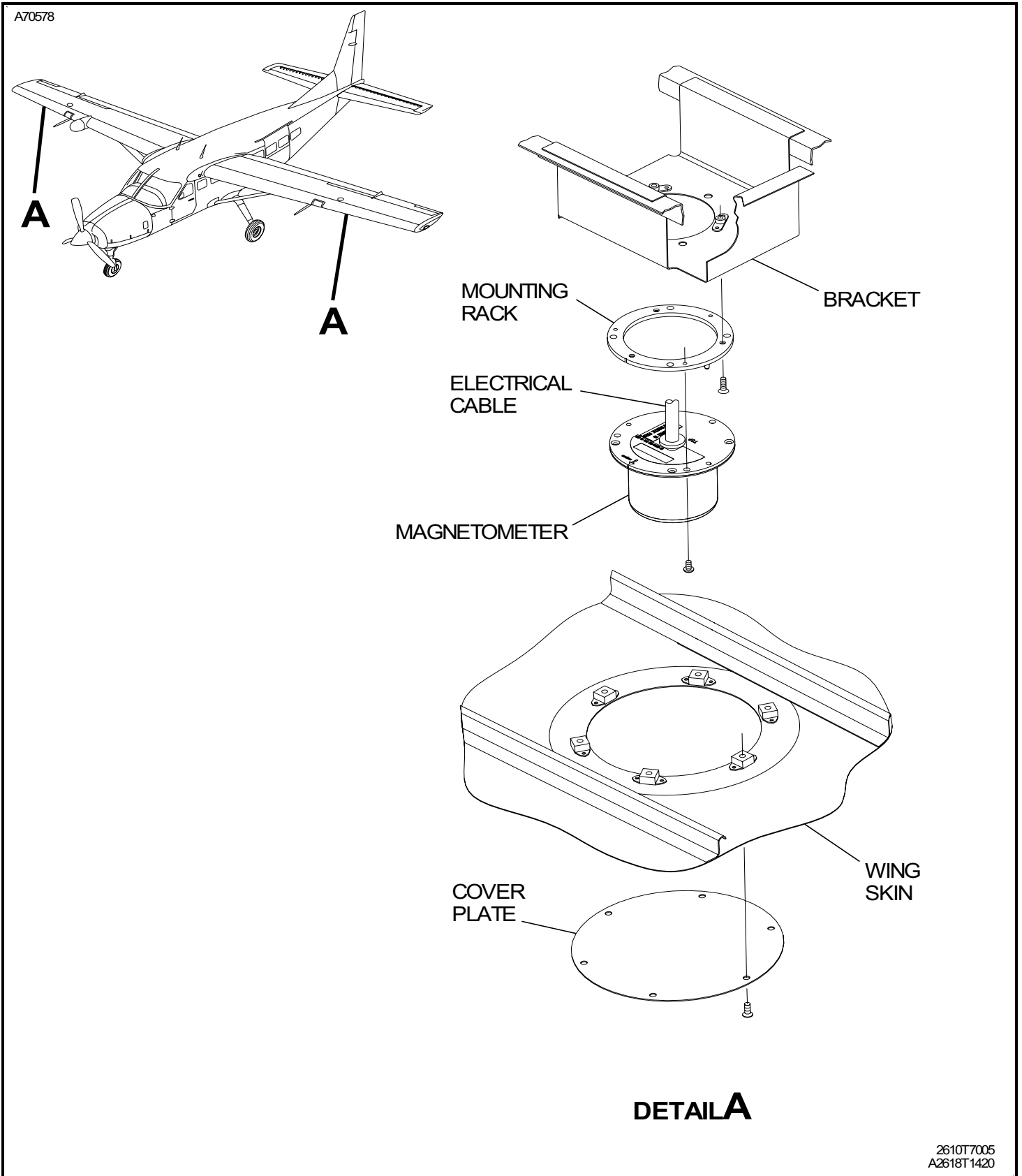
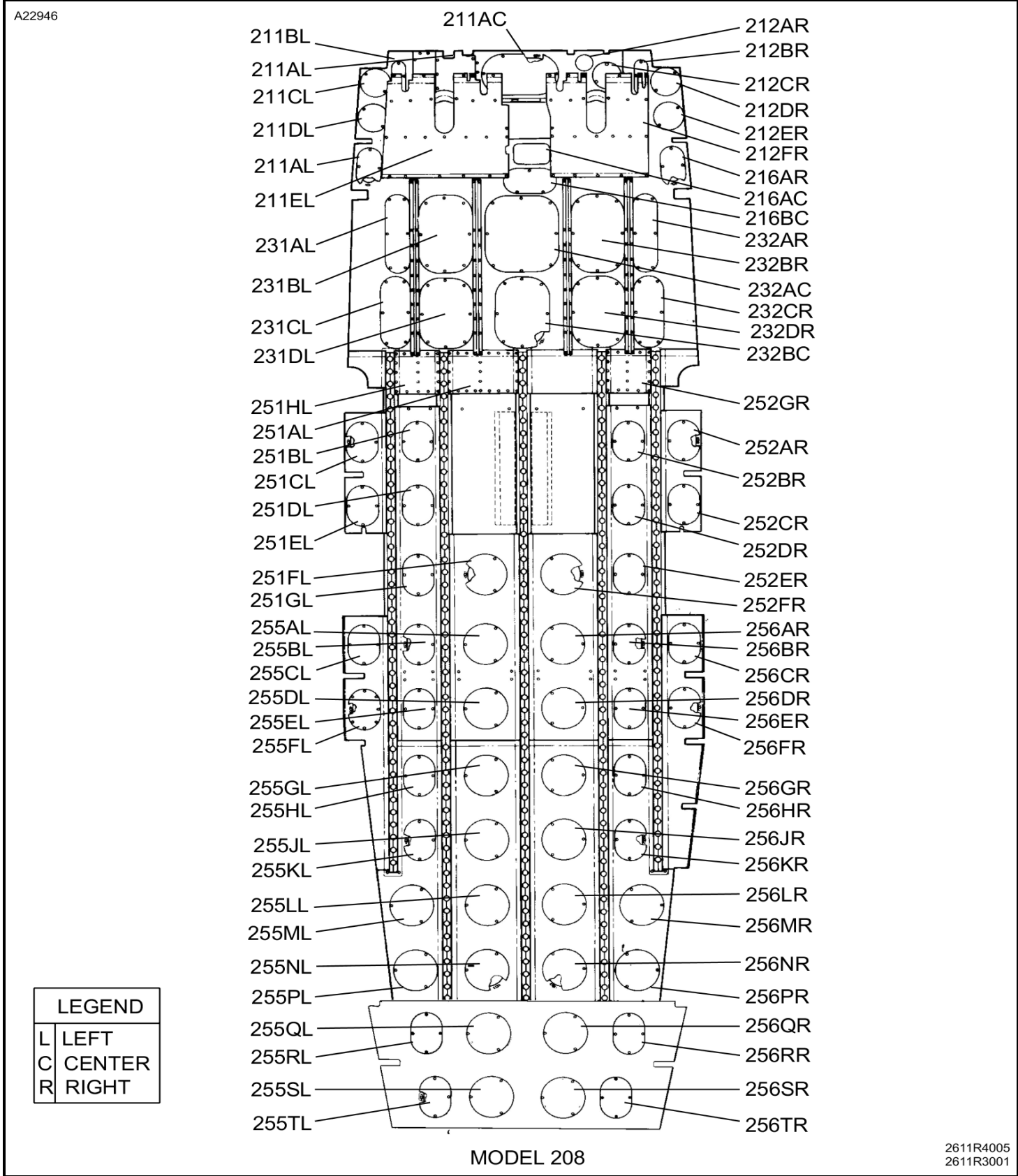


Figure 2 : Sheet 1 : Model 208 Floorboard Access Plates/Panels Identification

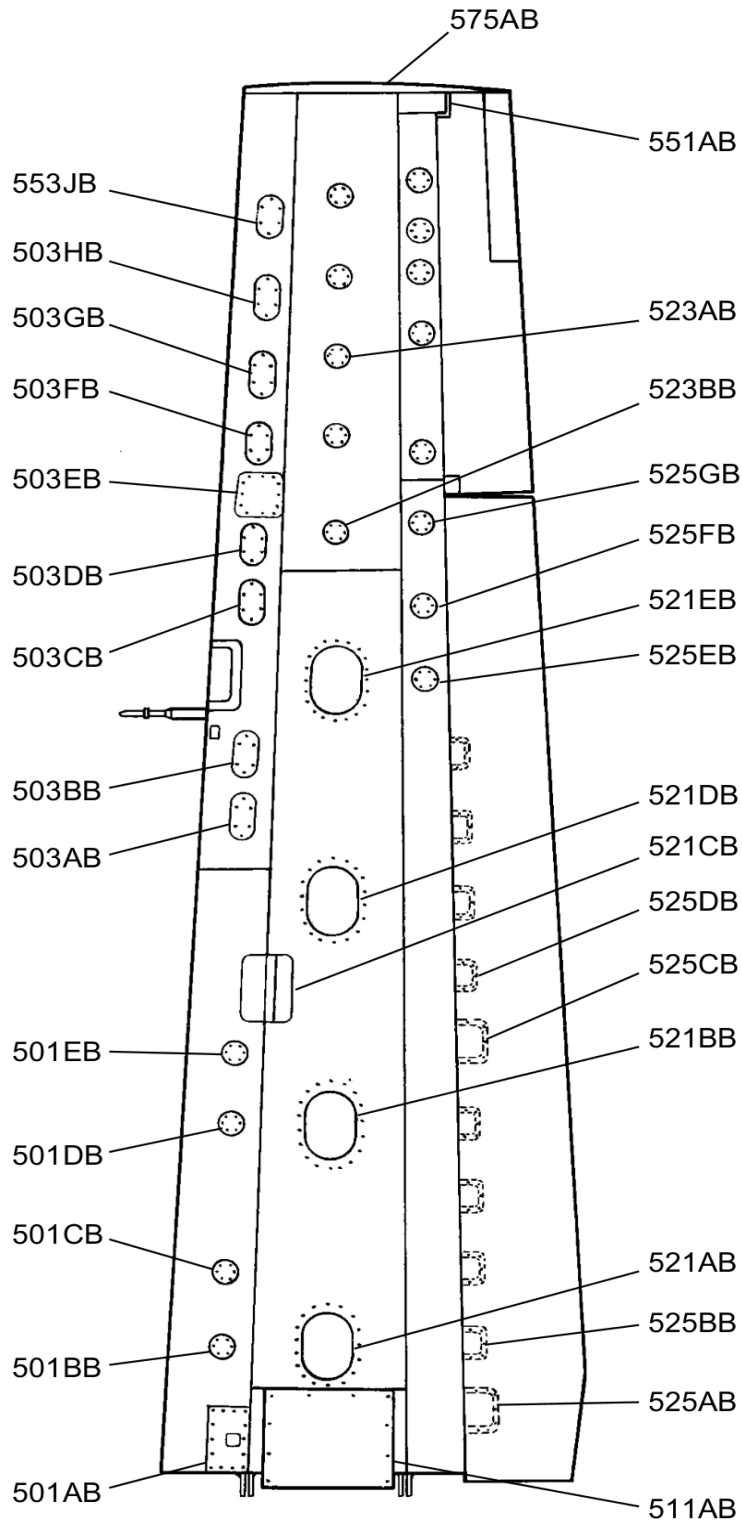


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Figure 7 : Sheet 1 : Left Lower Wing Panels

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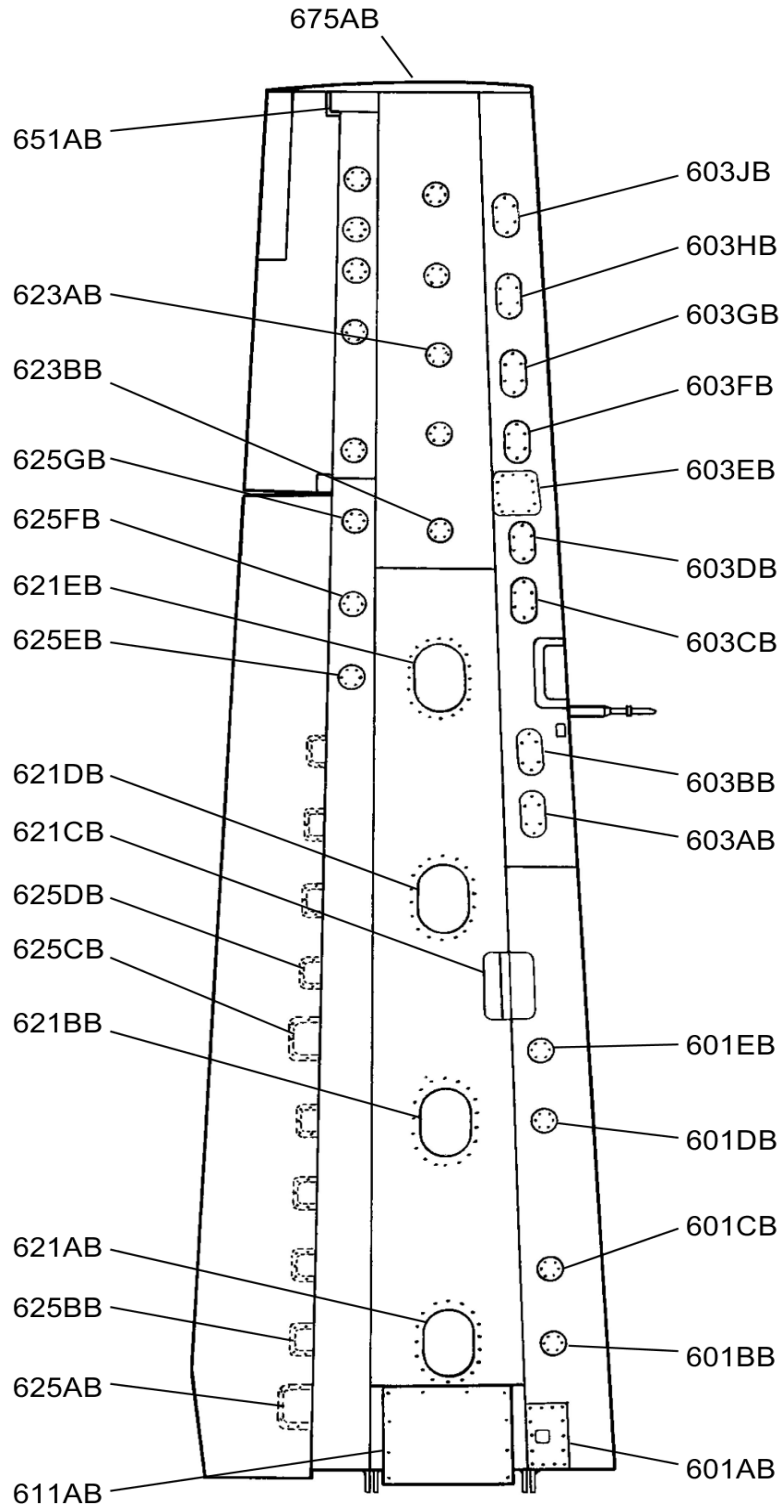


VIEW LOOKING UP AT LEFT WING

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Figure 8 : Sheet 1 : Right Lower Wing Panels

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VIEW LOOKING UP AT RIGHT WING

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